

ROSTOR®

HIGH PRESSURE PUMPS



COMPANY

- History
- Manufacture
- Location

PUMPS

- 345 Series
- 3100 Series
- 3150 / 3150S / 3150L Series
- 3220 / 3220S / 3220L Series

EQUIPMENT

ACCESSORIES

Valves

- Regulator valves
- Valves

REDUCED POWER PRESSURE PUMPS

- R Type
- RH Type

SURFACE CLEANING

- Pistols
- Sand blasting
- Submarine lance
- Foot valve
- Pneumatic cut valve
- Rotary heads
- Surface pressure cleaner
- SG-30 Rotary head
- SG-40, 50, 60, 70 Rotary heads

PIPES CLEANING

- Pistol and sand blasting nozzles
- Small hoses and nozzles
- Pipe cleaning nozzles
- Round nozzles
- Pointed nozzles
- Bomb nozzles
- Heavy nozzles
- Bomb balanced nozzle
- Bulldozer nozzles - Counterweighted obus
- Venturi nozzles
- Centralizers
- Lance nozzles

ROTATING NOZZLES

- For heat exchanger cleaning 1000 bar
- RC/RT Rotating nozzles - Rotating drills
- Rotary vibrating nozzles and rotary drills
- Rotative nozzles BL
- Safety hose extension
- Conventional roots cutter nozzles
- Çroot cutting nozzles - turbine type
- 1000 bar Rotative nozzles
- 1000 bar Cross jet nozzles
- For heat exchanger cleaning - BN

ROTARY HEADS

- BA Type
- RJV Series
- BJV Series

SEGURIDAD

WATER ARMOR

- TS Type
- PWA Type

PREVENTERS

- Articulate backout preventer
- Simple backout preventer
- Pipe nozzles backout preventers
- Vertical tube slashguard

LANCE MACHINES

- Heat exchange lance machine

HOSES

- Hidraulic
- Sewer hoses
- High pressure
- Ultra high pressure

SAFETY HOSES

- Safety grips
- Rigid lances
- Hose guides
- Swivel joints for reels

ACCESSORIES

- Rigid lances
- Hose guides

CARRETES

- Swivel joints for reels
- 1000 Series
- Reinforced reels for vehicles

TANK CLEANING

- 3-D Rotating head F Type
- 3-D Rotating head W Type
- 3-D Rotating head T Type
- Rotating head CST Type

POSITIONERS

- PT - Telescopic
- PL - Lances
- PM - Hose

OTHERS

- Mud suction venturi

MOTORRENS S.L. Is a company with a long industrial tradition. It was founded in 1911 and in the beginning it manufactured petrol and diesel engines for agricultural and marine applications, irrigation motorpumps and generators.

In 1970 it re-orientated its product to present day manufacture of high pressure pumps, equipments and accessories for industrial and sewer cleaning by application of a high pressure water jet. The products are know by the Rostor trademark:



MANUFACTURE

Motorrens has modern facilities equipped with numeric control (CNC) machines of high precision and production.

The final products have been controlled from the entrance of the raw material to their completion.

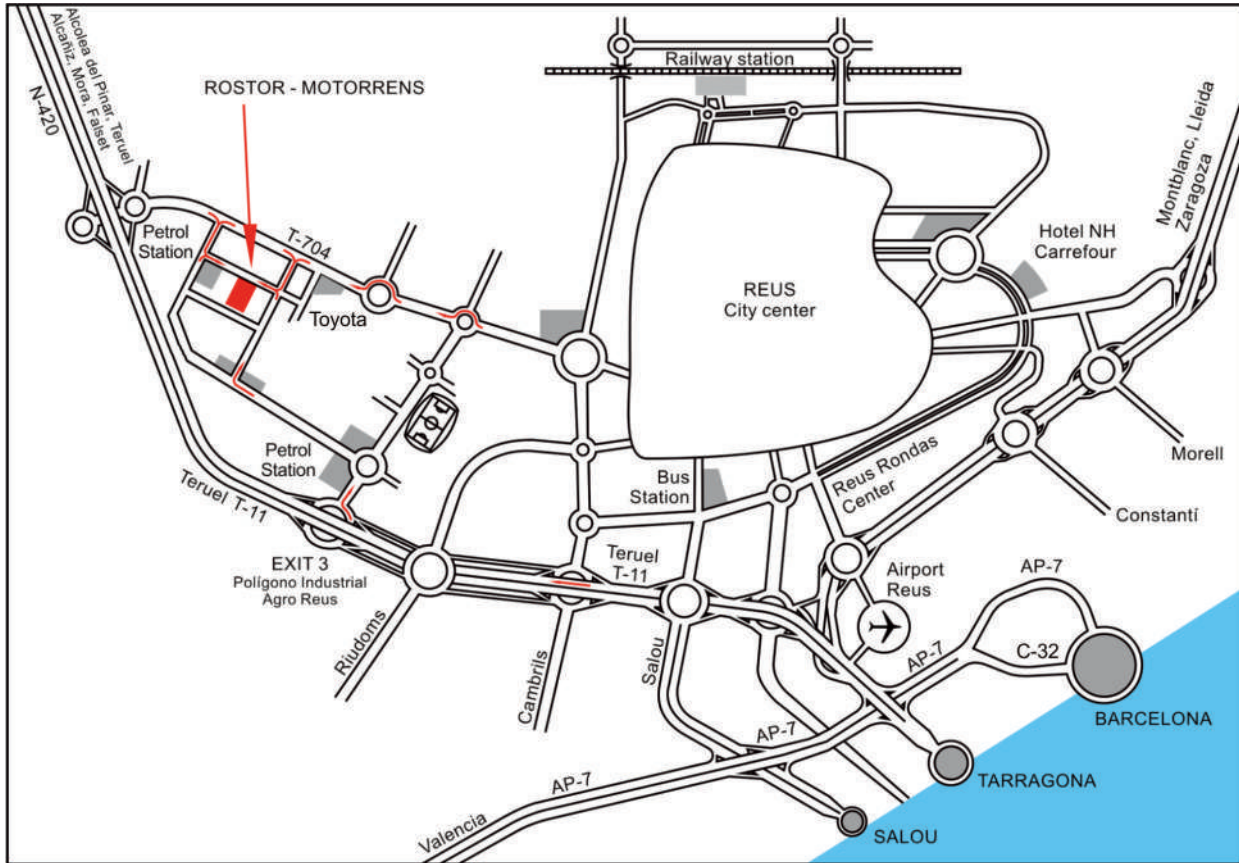
Each manufactured pump is checked on the test bench, making running-in and test several hours at maximum performances.

The accessories with internal mechanisms, pistols, foot valves, rotating nozzles, also are controlled in operation before the storage.

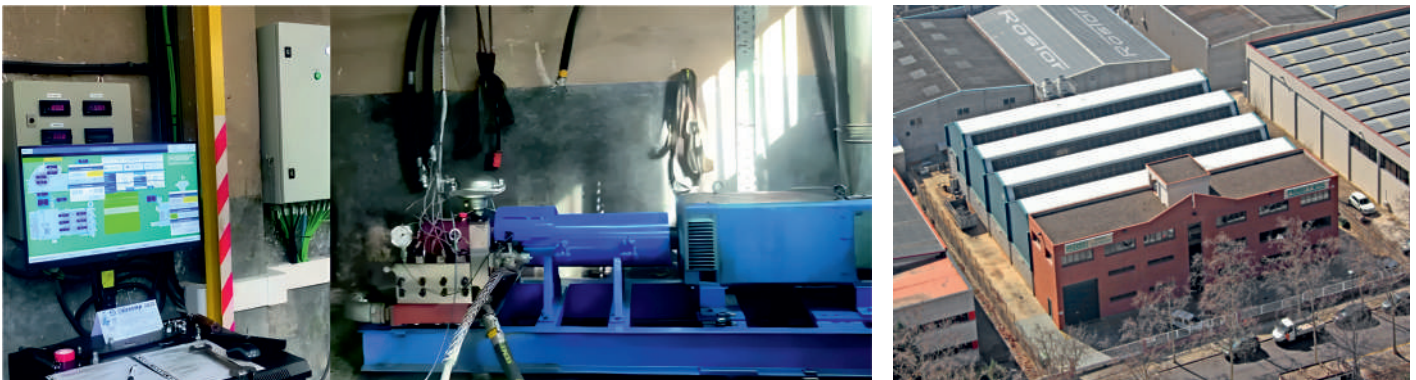
All is assured that the material is given to the client with the maximum quality.



MOTORRENS S.L. Is located in Reus, Catalonia. Region of the northeast of Spain to 125 km. South of Barcelona. Reus is a city of approximately about 100,000 inhabitants, calm weather near the sea and mountains, with an important cultural patrimony. Connected by own motorway, railroad and airport.



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HIGH PRESSURE PUMPS

CONSTRUCTIVE CHARACTERISTICS

Alternative volumetric pumps , with three horizontal plungers.

Drive shaft in right or left position seen from head.

Interchanging different diameters can be set to get other ranges of pressure and flow, these changes can be made easily. Head A, vertical valves for high pressure. Head B, horizontal valves for a big flow. Head S, vertical valves for work with recycled water (water with particles). Head L, very high pressure inline valves.

They are several pressure regulator valves manual and pneumatic operated adjust remote the pump pressure.

The pump is equipped with pressure regulator valve, safety valve and manometer.

MATERIALS

Spheroidal cast iron body, chrome nickel drive shaft and steel crankshaft, connecting rods with babbit bearings, long life hard chrome coated crossheads, there are babbit bearings and crossheads semi-finished for repairs in case of seizing up. Ceramic plungers, spheroidal cast iron or stainless steel heads, internal hydraulic parts made of strong corrosion steel, tempered with grinded surfaces.

HIGH PRESSURE PUMP
345 Series
3 plungers 50 HP (37 Kw)

HEAD: A



HIGH PRESSURE PUMP
3100 Series
3 plungers 100 HP (75 Kw)

HEAD: A - B



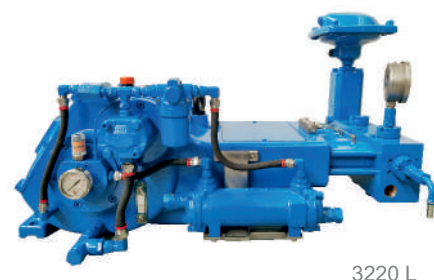
HIGH PRESSURE PUMP
3150 Series
3 plungers 150 HP (110 Kw)

HEAD: A - B - S - L



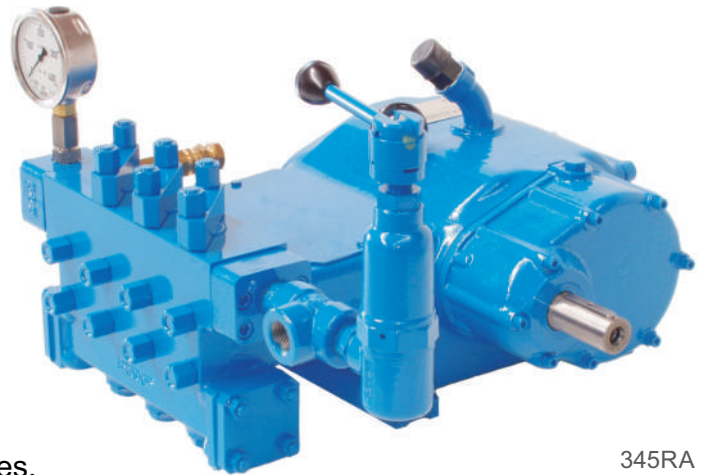
HIGH PRESSURE PUMP
3220 Series
3 plungers 220 HP (160 Kw)

HEAD: A - B - S - L



345 Series 3 plungers 50 HP (37 Kw)

- Input shaft left (l) or right viewable from the head.
- If it's required, auxiliary P.T.O. shaft may be supplied on the opposite side.
- 345 Body type, drive shaft with own crankshaft. Maximum speed 825 r.p.m.
- 345R Body lateral Gear box, reduction 1,76.
- Stroke: 45 mm
- Ceramic plungers
- High pressure A Head made of spheroidal cast iron or stainless steel.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Several pressure regulators valves and outlet nipples.



345RA
With regulator valve A

Head type	Heat material	Pump type	Weight (Kg)
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High pressure	A	Spheroidal cast iron	345A	130
			345RA	150
	A02	Stainless steel	345A02	130
			345RA02	150

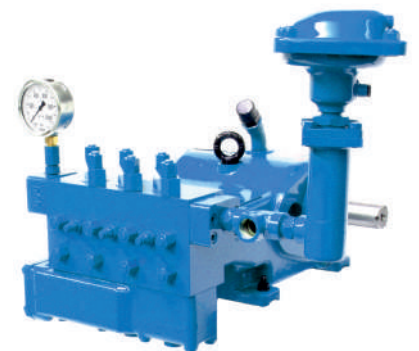
A02: Body head made of stainless steel. Suction manifold made of cast iron.
A1: All made of stainless steel.



345A
With regulator valve B

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)				
					25/18	30/22	40/30	50/37	
					Working pressure (bar)				
HEAD A / A02	20	825	-	825	33	280	340	450	550
		1452	1,76	750	30	310	370	500	550*
		750	-	750	40	230	280	370	450
	22	825	-	825	40	230	280	370	450
		1452	1,76	750	36	255	305	410	450*
		750	-	750	48	195	235	310	390
24	825	-	825	48	195	235	310	390	
	1452	1,76	750	43	215	260	345	390*	
	750	-	750	56	165	200	265	330	
26	825	-	825	56	165	200	265	330	
	1452	1,76	750	51	180	220	290	330*	
	750	-	750	75	120	145	195	250	
30	825	-	825	75	120	145	195	250	
	1452	1,76	750	70	135	160	215	250*	
	750	-	750	105	90	105	140	180	
35	825	-	825	105	90	105	140	180	
	1452	1,76	750	95	95	115	155	180*	
	750	-	750	135	65	80	110	140	
40	825	-	825	135	65	80	110	140	
	1452	1,76	750	124	75	90	120	140*	
	750	-	750	170	55	65	85	110	
45	825	-	825	170	55	65	85	110	
	1452	1,76	750	157	60	70	95	110*	
	750	-	750	210	45	50	70	90	
50	825	-	825	210	45	50	70	90	
	1452	1,76	750	194	50	55	75	90*	
	750	-	750						

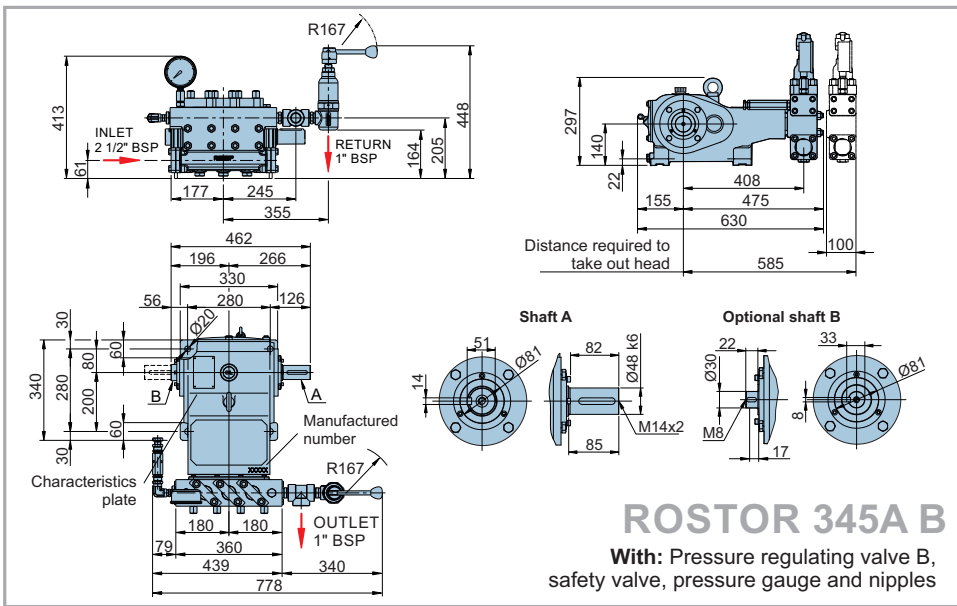


345A02
With regulator valve BN

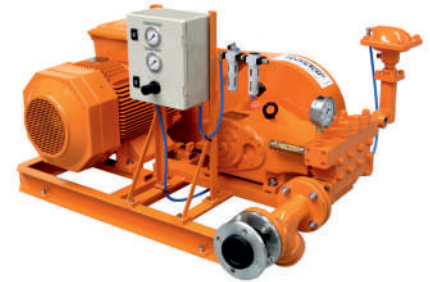
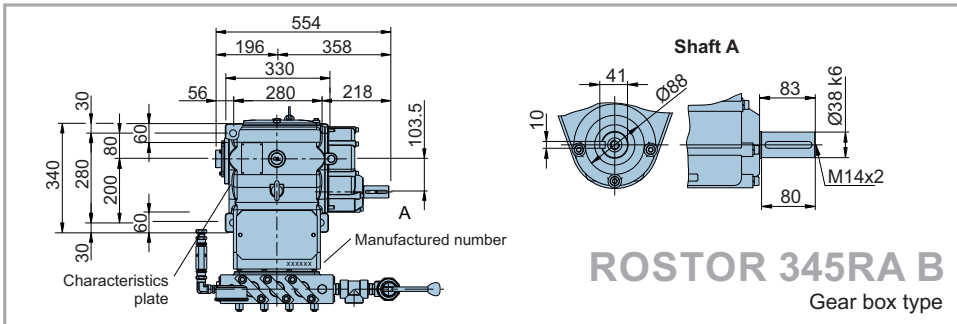
* To obtain this pressure is needed less power than indicated.

Higher pressure than 300 bar we recommend the A02 stainless steel head.

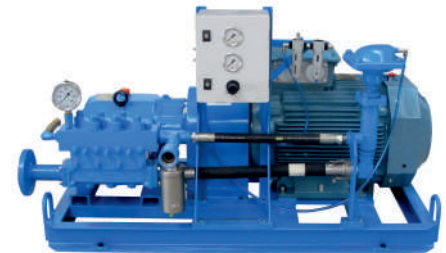
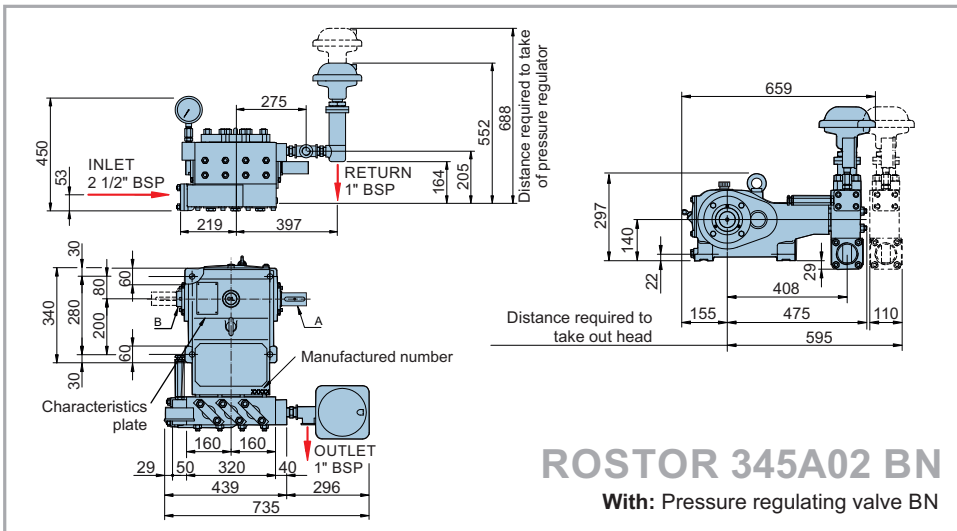
Crankshaft speed 750 r.p.m. or inferior for intensive use.



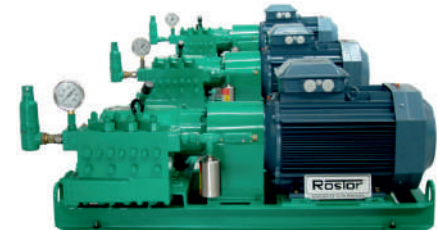
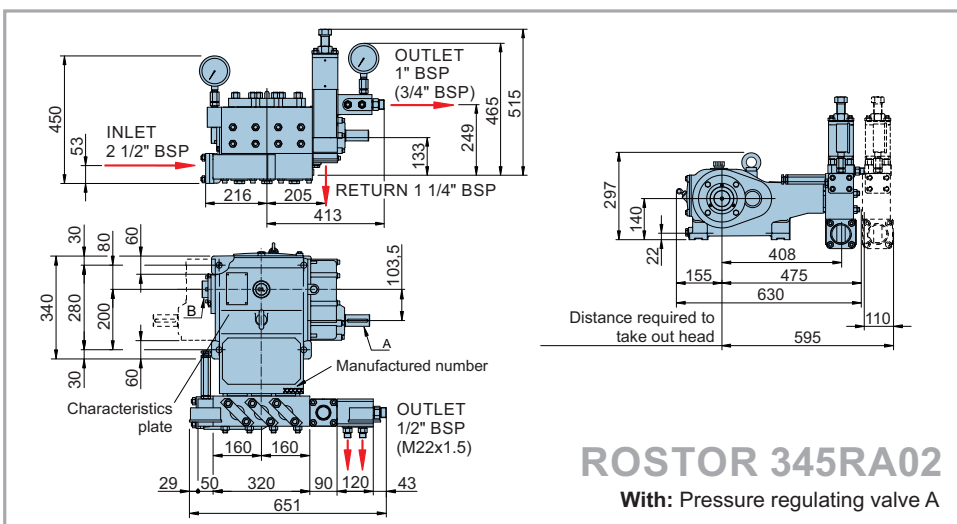
345A02 - 25 HP, with small wheels
 350 bar - 25 l/min



345A - 50 HP
 90 bar - 210 l/min



345R A01 - 50 HP
 110 bar - 170 l/min



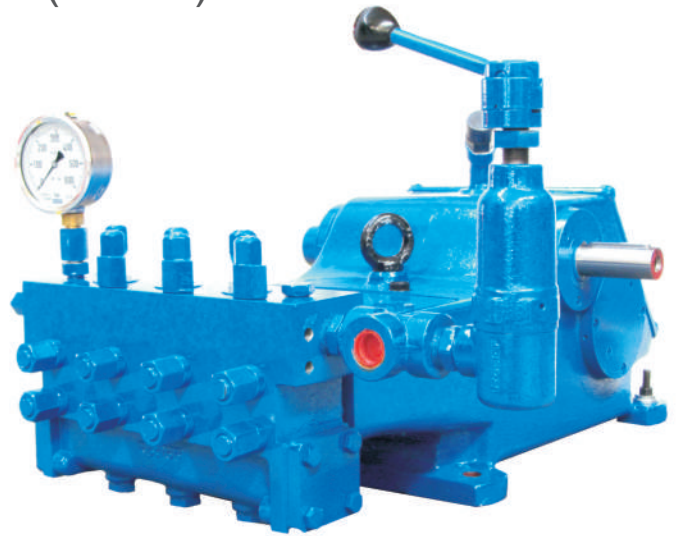
345RA02 - 40 HP
 310 bar - 48l/min x 3 = 144 l/min



345A Driven by P.T.O. tractor
 140 bar - 135 l/min

3100 Series 3 plungers 100 HP (75 Kw)

- Input shaft left (l) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal gear box with reduction 3 in 3100 body type. Reduction 3,63 in 3100R type.
- Stroke: 75 mm.
- Ceramic plungers.
- High pressure A head, low pressure to high volume B head made of spheroidal cast iron or stainless steel.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Several pressure regulator valves and outlet nipples.



ROSTOR 3100 A01
With regulator valve B

Head type	Heat material	Pump type	Weight (Kg)
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High pressure	A01	Spheroidal cast iron	3100A01 / 3100RA01	230
	A02	Stainless steel	3100A02 / 3100RA02	230
Low pressure	B	Spheroidal cast iron	3100B / 3100RB	220
	B02	Stainless steel	3100B02 / 3100RB02	220

A02 - B02: Body head made of stainless steel. Suction manifold made of cast iron.
A1 - B1: All made of stainless steel.

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)					
					40 / 30	50 / 37	60 / 44	75 / 55	100 / 75	
					Working pressure (bar)					
HEAD A01 / A02	24	1500	3,00	500	48	310	380	465	580	750*
		1800	3,63	495	47	310	390	470	580	750*
		1500	3,63	413	40	375	470	560	700	-
	26	1500	3,00	500	57	265	330	395	490	660
		1800	3,63	495	56	265	330	400	490	660
		1500	3,63	413	47	320	400	480	600	-
	30	1500	3,00	500	75	200	250	300	370	500
		1800	3,63	495	74	200	250	300	370	500
		1500	3,63	413	62	240	300	360	450	-
35	1500	3,00	500	100	145	180	220	270	360	
	1800	3,63	495	99	145	185	220	270	360	
	1500	3,63	413	85	175	220	265	330	-	
40	1500	3,00	500	135	110	140	170	200	280	
	1800	3,63	495	133	110	140	170	200	280	
	1500	3,63	413	110	135	170	200	250	-	
45	1500	3,00	500	170	85	110	130	160	220	
	1800	3,63	495	168	90	110	130	160	220	
	1500	3,63	413	140	105	130	160	200	-	
HEAD B / B02	50	1500	3,00	500	215	70	90	105	130	175
		1800	3,63	495	213	70	90	105	130	175
		1500	3,63	413	177	85	105	125	160	-
	55	1500	3,00	500	260	60	70	90	110	145
		1800	3,63	495	258	60	70	90	110	145
		1500	3,63	413	215	70	85	105	130	-
	60	1500	3,00	500	310	50	60	75	90	120
		1800	3,63	495	307	50	60	75	90	120
		1500	3,63	413	255	55	70	85	110	-



3100 A02
With regulator valve N1

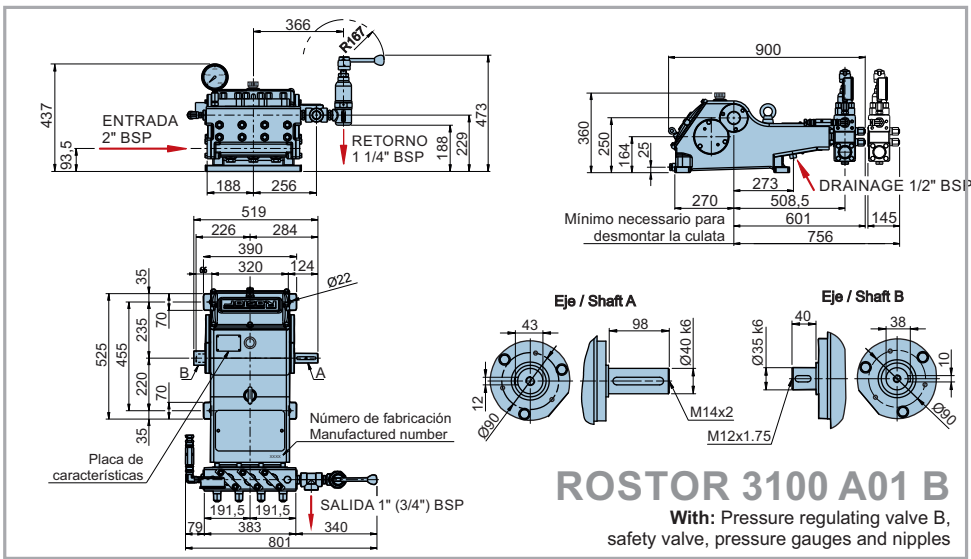


3100 B
With regulator valve CN1

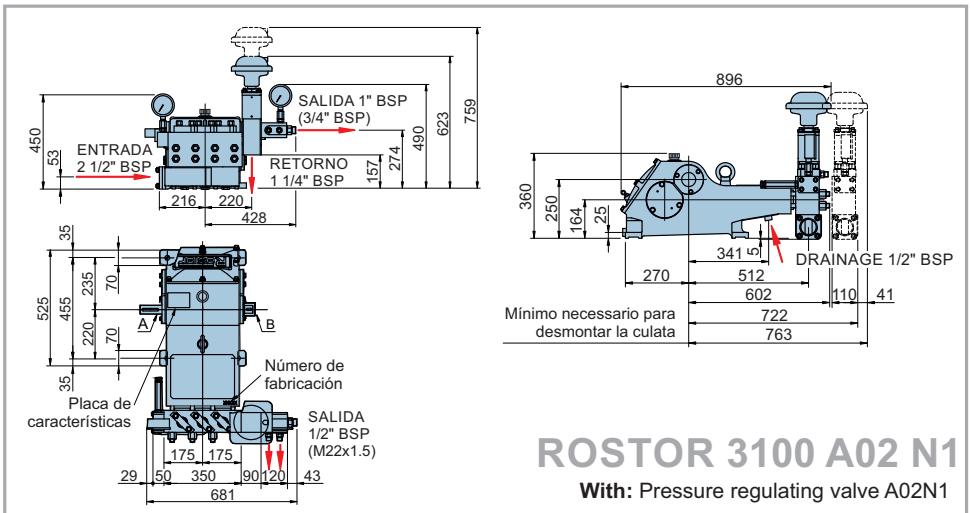
* To obtain this pressure is needed less power than indicated.

Higher pressure than 300 bar we recommend the A02 stainless steel head.

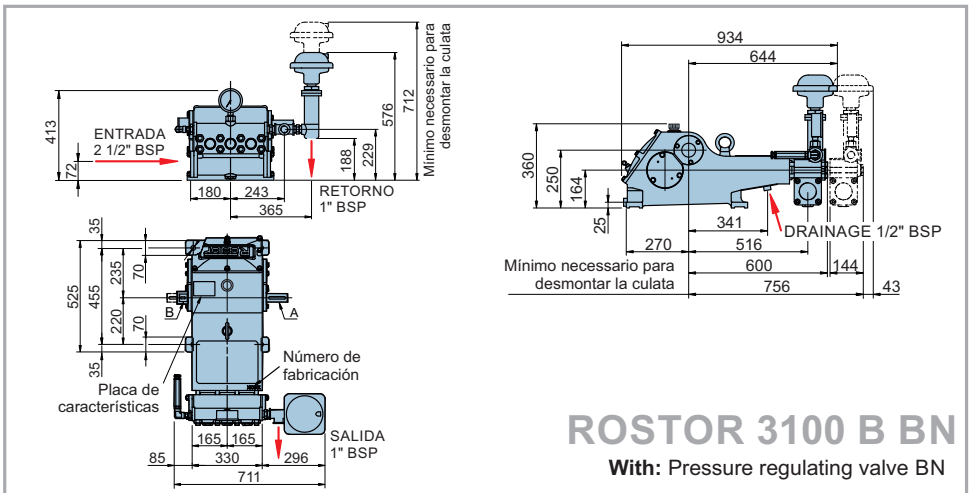
Crankshaft speed to 413 r.p.m. or inferior for intensive use, the rest intermittent use.



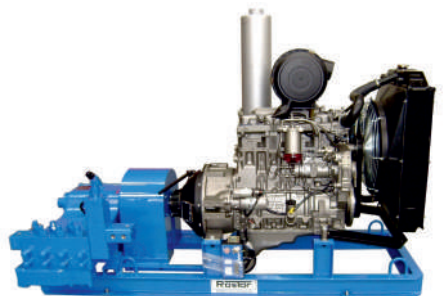
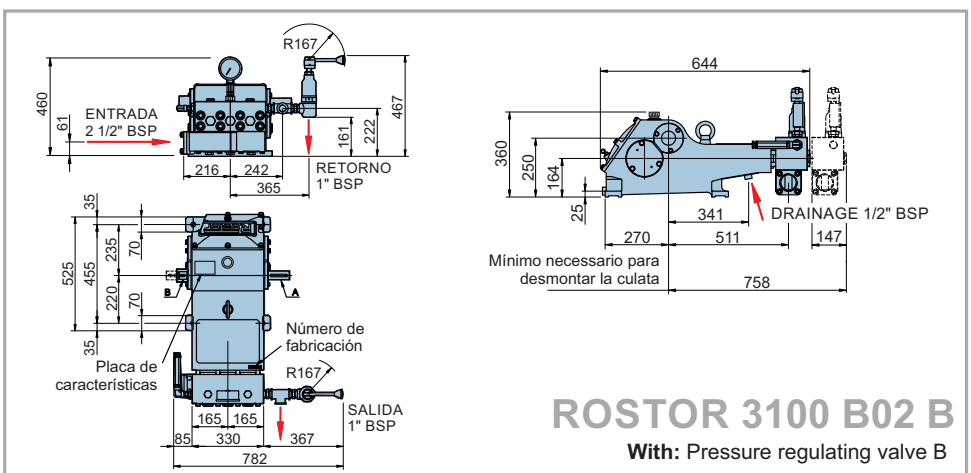
66u bar - 5/ l/min



3100A02 - 75 HP
490 bar - 57l/min



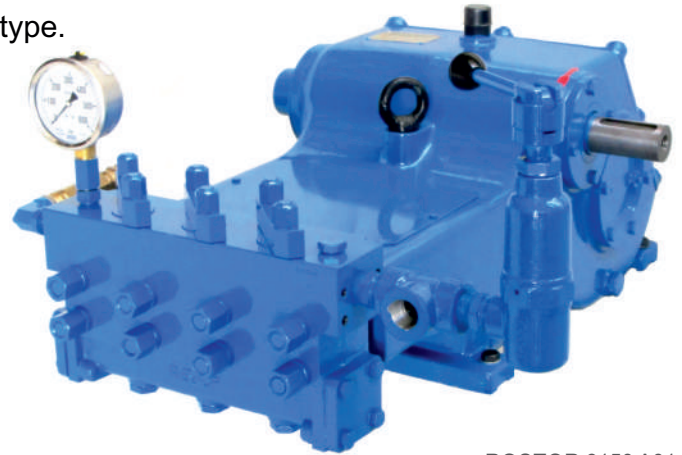
3100RB - 100 HP
145 bar - 258 l/min



3100A02 - 100 HP
280 bar - 135 l/min

3150 Series 3 plungers 150 HP (110 Kw)

- Input shaft left (l) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal Gear box with reduction 2,963 in 3150 body type.
Reduction 3,652 in 3150R type.
- Internal oil pressure lubrication.
3150 E / 3150R E Body type.
- Stroke: 95 mm.
- Ceramic plungers.
- High pressure A head low pressure to high volume B head made of spheroidal cast iron or stainless steel.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Several pressure regulator valves and outlet nipples.



