

ROTHENBERGER
pipetool technologies at work



**REFRIGERATION
AIR-CONDITIONING
CATALOG**





Welcome to ROTHENBERGER!

We at ROTHENBERGER are driven by the needs of plumbers, service technicians and installers. We develop pipe tools and machines that assist tradespeople, to ensure construction sites are always under control.

To achieve this, we see the world through your eyes, familiarise ourselves closely with your everyday work and listen to you if you provide us with suggestions or criticism: Because you're our Number One. In addition, all of our new products undergo an on-site endurance test. Only if they pass this test do they make it to the market.

If you are able to complete your work cleanly, quickly, easily and profitably, and go home happy, then we have done a good job.



Focused on our users!

Solutions for professionals: systems that fit.

ACR technicians are all set for everything with system solutions by ROTHENBERGER. Whether they need to press copper pipes, expand, tee-extract, braze or work with refrigerants of A1, A2L and A2 – ROTHENBERGER will provide a suitable solution.



Service for professionals: always prepared.

The RO SERVICE+ takes care of maintenance and repairs: our Service After Sales team quickly gets equipment back up and running without any detours, because we have your tool collected where you are and also deliver it to you at the construction site, upon request.*



* Complete terms and conditions at rothenberger.com/service
RO SERVICE+ only valid in participating countries.



We are here for you.

You can reach us through many channels – the website rothenberger.com, by email at info@rothenberger.com, by phone on our customer hotline and on our technical customer service hotline.

Also, visit us on Facebook and YouTube!



Installation

Cutting and deburring



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General-purpose tools



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Cutting and deburring

Telescopic ratchet pipe cutter

1 TUBE CUTTER 35/42 Pro
Proven pipe cutter for the precise cutting of pipes
Ø6–42 mm (1/4–1.5/8")



APPLICATION AREA

TC 35/TC 42

For copper, brass, aluminium, thin-walled steel pipes
TC 35 Ø6–35 mm/TC 42 Ø6–42 mm

INOX TC 35/INOX TC 42 Pro

Stainless steel pipes INOX TC 35 Ø6–35 mm/
INOX TC 42 Ø6–42 mm

KEY FEATURES

- Optimal for confined spaces
- Quick adjustment of the working area
- Spare cutter wheel in handle
- Cuts near to flares are possible
- Retractable internal pipe deburrer
- Robust and extremely stable



**Metal casing with DURAMANT coating:
Robust and extremely stable!**

Model	mm	inch	g	mm	mm	No.
TUBE CUTTER 35 DURAMAG (Cu, brass, Al, thin-walled pipe)	6–35	1/4"–1.3/8"	255	1	4	70027
TUBE CUTTER 35 DURAMAG display	6–35	1/4"–1.3/8"	1,700	1	9	070027DB
TUBE CUTTER 35 C (for refrigeration)	6–35	1/4"–1.3/8"	470	1	4	070027C
TUBE CUTTER 42 PRO (Cu, brass, thin-walled steel pipe)	6–42	1/4"–1.5/8"	540	1	4	70029
INOX TUBE CUTTER 35 PRO DURAMAG (stainless steel)	6–35	1/4"–1.3/8"	470	1	4	70055
INOX TUBE CUTTER 42 PRO	6–42	1/4"–1.5/8"	540	1	4	70070

ROTRAC 28 PLUS CHROM/28/42

High-precision pipe cutter
Ø3–42 (1/8"–1.5/8")



KEY FEATURES

- Constant working radius
- Cast aluminium design
- Protection of the cutter wheel with the rolling stop
- Retractable internal deburrer and spare cutter wheel in handle
- Protected screw spindle – protection against dirt and jamming

Model	mm	inch	g	No.
ROTRAC 28 PLUS CHROM	3–28	1/8"–1.1/8"	220	100000046
ROTRAC 28	3–28	1/8"–1.1/8"	220	70010
ROTRAC 42	6–42	1/4"–1.5/8"	255	70011
Spare cutter wheel (3 pcs.) Cu, Al, brass			20	070007D

MINICUT I PRO/II PRO MINICUT 2000



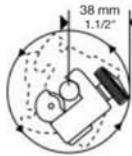
Copper pipe cutter

Ergonomic design of body and knob with seating surface for the hand during turning

KEY FEATURES

- For copper, brass, aluminium, thin-walled steel pipes
- Handy design with small working radius (38 mm and/or 1.1/2" I PRO/42 mm and/or 1.5/8" II PRO) allows use in hard-to-reach places
- Effortless pressure control with the large knurled knob and handy design
- Two guide rollers with recess for cuts near flares

Ø3–16 mm
(1/8–5/8")



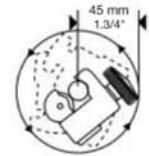
No. 70401

Ø6–22 mm
(1/4–7/8")



No. 70402

Ø6–22 mm
(1/4–7/8")



No. 70402

Model	mm	inch	g		No.
MINICUT I PRO	3–16	1/8–5/8"	115	1 4	70401
MINICUT I PRO display (incl. 20x 70017)			1 (20)		070401D
MINICUT II PRO	6–22	1/4–7/8"	125	1 4	70402

Model	mm	inch	g		No.
MINICUT 2000	6–22	1/4–7/8"	140	1 4	70105
Spare cutter wheel			20	1 (5)	070017D
Spare axle			5	1	70041

ROSLICE

Copper pipe cutter Ø 12–22 mm (1/2–1.1/8")



KEY FEATURES

- Quick cutting of copper pipes with less turns
- No deformation of the pipe: self-clamping and self-alignment
- Less space required, ideal for hard-to-reach places
- Reliable hold with the non-slip surface

Model	mm/inch	g		No.
ROSLICE	12 mm	240	1	88812
ROSLICE	15 mm	230	1	88815
ROSLICE	18 mm	260	1	88818
ROSLICE	22 mm	250	1	88822
Spare cutter wheel	1.1/8", 12 mm	36.3	5	088840D
Spare cutter wheel	5/8"–7/8", 15–22 mm	34.6	5	088841D
Spare cutter wheel	1/2"–3/4", 18 mm	37.4	5	088842D

Self-clamping and selfalignment

Prevents the deformation of the pipe

Non-slip surface

Reliable grip

Ergonomic form

Less space needed, ideal for hard-to-reach places

Self-clamping and selfalignment

Prevents the deformation of the pipe



Chain pipe cutter

For pipes Ø20–100 mm (1–4")



KEY FEATURES

- For copper, brass, aluminium, thin-walled steel pipes, as well as plastic coated pipes
- Ideal for working in confined spaces, e.g. parallel-running pipes
- Stable chain with 15 mini cutter wheels, two-step adjustment, chrome plated with plastic covered handles

Model	mm	inch	g	No.
Chain pipe cutter	20–100	1–4"	575	70285
Spare cutter wheel chain			180	70286

Cutting and deburring

Pipe cutter

1



No. 70030

Model	mm	inch	g	No.
Size 1	6–67	1/4–2.5/8"	755	70030
Size 1 Spare deburring blade			5	21652
Size 1 Spare cutter wheel (5 pcs.)			20	070017D
Size 2 Spare cutter wheel (2 pcs.)			20	070057D
Size 2 Spare deburring blade			5	21652

Automatic ratchet telescopic pipe cutter

Telescopic pipe cutter Ø6–67 mm (1/4–2.5/8")



KEY FEATURES

- For copper, brass, aluminium, thin-walled steel pipes, as well as plastic coated pipes
- Retractable internal deburrer and spare cutter wheel in handle
- Monoblock design

Model	mm	inch	g	No.
Size 2	50–127	2–5"	1,850	70142
Size 1 Spare axle			20	70042
Size 1 Spare axle complete			5	70041



No. 52031



RO CUT TC 63 Professional

Plastic pipe shears up to Ø63 mm (2.1/2")

For precise cutting of PP, PE, PEX, PB and PVDF pipes up to Ø75 mm.



Model	mm	inch	g		No.
RO CUT TC 63 Prof.	0–63	0–2.1/2"	700	1	52030
Spare stainless steel blade	0–63	0–2.1/2"	130	1	52031

Pipe cutters, cutting wheels and spare parts

Only original ROTHENBERGER cutting wheels made of high-alloyed hardened steel guarantee an exact, right-angled cut.

Pipe cutter type	Model for pipe-Ø	No.	Cutting wheel No.	Sizes d/L/D mm		Cutting depth	Spare axle No.	Ømm Length mm Thread	Spare roller No.	Deburring blade No.	Application area	
MINICUT I PRO	3–16 mm	70401	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3	70023		Copper pipe (Cu), Brass pipe (Ms), Aluminium pipe (Al), thin-walled Steel pipe (Fe), PVC hard plastic pipe, Plastic coated pipe	
MINICUT II PRO	6–22 mm	70402	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3	70023			
MINICUT 2000	3–22 mm	70105	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3				
MINIMAX	3–28 mm	70015	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3			Copper pipe (Cu), Brass pipe (Ms), Aluminium pipe (Al), thin-walled Steel pipe (Fe), PVC hard plastic pipe, Plastic coated pipe	
TUBE CUTTER 30 PRO	3–30 mm	71019	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3	70067			
TUBE CUTTER 35 + 35 C	6–35 mm	070027(C)	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3	70067	21652		
TUBE CUTTER 42 PRO	6–42 mm	70029	070017D	4.8/5.90/18.5	5	3.0	70041	4.7/14/M3	70067	21652	Copper pipe (Cu), Brass pipe (Ms), Aluminium pipe (Al), thin-walled Steel pipe (Fe), PVC hard plastic pipe, Plastic coated pipe	
TUBE CUTTER 35 MSR	6–35 mm	70108	070188D	4.8/5.90/19.3	5	4.0	70041	4.7/14/M3	70067	21652		
TUBE CUTTER 42 PRO MSR	6–42 mm	70109	070188D	4.8/5.90/19.3	5	4.0	70041	4.7/14/M3	70067	21652		
TUBE CUTTER 50	12–50 mm	70065	070017D	4.8/5.90/18.5	5	3.0	70006	4.7/16/M4			Multi-layered composite pipe	
AUTOMATIK pipe cutter	Size 1	6–67 mm	70030	070017D	4.8/5.90/18.5	5	3.0	70042	4.7/16/M4		21652	thin-walled Cu, Ms, Al, Fe
			70031	070028D	4.8/5.90/23.6	3	7.0	70042	4.7/16/M4		21652	PE-, PP-, VPE, PB- and PVDF pipes
	Size 2	50–127 mm	70142	070057D	8.0/14.0/29.0	2	7.0	751004200	7.9/23.5/1/4"		21652	thin-walled Cu, Ms, Al, Fe
			70032	055054D	8.0/13.0/40.0	3	13.0	751004200	7.9/23.5/1/4"		21652	PE-, PP-, VPE, PB- and PVDF pipes
	Size 3	100–168 mm	70033	055053D	8.0/13.0/30.5	2	8.0	751004200	7.9/23.5/1/4"		21652	thin-walled PP pipes
				055074D	8.0/11.0/45.0	2	16.0	751004200	7.9/23.5/1/4"		21652	PE-, PP-, VPE, PB- and PVDF pipes
TUBE CUTTER 28	3–28 mm	70010	070007D	4.8/3.0/16.0	3	2.5	70080 + 70081	4.7/9/SR	80679		thin-walled Cu, Ms, Al, Fe	
TUBE CUTTER 42	3–42 mm	70011	070007D	4.8/3.0/16.0	3	2.5	70080 + 70081	4.7/9/SR	80679		thin-walled Cu, Ms, Al, Fe	
TUBE CUTTER 42 PRO PVC	6–42 mm	70072	070028D	4.8/9.5/23.6	3	7.0	70041	4.7/14/M3	70067		PE-, PP-, VPE, PB- and PVDF pipes	
Steel pipe cutter SUPER	1/8"–1.1/4" 1/8"–2"	70040 70045	070046D 070051D	7.5/14.0/25.7 9.0/17.0/31.5	3	5.5 6.0	70048 70053	7.4/30/– 8.9/35/–	70047 70052		Steel pipe Steel pipe	
Steel pipe cutter ENORM	2"–4"	70060	070061D	9.7/20.0/41.0	2	8.0	70064	9.4/52/–	70063		Steel pipe	
INOX TUBE CUTTER 30 PRO	3–30 mm	71085	070056D	4.8/5.9/18.5	5	5.5	70041	4.7/14/M3	70068		Stainless steel pipe	
INOX TUBE CUTTER	10–54 mm	70340	70341	5.0/21.0/30.0	2	3.5	70041	4.7/14/M3	70068	21652	Stainless steel pipe	
INOX TUBE CUTTER 35	6–35 mm	70055	070056D	4.8/5.90/18.5	5	4.0	70041	4.7/14/M3	70068	21652	Stainless steel pipe	
INOX TUBE CUTTER 42 PRO	6–42 mm	70070	070056D	4.8/5.90/18.5	5	4.0	70041	4.7/14/M3	70068	21652	Stainless steel pipe	
INOX SUPER	1/8"–1.1/4" 1/8"–2"	70086	070088D	4.8/5.90/19.3	2	4.0	70048	7.4/30/–	70047		Stainless steel pipe	
		70087	070089D	9.0/19.0/31.5	2	7.0	70053	8.9/35/–	70052		Stainless steel pipe	
Chain pipe cutter	100 mm	70285		4.0/3.80/17.8		3.0				Spare chain 70286	thin-walled Cu, Ms, Al, Fe	

Universal internal & external deburrer

Quick and easy deburring Ø4–54 mm (1/8–2")

For copper, steel and stainless steel pipes, with polished cutting blade made of hardened special steel, smooth running



No. 11006



No. 150000237
No. 150000236

Model	mm	inch	g			No.
Internal and external deburrer for copper and plastic	4–36	1/8–1.3/8"	30	1	25	11006
Internal and external deburrer for copper and INOX (stainless steel)	6–35	1/4–1.3/8"	100			150000237
Internal and external deburrer for copper and INOX (stainless steel)	10–54	1/2–2"	390			150000236



No. 11045

Drive shaft

For the deburring with portable screwdriver or drill

Model	g	No.
Deburrer adaptor I for No. 150000237	160	11044
Deburrer adaptor II for No. 150000236	280	11045

Deburrer adaptor I/II

Adaptor for the use of the internal and external deburring with portable screwdriver or drill

KEY FEATURES

- User-friendly solution for deburring pipes "internal and external"
- Huge time-savings
- Precise, burr-free deburring without effort



GRATFIX HSS/UNIGRAT

Deburrer

KEY FEATURES

- Replaceable blades
- GRATFIX with plastic cartridge-grip
- Grip recess is raised at the end and prevents slippage out of the hand
- One-handed use with the retractable locking head
- Offset surfaces provide a good torque
- Pluggable handle ends for the storage of associated blades



UNIGRAT (No. 21660)

Model	g	No.
UNIGRAT with HSS deburring blade	30	21660
GRATFIX with deburring blade No. 1	50	21655
GRATFIX with deburring blade No. 1–2–3	80	21651

Ideal for deburring of edges, pipes and steel, aluminium, brass, copper sheets, cast-iron and plastic plates!



GRATFIX HSS (No. 21655)

Model	g	No.
HSS deburring blade No. 1 Universal	10	21652
HSS deburring blade No. 2 for brass and cast	10	21653
HSS deburring blade No. 3 for straight edges	10	21654

General-purpose tools

Installation wrenches

Combination pliers

For hard and soft wire, special tool steel, oil hardened, special slim form, chrome-plated head, zero-play joint and heavily insulated handles

DIN
-Norm

VDE
geprüft



Model	L mm	g	No.
DIN 5244	180	250	324559

Edge cutter

For hard and soft wire, special tool steel, oil hardened, Swedish style, chrome-plated head, zero-play joint with heavily insulated handles

DIN
-Norm

VDE
geprüft



Model	L mm	g	No.
DIN 5238B	160	210	324577

Insulation stripper

Special tool steel, oil hardened, chrome-plated, zero-play joint, heavily insulated handles, with adjustment screw and opening spring

VDE
geprüft



L mm	max. mm	g	No.
165	5	160	324800

Long nose pliers, straight

With cutting edge for hard and soft wire, flat oval jaws, tapered off, special tool steel, oil hardened, chrome-plated head, zero-play joint with heavily insulated handles

DIN
-Norm

VDE
geprüft



Model	L mm	g	No.
DIN 5236A	200	200	324737

Long nose pliers, angled

With cutting edge for hard and soft wire, flat oval jaws, tapered off, special tool steel, oil hardened, chrome-plated head, zero-play joint with heavily insulated handles

DIN
-Norm

VDE
geprüft



Model	L mm	g	No.
DIN 5236D	200	200	324739

VDE screwdriver set

Blades made of chrome vanadium molybdenum steel, thoroughly hardened, extrusion-coated blade insulation tightly joined with handle, 1,000 Volt



Model	g	No.
VDE screwdriver set, includes: Slot 2.5x75; 4.0x100; 5.5x125; 6.5x150 Phillips PH 1x 80; PH 2x 100 and live-wire-tester	680	323126

General-purpose tools

Installation wrenches

2

Adjustable wrench

Chrome vanadium steel, drop forged, chrome-plated and polished



Size	L mm	Clamping width	g	No.
4"	120	16 mm	80	70440
6"	160	20 mm	100	70441
8"	210	25 mm	220	70442
10"	250	29 mm	390	70443
12"	300	34 mm	660	70444
15"	380	44 mm	1,170	70445

SWO adjustable wrench

Chrome-Vanadiumsteel, chrome-plated and polished finish

KEY FEATURES

- Metric measuring scale on jaws for easy jaws pre-setting and sizing of nuts, bolts, pipes etc.
- Great accessibility in confined spaces, non-protruding jaw shank at maximum opening
- Absolutely parallel jaw surfaces ensure perfect grip of nuts and screws



No. 1500001509

Size	L mm	Clamping width up to mm (inch)	g	No.
6"	176	34 (1.3/8")	205	1500001509
8"	216	39 (1.1/2")	345	1500001510

ROCLICK key

Chrome vanadium, head black atramentized

KEY FEATURES

- With the spring mechanism – the harder the pressure, the more firmer the grip
- Self-ratcheting effect when turning back
- Fast extraction and loosening of screws
- Suitable especially for screws on pipes, cables and rods

Model	Key width mm	L mm	g	No.
ROCLICK key 10	10	134	80	70420
ROCLICK key 11	11	137	80	70419
ROCLICK key 12	12	137	80	70421
ROCLICK key 13	13	137	90	70422
ROCLICK key 14	14	140	90	70423



Model	Key width mm	L mm	g	No.
ROCLICK key 16	16	184	130	70424
ROCLICK key 17	17	184	140	70425
ROCLICK key 19	19	188	188	70426
ROCLICK key 21	21	230	230	70427
ROCLICK key 24	24	240	240	70418

ROCLICK

Combined open-ended / hinged ratchet wrench



Chrome vanadium steel, polished and high shine chrome-plated

KEY FEATURES

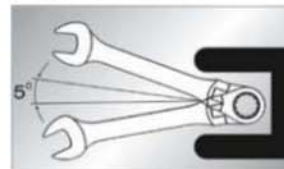
- Moveable ring ratchet allows for use even in tight spaces
- Precise work with the fine-running ratchet (72 teeth)



7-part set (No. 70490) includes: ROCLICK combined spanner 8–10–11–13–14–17–19mm, plastic case

Model	g	mm	No.
ROCLICK spanner set, 7 pieces	1,150	1 12	70490

Small 5° operating radius



Adjustable inclination angle



Small operating radius of only 5°!



Fig. ROCLICK wrench set

General-purpose tools

Water pump pliers

ROGRIP M

Quickly adjustable water pump plier

KEY FEATURES

- 30 % more gripping capacity: 10" pliers up to 2" pipe diameters
- 3-point grip: reliable clamping and perfect grip up to the maximal pipe diameter
- Wide handles for more comfort and better power transmission
- 10 point size adjustments

TECHNICAL DATA

- **Chrome vanadium steel** tempered, drop forged with heavy-duty box joint
- **Polished head and joint**
- **Double hardened jaws**, extremely durable

ROTHENBERGER Curve-Shape-Design

Especially ergonomic for larger pipe diameters. Reduces the danger of fingers getting clamped



Double hardened jaws extremely durable

Good grip on every surface even at highest demands



Large gripping width

Reliable grip and hold up to 2" pipe diameter



Integrated sizing scale

Comfortable and quick adjustment of the pipe diameter

Slip-resistant plastic handles

High grip reliability

Wide handles

More comfort and better power transmission

Model	No.
ROGRIP M 7", Ø 1.1/4" / 43 mm	1000000215
ROGRIP M 10", Ø 2" / 60 mm	1000000216

ROTHENBERGER Curve-Shape-Design – especially ergonomic!

ROGRIP F

Quickly adjustable automatic water pump plier

KEY FEATURES

- 30 % more gripping capacity: 10" pliers up to 2" pipe diameter
- 3-point grip: reliable clamping and perfect grip up to the maximal pipe diameter
- **ROTHENBERGER Curve-Shape-Design**: especially ergonomic for large pipe diameters. Reduces the danger of fingers getting clamped
- Wide handle for more comfort and better transmission of power
- **Safety lock system**: prevents unintentional opening and enables a 50 % quicker adjustment
- 18 point size adjustments

Curve-Shape-Design: especially ergonomic



3-point grip over the middle for reliable clamping. Perfect grip on pipes up to Ø2"



Safety lock system

Prevents unintentional opening and enables a 50 % quicker adjustment

18 adjustable positions

Variable uses, lateral stability and high strength

Wide handles

More comfort and better power transmission

Slip-resistant plastic handles

High grip reliability

L	L	⊘	⊘	g	⊠	⊠	No.
inch	mm	max. inch	max. mm				
7"	191	1.1/4"	43	215	1	6	1000000213
10"	254	2"	60	405	1	6	1000000214

30 % more gripping capacity!*

General-purpose tools

Water pump pliers

2

ROGRIP S

Quickly adjustable water pump plier

- Characteristics like ROGRIP M

Curve-Shape-Design:
especially ergonomic



**Double hardened jaws
extremely durable**

Good grip on every surface
even for hardest demands



Integrated sizing scale

Comfortable and quick
adjustment of the pipe diameter

Wide handles

More comfort and better
power transmission

L	L	⌀	⌀	g	⊞	⊞	No.
inch	mm	max. inch	max. mm				
7"	185	1.1/4"	43	210	1	8	1000000217
10"	254	2"	60	410	1	6	1000000218

ROGRIP XL

Quickly adjustable water pump plier

KEY FEATURES

- 16" pliers up to 3.1/2" pipe diameters
- 3-point grip: reliable clamping and perfect grip up to the maximal pipe diameter
- ROTHENBERGER Curve-Shape-Design: especially ergonomic by large pipe diameters. Reduces the danger of fingers getting clamped
- Wide handle for more comfort and better transmission of power
- 14 point size adjustment

TECHNICAL DATA

- **Chrome vanadium steel** tempered, drop forged with heavy-duty box joint
- **Polished head and joint**
- **Double hardened jaws**, extremely durable

**Enormous gripping width of 3.1/2" –
reliable grip during application**



**Double hardened jaws
extremely durable**

Good grip on every surface
even for hardest demands



Large gripping width

Reliable grip and hold
up to 3.1/2" pipe diameter

**ROTHENBERGER
Curve-Shape-Design**

Especially ergonomic with larger
pipe diameters. Reduces the
danger of fingers getting clamped

14 adjustable positions

Variable uses, lateral stability
and high strength

**ROTHENBERGER Curve-Shape-Design –
especially ergonomic!**

Wide handles

More comfort and better
power transmission

**Slip-resistant
plastic handles**

High grip reliability

Curve-Shape-Design:
especially ergonomic

3-point grip over the
middle for reliable
clamping. Perfect grip
on pipes up to Ø3.1/2"



L	L	⌀	⌀	g	⊞	⊞	No.
inch	mm	max. inch	max. mm				
16"	440	3.1/2"	102	1,400	1	1	1000000328



JOIN THE PRESS REVOLUTION!

