





# Bending

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## **REMS Swing**

Single-hand tube bender

Practical one-hand pipe bender for dimensionally accurate bending of pipes up to 90°. Ideal for on-site work. For trade and industry. For the building site and the workshop.

Soft copper pipes, also thin-walled	Ø 10 – 22 mm Ø ¾ – ⅛" s ≤ 1 mm
Coated soft copper tubes	Ø 10 – 18 mm Ø ⅔ – 5⁄8" s ≤ 1 mm
Soft, coated carbon steel pipes	
of the pressfitting systems	Ø 12–18 mm
	s ≤ 1.2 mm
Soft precision steel tubes	Ø 10–18 mm
	s ≤ 1 mm
Multi-layer composite tubes	Ø 14–32 mm

REMS Swing – bending tubes where they are installed. Ultra light, ultra small, ultra handy. Universally usable for many pipe types. Ultra fast operation by practical multifunction lever for fast in-feed and fast return. Proven, reliable ratchet feed. Ideal also for coated tubes.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Also for copper thin-walled heating tubes according to EN 1057 and for tubes of pressfitting systems.

#### **Cost advantage**

Bender recovered after a few bends through savings on fittings. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Compact, job site-proven. Handy and light, drive unit only 0.9 kg. Can be used anywhere, free-hand, in confined areas. Easy, quick working, e.g. Ø 22 mm copper pipe bend in just 9 s. Marked bending formers for exact bending. Overbend, tier bend possible. Easy and rapid changing of bending formers. Back former support S Ø 10-26 mm, rotatable according to the size of the pipe to be bent, with back formers for pipes Ø 10-26 mm,  $\frac{N}{6} - \frac{N}{6}^{*}$ . Back former support Ø 32 mm with back formers for pipe Ø 32 mm. Device for reverse bending up to Ø 22 mm,  $\frac{N}{6}^{*}$ .

#### Bending formers and sliding pieces

In high-strength, high-slide, glass-fibre reinforced polyamide. See table on page 129 for bending formers. UP bending formers with smaller bending radii for Uponor Uni Pipe PLUS composite pipes, see below.

#### Drive

Sturdy drive unit with proven, reliable ratchet feed for the complete work range up to  $\emptyset$  32 mm. Practical multi-function lever for fast in-feed and fast return saves time and effort.





#### German Quality Product



#### Supply format

**REMS Swing UP Set.** Single-hand tube bender Ø 16–32 mm, up to 90°. for Uponor Uni Pipe PLUS composite pipes Ø 16–32 mm. With UP drive unit, UP bending formers with smaller bending radii, UP back former supports Ø 16–32 mm with back formers, in a sturdy steel box/case.

Description mm	ArtNo.
Set 16 + 20 + 25 + 32	153030

Description	ArtNo.
REMS Swing UP drive unit	153300
<b>UP back former support Ø <math>16-32 \text{ mm}</math></b> with back formers for pipes Ø $16-32 \text{ mm}$	153307
UP bending former Ø 16 mm, bending radius 32 mm	153303
UP bending former UP Ø 20 mm, Biegeradius 40 mm	153304
UP bending former UP Ø 25 mm, Biegeradius 62,5 mm	153305
UP bending former UP Ø 32 mm, Biegeradius 80 mm	153306
Steel case with inlay	153265



#### Supply format

**REMS Swing Set.** Single-hand tube bender Ø 10-32 mm, Ø  $\frac{3}{4} - \frac{7}{8}^{"}$ , up to 90°. Soft copper pipes Ø 10-22 mm, Ø  $\frac{3}{4} - \frac{7}{8}^{"}$ , s  $\leq 1$  mm, soft, coated copper pipes Ø 10-18 mm, Ø  $\frac{3}{4} - \frac{5}{8}^{"}$ , s  $\leq 1$  mm, soft, coated carbon steel pipes of the pressfitting systems Ø 12-18 mm, s  $\leq 1.2$  mm, soft precision steel pipes Ø 10-18 mm, s  $\leq 1$  1 mm, composite tubes Ø 14-32 mm. Up to Ø 26 mm with drive unit, bending formers, back former supports S Ø 10-26 mm with back formers, 2 back former supports Ø 10-26 mm and Ø 32 mm with back formers, in a sturdy steel case.

Description mm	inch	ArtNo.	
Set 12 + 15 + 18 + 22	1/2 + 5/8 + 3/4 + 7/8"	153025	
Set 10 + 12 + 15 + 18 + 22	$\frac{3}{8} + \frac{1}{2} + \frac{5}{8} + \frac{3}{4} + \frac{7}{8}$ "	153021	
Set 12 + 14 + 16 + 18 + 22	<sup>1</sup> / <sub>2</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153020	
Set 14 + 16 + 20 + 25/26		153026	
Set 14 + 16 + 18 + 20 + 25/26		153022	
Set 16 + 20 + 25/26 + 32		153029	
Set Allround 22 10 + 12 + 14 + 15 + 16 + 17 + 18 + 20 + 22	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153027	
Set 16 + 18 + 20 + 25/26 + 32		153023	
Set Allround 32 10+12+14+15+16+17+18+20+22+			
25/26+32	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153028	

#### Accessories

Description							ArtNo.	
REMS Swing drive unit								
<b>Back former support S Ø 10 – 26 mm</b> with back formers for pipes Ø 10 – 26 mm, $\frac{3}{2} - \frac{7}{8}$ "								
Back former support Ø 32 mm with back formers for pipe Ø 32 mm							153115	
Device for reverse bendi on laid pipes up to Ø 26 m							153140	
Steel case with inlay							153265	
Case with inlay							153270	
			suit	able	for			
<b>Bending former</b> for tubes Ø mm/inch	Bending radius <sup>1)</sup> mm	Cu	Cu-U	St 10305-U	St 10305	>		
10, ¾"	30	•			•		153155	
12, 10 U, ½"	36	٠	٠		•		153160	
14, 12 U	50	٠		٠	•	•	153170	
15, 12 U, %"	55	٠	•		٠		153175	
16, 14 U	55	•	•		•	•	153180	
17, 15 U	60			٠		•	153185	
18, 14 U, 15 U, 16 U, ¾"	72	•	•		•	•	153190	
20, 18 U	79	٠	•	٠		•	153195	
22, 18 U, ¾"	86	86 • •					153200	
25, 26	88	•					153205	
32	128					•	153210	

<sup>1)</sup> Bending radius mm at the neutral axis of the bend (DVGW GW 392) Cu: soft copper tubes, also thin-wall

St 10305-U: soft, coated carbon steel pipes of the pressfitting systems EN 10305-3 St 10205: soft president steel pipes EN 10205-1 EN 10205-2

St 10305:	soft precision steel pipes EN 10305-1, EN 10305-2,
	EN 10305-3
U:	coated

V: multi-layer composite tubes of pressfitting systems





## **REMS Hydro-Swing**

### Oil-hydraulic hand pipe bender

Effort-saving, oil-hydraulic hand pipe bender for dimensionally accurate bending of pipes up to 90°. Ideal for on-site work. For trade and industry. For the building site and the workshop.

Soft copper pipes, also thin-walled	Ø 10 – 22 mm Ø ¾ – ⅛" s ≤ 1 mm
Coated soft copper tubes	Ø 10 – 18 mm Ø ¾ – 5⁄8" s ≤ 1 mm
Pipes of press fitting systems made of:	
stainless steel, nickel steel	Ø 15–22 mm
	s ≤ 1.2 mm
Soft, coated carbon steel	Ø 12–18 mm
	s ≤ 1.2 mm
Soft precision steel tubes	Ø 10-22 mm
	s ≤ 1.5 mm
Multi-layer composite tubes	Ø 14–32 mm

REMS Hydro-Swing – bending tubes where they are installed. Universally usable for many pipe types. Effortless working due to oil-hydraulic force transmission.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Also for copper thin-walled heating tubes according to EN 1057 and for tubes of pressfitting systems.

#### Cost advantage

Bender recovered after a few bends through savings on fittings. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

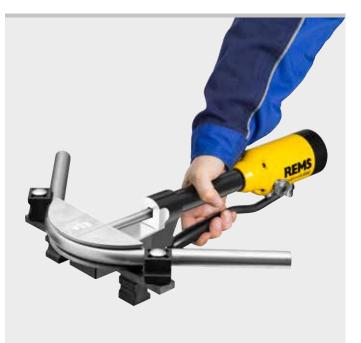
Robust, compact drive unit with closed, maintenance-free hydraulic system. Handy and light, only 2.4 kg. Can be used anywhere, even in confined spaces. Easy, quick working, e.g. Ø 22 mm copper pipe bend in just 18 s. Marked bending formers for exact bending. Overbend, tier bend possible. Easy and rapid changing of bending formers. Back former support H-S Ø 10–26 mm, rotatable according to the size of the pipe to be bent, with back formers for pipes Ø 10–26 mm,  $\frac{3}{2} - \frac{3}{2}$ ". Back former support Ø 32 mm with back formers for pipes Ø 32 mm.

#### Bending formers and sliding pieces

Bending formers and back formers made of high strength, high sliding, glass fibre reinforced polyamide or aluminium bending formers. See table on page 131 for bending formers.

