

# Runpul

Automatic continuous hydraulic tube puller

Maintenance

Tube puller



## 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.



## ***Every day in over 80 country worldwide***

Find an official distributor in your country





# Runpul

*Automatic hydraulic tube puller  
for the continuous high-speed extraction of tubes*

Maus Italia automatic hydraulic tube pullers are the result of more than forty years of experience in the field of tube extraction. Runpul is designed and manufactured for fast and continuous extraction.

Runpul comes in an electrically or pneumatically operated version. It is equipped with an incorporated remote control and comes in four versions depending on the extraction force ( Runpul 15, Runpul 30, Runpul 45 and Runpul 60 ).



## **Automatic**

Exclusive double-jaw system



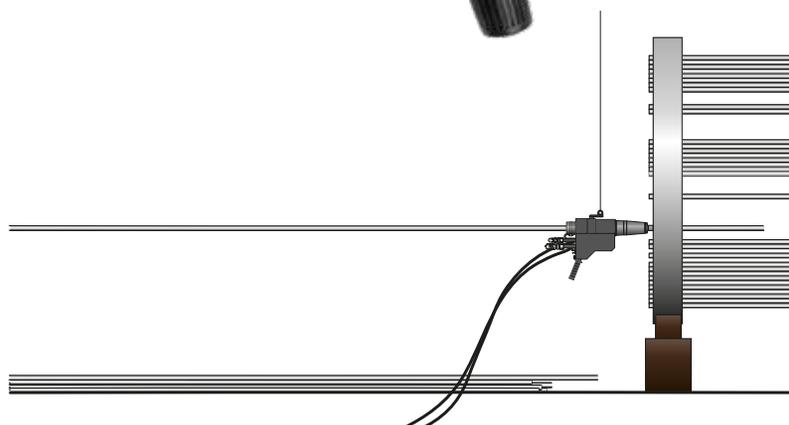
## **High speed**

For large-scale maintenance operations



## **High quality**

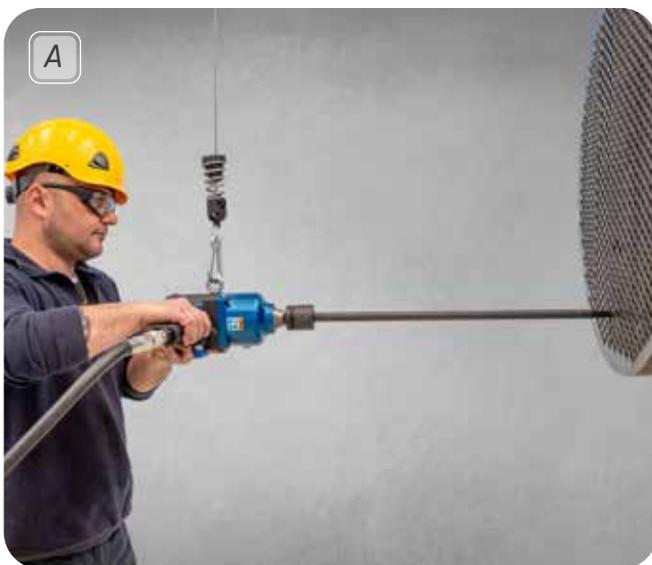
Preserving the tube sheet hole



## **The extraction process**

The extraction process consists of the following steps:

- Select the correct tools (TPC thrust collar, TPJ tightening jaws and TPM extraction mandrel) according to the dimensions of the tube to be extracted
  - Install the TPC thrust collar and TPJ tightening jaws onto the RUNPUL hydraulic puller
  - Screw the TPM extraction mandrel into the tube inlet using the TPA pneumatic Impact wrench and TPS reduction coupling ( Pic. A )
  - Position the RUNPUL hydraulic puller onto the TPM extraction mandrel until the TPC collar is in contact with the tube plate (Pic. B)
  - Proceed with the tube extraction. In the first extraction phase, the TPJ jaws will clamp the TPM mandrel ( Fig. C )
  - In the following steps, the TPJ extraction jaws will clamp the tube until it is fully extracted ( Fig. D )
- The operator will select the manual or automated mode - either slow or fast - depending on the condition of both the tube and heat exchanger.



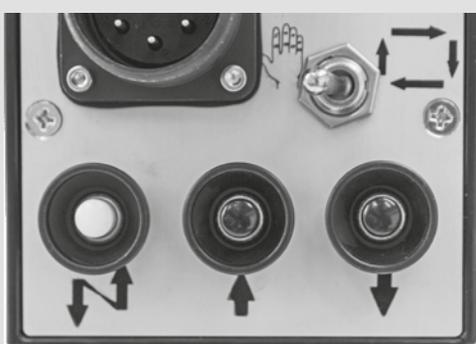
## Features that make the difference



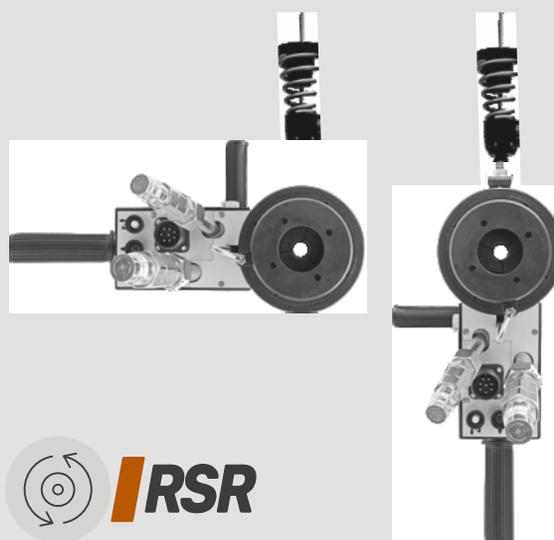
The Unclamping System Device is an emergency system for unlocking jaws that are stuck on the tube in case the Runpul needs to be removed from the tube.



The Over-Pressure Switch cuts off hydraulic oil delivery when the piston reaches the end of its stroke, preventing unnecessary overpressure in the system.



The RC24 remote control beside the knobs simplifies the working steps. In the electric version it is powered at a low voltage of 24 Volts. In its pneumatic version, the control is operated by the air pressure.

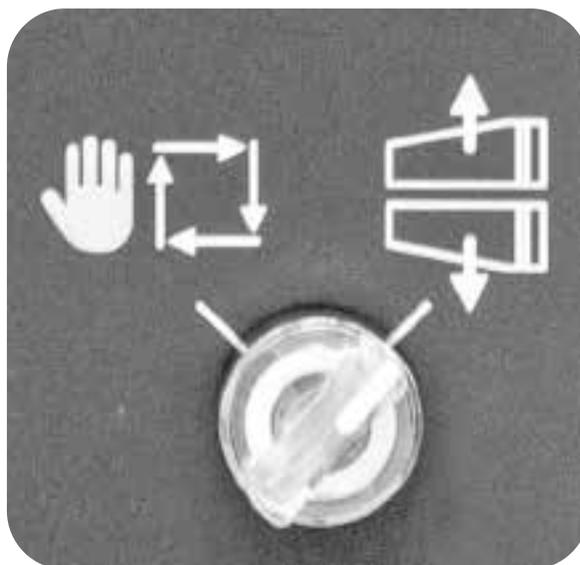
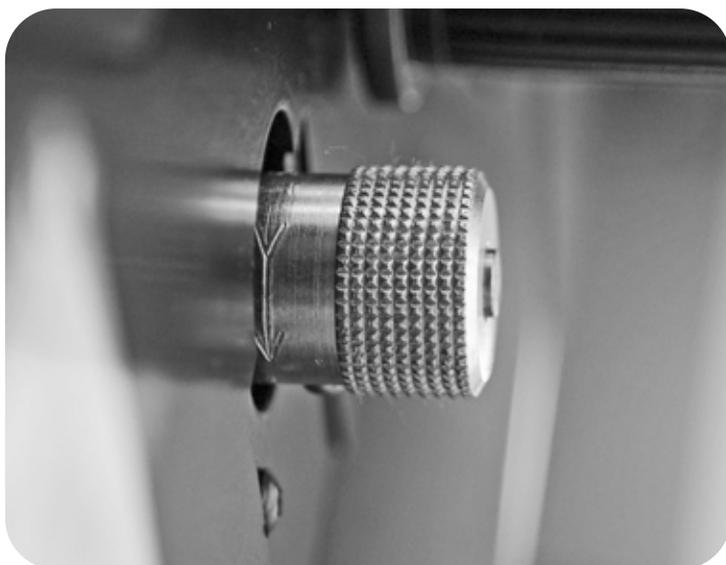


The Revolving Support Ring on which RUNPUL is suspended allows optimal positioning in the tightest spaces.

