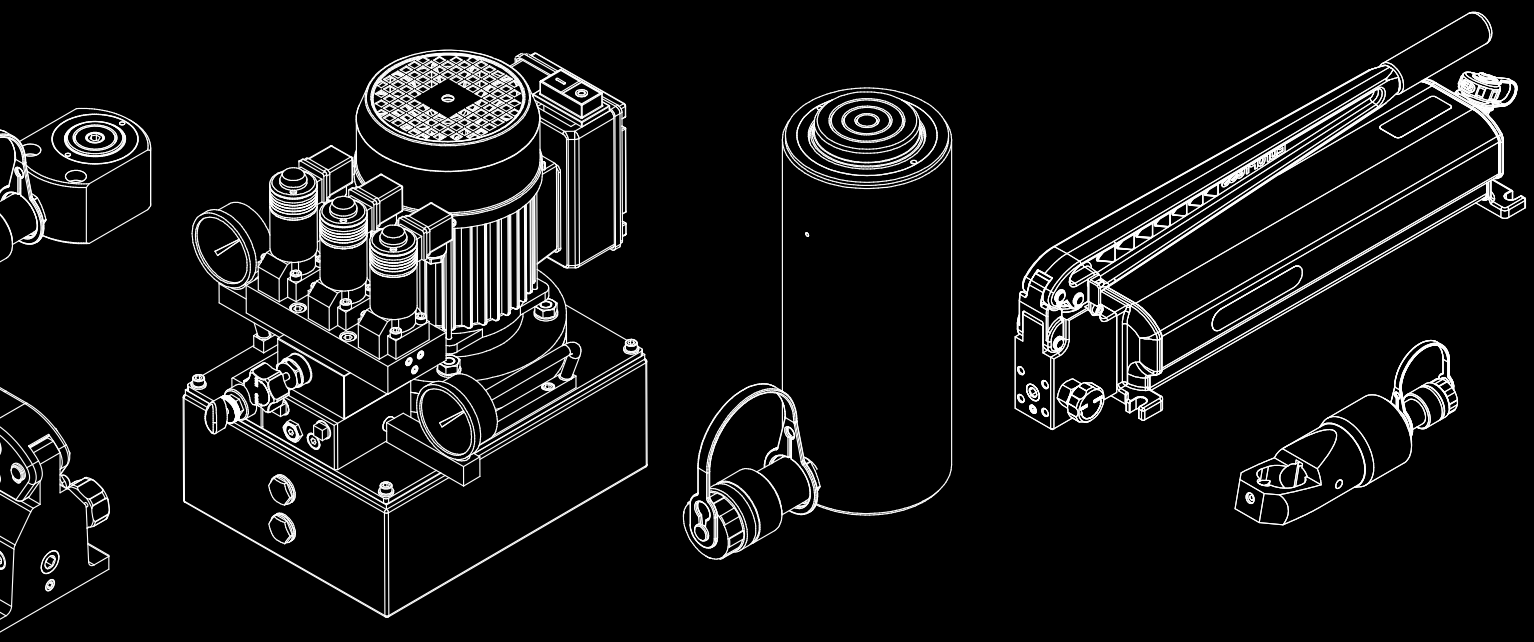
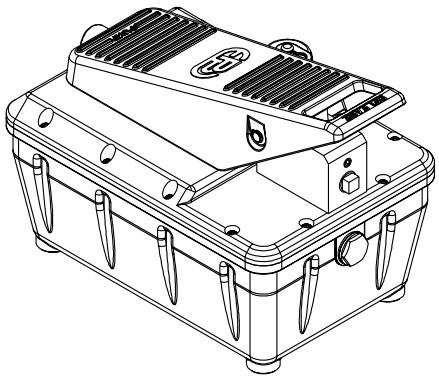
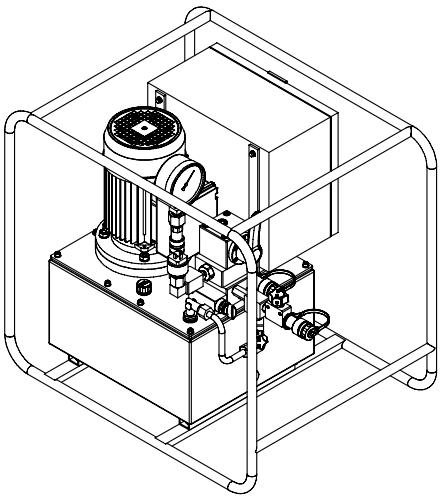
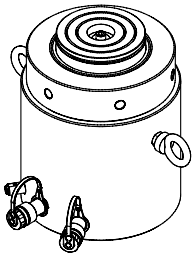


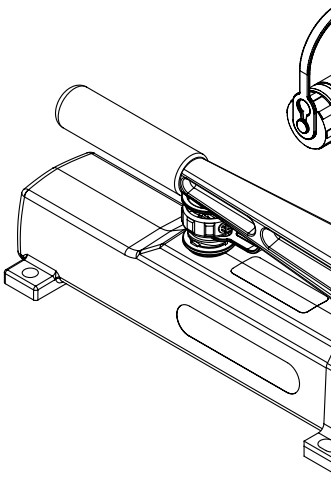
EUROPRESS

HIGH PRESSURE HYDRAULICS









THE COMPANY

OUR JOURNEY

The journey of **EUROPRESS** begins in 1919, with the creation of the **RAFFAELE RIMASSA** company, founded to commercialize high-pressure hydraulic products throughout Europe, and evolves in 1993 when it is taken over by EURO PRESS PACK. The group is currently a worldwide leader in the manufacture of high-pressure hydraulic components from 700 to 4000 bars, has replaced its trademark RARIPRESS as a result of a complete re-design of its range of products according to the most advanced technology in terms of quality, safety and reliability, earning the **ISO CERTIFICATION 9001** in 1996 and the **ISO CERTIFICATION 14001** in 2008.

In addition to all the various standard products illustrated in this catalogue, we design and produce special high pressure equipment according to specific customer requirements.

Both the design and the entire production process of standard and special products is in-house, this guarantees high quality and reliable deliveries.

OUR STRUCTURE

Italy

E.P.P. EURO PRESS PACK SpA

Production plant of the group, is located in Carasco, an area made strategic by the close proximity to Genova's port and international airport.
The factory covers an area of around 6000 sq.m and includes, as well as the production plant, the commercial and technical offices, research departments department, plus a well-stocked warehouse.

Germany

EUROPRESS DEUTSCHLAND GmbH (ex E.P.P. ROEMHELD)

Previously called E.P.P. ROEMHELD now the trading company in charge of the German market, located in Nuremberg, Germany, it was born from the trade agreement between EUROPRESS and the renowned German Group ROEMHELD, specialized in the manufacturing of hydraulic blocking and industrial automation.
The firm is currently independent and works as an essential strategic logistic junction between the North-South and the East- West of Europe, also it's a short distance from the international airports of Nuremberg and Munich.

United Kingdom

E.P.P. MAGNUS Ltd

Is the trading company responsible for the marketing and sales of all Europress products in the United Kingdom, situated in Norwich, near the international airport and only a few km away from the North Sea.

WHY EUROPRESS?

EUROPRESS

WE DO NOT OUTSOURCE

- All our products are manufactured in-house for better quality control, costs and speedy delivery.

OUR STEEL DOES NOT CORRODE

- Our products are the only ones in the sector treated with the **Nitreg ONC** process that is carried out exclusively within our production facilities. This process is a thermo-chemical treatment applied to steel, which starts with the liquid nitriding followed by an oxidation, causing a change in the chemical structure of the steel's superface, this alteration makes the steel exceptionally hard and resistant to corrosion.
- The resistance is further strengthened with the application of a special oil that coats the treated surfaces and makes the steel resistant to corrosion. Tests conducted in saline smoked rooms in accordance with to the ASTM B117 regulations have shown up to 300 hours of resistance to corrosion.
  Our products, treated with this process, are therefore especially suitable for applications with high risks of corrosion and mechanical wear.
  The black colour of all EUROPRESS's products is a direct result of the last phase of this unique treatment and has come to symbolize our long lasting effort towards the pursuit of quality.

WE ARE FLEXIBLE

- Our production is capable of dealing with orders and special requirements assuring short delivery times.

WE GUARANTEE THE QUICKEST DELIVERIES

- Thank to this you can reduce your costs as you don't have the urge to place a huge stock order to assure your customers a good service.

THE QUALITY OF OUR RAW MATERIALS IS CONSTANTLY VERIFIED:

- We can provide certificates of conformity and carry out quality control tests on all of our steel before and after the manufacturing process.

EXCELLENT QUALITY OF OUR PRODUCTS

- We test both the components and the end products.

WE HAVE MODERN MANUFACTURING TECHNIQUES

- Our manufacturing facilities are new and highly automatized, with continual investiment to the highest standards

WE TAKE CARE OF YOU

- Packing and branding are carefully selected to obtain the best stock holding profile; we offer quick and effective logistic solutions through a global distribution network, we offer technical trainings both on our premises and at our customers locations to support your Sales, furthermore our expert design teams are at your disposal to create new and customized products to your design and specifications.

Our main goal is to provide a high level customer care and satisfy all your requirements: you'll discover that we are reliable business partners!!!

- EURO PRESS PACK products are the only ones in the sector treated with the **Nitreg® ONC®** process as standard, for many years this has been carried out exclusively within our manufacturing plants.
- This process is a thermo-chemical treatment applied to the steel, the process starts with the liquid nitriding phase followed by an oxidation phase, this causes a change in the steel's superficial chemical structure.
- This alteration makes the steel exceptionally hard and resistant to corrosion. The enhanced resistance is further strengthened with the application of a special oil that coats the treated surfaces and makes the steel resistant to corrosion (tests conducted in saline smoked rooms has show up to 200 hours of resistance to corrosion according to the **ASTM B117** regulations).
- Our products, treated with this process, are therefore especially suitable for applications with high risks of corrosion and mechanical wear.
- The black colour of all EUROPRESS products is a direct result of the last phase of this unique treatment and has come to symbolize our enduring effort towards the pursuit of quality and reliability.

THE 9 PHASES OF PRODUCTION


Phase 1
Unrefined components waiting to be worked.


Phase 2
Washing of the components.

Phase 3
Positioning of the components for the NITREG process in the furnace.

Phase 4
Positioning of the components inside the oven for the NITREG process.

Phase 5
Positioning of the components over the grill of the oil tank. The oil is used to saturate the surface in order to avoid possible future corrosion of the components.

Phase 6
Filling of the tank with oil.

Phase 7
Components out of the oil tank.


Phase 8
Washing and cleaning of the components which will be ready to be assembled.

Phase 9
End product.

WHERE OUR PRODUCTS ARE BORN

The **EUROPRESS group** has conquered the leadership of the sector thanks to a working philosophy based on vital values which have characterized the journey of the company since the early days.

Tradition, experience, education, innovation, attention, care, reliability… all are synonyms which describe perfectly all our divisions which are in close contact and are all fundamental to create EUROPRESS products.

THE WORKSHOP

Constantly renewed and equipped with automated machineries which guarantee a 4.0 production.

THE PRODUCTION PLANT

Optimized for maximum efficiency and minimum setup times which allow the production of a wide range of measures even with small batches.

RAW MATERIAL

Steel and alloy exclusively of European origin are stocked in large quantities to be able to react quickly to all the market needs.

THE WAREHOUSES

One for the end products and another one for the components for a total of 1100 Mq in which are kept in stock more than 9000 items.

PACKING AND SHIPPING DIVISION

Boxes, pallets and wooden crates; the best solutions based on the features of the goods, the shipments and the destinations.

WHERE OUR PRODUCTS ARE BORN

MAXIMUM AUTONOMY

The production department is conceived entirely to guarantee an optimal quality, cost and service control. Besides the gas nitregation process EUROPRESS boasts an entire fabrication department and an automated painting system.

POWER PACK DEPARTMENT

it's where the power packs, piston pumps and valves are assembled and tested. Thanks to the two testing areas "Gioconda" and "Fenice" thorough leakage and pressure tests are guaranteed.

ASSEMBLING AREAS

One area is dedicated to the assembling and testing of cylinders and hydraulics components while the second one is dedicated to the assembling and testing of hand and foot pumps.

FABRICATION DEPARTMENT

An automated welding plant equipped with machineries for the metal sheet processing and for the construction of tanks, protection cages and accessories.

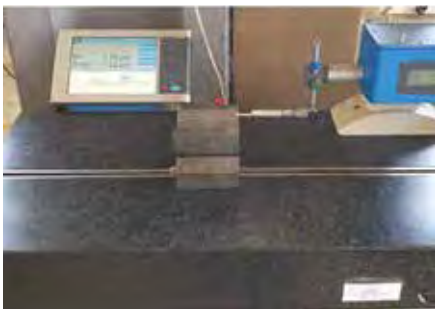
WHERE OUR PRODUCTS ARE BORN











PAINTING AREA

A last generation automated plant for powder and liquid painting that allows the obtaining of excellent quality finishes.

LASER LABELLING

All our products are laser labeled so that they can be recognized through time. With two different types of laser machineries and markers all our products can be stamped without no dimensions exception.

QUALITY DEPARTMENT AND METROLOGICAL ROOM

In this area there are different specific machineries and tools for the dimensional control of hardness and roughness of the components.

SYMBOLS EXPLANATION

Important usage and safety instructions	Alternative products recommended for similar applications.	General product informaton.	Recommended product for activation.

QUALITY CERTIFICATIONS

EURO PRESS PACK has always been a Company very attentive to quality norms. This means that both the design and the manifacture of our products are planned considering the Good Manufacturing Practice. All necessary controls are made to guarantee our customers the highest possible quality standard. In this way the final product is produced and checked according to the defined procedures and this assures that the quality system is efficient, controlled and proved.

QUALITY SYSTEM CERTIFICATE ISO 9001

- System certification for design and manufacturing, marketing and repair of high-pressure hydraulic components.

ENVIRONMETAL SYSTEM CERTIFICATE ISO 14001

- System certification for design and manufacture, through the various steps of cutting, mechanical machining, surface treatments, painting, assembly, testing, packing and dispatch, sales and service of high pressure hydraulic fluid components.

ANSI B30.1

- All cylinders comply to the standard laid down by the American National Standards institute (apart from CGS#P#, CGG#P#, and CGR cylinders).

EN 60204-1

- The electric parts of the machines are made according the standard of EN 60204-1.

SAE 100R10

- The 700 bar hoses exceed this norm.

2006/42/CE - 2014/35/EU - 2014/30/EU, guidelines

- All our power packs are in line with the CE norm on the machine directive, low tension and electromagnetic compatibility.

CE mark

- All EUROPRESS products meet the European safety directives.

CE

- Excluding certain systems or utensils which are designed for a specific use and are certified as machineries, all the cylinders, pumps and power packs of generic purpose are accompanied by certificates. The CE certification is responsibility of the construction of the machinery in which all the components are assembled.

PRODUCTS INDEX

HYDRAULIC CYLINDERS

FEATURES

The manufacturing program of 700 bar components is based on innovative technology and on our longstanding experience in high PRESSURE hydraulics.

The ideal choice of materials combined with surfaces treated and protected against corrosion, render unnecessary the use of guide rings and paint.

Furthermore, the majority of EUROPRESS cylinders can withstand off-centered and with side load forces up to 8% of their nominal capacity.

Most of our models are in compliance with ANSI (American National Standard Institute) B30.1 Standard.

1/2/3 | CYLINDER BODY

The cylinder body, piston and the end of stroke nut are in Highly resistant ternary alloy steel and have been treated with a special nitriding process so that these parts have a high wear resistance and are protected from corrosion; they have a long lasting outdoor usage even in sea-water and aggressive atmospheres.
The bodies of the cylinders, with the exception of some versions with the bottom screwed cap, are produced from solid and are not subject to welding.

4 | WIPER

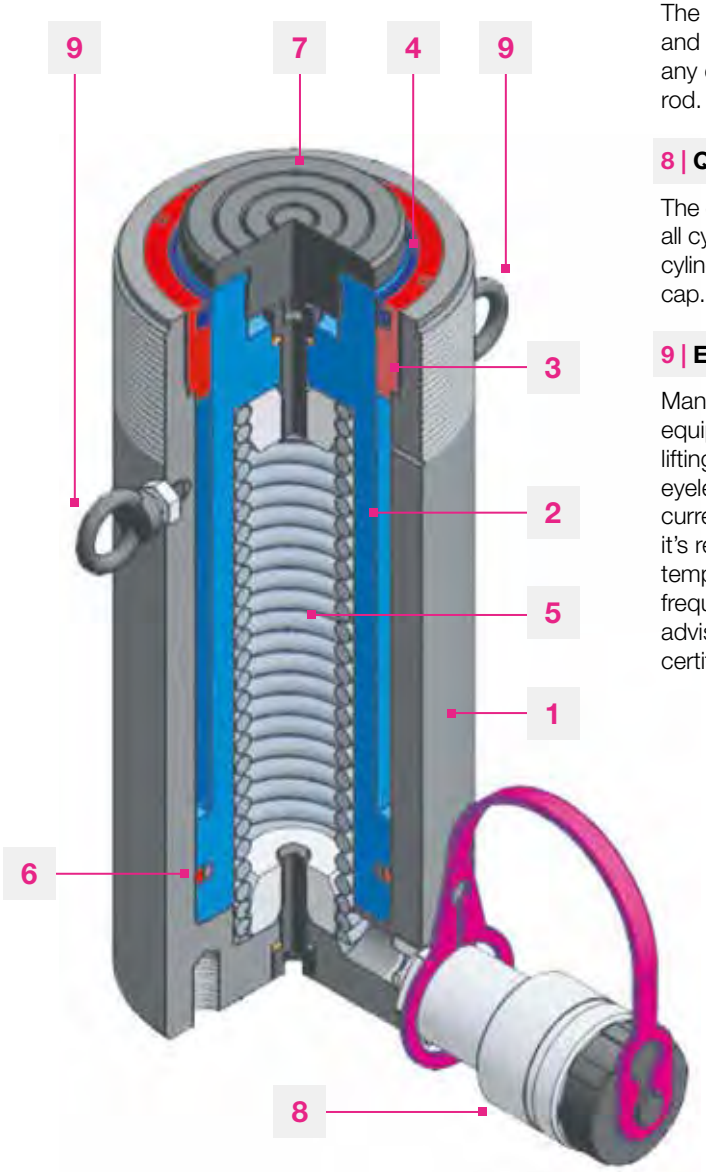
The wiper prevents contamination and increases the durability of the cylinder.

5 | RETURN SPRING

(For models that provide it).
This spring ensures fast piston retraction Independently from the position of the cylinder.

6 | SEAL

The compact seal provides good resistance to wear and extrusion.The drawing of the foot of the piston increases the guiding length and reduces almost to zero the gap which causes the extrusion.



7 | SADDLE

The saddle is in high tensile and nitrided steel and prevents any deformation of the piston rod.

8 | QUICK COUPLER

The quick coupler mounted on all cylinders(except COD cylinders), is fitted with a dust cap.

9 | EYEBOLT

Many cylinder models are equipped with removable lifting eyelets. The usage of the eyelets does not satisfy the current regulation since it's recommended only for temporary lifting. In case of frequent and habitual usage it's advised to make use of the certified eyelet kit.

HOW TO CHOOSE A CYLINDER

IT'S NECESSARY TO HAVE SOME ESSENTIAL INFORMATION TO CHOOSE THE CORRECT CYLINDER, THIS INFORMATION INCLUDES:

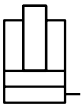
- FORCE
- STROKE
- TYPE OF CYLINDERS IN RELATION TO THEIR USE

And also some further information as:

- REQUIRED OIL VOLUME
- OPERATIONAL SPEED

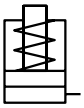
In the USEFUL PAGES you may find some calculation examples (p. 173).

THERE ARE THREE MAIN TYPES OF CYLINDERS:



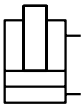
LOAD RETURN

Load return, in which the piston is retracted by the weight of the load (or any other external force). The minimum force required to retract the piston is approximately 0,2% of the rated cylinder nominal push value.
These cylinders are the most economic solution for an application that does not require quick removal of the cylinder after the load has been lowered.
The cylinders of the **CGG**, **CGR**, **CGS** ranges belong to this group.



SPRING RETURN

Spring assisted return, in which the piston is retracted by means of an internal compression or a tension spring inside the cylinder. These cylinders are proposed whenever it is necessary to remove the cylinder quickly once the load has been lowered.
The cylinders of the **CMC**, **CMF**, **CMI**, **CML**, **CMP**, **CMT** ranges belong to this group.



OIL RETURN

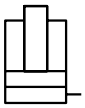
Oil Return, (double acting): the piston is retracted hydraulically by pumping oil into the anular chamber of the cylinder.
The ideal usage of these cylinders is in production applications where a fast cycle time is required.
When being used in a lifting application, the lowering of the load can be controlled by adding a pilot check valve and one-way flow distributor into the circuit.
The return pressure can be set to a lower value when it is required to only retract the piston.

The cylinders of the **COF**, **COG**, **COI**, **COL**, **COS** ranges belong to this group. When it is necessary to exert a pulling force, we recommend cylinders belonging to the **COD** e **COJ** ranges.
These cylinders are supplied with the required threads and connections and may also be operated at the maximum working pressure on both sides of the piston.

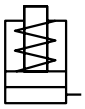
C	#	#	###	#	###	#
Cylinder	Return type	Series	Pushing FORCE in t	N = Standard P = Plunging (with no end of stroke nut)	Stroke in mm	F = with base mounting holes T = with tilt saddle
CMF20N100 Cylinder, spring return with **20** t force, **N** version, **100** mm stroke.			**CGG200N250FT** Load return cylinder with safety nut, **200** t force, **N** version, **250** mm stroke with fixing holes at the base and tilt saddle.			

HYDRAULIC CYLINDERS

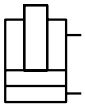
HYDRAULIC CYLINDERS



	SINGLE ACTING CYLINDERS / LOAD RETURN	
CGG#N	With safety nut, with end of stroke nut, for high tonnage	P. 16 > 19
CGG#P	With safety nut, without end of stroke nut, for high tonnage	P. 16 > 19
CGR	With safety nut, low profile cylinders	P. 20 > 21
CGS#N	With end of stroke nut, standard, for high tonnage	P. 22 > 25
CGS#P	Without end of stroke nut, standard, for high tonnage	P. 22 > 25
CGS#D	With end of stroke nut, telescopic double stroke	P. 26 > 27
CGS#T	With end of stroke nut, telescopic triple stroke	P. 26 > 27



	SINGLE ACTING CYLINDERS / SPRING RETURN	
CMC	Extra flat cylinders	P. 28 > 29
CMF#N	With hollow piston, in steel	P. 30 > 31
CMF#L	With hollow piston, in aluminium	P. 30 > 31
CMF#NJ	With hollow piston, for barriers type NEW JERSEY and guard-rails	P. 32 > 35
CMI#N	Multi-purpose cylinders, with metric thread	P. 36 > 38
CMI#W	Multi-purpose cylinders, with imperial thread	P. 36 > 39
CML	Aluminium cylinders	P. 40 > 41
CMP	Low profile cylinders, with short stroke	P. 42 > 43
CMT#N	Pulling cylinders, in steel	P. 44 > 45
CMT#L	Pulling cylinders, in aluminium	P. 44 > 45



	DOUBLE ACTING CYLINDERS / OIL RETURN	
COD	Industrial cylinders, double acting	P. 46 > 47
COF#N	With hollow piston, in steel	P. 48 > 49
COF#L	With hollow piston, in aluminium	P. 48 > 49
COG	With safety nut, for high tonnage	P. 50 > 51
COI#N	Industrial cylinders, with metric thread	P. 52 > 53
COI#W	Pindustrial cylinders, with imperial thread	P. 52 > 54
COJ	Strand jacks	P. 55 > 56
COL	Standard, in aluminium	P. 57 > 58
COL#D	Standard, in aluminium telescopic double stroke, RAILWAYS	P. 59 > 60
COS	Standard, for high tonnage, in steel	P. 61 > 64

CGG#N / CGG#P

CYLINDERS / LOAD RETURN WITH SAFETY NUT HIGH TONNAGE

FEATURES

These cylinders are particularly suitable for applications in which the load has to be supported for long periods.
The lock nut can be screwed down onto the cylinder body to hold the load mechanically. This ensures that it's **absolutely safe to operate under load.**

CGG cylinders have concentric grooves machined on the end of the rod to improve the load grip, models above 30 ton have lifting eyelets to facilitate their transport.

From 50 ton upwards, the cylinders are plunging type **(P version)** and have a system which prevents any possible over-stroke. The rod has a coloured zone which becomes visible 10 mm before the end of the piston stroke.
All models can operate with off-centred load up to 8% of their nominal capacity.

OPERATIONAL AREAS

The ideal use for these cylinders is in the Construction Industry for example, bridge repairs and constructions and in the building and maintenance of heavy structural works.
The anti-corrosion treatment applied to these cylinders makes them suitable for use in harsh and adverse environments.

OPTIONS

- **Version T**, cylinder with integrated tilt saddle.
- **Version F**, cylinder with mounting holes for fixing purposes at the bottom.
- **Version N**, (optional starting from 50 t) cylinders with end of stroke ring nut.

This version is in compliance with ANSI B30.1.

- **Version M**, cylinder with spring return.

This version is available for **N - version cylinders up to 150 tons (i.e., CMG50N100)**.

ACCESSORIESES (p. 19)

- **ZTT tilt saddle** reduces the effects of any possible off-centred load.

Whenever working space is restricted, **CGR** low profile cylinders offer a perfect solution.

