

Hydraulically operated stubs puller

Grippul



Quick attaching gripper tube pullers

Grippul series quick attaching gripper tube pullers, incorporating know-how from Maus Italia's more than thirty years experience in tube extraction with the **TP/30** and **TP/60** automatic pullers, have now reached their **second generation** with the **Grippul 11** and **Grippul 21**. The second generation Grippul feature significant innovations that improve the operating characteristics and strength of the tool set.

The **Grippul** is designed and built for **rapid extraction of tube stubs from tube sheets**.

The **Grippul**, available in electric or pneumatic versions, has integral remote control and is now available in the **second generation Grippul 11** and **Grippul 21** models, which differ in extraction force.

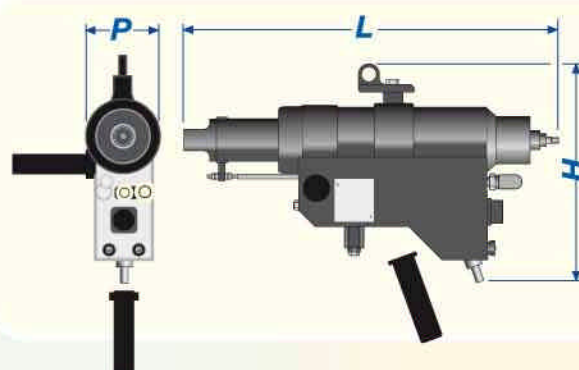
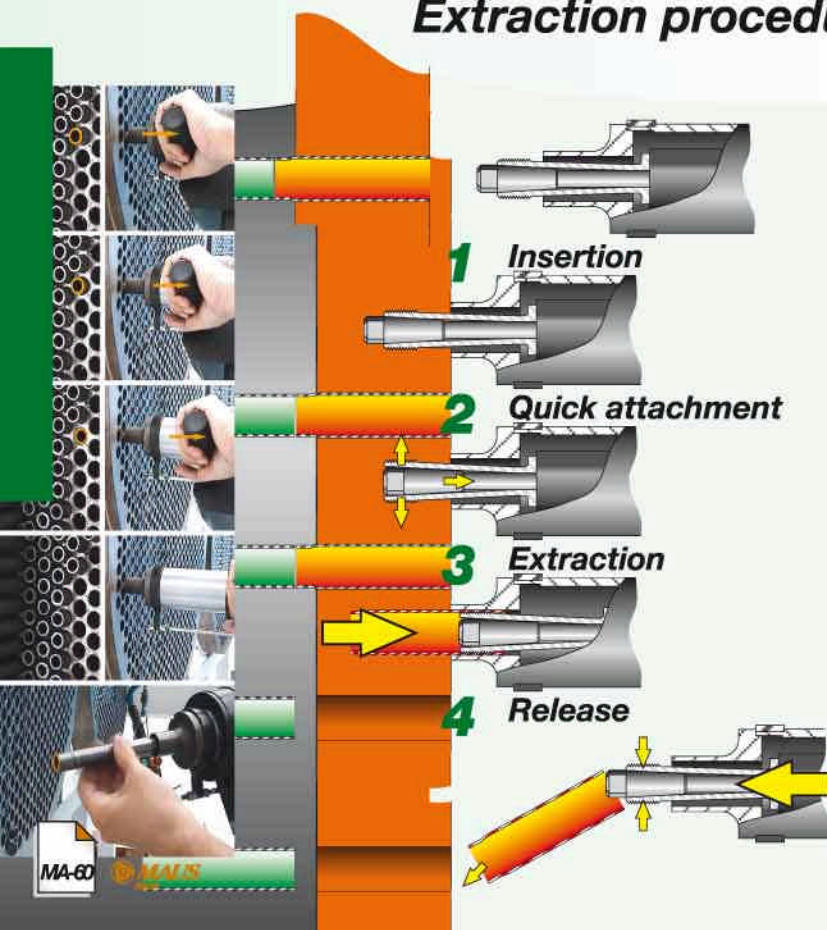
Flexible
Tolerance up to
1 mm (0.04") of iD

Quick
4÷6 extractions
per minute

Economical
Low
tool wear

High quality
No damage to hole
in the tube-sheet

Extraction procedure

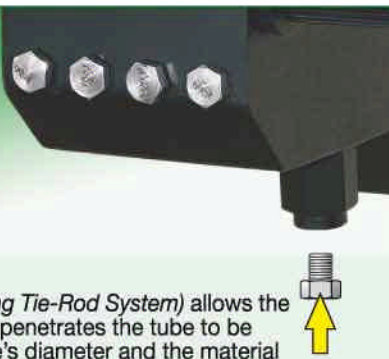


Comes complete with:

- Carrier case
- Set of spare gaskets
- Set of service spanners
- Pressure gauge
- Instruction booklet
- Set of service tools
- 2 (Two) hydraulic hoses:

Ø 9,5mm x 6m
Ø 3/8" x 19,7 ft





The **ABTS** (Anti-Breaking Tie-Rod System) allows the force with which the jaw penetrates the tube to be regulated to suit the tube's diameter and the material of which it is made. This device means the system is **unaffected by the difference in inside diameter of, as much as 1 mm (0.04")**, between tubes in the same sheet, preventing tie-rod breakage.



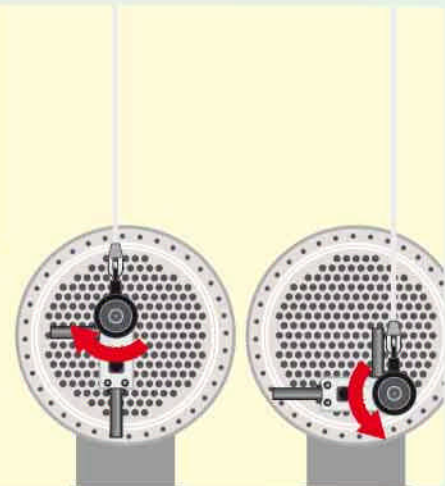
The **RC24** remote control beside the knobs **simplifies and speeds up stub extraction**. The remote control is fitted on both pneumatic and electric versions.



The electric **OPS** (Over Pressure Switch) cuts off hydraulic fluid delivery when the piston reaches the end of its stroke, **preventing unnecessary overpressure in the system**.



The **RSR** (revolving support ring) on which the Grippul is suspended during use allows **optimal positioning in the tightest spaces**.



Model	Tube		Maximum pulling force		Remote control power supply			Piston stroke		Max. pressure		Dimensions				Weight		Balancer	
	min	d _e → max	KN	Lb	Volt	Bar	Psi	mm	"	Bar	Psi	L		P		H			
	mm	"										mm	"	mm	"	mm	"		
Grippul 11 E	12,7 ÷ 38,1	1/2" ÷ 1.1/2"	10	22000	24	-	-	120	4.72"	350	5075	500	19.7"	113	4.45"	270	10.63"	23 51 55	TPB 10
Grippul 11 P	12,7 ÷ 38,1	1/2" ÷ 1.1/2"	10	22000	-	6,3	91.4	120	4.72"	350	5075	500	19.7"	113	4.45"	270	10.63"	23 51 -	TPB 10
Grippul 21 E	25,4 ÷ 63,5	1" ÷ 2.1/2"	20	44000	24	-	-	130	5.12"	350	5075	600	23.6"	130	5.12"	290	11.43"	34 75 55	TPB 20
Grippul 21 P	25,4 ÷ 63,5	1" ÷ 2.1/2"	20	44000	-	6,3	91.4	130	5.12"	350	5075	600	23.6"	130	5.12"	290	11.43"	34 75 -	TPB 20

TP10-E TP10-P

Semi-automatic Electrical and Pneumatical hydraulic pump unit



Model	Max. pressure *		Oil flow rate		Power supply	Remote control power supply	Dimensions			Weight		IP			
	bar	psi	Lt/min (bar)	US gpm (psi)			Width	Depth	High	Kg	Lb				
TP10-E	350	5075	12 (0÷70) 0,9 (70÷350)	3.17 (0÷1015 psi) 0.24 (1015÷5075 psi)	1,1Kw-230/400V-50/60Hz-3Ph	24	680	26.8"	520	20.5"	720	28.3"	82	181	30

Model	Max. pressure *		Oil flow rate		Power supply	Air pressure required	Dimensions			Weight					
	bar	psi	Lt/min (bar)	US gpm (psi)			Width	Depth	High	Kg	Lb				
TP10-P	350	5075	12 (0÷70) 0.9 (70÷350)	3.17 (0÷1015 psi) 0.24 (1015÷5075 psi)	1,7Kw-7 bar (67Cfm) 1900 Lt/min (67Cfm)	7	100	680	26.8"	460	18.1"	600	23.6"	82	181

* On request available also **700 Bar (10000 psi)** version

The **Grippul** can also be used with **TP/60** power units, providing considerably enhanced performance.

Hydraulically operated stubs puller



Grippul

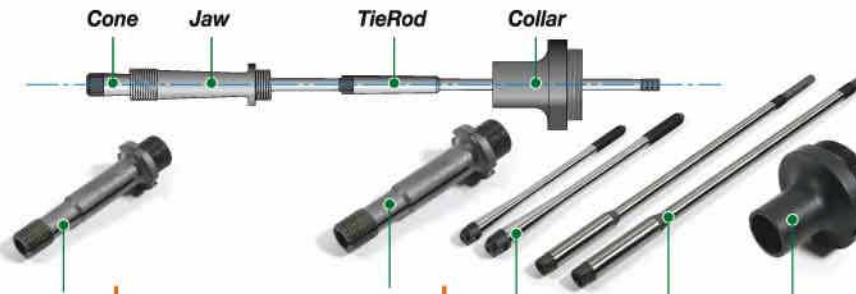
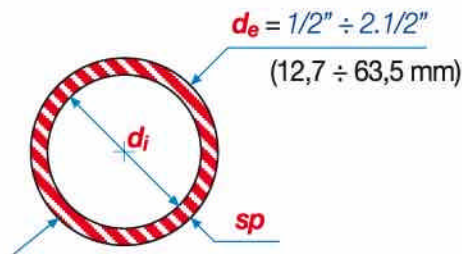
Tools



d_e " mm	Tube sp				Expansion		Jaw G11J Cod.	Expansion		Jaw G21J Cod.	Cone G11C Cod.	G21C Cod.	TieRod G11T Cod.	G21T Cod.	Collar TPC Cod.
	B.W.G.	"	mm	"	mm	" mm		" mm							
1/2" (12,7)	14	0.083	2,11	0.334	8,5	0.335÷0.393	8,5÷10,0	G11J-02	-	-	-	-	-	-	-
	16	0.065	1,65	0.370	9,4	-	-	-	-	-	-	-	-	-	-
	17	0.058	1,47	0.384	9,7	-	-	-	-	-	-	-	-	-	-
	18	0.049	1,24	0.402	10,2	0.347÷0.433	9,5÷11,0	G11J-02/A	-	-	-	G11C 02÷03	-	G11T 02÷03	-
	19	0.042	1,07	0.416	10,5	-	-	-	-	-	-	-	-	-	TPC-14
5/8" (15,9)	20	0.035	0,89	0.430	10,9	0.393÷0.472	10,5÷12,0	G11J-03	-	-	-	-	-	-	-
	14	0.083	2,11	0.459	11,7	0.452÷0.512	11,5÷13,0	G11J-04	-	-	-	-	-	-	-
	15	0.072	1,83	0.481	12,2	-	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	0.495	12,6	0.492÷0.551	12,5÷14,0	G11J-1	-	-	-	G11C 04÷2	-	G11T 04÷2	-
	18	0.049	1,24	0.527	13,4	-	-	-	-	-	-	-	-	-	TPC-18
3/4" (19,0)	19	0.042	1,07	0.541	13,7	-	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	0.555	14,1	0.551÷0.610	14,0÷15,5	G11J-2	-	-	-	-	-	-	-
	22	0.028	0,71	0.569	14,5	-	-	-	-	-	-	-	-	-	-
	12	0.109	2,77	0.532	13,4	0.531÷0.610	13,5÷15,5	G11J-2/A	0.531÷0.610	13,5÷15,5	G11J-2/A	-	-	-	-
	13	0.095	2,41	0.560	14,2	-	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	0.584	14,8	0.571÷0.650	14,5÷16,5	G11J-3	0.571÷0.650	14,5÷16,5	G11J-3	-	-	-	-
	15	0.072	1,83	0.606	15,3	-	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	0.620	15,7	0.610÷0.689	15,5÷17,5	G11J-4	-	-	-	G11C 2/A÷8	G11C 2/A÷8	G11T 2/A÷8	G21T 2/A÷8
7/8" (22,2)	18	0.049	1,24	0.652	16,5	-	-	-	-	-	-	-	-	-	TPC-21
	19	0.042	1,07	0.666	16,8	-	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	0.680	17,2	0.669÷0.748	17,0÷19,0	G11J-5	-	-	-	-	-	-	-
	22	0.028	0,71	0.694	17,6	-	-	-	-	-	-	-	-	-	-
	12	0.109	2,77	0.657	16,6	0.650÷0.728	16,5÷18,5	G11J-6	-	-	-	-	-	-	-
	14	0.083	2,11	0.709	18,0	-	-	-	-	-	-	-	-	-	-
1" (25,4)	16	0.065	1,65	0.745	18,9	0.728÷0.807	18,5÷20,5	G11J-7	-	-	-	G11C 2/A÷8	-	G11T 2/A÷8	-
	18	0.049	1,24	0.777	19,7	-	-	-	-	-	-	-	-	-	TPC-25
	19	0.042	1,07	0.791	20,0	-	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	0.805	20,4	0.787÷0.866	20,0÷22,0	G11J-8	-	-	-	-	-	-	-
	22	0.028	0,71	0.819	20,8	-	-	-	-	-	-	-	-	-	-
1" (25,4)	10	0.134	3,40	0.732	18,6	-	-	-	0.728÷0.846	18,5÷21,5	G21J-8/A	-	-	-	-
	12	0.109	2,77	0.782	19,8	0.767÷0.846	19,5÷21,5	G11J-9	0.768÷0.886	19,5÷22,5	G21J-9	-	-	-	-
	13	0.095	2,41	0.810	20,6	-	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	0.834	21,2	0.827÷0.906	21,0÷23,0	G11J-9/A	0.827÷0.945	21,0÷24,0	G21J-9/A	-	-	-	-
	15	0.072	1,83	0.856	21,7	-	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	0.870	22,1	0.866÷0.945	22,0÷24,0	G11J-10	0.866÷0.984	22,0÷25,0	G21J-10	G11C 8/A÷11	G21C 8/A÷11	G11T 8/A÷20	G21T 8/A÷11
	18	0.049	1,24	0.902	22,9	-	-	-	-	-	-	-	-	-	TPC-28
	19	0.042	1,07	0.916	23,2	-	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	0.930	23,6	0.925÷1.004	23,5÷25,5	G11J-11	0.925÷1.043	23,5÷26,5	G21J-11	-	-	-	-
	22	0.028	0,71	0.944	24,0	-	-	-	-	-	-	-	-	-	-

