

# **virax**



MAKE **NOC** H 

## **virax**



For more than 100 years, our mission has been to inspire professional heating and sanitary installers to excel in their daily work, through the manufacture of high-quality, versatile, ergonomic and durable tools in French design.

Attentive to all our customers, **both in France and abroad**, we work diligently and passionately every day to innovate and make our products, services, and your business **even better**.







## VIRAX WAS ESTABLISHED WITH THE FAMOUS "VIRAX THREADER", THE THREADER THAT "TURNS AROUND THE AXIS"

Alfred Lang and André Metivier establishes METIVIER-LANG on 8 February 1920. In the beginning, the plant is a craft workshop located in Gentilly manufacturing the first VIRAX threaders, which "turn [VIRent] around the AXis"! The production is first sold on the French market and then, from 1923, on the export market. To cope with increasing demand, the plant moves to larger premises in Villemomble.

## START OF THE CERTIFICATION PROCEDURES

An important acknowledgement of VIRAX's French industrial know-how and its commitment to providing its users with reliable products, the ISO 9001 Quality certification is awarded to the Epernay production site in 1997.

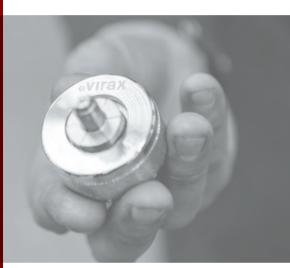
This is followed by ISO 14001 certification for its environmental management system.

## VIRAX OPERATES IN OVER 42 COUNTRIES, WITH THE VIRAX FACTORY LOCATED IN EPERNAY (MARNE DÉPARTEMENT)

The threaders conquer markets worldwide, including Japan! With the factory no longer large enough to cope with the growing order book, in 1964 VIRAX moves its head office, administrative and sales departments, and production means to Epernay, in the Champagne region. This new plant now covers an area of 25,000 m<sup>2</sup> on more than 9 hectares of land.

## VIRAX OFFICIALLY ON FACEBOOK TWITTER, YOUTUBE AND LINKEDIN

The brand is present on several of the largest social networks, with the aim of being even closer to its users, being able to provide them with information in a different way, and obtaining their views on the Virax tools they use on a daily basis on their work sites.



## VIRAX JOINS THE CAS ALLIANCE AND CONTINUES ITS NEW ENVIRONMENTAL APPROACH

VIRAX joins the Cordless Alliance System (CAS), a common battery platform with more than 35 manufacturers and 300 machines. At the same time, aware of its environmental role, VIRAX is speeding up its CSR (Corporate Social Responsibility) action plan in order to maintain a sustainable approach, and obtains ISO 45001 certification for its occupational health and safety management system.

## VIRAX CELEBRATES ITS 100<sup>TH</sup> ANNIVERSARY

In 2020, the company proudly celebrated 100 years of existence, a demonstration of its durability and the high quality of its products. Above all it underlines the brand loyalty shown by VIRAX users, with the most loyal ones passing tools on from one generation to the next.





VIRAX has established its reputation as a reference tool brand for pipe maintenance and installation professionals, in both fluid and gas applications, for over 100 years. With more than 2,000 products in its catalogue and over 6,000 in production, VIRAX is a key player in France and a leading player in the European market.

Over 70% of our product range is industrialised at our **20,000 m<sup>2</sup>** plant at our head office in the Champagne region. We realise that our products are frequently used in tough conditions, which is why we machine, inject and treat **premium materials** to ensure optimal strength.

The **Quality policy** implemented by VIRAX has been repeatedly praised and rewarded by the most demanding certifications over more than 20 years; that is why we are confident and offer a 2-year guarantee on the **quality and reliability** of all VIRAX products.

**EPERNAY** 



Aware of its environmental role, VIRAX is speeding up its CSR (Corporate Social Responsibility) action plan in order to maintain a sustainable approach.

The company has undergone an **Eco Vadis audit**, the global standard for CSR assessments, to assess our various actions. This audit identified both the **positive impacts** of our approach, and all future areas for improvement.



## THE VIRAX CSR CHARTER IS STRUCTURED AROUND FOUR MAJOR AREAS:

- More responsible sourcing for our raw materials and suppliers.
- Reducing our environmental impact and carbon footprint.
- Promoting diversity and inclusivity in the workplace, in particular through training our employees and users.
- Contributing to local development.









From the basic idea to the day the product reaches the shelves, all company teams are involved in the research and development process for a VIRAX product, and sometimes this requires several prototypes to meet both our and your requirements.

In addition to systematic stress testing and according to our quality processes, these prototypes are also regularly tested by professional users under real-life conditions.

Consequently, we talk with our end-user throughout the development process, to make sure we offer a tool that fully meets their needs, and "makes the most of your talent"!



## **MODERNISING THE PLANT**

.....

## Since its establishment in Marne in 1964, VIRAX has continuously invested in its plant covering over 20,000 m<sup>2</sup>.

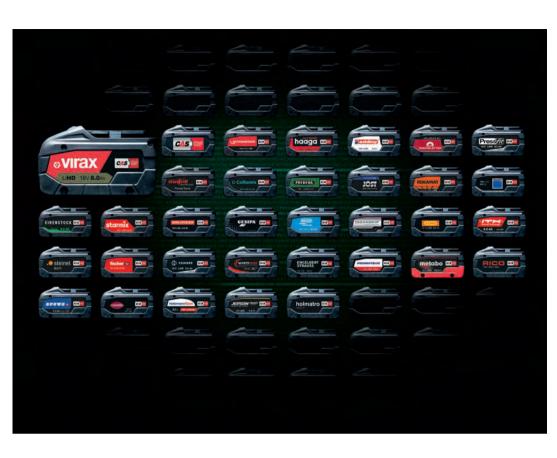
These investments mean we can, firstly, meet the ever-increasing demand from our customers, and also produce equipment with the latest technical and technological advances.

As a result, we offer our users premium tools that are durable and can withstand often tough worksite conditions.





DESIGNED FOR THE USER



#### Making life easier for our end-users on work sites is a priority for our company.

VIRAX tools are designed to be as versatile as possible: our 5-in-1 inspection camera, our well-known PC 42, 4-in-1 pipe cutter, and our interchangeable press-fitting solution cover a wide range of applications.

With this in mind, the VIRAX brand has joined CAS (Cordless Alliance System), a common battery platform with more than 35 manufacturing partners, representing more than 300 machines compatible with a single battery. Already 3 VIRAX products are equipped with CAS technology, and future innovations will also use this technology. Our goal of user satisfaction in terms of working comfort has led us to offer a smart transport system: the VIRABOX cases, which can be clipped together, making them easier to store, transport and organise.

More than 20 of the leading machines and tools from the VIRAX range are already delivered in VIRABOXes!



## Shortly after its founding, VIRAX met great success in foreign markets with its famous threaders.

Today, the brand operates in more than 50 countries in Europe and worldwide, through a network of partner distributors made up of agents, wholesalers and resellers, supported by our VIRAX area managers.

VIRAX therefore takes part in many national and international events in order to be close to its users.

## **YOUR NEWS ON SOCIAL NETWORKS!**

New products, competitions, polls, tutorials, etc.









# YOUR OPINION MATTERS!



@ NILS

**CROSSBOW BENDER** 





**PC 42 PIPE CUTTER** 

 $\star \star \star \star \star$ 

96 similar reviews

215042





**FLARING PLIERS** 













ADJUSTABLE WRENCH





15 **VIrax** 

## **PIPE WRENCH**

#### 0100 : Swedish key - 90°

90° head angle. Narrow parallel, tapered jaws for effective nut gripping. Easily grips thin materials. Non-pinch handles.

							1
Α "	A mm	A max.	L"	Lmm	E mm	Kg	Ref.
1	34	47	12.1/2	305	15	0,765	010011
1.1/2	49	63	16.3/4	420	18	1,410	010012
2	60	82	22	535	22	2,500	010013

#### 0100 : Swedish - 45° Pipe Wrench

45° head angle. Parallel jaws for effective nut gripping. Teeth fully surround the pipe so it cannot escape.

Special notch for nut corner. Non-pinch handles.



Α "	A mm	A max.	L"	L mm	E mm	Kg	Ref.
1	34	45	12.1/2	315	10	0,725	010041
1.1/2	49	61	16.3/4	445	12	1,380	010042
2	60	82	22	560	14	2,600	010043

#### 0104 : Swedish Pipe Wrench

Teeth fully surround the pipe. No risk of slippage. Pipe gripped at three points. Non-pinch handles.



Α "	A mm	A max.	L"	L mm	E mm	Kg	Ref.
1	34	48	12	320	14	0,860	010434
1.1/2	49	55	16.1/4	440	19	1,580	010449
2	60	68	22	550	21	2,830	010460

Make the most of your talent

#### 0105 : Swedish - 45° Pipe Wrench

45° head angle. Parallel jaws for effective nut gripping. **Easily grips thin materials.** Non-pinch handles.

Α "	A mm	A max.	L"	L mm	E mm	Kg	Ref.
1/2	21	29	9.1/2	240	15	0,465	010521
1	34	45	12.1/2	315	17	0,800	010534
1.1/2	49	59	16.3/4	440	20	1,450	010549
2	60	76	22	560	23	2,700	010560
3	90	102	27.3/4	705	28	4,160	010590

#### 0106 : Chain Wrench

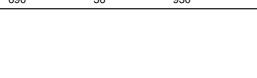
Forged, heat-treated jaws for a powerful grip. Heat-treated nickle-chrome pin. Fast opening. Heavy-duty tool for securely tightening pipes in difficult-to-reach locations (water and gas pipes in trenches, pipelines, etc.).

Α "	A mm	C mm	L."	L mm	E max. mm	E1 mm	Kg	Ref.
1/8 - 1	10 - 34	275	14	350	52	16	1,175	010610
1/8 - 3	10 - 90	470	27	680	64	20	4,100	010611
1/4 - 6	13 - 165	690	36	930	90	32	7,650	010613

#### 0107 : Chain Wrench

#### Reversible jaws double the lifespan of the wrench.

Very heavy-duty wrench for tightening the large diameter pipes used in the chemical and petroleum industries, shipyards, etc.





Α "	A mm	C mm	L"	L mm	E max. mm	E1 mm	Kg	Ref.
1/4 - 2.1/2	13 - 76	415	22	550	55	22	3,200	010731
3/4 - 4	27 - 114	560	35	900	60	20	5,900	010732
1 - 6	34 - 165	690	42	1065	80	32	8,720	010733
1.1/2 - 8	48 - 219	1090	50	1285	82	32	14,500	010734
2 - 12	60 - 320	1440	64	1600	100	40	24,000	010735



#### 100% guarantee for 2 years

Virax guarantees all its products for 2 years at 100%, excluding consumables and batteries, and excluding abuse or product modified.

## **RACK-TYPE WRENCH**

#### 0108 : Adjustable Wrench

Sturdy, wide-opening wrench. Easy to adjust. Made in hardened steel. Ground and chrome finish.



A max. mm	A hex. nut	L"	Lmm	E mm	Kg	Ref.
60	39 mm - 1.1/2"	9	230	17	0,480	010823
70	45 mm - 1.3/4"	11	280	20	0,780	010828
80	52 mm - 2.1/16"	15	375	22	1,580	010838

## **TWIN SLIP-JOINT**

#### 0109 : Twin Slip-Joint Pliers

Excellent grip on all shapes. 7 position rack, for high precision adjustment. Non-pinch interlocking handles.



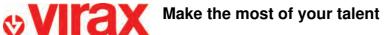
A mm	L mm	P mm	E mm	Kg	Ref.
17	175	18,5	6	0,160	010917
30	240	27	7	0,310	010924
36	300	35	10,5	0,485	010930

#### 0112 : Insulated Slip-Joint Pliers - Straight Jaws

Grooved ratchet system prevents slippage for effective tightening. Plastic handle grips. Chrome-vanadium steel body. Straight jaws: very large capacity.



A mm	Lmm	P mm	Emm	Kg	Ref.
100	400	75	14	1,065	011240



### 0182 : Extra-Wide Opening Multigrip Pliers

## Advantages

**Practical**: wide opening to substitute for several pliers. **Ergonomic** with very large handles for a better grip. **Avoids slipping** with self-clamping inward curved teeth.

Extra-wide opening, between 28 and 70% wider than typical pliers: one set of pliers instead of several (saves weight and space in the toolbox).

Available with classical or non-slip handles for a better grip.

Extra-wide handles for a better grip and lesser effort.

Chrome vanadium pliers, forged for a very high strength tool with double thermal treatment.



A mm	L mm	P mm	E mm	E1 mm	Sheathed grips	Kg	Ref.
35	180	32	6	13	no	0,240	018202
56	250	45	8	15	no	0,420	018208
35	180	32	6	13	yes	0,245	018212
56	250	45	8	15	yes	0,425	018218

## 0182 : Extra-Wide Multigrip Pliers with Fast Locking Button

## Advantages

**Practical**: wide opening to substitute for several sets of pliers. **Ergonomic** with very large handles for a better grip **Fast** with a fast locking button for accurate adjusting.

Extra-wide opening, up to 30% wider than typical pliers: one set of pliers instead of several (saves weight and space in the toolbox).

Fast locking button for easier and more accurate adjusting, 18 locking positions Non-slip handles for a better grip.

Extra-wide handles for a better grip and lesser effort.

Chrome vanadium pliers, forged for a very high strength tool with double thermal treatment.

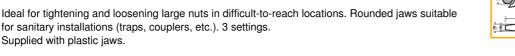




A mm	L mm	P mm	E mm	E1 mm	Sheathed grips	Kg	Ref.
45	180	32	6	18	yes	0,240	018222
52	250	45	8	20	yes	0,425	018228



#### 0113 : Large-Capacity Plumbing Wrench





A mm	L mm	P mm	E mm	Kg	Ref.
60	240	42	10	0,310	011324

### **PLIER WRENCH**

#### 0112: Plier Wrench 10" - 250 mm

## Advantages

**Compact and economical:** substitutes for a complete set of open end wrenches up to 45 mm.

**Designed for plumbers:** smooth and parallel jaws for a perfect contact and maximum tightening.

**Versatile use:** for tightening and loosening all types of bolts and nuts, holding, bending, clamping, forming, etc.

Fast adjustment and flat jaw screwing and tightening tool, a perfect combination of slip-joint pliers and adjustable wrench.

Smooth and perfectly parallel jaws ensuring tight fit when tightening without damage to nuts in soft materials (brass, plastic) and preserving chrome-plated and fragile coatings. Versatile tightening for multiple applications in plumbing, maintenance, mechanical engineering, industry, for tightening/loosening all types of bolts and nuts, holding, bending, clamping, forming, etc.

Instant opening by secured locking push-button of the adjusted position by quadruple rack. Ratchet-like operation for fast screwing / unscrewing.

Graded with position cursor for easy pre-adjustment and slide rule type of use providing accurate measurement up to 40 mm.

Anti-slip handles for improved grip.

Comfort of use thanks to its light weight, 510 grammes only, and high demultiplication for powerful application.

High quality heavy duty clamp wrench in 100% hot forged chrome Vanadium.



A mm	L mm	P mm	E mm	E1 mm	Sheathed grips	Kg	Ref.
45	264	35	8	14	oui	0,490	011210



#### Virax supports future installers

Virax helps teachers promote the industry to students. Every year, Virax and teachers create a competition to test the skills of future graduates in a fun way. The best students win prizes to help them get started in their new profession.

## STRAP WRENCH

#### 0116 : Strap Wrench

For use where the surface of the parts to be tightened must remain unmarked, such as chrome pipes, connectors or tap fittings, as well as components made from stainless steel or plastic, etc. Very high strength replaceable nylon strap.

High-strength light alloy handle. End of handle shaped to allow strap to be self-tightening.



EP.

Α "	A mm	L"	L mm	E mm	C mm	E1 mm	Kg	Ref.
2	60	12	315	42	450	30	0,320	011600
4	114	12	315	42	750	30	0,355	011610
14	350	12	315	42	1500	30	0,360	011620

## **STILLSON WRENCH**

#### 0125 : Stillson Wrench

Springs housed inside the casing provide an instant grip on the pipe and efficient self-tightening and ratchet-like action. Special heat-treated steel handle and jaws.

Α "	A mm	L"	Lmm	E mm	Kg	Ref.
3/4	27	8	200	12	0,280	012520
1	34	10	250	16	0,600	012525
1.1/2	49	14	350	20	1,130	012535
2	60	18	450	23	1,845	012545
2.1/2	76	24	600	26	3,100	012560
3.1/2	102	36	900	28	5,975	012590

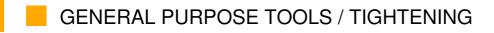
## **VIRAGRIP WRENCH**

#### 0136 : Light Alloy Offset Viragrip® Pipe Wrench

Perfect for working in difficult-to-reach places: along walls and floors, between pipes next to ceilings, etc. Replaceable lower jaw.

Α "	A mm	L"	Lmm	E mm	Kg	Ref.
1.1/2	49	14	350	34	0,900	013614
2	60	18	450	39	1,460	013618
2.1/2	76	24	600	47	2,485	013624





#### 0137 : Light Alloy Viragrip® Pipe Wrench

The upper jaw is forged in heat-treated steel, equipped with 2 springs ensuring efficient self-tightening on the pipe and allowing ratchet-like action. Double high-frequency hardened teeth.

Lightweight, very easy to handle. Replaceable lower jaw.



Α "	A mm	L."	L mm	E mm	Kg	Ref.
2	60	14	350	23	0,985	013735
2.1/2	76	18	450	27	1,675	013745
3	90	24	600	30	2,650	013760
5	140	36	900	32	5,210	013790

#### 0138 : Viragrip® in Heavy Duty Cast Iron

## Advantages

High effort resistance: reinforced model. Efficient: self-clamping on pipe. Fast: moving jaw ratchet effect.

Viragrip® pipe wrench, 6" to 48", for tubes of  $\emptyset$  3/4" to 6". Reinforced handle and head for use in extreme tightening conditions. Moving jaw made from treated forged steel, with 2 springs allowing effective self-tightening of the tube and providing clamping force identical to that of a ratchet. High-frequency double hardening for gear teeth.

In accordance with standard US/GGG-W-651-E.

HEAVY DUTY: + 30% more strength.



Α "	A mm	L "	L mm	E mm	Kg	Ref.
3/4	27	6	150	15	0,240	013806
1	34	8	200	15	0,400	013808
1.3/4	55	10	250	20	0,770	013810
2	60	12	300	25	1,110	013812
2	60	14	350	25	1,610	013814
2.1/2	76	18	450	30	2,580	013818
3.1/2	102	24	600	30	3,740	013824
5	140	36	900	40	7,750	013836
6	168	48	1200	52	14,100	013848

#### 0141 : Chain Wrench

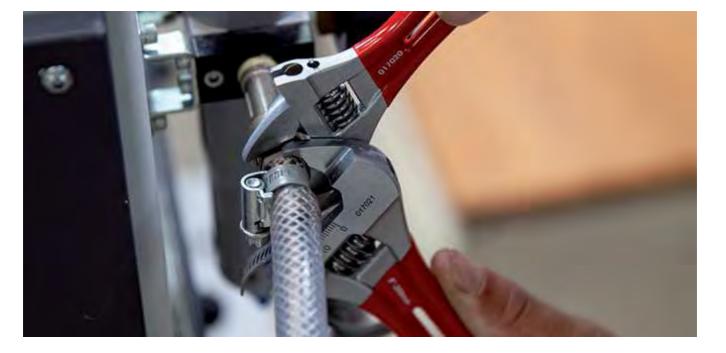
Forged, hardened chrome vanadium steel jaws and handles made of one piece. **Double set of teeth allow direction to be reversed with the wrench in position.** Easy to handle tool for use in confined spaces.

Tightening A	Tightening A mm	Pre-tigntenin g A "	Pre-tightenin g A mm	C mm	L"	Lmm	Emm	Kg	Ref.
2	60	4	114	460	14	360	20	1,040	014100

#### 0142 : Chain Wrench

Reversible jaw with two sets of teeth in hardened chrome vanadium steel. Chain secured to handle at two points. Easy to handle, designed for use in confined spaces.

Tightening A"	Tightening A mm	Pre-tigntenin g A "	Pre-tightenin g A mm	C mm	L"	L mm	E mm	Kg	Ref.
2	60	4	114	475	14	350	21	1,150	014200
3	90	5	140	515	24	600	30	3,740	014210





## **ADJUSTABLE WRENCH**

#### 0170 : Extra-Wide Opening Adjustable Wrench

## Advantages

#### Practical:

One wrench instead of several, saves weight and space. **For confined spaces:** 

Thin noses and flush moving jaw when open.

- 2 additional extra-wide opening versions:
- Classical or with thin jaws for confined locations.

Extra-wide opening, sheathed adjustable wrench, ideal for working on copper and brass in plumbing, air-conditioning, refrigeration, maintenance and heating applications. With it's wide-opening jaw and torsional strength, it replaces 3 wrenches (6"-8"-10" for ref. 017045/017047, 8"-10"-12" for ref. 017050/017052, 10"-12"-15" for ref. 017055). Non-slip sheathed handle for a better grip.

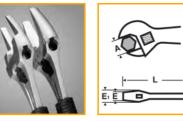
Extra-wide opening adjustable wrench with extra-thin jaws (ref. 017047 and 017052) adapted to the thinnest nuts.

Ideal for assembly and disassembly of locknut systems.

Maximum access thanks to nose 50% slimmer than standard wrenches with similar opening, and even thickness over the entire nose length.

Complies with ISO 6787:2001 and ASME B107.100-2010 standards.





Accross flats A mm	Accross flats A"	Emm	E1 mm	L mm	L"	Kg	Ref.
34	1.1/4"	6	14	175	6	0,210	017045
34	1.1/4"	4	14	175	6	0,210	017047
39	1.1/2"	6	14	215	8	0,350	017050
39	1.1/2"	4	14	215	8	0,350	017052
53	2.1/16"	6	16	250	10	0,640	017055



#### **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com **Exploded views and manuals**: www.virax.com, Download section.

#### 0170 : Adjustable wrench with reversible jaw

## Advantages

**Reversible jaw:** 1 side for pipes, 1 side for nuts. **Wide opening:** the jaw opens wider than wrenches with equivalent length. **For confined spaces:** thin nose tips.

**The two-in-one tool**: High quality reversible jaw, with one serrated side for tightening and loosening pipes and damaged nuts, and one smooth side for usual work.

With its wide opening jaw it replaces two wrenches (6"-8" for reference 017030, 8"-10" for reference 017031, etc.)

Triple coating of nickel and chrome provides high corrosion resistance.

Ergonomic handle with anti-slip coating for better grip.

Fixed jaw graded in mm and inch for adjustment before use.

Complies with ISO 6787:2001 and ASME B107.100-2010 standards.



Accross flats A mm	Accross flats A"	E mm	E1 mm	L mm	L"	Kg	Ref.
27	1.1/16"	5,3	10,8	162	6	0,160	017030
34	1.5/16"	7,2	14,0	209	8	0,320	017031
40	1.9/16"	7,7	15,5	261	10	0,510	017032
45	1.3/4"	9,5	19,0	313	12	0,835	017033





### 0170: Adjustable wrench extra light with thin jaws

## Advantages

Extra-light: 30% less weight compared with a traditional adjustable wrench. Thin jaws: to adapt to the thinnest nuts. Wide opening: the jaw opens wider than wrenches with

equivalent length.

**Extra light adjustable wrench** for user comfort. This optimal design reduces weight by up to -30% compared with a traditional wrench and -48% compared with a technical wrench, while maintaining excellent strength thanks to high grade steel.

**Thin jaws** ensure optimal access, up to 50% thinner than standard wrenches with similar opening potential. Homogeneous thickness over the full length of the jaws, which is ideal for fitting and removing locknut systems.

With its wide opening jaw it replaces two wrenches (6"-8" for reference 017020, 8"-10" for reference 017021, etc.)

Triple coating of nickel and chrome provides high corrosion resistance. Handle with anti-slip coating for better grip. Short and smooth mobile jaw rod, for use in small spaces. Fixed jaw graded in mm and inch for adjustment before use.

Complies with ISO 6787:2001 and ASME B107.100-2010 standards.





Accross flats A mm	Accross flats A"	E mm	E1 mm	L mm	L"	Kg	Ref.
24	15/16"	4	10,8	161	6	0,115	017020
30	1.3/16"	5	14,0	207	8	0,210	017021
36	1.7/16"	6	15,5	259	10	0,345	017022
46	1.3/16"	8	19,0	311	12	0,600	017023

#### 0170 : Adjustable Wrench

Triple coating of nickel and chrome provides high corrosion resistance. Very tough. The moving jaw of 6, 8, 10 and 12" long wrenches do not protrude when open, making them suitable for use in confined spaces.



Accross flats A mm	Accross flats A"	Emm	E1 mm	Lmm	L."	Kg	Ref.
19	3/4	6	10	150	6	0,120	017006
24	15/16	7	12	200	8	0,230	017008
29	1.1/8	8	14	250	10	0,390	017010
33	1.1/4	11	19	300	12	0,670	017012
45	1.3/4	18	25	380	15	1,230	017015
53	2.1/16	19	28	455	18	2,105	017018

## **RADIATOR WRENCH**

#### 2204 : Radiator Key Wrench With Ratchet

For fitting the captive nuts connecting the regulating valve to the radiator. Short wrench for working on ribbed nuts and internal hexagonal nuts in confined spaces.

Description	Kg	Ref.
Wrench : 3/8" - 1/2" - 3/4" - 1" + 1/2" female ratchet	0,545	220425
Wrench : 8 sizes including 3/8" - 1/2" - 3/4" - 1"+ 1/2" female ratchet	0,560	220435
1/2" female ratchet	0,420	220410
Wrench : Ø 3/8" - 1/2" - 3/4" - 1"	0,130	220420
Wrench : 8 sizes. including 3/8" - 1/2" - 3/4" - 1"	0,140	220430

#### 2204 : Radiator Key Wrench

For fitting the captive nuts connecting the regulating valve to the radiator. 18 mm square drive. Forged steel.

Description		Ref.
Wrench : Ø 3/8" - 1/2" - 3/4"	0,175	220460
Wrench : Ø 3/8" - 1/2" - 3/4" - 1" - 1.1/4"	0,315	220465

#### 2204 : 4 way sanitary cross wrench

Very easy to use, fast and efficient.

External hexagon 10, 12, 17, 22 mm: suitable for radiator valves and lockshields 3/8', 1/2', 3/4', 1'.

Internal thread M8, M10, M12: suitable for hanger bolts and studs.

Size mm	Kg	Ref.
220 x 220 x 33	0,565	220470





#### **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com Exploded views and manuals: www.virax.com, Download section.







## **RATCHET WRENCH**

#### 3103 : Flexible Head Ratchet Wrench 8-17 mm

## Advantages

Accessibility: 180° flexible head and 15° angle fork Speed: Ratchet wrench with a 5° recovery angle. Comfort: 12-sided profile eye: easy positioning on the nut

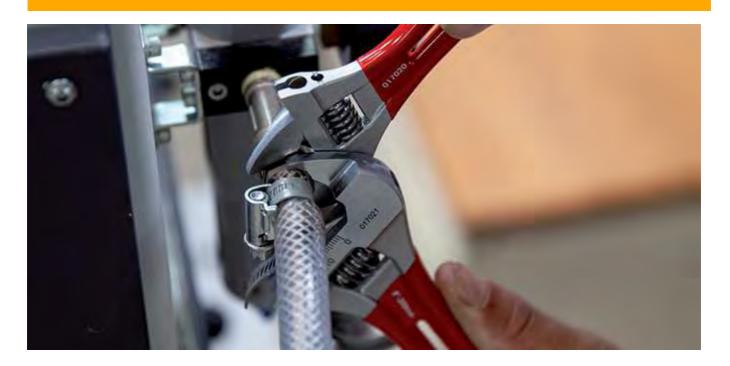
Wrench ideal for tightening operations in difficult to access locations. The set contains the most frequently used dimensions: 8, 9, 10, 11, 12, 13 and 17 mm. Delivered in a storage case.

Dimensions indicated on the case enabling quick selection and easy storage.





Number of wrenches	A mm	Size mm	Kg	Ref.
7	8 - 9 - 10 - 11 - 12 - 13 - 17	190 x 82 x 35	0,630	310325



**VIrax** 28

### 3103:4 in 1 ratcheting wrench

## Advantages

Practical: 2 wrenches = 8 sizes: 8, 10, 12, 13, 16, 17, 18, 19 mm. Comfort: Reverse lever. Speed: Ratchet wrench with a 5° recovery angle.

Save weight and space. Ideal for mobile maintenance.

Ref. 310330: Supplied in reusable textile pouch.





Number of wrenches	A mm	Size mm	Kg	Ref.
2	8 - 10 - 12 - 13 - 16 - 17 - 18 - 19	-	0,460	310330
1	8 - 10 - 12 - 13	150 x 25 x 17	0,095	310331
1	16 - 17 - 18 - 19	230 x 34 x 22	0,245	310332



#### **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com **Exploded views and manuals**: www.virax.com, Download section.

### 3104: 41 pieces set - 1/4" compact sockets, 1/4" bits

## Advantages

The Essential: 41 tools for a maximum of applications.

- 3 functions ratchet for all situations.
- Easy access to nuts with a compact ratchet/socket assembly.
- Precise work on all type of screws.
- A strong and compact box.

3 functions ratchet: Precise and strong 72 teeth ratchet, 5° increment. Reverse with lever. 1 ratchet side for sockets. 1 ratchet side for bits. 1 middle position for T-handle use.

10 compact sockets (5,5 to 14 mm) assembled directly in the ratchet head. Ratchet + socket are extremely compact to access nuts in tight spaces.

134 mm magnetic extension with locking system. Practical: the screw is magnetized on bit. Locking system avoids accidental fall of bit. Easy access in tight spaces.

Spinner with bi-material plastic handle for an optimum comfort.

26 bits with color code for all screw tips: Phillips®: PH1-2-3 ; Posidriv®: PZ1-2-3 ; Flat: 3,5-4,5-6,5-8 mm ; 6 points: 2-2,5-3-4-5-6-7-8 mm ; Torx: TX9-10-15-20-25-27-30-40. Easy identification of the tip with the color code of the bit. 1 color per tip.

Bi-materiel box: 1200 x 1200 stitck fabric combines flexibility and resistance. Vinyl is waterproof and easy to clean: ideal for wet and dirty construction sites. Double zip for an easy opening/closing. Easy to store thanks to the compact box.

Bicolor foam tray: holds tools when box is upside down and see missing tools.

Size mm	Kg	Ref.
185 x 110 x 54	0,690	310400







VIRAX 30

## 3104: 51 pieces set - basin wrench, go-thru sockets, 1/4" bits

## Advantages

The Plombi'box: 51 tools special plumbing in 1 single set. Special wrench for nuts under sink. Easy access on nuts on long threaded rods. Quick and precise work on all type of screws. Strong and handy box.

Special wrench for nuts under sink: compact design to reach awkward nuts under sink. Hollow arm and end socket to avoid obtruction by threaded rods. Size 13 mm on wrench + 6 sockets (9, 10, 11, 12, 14 et 17 mm).

Precise and strong 72 teeth ratchet, 5° increment. One 75 mm extension for difficult access. 13 go-thru sockets (10 to 19, 21, 22, 24 mm) which are assembled directly in the head of the ratchet = very compact. Suitable for nuts on long threaded rods: bolts for water heater support, basin support, WC suport, Air conditioning support, Müpro rails, sprinkler collars,...

Magnetic bit holder with locking system. Practical: the screw is magnetized on bit. Locking system avoids accidental fall of bit. Quick tightening with a drill bit machine.

Spinner with bi-material plastic handle for an optimum comfort.

26 bits with color code for all screw tips: Phillips®: PH1-2-3 ; Posidriv®: PZ1-2-3 ; Flat: 3,5-4,5-6,5-8 mm ; 6 points: 2-2,5-3-4-5-6-7-8 mm ; Torx: TX9-10-15-20-25-27-30-40. Easy identification of the tip with the color code of the bit. 1 color per tip.

Bi-materiel box: 1200 x 1200 stitck fabric combines flexibility and resistance. Vinyl is waterproof and easy to clean: ideal for wet and dirty construction sites. Double zip for an easy opening/closing. Easy to carry with the handle.

Bicolor foam tray: holds tools when box is upside down and see missing tools.

Size mm	Kg	Ref.
325 x 230 x 63	2,070	310410







#### **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com Exploded views and manuals: www.virax.com, Download section.

## **UNIVERSAL WRENCH**

#### 2205 : Universal wrench for toilet lid

## Advantages

Central articulation for easier tightening/loosening. Small footprint for use in tight spaces.

Universal tool for butterfly nut for installing and removing toilet lids with most fixing systems. Optimised handle for a good grip. Very easy to use, fast and efficient.

Size mm	Kg	Ref.
200 x 30 x 30	0,070	220510





#### 2615 : Universal Key Wrench

## Advantages

Made in **zinc moulded** under pressure for **high strength and light weight**.

**Multiple pattern four-way wrench**, with optimized size and ergonomics.

Minimum dimension for a maximum solution.

The indispensable tool for your projects, 3 models, 3 solutions, suited for maintenance, repairs and installation work.

**Electrical universal key wrench with 6 bits** : electrical cabinets, sanitary installations, A/C, radiator bleeding.

**Construction universal key wrench with 6 bits** : service shafts, inspection hatches, radiator bleeds, sanitary installations, buildings (door and window handles).

**Universal multifunction key wrench with 12 patterns** : service shafts, gas and electricity meters, A/C, buildings (door and window handles), radiator bleeds. Wrench fitted with a square bit, fastened to the spring hook by a magnet system.

Desc	ription	Composition	Kg	Ref.
Electrical unive	ersal key wrench	Plat 1X7mm, PH2 , hexagonale 1/4" , carré 5 à 8mm, triangle 9 mm, pic 3-5 mm.	0,880	261502
	adjustable key ench	Plat 1X7mm, PH2 , hexagonale 1/4" , carré 5 à 8 mm, triangle 9 mm, étagé 6 à 9 mm.	0,880	261501
Multifunction univ	versal key wrench <sup>r</sup>	Carré 5 à 10 mm, triangle 7 à 9 nm, hexagonale 1/4", pic 3-5 mm, demi-lune 6 mm, étagé 6 à 10 mm.	0,255	261500

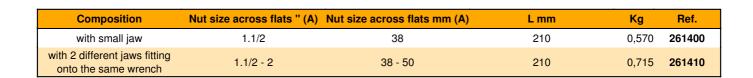




## **SANICROM WRENCH**

#### 2614 : Sanicrom® Basin Wrench

Basin wrench for nuts and connections on washbasins, bathtubs, sinks or bidets. 2 interchangeable jaws. Designed for tightening and loosening in difficult-to-reach locations. Self-tightening jaw design.



#### 2614 : Reversible Sanicrom® Basin Wrench

For nuts and connections on washbasins, bathtubs, sinks or bidets. **Direction of rotation reversed by pivoting the jaw without removing it from the tool.** Designed for tightening and loosening in difficult-to-reach locations. Self-tightening jaw design.



Nut size across flats " (A)	Nut size across flats mm (A)	Lmm	Kg	Ref.
1.1/2	38	240	0,565	261420

#### 2614 : Telescopic Sanicrom® Basin Wrench

Basin wrench with 4-position telescopic handle for nuts and connections on washbasins, bathtubs, sinks or bidets.

Min length: 280 mm, - L1: 340 mm, - L2: 400 mm, - L3: 460 mm.

180° pivoting fixed and moving jaw assembly mounted on the end of the handle. Return spring holds the jaw in place.

Nut size across flats " (A)	Nut size across flats mm (A)	Kg	Ref.
3/8 - 1.3/8	10 - 36	0,795	261450
1.3/8 - 2.1/2	36 - 65	0,955	261460





#### Much more than just quality, here's the Virax commitment!

Virax commits to total, permanent and durable satisfaction of users and therefore applies a process based on:

A proactive product plan. A constant innovation process. A focus on permanent improvement. Improved customer services. An assurance of optimum availability rate. **Customer satisfaction, the heart of our commitments.** 

### 2614 : Basin Wrench

## **Advantages**

Manoeuvrable:

Compact design for reaching awkward nuts. Fits most taps. **Practical:** Hollow arms and end fittings to avoid obstruction by threaded rods.

For tightening and loosening tap nuts. Hollow arms, 25 cm long. Hollow end fittings for 13 mm hexagonal nuts.

Removable jaw, adjustable up to 32 mm - 1.1 / 4, for screws or fittings sinks, bathtubs, sinks or bidets.

Removable jaw, adjustable up to Ø 32 mm - 1.1 / 4, for screws or fittings sinks, bathtubs, sinks or bidets.

Other end fittings provided: 9, 10, 11, 12, 14, 17 mm.

Description	Nut size across flats mm (A)	Kg	Ref.
Basin wrench + 6 end fittings + jaw	9 - 10 - 11 - 12 - 13 - 14 - 17 - 32	0,500	261470
6 end fittings	9 - 10 - 11 - 12 - 14 - 17	0,090	753270
Jaw	32	0,150	753750





## **PLUG WRENCH**

### 2616 : Plug Wrench

## Advantages

Detachable head: Fits most drainage plugs. M8 and M10 threads for fitting studs.

Essential accessory for our basin wrenches (2614), to hold the drain plug in place while tightening or loosening the nut. Wrench: M8 and M10 threads for fitting double-end studs.

Description	Kg	Ref.
Wrench and head	0,735	261620









## **CARPENTERS PENCIL**

#### 2627 : Carpenter's Pencil

Professional quality pencil with a very hard lead, suitable for writing on all materials.

Contents		Ref.
12 carpenters pencils	0,155	262700

## LEVEL

#### 2631 : Compact Tubular Level

Shock-resistant mini-level with ABS casing and shock-proof grips. Magnetized surface for easier work on metallic materials. V-shaped sole plate to adapt to tubes. Accuracy: 0.8 mm/m. Length: 23 cm.



L mm	H mm	E mm	Kg	Ref.
230	38	18	0,085	263125

#### 2631 : Tubular Vial Level / Trapezoid Level

## Advantages

**Easy vertical levelling**: front or side "double view" reading. **High quality**: lifetime guarantee, UV protected, one-piece vials (shock resistant).

Optimum 0.5 mm/m accuracy.

Easy front level reading with the **"dual view" system** and its 45° mirror. **Magnetized surface** for easier work on metallic materials. Optimum 0.5 mm/m accuracy thanks to top range one-piece vials (shock resistant), **lifetime guaranteed** with inside permanent engraved level line. The vials are treated against UV radiation to prevent fading by sunlight.

#### Tubular vial level:

High quality in aluminium profiles with **2 machined sole plates**. Grips with shock-proof coating for protection in case of fall.

#### Trapezoid level:

High quality trapezoid-shaped in cast aluminium. Shock absorbing pads allow to adjust the level with a hammer without risk of damaging the product.





	Description	L mm	Hmm	E mm	Kg	Ref.
Γ	Tubular vial level	500	60	25	0,530	263120
	Trapezoid level	500	46	20	0,440	263122



#### 2631 : Level with 2 in 1 centre distance

## Advantages

Special plumbing: designed for accurate alignment of wall-mounted fixtures.2-in-1: 3 vials for classical use as a spirit level.

Handy: supplied in reusable storage bag.

**Standardized centre distance level**, for accurate horizontal and vertical levelling of wall-mounted fixtures. 2 **removable** calibres, with vials, double thread 3/8" and 1/2".

Standardized **dimensions**: 90 – 110 – 120 – 140 – 150 – 160 – 180 – 200 – 220 mm.

Can be used as a classical level with its **3 vials** (horizontal, vertical, 45°). Length 50 cm

**Optimum** 0.5 mm/m **accuracy** thanks to top range shock resistant, **lifetime guaranteed vials**, with inside permanent engraved level line.

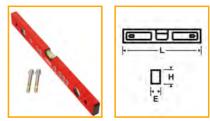
The vials are treated against UV radiation to prevent fading by sunlight. Reinforced shock resistant end pieces, 2 fastening holes. **High quality** aluminium profile.

Supplied with:

- 2 removable calibres.

- Storage pouch.





Description	L mm	Hmm	E mm	Kg	Ref.
Level with 2 in 1 centre distance	500	50	23	0,580	263150

## **HEXAGON SOCKET SCREW KEY SET**

### 3114 : Set of 9 hexagonal keys

## Advantages

Spherical head: suitable to handle screws with an angle up to 25°.

Set of 9 long hexagonal keys with spherical head. Delivered on plastic holder. For hexagonal socket screw. Easy identification: sizes stamped on keys and on holder. Sizes: 1,5 - 2 - 2,5 - 3 - 4 - 5 - 6 - 8 - 10 mm.

Number of keys	A mm	Kg	Ref.
9	1,5 - 2 - 2,5 - 3 - 4 - 5 - 6 - 8 - 10	0,335	311458





# **REDUCING PLIERS**

#### 3350 : Reducing Pliers

The blades inter-penetrate to form a fold on the periphery of the pipe, reducing its diameter, and allowing consistent slotted joints to be easily formed in all types of pipe (smoke and gas, extraction, ventilation, dust extraction, rainwater downpipes, etc.). Accurate adjustment is obtained by varying the pressure on the handles. Insulating polypropylene grips. Case-hardened blades and pins.



Туре	Capacity mm	Lmm	Kg	Ref.
Short model	35	245	0,490	335000
Long Model	52	265	0,750	335010

## SCREWDRIVER

## 3418 : Magnetic screwdrivers

## Advantages

**Magnetic tip** securing the screw, for comfortable and fast screwing.

Graded shank, handy for quick measuring.

Shank in silicon carbon steel for greater torsional strength.

quick rotation between thumb and index.

**non-slip** with high resistance to cold, impact, abrasion, solvents, and hydrocarbons. **sliding thrust zone**.

Integral grip moulded directly onto the shank with dual opposite flats.

**Hexagon nut** for easier unlocking of jammed screws using a wrench (not supplied). **ribbed** for better locking in the screw head.

Complies with the ISO 8764, ISO 2380 and EN 60900 standards (ref. 341806 1000V insulated screwdriver) guaranteeing **secured** use.

Supplied in reusable textile pouch (set of 8 screwdrivers, ref. 341820).

Description	Kg	Ref.
Set of 8 magnetic screwdrivers (341801 to 341808) in textile pouch	0,900	341820
Magnetic screwdriver PZ2 x 38 - 106 mm	0,063	341801
Magnetic screwdriver 5.5 X 38 - 106 mm	0,058	341802
Magnetic screwdriver PZ1 X 100 - 209 mm	0,083	341803
Magnetic screwdriver 5.5 X 100 - 209 mm	0,078	341804
Magnetic screwdriver 6.5 X 150 - 259 mm	0,108	341805
1000V insulated screwdriver 3 X 80 - 170 mm	0,043	341806
Magnetic screwdriver PZ2 X 100 - 209 mm	0,096	341807
Magnetic screwdriver 8 X 150 - 269 mm	0,155	341808
Fabric pouch for small tools	0,200	382652



#### Go to www.virax.com

To find a product sheet, a safety data sheet or exploded views, **Go to our web site.** 



#### 3425 : Seven-Bit Screwdriver

All the bits are stored in the handle for safe-keeping and immediate availability. Very compact. Long bit-holder for difficult-to-reach screws. Fully machined tips. Magnetic bit holder. Large diameter handle: Very efficient tightening and loosening action. Excellent grip. Impact and torsion-resistant. Total length: 185 mm.

Bits length: 35 mm.

Bit	Kg	Ref.
0.8 x 5; 1 x 7; 2.5 x 8; PZ1; PZ2; PH1; PH2	0,210	342501
Torx T10; T15; T20; T25; T27; T30; T40	0,202	342511

#### 3425 : Mini Six-Bit Screwdriver

All the bits are stored in the handle for safe-keeping and immediate availability. Very compact. Magnetic bit holder. Total length: 95 mm. Bits length: 15 mm.

Bit	Kg	Ref.
0,8 x 5; 1 x 7; PZ1; PZ2; PH1; PH2	0,092	342521

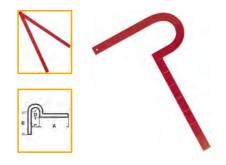
# **SQUARE**

#### 2206 : Square

Ref. 220610/220620: For measuring the squareness of pipe flanges prior to welding. Ref. 220630: Used to copy angles.







Туре	A mm	B mm	C mm	D mm	Kg	Ref.
Flange square	380	250	90	60	1,000	220610
Flange square	530	460	170	110	1,660	220620
Bevel square	500	500	-	-	0,950	220630
Right-angle square	500	290	-	-	1,090	220640



## www.virax.com

Simple, quick and easy to use. Browse and download our online catalogue, Discover the new products, Find a point of sale, Subscribe to our newsletter, Ask for an appointment, In just a few clicks!

**VIRAX** 38

# **MEASURING TAPE**

#### 3717 : Measuring Tape

New range of sturdy tape measures with bi-material stainless steel / rubber casing for optimum resistance to shock and easy grip.

Precision class: II.

Graduation front / back. Anti-reflective tape.

Hook fastened by 3 rivets on 16 mm wide tape and 4 rivets on the 25 mm tape, for heavy use. Very sturdy. Shock resistant thanks to its bi-material chrome/rubber casing. Excellent handling. Locking button for maximum comfort of use.

Built-in belt clip.

L tape m	w tape mm	Kg	Ref.
3	16	0,150	371741
5	25	0,290	371742

#### 3717 : Display of Measuring Tapes

Counter display.

Display of :	Tape dimensions	Kg	Ref.
20	3 m x 16 mm	3,070	371744
10	5 m x 25 mm	3,110	371745



## **FITTING BAR**

#### 2203 : Fitting Bar

For tightening nipples on cast iron radiators from inside. 18 mm square drive. Flat for engaging with the internal tabs of the nipple. Centring guide (1.1/4"). Can be used with ratchet.

For nipples	Lmm	Kg	Ref.
1" - 26 x 34 mm	500	0,810	220305
1" - 26 x 34 mm	800	1,215	220308
1" - 26 x 34 mm	1000	1,500	220310
1.1/4" - 33 x 42 mm	500	1,400	220315
1.1/4" - 33 x 42 mm	800	2,120	220318
1.1/4" - 33 x 42 mm	1000	2,850	220320





#### Virax and the environment

Virax is committed to environmental protection and sustainable development, as demonstrated by our ISO certification 14001: 2015 for our environmental management system.

Compliance with the REACH Directive no.1907/2006. Low energy consumption. Dematerialisation of documentary flows and printing control. Waste control and reclaiming. Packaging materials recycled in a partnership with Eco Emballage. Anticipation of pollution risks.



# **virax**



PC 42 PIPE CUTTER 215042



HACKSAW FRAME	42	<b>GUILLOTINE PIPE CUTTER</b> 60
SAW BLADE	42	SHEATH-CUTTER 61
CORE DRILL	43	HOLE SAW 62
CORE DRILL ACCESSORIES	46	SCREW-PUNCH 64
STEEL AND CAST IRON PIPE CUTTER	48	REAMER 64
STAINLESS STEEL TUBE CUTTER	50	CALIBRATION TOOL 66
COPPER TUBE CUTTER	52	CHAMFERING TOOL 66
PLASTIC-COMPOSITE PIPE CUTTER	55	

# HACKSAW FRAME

#### 0490 : Hacksaw frame

For 300 mm blades.

Hacksaw Frame (049000): 4 blade positions. Supplied with HSS bi-metal blade (12 teeth/cm).

Hacksaw Frame With Finger-Protecting Closed Grip (049050): 3 blade positions. Spare blade storage in the upper frame. Supplied with HSS bi-metal blade (12 teeth/cm).

**Mini Hacksaw Frame(049070)**: Special grip for use where standard hacksaw cannot reach. Supplied without blades.



Description	Size mm	Kg	Ref.
Hacksaw frame	500 x 125	0,590	049000
Hacksaw Frame With Finger-Protecting Closed Grip	425 x 130	0,630	049050
Mini Hacksaw Frame	105 x 80	0,050	049070

## SAW BLADE

#### 0430 : HSS Saw Blade

New High speed and precise HSS bi-metal saw blade:

- 18 teeth or 24 teeth per inch : blade perfect for steels, but also aluminium, stainless steel, PCV or wood, high thickness (18 TPI) or medium thickness (24 TPI)

- 32 teeth per inch : blade perfect for copper, but also aluminium and stainless steel, small thickness.

Overheating resistance: high longevity. Flexible blade to be able to cut in difficult to access locations.



Use	Number of teeth per "	Number of teeth per cm	Recommended thickness mm	Lmm	Packaging	Kg	Ref.
Steel	18	8	6-25	300	100	1,740	043008
Steel	24	10	3-6	300	10	0,174	043004
Steel	24	10	3-6	300	100	1,740	043010
Copper	32	12	1-3	300	10	0,174	043006
Copper	32	12	1-3	300	100	1,740	043012



#### Virax, French manufacturer

In its Production Centre extending over more than 20,000 m<sup>2</sup> situated in Epernay, France, Virax manufactures tools and machines designed by its R&D Center to meet the requirements of professionals. Plasturgy, machining, milling, grinding, assembly and painting, all these activities are performed on site for manufacturing control and quality.

## **CORE DRILL**

## 0501 : V 150+ Core Drill and Support Stand

## **Advantages**

- For wet and dry / raised hand or support stand core drilling. 3-speed motor with progressive start. Triple protection for the motor for long lift and user safety.
- Quick, tool-free attachment to the support stand.

#### Core drill:

- Hand core drilling facilitated:
- 1900 W motor with triple protection.
- Electronic (in the event of overload on the motor) with alert light in the trigger,
- Thermal (in the event of overheating),
- Mechanical (axis decoupling if the core bit locks).
- 3 speeds: 550/1250/2700 tr/min (rotation under load).
- Ready to use : the water and dust aspiration end pieces are built-in.

UNC connection 1.1/4", 1/2".

PRCD protection switch.

#### Support stand:

Aluminium column support stand and reinforcement bars to minimise vibration. Drilling over the full height of the stand (scale in mm); Can be tilted from 0° to 45°. Adjustable brake; Stop button; easy positioning of the V150+.

Prostical: contring indicator and built in loval

Practical: centring indicator and built-in level.

Maximum stability: base with 4 adjustment nuts, can be used fixed by anchor spindle or with vacuum pump

Right/left movement lever, movable without tools.