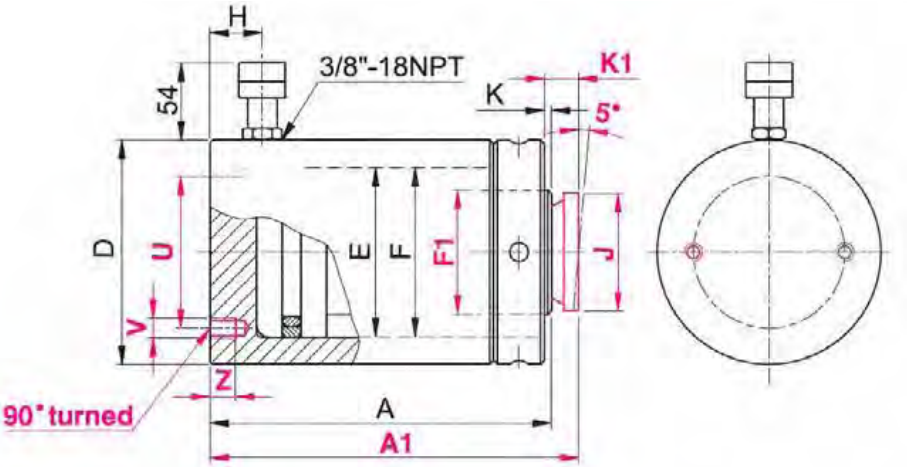
For the **P** version cylinders without end of stroke nut, it is very important that the operator is in position to observe when the coloured zone of the piston appears,

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

FORCE	30 - 500 t
STROKE	25 - 300 mm
MAX WORKING PRESSURE	700 bar

CGG#N / CGG#P

CYLINDERS / LOAD RETURN WITH SAFETY NUT HIGH TONNAGE



SELECTION CHART

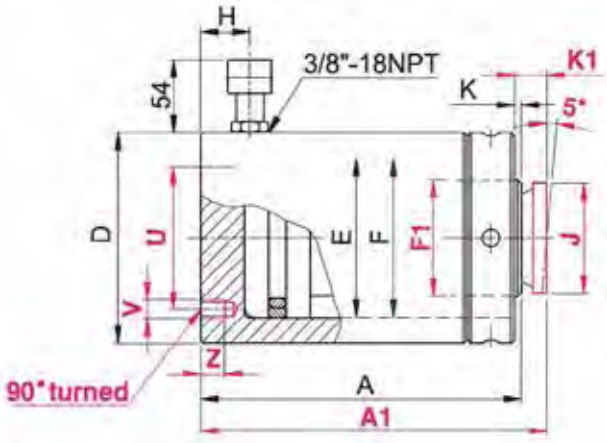
PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø P ROD VERSION	Ø N ROD VERSION	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
30 309	100	44.1	442	**CGG30N100**	189	193	102	75	-	Tr 65 x6	19	53	1	5	65	2xM10 13	11
50 496	50	70.9	355	**CGG50P50**	158	163	127	95	Tr 95 x6	Tr 85 x6	22	68	1	6	95	2xM12 15	16
	100		709	**CGG50P100**	208	213											20
	150		1063	**CGG50P150**	258	263											25
100 929	100	132.7	1327	**CGG100P100**	236	243	175	130	Tr 130 x10	Tr 110 x10	22	88	2	9	130	2xM12 17	44
	150		1991	**CGG100P150**	286	293											54
150 1407	25	201	503	**CGG150P25**	184	193	213	160	Tr 160 x10	Tr 130 x10	30	118	3	12	130	4xM12 17	51
	50		1005	**CGG150P50**	209	218											58
	100		2011	**CGG150P100**	259	268											72
	150		3016	**CGG150P150**	309	318											86
	200		4021	**CGG150P200**	359	368											100
	250		5026	**CGG150P250**	409	418											114
200 1984	25	283.4	709	**CGG200P25**	205	214	252	190	Tr 190 x10	Tr 165 x10	32	148	3	12	140	4xM16 20	80
	50		1418	**CGG200P50**	230	239											90
	100		2835	**CGG200P100**	280	289											109
	150		4253	**CGG200P150**	330	339											129
	200		5670	**CGG200P200**	380	389											148
	250		7088	**CGG200P250**	430	439											168
	300		8506	**CGG200P300**	480	489											187

* Nominal value, see kN for the exact force.

CGG#N / CGG#P

CYLINDERS / LOAD RETURN WITH SAFETY NUT HIGH TONNAGE

FORCE	30 - 500 t
STROKE	25 - 300 mm
MAX WORKING PRESSURE	700 bar



SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø P ROD VERSION	Ø N ROD VERSION	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
250 2424	25	346.3	866	CGG250P25	224	233	280	210	Tr 210 x10	Tr 175 x10	34	158	3	12	150	4xM16 20	108
	50		1732	CGG250P50	249	258											120
	100		3464	CGG250P100	299	308											144
	150		5195	CGG250P150	349	358											168
	200		6927	CGG250P200	399	408											192
	250		8659	CGG250P250	449	458											217
	300		10391	CGG250P300	499	508											241
300 2908	25	415.4	1039	CGG300P25	240	249	305	230	Tr 230 x10	Tr 195 x10	38	158	3	12	170	4xM16 20	137
	50		2077	CGG300P50	265	274											152
	100		4155	CGG300P100	315	324											180
	150		6232	CGG300P150	365	374											209
	200		8310	CGG300P200	415	424											238
	250		10387	CGG300P250	465	474											266
	300		12464	CGG300P300	515	524											295
350 3436	25	490.87	1227	CGG350P25	250	262	332	250	Tr 250 x10	Tr 215 x10	42	196	3	15	200	4xM16 20	170
	50		2454	CGG350P50	275	287											187
	100		4909	CGG350P100	325	337											221
	150		7363	CGG350P150	375	387											255
	200		9818	CGG350P200	425	437											289
	250		12272	CGG350P250	475	487											322
	300		14726	CGG350P300	525	537											356

* Nominal value, see kN for the exact force.

FORCE	30 - 500 t
STROKE	25 - 300 mm
MAX WORKING PRESSURE	700 bar

CGG#N / CGG#P

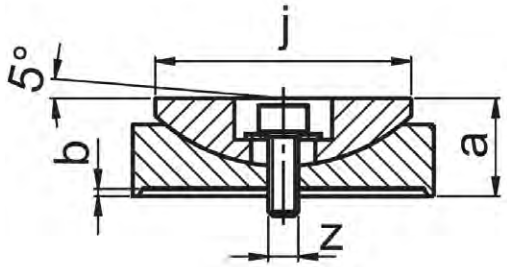
CYLINDERS / LOAD RETURN WITH SAFETY NUT HIGH TONNAGE

SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø P ROD VERSION	Ø N ROD VERSION	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
400 4008	25	572.6	1431	**CGG400P25**	260	272	356	270	Tr 270 x10	Tr 235 x10	42	196	3	15	230	4xM16 20	203
	50		2863	**CGG400P50**	285	297											222
	100		5726	**CGG400P100**	335	347											261
	150		8588	**CGG400P150**	385	397											300
	200		11451	**CGG400P200**	435	447											340
	250		14314	**CGG400P250**	485	497											379
	300		17177	**CGG400P300**	535	547											418
500 4948	25	706.9	1767	**CGG500P25**	275	287	396	300	Tr 300 x10	Tr 260 x10	47	196	3	15	250	4xM16 20	265
	50		3534	**CGG500P50**	300	312											290
	100		7069	**CGG500P100**	350	362											338
	150		10603	**CGG500P150**	400	412											386
	200		14137	**CGG500P200**	450	462											435
	250		17651	**CGG500P250**	500	512											483
	300		21206	**CGG500P300**	550	562											531

* Nominal value, see kN for the exact force.

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	j	z	kg
ZTT30	CGG30N100	19	1	53	M5	0.3
ZTT50	CGG50 # # # #	25		68	M8	0.9
ZTT100	CGG100 # # # #	34	2	88	M10	1.7
ZTT150	CGG150 # # # #	45	3	118		3.4
ZTT200	CGG200 # # # #	54	3	148		7
ZTT250	CGG250 # # # #	58		158		9.5
ZTT300	CGG300 # # # #					11.3
ZTT350	CGG350 # # # #	71		196	M12	18
ZTT400	CGG400 # # # #					20.7
ZTT500	CGG500 # # # #					23.8

MODEL CODING

C # G	30	N	###	#
Series **G** (gravity) Series **M** (spring)	Pushing Force in **t**	**N** = with end of stroke nut **P** = with no end of stroke nut (plunging)	Stroke in **mm**	**F** = with base mounting holes **T** = with integrated tilt saddle **

** Cylinders with a force below 100 tonne can be supplied subjet to a minimum.

CGR

CILINDERS / LOAD RETURN WITH SAFETY NUT LOW PROFILE

FEATURES

Pancake lock ring cylinders have a system which prevents any possible over-stroke.
The rod on these cylinders has a coloured area which appears 10mm before the maximum stroke has been reached. This version does not conform to **ANSI B30.1**.

These cylinders are particularly suitable for applications in which the load has to be left in a raised position for long periods.
The threaded safety nut, which blocks mechanically the cylinder boby, allows to **operate in total safety under the load**.

All cylinders are supplied with integrated tilt saddle and eyelets in order to ease their transport.

OPERATIONAL AREAS

CGR cylinders are suggested in the construction and maintenance of bridges, viaducts, building and industrial sites where the working space is limited.

The protective nitriding treatment on these cylinders gives them excellent resistance to corrosion.

STANDARD

Integrated tilt saddle, reduces the effects of possible off-centred loads.

CGR cylinders have been designed for use in applications where space is limited and to stand the full load even without a pressure distribution plate below. It is anyhow recommended that pressure plates are placed both under the base and on top of the saddle to distribute the load if the support resistance is not compatible with the PRESSURE shown in the chart. Non compliance with this notice could result in damage to the cylinder and/or the load being lifted..

During the lifting operation the operator must always be in a position to observe when the coloured end of section of the rod appears.

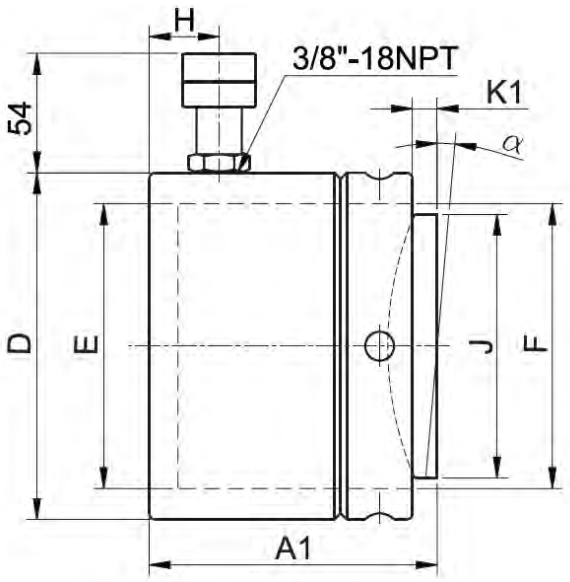
It's important to drop the pressure inside the cylinder bifore disconnecting the quick coupler to avoid problems if re-inserting or lowering the load.
In case some pressure persists it is possible to use the apposite tool KST38 in order to lower the pressure in the cylinder.

Although the standard tilt saddle allows to adjust the working load, it's suggested to avoid any side component especially if the cylinder is more than 20 mm of stroke.

● FORCE	60 - 900 t
● STROKE	50 mm
● MAX WORKING PRESSURE	700 bar

CGR

CILINDERS / LOAD RETURN WITH SAFETY NUT LOW PROFILE



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	CYLINDER BOTTOM PRESSURE	SADDLE PRESSURE	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER HEIGHT	Ø TILT SADDLE	ROD PROJECTION WITH INTEGRATED TILT SADDLE	TILT SADDLE ANGLE	WEIGHT
t* kN	mm	cm²	cm³	MPa	MPa		A1 mm	D mm	E mm	F mm	H mm	J mm	K1 mm	α	kg
60 606	50	86.6	433	39	100	CGR60N50	125	140	105	Tr 105x6	19	88	6	5°	16
110 1078		154	770	46	113	CGR110N50	137	178	140	Tr 140x10	19	118	8	5°	26
160 1589		227	1135	45	102	CGR160N50	148	218	170	Tr 170x10	19	148	9	5°	42
200 1985		283.6	1418	45	87	CGR200N50	154	242	190	Tr 190x10	20	176	10	5°	54
250 2424		346.3	1732	45	84	CGR250N50	159	268	210	Tr 210x10	22	196	11	5°	68
400 4008		572.6	2863	44	89	CGR400N50	178	347	270	Tr 270x10	27	248	11	4°	128
500 4948		706.9	3534	44	81	CGR500N50	192	385	300	Tr 300x10	30	285	10	3°	171
700 6735		962.1	4811	44	85	CGR700N50	200	445	350	Tr 350x10	30	325	10	3°	238
900 8796		1256.6	6283	47	83	CGR900N50	216	495	400	Tr 400x10	30	375	12	3°	315

* Nominal value, see kN for the exact force.

CGS#N / CGS#P

CYLINDERS / LOAD RETURN
STANDARD FOR HIGH TONNAGE

FEATURES

CGS cylinders also have concentric grooves machined into the end of the rod to improve load grip, models above 30 tonnes have lifting eyelets to facilitate their transport and positioning.

From 50 ton upwards, the cylinders are plunging type (**P version**) and have a system which prevents any possible over-stroke. The rod has a coloured zone which becomes visible 10 mm before the end of the piston stroke.

All models can operate with off-centred load up to 8% of their nominal capacity.

OPERATIONAL AREAS

These hydraulic cylinders are extremely solid and are recommended for the lifting, lowering and sustaining of a heavy load.

They are designed specifically strong in order to be usefull in applications which require very heavy loads to be lifted.

The anti-corrosion treatment applied to these cylinders makes them suitable.

OPTIONS

Stackable following chart at page 24.

- **T version**, cylinder with integrated tilt saddle.
- **F version**, cylinder with base mounting holes for fixing purposes.
- **N version**, (optional starting from 50 t) cylinders with end of stroke ring nut. This version is in compliance with **ANSI B30.1**.

ACCESSORIESES (p. 25)

- **ZTT tilt saddle** reduces the effects of any possible off-centred load.

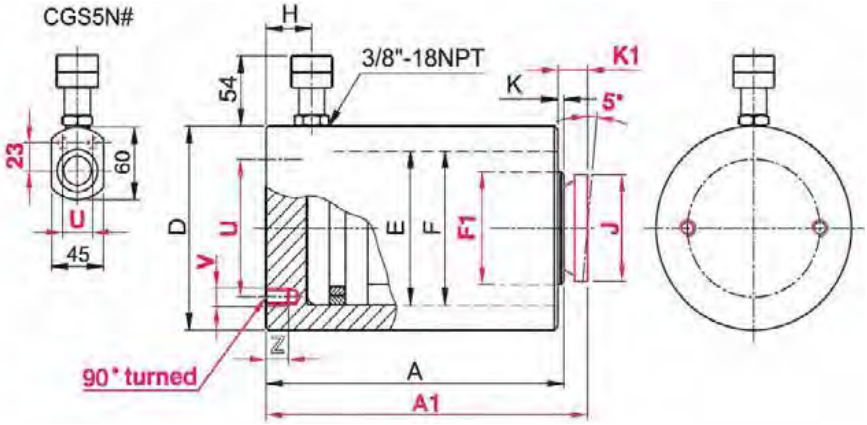
Where **P** version cylinders are being used the operator must always be in a position to observe when the coloured end of stroke section of the rod appears.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

● FORCE	5 - 500 t
● STROKE	15 - 300 mm
● MAX WORKING PRESSURE	700 bar

CGS#N / CGS#P

CYLINDERS / LOAD RETURN
STANDARD FOR HIGH TONNAGE



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.standard.

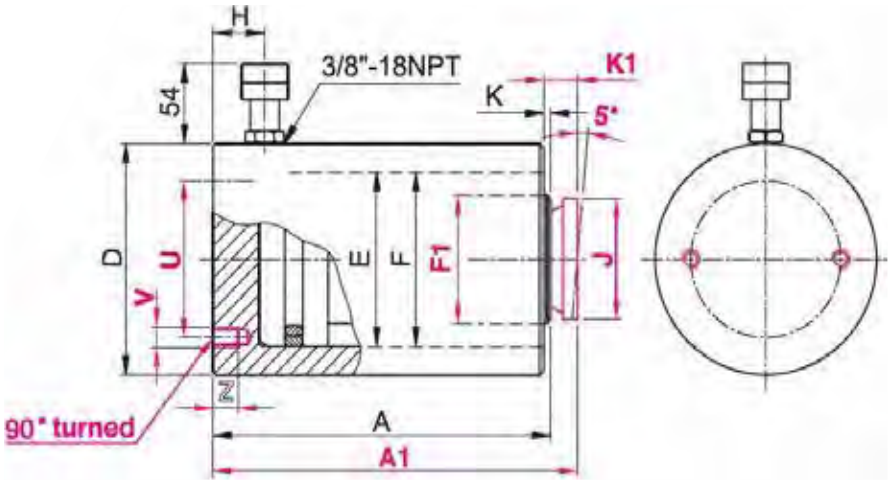
PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø P ROD VERSION	Ø N ROD VERSION	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
5 49,5	15	7.1	11	CGS5N15	45	-	60/45	30	-	24	19	-	1	-	30	2xM5 10	1
	50		35	CGS5N50	80												1.6
	80		56	CGS5N80	120												2.4
10 111	25	15.9	40	CGS10N25	72	75	75	45	-	35	19	34	1	4	25	2xM8 8	2.8
	50		80	CGS10N50	97	100											3.6
20 198	25	28.3	71	CGS20N25	75	80	88	60	-	45	19	43	1	6	60	2xM10 10	3.7
	50		141	CGS20N50	100	105											4.7
	100		283	CGS20N100	150	155											6.6
30 309	25	44.1	110	CGS30N25	86	90	102	75	-	55	19	53	1	5	65	2xM10 13	5.5
	50		221	CGS30N50	111	115											6.7
	100		442	CGS30N100	161	165											9.1
50 496	50	70.9	354	CGS50P50	122	127	127	95	95	80	22	68	1	6	95	2xM12 15	12
	100		709	CGS50P100	172	177											17
	150		1063	CGS50P150	222	227											22
100 929	50	132.7	664	CGS100P50	141	148	175	130	130	100	22	88	2	9	130	2xM12 17	27
	100		1327	CGS100P100	191	198											36
	150		1991	CGS100P150	241	248											46
150 1407	25	201	503	CGS150P25	137	146	213	160	160	120	30	118	3	12	130	4xM12 17	38
	50		1005	CGS150P50	162	171											45
	100		2011	CGS150P100	212	221											59
	150		3016	CGS150P150	262	271											73
	200		4021	CGS150P200	312	321											87
	250		5026	CGS150P250	362	371											101

* Nominal value, see kN for the exact force.

CGS#N / CGS#P

CYLINDERS / LOAD RETURN
STANDARD FOR HIGH TONNAGE

FORCE	30 - 500 t
STROKE	25 - 300 mm
MAX WORKING PRESSURE	700 bar



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø P ROD VERSION	Ø N ROD VERSION	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
200 1984	25	283.4	709	CGS200P25	151	160	252	190	190	150	32	148	3	12	140	4xM16 20	59
	50		1418	CGS200P50	176	185											69
	100		2835	CGS200P100	226	235											88
	150		4253	CGS200P150	276	285											108
	200		5670	CGS200P200	326	335											127
	250		7088	CGS200P250	376	385											147
	300		8506	CGS200P300	426	435											167
250 2424	25	346.3	866	CGS250P25	167	176	280	210	210	170	34	158	3	12	150	4xM16 20	81
	50		1732	CGS250P50	192	201											93
	100		3464	CGS250P100	242	251											117
	150		5195	CGS250P150	292	301											141
	200		6927	CGS200P200	342	351											165
	250		8659	CGS250P250	392	401											189
	300		10391	CGS250P300	442	451											213
300 2908	25	415.4	1039	CGS300P25	173	182	305	230	230	190	38	158	3	12	170	4xM16 20	99
	50		2077	CGS300P50	198	207											113
	100		4155	CGS300P100	248	257											142
	150		6232	CGS300P150	298	307											171
	200		8310	CGS300P200	348	357											199
	250		10387	CGS300P250	398	407											228
	300		12464	CGS300P300	448	457											257

* Nominal value, see kN for the exact force.

● FORCE	5 - 500 t
● STROKE	15 - 300 mm
● MAX WORKING PRESSURE	700 bar

CGS#N / CGS#P

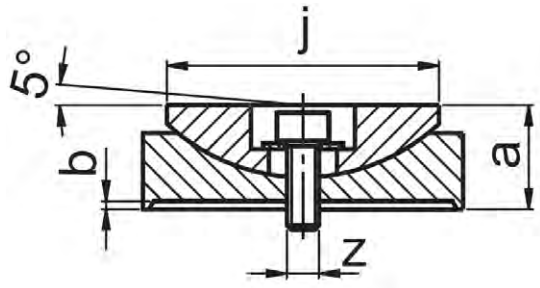
CYLINDERS / LOAD RETURN STANDARD FOR HIGH TONNAGE

SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø ROD VERSION P	Ø ROD VERSION N	COUPLER HEIGHT	Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	A1 mm	D mm	E mm	F mm	F1 mm	H mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
350 3436	25	490.9	1227	CGS350P25	180	192	332	250	250	210	39	196	3	15	200	4xM16 20	122
	50		2454	CGS350P50	205	217											139
	100		4909	CGS350P100	255	267											173
	150		7363	CGS350P150	305	317											207
	200		9817	CGS300P200	355	367											241
	250		12272	CGS350P250	405	417											275
	300		14726	CGS350P300	455	467											309
400 4008	25	572.6	1431	CGS400P25	187	199	356	270	270	230	42	196	3	15	230	4xM16 20	146
	50		2863	CGS400P50	212	224											165
	100		5726	CGS400P100	262	274											204
	150		8588	CGS400P150	312	324											244
	200		11451	CGS400P200	362	374											283
	250		14314	CGS400P250	412	424											322
	300		17177	CGS400P300	462	474											361
500 4948	25	706.9	1767	CGS500P25	195	207	396	300	300	250	50	196	3	15	250	4xM16 20	188
	50		3534	CGS500P50	220	232											212
	100		7069	CGS500P100	270	282											261
	150		10603	CGS500P150	320	332											309
	200		14137	CGS500P200	370	382											357
	250		17651	CGS500P250	420	432											406
	300		21206	CGS500P300	470	482											454

* Nominal value, see kN for the exact force.

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	j	z	kg
ZTT10	CGS10N # # #	16	1	34	M4	0.1
ZTT20	CGS20N # # #	18		43	M5	0.2
ZTT30	CGS30N # # #	19		53		0.3
ZTT50	CGS50 # # # #	25		68	M8	0.9
ZTT100	CGS100 # # # #	34	2	88	M10	1.7
ZTT150	CGS150 # # # #	45	3	118		3.4
ZTT200	CGS200 # # # #	54	3	148		7
ZTT250	CGS250 # # # #	58		158		9.5
ZTT300	CGS300 # # # #					11.3
ZTT350	CGS350 # # # #	71		196	M12	18
ZTT400	CGS400 # # # #					20.7
ZTT500	CGS500 # # # #					23.8

MODEL CODING

CGS	5	N	###	#
Series	Pushing force in **t**	**N** = with end of stroke nut **P** = with no end of stroke nut (plunging)	Stroke in **mm**	**F** = with base mounting holes **T** = with integrated tilt saddle **

** Cylinders with a FORCE below 100 tonne can be supplied subjet to a minimum.

CGS#D / CGS#T

CYLINDERS / LOAD RETURN TELESCOPIC DOUBLE OR TRIPLE STROKE

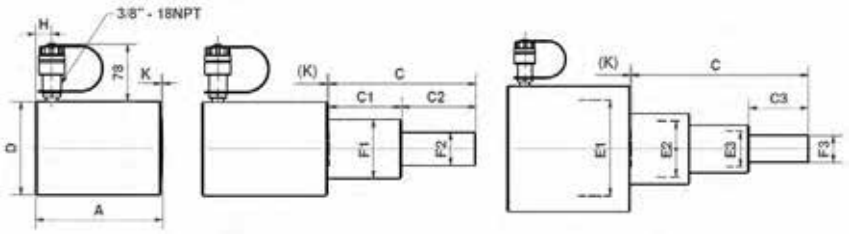
FORCE	5 - 50 t
STROKE	100 - 300 mm
MAX WORKING PRESSURE	700 bar

FEATURES

The hydraulic telescopic cylinders **CGS** are an efficient solution when you have very little space available below the load and when a long stroke is required.
They can be manufactured with double stroke (D) or with triple stroke (T).
Given the high expansion only the 3% of maximum side load is allowed.

OPERATIONAL AREAS

This type of cylinder has various applications, especially in lifting of machineries but it's considered very handy in areas with restricted space.



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

PUSHING FORCE			TOTAL STROKE	STROKE			OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON			Ø RODS			ROD PROJECTION	COUPLER HEIGHT	WEIGHT
1° Stroke	2° Stroke	3° Stroke		1° Stroke	2° Stroke	3° Stroke					1°	2°	3°	1°	2°	3°			
t* kN	t* kN	t* kN	C mm	C1 mm	C2 mm	C3 mm	cm³		A mm	D mm	E1 mm	E2 mm	E3 mm	F1 mm	F2 mm	F3 mm	K mm	H mm	kg
50 496	**20** 198	**5** 49,5	280	100	100	80	1045	**CGS5T280**	173	127	95	60	30	80	50	24	2	22	14
30 309	**10** 111	-	100	50	50	-	370	**CGS10D100**	111	102	75	62	-	45	35	-	1	19	6.5
100 929	**30** 309	**10** 111	300	100	100	100	1925	**CGS10T300**	191	175	130	75	45	100	62	35	2	22	30
30 309	**15** 137,5	-	300	150	150	-	955	**CGS15D300**	220	102	75	50	-	65	40	-	1	19	13
50 496	**20** 198	-	100	50	50	-	495	**CGS20D100**	122	127	95	60	-	80	45	-	1	22	11
50 496	**20** 198	-	200	100	100	-	990	**CGS20D200**	173	127	95	60	-	80	45	-	2	22	15
150 1407	**50** 496	**20** 198	300	100	100	100	3000	**CGS20T300**	212	213	160	95	60	120	80	45	3	30	49
100 929	**30** 309	-	200	100	100	-	1768	**CGS30D200**	190	175	130	75	-	100	55	-	1	22	30
75 727	**30** 309	-	300	150	150	-	2225	**CGS30D300**	271	155	115	75	-	100	60	-	2	28	36
150 1407	**50** 496	-	200	100	100	-	2718	**CGS50D200**	211	213	160	95	-	120	80	-	2	30	50
150 1407	**50** 496	-	300	150	150	-	4075	**CGS50D300**	261	213	160	95	-	120	80	-	2	30	59

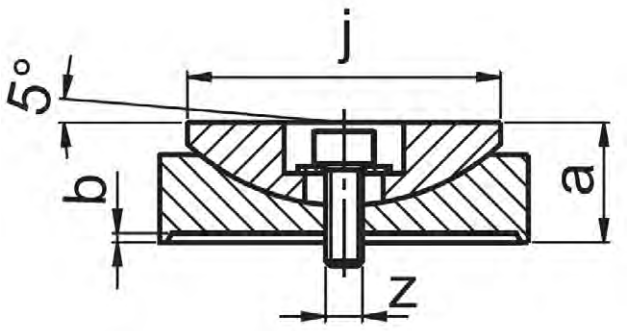
* Nominal value, see kN for the exact force.