Critical extractions
Reached power limits

Depending on tube material and tube-sheet thickness
Choose bigger size



d_e " mm	Tube sp		d_i " mm	Expansion		Jaw G11J Cod.	Expansion		Jaw G21J Cod.	Cone		TieRod		Collar TPC Cod.
	B.W.G.	" mm		" mm	" mm		" mm	" mm		Cod.	Cod.	Cod.	Cod.	
1.1/4" (31,8)	10	0.134	3,40	0.982	25,0	-	-	0.965 ÷ 1.083	24,5 ÷ 27,5	G21J-12	-	-	-	-
	11	0.120	3,05	1.010	25,7	-	-	-	-	-	-	-	-	-
	12	0.109	2,77	1.032	26,2	-	-	-	-	-	-	-	-	-
	13	0.095	2,41	1.060	27,0	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	1.084	27,6	1.043 ÷ 1.122	26,5 ÷ 28,5	G11J-13	1.043 ÷ 1.161	G21J-13	-	-	-	-
	16	0.065	1,65	1.120	28,5	-	-	-	-	-	-	-	-	-
	18	0.049	1,24	1.152	29,3	1.102 ÷ 1.181	28,0 ÷ 30,0	G11J-14	1.102 ÷ 1.220	G21J-14	-	-	-	-
	19	0.042	1,07	1.166	29,6	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	1.180	30,0	1.161 ÷ 1.240	29,5 ÷ 31,5	G11J-15	1.161 ÷ 1.280	G21J-15	-	-	-	-
1.1/2" (38,1)	22	0.028	0,71	1.194	30,4	-	-	-	-	-	-	-	-	-
	8	0.165	4,19	1.170	29,7	-	-	1.161 ÷ 1.280	29,5 ÷ 32,5	G21J-16	-	-	-	-
	10	0.134	3,40	1.232	31,3	-	-	-	-	-	-	-	-	-
	11	0.120	3,05	1.260	32,0	-	-	1.240 ÷ 1.358	31,5 ÷ 34,5	G21J-17	-	-	-	-
	12	0.109	2,77	1.282	32,5	-	-	-	-	-	-	-	-	-
	13	0.095	2,41	1.310	33,3	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	1.334	33,9	-	-	1.299 ÷ 1.417	33,0 ÷ 36,0	G21J-18	-	-	-	-
	15	0.072	1,83	1.356	34,4	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	1.370	34,8	1.358 ÷ 1.437	34,5 ÷ 36,5	G11J-19	1.358 ÷ 1.476	G21J-19	-	-	-	-
	18	0.049	1,24	1.402	35,6	-	-	-	-	-	-	-	-	-
1.3/4" (44,4)	19	0.042	1,07	1.416	35,9	1.417 ÷ 1.496	36,0 ÷ 38,0	G11J-20	1.417 ÷ 1.535	G21J-20	-	-	-	-
	20	0.035	0,89	1.430	36,3	-	-	-	-	-	-	-	-	-
	22	0.028	0,71	1.444	36,7	-	-	-	-	-	-	-	-	-
	10	0.134	3,40	0.482	37,6	-	-	1.476 ÷ 1.594	37,5 ÷ 40,5	G21J-21	-	-	-	-
	11	0.120	3,05	1.510	38,3	-	-	-	-	-	-	-	-	-
	12	0.109	2,77	1.532	38,8	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	1.584	40,2	-	-	1.555 ÷ 1.673	39,5 ÷ 42,5	G21J-22	-	-	-	-
	15	0.072	1,83	1.606	40,7	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	1.620	41,1	-	-	-	-	-	-	-	-	-
	18	0.049	1,24	1.652	41,9	-	-	1.634 ÷ 1.752	41,5 ÷ 44,5	G21J-23	-	-	-	-
2" (50,8)	19	0.042	1,07	1.666	42,2	-	-	-	-	-	-	-	-	-
	20	0.035	0,89	1.680	42,6	-	-	-	-	-	-	-	-	-
	10	0.134	3,40	1.732	44,0	-	-	1.713 ÷ 1.831	43,5 ÷ 46,5	G21J-24	-	-	-	-
	12	0.109	2,77	1.782	45,2	-	-	-	-	-	-	-	-	-
	13	0.095	2,41	1.810	46,0	-	-	1.791 ÷ 1.909	45,5 ÷ 48,5	G21J-25	-	-	-	-
	14	0.083	2,11	1.834	46,6	-	-	-	-	-	-	-	-	-
2.1/2" (63,5)	16	0.065	1,65	1.870	47,5	-	-	1.870 ÷ 1.988	47,5 ÷ 50,5	G21J-26	-	-	-	-
	18	0.049	1,24	1.884	47,8	-	-	-	-	-	-	-	-	-
	10	0.134	3,40	2.232	56,7	-	-	2.224 ÷ 2.343	56,5 ÷ 59,5	G21J-30	-	-	-	-
	11	0.120	3,05	2.260	57,4	-	-	-	-	-	-	-	-	-
	12	0.109	2,77	2.282	57,9	-	-	-	-	-	-	-	-	-
	14	0.083	2,11	2.334	59,3	-	-	2.303 ÷ 2.421	58,5 ÷ 61,5	G21J-31	-	-	-	-
	15	0.072	1,83	2.356	59,8	-	-	-	-	-	-	-	-	-
	16	0.065	1,65	2.370	60,2	-	-	-	-	-	-	-	-	-
2.1/2" (63,5)	18	0.049	1,24	2.402	61,0	-	-	2.382 ÷ 2.500	60,5 ÷ 63,5	G21J-32	-	-	-	-

Critical extractions
Reached power limits

Depending on tube material and tube-sheet thickness
Choose bigger size

Hydraulically operated continuous tube pullers



Onlypul

Semiautomatic continuous hydraulic tube pullers

Hydraulic tube puller for sizes from 9,5 mm (3/8") to 101,6 mm (4"), for semiautomatic continuous extraction. Suggested for **small scale maintenance work**.

included



Hydraulic Gun

Onlypul ##-EM

Runpul ##-EM

Version

Electric

Onlypul ##-PM

Runpul ##-PM

Pneumatic

Hydraulic Unit

TP 1-H

TP 10-E

TP 30-E

TP 60-E

Version

Manual

Electric

TP 10-P

TP 30-P

TP 60-P

Pneumatic



Runpul

Automatic continuous hydraulic tube pullers

Hydraulic tube puller for sizes from 9,5 mm (3/8") to 101,6 mm (4"), with double jaws, for automatic continuous tube pulling at high speed. Suggested for **large scale maintenance work on condensers and exchangers**.

included



Onlypul Runpul comes complete with:

- Carrier case
- Set of spare gaskets
- Set of service spanners
- Instruction booklet



The **USD** (Unclamping System Device) is an **emergency hydraulic device** for unblocking jaws jammed on the tube due to rust, etc.



The **RSR** (revolving support ring) on which the **Onlypul** and **Runpul** is suspended during use allows **optimal positioning in the tightest spaces**.



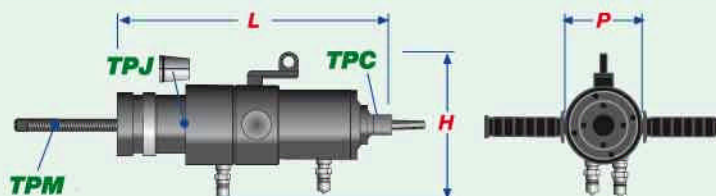
The electric **OPS** (Over Pressure Switch) cuts off hydraulic fluid delivery when the piston reaches the end of its stroke, **preventing unnecessary overpressure in the system**.



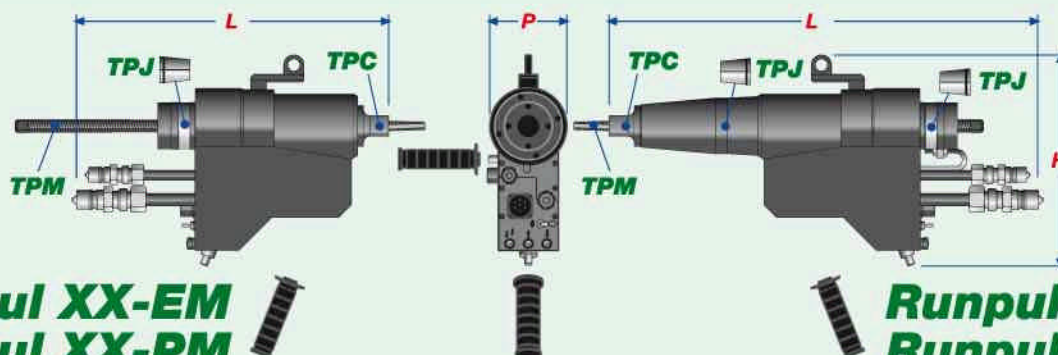
The **RC24** remote control beside the knobs **simplifies and speeds up stub extraction**. The remote control is fitted on both pneumatic and electric versions.



Onlypul XX-HM



Onlypul XX-EM Onlypul XX-PM



Runpul XX-EM Runpul XX-PM

Hydraulic Gun		Tube <i>de</i> " mm	Power KN <i>Lbs</i>	Speed m/min <i>inches/min</i>	Ram stroke mm "	<i>L</i> mm "	<i>P</i> mm "	<i>H</i> mm "	Weight Kg <i>Lb</i>	Balancer <i>Cod.</i>	Suggested Hydraulic Units
Manual	<i>Cod.</i> Onlypul 15-HM	3/8"÷1.1/8" (9,5÷28,6)	15 33000	-	101,6 4	420 16.6	125 4.9	230 9.1	15 33.1	TPB 15	TP 1-H
	Onlypul 30-HM	3/8"÷1.1/4" ^{Gas} (9,5÷42,4)	30 66000	-	101,6 4	420 16.6	155 6.1	270 10.7	30 66.2	TPB 30	TP 1-H
Semiautomatic	Onlypul 15-EM	3/8"÷1.1/8" (9,5÷28,6)	15 33000	-	101,6 4	500 19.7	125 4.9	340 13.4	21 46.2	TPB 15	TP 10-E
	Onlypul 15-PM										TP 10-P
	* Onlypul 30-EM	3/8"÷1.1/4" ^{Gas} (9,5÷42,4)	30 66000	-	101,6 4	500 19.7	155 6.1	430 16.9	38 83.6	TPB 30	TP 10-E
	Onlypul 30-PM										TP 10-P *
	Onlypul 45-EM	1"÷3" (25,4÷76,2)	45 99000	-	50,8 2	510 20.1	190 7.5	430 16.9	55 121.2	TPB 45	TP 30-E
	Onlypul 45-PM										TP 30-P
Automatic	Onlypul 60-EM	2"÷4" (50,8÷101,6)	60 132000	-	50,8 2	510 20.1	220 8.7	450 17.7	71 156.5	TPB 60	TP 30-E
	Onlypul 60-PM										TP 30-P
	Runpul 15-EM	3/8"÷1.1/8" (9,5÷28,6)	15 33000	8 315	101,6 4	690 27.2	124 4.9	340 13.4	26 57.2	TPB 15	TP 30-E TP 60-E
	Runpul 15-PM										TP 30-P TP 60-P
Automatic	Runpul 30-EM	3/8"÷1.1/4" ^{Gas} (9,5÷42,4)	30 66000	4 170	101,6 4	730 28.7	155 6.1	430 16.9	46 101.2	TPB 30	TP 30-E TP 60-E
	Runpul 30-PM										TP 30-P TP 60-P
	Runpul 45-EM	1"÷3" (25,4÷76,2)	45 99000	3,4 134	50,8 2	740 29.1	190 7.5	430 16.9	70 154.0	TPB 45	TP 30-E TP 60-E
	Runpul 45-PM										TP 30-P TP 60-P
Automatic	Runpul 60-EM	2"÷4" (50,8÷101,6)	60 132000	3 110	50,8 2	750 29.5	220 8.7	450 17.7	96 211.2	TPB 60	TP 30-E TP 60-E
	Runpul 60-PM										TP 30-P TP 60-P