ROSTOR 3150 A01
With regulator valve B

Head type	Heat material	Pump type	Weight (Kg)
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High pressure	A01	Spheroidal cast iron	3150A01 / 3150RA01	335
	A02	Stainless steel	3150A02 / 3150RA02	335
Low pressure	B	Spheroidal cast iron	3150B / 3150RB	310
	B02	Stainless steel	3150B02 / 3150RB02	310

A02 - B02: Body head made of stainless steel. Suction manifold made of cast iron.
A1 - B1: All made of stainless steel.



3150A01
With regulator valve A02

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)				
					75/55	100/75	125/90	150/110	
					Working pressure (bar)				
HEAD A01 / A02	22	1500	2,963	506	52	540	750	-	-
		1800	3,652	493	50	550	750	-	-
		1500	3,652	411	42	665	750*	-	-
	24	1500	2,963	506	62	450	605	750*	-
		1800	3,652	493	60	465	620	750*	-
		1500	3,652	411	50	555	750	-	-
	26	1500	2,963	506	73	385	515	640	750
		1800	3,652	493	71	395	530	660	750*
		1500	3,652	411	59	475	635	750*	-
	30	1500	2,963	506	97	290	390	480	570
		1800	3,652	493	94	300	400	500	570*
		1500	3,652	411	78	355	475	570*	-
35	1500	2,963	506	132	210	285	355	420	
	1800	3,652	493	128	220	290	365	420*	
	1500	3,652	411	107	260	350	420*	-	
40	1500	2,963	506	172	160	220	270	320	
	1800	3,652	493	168	165	225	280	320*	
	1500	3,652	411	140	200	270	320*	-	
45	1500	2,963	506	218	130	170	215	250	
	1800	3,652	493	212	135	175	220	250*	
	1500	3,652	411	178	160	210	250*	-	
HEAD B / B02	50	1500	2,963	506	276	100	135	170	200
		1800	3,652	493	269	105	140	175	200*
		1500	3,652	411	224	125	165	200*	-
	55	1500	2,963	506	334	85	110	140	170
		1800	3,652	493	325	85	115	145	170*
		1500	3,652	411	271	105	138	170*	-
60	1500	2,963	506	397	70	95	120	140	
	1800	3,652	493	387	70	95	120	140*	
	1500	3,652	411	322	85	115	140*	-	



3150 A02
With regulator valve A02N2



3150B
With regulator valve C

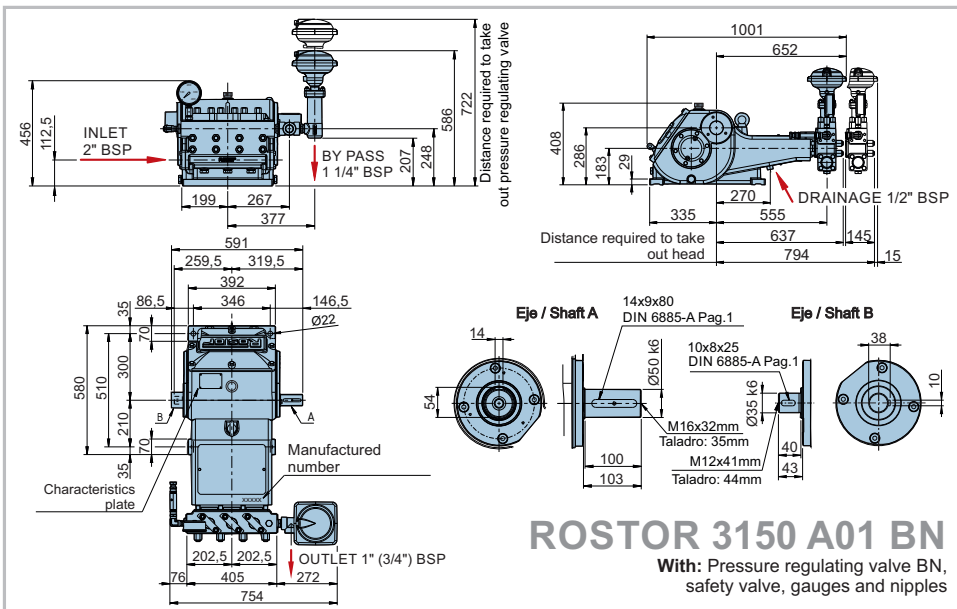


3150 EAI

* To obtain this pressure is needed less power than indicated.

Higher pressure than 300 bar we recommend the A02 stainless steel head.

Crankshaft speed to 411 r.p.m. or inferior for intensive use, the rest intermittent use.



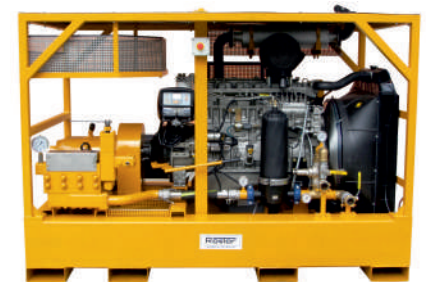
3150A02 - 150 HP
750 bar - 73 l/min



3150AI - 150 HP
320 bar - 132 l/min



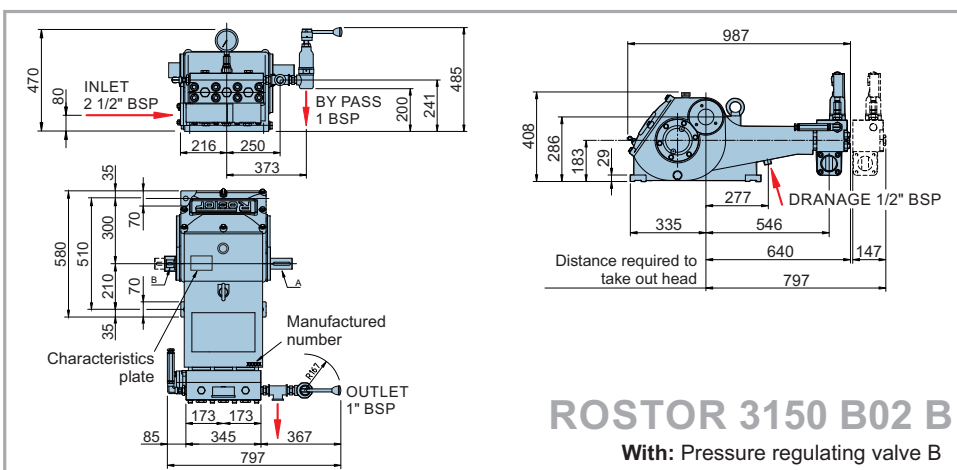
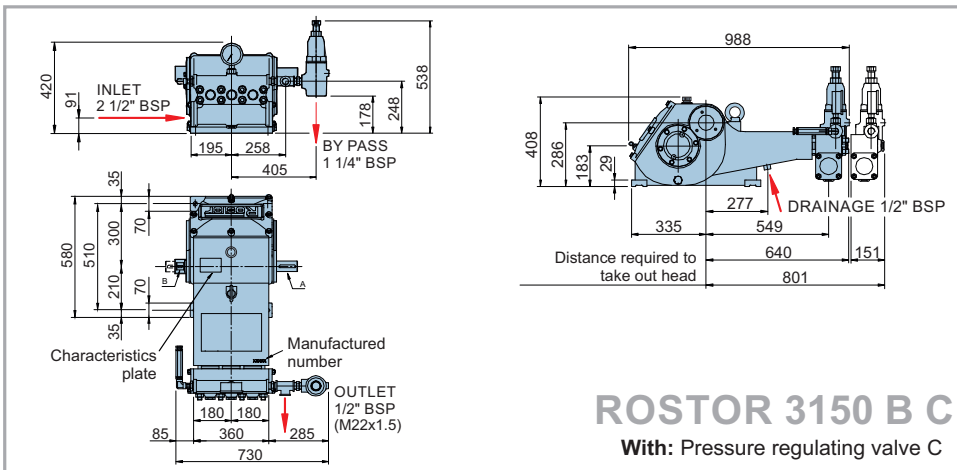
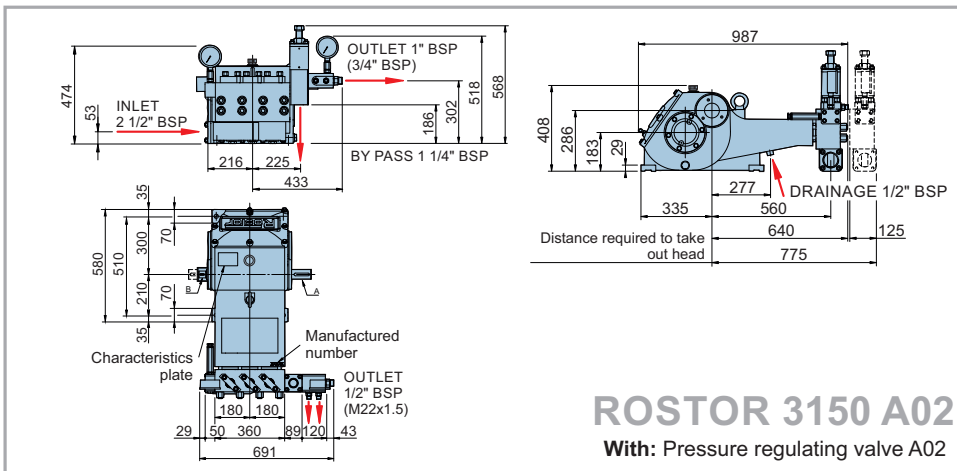
3150RB02 - 50 HP
60 bar - 322 l/min



3150RA02 - 150 HP
320 bar - 168 l/min

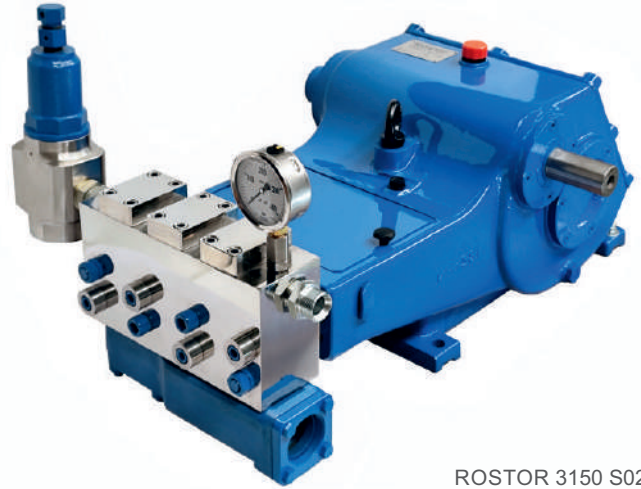


3150RA02 - 150 HP
570 bar - 94 l/min



3150S 3 plungers 150 HP (110 Kw)

- Water recycling pump.
- Input shaft left (I) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal gear box with reduction 2,963 in 3150 body type. Reduction 3,652 in 3150R type.
- Option: Internal oil pressure lubrication. 3150 E / 3150R E Body type.
- Stroke 95 mm.
- Ceramic plungers.
- S Valves to use with dirty water.
- SL Valves to use with clean water.
- Accessories: Pressure regulator valve, safety valve, manometer, outlet nipples.



ROSTOR 3150 S02

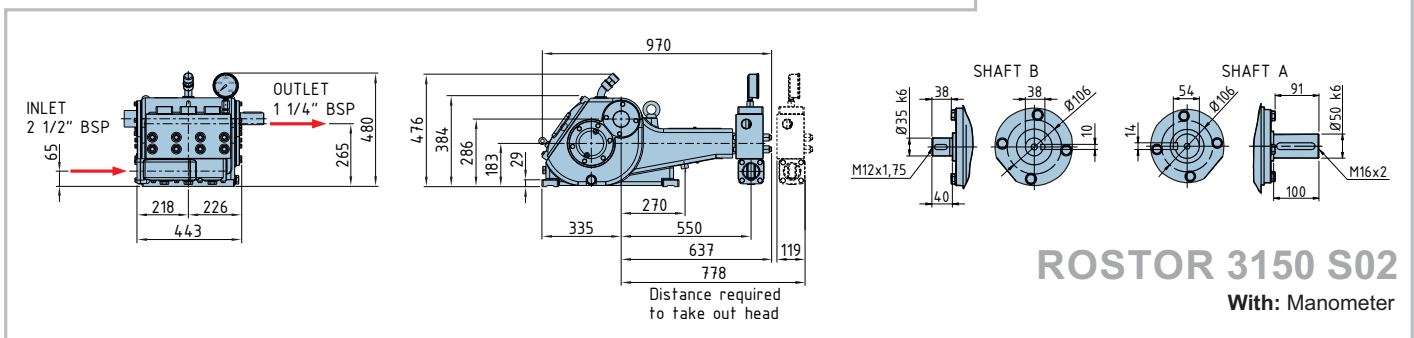
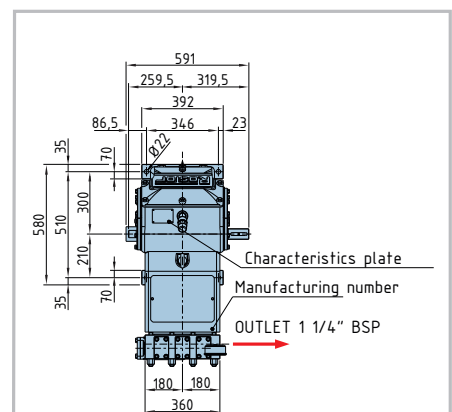
Head type	Use	Head material	Weight (Kg)
S02	Dirty water	Stainless steel body head, suction manifold in cast iron	320
SL02	Clean water		
SI	Dirty water	All in stainless steel	330
SLI	Clean water		

Technical data ROSTOR 3150

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank Shaft (r.p.m.)	Flow (l/min)	Motor power (HP / Kw)			
					75/55	100/75	125/90	150/110
					Working pressure (bar)			
35	1500	2,963	506	132	200*	-	-	-
	1800	3,652	493	128	200*	-	-	-
	1500	3,652	411	107	200*	-	-	-
40	1500	2,963	506	172	160	200*	-	-
	1800	3,652	493	168	165	200*	-	-
	1500	3,652	411	140	200	-	-	-
45	1500	2,963	506	218	130	170	200*	250
	1800	3,652	493	212	135	175	200*	250*
	1500	3,652	411	178	160	210	250*	-
50	1500	2,963	506	276	100	135	170	200
	1800	3,652	493	269	105	140	175	200*
	1500	3,652	411	224	125	165	200*	-
55	1500	2,963	506	334	85	110	140	170
	1800	3,652	493	325	85	115	145	170*
	1500	3,652	411	271	105	138	170*	-
60	1500	2,963	506	397	70	95	120	140
	1800	3,652	493	387	70	95	120	140*
	1500	3,652	411	322	85	115	140	-

*To obtain this pressure is needed less power than indicated.

Crankshaft speed to 411 r.p.m. or inferior for intensive use, the rest intermittent use.

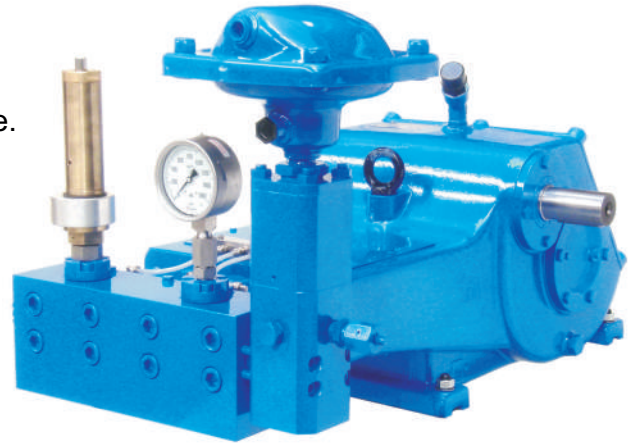


ROSTOR 3150 S02

With: Manometer

3150L Series 3 plungers 150 HP (110 Kw)

- Input shaft to left (I) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal gear box with reduction 2,963 in 3150 body type. Reduction 3,652 in 3150R type.
- Internal oil pressure lubrication. Carter 3150 E / 3150R E.
- Stroke: 95 mm.
- Ceramic plungers - cooled.
- Very high pressure head L type, inline valves, optimal pressure resistant.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Accessories, pressure regulator valve, safety valve, manometer, outlet nipples.



ROSTOR 3150L LAD3N

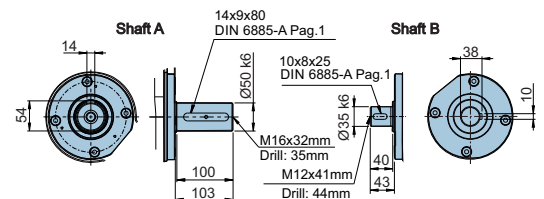
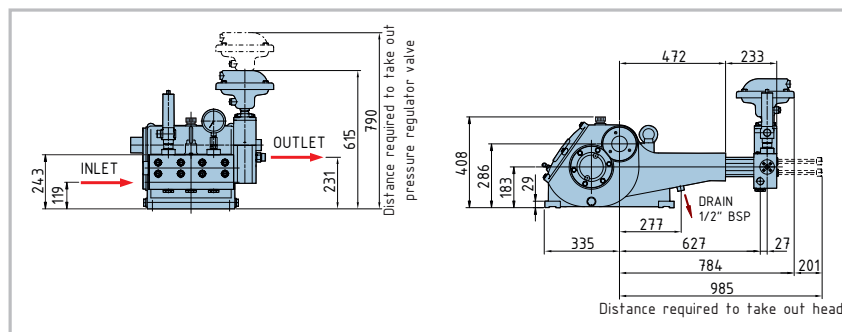
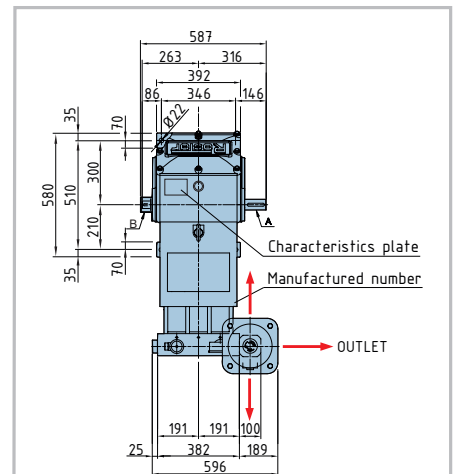
Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)				
					75/55	100/75	125/90	150/110	
					Working pressure (bar)				
HEAD L	16	1500	2,963	506	28	1020	1250*	-	-
		1800	3,652	493	26	1050	1250*	-	-
		1500	3,652	411	22	1250*	-	-	-
	18	1500	2,963	506	35	805	1075	1250*	-
		1800	3,652	493	34	830	1100	1250*	-
		1500	3,652	411	28	995	1250*	-	-
	20	1500	2,963	506	43	650	870	1090	1250*
		1800	3,652	493	41	680	910	1140	1250*
		1500	3,652	411	35	800	1070	1250	-
22	1500	2,963	506	52	540	720	900	1050	
	1800	3,652	493	50	550	750	940	1050	
	1500	3,652	411	42	665	890	1050	-	
24	1500	2,963	506	62	450	605	750	900*	
	1800	3,652	493	60	465	620	780	900*	
	1500	3,652	411	50	555	750	900*	-	
26	1500	2,963	506	73	385	515	640	750*	
	1800	3,652	493	71	395	530	660	750*	
	1500	3,652	411	59	475	635	750*	-	
30	1500	2,963	506	97	290	390	480	570*	
	1800	3,652	493	94	300	400	500	570*	
	1500	3,652	411	78	355	475	570	-	

* To obtain this pressure is needed less power than indicated.

Crankshaft speed to 413 r.p.m. or inferior for intensive use, the rest intermittent use.

Weight: 335 Kg

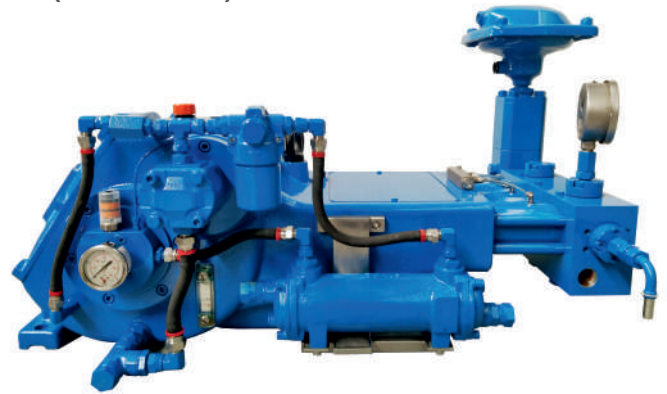


ROSTOR 3150L LDA3N

With: Pressure regulator valve LAD3N, safety valve and manometer

3220 Series 3 plungers 220 HP (160 Kw)

- Input shaft left (l) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal Gear box with reduction 2,963 in 3220 body type. Reduction 3,652 in 3220R type.
- Internal oil pressure lubrication.
- Stroke: 95 mm.
- Ceramic plungers.
- A head for high pressure, B head low pressure or high flow in spheroidal cast iron or stainless steel.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Several pressure regulator valves and outlet nipples.



ROSTOR 3220 L
with valve regulator type LAD3N

Head type	Head material	Pump type	Weight (Kg)
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High pressure	A01	Spheroidal cast iron	3220A01 / 3220RA01	350
	A02	Stainless steel	3220A02 / 3220RA02	350
Low pressure	B	Spheroidal cast iron	3220B / 3220RB	325
	B02	Stainless steel	3220B02 / 3220RB02	325

A02 - B02: Body head made of stainless steel. Suction manifold made of cast iron.
A1 - B1: All made of stainless steel.



3220A01
with valve regulator type A02

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)					
					100/75	125/90	150/110	220/160		
					Working pressure (bar)					
HEAD A01 / A02	22	1500	2,963	506	52	750	-	-	-	
		1800	3,652	493	50	750	-	-	-	
		1500	3,652	411	42	750*	-	-	-	
	24	1500	2,963	506	62	605	750*	-	-	
		1800	3,652	493	60	620	750*	-	-	
		1500	3,652	411	50	750	-	-	-	
	26	1500	2,963	506	73	515	640	750*	-	
		1800	3,652	493	71	530	660	750*	-	
		1500	3,652	411	59	635	750*	-	-	
	30	1500	2,963	506	97	390	480	580	750	
		1800	3,652	493	94	400	500	590	750	
		1500	3,652	411	78	475	590	700	-	
	35	1500	2,963	506	132	285	355	430	660	
		1800	3,652	493	128	290	365	440	660	
		1500	3,652	411	107	350	440	520	-	
	40	1500	2,963	506	172	220	270	320	500	
		1800	3,652	493	168	225	280	330	500	
		1500	3,652	411	140	270	330	400	-	
	45	1500	2,963	506	218	170	215	260	400	
		1800	3,652	493	212	175	220	260	400	
		1500	3,652	411	178	210	260	320	-	
	HEAD B / B02	50	1500	2,963	506	276	135	170	200	-
			1800	3,652	493	269	140	175	200	-
			1500	3,652	411	224	165	200	-	-
55		1500	2,963	506	334	110	140	170	200*	
		1800	3,652	493	325	115	145	175	200*	
		1500	3,652	411	271	138	170	200	-	
60	1500	2,963	506	397	95	120	140	200		
	1800	3,652	493	387	95	120	140	200		
	1500	3,652	411	322	115	140	170	-		



3220 A02
with valve regulator type A02N2



3220B
with valve regulator type C

* To obtain this pressure is needed less power than indicated.

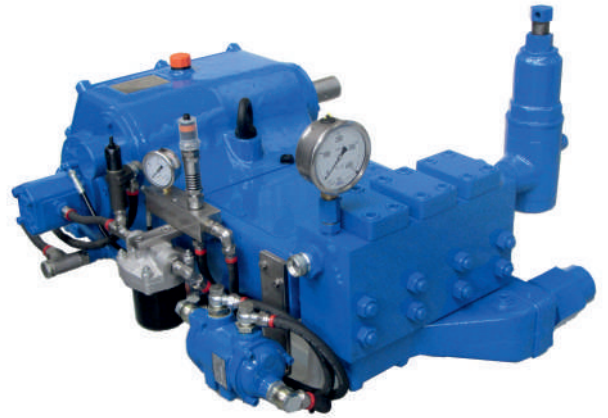
Higher pressure than 300 bar we recommend the A02 stainless steel head.



HIGH PRESSURE PUMPS

3220S Series 3 plungers 220 HP (160 Kw)

- Water recycling pump.
- Input shaft left (l) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal Gear box with reduction 2,963 in 3220 body type. Reduction 3,652 in 3220R type.
- Internal oil pressure lubrication.
- Stroke: 95 mm.
- Ceramic plungers.
- S Valves to use with dirty water.
- SL Valves to use with clean water.
- Accessories: Pressure regulator valve, safety valve, manometer, outlet nipples.



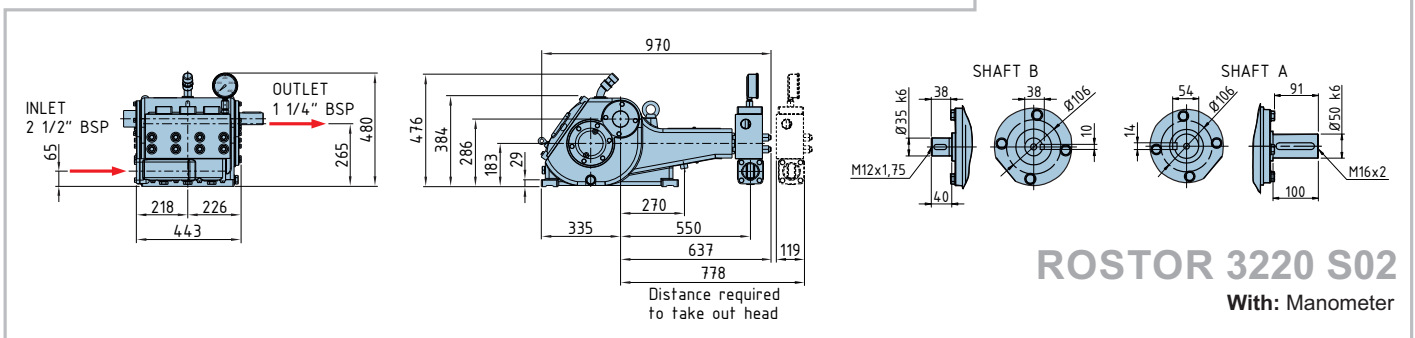
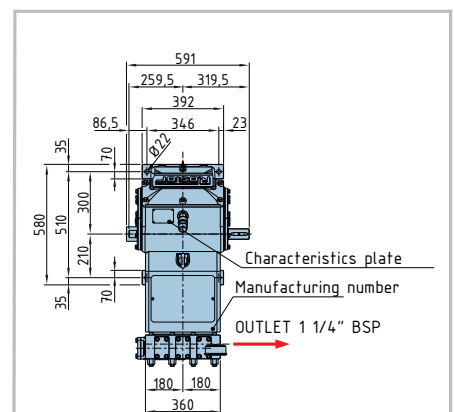
ROSTOR 3220 S02

Head type	Use	Head material	Weight (Kg)
S02	Dirty water	Stainless steel body head, suction manifold in cast iron	340
SL02	Clean water		
SI	Dirty water	All in stainless steel	350
SLI	Clean water		

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank Shaft (r.p.m.)	Flow (l/min)	Motor power (HP / Kw)				
					75/55	100/75	125/90	150/110	220/160
					Working pressure (bar)				
35	1500	2,963	506	132	215	250*	-	-	-
	1800	3,652	493	128	220	250*	-	-	-
	1500	3,652	411	107	250*	-	-	-	-
40	1500	2,963	506	172	160	215	250*	-	-
	1800	3,652	493	168	165	220	250*	-	-
	1500	3,652	411	140	200	250*	-	-	-
45	1500	2,963	506	218	130	170	215	250*	-
	1800	3,652	493	212	135	175	220	250*	-
	1500	3,652	411	178	160	210	250*	-	-
50	1500	2,963	506	276	100	135	170	205	250
	1800	3,652	493	269	105	140	175	210	250
	1500	3,652	411	224	125	165	210	250	-
55	1500	2,963	506	334	85	110	140	170	250
	1800	3,652	493	325	85	115	145	170	250
	1500	3,652	411	271	105	138	170	210	-
60	1500	2,963	506	397	70	95	120	140	220
	1800	3,652	493	387	70	95	120	140	220
	1500	3,652	411	322	85	115	140	175	-

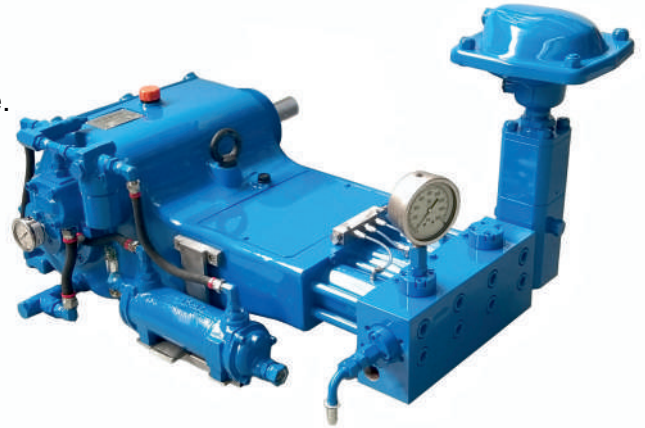
*To obtain this pressure is needed less power than indicated.



ROSTOR 3220 S02
With: Manometer

3220L Series 3 plungers 220 HP (160 Kw)

- Input shaft to left (I) or right viewable from the head.
- Auxiliary P.T.O. shaft on opposite side.
- Internal gear box with reduction 2,963 in 3220 body type. Reduction 3,652 in 3220R type.
- Internal oil pressure lubrication.
- Stroke: 95 mm.
- Ceramic plungers - cooled.
- Very high pressure head L type, inline valves, optimal pressure resistant.
- Internal parts in contact with the liquid made of resistant corrosion materials.
- Accessories, pressure regulator valve, safety valve, manometer, outlet nipples.