Dimensions (L x w x H): 350 x 250 x 1110 mm.

Description	Power W	Kg	Ref.
V 150+ Motor and support stand	1900	19,500	050110
V 150+ Support stand	-	13,000	050111
V 150+ Motor	1900	6,500	050116
V 150+ Motor and support stand + Core bit Ø 127 mm	1900	23,200	990022
V 150+ Motor and support stand + Core bit Ø 127 mm + Manual water pump + Centring bit	1900	30,200	990023

#### Capacities

Wet drilling for reinforced concrete, abrasive materials, etc.:

- Raised hand: Ø max 82 mm,

- On support stand: Ø max 152 mm.

Dry drilling for brick, breeze block, hollow materials:

- Raised hand: Ø max 200 mm (requires the use of the centre bit ref. 050158),

- On support stand: Ø max 152 mm.

#### **Delivered with**

#### Core drill:

Side handle,

2 flat wrenches (SW 32 and SW 41),

Sprinkler mechanism with bearing tap - Dust suction mechanism,

Plastic transport case.

#### Support stand:

Ready to use attachment set (anchor spindle, reusable pegs for attachment in breeze block, non reusable pegs for attachment in concrete). Delivered without core bit.

#### Tips

The use of a water and dust vacuum (ref. 050157) is strongly recommended for dry core drilling.





## 0501: V 250 Core Drill and Support Stand

# Advantages

For wet core drilling on support stand.

- Powerful 2-speed motor for **frequent use**.
- **Quadruple protection** for the motor for long lift and user safety. **1 single support stand** for the 2 core drills V 250 and V 350.

#### Core drill:

2500 W motor with triple protection:

. Electronic (in the event of overload on the motor) with alert light in the trigger,

- Thermal (in the event of overheating),

- Mechanical (axis decoupling if the core bit locks).

Fourth protection for the motor and gears thanks to an oil pumping system that enables permanent lubrication.

2 speeds: 360/850 rpm (rotation under load).

UNC connection 1.1/4".

PRCD protection switch.

#### Support stand:

Aluminium column support stand and reinforcement bars to minimise vibration. Drilling over the full height of the stand (scale in mm); Can be tilted from 0° to 45°. Adjustable brake; Stop button; easy positioning of the V150+. Practical: centring indicator and built-in level. Maximum stability: base with 4 adjustment nuts, can be used fixed by anchor spindle or with

vacuum pump Right/left movement lever, movable without tools.

Wheels and handle to facilitate transport.

Dimensions (L x w x H) :  $538 \times 330 \times 1110$  mm.

Description	Power W	Kg	Ref.
V 250 motor and support stand	2500	32,500	050120
V 250 / V 350 support stand	-	22,000	050121
V 250 motor	2500	10,500	050126

#### Capacities

Wet drilling on support stand for reinforced concrete, abrasive materials, bricks, breeze block, etc. up to Ø 250 mm.

#### **Delivered with**

Core drill:

2 flat wrenches (SW 32 and SW 41),

Sprinkler mechanism with bearing tap.

#### Support stand:

Ready to use attachment set (anchor spindle, reusable pegs for attachment in breeze block, non reusable pegs for attachment in concrete). Delivered without core bit.

#### Tips

The use of a water and dust vacuum (ref. 050057) is strongly recommended for dry core drilling.



#### Virax, French manufacturer

Virax is located in Epernay, the Champagne capital, and was founded more than 100 years ago with the launch of its famous "Virax threader", the threader that "Turns around the Axis". Today, the production facility covers more than 20,000 m<sup>2</sup>.





## 0501 : V 350 Core Drill and Support Stand

# Advantages

For wet core drilling on support stand.

Powerful 3-speed motor for intensive use.

**Quadruple protection** for the motor for long lift and user safety. **1 single support stand** for the 2 core drills V 250 and V 350.

#### Core drill:

3000 W motor with triple protection:

- Electronic (in the event of overload on the motor) with alert light in the trigger,

- Thermal (in the event of overheating),

- Mechanical (axis decoupling if the core bit locks).

Fourth protection for the motor and gears thanks to an oil pumping system that enables permanent lubrication.

3 speeds: 230/500/1030 rpm (rotation under load).

Additional handle for easy transport and assembly.

UNC connection 1.1/".

PRCD protection switch.

#### Support stand:

Aluminium column support stand and reinforcement bars to minimise vibration. Drilling over the full height of the stand (scale in mm); Can be tilted from 0° to 45°. Adjustable brake; Stop button; easy positioning of the V150+.

Augustable brake, Stop button, easy positioning of the v

Practical: centring indicator and built-in level.

Maximum stability: base with 4 adjustment nuts, can be used fixed by anchor spindle or with vacuum pump

Right/left movement lever, movable without tools.

Wheels and handle to facilitate transport.

Dimensions (L x w x H) : 538 x 330 x 1110 mm.

Description	Power W	Kg	Ref.
V 350 motor and support stand	3000	33,700	050130
V 250 / V350 support stand	-	22,000	050121
V 350 motor	3000	11,700	050136

#### Capacities

Wet drilling on support stand for reinforced concrete, abrasive materials, bricks, breeze block, etc. up to Ø 350 mm.

#### **Delivered with**

#### Core drill:

2 flat wrenches (SW 32 and SW 41), Sprinkler mechanism with bearing tap, Additional handle for transport and assembly.

#### Support stand:

Ready to use attachment set (anchor spindle, reusable pegs for attachment in breeze block, non reusable pegs for attachment in concrete). Delivered without core bit.

#### Tips

All wet core drilling accessories are available in the Virax range.



#### Virax is committed to WEEE management

As a manufacturer, Virax has established a process for the recovery of Waste Electrical and Electronic Equipment (WEEE) in accordance with European Directive 2012/19/EU. Virax organises the management and recycling of WEEE at end-of-life, as part of its commitment to the environment.





# **CORE DRILL ACCESSORIES**

## 0535 : Diamond Core Bit

# **Advantages**

For wet core drilling for reinforced concrete and abrasive materials. For dry core drilling on breeze block, brick and non-abrasive materials.

Cold segment fusion for extreme tear strength.

Segment composition specially optimised both for dry core drilling on abrasive materials and wet core drilling on non-abrasive materials.

For fast starting upon the 1st use: tip segments ( $\emptyset$  25 – 250 mm) or with release sphere ( $\emptyset$  300 – 350 mm).

Segments welded by cold fusion: extreme tear strength and 100% segment used. Re-segmentable core bit.





Ø mm	Connection "	Kg	Ref.
25	1/2	0,420	053502
30	1/2	0,560	053504
40	1/2	0,750	053506
52	1.1/4	1,120	053508
62	1.1/4	1,330	053510
72	1.1/4	2,080	053512
82	1.1/4	2,190	053514
92	1.1/4	2,800	053516
102	1.1/4	2,850	053518
112	1.1/4	3,220	053520

Ø mm	Connection "	Kg	Ref.
127	1.1/4	3,750	053522
132	1.1/4	3,900	053524
152	1.1/4	4,560	053526
162	1.1/4	5,720	053528
182	1.1/4	6,490	053530
200	1.1/4	7,200	053532
225	1.1/4	9,040	053534
250	1.1/4	9,840	053536
300	1.1/4	13,440	053538
350	1.1/4	22,150	053540

#### Capacities

Ø 25 to 350 mm.

Useful length 430 mm.

Segment height: 10 mm.

#### Tips

Respecting usage instructions (providing water for abrasive materials, vacuuming dust for non-abrasive materials) will increase the segments' lifetime.

Virax can re-segment core bits for increased lifetime.



#### Discover our YouTube channel

and our product demonstration videos! /VIRAX

#### 0500 : Vacuum Pump for Core Drill

For core drills:

V 150+ / V 250 / V 350 / V 130 / V 200 / V 300.

For quickly clamping Virax core drills without damage to the floor or wall. "Suction" effect allows drill to be secured without anchor bolts, thus avoiding damage to the support (wall, ceiling, tiling, etc.).

Supplied without slot cap + gasket (ref. 050114).

Kg	Ref.
14,300	050043

### 0501 : Core Drill Accessories

For V 150+ / V 250 / V 350 core drills and support stands.

- A complete range of accessories for different core drilling situations:
- . Wet core drilling with vacuum, water retriever and water pump (manual or electric),
- . Dry core drilling with vacuum,
- . Raised hand core drilling with centring bit (from Ø 51 mm),
- . Core drilling with vacuum pump.
- Adaptors and extensions for core bits. Adaptors for Hilti® core drills.

Wheels to move the support stand.

Sharpening stone to optimise bits' cutting performance and increase their lifetime.

\*Delivered as standard



Description	Ø max. mm	V 150+	V 250	V 350	Kg	Ref.
Water retriever + 2 seals	152	ok	-	-	2,000	050112
Seal for water retriever	152	ok	-	-	0,150	050113
Water retriever + 2 seals	250	-	ok	-	4,000	050122
Seal for water retriever	250	-	ok	-	0,300	050123
Water retriever + 2 seals	350	-	-	ok	5,000	050132
Seal for water retriever	350	-	-	ok	0,600	050133
Support stand cover plate + seal		ok	-	-	0,500	050114
Vacuum base seal		ok	-	-	0,150	050115
Support stand cover plate + seal		-	ok	ok	0,600	050124
Vacuum base seal		-	ok	ok	0,200	050125
Wheels for support stand		ok	*	*	1,000	050119
10 anti-lock washers		ok	ok	ok	0,050	050139
Anchor spindle		ok	ok	ok	1,100	050141
Adaptor F/F 1.1/4?-1/2?		ok	ok	ok	0,650	050145
Extension 1/2? x 200 mm		ok	ok	ok	0,900	050146
Extension 1.1/4? x 300 mm		ok	ok	ok	3,000	050147
Hilti® adaptor DD100-DD130 SDS 1/2"-1.1/4"	-	ok	ok	ok	0,420	050155
Water and dust vacuum cleaner	-	ok	ok	ok	10,000	050157
Centring bit		ok	-	-	1,000	050158
Hilti® adaptor DD160-DD250 1/2"-1.1/4"	-	ok	ok	ok	0,950	050160
Sharpening stone	-	ok	ok	ok	2,000	050175

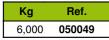




#### 0500 : Manual Water Pump

For Core Drills: V 150+ / V 250 / V 350 / V 130 / V 200 / V 300.

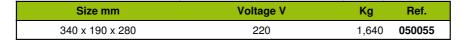
Capacity: 10 L. Max service pressure 6 bar, with safety valve. Steel tank with polyester coating.



### 0500 : Electrical Water Pump

For core drills: V 150+ / V 250 / V 350 / V 130 / V 200 / V 300.

Easy, convenient and economical system, to supply the core drill with water. It is the ideal product to solve the damaging of the core bits due to insufficient water-suppling. Warning : Always keep the pump horizontally. Max lifting height: 1.8m.



# **STEEL AND CAST IRON PIPE CUTTER**

#### 2101 : Steel Pipe Cutter

#### Max thickness: 5 mm.

For quickly cutting steel pipes (gas- API-etc...) cleanly and squarely. Also cuts stainless steel pipes (> 2 mm thick) with cutting wheels 210123 and grey cast iron with cutting wheels 210122.

A pipe "	A pipe mm	L mm	Hmm	E maxi mm	Kg	Ref.
1/8 - 1.1/4	10 - 42	310	118	5	1,740	210110
1/2 - 2	21 - 60	400	150	5	3,020	210120
3/4 - 3	27 - 90	460	177	5	4,220	210130



## Virax Experts

Would you like technical assistance?

Our team of experts is at your disposal to provide you with tips and recommendations on how to get the most out of your Virax products.

From 8.00 am to 12.15 pm and from 1.45 pm to 5.00 pm, Monday to Friday (4.30 pm): +33 (0) 3.26.59.56.82 - experts@virax.com Exploded views and manuals: www.virax.com, Downloads section.





VIRAX 48

### 2101 : Steel Pipe Cutter

#### Max thickness: 7 mm.

Designed for cutting large diameter pipes, it is fitted with a second handle on the side opposite the feed screw allowing it to be operated by 1 or 2 people. For quickly cutting steel pipes (gas, API, etc.) cleanly and squarely. Removable auxiliary handle attaches to adjusting handle to assist operation. Also works on grey cast iron pipes with special cutting wheels fitted (Ref. 210142).





A pipe "	A pipe mm	L mm	Hmm	E maxi mm	Kg	Ref.
2 - 4	60 - 114	1030	235	7	9,000	210145
4 - 6	114 - 165	1110	260	7	10,300	210165

### 2102 : Grey Cast Iron Pipe Cutter

#### Max thickness: 7 mm (210210).

Max thickness: 8 mm (210220).

Hardened chrome-tungsten steel cutting wheels mounted in separate sections that can be added or removed to adapt the maximum and minimum diameters to the pipe to be cut. Can also be fitted with cutting wheels for ductile cast iron.

A pipe "	A pipe mm	L mm	Hmm	E max. mm	No. of wheels	Kg	Ref.
2.1/2 - 6	76 - 150	600	200	7	8	6,550	210210
5 - 12	125 - 300	1000	260	8	9	16,390	210220

## 2102 : Grey Cast Iron Pipe Cutter for grey cast iron

#### Max thickness: 5 mm.

Hardened chrome-tungsten steel cutting wheels mounted in separate sections that can be added or removed to adapt the maximum and minimum diameters to the pipe to be cut.



Ар	oipe "	A pipe mm	Lmm	Hmm	E max. mm	No. of wheels	Kg	Ref.
2.1	/2 - 6	76 - 150	530	235	5	9	3,800	210250

#### 2102 : Ductile Cast Iron Pipe Cutter

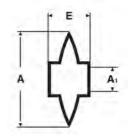
Max thickness: 7 mm (210260). Max thickness: 8 mm (210265). Can also be fitted with cutting wheels for grey cast iron.



A pipe "	A pipe mm	L mm	H mm	E max. mm	No. of wheels	Kg	Ref.
2.1/2 - 6	76 - 150	600	175	7	8	6,850	210260
5 - 12	125 - 300	1000	260	8	9	16,500	210265



### 2101 : Cutting Wheel - Steel and Cast Iron Pipe Cutter



For pipe cutter	Description	A mm	A1 mm	E mm	Packaging	Kg	Ref.
210110 - 210120 - 210130	Steel	32	9	19	5	0,170	210121
210110 - 210120 - 210130	Grey cast iron	30	9	18,75	5	0,170	210122
210145 - 210165	Steel	41	9,55	28	5	0,435	210141
210145 - 210165	Grey cast iron	34	9,55	28	5	0,435	210142
210210 - 210260	Grey cast iron	42	9,6	8	5	0,285	210211
210220 - 210265	Grey cast iron	47	11,1	9,5	5	0,390	210221
210210 - 210260	Ductile cast iron	45	9,6	8	5	0,300	210261
210220 - 210265	Ductile cast iron	50	11,1	9,5	5	0,375	210266
210250	Construction-type grey cast iron	32	9	19	5	0,170	210251

# **STAINLESS STEEL TUBE CUTTER**

#### 2104 : Stainless Steel Pipe Cutter 6-28 mm

#### Max thickness: 3.2 mm.

Soft Touch® non-slip knob: good hold in hand. Quick and tool-less wheel change. Fold-away reamer blade.



A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
6 - 28	1/4 - 1.1/8	142	55	3,2	0,385	210469



## Virax is committed to a new environmental policy

VIRAX is aware of its environmental role, and speeding up its CSR (Corporate Social Responsibility) action plan in order to maintain a sustainable approach.

## 2104 : ZR 35 Stainless Steel Tube Cutter 3-35 mm

# Advantages

Soft Touch® non-slip knob, fast action adjustment. Quick, tool-less wheel change. 4 guide rollers to prevent wheel tracking.

#### Max thickness: 3.2 mm .

Precise cutting from Ø 3 to Ø 35 mm according to the type of tube. 1 spare wheel.

Retractable rotating reamer with interchangeable blades.

Colour-coded end cap according to the material to be cut.





A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
3 - 35	1/8 - 1.3/8	165	64	3,2	0,450	210471

#### 2104 : Fast Stainless Steel Tube Cutter 6-67 mm

#### Max thickness: 2,5 mm.

Notched telescopic slide and release button for fast forward and reverse wheel adjustment.

Removable rotary hole deburrer with interchangeable blade.

Cutting wheel with 4 rollers for increased cutting precision.

Spare cutting wheel incorporated within the knob.

Soft Touch® anti-slip knob.

Colour-coded end cap according to the material to be cut.

A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
6 - 67	1/4 - 2.5/8	230	100	2,5	0,820	210483

#### 2101 : Stainless Steel Pipe Cutter 10-90 mm

#### Max. thickness: 5 mm.

Excellent weight distribution giving improved inertia and providing high stiffness. Thrust ball bearing prevents slider wear and reduces the turning torque of the screw.

Ref. 210125 : Also works on steel pipes with cutting wheels 210121 fitted.

Ref. 210110 - 210130 : Steel pipe cutter (supplied with a steel cutting wheel). Also works on stainless steel pipes with cutting wheels 210123 fitted.

A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
10 - 42	1/8 - 1.1/4	310	118	5	1,740	210110
21 - 60	1/2 - 2	400	155	5	3,010	210125
27 - 90	3/4 - 3	460	177	5	4,220	210130





#### 2104 : Stainless Steel Pipe Cutter 14-54 mm

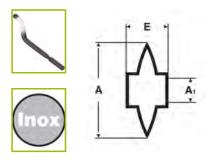
#### Max thickness: 3.2 mm.

Soft Touch® non-slip knob: good hold in hand. Quick and tool-less wheel change.



A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
14 - 54	1/2 - 2.1/8	185	79	3,2	0,555	210475

## 2104 : Cutting Wheel - Deburring Spare Blade - Stainless Steel Tube Cutter



E	Description			<b>F</b>	Destantion	14 m	<b>D</b> -1
For pipe cutter	Description	A mm	A1 mm	E mm	Packaging	Kg	Ref.
210110 - 210125 - 210130	Cutting Wheel	32	9	19	5	0,168	210123
210392 - 210469 - 210471 - 210475	Cutting Wheel	18,5	4,77	3,15	10	0,038	210360
210392 - 210469 - 210471 - 210475	DCutting Wheel	18,5	4,77	3,15	1	0,007	210362
210479	Cutting Wheel	24,8	4,85	6,20	1	0,010	210481
210483	Cutting Wheel	24,8	4,80	5,95	1	0,007	210482
210471 - 210483	Deburring Spare Blade	-	-	-	5	0,200	221266

## **COPPER TUBE CUTTER**

#### 2104 : Mini Copper Tube Cutter 3-28 mm

#### Max thickness: 2 mm.

Very compact tube cutter. Compact swing radius allows to cut in tight spaces: under washbasin, between 2 tubes, along a wall. Oval knob : good hold in hand ans optimum tightening. Quick and tool-less wheel change.



A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
3 - 16	1/8 - 5/8	53	39	2	0,125	210437
6 - 28	1/4 - 1.1/8	74	51	2	0,220	210439

## 2104 : Copper Tube Cutter 6-28 mm

#### Max thickness: 2 mm.

Soft Touch® non-slip knob : good hold in hand. Quick and tool-less wheel change. Equipped with a fold-away reamer blade. Grooved rollers for cutting tight up against flanges.



A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
6 - 28	1/4 - 1.1/8	142	55	2	0,385	210441

## 2104 : ZR 35 Copper Tube Cutter 3-35 mm

# **Advantages**

**Soft Touch**® non-slip knob, fast action adjustment. **Quick, tool-less** wheel change.

4 guide rollers to prevent wheel tracking.

Max thickness: 2 mm.

Precise cutting from Ø 3 to Ø 35 mm according to the type of tube. 1 spare wheel.

Retractable rotating reamer with interchangeable blades.

Grooved rollers for **cutting tight up against flanges. Colour-coded end cap** according to the materialto be cut.

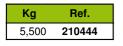




A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
3 - 35	1/8 - 1.3/8	165	64	2	0,450	210443

## 2104 : Display Box of Copper Tube Cutters ZR 35

12 pieces ZR 35 Copper tube cutter display (210443).







#### Go to www.virax.com

To find a product sheet, a safety data sheet or exploded views, **Go to our web site.** 

## 2104 : ZR 42 Copper Tube Cutter 6-42 mm

# Advantages

Soft Touch® non-slip knob, fast action adjustment. Quick, tool-less wheel change.

4 guide rollers to prevent wheel tracking.

#### Max thickness: 2 mm.

Precise cutting from Ø 6 to Ø 42 mm according to the type of tube. 1 spare wheel.

Retractable rotating reamer with interchangeable blades.

Grooved rollers for cutting tight up against flanges.

Colour-coded end cap according to the material to be cut.





A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
6 - 42	1/4 - 1.5/8	187	76	2	0,515	210445

## 2104 : Fast Copper Tube Cutter 6-67 mm

#### Max thickness: 2 mm.

Notched telescopic slide and release button for fast forward and reverse wheel adjustment.

Removable rotary hole deburrer with interchangeable blade.

Cutting wheel with 4 rollers for increased cutting precision.

Spare cutting wheel incorporated within the knob.

Soft Touch® anti-slip knob.

Colour-coded end capaccording to the materialto be cut.

A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
6 - 67	1/4 - 2.5/8	230	100	2	0,820	210455

## 2104 : Copper Tube Cutter 14-54 mm

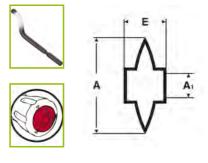
#### Max thickness: 2 mm.

Slider-mounted cutting wheel. Phosphate-coated cutting wheel and rollers. Knob provides excellent grip.



A mm	A " OD	L mm	H mm	E maxi mm	Kg	Ref.
14 - 54	1/2 - 2.1/8	183	79	2	0,555	210447

2104 : Cutting Wheel - Deburring Spare Blade - Copper Tube Cutter



For pipe cutter	Description	A mm	A1 mm	E mm	Packaging	Kg	Ref.
210300 - 210310 - 210312 - 210320 - 210335 - 210390 - 210437 - 210439 - 210441 - 210443 - 210445 - 210447	Cutting Wheel	18,5	4,77	3,15	10	0,030	210350
210300 - 210310 - 210312 - 210320 - 210335 - 210390 - 210437 - 210439 - 210441 - 210443 - 210445 - 210447	Cutting Wheel	18,5	4,77	3,15	1	0,010	210352
210451	Cutting Wheel	19	4,85	6,20	1	0,010	210453
210455	Cutting Wheel	18,50	4,80	5,95	1	0,005	210454
210443 - 210445 - 210455	Deburring Spare Blade	-	-	-	5	0,200	221265

# **PLASTIC-COMPOSITE PIPE CUTTER**

#### 2104 : Fast feed 6-65 mm plastic pipe cutter

#### Max thickness: 8 mm.

For pipes in plastic, composite materials and multilayer.

Notched telescopic slide and release button for fast forward and reverse wheel adjustment. Removable rotary hole deburrer with interchangeable blade.

Cutting wheel with 4 rollers for increased cutting precision.

Soft Touch® anti-slip knob.

Colour-coded end capaccording to the materialto be cut.



A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
6 - 65	1/4 - 2.9/16	230	100	8	0,820	210497

H mm

125

L mm

295

## 2106 : Plastic pipe cutter 50 -110 mm plastic pipe cutter

#### Max thickness: 8 mm.

A mm

50 - 110

For pipes in plastic, composite materials and multilayer. Releasable nut for quick fast forward and reverse wheel adjustement. Fitted with 3 rollers to avoid crushing the pipe.

A " OD

2 - 4



2

## 2104 : ZR 35 Plastic Tube Cutter 3-32 mm

# Advantages

Soft Touch® non-slip knob, fast action adjustment. Quick, tool-less wheel change.

4 guide rollers to prevent wheel tracking.

#### Max thickness: 3 mm.

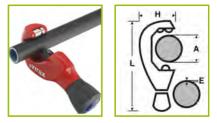
For pipes in plastic, composite materials and multilayer.

Precise cutting from Ø 3 to Ø 32 mm according to the type of tube. 1 spare wheel.

Retractable rotating reamer with interchangeable blades.

Colour-coded end cap according to the material to be cut.





A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
3 - 32	1/8 - 1.1/4	165	64	3	0,450	210487

## 2104 : ZR 42 6-40 mm plastic pipe cutter

# Advantages

**Soft Touch**® non-slip knob, fast action adjustment. **Quick, tool-less** wheel change.

4 guide rollers to prevent wheel tracking.

#### Max thickness: 4 mm.

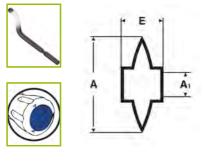
For pipes in plastic, composite materials and multilayer. Precise cutting from  $\emptyset$  6 to  $\emptyset$  40 mm according to the type of tube. 1 spare wheel.

Retractable rotating reamer with interchangeable blades. Grooved rollers for cutting tight up against flanges.



					1	00
A mm	A " OD	L mm	Hmm	E maxi mm	Kg	Ref.
6 - 40	1/4 - 1.1/2	187	76	4	0,520	210489

# 2104 : Cutting Wheel - Deburring Spare Blade - Plastic-composite Tube Cutter



For pipe cutter	Description	A mm	A1 mm	E mm	Packaging	Kg	Ref.
210487 - 210489	DCutting Wheel	26	4,77	3	1	0,010	210486
210487 - 210489	Cutting Wheel	26	4,77	3	10	0,030	210488
210493	Cutting Wheel	26	4,85	6,20	1	0,010	210495
210610	Cutting Wheel	22	4,77	3	5	0,070	210611
210630	Cutting Wheel	31	8	11	5	0,070	210621
210497	Cutting Wheel	28,70	4,80	5,95	1	0,005	210496
210487 - 210489 - 210497	Deburring Spare Blade	-	-	-	5	0,200	221265

### 2114 : Plastic pipe cutter 35 - 40 - 63 mm

Used for quickly cutting PVC, PP, PE, PER, ABS and HDPE pipes. Ref. 211464: also for multilayer pipes.

Effort-reducing rack system. Locking catch. Ref. 211440: non-slip sheathed handle for a better grip.



A mm	A " OD	L mm	Hmm	Kg	Ref.
35	1.3/8	198	72	0,260	211435
40	1.1/2	250	135	0,355	211440
63	2.1/2	428	133	1,110	211464



## **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com **Exploded views and manuals**: www.virax.com, Download section.

## 2150 : PC 32 Plastic Tube Cutter up to 32 mm

# Advantages

Accuracy: "V" shape blade to enable easy, perpendicular cutting and reduced imprint on the pipe. **Practical**: automatic opening: a spring keeps the lower handle open. The pipe cutter is always ready to cut. **Soft Touch® handle**: non-slip grip for firm control.

Materials cut: PVC, PE, PER, PEX, flexible plastic pipes (Tricoclair®), sprinkler hoses, irrigation hoses, multilayer. Locking catch: keeps the lower handle closed: easy storage. No risk of injury.

Ergonomy: the lower handle's special shape is suitable for all hand sizes.





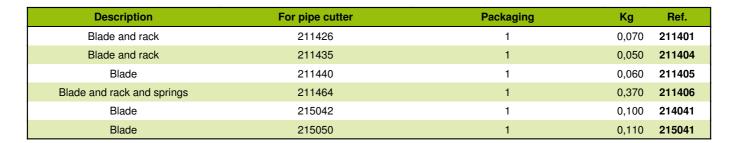
A mm	A " OD	L mm	H mm	Kg	Ref.
32	1.1/4	198	90	0,195	215032

## 2150 : Display Box of PC 32 Pipe Cutters

Display containing 12 pipe cutters PC 32 (215032).

Kg	Ref.
2,870	215035

## 2114 - 2140 : Blade - Plastic-composite Tube Cutter







## 2150 : PC 42 - PC 50 Plastic Tube Cutter

# Advantages

#### Cutting load reduced by 20%:

The PTFE (polytetrafluorethylene) Teflon coating facilitates blade sliding. On average, the cutting load is reduced by 20% versus with a blade with a typical coating. Fast cutting:

The patented double ratchet mechanism ensures easy and fast cutting. Blade secured during cutting.

#### 2-in-1 tool:

The built-in chamfering tool allows chamfering PVC tubes before gluing.

The extremely low friction ration of the PTFE (polytetrafluorethylene) Teflon coating facilitates blade sliding. Cutting load reduced by 20%\*.

(\*- 20% on average on different types of tubes compared to a regular coating). Material cut: PVC, PP, PE, PER, PEX, ABS, PEHD, CPVC, PPR, PB, multilayer. Cutting accuracy: the V-shaped blade enables easy, perpendicular cutting. Practical: quick, tool-free blade change.

Soft Touch ® handle: non-slip for perfect control.

The shape of the upper arm perfectly guides the blade during cutting. Integrated wire-cutter: max Ø: 12 mm, max cross section: 4G2.5 mm<sup>2</sup>. Chamfer angle: 15°.





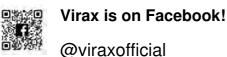
A mm	A " OD	L mm	Hmm	Kg	Ref.
42	1.5/8	238	112	0,525	215042
50	2	248	112	0,545	215050

## 2150 : Display Box of PC 42 - PC 50 Plastic Tube Cutters

215060 : displays containing 6 tube cutters PC 42 (215042). 215061 : displays containing 6 tube cutters PC 50 (215050).







Kg

3.820

3,960

Ref.

215060 215061

2

# **GUILLOTINE PIPE CUTTER**

## 2115 : Guillotine Pipe Cutter

# **Advantages**

**Practical:** Fast opening. **Heavy-duty:** Quadruple ground stainless steel blade. **Blade holder:** Holds the blade perpendicular to the pipe centerline.

#### Max thickness: 18 mm.

#### Material cut: PEHD.

Square drive 14 mm (models 1 and 2) or 17 mm (model 3) across flats. A wrench or extension can be used for cutting pipes in deep trenches. Releasing the catch on the hinged lower V-shaped jaw allows the cutter to be positioned anywhere along the pipe. Stainless steel blade.

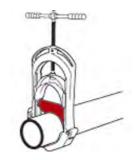


Model	Ø ext. tube "	Pipe O.D. mm	SDR	Max. thickness mm	C mm	Kg	Ref.
1	4	125	11	11,4	125	7,470	211512
2	8	225	11,5	18	225	17,000	211522
3	12	315	17	18	323,8	34,000	211532

## 2115 : Blade - Guillotine Pipe Cutter

Stainless steel blade.

For pipe cutter	Packaging	Kg	Ref.
211512	1	0,290	211501
211522	1	0,720	211502
211532	1	2,090	211503





## **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com **Exploded views and manuals**: www.virax.com, Download section.

# SHEATH-CUTTER

## 2116 : Corrugated Conduit Cutter Ø 45 mm

# **Advantages**

Cuts corrugated conduits without damaging the pipe inside the sheath, and without risk for the user. No risk of injury, as blades are in the middle of guides. Ensures a straight, clean cut.

Very compact cutter, for use in confined spaces.

Cuts PE protective pipe sheaths and most electric cable sheaths up to  $\emptyset$  45 mm. Cuts the corugation at the top of the grove leaving the pipe inside the sheath intact and free from scratches.

Ultra-resistant body and blade guides.

Very strong, removable, interchangeable stainless steel blades.

2 models / 2 colours to suit all available corrugated conduits on the market. Cut quickly. 1/2 turn is enough.



2



For corrugations	L mm	Hmm	Kg	Ref.
At 2,7 mm centres	85	53	0,290	211627
At 4 mm centres	85	53	0,290	211640

#### 2116 : Blade - Corrugated Conduit Cutter

For Corrugated Conduit	Packaging	Kg	Ref.
211627 - 211640	2	0,008	752653





## Much more than just quality, here's the Virax commitment!

Virax commits to total, permanent and durable satisfaction of users and therefore applies a process based on:

A proactive product plan. A constant innovation process. A focus on permanent improvement. Improved customer services. An assurance of optimum availability rate. **Customer satisfaction, the heart of our commitments.** 

## **HOLE SAW**

## 2209 : Hole Saw Set

# Advantages

Virax bi-metal hole saws, with their varying tooth height and gullet size guarantee: A fast, regular cut. Low vibration during cutting. Easy removal of the blank. Increased durability. Low pressing force.

For drilling holes in gas pipes to form T-flanges or in partitions made of wood, plasterboard or similar materials for the passage of mild steel, semi-hard steel, stainless steel, lightweight alloy or plastic pipes.





Description	Ø mm	Supplied with	Kg	Ref.
Complete kit - 12-piece hole saw set	16-19-22-25-29-32-35-38-44-51-64-76	2 arbors with Ø 6 mm.pilot drill, 3 spare pilot drills	1,910	220906
Plumbers and electricians kit - 9-piece hole saw set	19-22-29-35-38-44-51-57-64	2 arbors with Ø 6 mm pilot drill, 1 adaptor, 1 spare pilot drill	1,590	220907
Basic kit - 5-piece hole saw set	22-25-29-32-38	1 arbor with Ø 6 mm pilot drill, 1 adaptor	0,590	220908



## 2209 : Individual Hole Saws

# Advantages

Virax bi-metal hole saws, with their varying tooth height and gullet size guarantee: A fast, regular cut. Low vibration during cutting. Easy removal of the blank. Increased durability. Low pressing force.

For accurate drilling of various materials and in particular gas pipes to form welded connections. - HSS bi-metal saw. - HSS teeth of varying height and gullet size.





Ømm	Ø "	H mm	Kg	Ref.
15,9	5/8	50	0,025	220910
17,4	11/16	50	0,030	220911
19	3/4	50	0,030	220912
22,2	7/8	50	0,045	220914
25,4	1	50	0,060	220916
27	1.1/16	50	0,070	220917
28,6	1.1/8	50	0,080	220918
31,7	1.1/4	45	0,085	220920
33,3	1.5/16	45	0,090	220921
34,9	1.3/8	45	0,090	220922
38,1	1.1/2	45	0,090	220924
41,3	1.5/8	45	0,100	220926
44,4	1.3/4	45	0,085	220928
47,6	1.7/8	45	0,130	220930

Ømm	Ø "	Hmm	Kg	Ref.
50,8	2	45	0,140	220932
54	2.1/8	45	0,120	220934
57,1	2.1/4	45	0,130	220936
60,3	2.3/8	45	0,135	220938
63,5	2.1/2	45	0,210	220940
66,7	2.5/8	45	0,160	220942
76,2	3	45	0,205	220948
82,6	3.1/4	45	0,195	220952
88,9	3.1/2	45	0,365	220956
101,6	4	45	0,285	220964
104,8	4.1/8	45	0,500	220966
114,3	4.1/2	45	0,540	220972
127	5	45	0,650	220980

## 2209 : Accessories for Hole Saws

Description	Kg	Ref.
Arbor and pilot drill for saws Ø 14 a 130 mm	0,065	220900
Arbor and pilot drill for saws Ø 32 a 152 mm	0,220	220901
Pilot drill	0,020	220903





Virax is on Twitter! @ViraxOfficial

# **SCREW-PUNCH**

#### 2211 : Knockout Punch

For cutting stainless steel sinks or mild steel plates 2 mm thick. Special 4-tooth design prevents the blank from sticking. **TIP**:

It is important to grease the screw and the back of the head.



Ø mm	Electrical conduit no.	Screw hole	Kg	Ref.
22,50	16	10	0,150	221123
28,30	21	10	0,220	221128
31,75	-	10	0,260	221132
35	-	12	0,310	221135
37	29	12	0,330	221137

## REAMER

#### 2212 : Ratchet Reamer

#### For steel pipe Ø 1/8" to 2". Ratchet handle with 18 mm square drive.

5 hardened forged steel cutting blades.

Kg	Ref.
2,250	221220



#### 2212 : Standard Reamer

For copper, HDPE and PVC pipes. Reamer with non-replaceable blade. For deburring the inside of copper or other pipes, sheet metal edges, etc. Pocket clip.

Packaging	Kg	Ref.
2	0,064	221242



## 2212 : Internal-External Reamer

For HDPE pipes: **reaming** inner / outer  $\emptyset$  6 to 40 mm. For copper pipes: **reaming** inner  $\emptyset$  6 to 42 mm - **reaming** outer  $\emptyset$  6 to 40 mm. Impact and cold resistant polypropylene housing.

Packaging	Kg	Ref.
1	0,115	221250





## 2212 : Multi-Material Internal/External Reamer

# Advantages

Reaming of all types of tubes (copper, stainless steel, aluminium, steel, hard plastics, multi-layer).
Internal and external reaming of the tube.
Precise reaming (due to its large number of small steel blades).
Ergonomic (easy handling, aluminium finish).

For copper, stainless steel, aluminium, steel, hard plastics and multi-layer tubes: Ø 8 to 35 mm/ 5/16" to 1.3/8" for 221251, Ø 10 to 56 mm/ 1/2" to 2" for 221252.



2



A mm	A " OD	L mm	Hmm	Kg	Ref.
8 - 35	5/16 - 1.3/8	48	60	0,210	221251
12 - 54	1/2 - 2	70	85	0,450	221252

## 2212 : Pencil Reamer with Interchangeable Blade

# Advantages

Possibility of changing the blade when it is worn. Receptacle to store the spare blades. Choice of blade according to the tube type.

For internal reaming of copper, PVC, PEHD and stainless steel tubes. Supplied with 3 blades copper, PVC and PEHD.

Description	Kg	Ref.
Pencil reamer with 3 blades for Cu, PVC and PEHD	0,500	221261
Pack of 5 blades for Cu, PVC and PEHD (black color)	0,200	221265
Pack of 5 blades for stainless steel (golden color)	0,200	221266







## Discover our YouTube channel

and our product demonstration videos! /VIRAX

# **CALIBRATION TOOL**

## 2212 : Calibration Tool 16-63 mm

# Advantages

5 models to calibrate a maximum of tube makes. Dual function: calibration and interior reamer. Several diameters per product to calibrate the most frequently used dimensions.

Two vital functions to crimp multi-layer tubes. 1- Recalibrate the tube after cutting operations. 2- Ream the inside of the tube to avoid damaging the connector's o-ring. Strong product, burnished steel body, hardness 95 HrB. Practical plastic handle.

221280 - 221281 (Ø 40 - 50 - 63 mm) : ease of use and speed thanks to an integrated ratchet.

Ext. Ø x Thickness mm	Kg	Ref.
16x2 - 20x2 - 25x2.5 - 26x3 - 32x3	0,260	221276
16x2 - 20x2.5 - 25x2.5 - 26x3 - 32x3	0,260	221277
16x2.25 - 20x2.5 - 25x2.5 - 26x3 - 32x3	0,260	221278
40X3,5 - 50X4 - 63X4,5	0,450	221280
40X4 - 50X4,5 - 63X6	0,450	221281



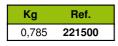


# **CHAMFERING TOOL**

## 2215 : Chamfering Tool For Plastic Pipes

Recommended by plastic pipe manufacturers. Releasable grips.

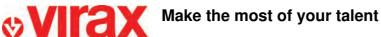
Capacity: Ø 32 to 250 mm pipe. Thickness: up to 12 mm. Chamfering angle: 15° on plastic pipes. Pivoting counter-blade adjustment.



## 2215 : Blade and Counter-Blade

For	Packaging	Kg	Ref.
221500	1	0,026	221501









oVITAX R70 - Ø18 250018

ovi

# **virax**



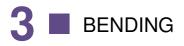
CROSSBOW BENDER 2503

 $\bigstar \bigstar \bigstar \bigstar \bigstar \bigstar$ 192 similar reviews



MANUAL HYDRAULIC BENDER	70
POWERED HYDRAULIC BENDER	71
ACCESSORIES FOR HYDRAULIC BENDER	71
CROSSBOW BENDER	77
BENDING SPRING	79
BENDING PLIERS	80
ATTACHABLE MANUAL BENDER	82
PORTABLE ELECTRIC BENDING MACHINE	84

# 



# MANUAL HYDRAULIC BENDER

## 2402 : Manual Hydraulic Bender

# **Advantages**

Bending capacity: Gas pipes:  $\emptyset$  3/8" to 4" (nfa 49115-en10255). Locksmith's pipes:  $\emptyset$  12 à 45 mm. Multilayer pipes:  $\emptyset$  40 to 63 mm. Angle: 0 to 90°.

For medium and heavy series gas pipes.

Manual hydraulic bender for worksites or prefabrication. Simple action circuit with spring-loaded piston return. Supplied in a wooden case with the forms and accessories. To identify the different types of cheeks, see next pages.

#### Tip:

- Use Virax hydraulic ram oil for best protection.

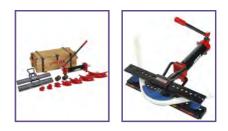
- All necessary precautions must be taken when filling the ram to avoid foreign matter

entering the reservoir as this may impair operation.

- Use horizontally.

Ref. 240233 / 240242 / 240243 / 240249 : Supplied in a wooden chest. Ref. 240252 : Supplied in two wooden chests.





For pipe	Formers	Ram	Туре	Kg	Ref.
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4	Manual - n°1	Sliding cheek	44,500	240233
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2"	Manual - n°2	Open cheek	77,000	240242
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2"	Manual - n°2	Sliding cheek	71,00	240243
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2 - 2.1/2 - 3"	Manual - n°3	Hinged cheek	170,000	240252
Multiplayer	40 - 50 - 63 mm	Manual - n°2	Sliding cheek	54,000	240249

## 2402 : Manual Hydraulic Bender for Locksmith's Pipe

For locksmith's pipes and electrical conduit. (Supplied without formers)

Capacity mm	Ram	Туре	Kg	Ref.
Ø 12 to 45	Manual - no.2	Sliding Cheeks	58,000	240279



#### Virax supports future installers

Virax helps teachers promote the industry to students. Every year, Virax and teachers create a competition to test the skills of future graduates in a fun way. The best students win prizes to help them get started in their new profession.

# **POWERED HYDRAULIC BENDER**

## 2408 : Powered Hydraulic Bender

## **Advantages**

### Bending capacity:

Gas pipes:  $\emptyset$  3/8" to 4" (nfa 49115 - en 10255). Locksmith's pipes:  $\emptyset$  12 à 45 mm. Bending angle: 0° to 90°.

#### For medium and heavy series gas pipes.

Electrical hydraulic bender for worksites or prefabrication. Simple action circuit with spring-loaded piston return. Supplied in a wooden case with the forms and accessories. Less effort required for large batches. Limit switch (option - ref. 240811) to reproduce identical bends. To identify the different types of cheeks, see next pages.

#### Tip:

- Use Virax hydraulic ram oil for best protection.

- All necessary precautions must be taken when filling the ram to avoid foreign matter

entering the reservoir as this may impair operation.

- Use horizontally.

Ref. 240851, Ref. 240852 delivered in two wooden chests





3



For pipe	Formers	Ram	Туре	Kg	Ref.
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2"	230 V - n° 2	Open Cheeks	93,000	240842
Steel	3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2"	230 V - n° 2	Sliding Cheeks	87,000	240843
Steel	□3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2 - 2.1/2 - 3"	□230 V - n° 3	Hinged Cheeks	□188,0 00	240852
Steel	□3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2 - 2.1/2 - 3 - 3.1/2 - 4"	□230 V - n° 3	Hinged Cheeks	□303,0 00	240851

#### 2408 : Limit Switch

230 V single phase limit switch for electric ram 2. This device allows the same bend to be reproduced repeatedly on electric powered benders.

For ram	Kg	Ref.
no.2	0,710	240811



# **ACCESSORIES FOR HYDRAULIC BENDER**

#### 2402 - 2408 : Hydraulic Ram Oil

Highly refined mineral oil, essential for the proper operation of Virax hydraulic benders (ref. 2402/2408). Very high lubrication, prevents oxidation, corrosion and wear. Density at 20°C: 0.87 to 0.89. Viscosity at 40°C: 22 mm2/s. Flow point: - 42°C.

Description	Kg	Ref.
1-litre container	0,910	240101
Box of 12 containers of 1 L	11,600	240102





### 2402 - 2408 : Tripod

Range of tripods adaptable on Virax benders to avoid stooping, as well as for forming bends at the ends of pipes or working in confined spaces.

Cheek	For ram	Kg	Ref.
Open	Manual and electric no.1 and 2	5,500	240103
Sliding	Manual and electric no.2	9,350	240105
Hinged 3"	Manual no.3 e eléctrico no.3	11,700	240106
Open	Electrical no.2	10,000	240107

### 2402 - 2408 : Open Cheeks

For medium and heavy series gas pipes.





Description	Ø "	For ram	Kg	Ref.
Open cheek	3/8 - 1.1/2	n°1	10,750	240210
Dolly OC (x1)	3/8 - 1.1/2	n°1	1,830	240110
Open cheek	3/8 - 2	n°2	20,200	240216
Dolly OC (x1)	3/8 - 2	n°2	2,225	240114

## 2402 - 2408 : Sliding Cheeks

For medium and heavy series gas pipes.



Description	Ø "	For ram	Kg	Ref.
Sliding cheeks	3/8 - 1.1/4	n°1	7,200	240211
Dolly SC (x1)	3/8 - 1.1/4	n°1	1,730	240111
Sliding cheeks	3/8 - 2	n°2	15,120	240217
Dolly SC (x1)	3/8 - 2	n°2	2,200	240115



## Virax, French manufacturer

In its Production Centre extending over more than 20,000 m<sup>2</sup> situated in Epernay, France, Virax manufactures tools and machines designed by its R&D Center to meet the requirements of professionals. Plasturgy, machining, milling, grinding, assembly and painting, all these activities are performed on site for manufacturing control and quality.

### 2402 - 2408 : Hinged cheek 3"

For medium and heavy series gas pipes.



3

	Description	Ø "	For ram	Kg	Ref.
ſ	Hinged cheek	3/8 - 3	n°3	33,000	240228
	Dolly for hinged cheek (x1)	3/8 - 3	n°3	3,970	240120

### 2402 - 2408 : Cheeks 4"

For medium and heavy series gas pipes.

\* Requires adaptor (Ref. 240206+240207+20408).



Description	Ø ''	For ram	Kg	Ref.
Upper cheek	2.1/2 - 4	n°2* - n°3	30,000	240223
Lower cheek	2.1/2 - 4	n°2* - n°3	37,000	240222
Dolly for 2.1/2 to 4" hinged cheek (x1)	2.1/2 - 4	n°2* - n°3	4,560	240117

### 2402-2408 : Sliding Cheeks - Locksmith's Conduit

For Locksmith's conduit.



Description	Ø mm	For ram	Kg	Ref.
Dolly SC (x1)	12-50	n°2	2,000	240119
Sliding cheeks	12-50	n°2	17,000	240226

### 2402 - 2408 : Former for Gas Pipes Medium and Heavy Series (nfa49-115)

\* with hinged cheek (240228) .

\*\* with 2 1/2 to 4" cheeks (240222 - 240223) or 2 1/2" cheek (240220 - 240221). \*\*\* only with 2 1/2" to 4" cheeks (240222 - 240223).



Pipe "	Pipe mm	Radius mm	Kg	Ref.
3/8	12/17	40	0,845	240141
1/2	15/21	50	0,875	240142
3/4	20/27	65	1,190	240143
1	26/34	100	1,950	240144
1.1/4	33/42	135	3,300	240145
1.1/2	40/49	160	4,650	240146
2	50/60	210	7,050	240147

Pipe "	Pipe mm	Radius mm	Kg	Ref.
2.1/2*	66/76	350	19,480	240148
3*	80/90	400	27,900	240149
2.1/2**	66,76	350	22,000	240122
3***	80/90	420	30,200	240123
3.1/2***	90/102	mini 1800	9,025	240124
4***	102/114	mini 2000	9,320	240125

## 2402 - 2408 : Former for Light Series Pipes



Pipe "	Pipe mm	Radius mm	Kg	Ref.
3/8	12/17	70	0,920	240151
1/2	15/21	85	1,000	240152
3/4	20/27	110	1,375	240153
1	26/34	135	2,160	240154
1.1/4	33/42	170	3,510	240155
1.1/2	40/49	200	4,790	240156

### 2402 - 2408 : Former for Locksmith's Pipes



Pipe O.D. mm	Bending radius	Kg	Ref.
12	50	0,850	240160
13	50	0,830	240161
14	60	0,900	240162
15	60	0,860	240163
16	70	0,920	240164
18	70	0,890	240165
20	105	0,900	240166
22	130	1,335	240167

Pipe O.D. mm	Bending radius	Kg	Ref.
25	130	1,330	240168
28	160	1,640	240169
30	165	2,000	240170
32	165	2,030	240171
35	220	4,220	240172
38	220	3,700	240173
40	220	3,300	240174
45	275	5,700	240175

### 2402 - 2408 : Former for PEX/AL/PEX Pipe



Description	Pipe O.D. mm	Bending radius	Kg	Ref.
Former	40	160	0,980	240177
Former	50	200	1,170	240178
Former	63	252	1,590	240179
Pair of dollies SC (HR)	-	-	2,500	240185

### 2402 - 2408 : Bending 2.1/2-4" Option for Ram No. 2

For medium and heavy series gas pipes (nfa 49115 - en 10255). Upper and lower cheeks. Dollies. 2 1/2" and 3" formers. 3 1/2" and 4" section formers. Ram adaptor. Piston extension.

Description	Kg	Ref.
2.1/2 to 4"	178,000	240248



### 2402 : Manual Ram

Mechanical safety ensured by an end-of-travel stop and high pressure seals at the back of the piston, which remain effective even in the event of impact on the piston. Automatic piston return. Virax rams are individually tested and inspected.

Ram No.	Capacity	Kg	Ref.
1	1.1/4" (42,4 mm)	13,900	240201
2	2" (60,3 mm) or 4" with accessories	17,200	240202
3	3" (90 mm) or 4" with accessories	31,000	240203



#### 2402 : Accessories

Description	Kg	Ref.
Pump handle	0,810	240200





#### Go to www.virax.com

To find a product sheet, a safety data sheet or exploded views, **Go to our web site.** 



### 2408 : Electric Ram

Mechanical safety ensured by an end-of-travel stop and high pressure seals at the back of the piston, which remain effective even in the event of impact on the piston. Automatic piston return.

Virax rams are individually tested and inspected.