* On request available also 700 Bar (10000 psi) version

Hydraulically operated continuous tube pullers tools

Onlypul Runpul

Tools



TPM

d_e mm	sp B.W.G.	dim mm	dim "	Mandrel Cod.	Mandrel "
$3/8"$ (9,5)	17 ÷ 19 20 ÷ 24	6,5 ÷ 7,5 7,5 ÷ 8,5	$0.256 \div 0.295$ $0.295 \div 0.335$	TPM-7 TPM-8	$5/16"$
$1/2"$ (12,7)	14 - 16 17 - 18 19 ÷ 21 24	8,5 ÷ 9,5 9,5 ÷ 10,5 10,5 ÷ 11,5 11,5 ÷ 12,5	$0.335 \div 0.374$ $0.374 \div 0.413$ $0.413 \div 0.453$ $0.453 \div 0.492$	TPM-9 TPM-10 TPM-11 TPM-12	$3/8"$
$5/8"$ (15,9)	16 - 17 19 ÷ 21 23 - 24	12,5 ÷ 13,5 13,5 ÷ 14,5 14,5 ÷ 15,5	$0.492 \div 0.531$ $0.531 \div 0.571$ $0.571 \div 0.610$	TPM-13A TPM-14A TPM-15A	$1/2"$
$3/4"$ (19,0)	11 12 - 13 14 - 15 16 - 17 18 ÷ 20 21 ÷ 24	12,5 ÷ 13,5 13,5 ÷ 14,5 14,5 ÷ 15,5 15,5 ÷ 16,5 16,5 ÷ 17,5 17,5 ÷ 18,5	$0.492 \div 0.531$ $0.531 \div 0.571$ $0.571 \div 0.610$ $0.610 \div 0.650$ $0.650 \div 0.689$ $0.689 \div 0.728$	TPM-13 TPM-14 TPM-15 TPM-16 TPM-17 TPM-18	$5/8"$
$7/8"$ (22,2)	14 16 - 17 18 - 19	17,5 ÷ 18,5 18,5 ÷ 19,5 19,5 ÷ 20,5	$0.689 \div 0.728$ $0.728 \div 0.768$ $0.768 \div 0.807$	TPM-18S TPM-19S TPM-20S	$5/8"$
$1"$ (25,4)	10 - 11 12 13 - 14 15 - 16 18 19 - 20	18,5 ÷ 19,5 19,5 ÷ 20,5 20,5 ÷ 21,5 21,5 ÷ 22,5 22,5 ÷ 23,5 23,5 ÷ 24,5	$0.728 \div 0.768$ $0.768 \div 0.807$ $0.807 \div 0.846$ $0.846 \div 0.886$ $0.886 \div 0.925$ $0.925 \div 0.965$	TPM-19 TPM-20 TPM-21 TPM-22 TPM-23 TPM-24	$3/4"$
$3/4"$ Gas (26,9)	13 14 - 15 16 - 17 19 ÷ 21	21,5 ÷ 22,5 22,5 ÷ 23,5 23,5 ÷ 24,5 24,5 ÷ 25,4	$0.846 \div 0.886$ $0.886 \div 0.925$ $0.925 \div 0.965$ $0.965 \div 1.004$	TPM-22G TPM-23G TPM-24G TPM-25G	$3/4"$
$1.1/4"$ (31,8)	10 11 - 12 13 14 - 15 16 ÷ 18 19 ÷ 22 23 - 24	24,5 ÷ 25,5 25,4 ÷ 26,5 26,5 ÷ 27,5 27,5 ÷ 28,5 28,5 ÷ 29,5 29,5 ÷ 30,5 30,5 ÷ 31,5	$0.965 \div 1.004$ $1.004 \div 1.043$ $1.043 \div 1.083$ $1.083 \div 1.122$ $1.122 \div 1.161$ $1.161 \div 1.201$ $1.201 \div 1.240$	TPM-25 TPM-26 TPM-27 TPM-28 TPM-29 TPM-30 TPM-31	$1"$
$1"$ Gas (33,7)	9 10 11 - 12 13 - 14	25,5 ÷ 26,5 26,5 ÷ 27,5 27,5 ÷ 28,5 28,5 ÷ 29,5	$1.004 \div 1.043$ $1.043 \div 1.083$ $1.083 \div 1.122$ $1.122 \div 1.161$	TPM-26G TPM-27G TPM-28G TPM-29G	$1"$

TPM

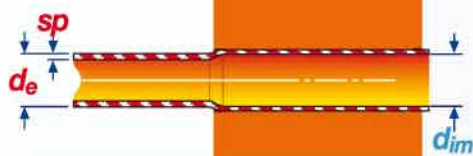
d_e mm	sp B.W.G.	dim mm	dim "	Mandrel Cod.	Mandrel "
$1.1/2"$ (38,1)	10 - 11 12 - 13 14 15 ÷ 17 18 ÷ 20 21 ÷ 24	31,5 ÷ 32,5 32,5 ÷ 33,5 33,5 ÷ 34,5 34,5 ÷ 35,5 35,5 ÷ 36,5 36,5 ÷ 37,5	$1.240 \div 1.280$ $1.280 \div 1.319$ $1.319 \div 1.358$ $1.358 \div 1.398$ $1.398 \div 1.437$ $1.437 \div 1.476$	TPM-32 TPM-33 TPM-34 TPM-35 TPM-36 TPM-37	$1"$
$1.1/4"$ Gas (42,4)	12 13 - 14 15 - 16 17 ÷ 19 20 ÷ 24	36,5 ÷ 37,5 37,5 ÷ 38,5 38,5 ÷ 39,5 39,5 ÷ 40,5 40,5 ÷ 41,5	$1.437 \div 1.476$ $1.476 \div 1.516$ $1.516 \div 1.555$ $1.555 \div 1.594$ $1.594 \div 1.634$	TPM-37G TPM-38G TPM-39G TPM-40G TPM-41G	$1"$
$1.3/4"$ (44,4)	10 - 11 12 13 - 14 15 - 16 18 - 19 20 ÷ 24	37,5 ÷ 38,5 38,5 ÷ 39,5 39,5 ÷ 40,5 40,5 ÷ 41,5 41,5 ÷ 42,5 42,5 ÷ 43,5	$1.476 \div 1.516$ $1.516 \div 1.555$ $1.555 \div 1.594$ $1.594 \div 1.634$ $1.634 \div 1.673$ $1.673 \div 1.713$	TPM-38/44 TPM-39/44 TPM-40/44 TPM-41/44 TPM-42/44 TPM-43/44	$1"$
$1.1/2"$ Gas (48,3)	11 - 12 13 - 14 15 ÷ 17 18 - 19	42,5 ÷ 43,5 43,5 ÷ 44,5 44,5 ÷ 45,5 45,5 ÷ 46,5	$1.673 \div 1.713$ $1.713 \div 1.752$ $1.752 \div 1.791$ $1.791 \div 1.831$	TPM-43G TPM-44G TPM-45G TPM-46G	$1"$
$2"$ (50,8)	10 11 - 12 13 14 - 15 16 ÷ 18 19 ÷ 22	43,5 ÷ 44,5 44,5 ÷ 45,5 45,5 ÷ 46,5 46,5 ÷ 47,5 47,5 ÷ 48,5 48,5 ÷ 49,5	$1.713 \div 1.752$ $1.752 \div 1.791$ $1.791 \div 1.831$ $1.831 \div 1.870$ $1.870 \div 1.909$ $1.909 \div 1.949$	TPM-44/51 TPM-45/51 TPM-46/51 TPM-47/51 TPM-48/51 TPM-49/51	$1"$
$2.1/4"$ (57,1)	9 - 10 11 12 - 13	49,5 ÷ 50,5 50,5 ÷ 51,5 51,5 ÷ 52,5	$1.949 \div 1.988$ $1.988 \div 2.028$ $2.028 \div 2.067$	TPM-50/57 TPM-51/57 TPM-52/57	$1.1/2"$
$2"$ Gas (60,3)	7 8 9	50,5 ÷ 51,5 51,5 ÷ 52,5 52,5 ÷ 53,5	$1.988 \div 2.028$ $2.028 \div 2.067$ $2.067 \div 2.106$	TPM-51G TPM-52G TPM-53G	$1.1/2"$
$2.1/2"$ (63,5)	7 8 9 10	53,5 ÷ 54,5 54,5 ÷ 55,5 55,5 ÷ 56,5 56,5 ÷ 57,5	$2.106 \div 2.146$ $2.146 \div 2.185$ $2.185 \div 2.224$ $2.224 \div 2.264$	TPM-54/63 TPM-55/63 TPM-56/63 TPM-57/63	$1.1/2"$

**Onlypul 15
Runpul 15**

**Onlypul 30
Runpul 30**

**Onlypul 45
Runpul 45**

**Onlypul 60
Runpul 60**



TPJ for Onlypul Jaw



Set-TPJ for Runpul Set of jaws

d_e "	Onlypul 15 Runpul 15 Cod.	Onlypul 30 Runpul 30 Cod.	Onlypul 45 Runpul 45 Cod.
3/8"	TPJ/15-1	TPJ/30-1	-
1/2"	TPJ/15-2	TPJ/30-2	-
5/8"	TPJ/15-3	TPJ/30-3	-
3/4"	TPJ/15-4	TPJ/30-4	-
7/8"	TPJ/15-4/A	TPJ/30-4/A	-
1"	TPJ/15-5	TPJ/30-5	TPJ/45-5
3/4"Gas	-	TPJ/30-6	TPJ/45-6
1.1/4"	-	TPJ/30-7	TPJ/45-7
1"Gas	-	TPJ/30-8	TPJ/45-8
1.1/2"	-	TPJ/30-9	TPJ/45-9

d_e "	Onlypul 30 Runpul 30 Cod.	Onlypul 45 Runpul 45 Cod.	Onlypul 60 Runpul 60 Cod.
1.1/4"Gas	TPJ/30-10	TPJ/45-10	-
1.3/4"	-	TPJ/45-11	-
1.1/2"Gas	-	TPJ/45-12	-
2"	-	TPJ/45-13	TPJ/60-13
2.1/4"	-	TPJ/45-14	TPJ/60-14
2"Gas	-	TPJ/45-15	TPJ/60-15
2.1/2"	-	TPJ/45-16	TPJ/60-16
3"	-	TPJ/45-17	TPJ/60-17
3.1/2"	-	-	TPJ/60-18
4"	-	-	TPJ/60-19



TPC for Onlypul / Runpul Collar

d_e "	Onlypul 15 Runpul 15 Cod.	Onlypul 30 Runpul 30 Cod.	Onlypul 45 Runpul 45 Cod.
3/8"	TPC-11	TPC-11	-
1/2"	TPC-14	TPC-14	-
5/8"	TPC-18	TPC-18	-
3/4"	TPC-21	TPC-21	-
7/8"	TPC-25	TPC-25	-
1"	TPC-28	TPC-28	TPC-28
3/4"Gas	-	TPC-31	TPC-31
1.1/4"	-	TPC-34	TPC-34
1"Gas	-	TPC-37	TPC-37
1.1/2"	-	TPC-41	TPC-41

d_e "	Onlypul 30 Runpul 30 Cod.	Onlypul 45 Runpul 45 Cod.	Onlypul 60 Runpul 60 Cod.
1.1/4"Gas	TPC-44	TPC-44	-
1.3/4"	-	TPC/45-48	-
1.1/2"Gas	-	TPC/45-53	-
2"	-	TPC/45-56	TPC/60-56
2.1/4"	-	TPC/45-60	TPC/60-60
2"Gas	-	TPC/45-63	TPC/60-63
2.1/2"	-	TPC/45-66	TPC/60-66
3"	-	TPC/45-80	TPC/60-80
3.1/2"	-	-	TPC/60-93
4"	-	-	TPC/60-105



Hydraulically operated tube pullers tools



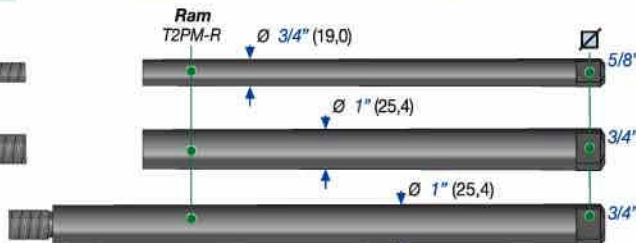
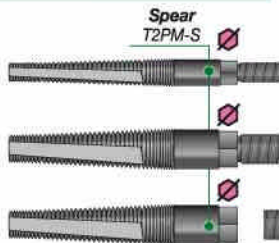
Onlypul

T2PM two pieces mandrel for size from **1/2"** (12,7mm) to **1.1/2"** (38,1mm)

$d_e = 1/2"$
(12,7)

$d_e = 5/8" \div 1"$
(15,9 ÷ 25,4 mm)

$d_e = 1.1/4" \div 1.1/2"$
(31,8 ÷ 38,1 mm)