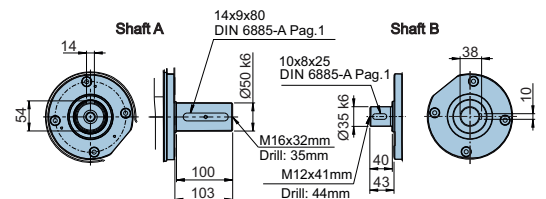
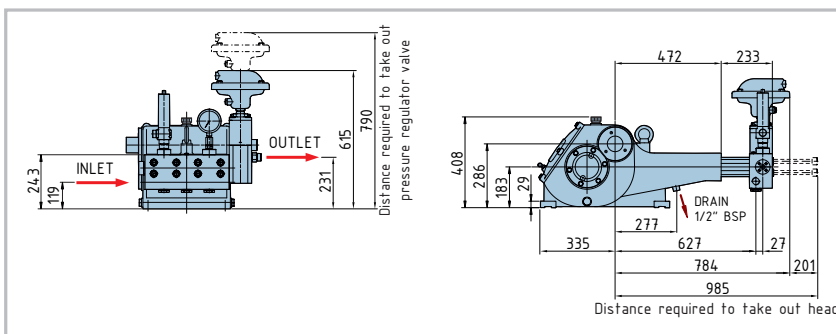
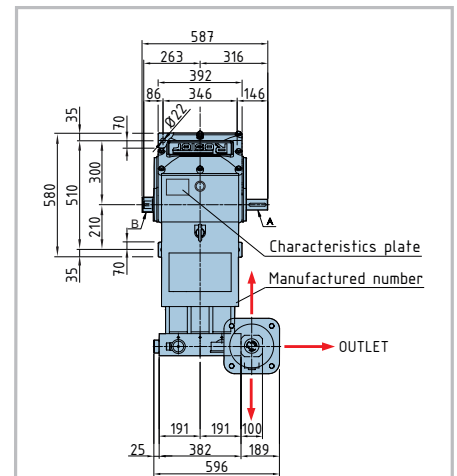
ROSTOR 3220L LAD3N

Technical data

Plunger (mm)	Shaft (r.p.m.)	Reduction	Crank shaft (r.p.m.)	Q (l/min)	Motor power (HP / Kw)				
					100/75	125/90	150/110	220/160	
					Working pressure (bar)				
HEAD L	16	1500	2,963	506	28	1360*	1500*	-	-
		1800	3,652	493	26	1440*	1500*	-	-
		1500	3,652	411	22	1500*	-	-	-
	18	1500	2,963	506	35	1075	1340*	1500*	-
		1800	3,652	493	34	1100	1380*	1500*	-
		1500	3,652	411	28	1340*	1500*	-	-
	20	1500	2,963	506	43	870	1090	1300*	1500
		1800	3,652	493	41	910	1140	1300*	1500
		1500	3,652	411	35	1070	1390*	1500*	-
22	1500	2,963	506	52	720	900	1080	1500	
	1800	3,652	493	50	750	940	1125	1500	
	1500	3,652	411	42	890	1115	1340*	-	
24	1500	2,963	506	62	605	750	905	1400	
	1800	3,652	493	60	620	780	940	1400	
	1500	3,652	411	50	750	935	1125	-	
26	1500	2,963	506	73	515	640	770	1200	
	1800	3,652	493	71	530	660	790	1200	
	1500	3,652	411	59	635	795	950	-	
30	1500	2,963	506	97	390	480	580	900	
	1800	3,652	493	94	400	500	600	900	
	1500	3,652	411	78	475	600	720	-	

* To obtain this pressure is needed less power than indicated.

Weight: 335 Kg



ROSTOR 3220L LDA3N

With: Pressure regulator valve LAD3N, safety valve and manometer



HIGH PRESSURE PUMPS

3150L Series 3 plungers 150 HP (110 Kw)



3200 L - 208 HP
1.200 bar - 62 l/min



3150 L - 150 HP
1.000 bar - 50 l/min

EQUIPMENT

MOTORS

- Equipment manufactured by hydraulic, electric or diesel motor.

COUPLINGS

- Direct coupling between motor and pump, sometimes coupled by pulleys and belts if the job requires it.

FRAME

- Stationary in fixed installations.
- Small wheeled cart for displacement on paved surfaces in factories.
- Pneumatic wheeled cart. They allow the irregular ground displacement.
- Standardised trailer for driving on the roads.

OTHER ACCESSORIES

- Polyester or stainless steel tank. The inlet water is closed by a float valve, pneumatic valve or electrovalve with level probe.
- The tank is recommended because the pressure regulator bypass is connected to the tank. The bypass water goes to the tank and the equipment doesn't leak water.
- Several filter types depending equipment and work can be mounted.
- Hose reels: Manual crank, pneumatic, electric D.C. or hydraulic motors.
- High pressure hoses, lances, pistols, foot valves, etc... In the accessories section a great quantity of tools are indicated.

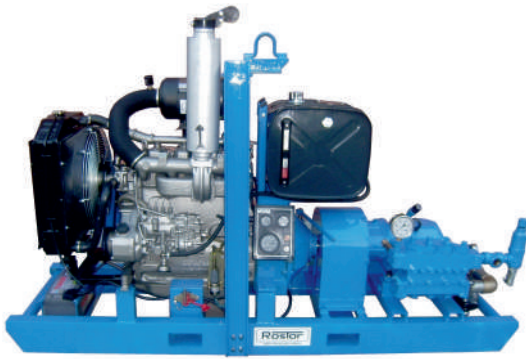


Electrical motors



Diesel motors

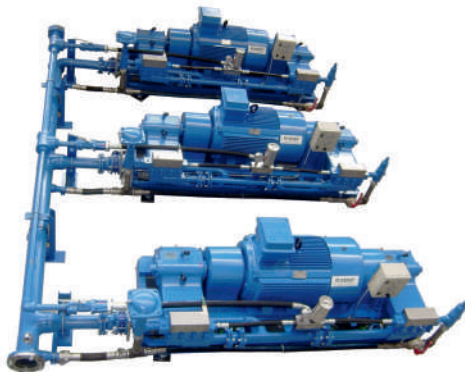
EQUIPMENT



345RA - 50 CV 250 bar - 75 l/min



3150EAI - 100 CV 220 bar - 170 l/min



3150RA02 Duplex - 270 CV 230 bar - 712 l/min



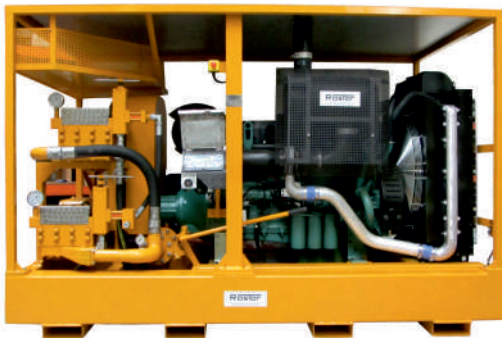
3150EL - 150 CV 750 bar - 73 l/min



3150RA02 - 125 CV 660 bar - 71 l/min



3150A02 - 150 CV 750 bar - 73 l/min



3150A02 Duplex - 314 CV 250 bar - 436 l/min



3150RA02 - 165 CV 250 bar - 212 l/min

PRESSURE REGULATOR VALVE

Regulating valves are used to adjust the pressure in high pressure equipment. It can be regulated from zero to the maximum designed for the valve. The water pumped but not used is diverted through the return/bypass port to the tank of drain line, etc.

The pressure regulator valves work continuously as an accurate safety valve not allowing it to exceed the regulated pressure.

Operating mode

- **Automatic pressure regulator:** When the water pressure outlet is cut off the pressure goes down to zero and the motor turns idle. Used with a pistol, foot valve, etc.

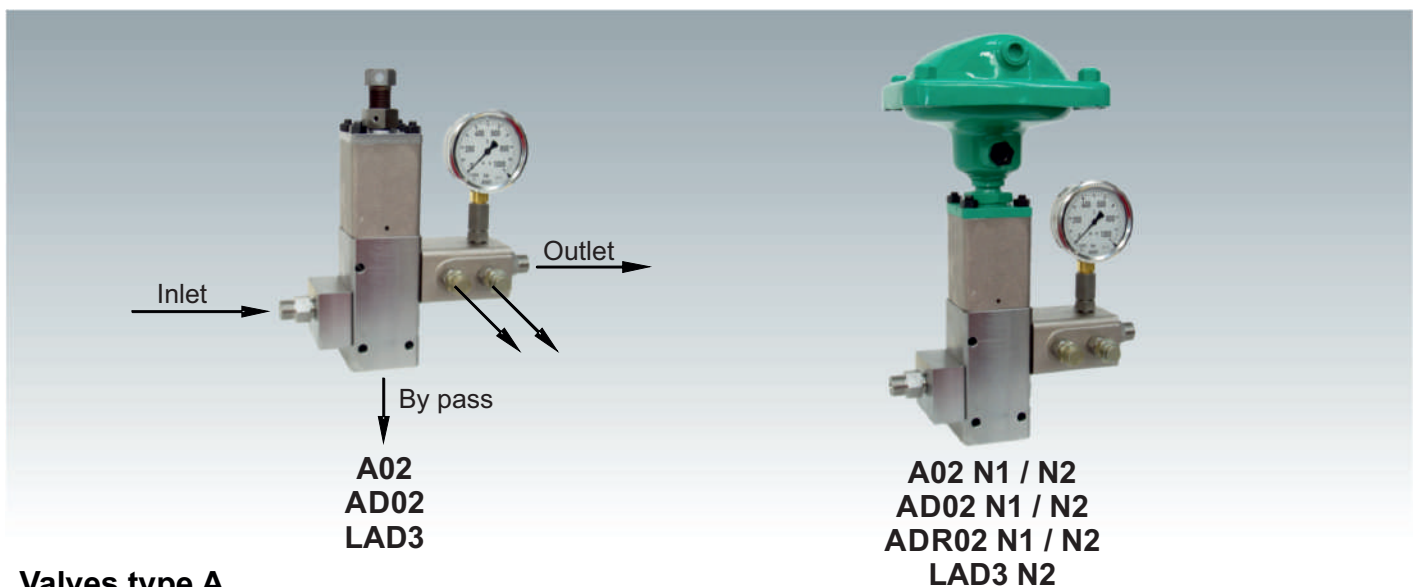
- **Pressure regulator of maximum pressure or overflow valve:** When cutting of the water pressure outlet, the pressure is maintained and the motor works continuously. The regulator works as a limitation pressure valve only. It's used generally when it isn't necessary to cut off the water pressure outlet for example in sewer cleaning.

In pneumatic pressure types besides the overflow basic version. They are also without leak loss. On this type the pressure regulator valve is on "without pressure position". The water goes out of the bypass port and at the same time the outlet pressure port is closed and the nozzle hose doesn't leak out.

Regulating mode

- **Manual:** with screw or lever.

- **Pneumatic:** By pneumatic cylinder operated with regulated compressed air.



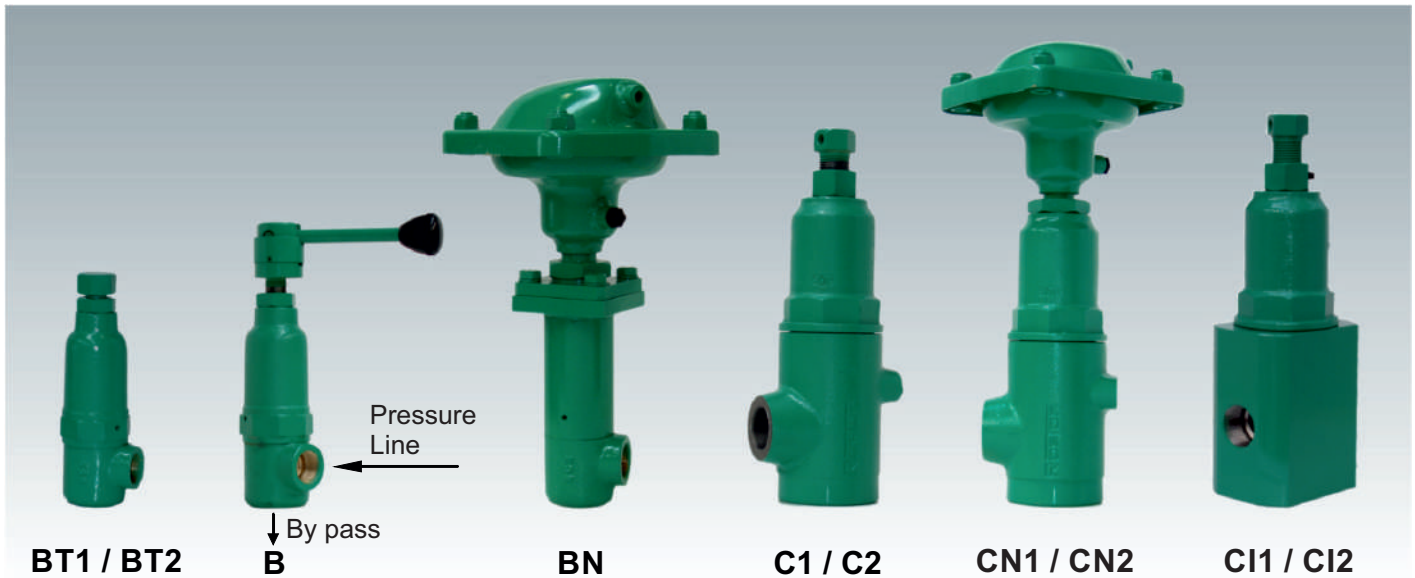
Valves type A

Type	Operating mode	Regulating mode	Max. Pressure (bar)	Flow (l/min)	Height (mm)	Weight (Kg)	Air pressure (bar)
A02	Automatic	Screw	750	215	382	20	-
AD02	Overflow	Screw	750	215	382	20	-
A02 N1	Automatic	Pneumatic	300	215	467	24	6
A02 N2	Automatic	Pneumatic	750	215	497	30	8
AD02 N1	Overflow	Pneumatic	300	215	467	24	6
AD02 N2	Overflow	Pneumatic	750	215	497	30	8
ADR02 N1	Overflow without leak	Pneumatic	300	215	467	24	6
ADR02 N2	Overflow without leak	Pneumatic	750	215	497	30	8
LAD3	Overflow	Screw	1.250	215	497	30	5
LAD3N2	Overflow	Pneumatic	1.250	215	497	30	5

Body material: Stainless steel

Inlet - Outled ports: BSPP 60°, cylindrical thread, 1/2", 3/4", 1" / M22x1,5-60°, M24x1,5-24°

PRESSURE REGULATOR VALVE



Valves type B

Operating mode: Overflow

Code	Type	Regulating mode	Max. Pressure (bar)	Flow (l/min)	BSPP Thread		Height (mm)	Weight (Kg)	Air pressure (bar)
					Pressure line	By pass			
34082	BT1	Screw	200	255	1"	1"	245	5	-
34084	BT2	Screw	300	255	1"	1"	245	5	-
3408	B	Lever	200	255	1"	1"	286	5	-
34087	B2	Lever	300	255	1"	1"	286	5	-
34081	BN	Pneumatic	200	255	1"	1"	375	9	5,0
34088	BN1	Pneumatic	300	255	1"	1"	382	9	8,0
34086	BN2	Pneumatic	300	255	1"	1"	411	15	4,5

Valves type C

Code	Type	Regulating mode	Max. Pressure (bar)	Flow (l/min)	BSPP Thread		Height (mm)	Weight (Kg)	Air pressure (bar)
					Pressure line	By pass			
31060	C1	Manual	150	450	1 1/4"	1 1/2"	360	12	-
31061	C2	Manual	300	450	1 1/4"	1 1/2"	360	12	-
31062	CN1	Pneumatic	150	450	1 1/4"	1 1/2"	455	16	6,5
31063	CN2	Pneumatic	300	450	1 1/4"	1 1/2"	485	22	8,0
310601	CI1	Manual	150	450	1 1/4"	1 1/2"	360	19	-
310611	CI2	Manual	300	450	1 1/4"	1 1/2"	360	19	-
310621	CIN1	Pneumatic	150	450	1 1/4"	1 1/2"	455	23	6,5
610631	CIN2	Pneumatic	300	450	1 1/4"	1 1/2"	485	29	8

Body material: B series brass, C series spheroidal cast, CI series stainless steel.
BSPP = Cylindrical thread.

Safety valve - ROSTOR


Code	Max. Pressure (bar)	Thread BSPP	Height (mm)	Weight (Kg)
34051	750	1/2"	170	0,9

High pressure pumps need a pressure regulator valve and safety valve. The safety valve opens whenever pressure exceeds the stated pressure measures preventing excess pressure. It prevents the incorrect use of the pressure regulator valve.




PRESSURE PUMPS - R TYPE




TYPE	SHAFT: Ø24 - 1450 RPM				
	FLOW l/min	PRESSURE bar	POWER HP	POWER Kw	WEIGHT Kg
R78-15/150	15	150	5,5	4,0	6,5
R78-15/200	15	200	7,5	5,5	6,5




TYPE	SHAFT: Ø24 - 1450 RPM				
	FLOW l/min	PRESSURE bar	POWER HP	POWER Kw	WEIGHT Kg
R28-15/150	15	150	5,5	4,0	9,0
R28-15/200	15	200	7,5	5,5	9,0
R28-21/150	21	150	7,5	5,5	9,0
R28-21/200	21	200	10,0	7,5	9,5



TYPE	SHAFT: Ø24 - 1450 RPM				
	FLOW l/min	PRESSURE bar	POWER HP	POWER Kw	WEIGHT Kg
R94-26/150	26	150	10,0	7,5	16,0
R94-26/200	26	200	13,0	9,6	16,0
R94-30/200	30	200	15,0	11,0	16,0
R94-50/150	50	150	20,0	15,0	16,0
R94-50/200	50	200	26,5	19,5	17,6
R94-60/150	60	150	24,0	17,5	17,6
R94-60/200	60	200	31,0	23,0	17,6
R94-70/150	70	150	27,0	20,0	17,6
R94-15/350	15	350	15,0	11,0	16,0
R94-21/350	21	350	20,0	15,0	16,0
R94-20/500	20	500	25,0	18,5	16,0
R94-20/500I	20	500	25,0	18,5	18,5

TYPE	SHAFT: Ø30 - 1450 RPM				
	FLOW l/min	PRESSURE bar	POWER HP	POWER Kw	WEIGHT Kg
R38-22/400	22	400	22,0	16,5	22
R38-36/400	36	400	36,2	27,0	22



PRESSURE PUMPS - R TYPE

TYPE	SHAFT: Ø30 - 1450 RPM				
	FLOW l/min	PRESSURE bar	HP	POWER Kw	WEIGHT Kg
R66-30/300	30	300	24	18	32,5
R66-50/200	50	200	34	26	32,5
R66-50/300	50	300	40	30	32,5
R66-60/300	60	300	47	35	32,5
R66-70/150	70	150	30	22	32,5
R66-70/200	70	200	37	28	32,5
R66-70/250	70	250	37	28	32,5
R66-85/150	85	150	34	26	32,5
R66-100/120	100	120	30	22	32,5
R66-150/100	150	100	40	30	35,0
R66-30/600	30	600	45	34	34,0
R66-35/350	35	350	40	30	34,0
R66-30/500I	30	500	40	30	34,0
R66-30/600I	30	600	45	34	34,0
R66-24/800I	24	800	48	36	34,0



TYPE	SHAFT: Ø35 - 1000 RPM *1.150 RPM				
	FLOW l/min	PRESSURE bar	HP	POWER Kw	WEIGHT Kg
R18-80/300	80	300	65	48	64
R18-100/200	100	200	54	41	59
R18-120/200	120	200	54	41	59
R18-130/100	130	100	34	26	59
R18-130/160	130	160	54	41	59
R18-130/200	130	200	68	51	59
R18-160/100	160	100	42	32	59
R18-160/130	160	130	54	41	59
R18-200/80	200	80	43	32	59
R18-200/100	200	100	52	39	59
R18-130/220	130	220	75	55	59
R18-160/180	160	180	75	55	59
R18-210/150	210	150	80	60	59
R18-240/140*	240	140	86	64	59
R18-15/1000	15	1000	40	30	62
R18-18/1000	18	1000	47	35	62
R18-20/1000	20	1000	52	39	62



PRESSURE PUMPS - RH TYPE

TYPE	SHAFT: Ø24 - 1450 RPM + Elastic coupling + bell + motor				HIDRAULIC MOTOR			WEIGHT Kg
	FLOW l/min	PRESSURE bar	POWER HP Kw		cm ³	FLOW l/min	PRESSURE bar	
RH28-15/150	15	150	5,5	4	19,2	29	105	12,5
RH28-15/200	15	200	5,5	4	19,2	29	140	12,5
RH28-21/150	21	150	5,5	4	19,2	29	150	12,5



TYPE	SHAFT: Ø24 - 1450 RPM + Elastic coupling + bell + motor				HIDRAULIC MOTOR			WEIGHT Kg
	FLOW l/min	PRESSURE bar	POWER HP Kw		cm ³	FLOW l/min	PRESSURE bar	
RH66-70/150	70	150	40	30	44,1	70	180	42,5
RH66-70/200	70	200	50	37	44,1	70	240	42,5
RH66-100/120	100	120	40	30	44,1	70	210	42,5



TYPE	SHAFT: Ø24 - 1450 RPM + Elastic coupling with cylindrical splined shaft + bell					WEIGHT Kg
	FLOW l/min	PRESSURE bar	HP	POWER Kw		
RH66-30/300N	30	300	24	18	32,5	
RH66-50/300N	50	300	40	30	32,5	
RH66-60/300N	60	300	47	35	32,5	
RH66-70/150N	70	150	30	22	32,5	
RH66-85/150N	85	150	34	26	32,5	
RH66-100/120N	100	120	30	22	32,5	



TYPE	SHAFT: Ø24 - 1450 RPM + Cylindrical splined shaft + bell (without elastic coupling)					WEIGHT Kg
	FLOW l/min	PRESSURE bar	HP	POWER Kw		
RH66-30/300C	30	300	24	18	32,5	
RH66-50/300C	50	300	40	30	32,5	
RH66-60/300C	60	300	47	35	32,5	
RH66-70/200C	70	200	37	28	32,5	
RH66-85/150C	85	150	34	26	32,5	
RH66-100/120C	100	120	47	35	32,5	
RH66-150/100C	150	100	30	22	35,0	
RH66-30/500C	30	500	30	22	36,5	



				
TYPE	HM 44 Gears	HM 90 Gears	HM 34 Pistons	HM 64 Pistons
POWER				
HP	40	47	40	47
Kw	30	35	30	35


PRESSURE PUMPS - RH TYPE

TYPE	SHAFT: Ø38 - 1000 RPM + Elastic coupling with cylindrical splined shaft + bell				
	FLOW l/min	PRESSURE bar	POWER CV	POWER Kw	WEIGHT Kg
RH18-80/300N	80	300	64	47	92,5
RH18-100/200N	100	200	54	41	92,5
RH18-130/100N	130	100	34	26	92,5
RH18-130/60N	130	60	54	41	92,5
RH18-130/200N	130	200	70	51	92,5
RH18-160/100N	160	100	42	32	92,5
RH18-160/130N	160	130	54	41	92,5



TYPE	SHAFT: Ø38 - 1000 RPM + Cylindrical splined shaft + bell (without elastic coupling)				
	FLOW l/min	PRESSURE bar	POWER CV	POWER Kw	WEIGHT Kg
RH18-100/200C	100	200	54	41	92,5
RH18-130/160C	130	160	54	41	92,5
RH18-130/200C	130	200	70	51	92,5
RH18-160/130C	160	130	54	41	92,5



	
TYPE	HM 84
POWER CV	70
POWER KW	51

PISTOLS

PISTOL 200

Máx. Pressure	Advised máx. Flow	Lance lenght	Weight
380 bar	100 l/min	0,66 metros	3,3 Kg

The pistol is equipped with a trigger guard and safety.



PISTOL A-1

Máx. Pressure	Advised máx. Flow	Lance lenght	Weight
750 bar	170 l/min	0,66 metros	5,2 Kg

The pistol is equipped with a trigger guard and safety.



PISTOL P-800

Máx. Pressure	Advised máx. Flow	Lance lenght	Weight
800 bar	100 l/min	0,66 metros	3,3 Kg

The pistol is equipped with a trigger guard, safety, and handle.



DISCHARGE PISTOL

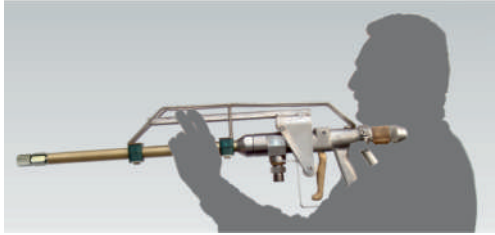
Tipo	Máx. Pressure	Advised máx. Flow	Lance lenght	Weight
1000D	1000 bar	100 l/min	0,8 metros	4,7 Kg

Is equipped with a trigger guard, safety, handle, and adjustable shoulder rest.

Operation: Pressing the trigger closes the discharge outlet, applying pressure to the pump. Releasing the trigger opens the discharge outlet, and the water flows out through the drain pipe and the lance nozzle without pressure. This is a very safe way to work because releasing the trigger completely depressurizes the system. A significant advantage is the ease of repair. This is done by replacing the internal cartridge without the need for tools, an operation that takes less than a minute.



PISTOLS - ACCESSORIES



LEVER ACTION TRIGGER - PISTOL A1 / 200

Device that allows the operator to support the pistol on the shoulder, and touch the trigger easily. It incorporates a guard, which avoids the accidental operation of the pistol, and also a butt to support it on the shoulder.

LEVER LOWER ACTION TRIGGER PISTOL 200

Device that allows the operator to press the trigger comfortably and with little effort. It incorporates a protector, which prevents accidental activation of the gun.

PISTOL 200 - STANDARD INLET NIPPLES



420157
BSPP
1/4" M 60°



420154
BSPP
3/8" M 60°



420151
BSPP
1/2" M 60°



420152
BSPP
3/4" M 60°



420155
BSPP
3/4" TL 60°



420153
Métrico
22x1,5 M 60°



4201535
Métrico
24x1,5 M 24°



453240
JIC
7/8" M 37°

PISTOL A-1 - STANDARD INLET NIPPLES



453247
BSPP
1/4" M 60°



453244
BSPP
3/8" M 60°



453242
BSPP
1/2" M 60°



453246
BSPP
3/4" M 60°



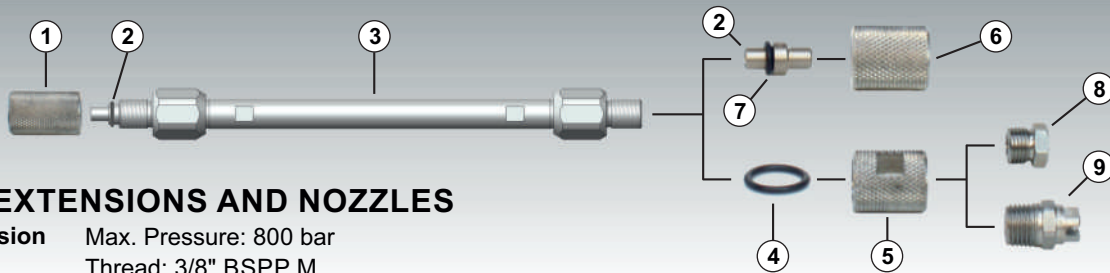
453241
Métrico
22x1,5 M 60°



4532491
Métrico
24x1,5 M 24°



453240
JIC
7/8" M 37°



PISTOL EXTENSIONS AND NOZZLES

Pistol extension Max. Pressure: 800 bar
Thread: 3/8" BSPP M

Pos	Code	Description	Lenght (mm)
1	4013	Coupling	-
2	2232004	OR	-
3	48170483841	Lance pistol extension	400
	48171083841	"	1.000
	48171583841	"	1.500
	48172083841	"	2.000
4	2232028	OR	-
5	453251	1/4" F Nozzle nut	-
6	453250	Nozzle nut	-
7		Nozzle 04 type, concentrate straight jet	-
8		Nozzle 01 type 1/4" BSPP, straight jet, ceramic, graft, flow stabilizer	-
9		Nozzle 06 type 1/4" BSPT, fan jet	-

Full extension

Pos.: 1+2+3
Código: 4817XX838411
To choose

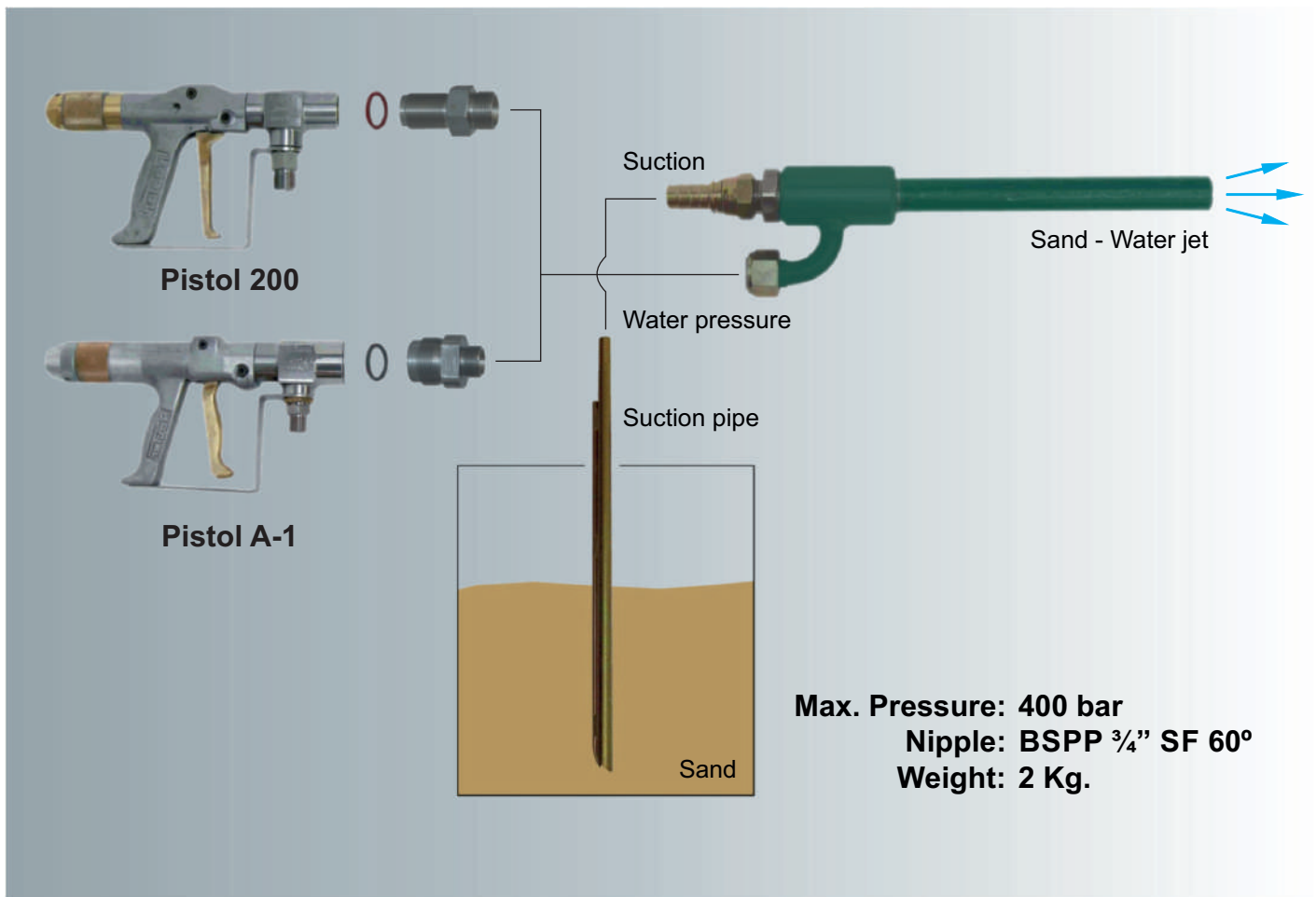
SAND BLASTING

OPERATION

Water pressure passing across a nozzle, circulates inside the jet at high speed, that cause a venturi effect, vacuum and great suction at the rear part of the accessory. The suction must be connected by means of hose to the sand container or accessory used.

Cleaning with sand-water jet pressure is more powerful than the exclusive use of water pressure. The sand hits the surface to be cleaned. You can control the force of the sand by using different grain sizes and adjust the water pressure, also the water pressure avoid the formation of harmful powder for people and environment.

It can be used to remove paints, oxides and residues stuck fast that with only water pressure would be very difficult to remove.



SUPPLY

Code 430: Sand blast 200

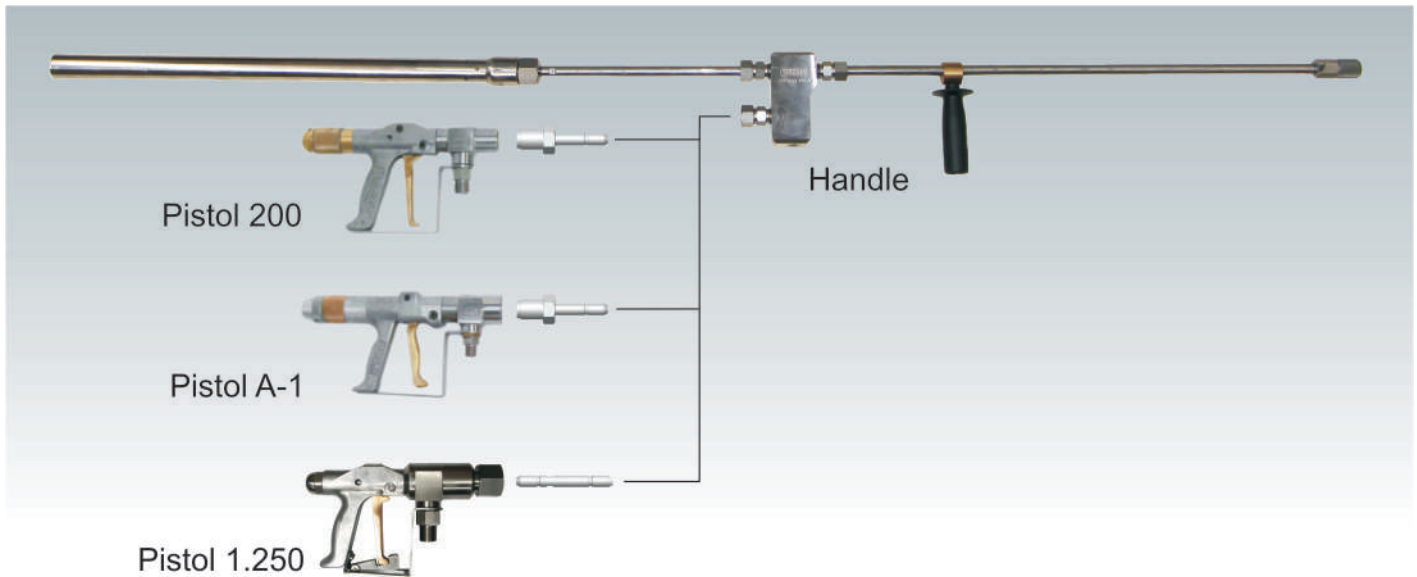
Code 431: Sand blast A-1

- The sand blasting equipment also includes the pistol connection nipple and suction pipe.
- The pistol and the sand suction hose are supplied separately.