#### Drive

Oil-hydraulic drive unit with hydraulic cylinder made from high-quality, rolled hydraulic tube. Ergonomically designed thrust lever for strength saving pressure build-up with manual hydraulic pump. Reliable hydraulic thrust with overload protection in the foremost piston position and overpressure valves for safe working.







## **REMS Hydro-Swing**

#### Supply format

**REMS Hydro-Swing Set.** Oil-hydraulic hand pipe bender Ø 10-32 mm, Ø  $\frac{3}{6} - \frac{7}{6}^{"}$ , up to 90°. Soft copper pipes Ø 10-22 mm, Ø  $\frac{3}{6} - \frac{7}{6}^{"}$ , s  $\leq$  1 mm, soft, coated copper pipes Ø 10-18 mm, Ø  $\frac{3}{6} - \frac{5}{6}^{"}$ , s  $\leq$  1 mm, pipes of the press fitting systems made of soft, coated carbon steel Ø 12-18 mm, s  $\leq$  1.2 mm, soft precision steel pipes Ø 10-18 mm, s  $\leq$  1.5 mm, composite tubes Ø 14-32 mm. Up to Ø 26 mm with drive unit, polyamide bending formers, back former support H-S Ø 10-26 mm with back formers, in a sturdy case. Up to Ø 32 mm with drive unit, polyamide bending formers, back former and Ø 32 mm with back formers, in a sturdy case.

Description mm	inch	ArtNo.	
Set 12 + 15 + 18 + 22	1/2 + 5/8 + 3/4 + 7/8 "	153525	
Set 10 + 12 + 15 + 18 + 22	$\frac{3}{8} + \frac{1}{2} + \frac{5}{8} + \frac{3}{4} + \frac{7}{8}$ "	153521	
Set 12 + 14 + 16 + 18 + 22	1/2 + 3/4 + 7/8"	153520	
Set 14 + 16 + 20 + 25/26		153526	
Set 14 + 16 + 18 + 20 + 25/26		153522	
Set 16 + 20 + 25/26 + 32		153529	
Set Allround 22 10 + 12 + 14 + 15 + 16 + 17 + 18 + 20 + 22	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153527	
Set 16 + 18 + 20 + 25/26 + 32		153523	
Set Allround 32 10+12+14+15+16+17+18+20+22+	2/ 1/ 5/ 2/ 7/1	450500	
25/26+32	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153528	

#### Supply format

REMS Hydro-Swing NOX Set. REMS Hydro-Swing with aluminium bending<br/>formers, especially also for<br/>Geberit Mapress Stainless Steel (EN 10088, 1.4401),<br/>Geberit Mapress Carbon Steel (EN 10305-3, 1.4521, nickel-free),<br/>Geberit Mapress (EN 10088, 1.4401),<br/>Viega Sanpress (EN 10088, 1.4401),<br/>Viega Prestabo (EN 10305-3, 1.0308 (E235)).Art.-No.Description mmArt.-No.Set 15 + 18 + 22153510

#### Accessories

Description							ArtNo.		
REMS Hydro-Swing dri	ve unit							153500	
<b>Back former support H-S Ø 10 – 26 mm</b> with back formers for pipe Ø 10 – 26 mm, $\frac{3}{9}$ – $\frac{7}{8}$ "								153501	
Back former support Ø for pipe Ø 32 mm	<b>32 mm</b> wit	h ba	ck f	orm	ers			153115	
Case with inlay								153570	
			รเ	uitat	ole f	or			
<b>Bending former</b> for tubes Ø mm/inch	Bending radius <sup>1)</sup> mm	Cu	Cu-U	St 10217	St 10305	St 10305-U	Λ		
10, ¾"	30	•			٠			153155	
12, 10 U, ½"	36	٠	٠		٠			153160	
14, 12 U	50	٠			٠	٠	٠	153170	
15 <sup>2)</sup>	55	٠	٠	•	٠			153531	
15, 12 U, %"	55	٠	•		٠			153175	
16, 14 U	55	٠	٠		٠		٠	153180	
17, 15 U	60					٠	٠	153185	
18 <sup>2)</sup>	72	٠	•	•	٠		٠	153532	
18, 14 U, 15 U, 16 U, ¾"	72	٠	٠		٠		٠	153190	
20, 18 U	79	٠	٠			٠	٠	153195	
22, 18 U, %" 2)	86	•	•	•	٠			153540	
22, 18 U, %"	86	•	•					153200	
25, 26	88						•	153205	
32	128						٠	153210	

<sup>1)</sup> Bending radius mm at the neutral axis of the bend (DVGW GW 392) <sup>2)</sup> Aluminium bending formers

Cu:	soft copper tubes, also thin-wall, EN 1057
St 10217:	stainless, nickel steel pipes of the press fitting systems
	EN 10217-7, EN 10312, series 2, material 1.4401
St 10305:	soft precision steel pipes EN 10305-1, EN 10305-2,
	EN 10305-3
St 10305-U:	soft, coated carbon steel pipes of the pressfitting systems
	EN 10305-3
U:	coated
V:	multi-layer composite tubes of pressfitting systems









## **REMS Hydro-Swing 22 V**

Cordless tube bender

Universal, mobile, handy electric tool for dimensionally accurate bending of pipes up to 90°. Ideal for on-site work. For trade and industry. For the building site and the workshop. Li-Ion 22V Technology. For battery and corded operation.

Soft copper pipes, also thin-walled	Ø 10 – 22 mm Ø ¾ – %" s ≤ 1 mm
Coated soft copper tubes	Ø 10 – 18 mm Ø ¾ – 5⁄8 " s ≤ 1 mm
Pipes of press fitting systems made of:	
stainless steel, nickel steel	Ø 15–22 mm
	s ≤ 1.2 mm
Soft, coated carbon steel	Ø 12–18 mm
	s ≤ 1.2 mm
Soft precision steel tubes	Ø 10–22 mm
	s ≤ 1.5 mm
Multi-layer composite tubes	Ø 14–32 mm

REMS Hydro-Swing 22V – bending tubes where they are installed. Mobile, handy, light. Universally usable for many pipe types. Li-Ion 21.6V, 2.5 Ah battery, for approx. 110 stainless steel pipe bends of the Ø 22 mm press fitting systems with one battery charge\*.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Also for copper thin-walled heating tubes according to EN 1057 and for tubes of pressfitting systems.

#### Cost advantage

Cordless tube bender recovered after a few bends through savings on fittings. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Robust, compact drive unit with closed, maintenance-free hydraulic system. Mobile, handy, light. Drive machine with battery pack weights only 3.0 kg. Can be used anywhere, even in confined spaces. Easy, quick working, e.g. Ø 22 mm stainless steel pipe bend in just 8 s. Marked bending formers for exact bending. Overbend, tier bend possible. Easy and rapid changing of bending formers. Back former support H-S Ø 10–26 mm, rotatable according to the size of the pipe to be bent, with back formers for pipes Ø 10–26 mm, %-%". Back former support Ø 32 mm with back formers for pipes Ø 32 mm. LED work light for illuminating the work place.

#### Bending formers and sliding pieces

Bending formers and back formers made of high strength, high sliding, glass fibre reinforced polyamide or aluminium bending formers. See table on page 133 for bending formers.

#### Drive

Tons of thrust for crease-free bending within seconds. Thrust force 9 kN. Powerful electro-hydraulic drive with powerful battery motor 21.6 V, 380 W output, robust planetary gear, eccentric reciprocating pump and compact high power hydraulic system. Safety tip switch.

#### Battery or mains operation

Li-lon 22 V Technology. Highly resistant Li-lon 21.6V battery with 2.5, 4.4, 5.0 or 9.0 Ah capacity, for long service life. Light and powerful. Li-lon 21.6V, 2.5 Ah battery for approx. 110 pipe bends, 4.4 Ah for approx. 190 pipe bends, 5.0 Ah for approx. 220 pipe bends, 9.0 Ah for approx. 396 pipe bends of the stainless steel  $\emptyset$  22 mm press fitting systems with one battery charge<sup>-</sup>. Graduated charging status check by coloured LEDs. Operating temperature range – 10 to + 60 °C. No memory effect for maximum battery power. Rapid charger 100 – 240V, 90W. Rapid charger 100 – 240V, 290W, for shorter charging times, as accessory. Voltage supply 220 – 240 V/21.6V, 15A output, for mains operation instead of Li-lon battery 21.6 V, as accessory.

#### Supply format

REMS Hydro-Swing 22V INOX Set. REMS Hydro-Swing bending formers, especially also for Geberit Mapress Stainless Steel (EN 10088, 1.4401), Geberit Mapress Stainless Steel (EN 10088, 1.4521, nic Geberit Mapress Carbon Steel (EN 10305-3, 1.0034 (E1 Viega Sanpress (EN 10088, 1.4401), Viega Prestabo (EN 10305-3, 1.0308 (E235)).	kel-free),	
Description mm	ArtNo.	
Set 15 + 18 + 22	153419	
Other voltages on request.		