T2PM					TPJ	TPC		
<i>d_e</i> mm	<i>sp</i> B.W.G.	<i>dim</i> mm "		<i>Spear</i> Cod.	 mm	<i>Ram</i> Cod.	<i>Jaw</i> Cod.	<i>Collar</i> Cod.
1/2" (12,7)	14 - 16	8,5 ÷ 9,5	0.335 ÷ 0.374	T2PM-S9	 17 0.669	T2PM-R9÷12	TPJ/15-4 TPJ/30-4	TPC/21
	17 - 18	9,5 ÷ 10,5	0.374 ÷ 0.413	T2PM-S10				
	19 ÷ 21	10,5 ÷ 11,5	0.413 ÷ 0.453	T2PM-S11				
	24	11,5 ÷ 12,5	0.453 ÷ 0.492	T2PM-S12				
5/8" (15,9)	16 - 17	12,5 ÷ 13,5	0.492 ÷ 0.531	T2PM-S13	 22 0.866	T2PM-R13÷24	TPJ/15-5 TPJ/30-5	TPC/28
	19 ÷ 21	13,5 ÷ 14,5	0.531 ÷ 0.571	T2PM-S14				
	23 - 24	14,5 ÷ 15,5	0.571 ÷ 0.610	T2PM-S15				
3/4" (19,0)	11	12,5 ÷ 13,5	0.492 ÷ 0.531	T2PM-S13	 22 0.866	T2PM-R13÷24	TPJ/15-5 TPJ/30-5	TPC/28
	12 - 13	13,5 ÷ 14,5	0.531 ÷ 0.571	T2PM-S14				
	14 - 15	14,5 ÷ 15,5	0.571 ÷ 0.610	T2PM-S15				
	16 - 17	15,5 ÷ 16,5	0.610 ÷ 0.650	T2PM-S16				
	18 ÷ 20	16,5 ÷ 17,5	0.650 ÷ 0.689	T2PM-S17				
	21 ÷ 24	17,5 ÷ 18,5	0.689 ÷ 0.728	T2PM-S18				
7/8" (22,2)	14	17,5 ÷ 18,5	0.689 ÷ 0.728	T2PM-S18	 22 0.866	T2PM-R13÷24	TPJ/15-5 TPJ/30-5	TPC/28
	16 - 17	18,5 ÷ 19,5	0.728 ÷ 0.768	T2PM-S19				
	18 - 19	19,5 ÷ 20,5	0.768 ÷ 0.807	T2PM-S20				
1" (25,4)	10 - 11	18,5 ÷ 19,5	0.728 ÷ 0.768	T2PM-S19	 22 0.866	T2PM-R13÷24	TPJ/15-5 TPJ/30-5	TPC/28
	12	19,5 ÷ 20,5	0.768 ÷ 0.807	T2PM-S20				
	13 - 14	20,5 ÷ 21,5	0.807 ÷ 0.846	T2PM-S21				
	15 - 16	21,5 ÷ 22,5	0.846 ÷ 0.886	T2PM-S22				
	18	22,5 ÷ 23,5	0.886 ÷ 0.925	T2PM-S23				
	19 - 20	23,5 ÷ 24,5	0.925 ÷ 0.965	T2PM-S24				
1.1/4" (31,8)	10	24,5 ÷ 25,5	0.965 ÷ 1.004	T2PM-S25	 30 1.181	T2PM-R25÷48	TPJ/30-5	TPC/35
	11 - 12	25,4 ÷ 26,5	1.004 ÷ 1.043	T2PM-S26				
	13	26,5 ÷ 27,5	1.043 ÷ 1.083	T2PM-S27				
	14 - 15	27,5 ÷ 28,5	1.083 ÷ 1.122	T2PM-S28				
	16 ÷ 18	28,5 ÷ 29,5	1.122 ÷ 1.161	T2PM-S29				
	19 ÷ 22	29,5 ÷ 30,5	1.161 ÷ 1.201	T2PM-S30				
	23 - 24	30,5 ÷ 31,5	1.201 ÷ 1.240	T2PM-S31				
1.1/2" (38,1)	10 - 11	31,5 ÷ 32,5	1.240 ÷ 1.280	T2PM-S32	 30 1.181	T2PM-R25÷48	TPJ/30-5	TPC/41
	12 - 13	32,5 ÷ 33,5	1.280 ÷ 1.319	T2PM-S33				
	14	33,5 ÷ 34,5	1.319 ÷ 1.358	T2PM-S34				
	15 ÷ 17	34,5 ÷ 35,5	1.358 ÷ 1.398	T2PM-S35				
	18 ÷ 20	35,5 ÷ 36,5	1.398 ÷ 1.437	T2PM-S36				
	21 ÷ 24	36,5 ÷ 37,5	1.437 ÷ 1.476	T2PM-S37				





Onlypul Runpul

TPM-K Quick gripping extraction mandrel for size from **1.1/2"** (38,1mm) to **4"** (101,6mm)

Maus Italia **exclusive design** mandrel, to be used in combination with the semi-automatic pulling gun **Onlypul** or **Runpul**, allows a rapid anchoring to the tube (**No need of impact tool or keys**)



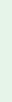
Extension of the quick gripping attachment typical of the **Grippul** even in continuous tube pulling ≥ 38.1 mm (**1.1/2"**) with **Runpul 30**, **Runpul 45** and **Runpul 60**



Quick tool attaching: the operator no longer has to screw and unscrew the end in the tube

Quick tube gripping operation

Low wear limited to replacement of the jaws

de "	sp B.W.G.	dim mm	dim "	Mandrel Cod.	Cone Cod.	Jaw Cod.	Ram Cod.	
1.1/2" (38,1)	10 - 11	31,5 ÷ 32,5	1.240 ÷ 1.280	TPM-K-32	CK-32÷37	JK-32	RK-32÷37	
	12 - 13	32,5 ÷ 33,5	1.280 ÷ 1.319	TPM-K-33		JK-33		
	14	33,5 ÷ 34,5	1.319 ÷ 1.358	TPM-K-34		JK-34		
	15 ÷ 17	34,5 ÷ 35,5	1.358 ÷ 1.498	TPM-K-35		JK-35		
	18 ÷ 20	35,5 ÷ 36,5	1.498 ÷ 1.437	TPM-K-36		JK-36		
	21 ÷ 24	36,5 ÷ 37,5	1.437 ÷ 1.476	TPM-K-37		JK-37		
1.3/4" (44,4)	10 - 11	37,5 ÷ 38,5	1.476 ÷ 1.516	TPM-K-38	CK-38÷43	JK-38	RK-38÷43	
	12	38,5 ÷ 39,5	1.516 ÷ 1.555	TPM-K-39		JK-39		
	13 - 14	39,5 ÷ 40,5	1.555 ÷ 1.594	TPM-K-40		JK-40		
	15 - 16	40,5 ÷ 41,5	1.594 ÷ 1.634	TPM-K-41		JK-41		
	18 - 19	41,5 ÷ 42,5	1.634 ÷ 1.673	TPM-K-42		JK-42		
	20 ÷ 24	42,5 ÷ 43,5	1.673 ÷ 1.713	TPM-K-43		JK-43		
2" (50,8)	10	43,5 ÷ 44,5	1.713 ÷ 1.752	TPM-K-44	CK-44÷49	JK-44	RK-44÷49	
	11 - 12	44,5 ÷ 45,5	1.752 ÷ 1.791	TPM-K-45		JK-45		
	13	45,5 ÷ 46,5	1.791 ÷ 1.831	TPM-K-46		JK-46		
	14 - 15	46,5 ÷ 47,5	1.831 ÷ 1.870	TPM-K-47		JK-47		
	16 ÷ 18	47,5 ÷ 48,5	1.870 ÷ 1.909	TPM-K-48		JK-48		
	19 ÷ 22	48,5 ÷ 49,5	1.909 ÷ 1.949	TPM-K-49		JK-49		
2.1/4" (57,1)	9 - 10	49,5 ÷ 50,5	1.949 ÷ 1.988	TPM-K-50	CK-50÷52	JK-50	RK-50÷52	
	11	50,5 ÷ 51,5	1.988 ÷ 2.028	TPM-K-51		JK-51		
	12 - 13	51,5 ÷ 52,5	2.028 ÷ 2.067	TPM-K-52		JK-52		
2.1/2" (63,5)	7	53,5 ÷ 54,5	2.106 ÷ 2.146	TPM-K-54	CK-54÷57	JK-54	RK-54÷57	
	8	54,5 ÷ 55,5	2.146 ÷ 2.185	TPM-K-55		JK-55		
	9	55,5 ÷ 56,5	2.185 ÷ 2.224	TPM-K-56		JK-56		
	10	56,5 ÷ 57,5	2.224 ÷ 2.264	TPM-K-57		JK-57		
3" (76,2)	7	66,5 ÷ 67,5	2.618 ÷ 2.657	TPM-K-67	CK-67÷70	JK-67	RK-67÷70	
	8	67,5 ÷ 68,5	2.657 ÷ 2.697	TPM-K-68		JK-68		
	9 - 10	68,5 ÷ 69,5	2.697 ÷ 2.736	TPM-K-69		JK-69		
	11	69,5 ÷ 70,5	2.736 ÷ 2.776	TPM-K-70		JK-70		
3.1/2" (88,9)	6	78,5 ÷ 79,5	3.091 ÷ 3.130	TPM-K-79	CK-79÷82	JK-79	RK-79÷82	
	7	79,5 ÷ 80,5	3.130 ÷ 3.169	TPM-K-80		JK-80		
	8 - 9	80,5 ÷ 81,5	3.169 ÷ 3.209	TPM-K-81		JK-81		
	10	81,5 ÷ 82,5	3.209 ÷ 3.248	TPM-K-82		JK-82		
4" (101,6)	6	91,5 ÷ 92,5	3.602 ÷ 3.642	TPM-K-92	CK-92÷95	JK-92	RK-92÷95	
	7 - 8	92,5 ÷ 93,5	3.642 ÷ 3.681	TPM-K-93		JK-93		
	9	93,5 ÷ 94,5	3.681 ÷ 3.720	TPM-K-94		JK-94		
	10	94,5 ÷ 95,5	3.720 ÷ 3.760	TPM-K-95		JK-95		

Onlypul 30
Runpul 30

Onlypul 45
Runpul 45

Onlypul 60
Runpul 60



Power unit

TP

**Flexibility and
economy of use**

**Tubes sizes extractable
(up to) 101,6 mm (4")**

**High quality
of the maintenance**

**Speed of extraction
8mt/min (26 Ft/min)**

Unit for the continuous pulling of tubes from 12,7÷101,6 mm (1/2" to 4")

The tube pulling equipment is designed and produced by Maus Italia for daily use in the workshops of petroleum refineries and aluminum refineries, in power stations and sugar factories for the partial or complete retubing of tube bundles in heat exchangers, condensers and boilers.

The **TP** systems come in **7 different versions** depending on **driving unit** (manual, air motor or electric motor), **working system** (semi-automatically, automatically in a continuous process) and **performance**.

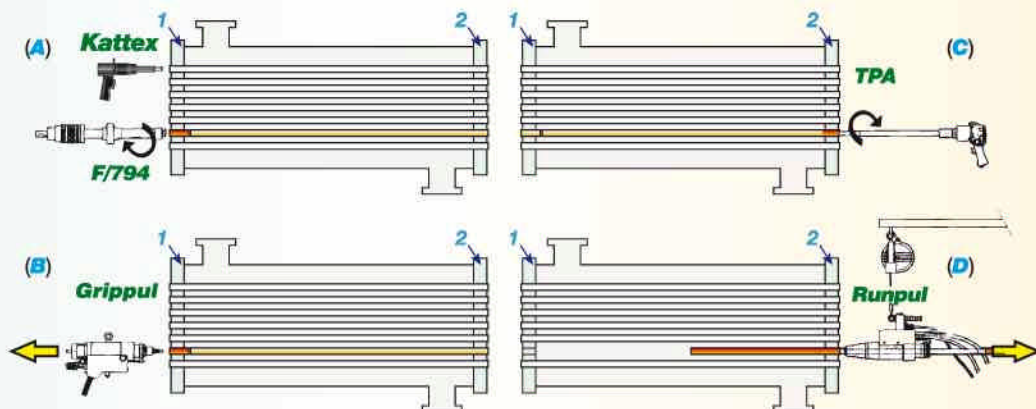
The size of the machines is calculated on the basis of the **number of tubes to be extracted**.



Suggested operation

As illustrated in the figure at the bottom of the page, Maus Italia offers solutions for dealing with the problem of dismantling tube bundles in increasingly rapid and convenient ways thanks to a series of accessories capable of meeting all needs. The **Kattex** or **F/794** motor powered tube cutters are used to cut the tube to be extracted (A).

Meanwhile it is possible to work on the opposite tube sheet using the **Onlypul** continuous semiautomatic tube puller or the **Runpul** (C and D) automatic version. After the tube has been cut, the **Grippul** is used to proceed with rapid extraction (6 per minute) of the stubs (B). The hydraulic units are connected rapidly to all the tube pullers by a unified connection system.



TP10-P/TP1-H
Particularly
suitable for
partial repair
on-site

MTP

Possible combinations
between hydraulic gun and power unit

Manual
equipment

Hydraulic Gun
Cod.

Power unit
Cod.

Set
Cod.

Onlypul - HM



TP1-H



MTP1H-OM

Grippul - E



TP10-E



MTP10-GE

TP60-E



MTP60-GE

Onlypul - EM



TP10-E



MTP10-OE

TP30-E



MTP30-OE

Runpul - EM



TP30-E



MTP30-RE

TP60-E



MTP60-RE

Pneumatic
equipment

Grippul - P



TP10-P



MTP10-GP

TP60-P



MTP60-GP

Onlypul - PM



TP10-P



MTP10-OP

TP30-PS

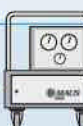


MTP30-OP

Runpul - PM



TP30-PS



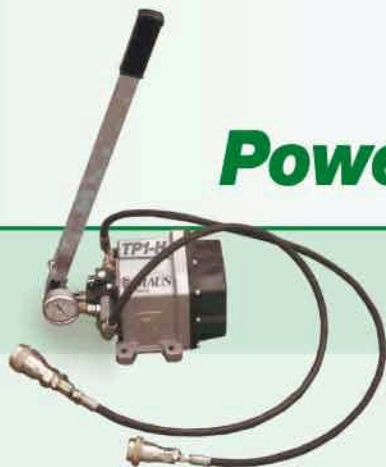
MTP30-RP

TP60-P



MTP60-RP

Power unit



TP1-H

Hand
pump

Model	Max. pressure		Oil flow rate		Dimensions						Weight	
	bar	psi	Lt/ciclo	US gpm	Width	Depth	Highh				Kg	Lb
TP1-H	300	4350	0,025	0.007	350	13.8"	200	7.9"	230	9.1"	9,5	21



TP10-E

Semi-automatic
Electrical
hydraulic pump unit

Model	Max. * pressure		Oil flow rate		Power supply	Remote control power supply	Dimensions						Weight			
	bar	psi	Lt/min (bar)	US gpm (psi)			Width	Depth	Highh				with oil	without oil		IP
TP10-E	350	5075	12 (0÷70) 0,9 (70÷350)	3.17 (0÷1015 psi) 0.24 (1015÷5075 psi)	1,1Kw-230/400V-50/60Hz-3Ph	24	680	26.8"	520	20.5"	720	28.3"	82	181	52	115