Ram No.	Voltage	Capacity	Kg	Ref.
2	230 V single phase	2" (60,3 mm) to 4" with accessories	29,000	240802
3	230 V single phase	3" (90 mm) to 4" with accessories	39,000	240803



# **CROSSBOW BENDER**

# 2503 : Crossbow Bender

# Advantages

Optimum force / actuation ratio for **easy and fast bending**. **Powerful**: bends stainless steel tubes p to Ø 15 mm. Optimised high quality materials for **maximum strength**.

Perfect bending of **annealed copper tubes**, in compliance with the recommendations of the **EN 1057 standard** up to  $\emptyset$  22 mm, **multilayer pipes** up to  $\emptyset$  32 mm, **stainless steel** (stainless steel 304 - 304L -316 - 316L, thickness 1 mm) and **zinc-platedtubes** up to  $\emptyset$  15 mm.

Optimizes the force to apply with respect to the number of grip presses for easy and fast bending.

Ideal for use in work sites or workshops.

To produce 90° elbows, crank shapes, bayonets, etc. Lightweight and handy, only 1.3 kg (bare machine) for user comfort. Body in high quality aluminium, mobile handle in treated drop-forged steel. High strength steelrack and mechanism. Adaptable use: 1 hand for fast bending on most diameters, 2 hands for high strengthon the most demanding materials and diameters. Release lever for fast removal of the bending former. Non-slip Soft Touch® handle for perfect control.

Time gain against soldering, **lower costs** of elbow procurement and storage, **secured installations** thanks to fewer assemblies.

New formers in **high strength** glass fibre charged **plastic**, guaranteeing ideal maintaining of the tube in the former.

Patented system for easy viewing of the dimension markings on the tube. **High strength glass fibre charged plastic** cheeks and counter formers. **Patented system** facilitating elbow-in-elbow bending. Easy fitting / removal of bending formers and cheeks without tools.

Size : 350 x 60 x 65 mm. Supplied in a plastic VIRABOX case.

For pipe	Composition	Kg	Ref.
-	Machine only	3,370	250300
Copper	12 – 15 – 18 – 22 mm	4,880	250301
Copper	12 – 14 – 16 – 18 – 20 – 22 mm	5,140	250302
Copper	3/8 - 1/2 - 5/8 - 3/4 - 7/8"	5,070	250303
PEX / AL / PEX	16 – 18 – 20 – 26 – 32 mm	5,120	250304
Copper / PEX / AL	12 - 14 - 16 - 18 - 20 - 22 - 26 - 32 mm	0,140	250305
Copper / PEX / AL	12 - 15 - 16 - 18 - 20 - 22 - 26 - 32 mm	6,145	250306

#### Capacities

Annealed copper pipes: Ø 10 to 22 mm, Ø 3/8 to 7/8" Multilayer pipes: Ø 14 to 32 mm. Stainless steel pipes: Ø 12 to 15 mm Zinc-plated pipes: Ø 12 to 15 mm Bending angle: up to  $95^{\circ}$ 

#### Tips

Tip: For blow torch annealed copper pipe, only anneal the bent part to avoid weakening the tube at the counter-form. Do not anneal the tube at the counter-formers: risk of warping.





# 2500 : Former for 2500 / 2503 Crossbow Bender

Bending

radius mm

40

45

50

50

54

70

**Formers in high strength** glass fibre charged plastic, guaranteeing **ideal maintaining** of the tube in the former. For perfect bending of **annealed copper tubes**, in compliance with the recommendations of the **EN 1057 standard**, or **multilayer tubes**. To facilitate bending: **patented** system for easy viewing of the **dimension markings** on the tube.

**Clear and visible marking** of the diameter and bending radius directly on the formers.

Kg

0,063

0,065

0,087

0,081

0,082

0,150

Ref.

250010

250012

250014

250015

250016

250018

2500 : Cheek and Counter Former for 2500 / 2503 Crossbow	1
Bender	

**Cheeks** with **high strength** glass fibre charged plastic **counter formers**. **Patented** system facilitating **elbow-in-elbow bending**: counter formers with 1 for regular bending and 1 special face dedicated to elbow-in-elbow.

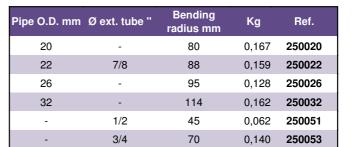
Pipe O.D. "	Pipe O.D. mm	Kg	Ref.
3/8 - 1/2 - 5/8	10 - 16	0,470	250001
3/4 - 7/8	18 - 22	0,600	250002
-	26 - 32	0,700	250003

## 2501 : Former for 2501 Crossbow Bender

High strength lightweight alloy formers.

Pipe O.D. mm	Ø ext. tube "	Bending radius mm	Kg	Ref.
10	-	30	0,090	250160
12	-	35	0,100	250161
14	-	40	0,120	250162
15	-	50	0,140	250159
16	-	50	0,140	250163
18	-	70	0,190	250164
20	-	80	0,200	250165
22	-	90	0,200	250166

Pipe O.D. mm	Ø ext. tube "	Bending radius mm	Kg	Ref.
24	-	90	0,200	250167
26	-	95	0,240	250168
-	3/8	30	0,080	250170
-	1/2	40	0,140	250171
-	5/8	50	0,150	250172
-	3/4	80	0,190	250173
-	7/8	90	0,210	250174











Pipe O.D. mm Ø ext. tube "

3/8

-

-

5/8

-

10

12

14

15

16

18

2501 : Cheeks and Counter-Former for 2501 Crossbow Bender

Pipe O.D. "	Pipe O.D. mm	Kg	Ref.
3/8 - 1/2 - 5/8	10 - 16	0,500	250130
3/4 - 7/8	18 - 22	0,460	250131
-	26	0,380	250132



# **BENDING SPRING**

### 2510 : Bending Spring - For Copper Pipe

Outside bending spring.

Hardened, burnished steel wire. End bending rings. Wall thickness: 0,8 to 1,2 mm.

Ø mm	L mm	Kg	Ref.
10	240	0,170	251010
12	240	0,240	251012
14	255	0,280	251014
15	275	0,320	251015
16	285	0,350	251016
18	295	0,470	251018
20	325	0,580	251020
22	340	0,650	251022



## 2510 : Internal Bending Spring for PEX & Multilayers Pipes

These springs slip inside pipes (multi-layers, PEX) in order to bend pipes without folding or flattening them.

With 1100 mm length, these springs can be used easily and in every situations. Springs in pre-zinc steel.

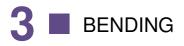


L mm	Ø mm	For PEX-pipe Ø mm	For Multilayer-pipe Ø mm	Kg	Ref.
1100	9	12 x 1,1	12 x 1,1 - 14 x 2 - 16 x 2,7	0,280	251042
1100	11	16 x 1,5	16 x 2 - 16 x 2,2	0,370	251044
1100	13	-	18 x 2 - 20 x 2,8 - 20 x 3	0,460	251046
1100	15	20 x 1,9	20 x 1,9 - 20 x 2 - 20 x 2,25	0,560	251048
1100	17	-	25 x 3,5	0,650	251050
1100	19	25 x 2,3	25 x 2,5 - 26 x 3	0,780	251052



### Virax supports future installers

Virax helps teachers promote the industry to students. Every year, Virax and teachers create a competition to test the skills of future graduates in a fun way. The best students win prizes to help them get started in their new profession.



# **BENDING PLIERS**

### 2511 : Bending Pliers

For hardened and annealed copper pipes: Ø 6 to 18 mm and Ø 1/4" to 5/8" O.D. / wall thickness 1 to 1.2 mm. Bending radius: 2 to 3.5 D. **For forming very short radius bends and counter-bends.** Bending angle: up to 180°. 0 to 180° graduations. Steel handle and body. Machined groove.

Pipe O.D.	Bending radius mm	Kg	Ref.
6	11	0,310	251106
8	14	0,355	251108
10	23	0,850	251110
12	30	1,000	251112
14	42	2,100	251114
15	42	2,100	251115
16	54	2,740	251116

SS	-			
	Bending radius mm	Kg	Ref.	
		0.000	051110	Ĩ

Pipe O.D.	Bending radius mm	Kg	Ref.
18	55	3,000	251118
1/4	15	0,355	251121
5/16	25	0,500	251122
3/8	35	1,015	251123
1/2	45	2,100	251124
5/8	54	2,700	251125



# 2514 : Bending pliers with knee protection

# Advantages

**Comfortable:** the soft plastic protective pad provides maximum comfort for the knee while bending.

Practical: double marks to see bending angle and do a quick measure of the pipe length.

**Durable:** the independent roller in zamac avoids rapid wear of the arm and doesn't hurt pipe.Comfortable: the soft plastic protective pad provides maximum comfort for the knee while bending.

**Practical:** double marks to see bending angle and do a quick measure of the pipe length.

Durable: the independent roller in zamac avoids rapid wear of the arm and doesn't hurt pipe.

Suitable for many applications: bending of sanitary or heating pipe, gas supply pipe.

Bended material: copper pipe and multilayer pipe.

A curve allows to put knee. The soft plastic pad is fixed into the curve to provide maximum comfort.

Bending with low effort with the long arms and ergonomic handles.

To reduce pain while repeated bending, lock the bending plier in a bench vice thanks to the two flat surfaces.

Save weight in toolbox with the body in lightweight alloy - aluminium.

Marks on former to see bending angle (45°, 90°, 135°, 180°).

Marks on fix arm for a quick measure of the pipe.

Each bending plier is delivered with one protective pad for knee. Pad is also available by unit in spare part (ref. 251405).

Pipe O.D. mm	Bending radius mm	Kg	Ref.
12	45	1,040	251412
14	50	1,320	251414
16	60	1,860	251416

#### Tips

Stress and pain on the knee are significantly reduced compared to a bending plier without protection. Protection pad in plastic (ref. 251405) which combines flexibility and durability for optimum comfort.

Can be assembled easily and with no tool on VIRAX bending pliers range 2514 from model 2023.



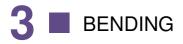




### Much more than just quality, here's the Virax commitment!

Virax commits to total, permanent and durable satisfaction of users and therefore applies a process based on:

A proactive product plan. A constant innovation process. A focus on permanent improvement. Improved customer services. An assurance of optimum availability rate. **Customer satisfaction, the heart of our commitments.** 



# 2514: Multi-diameter Bending Plier

# **Advantages**

Multi-purpose: 1 tool for 3 dimensions: Ø 6, 8, 10 mm. Comfort: Light and compact in the toolbox instead of 3 single diameter bending pliers.

For hardened and annealed copper pipes: Ø 6, 8, 10 mm / wall thickness: 1 mm. Lightweight alloy body. 180° bending angle. 0 to 180° graduations.

Ideal for many applications: air conditioning, refrigeration, gas supply, and compressed air circuit.

Size mm	Kg	Ref.
275 x 68 x 61	0,450	251406





# **ATTACHABLE MANUAL BENDER**

### 2502 : Workbench Manual Bender

Wall thickness: 0.8 to 1.5 mm. Bending angle: 0 to 180°. Red Universal formers:
Ø 8 to 22 mm.
Grey Universal formers:
Ø 5/16 to 7/8 ".
Wall thickness: 1 to 1.5 mm. Bending angle: 0 to 180°.
Yellow Standard formers
Ø 10 to 22 mm. Short bending radius.
With Loose guide.
Provides a perfect finish as the guide follows the pipe round the bend. Essential for bending
insulated pipes.
With Sliding guide
For quick bendings and vertical works.
Supplied with an assembled body and a rapid feed lever.
Attachment: on a special base (250203), in a parallel vice, in a pipe vice.



Туре	Composition	Ø	Kg	Ref.
With loose guide	Universal formers	8 - 10 - 12 - 14 - 16 - 18 - 20 - 22 mm	18,600	250271
With loose guide	Universal formers	10 - 12 - 14 - 16 - 18 - 20 - 22 mm	18,400	250272
With loose guide	Standard formers	10 - 12 - 14 - 16 - 18 - 20 - 22 mm	12,500	250275
With loose guide	Universal formers	5/16 - 3/8 - 1/2 - 5/8 - 3/4 - 7/8"	15,030	250280
With sliding guide	Universal formers	10 - 12 - 14 - 16 - 18 - 20 - 22 mm	16,550	250282
With sliding guide	Standard formers	10 - 12 - 14 - 16 - 18 - 20 - 22 mm	15,000	250285



### 2502 : Workbench Manual Bender Accessories

Support Base for workbench-mounted bender: space-saving arrangement allowing bender to be used in both horizontal and vertical positions. Fits inside the bender's storage case.



Description	Pipe O.D.	Kg	Ref.
Assembly body	-	3,540	250200
Rapid speed lever	-	1,900	250201
Support Base	-	1,250	250203
Stitch barrel	-	0,045	250208
Assembly body + rapid feed lever	-	10,400	250270
Lever extension	-	0,810	240200
Loose Guide	8 - 10 - 20 - 22 mm	1,160	250210

#### Description Pipe O.D. Kg Ref. Loose Guide 12 - 14 - 16 - 18 mm 1,180 250212 Loose Guide 5/16 - 3/8 - 7/8" 1,260 250216 Loose Guide 1/2 - 5/8 - 3/4" 1,120 250218 Sliding Guide + Pin 8 - 10 - 20 - 22 mm 0,290 250211 Sliding Guide + Pin 12 - 14 - 16 - 18 mm 250213 0,290 1/2 - 5/8 - 3/4" Sliding Guide + Pin 0,290 250219

### 2502 : Former



Description	Pipe O.D. "	Pipe O.D. mm	Bending radius mm	Kg	Ref.
Universal	-	8	30	0,275	250221
Universal	-	10	42	0,430	250222
Universal	-	12	50	0,545	250223
Universal	-	14	60	0,700	250224
Universal	-	15	71	0,830	250225
Universal	-	16	71	0,925	250226
Universal	-	18	80	1,135	250227
Universal	-	20	90	1,370	250228
Universal	-	22	100	1,500	250229
Standard	-	10	35	0,335	250232
Standard	-	12	42	0,420	250233
Standard	-	14	50	0,525	250234
Standard	-	15	60	0,700	250235
Standard	-	16	60	0,680	250236
Standard	-	18	70	0,915	250237
Standard	-	20	80	1,100	250238
Standard	-	22	90	1,270	250239
Universal	5/16	-	30	0,270	250241
Universal	3/8	-	42	0,420	250242
Universal	1/2	-	60	0,715	250243
Universal	5/8	-	70	0,850	250244
Universal	3/4	-	90	1,350	250245



Description	Pipe O.D. "	Pipe O.D. mm	Bending radius mm	Kg	Ref.
Universal	7/8	-	100	1,490	250246

# **PORTABLE ELECTRIC BENDING MACHINE**

# 2518 : Portable Battery-Powered Bender 18 V Eurostem® III

# Advantages

**Precise pressure die adjustment:** optimal pipe clamping and securing during bending for top notch bending. **Compatible and high-performance CAS battery**: Lithium-Ion

18V technology, compatible with over 300 machines by CAS partners (Cordless Alliance System).

Ideal for complex bending within a short distance.

Bender for small and intermediate runs at the factory or the worksite, up to Ø35 mm (copper) and Ø40 mm (multi-layer).

Save time and energy thanks to the instantaneous manual bend die return after bending, without need to use either the motor or the battery.

**Long life**, up to 130 bending operations thanks to  $2 \times 18V - 2$  Ah batteries (copper pipe Ø28 mm / 90°).

Easy repositioning in the initial angle thanks to drive shaft indexing every 90°.

Easy fitting / removal of the pipe thanks to its articulated hook.

Clear space around the bend die to allow for **multiple bending operations in any plane**, even for small diameters.

Suitable for working on the flat or vertically when bending long pipes, with two housings for a tripod.

Easy gearbox engagement thanks to a self-adjusting clutch.

Stop bending at a precise location thanks to a speed controller.

Release the bent pipe with no risk of damage simply by pulling the pressure die away. Change the bend and pressure dies quickly, no tools required.

Light and solid aluminium casing, gears with wearproof coating, PP handle reinforced with fibre glass.

\* 251849 : former Ø28mm for stainless steel pipes Ø 28 x 1.2 mm - Bending radius 112mm.

Formers Ø	Case	Kg	Ref.
-	-	15,210	251873
12 - 14 - 16 - 18 - 22 mm	1 Virabox	17,700	251874
14 - 16 - 18 - 22 - 28 mm	1 Virabox	18,970	251875
16 - 18 - 22 - 28 - 35 mm	2 Virabox	23,840	251876
16 - 20 - 26 - 32 - 40 mm	2 Virabox	27,520	251877
16 - 20 - 26 - 32 mm	2 Virabox	19,600	251878
15 - 18 - 22 - 28 mm (Stainless steel) *	2 Virabox	18,670	251849
12 - 15 - 18 - 22 mm	1 Virabox	17,285	251880
15 - 18 - 22 - 28 mm	1 Virabox	18,607	251881





VIRAX 84

#### Capacities

#### Maximum capacity:

- Bending angle: up to 180°.
- Annealed and hardened copper pipe, EN 1057 thickness 1 to 1.5 mm, locksmith pipe: Ø 10 35 mm
- Steel pipe EN 10255 Light and Intermediate Series: Ø 3/8 3/4"
- Stainless steel pipe, max. thickness 1.2 mm, electro galvanised steel: Ø 10 28 mm
- Multilayer pipes: Ø 14 Ø 40 mm

#### **Delivered with**

- 2 Lithium-Ion 18 V 2.0 Ah batteries, 1 fast charger.
- In a Virabox case, 1 or 2 cases depending on the contents.

#### Tips

When working at eye-height, use the tripod (ref. 251809). The bender can be placed in a horizontal or vertical position depending on the dimensions and orientation of the pipe to be bent.

For optimal recurrent bending operations on large diameter pipes, a 4.0 Ah battery (ref. 253541) is recommended.

Use a bending lubricant spray to reduce forces and make it easier to bend metal pipes (ref. 251804).

#### 2518 : Former and Counter-Former for Eurostem® II / III

Aluminium bend dies to optimise resistance to wear and bending loads. PA6 pressure dies for smooth pipe travel.

\*Ref. 251826/251831 : For PEX/AL/PEX pipes.

\*\*Ref. 251829 : For stainless steel pipes Ø 28 x 1.2 mm.

\*\*\*Ref. 251864/251865: In a Virabox case, for Eurostem III only.

\*\*\*\* For copper refrigeration pipes.



Туре	Pipe O.D. mm	Pipe O.D. "	Bending radius	Kg	Ref.
Formers and counter-former	10	-	40	0,260	251810
Former	12	-	45	0,220	251812
Former	14	-	50	0,290	251814
Former	15	-	55	0,325	251815
Former	16	-	60	0,380	251816
Former	18 - 3/8 GAS	-	70	0,590	251818
Formers and counter-former	20	-	77	0,930	251820
Former	22 - 1/2 GAS	-	77	0,710	251822
Formers and counter-former	25	-	98	1,720	251825
Formers and counter-former *	26	-	98	1,700	251826
Formers and counter-former	28 - 3/4 GAS	-	98	1,560	251828
Formers and counter-former	28	-	112	□1,820	251829
Formers and counter-former *	32	-	□112	□1,620	251831
Formers and counter-former	35	-	140	5,170	251864
Formers and counter-former * / ***	40	-	140	4,900	251865
Formers and counter-former	-	3/8	40	0,270	251860
Former ****	-	1/2	45	0,240	251863
Former ****	-	5/8	55	0,320	251866
Former ****	-	3/4	70	0,600	251869
Former ****	-	7/8	77	0,690	251872

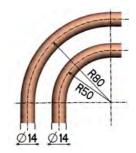


Туре	Pipe O.D. mm	Pipe O.D. "	Bending radius	Kg	Ref.
Formers and counter-former	-	1.1/8	98	1,600	251879
Counter-former	12 - 15	-	-	0,055	251832
Counter-former	14 - 16	-	-	0,065	251833
Counter-former	18 - 22 - 3/8 GAS - 1/2 GAS	-	-	0,085	251834
Counter-former	28 - 3/4 GAS			0,050	752824
Counter-former ****	-	1/2 - 5/8	-	0,050	251882
Counter-former ****	-	3/4 - 7/8	-	0,080	251883

### 2518 : Concentric Radius Former for Eurostem® II / III

Former with special bending radius for parallel working on double collars.

Ø mm	Bending radius	Kg	Ref.
12	75	0,410	251835
14	80	0,580	251836
16	90	0,780	251837
18	105	0,960	251838
22	120	1,380	251839



### 2518 : Accessories for Eurostem® II / III

For	Description	Kg	Ref.
Eurostem® II / III	Bending Oil - Spray 150ml	0,214	251804
Eurostem® II / III	Tripod	3,000	251809
Viper® M2X / L2X / Eurostem® III	Battery 18 V - 2 Ah Li-Ion Power CAS	0,465	253540
Viper® M2X / L2X / Eurostem® III	Battery 18 V - 4 Ah Li-Ion HD CAS	0,660	253541
Viper® M2X / L2X / Eurostem® III	240 V Charger EU - for 18 V battery CAS	0,580	253542
Viper® M2X / L2X / Eurostem® IIID	240 V Charger UK - for 18 V battery CAS	0,580	253543
Viper® M20+ / P22+ / Eurostem® II	Battery 14,4 V - 2,4 Ah Li-Ion	0,645	253244
Viper® M20+ / P22+ / Eurostem® II	230 V Charger - for 14,4 V battery - 2,4 Ah Li-Ion	0,740	251844
Viper® M20+ / P22+ / Eurostem® II	Mains adaptor 230V - 14,4V	0,980	252938





## www.virax.com

Simple, quick and easy to use. Browse and download our online catalogue, Discover the new products, Find a point of sale, Subscribe to our newsletter, Ask for an appointment, In just a few clicks!



3

87 øvirax









**#VIRAXFRENCHMANUFACTURER** 

4 CONNECTION / ASSEMBLY

	CUTTING OIL	90
	ADJUSTABLE MANUAL THREADER	91
a aug	MANUAL THREADER WITH INTERCHANGEABLE HEADS	92
Co.PT	PORTABLE ELECTRIC THREADING MACHINE	94
	COMPLETE HEADS & DIES	96
X	THREADING MACHINE	98
	ACCESSORIES FOR 2" AND 4" THREADING MACHINE	100
	GROOVER	103
	PERCUSSION FLANGING TOOL	104

J.	FRIGOR - FLARING TOOL	105
	FLARING PLIERS	106
4	EXPANSION PLIERS	107
2 J. L.	T-FLANGE	108
	TOOLS FOR LEAD TUBE	110
AVERS BETTER OF	SEALANT	111
	AXIAL CRIMPING	112
	RADIAL CRIMPING	114

89 **VIrax** 

# 🐥 📒 CONNECTION / ASSEMBLY

# **CUTTING OIL**

### 1101 - 1102 : Mineral Cutting Oil

Specially designed for manual and powered threading. Suitable for steel and stainless steel. With its very high lubricating ability, Virax cutting oil ensures better quality threads and lengthens the service life of both dies and machines. Water emulsifiable. Odourless.

**WARNING**: It is essential to rinse off the oil with detergent when used on drinking water circuits.

L	Packaging	Kg	Ref.
1 L	Container	0,985	110101
5 L	Container	4,860	110105
1 L	Box of 12 containers	12,430	110112
500 ml	Spray can	0,620	110200
500 ml	Box of 12 spray cans	6,900	110202



# 1106 : Synthetic Threading Oil

# Advantages

Special threading on drinking water circuits. Odourless: For a better user comfort. High technical performances: Threading couple and tools durability are improved.

Acceptable for fresh water: specially done to thread drinkable water pipings, all the oil is eliminated by rinsing it out. DVGW W 521 Certification Nr. DW-0201BR5779. Dynamic viscosity at -10°C : < 250 mPa s. Use it without diluting.







### Virax and the environment

Virax is committed to environmental protection and sustainable development, as demonstrated by our ISO certification 14001: 2015 for our environmental management system.

Compliance with the REACH Directive no.1907/2006. Low energy consumption. Dematerialisation of documentary flows and printing control. Waste control and reclaiming. Packaging materials recycled in a partnership with Eco Emballage. Anticipation of pollution risks.

# **ADJUSTABLE MANUAL THREADER**

### 1265 - 1275 : Adjustable Manual Threader

Forged, heat-treated steel, reversible without removal, for right and left-hand threads. Two removable tubular steel handles, can be screwed end to end.

Adjustable rear guides for centring the threader on the pipe.

Opening lever disengages the dies from the pipe when threading completed for trimming metal shavings and removing the threader from the pipe.



Description	Pipe O.D. "	Pipe O.D. mm	Dies	Kg	Ref.
Single ratchet 1" to 3"	1.1/2 - 2, 2.1/2 - 3	40/49 - 50/60, 66/76 - 80/90	Right BSPT	19,100	126500
Single ratchet 1" to 3"	1 - 1.1/4, 1.1/2 - 2, 2.1/2 - 3	26/34 - 33/42, 40/49 - 50/60, 66/76 - 80/90	Right BSPT	20,000	126520
Single ratchet 2.1/2" to 4"	2.1/2 - 3, 3.1/2 - 4	66/76 - 80/90, 90/102 - 102/114	Right BSPT	25,200	127500
Single ratchet housing only	1 - 3	-	-	18,600	126599
Single ratchet housing only	2.1/2 - 4	-	-	23,150	127599

### 1245 - 1265 - 1275 : Set of Dies



Description	Pipe O.D. "	Pipe O.D. mm	For adjustable threader	Kg	Ref.
Right BSPT	1/2 - 3/4	15/21 - 21/27	1240 - 1245	0,560	124502
Right BSPT	1 - 1.1/4	26/34 - 33/42	1240 - 1245	0,530	124503
Right BSPT	1.1/2 - 2	40/49 - 50/60	1240 - 1245	0,470	124504
Right BSPT	1 - 1.1/4	26/34 - 33/42	1265	0,980	126503
Right BSPT	1.1/2 - 2	40/49 - 50/60	1265	0,900	126504
Right BSPT	2.1/2 - 3	66/76 - 80/90	1265	0,810	126505
Right BSPT	2.1/2 - 3	66/76 - 80/90	1275	1,250	127505
Right BSPT	3.1/2 - 4	90/102 - 102/114	1275	1,990	127506



# **Virax Experts**

Would you like technical assistance?

Our team of experts is at your disposal to provide you with tips and recommendations on how to get the most out of your Virax products.

From 8.00 am to 12.15 pm and from 1.45 pm to 5.00 pm, Monday to Friday (4.30 pm): +33 (0) 3.26.59.56.82 - experts@virax.com Exploded views and manuals: www.virax.com, Downloads section.

# 4 CONNECTION / ASSEMBLY

# MANUAL THREADER WITH INTERCHANGEABLE HEADS

1362 - 1363 : Threading Set 3/8" - 1 1/4" - Plastic case - Metal case

# Advantages

Reversible ratchet for increased manœuvrability. Ergonomic grip.

Capacity : Steel: Right BSPT: Ø 1/4" to 1.1/4" Left BSPT: Ø 1/4" to 1.1/4" NPT : Ø 1/4" to 1.1/4"



Tubular steel handles.

Heads can also be used on Mini Phenix / Phenix III B portable electric threader. For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

Description	Case	Kg	Ref.
Single ratchet housing + handle right BSPT : 1/2 - 3/4 - 1 - 1.1/4	Metal - Single (670 x 115 x 150 mm)	7,650	136270
Single ratchet housing with 2 part handle - Right BSPT : 3/8 - 1/2 - 3/4 - 1 - 1.1/4	Plastic (429 x 240 x 125 mm)	6,060	136301
Single ratchet housing with 2 part handle - Right BSPT : 1/2 - 3/4 - 1 - 1.1/4	Plastic (429 x 240 x 125 mm)	5,615	136311
Single ratchet housing with 2 part handle - NPT : 3/8 - 1/2 - 3/4 - 1 - 1.1/4	Plastic (429 x 240 x 125 mm)	6,100	136361



# 1362 - 1364 : Threading Set 3/8" - 2" And 1.1/2" - 2" - Metal Case

# Advantages

Reversible ratchet for increased manœuvrability. Ergonomic grip. Easy head installation and removal.

Capacity: Steel Right BSPT: Ø 1/4" to 2" Left BSPT: Ø 1/4" to 2" NPT : Ø 1/4" to 2".

#### Tubular steel handles.

Heads can also be used on Mini Phenix / Phenix III portable electric threading machine.

For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

Description	Case	Kg	Ref.
2 single ratchet housings + handle BSPT right : 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2	670 x 230 x 150 mm	20,000	136280
Single ratchet housing with 2 part handle Single ratchet housing with 3 part handle - BSPT Right 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2	450 x 345 x 100 mm	17,000	136281
2 single ratchet housings + handle BSPT right : 3/8 -1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2	670 x 230 x 150 mm	20,700	136282
2 single ratchet housings + handle NPT : 1/2 - 3/4 - 1 - 1.1/4 - 1.1/2 - 2	670 x 230 x 150 mm	20,000	136263
Single ratchet housing + Handle Right BSPT: 1.1/2 - 2	660 x 200 x 110 mm	12,800	136460

# 1362 - 1363 - 1364 : Ratchet Housing for Manual Threader with Interchangeable Heads

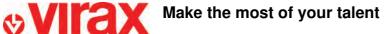
Description	Capacity "	Kg	Ref.
1 ratchet 1 housing	1/8 - 1.1/4	1,130	136294
1 handle + 1 ratchet 1 housing	1/8 - 1.1/4	1,990	136290
2-part handle + 1 ratchet 1 housing	1/8 - 1.1/4	2,050	136295
1 handle + 2 ratchets 1 housing	1/8 - 1.1/4	2,100	136292
3-part handle + 1 ratchet 1 housing	1.1/2 - 2	2,565	136495
1 ratchet 1 housing	1.1/2 - 2	1,130	136494
2-part handle + 1 ratchet 1 housing	1.1/2 - 2	2,480	136490
2-part handle + 2 ratchets 1 housing	1/8 - 1.1/4	2,260	136095











# 📮 📒 CONNECTION / ASSEMBLY

# **PORTABLE ELECTRIC THREADING MACHINE**

## 1380 : Phenix Mini Portable Electric Threading Machine

# Advantages

**Compact, ideal for interventions in confined environment. Locking vice with anti-torque bar** to lock the machine in rotation when threading.

Robust and light, suited to all maintenance work.

Dual rotation direction.

Easy to use, selector to choose rotation direction and trigger to control rotation speed according to pressure applied.

In spite of its small size, this threading machine can thread right- or left-hand BSPT, from 1/4" to 1.1/4".

Feather weight for easy transport and use.

Rotation speed: 20 rpm in both directions.

For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.





Description	Voltage V	Power	Kg	Ref.
Mini Phenix + 4 Right-hand BSPT heads: 1/2" - 3/4" - 1" - 1.1/4"	230	800W - 50/60 Hz	11,000	138021
Threader only - 230 V	230	800W - 50/60 Hz	5,800	138020

#### Capacities

Steel: Right-hand BSPT Ø 1/4" to 1.1/4" Left-hand BSPT Ø 1/4" to 1.1/4"

#### **Delivered with**

- 1 locking vice (ref. 138022).
- 4 Right-hand BSPT heads: 1/2" 3/4" 1" 1.1/4".

#### Tips

Virax cutting oil (ref. 110200) should be used for smooth die operation, ensuring a good cut and a perfect thread. For NPT threading use the Phenix III portable automatic threading machine ref. 137562.



### Virax, French manufacturer

In its Production Centre extending over more than 20,000 m<sup>2</sup> situated in Epernay, France, Virax manufactures tools and machines designed by its R&D Center to meet the requirements of professionals. Plasturgy, machining, milling, grinding, assembly and painting, all these activities are performed on site for manufacturing control and quality.

# 1375 : Phenix III Portable Electric Threader

# Advantages

For effortless threading up to 2" in all situations. Holding vice with anti-torque bar to steady the machine during threading operations.

Ideal for working in confined spaces (close to walls, etc.).

Bidirectional rotation.

Mechanical reverse control ensuring longer motor life.

Adaptor for octagonal heads 1/4" to 1.1/4 " with unique locking system for securely holding the head during difficult operations.

Rotation speed: 26 rpm in both directions.

For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.





Description	Voltage V	Power	Kg	Ref.
Phenix III + 4 Right heads BSPT: 1/2" - 3/4" - 1" - 1.1/4"	230	1100W - 50/60 Hz	18,800	137562
Phenix III + 6 Right heads BSPT: 1/2" - 3/4" - 1" - 1.1/4" - 1.1/2" - 2"	230	1100W - 50/60 Hz	22,800	137563
Threader only - 230 V	230	1100W - 50/60 Hz	7,500	137550

#### Capacities

**Steel:** Right BSPT Ø 1/4" to 2" Left BSPT Ø 1/4" to 2" NPT: Ø 1/4" to 2"

#### **Delivered with**

- 1 holding vice (ref. 137552)

- 1 adaptor for octagonal heads 1/8" to 1 1/4" (ref. 137553).

#### Tips

Virax cutting oil (ref. 110200) should be used for smooth die operation, ensuring a good cut and a perfect thread.



#### Virax, French manufacturer

Virax is located in Epernay, the Champagne capital, and was founded more than 100 years ago with the launch of its famous "Virax threader", the threader that "Turns around the Axis". Today, the production facility covers more than 20,000 m<sup>2</sup>.





### 1375 - 1380 : Accessories - Portable Electric Threader

Holding vice: safety pipe-threading accessory. Anti-torque bar steadies the machine while working.

Phenix III: vice jaws can be adapted for threading stainless steel pipes (137507).

Description	For	Kg	Ref.
Holding vice	Phenix III	3,000	137552
Reducer for octagonal heads 1/8" to 1.1/4"	Phenix III	1,400	137553
Vice jaw inserts for stainless steel pipes (for mounting on blocking vice)	Phenix III	0,200	137507
Holding vice	Mini Phenix	1,500	138022



# **COMPLETE HEADS & DIES**

### 1362 - 1363 - 1364 : Drop Head Threaders

# Advantages

Lubrification and chip removal assisted by large openings. Die position markings remain perfectly visible at all times. Guide hole for self-centring of die-head.

**Heads** with notched octagonal (or splined) drive for securing within the housing. **Cap** for accurate positioning of dies. Also allows them to be turned around to cut threads tight up against walls without risking to be pulled out. **Long-reach centring guide** for easy operation.

Compatible with manual interchangeable head threader, Mini Phenix and Phenix III, according to capacity.

To be threaded with the Mini Phenix ref. 138020 /138021, use only steel BSPT heads up to Ø 1.1/4".

For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

\* Retaining pin must be removed when used with the Phenix IIB / Phenix III threading machines (ref 1375).





Туре	Type of thread	Ø "	Ømm	Kg	Ref.
Steel - 1363	Right hand BSPT	1/4	8/13	0,460	136340
Steel - 1363	Right hand BSPT	3/8	12/17	0,445	136341
Steel - 1363	Right hand BSPT	1/2	15/21	0,520	136342
Steel - 1363	Right hand BSPT	3/4	20/27	0,570	136343
Steel - 1363	Right hand BSPT	1	26/34	0,720	136344
Steel - 1363	Right hand BSPT	1.1/4	33/42	0,720	136345
Steel - 1363	Right hand BSPT	1.1/2*	40/49	2,000	136346
Steel - 1363	Right hand BSPT	2*	50/60	2,150	136347
Steel - 1362	Left hand BSPT	1/8	6/10	0,460	136241
Steel - 1362	Left hand BSPT	1/4	8/13	0,460	136242
Steel - 1362	Left hand BSPT	1/2	15/21	0,510	136244
Steel - 1362	Left hand BSPT	1	26/34	0,720	136246

Туре	Type of thread	Ø "	Ø mm	Kg	Ref.
Steel - 1364	Left hand BSPT	1.1/2*	40/49	1,980	136448
Steel - 1364	Left hand BSPT	2*	50/60	2,150	136449
Steel - 1363	NPT	1/4	8/13	0,450	136350
Steel - 1363	NPT	3/8	12/17	0,430	136351
Steel - 1363	NPT	1/2	15/21	0,520	136352
Steel - 1363	NPT	3/4	20/27	0,570	136353
Steel - 1363	NPT	1	26/34	0,720	136354
Steel - 1363	NPT	1.1/4	33/42	0,730	136355
Steel - 1363	NPT	1.1/2*	40/49	2,000	136356
Steel - 1363	NPT	2*	50/60	2,160	136357

# 1362 - 1363 - 1364 - 1370 : Set of Dies

# Advantages

**Precision machined** from a special alloy steel guaranteeing a high cutting performance, excellent resilience and hardness. **Cutting profile** with a clearance angle to reduce friction.

Compatible with manual interchangeable head threader, Mini Phenix and Phenix III, according to capacity.

For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

Virax cutting oil must be used for lubrication in all threading operations.

Type : choice of dies according to their compatibility with the old generation heads (1362 - 1364 - 1370) or new generation (1363). The new generation heads are identifiable thanks to the marking 1363xx on their cap.



Туре	Type of thread	Ø "	Ø mm	Kg	Ref.
Steel - 1362	Right hand BSPT	1/8	6/10	0,060	136201
Steel - 1362	Right hand BSPT	1/4	8/13	0,055	136202
Steel - 1363	Right hand BSPT	1/4	8/13	0,058	136320
Steel - 1362	Right hand BSPT	3/8	12/17	0,055	136203
Steel - 1363	Right hand BSPT	3/8	12/17	0,055	136321
Steel - 1362	Right hand BSPT	1/2	15/21	0,060	136204
Steel - 1363	Right hand BSPT	1/2	15/21	0,060	136322
Steel - 1362	Right hand BSPT	3/4	20/27	0,070	136205
Steel - 1363	Right hand BSPT	3/4	20/27	0,065	136323
Steel - 1362	Right hand BSPT	1	26/34	0,115	136206
Steel - 1363	Right hand BSPT	1	26/34	0,114	136324
Steel - 1362	Right hand BSPT	1.1/4	33/42	0,115	136207
Steel - 1363	Right hand BSPT	1.1/4	33/42	0,115	136325
Steel - 1364	Right hand BSPT	1.1/2 - 2	40/49 - 50/60	0,150	136408
Steel - 1363	Right hand BSPT	1.1/2 - 2	40/49 - 50/60	0,149	136326
Steel - 1362	Left hand BSPT	3/8	12/17	0,055	136213
Steel - 1362	Left hand BSPT	3/4	20/27	0,070	136215
Steel - 1362	Left hand BSPT	1	26/34	0,115	136216
Steel - 1364	Left hand BSPT	1.1/2 - 2	40/49 - 50/60	0,150	136418
Steel - 1362	NPT	1/4	8/13	0,060	136222
Steel - 1363	NPT	1/4	8/13	0,060	136330

CONNECTION / ASSEMBLY

Туре	Type of thread	Ø"	Ømm	Kg	Ref.
Steel - 1362	NPT	3/8	12/17	0,055	136223
Steel - 1363	NPT	3/8	12/17	0,052	136331
Steel - 1362	NPT	1/2	15/21	0,060	136224
Steel - 1363	NPT	1/2	15/21	0,060	136332
Steel - 1362	NPT	3/4	20/27	0,070	136225
Steel - 1363	NPT	3/4	20/27	0,070	136333
Steel - 1362	NPT	1	26/34	0,115	136226
Steel - 1363	NPT	1	26/34	0,114	136334
Steel - 1363	NPT	1.1/4	33/42	0,115	136335
Steel - 1364	NPT	1.1/2 - 2	40/49 - 50/60	0,150	136428
Steel - 1363	NPT	1.1/2 - 2	40/49 - 50/60	0,149	136336
Stainless steel - 1370	Right hand BSPT	3/8	12/17	0,055	137003
Stainless steel - 1370	Right hand BSPT	1/2	15/21	0,065	137004
Stainless steel - 1370	Right hand BSPT	3/4	20/27	0,072	137005
Stainless steel - 1370	Right hand BSPT	1.1/4	33/42	0,120	137007

# **THREADING MACHINE**

## 1621 : Threading Machine 2"

# Advantages

Automatic opening or manually operated threading head. Quick, simple thread size adjustment. Hammer-type chuck and long jaws to rapidly, firmly and safely secure the pipe. Safety switch avoids accidental operation.

**Universal motor** designed for harsh condition. Can withstand voltage drops of up to 80 V.

Machine producing "gas" threads with sealing as per NFE 03.004 compliant with ISO/7. For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

Heavy-duty dies of HSS or standard grade steel. Five-blade reamer for a clean, accurate result. Body 330 mm long for threading short lengths of pipe. The body is angled at 2.2° to drain the oil from the pipe. Safety pedal for starting and stopping the machine. Self-priming gear-style oil pump.

Raised strainer avoids oil contamination by iron filings. Variable oil flow control.





Motor	Power W	Composition	Dies	Speed rpm	Size mm	Kg	Ref.
Single phase Universal 230 V motor	1100	Ø " : 1/2 - 3/4, 1 - 2. Ø mm : 15/21 - 20/27, 26/34 - 50/60	Right-hand BSPT	38	1160 x 650 x 1100	101	162120

#### Capacities

Steel: BSPT, NPT Ø 1/4" - 2". BSPP Ø 1/2" - 2". Stainless steel: BSPT, NPT Ø 1/4" - 2".

#### **Delivered with**

- 1 automatic 1/2" to 2" BSPT and NPT threading head,
- 1 set of right-hand BSPT dies 1/2" 3/4",
- 1 set of right-hand BSPT dies 1" 2",
- 1 set of carbon brushes,
- 1 steel pipe cutting wheel,
- 5 L container of oil (Ref. 110605),
- 4 support legs,
- 1 safety pedal.

#### Tips

Use specially-designed dies and cutting wheels when working with zinc-coated and stainless steel.

## 1621 : Threading Machine 4"

# Advantages

Automatic opening threading head.

Quick, simple thread size adjustment.

**Hammer-type chuck** and long jaws to rapidly, firmly and safely secure the pipe.

Machine producing "gas" threads with sealing as per NFE 03.004 compliant with ISO/7. For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

Self-priming gear-style oil pump. Raised strainer avoids oil contamination by iron filings. Variable oil flow control. Heavy-duty dies available in HSS and standard grade steel. Slotted dies for quick and easy replacement without removing the head. 3 gears for optimum cutting and threading of each pipe diameter. Safety pedal for starting and stopping the machine. Three-blade reamer for a precision result. Special storage compartment.

A machine of proven endurance, designed for high-volume applications.





Motor	Power W	Composition	Dies	Speed rpm	Size mm	Kg	Ref.
Single-phase		Ø": 1/2 - 3/4, 1 - 2, 2.1/2 - 4. Ø mm:					
induction 230 V motor	1600	8/13 - 12/17, 26/34 - 50/60, 66/76 -	Right-hand BSPT	36/20/11	1200 x 870 x 1200	142,200	162140
motor		102/114					

#### Capacities

Steel: BSPT, NPT Ø 1/4" - 4". BSPP Ø 1/2" - 2". Stainless steel: BSPT, NPT Ø 1/4"- 4".

#### **Delivered with**

- 1 automatic 1/2" to 2" BSPT threading head,
- 1 automatic 2.1/2" to 4" BSPT threading head,
- 1 set of right-hand BSPT dies 1/2" 3/4",
- 1 set of right-hand BSPT dies 1" 2",
- 1 set of right-hand BSPT dies 2.1/2" 4",
- 1 steel pipe cutting wheel,
- 2 x 5 L synthetic threading oil (ref. 110605),
- 4 support legs,
- 1 safety pedal.



#### Tips

Use specially-designed dies and cutting wheels when working with zinc-coated and stainless steel.

# **ACCESSORIES FOR 2" AND 4" THREADING MACHINE**

#### 1611 : Roller Stand

The feet can be formed from 3/4" tubes (20/27).

Feet not included.

Description	Kg	Ref.
Stand (without feet)	4,100	161100



### 1621 : Die Head for 2" – 4" Threading Machine

Machine producing "gas" threads with sealing as per NFE 03.004 compliant with ISO/7. For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.

\* Supplied without set of dies.



Description	Capacity "	For machine	Opening	Kg	Ref.
Right hand BSPT - NPT *	1/4 - 3/8	162120/40	Manual	3,700	162150
Right hand BSPT - NPT *	1/2 - 2	162120/40	Auto	6,000	162151
Right hand BSPT *	2.1/2 - 4	162140	Auto	10,000	162152
Right hand NPT *	2.1/2 - 4	162140	Auto	10,000	162153

### 1622 : Dies for 2 " - 4 " Threading Machine Die Heads

Standard: steel. HSS: Zinc coated and stainless steel.

Machine producing "gas" threads with sealing as per NFE 03.004 compliant with ISO/7. For tubes complying with the EN 10255 S and EN 10255 W standards (former NFA 49115 and NFA 49145 standard medium and heavy duty series); only light series tubes are not recommended.



Description	Pipe O.D. "	Pipe O.D. mm	For threader	Kg	Ref.
Right hand BSPT	1/4 - 3/8	8/13 - 12/17	Steel - 1621	0,500	162201
Right hand BSPT	1/2 - 3/4	15/21 - 20/27	Steel - 1621	0,600	162202
Right hand BSPT	1 - 2	26/34 - 50/60	Steel - 1621	0,600	162203
Right hand BSPT	2.1/2 - 4	66/76 - 102/114	Steel - 1621	0,800	162204
Right hand NPT	1/4 - 3/8	8/13 - 12/17	Steel - 1621	0,500	162205
Right hand NPT	1/2 - 3/4	15/21 - 20/27	Steel - 1621	0,600	162207
Right hand NPT	1 - 2	26/34 - 50/60	Steel - 1621	0,600	162208
Right hand NPT	2.1/2 - 4	66/76 - 102/114	Steel - 1621	0.800	162209

Description	Pipe O.D. "	Pipe O.D. mm	For threader	Kg	Ref.
HSS Right hand BSPT	1/4 - 3/8	8/13 - 12/17	Stainless steel - 1621	0,500	162301
HSS Right hand BSPT	1/2 - 3/4	15/21 - 20/27	Stainless steel - 1621	0,600	162302
HSS Right hand BSPT	1 - 2	26/34 - 50/60	Stainless steel - 1621	0,600	162303
HSS Right hand BSPT	2.1/2 - 4	66/76 - 102/114	Stainless steel - 1621	0,800	162304
HSS Right hand NPT	1/4 - 3/8	8/13 - 12/17	Stainless steel - 1621	0,500	162305
HSS Right hand NPT	1/2 - 3/4	15/21 - 20/27	Stainless steel - 1621	0,600	162307
HSS Right hand NPT	1 - 2	26/34 - 50/60	Stainless steel - 1621	0,600	162308
HSS Right hand NPT	2.1/2 - 4	66/76 - 102/114	Stainless steel - 1621	0,800	162309
Right hand BSPP	1/2 - 3/4	15/21 - 20/27	Steel - 1621	0,600	162220
Right hand BSPP	1 - 2	26/34 - 50/60	Steel - 1621	0,600	162221

# 1621 : Spare parts for 2" - 4" Threading Machine

Description	Kg	Ref.
Cutting wheel for steel pipe (2" – 4" threading machine)	0,050	162470
Cutting wheel for Zinc coated and stainless steel pipes (2" – 4" threading machine)	0,050	162471
Carbon brushes (set of 2) for 2" threading machine	0,030	753066
Set of 3 jaws for 2" threading machine	0,600	753068
Set of 3 pawls for 2" threading machine	0,600	753069
Set of 3 jaws for 4" threading machine	0,900	753070
Set of 3 pawls for 4" threading machine	0,900	753071



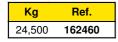
### 1624 : Stand for 2" Threading Machine

#### For machine 162120.

The machine can be loaded and unloaded from a utility vehicle by one person. The stand includes pistons for raising and lowering the machine. Folding stand for easily transporting the threading machine. System for emptying the machine without dismantling. Legs provide support under load. Tool tray.

Supplied with:

- Oil emptying system,
   Set of fastening screws.



### 1624 : Stand for 4" Threading Machine

For 162140 machine.

Fitted with four wheels and handles for easy transport. Rides kerbs and other obstacles easily.

Tool tray. Supplied with: Fastening screws.

Kg	Ref.
31,500	162461





# CONNECTION / ASSEMBLY

### 1624 : Grooving machine

It fits most machines currently on the market. Designed for on site applications. Fast and easy grooving to be carried out. Quick, simple adjustment system ensuring a constant groove depth. Turn with a ratchet wrench (1/2" ref. 220410) or handle for reduced effort.

**Pipe for grooving:** Steel pipes: NF EN 10208.2/10255W/10217.1/10255S/10216.1. Max thickness 5.5 mm.

Supplied with: - 1 connecting shaft,

- 1 set of rollers 2 to 6". Adaptor optional.

Description	Capacity "	Kg	Ref.
Grooving machine	1 - 6	11,000	162400
Set of rollers	1	2,300	162431
Set of rollers	1.1/4 - 1.1/2	2,400	162432
Set of rollers	2 - 6	2,500	162433



## 1624 : Adaptor for the VIRAX Grooving Machine

These adaptors allow the Virax grooving machine to be mounted on most threading machines currently available.

For machine	Kg	Ref.
Virax 162120	1,150	162420
Virax 162140	1,500	162430
Virax 1620	1,500	162424
Ridgid 300	1,500	162421
Ridgid 300C	1,500	162422
Ridgid 535	1,500	162423
Rems Tornado and Magnum	1,500	162425
Rothenberger Supertronic 2SE	1,150	162420





### Virax is committed to WEEE management

As a manufacturer, Virax has established a process for the recovery of Waste Electrical and Electronic Equipment (WEEE) in accordance with European Directive 2012/19/EU. Virax organises the management and recycling of WEEE at end-of-life, as part of its commitment to the environment.

# GROOVER

### 1626 : Groover GR2-12

# Advantages

Grooving up to 12", with accurate depth setting. Hydraulic jack for fast grooving. Powerful and silent motor on sturdy frame.

**Electrohydraulic groover**, produces grooves by cold knurling on standard steel and thin wall pipes  $\emptyset$  2" – 12". For installing piping, spraying systems, large-size heating and industrial installations.

Compact and highly stable designed for work on worksites and in workshops. **Powerful motor** 240 V, 50 / 60 Hz, 1500 W, 23 rpm. **Frame** mounted **on 4 feet** for safe man-height work. Sturdy hydraulic pump with ergonomic control grip; max. pressure: 8,000 kg. Pressure valve for fast pipe change. Lower roller storage compartment.

**Grooving rollers** designed and tempered specifically for minimum wear, with anti-skid surface for more effective tube feed.

