MAUS ITALIA

Manual tools

Equipment for the manual maintenance of the tubes in the heat exchangers

Maintenance

Tube extraction and cutting

REV / ENG
01/24

A winning story since 1961

The Beginning

At the end of the 1950s, Domenico Franco Agostino became the Italian representative of Albert Otto, a German manufacturer of tube expanders. In 1961 Franco Agostino's Albert Otto Italiana was founded and in 1972, after purchasing an area of 10,000 square metres in the municipality of Bagnolo Cremasco, Maus Italia Sas was established.

The Growth

In 1976 his son Stefano, a mechanical engineer, joined the company. Together with his father, he studied products, introduced new machinery onto the market and filed the first patents by Maus Italia. Above all, Stefano was firmly convinced that people are the very heart of a company's success. Therefore, he invested in human capital by valuing people and roles, and he surrounded himself with skilled operators as well as technical, commercial and administrative collaborators. The result was a winning, competent and proactive team.
His daughter Anna - also a mechanical engineer - has been working in the company since 2016, giving new impetus and energy to the business her father and grandfather had built.
Father and daughter work together side by side every day to guarantee the excellence of Maus Italia and support all customers worldwide with competence and passion: the company's distinctive traits.

Stefano Agostino
CEO - Mechanical Engineer

Anna Agostino
COO - Mechanical and Management Engineer

In-house production of each component
Workshop 4.0 and 24/7 production control

The production of Maus Italia branded items is entirely carried out in Bagnolo Cremasco, in the heart of an Italian industrial area 30 km southeast of Milan.
The company boasts a 4.0 workshop equipped with state-of-the-art machinery, an in-house heat treatment room and a final inspection department that allow Maus Italia to independently manage every phase of the manufacturing process of its wide range of products whilst maintaining high quality standards.

Quality first.
Design and development

One of Maus Italia's strengths is its willingness to understand its customers' needs.

Our technical department is always ready to find operational solutions to the most complex applications, even via feasibility studies. We develop accurate work processes, draw with FEM analyses to verify our mechanical-structural performance and optimise the manufacturing process of each component.

Ready To Deliver

A well-stocked and complete warehouse of finished products enables Maus Italia ship quickly to customers all over the world according to a ready-to-deliver logic.
The warehouse is fully located within our premises in Bagnolo Cremasco at controlled temperatures and conditions to guarantee the maximum safety and quality of Maus Italia products for all our customers.

Quality, environment and safety policy

Research, quality and safety are the watchwords of Maus Italia Spa.

Maus Italia has several projects underway aimed at increasingly sustainable development and integrates environmental concerns into its business model. The company's actions, behaviour and development choices are focused not only on the short run but rather mainly on a medium and long-term horizon.

MANAGEMENT SYSTEM CERTIFICATION
DNV
ISO 9001 · ISO 14001
ISO 45001

Every day in over 80 country worldwide

Find an official distributor in your country

F/794

Motor operated tube cutter for medium tube-sheets

This tube cutter is designed for the use in maintenance of heat exchangers and boilers.

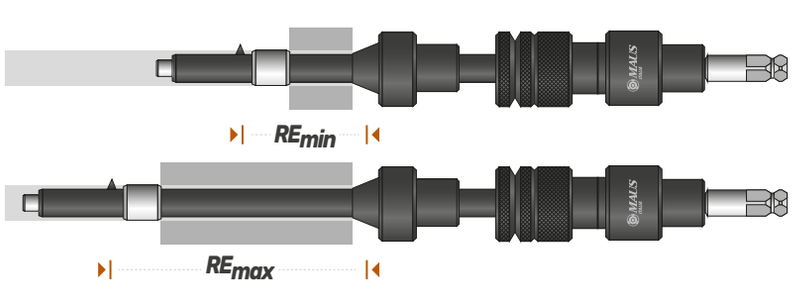
RE*min* 2" (50,8 mmm) ▶ **RE*max*** 6" (152,4 mmm)

F/794/L

Motor operated tube cutter for thick tube-sheets

This tube cutter is designed for the use in aintenance of heat exchangers and boilers. Dedicated to the maintenance of exchangers with very thick tube sheets.