## Unclamping System Device



The Unclamping System Device is an emergency system for unlocking jaws that are stuck on the tube. By turning the selector switch to the 'Jaw release' position located on the control panel of the TP60 HDE or TP30 power unit and simultaneously opening the valve on Runpul, the front jaw is released via an hydraulic cylinder inside Runpul. This operation allows Runpul to be taken out along the tube to be extracted.



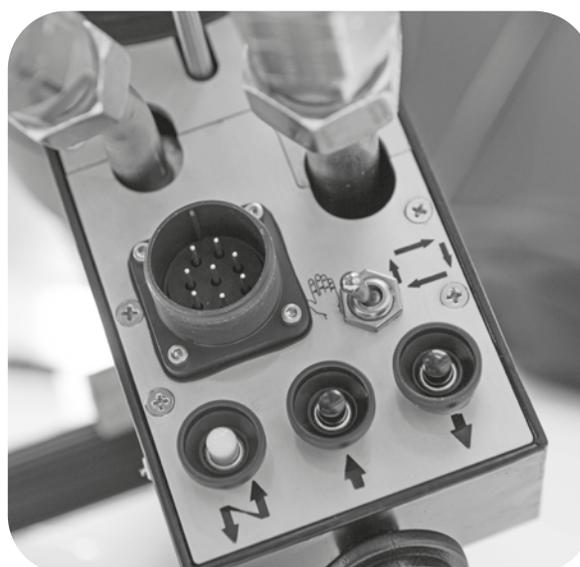
## Easy and friendly commands

### THE RC24 REMOTE CONTROL

The RC24 remote control beside the knobs simplifies the working steps. In the electric version it is powered at a low voltage of 24 Volts.

It includes the following commands:

- Fixed connector to connect the signal cable from Runpul to the hydraulic unit
- 'Manual' / 'Automated' cycle selector switch
- Start/Stop command in case of automated cycle
- Extraction command (in manual mode) or fast extraction (in automated mode)
- Return command (in manual mode)

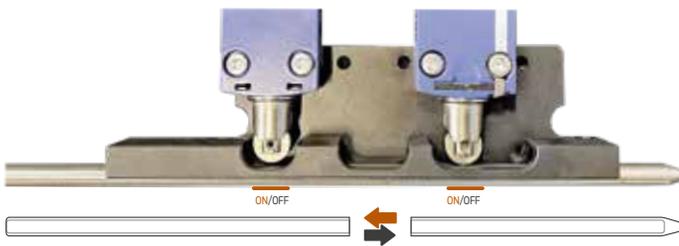
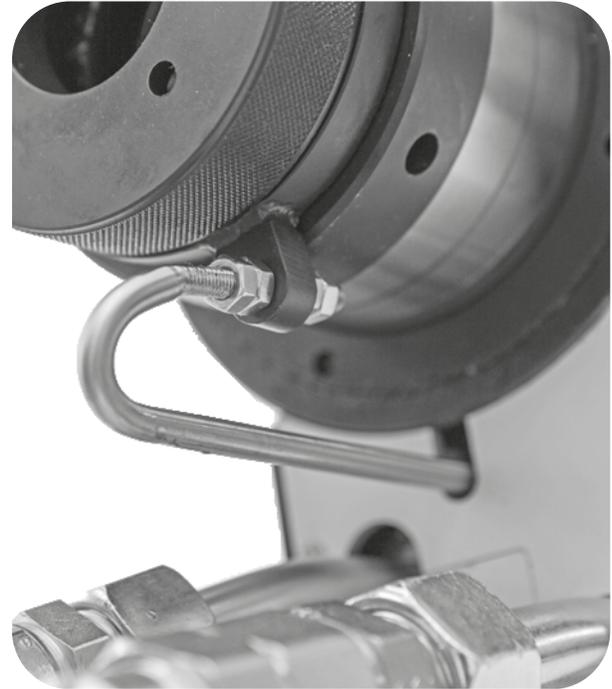


## Over Pressure Switch



The Over-Pressure Switch cuts off hydraulic oil delivery when the piston reaches the end of its stroke, preventing unnecessary overpressure in the system and thus protecting the hydraulic pump.

A rigid shaft mounted on the hydraulic piston via a ring slides into the microswitch holder controlling the interruption of the hydraulic oil supply.



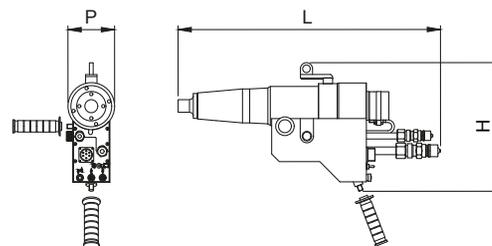
## High Pressure Hydraulic Hoses



High Pressure Hydraulic Hoses are 6 m (19.7 ft) long and certified for use up to 350 bar (5075 psi). They are equipped with FLAT fittings that reduce dripping during connection and disconnection from RUNPUL and hydraulic power unit. They are also equipped with safety systems that prevent a whip effect in the event of a broken hose-fitting connection.



## Electric versions



### Runpul 15 EM

- > Tube (*min* < *de* > *max*) 9,2 ÷ 28,6 mm - 3/8" ÷ 1.1/8"
- > Maximum extraction force 15000 Kg / 33000 lb
- > Stroke 101,6 mm / 4"
- > Speed with TP60HDE 6,2 mt - 244" / min
- > Speed with TP30EPF 5,0 mt - 197" / min
- > Dimensions:
  - Width *L*: 690 mm / 27.2"
  - Depth *P*: 124 mm / 4.9"
  - Height *H*: 340 mm / 13.4"
- > Remote control supply 24 V
- > Weight 26 Kg / 57.2 lb

### Runpul 30 EM

- > Tube (*min* < *de* > *max*) 9,5 ÷ 42,4 mm - 3/8" ÷ 1.1/4"GAS
- > Maximum extraction force 30000 Kg / 66000 lb
- > Stroke 101,6 mm / 4"
- > Speed with TP60HDE 4,4 mt - 173" / min
- > Speed with TP30EPF 3,2 mt - 126" / min
- > Dimensions:
  - Width *L*: 730 mm / 28.7"
  - Depth *P*: 155 mm / 6.1"
  - Height *H*: 430 mm / 16.9"
- > Remote control supply 24 V
- > Weight 46 Kg / 101.2 lb

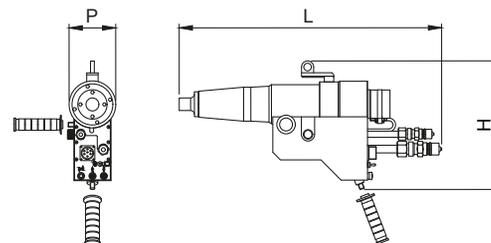
### Runpul 45 EM

- > Tube (*min* < *de* > *max*) 25,4 ÷ 76,2 mm - 1" ÷ 3"
- > Maximum extraction force 45000 Kg / 99000 lb
- > Stroke 50,8 mm / 2"
- > Speed with TP60HDE 2,6 mt - 102" / min
- > Speed with TP30EPF 1,6 mt - 63" / min
- > Dimensions:
  - Width *L*: 740 mm / 29.1"
  - Depth *P*: 190 mm / 7.5"
  - Height *H*: 430 mm / 16.9"
- > Remote control supply 24 V
- > Weight 70 Kg / 154 lb

### Runpul 60 EM

- > Tube (*min* < *de* > *max*) 50,8 ÷ 101,6 mm - 2" ÷ 4"
- > Maximum extraction force 60000 Kg / 132000 lb
- > Stroke 50,8 mm / 2"
- > Speed with TP60HDE 2,2 mt - 87" / min
- > Speed with TP30EPF 2,2 mt - 87" / min
- > Dimensions:
  - Width *L*: 750 mm / 29.5"
  - Depth *P*: 220 mm / 8.7"
  - Height *H*: 450 mm / 17.7"
- > Remote control supply 24 V
- > Weight 96 Kg / 211.2 lb