>B< MaxiPro
In partnership with **Conex** | **Bänninger**



Pressing

Press machines Compact for ›B‹ MaxiPro

ROMAX Compact TT (TWIN TURBO)

Electrohydraulic press machine for battery operated pressing of ›B‹ MaxiPro copper refrigeration fittings up to 1.1/8" with 19kN



APPLICATION AREA

The ROMAX Compact TT is 3 seconds fast, 2.5 kg light and 19kN strong. Through the perfect handling the machine is particularly suitable for ACR installations, high volume pressings or service installations.

COMPATIBLE PRESSING TOOLS

The ROMAX Compact TT and the ROTHENBERGER ›B‹ MaxiPro Compact press jaws are suitable to press the innovative ›B‹ MaxiPro ACR fitting system of Conex|Bänninger. Press jaws see page 17.

TECHNICAL DATA

Dimension:	336x143x76mm (w/2.0Ah battery)
Weight:	2.5 kg (without press jaw)
Piston force/hub:	19kN/30mm
Nominal size:	1/4"–1.1/8" ›B‹ MaxiPro copper
Service interval:	40.000 Pressings/2 years
Press jaw fixture:	270° rotation
Power supply:	RO BP 18V/2.0Ah Li-Ion battery RO BP 18V/4.0Ah Li-Ion battery
Operating temperature:	-10°C up to 60°C
Pressings:	Approx. 150 press cycles with 2.0Ah battery tested with 1" ›B‹ MaxiPro fittings

3



No Nitrogen purge: ›B‹ MaxiPro is a mechanical joint, thus eliminating the need for nitrogen purge during the jointing process.



Flame-free: Flame-free installation avoids the need for a hot work permit and the risk of fire on site.



Effect of the two cylinder-structure: The machine can be used with one hand.



›B‹ MaxiPro press jaws Compact

An innovative press system suitable for air-conditioning and refrigeration applications consisting of ›B‹ MaxiPro fittings from Conex|Bänninger and suitable press jaws and press machines from ROTHENBERGER.



Conex|Bänninger

›B‹ MaxiPro

TIGHT CONNECTIONS UP TO 48 BAR

- The O-ring is resistant against several oils including ester oil*
- The 3-point press, one each side of the bead and one press compressing the O-ring, provides a permanent and secure joint

THE ADVANTAGES

- Only 3 seconds per joint completion
- Saves approx. 3 minutes per connection
- No hot work permit needed
- No need for nitrogen purge



TECHNICAL DATA*

- Application:** Air-conditioning and refrigeration
- Connections:** Copper to copper
- Fitting / tube range:** 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1.1/8"
- O-ring:** HNBR
- Max. operating pressure:** 48 bar/4800 kPa/700 psig
- Leak tightness:** Helium $\leq 7.5 \times 10^{-7}$ Pa.m³/s at +20°C, 10 bar
- Vaccum:** 200 microns
- Operating temperature:** -40°C up to 140°C
- UL listing continues operating temperature:** 121°C
- Compatible refrigerants:** R32, R134a, R404A, R407C, R407F, R410A, R507, R1234ze, R1234yf, R718, R450A, R513A, R448A, R449A, R407A, R427A, R438A, R417A and R422D
- Approved tube:** For full information, please visit conexbanninger.com
- Approvals, standards and test compliance:** For full information, please visit conexbanninger.com



Set ROMAX Compact TT ›B‹ MaxiPro 1/4"–1.1/8"; EU (No. 1000002121) includes: ROMAX Compact TT press machine, 1x RO BP 18 V/2.0Ah battery (No. 1000001652), RO BC battery charger EU (No. 1000001654), 8x ›B‹ MaxiPro press jaws (No. see below), TC 35 (No. 70027), internal/external deburrer (No. 1500000237), UNIGRAT pencil deburrer (No. 21660), ROVLIES cleaning pads (No. 45268), depth gauge (No. 1000002400), 2x ROCASE 4414 case system

Model	Press jaws Ø			No.
ROMAX Compact TT + ›B‹ MaxiPro press jaw set 1/4"–1.1/8" + hand tools; EU	1/4", 3/8", 1/2", 3/4", 5/8", 7/8", 1", 1.1/8"	21.2	1	1000002121
ROMAX Compact TT + ›B‹ MaxiPro press jaw set 1/4"–1.1/8" + hand tools; UK	1/4", 3/8", 1/2", 3/4", 5/8", 7/8", 1", 1.1/8"	21.2	1	1000002125
ROMAX Compact TT basic set 1, 1x 2 Ah; EU	–	5.4	1	1000002115
ROMAX Compact TT basic set 1, 1x 2 Ah; UK	–	5.4	1	1000002123
›B‹ MaxiPro press jaw set 1/4"–1.1/8" + hand tools	1/4", 3/8", 1/2", 3/4", 5/8", 7/8", 1", 1.1/8"	14.0	1	1000001989
›B‹ MaxiPro press jaw	1/4"	1.9	1	1000001749
›B‹ MaxiPro press jaw	3/8"	1.9	1	1000001750
›B‹ MaxiPro press jaw	1/2"	1.9	1	1000001751
›B‹ MaxiPro press jaw	5/8"	1.9	1	1000001752
›B‹ MaxiPro press jaw	3/4"	1.9	1	1000001753
›B‹ MaxiPro press jaw	7/8"	1.9	1	1000001754
›B‹ MaxiPro press jaw	1"	1.9	1	1000001755
›B‹ MaxiPro press jaw	1.1/8"	1.9	1	1000001756

* For full information, please visit conexbanninger.com

Pressing

DURA LAZR TEC

DURA LAZR TEC

The unique laser hardening process

Long-lasting. Safe. Precise. Our DURA LAZR TEC press jaws set a new industry standard. The unique ROTHENBERGER laser hardening process, which is implemented in our own production, provides maximum stability and wear resistance. And, therefore, more safety and a longer service life!

Depth distribution of hardness was tested by the independent test laboratory of the public material testing institute Darmstadt



3



Partial Laser-hardening for highly stressed surfaces

- Ideal accuracy of contour for highest precision during the complete live time
- 40 % increase in hardness*

Highest degree of hardness

- ROTHENBERGER press jaws are performing with the highest degree of hardness at high stressed areas
- Even in the case of high burr formation during compression, the wear is reduced to a minimum



ROTHENBERGER press jaw before surface treatment

100 % extended lifetime of the press jaws among other things due to laser hardening*

Parts which have to be flexible stay ductile

Adjustment of the plate

Durability increased by approx. 45%*

+ 40 %
HARDNESS
AT HIGHLY STRESSED
AREAS*

+100%
PRESS CYCLES
WITH LASER
HARDENING*

Easy to install

›B‹ MaxiPro benefits from a 3-point radial press – three press points, one on each side of the bead and one press compressing the O-ring. This provides a permanent and secure joint. ›B‹ MaxiPro is a mechanical joint, thus eliminating the need for nitrogen purge during the jointing process.

1. Cut the tube to length



2. Deburr and remove all external sharp edges



3. Use a pencil deburrer on internal edges



4. Clean the tube end with a circular movement, avoiding grooves that run parallel to the tube



5. Check for defects



6. Ensure the O-ring is seated



7. Mark insertion depth using depth gauge and insert tube fully into the fitting



8. Align jaws squarely on the fitting and complete the joint



9. Mark the completed joint



Please note: To ensure a safe and seal connection please follow the detailed ›B‹ MaxiPro installation process. For more information, please visit the Conex|Bänninger website: conexbanninger.com

ACCESSORIES

Model	No.
RO BP 18V/2.0 Ah Li-Ion battery	1000001652
RO BP 18V/4.0 Ah Li-Ion battery	1000001653
RO BC battery charger EU (230V)	1000001654
RO BC battery charger UK (110V)	1000001691
ROCASE 4414 case system for 8x ›B‹ MaxiPro jaws and accessories	1000001786
TUBE CUTTER 35 DURAMAG	70027
Internal and external deburrer 1/8"–1.3/8"	1500000237
UNIGRAT with HSS deburring blade	21660
ROVLIES cleaning pads (1x 10 pads)	45268
ROVLIES cleaning pads counter display (36x 10 pads)	045268D
Depth gauge ›B‹ MaxiPro	1000002400



Expanding

Expander

ROCAM EXPANDER power torque

For expanding, reducing and calibrating soft and semihard pipes $\varnothing 8-42$ mm (5/16-1.3/4"), as well as producing tapers



APPLICATION AREA

For efficient, fitting-free installation of pipes in sanitary, heating, gas, refrigeration and air-conditioning systems.

Suitable for pipes made of:

Copper (soft and semi-hard): $\varnothing 8-42$ mm, 5/16-1.3/4"
max. wall thickness 1.6 mm

Aluminium (soft): $\varnothing 8-28$ mm, 5/16-1.1/8"
max. wall thickness 1.6 mm

Precision steel (soft): $\varnothing 8-28$ mm, 5/16-1.1/8"
max. wall thickness 1.6 mm

Stainless steel (soft): $\varnothing 8-22$ mm, 5/16-7/8"
max. wall thickness 1.0 mm

KEY FEATURES

- Eliminates the cost of purchase and storage of fittings
- Converts deformed pipes into fittings; saves resources
- 50 % reduction of labour, soldering materials, joints and energy
- Reliable pipe connection according to DVGW standards
- Tough, light and wear-resistant
- Fine adjustment of the capillary gap
- **EPT – concealed bent lever**

Made in Germany!

The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



Model	kg	No.
Expander tool (without expander heads) for expander heads up to 42 mm/1.3/4"	1	12000

ROCAM EXPANDER power torque sets

ROCAM EXPANDER power torque sets include: Expander heads, ROCAM EXPANDER power torque (No. 12000), internal and external deburrer (No. 11006), in a steel carrying case (No. 24022), plastic inlay (No. 11002)



Quality protection against wear with the **TiN** sealed pin drive



For efficient, fitting-free installation of pipes



4

The **EPT-Technology (Enclosed Power Transmission)** offers the following technical benefits:

Concealed bent lever:

Protection against dirt and external mechanical damage.

Energy efficient through optimised force transmission:

Ergonomic, highly optimised force flow in relation to the hand force of the user, therefore reducing effort.



Size	kg	☒	No.
12-15-18-22 mm	2.9	1	12300
10-12-15-18-22 mm	3.3	1	12302
12-15-18-22-28 mm	3.3	1	12303
10-12-16-18-22 mm	3.3	1	12304
10-12-16-22-28 mm	3.3	1	12305
12-14-16-18-22 mm	3.3	1	12309
12-14-16-18-22-28 mm	3.3	1	12310
10-12-14-16-18-22 mm	3.6	1	12311
3/8-1/2-5/8-3/4-1"	3.3	1	12317
3/8-1/2-5/8-3/4-7/8-1.1/8"	3.6	1	12318
1/2-5/8-3/4-7/8"	2.9	1	12321
12-16-18-22-28 mm	3.2	1	12322

Size	kg	☒	No.
3/8-1/2-3/4-1"	3.2	1	12323
1/2-5/8-7/8-1.1/8"	3.0	1	12324
12-15-18-22-28-35-42 mm	4.2	1	12326
15-22-28 mm	2.9	1	12327
15-22 mm	2.5	1	12328
1/2-3/4-1"	2.9	1	12335
10-12-15-16-18-22-28 mm	3.6	1	12337
12-14-16-18-22-28-32 mm	3.7	1	12338
15-18-22-28-35-42 mm	4.0	1	12339
3/8-1/2-5/8-3/4-7/8-1-1.1/8"	3.7	1	12336
3/8-1/2-5/8-3/4"-22-28 mm	3.6	1	12336
3/8-1/2-5/8-3/4-7/8-1.1/8-1.3/8"	4.5	1	12341

Expanding Expander

ROLOCK EXPANDER power torque

For expanding, reducing and calibrating soft and semihard pipes Ø8–42 mm (5/16–1.3/4"), as well as producing tapers



APPLICATION AREA

For efficient, fitting-free installation of pipes in sanitary, heating, gas, refrigeration and air-conditioning systems.

Suitable for pipes made of:

Copper (soft and semi-hard): Ø8–42 mm, 5/16–1.3/4"
max. wall thickness 1.6 mm

Aluminium (soft): Ø8–28 mm, 5/16–1.1/8"
max. wall thickness 1.6 mm

Precision steel (soft): Ø8–28 mm, 5/16–1.1/8"
max. wall thickness 1.6 mm

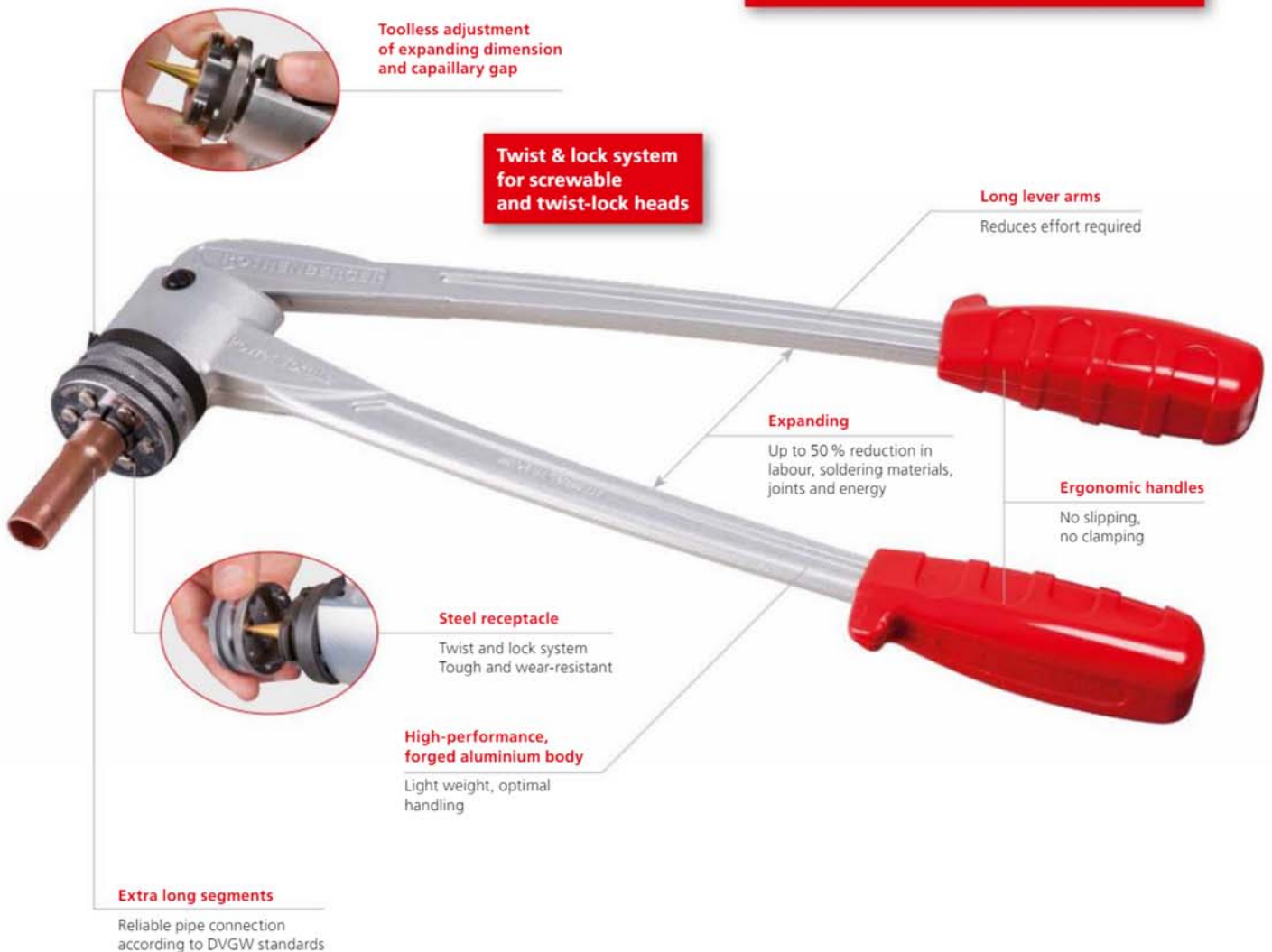
Stainless steel (soft): Ø8–22 mm, 5/16–7/8"
max. wall thickness 1.0 mm

KEY FEATURES

- Eliminates the cost of purchase and storage of fittings
- Converts deformed pipes into fittings; saves resources
- 50 % reduction of labour, soldering materials, joints and energy
- Reliable pipe connection according to DVGW standards
- Tough, light and wear-resistant
- Fine adjustment of the capillary gap
- **EPT – concealed bent lever**

Made in Germany!

The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



Model	kg		No.
ROLOCK EXPANDER power torque	1	1	12400

ROLOCK EXPANDER power torque sets

ROLOCK EXPANDER power torque sets include: Expander heads, ROLOCK EXPANDER power torque (No. 12400), internal and external deburrer (No. 11006), in a steel carrying case (No. 24022), plastic inlay (No. 11002)



New expander head for guide change between nominal diameters



Expander heads with screw top applicable

Size	kg		No.
12-15-18-22 mm	2.9	1	12500
12-15-18-22-28 mm	3.3	1	12503
10-12-16-22-28 mm	3.3	1	12505
12-14-16-18-22 mm	3.3	1	12509
10-12-14-16-18-22 mm	3.6	1	12511
10-12-15-16-18-22-28 mm	3.6	1	12537
12-14-16-18-22-28-32 mm	3.7	1	12538
3/8-1/2-5/8-3/4-1"	3.3	1	12517
3/8-1/2-5/8-3/4-7/8-1.1/8"	3.6	1	12518
1/2-5/8-3/4-7/8"	2.9	1	12521
12-16-18-22-28 mm	3.2	1	12522
1/2-5/8-7/8-1.1/8"	3.0	1	12524
12-15-18-22-28-35-42 mm	4.2	1	12526
1/2-3/4-1"	2.9	1	12535
3/8-1/2-5/8-3/4-7/8-1-1.1/8"	3.7	1	12536
3/8-1/2-5/8-3/4-7/8-1.1/8-1.3/8"	4.5	1	12541

The **EPT-Technology (Enclosed Power Transmission)** offers the following technical benefits:

Concealed bent lever:

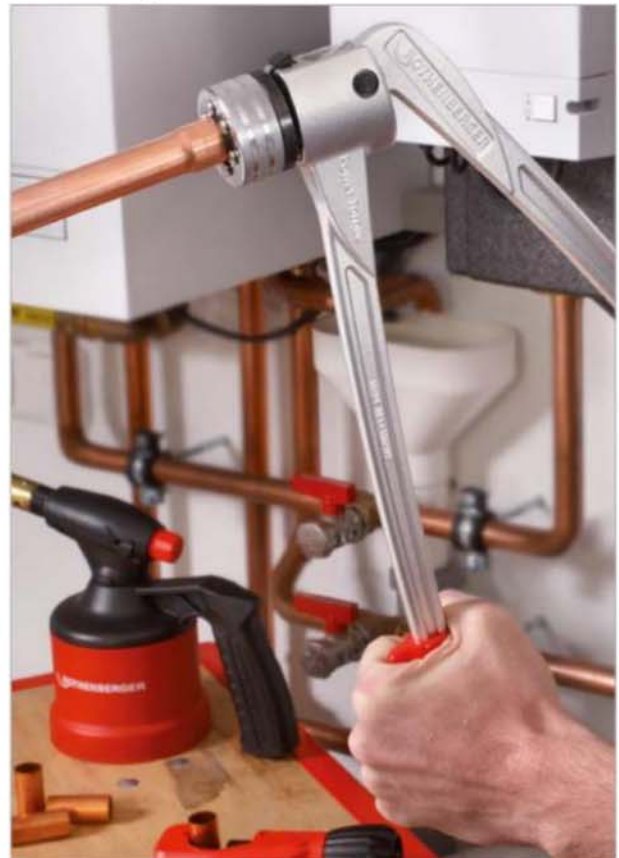
Protection against dirt and external mechanical damage.

Energy efficient through optimised force transmission:

Ergonomic, highly optimised force flow in relation to the hand force of the user, therefore reducing effort.



For efficient, fitting-free installation of pipes



ACCESSORIES



Expander heads for ROLOCK EXPANDER power torque



Expander heads type S/riveted expander heads



Pipe cutter



Internal/External deburrer



Expander adaptor type S



Brazing solder



High-performance torch (SUPER FIRE 3 with MAPP Gas)

Expanding Expander

Standard expander head

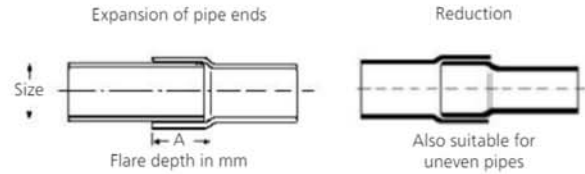
For producing standard precision flares Ø8–42 mm (5/16–1.3/4") according to DVGW standards; as well as the specifications for the Gas de France

KEY FEATURES

- 50 % reduction in labour, soldering materials and soldered joints
- Depth of the flare is consistent with DVGW standards
- Guide guarantees a perfect centred position and uniform capillary gap
- Tough and long lasting with the hardened segments

Made in Germany!

The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



4

Fits similar expanders from other brands as well!