● FORCE	5 - 50 t
● STROKE	100 - 300 mm
● MAX WORKING PRESSURE	700 bar

CGS#D / CGS#T

CYLINDERS / LOAD RETURN TELESCOPIC DOUBLE OR TRIPLE STROKE

ACCESSORIESES ZTT TILT SADDLES



They can **ONLY** be used up to the maximum pushing force of the last stroke.

MODEL	For use with	a	b	j	z	kg
ZTT10	CGS10 # # # #	16	1	34	M4	**0.1**
ZTT20	CGS20 # # # #	18		43	M5	**0.2**
ZTT30	CGS30 # # # #	19		53		**0.3**
ZTT50	CGS50 # # # #	25		68	M8	**0.9**

MODEL CODING

CGS	10	D	###
Series	Pushing Force in **t**	**D** = double stroke **T** = triple stroke	Stroke in **mm**

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems re-inserting or if lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

CMC

EXTRA FLAT CYLINDERS SPRING RETURN

FEATURES

The **CMC** range of cylinders have grooved end rods to improve the load grip, models over 20 tonne also have two threaded holes in the end rod to facilitate the screwing of the tilt saddle.
All models have two holes which allows the cylinder to be bolted down onto a work surface; their flat sides also allow them to be used horizontally.
Models over 5 tonne are fitted with a wiper seal and from 75 tonne upwards they are fitted with a removeable carrying handle.
The **CMC5N6** model is supplied with a **K71F** coupler (**1/4"- 18 NPT** connection).

OPERATIONAL AREAS

These extra compact lightweight cylinders are the ideal solution to operate in the narrowest working areas.
They are used for the lifting of machineries, transformers and bridge sections while in the ship building industry can be used to raise engines into position and remove propellers.

ACCESSORIES (p. 29)

- **ZTT tilt saddle** reduces the effects of any possible off-centred load.

STANDARD

- Tilt saddle mounting **holes**.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

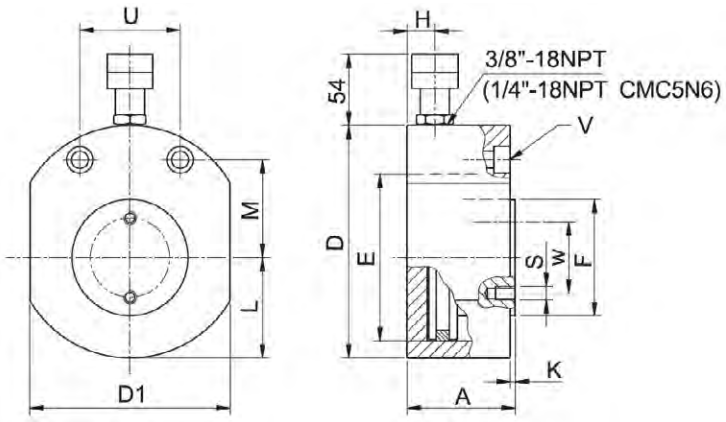
For the lifting of machineries from a very low position it can be also used our product **UJ**.

Thanks to their dimensions **PS** and **PNP** hand pumps are raccommended to operate with these cylinders.

● FORCE	5 - 150 t
● STROKE	6 - 15 mm
● MAX WORKING PRESSURE	700 bar

CMC

EXTRA FLAT CYLINDERS SPRING RETURN

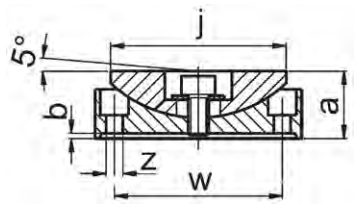


SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	EXTERNAL DIMENSION	Ø PISTON	Ø ROD	COUPLER HEIGHT	ROD PROJECTION	DISTANCE FROM ROD AXIS TO THE EXTERNAL Ø	DISTANCE FROM THE MOUNTING HOLES TO THE ROD AXIS	DISTANCE BETWEEN THE MOUNTING HOLES CENTRES	THROUGH HOLES FOR ISO - 4762 SCREWS	PCD MOUNTING HOLES FOR THE TILT SADDLE	MOUNTING HOLES FOR THE TILT SADDLE	WEIGHT
t*	mm	cm²	cm³		A mm	D mm	D1 mm	E mm	F mm	H mm	K mm	L mm	M mm	U mm	V mm	W mm	S mm	kg
5 49,5	6	7.1	4	CMC5N6 **	33	59	41	30	24	16	1	20.5	22.5	28.5	M5	-	-	0.6
	15		11	CMC5N15	42					19								0.8
10 111	10	15.9	16	CMC10N10	43	78	58	45	35	19	1	29	34	37	M6	-	-	1.6
20 198	10	28.3	28	CMC20N10	52	100	76	60	45	19	1	39	40	50	M10	-	-	2.8
30 309	10	44.1	44	CMC30N10	59	115	95	75	55	19	1	48	44	52	M10	44	2xM5	4.2
50 496	15	70.9	106	CMC50N15	68	143	120	95	80	19	1	60	54	67	M12	65	2xM6	6.9
75 727	15	103.9	156	CMC75N15	80	166	142	115	100	19	2	71	67	76	M12	65	2xM6	12
100 929	15	132.7	199	CMC100N15	86	178	160	130	100	20	2	80	75	76	M12	65	2xM6	14.5
150 1407	15	201	302	CMC150N15	100	217	194	160	120	23	2	97	83	117	M12	80	2xM6	24.5

* Nominal value, see kN for the exact force. / ** CMC5N6 with K71F (1/4" NPT).

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	j	z	w	kg
ZTT30	CMC30N10	19	1	53	5.5	44	0.3
ZTT50	CMC50N15	25	1	68	6.5	65	0.9
ZTT100	CMC75N15 / CMC100N15	34	2	88			1.7
ZTT150	CMC150N15	45	3	118		80	3.4

CMF#N / CMF#L

STEEL AND ALUMINIUM HOLLOW PISTON CYLINDERS

FEATURES

All the **CMF** cylinder series are supplied with a smooth hollow saddle and the cylinder body, rod and bottom are threaded to facilitate the fixing and fitting of eventual Accessories.
The end of stroke nut has a wiper seal which prevents the penetration of dirt inside the cylinder.
Cylinders are supplied with anti-corrosive treatment which is very effective to protect the central bore.

OPERATIONAL AREAS

These cylinders are recommended for tensioning and for the extractiong of pulleys, bushes and heat exchangers. They can also be used in both pulling and pushing operations by inserting either a bar or a cable through the hollow saddle.

ACCESSORIES (p. 31)

ZTE threaded saddle allows the fitting of threaded bars usually for extractors (**UEC / UEG / UEZ / UET series**).

OPTIONS

- **L version,** cylinders with aluminium body (**CMF###L###**).

STANDARD

- **Smooth hollow saddle** prevents any risk of any possible rod deformation.

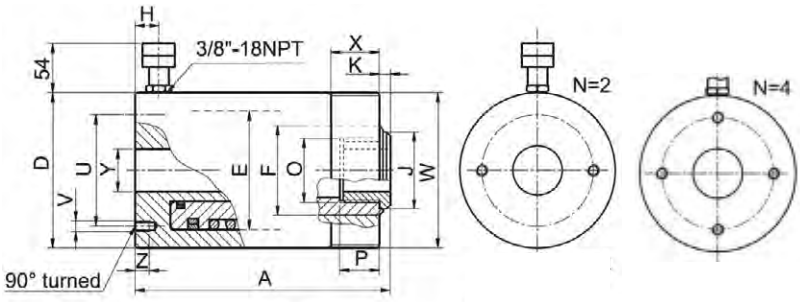
EUROPRESS technical department is available to design special customised solutions.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

FORCE	10 - 100 t
STROKE	8 - 160 mm
MAX WORKING PRESSURE	700 bar

CMF#N / CMF#L

STEEL AND ALUMINIUM HOLLOW PISTON CYLINDERS SPRING RETURN

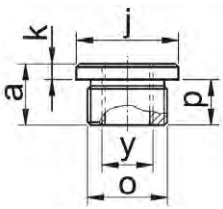


SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL VERSION N Ø EXTERNAL VERSION L	Ø PISTON	Ø ROD	COUPLER HEIGHT	Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	COLLAR THREAD	COLLAR THREAD LENGTH	Ø THROUGH HOLE	WEIGHT VERSION N	WEIGHT VERSION L
t* kN	mm	cm²	cm³		A mm	D mm	E mm	F mm	H mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W mm	X mm	Y mm	kg	kg
10 123	8	17.6	14	CMF10N8	55	80 / -	55	38	-	-	-	-	-	-	-	-	-	21.5	2.3	-
	50		88	CMF10N50	132	74 / 75		40	19	34.5	1	M30 x1,5	16	50.8	2xM8 8	M74 x2	20	21	3.8	2.5
	80		141	CMF10N80	176														4.8	3.1
20 230	50	32.9	164	CMF20N50	150	100 / 105	75	56	19	47.5	2	M40 x1,5	24	82.6	2xM8 10	M100 x2	20	28	7.8	5.3
	100		328	CMF20N100	221														10.7	7.4
	160		525	CMF20N160	305														14.1	9.5
22	8	30.3	24	CMF22N8	60	100 / -	75	55	-	-	-	-	-	-	-	-	-	33	3.5	-
30 334	50	47.7	239	CMF30N50	160	115 / 125	90	65	21	57.5	2	M48 x1,5	32	92.2	2xM10 12	M115 x2	20	34	10.5	8.1
	100		477	CMF30N100	233														14.5	11
	150		716	CMF30N150	303														18.1	13.6
60 590	75	84.3	632	CMF60N75	219	165 / 180	125	90	26	81.5	2	M72 x1,5	40	130.2	2xM12 16	M165 x4	25	54.5	28.9	21.4
	150		1264	CMF60N150	331														39.9	28.6
100 947	75	135.3	1015	CMF100N75	270	215 / 235	165	125	36	117.5	4	M102 x1,5	55	130	4xM12 15	M215 x4	35	80.5	59.3	44.6

* Nominal value, see kN for the exact force.

ACCESSORIES ZTE THREADED SADDLES



MODEL	For use with	a	k	j	p	y	o	kg
ZTE10	** CMF10 # # # #	20	4	34.5	16	3/4" - 16 UNC	M30x1,5	0.1
ZTE20	CMF20 # # # #	30	6	47.5	24	1" - 8 UNC	M40x1,5	0.25
ZTE30	CMF30 # # # #	39	7	57.5	32	1 ¼" - 7 UNC	M48x1,5	0.32
ZTE60	CMF60 # # # #	47	7	81.5	40	1¼" - 5 ½ UNS	M72x1,5	0.85

** Except CMF10N8.

MODEL CODING

CMF	10	N	###
Series	Pushing Force in **t**	**N** = steel **L** = alluminium	Stroke in **mm**

CMF#NJ

SPRING RETURN CYLINDERS WITH HOLLOW PISTON FOR BARRIERS TYPE NEW JERSEY AND GUARD-RAILS

INTRODUCTION AND OPERATIONAL AREAS

When considering new Jersey and guard-rail systems we have two possible solutions: the **CMF22N008** model, used to verify and test them with traction cells,which uses M16/M20/M24 studs or the **CMF20N50** model, used to verify, test and extract them via cylinder, which uses M16/M20/M24/M27/M30 studs.

Both during the instllation and the exercise of the studs it's necessary to verify them through traction tests in order to prove their adherence to concrete and the integrity of the material.
To this purpose the Europress system allows to fulfill simple and efficient tensile strength tests.
The system is composed of a traction load cell **CMF22N8G** constituted by a simple effect spring return hollow ram cylinder, with a nominal capacity of a maximum of 212 kN at 700 bars, 8 mm of stroke, firmly connected to a gauge and provided with a quick female coupler combined with a pump which generates hydraulic pressure.

This traction cell constitutes an instrument to measure the force applied on the stud while testing.
If calibrated as a measurement instrument it can be used also to redact calibration certificated tests.

Depending on the different applications required the set can be equipped with ancillaries which are useful to the traction of studs of M16, M20, M24 diameter. Moreover it can be used a longer M20 diameter version for the traction of studs fixed on steel New Jersey barriers.
The cylinder is activated by a **PNP130** (or **PN131**) hand pump and a flexible hose **SN20M** with a male coupler on top.

The pump is connected thanks to the male coupler fixed on one side of the hose which is connected to the female coupler fixed on the cylinder.
The hollow ram cylinder, thanks to its through hole, allows the passage of the tie-rod of appropriate dimension in order to screw it on the stud itself.

Extending the piston of the cylinder, a tensile force, proportional to the pressure generated by the pump, is exerted on the stud.

The gauge thus allows to verify the force exerted on the stud.

FORCE	10 - 20 t
STROKE	8 - 50 mm
MAX WORKING PRESSURE	700 bar

CMF#NJ

SPRING RETURN CYLINDERS WITH HOLLOW PISTON FOR BARRIERS TYPE NEW JERSEY AND GUARD-RAILS

SET CHOICE

The load cell **CMF22N8G** is suitable for all the sets and it's adjustable to certify the extent of the applied force. The set **CMF22N8S1624NJC**, which is available in our stock, includes all the necessary articles to compose the illustrated variants, in particular:

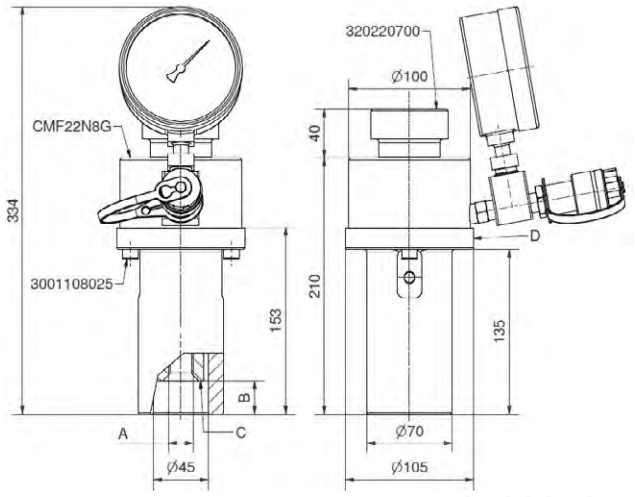
- 1 pcs. Load cell CMF22N8G.
- 1 pcs. Base 320220820.
- 1 pcs. Extended base 320200821 for barriers type New.

Jersey in steel:

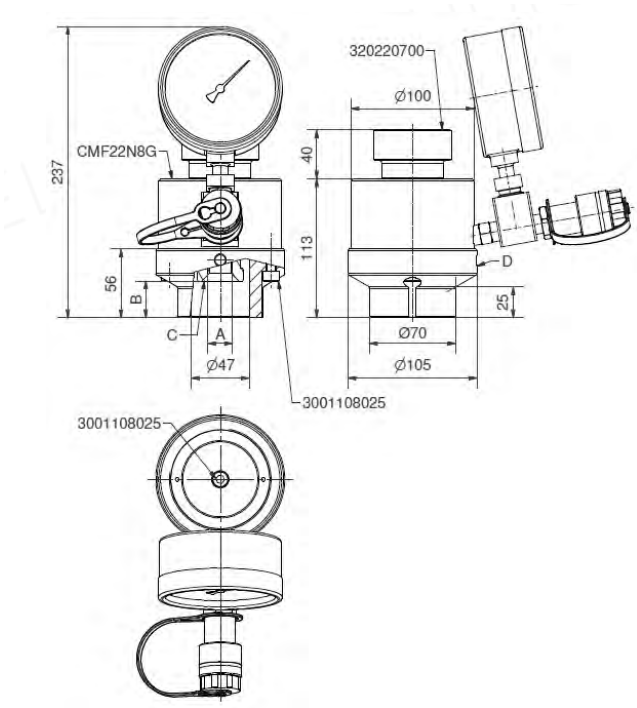
- 3 pcs. Screws 3001108025.
- 1 pcs. Knub 320220700.
- 1 pcs. Puller M16 320220716.
- 1 pcs. Puller M20 320220720.
- 1 pcs. Puller M20 long 320220721 for extended base.
- 1 pcs. Puller M24 320220724.

The components of the set are illustrated in the attached drawing.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.



CMF22N8S20NJL



CMF22N8S16NJ / CMF22N8S20NJ / CMF22N8S24NJ

SELECTION CHART

MODEL	A	B	C (puller code)	D (base code)	kg
CMF22N8S16NJ	M16	27	320220716	320220820	8.3
CMF22N8S20NJ	M20	30	320220720	320220820	8.3
CMF22N8S20NJL	M20	27	320220721	320200821	9.6
CMF22N8S24NJ	M24	30	320220724	320220820	8.3
CMF22N8S1624NJC	M16 / M20 / M24	27 / 30	-	-	-

CMF#NJ

HOLLOW PISTON FOR NEW JERSEY BARRIERS TYPE AND GUARD-RAILS

INTRODUCTION AND OPERATIONAL AREAS

The Europress system model **CMF22N50S##NJ** is used to verify and test the studs in New Jersey barriers and guard rails.

The barriers both New Jersey, steel or concrete, and the guard rails are fixed to the road thanks to studs which generally have M16, M20, M24, M27 and M30 dimensions.

Both during the installation and the exercise of the studs it's necessary to verify them through traction tests in order to prove their adherence to concrete and the integrity of the material.

To this purpose the Europress system allows to fulfill simple and efficient tensile strength tests.
The system is composed of a traction load cell **CMF22N50** constituted by a simple effect spring return hollow ram cylinder, with a nominal capacity of a maximum of 230 kN at 700 bars, 50 mm of stroke, firmly connected to a gauge and provided with a quick female coupler combined with a pump which generates hydraulic pressure.

This traction cell constitutes an instrument to measure the force applied on the stud while testing.

If calibrated as a measurement instrument it can be used also to redact calibration certificated tests.

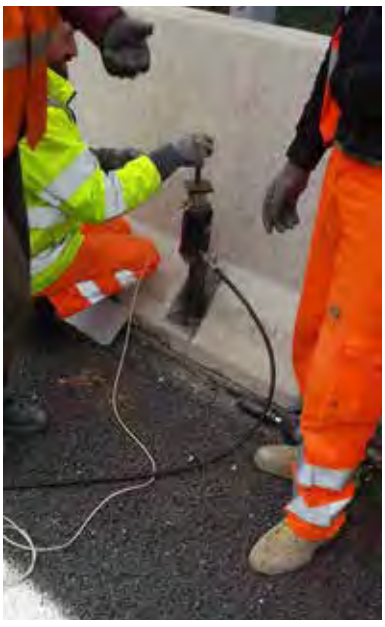
Depending on the different applications required the set can be equipped with ancillaries which are useful to the traction of studs of M16, M20, M24, M27 and M30 diameter. Moreover it can be used a longer M20 diameter version for the traction of studs fixed on steel New Jersey barriers.
The cylinder is activated by a **PNP130G** (or **PN131G**) hand pump and a flexible hose **SN20M** with a male coupler on top.

The pump is connected thanks to the male coupler fixed on one side of the hose which is connected to the female coupler fixed on the cylinder.

The hollow ram cylinder, thanks to its through hole, allows the passage of the tie-rod of appropriate dimension in order to screw it on the stud itself.

Extending the piston of the cylinder, a tensile force, proportional to the pressure generated by the pump, is exerted on the stud.

The gauge allows at last to verify and control the force exerted on the stud.



CMF#NJ
HOLLOW PISTON FOR NEW JERSEY BARRIERS TYPE AND GUARD-RAILS

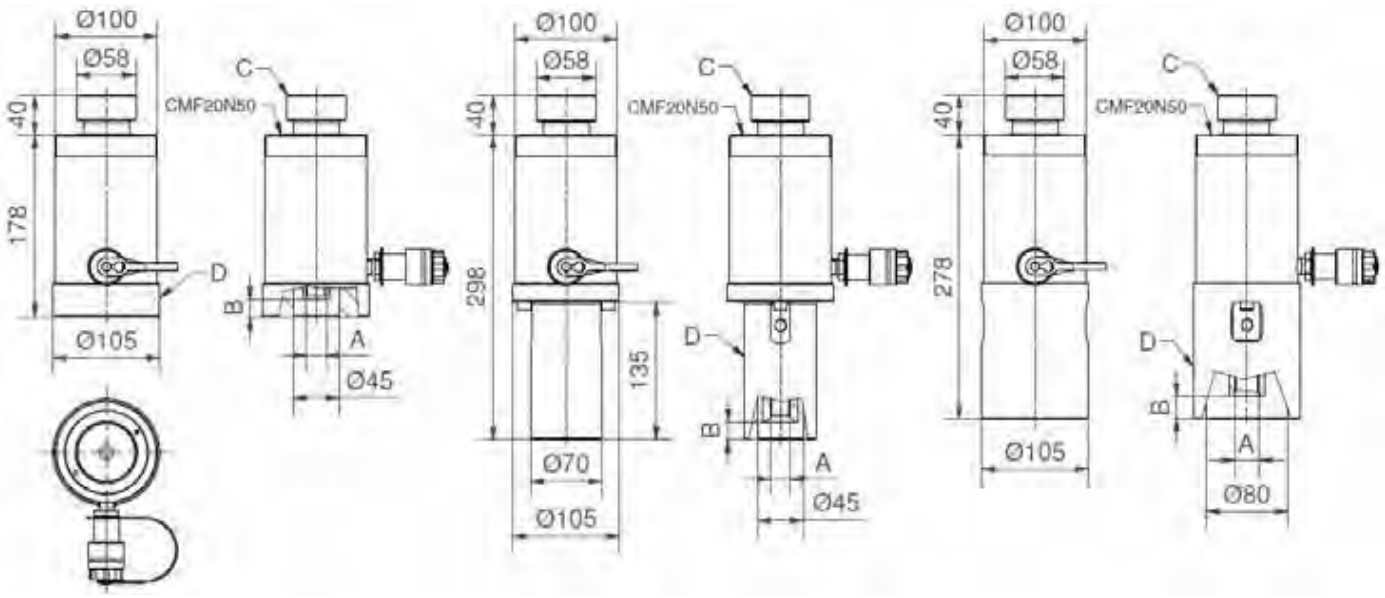
HOW TO CHOOSE A SET

The CMF20N50 cylinder is suitable for every set. All the sets can be supplied as single sets or it's also available a set which includes them all, it's the **CMF20N50S1630NJC**, more specifically:

- 1 pcs. Cylinder CMF20N50.
- 1 pcs. 320200820 hollow spacer for open M16 ed M20 New Jersey barriers.*
- 1 pcs. 320200821 extended spacer for enclosed M20 New Jersey barriers.**
- 1 pcs. 320200824 extended spacer for Guard-Rails M20**, M24, M27 ed M30.***
- 2 pcs. Screw 3001108025.
- 1 pcs. Screw 3001108180.
- 1 pcs. Rod M16 320200716.*
- 1 pcs. Rod M20 320200720.*
- 1 pcs. M20 320200721 extension for estended base.**
- 1 pcs. Adaptor M20 320200720E.**
- 1 pcs. Adaptor M24 320200724.***
- 1 pcs. Adaptor M27 320200727.***
- 1 pcs. Adaptor M30 3202007230.***

The components of the set are illustrated in the drawing underneath.

* Allows the total extraction of the M16 with the nut, tests with M20 on 10 mm with nut or total extraction without the nut. Maximum applicable force 110 kN.
**Maximum applicable force with M20 110kN rod.
*** Maximum applicable force with M24, M27 ed M30 80kN rod.



CMF20N50S16/20NJ | CMF20N50S20NJL | CMF20N50S20/24/27/30NJ

SELECTION CHART

MODEL	A	B	C (puller code)	D (base code)	kg
CMF20N50S16NJ	M16	20	320200716	320200820	9.5
CMF20N50S20NJ	M20	20	320200720	320200820	9.5
CMF20N50S20NJL	M20	20	320200720 + 320200721	320200821	10.8
CMF20N50S20NJ	M20	25	320200720 + 320200720E	320200824	11
CMF20N50S24NJ	M24	25	320200720 + 320200724	320200824	11
CMF20N50S27NJ	M27	25	320200720 + 320200727	320200824	11
CMF20N50S30NJ	M30	25	320200720 + 320200730	320200824	11
CMF20N50S1630NJC	M16 / M20 / M24 / M27 / M30	20 / 25	-	-	-

CMI#N / CMI#W

MULTI-PURPOSE CYLINDERS SPRING RETURN WITH METRIC AND IMPERIAL THREAD

FEATURES

All the CMI cylinders have collar threads on the cylinder body and mounting holes in the base.
They are supplied with an interchangeable grooved pushing saddle and models above 30 tonne are supplied with a handle for the carrying.
A wiper seal is fitted on models above 5 tonne to prevent the penetration of dirt and to extend the life of the cylinder.

STANDARD

- Base mounting **holes**.
- **Pushing saddle** prevents any risk of rod deformation.

ACCESSORIES

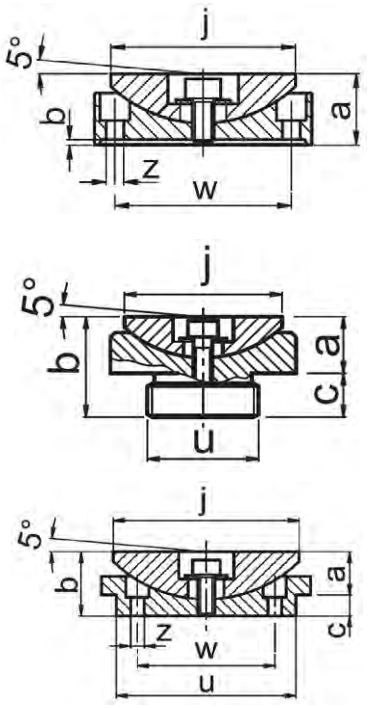
- **ZTT tilt saddle** reduces the effects of any possible off-centred load.
- **Base plates ZAB**.
- **Clevis eyes. ZAR** and **ZAE**.