**REMS Hydro-Swing 22V** 

#### Supply format

**REMS Hydro-Swing 22V Set.** Cordless tube bender Ø 10-32 mm, Ø  $\frac{3}{6}$ - $\frac{7}{6}$ ", up to 90°. Soft copper pipes Ø 10-22 mm, Ø  $\frac{3}{6}$ - $\frac{7}{6}$ ", s  $\leq$  1 mm, soft, coated copper pipes Ø 10-18 mm, Ø  $\frac{3}{6}$ - $\frac{5}{6}$ ", s  $\leq$  1 mm, pipes of the press fitting systems made of soft, coated carbon steel Ø 12-18 mm, s  $\leq$  1.2 mm, soft precision steel pipes Ø 10-18 mm, s  $\leq$  1.5 mm, composite tubes Ø 14-32 mm. Electro-hydraulic drive with powerful battery motor 21.6 V, 380 W, robust planetary gear, eccentric reciprocating pump and compact high power hydraulic system. Safety tip switch. LED work light. Battery Li-lon 21.6 V, 2.5 Ah, rapid charger 220-240V or 110 V, 50-60 Hz, 70 W. Up to Ø 26 mm with polyamide bending formers, back former support H-S Ø 10-26 mm with back formers. Up to Ø 32 mm with polyamide bending formers, n XL-Boxx system case.

Description mm	inch	ArtNo.
Set 12 + 15 + 18 + 22	1/2 + 5/8 + 3/4 + 7/8 "	153410
Set 10 + 12 + 15 + 18 + 22	$\frac{3}{8} + \frac{1}{2} + \frac{5}{8} + \frac{3}{4} + \frac{7}{8}$ "	153411
Set 12 + 14 + 16 + 18 + 22	1/2 + 3/4 + 7/8"	153412
Set 14 + 16 + 20 + 25/26		153413
Set 14 + 16 + 18 + 20 + 25/26		153414
Set 16 + 20 + 25/26 + 32		153415
Set Allround 22 10 + 12 + 14 + 15 + 16 + 17 + 18 + 20 + 22	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153416
Set 16 + 18 + 20 + 25/26 + 32		153417
Set Allround 32 10 + 12 + 14 + 15 + 16 + 17 + 18 + 20 + 22 + 25/26 + 32	<sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	153418
Basic-Pack (ohne Biegesegmente und Gleitstücke)		153401
Other voltages on request		



Other voltages on request.

#### Accessories

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Description	Description							ArtNo.	
REMS Hydro-Swing 22 V drive unit, without battery						153400			
Back former support H-S Ø 10-26 mm with back									
formers for pipe Ø 10-								153501	
Back former support Ø	<b>32 mm</b> wit	h ba	ck f	orm	ners			150115	
for pipe Ø 32 mm								153115	
Battery Li-lon 21.6 V, 2								571571	
Battery Li-lon 21.6 V, 4								571574	
Battery Li-Ion 21.6 V, 5								571581	
Battery Li-Ion 21.6 V, 9								571583	
Rapid charger 100-24	•							571585	
Rapid charger 100-24								571587	
Voltage supply 220-24 for mains operation ins								571567	
XL-Boxx system case v	XL-Boxx system case with inserts							153455	
REMS Lumen 2800 22	V, cordless	LED	floo	od li	ght,	see	pag	ge 111	
			รเ	uitat	ole f	or			
						5			
				5	2	15-1			
Bending former	Bending		5	021	030	030			
for tubes Ø mm/inch	radius <sup>1)</sup> mm	S	Cu-U	St 10217	St 10305	St 10305-U	>		
		_	0	07		07	-		1
10, 3⁄8"	30	•	_		•		_	153155	
12, 10 U, ½"	36	•	•		•		_	153160	
14, 12 U	50	•			•	•	•	153170	
15 <sup>2)</sup>	55	٠	٠	٠	٠			153531	
15, 12 U, %"	55	•	٠		٠			153175	
16, 14 U	55	•	٠		٠		٠	153180	
17, 15 U	60					٠	٠	153185	
18 <sup>2)</sup>	72	•	٠	•	٠		٠	153532	
18, 14 U, 15 U, 16 U, ¾"	72	•	٠		٠		٠	153190	
20, 18 U	79	•	٠			٠	٠	153195	
22, 18 U, 7⁄8" 2)	86	•	٠	•	•			153540	
22, 18 U, ¾"	86	٠	•					153200	
25, 26	88						•	153205	

 $^{1)}$  Bending radius mm at the neutral axis of the bend (DVGW GW 392)  $^{2)}$  Aluminium bending formers

• 153210

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Cu:	soft copper tubes, also thin-wall, EN 1057
St 10217:	stainless, nickel steel pipes of the press fitting systems
	EN 10217-7, EN 10312, series 2, material 1.4401
St 10305:	soft precision steel pipes EN 10305-1, EN 10305-2,
	EN 10305-3
St 10305-U:	soft, coated carbon steel pipes of the pressfitting systems
	EN 10305-3
U:	coated
V:	multi-layer composite tubes of pressfitting systems



## **REMS** Python

Robust, oil-hydraulic pipe bender for dimensionally accurate bending of pipes up to 90°. For trade and industry. For the building site and the workshop.

Steel pipes EN 10255	Ø ³⁄8−2"
Multilayer composite tubes	Ø 32 – 75 mm

### REMS Python – extremely easy bending up to Ø 2",

75 mm. Ideal for steel pipes EN 10255 and for multilayer composite tubes of the pressfitting systems. Also for producing level bends in different planes.

#### Universal use

For locksmith work, sanitary and heating installation and machine and plant engineering. Excellently suitable for steel pipes EN 10255 and for multilayer composite tubes of the pressfitting systems.

### System advantage

Only **one** bender drive for the whole working range up to Ø 2", Ø 75 mm. Thus simple, inexpensive stocking. No confusion possible.

#### Cost advantage

Pipe bender is amortised after just a few bends by saving on fittings. No costs for fittings, storage, procurement. Saving of welds, press connections and working time. Increased safety due to fewer pipe connections.

#### Design

Robust, oil-hydraulic drive unit with closed, maintenance-free hydraulic system. 2 slide roller supports and 2 slide rollers form a closed bending frame for high rigidity and precision when bending. Upper back former support tiltable for easy insertion and removal of the pipe, with marked plug positions for the back formers according to the pipe size to be bent, with angle scale 0 to 90°. Upper slide roller support with laterally adjustable slide roller bearing plate for producing over-bends and level bends according to requirements also in different planes. Can be used anywhere, any time. No setting, Easy, effortless, quick working, e.g. 90° bend Ø 63 mm only 60 s. Tripod as accessory.

#### Bending formers and back formers

Bending formers St for steel pipes, form and pressure stable, made of highly resistant spheroidal iron. Bending formers V for multilayer composite tubes, form and pressure stable, made of torsion-free shell-cast aluminium. See page 135. Marking on every bending former for dimensionally accurate bending. Angle gauge with angle scale 0 to 180° for dimensionally accurate bending, as an accessory. Optimum matching of bending formers and back formers guarantees material-compatible bending without cracks and creases. High strength back formers for low friction support of the thrust pressure. Fast changing of the bending formers and back formers by simple plug system.

#### Drive

Oil-hydraulic drive unit with hydraulic cylinder made from high-quality, rolled hydraulic tube. Overload protection of the hydraulic thrust in the foremost piston position and overpressure valves for safe working. Ergonomically designed thrust lever for strength saving pressure build-up with manual hydraulic pump. No danger of crushing due to end limiting of the thrust lever, for high work safety.



German Quality Product



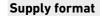
Bridges.



## **REMS** Python



Doglegs on several levels.



**REMS Python Set.** Oil-hydraulic pipe bender for dimensionally accurate bending of pipes up to 90°. Steel pipes EN 10255 Ø % – 2°, multilayer composite tubes Ø 32 – 75 mm. Drive unit with back former supports, upper back former support with laterally adjustable back former support bearing plate, 2 back formers, bending formers St or V. In sturdy carrying case.

Description	ArtNo.
Set St 3/4 + 1/2 + 3/4 + 1 + 11/4"	590020
Set St ½ + ¾ +1+1¼ +1½ +2"	590021
Set V 40 + 50 + 63 mm	590022

#### Accessories

Description						ArtNo.		
Drive unit with back former supports and back formers						590000		
Slide piece Ø	75 mm (pa	ck of 2)					590111	
Tripod							590150	
Carrying cas	<b>e</b> with practi	ical handles	5				590160	
Angle gauge	for dimensi	onally accu	rate	ben	ding		590153	
				suit	able	e for		
Bending former for pipes Ø mm/inch	Bending radius <sup>1)</sup> mm	Bending radius <sup>2)</sup> mm	St 10255	>				
St ¾"	50		•				590051	
St ½"	65		٠				590052	
St ¾"	85		•				590053	
St 1"	100		•				590054	
St 1¼"	150		•				590055	
St 1½"	170		•				590056	
St 2"	220		•				590057	
V 32 mm	112	128		•			590061	
V 40 mm	140	160		•			590058	
V 50 mm	175	200		•			590059	
V 63 mm	220	252		•			590060	
V 75 mm	260	298					590062	

 St 10255:
 Steel pipes (threaded pipes) EN 10255

 V:
 multilayer composite pipes of the pressfitting systems

 ▲
 2 slide pieces Ø 75 mm (Art. No. 590111) required

 <sup>11</sup> Bending radius mm on the inside of the bend (EN 10255)

 <sup>22</sup> Bending radius mm at the neutral axis of the bend (DVGW VP 632)





Electric pipe and tube bender

Universal, compact electric tool for cold bending of pipes and tubes up to 180°. Can be used anywhere, without vice. For trade and industry. For the building site and the workshop.