## Pneumatic versions



### Runpul 15 PM

- > Tube (*min* < *de* > *max*) 9,2 ÷ 28,6 mm - 3/8" ÷ 1.1/8"
- > Maximum extraction force 15000 Kg / 33000 lb
- > Stroke 101,6 mm / 4"
- > Speed with TP60HDP 5,8 mt - 228" / min
- > Speed with TP30PPF 4,6 mt - 181" / min
- > Dimensions:
  - Width *L*: 690 mm / 27.2"
  - Depth *P*: 124 mm / 4.9"
  - Height *H*: 340 mm / 13.4"
- > Remote control power supply 6-7bar
- > Weight 26 Kg / 57.2 lb

### Runpul 30 PM

- > Tube (*min* < *de* > *max*) 9,5 ÷ 42,4 mm - 3/8" ÷ 1.1/4" GAS
- > Maximum extraction force 30000 Kg / 66000 lb
- > Stroke 101,6 mm / 4"
- > Speed with TP60HDP 4,2 mt - 165" / min
- > Speed with TP30PPF 3,0 mt - 118" / min
- > Dimensions:
  - Width *L*: 730 mm / 28.7"
  - Depth *P*: 155 mm / 6.1"
  - Height *H*: 430 mm / 16.9"
- > Remote control power supply 6-7bar
- > Weight 46 Kg / 101.2 lb

### Runpul 45 PM

- > Tube (*min* < *de* > *max*) 25,4 ÷ 76,2 mm - 1" ÷ 3"
- > Maximum extraction force 45000 Kg / 99000 lb
- > Stroke 50,8 mm / 2"
- > Speed with TP60HDP 2,6 mt - 102" / min
- > Speed with TP30PPF 1,6 mt - 63" / min
- > Dimensions:
  - Width *L*: 740 mm / 29.1"
  - Depth *P*: 190 mm / 7.5"
  - Height *H*: 430 mm / 16.9"
- > Remote control power supply 6-7bar
- > Weight 70 Kg / 154 lb

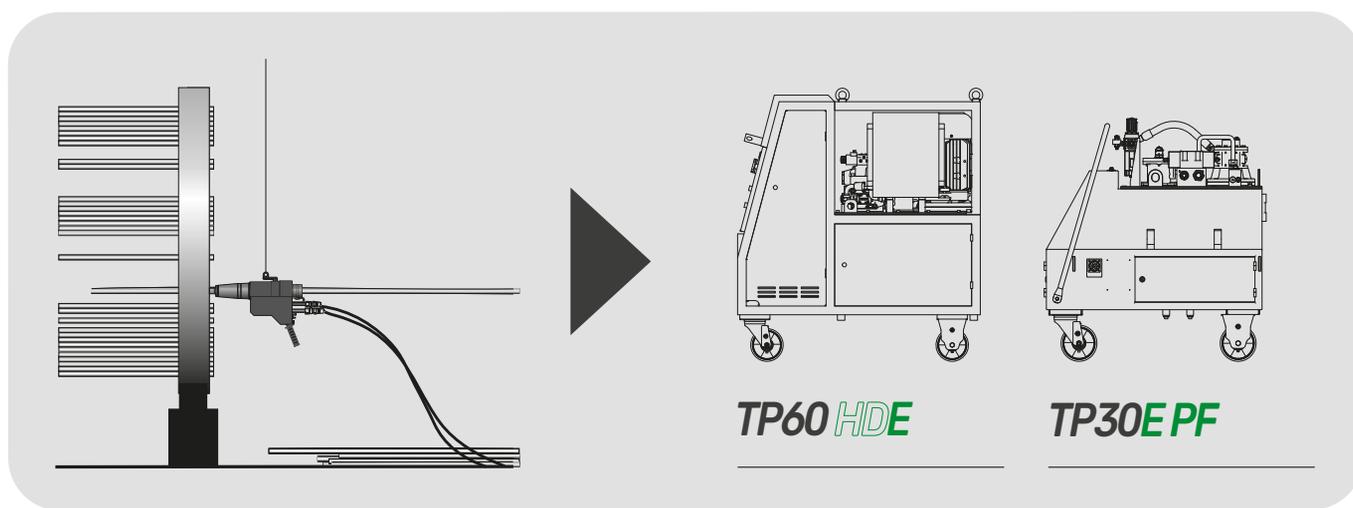
### Runpul 60 PM

- > Tube (*min* < *de* > *max*) 50,8 ÷ 101,6 mm - 2" ÷ 4"
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- > Stroke 50,8 mm / 2"
- > Speed with TP60HDP 2,2 mt - 87" / min
- > Speed with TP30PPF 2,2 mt - 87" / min
- > Dimensions:
  - Width *L*: 750 mm / 29.5"
  - Depth *P*: 220 mm / 8.7"
  - Height *H*: 450 mm / 17.7"
- > Remote control power supply 6-7bar
- > Weight 96 Kg / 211.2 lb

## Power unit coupling

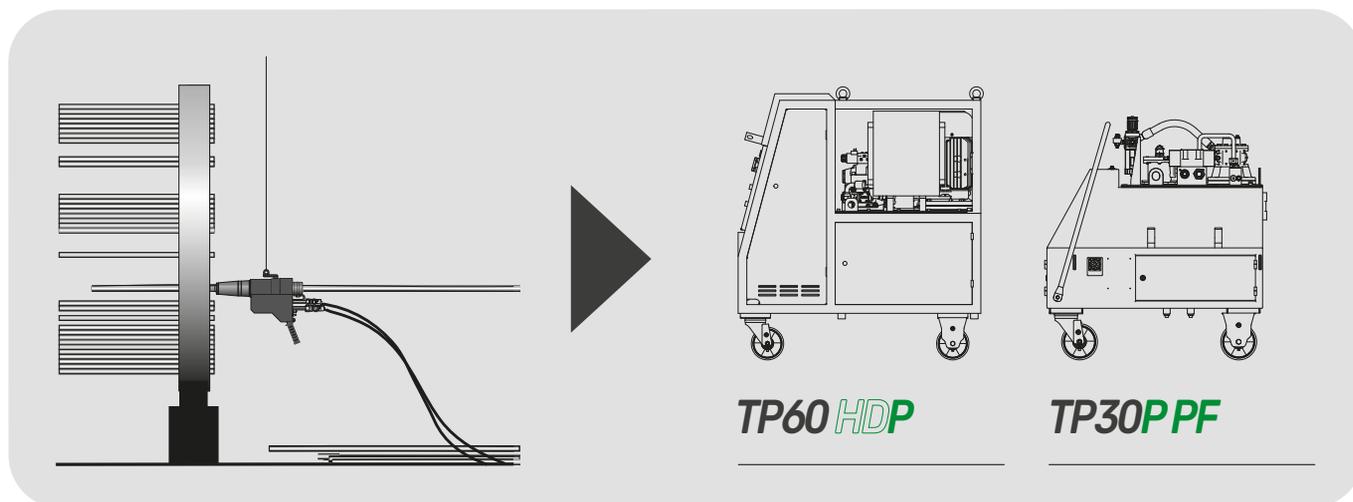
### Runpul EM

The electric version of the Runpul tube extractor can be combined with both the TP60HDE and TP30E PF electric power units



### Runpul PM

The pneumatic version of the Runpul tube extractor can be combined with both the TP60HDP and TP30P PF electric power units





# TP60 HDE

## PLC-controlled Heavy Duty electric hydraulic power unit to be combined with a Runpul series tube extractor



Maximum pressure up to 350 bar ( 5075 psi )

The TP60HDE power unit is characterised by a use under particularly demanding conditions. The upgraded motor, the pump with variable flow rate, the improved oil cooler, the IP55-rated control cabinet, the dedicated software, as well as the accessory and tool housings, make this machine an ideal partner for tube bundle maintenance.