OPERATIONAL AREAS

These cylinders can be operated in any position and are extremely versatile and suitable for different applications, including industrial works, steel structural works, presses and special applications.

The nitride treatment gives these cylinders an excellent resistance to corrosion and makes them particularly suitable to operate in the open air or in aggressive environments.

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a mm	b mm	c mm	j mm	u mm	z mm	w mm	kg
ZTT10	CMI10N25	16	1	-	34	-	5.5	24	0.1
ZTT11	CMI10N # # #	9	21	12	34	M24x2	-	-	0.1
ZTT11W	CMI10W # # #	9	21	12	34	1" - 8	-	-	0.1
ZTT31	CMI25N # # #	16	30	14	53	M32x2	-	-	0.3
	CMI30N210								
ZTT31W	CMI25W # # #	16	30	14	53	1 ½" - 16	-	-	0.3
ZTT51	CMI50 # # # #	18	26	8	68	65	5.5	45	0.8
ZTT101	CMI100 # # # #	22	32	10	88	85	6.5	65	1.6

The **CMI#W** cylinder version can be purchased starting from a minimum of 10 pieces.

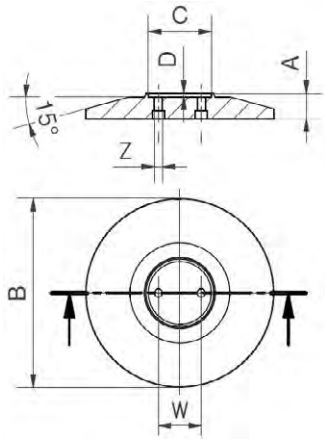
It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38** in order to lower the pressure in the couplers.

To operate with these cylinders the **MD** power units are particularly suitable.

CMI#N / CMI#W

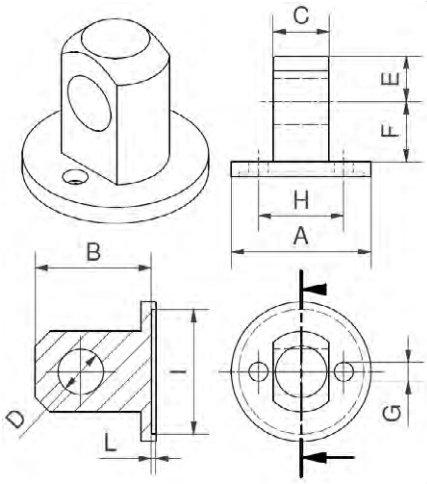
MULTI-PURPOSE CYLINDERS SPRING RETURN WITH METRIC AND IMPERIAL THREAD

ACCESSORIES ZAB BASE PLATES



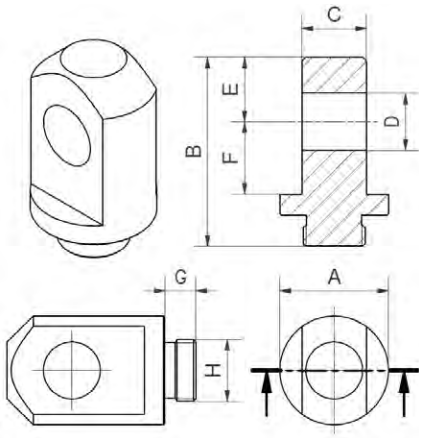
MODEL	For use with	A mm	B mm	C mm	D mm	Z mm	W mm	kg
ZAB5	CMI5N # # # CMI5W # # #	35	215	40	5	7	25	6.4
ZAB10	CMI10N # # # CMI10W # # #	35	235	60	5	9	39	7.9
ZAB25	CMI25N # # # CMI25W # # #	35	255	85	5	11	58	9.5

ACCESSORIES ZAR BASE CLEVIS EYES



MODEL	For use with	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	L mm	kg
ZAR5	CMI5N # # #	Ø45	47	14	Ø16	16	25	Ø7	Ø25	Ø40	4	0.2
ZAR10	CMI10N # # #	Ø65	66	25	Ø22	25	35	Ø8,5	Ø39	Ø60	4	0.6
ZAR25	CMI25N # # #	Ø95	79	38	Ø31	31	41	Ø13	Ø58	Ø85	3	1.3
ZAR5W	CMI5W # # #	Ø45	47	14	Ø16	16	25	Ø7	Ø25	Ø38	4	0.2
ZAR10W	CMI10W # # #	Ø65	66	25	Ø22	25	35	Ø8,5	Ø39	Ø57	4	0.6
ZAR25W	CMI25W # # #	Ø95	79	38	Ø31	31	41	Ø13	Ø58	Ø84	3	1.3

ACCESSORIES ZAE#M PLUNGER CLEVIS EYES

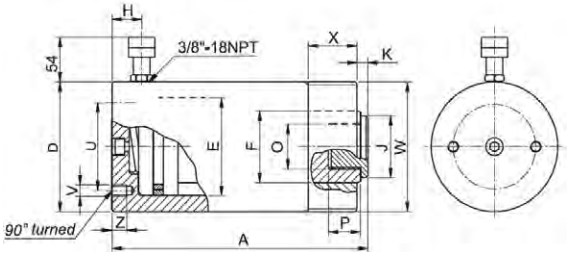


MODEL	For use with	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	kg
ZAE5M	CMI5N # # #	Ø28	55	14	Ø16	16	19	10	M16 x2	0.15
ZAE10M	CMI10N # # #	Ø42	73	25	Ø22	25	28	12	M24 x2	0.45
ZAE25M	CMI25N # # #	Ø57	85.5	38	Ø31	31	35	14.5	M32 x2	1
ZAE5MW	CMI5W # # #	Ø28	55	14	Ø16	16	19	10	3/4" - 16	0.15
ZAE10MW	CMI10W # # #	Ø42	73	25	Ø22	25	28	12	1" - 8	0.45
ZAE25MW	CMI25W # # #	Ø57	85.5	38	Ø31	31	35	14.5	1 ½" - 16	1

CMI#N

MULTI-PURPOSE CYLINDERS SPRING RETURN WITH METRIC THREAD

FORCE	5 - 100 t
STROKE	25 - 350 mm
MAX WORKING PRESSURE	700 bar



SELECTION CHART

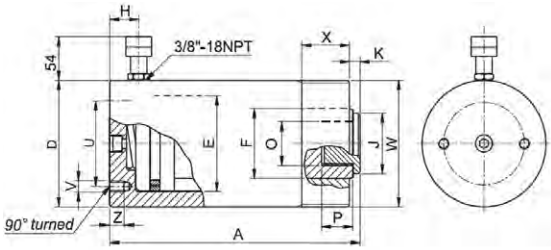
PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER HEIGHT	Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	COLLAR THREAD COLLAR LENGTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	D mm	E mm	F mm	H mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W / X mm	kg
5 49,5	25	7.1	18	CMI5N25	92	40	30	25	19	24.5	2	M16x1,5	14	25	2xM6 10	M40x1,5 28	1.1
	50		35	CMI5N50	117												1.3
	75		53	CMI5N75	142												1.5
	125		88	CMI5N125	202												1.9
	175		124	CMI5N175	252												2.3
	225		159	CMI5N225	302												2.7
10 111	25	15.9	40	CMI10N25	83	60	45	35	19	33 ¤	1 ¤	-	-	39	2xM8 12	M60x1,5 28	2
	50		80	CMI10N50	120					34	5	M24x2	15				2.6
	100		159	CMI10N100	170												3.5
	150		238	CMI10N150	245												4.7
	200		318	CMI10N200	295												5.6
	250		398	CMI10N250	345												6.5
	300		477	CMI10N300	408	65			33								9.3
	350		557	CMI10N350	458												10
25 232	25	33.4	83	CMI25N25	119	85	65	55	19	53	9	M32x2	16	58	2xM10 14	M85x2 40	4.6
	50		166	CMI25N50	144												5.3
	100		332	CMI25N100	214												7.5
	150		498	CMI25N150	264												8.8
	200		664	CMI25N200	314												10.2
	250		830	CMI25N250	364												11.6
	300		996	CMI25N300	414												13
	350		1161	CMI25N350	464												15
30 309	210	44.1	928	CMI30N210	386	102	75	55	47	53	9	M32x2	16	-	-	3 5/16" -12 49	18.4
50 496	50	70.9	354	CMI50N50	164	127	95	80	25	65	4	M16	12	95	2xM12 18	M125x2 40	14.2
	100		709	CMI50N100	214												17.4
	150		1063	CMI50N150	264												20.8
	325		2304	CMI50N325	439												32.6
100 929	100	132.7	1327	CMI100N100	246	175	130	100	26	85	4	M16	17	140	2xM12 18	M168x2 51	39.6
	150		1991	CMI100N150	296												46

* Nominal value, see kN for the exact force. / **Mountingholes forZTT10 tilt saddle.

● FORCE	5 - 100 t
● STROKE	25 - 325 mm
● MAX WORKING PRESSURE	700 bar

CMI#W

MULTI-PURPOSE CYLINDERS, SPRING RETURN WITH IMPERIAL THREAD



SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER HEIGHT	Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH FORI	COLLAR THREAD COLLAR LENGTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	D mm	E mm	F mm	H mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W / X mm	kg
5 43	25	6.1	15.5	**CMI5W25**	105	38	28	25	19	24.5	5	3/4" - 16	16	25	2xM6 10	1 ½" - 16 28	1.1
	50		31	**CMI5W50**	130												1.3
	75		46	**CMI5W75**	155												1.5
	100		61.7	**CMI5W100**	180												1.7
	125		77	**CMI5W125**	205												1.9
	150		92.4	**CMI5W150**	230												2.1
10 97	25	13.9	34.7	**CMI10W25**	97	57	42	35	19	34	7	1" - 8	19	39	2xM8 12	2 ¼" - 14 28	2.2
	50		69.3	**CMI10W50**	122												2.7
	75		104	**CMI10W75**	147												3.2
	100		139	**CMI10W100**	172												3.7
	125		173.2	**CMI10W125**	197												4.2
	150		208	**CMI10W150**	222												4.7
15 149	25	21.2	53	**CMI15W25**	113	69	52	42	19	40	8	1" - 8	25	47	2xM8 12	2 ¾" - 16 30	3.3
	50		106.2	**CMI15W50**	138												3.8
	75		159.3	**CMI15W75**	163												4.4
	100		212.4	**CMI15W100**	188												5
	125		265.5	**CMI15W125**	238												5.6
	150		318.6	**CMI15W150**	263												6.3
	175		371.7	**CMI15W175**	288												7
	200		424.8	**CMI15W200**	313												7.6
25 232	25	33.4	83	**CMI25W25**	122	84	65	55	19	53	9	1 ½" - 16	25	58	2xM10 14	3 5/16" - 12 49	5.1
	50		166	**CMI25W50**	147												5.7
	100		332	**CMI25W100**	217												7.7
	150		498	**CMI25W150**	267												9
	200		664	**CMI25W200**	317												10.4
	250		830	**CMI25W250**	367												11.8
	300		996	**CMI25W300**	417												13.1
50 496	50	70.9	354	**CMI50W50**	164	127	95	80	25	65	4	M16	12	95	2xM12 18	5" - 12 55	14.2
	100		709	**CMI50W100**	214												17.4
	150		1063	**CMI50W150**	264												20.8
	325		2304	**CMI50W325**	439												32.6
100 929	100	132.7	1327	**CMI100W100**	246	175	130	100	26	85	4	M16	17	140	2xM12 18	6 7/8" - 12 65	39.6
	150		1991	**CMI100W150**	296												46

The CMI#W cylinder version can be purchased starting from a minimum of 10 pieces.

* Nominal value, see kN for the exact force.

CML

SPRING RETURN ALUMINIUM CYLINDERS

FEATURES

Five models of this type of cylinder are manufactured in a high resistance aluminium cylinder body (and end of stroke nut for 100 tonne) with a protective treatment, to increase the resistance to corrosion. Wiper seals are fitted to prevent the penetration of dirt.
It's recommended to carefully avoid, despite the protective treatment, the eventual flow of water which, due to the galvanic currents, can deteriorate the surface.
Given the sensitivity of the material to work stress we suggest a maximum use of 5000 work cycles.

All models are supplied with interchangeable grooved pushing saddle and have two lateral threaded holes to enable the mounting of a tilt saddle to reduce the effects of any side loading.
They are also fitted with a removable carry handle.

OPERATIONAL AREAS

Because of their extremely low weight and dimensions these cylinders are particularly suitable for use in applications where lightness and ease of handling are paramount.

ACCESSORIES

- **Separate ZTT tilt saddle** (p. 41)
  Reduces the effects of possible off-centre loads.

STANDARD

Pushing saddle
Prevents any risk of rod deformation.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

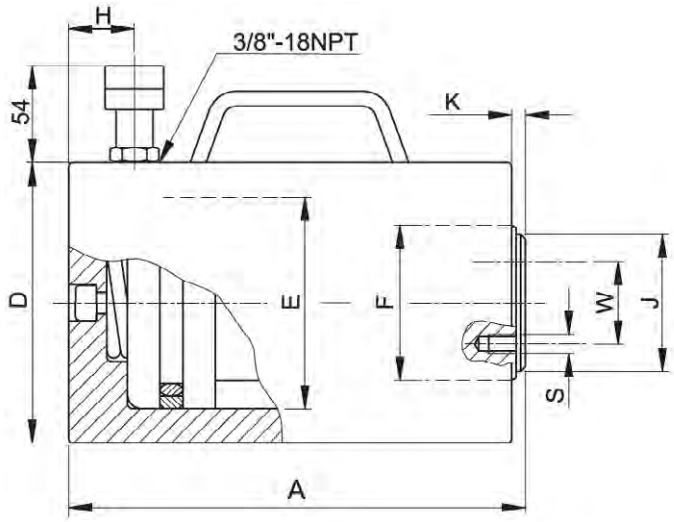
The **CML** cylinders accompanied with the **PN** pumps form a handy, simple and efficient set.

Follow EUROPRESS safety instructions see useful pages (p.176).

● FORCE	50 - 100 t
● STROKE	50 - 150 mm
● MAX WORKING PRESSURE	700 bar

CML

SPRING RETURN ALUMINIUM CYLINDERS



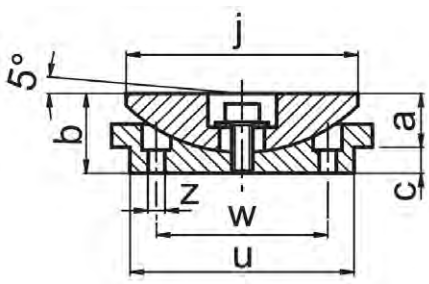
SELECTION CHART

Cylinder with non standard force and stroke can be supplied upon request.

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER HEIGHT	Ø HOLLOW SADDLE	ROD PROJECTION	PCD MOUNTING HOLES FOR THE TILT SADDLE	MOUNTING HOLES FOR THE TILT SADDLE	WEIGHT
t* kN	mm	cm²	cm³		A mm	D mm	E mm	F mm	H mm	J mm	K mm	W mm	S mm	kg
50 496	50	70.9	354	**CML50N50**	158	130	95	80	25	65	4	45	2xM5	8.8
	100		709	**CML50N100**	208									10.8
	150		1063	**CML50N150**	258									12.7
100 929	50	132.7	664	**CML100N50**	196	178	130	100	25	85	4	65	2xM6	19.4
	100		1327	**CML100N100**	246									22.6
	150		1991	**CML100N150**	296									25.8

* Nominal value, see kN for the exact force.

ACCESSORIES ZTT TILT SADDLES



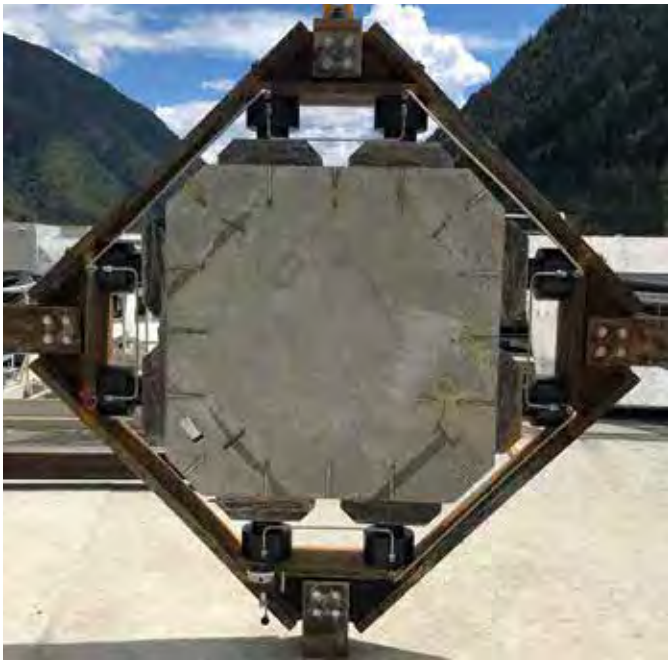
MODEL	For use with	a	b	c	j	u	z	w	kg
ZTT51	CML50N # # #	18	26	8	68	65	5.5	45	0.8
ZTT101	CML100N # # #	22	32	10	88	85	6.5	65	1.6

CMP

LOW PROFILE CYLINDERS WITH SHORT STROKE SPRING RETURN

FEATURES

Their main feature is their long stroke compared to their shortness, the **CMP** cylinders represent the widest range of low profile spring return cylinders.
All cylinders have a grooved rod top and two threaded holes for the mounting of the tilt saddle.
Holes at the bottom of the cylinder are available as an extraand the wiper avoids the prenetration of dirt.



OPERATIONAL AREAS

The small dimensions and the complete treatment against corrosion makes these cylinders ideal for lifting, levelling, supporting and pressing operations in restricted working areas and/or harsh environments.
General maintenance work, industrial assembly and construction are among the most common applications for this type of cylinder.

ACCESSORIES

- **Separate ZTT tilt saddle** (p. 43)
  Reduces the effects of possible off-centred loads.

STANDARD

- Tilt saddle mounting **holes**.

OPTIONS

- **F version**
  Cylinder with base mounting holes for fixing purposes.

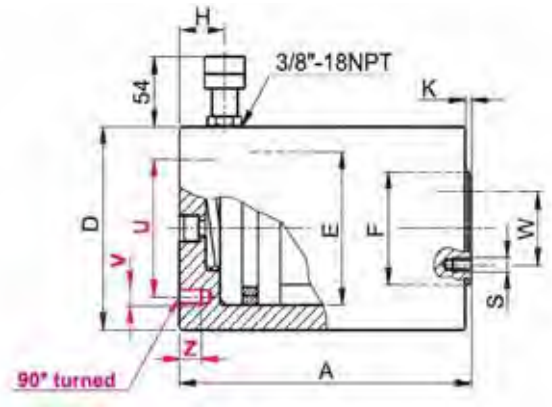
It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

Follow EUROPRESS safety instructions see useful pages (p. 176).

● FORCE	10 - 100 t
● STROKE	25 - 50 mm
● MAX WORKING PRESSURE	700 bar

CMP

LOW PROFILE CYLINDERS, WITH SHORT STROKE SPRING RETURN

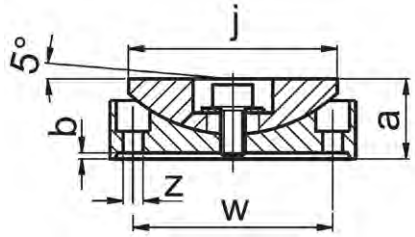


SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER HEIGHT	ROD PROJECTION	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	COLLAR THREAD	MOUNTING HOLES FOR THE TILT SADDLE	WEIGHT
t* kN	mm	cm²	cm³		A mm	D mm	E mm	F mm	H mm	K mm	U mm	V / Z mm	W mm	S mm	kg
10 111	25	15.9	40	CMP10N25	72	75	45	35	19	1	25	2xM8 6	24	2xM5	2.5
	50		80	CMP10N50	97										3.2
20 198	25	28.3	71	CMP20N25	75	88	60	45	19	1	60	2xM10 10	34	2xM5	3.4
	50		141	CMP20N50	100										4.2
30 309	25	44.1	110	CMP30N25	86	102	75	55	19	1	65	2xM10 13	44	2xM5	5
	50		221	CMP30N50	111										6.1
50 496	25	70.9	177	CMP50N25	97	127	95	80	22	1	95	2xM12 15	65	2xM6	7.6
	50		354	CMP50N50	122										9.1
100 929	25	132.7	332	CMP100N25	116	175	130	100	22	2	140	2xM12 17	65	2xM6	17.6
	50		664	CMP100N50	141										20.5

* Nominal value, see kN for the exact force.

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	j	z	w	kg
ZTT10	CMP10N # # #	16	1	34	5.5	24	0.1
ZTT20	CMP20N # # #	18		43		34	0.2
ZTT30	CMP30N # # #	19		53		44	0.3
ZTT50	CMP50N # # #	25		68	6.5	65	0.9
ZTT100	CMP100N # # #	34	2	88			1.7

MODEL CODING

CMP	10	N	###	#
Series	Pushing Force in **t**	**N** = standard	Stroke in **mm**	**F** = with base mounting holes

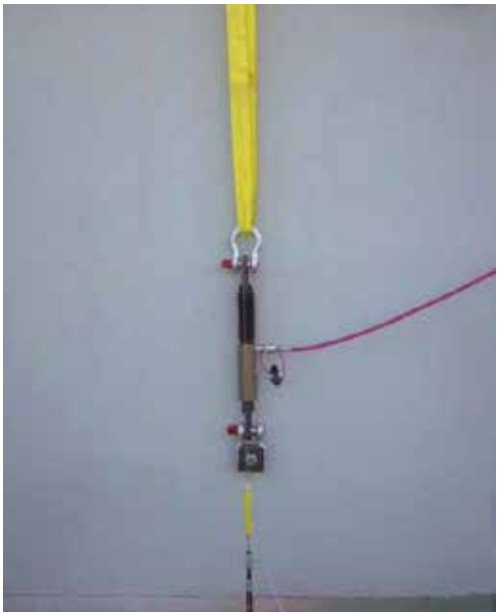
CMT#N / CMT#L

SPRING RETURN PULLING CYLINDERS IN STEEL AND ALUMINIUM

FEATURES

Series in steel / CMT###N###
They are threaded on the body, on the rod and in the base to mount the proper Accessories.
The internal and external nitriding treatment gives them a proper resistance to wear and corrosion.

Series in steel aluminium / CMT###L###
Manufactured totally in aluminium (except the rod and the eyelets) these cylinders are characterized by their superficial anodizing treatment.
They are equipped with a bellow in order to protect the rod, and from 30 tonne models they are also equipped with handles to ease their transport.



It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

OPERATIONAL AREAS

Series in steel / CMT###N###
Their use is suggested in situations where it is necessary to closen small masses in assemblies, in buildings and in laboratories to test the resistance of materials.

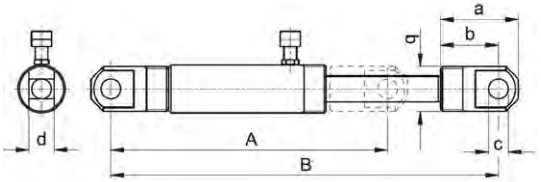
Series in steel aluminium / CMT###L###
They are especially used in ship buildings and in steel structural works to pull together plates, or prefabricated parts which have to be welded together.

ACCESSORIES

- **ZAS set of eyelets** for series N cylinders.

The **CMT** cylinders accompanied with the **PN** pumps form a handy, simple and efficient set.

ACCESSORIES ZAS EYELETS SET

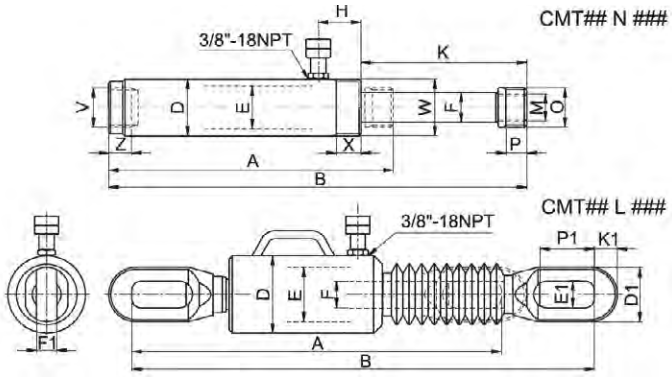


For use with	MODEL	A mm	B mm	a mm	b mm	c mm	d mm	q mm
CMT2N127	**ZAS2**	290	417	62	46	16	16	M35x1,5
CMT5N140	**ZAS5**	403	543	98	73	25	32	M56x2
CMT10N150	**ZAS10**	394	544					

● FORCE	2 - 60 t
● STROKE	127 - 150 mm
● MAX WORKING PRESSURE	700 bar

CMT#N / CMT#L

PULLING CYLINDERS IN STEEL AND ALUMINIUM SPRING RETURN



STEEL CYLINDERS SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	EXTENDED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLER DISTANCE	ROD PROJECTION	ROD THREAD	SADDLE THREAD	SADDLE THREAD LENGHT	INTERNAL BASE THREAD	INTERNAL BASE THREAD LENGHT	BODY THREAD THREAD LENGHT	WEIGHT
t* kN	mm	cm²	cm³		A mm	B mm	D mm	E mm	F mm	H mm	K mm	M mm	O mm	P mm	V mm	Z mm	W / X mm	kg
2 22,9	127	3.3	41	**CMT2N127**	244	371	48	30	22	39	155	M18x1,5	3/4" NPT	18	3/4" NPT	20	M40x1,5 20	2.9
5 55	140	7.9	110	**CMT5N140**	301	441	60	45	32	45	175	M30x2	1 ¼" NPT	22	1 ¼" NPT	24	M60x1,5 26	4.9
10 110	150	15.7	236	**CMT10N150**	302	452	80	55	32	39	189	M30x2	-	30	M30x2	24	M80x2 20	8

* Nominal value, see kN for the exact force.

ALUMINIUM CYLINDERS SELECTION CHART

PUSHING FORCE	STROKE	EFFECTIVE AREA	OIL VOLUME	MODEL	CLOSED HEIGHT	EXTENDED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	EYELET WIDTHO	SLIT WIDTH	EYELET THICKNESS	EYELET TOP THICKNESS	SLIT LENGTH	WEIGHT
t* kN	mm	cm²	cm³		A mm	B mm	D mm	E mm	F mm	D1 mm	E1 mm	F1 mm	K1 mm	P1 mm	kg
10 110	150	15.7	236	**CMT10L150**	526	676	75	55	32	53	32	20	20	100	4.4
30 334		47.7	716	**CMT30L150**	624	774	128	90	45	80	44	32	32	100	13.2
60 559		79.9	1199	**CMT60L150**	734	884	168	120	65	107	61	50	40	140	33.5

* Nominal value, see kN for the exact force.