Hard, half-hard, soft copper tubes also thin-wall	Ø 10−35 mm Ø ¾−1¾"
Coated soft copper tubes, also thin-wall	Ø 10–18 mm
Thick-walled copper pipes K65 for refrigeration and air conditioning technology EN 12735-1	Ø ¾-1¾"
Pipes of press fitting systems made of stainless steel Carbon steel (coated)	Ø 12–28 mm Ø 12–28 mm
Soft precision steel tubes	Ø 10–28 mm
Steel pipes EN 10255	Ø ¼ – ¾ "
Electric conduit EN 50086	Ø 16–32 mm
Multi-layer composite tubes	Ø 14–40 mm

#### REMS Curvo - wrinkle-free bending.

Universal for many pipe types. Instant use without setting. Fast and creep speed operation for precise bending. Rapid change of bending and back formers.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Specially suited for tubes of pressfitting systems, for hard and half-hard copper tubes and for thin-walled copper heating tubes according to EN 1057.

#### System advantage

Only one type of bending and back formers for REMS Curvo 22V, REMS Curvo, REMS Curvo 50 and REMS Sinus. Therefore simple, inexpensive stocking. No confusion possible.

#### Cost advantage

Bender cost recovered after a small number of bends. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Compact, handy electric tool with integral absorbtion of torque during bending. Super light, drive unit only 8 kg. Can be used anywhere, anytime. No setting. Simple, effortless, fast working, e.g. 90° bends, Ø 22 mm in only 6 s. Fast and creep speed operation for precise bending. Overbend, double bend, tier bend, reversed bend possible. Height adjustable machine support as accessory.

#### Bending formers and back formers

Form and pressure resistant, in high-strength, high-slide, glass-fibre reinforced polyamide. Optimum matching of bending former and back former guarantees material-compatible gliding without cracks and creases. Angle scale 0 to 180° provided on each bending former and mark on the back former ensure precise bending. Rapid change of bending formers and back formers. Bending formers and back formers for different sizes, materials and bending radii (page 143).

#### Drive

Robust, maintenance-free gear. Final point safety in both directions through safety slipping clutch. Proven, powerful universal motor, 1000 W. Right and left-hand rotation. Stepless electronic safety switch for rapid and creep speed operation.

#### **Bending lubricant**

REMS bending spray ensures a permanent lubricating film for reducing energy expenditure and uniform bending. High-pressure-proof, acid-free. CFC-free, so ozone-harmless.









### Supply format

**REMS Curvo Set.** Electric pipe and tube bender Ø 10-40 mm, Ø  $\frac{1}{4}$  - 1%", up to 180°. Hard, semi-hard, soft copper pipes, also thin-walled, Ø 10–35 mm, Ø %–1%", soft coated copper pipes, also thin-walled, Ø 10–18 mm, thick-walled copper pipes K65 for refrigeration and air conditioning technology EN 12735-1  $\emptyset \frac{3}{8} - 1\frac{3}{8}$ ", pipes of the press fitting systems of stainless steel  $\emptyset \frac{12}{2} - 28$  mm, carbon steel, also coated, Ø 12–28 mm, soft precision steel pipes Ø 10–28 mm, steel pipes EN 10255 Ø  $^{1\!\!4}$  –  $^{3\!\!4}$  ", electrical installation pipes EN 50086 Ø 16 – 32 mm, composite tubes Ø 14–40 mm, etc. Drive unit with maintenance-free gear and safety slipping clutch, universal motor 230 V or 110 V, 50 – 60 Hz, 1000 W, stepless electronic safety switch, right and left-hand rotation, insert bolt. Bending formers and back formers. In sturdy steel case.

Description	ArtNo.
Set 15 + 18 + 22	580026
Set 15 + 18 + 22 + 28 <sup>1)</sup>	580027
Set 15 + 18 + 22 + 28 <sup>2)</sup>	580036
Set 15 + 18 + 22 + 28 <sup>3)</sup>	580035
Set 12 + 15 + 18 + 22	580020
Set 12 + 15 + 18 + 22 + 28 <sup>1)</sup>	580033
Set 12 + 15 + 18 + 22 + 28 <sup>2)</sup>	580037
Set 15 + 22 + 28 <sup>1)</sup>	580022
Set 15 + 22 + 28 <sup>2)</sup>	580040
Set 17 + 20 + 24	580023
Set 12 + 14 + 16 + 18 + 22	580021
Set 12 + 14 + 16 + 18 + 22 + 28 <sup>1)</sup>	580031
Set 12 + 14 + 16 + 18 + 22 + 28 <sup>2)</sup>	580038
Set 14 + 16 + 18 + 22 + 28 <sup>1)</sup>	580028
Set 14 + 16 + 18 + 22 + 28 <sup>2)</sup>	580039
Set 3/8 + 1/2 + 5/8 + 3/4 + 7/8"	580024
Set 16 + 20 + 26 + 32	580025
Set 16 + 20 + 25 + 32	580034
Set 20 + 25 + 32	580029
Set 32 + 40	580030
Basic-Pack (without bending and back formers)	580010

Basic-Pack (without bending and back formers)

REMS Curvo Set delivered with the smaller radius bending and back former (except Art.-No. 580029 and 580030), see page 143.

- Bending former and back former 28, R102, Art. No. 581070, for hard, semi-hard copper pipes, also thin-walled. See page 143.
   Bending former and back former 28, ¾" (DN 20), R102, Art. No. 581260, for hard copper pipes Ø 28 mm, Ø 1½", pipes of the press fitting systems of stainless steel/carbon steel Ø 28 mm, steel pipes ¾". See page 143.
- <sup>3)</sup> Bending former and back former 28, <sup>3</sup>/<sub>4</sub>" (DN 20), R114, Art. No. 581310, for hard, semi-hard copper pipes Ø 28 mm, pipes Ø the press fitting systems of stainless steel/carbon steel Ø 28 mm, steel pipes  $\frac{3}{2}$ ". According to DVGW work sheet GW 392 for hard and semi-hard copper pipes Ø 28 mm minimum bending radius 114 mm necessary. Wall thickness  $\geq$  0.9 mm. See page 143.

Description	ArtNo.			
Bending formers and back formers see page 143.				
REMS Curvo drive unit	580000			
Insert bolt	582036			
REMS bending spray, 400 ml	140120			
Steel case with insert	586000			
Machine support 3B, height adjustable,on tripod	586100			
Machine support WB, height adjustable,				
for mounting on work bench	586150			





## **REMS Curvo 50**

Universal, compact electric tool for cold bending of pipes and tubes up to 90°. Can be used anywhere, without vice. For trade and industry. For the building site and the workshop.

Steel pipes EN 10255 (DIN 2440)	Ø ¼-1¼"
Stainless steel pipes EN ISO 1127,	
EN 10217-1	Ø ½-1¼"
	s ≤ 2.6 mm
Hard, half-hard, soft copper tubes	Ø 10-42 mm
Thin-wall copper tubes	Ø 10-35 mm
Thick-walled copper pipes K65 for refrigeration and air conditioning	
technology EN 12735-1	Ø 3/8 – 15/8 "
Pipes of press fitting systems made of	
stainless steel	Ø 12–42 mm
Carbon steel, also coated	Ø 12–42 (28) mm
Multi-layer composite tubes	Ø 14–50 mm
Further materials, see REMS Curvo	

### REMS Curvo 50 - wrinkle free bending of large pipes.

### Universal use

For metalwork and in sanitary, heating, air conditioning, refrigeration and hydraulic applications. Specially suited for steel pipe EN 10255, pipe for press-fitting systems, for hard and half hard copper pipe and for thin-walled copper heating pipe according to EN 1057.

### System advantage

Bending formers and back formers of REMS Curvo 22V, REMS Curvo and REMS Sinus (page 143) also fit in the REMS Curvo 50 drive machine with adaptor block 10-40, support 10-40. Therefore simple, inexpensive stocking. No confusion possible.

#### Cost advantage

Bender cost recovered after a small number of bends. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Compact, handy electric tool with integral absorption of torque during bending. Can be used anywhere, anytime. No setting. Simple, effortless, fast working, e.g. 90° bends of steel pipe Ø 1½" in only 37 s. Fast and creep speed operation for precise bending. Overbend, tier bend, reversed bend possible.

### Bending formers and back formers

Optimum matching of bending former and back former guarantees material-compatible gliding without cracks and creases. Angle scale provided on each bending former and mark on the back former ensure precise bending. Rapid change of bending formers and back formers. Bending formers and back formers for different sizes, materials and bending radii (page 143). Bending formers and back formers REMS Curvo 50 (Ø 35 R 100, Ø 42 R 140, Ø 50 R 135, Ø 1" R 100, Ø 1¼" R 140): Form and pressure resistant bending formers in ductile iron and back formers in highstrength, high-slide glass-fibre reinforced polyamide.