TP10-P

Semi-automatic
Pneumatical
hydraulic pump unit

Model	Max.  pressure		Oil flow rate		Power supply	Air pressure required	Dimensions						Weight					
	bar	psi	Lt/min (bar)	US gpm (psi)			Width		Depth		Highh		with oil		without oil			
							bar	psi	mm	"	mm	"	mm	"	Kg	Lb	Kg	Lb
TP10-P	350	5075	12 (0÷70) 0,9 (70÷350)	3.17 (0÷1015 psi) 0.24 (1015÷5075 psi)	1,7Kw-7 bar (67Cfm) 1900 Lt/min (67Cfm)	7	100	680	26.8"	460	18.1"	600	23.6"	82	181	52	115	

* On request available also 700 Bar (10000 psi) version

TP30-E

Automatic Electrical hydraulic pump unit

Oil filter cartridge

25µ Filter capacity
Replaceable cartridge



Electric motor TEFC

5.5Kw - 230/400V
3Ph - 50/60Hz
4 poles (1500 rpm)
B5 - IP 55

Hydraulic pump

variable capacity:
8÷40 Lt/min
2÷11 US gpm



Pilot lights of the state of the hydraulic gun, manual, automatic and Jaws release pilot light

Extraction pilot lamp indicator

Pressure gauges 350 bar (5075 psi)
oil discharge and return line

Return pilot lamp indicator

Work selector / jaws release

Hand bar

Oil level indicator

The TP30-E is controlled directly by the operator with substantial increase in productivity

Model	Max. pressure		Oil flow rate		Power supply	Remote control power supply	Dimensions						Weight				IP
	bar	psi	Lt/min	US gpm			Width		Depth		Highth		with oil		without oil		
TP30-E	350	5075	8÷40	2÷11	5,5Kw-230/400V-50/60Hz-3Ph	24	700	27.6"	950	37.4"	1080	42.5"	360	794	270	596	30

TP30-PS

Automatic Pneumactical hydraulic pump unit

Oil filter cartridge

25µ Filter capacity
Replaceable cartridge



Pneumatic motor

4Kw
7 bar (100 psi)
4800 Lt/min (170 Cfm)

Hydraulic pump

variable capacity:
8÷40 Lt/min
2÷11 US gpm



Internal tool box for hydraulic gun

Pressure gauges 350 bar (5075 psi)
oil discharge and return line

Air supply pressure gauge

Internal tool box for working accessories, hydraulic hoses, electric cables c/w lockable door

Hand bar

Oil level indicator

The TP30-PS is controlled directly by the operator with substantial increase in productivity

Model	Max. pressure		Oil flow rate		Power supply	Air pressure required		Dimensions				Weight					
	bar	psi	Lt/min	US gpm		bar	psi	Width		Depth		Highth		with oil		without oil	
								mm	"	mm	"	mm	"	Kg	Lb	Kg	Lb
TP30-PS	350	5075	8÷40	2÷11	4Kw - 7 bar (100psi)-4800 Lt/min (170Cfm)	7	100	770	30.3"	920	36.2"	1000	39.4"	220	485	130	287

Power unit

TP60-E

Automatic Electrical hydraulic pump unit PLC managed

High performance, accuracy in assembly and the best components from selected international sub-suppliers are the ingredients that make this unit the leader in the market.

PLC managed
Removable control rack for easy maintenance

Dirty oil filter alarm

Oil temperature alarm

Pilot lights of the state of the hydraulic gun, manual, automatic and Jaws release pilot light

Work selector / jaws release

Return pilot lamp indicator

Extraction pilot lamp indicator

Pressure gauges
350 bar (5075 psi)
oil discharge and return line

Hand bar

Internal tool box
for hydraulic gun
c/w lockable door

Hydraulic pump

variable capacity:
8÷60Lt/min
2÷16US gpm



Electric motor
TEFC

5.5Kw - 230/400V
3Ph - 50/60Hz
4 poles (1500 rpm)
B5 - IP 55



Oil filter cartridge

25µ Filter capacity
Replaceable cartridge



Manual regulator

Oil flow
Oil pressure



Emergency push button

External fan cooled radiator

Oil level indicator

Internal tool box
for working accessories,
hydraulic hoses,
electric cables
c/w lockable door

2 speeds extraction

The PLC present on the TP60-E makes it possible for the operator to have two extraction speeds.

The TP60-E is controlled directly by the operator with substantial increase in productivity

Model	Max. pressure		Oil flow rate		Power supply	Remote control power supply	Dimensions			Weight		Weight		IP
	bar	psi	Lt/min	US gpm			Width	Depth	High	Kg	Lb	with oil	without oil	
TP60-E	350	5075	8÷60	2÷16	5,5 Kw-230/400V-50/60Hz-3Ph	24 Vdc	700 mm	1070 mm	1270 mm	440	970	440	320	55

TP60-P

Automatic Pneumatically hydraulic pump unit

Hydraulic pump

variable capacity:

8÷60 Lt/min
2÷16 US gpm



Pneumatic motor

6,7 Kw
7 bar (100psi)
8000 Lt/min
(283 Cfm)



Oil filter cartridge

25µ Filter capacity
Replaceable cartridge



Hand bar

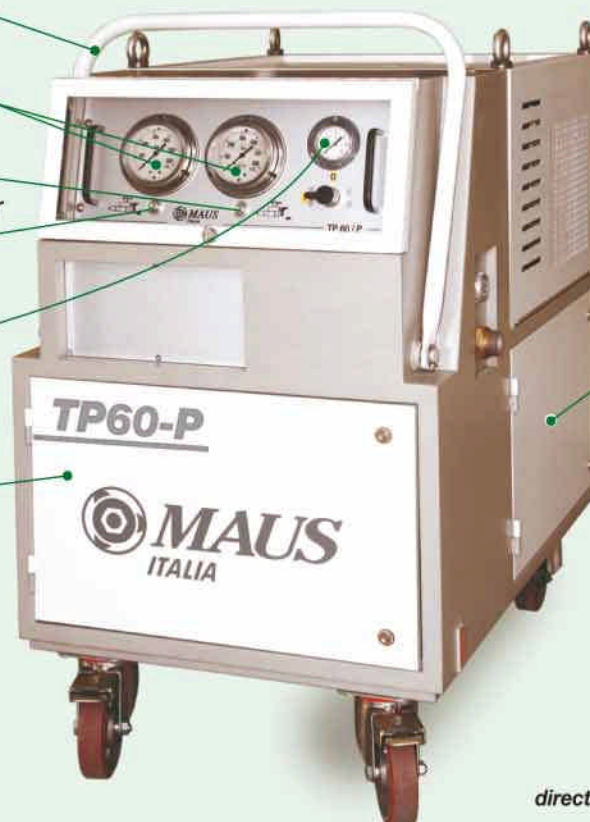
Pressure gauges
350 bar (5075 psi)
oil discharge and return line

Return pilot pneumatic indicator

Extraction pilot pneumatic indicator

Air supply pressure gauge

Internal tool box
for hydraulic gun
c/w lockable door



Manual regulator

Oil flow
Oil pressure



Oil level indicator

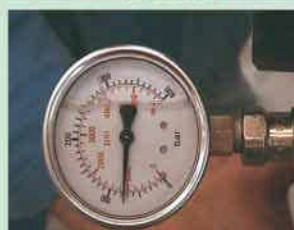


Internal tool box
for working accessories,
hydraulic hoses,
electric cables
c/w lockable door

The TP60-P is
controlled
directly by the operator
with substantial
increase
in productivity



Model	Max. pressure		Oil flow rate		Power supply	Air pressure required		Dimensions						Weight			
	bar	psi	Lt/min	US gpm		bar	psi	Width		Depth		Highh		with oil		without oil	
								mm	"	mm	"	mm	"	Kg	Lb	Kg	Lb
TP60-P	350	5075	8÷60	2÷16	6,7Kw - 7 bar (100psi) - 8000 Lt/min (283Cfm)	7	100	700	27.6"	1070	42.1"	1270	50.0"	410	904	290	640

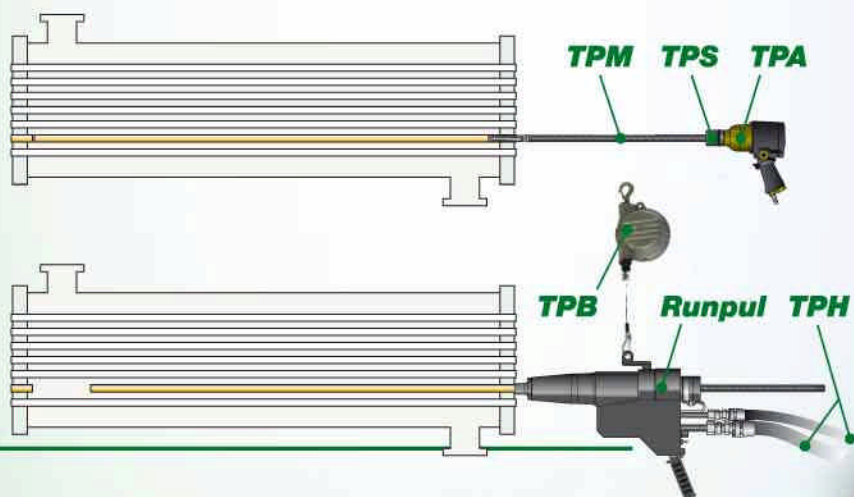
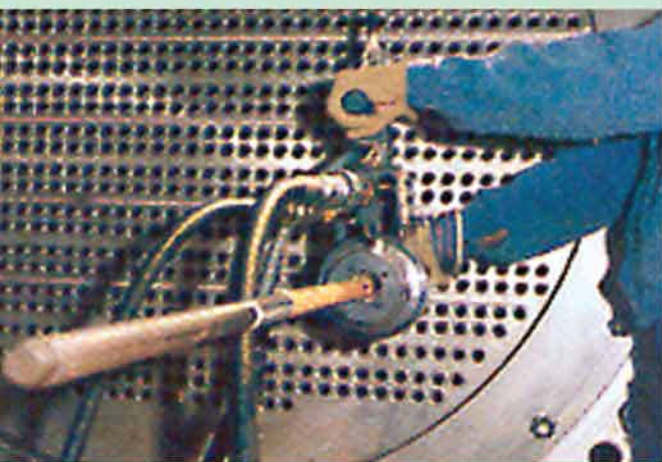


Accessories



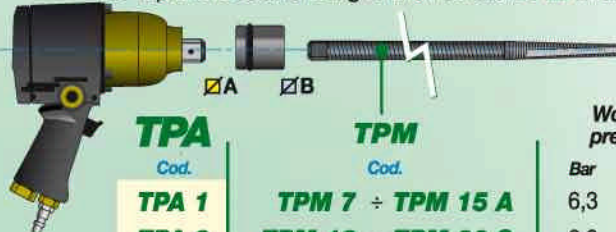
TP

Accessories for **Grippul**, **Onlypul** and **Runpul** pulling equipment



TPA - Impact tool

For rapid and secure fixing of the mandrel **TPM** in the tube before extraction.



TPA
Cod.

TPM
Cod.

TPA 1	TPM 7 ÷ TPM 15 A
TPA 2	TPM 13 ÷ TPM 20 S
TPA 3A	TPM 19 ÷ TPM 37
TPA 4	TPM 37 G ÷ TPM 49/51
TPA 5	TP 50/57 ÷ TP 95/102

Working pressure

Bar Psi

6,3 91.4

6,3 91.4

6,3 91.4

6,3 91.4

6,3 91.4

Air shank

"

3/8" Gas

1/2" Gas

1/2" Gas

1/2" Gas

3/4" Gas

Ø A

"

3/4"

1"

1"

1"

1.1/2"

Weight

Kg Lb

5,0 10.8

6,3 13.8

9,3 20.6

15,0 32.9

32,0 70.55



TPB - Spring balancer with rapid return

Spring balancer with rapid return for support and balancing of the **Grippul**, **Onlypul** and **Runpul**.

Available in 6 different lifting range capacity.



TPB
Cod.

Lifting range

Kg

Lb

TPB 10	20 ÷ 25	44 ÷ 55
TPB 15	25 ÷ 30	55 ÷ 66
TPB 20	30 ÷ 35	66 ÷ 77
TPB 30	40 ÷ 55	88 ÷ 121
TPB 45	55 ÷ 65	121 ÷ 143
TPS 60	65 ÷ 105	143 ÷ 231



Hydraulic guns

Grippul 11

Onlypul 15 - Runpul 15

Grippul 21

Onlypul 30 - Runpul 30

Onlypul 45 - Runpul 45

Onlypul 60 - Runpul 60

TPS - Socket

Study socket to be mounted between the impact tool **TPA** and the mandrel **TPM**.



TPS
Cod.

TPA
Ø A

TPM
Ø B

TPS 1B	3/4"	5/16"
TPS 2B	3/4"	3/8"
TPS 3B	3/4"	1/2"
TPS 3A	1"	1/2"
TPS 4	1"	5/8"
TPS 5	1"	3/4"
TPS 6	1"	1"
TPS 6A	1"	1.1/2"
TPS 7	1.1/2"	1"
TPS 8	1.1/2"	1.1/2"

Balanced support arms

Designed by Maus Italia for the vertical heat exchangers (Sugar Plants or Aluminium Refineris), they are suitable for the **positioning** and **moving** of the stub/tube pullers of the series **Grippul**, **Onlypul** and **Runpul**.

It's guarantee a trouble-free use in total safety for the operator thanks to a system of slides and balances.

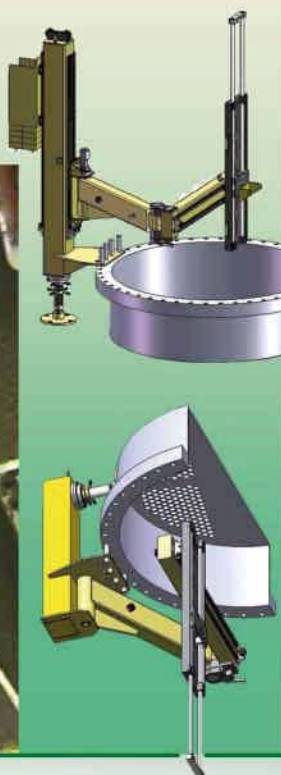
TSA-2000

Suitable for the upper tube-sheet, it is used with the **Runpul** and **Onlypul** equipment for the continuous extraction, and not for single tubes

BSA-2000

Suitable for the lower tube-sheet, it is used with **Kattex** and **Grippul** equipment for the cutting and extraction of the stub.