MODEL CODING

CMT	10	N	###
Series	Pushing Force in **t**	**N** = steel **L** = alluminium	Stroke in **mm**

COD

INDUSTRIAL CYLINDERS
DOUBLE ACTING OIL RETURN

FEATURES

All **COD** cylinders have a threaded body, rod and base. This feature makes them estremely versatile.
A complete range of Accessories to make the usage easier are available.

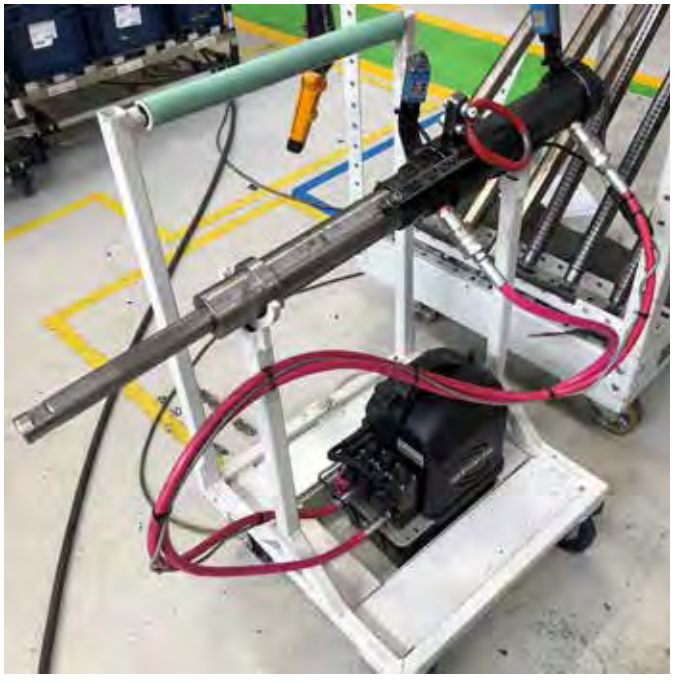
The guide and end of stroke nut are provided with a wiper to prevent the entrance of dirt and to improve the working life of the cylinder.

OPERATIONAL AREAS

These cylinders are used in industrial applications where a large number of cycles are required.
They are used in blocking operations, in laboratories and for tests which need pushing and pulling forces.
The nitride anti-corrosive treatment makes them suitable for works in harsh environments and in the open air.

ACCESSORIES (p. 47)

- **ZAE Clevis eyes** to be mounted on the rod or at the bottom.
- **ZAF Flange** to be mounted on the machined ends of the body.
- **ZAP Plate** to be mounted on the machined ends of the bod as alternative to the flange.
- **ZAA Nut** to block either the flange or the plate.



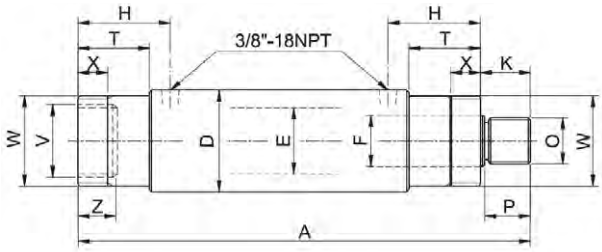
Given their unusual mounting, these cylinders are supplied without the female **K73F** half-couplers which can be ordered separately if required.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

● FORCE	5 - 25 t
● STROKE	30 - 260 mm
● MAX WORKING PRESSURE	700 bar

COD

INDUSTRIAL CYLINDERS, DOUBLE ACTING OIL RETURN



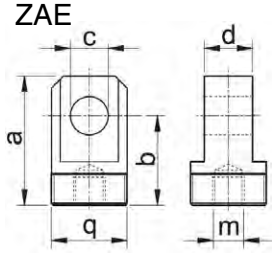
SELECTION CHART

PUSHING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT	ROD PROJECTION	ROD PROJECTION	ROD THREAD LENGTH	COLLAR LENGTH	INTERNAL BASE THREAD	INTERNAL BASE THREAD LENGHT	COLLAR THREAD	COLLAR THREAD LENGTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	D mm	E mm	F mm	H mm	K mm	O mm	P mm	T mm	V mm	Z mm	W mm	X mm	kg
5 49,5	3 27,5	30	7.1	3.9	21	12	COD5N30	185	50	30	20	45	22	M18 x1,5	19	26	M35 x1,5	13	M42 x1,5	9	2.1
		80			57	31	COD5N80	235													2.8
		160			113	63	COD5N160	315													3.8
10 97	6 62	30	13.9	8.9	42	27	COD10N30	204	63	42	25	54	23	M22 x1,5	20	35	M42 x1,5	15	M56 x2	15	3.6
		80			111	72	COD10N80	254													4.5
		160			222	143	COD10N160	334													5.8
		260			360	233	COD10N260	434													7.3
15 137	8 81	160	19.6	11.6	314	185	COD15N160	376	80	50	32	71	31	M30 x2	28	52	M56 x2	27	M70 x2	16	10.8
		260			511	301	COD15N260	476													13.9
25 232	12 121	160	33.1	17.3	531	276	COD25N160	412	92	65	45	84	41	M42 x1,5	38	65	M70 x2	30	M85 x2	20	15.5
		260			863	449	COD25N260	512													19.4

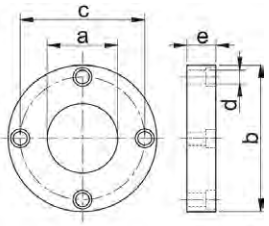
* Nominal value, see kN for the exact force.

ACCESSORIES ZAE – ZAF – ZAP - ZAA

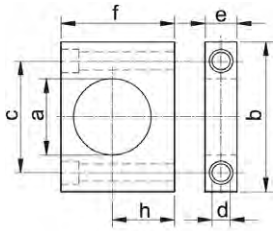
ZAE



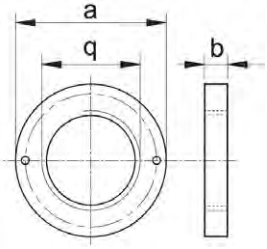
ZAF



ZAP



ZAA



MODEL	a	b	c	d	e	f	h	m	q	kg
ZAE5	62	46	16	16	-	-	-	M18x1,5	M35x1,5	0.3
ZAE10	77	58	20	25	-	-	-	M22x1,5	M42x1,5	0.6
ZAE15	98	73	25	32	-	-	-	M30x2	M56x2	1.2
ZAE25	112	80	32	38	-	-	-	M42x1,5	M70x2	2
ZAF5	42	98	78.6	11	17	-	-	-	-	0.8
ZAF10	56	118	99	11	23	-	-	-	-	1.5
ZAF15	70	145	116	17	35	-	-	-	-	3.4
ZAF25	85	168	136	17	45	-	-	-	-	6
ZAP5	42	80	58	10.5	17	60	32	-	-	0.4
ZAP10	56	110	82.6	13	23	82	45	-	-	1.1
ZAP15	70	135	100	21	35	100	52	-	-	2.6
ZAP25	85	160	118	26	45	125	63.5	-	-	5.1
ZAA5	58	9	-	-	-	-	-	-	M42x1,5	0.1
ZAA10	78	12	-	-	-	-	-	-	M56x2	0.3
ZAA15	95	16	-	-	-	-	-	-	M70x2	0.6
ZAA25	108	20	-	-	-	-	-	-	M85x2	0.8

COF#N / COF#L

CYLINDERS OIL RETURN WITH HOLLOW PISTON STEEL AND ALUMINIUM

FEATURES

All **COF** cylinders are supplied with a smooth hollow saddle and have a have a threaded body, rod and base to facilitate the fixing and inserting of the necessary accessories.
These cylinders are equipped with a safety valve which is connected to the retract chamber and prevents any possible over pressure.

The end of stroke nut has a wiper to prevent the entrance of dirt.

The nitride anti-corrosive treatment makes them suitable for works in harsh environments and in the open air.

OPERATIONAL AREAS

The through hole makes them particularly suitable for tensioning, mounting and the extraction of pulleys, bushings and heat exchanger pipes.

They can be used in pushing and pulling operations by putting a bar or a cable attached to the saddle.

OPTIONS

- **L version,** cylinders with aluminum body (**COF###L###**).

ACCESSORIES (p. 49)

- **ZTE threaded saddle** allows the mounting of threaded bars.

STANDARD

- **Smooth hollow** saddle avoids any risk of rod deformation.

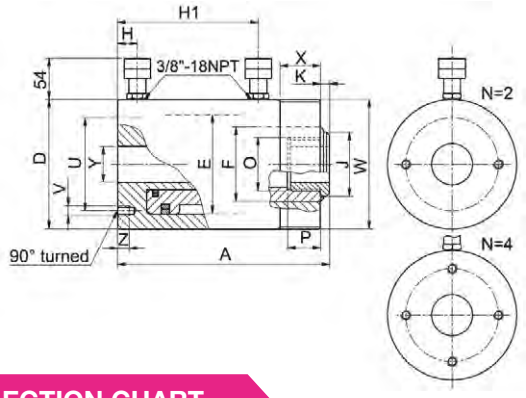
It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

Follow EUROPRESS safety instructions see useful pages (p. 176).

● FORCE	30 - 200 t
● STROKE	75 - 250 mm
● MAX WORKING PRESSURE	700 bar

COF#N / COF#L

CYLINDERS OIL RETURN WITH HOLLOW PISTON STEEL AND ALUMINIUM

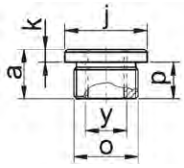


SELECTION CHART

PUSHING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL VERSION N Ø EXTERNAL VERSION L	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	BASE MOUNTING HOLES HOLES DEPTH	COLLAR THREAD	COLLAR THREAD LENGTH	Ø THROUGH HOLE	WEIGHT VERSION N	WEIGHT VERSION L
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W mm	X mm	Y mm	kg	kg
30 334	**18** 176	100	47.7	25.1	477	251	**COF30N100**	196	115	90	70	21	152	57.5	2	M48 x1,5	32	65	2xM10 12	M115 x2	20	34	13	11
		150			716	377	**COF30N150**	246	125				202										16	14
		250			1193	628	**COF30N250**	346					302										21	20
60 590	**31** 309	75	84.3	44.1	632	331	**COF60N75**	186	165 180	125	100	26	134	81.5	2	M72 x1,5	40	90	4xM10 16	M165 x4	25	54.5	26	18
		100			842	442	**COF60N100**	211					159										28	19
		150			1264	663	**COF60N150**	261					209										34	24
		250			2106	1104	**COF60N250**	361					309										46	32
100 947	**58** 568	75	135.3	81.1	1015	608	**COF100N75**	214	215 235	165	130	36	155	117.5	4	M102 x1,5	55	130	4xM12 15	M215 x4	35	80.5	47	29
		150			2029	1216	**COF100N150**	289					230										61	37
		250			3382	2027	**COF100N250**	389					330										79	48
150 1435	**76** 748	200	205	106.9	4100	2136	**COF150N200**	349	247 269	190	150	36	284	127.5	4	M112 x2	60	-	-	-	-	80.5	100	71
200 1979	94 924	200	282.7	132	5655	2639	**COF200N200**	380	305 330	230	190	37	305	167.5	5	M135 x2	70	-	-	-	-	103	160	108

* Nominal value, see kN for the exact force.

ACCESSORIES ZTE THREADED SADDLES



MODEL	For use with	a	k	j	p	y	o	kg
ZTE30	COF30 # # # #	39	7	57.5	32	1 ¼" - 7 UNC	M48x1,5	0.3
ZTE60	COF60 # # # #	47	7	81.5	40	1 ⅝ - 5 ½ UNS	M72x1,5	0.8

MODEL CODING

COF	30	N	###
Series	Pushing Force in **t**	**N** = steel **L** = alluminium	Stroke in **mm**

COG

OIL RETURN CYLINDER WITH SAFETY NUT FOR HIGH TONNAGE

FEATURES

Designed in function of their strength, they have the extremity of the rod equipped with grooved saddles in order to improve the grip of the load. All models are equipped with eyelets to facilitate their transport and positioning.

A safety valve, calibrated at 150 bar, connected to the return chamber, avoids possible over pressure.

OPERATIONAL AREAS

They are very solid hydraulic cylinders recommended for lifting, pillaring and lowering operations.

Given their double acting configuration they are suggested for the synchronous lowering with split flow power packs.

They are mostly used in works of civil, naval, iron metallurgy, mechanical engineering, in industrial assembly and in heavy carpentry where the quick and total return of the rod and the support of the load with the safety nut are fundamental requirements.

OPTIONS

- **F version,** cylinder with base mounting holes for fixing. purposes.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

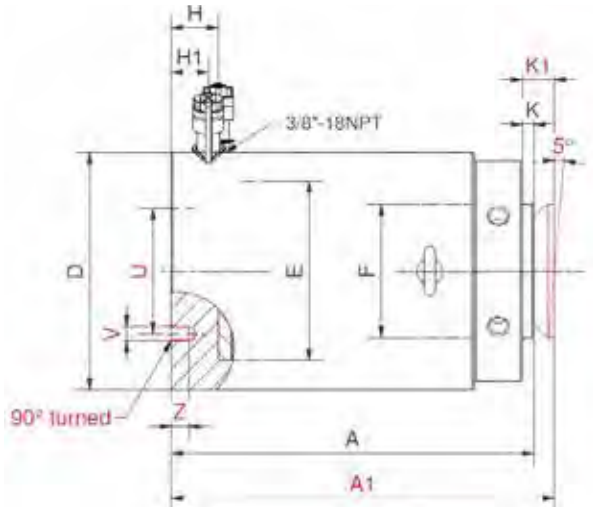
MODEL CODING

COG	100	N	###	#
Serie	Pushing Force in **t**	**N** = standard	Stroke in **mm**	**F** = with base mounting holes

● FORCE	100 - 400 t
● STROKE	100 - 250 mm
● MAX WORKING PRESSURE	700 bar pushing 150 bar pulling

COG

OIL RETURN CYLINDER WITH SAFETY NUT FOR HIGH TONNAGE



SELECTION CHART

Cylinder with non standard force and stroke can be supplied upon request.

PUSHING FORCE @700 BAR	PULLING FORCE @150 BAR	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH TILTING SADDLE MOUNTED	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		ROD PROJECTION	ROD PROJECTION WITH TILTING SADDLE OUNTED	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	A1 mm	D mm	E mm	F mm	H mm	H1 mm	K mm	K1 mm	U mm	V / Z mm	kg
100 1028	**5** 47	100	147	31	1469	314	**COG100N100**	272	292	188	140	Tr 120 x6	40	30	12	32	130	2xM12 15	51
		150			2203	471	**COG100N150**	322	342										59
150 1539	**5** 47	100	220	31	2199	314	**COG150N100**	278	298	226	170	Tr 130 x10	40	30	12	32	130	4xM12 17	73
		150			3299	471	**COG150N150**	328	348										84
		200			4398	628	**COG150N200**	378	398										95
		250			5498	785	**COG150N250**	428	448										106
200 2131	**10** 103	100	305	69	3045	689	**COG200N100**	305	331	265	200	Tr 165 x10	50	38	13	39	140	4xM16 20	109
		150			4568	1034	**COG200N150**	355	381										125
		200			6091	1378	**COG200N200**	405	431										140
		250			7613	1723	**COG200N250**	455	481										156
300 3099	**10** 103	100	443	69	4428	689	**COG300N100**	336	363	317	240	Tr 195 x10	50	38	16	43	170	4xM16 20	174
		150			6641	1034	**COG300N150**	386	413										197
		200			8855	1378	**COG300N200**	436	463										220
		250			11069	1723	**COG300N250**	486	513										243
400 4008	**20** 175	100	560	117	5600	1168	**COG400N100**	380	413	356	270	Tr 235 x10	60	42	23	56	230	4xM16 20	252
		150			8400	1752	**COG400N150**	430	463										282
		200			11200	2337	**COG400N200**	480	523										313
		250			14000	2921	**COG400N250**	530	563										343

* Nominal value, see kN for the exact force.

COI#N / COI#W

OIL RETURN
INDUSTRIAL CYLINDER
WITH METRIC AND IMPERIAL THREAD

FEATURES

These cylinders are equipped with a collar thread, an internal rod thread and base mounting holes.
They are supplied with an interchangeable grooved saddle and models over 30 tonne have eyelets to facilitate their transport.

For models with 30 ton or higher, the hole in the rod is not suitable for traction but only for the mounting of tilt saddles or other equipment.

A safety valve connected to the retract chamber avoids any possible overpressure.

The guide nut has a wiper ring to prevent the entering of dirt and to extend the working life of the cylinder.

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible. In case some pressure persists it is possible to use the apposite tool **KST38**.

In case of a non frequent use, the cylinders of the **COS** range could be a more economical solution.

OPERATIONAL AREAS

They are highly versatile and strong cylinders designed to be used in industrial applications with a high number of working cycles.

They are also used in the pushing of underpass constructions and in piling operations and given their threaded collar they can be mounted on presses.

ACCESSORIES (p. 53)

- **Separate ZTT tilt saddle** reduces the effects of possible off-centred loads.

STANDARD

- Base mounting **holes.**
- **Pushing saddle** prevents any risk of rod deformation.

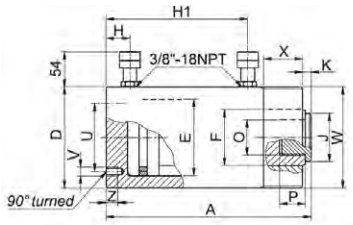
The modular power packs with 4 way valves are particularly suitable to operate these cylinders.

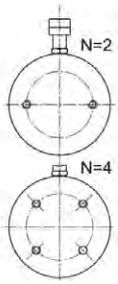
Follow EUROPRESS safety instructions see useful pages (p. 176).

● FORCE	10 - 500 t
● STROKE	150 - 325 mm
● MAX WORKING PRESSURE	700 bar

COI#N

OIL RETURN INDUSTRIAL CYLINDER WITH METRIC AND IMPERIAL THREAD



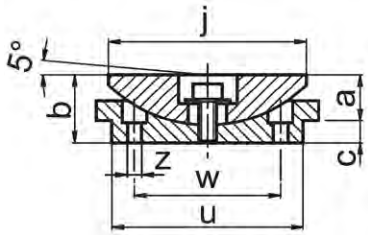


On request, cylinders with non standard force and stroke or special versions can be supplied for specific purposes.

SELECTION CHART

PUSHING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUMEE	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT	Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	COLLAR THREAD COLLAR LENGTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W / X mm	kg
10 111	5 55	150	15.9	7,9	239	118	COI10N150	258	60	45	32	19	213	34	6	M24 x2	15	39	2xM8 12	M60x1,5 20	5,2
		250			398	197	COI10N250	358					313								6,8
30 309	10 111	150	44.1	15.9	663	239	COI30N150	337	102	75	60	23	224	53	9	1 ½" - 16	26	50	2xM10 15	M100x2 30	18
		250			1104	398	COI30N250	437					324								23.2
50 496	15 144	150	70.9	20.6	1063	309	COI50N150	288	127	95	80	25	231	65	4	M16	17	75	2xM12 18	M125x2 31	26.5
		325			2304	670	COI50N325	463					406								41
100 929	38 379	150	132.7	54.1	1991	813	COI100N150	323	175	130	100	33	250	85	4	M16	17	100	4xM12 23	M168x2 50	55
		300			3982	1626	COI100N300	473					400								77
150 1407	62 616	150	20	88	3016	1319	COI150N150	336	215	160	120	40	255	105	6	M16	17	130	4xM16 23	M215x4 56	85
		300			6032	2639	COI150N300	486					405								118
200 1984	76 748	150	283,4	106,9	4253	1602	COI200N150	355	255	190	150	48	268	135	7	M16	17	140	4xM16 23	M255x4 60	129
		300			8506	3204	COI200N300	5053					418								177
300 2908	94 923	150	415,4	131,9	6232	1979	COI300N150	391		230	190	60	290	175	7	M16	17	200	4xM16 30	M305x4 74	208
		300			12464	3958	COI300N300	541					440								278
400 4008	112 1099	150	572,6	157	8588	2356	COI400N150	421	355	270	230	70	310	215	7	M16	17	250	4xM20 33	M355x4 84	307
		250			14314	3927	COI400N250	521					410								373
500 4948	154 1512	150	706,9	216	10603	3240	COI500N150	462	395	300	250	80	330	235	12	M16	17	280	4xM20 40	M395x4 100	416
		250			17671	5400	COI500N250	562					430								495

ACCESSORIES ZTT TILT SADDLES

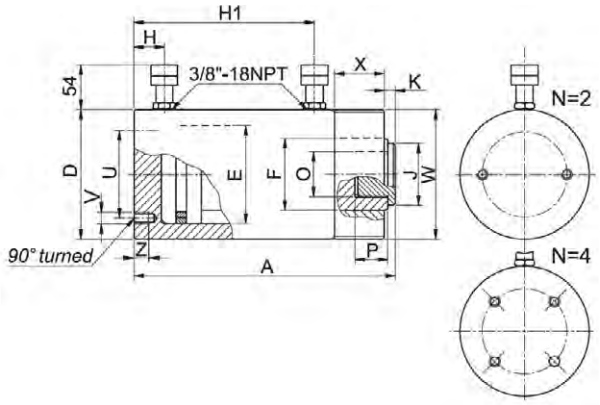


MODEL	For use with	a	b	c	j	u	z	w	kg
ZTT11	COI10N # # #	9	21	12	34	M24X2	-	-	0.1
ZTT31	COI30N # # #	16	30	14	53	M32X2	-	-	0.3
ZTT51	COI50N # # #	18	26	8	68	65	5.5	45	0.8
ZTT101	COI100N # # #	22	32	10	88	85	6.5	65	1.6
ZTT151	COI150N # # #	32	42	12	118	105		80	3.2
ZTT201	COI200N # # #	39	51	12	148	135	8.5	110	6.5
ZTT301	COI300N # # #	43	55		158	175		150	11
ZTT401	COI400N # # #	56	68		196	215		190	20.2
ZTT501	COI500N # # #	56	68			235		210	23.2

COI#W

OIL RETURN INDUSTRIAL CYLINDER WITH IMPERIAL THREAD

FORCE	10 - 100 t
STROKE	150 - 300 mm
MAX WORKING PRESSURE	700 bar

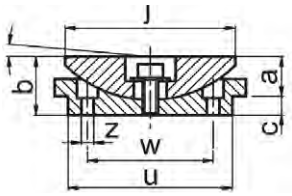


On request, cylinders with non standard force and stroke or special versions can be supplied for specific purposes.

SELECTION CHART

PUSHING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø HOLLOW SADDLE	ROD PROJECTION	ROD INTERNAL THREAD	ROD THREAD DEPTH	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	COLLAR THREAD COLLAR LENGTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	O mm	P mm	U mm	V / Z mm	W / X mm	kg
10 111	5 43,8	150	15.9	6.3	239	115	**COI10W150**	280	73	45	35	19	203	34	7	1" - 8	26	39	2xM8 12	2 ¼" - 14 28	6.8
		250			398	191	**COI10W250**	380					303								8.6
30 309	10 111	150	44.1	15.9	663	239	**COI30W150**	337	102	75	60	23	224	53	9	1 ½" - 16	26	50	2xM10 15	35/16" - 12 49	18
		250			1104	398	**COI30W250**	437					324								23.2
50 496	15 144	150	70.9	20.6	1063	309	**COI50W150**	288	127	95	80	25	231	65	4	M16	17	75	2xM12 18	5" - 12 35	26.5
		325			2304	670	**COI50W325**	463					406								41
100 929	38 379	150	132.7	54.1	1991	813	**COI100W150**	323	175	130	100	33	250	85	4	M16	17	100	4xM12 23	6 7/8" - 12 55	55
		300			3982	1626	**COI100W300**	473					400								77

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	c	j	u	z	w	kg
ZTT11W	COI10W # # #	9	21	12	34	1" - 8	-	-	0.1
ZTT31W	COI30W # # #	16	30	14	53	1 ½" - 16	-	-	0.3
ZTT51	COI50N # # #	18	26	8	68	65	5.5	45	0.8
ZTT101	COI100N # # #	22	32	10	88	85	6.5	65	1.6

COJ
STRAND JACKS
OIL RETURN

FEATURES

The cylinders used for lifting operations through cables (Strand Jacks) are a compact and effective solution for the positioning of heavy loads which operate both in lifting and lowering.

Their operating principle is the same of precompressioning and post-tensioning systems, with a bundle of cables (strands) which are guided through wedge grips arranged both at the base and at the rod end of the cylinder, passing through the central hole of the cylinder itself. It is then possible to carry out liftings for serveral metres with repeated strokes of the cylinder.

The heads equipped with wedge grips are hydraulically controlled to lock and unlock the wedges.
A piloted check valve is fitted on the cylinder inlet as a safety provision against any possible hose rupture and as a control of the lowering speed.

The cylinders are equipped with position sensors which communicate with the menagement sistem the reaching of intervention points for the movimentation commands, in order to sequence them correctly in relation to the desired direction.

If requested, the cylinders can be equipped with a linear stroke transducer in order to verify the position of the rod. A block with a clevis and a stud is provided with the cylinder. Thank to the wedge grips which grip the cable, it allows the cables insertion and the locking and unlocking from the outside.

The cylinders are designed to be used with standard 0.6" strands (not supplied) with a safety factor of 2.5. This limits the wearing of the strands and of the wedge grips, which can therefore be used several times. The access to the terminal heads where the wedges are located is however facilitated by the constructive solution adopted for the cylinder.

Accessories such as strand recoilers, strand guides or other devices for the guiding and recollection of the strands can be designed and delivered according to the specific needs.

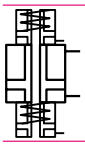
Each cylinder is operated by a dedicated control unit, equipped with solenoid valves to control both the cylinder itself and the hydraulic lock and unlock of the terminal heads, of the pressure gauge and of the electrical box for the power of the motor and valves with connector for the control cable, four 5 metre hoses with quick couplings. The control unit specifications for each cylinder are shown in the table below.