#### Drive

Robust, maintenance-free gear. Final point safety in both directions through safety slipping clutch. Proven, powerful universal motor, 1000 W. Right and left-hand rotation. Stepless electronic safety switch for rapid and creep speed operation.

#### **Bending lubricant**

REMS bending spray ensures a permanent lubricating film for reducing energy expenditure and uniform bending. High-pressure-proof, acid-free. CFC-free, so ozone-harmless.











### Supply format

**REMS Curvo 50 Basic-Pack.** Electric pipe and tube bender Ø 10–50 mm, up to 90°. Steel pipes EN 10255 Ø  $\frac{1}{4}$ –1 $\frac{1}{4}$ ", stainless steel pipes EN ISO 1127, EN 10217-7, Ø  $\frac{1}{2}$ –1 $\frac{1}{4}$ ", s  $\leq$  2.6 mm, hard, semi-hard, soft copper pipes, Ø 10–42 mm, thin-walled copper pipes Ø 10–35 mm, thick-walled copper pipes K65 for refrigeration and air conditioning technology EN 12735-1 Ø  $\frac{3}{4}$ –1 $\frac{5}{6}$ ", pipes of the press fitting systems of stainless steel Ø 12–42 mm, carbon steel Ø 12–42 mm, coated carbon steel Ø 12–28 mm, composite tubes Ø 14–50 mm, etc. Drive unit with maintenance-free gear and safety slipping clutch, universal motor 230 V or 110 V, 50–60 Hz, 1000 W, stepless electronic safety switch, right and left-hand rotation. Adaptor block 35–50, Support 35–50, insert bolt. In sturdy carrying case.

ArtNo.	
580110	

Other voltages on request.

Description	ArtNo.
Bending formers and back formers see page 143.	
REMS Curvo 50 drive unit	580100
Adaptor block 35–50, Support 35–50, for bending formers and back formers Ø 35 R 100, Ø 42 R 140, Ø 50 R 135, Ø 1" R 100, Ø 1¼" R 140 (see page 143).	582110
Adaptor block 10–40, Support 10–40, for bending formers and back formers REMS Curvo, REMS Curvo 22V, REMS Sinus (see page 143).	582120
Insert bolt	582036
REMS bending spray, 400 ml	140120
Carrying case with practical handles	590160
<b>Steel case</b> with insert for each bending former and back former R 100 and R 135/R 140, 90°	586012





Universal, mobile electric tool for cold bending of pipes up to 180°. Can be used anywhere, without vice. For trade and industry. For the building site and the workshop. Li-Ion 22V Technology. For battery and corded operation.

Hard, half-hard, soft copper tubes	
also thin-wall	Ø 10–28 mm
	Ø 3⁄8 – 11⁄8"
Coated soft copper tubes,	
also thin-wall	Ø 10–18 mm
Thick-walled copper pipes K65	
for refrigeration and air conditioning	
technology EN 12735-1	Ø 3⁄8 – 11⁄8"
Pipes of press fitting systems made of	
stainless steel	Ø 12–28 mm
Carbon steel, also coated	Ø 12–28 mm
Soft precision steel tubes	Ø 10–28 mm
Steel pipes EN 10255	Ø ¼ – ¾ "
Electric conduit EN 50086	Ø 16–25 mm
Multi-layer composite tubes	Ø 14–40 mm

REMS Curvo 22V – wrinkle-free bending of pipes. Mobile, handy, light. Universal for many pipe types. Ready to use immediately without setting. Fast and creep speed with immediate stop for precise bending. Quick change of bending and back formers. Li-Ion 21.6V, 5.0 Ah battery, for approx. 90 pipe bends of the stainless steel Ø 22 mm press fitting systems

#### with one battery charge\*.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Mains independent. Specially suited for tubes of pressfitting systems, for hard and half-hard copper tubes and for thin-walled copper heating tubes according to EN 1057.

#### System advantage

Only one type of bending and back formers for REMS Curvo 22V, REMS Curvo, REMS Curvo 50 and REMS Sinus. Therefore simple, inexpensive stocking. No confusion possible.

#### Cost advantage

Bender cost recovered after a small number of bends. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Compact, mobile, handy electric tool with integral absorbtion of torque during bending. Super light, drive machine with battery pack weights only 8.5 kg. Electronic charging status check with low discharge protection. Practical D-shaped handle with soft grip. Can be used anywhere, anytime. No setting. Simple, effortless, fast working, e.g. 90° bend Ø 22 mm only 6 s. Fast and creep speed with immediate stop for precise bending. Overbend, double bend, tier bend, reversed bend possible. Height adjustable machine support as accessory.

#### Bending formers and back formers

Form and pressure resistant, in high-strength, high-slide, glass-fibre reinforced polyamide. Optimum matching of bending former and back former guarantees material-compatible gliding without cracks and creases. Angle scale 0 to 180° provided on each bending former and mark on the back former ensure precise bending. Rapid change of bending formers and back formers. Bending formers and back formers for different sizes, materials and bending radii (page 143).

#### Drive

Robust, maintenance-free gear. Final point safety in both directions through safety slipping clutch. Powerful battery motor 21.6 V, with large power reserve, 500 W output. Right and left-hand rotation. Stepless electronic safety switch for fast and creep speed, with immediate stop. Machine status check with overload protection of the drive unit against too high currents, with overheating protection by motor temperature monitoring (NTC), with electronic battery charging status check with charging level indication by a 2-coloured green/red LED.

#### Battery or mains operation

Li-lon 22 V Technology. Highly resistant Li-lon 21.6V battery with 4.4, 5.0 or 9.0 Ah capacity, for long service life. Light and powerful. Li-lon 21.6V, 4.4 Ah battery, for approx. 79 pipe bends, 5.0 Ah battery, for approx. 90 pipe bends, 9.0 Ah for approx. 160 pipe bends of the stainless steel  $\emptyset$  22 mm press fitting systems with one battery charge\*. Graduated charging status check by coloured LEDs. Operating temperature range – 10 to + 60 °C. No memory effect for maximum battery power. Rapid charger 100–240V, 90W. Rapid charger 100–240V, 290W, for shorter charging times, as accessory. Voltage supply 220–240V/21.6V, 40 A output, for mains operation instead of Li-lon battery 21.6 V, as accessory.







## **REMS Curvo 22V**

#### **Bending lubricant**

REMS bending spray ensures a permanent lubricating film for reducing energy expenditure and uniform bending. High-pressure-proof, acid-free. CFC-free, so ozone-harmless



#### Supply format

REMS Curvo 22V Set. Cordless tube bender Ø 10-40 mm, Ø ¼-11/8", to 180°. Hard, semi-hard, soft copper pipes, also thin-walled, Ø 10-28 mm, Ø 3/8-11/8", soft coated copper pipes, also thin-walled, Ø 10-18 mm, thick-walled copper pipes K65 for refrigeration and air conditioning technology EN 12735-1 Ø % – 1/%", pipes of the press fitting systems of stainless steel Ø 12 – 28 mm, carbon steel, also coated, Ø 12 – 28 mm, soft precision steel pipes Ø 10 – 28 mm, steel pipes EN 10255 Ø % – %", electrical installation pipes EN 50086 Ø 16 – 25 mm, composite tubes Ø 14–40 mm, etc. Drive machine with D-shaped handle, maintenance-free gear with safely slipping clutch, powerful battery motor 21.6 V, stepless, electronic safety switch with immediate stop, right and left-hand rotation. Machine status check with overload protection, temperature monitoring, battery charging status check. Li-lon 21.6V, 5.0 Ah battery, 100-240V, 50-60 Hz, 90W rapid charger. Insert bolt. Bending and back formers. In sturdy steel case.

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Description	ArtNo.
Set 15 + 18 + 22	580051
Set 15 + 18 + 22 + 28 <sup>1)</sup>	580052
Set 15 + 18 + 22 + 28 <sup>2)</sup>	580053
Set 15 + 18 + 22 + 28 <sup>3)</sup>	580054
Set 12 + 15 + 18 + 22	580055
Set 12 + 15 + 18 + 22 + 28 <sup>1)</sup>	580056
Set 12 + 15 + 18 + 22 + 28 <sup>2)</sup>	580057
Set 15 + 22 + 28 <sup>1)</sup>	580058
Set 15 + 22 + 28 <sup>2)</sup>	580059
Set 17 + 20 + 24	580060
Set 12 + 14 + 16 + 18 + 22	580061
Set 12 + 14 + 16 + 18 + 22 + 28 <sup>1)</sup>	580062
Set 12 + 14 + 16 + 18 + 22 + 28 <sup>2)</sup>	580063
Set 14 + 16 + 18 + 22 + 28 <sup>1)</sup>	580064
Set 14 + 16 + 18 + 22 + 28 <sup>2)</sup>	580065
Set <sup>3</sup> / <sub>8</sub> + <sup>1</sup> / <sub>2</sub> + <sup>5</sup> / <sub>8</sub> + <sup>3</sup> / <sub>4</sub> + <sup>7</sup> / <sub>8</sub> "	580066
Set 16 + 20 + 26 + 32	580067
Set 16 + 20 + 25 + 32	580068
Set 20+25+32	580069
Basic-Pack (without bending and back formers)	580014

Basic-Pack (without bending and back formers)

Other voltages on request.