Accurate groove depth adjustment with a nut / locknut system, ideal for repetitive work.

Safety pedal for operation control and instant stopping of machine rotation. Stabilizer for large diameters to prevent tube slipping. Roller holder for tubes up to  $\emptyset$  12", fitted with 4 knobs; 2 tempered steel side guides with fast locking system.

# Weight (machine only): 129 kg.

Machine dimensions on feet: 770 x 550 x 1400 mm.

Description	Capacity "	Kg	Ref.
Groover GR2-12	2 - 12	170,000	162600
Upper roller 2"-6" for steel / stainless steel pipe	2 - 6	0,780	162610
Upper roller 8"-12" for steel / stainless steel pipe	8 - 12	0,810	162611
Lower roller 2"-2.1/2" for steel pipe	2 - 2.1/2	0,550	162612
Lower roller 3"-6" for steel pipe	3 - 6	1,250	162613

Description	Capacity "	Kg	Ref.
Lower roller 8"-12" for steel pipe	8 - 12	1,420	162614
Lower roller 2"-2.1/2" for stainless steel pipe	2 - 2.1/2	0,550	162616
Lower roller 3"-6" for stainless steel pipe	3 - 6	1,250	162617
Lower roller 8"-12" for stainless steel pipe	8 - 12	1,420	162618
Pipe holder for grooving machine	2 - 12	29,000	162615

#### Capacities

For steel or stainless steel pipes Ø 2" – 12" (60 – 325 mm). Pipe wall thickness: 3.5 - 10 mm (steel) / 1.6 - 6.5 mm (stainless steel).

#### **Delivered with**

- 4 frame feet.
- Safety pedal.
- Large diameter stabilizer.
- Roller holder. (162615)
- Grooving control tape measure.
- 3 lower rollers for steel pipe (2" 2.1/2"; 3" 6"; 8" 12").
- 2 upper rollers for steel and stainless steel pipe (2" 6"; 8" 12").
- Installation tool set.

#### Tips

When grooving stainless steel pipes, use the optional specific lower rollers.



# 4 CONNECTION / ASSEMBLY

# **PERCUSSION FLANGING TOOL**

### 2504 : Copper Forming Set

For annealed copper pipes.

The holes in the die have a 90  $^\circ$  chamfer on one side for forming tapered flanges with the turn pin.

The other side may be used for forming flat flanges after first forming a tapered flange. 4 opposing pegs are provided for securing the die in a parallel vice. Phosphate finish. Supplied in a plastic case with turn pin plus single and stepped mandrels.

Composition of set	Kg	Ref.
Die for pipe O.D. : 6 - 8 - 10 - 12 - 14 mm, 90° turn pin for pipe O.D. : 6 to 14 mm, Single size mandrel 10 to 12 mm dia, Stepped mandrels 8 to 14 mm	1,350	250401
Die for pipe O.D. : 10 - 12 - 15 - 16 - 18 - 20 - 22 mm, 90° turn pin for pipe O.D. : 10 to 22 mm, Single size mandrel 16 mm Ø.Stepped mandrels 10 and 18, 12 and 20 and 15 and 22 mm Ø.	3,440	250402
Die for pipe O.D. : 10 - 12 - 14 - 16 - 18 - 20 - 22 mm, 90° turn pin for pipe O.D. : 10 to 22 mm, Single size mandrel 16 mm Ø, Stepped mandrels 10 and 18, 12 and 20 and 14 and 22 mm Ø.	3,400	250403



### 2504 : Die

The holes in the die have a  $90^{\circ}$  chamfer on one side for forming tapered flanges with the turn pin. The other side may be used for forming flat flanges after first forming a tapered flange.

Pipe O.D. mm	Kg	Ref.
6 - 8 - 10 - 12 - 14	0,480	250411
10 - 12 - 15 - 16 - 18 - 20 - 22	1,180	250412
10 - 12 - 14 - 16 - 18 - 20 - 22	1,175	250413



#### 2504 : Mandrel / Flanging Tool



Description	Туре	Pipe O.D. mm	Kg	Ref.
Flanging tool	90°	6 to 14	0,090	250441
Flanging tool	90°	10 to 22	0,270	250442
Flanging tool	90°	6 to 40	0,525	250443
Flanging tool	60°	10 to 22	0,300	250447
Mandrel	Single	10	0,075	250422
Mandrel	Single	12	0,080	250423

Description	Туре	Pipe O.D. mm	Kg	Ref.
Mandrel	Single	16	0,250	250435
Mandrel	2 sizes	8 and 14	0,085	250421
Mandrel	2 sizes	10 and 18	0,265	250431
Mandrel	2 sizes	12 and 20	0,275	250432
Mandrel	2 sizes	14 and 22	0,285	250433
Mandrel	2 sizes	15 and 22	0,290	250434

# **FRIGOR - FLARING TOOL**

# 2505 : Heavy Duty Flanging Tool

# Advantages

**Eccentric-mounted turn-pin** for an impeccable finish and a perfect seal.

**End-of-travel "release" system** for "smoothing " the flange. Feed screw fitted with a large handle **for minimum effort**.

**Capacity on annealed and hard copper pipes**:  $45^{\circ}$  tapered flange: Ø 3/16" to 3/4" OD. Precision tool for forming flanges on copper refrigeration pipes. Supplied in a plastic case containing die and yoke vice.



Pipe O.D. "	Taper angle	Kg	Ref.
3/16 - 1/4 - 5/16 - 3/8 - 1/2 - 5/8 - 3/4	45°	1,970	250580



### 2506 : Flaring Tool

Chrome finish for the yoke, hard chrome for the tools. **Capacity on annealed copper pipes**: 45° tapered flange: Ø 1/8"\* to 3/4" OD. Expanding tools: Ø 3/16" to 3/4" OD. Combined tool for forming 45° flares and expansion of refrigeration pipes. Easy tool change. Supplied in a plastic case with die and yoke vice.

\* Only 45° tapered flange.

Pipe O.D. "	Kg	Ref.
1/8* - 3/16 - 1/4 - 5/16 - 3/8 - 7/16* - 1/2 - 5/8 - 3/4	2,110	250620





### Virax is committed to a new environmental policy

VIRAX is aware of its environmental role, and speeding up its CSR (Corporate Social Responsibility) action plan in order to maintain a sustainable approach.

# CONNECTION / ASSEMBLY

# **FLARING PLIERS**

# 2526 : Flaring Pliers for Copper

# Advantages

Reduced effort ensured by long, rigid handles. Lightweight pliers (made of forged aluminum) less than 800 gr and very high strength profiled handles. Quick and easy tool change.

The design of the mechanism of the pliers ensures: - Use in any position.

- Extraction of the head after flaring, every time.

Ergonomic polypropylene grease and solvent resistant grips.

Supplied in a plastic case.

Description	Kg	Ref.
Ø 12, 14, 16, 18, 22 mm	2,120	252641
Ø 12, 14, 16, 18, 22, 28, 32 mm	2,500	252644
Ø 12, 15, 18, 22, 28 mm	2,200	252679
Ø 3/8, 1/2, 5/8, 3/4, 7/8"	2,300	252637
Ø 3/8, 1/2, 5/8, 3/4, 7/8, 1.1/8"	2,170	252651
Ø 3/8, 1/2, 5/8, 3/4, 7/8, 1, 1.1/8"	2,485	252681
Pliers only	0,710	252600
Pliers + case	1,710	252640





### 2526 : Flaring Tool

#### High quality expansion tools:

- 6 detachable, self-centring segments.
- Long flaring length.
- Special anti-oxidation treatment providing efficient protection.



Pipe O.D. "	Pipe O.D. mm	Pipe wall thickness mm	Kg	Ref.
-	8	1	0,125	252601
-	10	1	0,130	252602
-	12	1	0,120	252603
-	14	1	0,130	252604
-	15	1	0,130	252605
-	16	1	0,130	252606
-	18	1	0,140	252607
-	20	1	0,145	252608
-	22	1	0,155	252609
-	25	1	0,175	252610
-	28	1	0,190	252611
-	32	1	0,230	252612
-	35	1	0,255	252613
-	36	1	0,265	252614

Pipe O.D. "	Pipe O.D. mm	Pipe wall thickness mm	Kg	Ref.
-	40	1	0,305	252615
-	42	1	0,325	252616
3/8	-	1	0,130	252622
1/2	-	1	0,125	252623
5/8	-	1	0,130	252624
3/4	-	1	0,140	252625
7/8	-	1	0,155	252626
1	-	1	0,175	252627
1.1/8	-	1	0,180	252628
1.1/4	-	1	0,210	252632
1.3/8	-	1	0,210	252633
1.1/2	-	1	0,210	252634
1.5/8	-	1	0,210	252635

# **EXPANSION PLIERS**

# 2534 : Expansion Pliers PEX series 5

# Advantages

Quick tool change. Effort reducing mechanism. Ergonomic polypropylene handles. Capacity Ø 12 to 32 mm. For PEX series 5 pipes. Expansion head: Ø 12, 16/20, 25 and 32 mm.

#### Specific case:

For the Alphacan Retube Ø 32 mm system, push the pipe onto the coupling as far as the last collar.

Description	Kg	Ref.
Case: Pliers + Expansion tools Ø 16, 20, 25, 32 mm	2,020	253401
Case: Pliers + Expansion tools Ø 12, 16, 20 mm	3,300	253402
Case: Pliers + Expansion tools Ø 12, 16, 20, 25, 32 mm	2,400	253403
Pliers only	0,720	253480
Case only	0,840	253481
Expansion tool Ø 12 mm	0,150	253412
Expansion tool Ø 16/20 mm	0,133	253416
Expansion tool Ø 25 mm	0,156	253425
Expansion tool Ø 32 mm	0,156	253432





#### **Delivered with**

In a plastic case.



# CONNECTION / ASSEMBLY

# 2534 : Expansion plier Quick & Easy AUTOROTATION

# Advantages

**Simplification and quick operation** thanks to the automatic rotation of the head.

Better accessibility in tight spaces when there's no place to turn the pliers.

**Reduced effort** thanks to the long and rigid forged aluminium handles.

Plier and expansion heads with **automatic rotation** of the head for Quick & Easy systems (Q&E).

The automatic rotation (patented system) simplifies the work of the user while ensuring a regular expansion of the pipe. No need to manually turn the plier or pipe after each expansion

Capacities Ø 16 to 32 mm\*. For pipes and rings in PEX-a or PEX-b according to the specificities of the manufacturers.

Automatic declutching system which preserves the internal mechanism for a longer service life.

Lightweight pliers (made of forged aluminum) only 915 gr. and very high strength profiled handles.

Ergonomic polypropylene grease and solvent resistant handles.

High quality expansion heads with special anti-oxidation treatment providing efficient protection. Conical profile specially designed for Q&E systems. 6 detachable, self-centring segments.

\*Ø 32 mm without autorotation.

Description	Kg	Ref.
Expansion set Quick & Easy Autorotation 16-20-25 mm	2,970	253460
Expansion plier Quick and Easy Autorotation only	2,365	253459
Expansion head Quick and Easy Autorotation 16 x 1.8/2.0 mm	0,183	253456
Expansion head Quick and Easy Autorotation 20 x 1.9/2.0 mm	0,201	253457
Expansion head Quick and Easy Autorotation 25 x 2.3 mm	0,221	253458
Expansion head Quick and Easy 32 x 2.9 mm (without autorotation)	0,329	253454





**T-FLANGE** 

### 2527 : T-Rax T-Flange Tool Set

Ratchet-operated tools for forming extruded T-flanges. Supplied in a metal case.

T-rax with tools	Kg	Ref.
Ø 12, 14, 16, 18, 22 mm	3,930	252730



Make the most of your talent



#### 2527 : T-rax Accessories

Special drill bit (adjusted to suit the diameter), to be mounted on a reversible drill to form the hole for inserting the tool prior to extrusion.

Punching Pliers: limit the penetration of the pipe branch into the flange to ensure perfect flow. 11 mm ratchet square drive.

Description	Kg	Ref.
Drill Bit	0,415	252701
Punching Pliers	0,120	252702
Ratchet for T-flanges	0,310	252703



### 2527 : T-Rax Flanging tools

Ømm	Kg	Ref.
12	0,084	252711
14	0,140	252712
16	0,175	252714
18	0,220	252715
22	0,335	252717
28	0,370	252719



### 2528 : Extrudax® T-Flange Tool Set

Special drill bit (adjusted to suit the diameter), mounted on a reversible drill to make a hole for inserting the tool prior to extrusion The punching pliers limit the penetration of the branch pipe into the flange to ensure perfect flow.

Powered "Extrudax®" T-flange tool set (ref. 252830) is supplied with a special 230 V – 750 W reversible drill machine which has a high torque (ref. 753825). Supplied in a case.

Description	Motorised	Kg	Ref.
Ø 12, 14, 16, 18, 22 mm	yes	5,750	252830
Ø 12, 14, 16, 18, 22 mm	-	1,500	252880
Ø 3/8, 1/2, 5/8, 3/4, 7/8"	-	1,500	252883







### 2528 : Extrudax® Accessories

Special drill bit (adjusted to suit the diameter), to be mounted on a reversible drill to make a hole for inserting the tool prior to extrusion.

Description	Speed rpm	Kg	Ref.
Drill Bit	-	0,080	252801
Tool holder	-	0,280	252802
Hexagonal drive	-	0,045	252804
230 V - 750 W reversible drill machine	0-660	2,600	753825



### Discover our YouTube channel

and our product demonstration videos! /VIRAX



### 2528 : Extrudax® Flanging Tools

C Co
500

Ø mm	Ø "	Kg	Ref.
10	-	0,060	252810
12	-	0,060	252812
14	-	0,060	252814
15	-	0,060	252815
16	-	0,065	252816
18	-	0,065	252818
20	-	0,065	252820

Ø mm	Ø"	Kg	Ref.
22	-	0,068	252822
-	3/8	0,060	252860
-	1/2	0,060	252861
-	5/8	0,060	252862
-	3/4	0,063	252863
-	7/8	0,070	252864

# **TOOLS FOR LEAD TUBE**

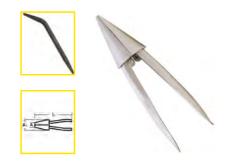
#### 2610 : Tools for lead tube

#### 261000 : Expanding Pliers

For expanding lead pipes. Pressed sheet steel. Striated surface.

#### 261010 : Plumbers broach

For reshaping the ends of lead pipes. Phosphated steel, bent at 40°.



Description	A mm	A1 mm	Ø mm	L mm	Kg	Ref.
Expanding Pliers	0 - 8	60	-	290	0,365	261000
Plumbers broach	-	-	16	270	0,375	261010



### Virax is committed to sustainable forest management

All user manuals and advertising brochures are printed on PEFC paper, certifying sustainable and balanced forest management.

# SEALANT

### 2626 : Filetfix® III

# **Advantages**

Quick polymerisation. Repositionable before drying. High temperature and pressure resistance. Consistent with the main European standards for gas, hot water and drinking water.

Sealant for threaded connections in contact with town gas, natural gas, liquid petroleum gas, hot water, drinking water, air and petroleum products.

- Complies with Positive Lists  $(\ensuremath{\text{CLP}})$  for contact with drinking water.

- Complies with EN 751-1 Class H / DVGW approval \* (sealants for threaded connections in contact with gas and hot water).

- Complies with WRAS drinking water certification.

**Easy to apply**, thanks to its accurate and transparent spout. Resistant to vibration, corrosion and most solvents. Not to be used on pure oxygen or steam pipes, or on plastics.

# For more information, see our Technical data sheet available at www.virax.com, section Documentation > Technical Sheet.

\* excluding installation meeting the TRGI 2018 standard

Packaging	Kg	Ref.
1 bottle of Filetfix® III - 60 ml	0,100	262600

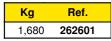






#### 2626 : Display of Bottles of Filetfix® III

Display of 15 Bottles of Filetfix® III (262600).







#### Virax is ISO 9001, ISO 14001 and ISO 45001 certified

Virax has received multiple awards for excellence in its Quality (ISO 9001 - 2015 version), Environment (ISO 14001 - 2015 version) and Health and Safety (ISO 45001 - 2018 version) management system.

# \rm 📒 CONNECTION / ASSEMBLY

# **AXIAL CRIMPING**

# 2533 : Compact Manual Axial Crimping Tool for PEX series 5

# Advantages

User-friendly: only one hand to crimp or declutch. Gear units to crimp the coupling, elbow, T, nut and threaded. The range is completed by Expansion Pliers  $\emptyset$  12-20 mm.

Specific crimping forks design to not damage the coupling during the crimping. For crimping free nuts  $\emptyset$  3/8, 1/2, 3/4" and Tees and elbows  $\emptyset$  12, 16 and 20 mm. (Crimping fork in  $\emptyset$  20 mm) Suitable for installation or renovation in a house. Ergonomic use with Soft Touch® handles.

Effortless handling for an easier work.

Die-cast aluminum design: strong and light weight (only 800g).

**Expansion Pliers PEX series 5** : Sheathed handles for a better handling ; End caps treated with cataphoresis to reduce corrosion risk and to make easier the pipe fitting.

Description	Kg	Ref.
Crimping tool box Ø 12 - 16 - 20 mm + expansion pliers Ø 12 - 16 - 20 mm	2,340	253360
Crimping tool box Ø 12 - 16 - 20 mm	2,000	253350
Expansion pliers Ø 12 - 16 - 20 mm	0,380	253355
Crimping tool box Ø 12 - 16 - 20 mm + expansion pliers Ø 12 - 16 - 20 mm + pipe cutter PC 32	2,540	253361
Gear Ø 12 mm	0,080	753568
Gear Ø 16 mm	0,080	753569
Gear V	0,080	753570
Flat double gear	0,080	753571





#### Capacities

PEX series 5 Ø 12 - 16 - 20 mm

#### **Delivered with**

2 gears Ø 12 mm (Réf. 753568), 2 gears Ø 16 mm (Réf. 753569), 1 double gear V (Réf. 753570), 1 flat double gear (Réf. 753571). In a case.



### Get our news first!

Subscribe to the Virax newsletter to receive exclusive news and promotions!

# 2533 : Manual Axial Crimping Tool for PEX series 5

# Advantages

Quick tool change. Effort reducing mechanism. **Quick crimping.** Capacity from Ø 12 to 32 mm.

Ergonomic polypropylene handles.

Reset trigger.

Removable, reversible adaptor to suit the different couplings on the market. Rapid feed system.

6 reducers and 1 adaptor are available for performing Ø 12, 16, 20, 25 and 32 mm crimps on the following couplings: union, T,  $90^{\circ}$  elbow, captive or free-turning captive nut.

Description	Kg	Ref.
Ø 16, 20, 25 and 32	3,260	253300
Ø 12, 16, 20 and 32	3,270	253302
Ø 12, 16, 20, 25, and 32	3,310	253303
Machine only	1,250	253380
Case	0,840	253381





#### Capacities

Ø 12 to 32 mm.

#### **Delivered with**

In a plastic case.

### 2533 : Reducer and adaptor for Axial Crimping Tools 2533

For Axial Crimping Tools ref. 253300, 253302, 253303, 253380.

Description	Kg	Ref.
Reducer Ø 12 mm	0,060	253312
Reducer Ø 16 mm	0,055	253316
Reducer Ø 20 mm	0,045	253320
Reducer Ø 25 mm	0,035	253325
Reducer Ø 32 mm	0,150	253332
"V" Adaptor Ø 12, 16, 20, 25, 32 mm	0,050	253333
Adaptor for Ø 1/2, 3/4, 1" nut	0,050	253334
Adaptor for Ø 3/8" nut	0,100	253335





### www.virax.com

Simple, quick and easy to use. Browse and download our online catalogue, Discover the new products, Find a point of sale, Subscribe to our newsletter, Ask for an appointment, In just a few clicks!

# \rm 📒 CONNECTION / ASSEMBLY

# **RADIAL CRIMPING**

### 2529 : Viper® i26 Manual Hydraulic Press-Fitting Machine

# Advantages

Multi-material press-fitting, **up to Ø 26 mm** in multiple layers. **Ergonomic and space-saving Sound indicator at end of crimping.** 

Manual hydraulic press-fitting machine for use with insert sets. **Easy feed** by a high performance staged piston hydraulic device. **Crimping end indicator:** sound signal when reaching maximum pressure. **Minimized weight** (only 2.5 Kg): one-handed use thanks to its ergonomic design, slim format and compact head for access to confined spaces. Head swivels at 180° for easy use in all situations; Fast head opening / closing. High quality steel hydraulic dispenser, jaw in anticorrosion treated hardened steel.

Machine protected by overpressure valve.

Non-slip Soft Touch® handle for perfect control.

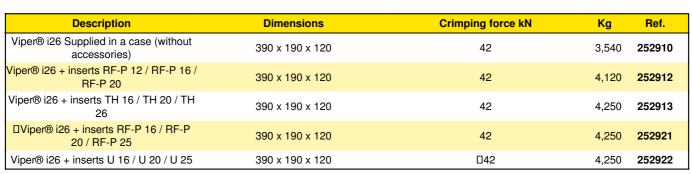
Wide choice of inserts: Virax has inserts for the majority of crimping systems available on the market.

Size: 366 x 63 x 88mm.

Supplied in a case VIRABOX

View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.

#### Non-contractual photo



#### Capacities

Copper: Ø 12 / 14 / 16 mm. PER, PEX: Ø 12 – 25 mm. Multilayer: Ø 12 - 26 mm. Except inserts HA26 and V15.



#### Virax supports future installers

Virax helps teachers promote the industry to students. Every year, Virax and teachers create a competition to test the skills of future graduates in a fun way. The best students win prizes to help them get started in their new profession.





# 2535 : Viper® M2X Electro-mechanical Press Fitting Machine

# Advantages

**Crimping lit and under control:** the LED ring lights up the work area at 360° and indiciates if the crimping is correct. **A compatible and high-performance CAS battery:** 18V Lithium-Ion technology compatible with more than 300 machines from CAS partners (Cordless Alliance System). **Bluetooth® Application:** Your crimping machine communicates with your smartphone via the VIR-APP application.

20kN electromechanical compact and light crimping machine, with automatic piston return.

#### 2 machines to better meet your need:

- M2X: "gun" shape is lightweight and handy.
- L2X: "in line" shape is compact and nice to reach fittings in difficult access.

#### Modular to your need with 2 crimping solution:

- Mother jaw + inserts: compact, lightweight, easy to store and transport.

- Compact jaws: size and weight optimized to one profile/one diameter, allow crimping in very tight spaces.

#### A smart crimping for maximum safety:

- Automatic checking of the effort with a micro-processor while crimping.
- The circular LED ring indicates if the crimping is correct, the battery charge level or the
- need to make the preventive maintenance (20 000 cycles).

- Cycle starts only if the battery is enough charged.

#### High performance CAS Lithium-Ion battery:

- Increased durability: permanent monitoring of each cell while charging ensures a longer battery lifetime.

- Fast and safe charging: ventilated charger for a constant temperature while charging.

- Anticipation for charging: battery charge level indicator.

- Reliable lifetime: long storage possible with almost no self-discharge.

#### Easy to work with and comfortable:

- Only one button to switch on and start crimping ; automatic shutdown of the machine to save energy.

- Quick crimping cycle ; simple and fast changing of inserts or compact jaws.

- Lightweight (2,1 kg with batterie), optimized size (only 33 cm long with jaw) and gravity center ideally placed, are essential to make a lightweight, compact and handy tool.

- Optimized ergonomic: Soft Touch® anti-slip grip ; 360° rotating head.

- Maximum lightening with no dark area: the circular LED ring around the jaw lights up the work area at 360°.

#### More efficiency with the application VIR-APP:

- Checking of the number of cycles already done or before the next maintenance.

- Customization of the brightness and the time before stand-by of your crimping machine to optimize comfort at work.

- Creation of job report with essential data (number of crimping, pictures, customer details).

In option, a CAS 18V - 4,0Ah Lithium-Ion HD battery (High Density) ref. 253541.

Sizes M2X (with batterie, without jaw): 263 x 259 x 81 mm.

View all systems compatible with VIRAX inserts and jaws on our web site or at the end of our catalogue.





4	CONNECTION / ASSEMBLY
_	

Composition	Size mm	Kg	Ref.
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Without mother jaw	590 x 390 x 140	5,790	253550
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw	590 x 390 x 140	6,940	253551
M2X 18V - Without battery - Without mother jaw	590 x 390 x 140	4,485	253552
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts HA16 / HA20 / HA26	590 x 390 x 140	7,985	253553
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts RFP12 / RFP16 / RFP20	590 x 390 x 140	7,520	253554
M2X 18V - 2 batteries 2,0 Ah Li-lon - Mother jaw - Inserts RFP16 / RFP20 / RFP25	590 x 390 x 140	7,450	253555
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts RFP16 / RFP20 / RFP25 / RFP32	590 x 390 x 140	7,580	253556
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts TH16 / TH20 / TH26	590 x 390 x 140	7,650	253557
M2X 18V - 2 batteries 2,0 Ah Li-lon - Mother jaw - Inserts TH16 / TH20 / TH26 / TH32	590 x 390 x 140	7,770	253558
M2X 18V - 2 batteries 2,0 Ah Li-lon - Mother jaw - Inserts U16 / U20 / U25	590 x 390 x 140	7,410	253559

Composition	Size mm	Kg	Ref.
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts U16 / U20 / U25 / U32	590 x 390 x 140	7,490	253560
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V15 / V18 / V22	590 x 390 x 140	7,395	253561
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V12 / V14 / V16 / V18 / V22	590 x 390 x 140	7,740	253562
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V12 / V15 / V18 / V22 / V28	590 x 390 x 140	7,665	253563
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V15 / V18 / V22 / V28	590 x 390 x 140	7,565	253564
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts TH16 / TH18 / TH20 / TH26	590 x 390 x 140	7,800	253565
M2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts R1/4" / R3/8" / R1/2" / R5/8"	590 x 390 x 140	7,580	253566
M2X 18V - 1 battery 2,0 Ah Li-Ion - Without mother jaw	590 x 390 x 140	5,390	253568
M2X 18V - 1 battery 2,0 Ah Li-Ion - Mother jaw	590 x 390 x 140	6,500	253569

#### Capacities

Copper: Ø 12 - 28 mm / Ø 1/4 - 1". Stainless steel: Ø 12 - 28 mm. PER, PEX: Ø 12 - 32 mm (inserts) - 40 mm (mini crimping jaws TH-U). Multilayer: Ø 12 - 32 mm (inserts) - 40 mm (mini crimping jaws TH-U). Electro-zinc steel (or carbon steel): Ø 12 - 28 mm.

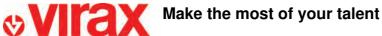
#### **Delivered with**

- 1 or 2 Lithium-Ion 18 V batteries - 2,0 Ah, 1 fast charger (except ref. 253552 and 253572).

- 1 mother jaw (except ref. 253550, 253552, 253568, 253570, 253572 and 253588). Mother jaw alone: ref. 753834.
- In Virabox (590 x 380 x 140 mm, ref. 753544) could contain 6 inserts sets, 2 compact jaws, 2 batteries, 1 charger.

#### Tips

A maintenance is mandatory every 20 000 cycles. Anticipate it by checking the remaining number of cycles before maintenance with the application.



# 2535 : Viper® L2X Electro-mechanical Press Fitting Machine

# Advantages

**Crimping lit and under control:** the LED ring lights up the work area at 360° and indiciates if the crimping is correct. **A compatible and high-performance CAS battery:** 18V Lithium-Ion technology compatible with more than 300 machines from CAS partners (Cordless Alliance System). **Bluetooth® Application:** Your crimping machine communicates with your smartphone via the VIR-APP application.

20kN electromechanical compact and light crimping machine, with automatic piston return.

#### 2 machines to better meet your need:

- M2X: "gun" shape is lightweight and handy.
- L2X: "in line" shape is compact and nice to reach fittings in difficult access.

#### Modular to your need with 2 crimping solution:

- Mother jaw + inserts: compact, lightweight, easy to store and transport.

- Compact jaws: size and weight optimized to one profile/one diameter, allow crimping in very tight spaces.

#### A smart crimping for maximum safety:

- Automatic checking of the effort with a micro-processor while crimping.
- The circular LED ring indicates if the crimping is correct, the battery charge level or the
- need to make the preventive maintenance (20 000 cycles).

- Cycle starts only if the battery is enough charged.

#### High performance CAS Lithium-Ion battery:

- Increased durability: permanent monitoring of each cell while charging ensures a longer battery lifetime.

- Fast and safe charging: ventilated charger for a constant temperature while charging.

- Anticipation for charging: battery charge level indicator.

- Reliable lifetime: long storage possible with almost no self-discharge.

#### Easy to work with and comfortable:

- Only one button to switch on and start crimping ; automatic shutdown of the machine to save energy.

- Quick crimping cycle ; simple and fast changing of inserts or compact jaws.

- Lightweight (2,1 kg with batterie), optimized size (only 33 cm long with jaw) and gravity center ideally placed, are essential to make a lightweight, compact and handy tool.

- Optimized ergonomic: Soft Touch® anti-slip grip ; 360° rotating head.

- Maximum lightening with no dark area: the circular LED ring around the jaw lights up the work area at 360°.

#### More efficiency with the application VIR-APP:

- Checking of the number of cycles already done or before the next maintenance.

- Customization of the brightness and the time before stand-by of your crimping machine to optimize comfort at work.

- Creation of job report with essential data (number of crimping, pictures, customer details).

In option, a CAS 18V - 4,0Ah Lithium-Ion HD battery (High Density) ref. 253541.

Sizes L2X (with batterie, without jaw): 322 x 121 x 81 mm.

View all systems compatible with VIRAX inserts and jaws on our web site or at the end of our catalogue.







Composition	Size mm	Kg	Ref.
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Without mother jaw	590 x 390 x 140	5,725	253570
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw	590 x 390 x 140	6,835	253571
L2X 18V - Without battery - Without mother jaw	590 x 390 x 140	4,385	253572
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts RFP12 / RFP16 / RFP20	590 x 390 x 140	7,415	253574
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts RFP16 / RFP20 / RFP25	590 x 390 x 140	7,555	253575
L2X 18V - 2 batteries 2,0 Ah Li-lon - Mother jaw - Inserts RFP16 / RFP20 / RFP25 / RFP32	590 x 390 x 140	7,685	253576
L2X 18V - 2 batteries 2,0 Ah Li-lon - Mother jaw - Inserts TH16 / TH20 / TH26	590 x 390 x 140	7,545	253577
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts U16 / U20 / U25	590 x 390 x 140	7,305	253579

Composition	Size mm	Kg	Ref.
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V15 / V18 / V22	590 x 390 x 140	7,290	253581
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V12 / V14 / V16 / V18 / V22	590 x 390 x 140	7,635	253582
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts V15 / V18 / V22 / V28	590 x 390 x 140	7,640	253584
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts TH16 / TH18 / TH20 / TH26	590 x 390 x 140	7,695	253585
L2X 18V - 2 batteries 2,0 Ah Li-Ion - Mother jaw - Inserts R1/4" / R3/8" / R1/2" / R5/8"□	590 x 390 x 140	7,685	253586
L2X 18V - 1 battery 2,0 Ah Li-Ion - Without mother jaw	590 x 390 x 140	5,290	253588
L2X 18V - 1 battery 2,0 Ah Li-Ion - Mother jaw	590 x 390 x 140	6,400	253589

#### Capacities

Copper: Ø 12 - 28 mm / Ø 1/4 - 1". Stainless steel: Ø 12 - 28 mm. PER, PEX: Ø 12 - 32 mm (inserts) - 40 mm (mini crimping jaws TH-U). Multilayer: Ø 12 - 32 mm (inserts) - 40 mm (mini crimping jaws TH-U). Electro-zinc steel (or carbon steel): Ø 12 - 28 mm.

#### **Delivered with**

- 1 or 2 Lithium-Ion 18 V batteries 2,0 Ah, 1 fast charger (except ref. 253552 and 253572).
- 1 mother jaw (except ref. 253550, 253552, 253568, 253570, 253572 and 253588). Mother jaw alone: ref. 753834.
- In Virabox (590 x 380 x 140 mm, ref. 753544) could contain 6 inserts sets, 2 compact jaws, 2 batteries, 1 charger.

#### Tips

A maintenance is mandatory every 20 000 cycles.

Anticipate it by checking the remaining number of cycles before maintenance with the application.



#### Virax, French manufacturer

In its Production Centre extending over more than 20,000 m<sup>2</sup> situated in Epernay, France, Virax manufactures tools and machines designed by its R&D Center to meet the requirements of professionals. Plasturgy, machining, milling, grinding, assembly and painting, all these activities are performed on site for manufacturing control and quality.

# 2532 : Viper® P25+ Battery-Powered Hydraulic Press Fitting Machine

# Advantages

Light: Only 4 kg with the battery. Quick: very short press fitting cycle (about 5 sec.), with automatic piston return. Practical: 2 frontal lights to light the part to press.

#### Handy and effective:

Hydraulic press fitting machine 32 kN, with 360° pivoting head and automatic piston return. Lightweight and fast cycle guaranteeing effective and easy work for the user in all working conditions.

Anti-slip Soft Touch® ergonomic handle. Temperature of use between -10° C and +60° C.

#### Smart with its electronic card:

Crimping cycle end or interruption indicator Battery charge indicator Cycle service indicator at 20 000 cycles with early warning at 19 500. Automatic machine shutdown to save batteries.

#### Safety focus:

Crimping clamps locked by a lever at 180° to prevent untimely locking Press fitting machine locked when battery charge insufficient to make a complete cycle The user may stop crimping at any time with the emergency stop button

**Li-Ion 18V / 3 Ah battery:** increased crimping time, resists to cold (down to -10°C), Soft Touch® protection reinforcements, minimum auto-discharge and no memory effect. Battery platform common with the VIPER® M21+ press fitting machine.

Size (with battery): 411 x 249 x 93 mm.

View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.





Description	Size mm	Crimping force kN	Kg	Ref.
Viper® P25+ 18V – 2 Li-Ion batteries 3Ah	590 x 390 x 140	32-34	8,700	253261
Viper® P25+ 18V – 1 Li-Ion batterie 3Ah	590 x 390 x 140	32-34	8,050	253263