Two control systems with PLC for the automation of lifting and lowering movements are available:

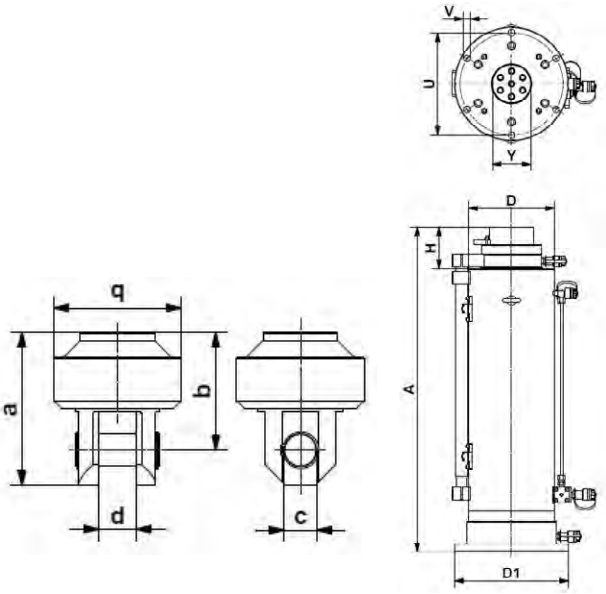
- **ZMRJ1** for single cylinders, with a three-position selector (lifting, hold, lowering) and emergency stop.
- **ZMRJ4** to control up to 4 cylinders simultaneously, with 4 two position switches to include or exclude each cylinder from the operation, a three-position selector (lifting, hold, lowering) and emergency stop. This system performs lifting and lowering cycles operating on the cylinders relating on the contacts arranged on the cylinder itself to determine its position. Each stroke ends when all the cylinders operating have reached the end of stroke, before starting the retraction of the cylinders. Since the cylinders are controlled by control units of the same flow, the movement speed is substantially equal for all the cylinders and it is thus possible to obtain a simple and efficient synchronization system similar to the split-flow systems.

COJ

STRAND JACKS
OIL RETURN



● FORCE	70 - 280 t
● STROKE	500 mm
● MAX WORKING PRESSURE	43 - 659 bar



SELECTION CHART

FORCE	PRESSURE	STROKE	PUSHING OIL VOLUME	PULLING OIL VOLUME	NUMBER 0,6" STRANDS"	MODEL	CYLINDER DIMENSION						Ø BUNDLE	CYLINDER WEIGHT	HOISTING BLOCK DIMENSIONS					BLOCK WEIGHT
T* kN	bar	mm	dm³	dm³			A mm	Ø D mm	Ø D1 mm	H mm	Ø U mm	Ø V mm	Ø Y mm	KG	A mm	B mm	C mm	D mm	Q mm	kg
70 730	430	500	9.33	3.46	7	COJ70N500	1118	265	355	130	320	21	100	328	281	216	60	70	238	46
120 1251	553	500	12.44	4.49	12	COJ120N500	1162	360	455	130	420	21	150	633	371	286	80	90	315	110
160 1600	594	500	14.82	6.87	15	COJ160N500	1162	370	455	130	420	21	150	640	371	286	90	90	315	120
200 1981	655	500	16.63	5.18	19	COJ200N500	1175	425	515	132	480	21	175	910	431	326	100	110	398	215
280 2816	659	500	23.50	9.46	27	COJ280N500	1187	520	615	132	580	21	220	1340	491	376	110	130	455	323

ACCESSORIES POWER UNITS

POWER UNIT MODEL	FOR USE WITH	PRESSURE MAX	PRESSURE 1°STAGE	DELIVERY 1ST STAGE	DELIVERY 2ND STAGE	RESERVOIR CAPACITY	USABLE OIL VOLUME	MOTOR POWER	TENSION	MAX LIFTINSPEED
		bar	bar	l/min	l/m	l	l	kW		m/h
MEK30ESJ	COJ70N500	430	70	11.6	1.6	30	22	2.2	400v 50Hz	4.9
MEV30ESJ	COJ120N500	553	85	10	2.5	30	20	3.0	400v 50Hz	5.5
	COJ160N500	594								4.6
	COJ200N500	655								4.2
	COJ280N500	659								3

COL

STANDARD CYLINDERS
OIL RETURN IN ALUMINIUM

FEATURES

Solidly designed, the cylinder's rod end has concentric grooves to improve load grip. Models above 30 tonne have lifting eyes and all models have anti-corrosive nitride treatment which makes them suitable to be used in harsh environments.

A safety valve connected to the return chamber prevents any overpressure. The end of stroke nut has a wiper to prevent the entrance of dirt.

They can operate with off-centred loads up to 8% of their nominal capacity.

Given the sensitivity of the material to work stress we suggest a maximum use of 5000 work cycles.

OPERATIONAL AREAS

They are very solid cylinders recommended for pile testing operations and in situations in which the weight can be dangerous due to harsh conditions of adjustments or difficulties in transport.

The oil return feature makes them suitable for synchronous lifting and lowering with **SPLIT FLOW** power packs.

ACCESSORIES

ZTT tilt saddle reduces the effects of any possible off-centred load.

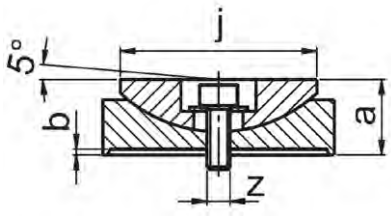
OPTIONS

- **T version**, cylinder with integrated tilt saddle.
- **F version**, cylinder with base mounting holes for fixing purposes.

T version

It's important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KST38**.

ACCESSORIES ZTT TILT SADDLES



MODEL	For use with	a	b	j	z	kg
ZTT50	COL50N # # #	25	1	68	M8	0.9
ZTT100	COL100N # # #	34	2	88		1.7
ZTT150	COL150N # # #	45		118		3.4
ZTT200	COL200N # # #	54	3	148	M10	7
ZTT250	COL250N # # #	58		158		9.5
ZTT300	COL300N # # #					11.3

MODEL CODING

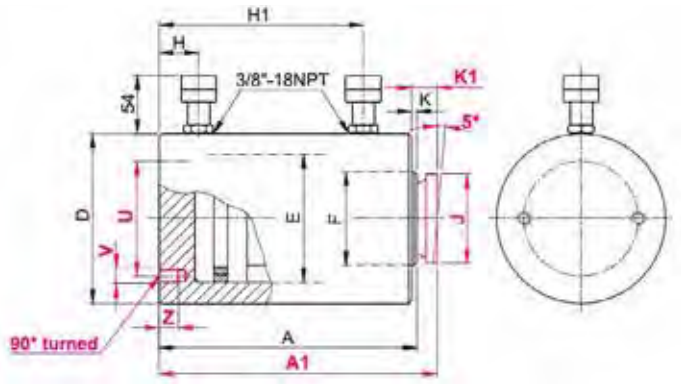
COL	50	N	###	#
Series	Pushing Force in **t**	**N** = standard	Stroke in **mm**	**F** = with base mounting holes **T** = with integrated tilt saddle **

** Cylinders with a force below 100 tonne can be supplied subject to a minimum production batch.

COL

STANDARD CYLINDERS
OIL RETURN IN ALUMINIUM

FORCE	50 - 300 t
STROKE	50 - 300 mm
MAX WORKING PRESSURE	700 bar pushing 150 bar pulling



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

PUSHING FORCE @ 700 bar	PULLING FORCE @ 150 bar	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	BASE MOUNTING HOLES HOLES DEPTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm3	cm3		A mm	A1 mm	D mm	E mm	F mm	H mm	H1	J mm	K	K1 mm	U mm	V / Z mm	kg
50 496	15 44	50	70.1	20.6	354	103	COL50N50	149	154	135	95	80	20	104	68	1	6	95	2xM12 15	10
		100			709	206	COL50N100	199	204					154						13
		150			1063	309	COL50N150	249	254					204						16
100 929	8 81	50	132.7	54.1	664	271	COL100N50	198	205	180	130	100	32	127	88	2	9	130	2xM12 17	17
		100			1327	542	COL100N100	248	255					177						20
		150			1991	813	COL100N150	298	305					227						23
		200			2655	1084	COL100N200	348	355					277						26
150 1407	13 131	50	201	88	1005	440	COL150N50	214	223	228	160	120	35	136	118	3	12	130	4xM12 17	26
		100			2011	880	COL150N100	264	273					186						31
		150			3016	1319	COL150N150	314	323					236						36
		200			4021	1759	COL150N200	364	373					286						41
		250			5027	2199	COL150N250	414	423					336						45
200 1984	16 160	50	283.4	106.9	1418	534	COL200N50	234	243	265	190	150	42	152	148	3	12	140	4xM16 20	44
		100			2835	1068	COL200N100	284	293					202						51
		150			4253	1602	COL200N150	334	343					252						58
		200			5671	2136	COL200N200	384	393					302						65
		250			7088	2670	COL200N250	434	443					352						72
		300			8506	3204	COL200N300	484	493					402						79
250 2424	18 179	100	346.3	119.3	3464	1194	COL250N100	305	314	295	210	170	48	214	158	3	12	150	4xM16 20	66
		150			5195	1791	COL250N150	355	364					264						75
		200			6927	2388	COL250N200	405	414					314						84
300 2908	20 197	100	415.4	131.9	4155	1319	COL300N100	314	323	320	230	190	53	217	158	3	12	170	4xM16 20	80
		150			6232	1979	COL300N150	364	373					267						90
		200			8310	2639	COL300N200	414	423					317						101

* Nominal value, see kN for the exact force.

COL#D

STANDARD CYLINDERS OIL RETURN IN ALUMINIUM TELESCOPIC DOUBLE STROKE / RAILWAYS

FEATURES

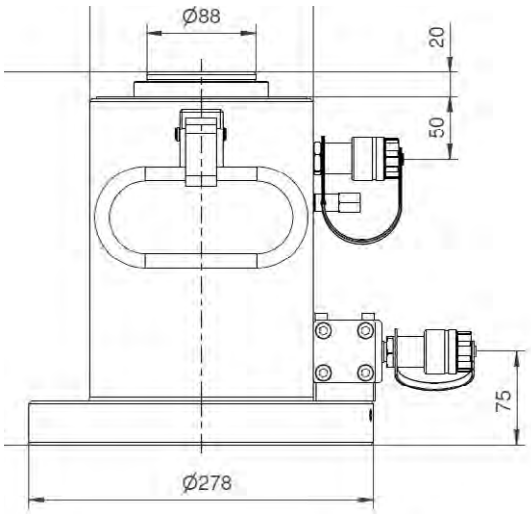
Hydraulic telescopic cylinder **COL** are available with double stroke (D) or triple stroke (T).

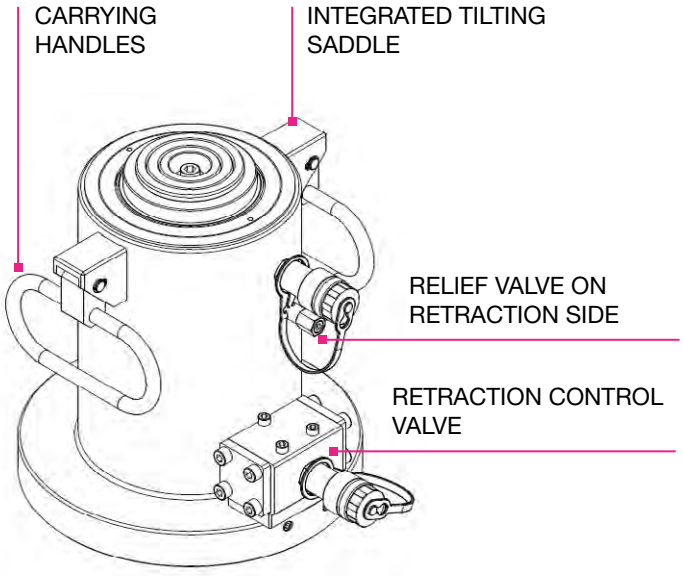
OPERATIONAL AREAS

This type of cylinder can be used in various applications but the must popular one is in the railing sector and it's used as a **re-railing system**.

For this reason, the cylinders are made in light alloy which makes them easier to be transported.
They also have a wider base which gives them a better stability and a integrated pilot check valve in order to control the lowerging of the load and for safety reasons in case a hose bursts.

Together with supporting beams, roller carriages, adjustable connecting bars and traversal cylinders they constitute **re-railing systems**.





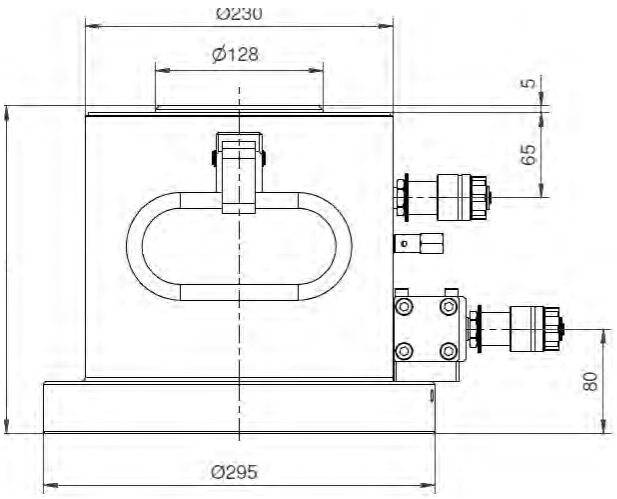
SELECTION CHART

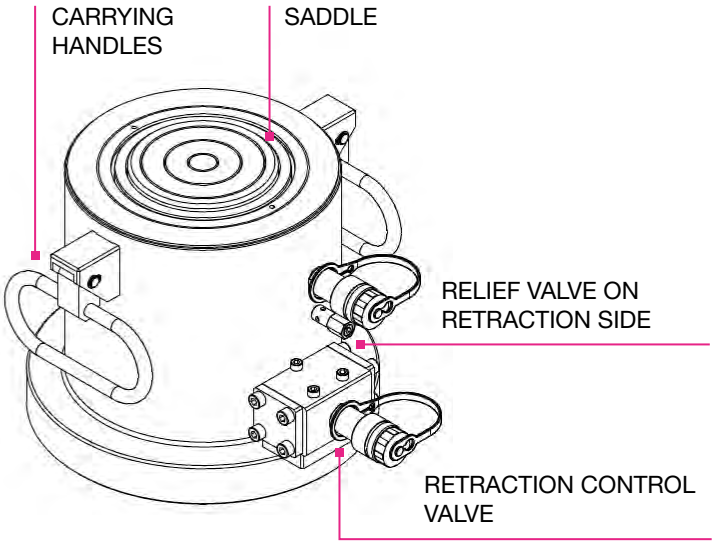
PUSHING FORCE 300 BAR		PUSHING FORCE 530 BAR		TOTAL STROKE	STROKE		PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTONNS		Ø RODS		ROD PROJECTION	WEIGHT
1° Stroke	2° Stroke	1° Stroke	2° Stroke		1° Stroke	2° Stroke						1°	2°	1°	2°		
t*	t*	t*	t*	C	C1	C2	cm³	cm³		A	D	E1	E2	F1	F2	K	kg
40 398	**17** 170	**72** 703	**31** 301	180	95	85	1743	429	**COL30D180**	240	180	130	85	115	70	20	24
40 398	**17** 170	**72** 703	**31** 301	300	155	145	2880	712	**COL30D300**	300	180	130	85	115	70	20	28
40 398	**17** 170	**72** 703	**31** 301	450	230	220	4301	1066	**COL30D450**	375	180	130	85	115	70	20	32

* Nominal value, see kN for the exact force.

COL#D

STANDARD CYLINDERS OIL RETURN IN ALUMINIUM TELESCOPIC DOUBLE STROKE RAILWAYS





SELECTION CHART

PUSHING FORCE 300 BAR		PUSHING FORCE 530 BAR		TOTAL STROKE	STROKE		PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø PISTONS		Ø RODS		ROD PROJECTION	WEIGHT
1° Stroke	2° Stroke	1° Stroke	2° Stroke		1° Stroke	2° Stroke						1°	2°	1°	2°		
t* kN	t* kN	t* kN	t* kN	C mm	C1 mm	C2 mm	cm^3	cm^3		A mm	D mm	E1 mm	E2 mm	F1 mm	F2 mm	K mm	kg
69 681	**29** 285	**122** 1203	**51** 504	150	75	75	2415	558	**COL50D150**	250	230	170	110	150	95	5	40
69 681	**29** 285	**122** 1203	**51** 504	410	205	205	6601	1526	**COL50D410**	380	230	170	110	150	95	5	51

* Nominal value, see kN for the exact force.

COS

STANDARD CYLINDERS OIL RETURN FOR HIGH TONNAGE IN STEEL

FEATURES

Solidly designed, the rod end has concentric grooves to improve load grip. Every model is equipped with lifting eyes and anti-corrosive nitride treatment which makes them suitable to be used in harsh environments.
A safety valve connected to the return chamber prevents any overpressure .
The end of stroke nut has a wiper to prevent the entrance of dirt.
They can operate with off-centred loads up to 8% of their nominal capacity.

OPERATIONAL AREAS

They are extremely solid hydraulic cylinders highly recommended for lifting, holding and lowering operations. They are ideally built for applications in civil and marine engineering and in the construction industry.

ACCESSORIES (p. 64)

- **Separate ZTT tilt saddle** reduces the effects of possible off-centred loads.

To ensure positive load holding we recommend installing the **VRP38** pilot check valve or the **VRB38** counterbalance valve between the pump and cylinder.

Where repetitive working cycles are needed or for use in presses, we recommend cylinders from the **COI** range.

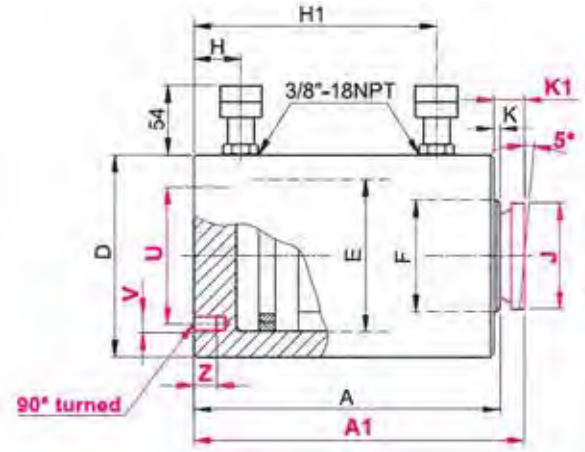
OPTIONS

- **T version**, cylinder with integrated tilt saddle.
- **F version**, cylinder with base mounting holes for fixing purposes.

COS

STANDARD CYLINDERS
OIL RETURN
FOR HIGH TONNAGE IN STEEL

● FORCE	50 - 300 t
● STROKE	25 - 300 mm
● MAX WORKING PRESSURE	700 bar



SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

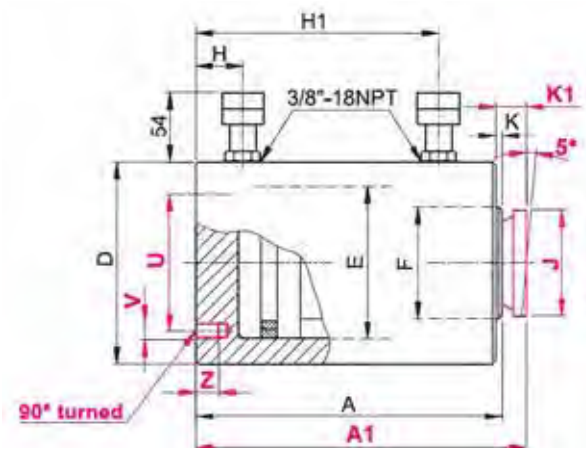
PULLING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	A1 mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
50 496	15 144	50	70.1	20.6	354	103	COS50N50	149	154	127	95	80	20	104	68	1	6	95	2xM12 15	14
		100			709	206	COS50N100	199	204					154						18
		150			1063	309	COS50N150	249	254					204						22
100 929	38 379	50	132.7	54.1	664	271	COS100N50	171	178	175	130	100	28	124	88	2	9	130	2xM12 17	30
		100			1327	542	COS100N100	221	228					174						38
		150			1991	813	COS100N150	271	278					224						45
		200			2655	1084	COS100N200	321	328					274						52
150 1407	62 616	25	201	88	503	220	COS150N25	167	176	213	160	120	30	106	118	3	12	130	4xM12 17	45
		50			1005	440	COS150N50	192	201					131						50
		100			2011	880	COS150N100	242	251					181						61
		150			3016	1319	COS150N150	292	301					231						71
		200			4021	1759	COS150N200	342	351					281						82
		250			5027	2199	COS150N250	392	401					331						93

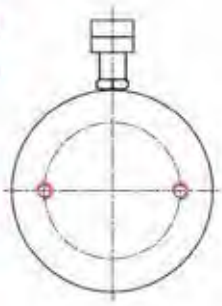
* Nominal value, see kN for the exact force.

● FORCE	50 - 500 t
● STROKE	25 - 300 mm
● MAX WORKING PRESSURE	700 bar

COS

STANDARD CYLINDERS OIL RETURN FOR HIGH TONNAGE IN STEEL





SELECTION CHART

Cylinders with non standard force and stroke can be supplied upon request.

PULLING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH NTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	A1 mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
200 1984	76 748	25	283.4	106.9	709	267	COS200N25	181	190	252	190	150	32	117	148	3	12	140	4xM16 20	69
		50			1418	534	COS200N50	206	215					142						76
		100			2835	1068	COS200N100	256	265					192						92
		150			4253	1602	COS200N150	306	315					242						107
		200			5671	2136	COS200N200	356	365					292						123
		250			7088	2670	COS200N250	406	415					342						138
		300			8506	3204	COS200N300	456	465					392						153
250 2424	85 835	25	346.3	119.3	866	298	COS250N25	197	206	280	210	170	34	128	158	3	12	150	4xM16 20	92
		50			1732	597	COS250N50	222	231					153						102
		100			3464	1194	COS250N100	272	281					203						122
		150			5195	1791	COS250N150	322	331					253						141
		200			6927	2388	COS250N200	372	381					303						161
		250			8659	2985	COS250N250	422	431					353						180
		300			10391	3581	COS250N300	472	481					403						200
300 2908	94 923	25	415.4	131.9	1039	330	COS300N25	203	212	305	230	190	38	130	158	3	12	170	4xM16 20	113
		50			2077	660	COS300N50	228	237					155						125
		100			4155	1319	COS300N100	278	287					205						148
		150			6232	1979	COS300N150	328	337					255						172
		200			8310	2639	COS300N200	378	387					305						195
		250			10387	3299	COS300N250	428	437					355						219
		300			12464	3958	COS300N300	478	487					405						242

* Nominal value, see kN for the exact force.

COS

STANDARD CYLINDERS
OIL RETURN
FOR HIGH TONNAGE IN STEEL

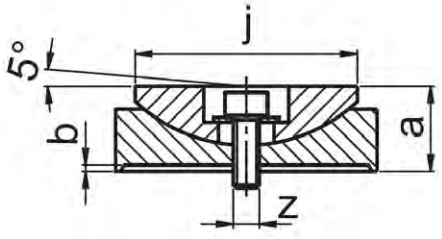
FORCE	50 - 500 t
STROKE	25 - 300 mm
MAX WORKING PRESSURE	700 bar

SELECTION CHART

PULLING FORCE	PULLING FORCE	STROKE	PUSHING EFFECTIVE AREA	PULLING EFFECTIVE AREA	PUSHING OIL VOLUME	PULLING OIL VOLUME	MODEL	CLOSED HEIGHT	CLOSED HEIGHT WITH INTEGRATED TILT SADDLE	Ø EXTERNAL	Ø PISTON	Ø ROD	COUPLERS HEIGHT		Ø INTEGRATED TILT SADDLE	ROD PROJECTION	ROD PROJECTION WITH INTEGRATED TILT SADDLE	PCD MOUNTING HOLES	MOUNTING HOLES DEPTH	WEIGHT
t* kN	t* kN	mm	cm²	cm²	cm³	cm³		A mm	A1 mm	D mm	E mm	F mm	H mm	H1 mm	J mm	K mm	K1 mm	U mm	V / Z mm	kg
350 3436	103 1011	25	490.1	144.4	1227	361	COS350N25	210	222	332	250	210	39	132	196	3	15	200	4xM16 20	138
		50			2454	723	COS350N50	235	247					157						153
		100			4909	1445	COS350N100	285	297					207						183
		150			7363	2168	COS350N150	335	347					257						213
		200			9817	2890	COS350N200	385	397					307						242
		250			12272	3613	COS350N250	435	447					357						272
		300			14726	4335	COS350N300	485	497					407						302
400 4008	112 1099	25	572.6	157	1431	393	COS400N25	217	229	356	270	230	42	135	196	3	15	230	4xM16 20	165
		50			2863	785	COS400N50	242	254					160						182
		100			5726	1571	COS400N100	292	304					210						215
		150			8588	2356	COS400N150	342	354					260						248
		200			11451	3142	COS400N200	392	404					310						281
		250			14314	3927	COS400N250	442	454					360						313
		300			17177	4712	COS400N300	492	504					410						346
500 4948	154 1512	25	706.9	216	1767	540	COS500N25	225	237	396	300	250	50	140	196	3	15	250	4xM16 20	212
		50			3534	1080	COS500N50	250	262					165						232
		100			7069	2160	COS500N100	300	312					215						271
		150			10603	3240	COS500N150	350	362					265						312
		200			14137	4320	COS500N200	400	412					315						352
		250			17671	5400	COS500N250	450	462					365						391
		300			21206	6480	COS500N300	500	512					415						431

* Nominal value, see kN for the exact force.

ACCESSORIES ZTT TILT SADDLE



MODEL	For use with	a	b	j	z	kg
ZTT50	COS50N # # #	25	1	68	M8	0.9
ZTT100	COS100N # # #	34	2	88	M10	1.7
ZTT150	COS150N # # #	45	3	118		3.4
ZTT200	COS200N # # #	54		148		7
ZTT250	COS250N # # #	58		158		9.5
ZTT300	COS300N # # #					11.3
ZTT350	COS350N # # #	71		196	M12	18
ZTT400	COS400N # # #					20.7
ZTT500	COS500N # # #					23.8

MODEL CODING

COS	50	N	###	#
Series	Pushing Force in **t**	**N** = standard	Stroke in **mm**	**F** = with base mounting holes **T** = with integrated tilt saddle **

** Cylinders with a force below 100 tonne can be supplied subject to a minimum production batch.

HOW TO CHOOSE A PUMP

IT IS NECESSARY TO HAVE SOME ESSENTIAL INFORMATION:

- RESERVOIR CAPACITY
- CYLINDER EXTENSION SPEED

PUMP SELECTION BASED ON ITS TANK CAPACITY.