Specially hardened segments

Tough and long lasting

6 Rivets and guide channels

Guide guarantees a perfect centred position and uniform capillary gap

Step at the end of the segments

Enables re-calibration of irregular pipes and fittings

Extra long segments

Depth of the flare is consistent with DVGW standards



mm	max. wall thickness mm (soft)				A mm	g	No.
	Cu	Al	Fe	Inox			
8	1.0	1.0	1.0	1.0	6.0	120	11008
10	1.0	1.0	1.0	1.0	10.0	120	11010
12	1.2	1.2	1.2	1.0	12.6	120	11012
14	1.2	1.2	1.2	1.0	12.6	120	11014
15	1.2	1.2	1.2	1.0	15.5	120	11015
16	1.2	1.2	1.2	1.0	15.5	120	11016
18	1.2	1.2	1.2	1.0	17.5	120	11018
20	1.2	1.2	1.2	1.0	17.5	140	11020
22	1.2	1.5	1.5	1.0	20.5	140	11022
28	1.5	1.5	1.5	–	18.5	390	11028
32	1.5	–	–	–	19.5	410	11032
35	1.6	–	–	–	19.5	430	11035
38	1.6	–	–	–	19.5	450	11038
40	1.5	–	–	–	19.5	470	11040
42	1.5	–	–	–	19.5	470	11042

inch	max. wall thickness mm (soft)				A mm	g	No.
	Cu	Al	Fe	Inox			
5/16"	1.0	1.0	1.0	1.0	6.0	120	11008
3/8"	1.0	1.0	1.0	1.0	7.4	120	11052
1/2"	1.2	1.2	1.2	1.0	11.0	120	11053
5/8"	1.2	1.2	1.2	1.0	14.0	120	11054
3/4"	1.2	1.2	1.2	1.0	18.1	120	11055
7/8"	1.2	1.2	1.2	1.0	18.0	140	11056
1"	1.5	1.5	1.5	–	15.8	150	11057
1.1/8"	1.6	1.6	1.6	–	17.0	390	11058
1.1/4"	1.6	–	–	–	17.0	410	11059
1.3/8"	1.6	–	–	–	17.0	430	11035
1.1/2"	1.6	–	–	–	17.0	450	11038
1.5/8"	1.6	–	–	–	17.5	470	11062
1.3/4"	1.6	–	–	–	17.5	500	11063

Availability, delivery time and price of custom products for other pipe diameters available upon request.

ROLOCK expander head

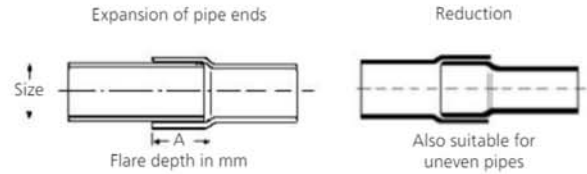
For producing standard precision flares Ø8–42 mm (5/16–1.3/4") according to DVGW standards; as well as the specifications for the Gas de France

KEY FEATURES

- 50 % reduction in labour, soldering materials and soldered joints
- Depth of the flare is consistent with DVGW standards
- Guide guarantees a perfect centred position and uniform capillary gap
- Tough and long lasting with the hardened segments

Made in Germany!

The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



Twist & lock heads for ROLOCK EXPANDER power torque

Specially hardened segments

Tough and long lasting

6 Rivets and guide channels

Guide guarantees a perfect centred position and uniform capillary gap



Step at the end of the segments

Enables re-calibration of irregular pipes and fittings

Extra long segments

Depth of the flare is consistent with DVGW standards



mm	max. wall thickness mm (soft)				A mm	g	No.
	Cu	Al	Fe	Inox			
8	1.0	1.0	1.0	1.0	6.0	120	12408
10	1.0	1.0	1.0	1.0	10.0	120	12410
12	1.2	1.2	1.2	1.0	12.6	120	12412
14	1.2	1.2	1.2	1.0	12.6	120	12414
15	1.2	1.2	1.2	1.0	15.5	120	12415
16	1.2	1.2	1.2	1.0	15.5	120	12416
18	1.2	1.2	1.2	1.0	17.5	120	12418
20	1.2	1.2	1.2	1.0	17.5	140	12420
22	1.2	1.5	1.5	1.0	20.5	140	12422
28	1.5	1.5	1.5	–	18.5	390	12428
32	1.5	–	–	–	19.5	410	12432
35	1.6	–	–	–	19.5	430	12435
38	1.6	–	–	–	19.5	450	12438
40	1.5	–	–	–	19.5	470	12440
42	1.5	–	–	–	19.5	470	12442

inch	max. wall thickness mm (soft)				A mm	g	No.
	Cu	Al	Fe	Inox			
5/16"	1.0	1.0	1.0	1.0	6.0	120	12408
3/8"	1.0	1.0	1.0	1.0	7.4	120	12452
1/2"	1.2	1.2	1.2	1.0	11.0	120	12453
5/8"	1.2	1.2	1.2	1.0	14.0	120	12454
3/4"	1.2	1.2	1.2	1.0	18.1	120	12455
7/8"	1.2	1.2	1.2	1.0	18.0	140	12456
1"	1.5	1.5	1.5	–	15.8	150	12457
1.1/8"	1.6	1.6	1.6	–	17.0	390	12458
1.1/4"	1.6	–	–	–	17.0	410	12459
1.3/8"	1.6	–	–	–	17.0	430	12435
1.1/2"	1.6	–	–	–	17.0	450	12438
1.5/8"	1.6	–	–	–	17.5	470	12462
1.3/4"	1.6	–	–	–	17.5	500	12463

Availability, delivery time and price of custom products for other pipe diameters available upon request.

Expanding

Expander/tee-extractor

COMBI KIT expander/tee-extractor

Practical, compact and cost-saving set combinations with ROCAM and ROLOCK EXPANDER power torque and tee-extractors. For all common pipe dimensions $\varnothing 10-28$ mm (3/8-1.1/8")

Made in Germany!
The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



APPLICATION AREA

Suitable for pipes made of **copper, aluminium and steel (soft)**: $\varnothing 10-28$ mm and 3/8-1.1/8"

KEY FEATURES

- Increases safety by reducing the number of connections
- Suitable for making branches even in confined spaces through the compact design

KEY FEATURES

- Fine adjustment of the capillary gap using the KSO-screw
- Reduces effort required and increases work space
- Up to 67% reduction of soldering materials and soldered joints
- Accurate drilling
- Saves resources by converting scrap pipes into fittings
- Reliable pipe connections to DVGW standards

4



EPT-Technology
Concealed bent lever

Largest possible expansion size and capillary gap using the adjustable KSO-screw



Professional extractions
Up to 67% reduction of soldering materials and soldered joints

Long handles
Reduces effort required and increases work space

Utilisation of material
Saves resources by converting scrap pipes into fittings

UNIDRILL Automatic 28/42
Accurate drilling



No. 21583/
No. 21575

Scale and cam depth adjustment



Extractor cam pincer
Limits insertion depth for $\varnothing 12-42$ mm (1/2-1.5/8")

No. 22080



COMBI KIT set includes: ROCAM EXPANDER power torque (No. 12000), standard expander heads, tee-extractor, special ratchet (No. 27180), adaptor (No. 150002894), UNIDRILL Automatic 28 (No. 21583), extractor cam pincer (No. 22080), steel carrying case (No. 24022)

COMBI KIT set includes: ROLOCK EXPANDER power torque (No. 12400), ROLOCK expander heads, tee-extractor, special ratchet (No. 27180), adaptor (No. 150002894), UNIDRILL Automatic 28 (No. 21583), extractor cam pincer (No. 22080), steel carrying case (No. 24022)

Model	Size	kg		No.
COMBI KIT	12-15-18-22 mm	4.4	1	011180X
COMBI KIT	12-14-16-18 mm	2.6	1	011186X
COMBI KIT	1/2-5/8-7/8-1.1/8"	2.8	1	011194X

Model	Size	kg		No.
ROLOCK COMBI KIT	12-15-18-22 mm	4.4	1	12601
ROLOCK COMBI KIT	12-14-16-18 mm	2.6	1	12602
ROLOCK COMBI KIT	1/2-5/8-7/8-1.1/8"	2.8	1	12604
ROLOCK COMBI KIT	1/2-3/4-1"	2.5	1	12605

Expanding Tee-extractor

Tee-extractor sets

For efficient production of T-branches (extractions) for fitting-free pipe installations, Ø 10–28 mm (3/8–1.1/8")

APPLICATION AREA

Suitable for pipes made of:

Copper
(soft, semi-soft, hart): 10–42 mm, 3/8–2.1/8"
max. wall thickness 2.5 mm

Aluminium: 10–42 mm, 3/8–2.1/8"
max. wall thickness 2.5 mm

Precision steel: 10–42 mm, 3/8–2.1/8"
max. wall thickness 2.5 mm

Made in Germany!

The know-how from the pioneer of expanding technology and the leading manufacturer of expanding tools for over 50 years!



KEY FEATURES

- Eliminates the cost for T-pieces, purchase and storage of fittings
- Extractions even on installed pipes possible
- Accurate drilling
- Optimal positioning with the cam pincher depth adjustment

Scale and cam depth adjustment



Extractor cam pincher

Limits insertion depth for Ø 12–42 mm (1/2–1.5/8")

No. 22081

Optimum capillary gap

Professional extractions

UNIDRILL Automatic 28/42

Accurate drilling



No. 21583/
No. 21575



Limits the insertion depth

Optimal positioning

No pipe removal

Extractions even on installed pipes possible



Tee-extractor sets include: Tee-extractor according to chart, special ratchet (No. 27180), adaptor (No. 1500002894), cam pincher (No. 22080) and special conical drill, UNIDRILL Automatic 42 (No. 21575), in steel carrying case (No. 24022)

Model	Size	kg	kg	No.
Tee-extractor set	12–15–18–22 mm	3.4	1	22100
Tee-extractor set	12–15–22–28 mm	3.6	1	22101
Tee-extractor set	12–15–18–22–28 mm	3.9	1	22103
Tee-extractor set	10–12–15–18–22 mm	3.5	1	22102
Tee-extractor set	12–14–16–18–22 mm	3.6	1	22109
Tee-extractor set	10–12–14–16–18–22 mm	3.7	1	22111
Tee-extractor set	12–15–18–22–28–35–42 mm	5.5	1	22126
Tee-extractor set	15–22–28 mm	3.6	1	22127
Tee-extractor set	1/2–5/8–3/4–7/8"	3.4	1	22121
Tee-extractor set	1/2–5/8–7/8–1.1/8"	3.7	1	22124
Tee-extractor set	1/2–3/4–1"	3.3	1	22135

Expanding

Tee-extractor

Tee-extractor

Tee-extractor with double v-block for accurate 90° branches, Ø 10–54 mm (3/8–2.1/8")

APPLICATION AREA

- Uniform and proper material extraction without scratches or burrs
- Burr-free operation with the specially polished extractor hooks
- Easy insertion into the drilled hole with the special trapezoidal screw thread
- Accurate and firm positioning for exact 90° branches

mm/inch	mm	Drill Ø mm	mm	g	No.
10	1.0	6	11	130	22010
12	1.0	7	11	150	22012
14	1.0	8	11	160	22014
15	1.0	8	11	160	22015
16	1.0	8	11	220	22016
18	2.0	10	11	220	22018
22	2.0	12	11	300	22022
28	2.5	15	11	470	22028
35	2.5	22	11	700	22035
38	2.5	22	11	700	22038
42	2.5	26	11	890	22042
54	2.5	30	19	1,380	22054
3/8"	1.0	6	11	110	22060
1/2"	1.0	7	11	140	22061

● Hexagon ■ Square

Double V-block

Accurate and firm positioning for exact 90° branches

Specially polished, forged and tempered extractor hooks

Burr-free operation

Special hook design

Easy insertion into the drilled hole



mm/inch	mm	Drill Ø mm	mm	g	No.
5/8"	1.0	8	11	220	22016
3/4"	2.0	10	11	220	22062
7/8"	2.0	12	11	350	22063
1"	2.5	14	11	470	22064
1.1/8"	2.5	15	11	480	22065
1.1/4"	2.5	19	11	700	22066
1.3/8"	2.5	22	11	700	22035
1.1/2"	2.5	22	11	700	22038
1.5/8"	2.5	26	11	900	22068
2"	2.5	30	19	1,380	22050
2.1/8"	2.5	30	19	1,380	22054

ACCESSORIES

Socket 19mm	F80053
Square connection 3/4"	F80054

Spare extractor hooks

Forged hooks, specially polished, tempered from Ø 10–54 mm (3/8–2.1/8")



mm	g	No.	mm	g	No.
10	60	1300005045	22	210	1300005051
12	70	1300005046	28	220	1300005052
14	90	1300005047	35	290	1300005054
15	90	1300005048	38	290	1300005055
16	140	1300005049	42	320	1300005056
18	140	1300005050	54	560	1300005057

inch	g	No.	inch	g	No.
3/8"	60	1300005058	1.1/4"	270	1300005064
1/2"	70	1300005059	1.3/8"	290	1300005054
5/8"	140	1300005049	1.1/2"	290	1300005055
3/4"	140	1300005060	1.5/8"	320	1300005065
7/8"	200	1300005061	2"	520	1300005067
1"	210	1300005062	2.1/8"	560	1300005057
1.1/8"	220	1300005063			

Tee-extractor ratchet

Chrome vanadium steel, fine toothed and right/left reversible

Model	SW	g	No.
10–42 mm, 3/8–1.3/4"	11 mm	435	27180*
50–54 mm, 2–2.1/8"	3/4" ■	1,140	27181



TUBE BENDER

For accurate one handed bending up to 90°,
Ø5–12 mm (1/4–1/2")



APPLICATION AREA

Suitable for pipes made of:

Copper (soft) and aluminium: Ø5–12 mm, 1/4–1/2"
Precision steel (soft): Ø5–12 mm, 1/4–1/2"

KEY FEATURES

- Accurate bending even in restricted spaces
- Production of U-bends, counter bends, swan-neck bends and connecting bends possible at all levels
- Quick and simple change of the bending formers
- Fast release and removal of the bending formers
- One handed operation through the ergonomic design
- Fast and accurate bending

Ratchet arm with bayonet coupling

Quick change of the bending formers

Release lever

Quick release and reset of the bending formers

Ergonomic design

One handed operation

Open bending frame

Production of U-bends, counter bends, swan-neck bends and connecting bends possible at all levels

Compact design

Accurate bending even in restricted spaces

Mechanical ratchet feed

Quick and accurate bending

Various bends possible



TUBE BENDER (No. 24130)



Bending formers (No. 24048)



Back plates (No. 24049)



Bending segments



TUBE BENDER sets include: basic tool complete with bending segments, back plates, in plastic carrying case (No. 24025)

Model	kg	l	No.
Basic set (basic tool, back plates, plastic case)	1.00	1	24010
TB set 5–6–8–10 mm	2.84	1	24131
TB set 6–8–10–12 mm	3.03	1	24132
TB set 8–10–12 mm	2.82	1	24133
TB set 1/4–5/16–3/8–1/2"	2.92	1	24134
Basic tool without bending segments	0.36	1	766004016
Support segment	0.05	1	24048
Back plate without support segment	0.14	1	24049
Plastic carrying case	0.60	1	24025

TUBE BENDER bending segments

Model	Size	g	No.
Bending segments	5 mm	192	24001
Bending segments	6 mm	210	R2403200
Bending segments	8 mm	250	R2403300
Bending segments	9 mm	360	R2403400
Bending segments	10 mm	390	R2403500
Bending segments	12 mm	390	24007
Bending segments	1/4"	210	R2403200
Bending segments	5/16"	250	R2403300
Bending segments	3/8"	270	24006
Bending segments	1/2"	380	24008

Previous bending segments and back plates including support segments from earlier models are compatible!

Bending

Bender

TUBE BENDER MAXI

For accurate one handed bending up to 90°,
Ø 10–26 mm (3/8–7/8")



APPLICATION AREA

For the bending of pipes made of soft copper and aluminium, coated copper and precision steel pipes, as well as multi-layered composite pipes (only in MSR-sets) and stainless steel (soft).

Suitable for pipes made of:

Copper (soft) and aluminium:	Ø 10–22 mm, 3/8–7/8"
Copper (coated):	Ø 10–18 mm, 3/8–5/8"
Precision steel (soft):	Ø 10–22 mm, 3/8–7/8"
Stainless steel (thin-walled, soft):	Ø 10–18 mm, 3/8–5/8"
MSR (multilayer):	Ø 14–26 mm, 5/8–7/8"

KEY FEATURES

- Eliminates the cost for bending formers, storage and purchase
- Quick release and reset of the bending segments
- Bending segments are easily exchanged
- Optimum bending results

Safe transport

Handle will not open during transport

Optimum bending results

Plastic bending segments and support segments with increased conductivity

Mechanical ratchet feed

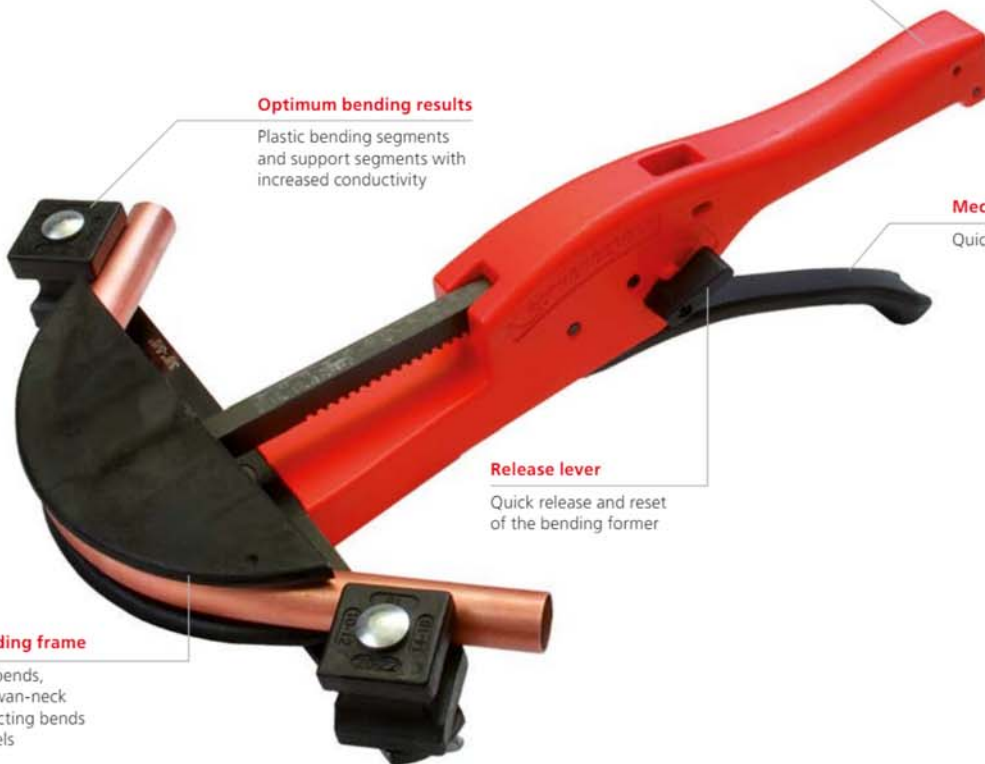
Quick precise bending

Release lever

Quick release and reset of the bending former

Adjustable bending frame

Production of U-bends, counter bends, swan-neck bends and connecting bends possible at all levels



TUBE BENDER MAXI sets include: basic unit (No. 766100016), back plate support with segments (Cu set No. 23001), (MSR set No. 23001), (MSR set No. 24022), plastic carrying case (No. 23097)

Model	kg	l	No.
TB MAXI set 12–15–18–22 mm	3.5	1	023020X
TB MAXI set 12–14–16–18–22 mm	3.5	1	023021X
TB MAXI set 3/8–1/2–5/8–3/4–7/8"	3.3	1	023022X
TB MAXI set MSR 14–16–18–20–25 mm	3.3	1	023090X
TB MAXI set MSR 14–16–18–20–26 mm	3.3	1	023091X
Basic tool without back plate support	1.0	1	766100016
Back plate support without support segments	0.5	1	R2301500
Support segments MSR R/L 10–25 mm	0.5	2	23008
Support segments R/L 12–22 mm	0.1	2	23047
Plastic carrying case	1.1	1	995866100

Previous bending segments and support segments from earlier models are compatible

TUBE BENDER MAXI bending segments

Model	Size	max. mm	g	No.
Bending segments	10 mm	1.0	80	23001
Bending segments	12 mm	1.0	80	23002
Bending segments	14 mm	1.0	80	23003
Bending segments	15 mm	1.0	90	23004
Bending segments	16 mm	1.0	100	23005
Bending segments	18 mm	1.0	140	23006
Bending segments	22 mm	1.0	170	23007
Bending segments	3/8"	1.0	70	23010
Bending segments	1/2"	1.0	80	23011
Bending segments	5/8"	1.0	100	23012
Bending segments	3/4"	1.0	120	23013
Bending segments	7/8"	1.0	170	23014

Pro Bender

For bending of pipes out of copper, stainless steel and carbon steel in the sizes 10 and 16 mm / 3/8"-3/4"

KEY FEATURES

- Bending of pipes out of copper, stainless steel and carbon steel possible
- Long lasting due to forged cast iron body
- Comfortable working due to long levers and rubber handles
- Clamping surface for working with a vice



Size	max. mm	R Radius mm	L mm	kg	No.
3/8" / 10mm	1.0	40	530	2.2	1000001431
1/2"	1.0	47	530	2.1	767050016
5/8" / 16mm	1.0	76	770	4.0	1000000445
3/4"	1.0	76	770	3.9	767750016

5

MULTIBEND

For accurate bending up to 180° of pipes made of soft copper, aluminium and precision steel Ø 10–18 mm (1/4–5/8")

KEY FEATURES

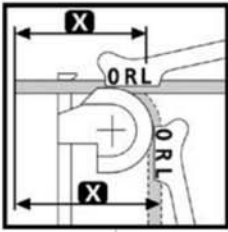
- Bending radius display of 0–180° for accurate bending
- Clamp mechanism for better pipe hold allows the bending of shorter pipe pieces
- Light construction allows for fatigue-free hand operation



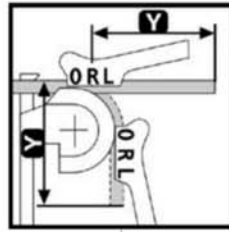
Size	max. mm	R Radius mm	kg	No.
10 mm	1.0	30	0.37	25401
12 mm	1.0	36	0.64	25402
14 mm	1.0	42	0.98	25403
15 mm	1.0	48	1.45	25404
16 mm	1.0	48	1.46	25405
18 mm	1.0	54	2.00	25406

Bending Bender

Method L



Method R



MINIBEND

For accurate two handed bending up to 180° of pipes made of soft copper, brass, aluminium and precision steel Ø6–10 mm (1/4–3/8")

KEY FEATURES

- Suitable for use in refrigeration and air-conditioning, oil supply, automotive, hydraulic and pneumatic industries



Accurate bending

Minimum size chart and bending radius display on measurement scale

Model	Size	g	No.
MINIBEND	6–8–10 mm	420	25150
MINIBEND	1/4–5/16–3/8"	420	25151

Method L: Determination of the length of L-Left

O: Reference to bending scale (0–0) and/or start/end of the bending radius
L: Used to determine/indicate the final dimension desired from the left (pipe beginning) up to top edge of the pipe (Measure X)

Method R: Determination of the length of R-Right

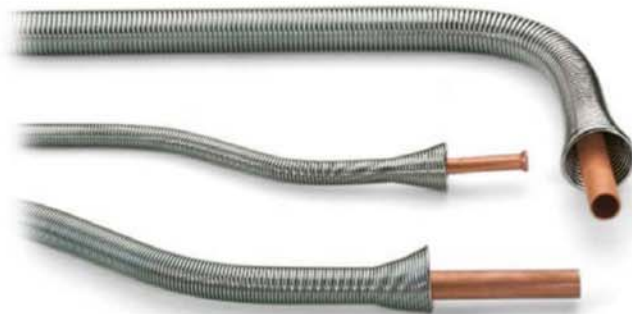
O: Reference to bending scale (0–0) and/or start/end of the bending radius
R: Used to determine/indicate the final dimension desired from the right (pipe beginning) up to top edge of the pipe (Measure Y)

Copper tube bending springs

For free-handed bending of soft copper pipes Ø8–16 mm (5/16–5/8")

KEY FEATURES

- Coiled cone for ideal handling even with longer pipes
- Tough and long lasting with the cadmium-plated spring steel
- Optimal spring form prevents buckling in bending radius area



Size	g	No.	Size	g	No.
8 mm	70	25181	16 mm	220	25186
10 mm	80	25182	5/16"	70	25181
12 mm	160	25183	1/2"	130	25190
15 mm	220	25185	5/8"	220	25186

ROBEND H+W PLUS

For accurate cold bending up to 180°, Ø8–22 mm (5/16–7/8")



KEY FEATURES

- Exact bending to the mm on continuous pipe
- Retains shape and remains stable
- Two-hand bending possible with the additional handle up to Ø 18 mm/5/8"
- Eliminates the costs of purchase and storage of bending formers

Optimum combination of ROLUB guide shoe and the bending former

Perfect bending results without friction marks

Minimum size chart and bending radius display

Accurate bending

Bending formers with base plate

Easy bending through clamping on a vice

KEY FEATURES

- Easy bending through clamping on a vice
- Exact bending with the minimum size chart and bending radius display

ROLUB-Anti-Block-System!