-				
Ca	na	CI	П	es
~~~	~~			~~

Copper: Ø 12 - 54 mm / Ø 1/4 - 1.3/8". Stainless steel: Ø 12 - 54 mm. PER/PEX: Ø 12 - 32 mm. Multilayer: Ø 12 - 110 mm. Electro-zinc steel (or carbon steel): Ø 12 – 54 mm.

#### **Delivered with**

Ref. 253261:

- 2 Li-Ion batteries 18 V - 3 Ah. - 1 fast 85 min. charger. - Without crimping jaws. - In a case.

- 1 Li-Ion batterie 18 V - 3 Ah. - 1 fast 85 min. charger. - Without crimping jaws. - In a case.



#### Go to www.virax.com

To find a product sheet, a safety data sheet or exploded views, **Go to our web site.** 

For	Description	Kg	Ref.
Viper® M2X / Viper® L2X / Eurostem® III	Battery 18 V - 2 Ah Li-Ion Power CAS	0,465	253540
Viper® M2X / Viper® L2X / Eurostem® III	Battery 18 V - 4 Ah Li-Ion HD CAS	0,660	253541
□Viper® M2X / Viper® L2X / Eurostem® III	240 V Charger EU - for 18 V battery CAS	0,580	253542
Viper® M2X / Viper® L2X / Eurostem® III	240 V Charger UK - for 18 V battery CAS	0,580	253543
Viper® M2X / Viper® L2X / Viper® M21+ / Viper® ML21+	DMother jaw	1,100	753834
Viper® M21+ / Viper® ML21+ / Viper® P25+	Battery 18 V - 3 Ah Li-ion	0,790	253505

0,580	253543		Viper® M20+ / P22+	230 V Charger - for 14,4 V battery - 2,4 Ah Li-Ion
1,100	753834		Viper® M20+ / P22+	Mains adaptor 230V - 14,4V
0,790	253505			
		-		

For

ML21+

ML21+ / Viper® P25+

Viper® M20+ / P22+

### 2529 - 2532 : Inserts for Models i10 / i26 / M20+ / M21+ / ML21+ / M2X / L2X

Lightweight. Compact. Very good value for money. Very high strength steel (33 HRC). Very precise crimping.

Inserts in offset version for certain profiles, allowing crimping as close as possible to an obstacle (e.g. along a wall).

\*\* For crimping systems >B< MaxiPro Conex Bänninger

5 year guarantee (except profile).

\* Viper® i10 with TH26 Profile: only for Barbi, Comap, Frankische, Giacomini, Idrosanitaria Bonomi, Industrial Blansol, Ipalpex, Somatherm, Tiemme, Valsir.

View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.

52	
7	SP

Profile	Ø	Туре	i10	i26	M20+	X/L2X	Kg	Ref.
М	12	Off centred	-	-	ok	ok	0,220	252951
М	15	Off centred	-	-	ok	ok	0,205	252952
М	18	Off centred	-	-	ok	ok	0,185	252953
М	22	Standard	-	-	ok	ok	0,185	252954
М	15-18-22	-	-	-	ok	ok	0,850	990156
М	28	Standard	-	-	-	ok	0,140	252955
G	16	Standard	-	ok	-	ok	0,270	252981
G	20	Standard	-	ok	-	ok	0,240	252982
G	26	Standard	-	ok	-	ok	0,190	252983
G	32	Standard	-	-	-	ok	0,160	252984
HA	16	Standard	ok	ok	ok	ok	0,410	252986
HA	20	Standard	ok	ok	ok	ok	0,360	252987
HA	26	Standard	-	-	ok	ok	0,290	252988
HA	16-20-26	Standard	-	-	ok	ok	1,300	990010
HA	32	Standard	-	-	ok	ok	0,180	252989



Kg

0,450

0,800

0,645

0,740

0,980

Ref.

253506

253507

253244

251844

252938

Description

Li-ion

V - Li-ion battery Battery 14,4 V - 2,4 Ah

Li-Ion

Viper® M21+ / Viper® Battery 18 V - 1,5 Ah -

Viper® M21+ / Viper® 240 V Charger - for 18



2532 - 2535 : Accessories for Press Fitting Machines



M21+/ML21+/M2

Profile	Ø	Туре	i10	i26	M20+	M21+/ML21+/M2 X/L2X	Kg	Ref.
H-ML	14	Standard	ok	ok	ok	ok	0,190	252942
H-ML	16	Standard	ok	ok	ok	ok	0,180	252943
H-ML	20	Standard	ok	ok	ok	ok	0,160	252946
H-ML	26	Standard	-	ok	ok	ok	0,130	252948
H-ML	16-20-26	Standard	-	ok	ok	ok	0,770	990066
H-ML	32	Standard	-	ok	ok	ok	0,080	252949
R **	1/4"	Off centered	-	-	ok	ok	0.240	253282
R **	3/8"	Off centered	-	-	ok	ok	0,190	253283
R **	1/2"	Off centered	-	-	ok	ok	0,180	253284
R **	5/8"	Off centered	-	-	ok	ok	0,165	253285
R **	1/4"-3/8"-1/2"-5/8 "	Off centered	-	-	ok	ok	0,890	990182
R **	3/4"	Standard	-	-	ok	ok	0,160	253286
R **	7/8"	Standard	-	-	ok	ok	0,135	253287
RF-P	12	Standard	ok	-	ok	ok	0,220	253251
RF-P	16	Standard	ok	ok	ok	ok	0,190	253252
RF-P	18	Standard	ok	ok	ok	ok	0,190	253257
RF-P	20	Standard	ok	ok	ok	ok	0,170	253253
RF-P	12-16-20	Standard	ok	ok	ok	ok	0,850	990020
RF-P	25	Standard	-	ok	ok	ok	0,150	253254
RF-P	16-20-25	Standard	-	ok	ok	ok	0,780	990058
RF-P	32	Standard	-	ok	ok	ok	0,130	253255
TH	14	Standard	ok	ok	ok	ok	0,290	252902
TH	14	Off centred	-	-	ok	ok	0,290	253266
TH	15	Standard	ok	ok	ok	ok	0,285	252903
TH	16	Standard	ok	ok	ok	ok	0,280	252904
TH	16	Off centred	-	-	ok	ok	0,280	253268
TH	17	Standard	ok	ok	ok	ok	0,270	252905
ТН	18	Standard	ok	ok	ok	ok	0,260	252906
TH	20	Standard	ok	ok	ok	ok	0,240	252907
ТН	20	Off centred	-	-	ok	ok	0,240	253271
TH	25	Standard	-	ok	ok	ok	0,200	252908
ТН	26	Standard	ok*	ok	ok	ok	0,190	252909
TH	16-20-26	Standard	ok*	ok	ok	ok	0,850	990019
TH	32	Standard	-	-	ok	ok	0,110	252911
U	14	Off centred	-	-	ok	ok	0,200	253281
U	16	Standard	ok	ok	ok	ok	0,180	252915
U	16	Off centred	-	-	ok	ok	0,170	253272
U	18	Standard	ok	ok	ok	ok	0,170	252916
U	20	Standard	ok	ok	ok	ok	0,160	252917
U	20	Off centred	-	-	ok	ok	0,160	253273
U	25	Standard	-	ok	ok	ok	0,130	252918
U	16-20-25	Standard	-	ok	ok	ok	0,770	990063
U	32	Standard	-	-	ok	ok	0,080	252919
V	12	Standard	-	ok	ok	ok	0,180	252961
V	12	Off centred	-	-	ok	ok	0,170	253274
V	14	Standard	-	ok	ok	ok	0,170	252966
V	14	Off centred	-	-	ok	ok	0,170	253275
V	15	Standard	-	-	ok	ok	0,165	252962
V	15	Off centred	-	-	ok	ok	0,170	253276



Profile	Ø	Туре	i10	i26	M20+	M21+/ML21+/M2 X/L2X	Kg	Ref.
V	16	Standard	-	ok	ok	ok	0,160	252967
V	16	Off centred	-	-	ok	ok	0,170	253277
V	18	Standard	-	-	ok	ok	0,160	252963
V	18	Off centred	-	-	ok	ok	0,170	253278
V	22	Standard	-	-	ok	ok	0,130	252964
V	12-15-18-22	Standard	-	-	ok	ok	0,940	990059
V	12-14-16-18-22	Standard	-	-	ok	ok	1,100	990034
V	28	Standard	-	-	ok	ok	0,090	252965

### 2525 : Mini crimping jaws for M21+ / ML21+ / M2X / L2X

Dedicated to the Viper® M21+ / ML21+ / M2X / L2X press fitting machine.

Extremely compact and light, allows for crimping in narrow places and between collectors. Made in tempered steel, resistant to heavy-stress and corrosion.

5 year guarantee (except profile).

View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.



Ø mm	Profile	Kg	Ref.
16	G	1,800	252529
20	G	1,800	252530
26	G	1,800	252531
32	G	1,800	252532
40	G	1,800	252556
12	М	1,800	252507
15	М	1,800	252508
18	М	1,800	252509
22	М	1,800	252510
12-15-18-22	М	8,800	252595
12	RF	1,800	252545
16	RF	1,800	252546
18	RF	1,800	252547
20	RF	1,800	252548
12-16-20	RF	5,500	252590
25	RF	1,800	252549
32	RF	1,800	252550
14	TH	1,800	252512
16	TH	1,800	252514
18	ТН	1,800	252516
20	TH	1,800	252517

Ø mm	Profile	Kg	Ref.
25	TH	1,800	252518
26	TH	1,800	252519
16-20-26	TH	5,500	252591
32	TH	1,800	252520
40	TH	1,800	252521
16	U	1,800	252523
18	U	1,800	252524
20	U	1,800	252525
25	U	1,800	252526
16-20-25	U	5,500	252592
32	U	1,800	252527
40	U	1,800	252528
12	V	1,800	252500
14	V	1,800	252501
15	V	1,800	252502
16	V	1,800	252503
18	V	1,800	252504
22	V	1,800	252505
12-14-16-18-22	V	8,800	252593
12-15-18-22-28	V	8,800	252594
28	V	1,800	252506



### Discover our YouTube channel

and our product demonstration videos! /VIRAX

### 2531: Mother Jaw 32 kN for Inserts for model P25+

# Advantages

Weight and space gain thanks to the insert concept. Compatible: Use with Virax inserts.

**Versatile:** Adaptable to most electrohydraulic machines in the market.

#### Economical:

The system [mother jaw + inserts] pays for itself promptly. On average, a set of inserts is twice cheaper than standard crimping jaws.

#### Practical:

Light and compact in the toolbox instead of standard crimping jaws. On average, an installation requires 5 sets of inserts (different profiles or diameters). The weight of the mother jaw and 5 sets of inserts is only 2.6 kg, instead of over 10 kg for 5 standard crimping jaws.

#### Compatible:

Use with Virax inserts on your Virax Viper® P25+ press-fitting machine. Ball locking is a good compromise between holding and easy extraction of inserts.

#### Versatile:

The Virax 32 kN mother jaw is assembled on market-standard 32-34 kN power electrohydraulic machines, such as the Virax VIPER® P25+.

Dimensions (mother jaw only): 151 x 103 x 39 mm. Weight (mother jaw only): 1.480 kg.

Not compatible with electromechanical machines, such as the Virax Viper® P30+.

View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.





Description	Size mm	Crimping force kN	Kg	Ref.
Mother Jaw 32 kN alone	390 x 190 x 120	32	2,390	253163
Mother Jaw 32 kN + Inserts TH16/TH20/TH26	390 x 190 x 120	32	3,100	253164
Mother Jaw 32 kN + Inserts V12/V14/V16/V18/V22	390 x 190 x 120	32	3,190	253165
Mother Jaw 32 kN + Inserts M12/M15/M18/M22/M28	390 x 190 x 120	32	3,325	253166
Mother Jaw 32 kN + Inserts U16/U20/U26	390 x 190 x 120	32	2,860	253167
Mother Jaw 32 kN + Inserts HA16/HA20/HA26	390 x 190 x 120	32	3,450	253168
Mother Jaw 32 kN + Inserts RF-P12/RF-P16/RF-P20	390 x 190 x 120	32	2,970	253169
Mother Jaw 32 kN + Inserts RF-P12/RF-P16/RF-P20/RF-P/25	390 x 190 x 120	32	3,120	253170

#### Capacities

Copper: Ø 12 – 28 mm. Stainless steel: Ø 12 – 28 mm. PER, PEX: Ø 12 – 32 mm. Multilayer: Ø 12 – 32 mm. Electro-zinc steel (or carbon steel): Ø 12 – 28 mm.

#### **Delivered with**

The mother jaw itself, ref. 253163, and the mother jaw + insert kits are delivered in Virabox case, with 10 slots for insert sets.



#### 2530 - 2531 : Crimping Jaws for Models P10 / P22+ / P25+ / P30+

Adaptable to all currently available machines. 20 % harder than traditional jaws. Very high strength steel (33 HRC). Strength tests performed with a pressure of between 12T and

15T applied 10,000 times. 5 year guarantee (except profile).

- View all systems compatible with VIRAX inserts and clamps at the end of the catalogue.
- \* Original Uponor. Crimping ring must be used with the activator jaw 253110.
- \*\* Activator jaw for ref. 253126, 253127, 253128, 253129.

\*\*\* For crimping systems >B< MaxiPro Conex Bänninger





Ømm	Profile	Kg	Ref.	Ømm	Profile	Kg	Ref.
16	G (Geberit Original)	1,900	253130	1.3/8"	R ***	1,750	25304
20	G (Geberit Original)	1,900	253131	12	TH	1,900	25300
26	G (Geberit Original)	1,900	253132	14	ТН	1,900	25300
32	G (Geberit Original)	1,900	253133	15	TH	1,900	25300
40	G (Geberit Original)	1,900	253134	16	ТН	1,900	25300
50	G (Geberit Original)	1,900	253135	17	ТН	1,900	25300
12	Н	1,900	253090	18	ТН	2,040	25300
14	Н	1,900	253091	20	TH	1,980	25300
16	Н	1,900	253092	25	ТН	1,900	25300
20	Н	1,900	253095	26	TH	1,900	25300
12-16-20	Н	7,000	990113	16-20-26	TH	6,900	99003
25	Н	1,900	253096	32	TH	1,900	25301
26	Н	1,900	253097	40	TH	1,900	25301
32	Н	1,900	253098	50	TH (3 ELTS)	5,000	25301
12	HA	1,900	253102	63	TH (3 ELTS)	4,856	25301
16	HA	1,900	253104	14	U	1,900	25311
20	HA	1,900	253105	16	U	1,900	25311
26	HA	1,900	253106	18	U	1,900	25311
16-20-26	HA	7,400	990062	20	U	1,900	25311
32	HA	1,900	253107	25	U	1,900	25311
40	HA	1,900	253108	16-20-25	U	6,300	99005
12	М	1,900	253051	32	U	1,900	25311
14	М	1,900	253050	40	U	1,900	25311
15	М	1,900	253052	50	U	1,900	25311
16	М	1,900	253059	63	U	5,030	25311
18	М	1,900	253053	63	U*	2,300	25312
22	М	1,900	253054	75	U*	2,640	25312
28	М	1,900	253055	90	U*	3,310	25312
12-15-18-22-28	М	10,200	990056	110	U*	3,890	25312
35	М	1,900	253056	63-110	U**	2,430	25311
42	M (3 ELTS)	5,200	253033	12	V	1,900	25306
54	M (3 ELTS)	5,000	253034	14	V	1,900	25306
1/4"	R ***	1,750	253040	15	V	1,900	25306
3/8"	R ***	1,750	253041	16	V	1,900	25306
1/2"	R ***	1,750	253042	18	V	1,900	25306
5/8"	R ***	1,750	253043	22	V	1,900	25306
1/4"-3/8"-1/2"-5/8"	R ***	8,720	990180	12-14-16-18-22	V	10,500	99003
3/4"	R ***	1,750	253044	28	V	1,900	25306
7/8"	R ***	1,750	253045	35	V	1,900	25306
1"	R ***	1,750	253046	42	V	1,900	25306
1.1/8"	R ***	1,750	253047	54	V	1,900	25306
/4"-3/8"-1/2"-5/8"-3/4" -7/8"-1"-1.1/8"	R ***	17,330	990181				



## Virax, French manufacturer

Virax is located in Epernay, the Champagne capital, and was founded more than 100 years ago with the launch of its famous "Virax threader", the threader that "Turns around the Axis". Today, the production facility covers more than 20,000 m<sup>2</sup>.

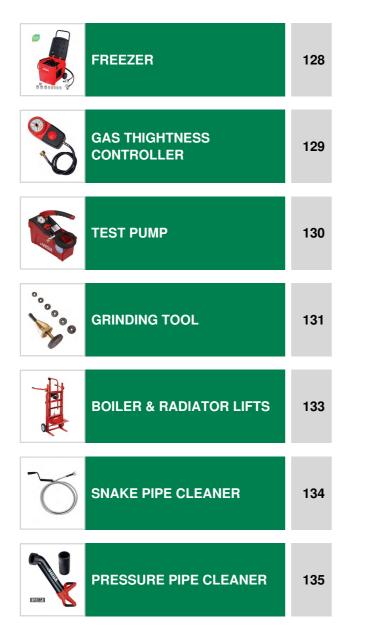


(2)



PUMP-ACTION PIPE CLEANER 290210





CLEANER         Image: Cleane	36
CLEANER 14	38
	46
CLEANING PUMP	49
	54
HYGIENE 1	58



# FREEZER

### 2210 : Siberia® Electric Pipe Freezer 2"

# Advantages

**Economical:** no gas cylinder required. **Easy to carry:** thanks to its wheels and folding handle. **Reduced freezing time:** for faster intervention. **Simple to use** with the thermometer integrated to its freezing heads.

# The Siberia ${\ensuremath{{\rm B}}}$ allows radiators and values to be replaced without emptying the water from the heating system.

It quickly forms an ice plug in the pipe, without polluting the environment thanks to the effectiveness of R290 gas: environmentally friendlier than R404A refrigerant but without compromising on performance.

A thermometer is integrated to the freezing heads to monitor the freezing process. Head integrated tightening screws for easier fastening.

#### Technical features : Motor: 230V ~50Hz

Refrigerating power: 309W at -25°C Protection rate: IP 20 Coolant: R290 55g





Description	Copper tube ext. Ø mm	Copper tube ext. Ø "	Iron tube ext. Ø ext. "	Kg	Ref.
Siberia® Electric Pipe Freezer	12 - 14/15 - 16 - 18 - 22 - 28 - 35 - 42	1/2 - 5/8 - 7/8 - 1.3/8	1/4 - 3/8 - 1/2 - 3/4 - 1 - 1.1/4 - 2	40,000	221070

### Capacities

Copper Tube: Ø 10 mm - 3/4" to Ø 54 mm - 2.1/8". Iron Tube: Ø 1/8" to Ø 2".

#### Delivered with

16 adaptors diameter 12 - 14/15 - 16 - 18 - 22 - 28 - 35 - 42 (8 pairs), 1 bottle of thermo-conductive paste (ref. 221069).

#### 2210 : Accessories for Siberia® Pipe Freezer

Thermo-conductive paste: for better cold conduction and improved pipe freezing. 150 mL.

Adaptors: sold in pairs.



Description	Standard / Option	Copper tube ext. Ø mm	Copper tube ext. Ø "	Iron tube ext. Ø ext. "	Kg	Ref.
Thermo-conductive paste	Supplied with Siberia®	-	-	-	0,130	221069
2 x Adaptors GR I	Option	10	3/8	1/8	0,385	221025
2 x Adaptors GR II	Supplied with Siberia®	12	1/2	-	0,755	221026

Description	Standard / Option	Copper tube ext. Ø mm	Copper tube ext. Ø "	Iron tube ext. Ø ext. "	Kg	Ref.
2 x Adaptors GR III	Supplied with Siberia®	14 / 15	-	1/4	0,345	221027
2 x Adaptors GR IV	Supplied with Siberia®	16	5/8	-	0,340	221028
2 x Adaptors GR V	Supplied with Siberia®	18	-	3/8	0,335	221029
2 x Adaptors GR VI	Option	20	3/8	-	0,320	221030
2 x Adaptors GR VII	Supplied with Siberia®	22	7/8	1/2	0,290	221031
2 x Adaptors GR VIII	Option	-	1	-	0,280	221032
2 x Adaptors GR A	Supplied with Siberia®	28	-	3/4	0,675	221033
2 x Adaptors GR B	Option	-	1.1/8	-	0,695	221034
2 x Adaptors GR C	Option	32	1.1/4	-	0,645	221035
2 x Adaptors GR D	Supplied with Siberia®	35	1.3/8	1	0,575	221036
2 x Adaptors GR F	Option	-	-	1.1/2	0,315	221038
2 x Adaptors GR E	Supplied with Siberia®	42	-	1.1/4	0,430	221037
2 x Adaptors GR G	Option	54	2.1/8	-	0,190	221039

# **GAS THIGHTNESS CONTROLLER**

## 2620 : Gas Tightness Controller

# **Advantages**

Very compact: holding in only one hand and being able to be transported easily.
Strong: very resistant composite material.
Ergonomic: easily transportable in its storage bag.
Modern design.
Checks the tightness seal of a gas installation in a pressure less than 50 mbar. its automatic limiting device of pressure avoids any risk of error.

Dimensions mm: 165 x 80 x 80.

Light: 1.280 kg. Supplied with:

- 1 coupling hose,

- brass couplings:1/2 G female, 7/8 G male, propan 20/150 male,

- box of seals,

- 1,5 V battery (LR6/AA),

- protective carrying bag.





F	Pression mbar	Coupling "	Resolution mbar	Kg	Ref.
	0 to 60	1 fitting for gas cooker, 1/2 G female, 7/8 G male gasmeter outlet connection, 1 male propan fitting 20/150	1	1,280	262080



### Virax is committed to WEEE management

As a manufacturer, Virax has established a process for the recovery of Waste Electrical and Electronic Equipment (WEEE) in accordance with European Directive 2012/19/EU. Virax organises the management and recycling of WEEE at end-of-life, as part of its commitment to the environment.



#### 2626 : Leak Detector

For testing all gas or compressed air circuits. Replaces soapy water for detecting leaks in gas installations. Will show up even the smallest leaks when sprayed on the surface to be checked.

Packaging	Kg	Ref.
1 spray can - 400 ml	0,480	262630



# **TEST PUMP**

## 2620 : Manual Test Pump

# Advantages

**EA85 anti-limestone patent**: to avoid blockages caused by over-hard water.

**Easy to use**: for pumping, testing and bleeding with a single button.

Small size for the tightest of locations.

3 pump models for your seal tests (for leak testing on water installations- plumbing, individual central heating, etc.).

Virax EA85 anti-limestone patented system: Prevents blockages due to hard water, or other deposits, on the ball in the piston (50 bar models only).

Plastic tank: light and shock resistant (max.: 4.3 kg).

Accurate result with a 1.6 class manometer. Easier reading with 1 bar grading.

High pressure hydraulic hose (1.5 m). Practical implementation.

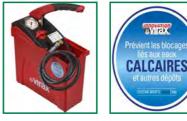
Nylon strainer (filter) on intake **to block particles** exceeding 0.1 mm diameter to protect the pump mechanism and the customer's installation against dirt.

 $\label{eq:soft_constraint} Soft \ \mbox{Touch} \ \mbox{ergonomic lever for working comfortably}.$ 

Easy to carry thanks to a lever locking mechanism.

Fluids accepted: water, Glycol (requires rinsing after use), oil (requires rinsing after use).





Description	Presssure bar	Coupling "	Tank capacity L	Kg	Ref.
Manual test pump	50	1/2 - 3/8	5	3,650	262035
High volume test pump	50	1/2 - 3/8	10	4,100	262015
High pressure test pump	100	1/2 - 3/8	10	4,290	262005



### Much more than just quality, here's the Virax commitment!

Virax commits to total, permanent and durable satisfaction of users and therefore applies a process based on:

A proactive product plan. A constant innovation process. A focus on permanent improvement. Improved customer services. An assurance of optimum availability rate. **Customer satisfaction, the heart of our commitments.** 



## 2620 : Electric Test Pump

# Advantages

Sturdy: Structure and handle in lightweight ABS. Powerful: 6 l/min - 40 bar. Autonomous: Can suck fluid from a tank.

For leak testing on water installations (plumbing, individual central heating...). Fast and effective work.

Accurate results with its glycerine manometer with 1 bar grading. Easy to carry thanks to its compact design and carry handle. Shock and corrosion resistant.

Self-extracting up to 1 m if no water intake available. Fluids accepted: water, Glycol (requires rinsing after use).





5



Description	Presssure bar	Coupling "	Self-extracting capacity m	Kg	Ref.
Electric test pump	40	1/2	1	18,000	262070

# **GRINDING TOOL**

#### 2621 : Rodor® Tap Reamer

Tap seat grinding tool. Spring holds cutter in contact with the tap seating. Cutter with serrated underside, screws on to cutter-holder.

M7 thread. Taper ensures a correct fit on the head of the tape.

Cutter-holder no.1 : internally and externally threaded tapered cone.

Cutter-holder no.2: triple cone: for servicing of bath, basin, kitchen and bib taps.

Characteristic	Kg	Ref.
Cutter-holder no.1 and cutters Ø 11 - 13 - 14 - 15 - 16 - 18 - 20 - 22 mm	0,305	262191
Cutter-holder no.1	0,235	262181
Cutter-holder no.2	0,390	262182



#### 2621 : Cutter For Rodor Tap Reamer

Cutter with serrated underside, screws on to cutter-holder. M7 thread for cutter-holders n° 1 & 2.



# MAINTENANCE

Cutter-holder	Ø mm	Kg	Ref.
no. 1, 2, 3 or 5	11	0,005	262111
no. 1, 2, 3 or 5	12	0,005	262112
no. 1, 2, 3 or 5	13	0,005	262113
no. 1, 2, 3 or 5	14	0,010	262114
no. 1, 2, 3 or 5	15	0,010	262115
no. 1, 2, 3 or 5	16	0,010	262116
no. 1, 2, 3 or 5	17	0,010	262117
no. 1, 2, 3 or 5	18	0,010	262118

Cutter-holder	Ø mm	Kg	Ref.
no. 1, 2, 3 or 5	20	0,015	262120
no. 1, 2, 3 or 5	22	0,020	262122
no. 1, 2, 3 or 5	23	0,020	262123
no. 1, 2, 3 or 5	24	0,025	262124
no. 1, 2, 3 or 5	26	0,025	262126
no. 1, 2, 3 or 5	30	0,040	262130
no. 1, 2, 3 or 5	32	0,040	262132

### 2645 : Recti 9® Tap Reamer Tool Set

Tap seat refacing tool. Cutter produces a high quality ground finish. M8 thread. Brass components. Micrometric feed control. Permanent, precise grinding control.

Characteristic	Kg	Ref.
Flat cutters: Ø 15 - 16 - 24 mm - Tapered cutter: Ø 15 mm - 3 Adaptors (264501, 264502, 264503)	2,100	264550
Flat cutters: Ø 15 - 16 - 18 - 19 - 21 - 24 mm - Tapered cutter: Ø 15 mm - 9 Adaptors (264501 to 264509) - 3 Extensions (264540, 264542, 264544)	3,600	264560
without accessories	0,450	264500

## 2645 : Accessories for Recti 9® Tap Reamer Tool

Ref. 264510, Ref. 264511, Ref. 264513, Ref. 264514 for fitting onto Porcher single hole tap.

Description	Ø mm	L mm	Kg	Ref.
Adaptor	3/8" - 17/150	-	0,210	264501
Adaptor	1/2" - 18/150	-	0,215	264502
Adaptor	3/4" - 20/150	-	0,225	264503
Adaptor	19/150 - 21/150	-	0,220	264504
Adaptor	23/150 - 26/150	-	0,225	264505
Adaptor	18/125 - 19/125	-	0,215	264506
Adaptor	20/125 - 21/125	-	0,220	264507
Adaptor	23/125 - 25/100	-	0,230	264508
Adaptor	20/100 - 22/100	-	0,220	264509
Adaptor	□18/125	-	0,170	264510
□Adaptor	□18/150	-	0,165	264511
Extension	-	10	0,015	264540

Description	Ø mm	L mm	Kg	Ref.
Extension	-	20	0,020	264542
Extension	-	40	0,035	264544
Cutter	13	-	0,010	264513
Cutter	14	-	0,010	264514
Cutter	15	-	0,010	264515
Cutter	16	-	0,007	264516
Cutter	18	-	0,008	264518
Cutter	19	-	0,010	264519
Cutter	21	-	0,012	264521
Cutter	24	-	0,015	264524
Tapered cutter	15	-	0,011	264535







# **BOILER & RADIATOR LIFTS**

### 2636 : Radiator Lift

# Advantages

Self-braking winch for loads up to 150 kg. An extension to adapt to vertical radiators. Folding handle and winch, practical for storage.

Integrated extension ideal for installing vertical radiators (does not require any tools for mounting).

Integrated telescopic radiator lock for more safety and stability during movement.

Deep tray (22 cm) to accommodate most radiators.

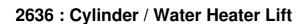
Folding arm and winch to save space during storage.

New self-braking winch for more safety and less effort during handling operations. Numerous protective rubber strips.

- Lifting Height: 0.57 m,

- Overall Width: 0.68 m.

Description	Kg	Ref.
Radiator lift	40,000	263605



# Advantages

**Safe and effortless** thanks to the self-braking winch. **Strong**: load up to 150 kg.

**Space saving** thanks to the folding arms.

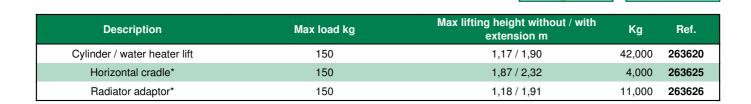
Strong belt to hold the water heater.

Folding arm and winch to save space during storage.
New self-braking winch for more safety and less effort during handling operations.
Integrated extensionfor installation in high location (does not require any tools for mounting).
Accurate: 4 balls under the forks for accurate positioning.
Integrated extension for installation in high location (does not require any tools for mounting).
Numerous protective rubber strips.
Overall width: 0,65 m.

Specific boiler lift accessories:

- Horizontal Cradle\*.

- Radiator adaptor\*: enables a radiator to be installed from a water heater lift. Built for safety and stability when moving blocks-telescopic radiator. Deep tray (19 cm) to accommodate the majority of radiators. \*Compatible only with the cylinder/ water heater lift ref. 263620







# **SNAKE PIPE CLEANER**

#### 2901 : Furet Auger Pipe Cleaner

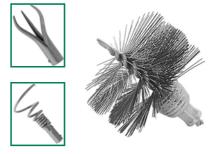
Simple, economical pipe cleaner for everyday use.

Hot-galvanised close wound steel wire cable: very flexible able to follow very tight radius bends (less than 3 times tool diameter). Sleeve to facilitate rotation.



cable Ø mm	L cable m	Pipe Ø mm	Brush type	Kg	Ref.
no. 4 : 15	5,00	80	Claw 42 mm	5,900	290140

### 2901 : Accessories for Furet Auger



Description	For	Use	Ø mm	Lm	Kg	Ref.
Extension	Furet no. 4	-	15	5,00	5,400	290141
Steel brush	Furet no. 3	Finishing tool for scraping	50	-	0,035	290132
Steel brush	Furet no. 4	Finishing tool for scraping	80	-	0,300	290142
Claw	Furet no. 4	To drill through blockages	42	-	0,070	290145
Corkscrew head	Furet no. 4	To retrieve lost objects: cloths, etc	80	-	0,250	290146



## Virax and the environment

Virax is committed to environmental protection and sustainable development, as demonstrated by our ISO certification 14001: 2015 for our environmental management system.

Compliance with the REACH Directive no.1907/2006. Low energy consumption. Dematerialisation of documentary flows and printing control. Waste control and reclaiming. Packaging materials recycled in a partnership with Eco Emballage. Anticipation of pollution risks.

# PRESSURE PIPE CLEANER

### 2902 : Pump-Action Pipe Cleaner

# Advantages

2 robust non-slip Soft Touch® handles.

**Single body**, resistant to impact and domestic pipe cleaning products.

**2 end pieces** for all types of pipe cleaning, easy to put on and take off.

Professional pump-action pipe cleaner for wash hand basins, sinks, showers toilets, etc.. Works in both pressure and suction.

Back and forward movement facilitated by the seal protected by water resistant marine grease.

Interior seal perfectly waterproof to guarantee maximum pressure during difficult pipe cleaning operations.

Specially designed end pieces to facilitate introduction and limit flow back.

Body and end pieces resistant to domestic pipe cleaning products (caustic soda or 20% diluted hydrogen chloride based).

Contents	Kg	Ref.
1 2	2,100	290210





## 2901 : Pipe Cleaner Gun

# Advantages

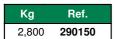
#### Pressure:

up to 6 bars for pipes up to Ø 100 mm. Efficiency: 98% of energy is directed forward to free blocked pipes. Safe: only 2% of released energy acts on the pipe walls.

#### Ideal for blockages far away from the siphon.

This cleaner uses the kinetic energy stored in the cylindrical body (max. 6 bar) to remove blockages formed by grease, soap, wash water, hair, paper, cloth, etc.

For cleaning domestic drainage pipes of max. internal  $\emptyset$  100mm (sinks, wash hand basins, urinals, bath-thubs, etc.), as well as toilet if fitted with the optional extension (290151). Integrated manometer to measure the pressure to be applied. **Supplied in a case.** 







### Virax is committed to a new environmental policy

VIRAX is aware of its environmental role, and speeding up its CSR (Corporate Social Responsibility) action plan in order to maintain a sustainable approach.



### 2901 : Toilet Extension for Pipe Cleaner Gun

Enables toilets to be unblocked by applying the handle directly into the bowl.

Kg	Ref.
0,740	290151

# MANUAL CABLE PIPE CLEANER

### 2905 : Closet Auger

Crank for rotation or back-and-forth movement. Plastic elbow to avoid scratching enamel. Scroll shaped jointed head. Articulated auger head. Double turnsover steel core. Carrying hook. Ref. : Telescopic shaft.

Ø mm	Max. reach cm	Kg	Ref.
12,5	85	2,400	290510
12,5	160	2,700	290520

#### 2905 : Swivel Head for Closet Auger

Kg	Ref.
0,115	290512

### 2906 : Drum-Type Manual Pipe Cleaner

Pipe cleaner. Lacquered metal reel. Fast cable storage. Lock screw. Adjustable anti-ejection system: prevents untimely cable exit and loss. Supplied with a pair of gloves.



Contents	Pipe Ø mm	cable Ø mm	L cable m	Max. reach m	Kg	Ref.
1	25 - 50	6,40	7,50	7,50	2,075	290600
8	25 - 50	6,40	7,50	7,50	17,270	290602

### 2906 : Accessory for Drum-Type Manual Pipe Cleaner

Tools	Ø mm	Lm	Kg	Ref.
Cable and boring gimlet	6,40	7,50	1,230	290605



### 2906 : Professional pipe cleaner VAL 26

# Advantages

Flexible and strong cleaning cables. Handy and light. For use by hand or with a power drill (not supplied).

Manual cable pipe cleaner for piping Ø25-75mm, maximum cable length 10m. Supplied with cleaning cable Ø 7 mm, length 7.5 m, for piping Ø 25-50 mm :

- Highly flexible for fast advance in the piping, even in narrow pipe curves and elbows.
- Jointed auger for easy passage in the elbows.

- High strength, special high grade steel, with steel core.

Handy and light, only 2.7kg cable included.

Used manually for easy obstructions easy to remove.

Used with power drill (not supplied) for tough obstructions:

- Crank removable in a few seconds without tools.

- Hew adapter at the centre of the drum.

- Ergonomic Soft Touch® grip for excellent control in rotation.

Adjustable anti-ejection system: **prevents untimely cable exit and loss** inside the piping. Plastic **anti-shock** and **anti-corrosion** drum with large openings for better viewing of the

cable and faster drying after cleaning.

Chuck Ø 13 mm to tighten cleaning pipes of different diameters.

#### Supplied with a pair of gloves.

Optional capacities with cables Ø 10 mm / length 7.5 m and Ø 8 mm / length 10 m.

Pipe Ø mm	Reach m	Kg	Ref.
25 to 50	7,50	3,350	290640

#### Tips

GARDIEN L'ÉQUILIBRE FORESTIER

After each intervention: clean the cable and protect it against rust with pipe cleaner oil reference 290400.

#### 2906 : Cables for professional pipe cleaner VAL 26



Description	Ø mm	Lm	Steel-cored	Pipe Ø mm	Kg	Ref.
Cable and articulated gimlet	7	7,50	Yes	25 to 50	1,650	290645
Cable and articulated gimlet	10	7,50	Yes	50 to 75	3,450	290646
Cable and articulated gimlet	8	10,00	No	50 to 75	2,500	290647

# Virax is committed to sustainable forest management

All user manuals and advertising brochures are printed on PEFC paper, certifying sustainable and balanced forest management.



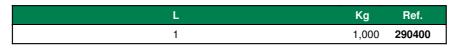




5 🔳 MAINTENANCE

#### 2904 : Pipe Cleaner Oil

Specially formulated for maintaining and cleaning pipe cleaning tools. Avoids oxidation, lubricates, disinfects and deodorises. To be applied after each pipe cleaning operation.





# **ELECTRIC CABLE PIPE CLEANER**

# 2910 : Portable Electric Drum Type Pipe Cleaner VAL 35 / VAL 35E

# Advantages

For pipes Ø 30 to 75 mm. Highly effective thanks to its articulated gimlet (VAL 35E) on steel core cable. Variable speed control.

VAL 35: manual cable feed and return.

VAL 35E: less effort thanks to automatic cable feed and return.

Cable: Ø 8 mm (also exists in Ø 6.3 and 9.5 mm).

Length 7.5 m (also exists in 10.5 and 15 m, depending on diameters). Composed of a robust steel wire rolled around a 49-strand thermally treated metal core. Light alloy casing. Cable feed adjustment knob and handle to lock the cable. Simple cartridge change thanks to its specially designed chuck to adapt to different cable diameters. Motor: 230 V / 275 W / 50 Hz, Reversible right/left, 0 to 400 rpm.

VAL 35 : cable included as standard Ø 8 mm Lg 7,5 m ref. 291013 (non-replacable fixed auger).

VAL 35E : cable included as standard Ø 8 mm Lg 7,5 m ref. 291014 (replacable hinger auger, ref. 291026 only).



FD=-	
------	--

Туре	Pipe Ø mm	cable Ø mm	Feed / Return	Reach m	Kg	Ref.
VAL 35	40 - 50	8	Manual	7,50	11,300	291000
VAL 35E	40 - 50	8	Automatic	7,50	11,920	291001



### Virax Experts

Would you like technical assistance?

Our team of experts is at your disposal to provide you with tips and recommendations on how to get the most out of your Virax products.

From 8.00 am to 12.15 pm and from 1.45 pm to 5.00 pm, Monday to Friday (4.30 pm): +33 (0) 3.26.59.56.82 - experts@virax.com Exploded views and manuals: www.virax.com, Downloads section.

### 2910 : Pipe Cleaner Cable VAL 35 / VAL 35E

VAL 35: cable included as standard Ø 8 mm Lg 7,5 m ref. 291013 (non-replacable fixed auger). VAL 35E: cable included as standard Ø 8 mm Lg 7,5 m réf. 291014 (replacable hinger auger, ref. 291026 only).



5

For	Ø mm	Lm	Tools	Use	Kg	Ref.
VAL 35/35E	6,3	7,50	Boring gimlet	Bath-tubs and showers	2,050	291011
VAL 35/35E	6,3	15,00	Boring gimlet	Bath-tubs and showers	3,870	291012
VAL 35/35E	8	7,50	Boring gimlet	Basins, sinks	2,700	291013
VAL 35/35E	8	7,50	Articulated gimlet	Basins, sinks	2,660	291014
VAL 35/35E	9,5	10,50	-	Roof drains, toilets	4,380	291016

### 2910 : Tools for Pipe Cleaner VAL 35 / VAL 35E

Check that your tool diameter matches your cable diameter.

VAL 35: cable included as standard Ø 8 mm Lg 7,5 m ref. 291013 (non-replacable fixed auger). VAL 35E: cable included as standard Ø 8 mm Lg 7,5 m ref. 291014 (replacable hinger auger, ref. 291026 only).



Description	Characteristic	Use	cable Ø mm	Kg	Ref.
Arrow head	Start drilling obstructions	-	9,50	0,010	291217
Toothed blades Ø 50 mm	Cutting and scraping walls	-	9,50	0,040	291212
Arrow head	For passing through short, tight bends	-	9,50	0,030	291017
Boring gimlet	For passing through short, tight bends	Removal, drainage	9,50	0,040	291019
Feed	Retrieving objects	-	9,50	0,050	291213
Smooth knives Ø 38 mm	Finishing tools	Grease stoppages	9,50	0,040	291211
Articulated connector	Others	All portable electric pipe cleaners	9,50	0,040	291020
Boring gimlet	For passing through short, tight bends	Removal, drainage	8,00	0,030	291026



### Virax is ISO 9001, ISO 14001 and ISO 45001 certified

Virax has received multiple awards for excellence in its Quality (ISO 9001 - 2015 version), Environment (ISO 14001 - 2015 version) and Health and Safety (ISO 45001 - 2018 version) management system.





# 2912 : Electric Drum Type Pipe Cleaner VAL 80 / VAL 80E

Advantages

Essential for any clearing on drain Ø 30 mm to 100 mm. Effective thanks to its steel-cored cable of 22,5 m, for an optimal ratio resistance/flexibility. Powerful motor, reverse switch up to 165 trs/min.

VAL 80 : manual cable feed and return.

VAL 80E: Electric cable feed and return. Clutching by automatic cable advance. Electric cable roller. Folding transportable trolley.

Electric rotation with pneumatic pedal.

Ø 9.5 mm cable composed of a robust steel wire rolled around a 49-strand thermally treated metal core. Distribution tube inside the drum to insert or remove the cable quickly. Metal drum with opening for cleaning and lubrication, removable for transport or for changing

the cable. Can receive cables of 7.5 or 15 m, or a drum and a cable of  $\emptyset$  6.3 or  $\emptyset$  8 mm to work in small

Can receive cables of 7.5 or 15 m, or a drum and a cable of Ø 6.3 or Ø 8 mm to work in small pipes (wash hand basin, etc.).

Motor: 230V / 50 Hz / 250W, Reversible right/left, 0 to 165 rpm.

- Supplied with:
- 1 pair of gloves,
- 1 cable Ø 9,5 mm, Lg 22,50 m ref. 291214,
- 1 gimlet ref. 291213,
- 1 smooth knife Ø 38 mm ref. 291211,
- 1 toothed blade Ø 50 mm ref. 291212,
- 1 arrow head ref. 291217.





Туре	Pipe Ø mm	cable Ø mm	Feed / Return	Reach m	Kg	Ref.
VAL 80	50 - 75	9,50	Manual	22,5	36,000	291200
VAL 80E	50 - 75	9,50	Automatic	22,5	48,200	291201

### 2912 : Pipe Cleaner Cable VAL 80 / VAL 80E

VAL 80 / VAL 80E: cable included as standard Ø 9,5 mm, Lg 22,50 m ref. 291214.

\* To adapt on VAL 80 / VAL 80E, also require the drum ref. 291223.



For	Ø mm	Lm	Tools	Use	Kg	Ref.
VAL 80/80E	9,5	22,50	-	Roof drains, toilets	10,500	291214
VAL 80/80E	12,7	22,50	-	Pipes Ø 50-100 mm	17,500	291216
VAL 80*/80E*	6,3	7,50	Boring gimlet	Bath-tubs and showers	2,050	291011
VAL 80*/80E*	6,3	15,00	Boring gimlet	Bath-tubs and showers	3,870	291012
VAL 80*/80E*	8	7,50	Articulated gimlet	Basins, sinks	2,660	291014



Virax is on Facebook!

@viraxofficial

### 2912 : Tools for Pipe Cleaner VAL 80 / VAL 80E

Check that your tool diameter matches your cable diameter.



g	Ref.

5

Description	Characteristic	Use	cable Ø mm	Kg	Ref.
Arrow head	Start drilling obstructions	-	9,50-12,70	0,010	291217
Toothed blades Ø 50 mm	Cutting and scraping walls	-	9,50-12,70	0,040	291212
Toothed blades Ø 75 mm	Cutting and scraping walls	-	12,70	0,050	292026
Toothed blades Ø 100 mm	Cutting and scraping walls	-	12,70	0,060	292027
Toothed knives Ø 50 mm	Cutting and scraping walls	-	12,70	0,110	292032
Arrow head	For passing through short, tight bends	-	9,50	0,030	291017
Boring gimlet	For passing through short, tight bends	Removal, drainage	9,50	0,040	291019
Rotating saw blade Ø 100 mm	Shredding branches and other materials	Cutting and scraping walls	12,70	0,140	292016
Feed	Retrieving objects	-	9,50-12,70	0,050	291213
Smooth knives Ø 38 mm	Finishing tools	Grease stoppages	9,50-12,70	0,040	291211
Articulated connector	Others	All portable electric pipe cleaners	9,50-12,70	0,040	291020

### 2912 : Pipe Cleaner Accessories VAL 80 / VAL 80E

For clearing basins, sinks, showers, etc. Adapt on VAL 80 / VAL 80E with cables ref. 291011, 291012, 291014.

Description	For	Kg	Ref.
Drum	VAL 80 / VAL 80E	6,770	291223





### **Customer Service**

For information on our products, promotions, stocks, record your orders or follow a delivery? From 8.00 am to 12.15 pm and from 1.45 pm to 5.30 pm, Monday to Friday (5 pm):

Phone: +33 3.26.59.56.57 Email: export@virax.com **Exploded views and manuals**: www.virax.com, Download section.



# 2920 : Electric Drum Type Pipe Cleaner: VAL 90

# Advantages

Specially designed for large diameter pipes, 75 to 250 mm. Effortless movement: loading wheel, tracks for going up and down stairs, ball bearing  $\emptyset$  25 cm wheels.

**Perfect result** thanks to the 8 tools supplied and its steel core cable for an optimum resistance/flexibility ratio.

Ø 16 mm (also exists in Ø 19 mm) 30 m long cable (extendible to 60 m) composed of a robust steel wire rolled around a 49-strand thermally treated metal core. Clutching for automatic cable feed and return with motorised variable speed mechanism to facilitate cable insertion and removal.

Pneumatic pedal to activate the motor and the safety circuit breaker. Open cage drum with distributor tube to avoid knots and see the quantity of cable remaining. Integrated toolkit. Supplied with:

- 1 pair of gloves.
- 1 cable Ø 16 mm, Lg 30 m ref. 292028.
- 1 84 cm long flexible head to intervene in tight bends, siphons ref. 292015.
- 2 toothed blades to cut and scrape walls in Ø 75 or 100 mm ref. 292027.
- 1 harpoon head to start pipe cleaning and drill through deposits ref. 292011.
- 1 large corkscrew to recover objects ref. 292014.
- 1 toothed blade to cut and scrape walls in Ø 50 mm ref. 292032.
- 1 rotating saw blade for crushing branches and other materials, in Ø 100 mm ref. 292016.
- 1 spiral saw blade for crushing roots, branches and other materials, in Ø 75 mm ref.

292021.

Motor	Pipe Ø mm	Max. reach m	cable Ø mm	Kg	Ref.
230V / 0 to 170 rpm - 50Hz / 375 W - Reversible right/left	75 - 150	60,00	16	107,500	292030

#### 2920 : Pipe Cleaner Cable VAL 90

VAL 90 : cable included as standard Ø 16 mm, Lg 30 m ref. 292028.



For	Ø mm	Lm	Tools	Use	Kg	Ref.
VAL 90	16	30,00	-	Pipes Ø 75-150 mm	37,500	292028
VAL 90	19	30,00	-	Pipes Ø 100-250 mm	47,000	292031

#### 2920 : Tools for Pipe Cleaner VAL 90

Check that your tool diameter matches your cable diameter.





Description	Characteristic	Use	cable Ø mm	Kg	Ref.
Harpoon head	Start drilling obstructions	-	16-19	0,080	292011
Toothed blades Ø 75 mm	Cutting and scraping walls	-	16-19	0,050	292026
Toothed blades Ø 100 mm	Cutting and scraping walls	-	16-19	0,060	292027
Toothed knives Ø 50 mm	Cutting and scraping walls	-	16-19	0,110	292032
Flexible head length 84 cm	For passing through short, tight bends	Long siphons	16-19	2,060	292015
Spiral saw blade Ø 75 mm	Shredding branches and other materials	Roots	16-19	0,180	292021
Rotating saw blade Ø 100 mm	Shredding branches and other materials	Cutting and scraping walls	16-19	0,140	292016
Large corkscrew	Retrieving objects	-	16-19	0,170	292014

## 2931 : Cable segment pipe cleaner VAL 96QC

# Advantages

'Quick Change' system: instant swapping of Ø 16 mm and Ø 22 mm cables, without tools.

**Easily transportable**: easy to store in a chest, cable sections are supplied in independent cages.

**Continuous drive shaft**: excellent protection against used water flow on the motor, as well as electrical and mechanical parts.

For Ø 50 to 150 mm piping, maximum length 70 m.

Electrical motor 750 W, right / left reversible, 690 rpm, 24 kg, IP44, maintenance-free, delivering high torque for effective pipe cleaning.

Timed belt for smooth motor power transmission. High wear resistance.

Electrical connection cable with built-in differential circuit breaker (PRCD) providing optimum protection of the pipe cleaner but also the user.

External drive jaws allowing instant cable changing; sealed, life lubricated, maintenance free bearings.

Sheathed grip for clutch and transport.

Manual cable feed for fast and accurate approach of the tool towards the plug.

Guide pipe to prevent waste water projections in the work environment.

Fastening pin securing the cable to the pipe cleaner when adding or removing a section (prevents untimely loss of the section engaged in the piping).

Feet with rubber anti-slip protection for better operating stability.

**Cable sections** with tempering optimized to guarantee flexibility allowing several elbows to be passed.

Metallic cable section storage and transport cage.

Simple and fast section connection / separation, T coupler for secured holding. According to the model, special cable sections with plastic core, ideal to avoid inner cable

fouling, easier to clean.

Cable sections and tools compatible with most cable segment cleaner in the market.

Description	Ø 16 mm	Ø 22 mm	Pipe Ø mm	Max. reach m	Kg	Ref.
VAL 96QC machine only	-	-	-	-	29,500	293140
VAL 96QC Ø 16 and Ø 22 mm	5 x 2.30 m - Set of 3 tools	5 x 4.50 m - Set of 5 tools	50 - 150	70	69,400	293130
VAL 96QC Ø 16 mm	5 x 2.30 m - Set of 3 tools	-	50 - 100	40	46,700	293131
VAL 96QC Ø 22 mm	-	5 x 4.50 m - Set of 5 tools	70 - 150	70	62,000	293132
VAL 96QC Ø 16 and Ø 22 mm with plastic core	5 x 2,30 m with plastic core - Set of 3 tools	5 x 4,50 m with plastic core - Set of 5 tools	50 - 150	70	72,800	293133
VAL 96QC Ø 16 mm with plastic core	5 x 2,30 m with plastic core - Set of 3 tools	-	50 - 100	40	47,500	293134





5

5 MAINTENANCE

Description	Ø 16 mm	Ø 22 mm	Pipe Ø mm	Max. reach m	Kg	Ref.
VAL 96QC Ø 22 mm with plastic core	-	5 x 4,50 m with plastic core - Set of 5 tools	70 - 150	70	64,700	293135
apacities						
		Ø 100 mm piping, max length				
Cable section Ø 22 mm /	4.50 m: for Ø 70 –	Ø 150 mm piping, max length	70 m.			
elivered with						
Guide pipe, pair of gloves Cable sections according Ø 16 mm: 5 sections Ø	to model: 16 mm / 2.3 m + tra	insport cage. mm / 2.3 m + transport cage.				

#### Tips

The cable sections and tools are compatible with most pipe cleaners with a cable section Ø 16 mm / Ø 22 mm.

## 2931 : Pipe Cleaner Cable VAL 95 / VAL 96QC



For	Ø mm	Lm	Tools	Use	Kg	Ref.
VAL 95/96QC	16	2,30	-	Pipes Ø 50-100 mm	1,010	293111
VAL 95/96QC	16	5 x 2,30	With metal cage	Pipes Ø 50-100 mm	7,200	293141
VAL 95/96QC	16	2,30	Plastic core	Pipes Ø 50-100 mm	1,150	293170
VAL 95/96QC	16	5 x 2,30	Plastic core - With metal cage	Pipes Ø 50-100 mm	7,900	293143
VAL 95/96QC	16	-	Metallic cage only	-	2,120	293155
VAL 95/96QC	22	4,50	-	Pipes Ø 70-150 mm	3,910	293112
VAL 95/96QC	22	5 x 4,50	With metal cage	Pipes Ø 70-150 mm	22,100	293142
VAL 95/96QC	22	4,50	Plastic core	Pipes Ø 70-150 mm	4,370	293172
VAL 95/96QC	22	5 x 4,50	Plastic core - With metal cage	Pipes Ø 70-150 mm	24,400	293144
VAL 95/96QC	22	-	Metallic cage only	-	2,530	293157

## 2931 : Tools for Pipe Cleaner VAL 95 / VAL 96QC

Check that your tool diameter matches your cable diameter.

**Ref. 293150**: Set of 3 tools for Ø 16 mm sections: straight spiral head Ø 16 mm (293158), bulb spiral head Ø 28 mm (293159), arrow blade head Ø 25 mm (293160), 1 uncoupling wrench Ø 16 mm (293162).



ohm

**Ref. 293151**: Set of 5 tools for Ø 22 mm sections: straight spiral head Ø 22 mm (293163), bulb spiral head Ø 40 mm (293164), conical spiral head Ø 55 mm (293165), toothed knife head Ø 76 mm (293166), toothed mill head Ø 65 mm 4 blades (293168), 1 uncoupling wrench Ø 22 mm (293169).

Description	Characteristic	Use	cable Ø mm	Kg	Ref.
Straight spiral head	Sampling or bursting	Fabric, paper, cellulose	16	0,060	293158
Straight spiral head	Sampling or bursting	Fabric, paper, cellulose	22	0,170	293163
Swivel head	For passing through short, tight bends	Fabric, paper, cellulose	16	0,060	293171
Bulb spiral head	Pipe cleaning	Fabric, paper, cellulose	16	0,070	293159
Bulb spiral head	Pipe cleaning	Fabric, paper, cellulose	22	0,220	293164
Conical spiral head	Bursting, pushing or recovering	Fabric, paper, cellulose	22	0,280	293165
Collection head	Retrieving objects	Fabric and miscellaneous object plugs	16	0,035	293175
Collection head	Retrieving objects	Fabric and miscellaneous object plugs	22	0,110	293173
Arrow head	Drilling	Fat, soft or soapy plugs	16	0,030	293160
Arrow blade head	Coring	Piping blocked by sand or sludge	22	0,150	293167
Toothed mill head	Pre-bursting before finish	Hardened plugs, built-up fabric and sludge	16	0,030	293161
Toothed mill head	Pre-bursting before finish	Hardened plugs, built-up fabric and sludge	22	0,200	293168
Smooth knife head	Cleaning and finish	Fat deposits and pipe scale	16	0,160	293179
Smooth knife head	Cleaning and finish	Fat deposits and pipe scale	22	0,530	293180
Toothed knife head	Heavy-duty cleaning and finish	Fat and scale deposits	22	1,110	293181
Knife head	Cutting and scraping	Stubborn deposits, fat deposits, sludge, fabric shredding	16	0,020	293174
Knife head	Cutting and scraping	Fatty deposits, siltation and roots	22	0,230	293166
Saw head	Cutting and shredding	Small branches and other materials	16	0,040	293176
Root cutting head Ø65mm	Cutting and shredding	Small branches, roots, and other tough materials	22	0,250	293177
Root cutting head Ø90mm	Cutting and shredding	Small branches, roots, and other tough materials	22	0,290	293178
Coupling wrench	For coupling and uncoupling cable sections and tools	-	16	0,020	293162
Coupling wrench	For coupling and uncoupling cable sections and tools	-	22	0,030	293169
Set of 3 tools for Ø 16 mm sections	-	-	16	0,180	293150
Set of 5 tools for Ø 22 mm sections	-	-	22	1,140	293151



## 100% guarantee for 2 years

Virax guarantees all its products for 2 years at 100%, excluding consumables and batteries, and excluding abuse or product modified.



### 2931 : Pipe Cleaner Accessories VAL 96QC

Guide pipe : to stabilize cables in rotation, protect and secure the workspace.

Description	For	Kg	Ref.
Guide pipe	VAL 96QC	4,160	293153



## **HIGH PRESSURE PIPE CLEANER**

### 2932 : Pro HP Cleaner-Clearer

## Advantages

Mobile and complete for semi-intensive use.

**Quickly wash** your sites, frontage using the low pressure / high pressure lances.

Strip the toughest surfaces deep down thanks to the rotating nozzle lance.

Clean blocked pipes effectively with the 3 retro-jet nozzle.

### A professional quality assembly:

- 2800 rpm motor for semi-intensive use.
- Brass axial pump and stainless steel pistons for maximum endurance.
- Automatic shut off function to preserve the motor and reduce electricity consumption.
- Non-deforming, shock-resistant PE injected hood.
- Large diameter moulded hub wheels to cross any obstacle.

### High pressure washing function:

- Gun with lockable trigger.
- Sheathed HP/LP multi-jet lance.
- Rotating nozzle lance: cleaning power doubled.
- 1 pro HP hose (12 m) on roller with brake.
- 2 removable 0.6 l. detergent tanks that can be controlled separately.

### Pipe cleaning function:

Cleans and unblocks all types of pipe obstructed by grease or friable materials such as grease, silt, soap, sand and clay.

- 3 retro-jet nozzle (1/8"): simply guide the hose which moves forward thanks to the pressure.

- 20 m pipe cleaning hose.

Power supply: 230V - 50Hz

Presssure bar	Pump flowrate I/min	Drilling speeds rpm	Motor rating kW	Max. reach m	Pipe Ø mm	Kg	Ref.
160	10	2800	3	12 (HP hose) - 20 (pipe cleaning hose)	40 - 100	24,000	293230
Capacities							
Ø 40 mm to 100 m Continuous usage	ım. time per day: 1h30.						







### **Delivered with**

- 1 gun,
- 1 HP/LP multi-jet lance,
- 1 rotating nozzle lance,
- 1 Pro HP hose (12 m),
- 1 3 retro-jet nozzle ((1/8"),
- 20 m pipe cleaning hose (Ref. 753578).

## 2932 : Electric High Pressure Pipe Cleaner

## Advantages

Hard-wearing and high performing, for intensive use. Cleans and unblocks all types of pipe:  $\emptyset$  50-150 mm. Rotating nozzle lance: cleaning power doubled.

#### A professional quality assembly:

- 1400 rpm low speed motor for semi-intensive use: allows it to run continuously for several

- hours at a time (4 hours) without the risk of overheating.
- Ceramic tie-rod and piston radial pump for greater longevity.
- Automatic shut off function to preserve
- the motor and reduce electricity consumption.
- Non-deforming, shock-resistant PE injected hood. Aluminium cradle frame.
- Large diameter moulded hub wheels to cross any obstacle.

### High pressure cleaning function:

- Rotating connector gun: anti-twist.
- 2 channel HP/LP lance with pressure adjustment.
- Rotating nozzle lance: cleaning power doubled.
- 2 pro HP hoses (10 m + 15 m) and a safety pedal allow the cleaner to be used in places
- that are inaccessible to the machine (stairs, confined spaces, etc.).
- 1 large capacity detergent tank (7.5 L).

#### Pipe cleaning function:

Cleans and unblocks all types of pipe Ø 50-150 mm obstructed by grease or friable materials such as silt, soap, sand and clay.

- 3 retro-jet nozzle: simply guide the hose which moves forward thanks to the pressure.

- 40 m pipe cleaning hose on roller.

Presssure bar	Pump flowrate I/min	Drilling speeds rpm	Motor rating kW	Max. reach m	Pipe Ø mm	Kg	Ref.
150	11	1400	3,2	10 + 15 (HP hose) / 40 (pipe cleaning hose)	50 - 150	60,000	293280

### Capacities

Ø 50-150 mm

Continuous usage time per day: 4h00.

### Delivered with

- 1 Rotating connector gun,
- 2 Channel HP/LP lance with pressure adjustment.
- 1 Rotating nozzle lance,
- 2 pro HP hoses (10 m + 15 m),
- 1 safety pedal.
- 1 3 retro-jet nozzle (1/4"),
- 40 m pipe cleaning hose.







## 2932 : Accessories for High Pressure Pipe Cleaner

- A complete range of accessories:
- Telescopic lance: frontage cleaning up to 5 m.
- Harness for telescopic lance: lance hold assistance.
- Gutter elbow lance: gutter cleaning, only operates with the telescopic lance Ref. 293233.
- Suction filter screen: filters water from an external tank (3 m hose).
- 4 1/8" jet nozzle: 3 retro-jets + 1 front jet to attack the plug.
- 1/8" rotating nozzle: rotating jets for pipes with heavy dirt build up, moss, etc.
- 4 1/4" jet nozzle: 3 retro-jets + 1 front jet to attack the plug.
- 1/4" rotating nozzle: rotating jets for pipes with heavy dirt build up, moss, etc.
  Pipe cleaning hose.



Description	293230	293280	Kg	Ref.
Telescopic lance	ok	ok	3,000	293233
Harness for telescopic lance	ok	ok	0,900	293234
Gutter elbow lance	ok	ok	1,200	293235
Suction filter screen	-	ok	5,200	293236
4 1/8" jet nozzle	ok	-	0,030	293272
1/8" rotating nozzle	ok	-	0,060	293273
4 1/4" jet nozzle	-	ok	0,035	293277
1/4" rotating nozzle	-	ok	0,065	293278
Pipe cleaning hose 20 m	ok	-	2,090	753578



## **PIPE INSPECTION**

## 2941: Colour Digital Inspection Mini Camera Visioval®

## **Advantages**

**Image always horizontal** thanks to the self-levelling head. **Colour touch screen** for intuitive use.

Application on Smartphone or tablet to view / transfer the image.

Possible head localisation on the 16-metre cable version.

#### Colour CCD camera head:

Self-levelling image to maintain it horizontal whatever the position of the camera head. Watertight head IP 68 down to 9 m deep. 4 built-in LEDs (power 100 Lux). Head  $\emptyset$  17 mm on 1.2 m semi-rigid cable: for inspections of  $\emptyset$  20 - 75 mm / 3/4" - 3" in confined areas (ref. 294110).

### 3,5" (9 cm) colour touch screen:

Touch screen with intuitive browsing in the many settings: zoom x2, adjustable brightness, black & white image function, time stamping. Live viewing during inspection possible on Smartphone and tablet via the Mini Visioval® app (on iOS and Android).

#### Power supply / Battery life:

Internal rechargeable lithium battery 3.7 V/ 4.2 Ah, battery life several hours.

### Photo / video / voice recording:

Resolution: Photos 720 x 480 (jpeg) / Videos 640 x 480 (avi) Built-in microphone to record voice comments on real-time videos or photos. 3 transfer modes: via SD card, USB port (cable supplied), or built-in Wifi transmitter for Smartphone or tablet transfer using the Mini Visioval® app (with synchronisation function), to later add annotations to the image, send by email or SMS.

### Cable 16 m (ref. 294121): to be used with the Mini Visioval® ref. 294110:

Head Ø 25 mm to inspect the Ø 40 - 100 mm / 1.1/2" - 4" up to 16 metres distance (can negotiate 90° bends in 50 mm internal diameter pipes) 4 built-in LEDs (power 125 Lux).

Head fitted with a 512 Hz transmitter to be detected by the Virax localizer ref. 294130. Other characteristics of the head equivalent to those of the Mini Visioval® ref. 294110. Cable in turret open with guide for easy storage an cleaning. Base with anti-slip and anti-scratch rubber pads.

Description	Camera head	For pipes internal Ø mm	Built-in record function	Possibility of localisation	Autonomy	Kg	Ref.
Mini Visioval® 1,2 m	Fixed self-tilting	20 - 75	Yes	No	3-5hrs	2,090	294110
Mini Visioval® kit 1,2 m + cable 16 m	Fixed self-tilting	20 - 75 / 40 (50) - 100	Yes	Yes	3-5hrs	12,000	294120
Cable 16 m	Fixed self-tilting	40 (50) - 100	Yes	Yes	3-5hrs	9,000	294121

### Capacities

Ref. 294110: Head Ø 17 mm on 1.2 m semi-rigid cable: for inspections of Ø 20 - 75 mm / 3/4" - 3" in confined areas (ref. 294110). Ref. 294121: Head Ø 25 mm to inspect the Ø 40 - 100 mm / 1.1/2" - 4" up to 16 metres distance (can negotiate 90° bends in 50 mm internal diameter pipes).





5



#### Delivered with

- Ref. 294110:
- -1 cable 1.2m.
- -1 USB mini-cable.
- -1 SD card.
- -1 charger for internal battery.
- -In plastic case.
- Ref. 294121:
- -1 cable 16 m.