After having selected the most suitable cylinder and determined the oil volume required for the stroke, it is now necessary to choose the most suitable pump based upon the required oil volume.
The volume is defined by multiplicating 1.2 times the oil volume required for the selected cylinder(s).

In the case of double acting cylinders the retraction oil volume shall be subtracted from the volume of oil required to extend the cylinder. It's also important to take into account the quantity of oil needed to fill the flexible hoses which is 32 cm^3 for meter length.
The following tables allows an easy choice.
The coloured zones represent the maximum utilization limits for each pump type.

SINGLE ACTING CYLINDERS

Stroke mm	Force in tons												
	5	10	15	20	25	30	50	60	100	150	200	250	300
15													
25													
50	PF120												
75													
100					PNP140				PN162				
125													
150													
175						PNP141							
200										PN168			
225		PNP130									PV1810		
250				PNP131				PN164					
275	PS100					PN142							
300		PS101										PV1820	
325				PN132									
350	PF150												

DOUBLE ACTING CYLINDERS

Stroke mm	Force in tons											
	5	10	20	25	30	50	60	100	150	200	250	300
25												
50												
75												
100		PNP240										
125												
150												
175						PN262						
200												
225										PN268		
250								PN264				
275											PV2810	
300												PV2820
325												
350												

HOW TO CHOOSE A PUMP

- **PUMP SELECTION BASED ON CYLINDER SPEED**
- **HAND PUMPS**

The data in the following chart refers to the piston stroke in mm for each pump handle stroke.

PUMP TYPE	PRESSURE STAGE	FORCE IN TONS										
		5	10	20	25	30	50	60	100	150	200	250
PF120	Single stage	3.1	1.4	0.8	0.7	0.5	0.3	0.3	0.2	-	-	-
PN131/PN132	Single stage	3.66	1.63	0.92	0.78	0.59	0.37	0.23	0.20	0.13	-	-
PNP130	Single stage	2.40	1.07	0.60	0.51	0.38	0.24	-	-	-	-	-
PNP131	Single stage	3.73	1.66	0.93	0.79	0.60	0.37	0.23	0.20	-	-	-
PS100	Single stage	1.4	0.6	0.4	0.3	0.2	0.1	-	-	-	-	-
PS101	Single stage	3.3	1.4	0.8	0.7	0.5	0.3	0.3	0.2	-	-	-
PN141/PN142	1°	19.20	8.53	4.80	4.09	3.07	1.91	1.20	1.02	-	-	-
	2°	2.90	1.29	0.73	0.62	0.46	0.29	0.18	0.15	-	-	-
PN16#	1°	38.93	17.30	9.73	8.29	6.23	3.88	2.43	2.07	1.37	-	-
	2°	3.61	1.60	0.90	0.77	0.58	0.36	0.23	0.19	0.13	-	-
PNP140	1°	20.84	9.26	5.21	4.44	3.33	2.08	-	-	-	-	-
	2°	1.48	0.66	0.37	0.32	0.24	0.15	-	-	-	-	-
PNP141	1°	20.75	9.22	5.19	4.42	3.32	2.07	1.30	1.11	-	-	-
	2°	2.52	1.12	0.63	0.54	0.40	0.25	0.16	0.13	-	-	-
PF150	1°	14.6	6.5	3.6	3.1	2.3	1.5	1.2	0.8	-	-	-
	2°	3.1	1.4	0.8	0.7	0.5	0.3	0.3	0.2	-	-	-
PV18# PVL18#	1°	176.8	78.6	44.2	37.7	28.3	17.6	14.8	9.4	6.2	4.4	3.6
	2°	6.8	3	1.7	1.4	1.1	0.7	0.6	0.4	0.2	0.2	0.1

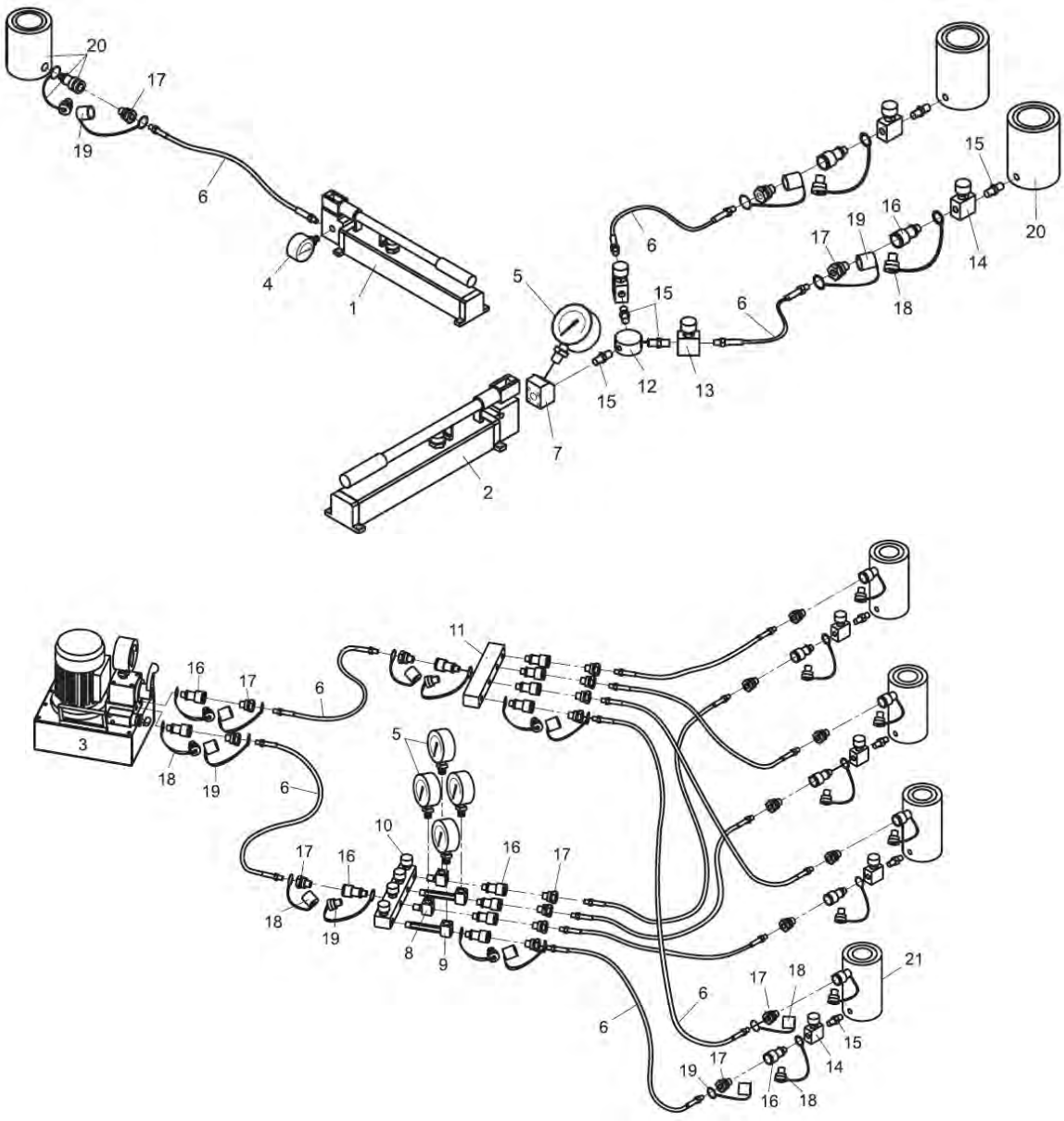
• MOTOR DRIVEN PUMPS

The data in the following chart refers to the piston speed in **mm per second**.

PUMP TYPE	Pressure stage	Force in tons														
		5	10	20	25	30	50	60	100	150	200	250	300	350	400	500
MC	Single stage	5	2.2	1.2	1.1	0.8	0.5	0.4	0.3	0.2	-	-	-	-	-	-
MD	1°	56.6	25.2	14.1	12.1	9.1	5.6	4.7	3	2	1.4	1.2	1	0.8	0.7	0.6
	2°	9.4	4.2	2.4	2	1.5	0.9	0.8	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1
MD # H	1°	141.5	62.9	35.4	30.1	22.6	14.1	11.9	7.5	5	3.5	2.9	2.4	2	1.7	1.4
	2°	14.1	6.3	3.5	3	2.3	1.4	1.2	0.8	0.5	0.4	0.3	0.2	0.2	0.2	0.1
A	1°	21.2	9.4	5.3	4.5	3.4	2.1	1.8	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2
	2°	10.6	4.7	2.7	2.3	1.7	1.1	0.9	0.6	0.4	0.3	0.2	0.2	0.2	0.1	0.1
B	1°	110.8	49.3	27.7	23.6	17.7	11.1	9.3	5.9	3.9	2.8	2.3	1.9	1.6	1.4	1.1
	2°	10.6	4.7	2.7	2.3	1.7	1.1	0.9	0.6	0.4	0.3	0.2	0.2	0.2	0.1	0.1
C	Single stage	21.2	9.4	5.3	4.5	3.4	2.1	1.8	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2
D	1°	42.4	18.9	10.6	9	6.8	4.2	3.6	2.3	1.5	1.1	0.9	0.7	0.6	0.5	0.4
	2°	21.2	9.4	5.3	4.5	3.4	2.1	1.8	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2
H	1°	56.6	25.2	14.1	12.1	9.1	5.6	4.7	3	2	1.4	1.2	1	0.8	0.7	0.6
	2°	21.2	9.4	5.3	4.5	3.4	2.1	1.8	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2
E	1°	221.6	98.5	55.4	47.2	35.5	22.1	18.6	11.8	7.8	5.5	4.5	3.8	3.2	2.7	2.2
	2°	21.2	9.4	5.3	4.5	3.4	2.1	1.8	1.1	0.7	0.5	0.4	0.4	0.3	0.3	0.2
F	Single stage	42.4	18.9	10.6	9	6.8	4.2	3.6	2.3	1.5	1.1	0.9	0.7	0.6	0.5	0.4
G	1°	110.8	49.3	27.7	23.6	17.7	11.1	9.3	5.9	3.9	2.8	2.3	1.9	1.6	1.4	1.1
	2°	42.4	18.9	10.6	9	6.8	4.2	3.6	2.3	1.5	1.1	0.9	0.7	0.6	0.5	0.4
L	Single stage	37.7	16.8	9.4	8	6	3.8	3.2	2	1.3	0.9	0.8	0.6	0.5	0.5	0.4
K	1°	273.5	121.6	68.4	58.3	43.8	27.3	22.9	14.6	9.6	6.8	5.6	4.7	3.9	3.4	2.7
	2°	37.7	16.8	9.4	8	6	3.8	3.2	2	1.3	0.9	0.8	0.6	0.5	0.5	0.4
T	1°	235.7	104.8	59	50.2	37.7	23.5	19.8	12.6	8.3	5.9	4.8	4	3.4	2.9	2.4
	2°	42.4	18.9	10.6	9	6.8	4.2	3.6	2.3	1.5	1.1	0.9	0.7	0.6	0.5	0.4
V	1°	235.7	104.8	59	50.2	37.7	23.5	19.8	12.6	8.3	5.9	4.8	4	3.4	2.9	2.4
	2°	58.9	26.2	14.7	12.6	9.4	5.9	4.9	3.1	2.1	1.5	1.2	1	0.8	0.7	0.6

HYDRAULIC PUMPS

• COMPONENTS OF AN HYDRAULIC SYSTEM



- **1** Hand pump with side mounted gauge
- **2** Hand pump with front mounted gauge
- **3** Power pack
- **4** G106L gauge
- **5** G10 gauge
- **6** SN# hose, 3/8" NPT
- **7** ZPF12 gauge adapter (flange connection)
- **8** 1/2 bsp gauge adapter short RP50
- **9** 1/2 bsp gauge adapter long RP502
- **10** VRF384 four-way needle valve
- **11** RM387 Manifold
- **12** RK383 radial manifold
- **13** VRF38 needle valve
- **14** VRU38 flow control valve
- **15** RN38 nipple
- **16** K73F female coupler
- **17** K73M male coupler
- **18** K73C female dust cap
- **19** K73D male dust cap
- **20** Single acting cylinder
- **21** Double-acting cylinder

HYDRAULIC PUMPS

MANUAL AND FOOT PUMPS	
PF	P. 70
PN	P. 71 > 74
PNP	P. 75
PP	P. 76
PS	P. 77
PV	P. 78
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AIR-HYDRAULIC PUMPS	
MLP	P. 80 > 83

COMPACT ELECTRIC PUMPS	
MC	P. 84 > 86
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MODULAR HYDRAULIC POWER PACKS	
Modular hydraulic power packs 700 bar	P. 91 > 93
ME	P. 94 > 95
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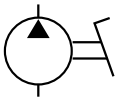
PF

LIGHTWEIGHT ALLOY FOOT PUMPS / 700 bar



• RESERVOIR CAPACITY	0,24 - 0,5 l
• OIL DELIVERY PER STROKE IN HP	2,2 cm³
• MAX PRESSURE	700 bar

FEATURES

This lightweight aluminium pump is strong, simple to use and easy to maintain.
Available in single-stage and double-stage versions to reduce approaching times.

It is equipped with:

- Externally adjustable relief valve.
- Steel base plate with antislip pads which can be removed if the pump is mounted onto a support structure.
- 1/4" NPT gauge port for direct installation of a pressure gauge on the pump head.

OPERATIONAL AREAS

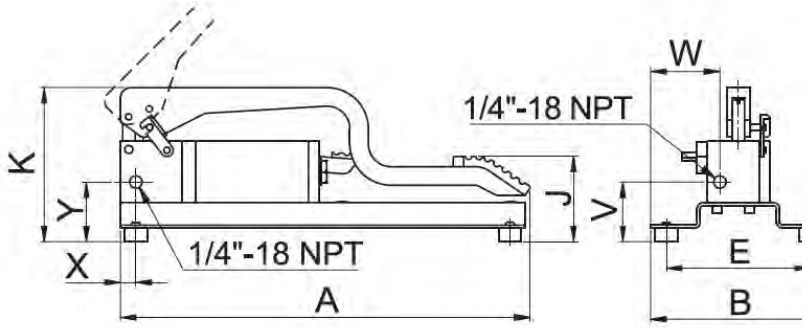
This pump is used with small tools for folding, drilling and pressing of pipes and metal sheets.
They are not suitable for lifting and lowering operations since the discharge pedal doesn't have the possibility to control and modify the oil flux.
This pump is recommended if the operator needs to keep his hands free.

OPTIONS

- **G version**, pump with pressure gauge **G106L** directly mounted on pump head (**PF120G**).

STANDARD

- 1/4" NPT gauge for Direct fitting of the pressure gauge on the pump head.



PRESSURE 1° STAGE	PRESSURE 2° STAGE	OIL DELIVERY 1° STAGE	OIL DELIVERY 2° STAGE	EFFORT ON PEDAL	FOR USE WITH	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM								WEIGHT
bar	bar	cm³	cm³	N		litres	litres		A	B	J	K	V	X	Y	W	kg
-	700	-	2.2	490	Single acting	0.24	0.19	**PF120**	400	200	56-350	155	56	15	56	83	3.5
20		10.3		560		0.5	0.4	**PF150**				175				75	4.5

PN

LIGHTWEIGHT ALLOY HAND PUMPS
700 / 1000 / 1600 / 2800 / 4000 bar

FEATURES

The main quality of **PN** is the lightness (their weight is over 50% less compared to traditional products).
They are made from light alloy metal which is normally used in the aviation field due to its mechanical resistance.
Because of this, PN pumps are extremely handy and stand out due to **a very low effort on their handle**.
The practical pedal locking hook allows to use **the lever as a handle during transport** by holding it in the correct position in order to balance the pump correctly even if equipped with ancillaries.
The pumps with 1 and 2 liter oil tank have a brand new design and a bigger internal usable oil volume. This allows both to use the total internal capacity without opening the oil briefer cap or to fill the tank completely in order to use, with the cap in briefing position, a much bigger quantity of oil.

All 700 bar models have:

- Externally adjustable relief valve.
- Side port 1/4" NPT for the direct fitting of the G106L gauge (PN26# range excluded).
- 1/4" NPT hole to insert directly the G106 gauge only on the **PN46#** pump.
- Fixing holes.
- Tank from 1.2 - 2.2 - 4.3 and 7.8 l.

All 1000 / 1600 / 2800 / 4000 bar models have:

- Double stage (except PN13110/16/28 and PN13110 models).
- Externally adjustable low and high pressure relief valves.
- Second port (also usable as gauge port) only on PN13110/16/28, PN16#28 and PN13240 models.
- Fixing holes.
- Tank from 1,2 - 2,2 - 4,3 and 7,8 l.

All PN pumps can work vertically with the pumping head pointing downwards.
The usable oil volume is 100% of the reservoir capacity with 1 and 2 litre tanks, thanks to the filler cap positioned at the end of the tank.

4 and 8 litre models can also work vertically but with a lower oil volume compared to their nominal capacity, it is recommended to use the **ZPN#MOD kit** to fasten correctly the 1 and 2 litre pump vertically.

Double acting pumps:

The PN26# pump Seriess are equipped with a 4 way manual valve in order to use oil return or double acting cylinders for traction, pushing and lifting operations.

While moving the lever to a different position from the central position the load in not held, the return is controlled by the by-pass valve and in order to have a total return of the cylinder place the valve in return position.

Double acting with piloted check valve:

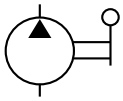
Differently from **PN26#** pump Seriess, the **PN46#** Seriess allow a perfectly controlled lowering under load by acting on the pump with the valve in discharge position thanks to the presence of a piloted check valve which intercepts the port A. The **PN46#** pumps are equipped with a hole for the mounting of 1/4" NPT manometer model **G106**.

In order to fix the 1 and 2 litre pumps correctly, use the holes at the bottom paying attention not to tight the screws too much to avoid possible deformations or oil losses.
We recommend to use the ZPNB kit.

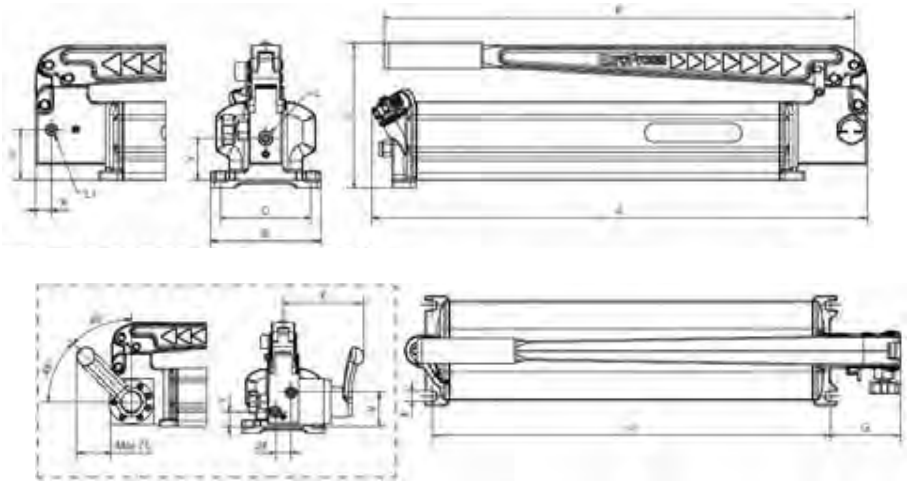
If requested, we are able to supply versions to be used with fluids which are different from mineral oil.

PN

LIGHTWEIGHT ALLOY HAND PUMPS 700 / 1000 / 1600 / 2800 / 4000 bar



• RESERVOIR CAPACITY	0,7 - 8,0 l
• OIL DELIVERY PER STROKE IN HP	0,8 - 2,7 cm³
• MAX PRESSURE	700 - 1000 - 1600 - 2800 - 4000 bar



SELECTION CHART

PRESSURE 1ST STAGE	PRESSURE 2ND STAGE	OIL DELIVERY PER STROKE 1 ST STAGE	OIL DELIVERY PER STROKE 2ND STAGE	HANDLE EFFORT	FOR USE WITH CYLINDERS	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM															WEIGHT
									A	B	D	G	H	F	J	L	L1	P	V	X	Y		
bar	bar	cm³	cm³	N		litres	litres																	kg
-	700	-	2.7	363	Single acting	1.2	1	PN131	572	115	90	83	460	11	154	3/8" NPT	1/4" NPT	544	32	18	42	4.8
						2.2	2	PN132	572	128	105	83	460	11	169			544	47	18	57	6.2
30		13.7	2.2	380		1.2	1	PN141	572	115	90	83	460	11	154			544	32	18	42	4.8
						2.2	2	PN142	572	128	105	83	460	11	169			544	47	18	57	6.2
70		28.5	2.7	363		2.2	2	PN162	572	128	105	83	460	11	173	3/8" NPT	1/4" NPT	544	32	18	55	6.6
						4.3	3.8	PN164	572	190	176	90	471	9	173			544	32	18	55	9.8
						7.8	7.2	PN168	652	270	256	90	551	9	173			544	32	18	55	14.5
					Double Acting	2.2	2	PN262	572	128	105	83	460	11	173	3/8" NPT	-	544	52	124	22	7.4
						4.3	3.8	PN264	572	190	176	90	471	9	173			544	52	124	22	10.6
						7.8	7.2	PN268	652	270	256	90	551	9	173			544	52	124	22	15.3
					With piloted check valve	2.2	2	PN462	572	128	105	83	460	11	173	3/8" NPT	-	544	52	148	22	7.7
						4.3	3.8	PN464	572	190	176	90	471	9	173			544	52	148	22	10.9
						7.8	7.2	PN468	652	270	256	90	551	9	173			544	52	148	22	15.6
-	1000	-	1.4	274	Single acting	1.2	1	PN13110	572	115	90	83	460	11	154		1/2"BSP	544	31	*	-	3
20		28.5		385		2.2	2	PN16210	572	128	105	83	460	11	173	1/4" BSP 120°	-	544	30	-	-	6.6
						4.3	3.8	PN16410	572	190	176	90	471	9	173			544	30	-	-	9.8
						7.8	7.2	PN16810	652	270	256	90	551	9	173			544	30	-	-	14.5
-	1600	-	1.4	437		1.2	1	PN13116	572	115	90	83	460	11	154	1/4" BSP 120°	1/2"BSP	544	31	*	-	3
15		28.5		522		2.2	2	PN16216	572	128	105	83	460	11	173		-	544	30	-	-	6.6
						4.3	3.8	PN16416	572	190	176	90	471	9	173			544	30	-	-	9.8
						7.8	7.2	PN16816	652	270	256	90	551	9	173			544	30	-	-	14.5
-	2800	-	0.8	432		1.2	1	PN13128	572	115	90	83	460	11	154	3/4" - 16 UNF	3/8"BSP	544	35	*	-	3
10		28.5		515		2.2	2	PN16228	572	128	105	83	460	11	173		3/4" - 16 UNF	544	42	28	42	6.8
						4.3	3.8	PN16428	572	190	176	90	471	9	173			544	42	28	42	10
						7.8	7.2	PN16828	652	270	256	90	551	9	173			544	42	28	42	14.7
-	4000	-	0.55	530		2.2	2	PN13240	567	128	105	83	460	11	173	M16 x1,5		544	32	26.5	36	8.3

* Pressure gauge connection on the front of head of the pump.

PN

LIGHTWEIGHT ALLOY HAND PUMPS 700 / 1000 / 1600 / 2800 / 4000 bar

MODEL CODING

PN	13	#		G
Series	Pump type	Reservoir capacity litres	**-** Max pressure 700 bar **16** Max pressure 1600 bar **40** Max pressure 4000 bar **10** Max pressure 1000 bar **28** Max pressure 2800 bar	Gauge (only for 700 bar pumps)

OPERATIONAL AREAS

- **PN13# Series**
  Single stage pumps with 1,2 - 2,2 litre reservoirs, for **single acting** cylinders with short strokes and small/ medium oil capacities.
- **PN14# Series**
  Double stage pumps with 1,2 - 2,2 litre reservoirs with a pressure relief valve on the first stage, recommended for **single acting** cylinders with medium strokes and medium oil capacities.
- **PN16# Series**
  Double stage pumps with 2,2 - 4,3 - 7,8 litre reservoirs with unloading valve to facilitate the pumping on the second stage; recommended for single acting cylinders with long strokes and large oil capacities.
- **PN26# Series**
  Double stage pumps with 2,2 - 4,3 - 7,8 litre reservoirs with unloading valve to facilitate the pumping on the second stage; with a **4 way** valve, for **double acting** cylinders with long strokes and large oil capacities.
- **PN46# Series**
  Pumps like the PN26# series but equipped with an additional pilot check valve in order to maintain the load while moving the lever and to control the lowering of the cylinder under load.
- **PN13110 / PN16#10 Series**
  Used in extracting operations, in lab tests and to operate hydraulic bolt tensioners models **UTN** and **UTH**.
- **PN13116 / PN16#16 Series**
  Used in all bearings extractions and to operate hydraulic bolt **UTV** tensioners.
- **PN13128 / PN16#28 / PN13240 Series**
  They are most useful and effective in cases of laddering of bearings, in tightenings, in pretensioning of studs, in burst tests and in calibrations.

ACCESSORIES 700 bar:

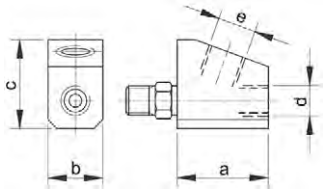
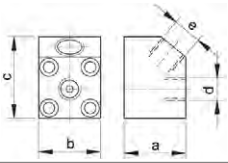
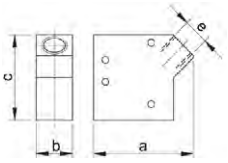
- **ZPS12** Adapter for **G10** gauge with screw connection.
- **ZPF12** Adapter for **G10** gauge with flange connection.
- **ZPF121** Adapter for **G10** with plate connection.