- REMS Curvo 22V Set delivered with the smaller radius bending and back former (except Art.-No. 580069), see page 143.
- <sup>10</sup> Bending former and back former 28, R102, Art. No. 581070, for hard, semi-hard copper pipes, also thin-walled. See page 143.
   <sup>21</sup> Bending former and back former 28, ¾" (DN 20), R102, Art. No. 581260, for hard copper pipes Ø 28 mm, Ø 1½", pipes of the press fitting systems
- of stainless steel/carbon steel Ø 28 mm. See page 143.
- <sup>3)</sup> Bending former and back former 28, <sup>3</sup>/<sub>4</sub>" (DN 20), R114, Art. No. 581310, for hard, semi-hard copper pipes Ø 28 mm, pipes of the press fitting systems of stainless steel/carbon steel Ø 28 mm, steel pipes  $\frac{3}{2}$ ". According to DVGW work sheet GW 392 for hard and semi-hard copper pipes Ø 28 mm minimum bending radius 114 mm necessary. Wall thickness  $\geq$  0.9 mm. See page 143.

Description	ArtNo.								
Bending formers and back formers see page 143.									
REMS Curvo 22V drive unit,									
without battery	580004								
Battery Li-lon 21.6 V, 4.4 Ah	571574								
Battery Li-lon 21.6 V, 5.0 Ah	571581								
Battery Li-lon 21.6 V, 9.0 Ah	571583								
Rapid charger 100–240V, 50–60Hz, 90W	571585								
Rapid charger 100–240V, 50–60Hz, 290W	571587								
Voltage supply 220-240V/21.6V, 50-60Hz, 40A,									
for mains operation instead of battery Li-lon 21.6V	571578								
Insert bolt	582036								
REMS bending spray, 400 ml	140120								
Steel case with inlay	566030								
Machine support 3B, height adjustable, on tripod	586100								
Machine support WB, height adjustable,									
for mounting on work bench 586150									
REMS Lumen 2800 22V, cordless LED flood light, see	bage 111								





Universal, robust hand tool for cold bending up to 180°. Can be used anywhere. For trade and industry. For the building site and the workshop.

Hard, half-hard, soft copper tubes, also thin-wall	Ø 10−22 mm Ø ¾−%"
Coated soft copper tubes, also thin-wall	Ø 10–18 mm
Pipes of press fitting systems made of stainless steel, carbon steel (coated) Carbon steel	Ø 12–18 mm Ø 12–22 mm
Soft precision steel tubes	Ø 10–20 mm
Electric conduit EN 50086	Ø 16–20 mm
Multi-layer composite tubes	Ø 14 – 32 mm

REMS Sinus – wrinkle-free bending. Universal for many tubes. Easy bending through long lever arms. Selectable lever positioning ensures optimum bending position and power transmission. Only one type of bending and back formers for REMS Sinus and REMS Curvo.

#### Universal use

For sanitary, heating, air conditioning, refrigerating and hydraulic applications. Specially suited for tubes of pressfitting systems, for hard and half-hard copper tubes and for thin-walled copper heating tubes according to EN 1057.

#### System advantage

Only one type of bending and back formers for REMS Curvo 22V, REMS Curvo, REMS Curvo 50 and REMS Sinus. Therefore simple, inexpensive stocking. No confusion possible.

#### Cost advantage

Bender cost recovered after a small number of bends. No costs for fittings, storage, procurement. Savings in soldering joints, pressing joints and working hours. Higher safety thanks to fewer pipe joints.

#### Design

Compact, handy unit of bender drive and bending tools. Can be used anywhere, in parallel vice or free hand as double-hand-bender. Easy bending through long lever arms. Selectable lever positioning ensures optimum bending position and power transmission. Robust design, drive unit in hardened steel for high stress. Simple and rapid changing of bending and back formers. Crossover, swan-neck and U-bends possible.

#### Bending formers and back formers

For different pipe sizes, materials and bending radii, see page 143.

#### Bending lubricant

REMS bending spray ensures a permanent lubricating film for reducing energy expenditure and for uniform bending. High-pressure-proof, acid-free. CFC-free, so ozone-harmless.

#### Supply format

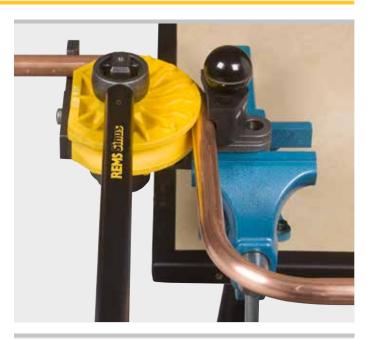
**REMS Sinus Set.** Hand tube bender Ø 10–32 mm, Ø  $\frac{3}{4}$ – $\frac{3}{4}$ ", up to 180°. Hard, half-hard, soft copper tubes, also thin-wall Ø 10–22 mm, Ø  $\frac{3}{4}$ – $\frac{3}{4}$ ", coated soft copper tubes, also thin-wall Ø 10–18 mm, pipes of the press fitting systems made of stainless steel, carbon steel (coated) Ø 12–18 mm, soft precision steel tubes Ø 10–22 mm, soft precision steel tubes, Ø 10–20 mm, electric conduit EN 50086, Ø 16–20 mm, multi-layer composite tubes Ø 14–32 mm and others. Drive unit, insert bolt. Bending formers and back formers. REMS bending spray. In sturdy steel case.

Description	ArtNo.	
Set 15+18+22	154001	
Set 14+16+18	154002	
Set 12 + 15 + 18 + 22	154003	
Set 10 + 12 + 14 + 16 + 18 + 22	154004	
Basic-Pack	15 ( 010	

(without bending and back formers and bending spray) 154010 REMS Sinus Set is delivered with bending formers and back formers of the smaller radius, see page 143.

#### Accessories

Description	ArtNo.
Bending and back formers see page 143.	
Insert bolt	582036
REMS Curvo drive unit	580000
REMS Sinus drive unit	154000
REMS bending spray, 400 ml	140120
Steel case with inlay	154160









## **Bending formers and back formers**

Accessories for REMS Curvo 50, REMS Curvo, REMS Curvo 22 V and REMS Sinus

Bending formers and back formers, 180°, form and pressure resistant, in high-strength, high-slide, glass-fibre reinforced polyamide or aluminum 90° (Ø 21.3 R 103, Ø 26.9 R 102, Ø 33.7 R 100, Ø 35 R 100, Ø 42 R 140, Ø 42.4 R 140, Ø 50 R135, Ø 1" R100, Ø 1¼" R140). Optimum matching of bending former and back former guarantees material-compatible gliding without cracks and creases. Angle scale provided on each bending former and mark on the back former ensure precise bending. Rapid change of bending formers and back formers.