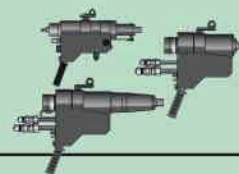
They are considered a good investment because they can also be used for managing the rolling motors



TPH - High pressure flexible hydraulic hoses with quick adapter

High pressure flexible hydraulic hoses with quick adapter

to ensure the proper and safe connection between tube pullers hydraulic guns **Grippul**, **Onlypul** and **Runpul** series and power units chosen.



TPH Cod.	Power unit	A		O.D. Tubo		B		Hydraulic guns
		mm	"	mm	"	mm	"	
TPH 960	TP10 - TP30	19,0	3/4"	9,5	3/8"	19,0	3/4"	Onlypul
TPH 970	TP10 - TP30	12,7	1/2"	9,5	3/8"	12,7	1/2"	Onlypul
TPH 940	TP10 - TP60	12,7	1/2"	9,5	3/8"	9,5	3/8"	Grippul
TPH 950	TP10 - TP60	19,0	3/4"	9,5	3/8"	12,7	1/2"	Grippul
TPH 1270	TP30 - TP60	12,7	1/2"	12,7	1/2"	12,7	1/2"	Runpul
TPH 1900	TP30 - TP60	19,0	3/4"	19,0	3/4"	19,0	3/4"	Runpul

Manual tool for tube extraction

Cheaptool



Equipment for the manual maintenance of the tube in heat exchangers

Cheaptool is the complete system of Maus Italia products for the manual, low-cost maintenance of tubes in heat exchangers in oil refineries, condensers in electric power stations, boilers, etc..

Cheaptool consists of various products that work in synergy to increase the effectiveness of the work on the tube being replaced. The tube reamer **F/791** starts first by reducing the thickness of the tube to enable the **F/793** to enter the part that has been reamed (therefore offering less resistance) and to expel the tube. The tube collapsing tool **F/792** is used when the thickness of the tube is not high and offers less resistance.

Cheaptool also includes a manual tube cutter **F/790**, a manual extractor **F/800** and a pneumatic hammer **F/789** suggested for use with the above tools.

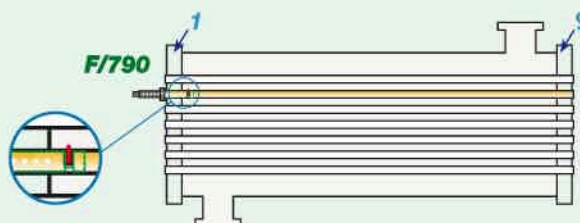
Flexibility and economy of use

High quality of maintenance

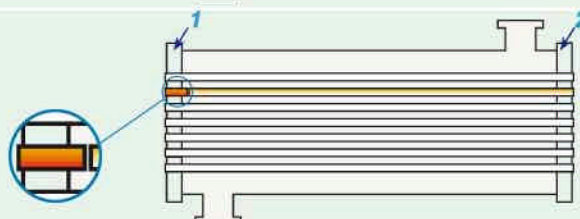
Examples of right procedures of tube extraction by **Cheaptool**

1st example of use Cutting and pulling of tube stub and tube

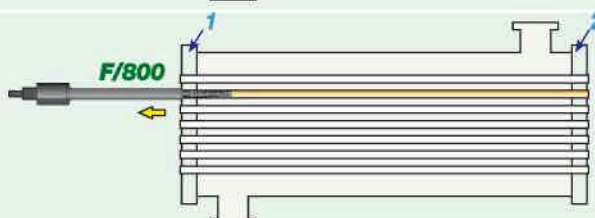
- Work on the first tubesheet with the one-revolution tube cutter **F/790** to cut the tube to be replaced.



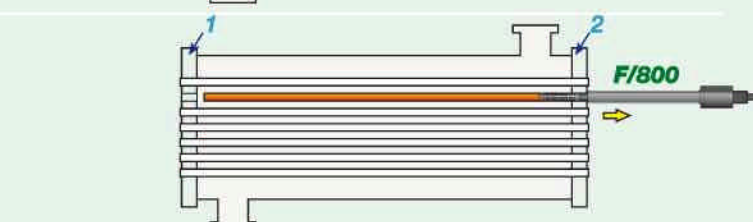
- After cutting the tube stub is connected to the first tubesheet and the remaining part of the tube is connected to the second tubesheet.



- Using the **F/800** manual tube puller it is easy to pull out the stub from the first tubesheet quickly and efficiently.



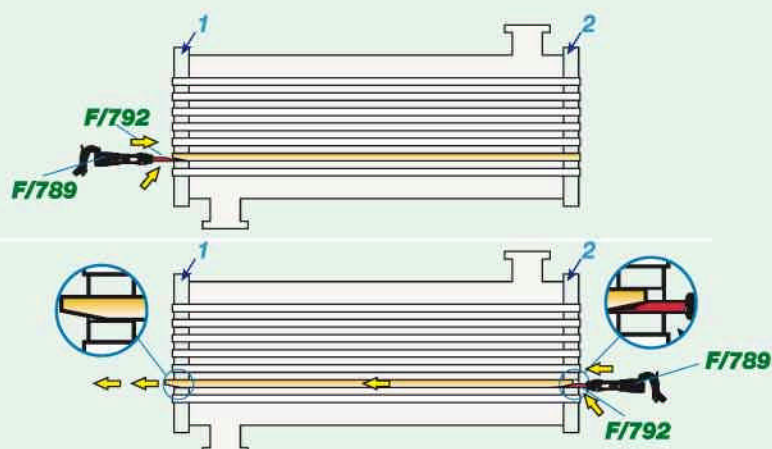
- By repeatedly using the **F/800** manual tube puller on the second tubesheet all the tube can be pulled out easily thus freeing the exchanger.



2nd example of use

Initial extraction and removal
for thin-walled tubes

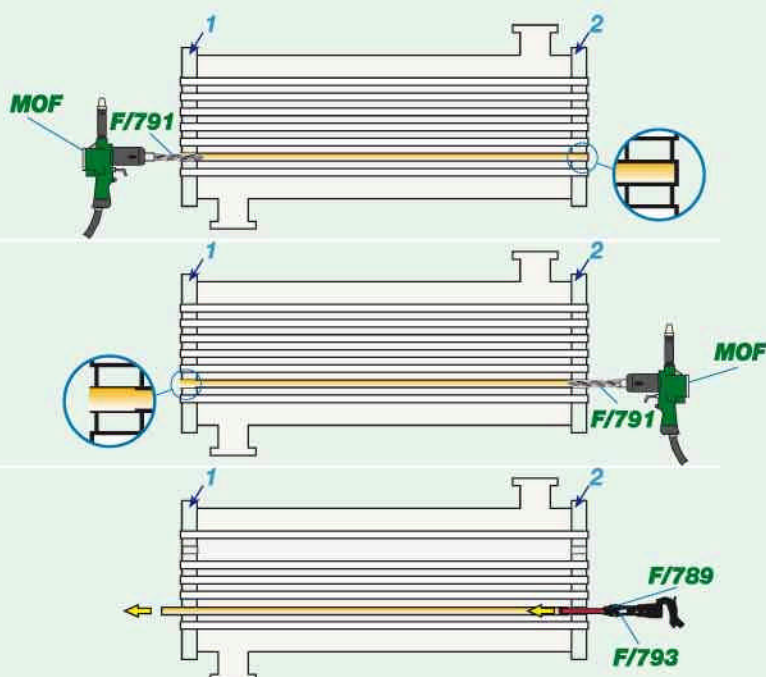
- Work on the first tubesheet with the **F/792** tube collapsing tool using the **F/789** pneumatic hammer to extract the tube.
- Initial extraction on the second tubesheet with the same **F/792** using the **F/789** moves the tube out for the first few millimeters giving sufficient length for a good grip in manual pulling.



3rd example of use

Initial extraction and removal

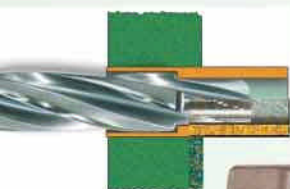
- Work on the first tubesheet with the **F/791** tube reamer with the **MOF**, reducing the tube thickness to make it easier to strip.
- Work in the same way also for the second tubesheet still using the **F/791** together with the **MOF** thus preparing the tube on both sides for removal.
- Operate the **F/793** tube expeller to move the tube out a few inches giving sufficient length for a good grip in manual pulling.



Manual tool for tube extraction

F/791

Tube reamer



These are high-speed steel reamers, with Morse taper connection and rear tang with diameter ground in accordance with the BWG of the tubes. To use to reduce the thickness of tubes to be replaced, for a depth of about 80% of the thickness of the sheet.



F/793

Tube expeller



Use preferably with a pneumatic hammer.
Standard tang: $\varnothing 17,2 \text{ mm}$ (0.677") x 60,3 mm (2.3/8")



F/792

Tube collapsing tool



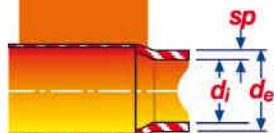
Used for crumpling tubes of non-ferrous alloys or ferrous alloys made lighter with the use of the reamer **F/791** and expelling them from the tube plate. To be used preferably with a pneumatic hammer.
Standard tang: $\varnothing 17,2 \text{ mm}$ (0.677") x 60,3 mm (2.3/8")



F/789

Pneumatic hammer specific for "Cheaptool"





Tube																							
d _e	sp			d _i		F/791	L1			F/793	L3		F/792	L2									
mm	B.W.G.	mm	"	mm	"	Cod.	mm	"		Cod.	mm	"	Cod.	mm	"								
1/2" (12,7)	-	-	-	-	-	-	-	-	-	-	-	-	F/792-0	196,0	7.717								
5/8" (15,9)	10	3,4	0.134	9,5	0.357	F/791-1				F/793-1													
	11	3,0	0.120	9,8	0.385	F/791-2				F/793-2													
	12	2,8	0.109	10,3	0.407	F/791-3				F/793-3													
	13	2,4	0.095	11,0	0.435	F/791-4	100,0	3.937	2	F/793-4	182,0	7.165	F/792-1	192,0	7.559								
	14	2,1	0.083	11,7	0.459	F/791-5				F/793-5													
	15	1,8	0.072	12,2	0.481	F/791-6				F/793-6													
	16	1,6	0.065	12,6	0.495	F/791-7				F/793-7													
	18	1,2	0.049	13,4	0.527	F/791-8				F/793-8													
3/4" (19,0)	10	3,4	0.134	12,2	0.482	F/791-9				F/793-9													
	11	3,0	0.120	12,9	0.510	F/791-10				F/793-10													
	12	2,8	0.109	13,5	0.532	F/791-11				F/793-11													
	13	2,4	0.095	14,2	0.560	F/791-12	120,0	4.724	2	F/793-12	182,0	7.165	F/792-2	194,0	7.638								
	14	2,1	0.083	14,8	0.584	F/791-13				F/793-13													
	15	1,8	0.072	15,4	0.606	F/791-14				F/793-14													
	16	1,6	0.065	15,7	0.620	F/791-15				F/793-15													
	18	1,2	0.049	16,6	0.652	F/791-16				F/793-16													
7/8" (22,2)	10	3,4	0.134	15,4	0.607	F/791-17				F/793-17													
	11	3,0	0.120	16,1	0.635	F/791-18				F/793-18													
	12	2,8	0.109	16,7	0.657	F/791-19				F/793-19													
	13	2,4	0.095	17,4	0.685	F/791-20	130,0	5.118	2	F/793-20	182,0	7.165	F/792-3	190,0	7.480								
	14	2,1	0.083	18,0	0.709	F/791-21				F/793-21													
	15	1,8	0.072	18,6	0.731	F/791-22				F/793-22													
	16	1,6	0.065	18,9	0.745	F/791-23				F/793-23													
	18	1,2	0.049	19,7	0.777	F/791-24				F/793-24													
1" (25,4)	8	4,2	0.165	17,0	0.670	F/791-25				F/793-25													
	10	3,4	0.134	18,6	0.732	F/791-26				F/793-26													
	11	3,0	0.120	19,3	0.760	F/791-27				F/793-27													
	12	2,8	0.109	19,9	0.782	F/791-28				F/793-28													
	13	2,4	0.095	20,6	0.810	F/791-29	155,0	6.102	3	F/793-29	182,0	7.165	F/792-4	177,0	6.969								
	14	2,1	0.083	21,2	0.834	F/791-30				F/793-30													
	15	1,8	0.072	21,7	0.856	F/791-31				F/793-31													
	16	1,6	0.065	22,1	0.870	F/791-32				F/793-32													
1.1/4" (31,8)	8	4,2	0.165	23,4	0.920	F/791-34				F/793-34													
	10	3,4	0.134	24,9	0.982	F/791-35				F/793-35													
	11	3,0	0.120	25,6	1.010	F/791-36				F/793-36													
	12	2,8	0.109	26,2	1.032	F/791-37	165,0	6.496	3	F/793-37	182,0	7.165	F/792-5	164,0	6.457								
	13	2,4	0.095	26,9	1.060	F/791-38				F/793-38													
	14	2,1	0.083	27,5	1.084	F/791-39				F/793-39													
	16	1,6	0.065	28,4	1.120	F/791-40				F/793-40													
1.1/2" (38,1)	8	4,2	0.165	29,7	1.170	F/791-41				F/793-41													
	10	3,4	0.134	31,3	1.232	F/791-42				F/793-42													
	11	3,0	0.120	32,0	1.260	F/791-43				F/793-43													
	12	2,8	0.109	32,6	1.282	F/791-44	180,0	7.087	4	F/793-44	182,0	7.165	F/792-6	165,0	6.496								
	13	2,4	0.095	33,3	1.310	F/791-45				F/793-45													
	14	2,1	0.083	33,9	1.334	F/791-46				F/793-46													
	16	1,6	0.065	34,8	1.370	F/791-47				F/793-47													

Manual tool for tube extraction

F/790

One revolution tube cutter

Cheaper tube cutter, adjustable reach from 50,8 mm to 152,4 mm (2" to 6"). The **F/790** was designed for hand use with a tap wrench and its functioning is based on the eccentricity of the blade.