ROLUB-Anti-block-System

Less effort due to lower friction and optimum distribution of the bending spray

Made from high quality forged aluminium

Retains shape and remains stable

Thread for the attachment of the additional lever (accessories)

Free-hand bending possible



Size	max. mm	R Radius mm	g	No.
8 mm	1.0	22	660	24508
10 mm	1.0	32	1,180	24510
12 mm	1.0	38	1,110	24512
14 mm	1.0	45	1,370	24514
15 mm	1.0	45	1,370	24515
16 mm	1.0	64	2,620	24516
18 mm	1.0	64	2,620	24518

Size	max. mm	R Radius mm	g	No.
22 mm	1.0	81	3,800	24522

ACCESSORIES (ADDITIONAL LEVER FOR TWO-HAND BENDING)*

Lever (short) for bending formers Ø 8 mm/3/8"	25075
Lever for bending formers Ø 10–15 mm	25076
Lever for bending formers bigger than Ø 15 mm	25078
Bending spray 150 ml	25120

* possible from 10mm

ROBEND H+W PLUS bending sets

Sets include: ROCASE case system for a maximum of 5 bending formers, 2 levers for vice bending and bending spray (No. 25120), bender corresponds to the respective pipe dimensions



Model	mm	kg	No.
12–15–18–22 mm	1.0	16.5	24500
15–18–22 mm	1.0	14.9	24505
1/2–5/8–3/4"	1.0	13.6	24503
1/2–5/8–7/8"	1.0	13.7	24504

ROLUB-Anti-Block special guide shoe

Especially adapted to the ROBEND H+W bender the ROLUB guide shoe with two-point lubricating chamber system

ROLUB guide shoe made of high-quality polyamide

Perfect bending results without friction marks

Two-point lubricating chamber system

Ensures optimum distribution of lubrication



Size	g	No.	Size	g	No.
8 mm	20	25308	22 mm	90	25322
10 mm	20	25310	5/16"	20	25308
12 mm	30	25312	3/8"	25	25310
14 mm	30	25314	1/2"	30	25313
15 mm	30	25315	5/8"	50	25316
16 mm	50	25316	3/4"	90	25319
18 mm	50	25318	7/8"	90	25322

Bending

Bender

ROBEND 4000

Portable, sturdy and powerful. Cold bending up to 180°, Ø 12–35 mm (1/2–1.3/8")



APPLICATION AREA

Universal application in sanitary and heating installations, in pipeline construction, refrigeration and air-conditioning systems as well as industrial systems and batch production. Fewer joints means less potential for leaks. Safety implies less likelihood of injury.

Suitable for pipes made of:

Copper (hard, semi-hard and soft DIN EN 1057, 12735-1, 13348): Ø 12–35 mm, (1/2–1.3/8")

Copper- and Precision steel (coated): Ø 12–28 mm, (1/2–1.1/8")

Precision steel (soft DIN 2391/2393/2394): Ø 12–28 mm, (1/2–1.1/8")

Threaded steel (DIN 2440/2441): Ø 1/2", 3/4"

Seamless Stainless steel (GW 541): Ø 12–28 mm, (1/2–1.1/8")

Multi-layered composite pipe (MSR): Ø 12–32 mm, (1/2–1.1/4")

KEY FEATURES

- Quick return on investment through the savings from joints, soldering material and energy
- Universal application: U-bends, counter-bends, swan-neck bends and connecting bends possible at all levels
- Retains shape and remains stable: bending formers made of high-quality forged aluminium
- Top-quality, precise and simple to use
- Bending without deformation or ripples due to less friction
- Motor rating: 1010 Watt, 50/60 Hz



Forged aluminium former with bending radius scale
Easy to use

Pre-adjustment of the bending angle without tools

Fast and precise bending

Special ROLUB guide shoe

Bending without deformation or ripples due to less friction



High-performance 1,010 W motor
Ideal for continuous operation

Automatic switch-off when preset bending angle is obtained

Fast batch production possible

Bending technology

Simplified work preparation, eliminates costs of purchase and storage of fittings

Bending of pipes made of various materials possible



Seven-fold drive



Comfortable carry handle



ROBEND 4000 with stand



ROBEND 4000 sets

Sets include: Basic 230V unit (No. 1000001559), bending formers and guide shoes for respective pipe diameters, guide shoe axle (No. 25743), adaptor for tripod (No. 25748) in basic unit (tripod optional), carrying case

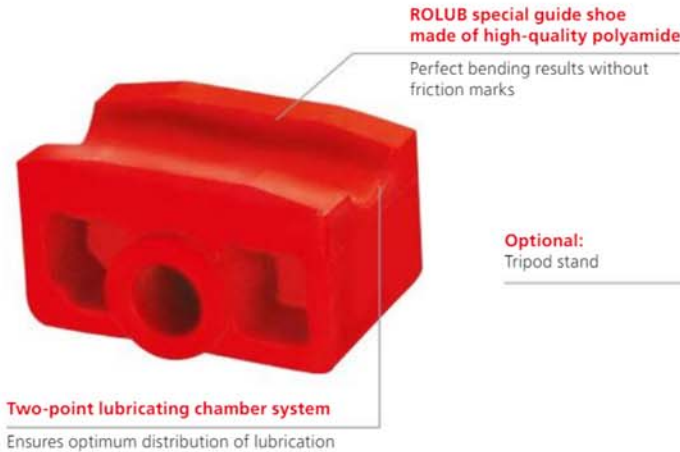


Fig. ROBEND 4000 set

Model	Description	Pipe type	kg	No.
ROBEND 4000 set	15–18–22 mm	Cu, Fe et al.	24.12	1000001554
ROBEND 4000 set	15–18–22–28 mm	Cu, Fe et al.	24.12	1000001550
ROBEND 4000 set	12–14–16–18–22 mm	Cu, Fe et al.	21.90	1000001551
ROBEND 4000 set	15–22–28 mm	Cu, Fe et al.	21.10	1000001545
ROBEND 4000 set	12–14–16–18–22–28 mm	Cu, Fe et al.	24.10	1000001552
ROBEND 4000 set	12–15–18–22 mm	Cu, Fe et al.	20.60	1000001548
ROBEND 4000 set	12–15–18–22–28 mm	Cu, Fe et al.	23.50	1000001549
ROBEND 4000 set	15–18–22–28–35 mm	Cu, Fe et al.	32.00	1000001567
ROBEND 4000 set	1/2–5/8–3/4"–7/8"	Cu, Fe et al.	19.60	1000001553
ROBEND 4000 set	1/2–5/8–3/4"–7/8–1.1/8–1.3/8"	Cu, Fe et al.	29.00	1000001565
ROBEND 4000 set	7/8–1.1/8–1.3/8"	Cu, Fe et al.	22.00	1000001566
ROBEND 4000 basic unit	in carrying case without bending segments	Cu, Fe et al.	14.50	1000001559

ROBEND 3000/4000 bending formers

For bending pipes Ø 12–35 mm (1/2–1.3/8")



For metric copper pipe DIN EN 1057, 12735-1, 13348, aluminium pipe, Precision steel pipe DIN 2391/93/94, stainless steel pipe and others

Size	mm	R Radius mm	kg	No.
12 mm	1.0	42	0.48	25612
14 mm	1.0	49	0.48	25614
15 mm	1.0	52	0.53	25615
16 mm	1.0	56	0.60	25616
18 mm	1.0	72	1.17	25618
20 mm	1.0	80	1.42	25620
22 mm	1.2	88	1.42	25622
28 mm	2.0	112	2.90	25628
32 mm**	2.0	128	3.40	1000001561
35 mm**	2.0	140	3.60	1000001563

For imperial copper pipe DIN EN 1057, 12735-1, 13348 aluminium pipe. Precision steel pipe DIN 2391/93/94, stainless steel pipe and others

Size	mm	R Radius mm	kg	No.
1/2"	1.2	45	0.53	25652
5/8"	1.2	56	0.60	762955300
3/4"	1.2	80	1.42	25619
7/8"	1.2	88	1.42	762955700
1"	1.5	112	2.90	25625
1.1/8"	1.6	112	2.90	25626
1.1/4"***	2.0	128	3.40	1000001561
1.3/8"***	2.0	140	3.60	1000001563

* Complete terms and conditions at rothenberger.com/service
RO SERVICE+ only valid in participating countries.

** Bending Former Sets (No. 1000001561), (No. 1000001563) are only compatible with ROBEND 4000. Only matching with optional plastic carrying case (No. 1000001564)

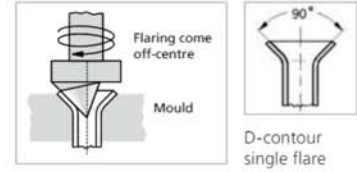
Flare connections

Flaring tools

ROFLARE REVOLVER

Revolver reeling flaring tool

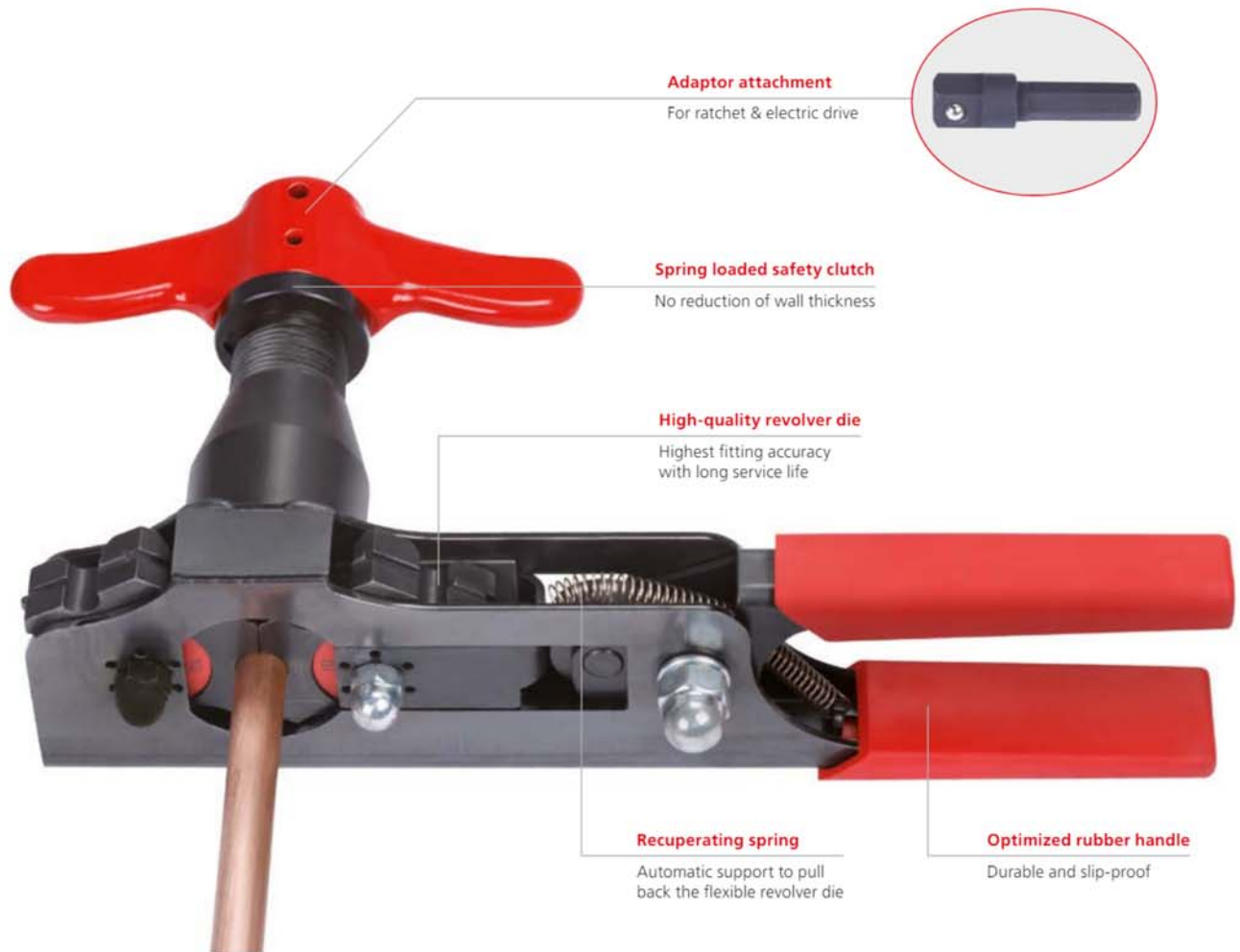
For the reliable and fast production of standard single 45° flares in accordance with **EN 14276-2** and **JIS B8607:2008** on copper soft pipes Ø6–18mm and 1/4–3/4"



APPLICATION AREA

- Guaranteed norm flares
- Produces leak free joints
- One-handed quick clamping system
- Automatic depth stop: perfect positioning of the pipe to the flaring cone

6



Set (1000000230) includes: ROFLARE REVOLVER metric incl. ratchet adaptor, dies Ø6, 8, 10, 12, 16 and 18mm, pipe cutter ROTRAC 28 PLUS CHROM (No. 1000000046), ROCASE 4214 (No. 1000001951)

Set (1000000231) includes: ROFLARE REVOLVER imperial incl. ratchet adaptor, dies Ø 1/4, 5/16, 3/8, 1/2, 5/8 and 3/4", pipe cutter ROTRAC 28 PLUS CHROM (No. 1000000046), ROCASE 4214 (No. 1000001951)

Model	No.
Set, metric with ROTRAC 28 PLUS CHROM	100000230
Set, imperial with ROTRAC 28 PLUS CHROM	100000231
Metric, Ø6, 8, 10, 12, 16, 18mm	100000222
Imperial, Ø 1/4, 5/16, 3/8, 1/2, 5/8, 3/4"	100000223

Compact design enables use in confined spaces



Automatic depth stop: Perfect positioning of the pipe to the flare cone

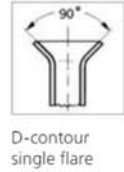
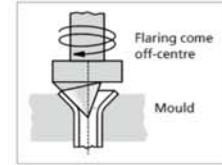


Reeling flaring tool

For producing precision 45° single flares on copper pipes Ø 6–18 mm (1/8–3/4")



No. 222401/No. 222402/
No. 222403



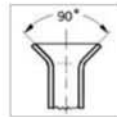
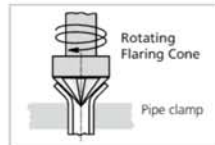
Reeling flaring tool set includes: Reeling flaring tool in plastic case with mould in metric and/or imperial format

Model	mm/inch	No.
Set EB	6–8–10–12–14–15–16–18mm 1/8–3/16–1/4–5/16–3/8–1/2–5/8–3/4"	222401
Set EB	1/8–3/16–1/4–5/16–3/8–1/2–5/8–3/4"	222402
Set EB	6–8–10–12–14–15–16–18mm	222403

Standard flaring tool

For producing 45° single flares for copper, KUNIFER, brass, aluminium and precision steel tubes up to 1 mm in wall thickness

- Ideal for mobile use for pipes in refrigeration, air conditioning and automobile (brakes) industries



D-contour single flare



Model	mm/inch	g	No.
SF	4–4.75–6–8–10–12–14mm	980	26050
SF	3/16–1/4–5/16–3/8–7/16–1/2–5/8"	980	26051

Flaring and swaging set

For producing flares from 1/8" to 3/4"

Expander heads from 3/16" to 3/4". Square ratchet wrench from 1/4" to 5/16". Essential for installation and maintenance work.

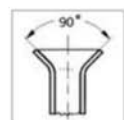
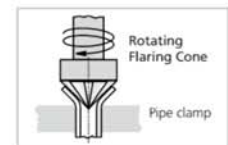


Model	No.
Flaring and swaging set	223500

Universal flaring tool

For producing precision 45° single flares on copper pipes Ø 4–16 mm (3/16–5/8")

- Universal application and highest flare precision through selfcentring pipe clamp for all diameters



D-contour single flare

Universal flaring tool set (No. 222601) includes: Universal flaring tool for pipe diameters 4–16mm, 3/16–5/8", in plastic case

Model	mm	inch	g	No.
Set EB	4–16mm	3/16–5/8"	900	222601

Flare connections

Torque wrenches

ROTORQUE AIRCON/REFRIGERATION

Step-less torque wrench

APPLICATION AREA

Self-locking rack and pinion drive enables quick and reliable fastening of flare nuts sizes 15–32 mm in accordance with EN 378-2:2012-08

KEY FEATURES

- Always fits, covers all flare nut sizes from 15–32 mm
- Won't slip thanks to the self-locking rack and pinion drive and ratchet function
- Simple and reliable: required torque in accordance with EN 378-2:2012-08 is embossed on the head for every size and can not be rubbed off
- Embossed torque data: easy tightening according to norm
- ROTORQUE REFRIGERATION is suitable for cylinder heads' work

Connection 9 x 12

Head can be exchanged between ROTORQUE AIRCON and ROTORQUE REFRIGERATION

All-In-One: One head fits all sizes!



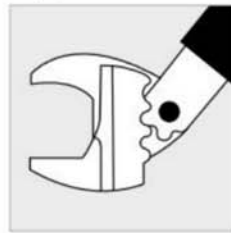
The torque can be read off

Always tighten according to the standard

Closed head



Fully opened head



ROTORQUE sets include: Torque wrench, head, carrying bag

Model	kg	No.
ROTORQUE AIRCON	1.5	1000000224
ROTORQUE REFRIGERATION	1.4	1000000225

ROTORQUE AIRCON torque wrench

- 10–110 Nm
- ± 4 % accuracy
- 1 Nm adjustment steps

ROTORQUE REFRIGERATION torque wrench

- 10–70 Nm
- ± 3 % accuracy
- 1/2 Nm adjustment steps
- Suitable for cylinder heads' work



Fig. ROTORQUE AIRCON torque wrench



Fig. ROTORQUE REFRIGERATION torque wrench

6

Torque wrench set

For proper tightening of flange connections

Set with adjustable torque wrench (10–70 Nm) and 6 spanner inserts sizes 17, 22, 24, 26, 27 and 29 mm for flange connections on 1/4", 3/8", 1/2" and 5/8" pipe lines according to DIN EN 378-2:2012-08



Fix with torque urgently necessary!

7 piece set (No. 175001) includes: Spanner wrench sizes 17, 22, 24, 26, 27, 29 mm, torque wrench, carrying bag



Pipe-Ø	Spanner width	Locking torque
1/4" / 6 mm	17 mm	14–18 Nm
3/8" / 10 mm	22 mm	33–42 Nm
1/2" / 12 mm	24 mm	50–62 Nm
1/2" / 12 mm	26 mm	50–62 Nm
5/8" / 15/16 mm	27 mm	63–77 Nm
5/8" / 15/16 mm	29 mm	63–77 Nm

Model	kg	No.
Torque wrench set, 7 piece	3.5	175001

Soldered joints

Brazing and soldering systems

ROFIRE GLOBAL

Ergonomic torch for brazing and soft soldering applications



APPLICATION AREA

Brazing: up to Ø28 mm (with flame reflector in a wind protected environment)

Soft soldering: up to Ø35 mm

KEY FEATURES

- Long service life, with cyclone effect for rapid heat-up
- Reliable up to 30.000 ignitions
- Protection against triggering of the Piezo ignition when falling down accidentally
- Precise flame adjustment
- Durable plastic for ergonomic handling
- Longer handle for stable positioning on gas cartridges



Model	g	No.
ROFIRE GLOBAL, 7/16"-EU	250	1500002869
ROFIRE GLOBAL, 1"-US	250	1500002196

ROFIRE SWIVEL PRO cyclone piezo

Cyclone burner with piezo ignition

APPLICATION AREA

Coupling: 1"-US

Brazing: up to Ø18 mm

Soft Soldering: up to Ø42 mm



Model	g	No.
ROFIRE SWIVEL PRO cyclone piezo, US	330	35016

ROFIRE SWIVEL PRO twin

Twin cyclone burner

APPLICATION AREA

Coupling: 1"-US

Brazing: up to Ø28 mm

Soft Soldering: up to Ø64 mm



Model	g	No.
ROFIRE SWIVEL PRO twin, US	400	35012

Soldered joints

Brazing and soldering systems

SUPER FIRE 3

Ergonomic HEAVY-DUTY brazing unit

For brazing up to $\varnothing 28\text{mm}$ and soft soldering up to $\varnothing 35\text{mm}$ as well as other applications such as removal of paint or shrinking of hoses



APPLICATION AREA

- Brazing:** up to $\varnothing 28\text{mm}$ (with flame reflector in a wind protected environment)
- Soft soldering:** up to $\varnothing 35\text{mm}$

KEY FEATURES

- Rapid heat-up, less consumption!
- "Twist 'N' Load" system (5 different burners available)
- Precise flame adjustment
- Long service life
- Up to 2.5 hours of brazing with one cartridge

KEY FEATURES

- Even more comfortable for longer jobs
- Reliable piezo ignition (up to 30,000 ignitions)
- Double the safety because there is no gas leakage without locked burner (piezo ignition)

KEY FEATURES

- Coupling:** 7/16"-EU or 1"-US
- Handle:** Aluminium, bolted
- Burner:** Brass/stainless steel

SUPER FIRE burners

Quick exchange with the "Twist 'N' Load" system

- Pin-point burner (No. 35455)
- Standard burner (No. 35456)
- Cyclone burner (No. 35457)
- Hot air burner (No. 35458)
- Shrinking burner (No. 35459)



Fast "Twist 'N' Load" system
Exchange of the burner with one movement (5 different burners available)

Fine regulating valve
Precise flame adjustment

High performance piezo
Reliable (up to 30,000 ignitions)

Locking button
Continual use with only one hand

Ergonomically designed handle
made of high-quality aluminium
Robust and optimum handling

ROTHENBERGER MAPP Gas
Up to 2.5 hours of brazing with one cartridge

Model			No.
SUPER FIRE 3 basic set EU, with cyclone burner	1	4	35436
SUPER FIRE 3 basic set US, with cyclone burner	1	4	35431

SUPER FIRE 3 HOT BOX

KEY FEATURES

- The ideal service kit
- For repairs, heating installations and refrigeration/air-conditioning technology



Flame reflector included!