SUBMARINE LANCE

Some work with water pressure needs to be performed under water, principally in the sea. The water pressure is manipulated by scuba divers operators. The water jet pressure produces, in the opposite direction to that of the exit, a force of reaction that the operator must support. The scuba diver when he is diving does not have any point of support, and can't bear the caused reaction.

The submarine lance ROSTOR is created in order that diver will not be submitted to any force of reaction and supports stability in the work position.



Max. Pressure: 1.250 bar
Connection: 9/16" MP
Material: Stainless steel

OPERATING MODE

The accessory must be coupled to a high pressure pistol. The submarine lance has 2 opposite exits, in each end the same diameter of nozzle must be assembled. On having opened the pistol, the water flows in 2 directions, forward to perform the work and backward dispersing in the water. The reaction forces are offset and the result is void.

SUPPLY

- Submarine lance 200
- Submarine lance A-1
- Submarine lance 1.250

The supply besides the lances and the pistol connection nipple.

APPLICATIONS

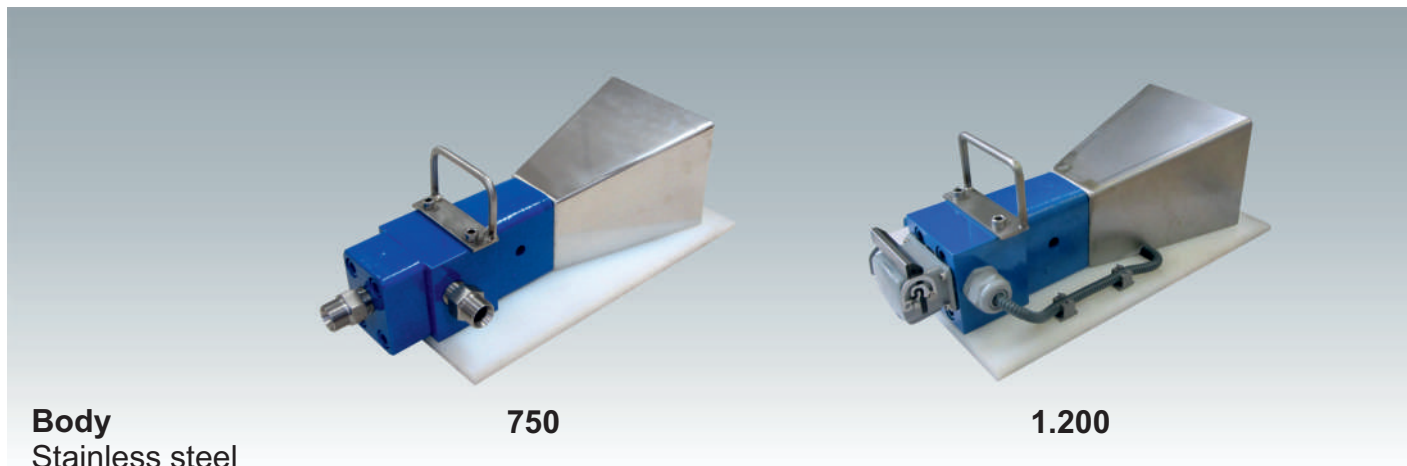
Column cleaning in oil rigs, docks, cleaning of submerged ship, ocean outfalls.

FOOT VALVE

It's used in work that is necessary to open and close the water pressure outlet many times and you need your hands to operate the lance, for example in head exchanger cleaning with rigid or flexible lance.

ADVANTATGES

- Operator hands are ready to use the accessory to work safely.
- The operator controls himself the opening-closing water pressure, not dependent on anyone and therefore avoid the accidents risk.



Body
Stainless steel

750

1.200

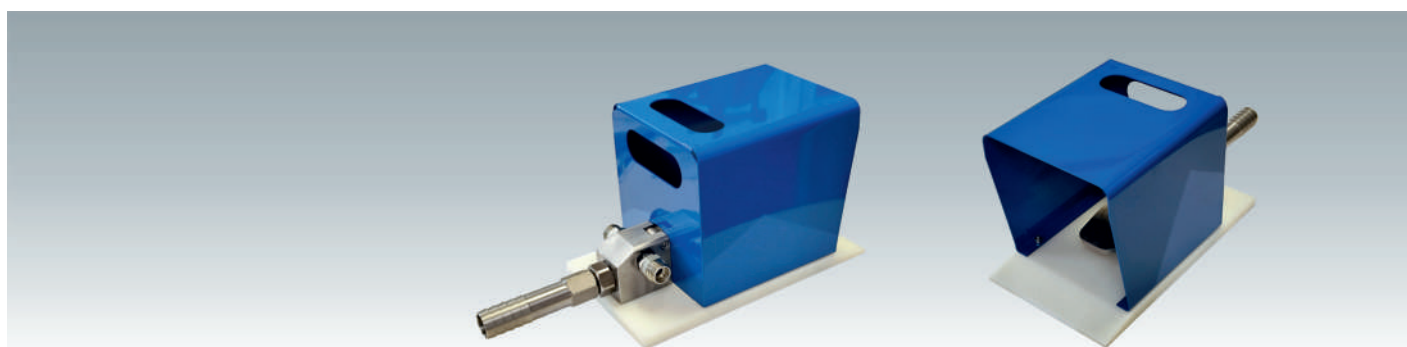
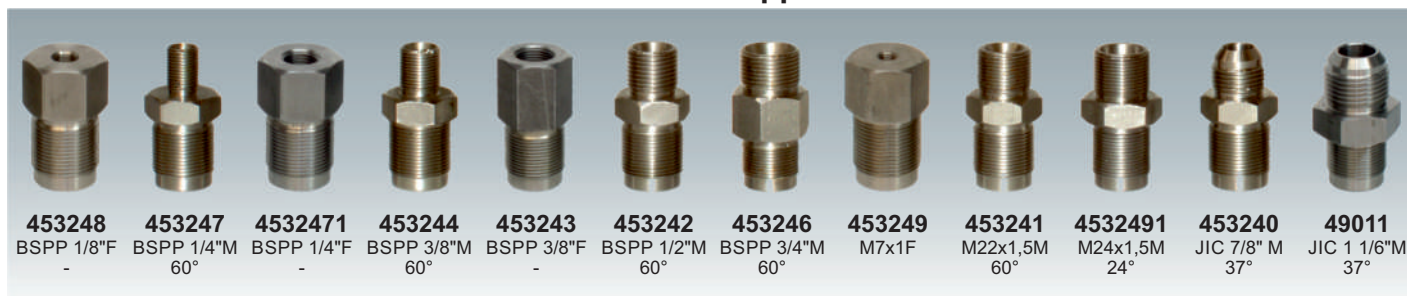
Type 750 Máx. pressure	Type 1200 Máx. pressure	Flow l/m.	Dimensions mm.			Weight Kg.
			L	A	H	
750	1.200	170	435	180	125	12

Electronic switch option

It works in combination with the pneumatic pressure regulator pump valve.

When the operator closes the water outlet, the pump pressure stops. The pressure is restored when the foot valve is opened

Standard nipples



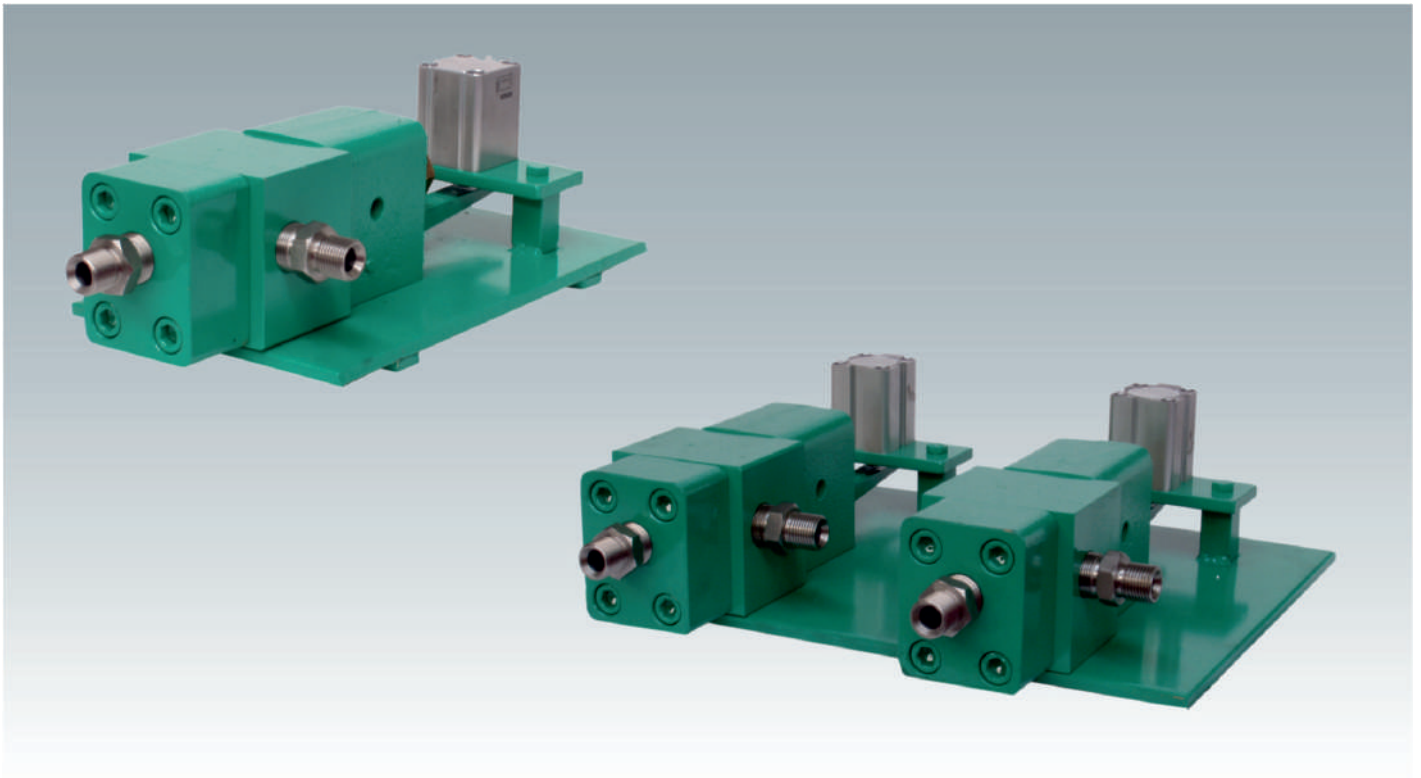
DISCHARGE FOOT VALVE

Type	Máx. Pressure	Flow l/m.	Dimensions mm.			Weight Kg.
			L	A	H	
1000D	1000 bar	130	465	190	207	6,2

PNEUMATIC CUT VALVE

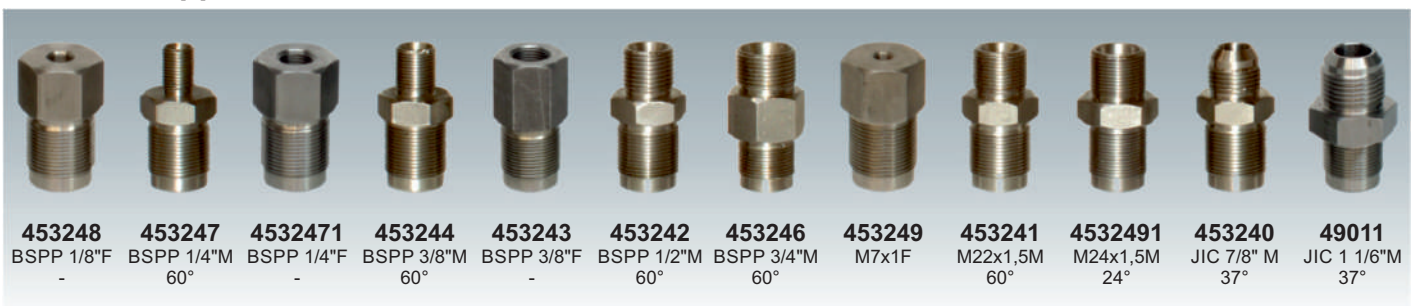
Used for opening-closing the water pressure flow automated by a pneumatic cylinder in industrial systems.

- Designed exclusively to work with water pressure.
- Great longevity with long cycles.
- Stainless steel body.
- Fundamental parts made of corrosion resistant steel with thermal treatment of high wear resistance.
- For systems that need several units, they are given grouped on a support with simple, double, triple and quadruple configuration.



Max. Pressure (bar)	Flow (l/min)	Air pressure (bar)	Type	Dimensions (mm)			Weight (Kg)
				L	W	H	
750	170	2-6	Simple	180	390	125	15
750	170	2-6	Double	380	390	125	30
750	170	2-6	Triple	580	390	125	45
750	170	2-6	Quadruple	780	390	125	60

Standard nipples



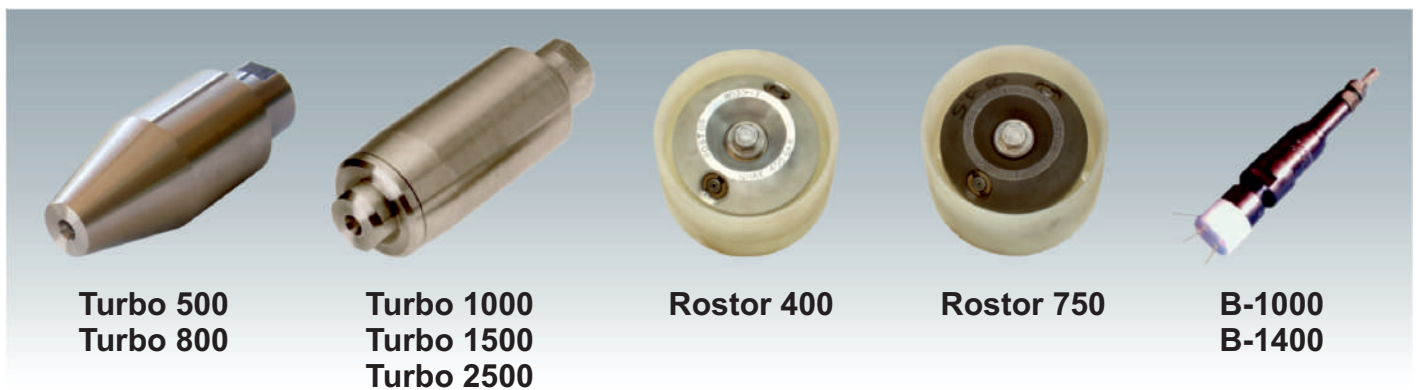
BSPP = Cylindrical thread

ROTARY HEADS - SURFACE CLEANING

The water pressure goes out by the nozzles, suitably located, giving revolving action to the jets increasing productivity in comparison with straight or fan nozzles in surface cleaning works.



Type	Max. Pressure (bar)	Max. Flow recommended* (l/min)	Thread	Diameter (mm)	Length (mm)	Weight (Kg)
300	390	40	BSPP 1/4" M	36	84	0,12
400	560	80	BSPP 1/2" F	64	115	0,50
Turbo 250	250	40	BSPP 1/4" F	45	95	0,40
Turbo 300	300	40	BSPP 1/4" F	53	110	0,60
Turbo 350	350	40	BSPP 1/4" F	58	115	0,74
Turbo 500	500	50	BSPP 3/8" - 1/2" - 1/4" F	43	109	0,62
Turbo 800	800	40	BSPP 3/8" - 1/2" - 1/4" F	43	130	0,66
Turbo 1000	1000	30	BSPP 3/8" - 1/2" - 1/4" F	50	134	1,20
Turbo 1500	1500	25	M14 or 9/16 LH	50	134	1,25
Turbo 2500	2500	20	M14 or 9/16 LH	50	134	1,30



Type	Max. Pressure (bar)	Max. Flow recommended* (l/min)	Thread	Diameter (mm)	Length (mm)	Weight (Kg)
Rostor 400	400	70	BSPP 3/8" F	99	87	0,80
Rostor 750	750	45	BSPP 3/8" F	99	87	1,30
B-1000	1000	40	NPT 1/2" F	46	200	1,30
B-1400	1400	30	UNF 9/16" F	46	200	1,30

* Maximum recommended flow so that the worker can support the reaction force.

SURFACE PRESSURE CLEANER

DESCRIPTION

This accessory connected to a water supplier pressure equipment, projects through its nozzles, rotating high pressure water jets, causing a circular water ring. The operator moves the device, sweeping and cleaning the surface.

COMPOSITION

Rotary head

Heavy duty. Long life, almost without maintenance, because it does not have conventional seals (Labyrinth seal).

Nozzle arms

Placed to the rotary outlet head. Specially slow turning speed to increase the efficiency of the cleaning.

Brush guard

Prevents the material removed from the surface to be splashed outwards from the surface pressure cleaner.

Chassis

The rotary head is attached to the chassis with two fixed and two mobile wheels for greater maneuverability.

Suction option

This option allows detached vacuum extraction of water and waste projected for greater cleanliness and task efficiency.

Folding handle

Possibility of folding the handle when not in use.



Specifications

Model	Max. Pressure continuous service (bar)	Max. Pressure intermittent service (bar)	Ø Swept area (mm)
BR 800/400	800	1.000	410

FILTRATION

20 Microns mesh size filter is mandatory. If the machine doesn't have this filter a high pressure ROSTOR filter can be used: F800/150 assembled at high pressure line.

APPLICATIONS

Paints, rubber, oils, old concrete, general dirt removal.

Cleaning floors, surfaces, parkings, roads, grids, etc...



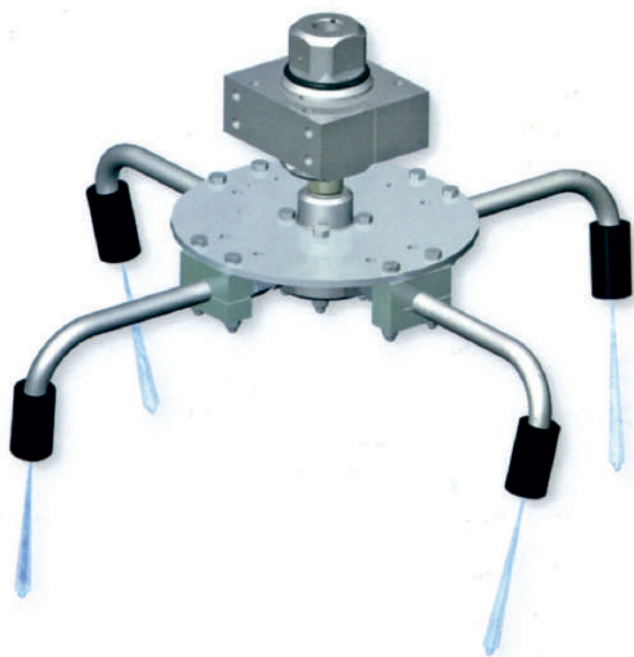
Folding handle

SG-30 ROTARY HEAD

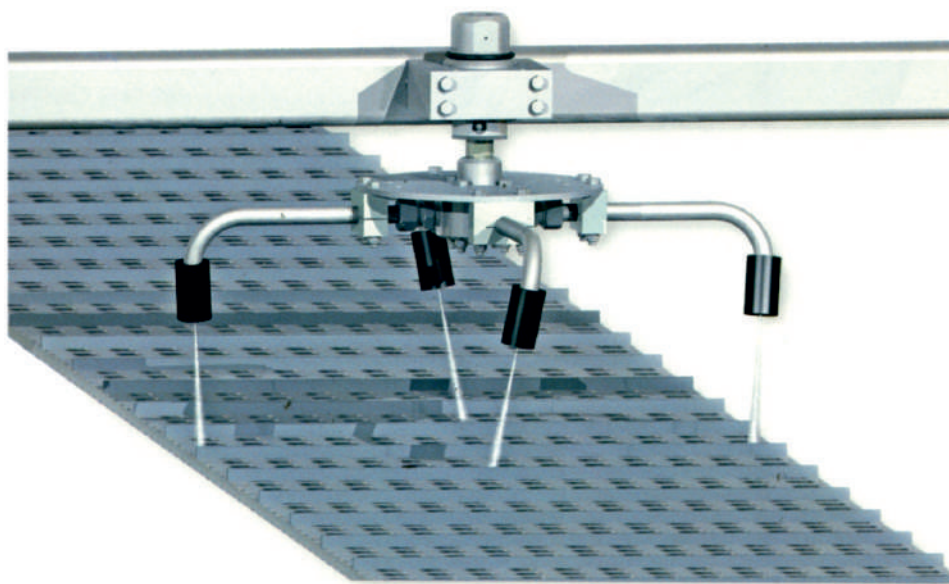
Rotary high pressure water jet for cleaning surfaces. Equipped with 4 arms and 4 interchangeable nozzles.

It is available in either 18" (460 mm) or 24" (620 mm) jet path diameters.

Application in various types of surface cleaning. For example, cleaning floors, walls, transport tapes, painting grids, airport runways, etc...



- Self rotating assembly
- 18" or 24" jet path diameter
- Radiused arms enhance jets
- Replaceable nozzle tips
- Aluminium mounting block



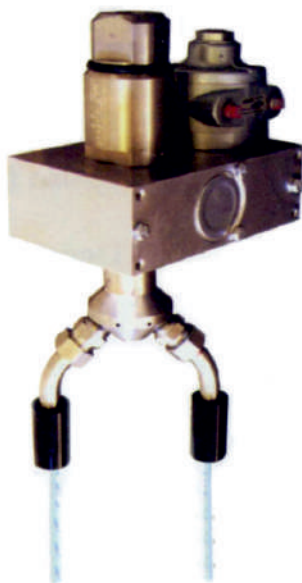
Characteristics

Model	Max. Pressure (bar)	Flow (l/m)	Jet path (mm)	Rotation speed (r.p.m.)	Weight (Kg)	Height (mm)
SG-30-P12	1000	190	460 or 620	300-1000	11,3	330
SG-30-M12	1400	110				

SG-40, 50, 60, 70 ROTARY HEADS

SG-40 / SG-50 (Fast rotation)

The rotary tools SG-40 and SG-50 working at a speed between 250 and 1,000 rpm. The tool SG-40 uses an air motor, and the SG-50 uses a hydraulic motor.



SG-40,50 Features

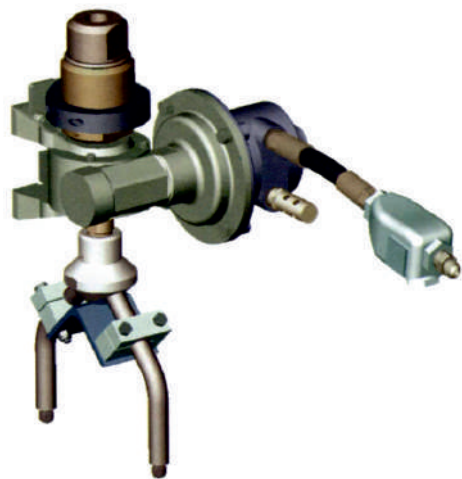
Pressure	1000 bar	1400 bar
Model	SG-CCN-P12K	SG-CCN-M12K
Max. Flow	190 l/min	
Rotation speed	250-1000 rpm	
Inlet thread	3/4 NPT	3/4 MP
Outlet thread	1 1/8"	
Air motor	4 bar - 20 l/seg	
Hydraulic Motor	140 bar - 15 l/min	
Weight	12 Kg	

SG-60 / SG-70 (Slow rotation)

The rotary tools SG-60 and SG-70 work at a slower rotation speed through a gearbox they have two work speed between 8-40 and 35-165 rpm.

The slower speed can increase the depth of penetration removing debris with greater efficiency and distance.

SG-60 uses an air motor, and the SG-70 uses a hydraulic motor.



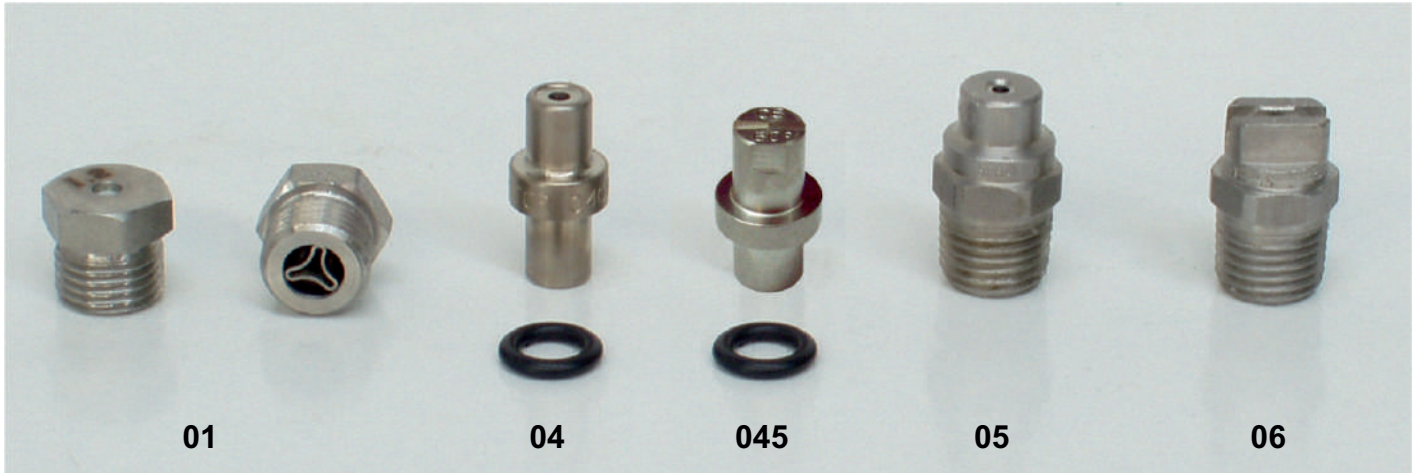
SG-60,70 Features

Pressure	1000 bar	1400 bar
Model	SG-P12KML	SG-M12KML
Max. Flow	420 l/min	
Rotation speed	8-40 rpm o 35-165 rpm	
Inlet thread	3/4 NPT	3/4 MP
Outlet thread	3/4 NPT	1 1/8"
Air motor	4 bar - 20 l/seg	
Hydraulic Motor	140 bar - 15 l/min	
Weight	18 Kg	

PISTOL AND SAND-BLAST NOZZLES

PISTOL NOZZLES

Max. Pressure: 1.000 bar



Type	Jet type	Thread	Dimensions (mm)	Weight (gr)	Material	ØHoles (mm)
01	Straight	BSPP 1/4"	∅ 14x14	12	Stainless steel + ceramic graft + flow stabilizer	1,0-1,2-1,5-1,7-2,0-2,2 2,5-2,7-3,0-3,2-3,6-4,0
04	Straight	-	∅ 12x24	8	Stainless steel, high resistance treatment	1,0-1,2-1,5-1,8-2,0-2,2 2,5-2,8-3,2-3,7-4,0-4,5-5,0
045	Fan 10°-15° 20°-30°-45°-60°	-	∅ 12x24	8	Stainless steel, high resistance treatment	1,0-1,2-1,5-1,8-2,0-2,2 2,5-2,8-3,2-3,7-4,0-4,5-5,0
05	Straight	BSPT 1/4"	∅ 15x23	18	Hardened stainless steel	0,8-0,9-1,1...4,7
06	Fan 15°-25° 40°-50°-65°	BSPT 1/4"	∅ 15x23	18	Hardened stainless steel	0,8-0,9-1,1...4,7

OR Nozzle 04 / 045 Code: 2232004

On request we can supply other sizes and different fan angles.

SAND-BLAST NOZZLE



Type	Max. Pressure (bar)	DxL (mm)	Weight (gr)	OR Quantity	OR Code
00	400	30x50	90	2	2232009
				1	2223005

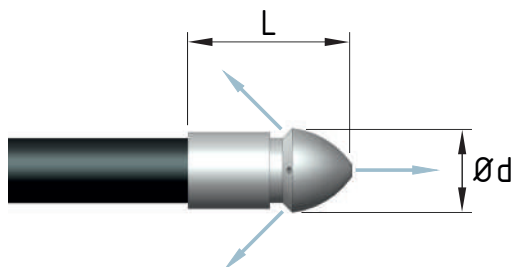
Material: Stainless steel, high wear resistance with thermic treatment.




HOSES AND NOZZLES

SMALL DIAMETER PIPELINES CLEANING

- Thermoplastic hoses with internal steel wires and high flexibility.
- Different solutions with pressed or threaded nozzles allow turning on bends in small pipelines.

Hose Type	Internal Ø (mm)	External Ø (mm)	Working pressure (bar)	Weight (gr/m)	Nipple available
51	5,0	10	200	115	1/8" M / 1/4" TL
61	6,5	12	200	160	1/4" M / 1/4" TL



	Hose type	Nozzle type	Ød (mm)	L (mm)	Assembly
	51	75	Ø 13	26	Crimped nozzle
	51	30	Ø 13	29	Short threaded male fitting
	61	318	Ø 17	40	Short threaded male fitting

When ordering please indicate, pressure, flow, hose diameter and length.

HOSE AND FLEXIBLE LANCE PIPE CLEANING NOZZLES



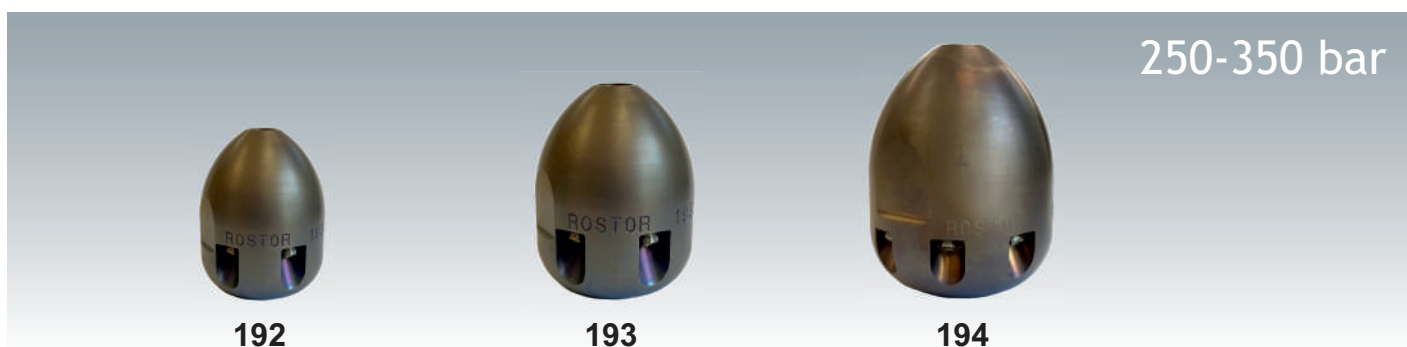
Form	Thread	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)	Max. Pressure (bar)
22	1" F	54	95	800	46	400
20	3/4" F	40	65	320	34	
32	1/2" F	30	37	100	27	
39	3/8" F	24	40	70	22	
37	3/8" M-60°	22	42	50	19	
318	1/4" F	17	21	19	14	
30	1/8" F	13	16	7	12	

Thread are BSPP type (Cylindrical) in inches.

Material: Stainless steel with thermal treatment for high wear resistance.

Stock available in a wide variety of every type with or without forward jet and many types of back jet at different outlet angles.

ROUND NOZZLES



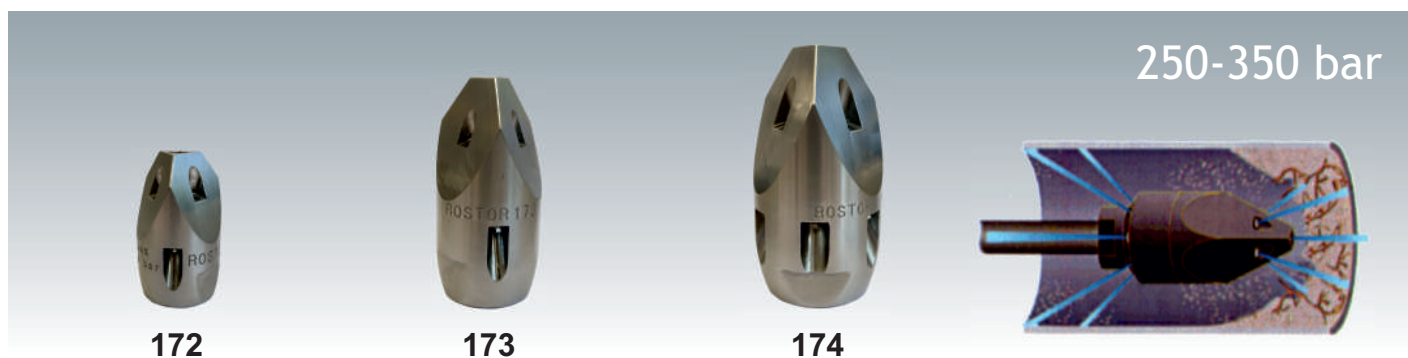
Form	Thread	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)	Inserts (Thread)	Max. Pressure (bar)
192	1/2" F	Ø 39	48	275	36	6x30° (M4)	350
193	3/4" F	Ø 48	60	450	46	6x30° (M6)	350
194	1" F	Ø 60	76	900	56	8x30° (M6)	250

Thread are BSPP type (Cylindrical) in inches.