- -2 AA batteries to supply the 512 Hz transmitter.
- -In plastic case.

Ref. 294120:

- -1 Mini Visioval camera ref. 294110.
- -1 cable 16 m ref. 294121.
- -In plastic case.

## 2941 : Locator for Mini Visioval®

## **Advantages**

Allows to locate the 16 m cable head of the Mini Visioval®. Localisation up to **2.45 m deep**.

Intuitive search with **visual and sound indications** of the Mini Visioval®.

Locator ref. 294130 :

Used to find the exact position of the 512 Hz transmitter of the Mini Visioval B 16 m cable head.

Easy and intuitive search with direction display on 3.5" screen of the Mini Visioval $\ensuremath{\mathbb{B}}$  and sound indications.

Two search models:

- A geolocalisation mode to find and move above the probe.

- A depth mode to determine the distance between the probe and the locator.

Also allows to detect the 640 Hz, 33 Khz active, 50/60 Hz passive frequencies. Telescopic design for easy storage.

Operates only with the Mini Visioval® camera (ref. 294110) associated with the 16 m cable (ref. 294121).

Supplied in a plastic shock-proof case.

Description	Kg	Ref.
Locator	4,500	294130
Complete Mini Visioval® kit + 16 m cable + Locator	16,500	294135







## Get our news first!

Subscribe to the Virax newsletter to receive exclusive news and promotions!

## 2940 : Colour digital inspection camera Visioval® VX

## Advantages

Camera heads with transmitter for localisation. 30 m hose with distance indication. Detachable and interchangeable camera heads (Switch version).

Portable video inspection system with localisable camera heads in a plastic case with double reinforced walls. Vertical or horizontal inspections of piping with an inner diameter of 40 mm, exhaust pipes, ventilation ducts, flue linings, false ceilings, industrial installations, miscellaneous cavities, etc.

## Visioval® VX-26 and VX-40 with non-interchangeable camera heads. Visioval® VX-SWITCH with interchangeable camera heads for complete inspection amplitude.

#### Colour CCD camera.

With built-in 8.9 kHz transmitter, for exact localisation of the head in the piping (requires localizer Ref. 294054).

Head Ø 26 mm watertight 3bar/IP68 for inspections of inner Ø 40 à 125 mm.

Head Ø 40 mm watertight 1bar/IP67 turns 360° and tilts 180° for inspections of inner int. 50 to 200 mm.

Digital display of head position (precision 4 cm) and tilting on screen.

'Home' function to recenter the camera head in the straight position (on Ø 40 mm head only). Wide 115° viewing angle and 0.5 lux sensitivity: precise image event in dark areas. 12 LEDs protected from shock and dirt, with adjustable lighting level.

#### 7" TFT colour screen (18 cm):

Light and excellent quality images thanks to the 800 x 480 pixel resolution. The screen can either be fixed inside the case or held in the hand thanks to its 2 m long cable.

The brightness and contrast can be adjusted. Solar protection option (Ref. 294034) to reduce glare when working outdoors.

#### Power supply / Battery life.

Runs on mains or battery supply (supplied with 2 batteries). Battery level indicated on screen, up to 2 hours per battery. Battery charge level indicator.

#### Photo / video recording:

Photo and video recording on 2 GB SD card (supplied), up to 2 hours video. Play Fast forward and rewind / Pause / Delete Functions from Visioval®. Mini USB port to transfer photos or videos onto PC.

**Visioval® VX locator:** Fast and accurate localisation of the Visioval® VX Ø 26 mm and Ø 40 mm camera head by radiofrequency (8.9 kHz) in the damaged or clogged zone down to a depth of 3 metres underground.

Intuitive search with direction display on colour screen and sound indications. Telescopic design for easy work.

Li-Ion 3.7V battery.

Description	Type head camera	Detachable camera head	Locator	Kg	Ref.
Visioval® VX-26 Caméra	Ø 26 mm	No	Option	8,450	294035
Visioval® VX-40 Caméra	Ø 40 mm orientable	No	Option	9,290	294045
Visioval® VX-SWITCH Caméra	Ø 40 mm orientable	Yes	Option	9,300	294050
Visioval® VX-SWITCH + Locator + Ø26 Head	Ø 26 mm et Ø 40 mm orientable	Yes	Delivered with	9,970	294051
Detachable camera head Ø26mm VX-SWITCH	Ø 26 mm	Yes	-	0,210	294052
Detachable camera head Ø40mm VX-SWITCH	Ø 40 mm orientable	Yes	-	0,250	294053
Visioval® VX Locator	-	-	Yes	3,130	294054







#### Capacities

Camera head Ø 26 mm: for pipes inner Ø 40 to 125 mm. Passage of 90° elbows in inner Ø 50 mm. Camera head Ø 40 mm: for pipes inner Ø 50 to 200 mm. Passage of 90 ° elbows in inner Ø 80 mm.

#### **Delivered with**

### Visioval® VX camera:

- 2 batteries: 12 V, 2.6 Ah, Ni-MH.
- Mains power supply
- Anti-slip mat: avoids the case slipping on tiled floors.
- 2 GB SD card.
- USB cable.
- 5 Plexiglas cups (VX-40 / VX-SWITCH)
- Visioval® VX locator:
- 1 headphone set with sound signal adjustment.
- 1 charger with micro USB cable
- 12 pencils
- 1 telescopic rod
- 1 case

#### Tips

Different accessories complete the use of the camera to make it more effective and handy: elbow head, guide ring, roller centring piece, weight for chimney inspection, etc.

### 2940 - 2941 : Accessories for Mini Visioval® and Visioval®

#### Guide ball:

(ref. 294112) allows for centring of the camera Mini Visioval® cable (ref. 294121) in pipes of section Ø 70 mm to Ø 100 mm.

#### Centre guide:

(ref. 294021) for pipe diameters 70 mm (min) to 150 mm (max). For centring the camera in larger diameter pipes.

#### 24 spare brushes:

(ref. 294022) for creating 4 sets of 6 brushes, by cutting them to the most frequently inspected diameters and changing them on the centre guide 294021 (min. 70 mm, max. 150 mm).

#### Extension for centre guide:

(ref. 294033) composed of a 7 cm tube and a 2nd 150 mm centre guide with brushes. Enables the head to be stabilised and improved guidance in pipes with diameters of over 120 mm. \*Only works in conjunction with camera heads Ø26 mm and with the centre guide ref. 294021.

#### Guide ring with protection:

(ref. 294031) enables the 26 mm Ø head to be protected from impact and acts as a centre guide 50 mm Ø.

#### 7" screen solar protection:

(ref. 294034) reduces glare on the VISIOVAL's 7" monitor. For optimum visibility event outdoors.

#### Protection cage:

(ref. 294041) protects the plastic dome of the 40 mm Ø head against shock and scratches.

#### Centring device with rollers:

(ref. 294042) improved 40 mm Ø centring and guiding for inspections in 100-150 mm Ø.

#### Kit of 10 plastic domes:

(ref. 294043) allows replacing the plastic dome of the 40 mm Ø head when scratched or damaged.





Description	Mini Visioval®	Visioval®	Kg	Ref.
Guide ball for 16m cable Mini Visioval®	ok	-	0,090	294112
Ø 150 mm 6" centre guide	-	ok	0,120	294021
24 Spare brushes for 294021	-	ok	0,050	294022
Elbow guide	-	ok	0,020	294023
Battery for Visioval®	-	ok	0,550	294027
Weights for chimney	-	ok	0,720	294028

Description	Mini Visioval®	Visioval®	Kg	Ref.
Guide ring with protection	۱ -	ok	0,020	294031
Extension for centre guide *	-	ok	0,150	294033
Protection cage	-	ok	0,100	294041
Protection solaire d'écran 7"	ı -	ok	0,100	294034
Centering device with rollers	-	ok	0,075	294042
Kit of 10 plastic domes	· _	ok	0,150	294043

## 2942: Micro Visioval® 5-in-1 camera

## Advantages

5-in-1 tool: Inspection Camera, Laser Telemeter, Infrared Thermometer, Torch, Laser Pointer. Easy information reading on the large 4.3" colour screen. Underwater and piping inspection with its watertight camera head (IP67).

### Inspection micro-camera:

Inspect, check and search in confined areas, piping, sight holes, partitions, underwater and in the dark with Ø 8 mm watertight camera (IP67) fitted with 6 white LEDs. Record up to 100 photos directly in the built-in flash memory.

Easy manual pushing thanks to axial stiffness of the 105 cm flexible and easy passage in elbows with its minimum radius of curvature of 30mm.

Excellent handling with its shock-proof Soft Touch reinforced casing and folds to store and protect the flexible.

X 4 screen zoom, comparative image (divides the screen into 2 images: frozen and live), photo viewing and deletion, PC transfer.

#### Laser telemeter

For fast measurement in the worksite.

Class 2 laser, range up to 20 metres. Displays the last 3 measurements on screen.

#### Infrared thermometer

Check the temperature of clogged heating installations and radiators, conditions before/after maintenance work.

Temperature range from -20° C to + 350° C. Last 4 measurements displayed on screen.

Torch, always handy to inspect under bath tubs, crawl spaces. Laser pointer to identify and point what cannot be reached physically.

Power supply: 4 LR6 1.5 V batteries (supplied).

Description	Kg	Ref.
Micro Visioval® 5-in-1 camera	0,990	294200
Set of 4 accessories for Micro Visioval®	0,005	294201

#### Delivered with

Metallic box and fabric storage pouch.

4 camera head tips: magnetic tip to recover small metal parts, single and double hooks to recover objects, mirror for inspection in angles. 4 LR6 1.5 V batteries (AA).

Internal flash memory.

USB - Micro USB transfer cable.







## **CLEANING PUMP**

## 2950 : Descaling Pump

## Advantages

**Faster and more effective action** thanks to its **electric** manual flow reverser to remove deposits in the 2 directions. **Easy draining** with its lower handle molded in the tank

Translucent, anti-impact plastic tank **to view the fluid level.** Balanced and **powerful motor (150 W)** for a 33 l/min flow rate and an elevation height up to 12 metres.

**IP54 protected motor** for maximum lifetime.

Robust and practical transport handle.

Specific funnel screwed instead of the stopper **for easy filling.** Max usage temperature: 50 °C.

Virax additives must be added to optimise the action of the sludge removal pump and descaling pump. These additives are specific to the cleaning to be carried out. Their objective is to re-establish the ideal circulation in the installation for better effectiveness.





Description	Pump flowrate I/min	Motor rating kW	Tank capacity L	Elevation height m	Use	Kg	Ref.
Descaling pump	33	0,150	15	12	Boiler	9,200	295000

### Delivered with

Two 2 m long transparent pipes and 1 set of 8 connectors included to adapt to all configurations.

#### Tips

Choose the descaling fluid to use according to the material of the boiler heating element:

- All materials including aluminium: multi-material descaling fluid ref. 295011 and 295012 not requiring any neutralisation phase.



## Much more than just quality, here's the Virax commitment!

Virax commits to total, permanent and durable satisfaction of users and therefore applies a process based on:

A proactive product plan. A constant innovation process. A focus on permanent improvement. Improved customer services. An assurance of optimum availability rate. **Customer satisfaction, the heart of our commitments.** 



## 2950 : Sludge Removal Pump

## Advantages

### Sludge removal pump: 3 functions in 1:

- Sludge removal from radiators and heated floors to eliminate cold zones.

- Algae elimination (sources of blockages) in heated floors.
- Descaling of boiler heating elements (copper and steel only).

Translucent, anti-impact plastic tank **to view the fluid level**. Manual flow reverser (electric) to attack deposits in both directions: quicker and more effective action. **IP54 protected motor** for maximum lifetime.

Robust and practical transport handle. Max usage temperature: 50 °C.

Virax additives must be added to optimise the action of the sludge removal pump and descaling pump. These additives are specific to the cleaning to be carried out. Their objective is to re-establish the ideal circulation in the installation for better effectiveness.

Accessory available: 20 m transparent pipe extension (ref. 295022) to connect to the water inlet, drains, etc.





Description	Pump flowrate I/min	Motor rating kW	Tank capacity L	Elevation height m	Use	Kg	Ref.
Sludge removal pump	30	0,330	24	15	Boiler / Radiator / Heated floor	12,000	295020

### Delivered with

Two 2 m long transparent pipes and 1 set of 8 connectors included to adapt to all configurations.

#### Tips

Using a neutralizer is indispensable to complete descaling, to preserve the boiler, the descaling pump and environment.





## 2950 : Virafal® High Flow Sludge Removal Pump / **Descaling Pump**

## Advantages

1 standard version, 1 connected version in compliance with European Directive EN 806.

### Mechanical cleaning 2 in 1: Air/Water pulses to separate the sludge. Air/Water continuous flows to expel the sludge.

### Chemical cleaning 4 in 1:

Sludge removal from radiators. Sludge removal and sanitization of heating floors. Protection against scale and corrosion. Disinfection of drinking water pipes.

Easy installation with its roller trolley and fastening suction cups. Connectors and pipes supplied for immediate use. High performance action: Maximum flow rate 80L/min and maximum pressure 8 bar. Effective and robust compressor: Self-lubricated, power 1.5 kW and evacuates 200L/min. Maximum temperature of use: 30°C.

For easy transport of your Virafal® or Virafal® Connect, models 295053 and 295059 are delivered with an extra raised handle. Tool-free assembly, quick height adjustment. Handle also available alone (ref. 753778).

#### Additional features of the VIRAFAL® Connect:

Connects with a SmartPhone, a tablet under Android or a PC via a Bluetooth connection to print an intervention report in compliance with European Directive EN 806 on drinking water piping.

Intervention report written and transferred using the Virafal application available on Android and PC

The use of Virax additives (sold separately) requires using the fitting ref. 295052 and injector ref. 295051. These additives allow chemical use for all types of installations. They can be rejected to the sewers without detrimental effect on the environment.

Description	Pump flowrate I/min	Motor rating kW	Connectable	Use	Kg	Ref.
Virafal® high flow sludge removal pump / descaling pump	80	1,500	No	Boiler / Radiator / Heated floor / Drinking water pipe	26,000	295050
Virafal® kit + injector + reducer + handle	80	1,500	No	Boiler / Radiator / Heated floor / Drinking water pipe	31,000	295053
Virafal® Connect high flow sludge removal pump / descaling pump	80	1,500	Yes	Boiler / Radiator / Heated floor / Drinking water pipe	26,000	295054
Virafal® Connect kit + injector + reducer + handle	80	1,500	Yes	Boiler / Radiator / Heated floor / Drinking water pipe	32,000	295059

### Delivered with

Two 1.5 m long transparent pipes (3/4")





**VITAX** 156

### 2950 : Additive and Accessory for Cleaning Pump

A complete range of additives that are vital to optimise the action of the VIRAFAL® sludge removal pump, descaling pump and sludge removal unit. These additives are specific to the cleaning to be carried out.

Their objective is to re-establish the ideal circulation in the installation for better effectiveness.

#### **Descaling fluids:**

To descale domestic hot water installations and the boiler heating element, and restore their energy performance.

(ref. 295010 – 10L) Descaling only for **steel** or **copper** installations. A mix of acid, defoaming agents and corrosion inhibitors to avoid damaging the piping. Colour indicator indicating whether the acid is powerful enough or not. The use of a neutralizer ref. 295015 is necessary after descaling.

(ref. 295011 – 1L and 295012 5L) Multi-material descaling fluid compatible with **all metals and alloys** normally present in installations, including aluminium. To descale aluminium parts, limit cleaning time to 2 hours whenever possible. This multi-material descaler does not require using a neutralizer: once descaling is complete, just rinse the installation thoroughly.

#### Neutralising agent:

(ref. 295015) to be used after using the steel / copper descaler 295010 only. For neutralising acidity remaining in the heating element, and then neutralise the descaling fluid remaining in the pump before disposal.

#### Sludge remover:

(ref. 295025) for radiators and heated floors. Sludge elimination to re-establish the heating system's effectiveness; non-acidic. Compatible with all metals.

#### VIRAFAL® sludge remover for radiators:

(ref. 295055) for radiators only. Sanitizes and removes sludge and deposits in radiators. Compatible with all metals.

#### VIRAFAL® sludge remover for heated floors:

(ref. 295056) for heated floors only. Eliminates both sludge and algae present in heated floors. Compatible with all metals.

#### Sanitizer:

(ref. 295026) for heated floors. Algae and bacteria destruction to optimise thermal performance. Compatible with all metals.

#### Protector:

(ref. 295027) for radiators and heated floors. Improves the installation's lifetime by slowing down sludge and corrosion return. Compatible with all metals.

#### VIRAFAL® protector:

(ref. 295057) for radiators and heated floors. Improves the installation's lifetime by slowing down sludge and corrosion return.

#### VIRAFAL® disinfectant:

(ref. 295058) for drinking water pipes. Eliminates germs from drinking water pipes.

#### 20 m transparent pipe extension:

(ref. 295022): for easier access to water inlets and outlets.

#### Injector for VIRAFAL® additives:

(ref. 295051) indispensable for chemical actions with the VIRAFAL®, this injector allows for continuous and even product dispensing in the water flow. \*

#### **Reducer for VIRAFAL® additives:**

(ref. 295052) this reducer, ideal for chemical actions with the VIRAFAL®, allows to reduce the flow to apply the chemical in the entire piping. \*\*

\* Ref. 295052 only.

\*\* Ref. 295052 only.

Description	Use	Packaging	295000	295020	295050	Kg	Ref.
Descaling fluid for steel, copper	Boiler	10 L Container	ok	ok	-	10,700	295010
Neutralising agent	Boiler	1 kg Box	ok	ok	-	1,050	295015





Description	Use	Packaging	295000	295020	295050	Kg	Ref.
Multi-material descaling fluid	Boiler	1 L Container	ok	ok	-	1,065	295011
Multi-material descaling fluid	Boiler	5 L Container	ok	ok	-	5,350	295012
Sludge remover	Radiator / Heated floor	1 L Container	-	ok	-	1,200	295025
VIRAFAL® sludge remover for radiators	Radiator	1 L Container	-	-	ok	1,400	295055
VIRAFAL® sludge remover for heated floors	Heated floor	1 L Container	-	-	ok	1,400	295056
Sanitizer	Heated floor	1 L Container	-	ok	-	1,200	295026
Protector	Radiator / Heated floor	1 L Container	-	ok	-	1,200	295027
VIRAFAL® protector	Radiator / Heated floor	1 L Container	-	-	ok	1,400	295057
VIRAFAL® disinfectant	Drinking water pipe	1 L Container	-	-	ok	1,400	295058
Flexible pipe extension	-	20 m	-	ok	-	3,500	295022
Injector for VIRAFAL® additives *	-	-	-	-	ok	0,600	295051
Reducer for VIRAFAL® additives **	-	-	-	-	ok	0,400	295052
Enhanced handle set for VIRAFAL®	-	-	-	-	ok	2,000	753778

## HYGIENE

### 3600 : Towels

Very high degreasing power thanks to the combination of a very high quality liquid detergent with an abrasive, non-scratching, towel.

Easy, fast and efficient cleaning, without water.

No rinsing or drying is required. Leaves no residue.

Removes greases, lubricants, adhesives, oils, tar, bitumen, paint, ink, waxes, coal, graphite, grass stains and other stubborn stains.

Applications: plumbing, industry, storage, mechanical, DIY, gardening, painting, printing, etc. Softens and treats the skin thanks to a mild emollient added to the cleaning agent. Dermatologically tested.

Pleasant smell (lemon).

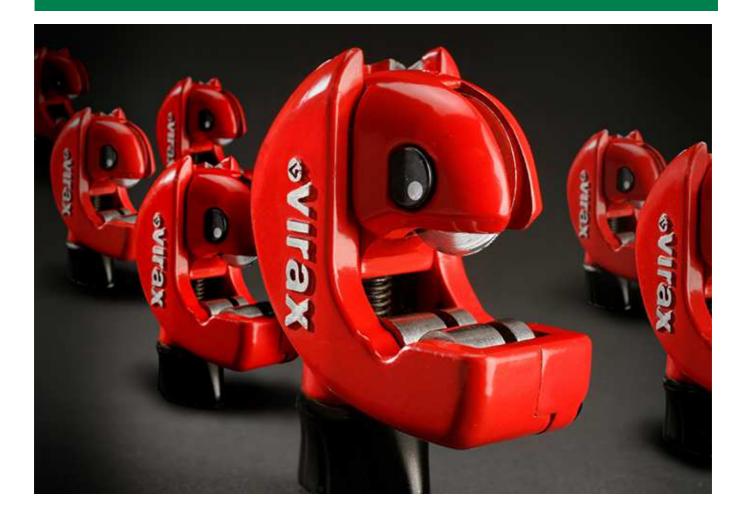
Contents	Kg	Ref.
Box of 70 towels	0,710	360000



## Virax supports future installers

Virax helps teachers promote the industry to students. Every year, Virax and teachers create a competition to test the skills of future graduates in a fun way. The best students win prizes to help them get started in their new profession.





**VIRAX** 







	SOLDERING ACCESSORY	162
E	VICE	163
A	WORKBENCH	164
Tr W	FITTERS TABLE	164
H	PLUMBER'S TABLE	165
U ourax	LIGHTING	166
	STORAGE	167
<b>U</b>	VACUUM CLEANER	169

# 6 🗖 WORKSTATION

## SOLDERING ACCESSORY

### 5284 : Universal Brazing Flux

**Ripoflux:** Flux paste for silver and phosphorus-copper brazing. Ensures good wetting of copper and its alloys, when melted, for producing high-quality brazed joints. **Smartflux:** For preparing the solder of copper domestic hot and cold water pipes: changes colour

when soldering temperature is reached, non flowing, easy brush application. Particularly recommended for use with the Cobraz 28 and Cobraz 54 electric soldering machines.

Description	Capacity	Kg	Ref.
Smartflux	250 g	0,280	528420

### 2000 : Fixtub®

Adjustable pipe holder for accurately and rigidly positioning two pipes (or profiled sections) at a given angle during assembly. Allows complete freedom of movement during welding or brazing. Wing-nut tightening. Galvanized parts.

Pipe Ø mm	Max. arm length mm	Kg	Ref.
8 - 30	60	0,220	200010

### 5282 : Flint Ignitor

Description	Kg	Ref.
1 x	0,070	528280
Box of 6 packs of 6 spare flints	0,065	528285



Reel of solder. Good fluidity, good wetting and bonding characteristics. For soft soldering copper hot and cold water supply pipes. Particularly recommended for soft soldering in conjunction with the Cobraz 28 and Cobraz 54 electric soldering machines.

Alloy contains Selenium for excellent capillary attraction. Contains no Nickel, Lead nor antimony. **Melting point** : 210°C. **Heat resistant** up to 110°C. **Solder strength** 52 N/mm<sup>2</sup>.

Ø mm	Kg	Ref.
2	0,250	528346





## Virax, French manufacturer

In its Production Centre extending over more than 20,000 m<sup>2</sup> situated in Epernay, France, Virax manufactures tools and machines designed by its R&D Center to meet the requirements of professionals. Plasturgy, machining, milling, grinding, assembly and painting, all these activities are performed on site for manufacturing control and quality.







## VICE

## 2002 : Etaugriff® Pipe Vice

Trapezoidal thread screw. High yield malleable cast iron vice. Reversible frame for obtaining the best working position on workbench, tripod or table. Hardened steel jaws. V-shaped pipe holder.

No.	Ø "	Ø mm	Kg	Ref.
0	1/8 - 2	10 - 60	3,720	200200
1	1/4 - 3	13 - 90	6,340	200210
2	1/2 - 4.1/2	21 - 127	10,500	200220
3	3/4 - 6	27 - 168	17,000	200230

## 2003 : Chain Vice

Presetting screw. V-shaped pipe holder. Forged cam locking handle for immediate clamping. High-strength hardened steel chain. High yield malleable cast iron vice.

Α "	A mm	Kg	Ref.
1/8 - 4	10 - 114	4,300	200340





For use in boiler shops, petroleum and chemical industries, shipyards, water and gas supply services, etc. High-strength hardened steel chain. High yield malleable cast iron vice.

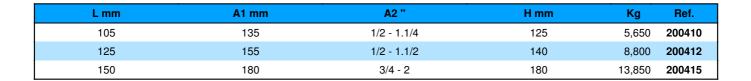
Α "	A mm	Kg	Ref.
2.1/2 - 12	76 - 325	34,000	200350



## 2004 : Parallel Vice

This vice is three tools in one: a parallel vice, a pipe vice and an anvil. Steel housing providing long guide length.

4 brass adjusting screws for centring and taking-up play in the moving jaw.



WORKSTATION

### 2004 : Swivel Base for Parallel Vice

Adjustable swivel base allowing 360° rotation of vice.

For	Kg	Ref.
200410	0,600	200411
200412	1,000	200413
200415	1,500	200416



## WORKBENCH

6

### 2005 : Folding Portable Stand

Very sturdy angle-section legs.

H mm	P mm	Equipment	Kg	Ref.
925	835	No vice	15,000	200500

## **FITTERS TABLE**

### 2009 : Professional Fitter's Table

Very sturdy construction, able to support heavy loads. Highly stable. Easy to set-up, take-down and carry.

Very thick beechwood top. 3 reinforcing tie-bars for increased rigidity. 40 mm angle section legs. Max load: 500 kg.

Version with wheels + handle set available for easy travel. Screws included, quick assembly model.

The wheels + handle set (réf. 200912) is only available for users with an existing table.



Working dimensions mm	E mm	H mm	Kg	Ref.
1200 x 540 - No wheels / handle	50	820	43,000	200900
1200 x 540 - With wheels / handle	50	820	44,500	200901



### Virax, French manufacturer

Virax is located in Epernay, the Champagne capital, and was founded more than 100 years ago with the launch of its famous "Virax threader", the threader that "Turns around the Axis". Today, the production facility covers more than 20,000 m<sup>2</sup>.

## 2009 : Standard Fitter's Table

## Advantages

Stability: thanks to its wide base.

Easy to carry: lockable folding legs, lightweight design.

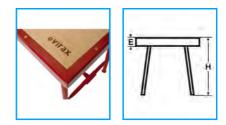
**Easy vice attachment:** no shoulder between the worktop and the angle section.

Multi-ply wooden worktop with steel angle section frame. Ø 40 mm tubular legs. Easy to install and dismantle. Max load: 300 kg.

Version with wheels + handle set available for easy travel. Screws included, quick assembly model.

The wheels + handle set (réf. 200912) is only available for users with an existing table.





Working dimensions mm	E mm	Hmm	Kg	Ref.
1080 x 610 - No wheels / handle	32	840	25,000	200910
1080 x 610 - With wheels / handle	32	840	26,500	200911

## 2009: Set wheels + handle for fitter's table

For easy travel. Screws included, quick assembly model.

Description	Kg	Ref.
Wheels / handle set	1,500	200912



## **PLUMBER'S TABLE**

### 2012 : Professional Plumber's Table

Beechwood worktop. With lower tray. Tubular legs. Max load: 200 kg.



Working dimensions mm	E mm	H mm	Kg	Ref.
700 × 500	30	830	19,000	201202



## LIGHTING

## 2628 : Waterproof XL spotlight

## **Advantages**

Waterproof for use in extreme conditions with its IP67 rating. Based on the COB LED technology, high power (2000 lumens) to light your worksites.

Handy Power Bank function to recharge your mobile devices.

Waterproof worksite spotlight (IP67 rating) with sturdy cast aluminium housing for heavy-duty and professional use in demanding work environments.

Emergency battery function with USB port to recharge mobile devices.

COB LED technology for powerful 2000 lumen lighting.

Extended lifetime up to 20 hours with its  $7.3V\,/\,4000$  mAh Li-ion battery.

Lighting intensity adjustment over 5 levels from 10% to 100%.

Jointed handle with powerful magnets

Lighting time indicator, battery charge indicator during charging.

Charger and recharging cable included.

Size mm	Kg	Ref.
163 x 163 x 63	0,790	262820





## 2628 : Portable mini spotlight

## Advantages

Min size and max power for free use.

Easy handling and **multiple positions** with its **4-in-1 jointed base**.

Brightness adaptable to your needs thanks to its ultra-precise intensity adjustment.

COB LED technology offering a powerful 1000 lumen lighting in such a compact spotlight. Can be used in all conditions thanks to its IP65 rating.

Extensive lifetime up to 15 hours with its 3.65V / 4000 mAh Li-ion battery. Accurate intensity adjustment from 10% to 100%.

Easy handling, multiple positions and light orientation with its 4-in-1 jointed base: ring, foot, magnet, clamp.

USB charging cable included.

Size mm	Kg	Ref.
104 x 96 x 38	0,250	262821







## 100% guarantee for 2 years

Virax guarantees all its products for 2 years at 100%, excluding consumables and batteries, and excluding abuse or product modified.

## 2628 : PRO 2-en-1 compact lamp

## Advantages

Multi-purpose with its **dual function: directional spotlight** or **widespread lighting**.

Adapts to all configurations with its magnetized jointed foot. Long operating lifetime with its 3.7V Li-ion battery.

Multipurpose use, adapts to your needs: directional spotlight or widespread lighting. Adapted to all work conditions with its IP65 rating.

Multiple orientation positions to adapt to all lighting configurations with its retractable suspension hook and its magnetized jointed foot with 180° rotation. Sturdy and ergonomic ultra-slim housing (13mm only) for excellent handling, carry it in your

Sturdy and ergonomic ultra-slim housing (13mm only) for excellent handling, carry it in your pocket.

Powerful lighting up to 200 lumens and low power consumption thanks to its COB LED technology.

Operating time up to 6 hours with its 3.7V / 1600 mAh Li-ion battery. Brightness adjustable from 50% to 100% power.

### Charger and charging cable included.

Size mm	Kg	Ref.
122 x 60 x 28	0,130	262822

## STORAGE

## 3826 : Textile backpack with rollers

## **Advantages**

Double use: Back pack or trolley.

Thick and strong fabric: 1200 x 1200 deniers.

Multiple storages and high capacity: adapts to your needs.

High mobility: telescopic handle integrated to the back of the bag, wheels fitted on metal shaft and ball bearings.

Many compartments ensuring easy tool access: wide opening main compartment with 2 internal pockets and removable internal tool holder, 2 external compartments with zipper, and 2 side pockets with adjustable strap for long tools.

Reflective strip for high visibility in the dark.

Comfortable use: **reinforced padded back** and adjustable padded straps (straps stored in the back when pack used as trolley), ergonomic and strong upper handle.

Tools sold separately.



6







DescriptionMax load kgInternal dimensions mmExternal dimensions mmKgRef.Textile backpack with rollers15450 x 350 x 200500 x 420 x 2503,000382653



Virax is on Facebook!

@viraxofficial





## 3826 : Textile Tool Bag

## Advantages

Multiple, practical storage compartments. Can hold up to 15 kg of tools and accessories (depending on model). Soft protective cover. (According to model) Thick, sturdy fabric: 1200x1200 stitch.

Functional and hard-wearing textile bag. **Padded shoulder strap.** Leather grip. **Stiff, water resistant base compartment.** Special screwdriver compartment.

Mini textile bag (ref. 382650) and textile bag (ref. 382660): -Aluminium carry bar. -Interior elastic straps to hold tools in place.

Textile bag (ref. 382660): -Metal saw storage.

Bucket bag (ref. 382655): -Removable tool holder spacer. -Metal holder for tape measure.





Tools sold separately.

Description	Max load kg	Internal dimensions mm	External dimensions mm	Kg	Ref.
Mini textile bag	12	340 x 200 x 200	380 x 320 x 320	2,300	382650
Textile bag	15	480 x 220 x 340	560 x 320 x 370	2,800	382660
Textile bucket bag	15	270 x 270 x 260	300 x 300 x 410	2,000	382655

## 3826 : Leather Fitter's Tool Bag

Top quality tan leather, waterproofed. Reinforced stitching. Buckle fasteners. 3 double leather studs on the underside of the bag. Inside pocket.

Tools sold separately.

Internal dimensions mm	External dimensions mm	Kg	Ref.
470 x 140 x 140	530 x 180 x 170	1,800	382670



### 3826 : Metal Fitter's Tool Bag

Painted sheet metal. Replaceable strap. Lid with closing flaps.

Internal dimensions mm	External dimensions mm	Kg	Ref.
545 x 175 x 245	570 x 180 x 270	3,920	382685



## **VACUUM CLEANER**

## 0501 : Water and Dust Vacuum Cleaner

## Advantages

Anti-clogging system thanks to its 2 filters. Vacuums everywhere thanks to its 5 m hose. Used alone or with Virax core drills.

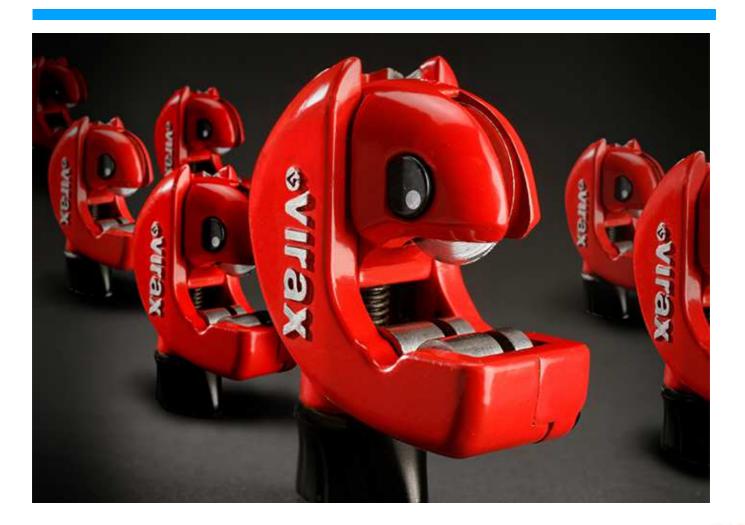
To vacuum water, dust, small gravel, plaster, soot and so on during maintenance or repair work (water leaks, sanitary system installation, masonry, etc.). Anti-clogging system to remove very fine dust with no loss of suction: 1 washable, anti-bacteria filter and 1 nylon filter.

Can be moved easily thanks to 2 fixed wheels and 2 swivel wheels. Powerful, graded speed 1500 W motor with ceramic collector for a longer lifetime. Adapted to Virax V150+ core drills and water retrievers for V150+, V250 and V350 stands. Delivered with an accessory and storage kit.

Description	Capacity L	Kg	Ref.
Water and dust vacuum cleaner	37	10,000	050157
Pack of 10 dust paper bags	30	0,150	050164







4	Ref.	Cat.	Page
4 in 1 ratcheting wrench	3103	1	29
4 way sanitary cross wrench	2204	1	27
41 pieces set - 1/4" compact sockets, 1/4" bits	3104	1	30

5	Ref.	Cat.	Page
51 pieces set - basin wrench, go-thru sockets, 1/4" bits	3104	1	31
Α	Ref.	Cat.	Page
Accessories	2402	3	75
Accessories - Portable Electric Threader	1375	4	96
Accessories for Mini Visioval® and Visioval®	2940	5	152
Accessories for Eurostem® II / III	2518	3	86
Accessories for Furet Auger	2901	5	134
Accessories for High Pressure Pipe Cleaner	2932	5	148
Accessories for Hole Saws	2209	2	63
Accessories for Press Fitting Machines	2532	4	120
Accessories for Recti 9® Tap Reamer Tool	2645	5	132
Accessories for Siberia® Pipe Freezer	2210	5	128
Accessory for Drum-Type Manual Pipe Cleaner	2906	5	136
Adaptor for the VIRAX Grooving Machine	1624	4	102
Additive and Accessory for Cleaning Pump	2950	5	157
Adjustable Manual Threader	1265	4	91
Adjustable Wrench	0170	1	26
Adjustable wrench extra light with thin jaws	0170	1	26
Adjustable wrench with reversible jaw	0170	1	25
В	Ref.	Cat.	Page
Basin Wrench	2614	1	34
Bending 2.1/2-4" Option for Ram No. 2	2402	3	75
Dending Diere	0511	0	00

2511	3	80
2510	3	79
2514	3	81
2116	2	61
2115	2	60
2114	2	58
2215	2	66
	2510 2514 2116 2115 2114	2510         3           2514         3           2116         2           2115         2           2114         2

0-4 D-

C	Ref.	Cat.	Page
Cable segment pipe cleaner VAL 96QC	2931	5	143
Cables for professional pipe cleaner VAL 26	2906	5	137
Calibration Tool 16-63 mm	2212	2	66
Carpenter's Pencil	2627	1	35
Chain Vice	2003	6	163
Chain Wrench	0142	1	23
Chamfering Tool For Plastic Pipes	2215	2	66
Cheek and Counter Former for 2500 / 2503	2500	3	78
Crossbow Bender	0400	3	70
Cheeks 4"	2402	3	73
Cheeks and Counter-Former for 2501 Crossbow Bender	2501	3	79
Closet Auger	2905	5	136
Colour Digital Inspection Mini Camera Visioval®	2941	5	149
Colour digital inspection camera Visioval® VX	2940	5	151
Compact Manual Axial Crimping Tool for PEX series 5	2533	4	112
Compact Tubular Level	2631	1	35
Concentric Radius Former for Eurostem® II / III	2518	3	86

Copper Forming Set	2504	4	104
Copper Tube Cutter 14-54 mm	2104	2	54
Copper Tube Cutter 6-28 mm	2104	2	53
Core Drill Accessories	0501	2	47
Corrugated Conduit Cutter Ø 45 mm	2116	2	61
Crimping Jaws for Models P10 / P22+ / P25+	2530	4	124
/ P30+	2531	4	124
Crossbow Bender	2503	3	77
Cutter For Rodor Tap Reamer	2621	5	131
Cutting Wheel - Deburring Spare Blade -	2104	2	55
Copper Tube Cutter	2104	2	55
Cutting Wheel - Deburring Spare Blade -	2104	2	57
Plastic-composite Tube Cutter	2104	2	57
Cutting Wheel - Deburring Spare Blade -	2104	2	52
Stainless Steel Tube Cutter	2104	2	52
Cutting Wheel - Steel and Cast Iron Pipe	2101	2	50
Cutter	2101	2	50
Cylinder / Water Heater Lift	2636	5	133

D	Ref.	Cat.	Page
Descaling Pump	2950	5	154
Diamond Core Bit	0535	2	46
Die	2504	4	104
Die Head for 2" – 4" Threading Machine	1621	4	100
Dies for 2 " – 4 " Threading Machine Die Heads	1622	4	100
Display Box of Copper Tube Cutters ZR 35	2104	2	53
Display Box of PC 32 Pipe Cutters	2150	2	58
Display Box of PC 42 - PC 50 Plastic Tube Cutters	2150	2	59
Display of Bottles of Filetfix® III	2626	4	111
Display of Measuring Tapes	3717	1	39
Double Chain Vice	2003	6	163
Drop Head Threaders	1362	4	96
Drum-Type Manual Pipe Cleaner	2906	5	136
Ductile Cast Iron Pipe Cutter	2102	2	49
E	Ref.	Cat.	Page
Electric Drum Type Pipe Cleaner VAL 80 / VAL 80E	2912	5	140
Electric Drum Type Pipe Cleaner: VAL 90	2920	5	142
Electric High Pressure Pipe Cleaner	2932	5	147
Electric Ram	2408	3	76
Electric Test Pump	2620	5	131
Electrical Water Pump	0500	2	48
Etaugriff® Pipe Vice	2002	6	163
Expansion Pliers PEX series 5	2534	4	107
Expansion plier Quick & Easy AUTOROTATION	2534	4	108
Extra-Wide Multigrip Pliers with Fast Locking Button	0182	1	19
Extra-Wide Opening Adjustable Wrench	0170	1	24
Extra-Wide Opening Multigrip Pliers	0182	1	19
Extrudax® Accessories	2528	4	109
Extrudax® Flanging Tools	2528	4	110
Extrudax® T-Flange Tool Set	2528	4	109
F	Ref.	Cat.	Page
Fast Copper Tube Cutter 6-67 mm	2104	2	54
Fast Stainless Steel Tube Cutter 6-67 mm	2104	2	51
Fast feed 6-65 mm plastic pipe cutter	2104	2	55
Filetfix® III	2626	4	111
Fitting Bar	2203	1	39
Fixtub®	2000	6	162
Flaring Pliers for Copper	2526	4	106
Flaring Tool	2526	4	106

0

	0100		
Flexible Head Ratchet Wrench 8-17 mm Flint Ignitor	3103 5282	1 6	<u>28</u> 162
Folding Portable Stand	2005	6	164
Former	2502	3	83
Former and Counter-Former for Eurostem®	2518	3	85
Former for 2500 / 2503 Crossbow Bender	2500	3	78
Former for 2501 Crossbow Bender	2501	3	78
Former for Gas Pipes Medium and Heavy	2402	3	73
Series (nfa49-115) Former for Light Series Pipes	2408 2402	3	74
Former for Locksmith's Pipes	2402	3	74
Former for PEX/AL/PEX Pipe	2402	3	75
Furet Auger Pipe Cleaner	2901	5	134
G	Ref.	Cat.	Page
	2620	-	
Gas Tightness Controller Grey Cast Iron Pipe Cutter	2020	5 2	<u>129</u> 49
Grey Cast Iron Pipe Cutter for grey cast iron	2102	2	49
Groover GR2-12	1626	4	103
Grooving machine	1624	4	102
Guillotine Pipe Cutter	2115	2	60
Н	Ref.	Cat.	Page
HSS Saw Blade	0430	2	42
Hacksaw frame	0490	2	42
Heavy Duty Flanging Tool	2505	4	105
Hinged cheek 3"	2402	3	73
Hole Saw Set	2209	2	62
Hydraulic Ram Oil	2402	3	71
I	Ref.	Cat.	Page
Individual Hole Saws	2209	2	63
Inserts for Models i10 / i26 / M20+ / M21+ /	2529	4	120
ML21+ / M2X / L2X	2532		
Insulated Slip-Joint Pliers - Straight Jaws	0112	1	18
Internal Bending Spring for PEX & Multilayers Pipes	2510	3	79
Internal-External Reamer	2212	2	64
Κ	Ref.	Cat.	Page
Knockout Punch	2211	2	64
L	Ref.	Cat.	Page
Large-Capacity Plumbing Wrench	0113	1	20
Leak Detector	2626	5	130
Leather Fitter's Tool Bag Level with 2 in 1 centre distance	3826 2631	<u>6</u> 1	<u>168</u> 36
Light Alloy Offset Viragrip® Pipe Wrench	0136	1	21
Light Alloy Viragrip® Pipe Wrench	0137	1	22
Limit Switch	2408	3	71
Locator for Mini Visioval®	2941	5	150
Μ	Ref.	Cat.	Page
Magnetic screwdrivers	3418	1	37
Mandrel / Flanging Tool	2504	4	104
Manual Axial Crimping Tool for PEX series 5	2533	4	113
Manual Hydraulic Bender Manual Hydraulic Bender for Locksmith's	2402	3	70
Pipe	2402	3	70
Manual Ram	L-10L		
	2402	3	75
Manual Test Pump	2402 2620	5	130
Manual Water Pump	2402 2620 0500	5 2	130 48
Manual Water Pump Measuring Tape	2402 2620 0500 3717	5 2 1	130 48 39
Manual Water Pump Measuring Tape Metal Fitter's Tool Bag	2402 2620 0500	5 2	130 48 39 168
Manual Water Pump Measuring Tape	2402 2620 0500 3717 3826	5 2 1 6	130 48 39
Manual Water Pump Measuring Tape Metal Fitter's Tool Bag Micro Visioval® 5-in-1 camera	2402 2620 0500 3717 3826 2942	5 2 1 6 5	130 48 39 168 153

Mini Six-Bit Screwdriver	3425	1	38
Mini crimping jaws for M21+ / ML21+ / M2X /	2525	4	122
L2X			
Mother Jaw 32 kN for Inserts for model P25+	2531	4	123
Multi-Material Internal/External Reamer	2212	2	65
Multi-diameter Bending Plier	2514	3	82
0	Ref.	Cat.	Page
Open Cheeks	2402	3	72
Ρ	Ref.	Cat.	Page
	Hon	outi	, ago
PC 32 Plastic Tube Cutter up to 32 mm	2150	2	58
PC 42 - PC 50 Plastic Tube Cutter	2150	2	59
PRO 2-en-1 compact lamp	2628	6	167
Parallel Vice	2004	6	163
Pencil Reamer with Interchangeable Blade	2212	2	65
Phenix III Portable Electric Threader	1375	4	95
Phenix Mini Portable Electric Threading	1380	4	94
Machine			
Pipe Cleaner Accessories VAL 80 / VAL 80E	2912	5	141
Pipe Cleaner Accessories VAL 96QC	2931	5	146
Pipe Cleaner Cable VAL 35 / VAL 35E	2910 2912	5	139
Pipe Cleaner Cable VAL 80 / VAL 80E		5	140
Pipe Cleaner Cable VAL 90 Pipe Cleaner Cable VAL 95 / VAL 96QC	2920 2931	5 5	<u>142</u> 144
Pipe Cleaner Gun	2901	5 5	135
Pipe Cleaner Oil	2901	5	135
Plastic pipe cutter 35 - 40 - 63 mm	2114	2	57
Plastic pipe cutter 50 -110 mm plastic pipe		-	
cutter	2106	2	55
Plier Wrench 10" - 250 mm	0112	1	20
Plug Wrench	2616	1	34
Portable Battery-Powered Bender 18 V		-	
Eurostem® III	2518	3	84
Portable Electric Drum Type Pipe Cleaner	0010	-	400
VAL 35 / VAL 35E	2910	5	138
Portable mini spotlight	2628	6	166
Portable mini spotlight Powered Hydraulic Bender	2628 2408	6 3	166 71
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table	2408 2932 2009	3	71
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table	2408 2932 2009 2012	3 5 6 6	71 146 164 165
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26	2408 2932 2009	3 5 6	71 146 164
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table	2408 2932 2009 2012	3 5 6 6	71 146 164 165
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner	2408 2932 2009 2012 2906 2902	3 5 6 5 5 5	71 146 164 165 137 135
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner R	2408 2932 2009 2012 2906	3 5 6 5 5	71 146 164 165 137
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner R Radiator Key Wrench	2408 2932 2009 2012 2906 2902	3 5 6 5 5 5	71 146 164 165 137 135
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner R Radiator Key Wrench Radiator Key Wrench With Ratchet	2408 2932 2009 2012 2906 2902 Ref. 2204 2204	3 5 6 5 5 5 Cat.	71 146 164 165 137 135 Page 27 27
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner R Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636	3 5 6 5 5 Cat. 1	71 146 164 165 137 135 Page 27
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362	3 5 6 5 5 <b>Cat.</b> 1 1 5	71 146 164 165 137 135 Page 27 27 27 133
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363	3 5 6 5 5 <b>Cat.</b> 1 1 5 4	71 146 164 165 137 135 Page 27 27 133 93
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212	3 5 6 5 5 <b>Cat.</b> 1 1 5 4	71 146 164 165 137 135 Page 27 27 133 93 64
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363	3 5 6 5 5 <b>Cat.</b> 1 1 5 4	71 146 164 165 137 135 Page 27 27 133 93
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212	3 5 6 5 5 <b>Cat.</b> 1 1 5 4	71 146 164 165 137 135 Page 27 27 133 93 64
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4	71 146 164 165 137 135 Page 27 27 133 93 64 132 113
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4 2 5 4 1	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4 4 1 1	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer	2408 2932 2009 2012 2906 2902 Ref. 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4 1 1 5 5	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer Roller Stand	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4 4 1 1	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer	2408 2932 2009 2012 2906 2902 Ref. 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621	3 5 6 5 5 <b>Cat.</b> 1 1 5 4 2 5 4 1 1 5 5	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional Pipe cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ratchet Reamer         Reducer and adaptor for Axial Crimping         Tools 2533         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Rodor® Tap Reamer         Rodor® Tap Reamer         Rodor® Tap Reamer	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref.	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional pipe cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ractie Reamer         Recti 9® Tap Reamer Tool Set         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Rodor® Tap Reamer         Roller Stand         S         Sanicrom® Basin Wrench	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional Pipe cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ratchet Reamer         Reducer and adaptor for Axial Crimping         Tools 2533         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Roller Stand         S         Sanicrom® Basin Wrench         Set of 9 hexagonal keys	2408 2932 2009 2012 2906 2902 Ref. 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33 36
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional Pipe Cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ratchet Reamer         Recti 9® Tap Reamer Tool Set         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Rodor® Tap Reamer         Roller Stand         S         Sanicrom® Basin Wrench         Set of 9 hexagonal keys	2408 2932 2009 2012 2906 2902 <b>Ref.</b> 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 <b>Ref.</b> 2614 3114 1362	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33 36 97
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional pipe cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ratchet Reamer         Reducer and adaptor for Axial Crimping         Tools 2533         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Roller Stand         S         Sanicrom® Basin Wrench         Set of 9 hexagonal keys         Set of Dies         Set wheels + handle for fitter's table	2408 2932 2009 2012 2906 2902 2204 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114 1362 2009	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33 36 97 165
Powered Hydraulic Bender         Pro HP Cleaner-Clearer         Professional Fitter's Table         Professional Plumber's Table         Professional Pipe cleaner VAL 26         Pump-Action Pipe Cleaner         Radiator Key Wrench         Radiator Key Wrench With Ratchet         Radiator Lift         Ratchet Housing for Manual Threader with         Interchangeable Heads         Ratchet Reamer         Reducer and adaptor for Axial Crimping         Tools 2533         Reducing Pliers         Reversible Sanicrom® Basin Wrench         Roller Stand         S         Sanicrom® Basin Wrench         Set of 9 hexagonal keys         Set of Dies         Set wheels + handle for fitter's table         Seven-Bit Screwdriver	2408 2932 2009 2012 2906 2902 2204 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114 1362 2009 3425	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71         146         164         165         137         135         Page         27         27         27         133         93         64         132         113         37         33         131         100         Page         33         36         97         165         38
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer Roller Stand <b>S</b> Sanicrom® Basin Wrench Set of 9 hexagonal keys Set of Dies Set wheels + handle for fitter's table Seven-Bit Screwdriver Siberia® Electric Pipe Freezer 2"	2408 2932 2009 2012 2906 2902 2204 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114 1362 2009 3425 2210	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33 36 97 165 38 128
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer Roller Stand <b>S</b> Sanicrom® Basin Wrench Set of 9 hexagonal keys Set of Dies Set wheels + handle for fitter's table Seven-Bit Screwdriver Siberia® Electric Pipe Freezer 2" Sliding Cheeks	2408 2932 2009 2012 2906 2902 2204 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114 1362 2009 3425	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71         146         164         165         137         135         Page         27         27         27         133         93         64         132         113         37         33         131         100         Page         33         36         97         165         38         128         72
Powered Hydraulic Bender Pro HP Cleaner-Clearer Professional Fitter's Table Professional Plumber's Table Professional pipe cleaner VAL 26 Pump-Action Pipe Cleaner <b>R</b> Radiator Key Wrench Radiator Key Wrench With Ratchet Radiator Lift Ratchet Housing for Manual Threader with Interchangeable Heads Ratchet Reamer Recti 9® Tap Reamer Tool Set Reducer and adaptor for Axial Crimping Tools 2533 Reducing Pliers Reversible Sanicrom® Basin Wrench Rodor® Tap Reamer Roller Stand <b>S</b> Sanicrom® Basin Wrench Set of 9 hexagonal keys Set of Dies Set wheels + handle for fitter's table Seven-Bit Screwdriver Siberia® Electric Pipe Freezer 2"	2408 2932 2009 2012 2906 2902 2204 2204 2204 2636 1362 1363 2212 2645 2533 3350 2614 2621 1611 Ref. 2614 3114 1362 2009 3425 2210 2402	3 5 6 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	71 146 164 165 137 135 Page 27 27 133 93 64 132 113 37 33 131 100 Page 33 36 97 165 38 128

Soft Solder	5283	6	162
Spare parts for 2" – 4" Threading Machine	1621	4	101
Square	2206	1	38
Stainless Steel Pipe Cutter 10-90 mm	2101	2	51
Stainless Steel Pipe Cutter 14-54 mm	2104	2	52
Stainless Steel Pipe Cutter 6-28 mm	2104	2	50
Stand for 2" Threading Machine	1624	4	101
Stand for 4" Threading Machine	1624	4	101
Standard Fitter's Table	2009	6	165
Standard Reamer	2212	2	64
Steel Pipe Cutter	2101	2	49
Stillson Wrench	0125	1	21
Strap Wrench	0116	1	21
Swedish - 45° Pipe Wrench	0105	1	17
Swedish Pipe Wrench	0104	1	16
Swedish key - 90°	0100	1	16
Swivel Base for Parallel Vice	2004	6	164
Swivel Head for Closet Auger	2905	5	136
Synthetic Threading Oil	1106	4	90

W	Ref.	Cat.	Page
Water and Dust Vacuum Cleaner	0501	6	169
Waterproof XL spotlight	2628	6	166
Workbench Manual Bender	2502	3	82
Workbench Manual Bender Accessories	2502	3	83
Ζ	Ref.	Cat.	Page
ZR 35 Copper Tube Cutter 3-35 mm	2104	2	53
ZR 35 Copper Tube Cutter 3-35 mm ZR 35 Plastic Tube Cutter 3-32 mm	2104 2104	2	53 56
		-	
ZR 35 Plastic Tube Cutter 3-32 mm	2104	2	56

Т	Def	Oct	Dama
	Ref.	Cat.	Page
T-Rax Flanging tools	2527	4	109
T-Rax T-Flange Tool Set	2527	4	108
T-rax Accessories	2527	4	109
Telescopic Sanicrom® Basin Wrench	2614	1	33
Textile Tool Bag	3826	6	168
Textile backpack with rollers	3826	6	167
Threading Machine 2"	1621	4	98
Threading Machine 4"	1621	4	99
Threading Set 3/8" - 2" And 1.1/2" - 2" -	1362	4	93
Metal Case	1364	•	
Threading Set 3/8" - 1 1/4" - Plastic case -	1362	4	92
Metal case	1363		400
Toilet Extension for Pipe Cleaner Gun	2901	5	136
Tools for Pipe Cleaner VAL 35 / VAL 35E	2910	5	139
Tools for Pipe Cleaner VAL 80 / VAL 80E	2912 2920	5	141 142
Tools for Pipe Cleaner VAL 90 Tools for Pipe Cleaner VAL 95 / VAL 96QC	2920	<u>5</u>	142
Tools for lead tube	2931	2 4	145
Towels	3600	4 5	158
Tripod	2402	3	72
Tubular Vial Level / Trapezoid Level	2631	1	35
Twin Slip-Joint Pliers	0109	1	18
· · · · · ·	0.00	•	
U	Ref.	Cat.	Page
Universal Brazing Flux	5284	6	162
Universal Key Wrench	2615	1	32
Universal wrench for toilet lid	2205	1	32
		•	
V	Ref.	Cat.	Page
V 150+ Core Drill and Support Stand	0501	2	43
V 250 Core Drill and Support Stand	0501	2	44
V 350 Core Drill and Support Stand	0501	2	45
Vacuum Pump for Core Drill	0500	2	47
Viper® L2X Electro-mechanical Press Fitting			
Machine	2535	4	117
Viper® M2X Electro-mechanical Press	0505	4	445
Fitting Machine	2535	4	115
Viper® P25+ Battery-Powered Hydraulic	0500	4	110
Press Fitting Machine	2532	4	119
Viper® i26 Manual Hydraulic Press-Fitting	2529	4	114
Machine	2029	4	114
Virafal® High Flow Sludge Removal Pump /	2950	5	156
Descaling Pump		-	
Viragrip® in Heavy Duty Cast Iron	0138	1	22

01	Cat.	Page
010011	1	16
010012	1	16
010012	1	16
010013	1	16
010041	1	16
010042	1	16
010043	1	16
010434	1	16
010449	1	16
010400	1	10
010534	1	17
010534	1	17
010549	1	17
010590	1	17
010590	1	17
	1	17
010611	1	17
010613		17
010731	1	
010732	1	17
010733	1	17
010734	1	17
010735	1	17
010823	1	18
010828	1	18
010838	1	18
010917	1	18
010924	1	18
010930	1	18
011210	1	20
011240	1	18
011324	1	20
011600	1	21
011610	1	21
011620	1	21
012520	1	21
012525	1	21
012535	1	21
012545	1	21
012560	1	21
012590	1	21
013614	1	21
013618	1	21
013624	1	21
013735	1	22
013745	1	22
013760	1	22
013790	1	22
013806	1	22
013808	1	22
013810	1	22
013812	1	22
013814	1	22
013818	1	22
013824	1	22
013836	1	22
013848	1	22
014100	1	23
014200	1	23
014210	1	23
017006	1	26
017008	1	26
017008 017010	1	26
017008		

017018	1	26
017020	1	26
017021	1	26
017022	1	26
017023	1	26
017030	1	25
017031	1	25
017032	1	25
017033	1	25
017045	1	24
017047	1	24
017050	1	24
017052	1	24
017055	1	24
018202	1	19
018208	1	19
018212	1	19
018218	1	19
018222	1	19
018228	1	19
04	Cat.	Page
0.4000.0.4	<u> </u>	10
043004	2	42
043006	2	42
043008	2	42
043010	2	42
043012	2	42
049000	2	42
049050	2	42
049070	2	42
05	Cat.	Page
00	Out.	Tage
050043	2	47
050043 050049	2	47 48
050049	2	48
050049 050055 050110	2 2	48 48
050049 050055	2 2 2	48 48 43
050049 050055 050110 050111	2 2 2 2 2	48 48 43 43
050049 050055 050110 050111 050112	2 2 2 2 2 2	48 48 43 43 43 47
050049 050055 050110 050111 050112 050113	2 2 2 2 2 2 2 2 2	48 48 43 43 47 47 47
050049 050055 050110 050111 050112 050113 050114	2 2 2 2 2 2 2 2 2 2	48 48 43 43 47 47 47 47
050049 050055 050110 050111 050112 050113 050114 050115	2 2 2 2 2 2 2 2 2 2 2 2	48 43 43 47 47 47 47 47 47
050049 050055 050110 050111 050112 050113 050114 050115 050116	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 43 43 47 47 47 47 47 47 43
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 43 47
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 43 43 47 47 47 47 47 47 43 47 43 47 44
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 43 43 47 47 47 47 47 47 43 47 43 47 44 44
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 43 47 43 47 44 44 45
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121 050121 050122	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48           48           43           47           47           47           47           47           47           47           43           47           47           47           43           47           43           47           43           47           43           47           43           47           43           47           43           47           43           47
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121 050121 050122 050123	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         48         43         47         47         47         47         47         47         47         47         47         47         47         47         47         47         43         47         43         47         43         47         43         47         44         45         47         47