5-part set (No. 1000002369) includes: Handle (No. 35445), cyclone burner (No. 35457), pin-point burner (No. 35455), flame reflector (No. 31043), universal torch support (No. 35461), 2x MAPP Gas A cartridges (No. 035521-A), ROCASE 4414 (No. 1000001945)

Model			No.
SUPER FIRE 3 HOT BOX EU (incl. MAPP Gas A)	1	4	1000002369
SUPER FIRE 3 HOT BOX EU (incl. MAPP Gas B)	1	4	1000002370
SUPER FIRE 3 HOT BOX EU (incl. MAPP Gas C)	1	4	1000002371



SUPER FIRE 4

Ergonomic brazing unit

For brazing up to Ø28mm and soft soldering up to Ø35mm as well as other applications such as removal of paint or shrinking of hoses



APPLICATION AREA

Brazing: up to Ø28mm (with flame reflector in a wind protected environment)

Soft soldering: up to Ø35mm

KEY FEATURES

- Rapid heat-up, less consumption!
- "Twist 'N' Load" system (5 different burners available)
- Precise flame adjustment
- Long service life
- Up to 2.5 hours of brazing with one cartridge

KEY FEATURES

- Reliable piezo ignition (up to 30,000 ignitions)
- Double the safety because there is no gas leakage without locked burner (piezo ignition)
- Longer handle for an even more stable positioning of the cartridge

KEY FEATURES

Coupling: 7/16"-EU or 1"-US
Handle: Plastic, rubberized
Burner: Brass/stainless steel



SUPER FIRE 4 HOT BOX



APPLICATION AREA

- The ideal service kit
- For repairs, heating installations and refrigeration/air-conditioning technology

5-part set (No. 1000002364) includes: Handle (No. 1500001354), cyclone burner (No. 35457), pin-point burner (No. 35455), flame reflector (No. 31043), universal torch support (No. 35461), 2x MAPP Gas A cartridges (No. 035521-A), ROCASE 4414 (No. 1000001945)



Model		No.
SUPER FIRE 4 HOT BOX EU (incl. MAPP Gas A)	1 4	1000002364
SUPER FIRE 4 HOT BOX EU (incl. MAPP Gas B)	1 4	1000002366
SUPER FIRE 4 HOT BOX EU (incl. MAPP Gas C)	1 4	1000002368
SUPER FIRE 4 HOT BOX US (incl. MAPP Gas US)	1 4	1000001630

SUPER FIRE 4 basic set



No. 035648X



No. 1500001355

Set (No. 1500001355) includes: Handle (No. 1500001354), cyclone burner (No. 35457)

Model		No.
SUPER FIRE 4 EU basic set	1 4	1500001355
SUPER FIRE 4 US basic set	1 4	1500001503
SUPER FIRE safety adaptor 7/16" to 1"	1 1	035648X

Soldered joints

Disposable gas cartridges

MAPP Gas EU

High performance brazing and soldering gas

Flame temperatures up to 2,700°C and 35% faster than propane



KEY FEATURES

- Superior heat transfer, higher than propane, especially in winter below 0°C
- Increased safety and stability based on massive brass valve and protective collar
- Provides superior flame performance in any position (360°)

KEY FEATURES

- Easy to use
- Guaranteed constant top torch performance
- Longer periods of use

100% propylene
Superior flame performance (even upside down) and a higher heat transfer than propane

Steel cylinder
Suitable for high pressure gases

7/16"-EU brass valve
Patented design for high-pressure gases

Protective collar
Stabilizes the torch and protects against accidental drops

SUPER FIRE 3 HOT BOX

SUPER FIRE 4 HOT BOX

Packaging profile

Model	MAPP
No.	035521-A
EAN code	4004625400180
Product size (mm) (W x H)	70x270
Contents (ml)	788
Net weight (g)	380
Unit per PU	12
PU per layer / pallet	10
Layer per pallet	3
Units per pallet	360
Number of pallets per truckload	60
Units per truckload	21,600
Pallet weight (kg)	324
Pallet size (mm) (LxWxH)	800x1,200x1,000
Carton size (mm) (LxWxH)	290x310x240



Protective collar stabilizes the torch and protects against accidental drops

Model	Volume	📦	📦	No.
MAPP Gas 7/16"-EU, A	788ml	12	360	035521-A
Languages: DE, GB, FR, ES, IT, PT				
MAPP Gas 7/16"-EU, B	788ml	12	360	035521-B
Languages: DK, NL, SE, FI, FR, RUS				
MAPP Gas 7/16"-EU, C	788ml	12	360	035521-C
Languages: CZ, PL, HU, BG, TR, RO				

Maxigas 400

High-performance welding, cutting and brazing gas for flame temperatures **up to 2,200°C**. Gas cartridge with 7/16"-EU coupling thread



Packaging profile

Model	Maxigas 400
No.	035570-A/-B
EAN code	4004625355701
Product size (mm) (W x H)	65x260
Contents (ml)	600
Net weight (g)	352
Unit per PU	24
PU per layer / pallet	9
Layer per pallet	3
Units per pallet	648
Number of pallets per truckload	60
Units per truckload	38,880
Pallet weight (kg)	195
Pallet size (mm) (L x W x H)	800 x 1,200 x 1,000
Carton size (mm) (L x W x H)	405 x 272 x 264

Multigas 300

Propane/butane gas mixture for flame temperatures **up to 1,900°C**. Gas cartridge with 7/16"-EU coupling thread



Packaging profile

Model	Multigas 300
No.	035510-A/-B
EAN code	4004625355107
Product size (mm) (W x H)	65x260
Contents (ml)	600
Net weight (g)	332
Unit per PU	24
PU per layer / pallet	9
Layer per pallet	3
Units per pallet	648
Number of pallets per truckload	60
Units per truckload	38,880
Pallet weight (kg)	191
Pallet size (mm) (L x W x H)	800 x 1,200 x 1,000
Carton size (mm) (L x W x H)	405 x 272 x 264

Oxygen

Technical oxygen for professional brazing and welding applications. Disposable steel cylinder with M 10x1 LH coupling thread and 930 ml cylinder volume



Packaging profile

Model	Oxygen
No.	35750
EAN code	400462505422
Product size (mm) (W x H)	70x340
Contents (ml)	103
Net weight (g)	136
Unit per PU	12
PU per layer / pallet	11
Layer per pallet	2
Units per pallet	264
Number of pallets per truckload	60
Units per truckload	15,840
Pallet weight (kg)	343
Pallet size (mm) (L x W x H)	800 x 1,200 x 1,000
Carton size (mm) (L x W x H)	290 x 220 x 350

MAPP Gas US

Welded steel cylinder filled with high performance gas for flame temperatures **up to 2,700°C**. 1"-US coupling thread



Packaging profile

Model	MAPP Gas US
No.	35698
EAN code	4004625355398
Product size (mm) (W x H)	80x250
Contents (ml)	750
Net weight (g)	400
Unit per PU	12
PU per layer / pallet	12
Layer per pallet	3
Units per pallet	432
Number of pallets per truckload	60
Units per truckload	25,920
Pallet weight (kg)	364
Pallet size (mm) (L x W x H)	800 x 1,200 x 1,000
Carton size (mm) (L x W x H)	450 x 280 x 150

Soldered joints

Propane high-performance systems

TURBOPROP

Propane high-performance torch for brazing up to Ø28 mm and soft soldering Ø54 mm

For brazing and soft soldering of copper and steel pipes up to 2,200°C without oxygen, as well as for warming up, shrinking and flame cleaning



KEY FEATURES

- High flame temperature due to turbine with increased oxygen self-induced air and 4- to 5-fold flame chamber
- Fast burner exchange without tools
- Gas-saving operation with the smooth-running economy valve
- Shut-off valve prevents uncontrolled gas escape

TECHNICAL DATA

- Self-induced air:** Turbine and combustion chamber
Torch: Surface treated, chromed brass
Hose coupling: G 3/8" LH

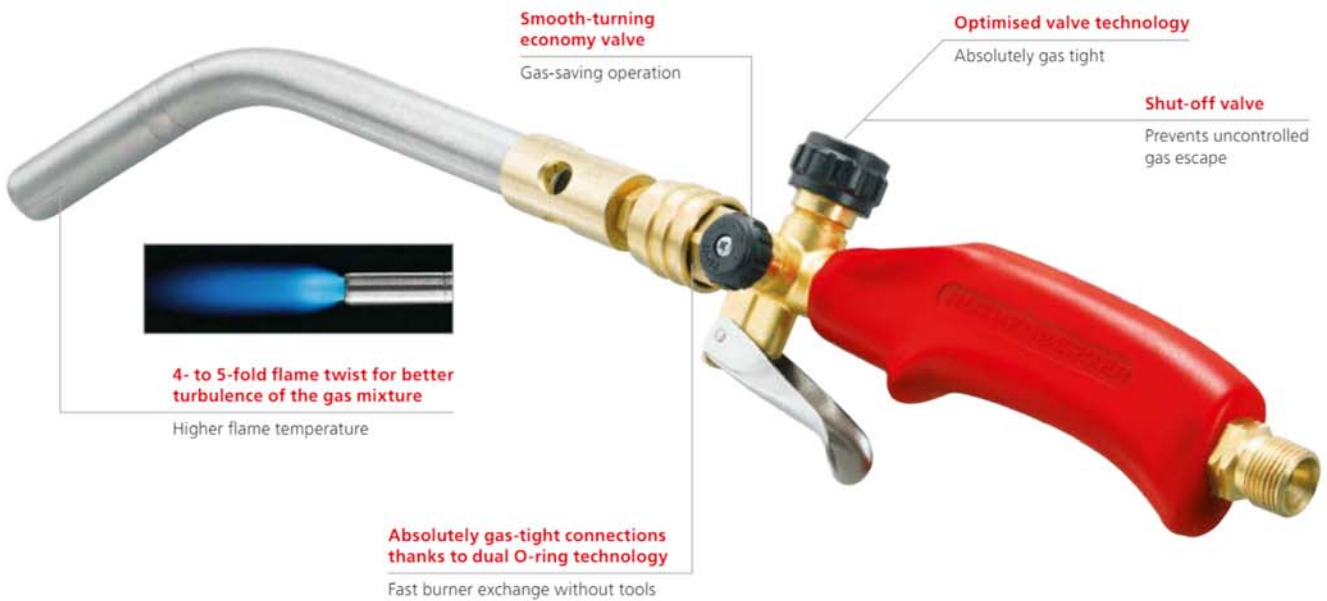


Fig. TURBOPROP torch with push-in nipple

Sets include: Safety handle with push-in coupling (No. 211121116), brazing torch with push-in nipple Ø 12 mm (No. 31032)/Ø 15 mm (No. 221031500)/Ø 18 mm (No. 221031800), 2.5 m propane hose with 3/8" LH coupling (No. 32201), safety igniter (No. 32077), replacement flints (No. 32088), open-ended spanner (No. 32073), steel case (No. 31005)



No. 31090

Model	kg	No.
TURBOPROP set without propane regulator	2.8	31090
TURBOPROP set with propane regulator as in set (No. 31090) but with regulator (No. 32081E) (W 21.8 LH-G 3/8 LH)	3.1	31094
TURBOPROP set with propane regulator as in set (No. 31090) but with regulator (No. 32083) (POL 7/8 LH-G 3/8 LH)	3.1	31037

Ø mm	L mm	g/h 2 bar	kWh-kcal-BTU	kg	No.
10mm	165	70	1.89-770-3,050	70	31031
12mm	175	110	1.41-1,210-4,815	90	31032
15mm	195	180	2.30-1,980-7,855	110	221031500
18mm	230	240	3.07-2,640-10,485	160	221031800

Soldered joints

Mobile autogenous welding systems

ALLGAS 2000 set

Mobile soldering and welding torch

Ideal mobile soldering and welding torch for plumbers, HVAC fitters, refrigeration technicians, automotive workshops and tinsmiths

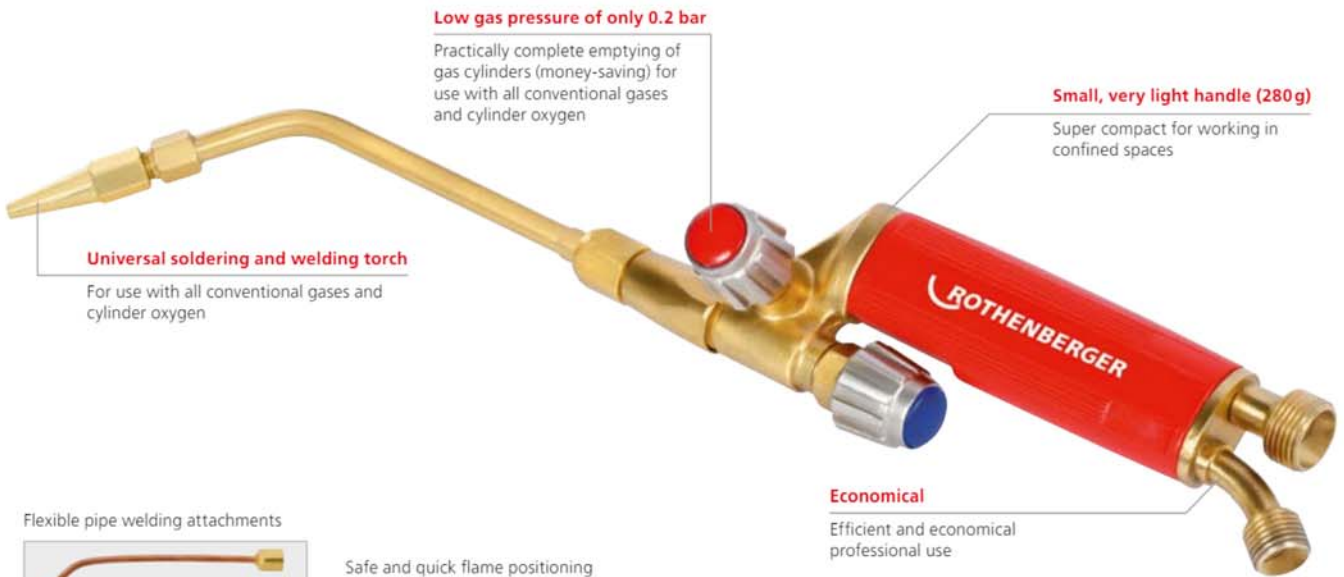


APPLICATION AREA

- Soldering range:** up to 2.5 mm material thickness
Welding range: 0.2–5 mm
Suitable for use with: Oxy-Acetylene
 Propane and oxygen
 CNG and oxygen
 Town gas and oxygen

KEY FEATURES

- For use with all conventional gases and cylinder oxygen
- Practically complete emptying of gas cylinders (money-saving)
- Super compact for working in confined spaces
- Efficient and economical professional use



Flexible pipe welding attachments



Safe and quick flame positioning



Dispersion burner for warming up



20-part set (No. 35300) includes: Handle (No. 35303), mixing burner with union nut (No. 35304), 5 welding tips 0.2 mm (No. 35305)/1–2 mm (No. 35306)/2–3 mm (No. 35307)/3–4 mm (No. 35308)/4–5.0 mm (No. 35309), pipe welding tips, size 1 (No. 35313)/size 2 (No. 35314), coupling nut size 14 (No. 35315), dispersion burner (No. 35311), 2.5 m dual-hose package (No. 35221), open-ended spanner size 14 x 19 mm (No. 32073), welding tip holder/spanner (No. 35312), safety igniter (No. 32077), replacement flints (No. 32088), steel case (No. 35319)

Model	Coupling oxygen	Coupling fuel gas	g	No.
ALLGAS 2000 set (acetylene)			3,100	35300
Handle ALLGAS 2000	G 1/4" RH	G 3/8" LH	280	35303
Mixing burner with union nut			40	35304

Welding tips, Welding attachments

Size	Welding range mm	g	No.
Welding tip size 1	0.2–1.0	10	35305
Welding tip size 2	1.0–2.0	10	35306
Welding tip size 3	2.0–3.0	10	35307
Welding tip size 4	3.0–4.0	10	35308
Welding tip size 5	4.0–5.0	10	35309
Dispersion burner for warming up		20	35311
Welding tip holder, can be used as a spanner		20	35312
Flexible welding tip size 1	2.0–3.0	40	35313
Flexible welding tip size 2	4.0–5.0	40	35314
Coupling/union nut, size 14		10	35315



ALLGAS 2000 set

Soldered joints

Mobile autogenous welding systems

ALLGAS 2000 PS 0.5/2 compact

Portable brazing equipment with carrying frame

For brazing iron, steel, sheet steel, pipes and non-ferrous metals



KEY FEATURES

- Secure transport in closed supporting frame
- Portable, light brazing equipment
- Ideal for mobile building-site and repair use
- Small propane cylinders can be refilled

TECHNICAL DATA

Gas: Propane and oxygen
Flame temperature: 2,850°C
Working temperature: 1,150°C

With safety devices to prevent flashbacks

24-part set (No. 35655) includes: Handle ALLGAS 2000 (No. 35303), 2.5 m propane hose (No. 32201), 2.5 m oxygen hose (No. 35210), propane regulator adjustable 0–6 bar (No. 242206000), oxygen pressure reducer 10 bar (No. 35634), mixing burners with union nut (No. 35304), welding tips 0.2–1 mm (No. 35305)/1–2 mm (No. 35306)/2–3 mm (No. 35307)/3–4 mm (No. 35308)/4–5 mm (No. 35309), flexible welding tip size 1 (No. 35313)/size 2 (No. 35314), dispersion burners (No. 35311), welding tip holder/spanner (No. 35312), multi-size spanner (No. 35738), safety igniter (No. 32077), replacement flints (No. 32088), nylon safety goggles (No. 540620), small propane cylinder 0.425 kg, empty (No. 33079), steel oxygen cylinder 2.0 l, full (No. 35635), oxygen safety device (No. 1000000633), fuel gas safety device (No. 1000000631), carrying frame (No. 35629)



The bottle colours shown are without obligation. Fig. similar

Model	kg	No.
ALLGAS 2000 PS 0.5/2 set	21.4	35655

7

ALLGAS Mobile Pro

Mobile brazing equipment with safety devices

For brazing of iron, steel, sheet steel, pipes and non-ferrous metals



KEY FEATURES

- Mobile brazing set with a total weight lower than 6 kg incl. cartridges
- High quality safety devices for both gas hoses to prevent flashbacks
- MAPP Gas pressure regulator with an adjustable range of 0–2 bar for a constant, low consumption and an efficient flame adjustment

TECHNICAL DATA

Gas: MAPP Gas with oxygen
Flame temperature: over 3,100°C
Working temperature: 1,300°C

Accessories included in the set



The bottle colours shown are without obligation. Fig. similar

Model	kg	No.
ALLGAS Mobile Pro 1"-US, w/o cartridges	3.86	1000000529
ALLGAS Mobile Pro 1"-US, incl. cartridges	5.95	1000000743
ALLGAS Mobile Pro 7/16"-EU, w/o cartridges	3.86	1000000642
ALLGAS Mobile Pro 7/16"-EU, incl. cartridges	5.70	1000000558

ALLGAS 2000 PS 0.5/2 basic

Portable fitter's brazing equipment

For brazing iron, steel, sheet steel, pipes and non-ferrous metals



The bottle colours shown are without obligation. Fig. similar

KEY FEATURES

- Compact and handy construction for mobile building-site and repair use
- Job compatible combination, assembled and ready to use

Space saving storage in service vehicles!



18-part set (No. 35651) includes: Handle ALLGAS 2000 (No. 35303), 2.5 m propane hose (No. 32201), 2.5 m oxygen hose (No. 35210), propane regulator adjustable 0–6 bar (No. 242206000), oxygen pressure reducer 10 bar (No. 35634), mixing burners with union nut (No. 35304), welding tips 0.2–1 mm (No. 35305)/1–2 mm (No. 35306)/2–3 mm (No. 35307)/3–4 mm (No. 35308)/4–5 mm (No. 35309), welding tip holder/spanner (No. 35312) multi-size spanner (No. 35738), safety igniter (No. 32077), replacement flints (No. 32088), steel oxygen cylinder 2.0 l, filled (No. 35635), propane cylinder 0.5 kg (empty) (No. 33079), ALLGAS stand (No. 35628)

Model	kg	No.
ALLGAS 2000 PS 0.5/2 basic	14.4	35651

ROXY 400 L

Standard gas-welding equipment for flame temperatures up to 3,100 °C

For brazing iron, steel, sheet steel, pipes and non-ferrous metals



The bottle colours shown are without obligation. Fig. similar

20-part set (No. 035780X) includes: Handle with fine regulating valve (No. 35580), Maxigas 400 (No. 035570-A), oxygen cylinder 2.0 l (No. 35635), fine regulating valve (No. 263003700), oxygen pressure reducer according to DIN 0-315/200 bar 0–16/10 bar (No. 35634), hose set (3 m without handle (No. 35785), oxygen blowback protection (No. 1000000633), gas blowback protection (No. 35691), mixing burners with union nut (No. 35587), high-performance tips 1.5 mm (No. 263005600)/2.0 mm (No. 263005400), micro-tips 0.3 mm (No. 35712)/0.5 mm (No. 35696)/0.7 mm (No. 35713), micro-tip adaptor (No. 35585), welding goggles A5 (No. 35621), safety igniter (No. 32077), multi-size spanner (No. 35738) carrying frame (No. 35727)

Model	kg	No.
ROXY 400l, 3,100 °C, complete	10.80	035780X
ROXY 400l without oxygen	6.0	35782
Welding-handle f. ROXY, M14x1	0.12	35580
ROXY dual hose set 3 m	0.95	35785
ROXY micro-burner adaptor	0.01	35585
Micro-tip, ROXY serie, 0.3 mm	0.01	35712
Micro-tip, ROXY serie, 0.4 mm	0.01	35695
Micro-tip, ROXY serie, 0.5 mm	0.02	35696
Micro-tip, ROXY serie, 0.6 mm	0.02	35697
Micro-tip, ROXY serie, 0.7 mm	0.02	35713
High-performance tip 0.7 mm f. 263005500	0.06	263005800
High-performance tip 1.2 mm f. 263005500	0.04	263005700
High-performance tip 1.5 mm f. 263005500	0.04	263005600
High-performance tip 2.0 mm f. 263005500	0.04	263005400

Soldered joints

Accessories




ROVLIES cleaning pads

Metal-free, for fast, score-free cleaning of copper pipe soldering surfaces

KEY FEATURES



- Reduced corrosion damage
- No metal abrasion, can be used wet or dry
- Removes oxide layers, corrosion, surface dirt, oil and grease residues
- Solvent-resistant and flexible



Model				No.
ROVLIES	80	1 (10)		45268
ROVLIES counter display			36 (10)	045268D

Internal brushes for copper pipe

For fast cleaning of the soldering surface, rugged plastic handle

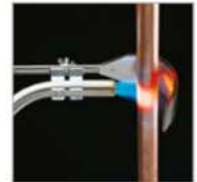
		No.			No.
mm	g		mm	g	
12	80	854181	22	140	854186
15	100	854183	28	140	854187
18	120	854185			



Flame reflectors

- Made of high-quality stainless steel
- Protects surrounding materials
- Better heat utilisation, saves time and energy

Model	Width mm	Adaptor Ø mm		No.
65/15	65	8–15	100	31042
65/22	65	15–22	100	31043



Welding blanket

Flame and heat resistant up to 700°C

KEY FEATURES

- Permanent heat resistance up to 700°C by direct flame contact and molten slag
- Good formability, long service life, asbestos-free and poses no health hazard
- Bonded edges
- Thickness: 1.4 mm; Weight: 1,000g/m²

Model	LxWxH		No.
Welding blanket	500x330x5 mm	300	31050



Hard solder rings S 2

High-quality safety solder material with silver-phosphorus content, guaranteed according to DIN EN ISO 17672, CuP 279



KEY FEATURES

- Ideal for capillary soldering with copper pipe installation in sanitary and heating systems
- Matched precisely to the inner pipe diameters of expanded sockets and fittings according to **EN 1254**
- Complete wetting of soldering gaps
- Particularly efficient working through precise solder quantity
- No preparatory or re-work of the soldered joint

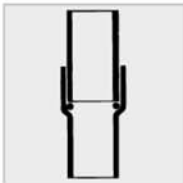
TECHNICAL DATA

Alloy (weight %):	Ag 1.5–2.5/P 5.9–6.5/Cu rest
Melting range:	650–810°C
Joinable materials:	Copper, gunmetal, brass, bronze
Use of flux with:	Gunmetal, brass, bronze with hard solder paste LP 5
Package size:	250g plastic bag

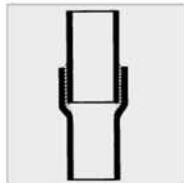
Simple insertion



Precise quantity of solder



Simply heat, no dripping, no reduction of cross-section



Model	approx. content rings	g	No.
Hard solder rings S 2, Ø 12 mm	395 pieces	260	40512
Hard solder rings S 2, Ø 18 mm	186 pieces	260	40518
Hard solder rings S 2, Ø 22 mm	106 pieces	260	40522
Hard solder rings S 2, Ø 28 mm	79 pieces	260	40528



Hard solder paste LP 5

Flux for hand soldering at working temperatures above 600°C, according to **EN 1045, Type FH 10, DVGW tested Reg.-No. DV-0101-AT2245**, for gas and water installations with copper pipes, recommended by DVGW in accordance with Worksheets GW 2 and GW 7, hard solders with silver content and usable with any basic materials of steel, copper and copper alloys, brass and gunmetal, working temperature range 550–800°C, flux residues must be removed carefully.