When the **F/790** is inserted, the blade is completely in.



At the beginning of the rotation it perforates the tube.

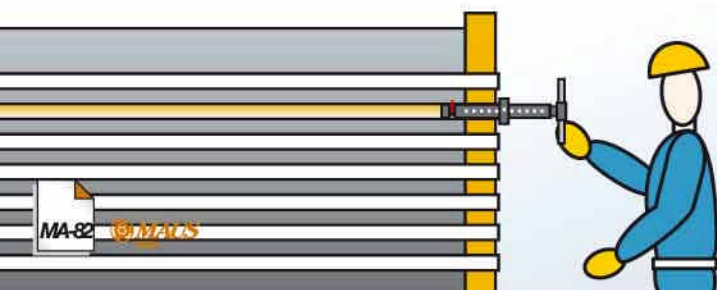


In **one revolution** the tube is completely cut.



Rotating the **F/790** anti-clockwise the blade goes back in so that the cutter can be removed.

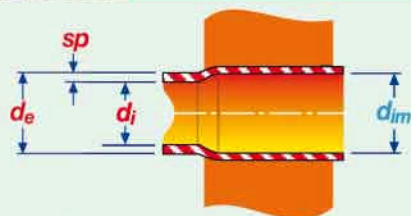
de mm	Tube		sp mm	di mm	F/790 Cod.	Spare bit Cod.	Ø "
	B.W.G.	"					
1/2" (12,7)	18	1,2	0.049	10,2	F/790-1	BIT-F790-1-2	1/4"
	20	0,9	0.035	10,9	F/790-2		
5/8" (15,9)	14	2,1	0.083	11,7	F/790-3	BIT-F790-3	3/8"
	16	1,6	0.065	12,6	F/790-4	BIT-F790-4	
	18	1,2	0.049	13,4	F/790-5	BIT-F790-5	
	20	0,9	0.035	14,1	F/790-6	BIT-F790-6	
3/4" (19,0)	14	2,1	0.083	14,8	F/790-7	BIT-F790-7	3/8"
	16	1,6	0.065	15,7	F/790-8		
	18	1,2	0.049	16,6	F/790-9	BIT-F790-8÷16	1/2"
	20	0,9	0.035	17,3	F/790-10		
	22	0,7	0.028	17,6	F/790-11		
7/8" (22,2)	14	2,1	0.083	18,0	F/790-12	BIT-F790-8÷16	1/2"
	16	1,6	0.065	18,9	F/790-13		
	18	1,2	0.049	19,7	F/790-14		5/8"
	20	0,9	0.035	20,4	F/790-15		
	22	0,7	0.028	20,8	F/790-16		
1" (25,4)	12	2,8	0.109	19,9	F/790-17	BIT-F790-17÷22	5/8"
	14	2,1	0.083	21,2	F/790-18		
	16	1,6	0.065	22,0	F/790-19		3/4"
	18	1,2	0.049	22,9	F/790-20		
	20	0,9	0.035	23,6	F/790-21		1"
	22	0,7	0.028	24,0	F/790-22		
1 1/4" (31,8)	12	2,8	0.109	26,2	F/790-23	BIT-F790-23÷32	3/4"
	14	2,1	0.083	27,5	F/790-24		
	16	1,6	0.065	28,4	F/790-25		
	18	1,2	0.049	29,3	F/790-26		
	20	0,9	0.035	30,0	F/790-27		
	12	2,8	0.109	32,6	F/790-28		
	14	2,1	0.083	33,9	F/790-29		
1 1/2" (38,1)	16	1,6	0.065	34,8	F/790-30	BIT-F790-23÷32	1"
	18	1,2	0.049	35,6	F/790-31		
	20	0,9	0.035	36,3	F/790-32		
	22	0,7	0.028	37,0	F/790-33		



F/800

Manual extractor

Recommended for small maintenance jobs, the **F/800** hand extractor allows easy removal of stubs and tubes.



TPMM

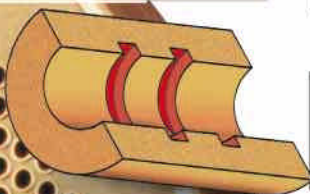
TPCM

F/800

d_e mm	sp B.W.G.	d_i mm	d_{im} "	TPMM Mandrel Cod.	TPCM Collar Cod.	F/800 Manual extractor Cod.	"
3/8" (9,5)	17 ÷ 19	6,5 ÷ 7,5	0.256 ÷ 0.295	TPMM-7	1/2"	TPCM-11	F/800-1
	20 ÷ 24	7,5 ÷ 8,5	0.295 ÷ 0.335	TPMM-8			
1/2" (12,7)	14 - 16	8,5 ÷ 9,5	0.335 ÷ 0.374	TPMM-9	1/2"	TPCM-14	F/800-1
	17 - 18	9,5 ÷ 10,5	0.374 ÷ 0.413	TPMM-10			
	19 ÷ 21	10,5 ÷ 11,5	0.413 ÷ 0.453	TPMM-11			
	24	11,5 ÷ 12,5	0.453 ÷ 0.492	TPMM-12			
5/8" (15,9)	16 - 17	12,5 ÷ 13,5	0.492 ÷ 0.531	TPMM-13	1/2"	TPCM-18	F/800-1
	19 ÷ 21	13,5 ÷ 14,5	0.531 ÷ 0.571	TPMM-14			
	23 - 24	14,5 ÷ 15,5	0.571 ÷ 0.610	TPMM-15			
3/4" (19,0)	11	12,5 ÷ 13,5	0.492 ÷ 0.531	TPMM-13	1/2"	TPCM-21	F/800-1
	12 - 13	13,5 ÷ 14,5	0.531 ÷ 0.571	TPMM-14			
	14 - 15	14,5 ÷ 15,5	0.571 ÷ 0.610	TPMM-15			
	16 - 17	15,5 ÷ 16,5	0.610 ÷ 0.650	TPMM-16			
	18 ÷ 20	16,5 ÷ 17,5	0.650 ÷ 0.689	TPMM-17			
	21 ÷ 24	17,5 ÷ 18,5	0.689 ÷ 0.728	TPMM-18			
7/8" (22,2)	14	17,5 ÷ 18,5	0.689 ÷ 0.728	TPMM-18	3/4"	TPCM-25	F/800-2
	16 - 17	18,5 ÷ 19,5	0.728 ÷ 0.768	TPMM-19			
	18 - 19	19,5 ÷ 20,5	0.768 ÷ 0.807	TPMM-20			
1" (25,4)	10 - 11	18,5 ÷ 19,5	0.728 ÷ 0.768	TPMM-19	3/4"	TPCM-28	F/800-2
	12	19,5 ÷ 20,5	0.768 ÷ 0.807	TPMM-20			
	13 - 14	20,5 ÷ 21,5	0.807 ÷ 0.846	TPMM-21			
	15 - 16	21,5 ÷ 22,5	0.846 ÷ 0.886	TPMM-22			
	18	22,5 ÷ 23,5	0.886 ÷ 0.925	TPMM-23			
	19 - 20	23,5 ÷ 24,5	0.925 ÷ 0.965	TPMM-24			
1.1/4" (31,8)	10	25,3 ÷ 25,5	0.995 ÷ 1.004	TPMM-25	1"	TPCM-34	F/800-3
	11 - 12	25,5 ÷ 26,5	1.004 ÷ 1.043	TPMM-26			
	13	26,5 ÷ 27,5	1.043 ÷ 1.083	TPMM-27			
	14 - 15	27,5 ÷ 28,5	1.083 ÷ 1.122	TPMM-28			
	16 ÷ 18	28,5 ÷ 29,5	1.122 ÷ 1.161	TPMM-29			
	19 ÷ 22	29,5 ÷ 30,5	1.161 ÷ 1.201	TPMM-30			
	23 - 24	30,5 ÷ 31,5	1.201 ÷ 1.240	TPMM-31			
1.1/2" (38,1)	10 - 11	31,5 ÷ 32,5	1.240 ÷ 1.280	TPMM-32	1"	TPCM-41	F/800-3
	12 - 13	32,5 ÷ 33,5	1.280 ÷ 1.319	TPMM-33			
	14	33,5 ÷ 34,5	1.319 ÷ 1.358	TPMM-34			
	15 ÷ 17	34,5 ÷ 35,5	1.358 ÷ 1.398	TPMM-35			
	18 ÷ 20	35,5 ÷ 36,5	1.398 ÷ 1.437	TPMM-36			
	21 ÷ 24	36,5 ÷ 37,5	1.437 ÷ 1.476	TPMM-37			
2" (50,8)	10	43,5 ÷ 44,5	1.713 ÷ 1.752	TPMM-44	1.1/4"	TPCM-56	F/800-4
	11 - 12	44,5 ÷ 45,5	1.752 ÷ 1.791	TPMM-45			
	13	45,5 ÷ 46,5	1.791 ÷ 1.831	TPMM-46			
	14 - 15	46,5 ÷ 47,5	1.831 ÷ 1.870	TPMM-47			
	16 ÷ 18	47,5 ÷ 48,5	1.870 ÷ 1.909	TPMM-48			
	19 ÷ 22	48,5 ÷ 49,5	1.909 ÷ 1.949	TPMM-49			

Other workings (see relative catalogues)

Holetool



Automatic equipments and tools (with cooling holes) for tube sheet refurbishment.

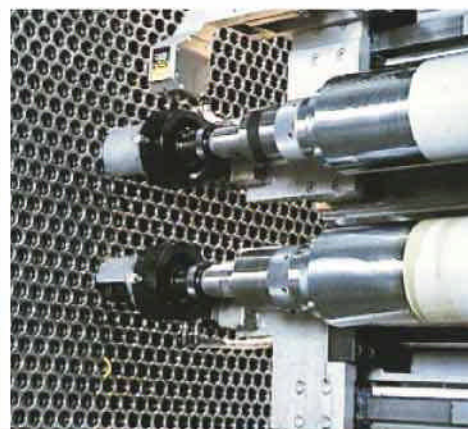
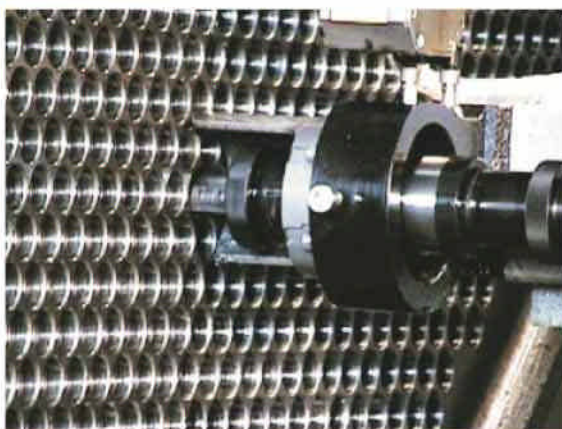
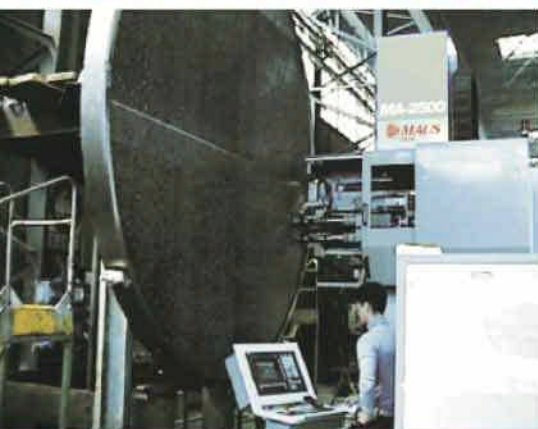
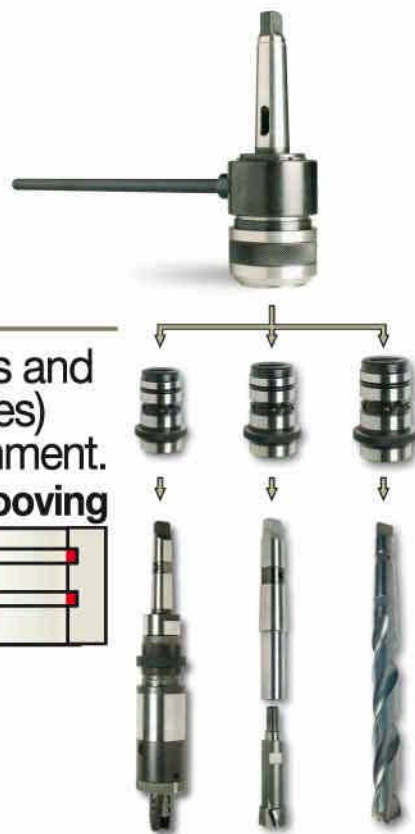
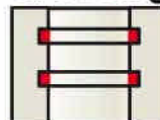
Drilling



Reaming

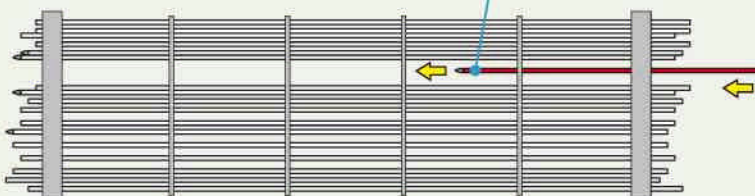
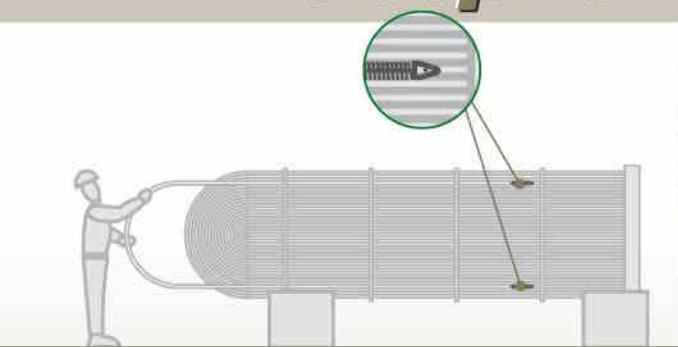