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050123	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         47         47         47         47         47         47         47         47         43         47         43         47         43         47         44         45         47         47         47         47
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121 050121 050122 050123 050123 050124 050125	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         44         45         47         47         47         47         47         47         47         47         47
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121 050121 050122 050123 050124 050125 050126	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 44 44 45 47 47 47 47 47 47 47 47 47 47 47
050049 050055 050110 050111 050112 050113 050114 050115 050116 050119 050120 050121 050121 050122 050123 050123 050124 050125 050126 050130	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         44         45         47         47         47         47         47         47         47         47         47         47         45
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050126           050130           050132	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 44 44 45 47 47 47 47 47 47 47 47 47 47 47
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050126           050130           050132           050133           050136           050139	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 44 44 45 47 47 47 47 47 47 47 47 47 47 45 47
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050121           050122           050123           050124           050125           050126           050130           050132           050133           050136           050139           050141	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         47         43         47         47         47         43         47         43         47         44         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         45         47         45         47         45         47         45          47          45
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050126           050130           050132           050133           050136           050139	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48 48 43 47 47 47 47 47 47 47 44 44 45 47 47 47 47 47 47 47 47 47 47 45 47
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050114           050115           050116           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050130           050132           050133           050136           050139           050141           050145           050146	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         43         47         43         47         43         47         44         45         47         47         47         47         47         47         45         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050111           050112           050113           050114           050115           050116           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050121           050122           050123           050124           050125           050126           050130           0501313           050133           050136           050139           050141           050145	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         47         43         47         47         43         47         44         45         47         47         47         47         47         47         45         47         45         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050114           050115           050116           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050130           050132           050133           050136           050139           050141           050145           050146	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         43         47         43         47         43         47         44         45         47         47         47         47         47         47         45         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050114           050115           050116           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050130           0501313           050133           050136           050139           050141           050145           050146           050147	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         47         43         47         43         47         43         47         43         47         44         45         47         47         47         47         45         47         45         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050120           050121           050122           050123           050124           050125           050130           0501313           050133           050136           050139           050141           050145           050146           050147           050155	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         47         43         47         43         47         43         47         44         45         47         47         47         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050121           050122           050123           050124           050125           050126           050130           050132           050133           050136           050137           050141           050145           050145           050147           050155           050157	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         43         47         43         47         43         47         43         47         44         45         47         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47 <tr td=""> <tr td=""></tr></tr>
050049           050055           050110           050112           050113           050114           050115           050116           050117           050118           050119           050120           050121           050122           050123           050124           050125           050126           050127           050128           050129           050121           050122           050123           050124           050125           050126           050130           0501313           050133           050136           050137           050141           050145           050144           050157           050157           050157	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	48         43         43         47         47         47         47         47         47         43         47         47         43         47         47         43         47         44         45         47         47         47         47         45         47         45         47         45         47         45         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47         47      47

	050164	6	169	136
	050175	2	47	136
	053502	2	46	136
	053504	2	46	136
	053506	2	46	136
	053508	2	46	136
	053510	2	46	136
	053512	2	46	136
	053514	2	46	136
	053516	2	46	136
	053518	2	46	136
_	053520	2	46	136
_	053522 053524	2	46 46	<u>136</u> 136
_	053524	2	46	136
_	053528	2	46	136
_	053530	2	40	136
_	053532	2	46	136
_	053534	2	46	136
	053536	2	46	136
	053538	2	46	136
	053540	2	46	136
				136
	11	Cat.	Page	136
				136
	110101	4	90	136
	110105	4	90	136
	110112	4	90	136
	110200	4	90	136
	110202	4	90	136
	110605	4	90	136
				136
	12	Cat.	Page	136
_	104500	4	01	136
	124502	4	91	136
	124503	4	91	136 136
	124503 124504	4 4	91 91	136 136 136
	124503 124504 126500	4 4 4	91 91 91	136 136 136 136
	124503 124504 126500 126503	4 4 4 4	91 91 91 91	136 136 136 136 136
	124503 124504 126500 126503 126504	4 4 4	91 91 91 91 91 91	136 136 136 136 136 136
	124503 124504 126500 126503 126504 126505	4 4 4 4 4	91 91 91 91 91 91 91	136 136 136 136 136 136 136
	124503 124504 126500 126503 126504	4 4 4 4 4 4 4	91 91 91 91 91 91	136 136 136 136 136 136 136
	124503 124504 126500 126503 126504 126505 126520	4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91	136 136 136 136 136 136 136
	124503 124504 126500 126503 126504 126505 126520 126599	4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91	136 136 136 136 136 136 136 136
	124503 124504 126500 126503 126504 126505 126520 126599 127500	4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91	$     \begin{array}{r}         136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\             136 \\     $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505	4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91	136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136           136
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506 127599	4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91	$     \begin{array}{r}       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506	4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91	$     \begin{array}{r}       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506 127599 <b>13</b>	4 4 4 4 4 4 4 4 4 4 4 4 Cat.	91 91 91 91 91 91 91 91 91 91 91 91 91 Page	$     \begin{array}{r}         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\         136 \\     $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506 127599 <b>13</b>	4 4 4 4 4 4 4 4 4 4 4 4 4 2 4 2 4 2 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$     \begin{array}{r}       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       136 \\       $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506 127599 <b>13</b>	4 4 4 4 4 4 4 4 4 4 4 4 <b>Cat.</b>	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ $
	124503 124504 126500 126503 126504 126505 126520 126599 127500 127505 127506 127599 <b>13</b> 136095 136201 136202	4 4 4 4 4 4 4 4 4 4 4 <b>Cat.</b>	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203	4 4 4 4 4 4 4 4 4 4 4 4 <b>Cat.</b> 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ $
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ -136\\ $
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215 136216	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 137\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215 136216 136222	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 137\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215 136216 136222 136223	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ \hline 137\\ \hline 13$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215 136216 136222 136223	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$
	124503 124504 126500 126503 126504 126505 126520 127500 127505 127506 127599 <b>13</b> 136095 136201 136202 136203 136204 136205 136206 136207 136213 136215 136216 136222 136223 136223	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	91 91 91 91 91 91 91 91 91 91 91 91 91 9	$\begin{array}{c} 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\ 136\\$

136241	4	96
136242	4	96
136244	4	96
136246	4	96
136263	4	93
136270	4	
-		92
136280	4	93
136281	4	93
136282	4	93
136290	4	93
136292	4	93
136294	4	93
136295	4	93
136301	4	92
136311	4	92
136320	4	97
136321	4	97
136322	4	97
136323	4	97
136324	4	97
136325	4	97
136326	4	97
136330	4	97
136331	4	
		98
136332	4	98
136333	4	98
136334	4	98
136335	4	98
136336	4	98
136340	4	96
136341	4	96
136342	4	96
136343	4	
	-	96
136344	4	96
136345	4	96
136346	4	96
136347	4	96
136350	4	97
136351	4	97
136352	4	97
136353	4	97
136354	4	97
136355	4	97
136356	4	97
136357	4	97
136361	4	92
136408	4	97
136418	4	97
136428	4	98
136448	4	96
136448	4	97
	4	
136449		97
136460	4	93
136490	4	93
136494	4	93
136495	4	93
137003	4	98
137004	4	98
137005	4	98
137007	4	98
137507	4	96
137550	4	95
137552	4	96
137553	4	96
137562	4	95
137563	4	95
138020	4	94

13	Cat.	Page	20
120001	Α	04	20
138021	4 4	94 96	20
130022	4	90	20
16	Cat.	Page	20
		- <b>J</b>	20
161100	4	100	20
162120	4	98	20
162140	4	99	20
162150	4	100	20
<u>162151</u> 162152	4	100	20
162152	4 4	100 100	20 20
162201	4	100	20
162202	4	100	
162203	4	100	2
162204	4	100	
162205	4	100	21
162207	4	100	21
162208	4	100	21
162209	4	100	21
162220	4	101	21
162301	4	101 100	21 21
162301	4	100	21
162302	4	101	21
162303	4	101	21
162304	4	101	21
162305	4	101	21
162307	4	101	21
162308	4	101	21
162309	4	101	21
162400	4	102	21
<u>162420</u> 162420	4	102 102	21 21
162420	4	102	21
162422	4	102	21
162423	4	102	21
162424	4	102	21
162425	4	102	21
162430	4	102	21
162431	4	102	21
162432	4	102	
162433	4	102	21
<u>162460</u> 162461	4 4	101 101	21 21
162401	4	101	21
162471	4	101	21
162600	4	103	21
162610	4	103	21
162611	4	103	21
162612	4	103	21
162613	4	103	21
162614	4	103	21
162615	4	103	21
<u>162616</u> 162617	4	103 103	21 21
162617	4 4	103	21
102010	-	100	21
20	Cat.	Page	21
			21
200010	6	162	21
200200	6	163	21
200210	6	163	21
200220	6	163	21

200230	6	163	210496
200340	6	163	210497
200350	6	163	210611
200410	6	163	210621
200411	6	164	210630
200412	6	163	211401
200412	6		211401
	-	164	
200415	6	163	211405
200416	6	164	211406
200500	6	164	211435
200900	6	164	211440
200901	6	164	211464
200910	6	165	211501
200911	6	165	211502
200912	6	165	211503
201202	6	165	211512
	-		211522
21	Cat.	Page	211532
	041.	i uge	211627
210110	2	48	211640
210110	2	51	214041
210120	2	48	215032
210121	2	50	215035
210122	2	50	215041
210123	2	52	215042
210125	2	51	215050
210130	2	48	215060
210130	2	51	215061
210141	2	50	
210142	2	50	22
210145	2	49	
210145	2	49	220305
210105	2	49	
	. –		220308
210211	2	50	220310
210220	2	49	220315
210221	2	50	220318
210250	2	49	220320
210251	2	50	220410
210260	2	49	220420
210261	2	50	220425
210265	2	49	220430
210266	2	50	220435
210350	2	55	220460
210352	2	55	220465
210360	2	52	220470
210362	2	52	220510
210437	2	52	220610
210439	2	52	220620
210433	2	53	220620
210443			220640
	2	53	220640
210444	2	53	
210445	2	54	220901
210447	2	54	220903
210453	2	55	220906
210454	2	55	220907
210455	2	54	220908
210469	2	50	220910
210471	2	51	220911
210475	2	52	220912
210481	2	52	220914
210482	2	52	220916
	2	51	220917
210483		57	220918
210483	· ·	01	
210486	2	56	220020
210486 210487	2	56 57	220920
210486 210487 210488	2 2	57	220921
210486 210487 210488 210489	2 2 2	57 56	220921 220922
210486 210487 210488	2 2	57	220921

10496	2	57	220926
10497	2	55	220928
10611	2	57	220930
10621	2	57	220932
10630	2	55	220934
11401	2	58	220936
11404	2	58	220938
11405	2	58	220940
11406	2	58	220942
11435	2	57	220948
11440	2	57	220952
11464	2	57	220956
11501	2	60	220964
11502	2	60	220966
11503	2	60	220972
11512	2	60	220980
11522	2	60	221025
11532	2	60	221026
11627	2	61	221027
11640	2	61	221027
14041	2	58	221028
15032	2	58	221029
15035	2	58	221030
15041	2	58	221031
15042	2	59	221032
15050	2	59	221033
15060	2	59	221034
15061	2	59	221035
00	0-1	Dama	221036
22	Cat.	Page	221037
20305	1	20	221038 221039
20303	1	39	
		20	
		39	221069
20310	1	39	221070
20310 20315	1 1	39 39	221070 221123
20310 20315 20318	1 1 1	39 39 39	221070 221123 221128
20310 20315 20318 20320	1 1 1 1	39 39 39 39	221070 221123 221128 221132
20310 20315 20318 20320 20410	1 1 1	39 39 39 39 39 27	221070 221123 221128 221132 221135
20310 20315 20318 20320 20410 20420	1 1 1 1 1 1 1	39 39 39 39 27 27 27	221070 221123 221128 221132 221135 221137
20310 20315 20318 20320 20410	1 1 1 1 1 1	39 39 39 39 39 27	221070 221123 221128 221132 221135
20310 20315 20318 20320 20410 20420 20425	1 1 1 1 1 1 1 1 1	39 39 39 39 27 27 27 27	221070 221123 221128 221132 221135 221135 221137 221220
20310 20315 20318 20320 20410 20420 20425 20430	1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27	221070 221123 221128 221132 221135 221135 221137 221220 221242
20310 20315 20318 20320 20410 20420 20425 20430 20435	1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27 27 27	221070 221123 221128 221132 221135 221135 221137 221220 221242 221250
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460	1 1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27 27 27 27 27	221070 221123 221128 221132 221135 221135 221137 221220 221242 221250 221251
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465	1 1 1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27 27 27 27 27 27	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20470	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27 27 27 27 27 27 27	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	39 39 39 27 27 27 27 27 27 27 27 27 27 27 27 32	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20510	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           27           27           27           27           32           38	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221265
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           27           32           38           38	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265
20310 20315 20318 20320 20410 20420 20425 20430 20435 20430 20465 20460 20465 20470 20510 20510 20610 20620 20630	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           27           38           38           38	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221265
20310 20315 20318 20320 20410 20420 20425 20430 20435 20430 20435 20460 20465 20470 20510 20510 20610 20620 20630 20640	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 2	39           39           39           27           27           27           27           27           27           27           27           38           38           38           38           38	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20620 20630 20640 20900	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2	39           39           39           27           27           27           27           27           27           27           27           38           38           38           38           38           38           38           38	221070 221123 221128 221135 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276
20310 20315 20318 20320 20410 20420 20425 20430 20435 20430 20435 20460 20465 20470 20510 20610 20610 20620 20630 20640 20900 20901	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           39           27           27           27           27           27           27           27           27           27           27           27           38           38           38           38           63           63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20620 20630 20640 20900 20901 20903 20906 20907	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           38           38           38           63           63           63           62           62	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20620 20630 20640 20900 20901 20903 20906 20907 20908	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           38           38           38           63           63           62           62           62	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20620 20630 20640 20900 20901 20903 20906 20907 20908 20910	$ \begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$	39           39           39           39           27           27           27           27           27           27           27           27           27           27           38           38           38           63           63           62           62           63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20900 20900 20900 20900 20900 20900 20900 20907 20908 20910 20911	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39           39           39           39           27           27           27           27           27           27           27           27           27           27           27           27           38           38           38           63           63           62           62           63           63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500 221501
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20620 20630 20640 20900 20901 20903 20906 20907 20908 20907 20908 20910 20911 20912	1 1 1 1 1 1 1 1 1 1 1 1 1 1	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         62         62         63         63         63         63         63         63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20640 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20901 20911 20912 20914	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         62         62         63         63         63         63         63         63         63         63         63         63         63          63   </td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221500 221501 221501</td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         62         62         63         63         63         63         63         63         63         63         63         63         63          63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221500 221501 221501
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20901 20908 20910 20911 20912 20914 20916	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         62         62         63         63         63         63         63         63         63         63         63         63          63    </td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b></td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         62         62         63         63         63         63         63         63         63         63         63         63          63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b>
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20470 20510 20610 20610 20620 20630 20640 20900 20901 20903 20906 20907 20908 20907 20908 20910 20911 20912 20914 20916 20917	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63          63   </td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b></td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63          63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b>
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20900 20901 20903 20906 20907 20908 20907 20908 20910 20911 20912 20914 20916 20917 20918	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63</td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221500 221501 <b>24</b>0101 240102 240103</td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221276 221277 221278 221280 221281 221500 221501 <b>24</b> 0101 240102 240103
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20901 20908 20910 20911 20912 20914 20916 20917 20918 20920	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63</td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b>0101 240102 240103 240105</td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         27         27         27         27         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b> 0101 240102 240103 240105
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20470 20510 20610 20610 20620 20630 20640 20900 20901 20903 20906 20907 20908 20907 20908 20910 20911 20912 20914 20916 20917 20918 20920 20921	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63          63          63          63          63          63          63    </td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b>0101 240102 240103 240105 240106</td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63          63          63          63          63          63          63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b> 0101 240102 240103 240105 240106
20310 20315 20318 20320 20410 20420 20425 20430 20435 20460 20465 20460 20465 20470 20510 20610 20610 20620 20630 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20900 20901 20908 20910 20911 20912 20914 20916 20917 20918 20920	1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2         2 <td< td=""><td>39         39         39         39         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63</td><td>221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b>0101 240102 240103 240105</td></td<>	39         39         39         39         27         27         27         27         27         27         27         27         27         27         38         38         38         38         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63         63	221070 221123 221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221276 221276 221277 221278 221280 221281 221280 221281 221500 221501 <b>24</b> 0101 240102 240103 240105

220320	~	00
220928	2	63
220930	2	63
220932	2	63
220934	2	63
220936	2	63
220938	2	63
220940	2	63
220942	2	63
220948	2	63
220952	2	63
220956	2	63
220964	2	63
220966	2	63
220972	2	63
220980	2	63
221025	5	128
221026	5	128
221027	5	128
221027	5	129
221028	5	129
221029	5	129
221030	5	129
221031	5	129
		129
221032	5	
221033	5	129
221034	5	129
221035		
	5	129
221036	5	129
221037	5	129
221038	5	129
221039	5	129
221069	5	128
221070	5	128
221123	2	64
221123	2	
221128	2	64
221128 221132	2 2	64 64
221128 221132 221135	2 2 2	64 64 64
221128 221132 221135 221137	2 2 2 2	64 64 64 64
221128 221132 221135	2 2 2	64 64 64
221128 221132 221135 221137 221220	2 2 2 2 2 2	64 64 64 64 64
221128 221132 221135 221137 221220 221242	2 2 2 2 2 2 2 2	64 64 64 64 64 64
221128 221132 221135 221137 221220 221242 221250	2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 64
221128 221132 221135 221137 221220 221242	2 2 2 2 2 2 2 2	64 64 64 64 64 64
221128 221132 221135 221137 221220 221242 221250 221251	2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 64 65
221128 221132 221135 221137 221220 221242 221250 221251 221252	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261	2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65 65
221128 221132 221135 221137 221220 221242 221250 221251 221252	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65 65 55
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65 65 55 57
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 65 65 65 65 55 57 65
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 64 65 65 65 65 55 57
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221266	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221266	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65           65           65           65           65           65           65           65           65           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65           66           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65           65           65           65           65           65           65           65           65           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           52           65           66           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           55           57           65           65           66           66           66           66           66           66           66           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         65         65         55         57         65         55         65         65         65         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64           64           64           64           64           64           65           65           55           57           65           55           57           65           65           66           66           66           66           66           66           66           66           66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         65         65         55         57         65         55         65         65         65         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500 221501	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         65         65         55         57         65         52         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66          66          66          66          66          66          66          66          66          66          66          66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         65         65         55         57         65         55         65         65         65         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221261 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500 221501 221501	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64 64 64 64 64 65 65 65 55 57 65 55 57 65 52 65 66 66 66 66 66 66 66 66 66 66 66 66
221128 221132 221135 221137 221220 221242 221250 221251 221252 221265 221265 221265 221265 221266 221266 221276 221277 221278 221280 221281 221500 221501	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         65         65         55         57         65         52         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221265         221265         221265         221265         221266         221276         221276         221277         221278         221281         221501         240101	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         65         65         55         57         65         52         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221265         221265         221265         221265         221266         221276         221276         221277         221278         221281         221500         221501         240101         240102	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         65         65         55         57         65         55         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221265         221265         221265         221265         221266         221276         221276         221277         221278         221281         221501         240101	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         64         64         65         65         55         57         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71         72
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221265         221265         221265         221265         221266         221276         221276         221277         221278         221281         221500         221501         240101         240102	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         65         65         55         57         65         55         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221261         221265         221265         221265         221266         221276         221277         221278         221281         221501         24         240101         240103         240105	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         64         64         65         65         55         57         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71         72         72
221128         221132         221135         221137         221220         221242         221250         221251         221252         221265         221265         221265         221265         221265         221266         221276         221277         221278         221281         221501         24         240101         240102         240105         240106	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         64         64         65         65         55         57         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71         72         72         72
221128         221132         221135         221137         221220         221220         221242         221250         221251         221252         221261         221265         221265         221265         221266         221276         221277         221278         221281         221501         24         240101         240103         240105	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         64         64         65         65         55         57         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71         72         72
221128         221132         221135         221137         221220         221242         221250         221251         221252         221265         221265         221265         221265         221265         221266         221276         221276         221277         221278         221281         221501         24         240101         240102         240103         240105         240106	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	64         64         64         64         64         64         64         64         64         65         65         55         57         65         65         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         66         71         71         72         72         72

63

2

				-	=0		-				
	<b>.</b>		240223	3	73	250228	3	83		3	80
24	Cat.	Page	240226	3	73	250229	3	83		3	80
		70	240228	3	73	250232	3	83		3	80
240111	3	72	240233	3	70	250233	3	83		3	80
240114	3	72	240242	3	70	250234	3	83		3	80
240115	3	72	240243	3	70	250235	3	83		3	80
240117	3	73	240248	3	75	250236	3	83		3	80
240119	3	73	240249	3	70	250237	3	83		3	82
240120	3	73	240252	3	70	250238	3	83		3	81
240122	3	73	240279	3	70	250239	3	83		3	81
240122	3	74	240802	3	76	250241	3	83		3	81
240123	3	73	240803	3	76	250242	3	83		3	86
240123	3	74	240811	3	71	250243	3	83		3	86
240124	3	73	240842	3	71	250244	3	83		3	85
240124	3	74	240843	3	71	250245	3	83		3	85
240125	3	73	240851	3	71	250246	3	83		3	85
240125	3	74	240852	3	71	250246	3	84		3	85
240141	3	73		_		250270	3	83		3	85
240141	3	74	25	Cat.	Page	250271	3	82		3	85
240142	3	73				250272	3	82		3	85
240142	3	74	250001	3	78	250275	3	82		3	85
240143	3	73	250002	3	78	250280	3	82		3	85
240143	3	74	250003	3	78	250282	3	82		3	85
240144	3	73	250010	3	78	250285	3	82		3	85
240144	3	74	250012	3	78	250300	3	77		3	85
240145	3	73	250014	3	78	250301	3	77		3	85
240145	3	74	250015	3	78	250302	3	77		3	86
240146	3	73	250016	3	78	250303	3	77		3	86
240146	3	74	250018	3	78	250304	3	77	251834	3	86
240147	3	73	250020	3	78	250305	3	77		3	86
240147	3	74	250022	3	78	250306	3	77		3	86
240148	3	73	250026	3	78	250401	4	104		3	86
240148	3	74	250032	3	78	250402	4	104		3	86
240149	3	73	250051	3	78	250403	4	104	251839	3	86
240149	3	74	250053	3	78	250411	4	104		3	86
240151	3	74	250130	3	79	250412	4	104		4	120
240152	3	74	250131	3	79	250413	4	104		3	84
240153	3	74	250132	3	79	250421	4	104		3	85
240154	3	74	250159	3	78	250422	4	104	251863	3	85
240155	3	74	250160	3	78	250423	4	104	251864	3	85
240156	3	74	250161	3	78	250431	4	104	251865	3	85
240160	3	74	250162	3	78	250432	4	104	251866	3	85
240161	3	74	250163	3	78	250433	4	104		3	85
240162	3	74	250164	3	78	250434	4	104	251872	3	85
240163	3	74	250165	3	78	250435	4	104	251873	3	84
240164	3	74	250166	3	78	250441	4	104	251874	3	84
240165	3	74	250167	3	78	250442	4	104	251875	3	84
240166	3	74	250168	3	78	250443	4	104	251876	3	84
240167	3	74	250170	3	78	250447	4	104	251877	3	84
240168	3	74	250171	3	78	250580	4	105	251878	3	84
240169	3	74	250172	3	78	250620	4	105	251879	3	85
240170	3	74	250173	3	78	251010	3	79	251879	3	86
240171	3	74	250174	3	78	251012	3	79	251880	3	84
240172	3	74	250200	3	83	251014	3	79	251881	3	84
240173	3	74	250201	3	83	251015	3	79	251882	3	86
240174	3	74	250203	3	83	251016	3	79	251883	3	86
240175	3	74	250208	3	83	251018	3	79	252500	4	122
240177	3	75	250210	3	83	251020	3	79	252501	4	122
240178	3	75	250211	3	83	251022	3	79	252502	4	122
240179	3	75	250212	3	83	251042	3	79	252503	4	122
240185	3	75	250213	3	83	251044	3	79	252504	4	122
240200	3	75	250216	3	83	251046	3	79	252505	4	122
240200	3	83	250218	3	83	251048	3	79		4	122
240201	3	75	250219	3	83	251050	3	79		4	122
240202	3	75	250221	3	83	251052	3	79		4	122
240203	3	75	250222	3	83	251106	3	80	252509	4	122
240210	3	72	250223	3	83	251108	3	80		4	122
240211	3	72	250224	3	83	251110	3	80		4	122
240216	3	72	250225	3	83	251112	3	80	252514	4	122
240217	3	72	250226	3	83	251114	3	80		4	122
240222	3	73	250227	3	83	251115	3	80		4	122

			252624	4	106	252916	4	121	253041 4	124
25	Cat.	Page	252624	4	100	252917	4	121	253041 4	125
20	Out.	i age	252625	4	107	252918	4	121	253042 4	123
252518	4	122	252625	4	100	252919	4	121	253042 4	124
		122								
252519	4		252626	4	106	252921	4	114	253043 4	124
252520	4	122	252626	4	107	252922	4	114	253043 4	125
252521	4	122	252627	4	106	252938	3	86	253044 4	124
252523	4	122	252627	4	107	252938	4	120	253044 4	125
252524	4	122	252628	4	106	252942	4	120	253045 4	124
252525	4	122	252628	4	107	252942	4	121	253045 4	125
252526	4	122	252632	4	106	252943	4	121	253046 4	124
252527	4	122	252632	4	107	252946	4	121	253046 4	125
252528	4	122	252633	4	106	252948	4	121	253047 4	124
252529	4	122	252633	4	107	252949	4	121	253047 4	125
252530	4	122	252634	4	106	252951	4	120	253048 4	124
252531	4	122	252634	4	107	252952	4	120	253048 4	125
252532	4	122	252635	4	106	252953	4	120	253050 4	124
252545	4	122	252635	4	107	252954	4	120	253050 4	125
252546	4	122	252637	4	106	252955	4	120	253051 4	124
252547	4	122	252640	4	106	252961	4	121	253051 4	125
252548	4	122	252641	4	106	252962	4	121	253052 4	123
252549	4	122	252644	4	106	252963	4	121	253052 4	124
252549	4	122	252644	4	106	252963	4	122	253052 4	125
252556	4	122	252679	4	106	252965	4	122	253053 4	125
252590	4	122	252681	4	106	252966	4	121	253054 4	124
252591	4	122	252701	4	109	252967	4	121	253054 4	125
252592	4	122	252702	4	109	252967	4	122	253055 4	124
252593	4	122	252703	4	109	252981	4	120	253055 4	125
252594	4	122	252711	4	109	252982	4	120	253056 4	124
252595	4	122	252712	4	109	252983	4	120	253056 4	125
252600	4	106	252714	4	109	252984	4	120	253059 4	124
252601	4	106	252715	4	109	252986	4	120	253059 4	125
252601	4	107	252717	4	109	252987	4	120	253060 4	124
252602	4	106	252719	4	109	252988	4	120	253060 4	125
252602	4	107	252730	4	108	252989	4	120	253061 4	124
252603	4	106	252801	4	109	253001	4	124	253061 4	125
252603	4	107	252802	4	109	253001	4	125	253062 4	124
252604	4	106	252804	4	109	253002	4	124	253062 4	125
252604	4	107	252810	4	110	253002	4	125	253063 4	124
252605	4	106	252812	4	110	253003	4	124	253063 4	125
252605	4	107	252814	4	110	253003	4	125	253064 4	124
252606	4	106	252815	4	110	253004	4	124	253064 4	125
252606	4	107	252816	4	110	253004	4	125	253065 4	124
252607	4	107	252818	4	110	253005	4	124	253065 4	125
252607	4	107	252820	4	110	253005	4	125	253066 4	124
252608	4	107	252822	4	110	253005	4	123	253066 4	124
252608	4	107	252830	4	109	253006	4	124	253067 4	125
252608	4	107	252830	4	110	253006	4	125	253067 4	124
				4			4			125
252609	4	107	252861		110	253007		125	253068 4	
252610	4	106	252862	4	110	253008	4	124	253068 4	125
252610	4	107	252863	4	110	253008	4	125	253069 4	124
252611	4	106	252864	4	110	253009	4	124	253069 4	125
252611	4	107	252880	4	109	253009	4	125	253090 4	124
252612	4	106	252883	4	109	253011	4	124	253090 4	125
252612	4	107	252902	4	121	253011	4	125	253091 4	124
252613	4	106	252903	4	121	253012	4	124	253091 4	125
252613	4	107	252904	4	121	253012	4	125	253092 4	124
252614	4	106	252905	4	121	253016	4	124	253092 4	125
252614	4	107	252906	4	121	253016	4	125	253095 4	124
252615	4	106	252907	4	121	253017	4	124	253095 4	125
252615	4	107	252908	4	121	253017	4	125	253096 4	124
252616	4	106	252909	4	121	253033	4	124	253096 4	125
252616	4	107	252910	4	114	253033	4	125	253097 4	124
252622	4	106	252911	4	121	253034	4	124	253097 4	125
252622	4	107	252912	4	114	253034	4	125	253098 4	124
252623	4	106	252913	4	114	253040	4	124	253098 4	125
252623	4	107	252915	4	121	253040	4	125	253102 4	123
202020	-7	107	202010	-	121	2000-0	7	120	200102 7	127



			050060	4	110	050555	4	115	001500 1	00
0.5	<u> </u>	_	253263	4	119	253555	4	115	261502 1	32
25	Cat.	Page	253266	4	121	253555	4	116	261620 1	34
			253268	4	121	253556	4	115	262005 5	130
253102	4	125	253271	4	121	253556	4	116	262015 5	130
253104	4	124	253272	4	121	253557	4	115	262035 5	130
253104	4	125	253273	4	121	253557	4	116	262070 5	131
253105	4	124	253274	4	121	253558	4	115	262080 5	129
253105	4	125	253275	4	121	253558	4	116	262111 5	131
253106	4	124	253276	4	121	253559	4	115	262111 5	132
253106	4	125	253277	4	122	253559	4	116	262112 5	131
253107	4	124	253278	4	122	253560	4	115	262112 5	132
253107	4	124				253560	4			
			253281	4	121			116	262113 5	131
253108	4	124	253282	4	121	253561	4	115	262113 5	132
253108	4	125	253283	4	121	253561	4	116	262114 5	131
253110	4	124	253284	4	121	253562	4	115	262114 5	132
253110	4	125	253285	4	121	253562	4	116	262115 5	131
253111	4	124	253286	4	121	253563	4	115	262115 5	132
253111	4	125	253287	4	121	253563	4	116	262116 5	131
253112	4	124	253300	4	113	253564	4	115	262116 5	132
253112	4	125	253302	4	113	253564	4	116	262117 5	131
253113	4	124	253303	4	113	253565	4	115	262117 5	132
253113	4	125	253312	4	113	253565	4	116	262118 5	131
										132
253114	4	124	253316	4	113	253566	4	115	262118 5	
253114	4	125	253320	4	113	253566	4	116	262120 5	131
253115	4	124	253325	4	113	253568	4	115	262120 5	132
253115	4	125	253332	4	113	253568	4	116	262122 5	131
253116	4	124	253333	4	113	253569	4	115	262122 5	132
253116	4	125	253334	4	113	253569	4	116	262123 5	131
253117	4	124	253335	4	113	253570	4	117	262123 5	132
253117	4	125	253350	4	112	253570	4	118	262124 5	131
253118	4	124	253355	4	112	253571	4	117	262124 5	132
253118	4	125	253360	4	112	253571	4	118	262126 5	131
253119	4	124	253361	4	112	253572	4	117	262126 5	132
							4			132
253119	4	125	253380	4	113	253572		118		
253126	4	124	253381	4	113	253574	4	117	262130 5	132
253126	4	125	253401	4	107	253574	4	118	262132 5	131
253127	4	124	253402	4	107	253575	4	117	262132 5	132
253127	4	125	253403	4	107	253575	4	118	262181 5	131
253128	4	124	253412	4	107	253576	4	117	262182 5	131
253128	4	125	253416	4	107	253576	4	118	262191 5	131
253129	4	124	253425	4	107	253577	4	117	262600 4	111
253129	4	125	253432	4	107	253577	4	118	262601 4	111
253130	4	124	253454	4	108	253579	4	117	262630 5	130
253130	4	125	253456	4	108	253579	4	118	262700 1	35
253130			253457			253581				166
	4	124		4	108		4	117		
253131	4	125	253458	4	108	253581	4	118	262821 6	166
253132	4	124	253459	4	108	253582	4	117	262822 6	167
253132	4	125	253460	4	108	253582	4	118	263120 1	35
253133	4	124	253480	4	107	253584	4	117	263122 1	35
253133	4	125	253481	4	107	253584	4	118	263125 1	35
253134	4	124	253505	4	120	253585	4	117	263150 1	36
253134	4	125	253506	4	120	253585	4	118	263605 5	133
253135	4	124	253507	4	120	253586	4	117	263620 5	133
253135	4	125	253540	3	86	253586	4	118	263625 5	133
253163	4	123	253540	4	120	253588	4	117	263626 5	133
253163	4	123	253540		86	253588	4		264500 5	132
				3				118		
253165	4	123	253541	4	120	253589	4	117	264501 5	132
253166	4	123	253542	3	86	253589	4	118	264502 5	132
253167	4	123	253542	4	120				264503 5	132
253168	4	123	253543	3	86	26	Cat.	Page	264504 5	132
253169	4	123	253543	4	120				264505 5	132
253170	4	123	253550	4	115	261000	4	110	264506 5	132
253244	3	86	253550	4	116	261010	4	110	264507 5	132
253244	4	120	253551	4	115	261400	1	33	264508 5	132
253251	4	121	253551	4	116	261410	1	33	264509 5	132
253257	4	121	253552	4	115	261420	1	33	264510 5	132
253252	4	121	253552	4	116	261420	1	33	264511 5	132
253254	4	121	253553	4	115	261460	1	33	264513 5	132
253255	4	121	253553	4	116	261470	1	34	264514 5	132
253257	4	121	253554	4	115	261500	1	32	264515 5	132
253261	4	119	253554	4	116	261501	1	32	264516 5	132

28         Cat.         Page         282011         5         143         284021         5         153         310410         1         33           28.6118         5         132         282015         5         143         284021         5         153           28.6118         5         132         282026         5         143         284023         5         153           28.4518         5         132         282026         5         144         284027         5         152           28.4543         5         132         282026         5         144         284027         5         152           28.4543         5         132         282026         5         144         284028         5         152           28.4543         5         132         282030         5         144         284028         5         153           28.4543         5         132         282030         5         143         284028         5         153           28.4543         5         143         284031         5         153         341803         1         37           29.101         5         144						1.10			450			04
28016         5         141         284022         5         152           28451         5         132         282016         5         143         284022         5         152           28452         5         132         282026         5         143         284023         5         153         335000         1         37           284453         5         132         282027         5         153         385000         1         37           284454         5         132         282037         5         142         284031         5         153         341801         1         37           284544         5         132         282032         5         144         284031         5         153         341801         1         37           284549         5         132         282032         5         143         284033         5         153         341804         1         37           290142         5         134         293131         5         143         294034         5         153         341807         1         37           290145         5         134         293134	00	0-1	Dama			-						
284519         5         122         292016         5         143         294022         5         153           284519         5         132         292026         5         143         294023         5         153           284542         5         132         292026         5         144         294027         5         153           284540         5         132         292026         5         144         294027         5         153           284540         5         132         292026         5         144         294023         5         153           284540         5         132         292027         5         144         294023         5         153           284540         5         132         292032         5         144         294033         5         153           290142         5         134         293132         5         143         294043         5         153           290144         5         134         293132         5         143         294043         5         153           290144         5         134         293132         5         144	26	Cat.	Page							311458	1	36
284519         5         132         292021         5         143         294023         5         152           284521         5         132         220206         5         143         294027         5         152           284535         5         132         220207         5         143         294027         5         153           284536         5         132         292027         5         143         294028         5         153           284542         5         132         292028         5         144         294028         5         152           284542         5         132         292028         5         144         294023         5         152           284540         5         132         292028         5         144         294033         5         153         341802         1         37           290142         5         134         293130         5         143         294041         5         153         341802         1         37           290142         5         134         293133         5         143         294042         5         151         34         <		_	100									_
284524         5         132         282026         5         143         284023         5         153         335010         1         37           284524         5         132         282027         5         143         284027         5         153           284540         5         132         282027         5         143         284028         5         153           284544         5         132         282028         5         142         284028         5         153           284560         5         132         282032         5         144         284033         5         153         341803         1         37           284560         5         132         282032         5         144         284033         5         153         341805         1         37           280142         5         134         283113         5         144         284041         5         153         341805         1         37           280144         5         134         283142         5         144         284043         5         151         34         341201         1         37         24201										33	Cat.	Page
2e4542         5         132         292020         5         143         294027         5         152           2e4535         5         132         292027         5         143         294027         5         153           2e4542         5         132         292027         5         143         294028         5         152           2e4542         5         132         292028         5         142         294021         5         153           2e4550         5         132         292028         5         144         294031         5         152         341802         1         37           2e4550         5         132         292032         5         144         294031         5         153         341802         1         37           290142         5         134         293135         5         143         294041         5         152         341802         1         37           290146         5         134         293135         5         143         294043         5         151           39105         138         293145         1443         294045         15151         342511 <td></td>												
28453         5         132         282027         5         141         284027         5         153           28454         5         132         282028         5         142         284028         5         153           28454         5         132         280031         5         142         284031         5         153           284560         5         132         280032         5         143         284033         5         153           290132         5         143         284033         5         153         341803         1         37           290140         5         134         23111         5         144         284034         5         153           290144         5         134         23131         5         143         284042         5         151           290145         5         136         293140         5         144         284042         5         151           290140         5         136         293140         5         144         284042         5         151           292040         5         136         293141         5         144         28												
284540         5         132         292027         5         143         294028         5         152           284540         5         132         292030         5         142         294031         5         152           284550         5         132         292032         5         141         294033         5         152           280132         5         144         294034         5         152         341802         1         37           290132         5         144         294034         5         152         341803         1         37           290140         5         134         293112         5         143         294043         5         153           290143         5         134         293135         143         294041         5         153           290161         5         135         29313         5         143         294042         5         151           290161         5         138         29314         6         144         294042         5         151           29010         5         138         29314         6         144         294035         <										335010	1	37
$\begin{array}{c c c c c c c c c c c c c c c c c c c $						141						
284540         5         132         282030         5         142         284031         5         152           284550         5         132         282032         5         141         284033         5         152           284550         5         132         282032         5         141         284033         5         152           29114         5         144         284034         5         152         341802         1         37           290132         5         143         284034         5         152         341805         1         37           290143         5         143         284041         5         152         341806         1         37           290145         5         134         293132         5         143         284042         5         151           290145         5         135         23140         5         144         284042         5         151           290512         5         136         23144         5         144         284050         5         151           290502         5         136         23145         144         284112 <t< td=""><td>264540</td><td>5</td><td>132</td><td>292027</td><td>5</td><td>143</td><td>294028</td><td>5</td><td>152</td><td>34</td><td>Cat.</td><td>Page</td></t<>	264540	5	132	292027	5	143	294028	5	152	34	Cat.	Page