10       40       45       20       P <th></th> <th></th> <th></th> <th></th> <th>Jer</th> <th></th> <th>R</th> <th>EM</th> <th>S Sii</th> <th>nus</th> <th>5</th> <th></th> <th></th> <th colspan="5">REMS Curvo REMS Curvo 22 V</th> <th></th> <th></th> <th>R</th> <th>EM</th> <th>IS</th> <th>Cur</th> <th></th> <th></th> <th></th>					Jer		R	EM	S Sii	nus	5			REMS Curvo REMS Curvo 22 V							R	EM	IS	Cur														
12       45       45       22       P <th>and back former for pipes</th> <th></th> <th>mm</th> <th>mm</th> <th>Bending former material</th> <th>Cu</th> <th>Cu-U</th> <th>St 10312 C+ 10205 11</th> <th>St 10305-0</th> <th>St 10255</th> <th>St 50086 V</th> <th></th> <th></th> <th>Cu-U</th> <th>St 10312</th> <th>St 10305-U</th> <th>St 10305 St 10255</th> <th>St 50086</th> <th>&gt;</th> <th>Cu</th> <th>Cu 12735</th> <th>Cu-U C+10313</th> <th>St 10312 St 10305-11</th> <th>St 10305</th> <th>St 10255</th> <th>St 50086</th> <th>&gt;</th> <th>Cu</th> <th>Cu 12735</th> <th>St 10312</th> <th>St 1127</th> <th>St 10305-U</th> <th>St 10305</th> <th>St 10255</th> <th>St 50086</th> <th>&gt;</th> <th>ArtNo.</th> <th></th>	and back former for pipes		mm	mm	Bending former material	Cu	Cu-U	St 10312 C+ 10205 11	St 10305-0	St 10255	St 50086 V			Cu-U	St 10312	St 10305-U	St 10305 St 10255	St 50086	>	Cu	Cu 12735	Cu-U C+10313	St 10312 St 10305-11	St 10305	St 10255	St 50086	>	Cu	Cu 12735	St 10312	St 1127	St 10305-U	St 10305	St 10255	St 50086	>	ArtNo.	
12       45       49       22       P <td>10</td> <td>40</td> <td>45</td> <td>20</td> <td>Р</td> <td>•</td> <td></td> <td></td> <td>•</td> <td></td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td>•</td> <td>•</td> <td>Γ</td> <td></td> <td>•</td> <td></td> <td></td> <td>Т</td> <td>•</td> <td>Γ</td> <td></td> <td></td> <td></td> <td></td> <td>Т</td> <td>Т</td> <td>Т</td> <td></td> <td></td> <td></td> <td></td> <td>581400</td> <td></td>	10	40	45	20	Р	•			•		Т					•	•	Γ		•			Т	•	Γ					Т	Т	Т					581400	
15, 12 U       55       56       28       P <td< td=""><td>12</td><td>45</td><td>49</td><td>22</td><td>Р</td><td>•</td><td></td><td>•</td><td>•</td><td></td><td></td><td></td><td>•</td><td>i</td><td>•</td><td>•</td><td>•</td><td>İ</td><td>i</td><td>•</td><td></td><td>•</td><td>•</td><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td>L.</td><td>i i</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	12	45	49	22	Р	•		•	•				•	i	•	•	•	İ	i	•		•	•	•							L.	i i						
15, 12 U       55       56       28       P <td< td=""><td>14. 10 U. ¼" (DN 6)</td><td>50</td><td>53</td><td>23</td><td>Р</td><td>٠</td><td>•</td><td></td><td>•</td><td></td><td>•</td><td>•</td><td></td><td>•</td><td></td><td>•</td><td></td><td>Г</td><td>•</td><td>•</td><td>•</td><td>•</td><td></td><td>•</td><td>•</td><td></td><td>•</td><td></td><td></td><td></td><td>Т</td><td>Т</td><td></td><td></td><td></td><td></td><td>581420</td><td></td></td<>	14. 10 U. ¼" (DN 6)	50	53	23	Р	٠	•		•		•	•		•		•		Г	•	•	•	•		•	•		•				Т	Т					581420	
16, 12 U       60       62       28       P <td< td=""><td></td><td>55</td><td>56</td><td>25</td><td>Р</td><td>•</td><td></td><td>• •</td><td>•</td><td></td><td></td><td>•</td><td>•</td><td></td><td>•</td><td>• •</td><td>•</td><td>t i</td><td></td><td>•</td><td></td><td></td><td></td><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td>,</td><td></td><td></td><td></td><td></td><td></td><td>581430</td><td></td></td<>		55	56	25	Р	•		• •	•			•	•		•	• •	•	t i		•				•							,						581430	
17, 15 U       56       60       27       P       • <td< td=""><td></td><td></td><td></td><td>_</td><td>Р</td><td>٠</td><td>•</td><td></td><td>•</td><td></td><td>• •</td><td>•</td><td>•</td><td>•</td><td></td><td>•</td><td>•</td><td>•</td><td>٠</td><td>•</td><td>•</td><td>•</td><td></td><td>٠</td><td></td><td>•</td><td>•</td><td></td><td></td><td></td><td>Т</td><td>Т</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				_	Р	٠	•		•		• •	•	•	•		•	•	•	٠	•	•	•		٠		•	•				Т	Т						
18, 14 (J, 15 U, %" (DN 10)       70       75       33       P       •       <				-	P			•	,		•	,				•			•				•	,			•			t.	Ť.							
20, 16 U, 18 U       75       80       36       P       •	,					•	•	•	•		•			•	•			П	•	•				•	•		•					Т			_			
21.3 % (s = 1.6/2.0/2.6)       103       110       50       S       <											• •			•		•		•	•	•	-	•				•	-			-	Ť.				-			
22,18 U, W <sup>+</sup> (DN 15)       77       81       36       A       A       A       A       A       S81460         22,18 U, W <sup>+</sup> (DN 15)       88       91       41       P       A       A       A       A       S81470         22, 22 U       75       85       38       P       A       A       A       S81130         25       98       103       46       P       A       A       A       A       S81180         26.9 (% (s = 1.6/2.0/2.6)       102       108       49       S       S81260       S81270         28, W (DN 20) <sup>20</sup> 102       108       49       S       S81260       S81260         28, W (DN 20) <sup>20</sup> 110       50       A       S81260       S81260       S81260         28, W (DN 20) <sup>20</sup> 114       120       54       A       S81260       S81260       S81260         32       98       105       47       P       S81300       S81520       S81520         32       114       121       54       A       S81300       S81520       S81520         33.7, 1' (s = 1.6/2.0/2.6)       100       105       47       S       S81300 <t< td=""><td></td><td>-</td><td></td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td><td>-</td><td>1</td><td>1</td><td>1</td><td></td><td>1</td><td>T</td><td>Ē</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>-</td><td></td><td></td><td>I.</td><td>_</td><td></td><td></td><td>۲</td><td>F</td><td></td><td></td></t<>		-				-	-				-	1	1	1		1	T	Ē		-						-	-	-			I.	_			۲	F		
22, 18 U, ½* (DN 15)       88       91       41       P <ul> <li>             •</li>             •</ul>						•	•		•					•	•					•					•													
24, 22 U       75       85       38       P       • <td< td=""><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>•</td><td></td><td></td><td>Ē</td><td></td><td>-</td><td>_</td><td></td><td>-</td><td>-</td><td></td><td></td><td>_</td><td>_</td><td>_</td><td>_</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>						-	-							-	•			Ē		-	_		-	-			_	_	_	_	_							
25       98       103       46       P <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>-</td> <td>-</td> <td>_</td> <td>-</td> <td></td> <td></td> <td>-</td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>												_	_	-	-	_	-			-		-	-				_	_			-							
26       98       108       49       A       \$													_			-				-			-				_			t	T	-						
26.9, ¼° (s = 1.6/2.0/2.6)       102       108       49       S       S81490         28"       102"       108       49       P       S81490       S81490         28, ¾° (DN 20)"       102       110       50       A       A       S81310         28, ¾° (DN 20)"       112       102       54       A       A       S81310         30, 28 U       98       105       47       P       C       A       A       S81320         32       98       105       47       P       C       A       A       S81320         32       98       100       105       47       S       S       S81520       S81520         32       101       105       47       S       S       S81520       S81520         33.7, 1° (s = 1.6/2.0/2.6)       100       105       47       S       S       S81500       S81520         35       140       150       68       A       S8150       S8150       S8150         42.4       140       155       70       S       S8150       S8150       S8150         1¼' (DN 32)       140       150       68       S       S8150<					· ·						_	_				_	-			-			+	-		-	_	_		1								
28 <sup>10</sup> 102 <sup>31</sup> 108       49       P										-									-		-		-	-	-		-			T.				-				
28, %' (DN 20) <sup>21</sup> 102       110       50       A       S81300       30.28 U       98       110       50       P       C       C       A       A       S81200       33.37.1" (s = 1.6/2.0/2.6)       100       105       47       S       S       S81520       S81520       S81520       S81520       S81520       S81520       S81520       S81530       S81530 <td></td> <td></td> <td></td> <td></td> <td>· · ·</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td>					· · ·											-													-					-				
28, % ' (DN 20) <sup>2</sup> 114       120       54       A       S81300       A       A       A       S81520       A       A       S81520       A       A       S81520       B								-		-	-		_							-	-						_	-								-		
30, 28 U       98       105       47       P       • <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>-</td><td>_</td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td>_</td><td>_</td><td>-</td><td>-</td><td></td><td>_</td><td>_</td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td>_</td><td></td><td></td><td></td><td></td></t<>											-	-	_					-				_	_	-	-		_	_	-	-		-	-	_				
32       98       110       50       P <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td>-</td> <td>-</td> <td></td> <td>-</td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>•</td> <td>_</td> <td>•</td> <td></td> <td>-</td> <td>•</td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td>							-	-		-	-		-			_				•	_	•		-	•		_	_			•					-		
32       114       121       54       A       A       581320         1'' (DN 25)       100       105       47       S <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td>-</td><td>-</td><td>-</td><td>•</td><td></td><td></td><td>•</td><td>-</td><td>-</td><td></td><td></td><td>-</td><td>-</td><td>•</td><td>'</td><td></td><td></td><td>-</td><td><b>A</b></td><td>-</td><td>-</td><td></td><td></td><td></td><td></td><td>_</td><td>-</td><td></td><td></td></t<>								-		-	-	-	•			•	-	-			-	-	•	'			-	<b>A</b>	-	-					_	-		
1''(DN 25)       100       105       47       S       581520         33.7, 1''(s = 1.6/2.0/2.6)       100       105       47       S       581520         35       100       105       47       S       581520         35       100       105       47       S       581520         35       140       150       68       A       581500         40       148       67       A       581500       581500         42       140       155       70       S       581500       581530         11% "(DN 32)       140       150       68       S       581530       581530         42.4, 1% "(s = 2.0/2.6)       140       150       68       S       581530       581530         50       135       143       64       S       581530       581530         42.4, 1% "(s = 2.0/2.6)       140       150       68       S       581540         %" (9.5mm)       43       48       2       P       581200       581200         ½" (12.7mm)       52       60       27       P       6       4       581200         ½" (12.7mm)       78       237										_	•				_						_	_	-		-		_											
33.7, 1° (s = 1.6/2.0/2.6)       100       105       47       S						_		_		_	_	•	•			_		•	•		_	_	_	_			•	<b>A</b>	_	-		-		-				<u> </u>
35       100       105       47       S </td <td>,</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>_</td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>_</td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td><u> </u></td>	,							_		_	_										_	_	_		_									_				<u> </u>
35       140       150       68       A       A       A       A       A       S81350         40       140       148       67       A       A       S81330       S81330         42       140       155       70       S       S       S8150       S8150         11% (DN 32)       140       150       68       S       S8150       S8150       S8150         42.4, 1% (s = 2.0/2.6)       140       150       68       S       S8150       S8150       S8150         50       135       143       64       S       S8150       S8150       S8150         %" (9.5mm)       43       48       22       P       O       O       A       S8120         ½" (12.7mm)       52       60       27       P       O       A       S8120         ½" (12.7mm)       63       70       32       P       O       A       S8120         ½" (12.7mm)       63       70       32       P       O       A       S8120         ½" (12.7mm)       75       82       37       P       O       A       S8120         ½" (12.7mm)       70       2	,							_		_	_		_			_	_	_			_	_	_	_				_	_	_								
40       140       148       67       A       A       A       S8130         42       140       155       70       S       S       S8150       S8150         114"       150       68       S       S       S8150       S8150       S8150         42.4.11/" (s = 2.0/2.6)       140       150       68       S       S8150       S8150       S8150         50       135       143       64       S       S8150       S8150       S8150         58170       52       60       27       P       S8120       A       S8120         58170       32       P       S8170       S8120       A       S8120         58120       S8170       S8120       A       S8130       S8130								_		_	_		_								_	_	_	_			_			-		_						
42       140       155       70       S </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td></td> <td></td> <td>_</td> <td>_</td> <td>_</td> <td></td> <td></td> <td>_</td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>_</td> <td><b>A</b></td> <td>_</td> <td></td> <td><u>۱</u></td> <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								_				•				_	_	_			_		_				_	<b>A</b>	_		<u>۱</u>	_						
140       150       68       5       581530         42.4, 1¼" (s = 2.0/2.6)       140       150       68       5       581530         50       135       143       64       5       581530       581530         50       135       143       64       5       581540       581540         %" (9.5 mm)       43       48       22       P       •       •       •       •       581540         %" (9.5 mm)       43       48       22       P       •       •       •       •       •       •       581200         ½" (12.7 mm)       52       60       27       P       •       •       •       •       •       •       581200         ½" (12.7 mm)       52       60       27       P       •       •       •       •       •       581200         ½" (12.7 mm)       63       70       32       P       •       •       •       •       •       581200         ½" (12.7 mm)       78       82       37       P       •       •       •       •       581200         ½" (22.2 mm)       98       107       48       P																			•								_											
42.4, 1¼" (s = 2.0/2.6)       140       150       68       S       50       581530         50       135       143       64       S       581540       581540         %" (9.5 mm)       43       48       22       P       •       •       •       •       581540         %" (9.5 mm)       43       48       22       P       •       •       •       •       •       581200         ½" (12.7 mm)       52       60       27       P       •       •       •       •       •       581200         ½" (15.9 mm)       63       70       32       P       •       •       •       •       •       581220         ¾" (19.1 mm)       75       82       37       P       •       •       •       •       •       581220         ¾" (22.2 mm)       98       107       48       P       •       •       •       •       •       581230         1" (22.4 mm)       101       112       50       P       •       •       •       •       581370         1%" (28.6 mm)       102       110       44       A       •       •       •																																						
50       135       143       64       S </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td></td>																																		_				
3/a" (9.5 mm)       43       48       22       P       •																																						
½" (12.7 mm)       52       60       27       P	50	135	143	64	S																																581540	
½" (12.7 mm)       52       60       27       P	¾" (9.5 mm)	43	48	22	Р	•							•							•	•								•	Γ							581200	
53       70       32       P						•							•					Í.		•	•		T							İ.	Ť.							
34" (19.1 mm)       75       82       37       P       •       •       •       •       •       581230         7%" (22.2 mm)       98       107       48       P       •       •       •       •       •       581230         7%" (22.2 mm)       98       107       48       P       •       •       •       •       581240         1" (25.4 mm)       101       112       50       P       •       •       •       •       581370         1%" (28.6 mm)       102       110       44       A       •       •       •       •       •       581260         1%" (28.6 mm)       115       117       53       A       •       •       •       •       •       581380         1%" (31.8 mm)       114       123       55       A       •       •       •       •       •       581320         1%" (34.9 mm)       100       105       47       S       •       •       •       •       •       581500						•		T				•	•			T		Ē		•	•	T	T		1		_		_	T	T	1						
%" (22.2 mm)       98       107       48       P       •       •       •       •       •       581240         1" (25.4 mm)       101       112       50       P       •       •       •       •       •       581370         1%" (28.6 mm)       102       110       44       A       •       •       •       •       •       581370         1%" (28.6 mm)       115       117       53       A       •       •       •       •       •       581380         1%" (31.8 mm)       114       123       55       A       •       •       •       •       •       •       581320         1%" (31.8 mm)       133       145       65       A       •       •       •       •       •       581390         1%" (34.9 mm)       100       105       47       S       •       •       •       •       •       •       581500					· ·	•						•	•					Í.		•	•			1						t	Ť.							
1° (25.4 mm)       101       112       50       P						_						-	_			T		Ē		-	•						_	_	_	Ť	T							
1½" (28.6 mm)       102       110       44       A       A       A       581260         1½" (28.6 mm)       115       117       53       A       A       A       581380         1¼" (31.8 mm)       114       123       55       A       A       A       581320         1¼" (31.8 mm)       133       145       65       A       A       A       581390         1%" (34.9 mm)       100       105       47       S       A       A       581500				-	· ·							_	_							-			+				_	_		t	t							
11% (28.6 mm)       115       117       53       A       A       A       A       581380         11% (31.8 mm)       114       123       55       A       A       A       581320         11% (31.8 mm)       133       145       65       A       A       A       581390         11% (31.8 mm)       133       145       65       A       A       A       581390         11% (34.9 mm)       100       105       47       S       A       A       581500													_			T		F		-	•		1			۲		-		T	T	1						
114       123       55       A       A       A       581320         114''(31.8 mm)       133       145       65       A       A       A       581320         114''(31.8 mm)       133       145       65       A       A       A       581320         114''(31.8 mm)       100       105       47       S       A       A       A       581320         114''(31.8 mm)       100       105       47       S       A       A       A       A       581320         116''(34.9 mm)       100       105       47       S       A       A       A       A       581500												-	_								-							_	-									
11% (31.8 mm)       133       145       65       A       A       A       581390         1% (34.9 mm)       100       105       47       S       A       A       581500					_								_					F		-							_	_	•	F	T		2			۲		
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1%" (34.9 mm) 140 150 68 A ● ● A A A 581350 1%" (41.3 mm) 140 155 70 S A A A A 581510								-		-	-	-									-	-	-				_		_	-	-							