Material: Stainless steel with thermal treatment for high wear resistance.

The nozzles are provided with replaceable ceramic insert nozzles.

POINTED NOZZLES



Pointed nozzles are comprised of 4 powerful front jets and other back jets for propulsion.

The nozzles are provided with replaceable ceramic insert nozzles.

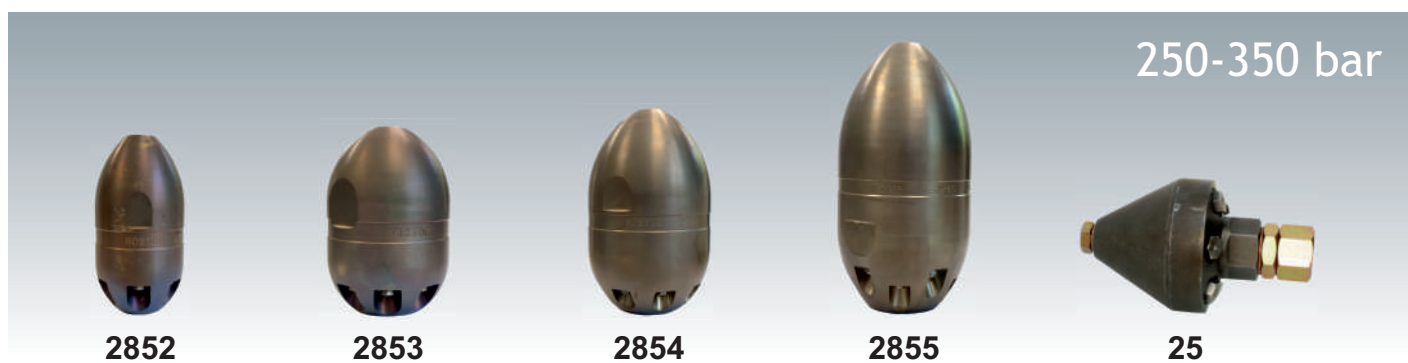
The use of the pointed nozzle in blocked pipes is much more effective than conventional fixed jet with only one frontal jet. With its sharp edges and forward jets the nozzle can easily go through any blocked pipe, root mass or frozen water pipes.

Form	Thread	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)	Inserts Front	Inserts Rear	Max. Pressure (bar)
172	1/2" F	Ø 32	56	190	28	1 + 3x15° (M4)	3x25° (M4)	350
173	3/4" F	Ø 40	80	420	32	1 + 3x15° (M4)	3x25° (M6)	350
174	1" F	Ø 50	94	710	41	1 + 3x15° (M6)	6x25° (M6)	250

Thread are BSPP type (Cylindrical) in inches.

Material: Stainless steel with thermal treatment for high wear resistance.

BOMB NOZZLES



Form	Thread	Diameter (mm)	Length (mm)	Weight (Kg)	Wrench size (mm)	Inserts (Thread)	Max. Pressure (bar)
2852	1/2" F	Ø 58	111	1,5	56	6x20° (M8)	350
2853	3/4" F	Ø 70	102	2,0	66	8x20° (M8)	350
2854	1" F	Ø 88	141	4,5	85	8x20° (M8)	250
2855	1 1/4" F	Ø 98	191	7,2	94	5x10° + 5x20° (M8)	250
25	3/4" F	Ø 88	188	2,0	36	3x20° + 3x30° (1/4")	250

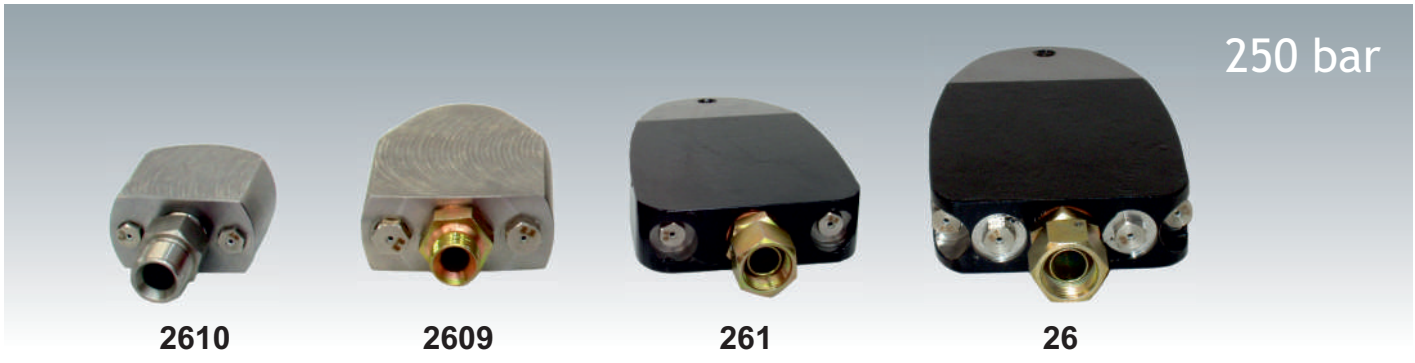
Thread are BSPP type (Cylindrical) in inches.

Material: Stainless steel with thermal treatment for high wear resistance.

The nozzles are provided with replaceable ceramic insert nozzles.

Optional: Front insert for all nozzles.

HEAVY NOZZLES



Brick nozzles

Used for extracting heavy materials, sands, stones... from sewer pipes.
Due to its weight and jets position, it drags heavy material prised from the bottom of the pipe.

Type	Thread BSPP	Weight (Kg)	Dimensions			Nozzle Qty	Thread	Max. Pressure (bar)	Material
			Lenght	Wide	Heigh				
2610	1/2" F	1,0	60	60	33	2	M10x1 + Front plug 1/4"	250	Steel
2609	1/2" F	2,0	100	80	35	2	1/4"	250	Steel
261	3/4" F	6,5	200	130	40	2	1/4"	250	Steel
26	3/4"	6,5	200	130	40	4	1/4"	250	Steel

Thread are BSPP type (Cylindrical) in inches.

BALANCED TORPEDO



Is an optimized heavy nozzle designed to remove sands and stones from the bottom part of the sewages system drain pipes.

It is counter balanced so that it cannot be put on its side and the jets always hit on the bottom part of the pipe. In addition it has a swivel joint so that the hose cannot turn and it remains in the horizontal position. The type 2896 has additional nozzles on the top for cleaning ceiling pipes.

Form	Thread	Diameter (mm)	Length (mm)	Weight (Kg)	Inserts (Thread)	Max. Pressure (bar)
2895	1 1/4" F	Ø 108	260/352*	10	3x10° + 2x15° + 2x25° (M8)	250
2896					3x10° + 2x15° + 2x25° + 5 top (M8)	

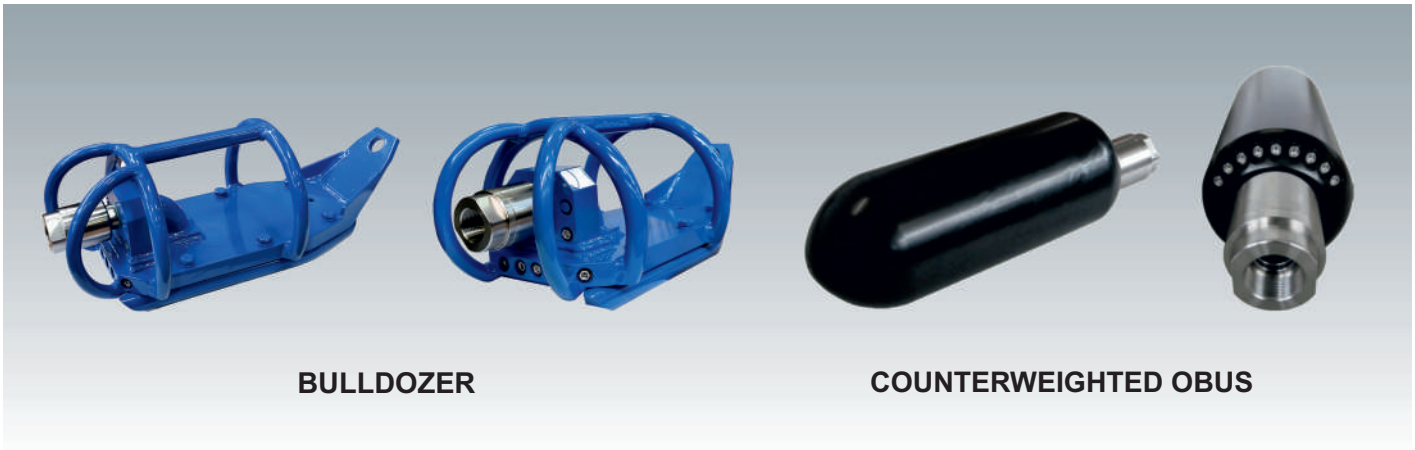
Thread are BSPP type (Cylindrical) in inches.

*With swivel joint

Material: Stainless steel with thermal treatment for high wear resistance.

The nozzles are provided with replaceable ceramic insert nozzles.

TOBERAS BULLDOZER - COUNTERWEIGHTED OBUS



BULLDOZER

COUNTERWEIGHTED OBUS

- The Bulldozer and Counterweighted obus is an optimized brick or tile designed to remove sand and stones from the bottom of sewer pipes.
- It is counterweighted to prevent tilting and ensure the jets always impact the bottom of the pipe. It also features a swivel joint to prevent the hose from rotating it, keeping it flat.
- The water jets exit through interchangeable nozzles with ceramic inserts for increased durability. The nozzle chamber is configured to ensure laminar flow without turbulence, maximizing the jets' impact efficiency.

Ref.	Thread connection	Dimensions (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
BULLDOZER						
281113305	3/4"	330 x 185 x 196	6 x M10	100	>300	13,1
281113306	1"					
281114805	3/4"	480 x 234 x 207	8 x M10	300	>300	23,9
281114806	1"					
281116016	1"	601 x 290 x 253	10 x M10	300	>300	33,3
281116017	1 1/4"					34,4
281116018	1 1/2"					38,3
COUNTERWEIGHTED OBUS						
281111406	1"	Ø140 x 348	7 x M10 - 10°	250	>300	17,0
281111596	1"	Ø159 x 400	9 x M10 - 10°	300	>500	24,0

VENTURI NOZZLES



- The venturi nozzle is designed to evacuate large numbers of sand and solids that are alight in the bottom of the culvert.
- Operation is based on the venturi effect. The pressurized water flows through a nozzle internal nozzle exert reaction force for the advancement of the device, while sucking on the front of the water pipe that drags sand pushing it through the nozzle. The mixture is transported sand and water channelled through the pipe downstream toward the well has been introduced where the nozzle.
- For optimum performance is very important that the nozzle working fully in submerged conditions, the hose must be filled with water. The water from the hose is used for cleaning. Thus, the volume of water trasvasado is five times greater than that provided by the pump. A pump of 300 l/min increase the flushing capacity of the nozzle to 1500 l/min. As a result enormous quantities of sand and gravel can be removed fast and efficiently.
- It ensures a smooth because cleaning nozzles do not work directly against the wall of the pipe. Giving result to a very appropriate tool for cleaning in poor or very old pipes.
- Their main application is cleaning large full surcharged pipes and drains from 500 mm up to 3000 mm diameter.

Working pressure up to 200 bar.

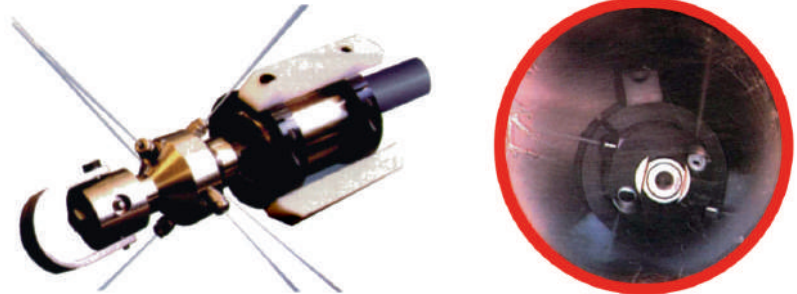
Ref.	Thread connection	Dimensions (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
281091706	1"	170 x 105 x 325	6 x M6 -10°	190	>300	10
281092706	1"	270 x 225 x 490	8 x M10 -10°	230	>500	32
281095457	1 1/4"	545 x 225 x 490	16 x M10 -10°	400	>1000	73

CENTRALIZERS

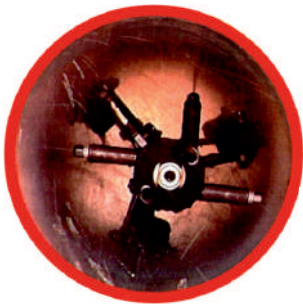
The centralizer is an accessory that puts the rotating head or nozzle in the center of pipe optimizing the jets impact.

BJ 070 SKID STYLE

- Replaceable plastic skis.
- For diameters of 150, 200, 300 mm



BJ 286 CENTRALIZERS (6 WHEELS)

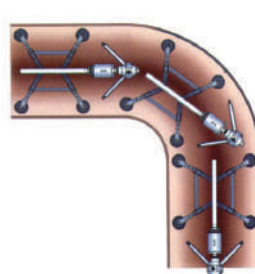


- Use in straight sections.
- Adjustable aluminium profiles.
- Easily convertible from 1000 to 1400 bar.
- Plastic wheels.

Dimensions	Ø (")	Ø (mm)	Weight (kg)
Small	9-18	230-460	9
Medium	13-40	330-1000	15
Large	16-60	410-1500	18

BJ 288 CENTRALIZERS (8 WHEELS)

- Turns in the bends.
- Adjustable galvanized steel profiles.
- Easily convertible from 1000 to 1400 bar.
- Resistant plastic wheels.



Dimensions	Ø (")	Ø (mm)	Weight (kg)
Small	16-21	410-530	5,5
Medium	22-29	560-740	5,9
Large	30-37	770-940	7,3



LANCE NOZZLES PIPE AND HEAT EXCHANGER CLEANING



Form	Thread	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)	Max. Pressure (bar)
34xx12	1/2" M-60°	28	47	110	25	750
34xx22	M22x1,5 M-60°	28	47	110	25	
34xx78	JIC 7/8" M-37°	28	47	110	25	
36	M24X1,5 M-24°	28	52	130	22	1.000
315	1/4" F	18	37	47	15	
355	1/8" F	13	30	19	9	
295	M7X1 F	10	24	9	8	



Form	Thread	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)	Max. Pressure (bar)
515	1/4" F	Ø18	40	54	16	1.000
505	1/8" F	Ø13	29	21	12	
425	M7x1 F	Ø10	28,5	11	9	
59	M6x1 M	Ø 8	28	5	-	500

Thread are BSPP type (Cylindrical) in inches.

Material: Stainless steel with thermal treatment or high wear resistance.

Stock available in a wide variety of every type with or without forward jet and many types of back jet at different outlet angles.

When ordering please indicate, pressure, flow, hose diameter and length.

ATTENTION: To use rigid lances. Be careful with the reaction force that the operator has to bear.

ROTARY NOZZLES PIPE AND HEAT EXCHANGER CLEANING



Max. pressure: 1.000 bar

Materials: Stainless steel with thermic treatment of high wear resistance

Flexible lance nozzles

Form	Thread	N° Jets	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)
6110	1/8" F	3 to 45° + 2 to 90°	16,0	32	35	13
6010	1/4" F	3 to 45° + 2 to 90°	18,5	48	60	16
6510	1/4" F	3 to 45° + 2 to 90°	25,5	48	125	21

Lance nozzles

Form	Thread	N° Jets	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)
6401	M7x1 F	2 to 85°	10,0	52	25	8
6202	1/8" F	2 to 85°	12,0	60	30	10
6102	1/8" F	3 to 45° + 2 to 90°	16,0	32	35	13
6001	1/4" F	3 to 45° + 2 to 90°	18,5	48	60	16
6501	1/4" F	3 to 45° + 2 to 90°	25,5	48	125	21

Propulsion nozzles



Can be used and assembled with other hose nozzles for increasing propulsion, with lance nozzles for offset the reaction force, getting out quickly the residues, avoiding pipe collapsing and ejecting the lance towards the operator, preventing accident risks.

Max. pressure: 1.000 bar

Materials: Stainless steel with thermic treatment of high wear resistance.

Form	Thread	N° Jets	Diameter (mm)	Length (mm)	Weight (gr)	Wrench size (mm)
93	M7x1 F	3 to 30°	10	40	15	8
90	1/8" F	3 to 30°	12	42	20	10
91	1/4" F	3 to 30°	18	50	60	16

Thread are BSPP type (Cylindrical) in inches.

When making the order please indicate pressure and flow, diameter and hose length.

RC/RT ROTATING NOZZLES - ROTARY DRILLS



RC nozzles have two side nozzles to improve cleaning power against the pipe walls and two rear nozzles. They are used for short pipe lengths.

In the RT type, the four rotating jets are directed rearward, cleaning the pipe walls and generating a forward reaction force.

Some models incorporate fixed rear jets for better debris removal and greater propulsion. The jets exit through replaceable nozzles with ceramic inserts for increased durability. Pipe cleaning with these nozzles is far superior to that achieved with fixed-jet nozzles.

Thread connection	Dimensions (mm)	Rotative jets (mm)		Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
		RC TYPE REF. 28101	RT TYPE REF. 28103				
1/8"	Ø12 x 26	2x - 45° + 2x - 80°	○	-	15	>30	0,02
1/8" 1/4"	Ø16 x 30	2x - 45° + 2x - 80°	○	-	20	>30	0,03
1/8" 1/4"	Ø22 x 50	2x - 45° + 2x - 80°	4 x - 45°	-	40	>30	0,15
1/4" 1/4" 3/8"	Ø28 x 56	2xM4-45° + 2xM4-80°	4xM4-45° + 4xM4-45° ○ 4xM4-45° + 4xM4-45°	- 3xM4 - 20° -	30 40 30	>30 >40 >30	0,22
1/2" 1/2" 3/4"	Ø40 x 78	2xM6-45° + 2xM6-80°	4xM6-45° ○ 4xM6-45°	- 3xM6 - 15° -	40 40 20	>70	0,60
1/2" 1/2" 3/4"	Ø50 x 80	2xM6-45° + 2xM6-80°	○ ○ 4xM6-45°	- 3xM6 - 25° 3xM6 - 25°	40	>100	1,10
3/4" 1"	Ø60 x 95	2xM6-45° + 2xM6-80°	4xM6-45°	3xM6 - 25°	70	>90	1,50
1" 1 1/4"	Ø100 x 180	2xM10-45° + 2xM10-80°	4xM10-45°	3xM10 - 25° 3xM10 - 35°	120	>100	7,00

○ Tipo no disponible

TIPO RP - ROTARY DRILLS

Ref.	Thread connection	Dimensions (mm)	Front rotative jet (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
281083441 281083442	1/2"	Ø34 x 65	1 x Ø1,4 1 x Ø1,2	6 x M4 - 18°	60 40	>50	0,4
281085051 281085052	1"	Ø50 x 95	1 x Ø2,6 1 x Ø2,1	8 x M6 - 18°	120	>100	1,0

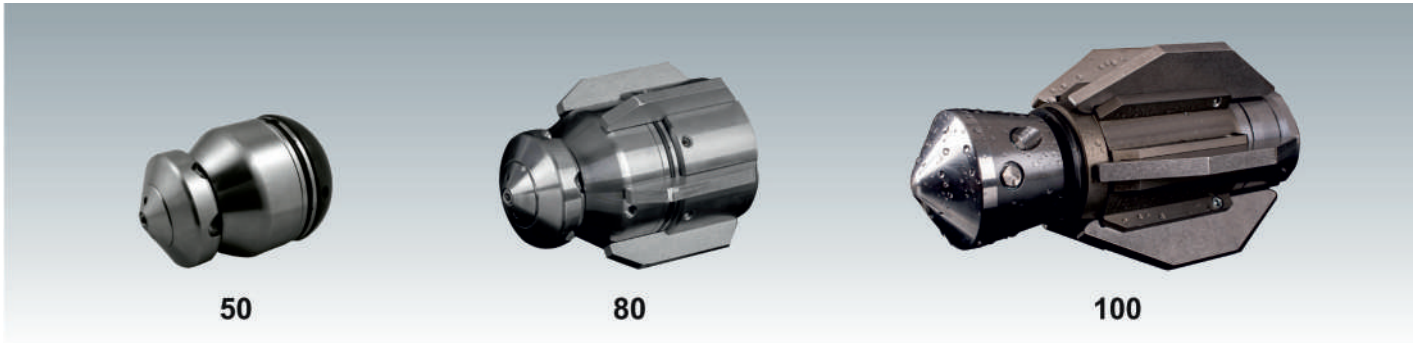
ROTARY VIBRATING NOZZLES AND ROTARY DRILLS



- Vibratory rotary nozzles produce a continuous hammering action on the pipe, breaking up and lifting hard sediments and deposits from the bottom.
- Scraper-type nozzles remove limescale and urine residue from the entire perimeter of small-diameter pipes.
- Eccentric vibrators, with their off-center rotor, are more aggressive than standard versions, whose recessed rotor rotates centrally.
- Rotary perforating nozzles are a different type; equipped with an angled, rotating front jet, they generate a conical water vortex that perforates obstructions and, at the same time, cleans the pipe walls more effectively.
- All types feature replaceable nozzles with long-lasting ceramic inserts.

Ref.	Thread connection	Dimensions (mm)	Rotating jets (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
VR TYPE - SCRAPERS							
28105121	1/8"	Ø12 x 26	2x - 45° + 2x - 80°	-	20	>20	0,02
28105191	1/8"	Ø19 x 31	2x - 45° + 2x - 80°	-	20	>20	0,03
28105192	1/4"						
V TYPE - VIBRATORS							
28105282	1/4"	Ø28 x 65	2xM4 - 45° + 2xM4 - 80°	-	30	>30	0,22
28105283	3/8"						
281054041	1/2"	Ø40 x 78	2xM6 - 45° + 2xM6 - 80°	3 x M6 - 15° -	70	>70	0,60
28105404	1/2"						
281055051	3/4"	Ø50 x 80	2xM6 - 45° + 2xM6 - 80°	3 x M6 - 25°	70	>70	0,95
281056061	1"	Ø60 x 103	2xM6 - 45° + 2xM6 - 80°	3 x M6 - 25°	100	>100	1,40
2810510061	1"	Ø100 x 180	2xM10 - 45° + 2xM10 - 80°	3 x M10 - 25° -	200	>200	6,85
281051007	1 1/4"						
VE TYPE - ECCENTRIC							
281052821	1/4"	Ø28 x 65	2 x M4 - 80°	-	30	>30	0,22
281052822	1/4"			3 x M4 - 25°			
28105283	3/8"			-			
28105404	1/2"	Ø40 x 78	2xM4 - 45° + 2xM4 - 80°	3 x M6 - 15°	70	>70	0,6
VBL TYPE - VIBRATORS							
2810510051	3/4"	Ø100 x 173	4 x M6 - 90°	6 x M6 - 25°	190	>150	4,3
2810510061	1"						
2810520561	1"	Ø205 x 340	3 x M10 - 36°	6 x M10 - 23°	200	>300	12,6
2810520571	1 1/4"				300		

ROTATIVE NOZZLES - BL



- BL-type rotary nozzles are designed to work with both regular and recycled water (containing particles).
- They are equipped with bearings, a mechanical seal, a magnetic brake, and replaceable ceramic nozzles, ensuring a long lifespan and requiring no maintenance. Because they rotate slower than standard nozzles, the jets deliver greater impact.
- In models 50 and 80, the three outlet nozzles can be mounted in two different positions to achieve either a faster or slower speed.
- The 100 model can be adjusted to three different speed levels.
- Rotating at a controlled and slower speed than conventional nozzles, the jets deliver greater impact, resulting in faster and more effective cleaning.
- Models 80 and 100 are 3-in-1 devices. They break up blockages, clean walls, and flush debris back.
- The type 100 can be transformed by adapting it with other accessories such as: Large diameter pipe cleaner, well cleaner, vibrating sediment breaker, root cutter and cutting mill.

Ref.	Thread connection	Dimensions (mm)	Front rotative jets (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
28106504 28106505	1/2" 3/4"	Ø61 x 87	3 x M6 - 37° (42°) 1 x M6 - 16°	-	40	>75	1,2
281068051 281068061	3/4" 1"	Ø86 x 125	3 x M6 - 37° (42°) 1 x M6 - 16°	6 x M6 - 25°	75	>100	2,0
2810610051 2810610061 2810610071	3/4" 1" 1 1/4"	Ø150 x 260 Ø150 x 260 Ø150 x 300	3 x M10 - 37° 1 x M6 - 16°	6 x M10 - 25°	120	>150	7,5

100 MODELS ACCESSORIES



WELL CLEANER



LARGE PIPES



VIBRATORS



MILLING CROWN



SAW ROOT CUTTER



LARGE ROOT CUTTER

SAFETY HOSE EXTENSION



Safety hose extenders are accessories designed to reduce the risk of the hose with the nozzle rotating inside the pipe, returning towards the operator and potentially causing a serious accident.

HOSE - 3/8"

Ref.	Description	Pressure máx. (bar)	Ø Pipes (mm)	Total lenght approx. L (mm)	Lenght L1 (mm)
4817031101118	<i>Extension 3/8" (200-400)</i>	250	200-400	331	301
4817061101118	<i>Extension 3/8" (400-700)</i>	250	400-700	631	601
4817091101118	<i>Extension 3/8" (700-1.000)</i>	250	700-1.000	931	901

HOSE - 1/2"

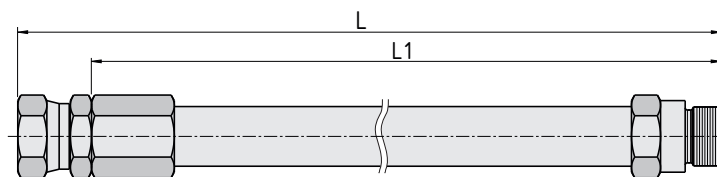
Ref.	Description	Pressure máx. (bar)	Ø Pipes (mm)	Total lenght approx. L (mm)	Lenght L1 (mm)
4821030981094	<i>Extension 1/2" (200-400)</i>	250	200-400	346	313
4821060981094	<i>Extension 1/2" (400-700)</i>	250	400-700	646	613
4821090981094	<i>Extension 1/2" (700-1.000)</i>	250	700-1.000	946	913

HOSE - 3/4"

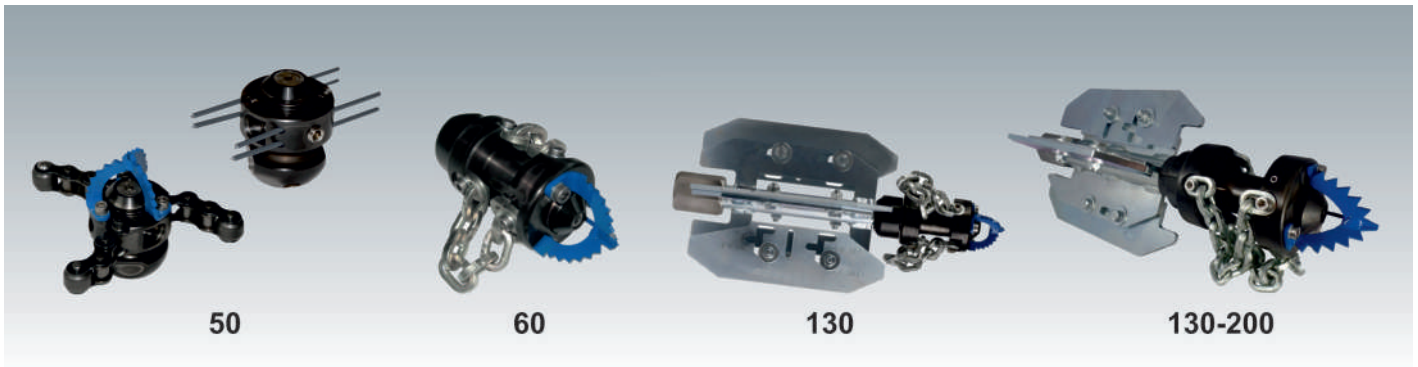
Ref.	Description	Pressure máx. (bar)	Ø Pipes (mm)	Total lenght approx. L (mm)	Lenght L1 (mm)
4826020950964	<i>Extension 3/4" (200-400)</i>	250	200-400	265	227
4826050950964	<i>Extension 3/4" (400-700)</i>	250	400-700	565	527
4826080950964	<i>Extension 3/4" (700-1.000)</i>	250	700-1.000	865	827

HOSE - 1"

Ref.	Description	Pressure máx. (bar)	Ø Pipes (mm)	Total lenght approx. L (mm)	Lenght L1 (mm)
4833021061074	<i>Extension 1" (200-400)</i>	250	200-400	270	228
4833051061074	<i>Extension 1" (400-700)</i>	250	400-700	490	448
4833081061074	<i>Extension 1" (700-1.000)</i>	250	700-1.000	770	728



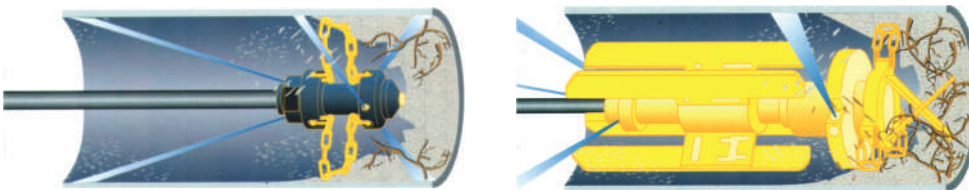
CONVENTIONAL ROOTS CUTTER NOZZLES



- The roots cutter nozzle is an apparatus of universal use and is simple in handling and maintenance. Several different pipe diameters can be cleaned with the same tool.
- The depositions of scale layers, concrete residues and roots, are efficiently removed.
- All apparatus are equipped with central blades. The water jet outs by replaceable ceramic graft nozzles for longer use.

APPLICATIONS:

- Removal total roots.
- Scale removal and deposits.
- As preliminary cleaning before the rehabilitation with internal coatings.
- Elimination of recent concrete fragments in the new pipes before the first inspection.
- Máximum working pressure: 150 bar

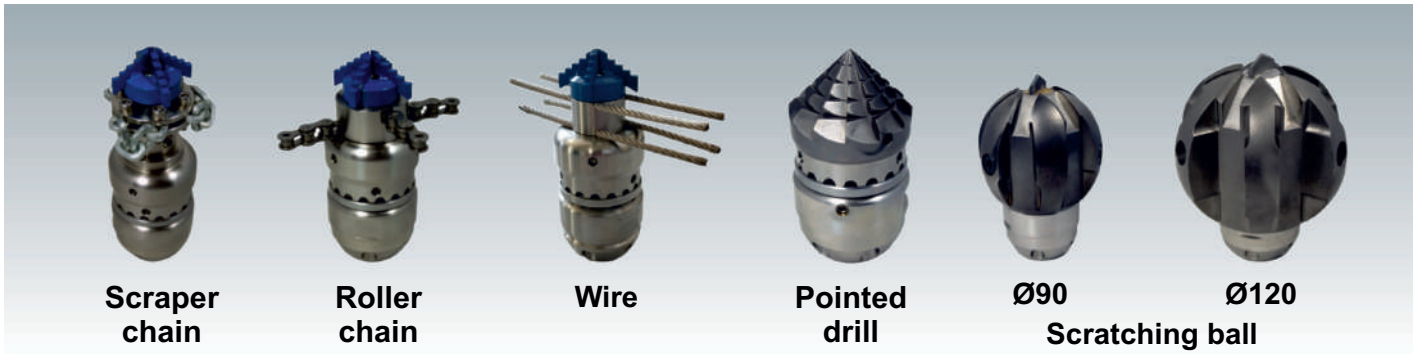


IMPORTANT:

The single chain must tear and not strike the walls of the tube. For the ideal length of the chains it must be adjusted to the diameter of every pipe.