Features in automatic mode



Features in manual mode



Jaws release



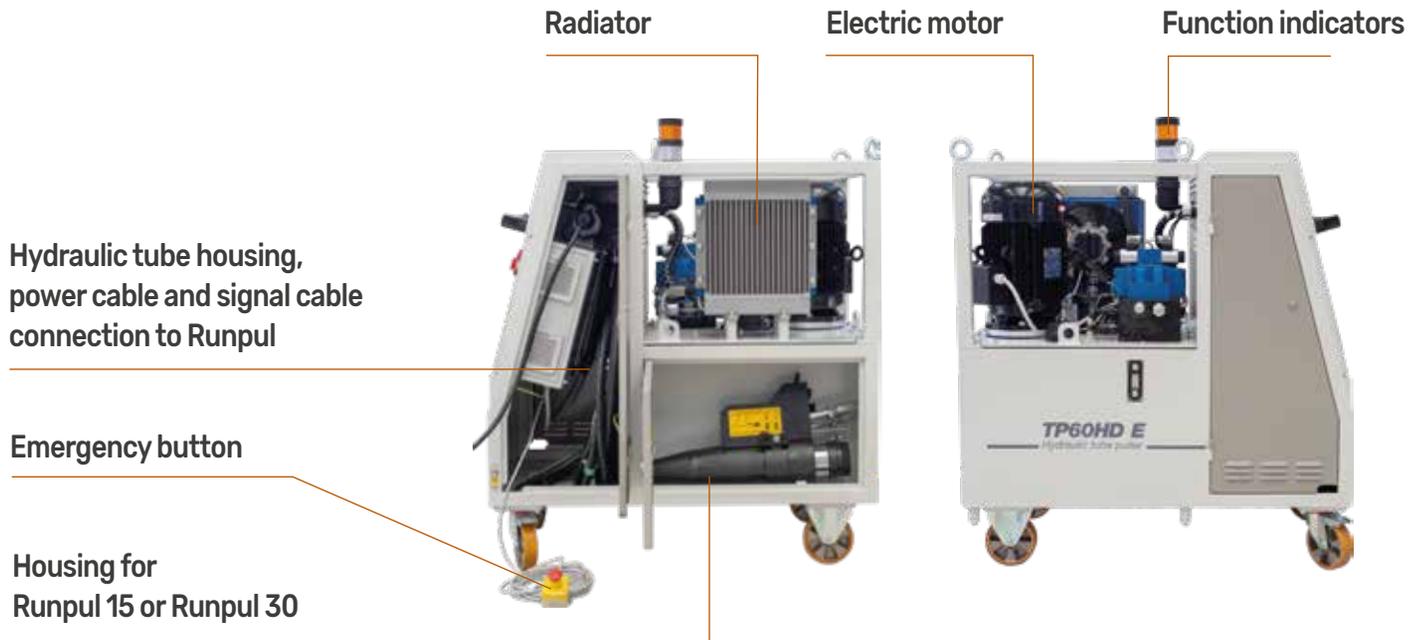
Alarm indicators

- > Max pression: 350 bar / 5075 psi
- > Oil flow: 65 Lt/min
- > Hydraulic oil ( not included ): 100 Lt / 27 US gal  
Viscosity 68
- > Supply: 400V 3Ph / 7,5 Kw
- > IP: 55
- > Dimensions:
  - Width: 73 cm / 28,74"
  - Depth: 113 cm / 44,49"
  - Height: 121 cm / 47,64"
- > Weight ( without hydraulic oil ): 320 kg / 705 lb
- > Crate



Width: 124 cm / 48,82"  
 Depth: 88 cm / 34,65"  
 Height: 141 cm / 55,51"  
 Weight of the crate: 98 kg / 216 lb





Hydraulic oil filter with electrical signalling for filters to be replaced



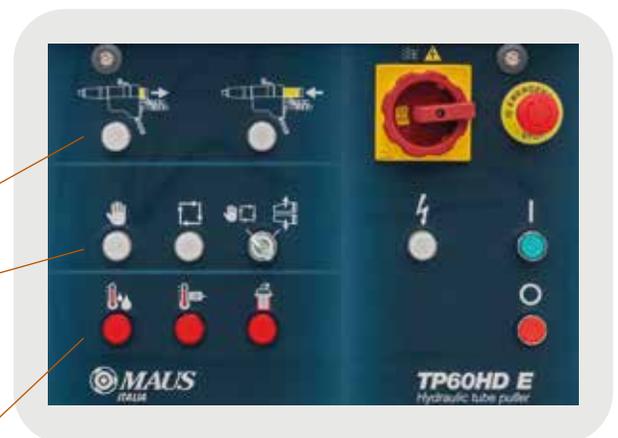
Electrovalves in automated / manual cycle (slow/fast)  
Hydraulic oil flow and pressure regulation



End of piston stroke

Manual / automated mode / Jaw release

Hydraulic oil temperature alarm  
Electric motor overheating alarm  
Warning to replace the hydraulic oil filter cartridge



# TP60 HDP

## Heavy Duty pneumatic hydraulic power unit to be combined with a Runpul series tube extractor



Maximum pressure up to 300 bar ( 4350 psi )



Features in automatic mode



Features in manual mode



Alarm indicators

The TP60HDP power unit is characterised by a use under particularly demanding conditions. The upgraded motor, the pump with variable flow rate, the improved oil cooler as well as the accessory and tool housings, make this machine an ideal partner for tube bundle maintenance professionals.

- > Max pressure: 300 bar / 4350 psi
- > Oil flow: 60 Lt/min
- > Hydraulic oil ( not included ): 100 Lt / 27 US gal  
Viscosity 46
- > Motor power: 6,7 Kw
- > Air consumption: 420 m<sup>3</sup>/h @ 7 bar  
245 CFM @ 100 psi
- > Dimensions:
  - Width: 73 cm / 28,74"
  - Depth: 113 cm / 44,49"
  - Height: 121 cm / 47,64"
- > Weight ( without hydraulic oil ): 300 kg / 661 lb
- > Crate
  - Width: 124 cm / 48,82"
  - Depth: 88 cm / 34,65"
  - Height: 141 cm / 55,51"
  - Weight of the crate: 98 kg / 216 lb





Runpul housing

Housing for hydraulic tubes and cable connection to Runpul

Radiator



Pneumatic motor



Hydraulic oil filter with mechanical indicator for hydraulic oil filter change warning.



# TP30E PF

## Hydraulic electric power unit to be combined with the Runpul series tube extractor



Maximum pressure up to 350 bar ( 5075 psi )



Features in automatic mode



Features in manual mode



Jaws release

The TP30E PF power unit is designed for both heavy-duty maintenance work and minor maintenance.

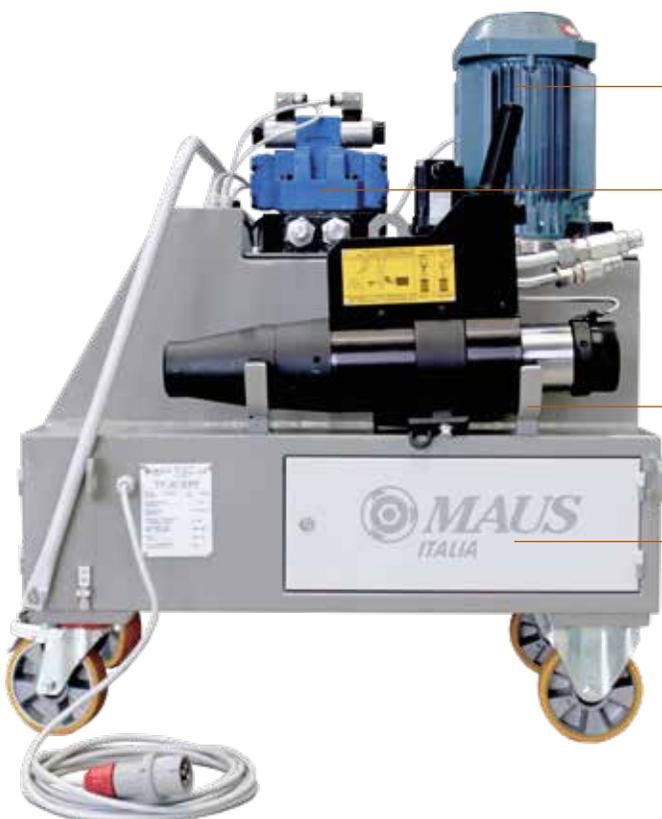
Thanks to its low weight and small volume, it is particularly suitable for handling within plants.