RE*min* 4" (101,6 mmm) ▶ **RE*max*** 12" (304,8 mmm)



d_e		**Tube cutter**	**Cutting I.D.**		**Bit**	**Tube pilot**	⌀	**Electrical**	**Pneumatic**		
"	mm	Cod	mm	inches	Cod	(Not included / Order separately) indicated for BWG	mm inches		Non ferrous tubes	Steel tubes	Stainless steel tubes
1/2"	(12,7)	***F/794-0***	8,1 ÷ 15,0	0.32 ÷ 0.59	BIT-F794-0	14 - 16 - 18 - 20 - 22 - 24	3/8" (9,5)	***MBOS 16-2***	***MOF 20 R***	***MOF 20 R***	***MOF 3***
5/8"	(15,9)	***F/794-1***	11,2 ÷ 18,0	0.44 ÷ 0.71	BIT-F794-1	14 - 16 - 18 - 20 - 22 - 24					
3/4"	(19,0)	***F/794-2***	13,5 ÷ 22,0	0.53 ÷ 0.87	BIT-794-2	14 - 16 - 18 - 20 - 22 - 24				***MOF 3***	***MOF 3 R***
7/8"	(22,2)	***F/794-3***	16,0 ÷ 24,9	0.63 ÷ 0.98	BIT-F794-3-4	14 - 16 - 18 - 20 - 22 - 24					
1"	(25,4)	***F/794-4***	18,0 ÷ 26,9	0.71 ÷ 1.06		14 - 16 - 18 - 20 - 22 - 24					
1.1/4"	(31,8)	***F/794-5***	23,1 ÷ 34,0	0.91 ÷ 1.34	BIT-F794-5-6	12 - 14 - 16 - 18 - 20 - 22	1/2" (12,7)		***MOF 3***	***MOF 3 R***	
1.1/2"	(38,1)	***F/794-6***	30,0 ÷ 41,9	1.18 ÷ 1.65		12 - 14 - 16 - 18 - 20 - 22					

* *On request, tube cutter F/794 for bigger diameters are available*

Motorization for F/794

Maus Italia gives indications concernig the pneumatic and elecgtric motorizations suitable for the use of the F/794 as well as advise for the selection of the adapter to be used.

MBOS 16-2

Portable electric drill

- Mechnanical 2 speed gear
- Electronic regulator of the rpm for optimal cutting speed
- Optimal control with ergonomic grip and supplementary grip

Electric		**MBOS-16-2**	
Voltage	Volt	220V - 50/60 Hz - 1 Ph	
Power consumpion	Watt	1200	
Speed No-Load	giri/min RPM	0-520 / 0-1600	
Speed Full-Load	giri/min RPM	0-520 / 0-1600	
Weight	Kg *Lb*	3,70	*8.16*
Dimension	mm *inches*	488 x 82	*19.2 x 3.2*

Adapters

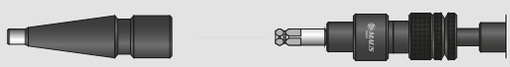
F/311 - 3/8"
F/312/CIL - 1/2"

MOF

Portable penumatic drill

- With morse Tape shank
- Two model available: MOF 20R and MOF 3R / Each models are reversible

Pneumatic		**MOF 20 R**		**MOF 3**		**MOF 3 R**	
Speed	Lap/min	470		170		140	
Power	Watt	745		745		745	
Shank	CM	2		2		2	
Air shank	" gas	3/8" gas		3/8" gas		3/8" gas	
Air consumption	Lt/sec *cfm*	14	*0.49*	14	*0.49*	14	*0.49*
Weight	Kg *Lb*	4,5	*9.22*	4,2	*8.82*	4,6	*10.10*
Dimension	Ø x L x h mm	66x236x360		66x272x360		66x241x360	
	Ø x L x h "	*2.6 x 8.3 x 14.2*		*2.6 x 10.7 x 14.2*		*2.6 x 9.5 x 14.2*	