Ref.	Thread connection	Dimensions (mm)	Rotative jets (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
28107504	1/2"	Ø50 x 95	3 x M6 - 25°	3 x M6 - 25°	40	80-150	0,7
28107604 28107605	1/2" 3/4"	Ø60 x 150	3 x M6 - 90°	3 x M6 - 25° 4 x M6 - 25°	80	80-150	1,7
281071306	1"	Ø130 x 380	3 x M6 - 90°	4 x M6 - 25°	100	130-250	5,7
281072006	1"	Ø200x 420	3 x M6 - 90°	4 x M6 - 25°	100	200-250	8,0

ROOT CUTTING NOZZLES - TURBINE TYPE



With a long-lasting internal mechanism. The rotor-chain rotates on turbine bearings, preventing the wear that would occur between the central shaft and the rotor, as happens in conventional root cutters.

Ref.	Tipo	Thread connection	Dimensions (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
281075961 281075962 281075963 281075964	Scraper chain Roller chain Wire Pointed drill	1"	Ø59 x 78	6 x M6 - 25°	80	100-150	1,1
28107906	Scratching ball	1"	Ø90 x 135	6 x M6 - 25°	80	100-150	4
281071206	Scratching ball	1"	Ø120 x 270	6 x M6 - 25°	80	100-150	12



Ref.	Thread connection	Dimensions (mm)	Rotative jets (mm)	Rear jets (mm)	Min. Flow a 100 bar (l/min)	Application Ø Pipes (mm)	Weight (Kg)
281075006 281075007	1" 1 1/4"	Ø500 x 780	3xM10 - 36°	6xM10 - 23°	120 300	250-500	21,4
281077006 281077007	1" 1 1/4"	Ø700 x 780	3xM10 - 36°	6xM10 - 23°	120 300	350-700	32,0
281071406	1"	Ø140 x 329	3x(6x) - 45°	6x - 25°	80	150-200	13,2
281072005 281072006	3/4" 1"	Ø200 x 567	3x(6x) - 45°	6x - 25°	80	200-400*	18,3

*Option: Ø250-Ø500

ACCESSORIES



1000 BAR - ROTATIVE NOZZLES



They are an efficient option to clean the internal walls of hard incrustations in pipes, heat exchangers of chemical, petrochemical industries...

Max. pressure of work: 1000 bar.

Replaceable ceramic graft nozzles for longer use.

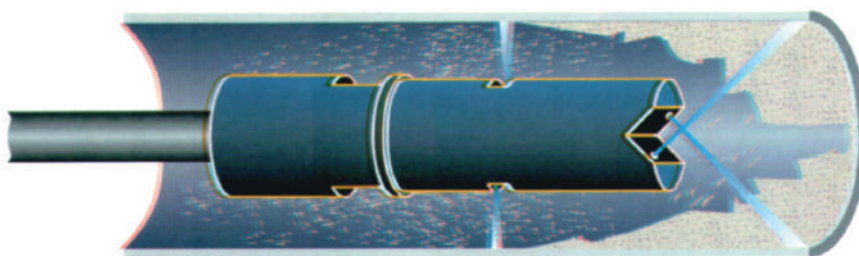
Type	Inclination jets
KBR	2 Jets to 90° + 2 jets to 45° backwards
KBRV	2 Jets to 90° + 2 jets to 45° to the front
HRH	4 Jets to 45° backwards
HRV	4 Jets to 45° to the front
RGS	4 Jets to 90° ó 75 backwards

Form	Type	Ø (mm)	Length (mm)	Weight (Kg)	Thread connection	Pipe diameter Ø (mm)	Min. Flow at 850 bar (l/m)
05.011 A	KBR	11	30	0,015	M7	12-18	45
05.011 AV	KBRV	11	30	0,015	M7	12-18	45
05.011 B	KBR	11	30	0,015	M8	12-18	45
05.011 BV	KBRV	11	30	0,015	M8	12-18	45
05.012	KBR	11	30	0,015	1/8"	12-18	45
05.012 V	KBRV	11	30	0,015	1/8"	12-18	45
05.016	KBR	16	41	0,040	1/8"	17-30	45
05.016 V	KBRV	16	41	0,040	1/8"	17-30	45
05.0281	RGR	28	62	0,200	1/4"	30-42	30
05.0282	HRH	28	62	0,200	1/4"	30-42	30
05.0283	HRV	28	62	0,200	1/4"	30-42	30
05.0284	KBR	28	62	0,200	1/4"	30-42	30
05.0285	KBRV	28	62	0,200	1/4"	30-42	30
05.0401	RGS	40	85	0,700	M24x1,5	42-55	30
05.0402	HRH	40	85	0,700	M24x1,5	42-55	30
05.0403	HRV	40	85	0,700	M24x1,5	42-55	30
05.0404	KBR	40	85	0,700	M24x1,5	42-55	30
05.0405	KBRV	40	85	0,700	M24x1,5	42-55	30
05.0501	RGR	50	103	1,250	M24x1,5	55-77	30
05.0502	HRH	50	103	1,250	M24x1,5	55-77	30
05.0503	HRV	50	103	1,250	M24x1,5	55-77	30
05.0504	KBR	50	103	1,250	M24x1,5	55-77	30
05.0505	KBRV	50	103	1,250	M24x1,5	55-77	30

CROSS JET NOZZLES



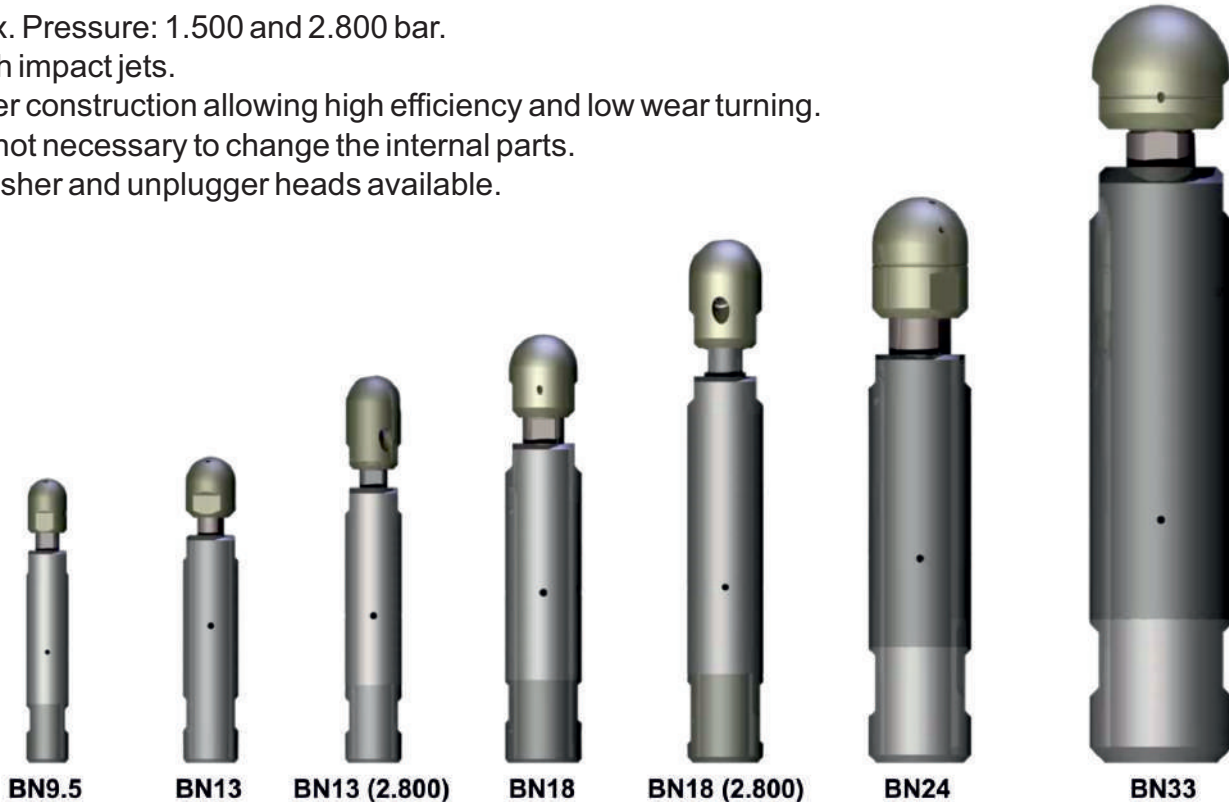
- They are used for industrial head exchangers cleaning with obstructed pipes.
- The frontal crossed jets, cut the material that plug the tube. At the same time 2 lateral jets at 90° are cleaning it.
- It is recommended to add a propulsion nozzle, to get out the removed material, increasing production and avoiding that the waste clog the space between lance and tube. If this happened the pressure would accumulate in front of the nozzle and the lance would propel suddenly towards the worker with injures risk.
- The nozzle must be mounted with lance generally. In certain cases adding a propulsion nozzle, with suitable reaction can be used with hose.
- Maximum pressure of work: 1000 Bar.
- They go provided with replaceable ceramic graft nozzles for long live, except the marked with *.



Form	Diameter (mm)	Length (mm)	Weight (Kg)	Thread connection	Pipe diameter (Ø mm)	Min. Flow to 1000 bar (l/m)
06.012*	12	43,5	0,03	1/8"	13-20	30
06.018*	18	47,5	0,04	1/4"	19-25	50
06.022	22	55,5	0,18	1/4"	23-30	50
06.028	28	59,5	0,21	1/4"	30-42	50

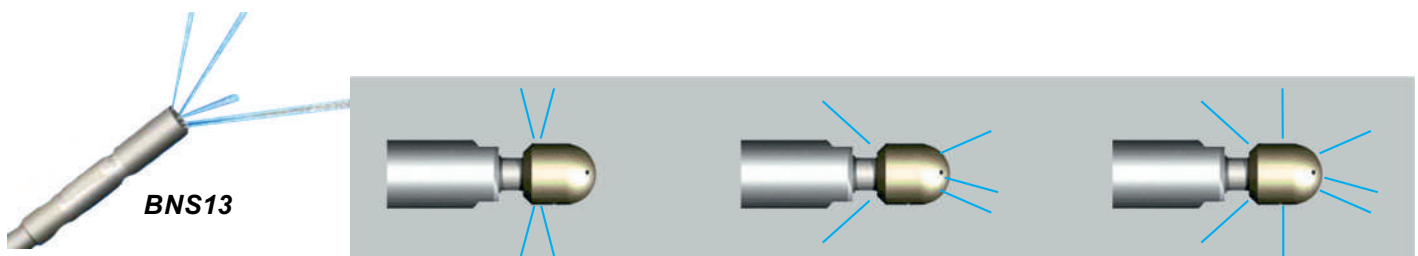
ROTARY NOZZLES FOR HEAT EXCHANGER CLEANING - BN TYPE

- Max. Pressure: 1.500 and 2.800 bar.
- High impact jets.
- Inner construction allowing high efficiency and low wear turning.
- It's not necessary to change the internal parts.
- Polisher and unplugging heads available.



Type	For pipes Ø (mm)	Máx. Flow (l/min)	Inlet thread BSPP or NPT	Outlet thread UNF R ó LH	Dimensions Ø x length (mm)
1.500 BAR					
BN9.5	12,7 - 16	25	M7, 1/16"	1/4" LH	Ø9,50 x 65,3
BN13 / BNS13	16-25	38	1/8"	1/4" LH, RH, 3/8" LH, RH	Ø12,7 x 73,7
BN18	22-38	53	1/4"	9/16" LH, RH	Ø17,6 x 96,5
BN24	29-51	90	3/8"	9/16" LH, RH	Ø24,0 x 130
BN33	38-51	181	1/2"	9/16" MP	Ø33,0 x 175

2.800 BAR					
BN13	16-25	19	-	1/4"-28 LH, 3/8"-24 LH	Ø13,2 x 89,0
BN18	22-38	26	-	3/8"-24 LH	Ø17,6 x 119



Type	Polisher	Unplugging	Universal
BN9.5	2 a 85° + 2 a 105°	1 a 15°,30°,45° + 2 a 135°	-
BN13 / BN18	2 a 85° + 2 a 105°	1 a 15°,30°,45° + 2 a 135°	1 a 20°,30°,60° + 2 a 90°,140°
BN24 / BN33	-	-	1 a 20°,30°,60° + 2 a 90°,140°
BN13 / BN18 (2.800)	2 a 85° + 2 a 105°	1 a 15°,30°,50° + 2 a 140°	-

ROTARY HEAD - BA TYPE

Rotating head for cleaning pipes with elbows.
 Designed to rotate elbows 2", 4" and 6" depending on model.
 Available with two ranges of rotation speed or adjustable speed depending on model.
 Maximum pressure: 1.000 and 1.500 bar.
 Water outlet for interchangeable nozzles.



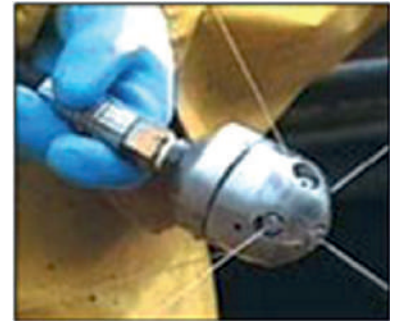
BA-P4 / BA-MP9
2" Elbows



BA-P6 / BA-TM12
4" Elbows



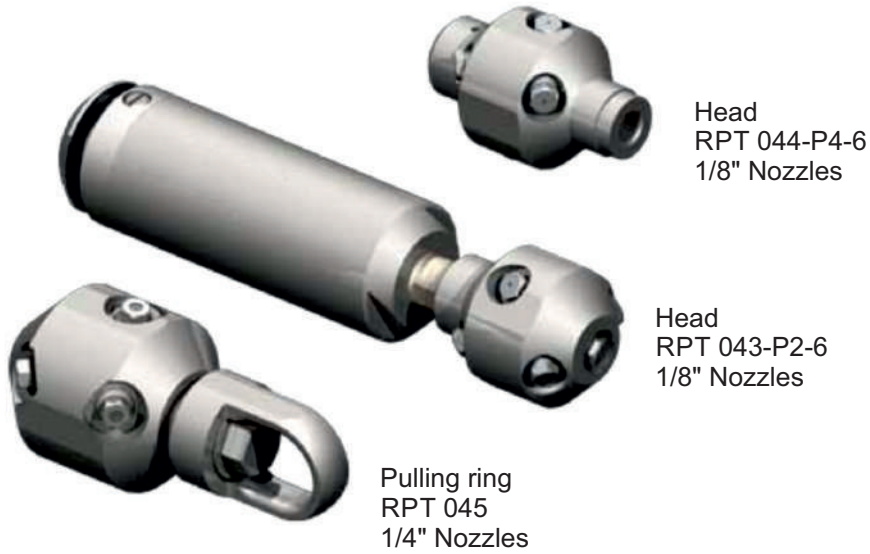
BA-P8 / BA-M9
6" Elbows



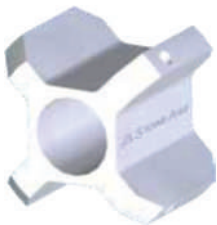
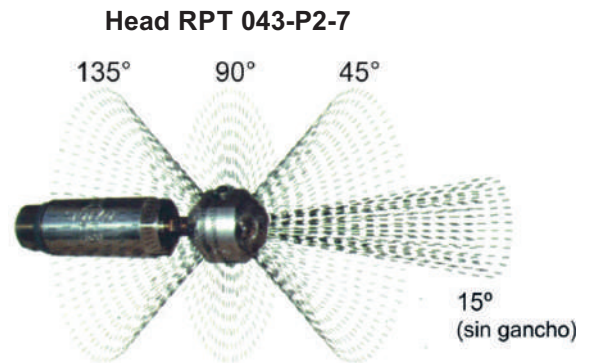
Badger specifications

Max. Pressure	1000 bar	1.500 bar	1000 bar	1.500 bar	1000 bar	1.500 bar
Model	BA-P4	BA-MP9	BA-P6	BA-TM12	BA-P8	BA-M9
Rotation rate	High speed		Fast: 75-220 rpm Slow: 20-80 rpm		Adjustable 50-300 rpm	
Flow range (l/min)	BA-R05=19-57		BA-R22=40-70 BA-R16=60-110	BA-R22=30-50 BA-R16=50-80	BA-R40=57-91 BA-R31=87-125 BA-R21=135-208	BA-R40=53-80 BA-R31=80-114 BA-R21=114-163
Inlet thread	1/4 NPT/BSPP	9/16 LH/RH	3/8 NPT/BSPP	3/4 M	1/2 NPT	9/16 MP / M24
Nozzles	7 x (OD3M)		5 x 1/8 NPT (AP2)		5 x 1/4 NPT (APF4)	
Diameter (mm)	33		70		95	
Length (mm)	50		89		140	
Weight (Kg)	0,2		1,1		3,6	

ROTARY HEAD - RPT SERIES



- Application in cleaning pipes of 60 mm to 305 mm.
- Made of stainless steel.
- Speed control rotation by means of viscous fluid.
- Replaceable nozzles of 1/4" or 1/8".
- It works with 2, 4 or 6 balance jets.



RPT 075 Guide

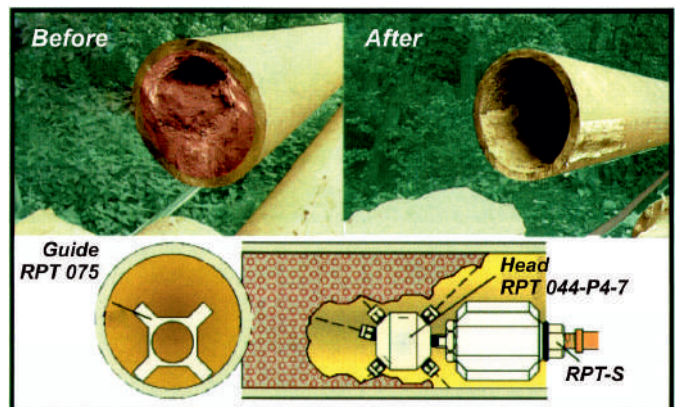
- A single plastic piece.
- It protects the head from scratches.
- For pipes of Ø75 or 115 mm



RPT 070 Guide

- Replaceable plastic skids for diameters of 100, 125, 150, 200 or 300mm.

Type	RPT (Without head)
Máx. Pressure	1.500 bar
Rotation rate	
Fast	50-250 rpm
Slow	15-60 rpm
Máx. Flow	230 l/min
Weight	1,9 Kg
Head diameter	
RPT 043	51 mm
RPT 044	64 mm
Longitud	240 mm
Inlet port	1/2 NPT, 9/16 MP, M24
Outlet port	1/8 npt, 1/4 npt

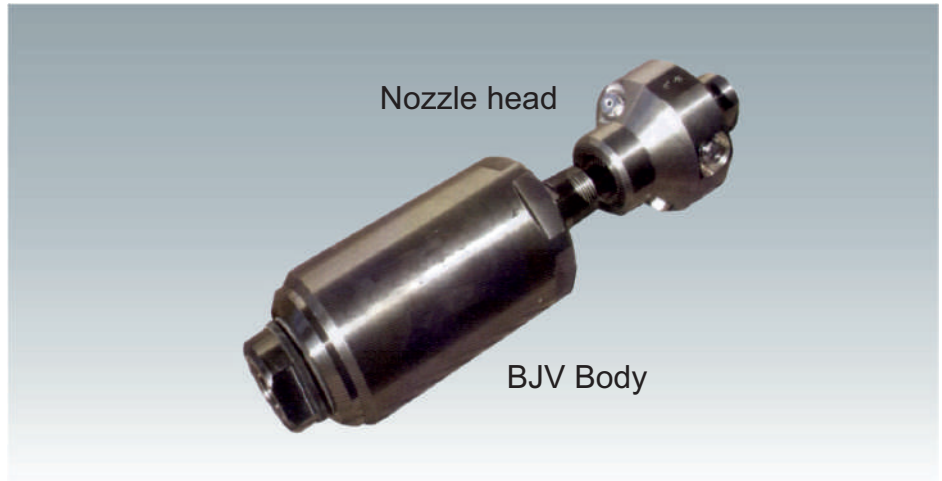


ROTARY HEAD - BJV SERIES

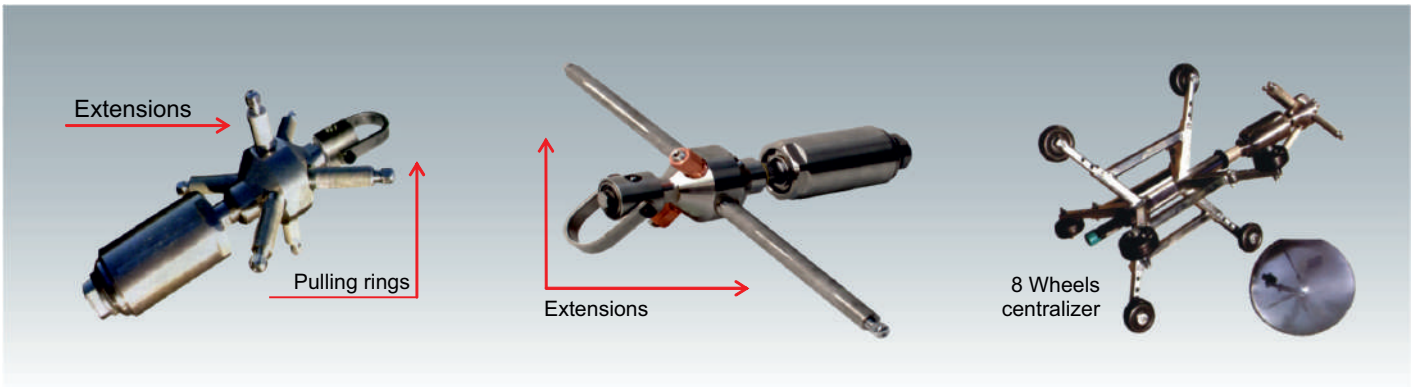
Rotating head for working pressures up to 2.760 bar, made of stainless steel with control speed rotation by means of viscous fluid. 6 outlets or 7 with additional 15° forward jet. It works with 2, 4 or 6 balance jets.

APPLICATIONS

- Pipes from 155 to 1830 mm.
- Tanks, towers.
- Head exchanger housings.
- Etc.



Accessories



Body	Max. Pressure (bar)	R.P.M. (Fast)	R.P.M. (Slow)	Max. Flow (l/min)	Inlet connection	Weight (Kg)	Length (mm)
BJV-P16	690	-	30-80	760	1" npt	3,6	184
BJV-M	1.000	40-200	5-80	380	3/4" npt	3,6	184
BJV-20K	1.380	70-300	15-50	230	3/4" MP	3,6	213
BJV-H9	2.760	90-250	20-60	75	9/16" HP	3,6	213

Heads	Diameter (mm)	Outlet connection	Weight (Kg)	Body
BJ 041-P12	89	6 - 3/4" npt	2,3	BJV-P16
BJ 044-P4	76	6 or 7 - 1/4" npt	1,5	BJV-M
BJ 144-P4	76	6 or 7 - 1/4" npt	1,5	BJV-20K
BJ 444-S6	76	6 or 7 - 3/8", 24 Threads	1,5	BJV-H9

Optional heads	Diameter (mm)	Outlet connection	Weight (Kg)	Body
BJ 041-P8	89	6 - 1/2" npt	2,3	BJV-M
BJ 145-G12	89	6 - 3/4"	2,0	BJV-20K
BJ 441-G9	89	6 - 9/16"	1,5	BJV-H9

When ordering please indicate, pressure, flow, hose diameter and length.

WATER ARMOR - TS



PROTECTION UP TO 3.000 BAR

Technical description:

Outer material: Laminated Polyamide. Inner material: Plyester mesh. Protective material: Special fabric containing Dyneema® fibre. Seams: Taped.



Ventilation
Comfort option for warm environments



Gaiters: Delivered to separately

1 GAMMA COMPLET KIT



Provides comprehensive protection and high comfort. Ventilation is an option. The Gamma Kit includes: Trousers and Jacket with integrated Hand Protection.

Single/Rotor*	Size	Art. N°
10/28	S / M,L / XL,2XL,3XL / 5XL	51K3047
20/30	S/M-2XL/3XL	51K3068

* Nivel de protección

2 SIGMA COMPLET KIT



Offering very good protection. All you need to be protected and dry. Ventilation is an option. The Sigma Kit includes: Waistcoat and Overall with integrated Hand Protection.

Single/Rotor*	Size	Art. N°
10/28	S / 3XL	51K2047
20/30	S / 3XL	51K2068

*Protection level

3 DELTA COMPLET KIT



Offering very good protection and excellent comfort. Ventilation is an option. The Delta Kit includes: Waistcoat, Trousers and Hand Protection.

Single/Rotor*	Size	Art. N°
10/28	S / M,L / XL,2XL / 3XL	51K1047
20/30	S / M,L / XL,2XL / 3XL	51K1068

* Nivel de protección

WATER ARMOR - TS

Protection up to 3000 bar / 43.500 psi

TECHNICAL DESCRIPTION

Outer material: Laminated Polyamide. Inner material: Polyester mesh. Protective material: special fabric containing Dyneema® fibre. Seams: Taped.

TEST RESULTS FOR CLOTHING

The different levels of protection have been determined by testing according to the table below.

Note! Different values (pressure, water flow, nozzle, distance, speed) can give significantly different results!

Protection level	Pressure bar (psi)	Flow l/min (gpm)	Nozzles		RPM	Distance mm (in.)	Linear Speed m/s (in./sec)	Result
			n	Dia. mm (in.)				
10/28	1000 (15000)	19.8 (5.2)	1	1.0 (.039)	–	75 (3)	0.5 (20)	No penetration
	2800 (40000)	18.8 (5.0)	2	0.6 (.024)	3000	75 (3)	0.5 (20)	No penetration
20/30	2000 (30000)	17.9 (4.7)	1	0.8 (.031)	–	75 (3)	0.5 (20)	No penetration
	3000 (43500)	19.5 (5.2)	2	0.6 (.024)	3000	75 (3)	0.5 (20)	No penetration

Sizes		
Trousers and Jacket	Height cm (ft. in.)	Chest cm (in.)
S/M	<186 (<6'1")	85-100 (33"-39")
L/XL	187-192 (6'2"-6'4")	108-116 (43"-46")
2XL/3XL	193-206 (6'4"-6'9")	124-132 (49"-52")
Waistcoat		
M-2XL	176-196 (5'10"-6'5")	85-124 (33"-49")
3XL	196-206 (6'5"-6'9")	124-132 (49"-52")
Overall		
S	<175 (<5'9")	92 (36")
M	176-180 (5'9"-5'11")	100 (39")
L	181-186 (5'11"-6'1")	108 (43")
XL	187-192 (6'2"-6'4")	116 (46")
2XL	193-200 (6'4"-6'7")	124 (49")
3XL	201-206 (6'7"-6'9")	132 (52")

Conversion table for shoe sizes		
EUR	US	UK
36	4 1/2	4
37	5	4 1/2
38	6	5 1/2
39	6 1/2	6
40	7 1/2	6 1/2
41	8	7 1/2
42	9	8
43	9 1/2	9
44	10 1/2	10
45	11 1/2	11
46	12	11 1/2
47	13	12 1/2
48	13 1/2	13 1/2

WATER ARMOR - PWA

PROTECTION UP TO 500 BAR / 7.500 PSI

Protective suit for cleaning high pressure water.

Soft, flexible, comfortable and light. Excellent for harsh conditions!



OVERALL WITH HOOD

- Very comfortable lined interior.
- Water and dirt proof.
- Ventilation in the armpit.
- Waterproof cuffs.
- Detachable hood with 3 adjustment possibilities and spacing for ear protection.
- Inside zip pocket.
- Special waterproof pocket for phone.
- 3-layer protection at the front on the head.
- Weight: 2,5 kg / 5.5 lbs (Overall size L)

Armpits ventilation in the armpits



Comfortable inside arm cuffs prevent leakage



Hood



JACKET WITH HOOD

- Very comfortable lined interior.
- Water and dirt proof.
- Armpit ventilation
- Waterproof cuffs.
- Detachable hood with 3 adjustment possibilities and spacing for ear protection.
- Inside zip pocket.
- Special waterproof pocket for phone.
- 3-layer protection at the front and on the head.
- Weight: 1,6 kg / 3.5 lbs (Overall size L)

2 Pockets with waterproof zippers



Waterproof zippers with overlapping coiler



Pocket for tools



Pocket for ID card on the right sleeve



WATER ARMOR - PWA



TROUSERS

- Very easy to put on and take off.
- Adjustable elastical waist for perfect fit.
- Water and dirt repellent proof.
- Waterproof pockets and extrawide belt bands/make them more comfortable.
- Zippers down on the legs allow them to widen to donning over boots.
- Weight: 2,5 kg / 5.5 lbs (Overall size L)

Extra wide belt bands



Adjustable back waist



Zippers at the bottom of the legs



Reinforcements on the knees



Pockets for knee pads



Sizes		
Jacket, Trousers and Overall	Height cm (ft. in.)	Chest cm (in.)
XS	160-167 (5'3"-5'6")	84 (33")
S	168-175 (5'6"-5'9")	92 (36")
M	176-180 (5'9"-5'11")	100 (39")
L	181-186 (5'11"-6'1")	108 (43")
XL	187-192 (6'2"-6'4")	116 (46")
2XL	193-200 (6'4"-6'7")	124 (49")
3XL	201-206 (6'7"-6'9")	132 (52")

Prot. level	Pressure bar (psi)	Flow (l/min)	Nozzle type	Dist. (mm)	Speed (m/s)	Result
5/5/2	500 (7500)	16,9	Rotor - Rotary jet	75	0,5	No penetration
5/5/2	500 (7500)	16,9	Flat - Single fan jet 15°	75	0,5	No penetration
5/5/2	200 (3000)	10,7	Single - Single round jet	75	0,5	No penetration

AREAS WITH PROTECTION

Striped fabric clearly identifies protected areas and the labels give the level of protection. As high pressure cleaning is very dangerous, it is essential that the operator knows where and how what he is protected.



PROTECTION LEVEL 5/5/2

- ROTOR 500 bar/7500 psi
- FLAT 500 bar/7500 psi
- SINGLE 200 bar/3000 psi

CE 89/686/EEC

BACKOUTS PREVENTERS

ARTICULATE BACKOUT PREVENTER

The backout preventers increase operator safety by preventing the tool from backing out of the pipe.

Pantograph moving mechanism for fast nozzle into the pipe to be cleaned.



SIMPLE BACKOUT PREVENTER

The contoured handle is designed to make it easy to hold.

It quickly adapts to different sizes of hoses.

It includes three adapters for hoses DN4, DN5 and DN6.



PIPE NOZZLES BACKOUT PREVENTERS

These devices are specifically designed to enhance operator safety. Prevent the nozzle exit of the pipe.

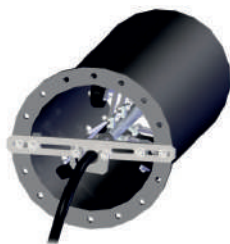
Several options are available including fixtures for small diameter pipes, pipes with various flange bolt circle diameters, and adapters for pipes with no-flange entry.



BJ 305	Application pipes	Hose range
	Ø50 - Ø150 mm	De 4 mm a 3/8"

BJ 310	Application pipes	Hose range
	Ø100 - Ø200 mm	De 3/8" a 3/4"

Includes clamp for securing the device to the tube



BJ 320	Application pipes	Hose range
	Ø125 - Ø430 mm	De 3/8" a 3/4"

BJ 325 BJ 340*	Application pipes	Hose range
	Ø380 - Ø914 mm	De 3/8" a 3/4"

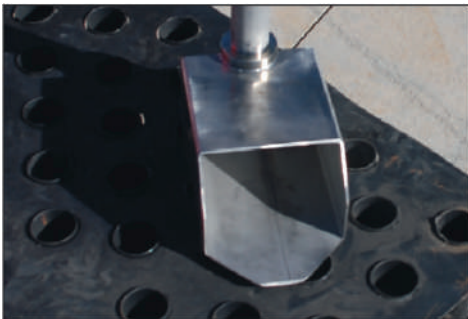
**No-Flange Kit*

VERTICAL TUBE SPLASHGUARD



The splashguard is designed to keep the operator safe from potential hazards of pressurized water jets. Is used in vertical heat exchangers cleaning with any type of rotary or fix jets nozzles.