- > Max pression: 350 bar / 5075 psi
- > Oil flow: 35 Lt/min
- > Hydraulic oil ( not included ) : 90 Lt / 24 US gal  
Viscosity 46
- > Supply: 400V 3Ph / 4 Kw
- > IP: 20
- > Dimensions:
  - Width: 71 cm / 27,95"
  - Depth: 92 cm / 36,22"
  - Height: 98 cm / 38,58"
- > Weight ( without hydraulic oil ): 228 kg / 48.5 lb
- > Crate



Width: 108 cm / 42,52"  
 Depth: 98 cm / 38,58"  
 Height: 135 cm / 53,15"  
 Weight of the crate: 90 kg / 198 lb





Electric motor

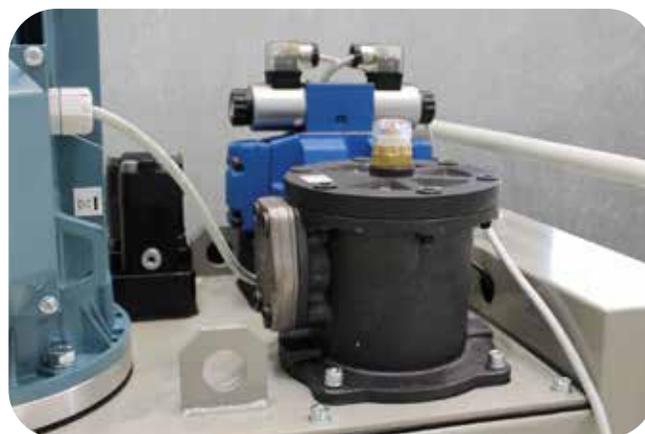
Electrovalve in manual / automated cycle

Runpul housing

Housing for service keys and tools

Hydraulic oil filter with mechanical indicator for hydraulic oil filter change warning.

### Control panel



Manual / Automatic mode / Jaw release

End of piston stroke

Motor start

# TP30P PF

## Hydraulic pneumatic power unit to be combined with the Runpul series tube extractor



Maximum pressure up to 350 bar ( 5075 psi )



Features in automatic mode



Features in manual mode

The TP30P PF power unit is designed for both heavy-duty maintenance work and minor maintenance.

Thanks to its low weight and small volume, it is particularly suitable for handling within the plant.

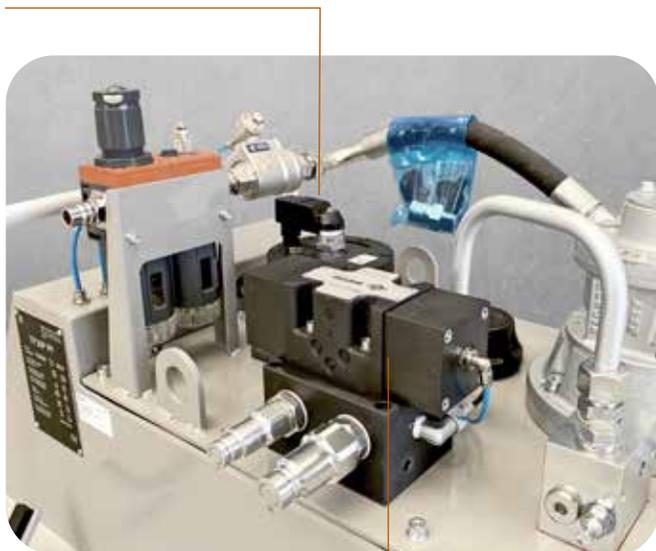
- > Max pressure: 350 bar / 5075 psi
- > Oil flow: 30 Lt/min
- > Hydraulic oil ( not included ) : 90 Lt / 24 US gal  
Viscosity 46
- > Motor power: 3,7 Kw
- > Air consumption: 300 m<sup>3</sup>/h @ 7 bar  
175 CFM @ 100 psi
- > Dimensions:
  - Width: 71 cm / 27,95"
  - Depth: 92 cm / 36,22"
  - Height: 98 cm / 38,58"
- > Weight ( without hydraulic oil ) : 146 kg / 322 lb
- > Crate
  - Width: 108 cm / 42,52"
  - Depth: 98 cm / 38,58"
  - Height: 131 cm / 51,57"
  - Weight of the crate: 90 kg / 198 lb





Housing for service keys and tools.

Hydraulic oil filter with mechanical indicator for oil filter change warning.

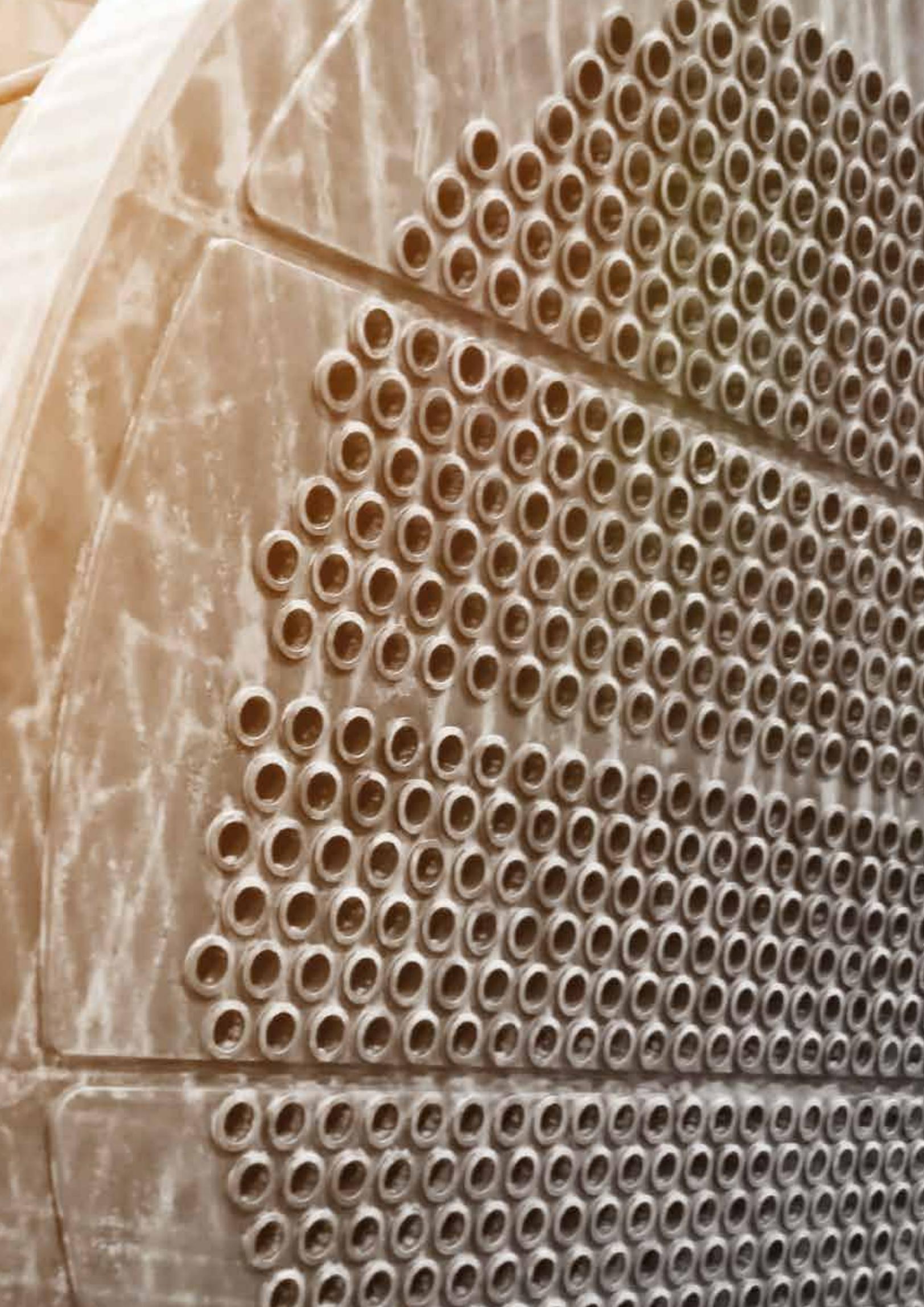


Pneumatic valves in manual / automated mode

Pneumatic motor



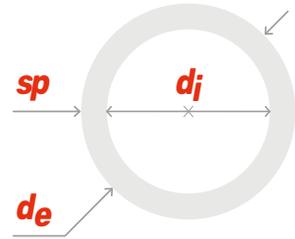




# TPM

Extraction mandrel for tubes from 3/8" ( 9,5mm ) to 2.1/2" ( 63,5mm )