Adapters

RCM - 2 - 3/8"
RCM - 2 - 1/2"

Manual tools

Equipment for the manual maintenance of the tubes in the heat exchangers

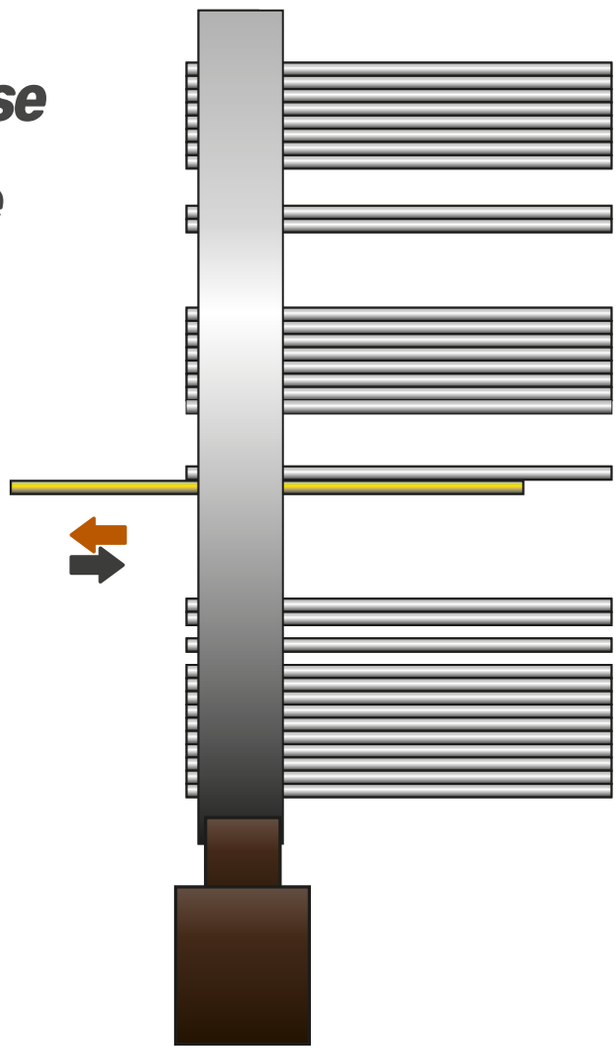
This panorama of manual tools is the entire products of Maus Italia for the manual, low cost maintenance of tubes in heat exchangers in oil refineries, condensers in electric power stations, boilers, etc...

These Manual tools work in synergy to increase the effectiveness of the work on the tube being replaced. The tube reamer F/791 starts fiorst 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 offer less resistance.

Manual tools also includes manual tube cutters F/790, a manual extractors F/800 and a pneumatic hammer F/789 suggested for use with the above tools.

Flexibility and economy of use

High quality of maintenance



F/790

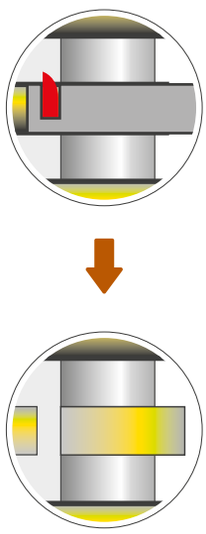
One revolution tube cutter

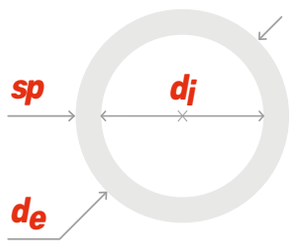
From 50,8 mm to 152,4 mm (from 2" to 6")