Weight	Hose range
5,6 Kg	De Ø5 a Ø13 mm



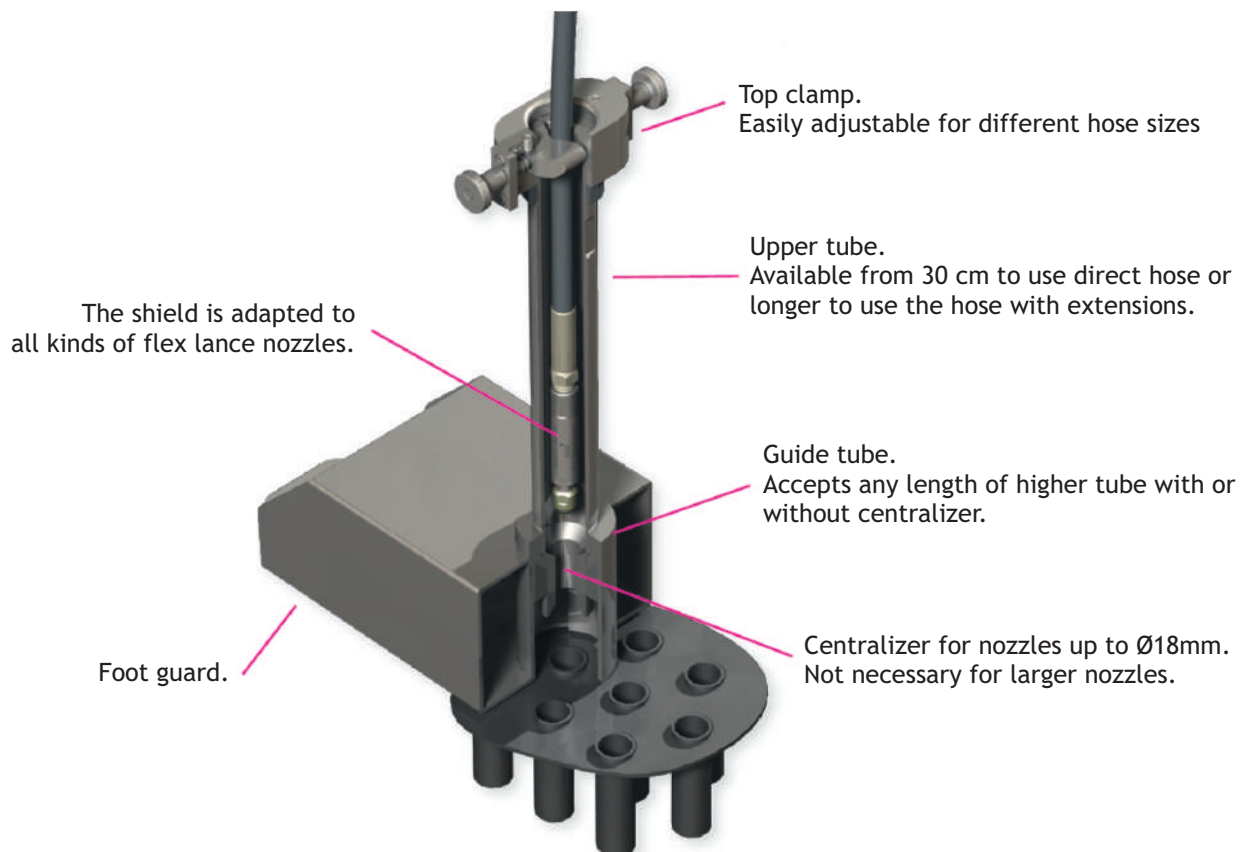
Stainless steel construction



Top of the hose clamp



For use with rotating nozzles



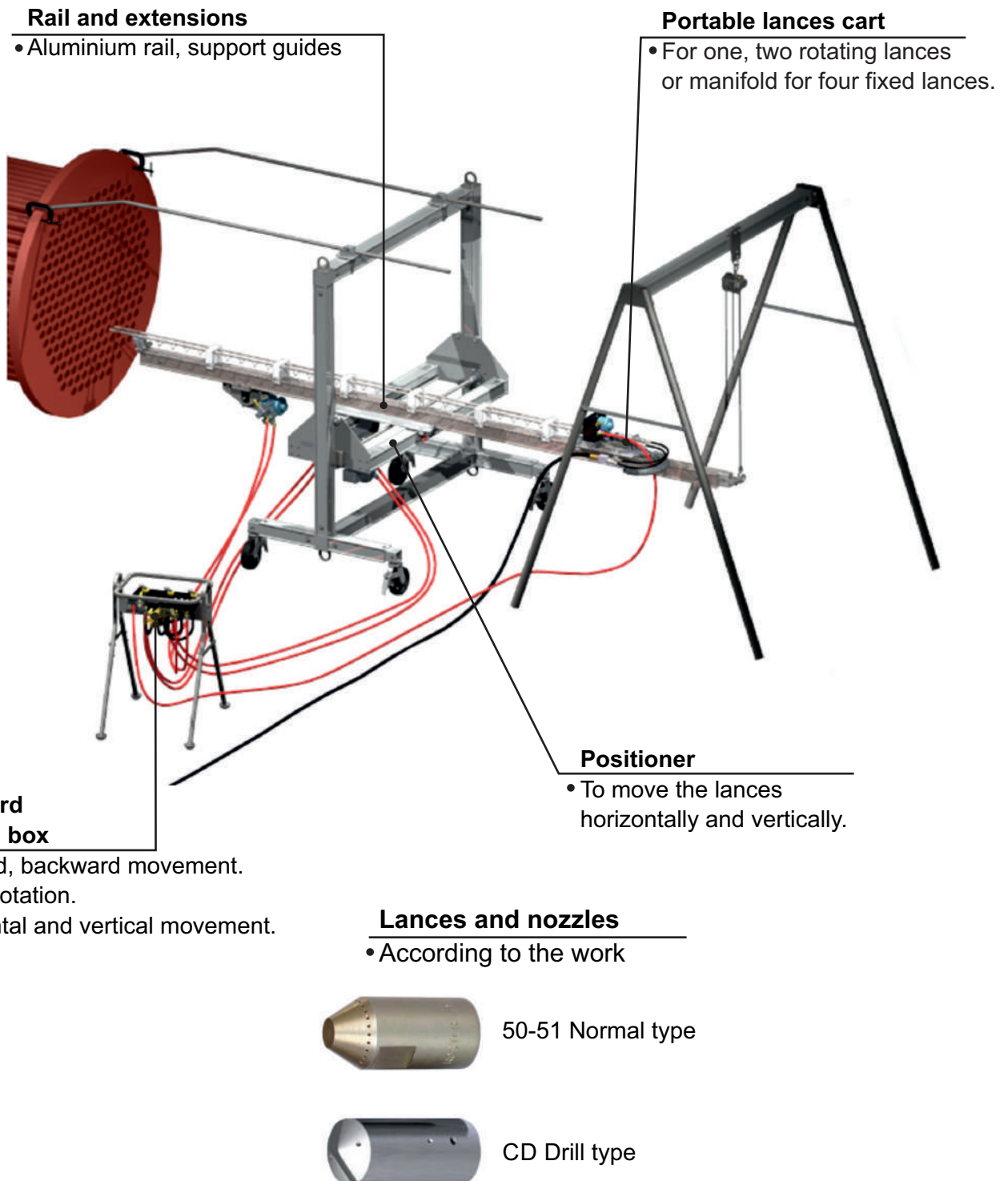
LANCE MACHINES

Safer, reliable and productive than any manual methods.

The operator is placed at distance of heat exchange, far away of dangerous water pressure and residues.

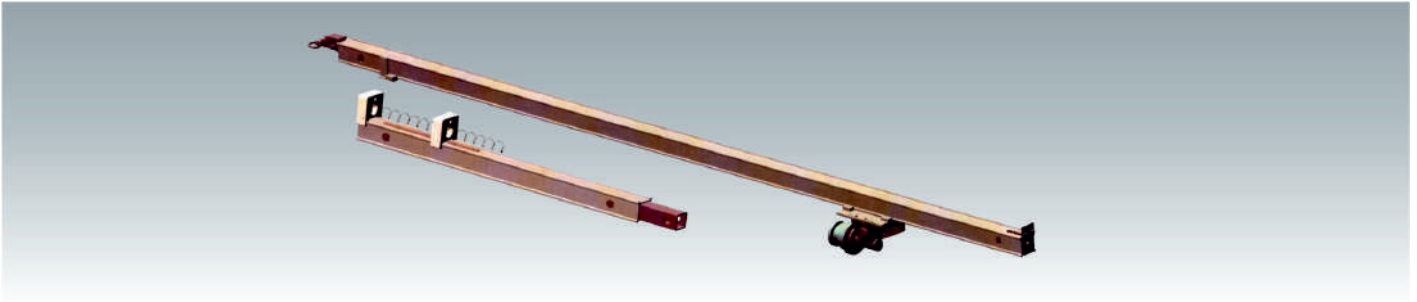
The rotating lance system allows the adjustment of the turning speed for maximum impact on all the inside of the pipe.

Maximum work pressure: 2.700 bar.



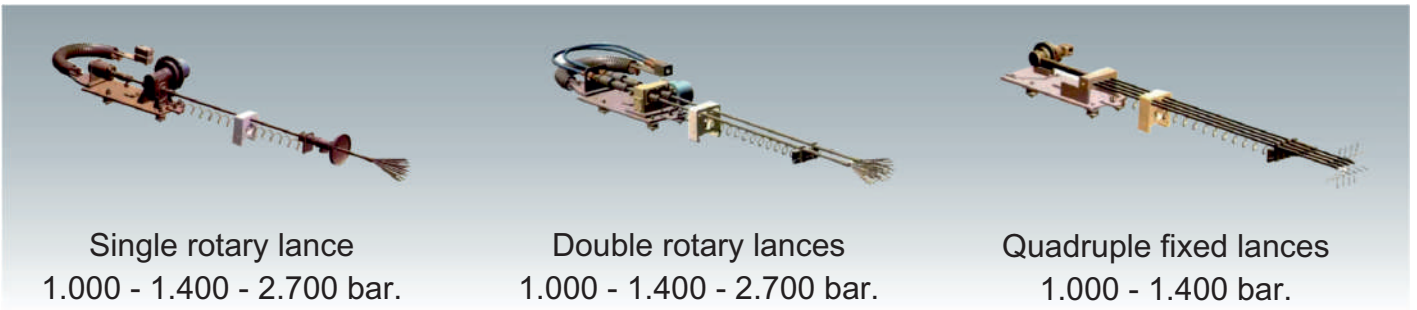
LANCE MACHINES

Rail & extensions



- Basic aluminum rail of 4,6m with pneumatic motor forward and backward movement.
- Extensions from 1,5m to 4,6m. Several extensions can be connected to 18m.

Rotary lances

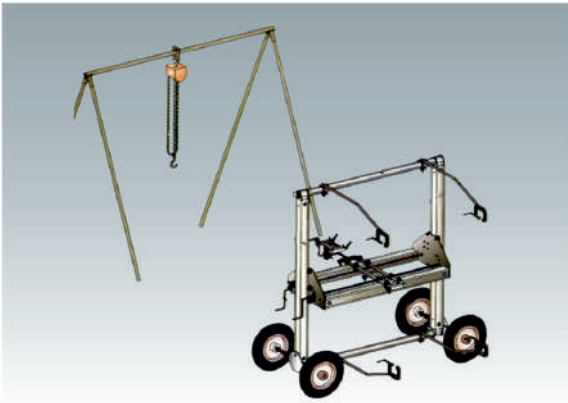


Single rotary lance
1.000 - 1.400 - 2.700 bar.

Double rotary lances
1.000 - 1.400 - 2.700 bar.

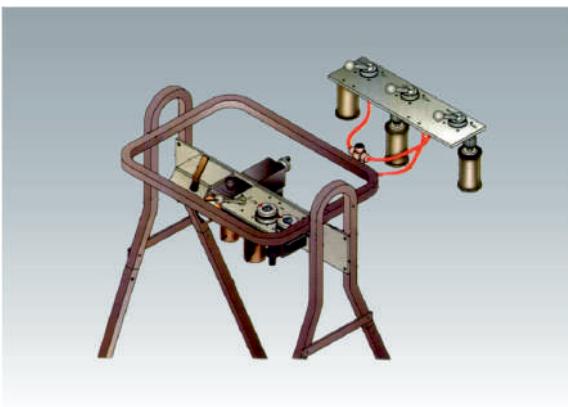
Quadruple fixed lances
1.000 - 1.400 bar.

Positioning unit



- Light and resistant.
- Easy assembly.
- Corrosion resistant.
- Horizontal and vertical movement by means pneumatic motor.

Pneumatic control box



- On/Off Lance rotation.
- Lances movement control: Forward/backward.
- Speed adjustment: Forward/backward.
- Optional: Horizontal and vertical pneumatic motorized movement.

HYDRAULIC HOSES



One high tensile steel layer = SAE100R1A

Heads	Ø Inner (Inches)	Ø Inner (mm)	Ø Outer (mm)	Working pressure (bar)	Burst pressure (bar)	Min. Bend radius	Weight (Kg/m)
2120141	1/4"	6,3	16	225	900	100	0,29
2120281	3/8"	9,5	20	180	720	130	0,43
2120121	1/2"	12,7	23	160	640	180	0,54
2120341	3/4"	19,0	30	105	420	240	0,80
2121001	1"	25,4	38	88	350	300	1,15



Two high tensile steel layers = SAE100R2A

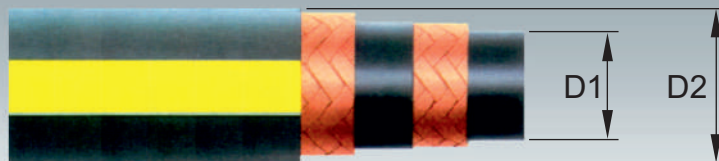
Heads	Ø Inner (Inches)	Ø Inner (mm)	Ø Outer (mm)	Working pressure (bar)	Burst pressure (bar)	Min. Bend radius	Weight (Kg/m)
2120142	1/4"	6,3	18,0	400	1600	100	0,43
2120382	3/8"	9,5	21,0	330	1320	130	0,61
2120122	1/2"	12,7	24,5	275	1100	180	0,75
2120342	3/4"	19,0	32,0	215	820	240	1,09
2121002	1"	25,4	39,5	165	650	300	1,58



Four high tensile steel layers = SAE100R9R

Heads	Ø Inner (Inches)	Ø Inner (mm)	Ø Outer (mm)	Working pressure (bar)	Burst pressure (bar)	Min. Bend radius	Weight (Kg/m)
2120144	1/4"	6,3	18,0	450	1920	150	0,61
2120384	3/8"	9,5	21,0	445	1780	180	0,76
2120124	1/2"	12,7	24,5	415	1660	230	0,88
2120344	3/4"	19,0	32,0	350/420	1400/1680	300/280	1,47/1,62
2121004	1"	25,4	39,5	280/380	1120/1520	340/340	1,98/2,12

SEWER HOSES



High quality hoses especially designed for cleaning pipes and sewers. A combination of particular characteristics make it unique.

Made of high resistance special rubber with a low coefficient friction.

Reinforced internally with a light weight textile layer, half that of a conventional hose and with better flexibility.

These hose are very durable and resistant. As they are light weight they are very easy to use. Also due to this it's possible to use hoses of a wider diameter therefore lowering the loss of pressure considerably. With the same pressure and flow they can reach longer distances. The nozzle can work at a higher pressure and more flow making them much more efficient and time effective.

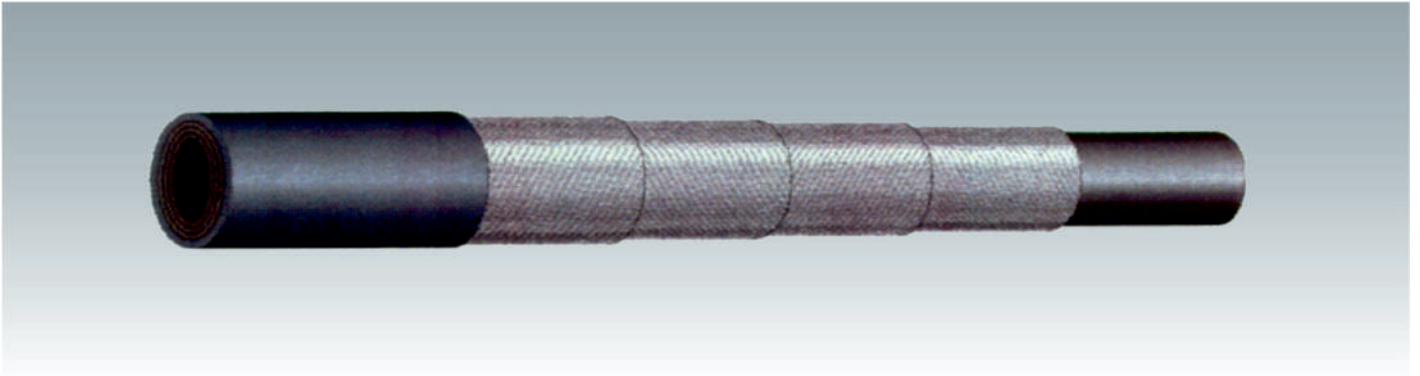


- High resistance / Very durable.
- Low friction coefficient.
- Light weight.
- Extremely flexible.
- Comfortable to manipulate.
- Long life.

Ø Inner D1 (Inches)	Thickness (mm)	Ø Outer D2 (mm)	Working pressure (bar)	Burst pressure (bar)	Min. bend radius	Weight (Kg/m)
1/2"	4,25	21,2	300	760	60	0,42
3/4"	6,00	31,0	200	500	100	0,67
1"	7,00	39,0	200	500	130	0,90
1 1/4"	7,50	47,0	150	400	150	1,07
1 1/2"	8,00	34,0	150	400	180	1,40

HIGH PRESSURE HOSES

- Internally and externally rubber coated.
- Has a very high flexibility for its high pressure range.



TYPE 15-HD

Ø Inner (Inches)	Ø Inner (mm)	Ø Outer (mm)	Working pressure (bar)	Burst pressure (bar)	Min. Bend radius	Weight (Kg/m)
3/8"	9,5	20,4	1.250	3.125	210	0,88
1/2"	12,6	24,6	1.100	2.750	230	1,22
3/4"	19,0	32,0	1.000	2.500	250	1,87

ULTRA HIGH PRESSURE HOSES

- Interior: POM o PA 11/12
- Reinforcement: High resistance steel layers.

- Exterior: PA 11/12.
- Temperature scale: -30° C a +60° C.

TYPE	Ø		Ø Outer sleeve	Working pressure	Burst pressure	Min. Bend radius	Weight
	Inner	Outer					
	mm	mm					

TYPE 2

32	3,0	7,0	9,1	1.100	2.750	60	0,072
42	4,0	8,0	10,0	1.200	3.000	75	0,110
52	5,0	9,4	12,0	1.000	2.500	95	0,125
62	6,3	11,5	13,5	1.100	2.750	110	0,200
82	8,1	13,3	16,1	900	2.250	120	0,250



TYPE 4

34	3,0	8,0	9,8	2.000	5.000	100	0,12
44	4,0	9,9	12,8	2.200	4.500	100	0,14
54	5,0	11,5	15,3	1.800	4.500	130	0,28
64	6,3	12,5	17,0	1.640	4.100	155	0,33
84	8,0	15,1	21,0	1.500	3.800	175	0,44
104	9,7	19,4	26,0	1.400	3.500	190	0,73
134	12,8	22,5	30,0	1.300	3.250	200	0,94
204	19,6	30,0	38,0	1.000	2.500	250	1,39



TYPE 4H

134H	12,8	25,0	30,0	1.400	3.500	110	1,190
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TYPE 6

46	4,0	12,0	15,6	2.800	7.000	140	0,29
56	4,8	13,2	18,3	2.800	7.000	200	0,47
86	8,0	16,9	22,0	2.100	5.250	225	0,68
136	12,8	24,5	34,0	1.800	4.500	450	1,36
206	19,6	40,0	40,6	1.400	3.500	350	2,10



TYPE 6H

56H	4,8	13,2	18,6	2.800	7.000	200	0,470
86H	7,8	17,2	22,8	2.500	6.250	200	0,830
136H	12,7	27,0	31,9	2.000	5.000	300	1,850



TYPE 8

58	4,6	15,0	18,8	4.000	8.000	200	0,660
88	7,8	19,5	24,0	3.000	7.000	250	1,100
128	12,7	29,8	34,2	2.500	6.250	350	2,500



TYPE 8H

88H	7,8	19,6	24,0	3.200	8.000	280	1,100
138H	13,0	29,9	34,2	3.000	6.250	350	2,500



SAFETY GRIPS

SAFETY HOSE GRIP

- Support the hose with more stability in its connections.
- Makes strong connections so that forced turns are not made which would weaken the hose.
- If the hose does fall out from the safety grip it is attached so that it doesn't hit the worker or anyone else and cause personal injuries.



Code	Description	For diameters
211042010	Safety mesh SS Ø7-14 mm	7 - 14 mm
211062010	Safety mesh SS Ø13-21 mm	13 - 21 mm
211086010	Safety mesh SS Ø17-31 mm	17 - 31 mm
211030010	Safety mesh SS Ø20-36 mm	20 - 36 mm
211030011	Safety mesh SS Ø27-52 mm	27 - 52 mm
211030015	Safety mesh SS Ø45-70 mm	45 - 70 mm

SAFETY ROPE

- New unique and improved design model. Safer and stronger.
- Inner steel wire covered with Kevlar and Polyester.
- Loop design. The more you pull, the more strength you do.
- Soft touch on hands, no wires.



Code	Description	For hoses	Burst load
211030014	Safety rope 4 mm	G 1/2" - G 1 1/4"	1.120 Kg
211030016	Safety rope 6 mm	G 1/2" - G 1 1/4"	2.600 Kg

SAFETY CABLE

- New unique and improved design model. Safer and stronger.
- Loop design. The more you pull, the more you.



Code	Description	For hoses	Burst load
211030013	Safety cable inox	G 1/2" - G 1 1/4"	1.800 Kg

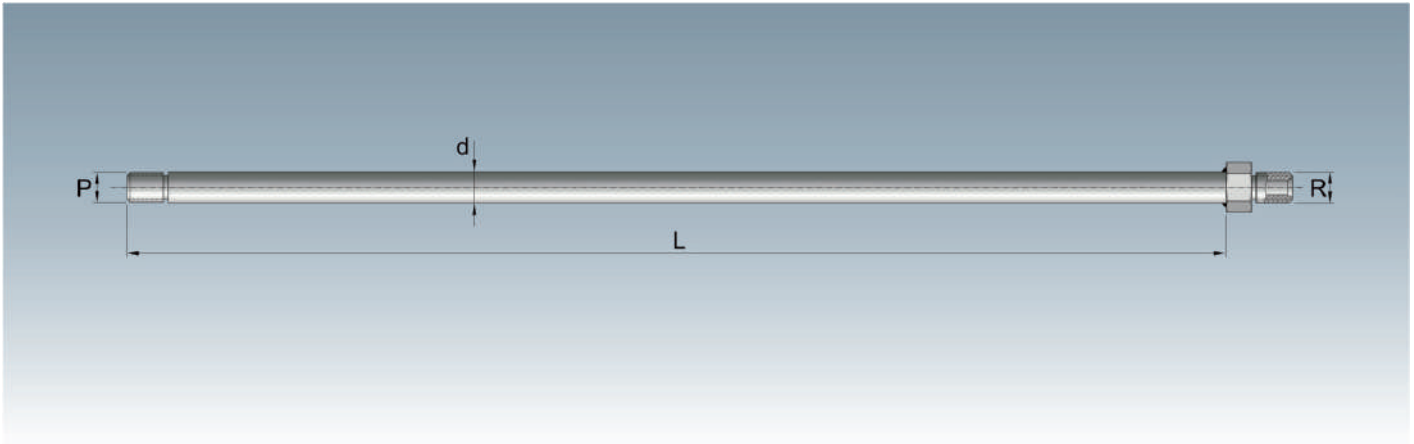
SAFETY WHIP CHECK

- Safe and strong.
- Loop design. The more you pull, the more you.



Code	Description	For hoses	Burst load
211030012	Safety whip check 600 mm	G 1/2" - G 1 1/4"	1.800 Kg

RIGID LANCES



Standard manufacture

d: Pipe diameter in mm	8, 10, 12, 14, 16, 18, 22 or 25
L: Length in meters	To 6 meters
R: Hose thread	1/8", 1/4", 3/8", 1/2", 3/4", BSPP Male and female M22x1,5 Cone a 60° or 24°, M24x1,5 cone 24°, M36x2 cone 24°
P: End lance thread	M6x1 Female, M7x1 Male, M8x1 Male, 1/8", 1/4" BSPP Male
Max. Pressure:	750 bar

HOSE GUIDES

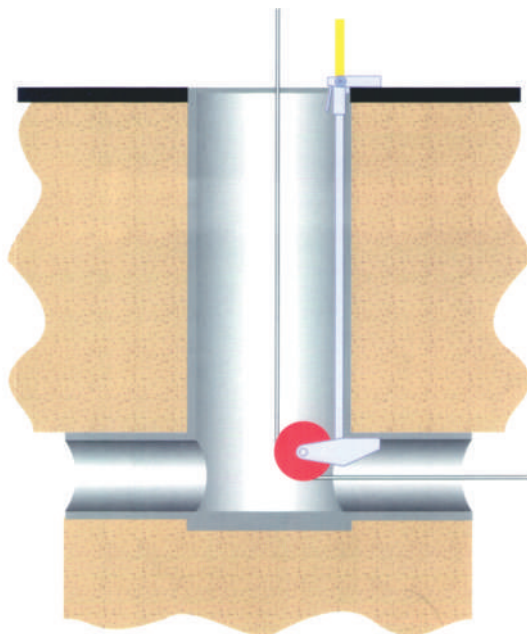
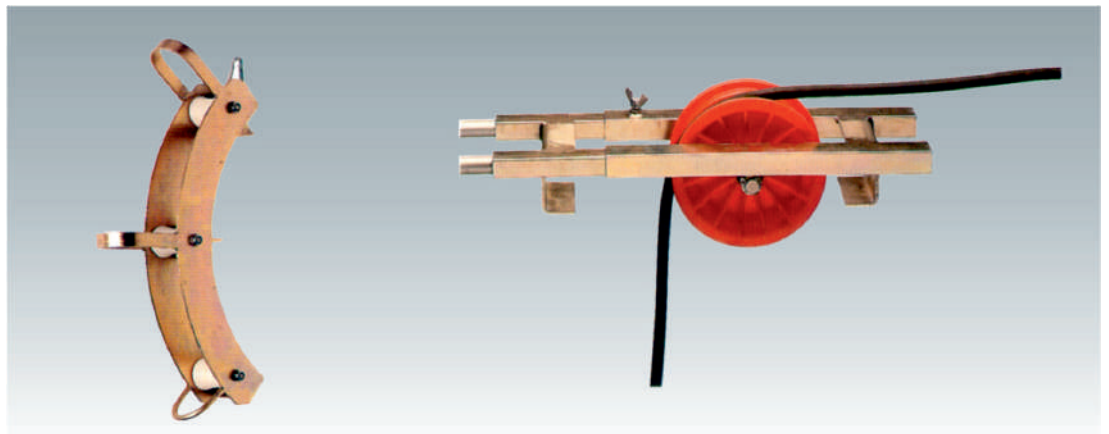
- Recommended for use high pressure hoses in sewer cleaning work.
- They help the hose slide into the pipe.
- The hose reel can rewind the hose with more safety.
- Protects the hoses against scrapes and cuts.

BOTTOM GUIDE

- Banana type.
- Weight: 2 Kg.

TOP GUIDE

- Applicability manhole: Ø450 to Ø800
- Weight: 7 Kg.



PROTECTION HOSE

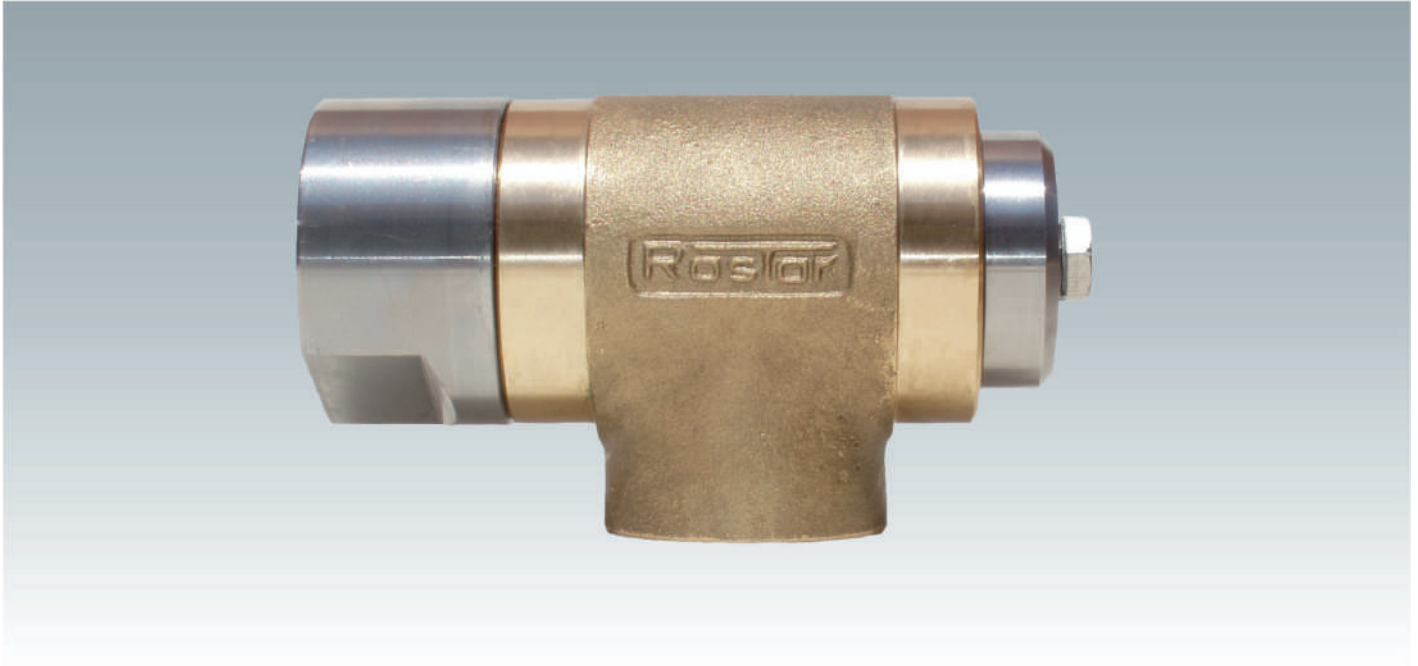
- Inside Ø: 75
- Length: 900 mm



BOTTOM GUIDE

- Wheel type
- Quick lock
- Fixed tube length: 1 meter.
- Weight: 8 Kg
- Includes 3 tube extensions of 1 m length each. (Additional weight: 6Kg).

SWIVEL JOINTS FOR REELS



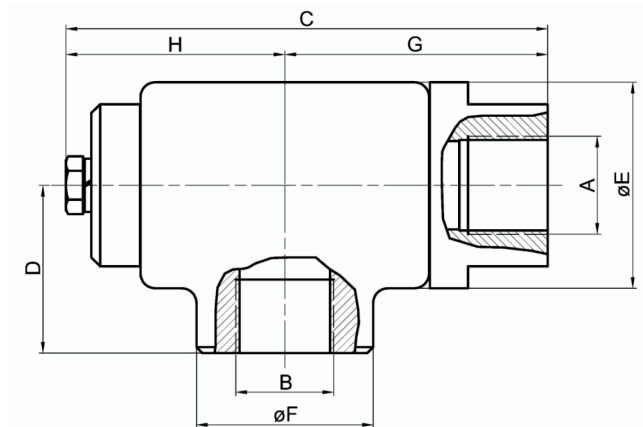
ADVANTAGES

- Long life, without maintenance, in comparison with other market types.
- Easy disassembly.
- The fundamental pieces aren't damaged.
- Economic maintenance. The reparation kit consists of 4 O-rings only.

MATERIALS

- Body: Bronze
- Axle: Stainless steel
- Seal: 4 O-rings

Dimensions



Code	Max. Pressure (bar)	Weight (Kg)	BSP Thread		Dimensions (mm)					
			A	B	C	D	E	F	G	H
412	300	1,5	1/2"	1/2"	112	43	58	44	57	55
41201	300	1,5	3/4"	3/4"	112	43	58	44	57	55
41401	250	3,7	1"	1"	166	57	70	60	90	76
414	250	3,7	1 1/4"	1 1/4"	166	57	70	60	90	76

REELS - 1.000 SERIES

Construction: Drum with ribbed sheet metal sides for greater resistance. Shaft supported with bearings. Robust folded sheet metal support. Manual with brake, motorized with gears.

Material: Painted and oven-dried sheet steel or stainless steel.

Max. pressure: 210 bar, others on request.