284560         5         132         228031         5         142         249031         5         153           29.         Cat         Pago         282032         5         143         294033         5         153           29.0         Cat         Pago         23311         5         144         294033         5         153           290142         5         134         293131         5         143         294041         5         153           290142         5         134         293131         5         143         294041         5         153           290142         5         134         293131         5         143         294042         5         153           290150         5         135         2444         294042         5         151           290160         5         136         293141         1444         294055         151           290600         5         136         293151         5         1444         294055         151           290602         136         233156         1444         294053         153         36.         27744         1         39	264542	5	132		5	142	294028	5	153			
2244580         5         132         220022         6         141         224033         5         152           29         Cat.         Page         29032         5         143         224033         5         153         341003         1         37           290140         5         134         293130         5         143         294034         5         153         341006         1         37           290141         5         134         293132         5         143         294041         5         153         341007         1         37           290145         5         134         293132         5         143         294042         5         153         34251         1         38           290145         5         138         293135         5         144         294052         5         151           294040         5         138         293140         5         144         294053         5         151           294050         5         138         293150         5         144         294053         5         151           294050         5         137         293150	264544		132	292030	5	142	294031		152	341801	1	37
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	264550	5	132	292031	5	142	294031	5	153	341802	1	37
29         Cat.         Page         293111         5         144         294034         5         152         341005         1         37           200142         5         134         293130         5         143         294034         5         153         341007         1         37           200141         5         134         293132         5         143         294041         5         152         341007         1         37           200142         5         134         293133         5         143         294042         5         152         341007         1         38         342511         1         38         294042         5         153         342511         1         38         294042         5         153         342511         1         38         292015         5         138         293135         5         144         294050         5         151         294142         5         144         294052         5         151         37174         39         371742         1         39         371742         1         39         371742         1         39         371742         1         39         371742	264560	5	132	292032	5	141	294033	5	152	341803	1	37
290132         6         144         294034         6         153         341006         1         37           290140         5         134         293131         5         143         294041         5         153         341006         1         37           290141         5         134         293132         5         143         294041         5         153         341006         1         37           290142         5         134         293132         5         143         294042         5         153         342501         1         38         294043         5         153         342511         1         38         294043         5         153         342511         1         38         294043         5         153         34251         1         38         294043         5         153         34251         1         38         294043         5         153         34251         1         38         294043         5         154         294043         5         151         360000         5         158         34251         1         38         32625         156         382655         1516         294063         5				292032	5	143	294033	5	153	341804	1	37
290132         5         134         293130         5         143         294035         5         151         341807         1         37           290140         5         134         293132         5         143         294041         5         152           290142         5         134         293132         5         143         294042         5         152           290145         5         134         293132         5         143         294042         5         152           290146         5         134         293135         5         143         294042         5         152           290150         5         135         293135         144         294050         5         151           294050         5         136         293141         5         144         294052         5         151           294050         5         136         293161         5         144         294056         5         151           294050         5         136         293161         5         144         294121         5         149         371741         1         39           290600	29	Cat.	Page	293111	5	144	294034	5	152	341805	1	37
290132         5         134         293130         5         143         294035         5         151         341807         1         37           290140         5         134         293132         5         143         294041         5         152           290142         5         134         293132         5         143         294042         5         152           290145         5         134         293132         5         143         294042         5         152           290146         5         134         293135         5         143         294042         5         152           290150         5         135         293135         144         294050         5         151           294050         5         136         293141         5         144         294052         5         151           294050         5         136         293161         5         144         294056         5         151           294050         5         136         293161         5         144         294121         5         149         371741         1         39           290600				293112	5	144	294034	5	153	341806	1	37
200140         5         134         293131         5         143         294041         5         152           200142         5         134         293132         5         143         294041         5         153           200142         5         134         293133         5         143         294042         5         153           200145         5         134         293135         5         143         294042         5         153           290150         5         135         293135         5         144         294042         5         153           290150         5         135         293131         5         144         294045         5         151           290512         5         136         293151         5         144         294052         5         153           290602         5         136         293151         5         144         294052         5         153           290602         5         136         293153         5         144         29412         5         143           290602         5         137         293155         5         144         <	290132	5	134				294035			341807	1	
290141         5         134         293132         5         143         294041         5         153         241820         1         37           290142         5         134         293133         5         143         294042         5         153         341820         1         37           290146         5         134         293135         5         143         294042         5         153         342511         1         38           290150         5         135         293141         5         144         294055         5         151           290100         5         138         293141         5         144         294052         5         151           290500         5         136         293150         5         144         294052         5         151           290600         5         136         293150         5         144         294052         5         152           290604         5         137         293157         5         144         294120         5         153           290604         5         137         293165         1445         294120         5											1	
290142         5         134         293133         5         143         294042         5         153         342511         1         38           200146         5         134         223136         5         143         294042         5         153         342511         1         38           200150         5         136         283136         5         144         294043         5         153           200151         5         136         283142         5         144         294050         5         151           2900151         5         138         283143         5         144         294053         5         151           290602         5         136         293150         5         144         294053         5         151           290602         5         136         293150         5         144         294102         5         153         37/744         1         39           290645         5         137         293160         5         145         294112         5         153         382650         6         168           29100         5         138         293160												
290146         5         134         293134         5         143         294042         5         152           290146         5         136         293136         5         143         294043         5         152           290150         5         136         293136         5         144         294043         5         153           290150         5         136         293141         5         144         294051         5         151           290510         5         136         293142         5         144         294052         5         151           290502         5         136         293143         5         144         294052         5         151           290502         5         136         293150         5         144         294054         5         151           290600         5         137         293153         5         146         294112         5         152         371744         1         39           290645         5         137         293160         5         146         294120         5         153         382650         6         168           <												
290146         5         134         293135         5         143         294043         5         153           290150         5         136         293140         5         144         294043         5         153           290210         5         138         293140         5         144         294050         5         151           290510         5         138         293142         5         144         294051         5         151           290512         5         136         293143         5         144         294053         5         151           290502         5         136         293150         5         144         294053         5         151           290602         5         136         293155         5         144         294112         5         152         371744         1         39           290604         5         137         293159         5         144         294112         5         153         382652         6         168           291001         5         138         293159         5         145         294120         5         153         382655												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $												
280101         5         136         283140         6         143         294045         5         151           290100         5         138         293141         5         144         294050         5         151           290101         5         136         293143         5         144         294051         5         151           290502         5         136         293150         5         144         294053         5         151           290602         5         136         293150         5         144         294054         5         151           290602         5         136         293155         5         144         294112         5         149           290640         5         137         293156         5         145         294121         5         149           291001         5         138         293162         5         145         294121         5         153           291011         5         139         293162         5         145         295011         5         157           291012         5         138         293165         5         145										042021		
290210         5         135         293141         5         144         294050         5         131           290001         5         136         293142         5         144         294051         5         151           290510         5         136         293150         5         144         294052         5         151           290520         5         136         293150         5         144         294054         5         151           290602         5         136         293150         5         144         294112         5         152           290605         5         136         293157         5         144         294120         5         149           290646         5         137         293160         5         145         294121         5         149           291000         5         138         293161         5         145         294201         5         153           291011         5         139         293161         5         145         294201         5         153           291012         5         139         293161         5         155										26	Cat	Paga
290400         5         138         293142         5         144         294051         5         151           290512         5         136         293143         5         144         294052         5         151           290502         5         136         293150         5         145         294052         5         151           290602         5         136         293155         5         146         294110         5         149           290602         5         136         293155         5         144         294120         5         149           290640         5         137         293156         5         144         294120         5         149           290645         5         137         293160         5         145         294120         5         153           291010         5         138         293161         5         145         294200         5         153           291011         5         140         293164         5         145         295001         5         157           291012         5         139         293171         5         145										30	Gal.	Faye
290510         5         136         293143         5         144         294052         5         151           290520         5         136         293150         5         144         294053         5         151           290520         5         136         293150         5         144         294053         5         151           290600         5         136         293150         5         144         294112         5         153         371742         1         39           290600         5         136         293150         5         144         294112         5         153         371745         1         39           290646         5         137         293160         5         145         294120         5         149         38.         Cat.         Page           290647         5         137         293160         5         145         294100         5         153         382650         6         168           291010         5         138         293163         5         145         295010         15         157         382650         6         168           291010										260000	F	150
290512         5         136         293144         5         144           290520         5         136         293151         5         145         294053         5         151           290500         5         136         293151         5         145         294010         5         152           290602         5         136         293157         5         144         294112         5         152         371744         1         39           290640         5         137         293157         5         144         294120         5         149         371742         1         39           290646         5         137         293159         5         144         294120         5         149         371744         1         39           290646         5         137         293159         5         145         294130         5         150         382650         6         168           291010         5         138         293161         5         145         295010         5         157         382656         6         168           291012         5         139         293166										360000	5	100
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										07	0-1	Dama
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										37	Cat.	Page
290602     5     136     293153     5     146     294112     5     152     371742     1     39       290605     5     136     293155     5     144     294120     5     153       290645     5     137     293158     5     145     294121     5     149       290645     5     137     293159     5     145     294121     5     149       290645     5     137     293159     5     145     294121     5     149       290645     5     137     293160     5     145     294121     5     149       29100     5     138     293161     5     145     294200     5     153       29101     5     138     293162     5     145     294200     5     153       29101     5     139     293163     5     145     295010     5     154       291012     5     139     293166     5     145     295012     5     158       291012     5     139     293170     5     145     295025     158       291014     5     139     293173     5     145     295027												
290606       5       136       293155       5       144       294112       5       153       371744       1       39         290640       5       137       293157       5       144       294121       5       149       371744       1       39         290646       5       137       293159       5       145       294121       5       149       371745       1       39         290647       5       137       293160       5       145       294130       5       150       38.       Cat.       Page         291001       5       138       293161       5       145       294200       5       153       382653       6       167         291011       5       139       293163       5       145       295010       5       153       382653       6       168         291012       5       140       293166       5       145       295015       5       157       382665       6       168         291014       5       140       293170       5       144       295025       158       528240       6       162       528420       6       162 <td></td>												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										371745	1	39
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					5	145				38	Cat.	Page
291001       5       138       293162       5       145       294201       5       153       382652       1       37         291011       5       140       293164       5       145       295010       5       157       382653       6       168         291012       5       139       293165       5       145       295011       5       157       382660       6       168         291012       5       139       293167       5       145       295011       5       158       382660       6       168         291014       5       139       293167       5       145       295012       5       158       382665       6       168         291014       5       139       293170       5       144       295025       5       158       528280       6       162         291017       5       141       293173       5       145       295026       5       158       528280       6       162         291020       5       141       293175       5       145       295051       5       158       752824       3       86         291200 <td></td> <td></td> <td></td> <td></td> <td>5</td> <td></td> <td></td> <td></td> <td>150</td> <td></td> <td></td> <td></td>					5				150			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	291000		138	293161	5	145	294200		153	382650	6	168
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	291001	5	138	293162	5	145	294201	5	153	382652	1	37
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	291011	5	139	293163	5	145	295000	5	154	382653	6	167
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	291011	5	140	293164	5	145	295010	5	157	382655	6	168
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	291012	5	139	293165	5	145	295011	5	157	382660	6	168
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	291012	5	140	293166	5	145	295011	5	158	382670	6	168
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	291013	5	139	293167	5	145	295012	5	158	382685	6	168
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	291014	5		293168	5	145	295015	5	157			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$										52	Cat.	Page
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	291016											
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$										528280	6	162
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
29101951412931745145295050515629102051412931755145295051515829102651392931765145295052515829102651392931775145295053515629120051402931785145295055515829120151402931795145295055515829121151392931805145295056515829121251392932305146295058515829121351412932355148295059515629121351412932365148295059515629121651402932725148310325128291217514129327351483103311292912175141293278514831033212929122351412932785148310332129												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
29102051412931765145295052515875Cat.Page29102651392931775145295053515629120051402931785145295054515629120151402931795145295055515829121151392931805145295056515829121251392932305146295057515829121251412932335148295059515629121351412932355148295059515629121351402932725148310325128291216514029327351483103311292912175141293278514831033212929122351412932785148310332129										020120	Ŭ	102
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$										75	Cat	Page
2912005140293178514529505451567526532612912015140293179514529505551587528243862912115139293180514529505651587530664101291212513929323051462950575158753068410129121251412932335148295059515675307041012912135141293235514829505951567530704101291213514129323651482950595156753270134291214514029327251483103251287535694112291217514129327751483103301297535704112291223514129327851483103321297535785148										70	Out.	i age
29120151402931795145295055515875282438629121151392931805145295056515875306641012912125139293230514629505751587530684101291212514129323351462950595156753069410129121351412932355148295059515675307041012912135141293236514829505951567530704101291214514029327251483103251287535694112291217514129327751483103301297535704112291223514129327851483103321297535785148										752652	2	61
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$												
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$												
2912125139293230514629505851587530694101291212514129323351482950595156753070410129121351412932355148295059515675307041012912135141293236514831Cat.Page7530714101291214514029323651483103251287535684112291216514029327251483103301297535704112291217514129327751483103311297535714112291223514129327851483103321297535785148												
291212       5       141       293233       5       148         291213       5       139       293234       5       148         291213       5       141       293235       5       148         291213       5       141       293236       5       148         291214       5       140       293236       5       148         291216       5       140       293272       5       148         291217       5       139       293273       5       148         291217       5       141       293277       5       148         291223       5       141       293278       5       148         310332       1       29       753570       4       112         753571       4       112       753571       4       112         291223       5       141       293278       5       148       310332       1       29         753578       5       148       310332       1       29       753578       5												
291213       5       139       293234       5       148         291213       5       141       293235       5       148         291213       5       141       293235       5       148         291214       5       140       293236       5       148         291216       5       140       293272       5       148         291217       5       139       293273       5       148         291217       5       149       293277       5       148         291217       5       141       293277       5       148         291223       5       141       293278       5       148         310332       1       29       753578       5       148												
2912135141293235514831Cat.Page753270134291214514029323651483103251287535684112291216514029327251483103251287535694112291217513929327351483103301297535704112291217514129327751483103311297535714112291223514129327851483103321297535785148							295059	5	156			
291214514029323651487535684112291216514029327251483103251287535694112291217513929327351483103301297535704112291217514129327751483103311297535714112291223514129327851483103321297535785148								<u></u>				
291216514029327251483103251287535694112291217513929327351483103301297535704112291217514129327751483103311297535714112291223514129327851483103321297535785148							31	Cat.	Page			
291217513929327351483103301297535704112291217514129327751483103311297535714112291223514129327851483103321297535785148												
291217514129327751483103311297535714112291223514129327851483103321297535785148												
<u>291223 5 141 293278 5 148 310332 1 29 753578 5 148</u>												
292011         5         143         293280         5         147         310400         1         30         753750         1         34												
	292011	5	143	293280	5	147	310400	1	30	753750	1	34

75	Cat.	Page
753778	5	158
753825	4	109
753834	4	120
99	Cat.	Page
990010	4	120
990019	4	121
990020	4	121
990022	2	43
990023	2	43
990034	4	122
990035	4	124
990035	4	125
990036	4	124
990036	4	125
990056	4	124
990056	4	125
990057	4	124
990057	4	125
990058	4	121
990059	4	122
990062	4	124
990062	4	125
990063	4	121
990066	4	121
990113	4	124
990113	4	125
990156	4	120
990180	4	124
990180	4	125
990181	4	124
990181	4	125
990182	4	121

### ALL SYSTEMS COMPATIBLE WITH VIRAX JAWS AND INSERTS

Ø (mm)

MULTI-LAYER / PE-RT COPPER

52

* MATERIAL	STEEL / CARBON STEEL

SYSTEM

PEX / PB / PER / PE

015

200

COPPER

SYSTEM

B

STAINLESS STEEL BRASS / BRONZE

Ø (mm)

14-16-18-20-26-32

52

TH

rax

TH

100

TH

12-16-20-25	RF-P	RF	Н
16-20-32	TH/H-ML/U	TH/U	TH/H/U
26	TH/H-ML	TH	TH/H/U
40-50-63	-	-	TH/H/U
12-16-20-25-32	RF-P/U	RF/U	H/U
16-18-20-25-32	RF-P/H-ML/U	RF/U	H/U
40	-	U	U
50-60	-	-	U
12-15-18-22	М	Μ	М
28	М	-	М
35	-	-	М
42-54	-	-	М
12-15-18-22-28	V	V	V
35-42-54	-	-	V
12-15-18-22	М	М	М
28	М	-	М
35	-	-	М
42-54	-	-	М
12-15-18-22	М	М	М
28	М	-	М
35	-	-	М
42-54	-	-	М
15-18-22	М	М	М
28	М	-	М
35	-	-	М
42-54	-	-	М
14-16-18-20-32	H-ML/TH/U	TH/U	H/TH/U
26	H-ML/TH	TH	H/TH
12-16-20-25	RF-P	RF	Н
16-20	TH/H-ML/U	TH/U	TH/H/U
18	TH	TH	TH
26-32	TH/H-ML	TH	TH/H
40	-	U	U
50-63	-	-	U
15	М	Μ	М
28	M	-	М
35	-	-	М
42-54-76.1-88.9- 107	-	-	М
	16-20-32         26         40-50-63         12-16-20-25-32         40         50-60         12-15-18-22         28         35         42-54         12-15-18-22         28         35-42-54         12-15-18-22         28         35-42-54         12-15-18-22         28         35         42-54         12-15-18-22         28         35         42-54         12-15-18-22         28         35         42-54         12-15-18-22         28         35         42-54         15-18-22         28         35         42-54         14-16-18-20-32         26         12-16-20-25         16-20         18         26-32         40         50-63         15         28         35         42-54-76.1-88.9-	16-20-32         TH/H-ML/U           26         TH/H-ML           40-50-63         -           12-16-20-25-32         RF-P/U           16-18-20-25-32         RF-P/U           40         -           50-60         -           12-15-18-22         M           28         M           35         -           42-54         -           12-15-18-22         M           35         -           42-54         -           15-18-22         M           35         -           42-54         -           12-16-20-25	16-20-32         TH/H-ML/U         TH/U           26         TH/H-ML         TH $40-50-63$ -         -           12-16-20-25-32         RF-P/U         RF/U           40         -         U           50-60         -         -           12-15-18-22         M         M           28         M         -           35         -         -           42-54         -         -           12-15-18-22         M         M           28         M         -           35         -         -           12-15-18-22         M         M           28         M         -           35         -         -           12-15-18-22         M         M           28         M         -           35         -         -           42-54         -         -           12-15-18-22         M         M           28         M         -           35         -         -           42-54         -         -           515-18-22         M         M

	14-16-18-20-26-3	32   TH	TH	TH
BAMPI Balpex	40	-	TH	TH
	50	-	-	TH
BARBI Easypress	12-16-20-25-32	RF-P/U	RF/U	H/U
	16-20 x 2.0-25- 26-32	RF-P/U/TH	RF/U/TH	TH/H/U
BARBI Multipex	18 - 20 x 2.5	U/RF-P	U/RF	H/U
	40	-	U	U
	50-63	-	-	U
BRASELLI Pressfitting PE-X	16-20-25-32	RF-P	RF	-
	16-18-20-25-32	U	U	U
BRASELLI Pressfitting Multicapa	40	-	U	U
nanoapa	50	-	-	U
BRASS & FITTING RetiPRESS	16-32	RF-P	-	-
BRASS & FITTING	16-32	U	U	U
MultiPRESS	40-50-63	-	-	U
BROEN Ballofix Press	15-18-22	M/V	V	M/V
BROSSETTE Eurobasic	12-16-20-25	RF-P	RF	Н
BUCCHI tech MP	14-16-20-26-32	TH	TH	TH
C				
CEDEO Altech (Comap)	12-16-20-25	RF-P	RF	Н
	12-14-15-16-18-	V	V	V
CEDEO Altech (IBP B Press)	22-28	V	۷	V
	35-42-54	-	-	V
COES Coesklima	14	U	-	U
JULO OUESKIITIA	16-18-20-25-32	U	U	U
	40	-	U	U
COES Coesklima (K-Fit)	50	-	-	U
	63-75	-	-	U CHAINS
COMAP PexPress	12-16-20-25	RF-P	RF	Н
	14-16-18-20-26-3	32 TH	TH	TH
COMAP SkinPress	40	-	TH	TH
	50-63	-	-	TH
	16-20-26-32	TH/U	TH/U	TH/H/U
COMAP Multiskin	40	-	TH/U	TH/U
	50-63	-	-	TH/U
	12-14-15-16-18-	V	V	V
COMAP Sudopress Cu	22-28	····	v	
	35-42-54		-	V
	12-15-18-22	M	-	M
COMAP XPress	28	M	-	M
	35-42-54	-	-	M
	15-18-22	M	М	M
COMAP XPress	28	M	-	M
	35-42-54	-	-	M
	14-16-18-20-26-3		TH	H/TH
COMISA Evo Press	25	TH	TH	TH
	40		TH	TH
	50-63	-	-	TH
COMPTOIR DE PICARDIE	16-20	U/TH	U/TH	U/TH
Aultiquick	26	TH	TH	TH
COMPTOIR DE PICARDIE	16-20	H-ML/TH/U	TH/U	H/TH/U
Quick plomberie	26	H-ML/TH	TH	TH/H
	16-20-32	TH/H-ML/U	TH/U	TH/H/U
CONEL Connect Multi				

\* MATERIAL STEEL / CARBON STEEL

SYSTEM

N STEEL MULTI-LAYER / PE-RT COPPER

Ø (mm)

PEX / PB / PER / PE

200

SYSTEM

BRASS / BRONZE

COPPER

F

\* Ø (m

STAINLESS STEEL

Ø (mm)

 $\checkmark$ 

62

virax

100

CORUS Forcas	28	М	М	М
	35	-	-	М

D				
	14-16-18-20-26-32	TH	TH	TH
DALPEX Laser multi Dalpex	40	-	TH	TH
	50-63	-	-	TH
DIWA Flow Quatama	14-16-18-20-26-32	TH	TH	TH
DIWA Flex Systems	40	-	TH	TH
DUOFIL Maximetal	16-20-32	RF-P/U	RF/U	U
	16-20-25-32	U	U	U
DW VERBUNDROHR	40	-	U	U
Multitubo	50	-	-	U
	63-75	-	-	U CHAINS

	14-16-18-20-26-32	TH	TH	TH	
EMMETI Gerpex-Fivpress Easytec	40	-	TH	TH	
Ladjoo	50	-	-	TH	
	15-18-22	М	М	М	
ESTA ROHR Simplesta	28	М	-	М	
	35	-	-	М	
	12-15-18-22	М	Μ	М	
EUROTUBI EUROPA Pressfitting System	28	М	-	М	
	35	-	-	М	

E					
		16-18-20-25-32	U	U	U
EBRILLE Monflex		40	-	U	U
		50-63-75	-	-	U
		16-18-20-25-32	U	U	U
EBRILLE Monflex (F5)		40	-	U	U
		50-63-75	-	-	U
EBRILLE Monflex (F8)		16-20-25-26-32	U	U	U
EBRILLE Monflex (F9)		16-20-25-26-32	TH	TH	TH
		16-20-25	TH/U	TH/U	TH/H/U
EBRILLE Monflex (F18)		26	TH	TH	TH/H
		32	TH/U	TH/U	TH/H/U
		15-18-22-28	M/V	V	M/V
EFFEBI Presstige		35	-	-	M/V
EFFEBI Tof Multipinza		16-18-20-32	TH/H-ML/U	TH/U	TH/H/U
		25	TH/U	TH/U	TH/H/U
		26	TH/H-ML	TH	TH/H
		12-15-18-22-28	М	Μ	М
EEEEDI Droop Corbon		28	М	-	М
EFFEBI Press Carbon		35	-	-	M
		42-54	-	-	M 3 ELTS
		12-15-18-22-28	М	М	М
EFFEBI Press Inox		28	М	-	М
LITEDIFICSS IIIOX		35	-	-	M
		42-54	-	-	M 3 ELTS
		15-18-22	М	М	М
EMCAL C-Stahl		28	М	-	M
		35	-	-	М
		16-20-25-32	U	U	U
EMCAL Perfect Aqua		40	-	U	U
LIVICAL FEITEUL AYUA		50	-	-	U
		63	-	-	U CHAINS
EMCAL Presso		16-20-26-32	TH	TH	TH
LIVIUAL FIG990		40	-	TH	TH
		15-18-22-28	М	М	М
EMCAL Presso Nox		28	М	-	М
		35	-	-	М

14         H-ML/TH/U         TH         H/TH/U           FAR RUBINETTERIE Raccords Pressfar         16-18-20-32         H-ML/TH/U         TH/U         H/TH/U           25         TH/U         TH/U         H/TH/U         H/TH/U         H/TH/U           26         H-ML/TH/U         TH/U         H/TH/U         H/TH/U         H/TH/U           40         -         TH/U         H/TH/U         H/TH/U         H/TH/U           50-63         -         -         TH/U         H/TH/U           FBQ BARONIO BQ Press carbon steel         15-18-22-28         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FERCOFLOOR Duo Press rame         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U         TH/U           FG INOX         28         M         -         M         M         M	
FAR RUBINETTERIE Raccords Pressfar         25         TH/U         TH/U         H/TH/U           26         H-ML/TH         TH         H/TH/           26         H-ML/TH         TH         H/TH/           40         -         TH/U         H/TH/           50-63         -         -         TH/U           FBQ BARONIO BQ Press carbon steel         15-18-22-28         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
Pressfar         26         H-ML/TH         TH         H/TH           40         -         TH/U         H/TH           50-63         -         -         TH/U           FBQ BARONIO BQ Press carbon steel         15-18-22-28         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
End and the second steel         End and	
50-63         -         TH/L           FBQ BARONIO BQ Press carbon steel         15-18-22-28         V         V         V           FBQ BARONIO BQ press rame         15-18-22-28         V         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FBC OFLOOR Duo Press rerco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/L           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/L           FER COFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/L           FER COFLOOR Duo Press Multifer         28         M         M         M	
FBQ BARONIO BQ Press carbon steel         15-18-22-28 35-42-54         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
FBQ BARONIO DO PIESS         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20:20         10:10:20:20:20         10:10:20:20:20         10:10:20:20:20         10:20:20:20         10:20:20:20         10:20:20:20         10:20:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20         10:10:20:20:20         10:10:20:20:20         10:10:20:20:20:20         10:10:20:20:20:20         10:10:20:20:20:20         10:10:20:20:20:20:20         10:10:20:20:20:20:20:20         10:10:20:20:20:20:20:20:20:20:20:20:20:20:20	
carbon steel         35-42-54         -         -         V           FBQ BARONIO BQ press rame         12-14-15-16-18- 22-28         V         V         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
FBQ BARONIO BQ press rame         22-28         V         V         V           22-28         35-42-54         -         -         V         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
35-42-54         -         -         V           FERCOFLOOR Duo Press Ferco Pex         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press Multifer         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           FG INOX         28         M         -         M	
Ferco Pex         10-20-23-32         RF-P/TH/U         RF/TH/U         TH/U           FERCOFLOOR Duo Press         16-20-25-32         RF-P/TH/U         RF/TH/U         TH/U           Multifier         18         TH/U         TH/U         TH/U           FG INOX         28         M         -         M	
Image: Multifier         Image: Multifier<	
Multiter         18         TH/U         TH/U         TH/U           FG INOX         15-18-22         M         M         M	
FG INOX 28 M - M	
25	
35 M	
12-15-18-22 M M M	
FILTUBE Installpress 28 M - M	
35-42-54 M	
15-18-22 M M M	
FILTUBE Installpress 28 M - M	
35-42-54 M	
FITTINGS ESTANDAR 16-20-25-32 RF-P RF -	
FITTINGS ESTANDAR PEX-A 16-20-25-32 RF-P/U RF/U U	
FITTINGS ESTANDAR 16-20-25-32 RF-P/U RF/U U	
Multicapa 18 U U U	
FORNARA SPA 16-20-26-32 TH TH TH	
15-18-22-28 V V V	
FRABO Frabopress C-Steel	
12-15-18-22-28 V V V	
FRABO Frabopress H20	
15-18-22-28 V V V	
FRABO Frabopress 316 35-42-54 V	
16-20 TH/U TH/U TH/U	
FRABO Multi-Brass	
16-20-32 H-ML/U U H/U	
FRABO Multi-Plus 26 H-ML - H	
FRANKISCHE Alpex Duo- Alpex L         16-20-26-32         TH         TH         TH	
FRANKISCHE Alpex Duo XS 16-20-26-32 TH TH TH	

\* MATERIAL STEEL / CARBON STEEL

SYSTEM

MULTI-LAYER / PE-RT COPPER 52

Ø (mm)

PEX/PB/PER/PE 200 000

SYSTEM

BRASS / BRONZE

COPPER

STAINLESS STEEL

Ø (mm)

¢

52

TH

TH

TH

rax

100

TH

TH

TH

FRANKISCHE Turatec System		16-20-26-32	TH	TH	TH
FRIATEC Friatherm Uni		16-20-26-32	H-ML	-	Н
		40	-	-	Н
		50-63	-	-	TH

G					OF PVDF COTINE	
u	12-15-18-22	M	М	М	HENCO HPL	
GEBERIT MAPRESS	28	M	-	М	HENGU HFL	
	35	-	-	М		
	14-16	-	-	М	HEROTEC Tem	
	12-15-18-22-28	M	-	М		
GEBERIT MAPRESS	35	-	-	М	HERZ Pipefix	
	42-54	-	-	M 3 ELTS	TILITZ TIPOTA	
GEBERIT MAPRESS	12-15-18-22-28	M	-	М		
JEDERII WAPKE35	35	-	-	М		
	16-20	TH/U	TH/U	TH/U		
GEBERIT Volex	26	TH	TH	TH	IBP CONEX/B/ >B <flex< td=""></flex<>	
	16-20-26-32	G	G	G	7.5 4104	
GEBERIT Mepla	40	-	G	G	IBP CONEX/BA	
	50	-	-	G	>B <flex (f5)<="" td=""></flex>	
	14	H-ML/TH/U	TH	H/TH/U	IBP CONEX/BA	
	16-18-20-32	H-ML/TH/U	TH/U	H/TH/U	>B <flex (f8)<="" td=""></flex>	
	25	TH/U	TH/U	H/TH/U	IBP CONEX/BA	
GENERAL FITTINGS Series 5000	26	H-ML/TH	TH	H/TH	>B <flex (f9)<="" td=""></flex>	
	40	-	U	H/U	IBP CONEX/BA	
	50	-	-	TH/U	>B <flex (f18)<="" td=""></flex>	
	16-20-32	H-ML/TH/U	TH/U	H/TH/U		
	26	H-ML/TH	TH	H/TH	IBP CONEX/BA	
	40	-	TH/U	TH/U	>B <maxipro< td=""></maxipro<>	
GIACOMINI Raccords RM	50	-	-	TH/U		
	63	-	-	TH	IBP CONEX/BA	
	75-90	-	-	U	>D <l1622< td=""></l1622<>	
GLOBAL PIPING SYSTEM Ac-Fix Press	12-16-20-25-32	RF-P/U	RF/U	H/U	IBP CONEX/BA	
	16-18-20-25-32	RF-P/H-ML/U	RF/U	H/U	>B <press< td=""></press<>	
GLOBAL PIPING SYSTEM Ac-Fix Press	40	-	U	U		
1000	50-60	-	-	U	IBP CONEX/BA	
GLOBALE TRADE Aqualpress System	16-20-25-32	U	U	U	>B <press< td=""></press<>	
	16-18-20-25-32	U	U	U		
GOLAN	40	-	U	U	IDROSANITARI Idropress	
	50-63	-	-	U		
н					ILTA INOX Chib	
HAKA GERODUR Hakathen-L	14-16-18-20-26-32	TH	TH	TH		
	10 14 15 10 10 00 00	- V	11	1		

GOL/III	10		0	0	
	50-63	-	-	U	
н					ILTA IN
HAKA GERODUR Hakathen-L	14-16-18-20-26-32	TH	TH	TH	
HAMMEL ROBINETTERIE	12-14-15-16-18-22-28	V	V	V	
	35-42-54	-	-	V	
HAMMEL ROBINETTERIE	16-20-26-32	TH	TH	TH	
HAMMEL ROBINETTERIE	12-16-20-25	RF-P	RF	Н	
	16-20-26-32	TH	TH	TH	INDUS Multip
HEIMA Press-Fittings	40	-	TH	TH	Multip
	50	-	-	TH	

	16-18-20-25-32	U	U	U
HELIROMA Klimapress	40	-	U	U
	50-63-75	-	-	U
HELIROMA Romapress	16-20-25-32	RF-P	RF	-
HENCO - PE-Xc/AL/Pe-Xc (Brass or PVDF connectors)	14-16-18-20-26	TH	TH	TH
	16-20	TH/H-ML/U	TH/U	TH/H/U
HENCO HPL	26	TH/U	TH/U	TH/U
	32	TH/H-ML/U	TH/U	TH/H/U
	14-16-20-26-32	TH	TH	TH
HEROTEC Tempuss-press	40	-	TH	TH

14-16-18-20-25-26-32

40

50-63

IBP CONEX/BANNINGER	12-16-20-25-32	RF-P	RF	Н
	16-18-20-25-32	U	U	U
IBP CONEX/BANNINGER >B <flex (f5)<="" td=""><td>40</td><td>-</td><td>U</td><td>U</td></flex>	40	-	U	U
	50-63-75	-	-	U
IBP CONEX/BANNINGER >B <flex (f8)<="" td=""><td>16-20-25-32</td><td>U</td><td>U</td><td>U</td></flex>	16-20-25-32	U	U	U
IBP CONEX/BANNINGER >B <flex (f9)<="" td=""><td>16-20-25-26-32</td><td>TH</td><td>TH</td><td>TH</td></flex>	16-20-25-26-32	TH	TH	TH
	16-20-25	TH/U	TH/U	TH/H/U
IBP CONEX/BANNINGER >B <flex (f18)<="" td=""><td>26</td><td>TH</td><td>TH</td><td>TH/H</td></flex>	26	TH	TH	TH/H
	32	TH/U	TH/U	TH/H/U
IBP CONEX/BANNINGER >B <maxipro< td=""><td>1/4 - 3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1</td><td>R</td><td>-</td><td>R</td></maxipro<>	1/4 - 3/8 - 1/2 - 5/8 - 3/4 - 7/8 - 1	R	-	R
	1.1/8 - 1.3/8"	-	-	R
IBP CONEX/BANNINGER	12-14-15-16-18-22-28	V	V	V
BP CONEX/BAINININGER	35	-	-	V
	42-54	-	-	V
	15-18-22-28	V	V	V
IBP CONEX/BANNINGER >B <press< td=""><td>35</td><td>-</td><td>-</td><td>V</td></press<>	35	-	-	V
	42-54	-	-	V
IBP CONEX/BANNINGER	15-18-22-28	V	V	V
>B <press< td=""><td>35</td><td>-</td><td>-</td><td>V</td></press<>	35	-	-	V
	42-54	-	-	V
IDROSANITARIA BONOMI	16-18-20-26-32	TH	TH	TH
Idropress	40	-	TH	TH
	50-63	-	-	TH
ILTA INOX Chibro Pressfitting	15-18-22-28	М	-	M
	35	-	-	M
	16	U/H-ML/ RF-P/TH	U/RF/TH	U/H/TH
	18	U/H-ML	U/RF	U/H
	20x2.5	U/H-ML/RF-P	U/RF	U/H
INDUSTRIAL BLANSOL	20x2	U/H-ML/ RF-P/TH	U/RF/TH	U/H/TH
Multipex	25	U/RF-P/TH	U/RF/TH	U/H/TH
	26	H-ML/TH	RF/TH	H/TH
	32	U/H-ML/ RF-P/TH	U/RF/TH	U/H/TH
	40	-	U	U CLAMP
	50-63	-	-	U CLAMP

Version 7.01

Ø (mm)

MULTI-LAYER / PE-RT COPPER

62

TH

TH

TH

* MATERIAL	STEEL / CARBON STEEL

SYSTEM

J

PEX / PB / PER / PE

275

200

COPPER BRASS / BRONZE

	12-15-18-22	М	М	M
INSTALPRESS Carbon Steel	28	M	-	M
	35	-	-	М
	14-16-18-20-26-32	TH	TH	TH
IPA Ipalpex	40	-	TH	TH
	50-63	-	-	TH
ISOLTUBEX Isolpex	16-20-25-32	RF-P	RF	-
	16-20-25-32	RF-P/U	RF/U	U
ISOLTUBEX	18	U	U	U
	63	-	-	U CHAINS
ISOTUBI Numepress	15-18-22	М	М	М
	28	M	-	M
	16-18-20-25-32	TH/H-ML/U	TH/U	TH/H/U
IVAR Multi-Press	26	TH/H-ML	TH	TH/H
IVAN IVIUIII-MESS	40	-	TH/U	TH/U
	50-63	-	-	U CHAINS
	16-20-32	TH/H-ML/U	TH/U	TH/H/U
IVAR Plastic-Multi-Press	25	TH/U	TH/U	TH/H/U
	26	TH/H-ML	TH	TH/H

16-20-26-32

SYSTEM	*	Ø (mm)			200
		15-18-22-28	M	-	M
KE KELIT Steelfix		35-42-54	-	-	M
KME Q-tec		14-16-20-26	TH	TH	TH
KIVIE Q-LEC		16-20-26	HA	-	HA
		15-18-22	М	М	M
KOHLER Inox Pres		28	M	-	M
		35	-	-	М
N					
		16-20-26-32	TH	TH	TH
NICOLL Fluxo		40	-	TH	TH
		50-63	-	-	TH
NINGBO Press-ID		12-16-20-25-32	RF-P	RF	H
		15-18-22	М	М	М
NINGBO Press-ID Carbon		28	M	-	M
NINGBU Press-ID Carbon		35	-	-	M
		42-54	-	-	M 3 ELMTS
		15-18-22	M/V	M/V	M/V
		28	M/V	V	M/V
NINGBO Press-ID Inox		35	-	-	M/V
		42-54	-	-	M/V
		16-18-20-25-32	U	U	U
NOYON & THIEBAULT Raccord F5		40	-	U	U
		50-63-75	-	-	U
NOYON & THIEBAULT Raccord F9		16-20-25-26-32	TH	TH	TH
NOYON & THIEBAULT Raccord		16-20-25-32	U/TH/H-ML	U/TH	U/TH/H
F17		26	TH/H-ML	TH	TH/H
NOYON & THIEBAULT		16-20	H-ML/TH/U	TH/U	H/TH/U
Multicouche à sertir		26	H-ML/TH	TH	TH/H
		14	TH/U	TH	TH/U
		16-18-20-25-32	TH/U	TH/U	TH/U
N.T.M. Winny-Al		26	TH	TH	TH
14. 1. IVI. WITHTY-AT		40	-	TH/U	TH/U
			1		

50

63

-

STAINLESS STEEL

**virax** 

	10 20 20 02			
JANSEN AG Jansen Comisa Ravani Prima	40	-	ТН	TH
	50-63	-	-	TH
K				
	16-20-25-32	TH/U	TH/U	TH/U
KAN Kan-Therm		TH	TH	TH
KAN Kan-merm		-	TH/U	TH/U
	50-63	-	-	TH
	16-20-25-32	TH/U	TH/U	TH/U
I/AN I/on Therm I DD	26	TH	TH	TH
KAN Kan-Therm LBP	10	-	TH/U	TH/U
	50-63	-	-	TH
	15-18-22	М	М	М
KAN Kan-Therm	28	M	-	М
	35-42-54	-	-	М
	15-18-22	М	М	М
KAN Kan-Therm	28	M	-	М
	35-42-54	-	-	М
	16-20-25-32	U	U	U
KE KELIT Kelox	40	-	U	U
NE NELTT NEIUX	50-63	-	-	U
	75	-	-	U CHAIN
	15-18-22	М	М	М
KE KELIT Steelfix	28	M	-	М
	35-42-54	-	-	М

	33
--	----

TH/U

U

-

\* MATERIAL STEEL / CARBON STEEL

SYSTEM

MULTI-LAYER / PE-RT COPPER 52

Ø (mm)

PEX / PB / PER / PE 200 000

SYSTEM

BRASS / BRONZE

COPPER

STAINLESS STEEL

62

rax

01

200

Ø (mm)

	14	U	U	U
	16-18-20-32	U/TH	U/TH	U/TH/H
NUPI INDUSTRIE ITALIANE	26	TH	TH	H/TH
Multinupi	40	-	U	U
	50-63	-		U
	50-05	-	-	U
0	16 00 06 00	114		114
	16-20-26-32	HA	-	HA
OVENTROP Cofit P	40	-	-	HA
	50	-	-	U
	63	-	-	U
Р				
PB TUB Sertipress	12-16-20-25	RF-P	RF	Н
	12-15-18-22	М	М	М
PB TUB Serti-Steel	28	М	-	М
י ט יטט טפו וו־טנפטו	35	-	-	М
	42-54	-	-	M 3 ELMTS
PB TUB Alpex duo & Turatec	16-20-26-32	TH	TH	TH
	12-14-15-18-22	М	М	М
	16	-	-	М
PEGLER YORKSHIRE Xpress	28	M	-	М
	35	-	-	М
	12-14-15-16-18-22-28	V	V	V
PEGLER YORKSHIRE Sudo Press cuivre visu control	35	-	-	V
ourro viou outiliut	42-54	-	-	V
	16-18-20-25-32	U	U	U
PERFILTUBO Perfialupex	40	-	U	U
	50-63	-	-	U
	15-18-22	М	М	М
PERFILTUBO Perfipress	28	M	-	M
F	35-42-54	-	-	M
PEXTUBE Pextube	16-20-25-32	RF-P	RF	-
PIETRO RAVANI	16-18-20-26-32	TH	TH	TH
	16-18-20-26-32	TH	TH	TH
PIPELIFE Radopress	40	-		TH
	50-63	-	-	TH
	16-18-20-25-32	U	U	U
POLYSAN Rainbow	40	-	U	U
	50-63	-	-	U
	16-20-26-32	H-ML	-	Н
PRANDELLI Multyrama (PF)	40		U	U
r i v v voletel multyranna (r r j	50		-	U
	16-20	- H-ML/TH/U	- TH/U	H/TH/U
	26	H-ML/TH	TH	H/TH
	32	H-ML/TH/U	TH/U	H/TH/U
PRANDELLI Multyrama (PFM)	40	11-1VIL/11/U		
	50	-	TH/U	TH/U TH/U
		-	-	
	63	-	-	U
R	15 10 00			
	15-18-22	M	M	M
RACCORDERIE METALLICHE	28	M	-	M
(RM) Steelpres	35	-	-	M
	42-54	-	-	M 3 ELTS

	15-18-22	М	М	M
RACCORDERIE METALLICHE	28	M	-	M
(RM) Inoxpres	35	-	-	M
	42-54	-	-	M 3 ELTS
	14	TH/H-ML/U	TH	TH/H/U
	16-18-20	TH/H-ML/U	TH/U	TH/H/U
	26	TH/H-ML	TH	TH/H
RBM Tita-fix	32	TH/H-ML	TH	TH/H
	40	-	TH	TH
	50-63	-	-	TH
	16-18-20-25-32	U	U	U
RIFENG Raccords F5	40	-	U	U
	50-63-75	-	-	U
RIFENG Raccords F8	16-20-25-26-32	U	U	U
RIFENG Raccords F9	16-20-25-32	TH	TH	TH
	16-20-25	TH/U	TH/U	TH/H/U
RIFENG Raccords F18	26	TH	TH	TH/H
	32	TH/U	TH/U	TH/H/U
	16-20-25-32	U/TH/H-ML	U/TH	U/TH/H
RIFENG Raccords F17	26	TH/H-ML	TH	TH/H
RIQUIER A sertir	12-16-20-25	RF-P	RF	Н
HIGOLEH / KOOTA	15-18-22	M	M	M
RUBINETTERIE BRESCIANE	28	M	-	M
BONOMI Turbo Cu-Ni	35	-		M
	15-18-22	М	M	M
RUBINETTERIE BRESCIANE BONOMI Turbo inox	28	M	IVI	M
BONOMI Turbo inox	35	-	-	M
	15-18-22	М	М	M
RUBINETTERIE BRESCIANE	28	M	-	M
BONOMI Turbo Steel	35	-	-	M
	14	TH/H-ML/U	TH	TH/H/U
	16-18-20-32	TH/H-ML/U		TH/H/U
RUBINETTERIE BRESCIANE	26	TH/H-ML	TH	TH/H
BONOMI Turbo Press	40	111/11 <sup>-</sup> IVIL	 TH	TH
	50-63	-	-	 ТН
RUBINETTERIE BRESCIANE	50-03	-		
BONOMI - Turbo Press LBP	16-20-26-32	TH	TH	TH
	16-20-26-32	TH	TH	TH
RUBINETTERIE BRESCIANE BONOMI Evenes System	40	-	TH	TH
,	50	-	-	TH
S				
-	16-20-32	TH/U	TH/U	TH/U
	26	TH	TH	TH
SANHA Multifit-Flex	40	-	TH	TH
	50	-	-	TH
	12-14-15-16-18-22-28	V	V	V/M
SANHA Pressfittings	35	-	-	V/M
Gran an Froonitalityo	42-54		-	V
	15-18-22-28	V/M	V	V/M
SANHA NiroSan Press	35	v/ ivl	۷	V/M
UMINIA IVIIUUUAII 171655	42-54		-	V/W
		-	- V	
CANILIA Thorm	12-15-18-22-28	V/M	V	V/M
SANHA Therm	35	-	-	V/M
	42-54	-	-	V

Version 7.01

Ø (mm)

\* MATERIAL STEEL / CARBON STEEL

SYSTEM

MULTI-LAYER / PE-RT COPPER PEX/PB/PER/PE

010

52

200

COPPER

V

SYSTEM

BRASS / BRONZE

STAINLESS STEEL

m)

62

virax

010

1

*	Ø (mr

	15-18-22	М	М	М
SCHWER Aquapress	28	М	-	М
	35-42-54	-	-	M
SESTA Sistema multistrato	16-20	H-ML/TH/U	TH/U	H/TH/U
SESTA SISLEMA MULLISITALO	18-26-32	TH	TH	TH
	16-18-20-25-32	U	U	U
SOMATHERM Fixomultix (F5)	40	-	U	U
	50-63-75	-	-	U
SOMATHERM Fixomultix (F9)	16-20-25-26-32	TH	TH	TH
	16-20-25-32	U/TH/H-ML	U/TH	U/TH/H
SOMATHERM Fixomultix (F17)	26	TH/H-ML	TH	TH/H
SOMATHERM Pronorm	12-14-16-18-22-28	V	V	V
Pressfitting	35	-	-	V
SOMATHERM Soma multi (duofil)	16-20-32	RF-P/U	RF/U	U
	12	RF-P	RF	Н
SOMATHERM Somapress	16-20-25-32	RF-P/U	RF/U	H/U
STPC Sopalpex Fit	16-20-26	TH	TH	TH
	14-16-18-20-26-32	TH	TH	TH
STELBI Polikraft	40	-	TH	TH
	50	-	-	TH
SYSTERM Woprex	14-16-20-26-32	HA	-	HA
r i				
1	16-20-32	TH/U	TH/U	TH/U
FERMICALINE Termiplex	26	TH	TH	TH
	14-16	V	V	V/M
	12-15-18-22-28	V/M	V V	V/M
THERMADOR	35	V/IVI	- V	V/M
	42-54	-	-	V/W
TIEMME Cobra-Pex series 1700	16-20-25-32	- RF-P	RF	- V
IEIVIIVIE GOULA-PEX SELLES 1700	14-16-18-20-25-26-32	TH	TH	TH
		іп		TH
FIEMME Cobrapress	40	-	TH	
	50	-	-	TH
	63-75	-	-	TH
EDA M. III'hannaa	16-20-25-32	U	U	U
FRA Multitrapress	40	-	U	U
FDA T	50-63	-	-	U
IRA Trapress	12-16-20-25-32	RF-P	RF	H
	16-18-20-25-32	U	U	U
TWEETOP	40	-	U	U
	50-63-75	-	-	U
J				
INICAL May Multiney	16-20-32	U	U	U
JNICAL Max Multipex	26	HM-L	-	H
	16-20-32	TH/H-ML/U	TH/U	TH/H/U
	26	TH/H-ML	TH	TH/H
INIDELTA Deltall	40	-	TH/U	TH/H/U
	50-63	-	-	TH/U
	16-20-25-32	U	U	U
	40	-	U	U
JPONOR Système Multicouche	50	_	-	U
				1

V				
	16-20	H-ML/TH/U	TH/U	H/TH/U
	26	H-ML/TH	TH	H/TH
VALSIR Bravopress PPSU	32	H-ML/TH/U	TH/U	H/TH/U
	40-50-63	-	TH/U	TH/U
	14	H-ML	-	Н
	16-20	H-ML/TH/U	TH/U	H/TH/U
	26	H-ML/TH	TH	H/TH
	32	H-ML/TH/U	TH/U	H/TH/U
VALSIR Brass connectors	40	-	TH/U	TH/U
	50-63	-	-	TH/U
	75	-	-	U
	90	-	-	U
VAN MARCKE Tubipex	16-18-20-26-32	TH	TH	TH
	16-20-26-32	TH	TH	TH
VAN MARCKE Tubipex	40-50-63-75	-	-	TH
	12-15-18-22-28	V	V	V
VIEGA Prestabo	35-42-54	-	·····	V
	12-14-15-16-18-22-28	- V	- V	V
VIEGA Profipress		V	·····	·
	35-42-54	-	-	V
VIEGA Sanpress	12-14-15-16-18-22-28	V	V	V
	35-42-54	-	-	V
VIEGA Sanpress inox	15-18-22-28	V	V	V
· · · · ·	35-42-54	-	-	V
	14-16-18-20-26-32	TH	TH	TH
VSH Skinpress	40	-	TH	TH
	50-63	-	-	TH
VSH Sudopress	12-15-18-22-28	V	V	V
1011 0000001633	35-42-54	-	-	V
	12-15-18-22	М	М	М
VSH Xpress	28	Μ	-	М
	35-42-54	-	-	М
	12-15-18-22	М	М	М
VSH Xpress	28	М	-	М
	35-42-54	-	-	М
	12-15-18-22	М	М	М
VSH Xpress	28	М	-	М
- F	35-42-54	-	-	М
W				
••	16-20-25-32	U	U	U
WAVIN Tigris M1	40	U	U	U
WAVIN TIGHS WIT	50-63	-	U -	U
WAVIN Tigrig ME		- U/TU/U		
WAVIN Tigris M5 WIEDLAND Cuprotherm CTX	16-20-25-32-40	H/TH/U	H/TH/U	H/TH/U TH
•	14-16-20	TH	TH	1 11
Z				1
	14	TH/U	TH	TH/U
ZETAESSE Europex Isolex	16-20	TH/U	TH/U	TH/U
	26-32	TH	TH	TH
ZETAESSE HvdroSan /	14	TH/U	TH	TH/U
ZETAESSE HydroSan / ThermoSan	16-20	TH/U	TH/U	TH/U
	14-16-20-26-32	TH	TH	TH
ZEWOTHERM	40	-	TH	TH
	50-63			TH



n	



<b>S</b>	




<b>S</b>	









♦VITAX 195

#### This catalogue is a publication of VIRAX SAS

39 quai de Marne - 51200 Epernay - France Tel.: +33 (0)3 26 59 56 78 - Fax: +33 (0)3 26 59 56 20 Email: contact@virax.com

RCS REIMS 562 086 330

Great care has been taken in preparing the catalogue and in reproducing the product information. However, errors cannot be completely ruled out. For this reason, VIRAX excludes liability for any errors it may contain, despite our thorough checking.

As a result of technical developments and the adaptation of our products to the needs and wishes of our customers, the design, assemblies, performance data, characteristics, measurements and weights of the products may be modified without any constraints or prior notice.

We are not obliged to change already delivered products accordingly. We also reserve the right to remove items from our product range.

This catalogue replaces and cancels all previous versions. References to standards are non-binding. The work instructions and safety-related and operating guidelines are intended for information purposes and do not replace legal or other information, such as information provided by trade associations, or the regulations in force in the different countries.

No part of this catalogue may be reproduced or translated into a machine-readable language or stored in electronic systems and processed there without the prior consent of VIRAX in any form whatsoever, print, photocopy, microfilm or any other process.

No changes or additions to the catalogue are permitted. All rights are reserved for all countries.

#### VIRAX

Our registered trademarks: Cobraz, Etaugriff, Eurostem, Extrudax, Filetix, Gyrolam, Lame Scie, Le Furet, Recti 9, Rotax, Sanicrom, Siberia, Soft Touch, Turbojet, Vanadix, Viper, Viraglace, Viragrip, Virafal, Visioval, Elite Virax "rewarding your talent", Virax, the Virax logo and the arrow, Virabox, Plombi'box.

Design and production: VIRAX, Agence Les Petites Madeleines, Adexos. Layout: VIRAX, Agence Les Petites Madeleines. Photo credits: Studio Visuel impact, Studio CP Création. Technical drawings, illustrations: T. Lecerf, C. Toussaint. Art purchases: Thinkstock, Istock. Publication: 2023





# **ANAX**

39 QUAI DE MARNE - CS 40197 - 51206 ÉPERNAY FRANCE

CUSTOMER SERVICE, FRANCE TEL.: +33 (0)3 26 59 56 78 - EMAIL: CLIENT.FR@VIRAX.COM

CONTACT A VIRAX EXPERT TEL: +33 (0)3 26 59 56 82 - EMAIL: EXPERTS@VIRAX.COM

INTERNATIONAL CUSTOMER SERVICE TEL.: +33 (0)3 26 59 56 97 - EMAIL: EXPORT@VIRAX.COM



# WWW.VIRAX.COM



CHRYSSAFIDIS S.A./ ATHENS: 3 AGRINIOU STR, TAVROS - (+30) 210 4836315-20 / THESSALONIKI: DA12A STR, OT32, BIPE SINDOU - (+30) 2310 754681-4 / www.chryssafidis.com / sales@chryssafidis.gr