Extra lenght on request

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

d_e		sp			d_i		F/790	Spare bit	⌀
"	mm	B.W.G	mm	inches	mm	inches	Cod.	Cod.	inches
1/2"	(12,7)	18	1,2	0.049	10,2	0.402	F/790-1	BIT-F790-1-2	1/4"
		20	0,9	0.035	10,9	0.430	F/790-2		
5/8"	(15,9)	14	2,1	0.083	11,7	0.459	F/790-3	BIT-F790-3	
		16	1,6	0.065	12,6	0.495	F/790-4	BIT-F790-4	3/8"
		18	1,2	0.049	13,4	0.527	F/790-5	BIT-F790-5	
		20	0,9	0.035	14,1	0.555	F/790-6	BIT-F790-6	
3/4"	(19,0)	14	2,1	0.083	14,8	0.584	F/790-7	BIT-F790-7	3/8"
		16	1,6	0.065	15,7	0.620	F/790-8		
		18	1,2	0.049	16,6	0.652	F/790-9	BIT-F790-8÷16	1/2"
		20	0,9	0.035	17,3	0.680	F/790-10		
		22	0,7	0.028	17,6	0.694	F/790-11		
7/8"	(22,2)	14	2,1	0.083	18.0	0.709	F/790-12		1/2"
		16	1,6	0.065	18,9	0.745	F/790-13		
		18	1,2	0.049	19,7	0.777	F/790-14	BIT-F790-8÷16	
		20	0,9	0.035	20,4	0.805	F/790-15		5/8"
		22	0,7	0.028	20,8	0.819	F/790-16		
1"	(25,4)	12	2,8	0.109	19,9	0.782	F/790-17		
		14	2,1	0.083	21,2	0.834	F/790-18		5/8"
		16	1,6	0.065	22,0	0.870	F/790-19		
		18	1,2	0.049	22,9	0.902	F/790-20	BIT-F790-17÷22	
		20	0,9	0.035	23,6	0.930	F/790-21		3/4"
		22	0,7	0,028	24,0	0,944	F/790-22		
1.1/4"	(31,8)	12	2,8	0.109	26,2	1.032	F/790-23		
		14	2,1	0.083	27,5	1.084	F/790-24		
		16	1,6	0.065	28,4	1.120	F/790-25	BIT-F790-23÷32	3/4"
		18	1,2	0.049	29,3	1.152	F/790-26		
		20	0,9	0.035	30,0	1.180	F/790-27		
1.1/2"	(38,1)	12	2,8	0.109	32,6	1.282	F/790-28		
		14	2,1	0.083	33,9	1.334	F/790-29		
		16	1,6	0.065	34,8	1.370	F/790-30	BIT-F790-23÷32	1"
		18	1,2	0.049	35,6	1.402	F/790-31		
		20	0,9	0.035	36,3	1.430	F/790-32		

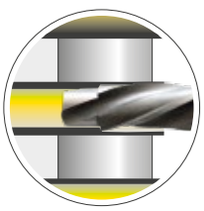




F/791

Tube reamer

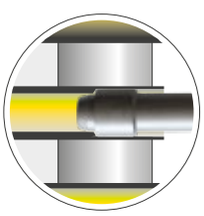
These are high-speed stewel reamers, with Morse taper connection and rear tang with diameter ground in accordance with thw BWG of the tubes. To use to reduce the thickness of tubes to be replaced, for a depth of about 80% of the thickness of the sheet.



F/793

Tube expeller

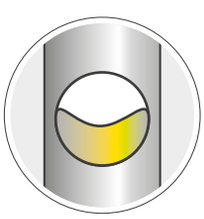
Use preferably with a pneumatic hammer.
Standard tang: ϴ 17,2 mm (0.677") x 60,3 mm (2.3/8")



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: ϴ 17,2 mm (0.677") x 60,3 mm (2.3/8")