Rmm	Bending radius mm at the neutral axis of the bend (DVGW GW 392)
Xmm	Correction dimension for a 90° or 45° bend
s mm	Wall thickness
1)	hard, semi-hard copper pipes, also thin-walled, EN 1057
2)	hard copper pipes EN 1057
3)	According to DVGW work sheet GW 392 for hard and semi-hard copper pipes
	Ø 28 mm minimum bending radius 114 mm necessary. Wall thickness $\geq$ 0.9 mm.
<b>A</b>	Adaptor block 10–40, support 10–40 (ArtNo. 582120) necessary.
	Adaptor block 35–50, support 35–50 (ArtNo. 582110) necessary.
Cu:	hard, half-hard, soft copper tubes, also thin-wall, EN 1057
Cu 12735:	Copper pipes K65 for refrigeration and air conditioning technology
	in accordance with EN 12735-1, EN 12449
St 10312:	stainless steel pipes of the press fitting systems EN 10312, series 2,
	EN 10088, EN 10217-7
St 1127:	stainless steel pipes EN ISO 1127, EN 10217-7
St 10305-U:	coated, soft carbon steel pipes of the press fitting systems EN 10305-3
St 10305:	soft precision steel pipes EN 10305-1, EN 10305-2, EN 10305-3,
	carbon steel pipes EN 10305-3
St 10255:	Steel pipes (threaded pipes) EN 10255
St 50086:	Electrical installation pipes DIN EN 50086
U:	coated
V:	multi-layer composite tubes of pressfitting systems
P:	Bending former made of glass fibre-reinforced polyamide
A:	Bending former made of aluminium
S:	Bending former made of spheroidal iron

#### Bending to size

If a bend is required at a certain point on the pipe, a length correction must be made to suit the pipe size. The correction dimension X specified in Fig. 1 must be considered for a 90° or 45° bend. The set dimension L must be reduced by the amount X here. If, e.g., the dimension L for pipe size 22 is 400 mm and a bend with a bending radius of 77 mm is to be made, the dimension line should be marked on the pipe at 319 mm. This line is then – as shown in Fig. 1 – to be aligned with the 0-mark on the bending former.