Model	Content	g	No.
LP 5 in plastic bottle	160g	180	40500



Hard solder powder HKM

Flux for hard soldering at working temperatures above 800°C, according to **EN 1045-FH 21**, working temperature 800–1,100°C, for copper and copper alloys, brass, gunmetal, nickel silver, bronze, steel and galvanised steel, grey iron and malleable cast iron, for welding copper and brass in dry conditions, can be mixed with clean water to form a paste, flux residues must be removed carefully. Free of boric acid.

Model	Content	g	No.
HKM in plastic bottle	50g	65	35611

Soldered joints

Accessories

Hard solders

For copper pipe installation



KEY FEATURES

- Non-foaming. Heat-resistant up to 200 °C
- No flux required with copper/copper joints (except S34 and S45)
- Manufactured with new, environmentally compatible technology, corrosion neutral, scale-free, improved flow properties


ROLOT S 94 CuP 179

Quality hard solder guaranteed according to **EN ISO 17672**, due to low phosphorus content, the solder has a wide melting range, and gives soldered joints with increased strength. Standard solder for normally-stressed copper pipe installation, especially for capillary soldering with copper pipe installation without fittings.



TECHNICAL DATA

Alloy (weight %):	Cu 94/P 6
Melting range:	710 °C–890 °C
Working temperature:	760 °C
Joinable materials:	Copper, gunmetal, brass, bronze
Flux required with:	Gunmetal, brass, bronze with LP 5

Content	Squared section mm	Length mm	 g	No.
1 kg carton	2x2	500	1,025	40094


ROLOT S 5 CuP 281

Special quality hard solder, not standardised, similar to **EN ISO 17672**, with low silver content, matched to normally-stressed copper pipe system, ideal for capillary gap soldering.



TECHNICAL DATA

Alloy (weight %):	Ag 5/Cu 89/P 6
Melting range:	645–815 °C
Working temperature:	710 °C
Joinable materials:	Copper, gunmetal, brass, bronze
Flux required with:	Gunmetal, brass, bronze with hard solder paste LP5

Content	Squared section mm	Length mm	 g	No.
1 kg carton	2x2	500	1,025	40005

ROLOT S 15 CuP 284

Particularly high quality silver hard solder, guaranteed according to **EN ISO 17672**, especially for capillary-gap soldering subject to high thermal and mechanical alternating loads in HVAC systems, as well as demanding sanitary and gas installations.



TECHNICAL DATA

Alloy (weight %):	Ag 15/Cu 80/P 5
Melting range:	645–800 °C
Working temperature:	700 °C
Joinable materials:	Copper, gunmetal, brass, bronze
Flux required with:	Gunmetal, brass, bronze with hard solder paste LP5

Content	Squared section mm	Length mm	 g	No.
1 kg carton	2x2	500	1,025	40015

ROCADDY 120 R32 Analogue/Digital

Universal sets for evacuation and charging



KEY FEATURES

- Everything you need within reach
- Flexible use with the individual use of the tools
- Easy to transport

Sturdy plastic rolling case (Fig. similar)

Simple and comfortable transport with ample room for accessories and small parts

2-stage high vacuum pump

For evacuation and removal of all moisture residue in refrigeration systems during installation per DIN 8975

Electronic digital scale up to 120 kg with high measurement precision

Precise weighing of refrigerants

TECHNICAL DATA

- Electric digital scale ROSCALE 120 with a weight capacity of 120 kg and a measuring accuracy per measurement of 5 g
- 2-stage vacuum pump ROAIRVAC R32 1.5 with integrated vacuum meter and solenoid valve, as well as a pump rating of 42 l/min.
- Digital manifold (with ROCADDY 120 R32 Digital) for the automatic calculation of superheat and subcool. More than 80 refrigerants are on file in the unit
- 2 analogue 4-way manifolds (with ROCADDY 120 R32) for the common refrigerants R22, R32, R134a, R404A, R407C and the high-pressure refrigerant R410A
- Pressure hose sets, each with 3 hoses from the PLUS series with shut-off valve for safe use with refrigerants
- Pipe cutter TUBE CUTTER 35 and MINICUT II PRO for cutting $\varnothing 6-35$ mm pipes to length

Bottle adaptor for 1 kg and 2 kg refrigerant bottles for connection to the scale

Secure mounting of the bottle during charging

2x analogue manifolds (with ROCADDY 120 R32)



ROCOOL 600

Automatic calculation of superheat and subcool. Optionally upgradable through attachment of a vacuum probe and a reading out function (with ROCADDY 120 R32 Digital)

Mini TUBE CUTTER and pipe cutter

For cutting $\varnothing 6-35$ mm pipes to length

ROCADDY 120 R32 includes: 2-stage vacuum pump ROAIRVAC R32 1.5 (No. 1000002399) with vacuum gauge and solenoid valve, 4-way manifold for R22, R32, R134a, R407C (No. 170502), 4-way manifold for R410A (No. 1000001427), pressure hose set 5/16" SAE each 1,500mm with ball valve for R410A (1500000030), pressure hose set 1/4" SAE each 1,500mm with ball valve for R22, R32, R134a, R407C (No. 1500000028), ROSCALE 120 (No. 173004), 1x adaptor 3/8" SAE F-1/4" SAE M (No. 089401), 2x adaptor (5/16" SAE F-1/4" SAE M with valve trigger (No. 01700RD), adaptor 5/16" SAE M-1/4" SAE F (No. 170016)), bottle connection 1/4" (No. 173205), bottle connection 5/16" (No. 173204) mineral oil (0.4 l), TUBE CUTTER 35 (No. 70027), MINICUT II Pro (No. 70402), transport case (No. 169051)

ROCADDY 120 R32 Digital includes: 2-stage vacuum pump ROAIRVAC R32 1.5 (No. 1000002399) with vacuum gauge and solenoid valve, 1x digital manifold ROCOOL 600 (No. 1000000569), 1x clamping thermometer (No. 1000000540), pressure hose set 1/4" SAE 1,500mm with ball valve for R22, R32, R134a, R407C (No. 1500000028), ROSCALE 120 (No. 173004), 1x 5/16" SAE F-1/4" with valve trigger (No. 1700RD), 1x 5/16" SAE M-1/4" SAE F (No. 170016), 1x bottle connection 1/4" (No. 173205), 1x bottle connection 5/16" (No. 173204) mineral oil (0.4 l), TUBE CUTTER 35 (No. 70027) MINICUT II Pro (No. 70402), transport case (No. 169051)

Model	Performance	Δ kg	No.		
R410A	R22	R134a	R407C	R404A	R32
ROCADDY 120 R32 Analogue	42 l/min.	20	1000002560		

Model	Performance	Δ kg	No.			
R410A	R22	R134a	R407C	R404A	R507	R32
ROCADDY 120 R32 Digital	42 l/min.	19	1000002561			

Complete solutions

Universal sets

ROKLIMA MULTI 4F

Fully automatic commissioning and maintenance of air-conditioning units and heat pumps

The innovative unit enables safe and comfortable operation on refrigeration systems. With simple menu navigation, 4 functions (4F) are automatically controlled.



R410A R22 R134a R407C R404A

KEY FEATURES

- Pressure resistance up to 80 bar guarantees full use with heat pumps
- Everything you need within reach
- Simple menu guidance guarantees appropriate use
- Fully-automatic gives time for parallel work
- Safe transport

4F

- Evacuation
- Charging
- Leakage test
- Control of the recovery process

TECHNICAL DATA

Weight:	17 kg
Final vacuum:	1 x 10 ⁻² mbar
Scale range:	up to 100 kg
Resolution:	10 g
Pressure hose length:	2,500 mm
Pump rating:	42 l/min

Interactive 16-digit display with 4 function buttons

All required parameters can be easily entered

Sturdy, compact metal casing

Protects all components such as vacuum pump and scale

3 different pressure gauges "Pulse-free", class 1.6, 80 mm

Universal use on air-conditioning units with all common refrigerants and operation in the high pressure range with R410A

Integrated high vacuum pump with 42l/min suction Power

For evacuation of the system in accordance with **DIN 8975**

2 pressure hoses (2,500 mm) from the series "Plus" with ball valve

Safe and comfortable operation with refrigerants without the risk of refrigerant loss

Plastic capillary hose

Safe, leak-free filling due to shut-off valve

Pull-out precision digital scale up to 100 kg

Secure stand for large and small containers

Shock-resistant low pressure and high pressure gauges for various refrigerants



Secure storage of all accessories

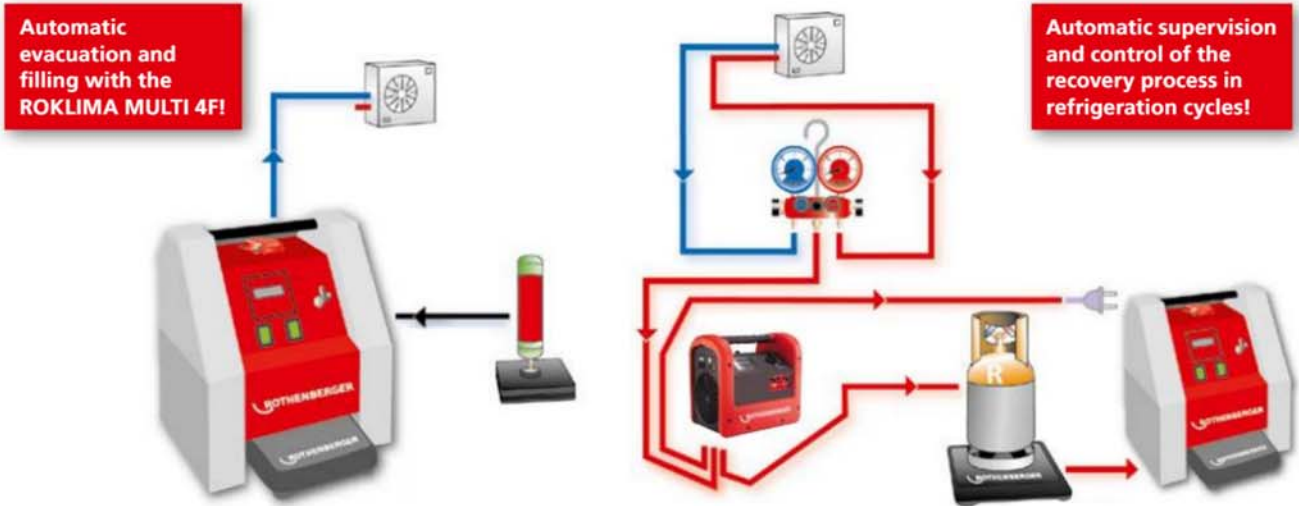


Pressure hoses: 2.5 m long with shut-off valve



Bottle adaptor No. 173204/05 for scale and 1/4" reducing pieces





ROKLIMA MULTI 4F in use (evacuation and charging)



Scope of delivery (No. 1000000138) includes: 2-stage vacuum pump, 2 low pressure gauges, 1 high pressure gauge R410A, 2 pressure hoses with ball valve à 2,500mm, 2 bottle connection adaptors (1/4" SAE No. 173205, 5/16" SAE No. 173204), 2 reducing pieces 1/4" SAE F-5/16" SAE M (No. 170016), precision digital scale up to 100kg, automatic control, vacuum and pressure switch, mineral oil (No. 169200)

Model	kg	✉	No.
ROKLIMA MULTI 4F	17.0	1	1000000138
Reducer pieces 1/4" SAE F-5/16" SAE M	0.1	1	170016

Secure storage of Accessories:
pressure hoses bottle adaptor, plastic capillary hose

Precision scale up to 100kg
Resolution: 10g
Accuracy: ± 1%

Ergonomic, compact

Light



Measuring and testing

Analogue manifolds

Analogue manifolds

2- and 4-way manifolds

Pressure gauge Ø80 mm, with pulse-dampening class 1.6

Easy-to-read, high precision display

Large hand valve with colour coding

Light, secure and precise opening and closing of the diaphragm valve, maintenance free

Valve sets



Pressure gauge with shock-proof rubber protector

Protects against damage

Valve body made of aluminium with gauge glass

Sturdy despite low weight

2-way manifold



Model	LP*/bar	HP*/bar	kg	No.
R22 R134a R407C R404A				
2-way, 1/4" SAE	-1 up to 17	0-34	0.7	1 170501
4-way, 1/4" SAE	-1 up to 17	0-34	0.9	1 170502
R410A R32				
2-way, 5/16" SAE	-1 up to 30	0-60	0.7	1 1000001426
4-way, 5/16" SAE	-1 up to 30	0-60	0.9	1 1000001427

Model	No.
Blue rubber protector for manifold	170545
Red rubber protector for manifold	170546
Valve sets for manifold	170547

Manifold sets

Manifold sets and pressure hoses

2-way manifold (for 170600 and 170607)
4-way manifold (for 170601, 170606, 170602 and 170608)

Durable and highly precise tool



No. 170602

Pressure hose with ball valve "Plus" (only for 170602 and 170608)

No loss of refrigerant



Sets include: Manifold, pressure gauge with Ø80 mm, "Pulse-free", class 1.6, 3x 1,500mm pressure hoses, plastic carrying case

Model	kg	No.
2-way "Standard"		
R22 R134a R407C R404A		
Manifold set 2-way "Standard"	2.7	170600
R410A R32		
Manifold set 2-way "Standard"	2.7	170607
4-way "Standard"		
R22 R134a R407C R404A		
Manifold set 4-way I "Standard"	2.8	170601
R410A R32		
Manifold set 4-way I "Standard"	2.8	170606
4-way "Plus"		
R22 R134a R407C R404A		
Manifold set 4-way II "Plus"	2.8	170602
R410A R32		
Manifold set 4-way II "Plus"	2.8	170608
Plastic carry case	1.4	171505

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Measuring and testing

Digital manifold sets

ROCOOL 600

For commissioning, maintenance work and documentation of refrigeration systems of all kinds



KEY FEATURES

- Modular system: The basic device can be fitted with the optional red box incl. the Data Viewer software for reading out or recording data on a PC. Additionally there is an optional external Pirani vacuum probe for precise vacuum readings
- More than 80 refrigerants incl. R32 and R744 (sub-critical) are stored in the device. New refrigerants can be added later using the update function
- Simultaneous calculation of superheat and subcool
- The documentation software Data Viewer generates an automatic report based on the data recorded. Ideal for handing out to the customer (client)
- An external Pirani vacuum probe allows reading of the vacuum where the most precise measurement is possible: directly at the refrigeration system

TECHNICAL DATA

Pressure display:	bar, psi, Kpa, MPa
Temperature display:	°C, °F
Vacuum display:	Micron, mbar, mmHg, Pa, mTorr
Power source:	9V battery, 550 mAh
Screen size:	4.1/3" / 11 cm
Pressure measurement range:	-1 up to 60 bar
Precision (at 22 °C):	± 0.5 % fs
Temperature measurement range:	-50 °C to +200 °C
Working temperature:	-10 °C to +50 °C
Connections:	4x 1/4" SAE
Max. recording time:	12 h (device), 96h (red box)

Large screen

All important data at a single glance. Strong backlight for dark environment

Connection for the temperature sensor T1

For automatic measurement of superheat data

Connection for the external vacuum probe

For very precise measurement of the vacuum level directly at the refrigeration system

Pressure sensors "Made in Germany"

Precise measurement from -1 to 60 bar

T-connection with Schrader valve 1/4" SAE

3-way function: Evacuation and filling without changing a hose

Y-connections 1/4" SAE

A connection and sealing plug in one. Simple transport of hoses when not in operation

Solid and non-tacky rubber coating

Prevents shock damages and allows a safe handling

Connection for the temperature sensor T2

For automatic measurement of subcool data

Green and red LEDs

An optical signal is displayed once an adequate vacuum level is reached or leakage in the system and also a warning of overpressure



Connection of the red box

To record data for up to 96 hours and independent read out of data at a PC

Temperature sensor for a pipe diameter of up to Ø32 mm



External vacuum probe for very precise measurement of the vacuum



Set (No. 1000000569) includes: ROCOOL 600, 1 temperature sensor
 Set (No. 1000000570) includes: ROCOOL 600, 2 temperature sensors, carry case
 Set (No. 1000000572) includes: ROCOOL 600, 2 temperature sensors, red box and data viewer software, carry case

Model	No.
Set with 1 temperature sensor (in the blister)	1000000569
Set with 2 temperature sensors (in the case)	1000000570
Set with 2 temperature sensors, red box, data viewer software (in the case)	1000000572

Scope of delivery (No. 1000000539): Red box, data viewer software, connection cable, external power supply

Model	No.
Red box, software, connection cable, external power supply	1000000539
Temperature sensor	1000000540
Vac Probe	1000000541

* Complete terms and conditions at rothenberger.com/service
 RO SERVICE+ only valid in participating countries.

Measuring and testing

Pressure hoses

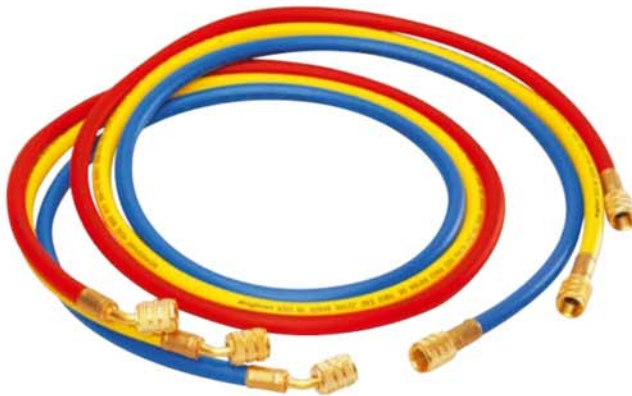
3-piece pressure hose sets

Available in "Standard" and "Plus"

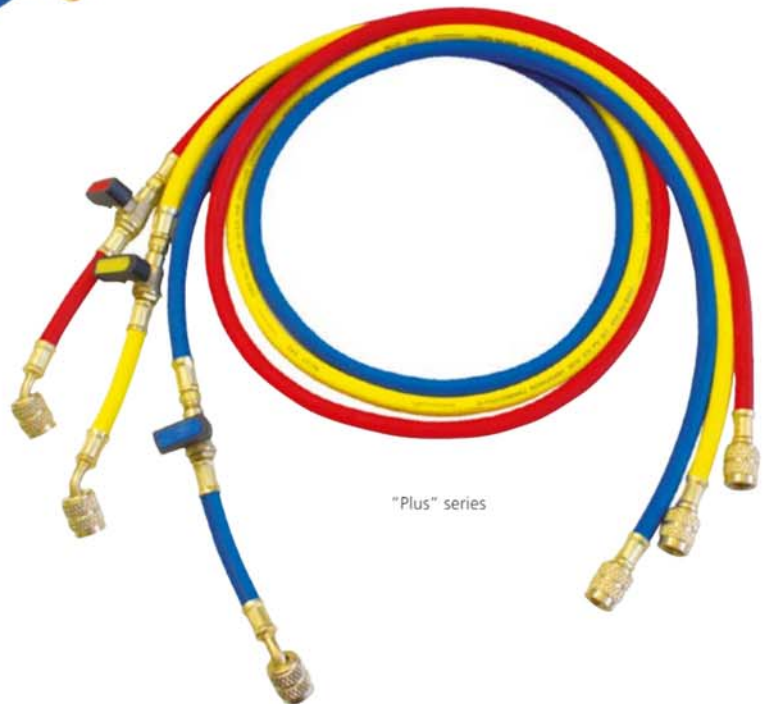


KEY FEATURES

- No confusion and safe use with the colour coding (blue, red, yellow)
- Teflon seal with up to 10x longer service life compared to neoprene seal
- Working pressure 60 bar/burst pressure 300 bar
- This is an 8 % better pressure resistance as previously



"Standard" series



"Plus" series

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Pressure hose from the series "Standard"

Model	Connection	L mm	⊞	No.
Vacuum hose	3/8" SAE	1,500	1	1500000032
R22	R134a	R407C	R404A	
Set of 3 pressure hoses	1/4" SAE	1,500	1	1500000024
Pressure hose yellow	1/4" SAE	1,500	1	1500000025
R410A	R32			
Set of 3 pressure hoses	5/16" SAE	1,500	1	1500000026
Pressure hose yellow	5/16" SAE	1,500	1	1500000027

Pressure hose from the series "Plus" with ball valve

Model	Connection	L mm	⊞	No.
R22	R134a	R407C	R404A	
Set of 3 pressure hoses	1/4" SAE	1,500	1	1500000028
Pressure hose yellow	1/4" SAE	1,500	1	1500000029
R410A	R32			
Set of 3 pressure hoses	5/16" SAE	1,500	1	1500000030
Pressure hose yellow	5/16" SAE	1,500	1	1500000031

Nitrogen set

Multiple uses for refrigeration systems



APPLICATION AREA

- Pressure and leak test with nitrogen
- Flushing of the installation
- Nitrogen admission during soldering to prevent scale formation

Ideal for split air-conditioning units and heat pumps!