F/789

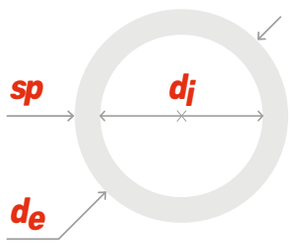
Pneumatic hammer specific for manual tools

d_e		sp			d_j		F/791	L1			F/793	L3		F/792	L2	
"	mm	B.W.G	mm	inches	mm	inches	Cod.	mm	inches		Cod.	mm	inches	Cod.	mm	inches
1/2"	(12,9)	-	-	-	-	-	-				-	-	-	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	F1791.2				F/793-2					
		12	2,8	0.109	10,3	0.407	F1791-3				F/793-3					
		13	2,4	0.095	11,0	0.435	F/791-4				F/793-4					
		14	2,1	0.083	11,7	0.459	F/791-5	100,0	3.937	2	F/793-5	182,0	7.165	F/792-1	192,0	7.559
		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	F1791-10				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				F/793-12					
		14	2,1	0.083	14,8	0.584	F/791-13	120,0	4.724	2	F/793-13	182,0	7.165	F/792-2	194,0	7.638
		15	1,8	0.072	15,4	0.606	F1791-14				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				F/793-20					
		14	2,1	0.083	18,0	0.709	F/791-21	100,0	3.937	2	F/793-21	182,0	7.165	F/792-3	190,0	7.480
		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					
		18	1,2	0.049	22,9	0.902	F/791-33				F/793-33					
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	180,0	6.496	4	F/793-35	182,0	7.165	F/792-5	164,0	6.457
		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				F/793-37					
		13	2,4	0.095	26,9	1.060	F/791-38	165,0	6.496	3	F/793-38	182,0	7.165	F/792-5	164,0	6.457
		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					

F/800

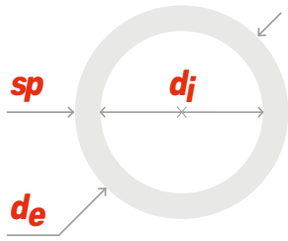
Manual extractor

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



de		sp	dim		TPMM Mandrel	⌀	TPCM Collar	F/800 Manual extractor	⌀
"	mm	B.W.G	mm	inches	Cod.	inches	Cod.	Cod.	
3/8"	(9,5)	17 ÷ 19	6,5 ÷ 7,5	0.256 ÷ 0.295	TPMM-7	1/2"	TPCM-11	F/800-1	22 mm
		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				
		17 - 18	9,5 ÷ 10,5	0.374 ÷ 0.413	TPMM-10	1/2"	TPCM-14	F/800-1	22 mm
		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	22 mm
		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				
		12 - 13	13,5 ÷ 14,5	0.531 ÷ 0.571	TPMM-14				
		14 - 15	14,5 ÷ 15,5	0.571 ÷ 0.610	TPMM-15	1/2"	TPCM-21	F/800-1	22 mm
		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	32 mm
		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				
		12	19,5 ÷ 20,5	0.768 ÷ 0.807	TPMM-20				
		13 - 14	20,5 ÷ 21,5	0.807 ÷ 0.846	TPMM-21	3/4"	TPCM-28	F/800-2	32 mm
		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	24,5 ÷ 25,5	0.995 ÷ 1.004	TPMM-25	1"	TPCM-34	F/800-3	46 mm
		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				
		12 -13	32,5 ÷ 33,5	1.280 ÷ 1.319	TPMM-33				
		14	33,5 ÷ 34,5	1.319 ÷ 1.358	TPMM-34	1"	TPCM-41	F/800-3	46 mm
		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				

d_e		sp	d_i m		TPMM Mandrel	⌀	TPCM Collar	F/800 Manual extractor	⌀
"	mm	B.W.G	mm	inches	Cod.	inches	Cod.	Cod.	
2"	(50,8)	10	43,5 ÷ 44,5	1.713 ÷ 1.752	TPMM-44	1.1/4"	TPCM-56	*F/800-4*	hexagon 55 mm
		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	TPM-48				
		19 ÷ 22	48,5 ÷ 49,5	1.909 ÷ 1.949	TPM-49				



TPMM Mandrel

TPCM Collar

F/800 Manual extractor

Manual key

mausitalia.it