Grooving



Tubepilot

Tube pilot for tube bundle assembling



Tube expanders

A complete range of tube expanders

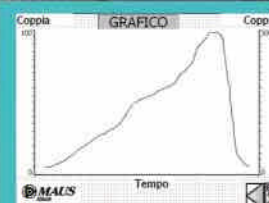
Tuberoll

Semiautomatic and automatic electric or pneumatic tube rolling



VISUALIZZAZIONI	
Giri	480 Giri/l'
Salvataggio	Arrestato
Parziale	1480
Corrente	38.00
Coppia	38.00
	0.689 Amp 38.00 Nm

PARAMETRI SPECIALI	
Univolt Password MAUS ITALIA	
CORRENTE	
Corrente reale	18.645 Amp
Corrente offset A	1.476 Amp
Corrente offset B	0.845 Amp
MOTORE	
Tipo motore	Plato V4
Velocità massima	800 Giri/l'
Corrente massima	38 Amp
Rapporto di riduzione	3.71 N
Costante di coppia	0.222 Nm/Amp



VELOCITA'	
Velocità massima	800 Giri/l'
Coppia massima	31 Nm
Velocità A	800 Giri/l'
Velocità B	200 Giri/l'
Marcia	N
Plato V4	
Velocità	200 300 500 800 Giri/l'

Eseguire procedura di azzerramento assorbimento motore ogni volta si cambia velocità

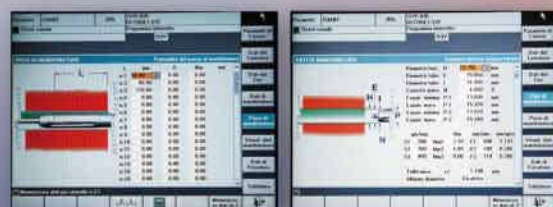
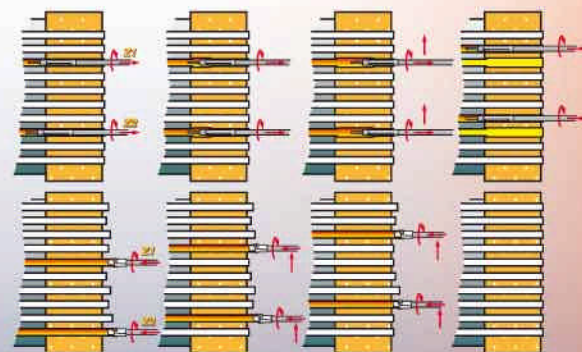
PARAMETRI SPECIALI	

COPPIE	
Fase A	Nm Amp
Fase B	Nm Amp
Passo 1	25,000 20,600
Passo 2	20000,000 0000,000
Passo 3	20000,000 0000,000
Passo 4	20000,000 0000,000
Passo 5	20000,000 0000,000
Massima	31,000 38,000

Other workings (see relative catalogues)



Automatic rolling, facing and welding
double-axis centre



Tubweld

Semi-automatic and automatic systems for tube to tube sheet
TIG orbital welding



Tubend

Semiautomatic electric or pneumatic tube facing and automatic facing machine

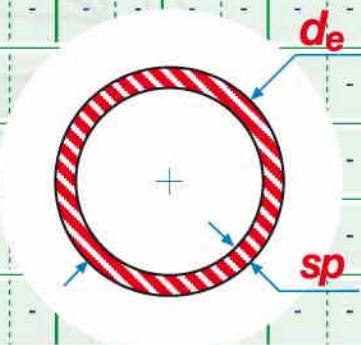


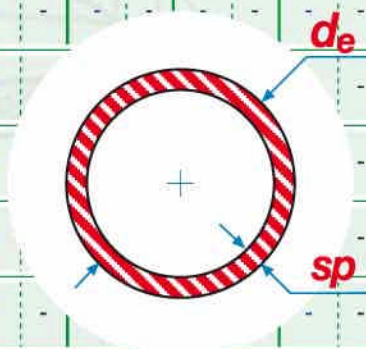
www.mausitalia.it

MA-87

BWG

de mm	00 BWG		0 BWG		1 BWG		2 BWG		3 BWG		4 BWG		5 BWG		6 BWG		7 BWG		8 BWG		9 BWG		10 BWG		11 BWG		
sp →	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
1/4" (6,3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3/8" (9,5)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1/2" (12,7)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5/8" (15,9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3/4" (19,0)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.482	12,2	0.510	12,9	
7/8" (22,2)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.607	15,4	0.635	16,1	
1" (25,4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.670	17,0	0.704	17,9	0.732	18,6	0.760	19,3	
1.1/4" (31,8)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.890	22,6	0.920	23,4	0.954	24,3	0.982	25,0	1.010	25,7
1.1/2" (38,1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.140	28,9	1.170	29,7	1.204	30,6	1.232	31,3	1.260	32,0
1.3/4" (44,4)	-	-	-	-	-	-	-	-	-	-	-	-	1.310	33,2	1.344	34,1	1.390	35,2	1.420	36,0	1.454	36,9	1.482	37,6	1.510	38,3	
2" (50,8)	-	-	-	-	-	-	-	-	-	-	-	1.524	38,7	1.560	39,6	1.594	40,5	1.640	41,6	1.670	42,4	1.704	43,3	1.732	44,0	1.760	44,7
2.1/4" (57,1)	1.490	37,8	1.570	39,8	1.650	41,8	1.682	42,7	1.732	43,9	1.774	45,0	1.810	45,9	1.844	46,8	1.890	47,9	1.920	48,7	1.954	49,6	1.982	50,3	2.010	51,0	
2.1/2" (63,5)	1.740	44,2	1.820	46,2	1.900	48,2	1.932	49,1	1.982	50,3	2.024	51,4	2.060	52,3	2.094	53,2	2.140	54,3	2.170	55,1	2.204	56,0	2.232	56,7	2.260	57,4	
2.3/4" (69,8)	1.990	50,5	2.070	52,5	2.150	54,5	2.182	55,3	2.232	56,6	2.274	57,7	2.310	58,6	2.344	59,5	2.390	60,6	2.420	61,4	2.454	62,3	2.482	63,0	2.510	63,7	
3" (76,2)	2.240	56,9	2.320	58,9	2.400	60,9	2.432	61,8	2.482	63,0	2.524	64,1	2.560	65,0	2.594	65,9	2.640	67,0	2.670	67,8	2.704	68,7	2.732	69,4	2.760	70,1	
3.1/4" (82,6)	2.490	63,3	2.570	65,3	2.650	67,3	2.682	68,2	2.732	69,4	2.774	70,5	2.810	71,4	2.844	72,3	2.890	73,4	2.920	74,2	2.954	75,1	2.982	75,8	3.010	76,5	
3.1/2" (88,9)	2.740	69,6	2.820	71,6	2.900	73,6	2.932	74,5	2.982	75,7	3.024	76,8	3.060	77,7	3.094	78,6	3.140	79,7	3.170	80,5	3.204	81,4	3.232	82,1	3.260	82,8	
3.3/4" (95,2)	2.990	75,9	3.070	77,9	3.150	79,9	3.182	80,8	3.232	82,0	3.274	83,1	3.310	84,0	3.344	84,9	3.390	86,0	3.420	86,8	3.454	87,7	3.482	88,4	3.510	89,1	
4" (101,6)	3.240	82,3	3.320	84,3	3.400	86,3	3.432	87,2	3.482	88,4	3.524	89,5	3.560	90,4	3.594	91,3	3.640	92,4	3.670	93,2	3.704	94,1	3.732	94,8	3.760	95,5	
4.1/4" (108,0)	3.490	88,7	3.570	90,7	3.650	92,7	3.682	93,6	3.732	94,8	3.774	95,9	3.810	96,8	3.844	97,7	3.890	98,8	3.920	99,6	3.954	100,5	3.982	101,2	4.010	101,9	
4.1/2" (114,3)	3.740	95,0	3.820	97,0	3.900	99,0	3.932	99,9	3.982	101,1	4.024	102,2	4.060	103,1	4.094	104,0	4.140	105,1	4.170	105,9	4.204	106,8	4.232	107,5	4.260	108,2	





12 BWG	13 BWG	14 BWG	15 BWG	16 BWG	17 BWG	18 BWG	19 BWG	20 BWG	21 BWG	22 BWG	23 BWG	24 BWG	de mm
" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	" mm	← sp
0.109 2,77	0.095 2,41	0.083 2,11	0.072 1,83	0.065 1,65	0.058 1,47	0.049 1,24	0.042 1,07	0.035 0,89	0.032 0,81	0.028 0,71	0.025 0,64	0.022 0,56	1/4" (6,3)
-	-	-	-	-	-	0.152 3,8	0.166 4,1	0.180 4,5	0.186 4,7	0.194 4,9	0.200 5,0	0.206 5,2	3/8" (9,5)
-	-	0.209 5,3	0.231 5,8	0.245 6,2	0.259 6,5	0.277 7,0	0.291 7,3	0.305 7,7	0.311 7,9	0.319 8,1	0.325 8,2	0.331 8,4	1/2" (12,7)
-	0.310 7,9	0.334 8,5	0.356 9,0	0.370 9,4	0.384 9,7	0.402 10,2	0.416 10,5	0.430 10,9	0.436 11,1	0.444 11,3	0.450 11,4	0.456 11,6	5/8" (15,9)
0.407 10,3	0.435 11,1	0.459 11,7	0.481 12,2	0.495 12,6	0.509 12,9	0.527 13,4	0.541 13,7	0.555 14,1	0.561 14,3	0.569 14,5	0.575 14,6	0.581 14,8	3/4" (19,0)
0.532 13,4	0.560 14,2	0.584 14,8	0.606 15,3	0.620 15,7	0.634 16,0	0.652 16,5	0.666 16,8	0.680 17,2	0.686 17,4	0.694 17,6	0.700 17,7	0.706 17,9	7/8" (22,2)
0.657 16,6	0.685 17,4	0.709 18,0	0.731 18,5	0.745 18,9	0.759 19,2	0.777 19,7	0.791 20,0	0.805 20,4	0.811 20,6	0.819 20,8	0.825 20,9	0.831 21,1	1" (25,4)
0.782 19,8	0.810 20,6	0.834 21,2	0.856 21,7	0.870 22,1	0.884 22,4	0.902 22,9	0.916 23,2	0.930 23,6	0.936 23,8	0.944 24,0	0.950 24,1	0.956 24,3	1.1/4" (31,8)
1.032 26,2	1.060 27,0	1.084 27,6	1.106 28,1	1.120 28,5	1.134 28,8	1.152 29,3	1.166 29,6	1.180 30,0	1.186 30,2	1.194 30,4	1.200 30,5	1.206 30,7	1.1/2" (38,1)
1.282 32,5	1.310 33,3	1.334 33,9	1.356 34,4	1.370 34,8	1.384 35,1	1.402 35,6	1.416 35,9	1.430 36,3	1.436 36,5	1.444 36,7	1.450 36,8	1.456 37,0	1.3/4" (44,4)
1.532 38,8	1.560 39,6	1.584 40,2	1.606 40,7	1.620 41,1	1.634 41,4	1.652 41,9	1.666 42,2	1.680 42,6	1.686 42,8	1.694 43,0	1.700 43,1	1.706 43,3	2" (50,8)
1.782 45,2	1.810 46,0	1.834 46,6	1.856 47,1	1.870 47,5	1.884 47,8	1.902 48,3	1.916 48,6	1.930 49,0	1.936 49,2	1.944 49,4	1.950 49,5	1.956 49,7	2.1/4" (57,1)
2.032 51,5	2.060 52,3	2.084 52,9	2.106 53,4	2.120 53,8	2.134 54,1	2.152 54,6	-	-	-	-	-	-	2.1/2" (63,5)
2.282 57,9	2.310 58,7	2.334 59,3	2.356 59,8	2.370 60,2	2.384 60,5	2.402 61,0	-	-	-	-	-	-	2.3/4" (69,8)
2.532 64,2	2.560 65,0	2.584 65,6	2.606 66,1	2.620 66,5	2.634 66,8	2.652 67,3	-	-	-	-	-	-	3" (76,2)
2.782 70,6	2.810 71,4	2.834 72,0	2.856 72,5	2.870 72,9	2.884 73,2	2.902 73,7	-	-	-	-	-	-	3.1/4" (82,6)
3.032 77,0	3.060 77,8	3.084 78,4	3.106 78,9	3.120 79,3	3.134 79,6	3.152 80,1	-	-	-	-	-	-	3.1/2" (88,9)
3.282 83,3	3.310 84,1	3.334 84,7	3.356 85,2	3.370 85,6	3.384 85,9	3.402 86,4	-	-	-	-	-	-	3.3/4" (95,2)
3.532 89,6	3.560 90,4	3.584 91,0	3.606 91,5	3.620 91,9	3.634 92,2	3.652 92,7	-	-	-	-	-	-	4" (101,6)
3.782 96,0	3.810 96,8	3.834 97,4	3.856 97,9	3.870 98,3	3.884 98,6	3.902 99,1	-	-	-	-	-	-	4.1/4" (108,0)
4.032 102,4	4.060 103,2	4.084 103,8	4.106 104,3	4.120 104,7	4.134 105,0	4.152 105,5	-	-	-	-	-	-	4.1/2" (114,3)
4.282 108,7	4.310 109,5	4.334 110,1	4.356 110,6	4.370 111,0	4.384 111,3	4.402 111,8	-	-	-	-	-	-	



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