Connection for large bottles

Any size of bottle can be connected without a problem

Spring loaded pressure reducing valve

Simple and safe handling

950 cm³ nitrogen bottle included

Complete set



Fine scaled 1.0 pressure gauge

Precise reading of the testing pressure

No. 259060

5/16" SAE adaptor for connecting to R410 units



Bottle adaptor for connecting 950 cm³ bottles



Set (No. 259060) includes: Pressure reducing valve, connection hose, bottle adaptor, pressure gauge, nitrogen bottle and plastic case

Model	No.
Nitrogen set with bottle (950 cm ³)	259060
Nitrogen bottle, each 950 cm ³	259008
Filling hose with pressure gauge	259010
Connection 5/16" SAE internal, 1/4" SAE external	01700RD

Measuring and testing

Leak detection

ROLEAK Pro

Electronic leak detection device for locating leaks in refrigeration systems (3 g/a)



KEY FEATURES

- Durable and highly sensitive sensor tip with a leak detection rate of 3 g/a within 3 seconds
- Suitable for R32
- Simple determination of the refrigerant concentration
- Adjustment of the sensor tips zero measurement point for simple detection of the leak
- Reference leak for functionality test included
- Easy accessibility of even hard to reach leaks

TECHNICAL DATA

Leak status:	LED display
Sensor length:	40 cm
Leak detection rate:	3 g/a within 3 seconds
Weight:	400 g
Working temperature:	0°C up to 40°C
Voltage:	6V (4 AA batteries included)

Model	No.
ROLEAK Pro in plastic case	1500002241



Audio signal
Comfortable use

40 cm long, flexible sensor
Easy access in hard-to-reach places

7 LEDs
Simple determination of the refrigerant concentrate with the coloured shading

3 different sensitivity levels
Exact and fast location of the leak

RESET-button
Adjusts to the sensor tip zero point setting for simple leak location



No. 1500002241

ROTEST

Leak detection on gas lines

DVGW-tested
Reg.-No. NG-5170CL0063



APPLICATION AREA

Ideal for detecting leaks in gas-filled lines, gas cylinders or containers. When a leak is present a blister forms.

KEY FEATURES

- Simple use – always ready to use
- Highly sensitive foaming spray for a quick and reliable locating of leaks

TECHNICAL DATA

- Detects gases (for example natural gas, inflammable gas, air)
- The leak detection spray is neutral against the most common inflammable gases and refrigerants. The only reaction is the building of foam

Content			No.
400ml	470	1	65000
400ml	470	12	1000000442



**Highly sensitive foam spray:
Quick and reliable location of leaks!**



9

ROSCOPE i2000 Module TEC

High-performance camera for the inspection of hollow spaces and hard to reach areas



KEY FEATURES

- User-friendly touchscreen monitor and simple menu guidance
- Self-leveling camera head
- Recording and playback of the inspection on video (AVI) or photo (JPEG)
- Waterproof camera head as per IP 68

TECHNICAL DATA

Display:	3.5" touchscreen (color)
Camera head:	Ø 17 mm, self-leveling and waterproof, with 4 LED lights
Brightness:	100 LUX (0.5 m)
Cable length:	1 m
Power supply:	Li-Ion battery 3.7V/5.2Ah
Weight:	0.9 kg

Scope of delivery ROSCOPE i2000 Module TEC (No. 1500000696): ROSCOPE i2000 basic unit, Module TEC, charger, plastic carrying case

Model		No.
ROSCOPE i2000 Module TEC	1	1500000696
Module TEC (without basic unit)	1	69601
Set (hook, magnet, mirror)	1	69615

Self-leveling camera head



Inspection of hollow spaces



Camera head with high-performance LEDs



ROSCOPE i2000 Module ROSCAN 150

Infrared camera for leak detection



KEY FEATURES

- Overlay technology for precise leak detection
- Very high accuracy of measurement in the range of -20°C to 220°C
- 3.5" touchscreen for easy and intuitive handling
- WiFi-transmission to mobile end devices
- Recording of pictures (JPEG) and videos (AVI)
- Recording and playback of audio comments
- Memory on internal SD-Card

TECHNICAL DATA

Display:	3.5" touchscreen (color)
IR Pixel:	32 x 31
Display size:	23.8 x 23.1 mm
Temperature range of the object:	-20°C up to 220°C
NETD:	160 mK
Frame rate:	9 Hz
Ideal focus distance:	2 m

Model		No.
ROSCOPE i2000 Module ROSCAN 150 + Module TEC	1	1000000995
Module ROSCAN 150 (without basic unit i2000)	1	1500000932



Overlay-technique:
Overlay of visual image and thermal image for accurate analysis and clear understanding

Modular concept for ROSCOPE 1000 und ROSCOPE i2000



Hydraulic balance – Visualization of heating efficiency



Evacuation, recovery and weighing

Vacuum pumps

ROAIRVAC

Two-stage vacuum pump

For evacuation in accordance with **DIN 8975** with vacuum gauge and solenoid valve



KEY FEATURES

- One way valve for vacuum protection during power off
- Vacuum gauge with integrated drag indicator enables simple and quick control of the evacuation process
- Protects the integrated components with the light and high quality casing
- Gas ballast valve for reduction of water vapour in the oil container
- Special filter reduces oil mist on exhaust vent

KEY FEATURES

- Gauge-glass enables easy oil-stand monitoring
- Fast filling of oil without spilling, no special funnel is necessary
- Easy access to the oil drain plug makes emptying quick
- Thermal switch protects the unit from the motor overheating
- Standard 1/4" SAE connection, as well as 5/16" SAE and 3/8" SAE adaptor included in delivery
- Removable cable prevents cable damage



Gas ballast valve

Reduction of water vapour in the oil container, guarantees higher evacuation performance and service life

Special filter

Reduces oil mist on exhaust vent

Light and high-quality casing

Protects the integrated components

Ergonomic handle

Light, compact and easy to transport

Removable cable

Prevents cable damage

Integrated vacuum gauge

Simple and fast control of the evacuation process

One way valve

For vacuum protection during power Off

Four-pole motor

Increased torque and high lifetime

1/4" SAE standard connection with adaptors for 5/16" SAE and 3/8" SAE



Optimal positioned viewing glass and oil drains for simple draining of the oil



Practical: operating instructions always within view



Evacuation, recovery and weighing

Vacuum pumps

ROAIRVAC Series

Two-stage rotary vane pump for evacuation in accordance with DIN 8975

TYP	R32 1.5	3.0	6.0	R32 6.0	9.0
No.	1000002399	170062	170063	1000001231	170064
Pump rating	1.5 cfm/42l/min. 2.5 m³/h	3.0 cfm/85l/min. 5.1 m³/h	6.0 cfm/170l/min. 10.2 m³/h	6.0 cfm/170l/min. 10.2 m³/h	9.0 cfm/255l/min. 15.3 m³/h
Vacuum stages	2	2	2	2	2
Final vacuum	15 micron 0.02 mbar	15 micron 0.02 mbar	15 micron 0.02 mbar	15 micron 0.02 mbar	25 micron 0.034 mbar
Motor rating	190W/1,720r/min.	250W/1,720r/min.	375W/3,440r/min.	550W/1,720r/min.	750W/3,440r/min.
Voltage	230V	230V	230V	230V	230V
Frequency	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz	50Hz/60Hz
Connection	1/4"	1/4"	1/4"	1/4"	1/4"
with adaptor	5/16" SAE M 3/8" SAE M	5/16" SAE M 3/8" SAE M	5/16" SAE M 3/8" SAE M	5/16" SAE M 3/8" SAE M	5/16" SAE M 3/8" SAE M
Oil capacity	250ml	330ml	330ml	580ml	590ml
Weight	10.1 kg	10.7 kg	11.5 kg	17.3 kg	17.0 kg
Manifold Ø	45mm	50mm	50mm	80mm	80mm



ROAIRVAC R32 1.5 (42l/min.)



ROAIRVAC 3.0 (85l/min.)



ROAIRVAC 6.0 (170l/min.)



ROAIRVAC R32 6.0 (170l/min.)

Future-proof product for the increased use of R32 refrigerants

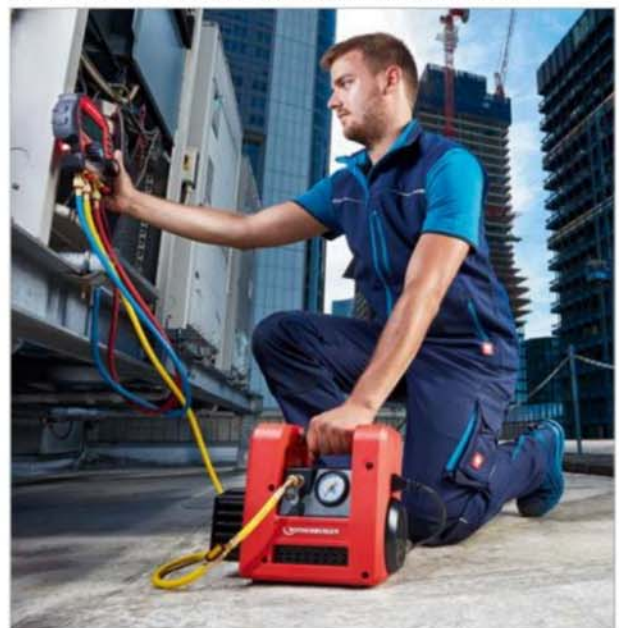
Mineral oil is included in all pump deliveries



ROAIRVAC 9.0 (255l/min.)



ROAIRVAC-vacuum pump in use with the digital manifold ROCOOL 600



Scope of delivery ROAIRVAC: Vacuum pump with 1/4", 5/16" SAE and 3/8" SAE connections, plastic bottle with mineral oil

Model	Performance	kg	No.
ROAIRVAC R32 1.5	42l/min.	10.1	1000002399
ROAIRVAC 3.0	85l/min.	10.7	170062
ROAIRVAC 6.0	171 l/min.	11.5	170063
ROAIRVAC R32 6.0	171 l/min.	17.3	1000001231
ROAIRVAC 9.0	255l/min.	17.0	170064
Mineral oil, 1 litre			169200

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Evacuation, recovery and weighing

Vacuum pumps

ROREC

Refrigerant recovery device

Compact, portable device for recovery and recycling refrigerants of all kinds



KEY FEATURES

- 4-pole motor guarantees the durability of the machine
- Low noise and vibration emission thanks to the compact design
- Intuitive handling makes it simple and safe to use
- Maintenance-free operation through the oil-free compressor
- Emptying of the device in order to work with different refrigerants with the PURGE function
- Simple transport and use with the light and compact plastic casing

TECHNICAL DATA

Delivery rate:	gaseous: 0.26 kg/min. fluid: 1.85 kg/min. Push/Pull: 6.22 kg/min.
Power supply:	230V/50–60Hz
Performance:	370W
High pressure switch:	38.5 bar
Product dimensions:	490x244x353 mm
Weight:	17 kg

Ideal for mono & multi-split air-conditioning units and heat pumps!

Integrated high pressure switch

Protects the integrated components

PURGE function

Emptying of refrigerant residue in the unit (self-cleaning mode)

Simple use

Controlled dosage of the refrigerant supply

RESET Button

Reset of the pressure shut-off

Removable cable

Prevents cable damage

Oil-free compressor

Maintenance-free operation

Thermal switch

Protects the unit from overheating

Light and compact plastic casing

Simple transport and use

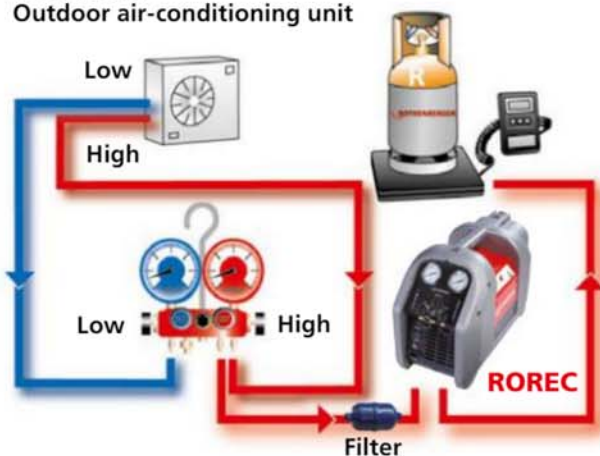
4-pole motor

Increased torque and service life



Recovery of Refrigerant

Exemplary:
Outdoor air-conditioning unit



Simple and precise reading with the glycol filled pressure gauge



Practical storage compartment for accessories on the back



Model	kg	No.	No.
ROREC	17.0	1	168605
Filter	0.12	1	168713

10

Evacuation, recovery and weighing

Vacuum pumps

ROREC PRO Digital

Refrigerant recovery device

Lightweight Recovery unit for the recovery of refrigerants of the classes A1, A2L and A2 (incl. R32), suitable for all unit sizes thanks to its high recovery rate



KEY FEATURES

- Suitable for refrigerants of the classes A1, A2L and A2 (incl. R32)
- Compact design with a weight of less than 12 kg
- Digital display and one-knob control
- Maintenance free operation with the oil-free 2-piston compressor
- 4-pole motor guarantees the durability of the machine
- Automatic shut-off and automatic restart once the pressure increases again
- Emptying of refrigerant residues with the PURGE function

TECHNICAL DATA

Delivery rate:	gaseous: 0.5 kg/min.; 30 kg/h fluid: 3.5 kg/min.; 210 kg/h Push/Pull: 9.5 kg/min.; 570 kg/h
Power supply:	230 V/50–60 Hz
Performance:	730 W
High pressure switch:	38.5 bar
Product dimensions:	380x250x350 mm
Weight:	12 kg

Digital display

Clearly structured display of the measured pressure values

Low pressure switch

Automatic shut-off and automatic restart once the pressure increases again



Oil-free 2-piston compressor

Very high recovery rate with maintenance free operation



Practical storage compartment

Storage of accessories in the back

Shoulder strap for transport over longer distances



Clearly structured digital display



10

Model	kg		No.
ROREC PRO Digital	12.0	1	1500002637
Filter	0.12	1	168713

* Complete terms and conditions at rothenberger.com/service
RO SERVICE+ only valid in participating countries.

Evacuation, recovery and weighing

Accessories

Refrigerant for air-conditioning units

Non-chlorinated refrigerant of the HFC group in practical 40 bar steel bottles (bursting pressure: 165 bar) TÜV seal No. 0036-043/03D and TPED accepted as per 99/36/CE



KEY FEATURES

- Light and practical for use on building-sites
- 1 and 2 litre steel bottles, rent-free and easy disposal
- Flat base for increased standing stability
- Ease of clean up after removing of the valve

Standardised SAE thread on all bottle valves

Universal application

Refillable bottles

Full flexibility for the user



Model			No.
R407C Refrigerant R407C in cardboard packaging			
1 l steel bottle 1/4" SAE, 850g	1	12	170913
2 l steel bottle 1/4" SAE, 1700g	1	6	170931

Model			No.
R410A Refrigerant R410A in cardboard packaging			
1 l steel bottle 5/16" SAE, 800g	1	12	170912
2 l steel bottle 5/16" SAE, 1600g	1	6	170932

Schrader valve tool

KEY FEATURES

- For exchanging the Schrader valve on air-conditioners under pressure, without having to recover the unit
- For safe and easy change of spring insert of the Schrader valve tool
- With safety thread for risk-free use with R410A



Model	No.
Schrader valve tool in plastic carrying case	87800



SANIFRESH

Deodorising cleaning spray

APPLICATION AREA

- Removes the threat of disease and allergies
- Practical and ecologically friendly solution for removing mites, dust, bacteria and spores
- Spray is applied directly to affected surface
- Economical spray can with spray nozzle and spray tube
- Removes unpleasant odours with pleasant mint smell

Model			Volume	No.
Sanifresh (contains 12 bottles)	1	1 (12)	400ml	85800



Plate fin comb

KEY FEATURES

- For straightening the plate fins of heat-exchangers
- 6 different sizes in one tool

Model	Dimension	No.
Plate fin comb	8-9-10-12-14-15 mm	224500



No. 173204, No. 173205



Bottle connection and adaptors

For refrigerant bottles

For use with new refrigerant bottles on existing equipment

M = external thread; F = inner thread

Model	No.
Adaptor, 1/4" connection	173205
Adaptor, 5/16" connection	173204
Adaptor, W21.8 x 1/4" SAE M connection with seal for 2l sized bottles	170950
Adaptor, 1/4" SAE M-3/8" SAE F connection	89501
Adaptor, 3/8" SAE M-1/4" SAE F connection	89503
Adaptor, 1/4" SAE F-5/16" SAE M connection	170016
Adaptor, 1/4" SAE M-5/16 SAE F connection with valve trigger	01700RD

Evacuation, recovery and weighing

Accessories

ROSCALE 120

Electronic refrigerant scale

Precise, easy to handle refrigerant scale for filling and evacuation processes with a maximal weight capacity of 120 kg



KEY FEATURES

- Resolution of 5 g enables very precise filling
- Weight capacity sufficient for all common refrigerant bottles
- Cable connection enables comfortable use in every situation
- Bottle adaptor for connecting small refrigerant bottles (1 l and 2 l bottles)
- Refrigerant bottles of all sizes have enough space
- Large LCD display for comfortable reading of the result
- Simple use

TECHNICAL DATA

Weight capacity:	120 kg or 264 lbs
Accuracy:	+/- 0.5 %
Resolution:	5 g/0.2 oz.
Working temperature:	-10 up to +49 °C / 14 up to +120 °F
Connection:	1/4" SAE for 1–2 l bottles
Battery:	9V
Platform size:	230x230x53 mm
Weight:	3.28 kg

Large rubberised weighing platform

All sizes of refrigerant bottles have enough space



1/4" SAE bottle adaptor

For connecting small 1 and 2 l refrigerant bottles

Large LCD display

For comfortable reading of the results

Three operating keys

Simple use

Cable connection

Enables comfortable use in every situation

Weight capacity of 120 kg

Weight capacity is sufficient for all common refrigerant bottles



ROSCALE 120 in carrying case

Scope of delivery: ROSCALE 120, 9V battery, carrying case

Model	 kg	No.
ROSCALE 120	3.28	R17300416

POWER SUPPLY



AC
230 V



AC
115 V



AC
110 V



Three-phase
current 400 V



Battery-
powered



Cable length
5 m



Battery + AC
operation
possible



Battery
operation



Battery
charger



ROTHENBERGER
Battery Platform

WORKING PROCESS



Can be used
overhead



Can be used in
confined spaces



Suitable for
tight spaces



Basic soft
soldering up
to 450°C



Hot brazing
450–1100°C



Max autogen
welding
1100°C



Fast cut



No
deformation
from use



Dry
drilling



Wet
drilling



Up to 50%
time-saving



Portable
operation



360°
rotatable



Fine
adjustment
of the flame

PRODUCT FEATURES



Ergonomic
design



Meets DIN
standards



VDE
approved



Propane
control



Oxygen
control



Acetylene
control



Shock
absorption



On/off
switch



LED
display



Sturdy
casing



Extension of
hose possible



Piezo
ignition



Economy
valve



Pressure
hose ball valve



Inspection
window



Pressure hose
length



Emergency
stop switch



Lock
button



Bayonet
coupling



Push lock



Thread lock



Pressure
gauge display
adjustable



Pressure gauge
class 1–6



Pressure
gauge size



Filling
supports



Counter
display



Balance
point in handle



Cable length



Measuring
accuracy
up to g



Scale range
max. kg



Transport
case



Heed safety
warning



Heed industrial
safety



Touchscreen



With USB
connection



With video
function



With photo
function



Memory card



WiFi



ROCASE
Case System



DURA LAZR TEC
Laser hardening
Process



5-Year-
Exchange
guarantee*

Pictograms

ROTHENBERGER ENCLOSED POWER TRANSMISSION

The **EPT-Technology (Enclosed Power Transmission)** of the expander head offers the following technical benefits:

Concealed bent lever:

Protection against dirt and external mechanical damage.

Energy efficient through optimised force transmission:

Ergonomic, highly optimised force flow in relation to the hand force of the user, therefore reducing effort.