Tube features				Mandrel <input checked="" type="checkbox"/>		
$d_e$		$sp$	$d_j$			
inches	mm	B.W.G	mm	inches	Cod. In.	
3/8" (9,5)		17 ÷ 19	6,5 ÷ 7,5	0.256 ÷ 0.295	TPM-7	5/16"
		20 ÷ 24	7,5 ÷ 8,5	0.295 ÷ 0.335	TPM-8	
1/2" (12,7)		14 ÷ 16	8,5 ÷ 9,5	0.335 ÷ 0.374	TPM-9	3/8"
		17 ÷ 18	9,5 ÷ 10,5	0.374 ÷ 0.413	TPM-10	
		19 ÷ 21	10,5 ÷ 11,5	0.413 ÷ 0.453	TPM-11	
		24	11,5 ÷ 12,5	0.453 ÷ 0.492	TPM-12	
5/8" (15,9)		12 ÷ 13	10,3 ÷ 11,1	0.407 ÷ 0.435	TPM-11A	1/2"
		14 ÷ 15	11,7 ÷ 12,2	0.459 ÷ 0.481	TPM-12A	
		16 ÷ 17	12,5 ÷ 13,5	0.492 ÷ 0.531	TPM-13A	
		19 ÷ 21	13,5 ÷ 14,5	0.531 ÷ 0.571	TPM-14A	
		23 ÷ 24	14,5 ÷ 15,5	0.571 ÷ 0.610	TPM-15A	
3/4" (19,0)		11	12,5 ÷ 13,5	0.492 ÷ 0.531	TPM-13	5/8"
		12 ÷ 13	13,5 ÷ 14,5	0.531 ÷ 0.571	TPM-14	
		14 ÷ 15	14,5 ÷ 15,5	0.571 ÷ 0.610	TPM-15	
		16 ÷ 17	15,5 ÷ 16,5	0.610 ÷ 0.650	TPM-16	
		18 ÷ 20	16,5 ÷ 17,5	0.650 ÷ 0.689	TPM-17	
		21 ÷ 24	17,5 ÷ 18,5	0.689 ÷ 0.728	TPM-18	
7/8" (22,2)		14	17,5 ÷ 18,5	0.689 ÷ 0.728	TPM-18S	5/8"
		16 ÷ 17	18,5 ÷ 19,5	0.728 ÷ 0.768	TPM-19S	
		18 ÷ 19	19,5 ÷ 20,5	0.768 ÷ 0.807	TPM-20S	
1" (25,4)		10 ÷ 11	18,5 ÷ 19,5	0.728 ÷ 0.768	TPM-19	3/4"
		12	19,5 ÷ 20,5	0.768 ÷ 0.807	TPM-20	
		13 ÷ 14	20,5 ÷ 21,5	0.807 ÷ 0.846	TPM-21	
		15 ÷ 16	21,5 ÷ 22,5	0.846 ÷ 0.886	TPM-22	
		18	22,5 ÷ 23,5	0.886 ÷ 0.925	TPM-23	
		19 ÷ 20	23,5 ÷ 24,5	0.925 ÷ 0.965	TPM-24	
		23,5 ÷ 24,5	23,5 ÷ 24,5	0.925 ÷ 0.965	TPM-24G	
3/4" Gas (26,9)		13	21,5 ÷ 22,5	0.846 ÷ 0.886	TPM-22G	3/4"
		14 ÷ 15	22,5 ÷ 23,5	0.886 ÷ 0.925	TPM-23G	
		16 ÷ 17	23,5 ÷ 24,5	0.925 ÷ 0.965	TPM-24G	
1.1/4" (31,8)		19 ÷ 21	24,5 ÷ 25,4	0.956 ÷ 1.004	TPM-25G	1"
		10	24,5 ÷ 25,4	0.956 ÷ 1.004	TPM-25	
		11 ÷ 12	25,5 ÷ 26,5	1.004 ÷ 1.043	TPM-26	
		13	26,5 ÷ 27,5	1.043 ÷ 1.083	TPM-27	
		14 ÷ 15	27,5 ÷ 28,5	1.083 ÷ 1.112	TPM-28	
		16 ÷ 18	28,5 ÷ 29,5	1.112 ÷ 1.161	TPM-29	
		19 ÷ 22	29,5 ÷ 30,5	1.161 ÷ 1.201	TPM-30	
1" Gas (33,7)		23 ÷ 24	30,5 ÷ 31,5	1.201 ÷ 1.240	TPM-31	1"
		9	25,5 ÷ 26,5	1.004 ÷ 1.043	TPM-26G	
		10	26,5 ÷ 27,5	1.043 ÷ 1.063	TPM-27G	
		11	27,5 ÷ 28,5	1.083 ÷ 1.122	TPM-28G	
		13 ÷ 14	28,5 ÷ 29,5	1.122 ÷ 1.161	TPM-29G	



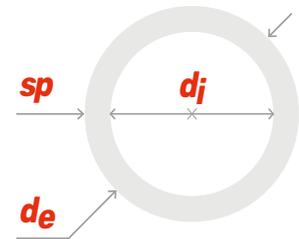
Dimensions fit for  
**Runpul 15**

Dimensions fit for  
**Runpul 30**

Dimensions fit for  
**Runpul 45**



Tube features				Mandrel <input checked="" type="checkbox"/>	
$d_e$		$sp$	$d_i$		
inches	mm	B.W.G	mm	inches	Cod. In.
<b>1.1/2"</b> <b>(38,1)</b>	10 ÷ 11	31,5 ÷ 32,5	1.240 ÷ 1.280	TPM-32	1"
	12 ÷ 13	32,5 ÷ 33,5	1.280 ÷ 1.319	TPM-33	
	14	33,5 ÷ 34,5	1.319 ÷ 1.358	TPM-34	
	15 ÷ 17	34,5 ÷ 35,5	1.358 ÷ 1.398	TPM-35	
	18 ÷ 20	35,5 ÷ 36,5	1.398 ÷ 1.437	TPM-36	
<b>1.1/4" Gas</b> <b>(42,4)</b>	21 ÷ 24	36,5 ÷ 37,5	1.437 ÷ 1.280	TPM-37	1"
	12	36,5 ÷ 37,5	1.437 ÷ 1.476	TPM-37G	
	15 ÷ 16	37,5 ÷ 38,5	1.476 ÷ 1.516	TPM-38G	
	14 ÷ 16	38,5 ÷ 39,5	1.516 ÷ 1.555	TPM-39G	
	17 ÷ 19	39,5 ÷ 40,5	1.555 ÷ 1.594	TPM-40G	
<b>1.3/4"</b> <b>(44,4)</b>	20 ÷ 24	40,5 ÷ 41,5	1.594 ÷ 1.634	TPM-41G	1"
	10 ÷ 11	37,5 ÷ 38,5	1.476 ÷ 1.516	TPM-38/44	
	12	38,5 ÷ 39,5	1.516 ÷ 1.555	TPM-39/44	
	13 ÷ 14	39,5 ÷ 40,5	1.555 ÷ 1.594	TPM-40/44	
	15 ÷ 16	40,5 ÷ 41,5	1.594 ÷ 1.634	TPM-41/44	
<b>1.1/2" Gas</b> <b>(48,3)</b>	18 ÷ 19	41,5 ÷ 42,5	1.634 ÷ 1.673	TPM-42/44	1"
	20 ÷ 24	42,5 ÷ 43,5	1.673 ÷ 1.713	TPM-43/44	
	11 ÷ 12	42,5 ÷ 43,5	1.673 ÷ 1.713	TPM-43G	
	13 ÷ 14	43,5 ÷ 44,5	1.713 ÷ 1.752	TPM-44G	
<b>2"</b> <b>(50,8)</b>	15 ÷ 17	44,5 ÷ 45,5	1.752 ÷ 1.791	TPM-45G	1"
	18 ÷ 19	45,5 ÷ 43,5	1.791 ÷ 1.831	TPM-46G	
	10	43,5 ÷ 44,5	1.713 ÷ 1.752	TPM-44/51	
	11 ÷ 17	44,5 ÷ 45,5	1.752 ÷ 1.791	TPM-45/51	
<b>2.1/4"</b> <b>(57,1)</b>	13	45,5 ÷ 46,5	1.791 ÷ 1.831	TPM-46/51	1"
	14 ÷ 15	46,5 ÷ 47,5	1.831 ÷ 1.870	TPM-47/51	
	16 ÷ 18	47,5 ÷ 48,5	1.870 ÷ 1.909	TPM-48/51	
	19 ÷ 22	48,5 ÷ 21,5	1.909 ÷ 1.949	TPM-49/51	
<b>2" Gas</b> <b>(60,3)</b>	9 ÷ 10	49,5 ÷ 50,5	1.949 ÷ 1.985	TPM-50/57	1.1/2"
	11	50,5 ÷ 51,5	1.985 ÷ 1.476	TPM-51/57	
	12 ÷ 13	51,5 ÷ 52,5	2.028 ÷ 2.067	TPM-52/57	
<b>2.1/2"</b> <b>(63,5)</b>	7	50,5 ÷ 51,5	1.999 ÷ 2.029	TPM-51G	1.1/2"
	8	51,5 ÷ 52,5	2.028 ÷ 2.057	TPM-52G	
	9	52,5 ÷ 53,5	2.067 ÷ 2.105	TPM-53G	
<b>2.1/2"</b> <b>(63,5)</b>	7	53,5 ÷ 54,4	2.105 ÷ 2.145	TPM-54/63	1.1/2"
	8	54,5 ÷ 55,4	2.145 ÷ 2.185	TPM-55/63	
	9	55,5 ÷ 56,5	2.185 ÷ 2.224	TPM-56/63	
	10	56,5 ÷ 57,5	2.224 ÷ 2.264	TPM-57/63	