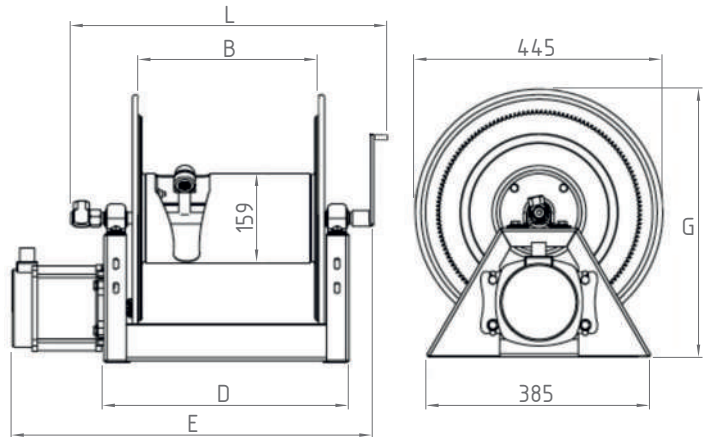


E 1 2 06

M: Manual
E: Electric
H: Hydraulic
N: Pneumatic

Serie 2: 1/2"
3: 3/4"

Type:
06
12
18
24
28



DIMENSIONS (mm)

Type	B	D	Manual L	Electric E	Hydraulic Pneumatic E	Manual G	Electric Hydraulic Pneumatic G	Weight Kg
06	152	289	558	467	419	460	476	16
12	305	441	711	619	570	460	476	18
18	457	594	863	770	728	460	476	22
24	610	746	1.016	924	876	460	476	24
28	711	848	1.116	1.025	978	460	476	26

HOSE CAPACITY METERS

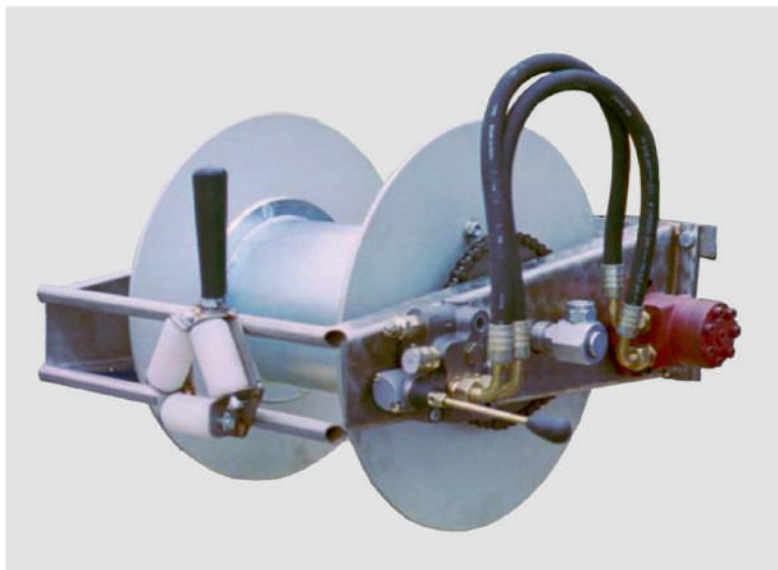
Type	Øi Øe	3/8"	1/2"	3/4"
06		42	30	15
12		91	61	30
18		136	99	53
24		186	136	61
28		212	152	76

GUIDES Top or Bottom Mount



REINFORCED REELS FOR VEHICLES

REAR HYDRAULIC REEL



Hose capacity

3/4" - 80m

1/2" - 120 m

HYDRAULIC FOLDING REEL



Hose capacity

Type Ø800

1/2" - 120 m

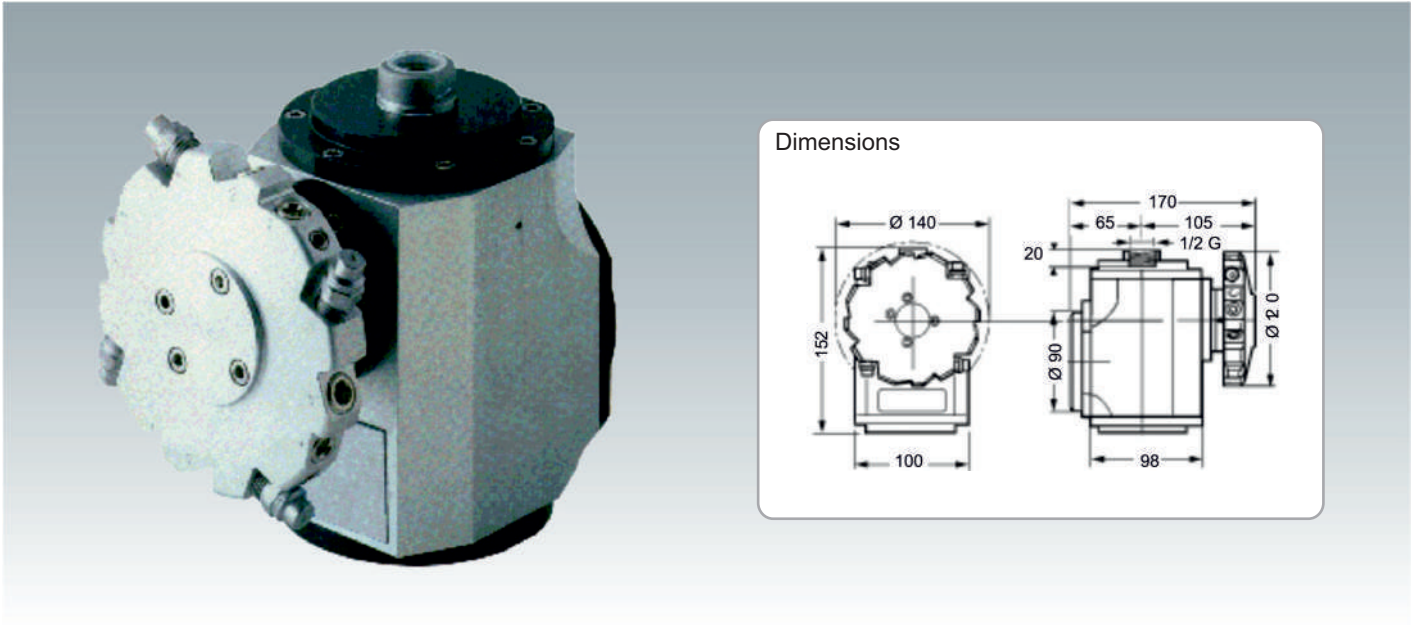
Type Ø1000

3/4" - 200 m

1" - 100 m

3-D ROTATING HEAD F TYPE

Self rotating through water jet pressure. Tank cleaning applications.



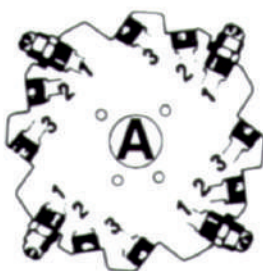
Characteristics

Heads	FV 020	FV 025
Max. flow	200 l/min	200 l/min
Max. Pressure	200 bar	200 bar
Max. Temperature	90° C	90° C
Fits through (Minimum)	170 mm	170 mm
Compleat turn (Cycle)	120 Arm turns	24 Arm turns
Cycle time	2÷12 min	25÷50 min
Arm recomended speed	10-60 r.p.m.	30-60 r.p.m.
Inlet thread	BSPP 1/2"	BSPP 1/2"
Nozzles thread	BSPP 1/4"	BSPP 1/4"
Nozzles quantity	2-4	2-4
Weight (Aluminium)	5,5 Kg	5,5 Kg
Body material	Aluminum or stainless steel AISI 316	

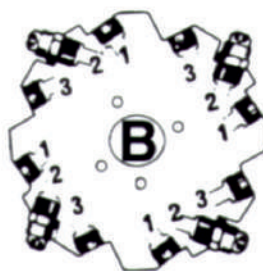
The rotation speed head is function of:

- Diameter and number of nozzles.
- Pressure.
- Flow.
- Nozzles position.

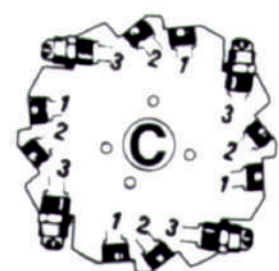
(A) Po. 1
Slow rotation



(B) Po. 2
Medium rotation



(C) Po. 3
Fast rotation

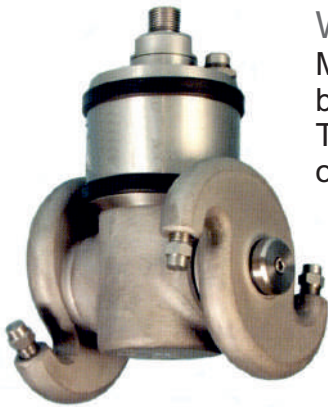


3-D ROTATING HEAD W TYPE

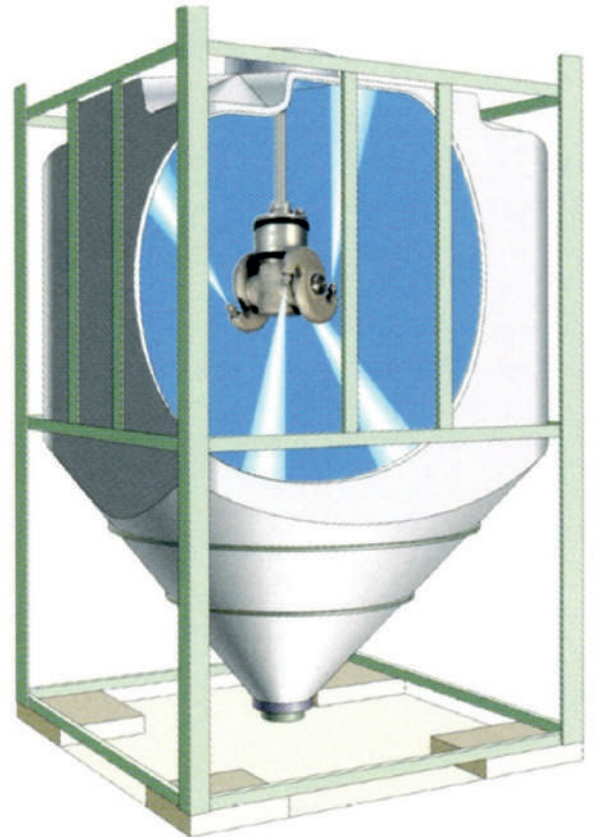
Self rotating through water jet pressure.
Adjustable rotation speed, with internal hydraulic brake.
To work with hot water available an additional thermostatic brake.

W Type Rotating head for cleaning tanks and irregular surfaces.

Type	Min. Flow (l/min)	Max. Pressure (bar)	Thread connection	Weight (Kg)
W80	40	80	1/2"	11
W250	50	250	1/2"	11
V80	20	80	1/2"	11
V250	30	250	1/2"	11



W Type
Made of stainless steel and brass.
Two arms, with two nozzles on each side.



V Type
One arm with two nozzles and a counterbalance on the opposite side.

ROTATING HEAD - T TYPE

Self-powered rotating head for tank cleaning 3-D T Type

- Pressures from 350 to 1,500 bar.
- Max flow 300 l/min.
- Internal adjustable magnetic brake.
- Easy maintenance.

Designed head for work with a wide range of pressures and flows. Four different rotors fit the head and make it suitable for use in different ranges of features.

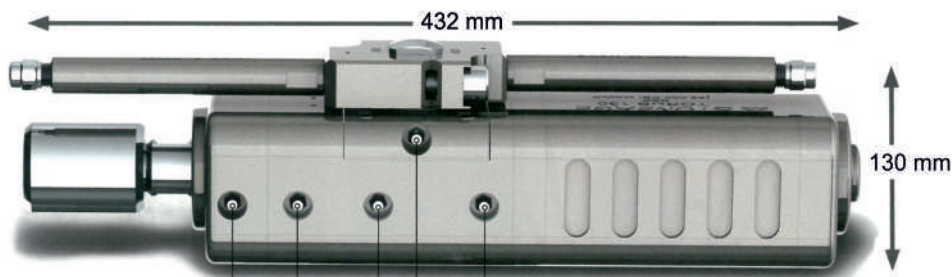
Another important quality rotary head T is the simplicity of design. The rotating head T does not have to be shipped to the factory for repair, improving maintainability and reducing its downtime, because it uses very few parts and can be assembled with common hand tools.



- Shockproof safety: If the arms hit against interferences, they stop spinning and gears won't broke.
- Leakage-witness holes; allowing user to know that seal leaks water and it is damaged.
- Accessible grease fittings to lubricate each area of friction from the outside.

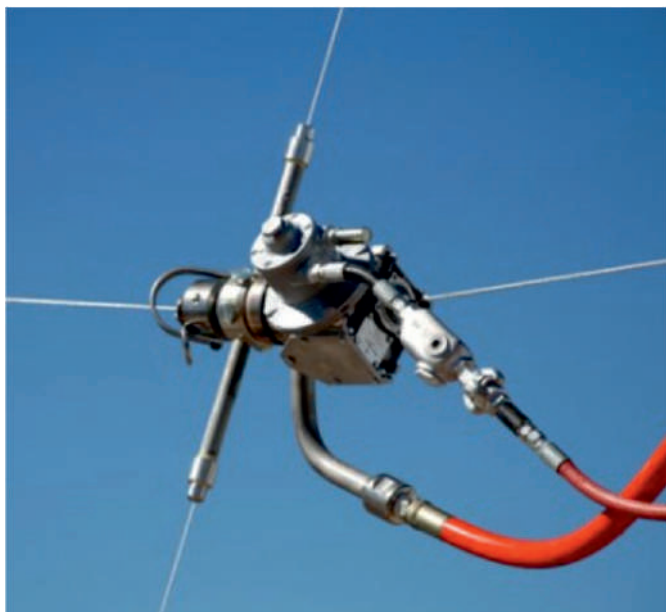
Pressure bar	Flow l/m	Power CV	Cycle time min	* Inlet thread	Diameter mm	Weight Kg
350 - 1.500	64 - 300	30 - 1000	4 - 28	3/4" or 1" npt	130	16

* On request other types of thread connections



All grease fittings are directly accessible

ROTATING HEAD - CST TYPE



Pression: 750 bar
Max. Flow: 640 l/min

- Ideal construction for cleaning between dirty parallel pipes.
- The device allows the hollow shaft inside in to pass the cable 3/8 " diameter to slip by the reaction force of the jets or pulling it, keeping the head in balance while avoiding sharp fluctuations.
- The rotation of the jets are made using an air motor with gearbox.
- The head has 6 outlets 3/4 " NPT configured to: 2 to 90 ° , 2 to 80 ° , 1 to 70 ° and 1 to 120 ° .
- It can be fix on robust extensions.

APPLICATIONS

- Fixed furnaces
- Boilers, re-boilers
- Superheaters and economizers
- Reformers, cokers and precipitators

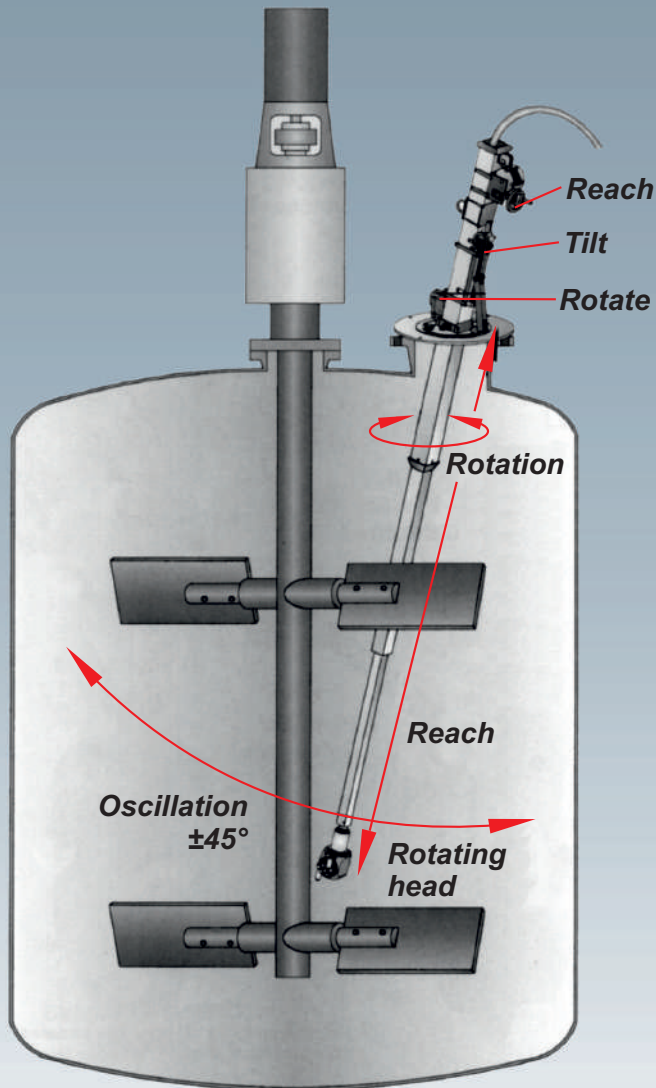
Specifications

Max. Pressure	750 bar
Max. Flow	640 l/m
Rotation range	5-60 rpm
Inlet connection	2 x 1" NPT
Outlet ports	6 x 3/4" NPT
Length	530 mm
Weight	21 Kg



TELESCOPING POSITIONER - PT

It places 3-D rotating head cleaning tanks (reactors) on several internal vessel positions for an effective clean.



It has 3 movements:

- Up / Down
- 330° Turn
- $\pm 45^\circ$ Oscillation

Maximum pressure: 1.000 bar
(Depending hose))

Max. Recomend flow: 380 l/min

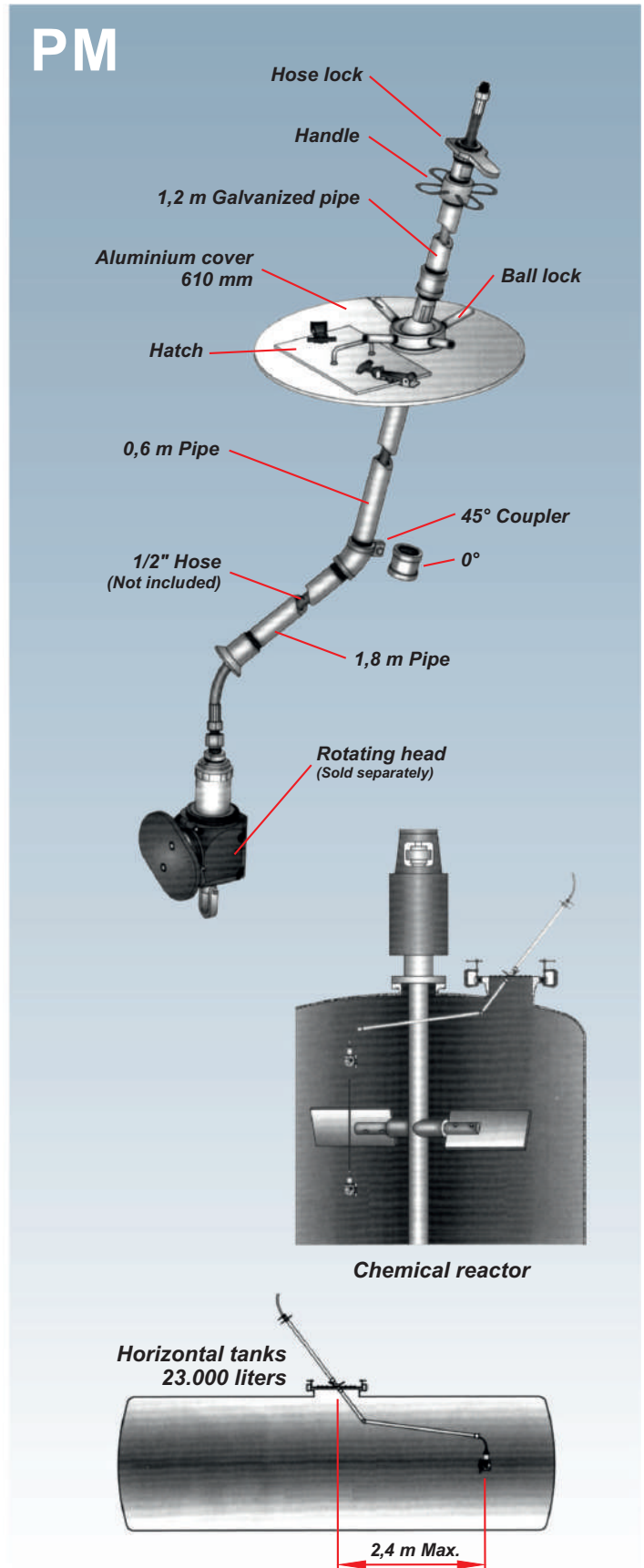
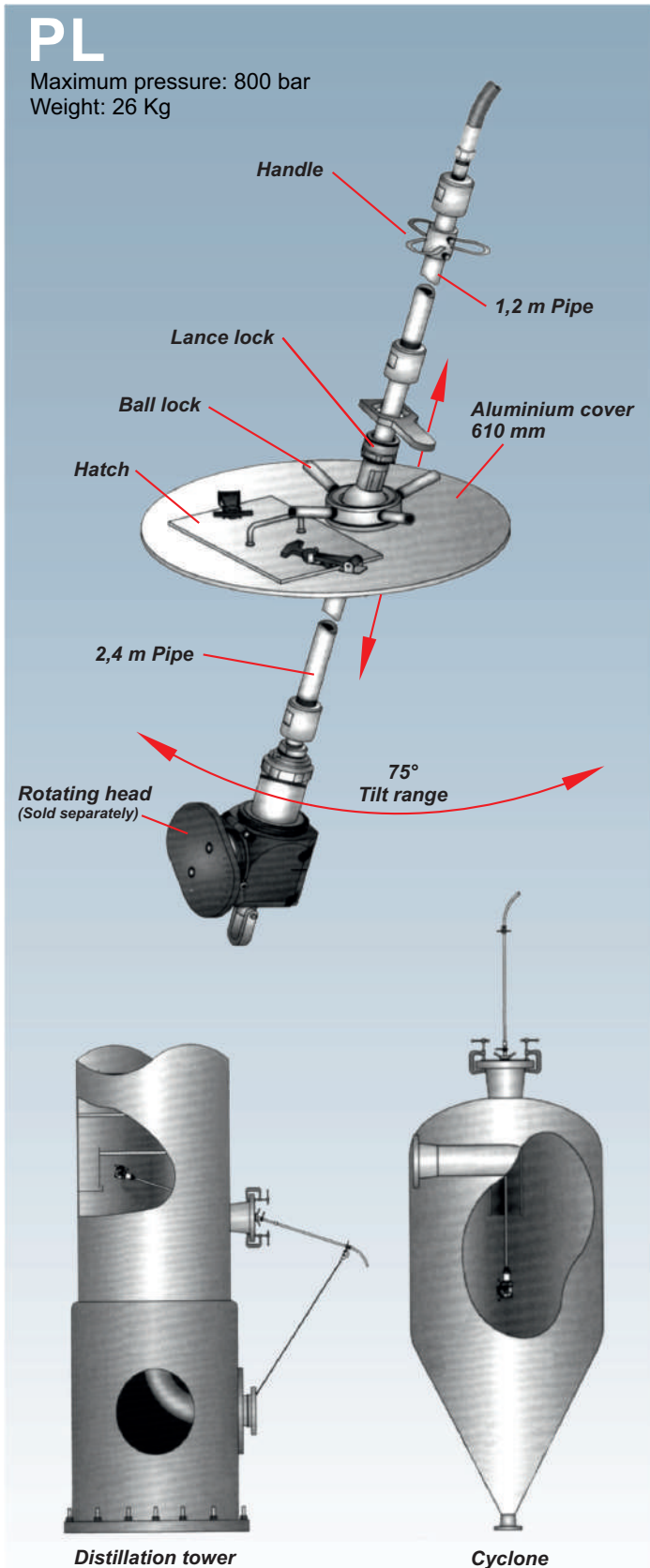
Recommended hose: 3/4" máx.

Cover diameter: 610 mm

Type	Extended length (m)	Collapsed length (m)	Weight (Kg)
PT-6	4,0	2,0	54
PT-8	5,8	2,6	59

LANCE POSITIONER - PL HOSE POSITIONER - PM

It places 3D self rotating head cleaning tanks on several internal vessel positions for an effective clean.



MUD SUCTION VENTURI

OPERATING MODE

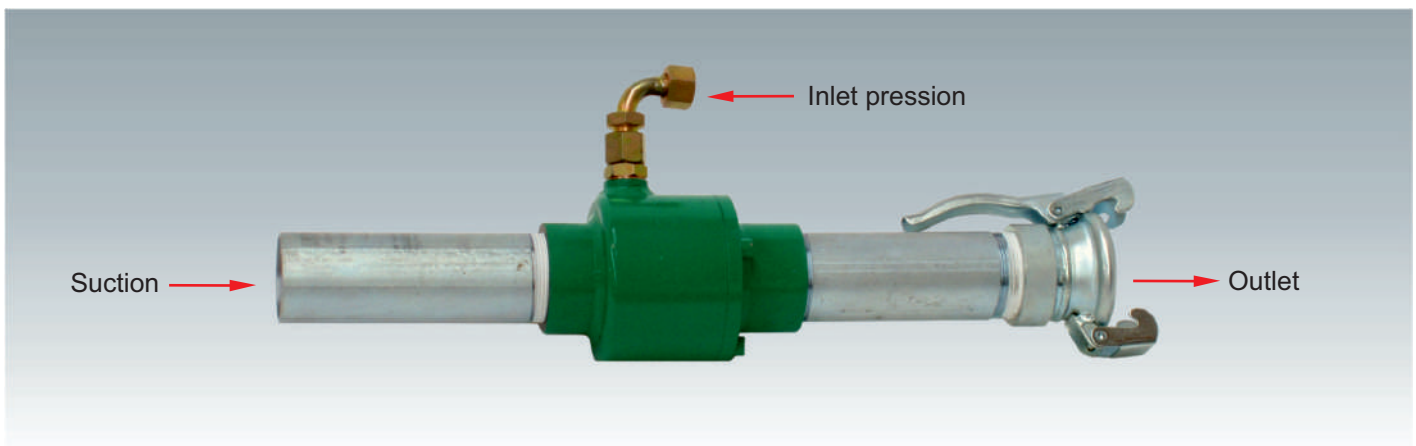
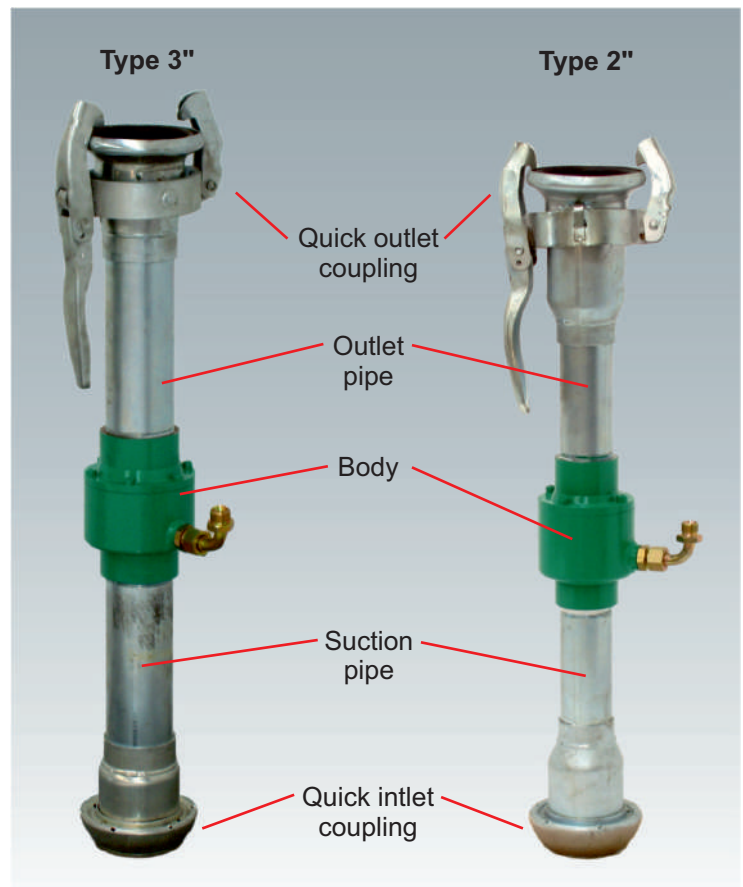
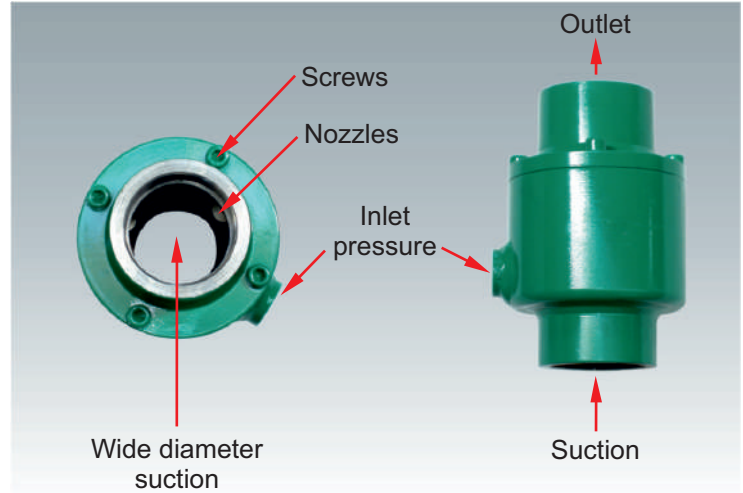
Venturi or ROSTOR ejector is a device which a pressure fluid is introduced. The fluid goes out across internal orifices or nozzles to high speed. A vacuum is created. It suctions liquid and / or solid materials, they are driving by great energy to the outlet.

APPLICATIONS

Designed to be used by water pressure, also for certain products can be used by compressed air, avoiding to wet the suctioned material.

For works with sewer and industrial cleaning equipment, is used basically for:

- For suction residues, driving directly to the sewer, without passing across the vacuum tank. The work is made faster and the vacuum pump doesn't work.
- In combination with the vacuum pump, increases the suction capacity. The materials are lifted higher.
- To make vacuum in the tank only with the ventury, while the vacuum pump is stopped. It's possible to suck light materials and store inside a tank. Working with vacuum pump, the waste could fly, to entry in the machine and break it down.



MUD SUCTION VENTURI

VENTURI ROSTOR ADVANTAGES

- Wide diameter suction without obstructions, nozzles are arranged in the periphery and doesn't obstruct the product's flow.
- Opening by screws for acceding to the nozzles easily in comparison threaded bodies, which have hazard to seizing.
- Suction and outled threaded ports. The pipes are easily changed, when the abrasive suctioned materials wear or perfore them.
- Quick couplings to different types and threads dimensions for mounting to the venturi pipes. They can connect fast, to suction hoses users.
- Pressure connection nipples according customer order.

Types

Code	Body type	Ø Way (mm)	Max. Operation pressure (bar)	Inlet pressure thread	Body length	Weight (Kg)
462	2" Iron	50	400	1/2"	173	4,9
46202	2" S. Steel	50	400	1/2"	173	4,9
463	3" Iron	75	400	1/2"	190	7,2
46302	3" S. Steel	75	400	1/2"	190	7,2

Accessories

	Code	Body 2" Description	Code	Body 3" Description
PIPES	25108272	2" x 0,2 m 2"M - 2"M	25108982	3" x 0,3 m 3"M - 3"M
	25108271	2" x 0,2 m 2"M - Ø60 mm	25108981	3" x 0,3 m 3"M - Ø90 mm
COUPLINGS	25112171	Spheric female S3-2" F	25162541	Spheric female S7-3" F
	251121721	Spheric female S7-2" F	25162421	Spheric female S10-3" F
	251121731	Spheric female S10-2" F	22753741	Conic female 89-3" F
	22753721	Conic female 89-2" F	2275751	Conic female 108-3" F
	22753731	Conic female 108-2" F	2516254	Spheric male S7-3" F
	2511217	Spheric male S3-2" F	25162542	Spheric male S10-3" F
	25112172	Spheric male S7-2" F	2275374	Conic male 89-3" F
	25112173	Spheric male S10-2" F	2275375	Conic male 108-3" F
	2275372	Conic male 89-2" F		
	2275373	Conic male 108-2" F		

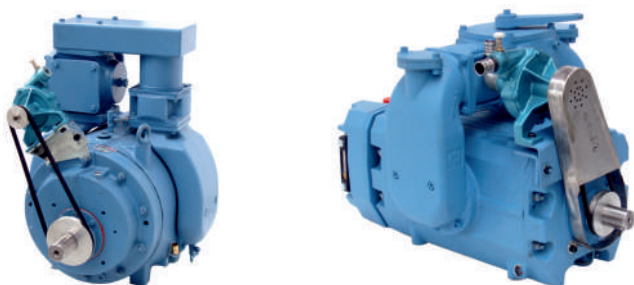
The indicated thread are BSPP type (Cylindrical thread).



High pressure piston pumps



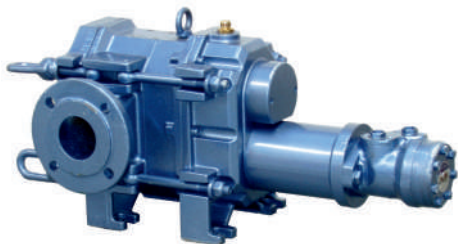
Portable cleaning equipment



Vacuum pumps



Vacuum pumps accessories



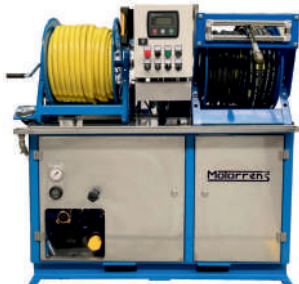
Lobe pumps



Transfer boxes



Sealing cushions and packer



Diesel van equipment



Petrol van equipment



Toilet cleaning unit



Trailer equipment

CCTV Pipeline Inspection Systems



Robotic systems

Thrust systems

Well camera