ROTHENBERGER TITANNITRID COATING

The golden **TiN Coating (Titanitrid-coating)** of the expander head offers the following technical benefits:

High durability 2,300 HV:

Protection against abrasive wear

Lower friction value compared to steel:

Less effort

Good chemical resistance:

Good protection against corrosion

Universal wear resistance:

Long-lasting



ROTHENBERGER CONSTANT FORCE TECHNOLOGY

The **CFT (Constant Force Technology)** guarantees a constant axial pressing force over the entire service interval. A very important requirement for the production of sealed press connections CFT guarantees:

ROMAX Compact TT

19–21 kN for 40,000 press cycles

ROMAX AC ECO

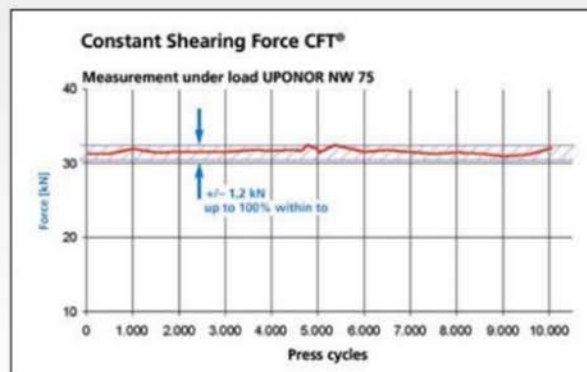
32–34 kN for 10,000 press cycles

ROMAX 4000

32–34 kN for 40,000 press cycles

ROMAX 3000 AC

32–34 kN for 20,000 press cycles



ROTHENBERGER DURAMAG TECHNOLOGY

The **DURAMAG Technology (high tec magnesium body)** offers the following benefits:

- Improved performance
- Higher stability with considerably lower weight

DURA = Durable MAG = Magnesium



General instructions for the use of refrigerants

Refrigerant data from CFC-alternative refrigerants

Refrigerant	Composition	ODP	GWP	Temperature glide
R22 (HFC-CFC refrigerant)	CHCLF2	0.05	1,700	–
R134a (HFC chlorine-free refrigerant)	CF3CH2F	0	1,300	–
R32 (HFC chlorine-free refrigerant)	CH2F2	0	580	–
R404A (HFC chlorine-free blends)	52 % R143a, 44 % R125, 4 % R134a	0	3,750	–
R507 (HFC chlorine-free blends)	50 % R143a, 50 % R125	0	3,800	–
R407C (HFC chlorine-free blends)	23 % R32, 25 % R125, 52 % R134a	0	1,610	7.5 K
R410A (HFC chlorine-free blends)	50 % R32, 50 % R125	0	1,890	0.2 K

ODP = Ozone Depletion Potential (degree in which the ozone layer is destroyed)

GWP = Global Warming Potential (degree in which it contributes to the greenhouse effect)

Instructions for safe and proper use of the refrigerants

Refrigerant

- Wear protective gloves and safety goggles
- Do not let refrigerant come in contact with skin
- Do not inhale high concentrations of vapours (Lack of oxygen causes a narcotic effect and is a danger to life)
- Do not smoke around refrigerant
- Working place/room must be thoroughly aired, if necessary extracted

Refrigerant bottles

- Secure against accidents, do not throw
- Do not expose to direct sunlight and do not place near radiators or other heat sources
- Do not use open flame
- Do not disassemble or remove valves
- Damaged bottles need to be properly returned
- Close empty containers

Air-conditioners

- Air-conditioner leaks need to be repaired immediately
- Do not allow refrigerant to leak while filling or doing maintenance work
- In high concentrations (for example pipe burst), leave the room and do not enter again until it has been properly ventilated
- Only do brazing work together with protective nitrogen gas and only in well ventilated areas

Flare connections

Normal flare size in accordance with JIS B8607:2008

Flare outer diameter in relationship to the pipe diameter

Pipe outer diameter mm/inch	Metric	Wall thickness mm/inch	Flare outer diameter with R22-, R134a-, R404-, R407C air-conditioners	Flare outer diameter with R410A air-conditioners
6 mm	–	1 mm	8.5 mm	9.1 mm
8 mm	–	1 mm	11.1 mm	11.1 mm
10 mm	–	1 mm	13.6 mm	13.2 mm
12 mm	–	1 mm	15.3 mm	16.5 mm
16 mm	–	1 mm	19.5 mm	19.2 mm
18 mm	–	1 mm	22 mm	2.7 mm
1/4"	6.35 mm	0.35"	9 mm	9.1 mm
5/16"	7.94 mm	0.35"	11 mm	11.1 mm
3/8"	9.52 mm	0.35"	13 mm	13.2 mm
1/2"	12.70 mm	0.35"	16.2 mm	16.6 mm
5/8"	15.88 mm	0.35"	19.4 mm	19.7 mm
3/4"	19.05 mm	0.35"	23.3 mm	24.0 mm

Conversion table pressure and temperature

Conversion table pressure

mbar	Micron	TORR	mm HG Vacuum
10	7,516	7.5	752
5	3,759	3.6	756
2	1,503	1.5	758
1	752	0.75	759
0.66	500	0.5	–
0.5	376	0.36	–
0.3	225	0.23	–
0.2	150	0.15	–
0.1	75	0.08	–
0.09	68	–	–
0.07	53	–	–
0.06	45	–	–
0.05	38	–	–
0.04	30	–	–
0.03	22	–	–
0.02	15	–	–
0.01	8	–	–

Conversion table temperature

Conversion from °C in °F: $^{\circ}\text{C} \times 1.8 + 32 = ^{\circ}\text{F}$

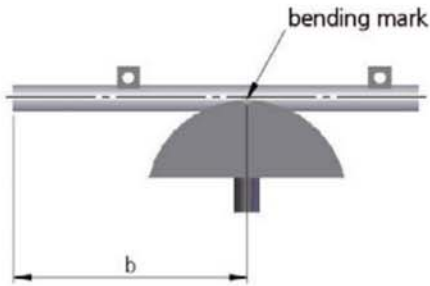
Conversion from °F in °C: $(^{\circ}\text{F} - 32) : 1.8 = ^{\circ}\text{C}$

°C	°F	°C	°F	°F	°C	°F	°C
100	212	30	86	212	100	70	21
95	203	25	77	200	93	60	16
90	194	20	68	190	88	50	10
85	185	15	59	180	82	40	4
80	176	10	50	170	77	30	-1
75	167	4	39	160	71	20	-7
70	158	0	32	150	66	10	-12
65	149	-10	14	140	60	0	-18
60	140	-20	-4	130	54	-10	-23
55	131	-30	-22	120	49	-20	-29
50	122	-40	-40	110	43	-30	-34
45	113	-50	-58	100	38	-40	-40
40	104	-60	-76	90	32	-50	-46
35	95	-70	-94	80	27	-60	-51
–	–	–	–	–	–	-112	-80
–	–	–	–	–	–	-460	-273

Common threads

UNF-Thread	SAE-Thread	Outer diameter (max. mm)	Internal diameter (min. mm)	Threads per inch	Increment (mm)
7/16" – 20	1/4"	11.079	9.738	20	1.270
1/2" – 20	5/16"	12.667	11.328	20	1.270
5/8" – 18	3/8"	15.839	14.348	18	1.411
3/4" – 16	1/2"	19.012	17.330	16	1.588
7/8" – 14	–	22.184	20.262	14	1.814
7/8" – 14	5/8"	22.184	20.262	14	1.814
1" – 14	3/4"	25.357	23.437	14	1.814
1 1/16" – 14	–	26.947	25.024	14	1.814
1 1/8" – 12	–	28.529	26.284	12	2.117
1 1/4" – 12	7/8"	31.704	29.459	12	2.117
1 3/8" – 12	–	34.877	32.634	12	2.117
1 1/2" – 12	1"	38.052	35.809	12	2.117

Push-bending



45°-ARC 90°-ARC



$$L = L_1 + L_2$$

$$b = L_1 - L_R$$



$$L = L_1 + L_2 - L_M$$

$$b = L_1 - L_R$$

Calculation examples TUBE BENDER MAXI

Specifications:

Installation in corner areas
 $L_W = 1,200$ mm
 $A_W = 30$ mm
 Pipe-Ø 12 mm, 90°-Arc

Sought after:

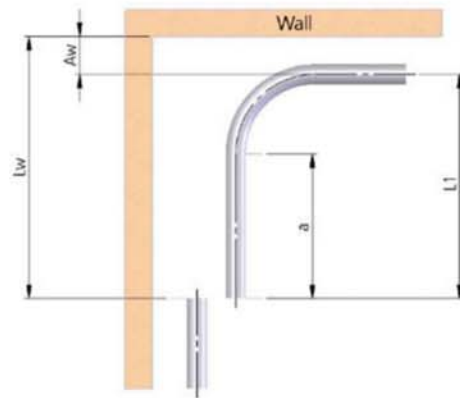
Leg length L_1
 Applied size b

Solution:

Summary from the TUBE BENDER MAXI bending table

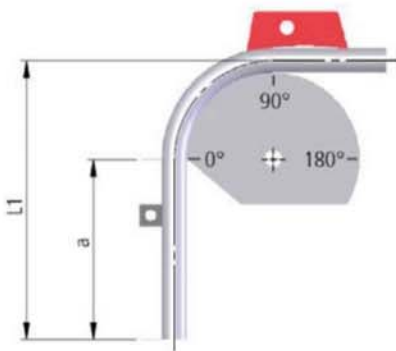
Leg length $L_1 = L_W - A_W = 1,200 - 30 = 1,170$ mm

Applied size $b = L_1 - L_R = 1,170 - 7.5 = 1,162.5$ mm;
 L_R ... Tabular value



Pull-bending

45°-ARC 90°-ARC 180°-ARC



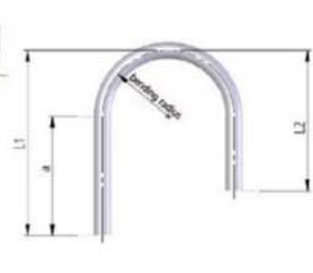
$$L = L_1 + L_2$$

$$a = L_1 - L_R$$



$$L = L_1 + L_2 - L_M$$

$$a = L_1 - L_R$$



$$L = L_1 + L_2 + L_M$$

$$a = L_1 - L_R$$

Calculation examples ROBEND 3000

Specifications:

Installation in corner areas
 $L_W = 1,200$ mm
 $A_W = 30$ mm
 Pipe-Ø 12 mm, 90°-Arc

Sought after:

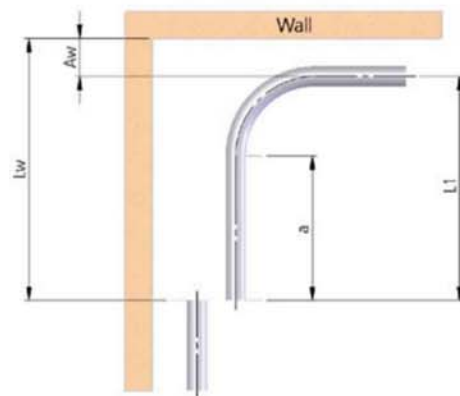
Leg length L_1
 Applied size a

Solution:

Summary from the ROBEND 3000 bending table

Leg length $L_1 = L_W - A_W = 1,200 - 30 = 1,170$ mm

Applied size $a = L_1 - L_R = 1,170 - 42 = 1,128$ mm;
 L_R ... Tabular value



Symbols

L_1, L_2 = Leg length; a/b = Lay out length;
 L = Total length of the pipe piece; L_W = Distance/pipe end - wall;
 A_W = Distance wall - pipe middle; L_M = Minimum length*; L_R = Reserve length*

Bending tables

H&W Plus			at 45°		at 90°		at 180°	
Ø/Ws mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	
8	22	9	–	22	9.5	22	47	
10	32	12	–	32	15.0	32	34	
12	38	15	–	40	20.0	38	39	
14	45	17	–	44	22.0	44	51	
15	45	17	–	44	22.0	44	51	
16	64	25	–	67	30.0	68	65	
18	64	25	–	67	30.0	68	65	
20	81	30	–	85	40.0	86	83	
22	81	30	–	85	40.0	86	83	
5/16"	22	9	–	22	9.5	22	47	
3/8"	32	12	–	32	20.0	32	34	
1/2"	38	15	–	40	22.0	38	39	
5/8"	64	25	–	67	30.0	68	65	
3/4"	81	30	–	85	40.0	86	83	
7/8"	81	30	–	85	40.0	86	83	

MINIBEND			at 45°		at 90°		at 180°	
Ø/Ws mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	
6	25.0	10.4	1.0	22.0	10.0	22.0	26.0	
8	24.0	9.9	1.0	32.0	15.0	32.0	34.0	
10	23.0	9.5	1.0	32.0	15.0	32.0	34.0	
1/4"	25.0	10.4	1.0	22.0	10.0	22.0	26.0	
5/16"	24.0	9.9	1.0	32.0	15.0	32.0	34.0	
3/8"	23.0	9.5	1.0	32.0	15.0	32.0	34.0	

Standard bender 180°			at 45°		at 90°		at 180°	
for Ø mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	
6	18.0	7.0	0.8	18.5	8.0	18.5	20.0	
10	30.0	11.5	1.3	30.5	14.5	30.5	34.0	
12	36.0	14.0	1.5	36.5	15.0	36.5	37.5	
14	47.5	18.5	2.0	48.5	20.5	48.5	52.5	
15	54.0	21.0	2.3	56.0	24.5	56.0	58.0	
16	58.0	22.5	2.5	64.0	28.5	64.0	67.0	
18	66.0	25.5	2.8	68.0	31.0	68.0	72.0	
1/4"	18.0	7.0	0.8	18.5	8.0	18.5	20.0	
5/16"	24.0	9.5	1.0	24.0	12.0	24.0	27.0	
1/2"	42.0	16.5	1.8	49.5	22.5	49.5	53.0	
5/8"	58.0	22.5	2.5	64.0	28.5	64.0	67.0	

MULTIBEND			at 45°		at 90°		at 180°	
for Ø mm	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	
8	24.0	9.5	1.0	24.0	10.0	24.0	26.0	
10	30.0	12.0	1.3	30.5	14.5	30.5	32.5	
12	36.0	14.0	1.5	36.5	15.5	36.5	37.5	
14	42.0	16.5	1.8	42.0	19.5	42.5	44.0	
15	48.0	19.0	2.0	48.0	22.0	48.0	53.0	
16	48.0	19.0	2.0	48.0	22.0	48.0	53.0	
18	54.0	21.0	2.3	54.0	26.0	54.5	58.0	

ROBEND 3000			at 45°		at 90°		at 180°	
for Ø mm/inch	Pipe	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm
12	–	42.0	16	–	42	24	42	68
14	wated	52.5	21	–	53	30	53	87
15	–	52.5	21	–	53	30	53	87
17	wated	72.0	28	–	72	41	72	107
18	–	72.0	28	–	72	41	72	107
20	wated	88.5	35	–	89	51	89	121
22	–	88.0	35	–	88	50	88	119
24	wated	112.0	43	–	110	62	110	114
28	–	112.0	44	–	112	64	112	148
30	wated	112.0	45	–	114	66	114	152
3/8"	steel	80.0	31	–	80	46	80	103
1/2"	copper	45.0	18	–	45	26	45	74
1/2"	steel	88.0	35	–	88	50	88	119
5/8"	copper	56.0	23	–	56	32	56	93
3/4"	steel	112.0	43	–	112	64	112	148
3/4"	copper	80.0	31	–	80	46	80	103
7/8"	copper	88.0	35	–	88	50	88	119
1"	copper	112.0	44	–	112	64	112	148
1.1/8"	copper	112.0	45	–	114	66	114	152

Bending tables

TUBE BENDER		at 45°		at 90°		at 180°	
for Ø mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm
4.75/5	20.0	4.5	1.0	4.5	10.0	–	–
6	23.5	5.0	1.2	5.0	11.5	–	–
8	28.0	7.0	1.4	7.0	14.0	–	–
9	30.0	7.0	1.5	7.0	15.0	–	–
10	34.0	7.5	1.8	7.5	17.5	–	–
12	37.5	8.5	1.9	8.5	19.0	–	–
3/16"	20.0	4.5	1.0	4.5	10.0	–	–
1/4"	23.5	5.0	1.2	5.0	11.5	–	–
5/16"	28.0	7.0	1.4	7.0	14.0	–	–
3/8"	34.0	7.5	1.8	7.5	17.5	–	–
1/2"	37.5	8.5	1.9	8.5	19.0	–	–

TUBE BENDER MAXI		at 45°		at 90°		at 180°	
for Ø mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm
12	35.0	0.8	1.0	7.5	35.0	–	–
14	42.5	0.9	12.5	9.0	42.5	–	–
15	48.5	1.1	14.0	10.5	48.5	–	–
16	49.0	1.1	14.5	10.5	49.0	–	–
18	74.0	1.7	22.0	16.0	74.0	–	–
22	87.0	1.9	25.5	18.5	87.0	–	–
3/8"	35.0	0.8	10.0	7.5	35.0	–	–
1/2"	35.0	0.8	10.0	7.5	35.0	–	–
5/8"	49.0	1.1	14.5	10.5	49.0	–	–
3/4"	74.0	1.7	22.0	16.0	74.0	–	–
7/8"	87.0	1.9	25.5	18.5	87.0	–	–

TUBE BENDER MAXI		at 45°		at 90°		at 180°	
for Ø mm/inch	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm
14x2.0	42.5	0.9	12.5	9.0	42.5	–	–
16x2.0	49.0	1.1	14.5	10.5	49.0	–	–
18x2.0	49.0	1.7	22.0	16.0	49.0	–	–
25x2.5	74.0	2.0	26.0	19.0	74.0	–	–
32x3.0	128.0	2.8	26.0	27.5	74.0	–	–

TUBE BENDER MAXI CT		at 45°		at 90°		at 180°	
Ø/Ws mm	Bending radius R (mm)	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm	Reserve length L _R mm	Minimum length L _M mm
10x0.6	42.5	0.8	12.5	9.0	42.5	–	–
12x0.6	49.0	1.1	14.5	10.5	49.0	–	–
15x0.7	74.0	1.7	22.0	16.0	74.0	–	–
18x0.7	87.0	1.9	25.5	18.5	87.0	–	–

* All sizes listed are standards and are dependant on the material and the wall thickness.
Bending specific sizes based on the bending radius – tabular value



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This catalog is a publication of
ROTHENBERGER Werkzeuge GmbH
Industriestraße 7
D-65779 Kelkheim/Germany
Tel.: +49 61 95 800-0
Fax: +49 61 95 800-3500
info@rothenberger.com
Company register and number:
Königstein/Taunus, HRB 2732

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ROTHENBERGER Worldwide

Australia	ROTHENBERGER Australia Pty Ltd Unit 6, 13 Hoyle Avenue Castle Hill • NSW 2154 Tel.: +61 2 98 99 75 77 rothenberger@rothenberger.com.au rothenberger.com.au	Italy	ROTHENBERGER Italiana s.r.l. Via G. Reiss Romoli 17-19 • I-20019 Settimo Milanese Tel.: +39 02 33 50 601 • Fax: +39 02 33 50 0151 info@rothenberger.it rothenberger.it
Austria	ROTHENBERGER Werkzeuge und Maschinen Handelsgesellschaft mbH Gewerbeparkstraße 9 • A-5081 Anif Tel.: +43 6246 72 0 91-250 • Fax: +43 6246 72 0 91-215 office@rothenberger.at rothenberger.at	Netherlands	ROTHENBERGER Nederland bv Postbus 45 • NL-5120 AA Rijen Tel.: +31 1 61 29 35 79 • Fax: +31 1 61 29 39 08 info@rothenberger.nl rothenberger.nl
Belgium	ROTHENBERGER Benelux bvba Antwerpsesteenweg 59 • B-2630 Aartselaar Tel.: +32 3 8 77 22 77 • Fax: +32 3 8 77 03 94 info@rothenberger.be rothenberger.be	Poland	ROTHENBERGER Polska Sp. z o.o. Ul. Annopol 4A • Budynek C • PL-03-236 Warszawa Tel.: +48 22 2 13 59 00 • Fax: +48 22 2 13 59 01 biuro@rothenberger.pl rothenberger.pl
Brazil	ROTHENBERGER do Brasil LTDA Av. Fagundes de Oliveira, 538–Galpão A4 09950-300–Diadema/SP–Brasil Tel.: +55 11 4044-4748 • Fax: +55 11 4044-5051 vendas@rothenberger.com.br rothenberger.com.br	Russia	ROTHENBERGER Russia Avtosavodskaya str. 25 115280 Moscow, Russia Tel./Fax: +7 495 792 59 44 info@rothenberger.ru rothenberger.ru
Bulgaria	ROTHENBERGER Bulgaria EOOD Boul. Sitnjakovo 79 • BG-1111 Sofia Tel.: +35 9 2 9 46 14 59 • Fax: +35 9 2 9 46 12 05 info@rothenberger.bg rothenberger.bg	Scandinavia	ROTHENBERGER Scandinavia A/S Smedevænget 8 • DK-9560 Hadsund, Denmark Tel.: +45 98 15 75 66 • Fax: +45 98 15 68 23 roscan@rothenberger.dk rothenberger.se/dk
China	ROTHENBERGER (Wuxi) Rohr Technologies Co., Ltd. Building D • No 9 Lianhe Road Hudai Industrial Park, Binghu District 214161 Wuxi, China Tel.: +886 0510-83217213 • Fax: +886 0510-83217263 office@rothenberger.cn	South Africa	ROTHENBERGER-TOOLS SA (Pty) Ltd P.O. Box 4360 • Edenvale 1610 165 Vanderbijl Street, Meadowdale Germiston Gauteng (Johannesburg), South Africa Tel.: +27 11 3 72 96 31 • Fax: +27 11 3 72 96 32 info@rothenberger.co.za rothenberger.co.za
Czech Republic	ROTHENBERGER CZ Prumyslova 1306/7, 102 00 Praha 10 Tel.: +420 271 730 183 • Fax: +420 267 310 187 prodej@rothenberger.cz rothenberger.cz	Spain	ROTHENBERGER S.A. Ctra. Durango-Elorrio, Km 2 • E-48220 Abadiano (Vizcaya) (P.O. Box) 117 • E-48200 Durango (Vizcaya) Tel.: +34 94 6 21 01 00 • Fax: +34 94 6 21 01 31 export@rothenberger.es rothenberger.es
France	ROTHENBERGER France S.A. 24, rue des Drapiers, BP 45033 • F-57071 Metz Cedex 3 Tel.: +33 3 87 74 92 92 • Fax: +33 3 87 74 94 03 info-fr@rothenberger.com rothenberger.fr	Switzerland	ROTHENBERGER (Schweiz) AG Herostr. 9 • CH-8048 Zürich Tel.: +41 44 435 30 30 • Fax: +41 44 401 06 08 info@rothenberger-werkzeuge.ch
Germany	ROTHENBERGER Deutschland GmbH Industriestraße 7 • 65779 Kelkheim/Germany Tel.: +49 6195 800 81 00 • Fax: +49 6195 800 37 39 verkauf-deutschland@rothenberger.com rothenberger.com ROTHENBERGER Werkzeuge Produktion GmbH Lilienthalstraße 71-87 • D-37235 Hessisch-Lichtenau Tel.: +49 56 02 93 94-0 • Fax: +49 56 02 93 94-36	Turkey	ROTHENBERGER TÜRKİYE ROTHENBERGER Center, Barbaros Bulvarı No:9 TR-34775 Şerifali/Ümraniye İstanbul Tel.: +90 216 449 24 85 • Fax: +90 216 449 24 87 rothenberger@rothenberger.com.tr rothenberger.com.tr
Greece	ROTHENBERGER Hellas S.A. Agias Kyriakis 45 • 17564 Paleo Faliro • Greece Tel.: +30 210 94 02 049 • +30 210 94 07 302 3 Fax: +30 210 94 07 322 ro-he@otenet.gr rothenberger.com	UAE	ROTHENBERGER Middle East FZCO PO Box 261190 • Jebel Ali Free Zone Dubai, United Arab Emirates Tel.: +971 48 83 97 77 • Fax: +971 48 83 97 57 office@rothenberger.ae ROTHENBERGER EQUIPMENT TRADING & SERVICES LLC PO Box 91208 • Mussafah Industrial Area Abu Dhabi, United Arab Emirates Tel.: +971 25 50 01 54 • Fax: +971 25 50 01 53 servicecenter@rothenberger.ae
Hungary	ROTHENBERGER Hungary Kft. Gubacsi út 24 • H-1097 Budapest Tel.: +36 1 3 47-50 40 • Fax: +36 1 3 47-50 59 info@rothenberger.hu rothenberger.hu	UK	ROTHENBERGER UK Ltd 2, Kingsthorpe Park, Henson Way Kettering • GB-Northants NN16 8PX Tel.: +44 15 36 31 03 00 • Fax: +44 15 36 31 06 00 info@rothenberger.co.uk
India	ROTHENBERGER India Pvt. Ltd. Plot No 17, Sector-37, Pace city-I Gurgaon, Haryana-122 001, India Tel.: +91 124-4618900 • Fax: +91 124-4019471 contactus@rothenbergerindia.com rothenberger.in	USA	ROTHENBERGER USA LLC 7130 Clinton Road • Loves Park, IL 61111, USA Tel.: +1 80 05 45 76 98 • Fax: +1 81 56 33 08 79 customerservice-us@rothenberger.com rothenberger-usa.com

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ROTHENBERGER Werkzeuge GmbH

Industriestraße 7
D-65779 Kelkheim/Germany

Tel.: +49 6195 800-0
Fax: +49 6195 800-3500

info@rothenberger.com