Dimensions fit for  
**Runpul 30**

Dimensions fit for  
**Runpul 45**

Dimensions fit for  
**Runpul 60**

# Jaws TPJ



<i>d<sub>e</sub></i>	Runpul 15	Runpul 30	Runpul 45	Runpul 60
inches	Cod.	Cod.	Cod.	Cod.
3/8"	Set-TPJ/15-1	Set-TPJ/30-1	-	-
1/2"	Set-TPJ/15-2	Set-TPJ/30-2	-	-
5/8"	Set-TPJ/15-3	Set-TPJ/30-3	-	-
3/4"	Set-TPJ/15-4	Set-TPJ/30-4	-	-
7/8"	Set-TPJ/15-4/A	Set-TPJ/30-4/A	-	-
1"	Set-TPJ/15-5	Set-TPJ/30-5	Set-TPJ/45-5	-
3/4" Gas	-	Set-TPJ/30-6	Set-TPJ/45-6	-
1.1/4"	-	Set-TPJ/30-7	Set-TPJ/45-7	-
1" Gas	-	Set-TPJ/30-8	Set-TPJ/45-8	-
1.1/2"	-	Set-TPJ/30-9	Set-TPJ/45-9	-
1.1/4" Gas	-	Set-TPJ/30-10	Set-TPJ/45-10	-
1.3/4"	-	-	Set-TPJ/45-11	-
1.1/2" Gas	-	-	Set-TPJ/45-12	-
2"	-	-	Set-TPJ/45-13	Set-TPJ/60-13
2.1/4"	-	-	Set-TPJ/45-14	Set-TPJ/60-14
2" Gas	-	-	Set-TPJ/45-15	Set-TPJ/60-15
2.1/2"	-	-	Set-TPJ/45-16	Set-TPJ/60-16
3"	-	-	Set-TPJ/45-17	Set-TPJ/60-17
3.1/2"	-	-	-	Set-TPJ/60-18
4"	-	-	-	Set-TPJ/60-19

# TPC Collars



<i>d<sub>e</sub></i>	Runpul 15	Runpul 30	Runpul 45	Runpul 60
inches	Cod.	Cod.	Cod.	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	-
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

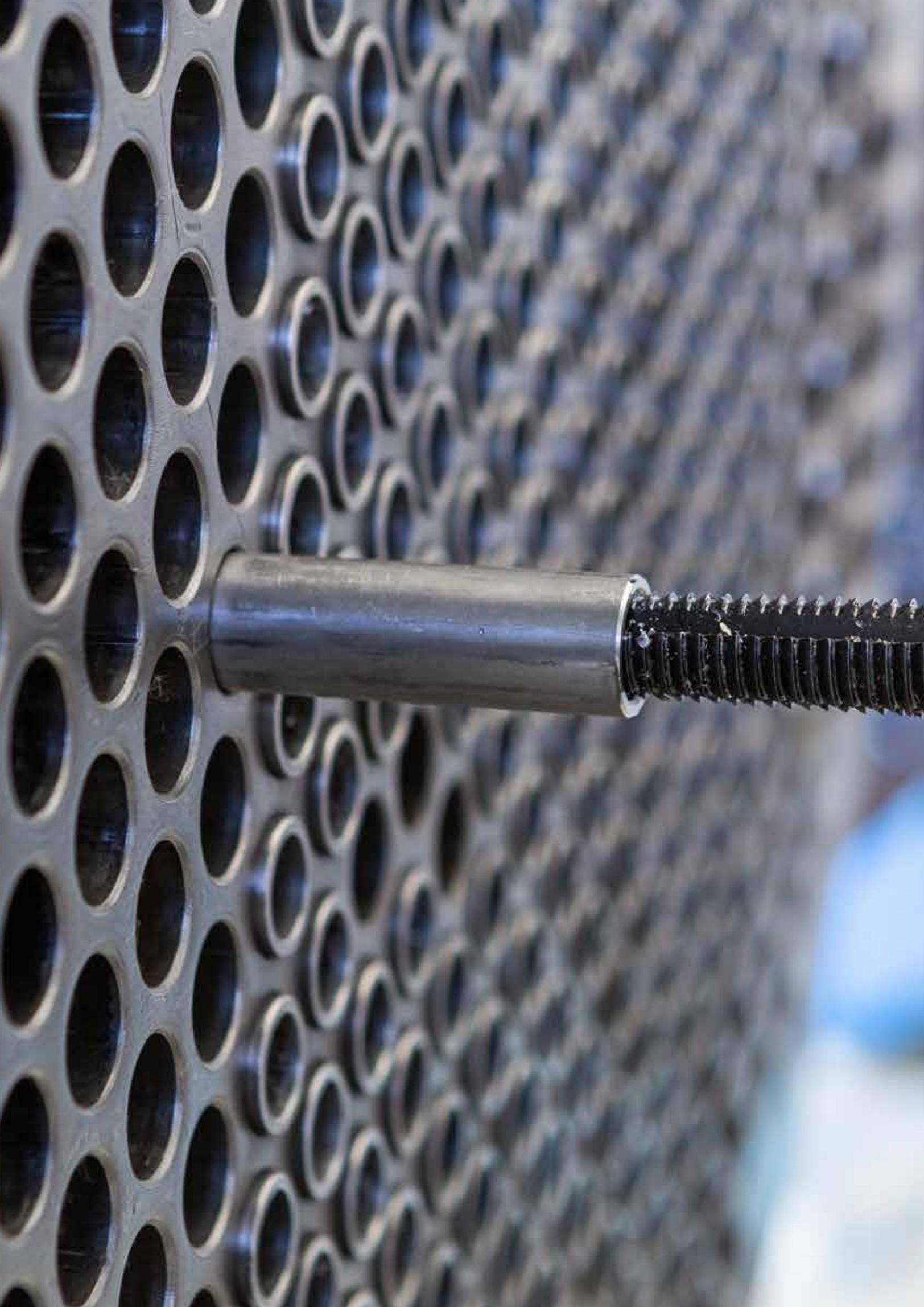
# TPM-K



Quick gripping extraction mandrel for tubes from 38,1 mm ( 1.1/2" ) to 101,6 mm ( 4" ).

An exclusive Maus Italia-designed extraction spear: used in combination with the Runpul puller allows for a rapid tube extraction without the need for tightening with a screwer ( no screwer or specific keys required ).

Tube		Mandrel		Cone	Jaw	Extension			
$d_e$	$sp$	$d_i$							
inches	mm	B.W.G	mm	inches	Cod.	Inches / mm	Cod.	Cod.	Cod.
<b>1.1/2"</b> <b>(38,1)</b>	10 ÷ 11		31,5 ÷ 32,5	1.240 ÷ 1.280	<b>TPM-K-32</b>	<b>CK-32÷37</b>	<b>JK-32</b>	<b>RK-32÷37</b>	<b>1.1/4"</b>
	12 ÷ 13		32,5 ÷ 33,5	1.280 ÷ 1.319	<b>TPM-K-33</b>		<b>JK-33</b>		
	14		33,5 ÷ 34,5	1.319 ÷ 1.358	<b>TPM-K-34</b>		<b>JK-34</b>		
	15 ÷ 17		34,5 ÷ 35,5	1.358 ÷ 1.397	<b>TPM-K-35</b>		<b>JK-35</b>		
	18 ÷ 20		35,5 ÷ 36,5	1.397 ÷ 1.437	<b>TPM-K-36</b>		<b>JK-36</b>		
<b>1.3/4"</b> <b>(44,4)</b>	21 ÷ 24		36,5 ÷ 37,5	1.437 ÷ 1.476	<b>TPM-K-37</b>		<b>JK-37</b>		
	10 ÷ 11		37,5 ÷ 38,5	1.476 ÷ 1.516	<b>TPM-K-38</b>	<b>CK-38÷43</b>	<b>JK-38</b>	<b>RK-38÷43</b>	<b>1.1/4"</b>
	12		38,5 ÷ 39,5	1.516 ÷ 1.555	<b>TPM-K-39</b>		<b>JK-39</b>		
	13 ÷ 14		39,5 ÷ 40,5	1.555 ÷ 1.594	<b>TPM-K-40</b>		<b>JK-40</b>		
	15 ÷ 16		40,5 ÷ 41,5	1.594 ÷ 1.673	<b>TPM-K-41</b>		<b>JK-41</b>		
18 ÷ 19		41,5 ÷ 42,5	1.634 ÷ 1.673	<b>TPM-K-42</b>	<b>JK-42</b>				
<b>2"</b> <b>(50,8)</b>	20 ÷ 24		42,5 ÷ 43,5	1.673 ÷ 1.713	<b>TPM-K-43</b>		<b>JK-43</b>		
	10		43,5 ÷ 44,5	1.713 ÷ 1.752	<b>TPM-K-44</b>	<b>CK-44÷49</b>	<b>JK-44</b>	<b>RK-44÷49</b>	<b>1.1/4"</b>
	11 ÷ 12		44,5 ÷ 45,5	1.752 ÷ 1.791	<b>TPM-K-45</b>		<b>JK-45</b>		
	13		45,5 ÷ 46,5	1.791 ÷ 1.831	<b>TPM-K-46</b>		<b>JK-46</b>		
	14 ÷ 15		46,5 ÷ 47,5	1.831 ÷ 1.870	<b>TPM-K-47</b>		<b>JK-47</b>		
16 ÷ 18		47,5 ÷ 48,5	1.870 ÷ 1.909	<b>TPM-K-48</b>	<b>JK-48</b>				
<b>2.1/4"</b> <b>(57,1)</b>	19 ÷ 22		48,5 ÷ 49,5	1.909 ÷ 1.949	<b>TPM-K-49</b>		<b>JK-49</b>		
	9 ÷ 10		49,5 ÷ 50,5	1.949 ÷ 1.988	<b>TPM-K-50</b>	<b>CK-50÷52</b>	<b>JK-50</b>	<b>RK-50÷52</b>	<b>1.1/2"</b>
	11		50,5 ÷ 51,5	1.988 ÷ 2.028	<b>TPM-K-51</b>		<b>JK-51</b>		
12 ÷ 13		51,5 ÷ 52,5	2.028 ÷ 2.067	<b>TPM-K-52</b>	<b>JK-52</b>				
<b>2.1/2"</b> <b>(63,5)</b>	7		53,5 ÷ 54,5	2.106 ÷ 2.146	<b>TPM-K-54</b>	<b>CK-54÷57</b>	<b>JK-54</b>	<b>RK-54÷57</b>	<b>1.1/2"</b>
	8		54,5 ÷ 55,5	2.146 ÷ 2.185	<b>TPM-K-55</b>		<b>JK-55</b>		
	9		55,5 ÷ 56,5	2.185 ÷ 2.224	<b>TPM-K-56</b>		<b>JK-56</b>		
	10		56,5 ÷ 57,5	2.224 ÷ 2.264	<b>TPM-K-57</b>		<b>JK-57</b>		
<b>3"</b> <b>(76,2)</b>	7		66,5 ÷ 67,5	2.618 ÷ 2.667	<b>TPM-K-67</b>	<b>CK-67÷70</b>	<b>JK-67</b>	<b>RK-67÷70</b>	<b>1.3/4"</b>
	8		67,5 ÷ 68,5	2.657 ÷ 2.697	<b>TPM-K-68</b>		<b>JK-68</b>		
	9 ÷ 10		68,5 ÷ 69,5	2.697 ÷ 2.736	<b>TPM-K-69</b>		<b>JK-69</b>		
	11		69,5 ÷ 70,5	2.736 ÷ 2.776	<b>TPM-K-70</b>		<b>JK-70</b>		
<b>3.1/2"</b> <b>(88,9)</b>	6		78,5 ÷ 79,5	3.091 ÷ 3.130	<b>TPM-K-79</b>	<b>CK-79÷82</b>	<b>JK-79</b>	<b>RK-79÷82</b>	<b>1.3/4"</b>
	7		79,5 ÷ 80,5	3.130 ÷ 3.169	<b>TPM-K-80</b>		<b>JK-80</b>		
	8 ÷ 9		80,5 ÷ 81,5	3.169 ÷ 3.209	<b>TPM-K-81</b>		<b>JK-81</b>		
	10		81,5 ÷ 82,5	3.209 ÷ 3.248	<b>TPM-K-82</b>		<b>JK-82</b>		
<b>4"</b> <b>(101,6)</b>	6		91,5 ÷ 92,5	3.602 ÷ 3.642	<b>TPM-K-92</b>	<b>CK-92÷95</b>	<b>JK-92</b>	<b>RK-92÷95</b>	<b>1.3/4"</b>
	7 ÷ 8		92,5 ÷ 93,5	3.642 ÷ 3.681	<b>TPM-K-93</b>		<b>JK-93</b>		
	9		93,5 ÷ 94,5	3.681 ÷ 3.720	<b>TPM-K-94</b>		<b>JK-94</b>		
	10		94,5 ÷ 95,5	3.720 ÷ 3.760	<b>TPM-K-95</b>		<b>JK-95</b>		



All the accessories offered by Maus Italia to support the Runpul series tube extraction equipment.

## Accessories

### TPA

#### Pneumatic impact wrench

Pneumatic impact wrench for quick and safe insertion of the TPM spear before each extraction. The TPA screwdriver is supplied in a practical and handy carrying case complete with connecting tubes and service keys.



Model	TPM	Working pressure		Air connect	A	Weight	
		bar	Psi			Kg	Lb
TPA 1	TPM 7 ÷ TPM 15 A	6,3	91.4	3/8" Gas	3/4"	5	10.8
TPA 2	TPM 13 ÷ TPM 20 S	6,3	91.4	1/2" Gas	1"	6,3	13.8
TPA 3A	TPM 19 ÷ TPM 37	6,3	91.4	1/2" Gas	1"	9,3	20.6
TPA 4	TPM 37 G ÷ TPM 49/51	6,3	91.4	1/2" Gas	1"	15,0	32.9
TPA 5	TPM 50/57 ÷ TPM 57/63	6,3	91.4	3/4" Gas	1.1/2"	32,0	70.55

### TPS

#### Adapter

Adapter between the TPA impact wrench and the TPM spear to be mounted, available in different sizes as required.



Model	TPA	TPM
	A	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"

### TPB

#### Balancer

Model	Balancers	Range
Runpul 15	TPB15	25-30 Kg / 55-66 lb
Runpul 30	TPB30	45-55 Kg / 99-121 lb
Runpul 45	TPB55	75-90 Kg / 165-198 lb
Runpul 60	TPB60	100-120 Kg / 220-265 lb



# Heat exchanger's world

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