ACCESSORIES 1000 / 1600 / 2800 bar:

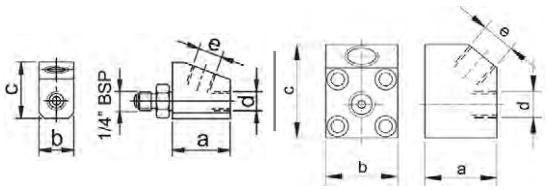
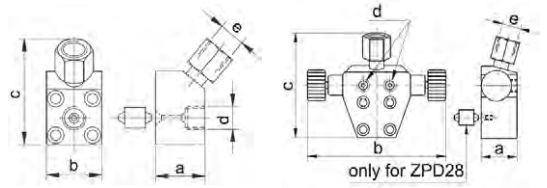
- **ZPS53** Gauge adapter with screw connection.
- **ZPF14** Gauge adapter with flange connection.
- **ZPF73** Gauge adapter with flange connection.
- **ZPD16** Flanges double needle valve to split the flow in two ways.
- **ZPD28** Flanges double needle valve to split the flow in two ways.

PN

ACCESSORIES ZPS / ZPF GAUGE ADAPTORS / 700 bar

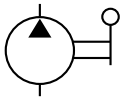
	MODEL	For pumps	a	b	c	d	e	kg
	**ZPS12** (screw connection)	SERIES **PN13#** **PN14#** **PN16#**	50	30	48	3/8" NPT	1/2" BSP	0.5
	**ZPF12** (flange connection)	SERIES **PN16#**	45	45	60	3/8" NPT	1/2" BSP	0.9
	**ZPF121** (plate connection)	SERIES **PN26#**	83	30	70	-	1/2" BSP	0.37

ACCESSORIES ZPS / ZPF GAUGE ADAPTORS / ZPD VALVES / 1000 / 1600 / 2800 bar

	MODEL	For pumps	Fot gauge	Max press. bar	a	b	c	d	e	kg
	**ZPS53** (screw connection gauge adapter)	SERIES **PN16#10** **PN16#16**	G10 G16	1000	50	30	48	3/8'' NPT	1/2'' BSP	0.9
	ZPF14 ((flanged gauge adapter)	SERIES **PN16#10** **PN16#16**	G10 G16	1600	45	45	60	1/4'' BSP 120°	1/2'' BSP	0.9
	**ZPF73** (flanged gauge adapter)	SERIES **PN16#28**	G30 / G40 + RN28	2800	40	45	85	3/4'' - 16UNF	1/2'' BSP swivelling	1
	ZPD16 (double needle flanged valve)	SERIES **PN16#10** **PN16#16**	G10 G16	1600	40	155	112	1/4'' BSP 120°	1/2'' BSP swivelling	1
	ZPD28 (double needle flanged valve)	SERIES **PN16#28**	G30 / G40 + RN28	2800						

USEFULL ACCESSORIES

- **ZPC**
  Support and protection framework for 1 a 2 litres PN pump series with lateral gauge.
- **ZPC1**
  Support and protection framework for 1 a 2 litres PN pump series with front gauge.
- **ZPNB**
  Mounting kit for the 1 and 2 litres PN pumps series on boards and bases.
- **ZPN1MV**
  Kit for the vertical mounting of the PN131 and PN141 pumps.
- **ZPN2MV**
  Kit for the vertical mounting of the 2 litre tank PN series.
- **ZPN21MV** Kit for the vertical mounting of PN131 and PN142 pumps.



• RESERVOIR CAPACITY	0,7 - 1,2 l
• OIL DELIVERY PER STROKE IN HP	1,1 - 2,7 cm³
• MAX PRESSURE	700 bar

PNP

HAND PUMPS WITH TANK IN PLASTIC / 700 bar

FEATURES

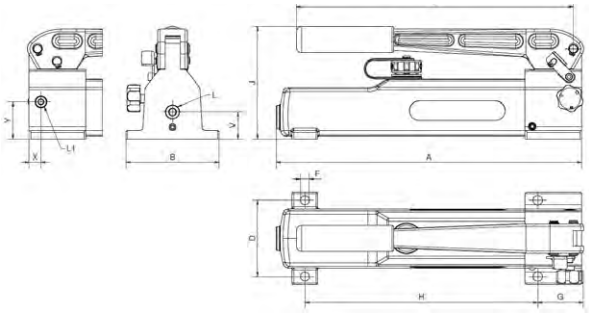
The main feature of the **PNP** pump is it's extreme lightness given that the body of the pump is produced from extruded aluminum and the oil tank from glass reinforced nylon.
The practical pedal locking hook allows the use of the **lever as a handle during transport** by holding it in the correct manner it will balance the pump even if equipped with ancillaries.

All **PNP** pumps can work vertically with the pumping head pointing downwards with a smaller oil volume than their nominal capacity.

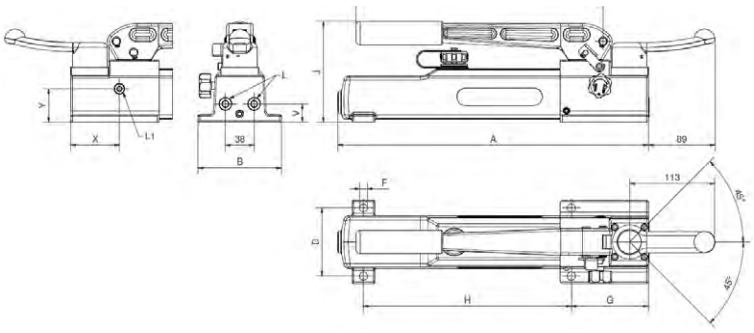
All 700 bar models have:

- Externally adjustable relief valve.
- 1/4 " NPT side port for the direct fitting of the gauge.
- Fitting holes.
- Tank from 0,7 - 1,2 l.
- The PNP240 model pump is equipped with a 4 way valve with 3 positions for the usage of the pump with double acting cylinders.

PNP1###



PNP240



SELECTION CHART

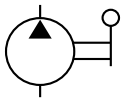
PRESSURE 1° STAGE	PRESSURE 2° STAGE	OIL DELIVERY PER STROKE 1° STAGE	OIL DELIVERY PER STROKE 2ND STAGE	HANDLE EFFORT	FOR USE WITH CYLINDERS	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM														WEIGHT
bar	bar	cm³	cm³	N		litres	litres		A	B	D	G	H	F	J	L	L1	P	V	X	Y	kg
-	700	-	1.7	426	Single acting	0.7	0.5	**PNP130**	362	110	90	52	275	11	135	3/8" NPT	1/4" NPT	330	32	14	44	3
			2.7	363		1.2	1	**PNP131**	551	110	90	52	460	11	135			554	32	14	44	4
20		14.7	1.1	455		0.7	0.5	**PNP140**	362	110	90	52	275	11	135			330	32	14	44	3
30		13.7	2.2	380		1.2	1	**PNP141**	551	110	90	52	460	11	135			544	32	14	44	4
20		14.7	1.1	455	Double acting	0.7	0.5	**PNP240**	414	110	90	104	275	11	135	3/8" NPT	1/4" NPT	330	24	66	44	3.5

MODEL CODING

PNP	13	#		G
Series	Pump type	Reservoir capacity in litres	Max pressure 700 bar	Gauge

PP

HAND PUMPS
FOR DIVERSIFIED APPLICATIONS
700 / 1400 bar



• OIL DELIVERY PER STROKE IN HP	2,1 - 4,5 cm³
• MAX PRESSURE	700 - 1400 bar

FEATURES

These hand pumps are single-stage, tankless, lightweight and are easy to handle (their weight is less than 5 kg for the standard version and 6 kg for the INOX version).

All models are equipped with:

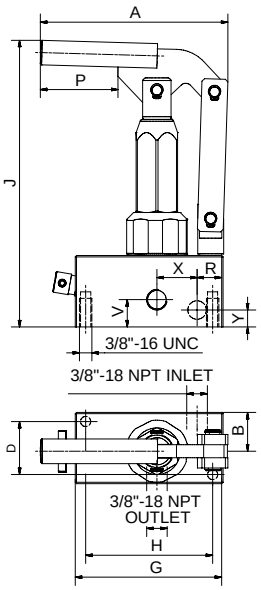
- 490 mm removable activation handle, used to turn the bypass valve on through the front connection.
- Fixing holes on the base.
- 3/8”-18 NPT side ports for oil inlet and outlet.
- All standard pump components, both internal and external, undergo the EUROPRESS exclusive thermo-chemical treatment, named **Nitreg-ONC®**, which makes steel exceptionally hard and resistant to corrosion and mechanical wear.

OPERATIONAL AREAS

- These types of pumps are particularly usefull if used with small assembly room applications, and if installed either on machines or in circuits already equipped with their own reservoir. We advise to action the pump with the flooded inlet.

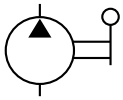
The **PP113** pump is also available in stainless steel for usage with water, and with different pump heads to be used at pressures lower than 700 bar (available on request).

Choosing a in-line valve PP pumps can be used also in **double-acting** applications.



SELECTION CHART

MAX PRESSURE	OIL DELIVERY PER STROKE	HANDLE EFFORT	TO BE USE WITH	FOR USE WITH CYLINDERS	MODEL	DIMENSIONS MM												WEIGHT
bar	cm³	N				A	B	D	G	H	J	K	M	P	R	V	X	Y	kg
1400	2.1	649	Oil	Single or double acting cylinders	**PP109**	145	30	41	114	98	219	55	55	60	20	21	31	13	4.8
700	4.5	677	Oil	Single or double acting cylinders	**PP113**	145	30	41	114	98	219	55	55	60	20	21	31	13	4.8
700	4.5	677	water	Single or double acting cylinders	**PP113SS**	145	30	41	114	98	219	60	60	60	20	21	31	13	5.6



• RESERVOIR CAPACITY	0,42 - 0,8 l
• OIL DELIVERY PER STROKE IN HP	1 - 2,3 cm³
• MAX PRESSURE	400 - 700 1000 bar

PS

STEEL HAND PUMPS
400 / 700 / 1000 bar

FEATURES

These steel pumps are robust and affordable and require little handle effort.
They are available in four models, with three pressure ratings, 400 / 700 / 1000 bar.

These pumps can also operate in vertical position with their head downwards.

All models are equipped with:

- External adjustable safety valve.
- Fixing holes.
- Handle locking mechanism for an easy transport.

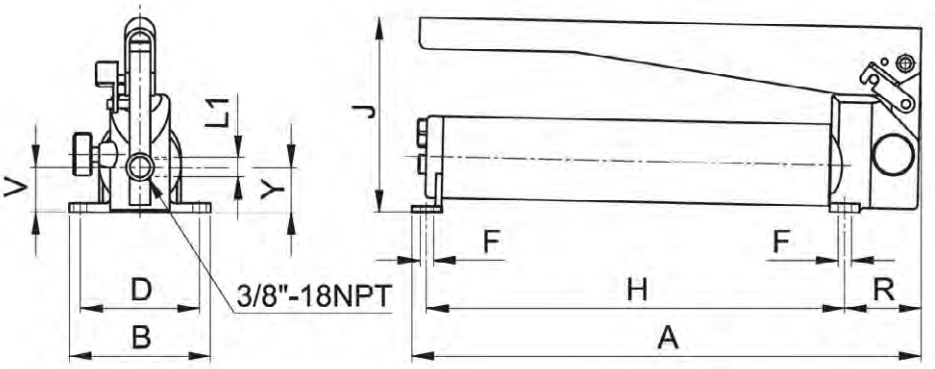
Available with 0,42 - 0,8 l. reservoirs depending on the model.

OPERATIONAL AREAS

- These pumps are ideal to be used with small hydraulic tools and / or single acting cylinders that require a small amount of oil.

STANDARD

- All the **PS** model pumps have a hole on the side for the mounting of the **G106L** gauge.



SELECTION CHART

MAX PRESSURE	OIL DELIVERY PER STROKE	HANDLE EFFORT	FOR USE WITH CYLINDERS	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM										WEIGHT
bar	cm³	N		cm³	cm³		A	B	D	F	H	J	L1	R	V	Y	kg
700	1	280	Single acting	420	300	**PS100**	340	95	80	9	280	130	1/4" NPT	50	32.5	32.5	3.2
1000		380				**PS10010**											
400	2.3	350		420	300	**PS10004**	340				280						
700		390		800	700	**PS101**	565				505						4.5

MODEL CODING

PS	10	0	##
Series	Pump type	Reservoir capacity litres	Max pressure 1000 bar

PV

STEEL HAND PUMPS WITH LARGE OIL DELIVERY 700 bar

• RESERVOIR CAPACITY	9,3 - 19,4 l
• OIL DELIVERY PER STROKE IN HP	4,8 cm³
• MAX PRESSURE	700 bar

FEATURES

These pumps are two-stage hand pumps with an automatic switch from the 1st to the 2nd stage. A moderate effort on the handle is required to reach the maximum working pressure.

All models are equipped with:

- Relief valve.
- Carry handle.
- 1/2" BSP connection for pressure gauge.

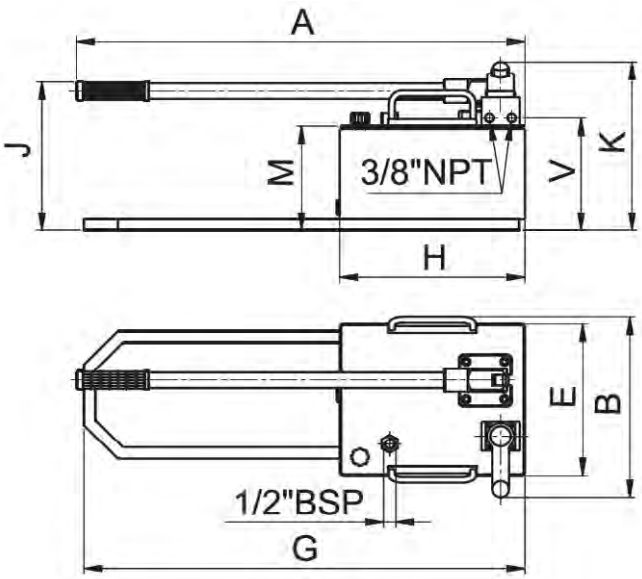
Available in 10 or 20 litre reservoirs and 3-way, 4-way and 4-way with control check valves.

OPERATIONAL AREAS

These steel hand pumps are ideal when you need a more affordable and handier pump compared to electric or pneumatic power packs while also having a larger reservoir capacity compared to **PN** hand pumps.

STANDARD

- **G version** pump with gauge **G10** (**PV # G**).



SELECTION CHART

PRESSURE 1ST STAGE	PRESSURE 2ND STAGE	OIL DELIVERY FOR STROKE 1 ST STAGE	OIL DELIVERY FOR STROKE 2ND STAGE	HANDLE EFFORT	FOR USE WITH CYLINDERS	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM									WEIGHT WITHOUT OIL	WEIGHT WITH OIL
bar	bar	cm³	cm³	N		litres	litres		A	B	E	G	H	J	K	M	V	kg	kg
20	700	125	4.8	450	Single acting	9.3	7.7	**PV1810**	763	261	245	750	315	257	290	180	194	20.9	29
						19.4	16	**PV1820**				-	650	245	278	168	182	23.1	40
					Double acting	9.3	7.7	**PV2810**		313		750	315	257	290	180	194	20.9	29
						19.4	16	**PV2820**				-	650	245	278	168	182	23.1	40
					Double acting with controlled check valve	9.3	7.7	**PV4810**				750	315	257	290	180	194	20.9	29
						19.4	16	**PV4820**				-	650	245	278	168	182	23.1	40

• RESERVOIR CAPACITY	10 l
• OIL DELIVERY PER STROKE IN HP	4,8 cm³
• MAX PRESSURE	700 bar

PVL

STEEL HAND PUMPS WITH LARGE OIL DELIVERY AND LIGHTWEIGHT ALLOY RESERVOIR / 700 bar

FEATURES

These are two-stage hand pumps with a valve that allows to automaticly switch from 1st to 2nd stage and to reach the maximum working pressure with relatively little effort.

All models are equipped with:

- Relief valve.
- Carrying handles.
- Light alloy reservoir (it reduces considerably the weight of the pump).
- 1/2" BSP connection for pressure gauge.

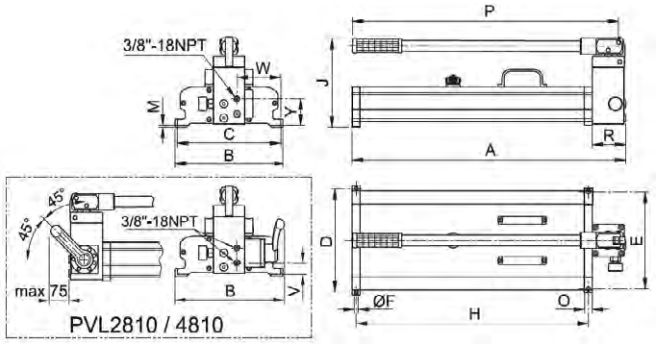
Available with 3-way, 4-way, and 4-way with controlled check valves.

OPERATIONAL AREAS

These pumps have bigger flow and capacity compared to the **PN** hand pumps but they are also a very good alternative to the **PV** hand pumps if weight is a significant factor.

ACCESSORIES

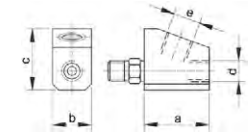
- **ZPS12**
  Gauge adapter for **G10** gauge with screw connection.
- **ZPF121**
- Gauge adapter for **G10** gauge with plate connector.



SELECTION CHART

PRESSURE 1ST STAGE	PRESSURE 2ND STAGE	OIL DELIVERY PER STROKE 1 STSTAGE	OIL DELIVERY PER STROKE 2ND STAGE	HANDLE EFFORT	FOR USE WITH CYLINDERS	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM																WEIGHT WITHOUT OIL	WEIGHT WITH OIL
bar	bar	cm³	cm³	N		litres	litres		A	B	C	D	E	F	H	J	M	O	P	R	V	W	Y	kg	kg
20	700	125	4.8	420	Single acting	9.5	8.3	**PVL1810**	790	270	259	256	240	9	686	223	5	20	770	84	28	110	65	15.7	24
					Double acting			**PVL2810**		274														16.2	24.5
					Double acting with controller check valve			**PVL4810**		306														16.7	25

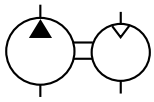
ACCESSORIES GAUGE ADAPTER



MODEL	For pumps	a	b	c	d	e	kg
ZPS12 (screw connection)	**PVL1810 PVL2810 PVL4810**	50	30	48	3/8" NPT	1/2" BSP	0.25
ZPF121 (plate connection)	**PVL2810 PVL4810**	83	30	70	-	1/2" BSP	0.37

MLP

AIR-HYDRAULIC PUMPS FROM 80 TO 3000 bar



• RESERVOIR CAPACITY	2,4 - 5 - 10 l
• MAX PRESSURE	80 - 350 - 700 1000 - 1500 - 2100 - 3000 bar
• INLET AIR PRESSURE	2,8 - 8,5 bar
• AIR CONSUMPTION	500 - 2100 l/min

FEATURES

Air- hydraulic pumps are extremely light and versatile.
Tests results show how exceptionally reliable and suitable they are for the most difficult operations thanks to their unique design (series SA, MA, HA, TA, V, U made of plastic material outside and metal alloy inside).
There are seven multiplying factors: 19:1, 60:1, 122.1, 196:1, 278:1, 336:1, 484:1 for maximum oil pressure values respectively of 80, 350, 700, 1000, 1500, 2100, 3000 bar.
All the pumps (version KA excluded) have a maximum pressure valve not adjustable from the outside.
The outward pressure can be adjusted varying the inward air pressure.

The five basic versions are:

- **MLP0** with P and T outlets, to be used with on-line valves.
- **MLP1** with Cetop 3 plate.
- **MLP2** with three-way valve (with control pedal for **SA**. **MA; HA** and ta, with manual handwheel for **V, U** and **KEG)** for single acting cylinders.
- **MLP3** with three-way valve (with manual handwheel) for single acting cylinders.
- **MLP4** with four-way valve (with hand lever) four double acting cylinders.

Different ancillaries can be added to the basic version, this expands the pump's functions, check the table on the next page.

EUROPRESS Technical department is available for the design and composition of special applications.

Follow EUROPRESS safety instructions see useful pages (p. 176).

OPERATIONAL AREAS

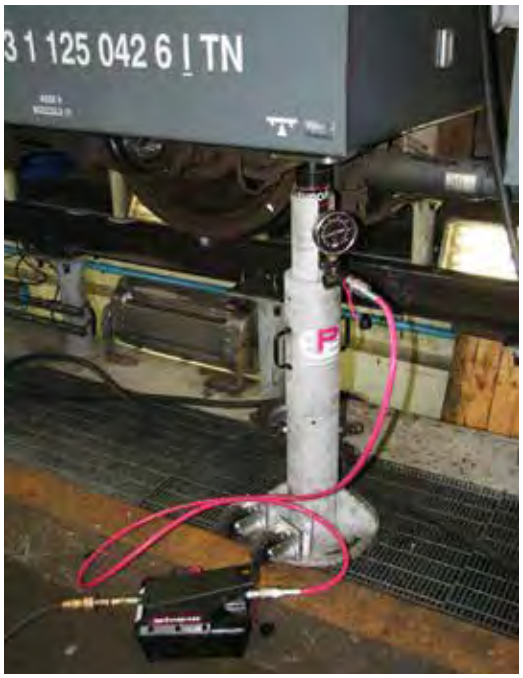
- These air-hydraulic pumps are best if used in the rapid exchange of the equipments on machine tools (80 bar), in hydraulic clamping (80 and 350 bar), in the industrial sector (350 bar), for the lifting, the maintenance and in the automotive sector (700 bar) together with bolt tensioner cylinders and hydraulic nuts (1000 and 1500 bar), bearings press fitting, for laboratory and burst tests (1500, 2100 and 3000 bar).

STANDARD (on MLP21V, MLP21U and MLP23KAG):

- **Cage**.
- **Gauge**.
- **Pressure reducer**.

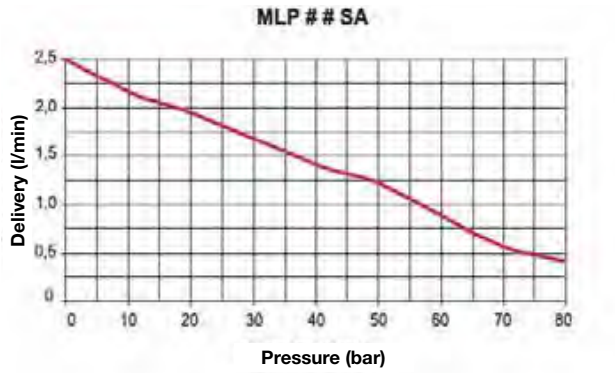
ACCESSORIES

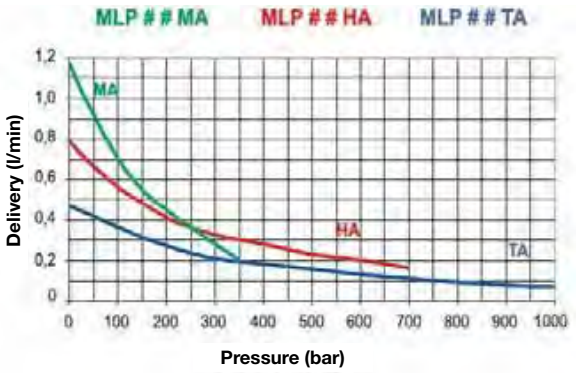
- **ZML14 pressure reducer** for air supply.
- **ZMB7 pressure booster** adaptable to the MLP2# HA/MA/SA to multiply outgoing pressure (Ratio 4:1) Inlet 3/8″ NPT, outlet 3/4″ -16 UNF.
- **RP52 gauge adaptor** for gauge type G106L (a part from models V, KAG and U).

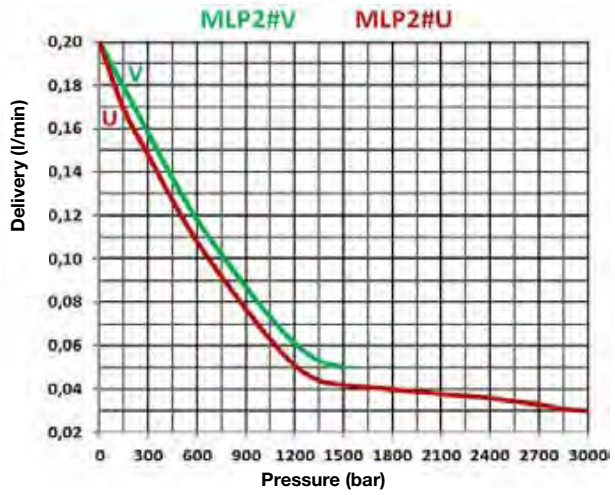


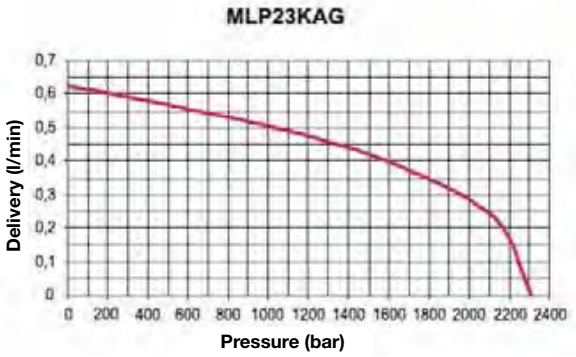
MLP

AIR-HYDRAULIC PUMPS FROM 80 TO 3000 bar









MODEL COMPOSITION CHART

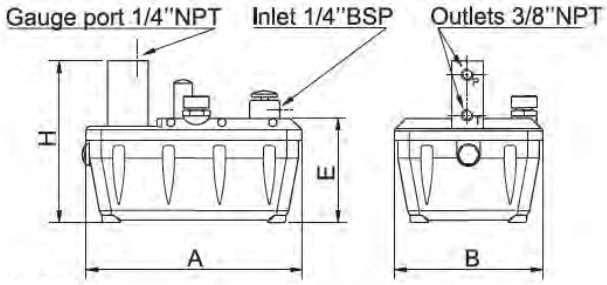
	DESCRIPTION	MODEL	BASE VERSIONS				
			MLP0	MLP1	MLP2	MLP3	MLP4
Tank	Tank 2,4 l **(excluded KAG)**	1	•	•	•	•	•
	Tank 5 l **(excluded KAG)**	2	•	•	•	•	•
	Tank 10 l	3	•	•	•	•	•
Working pressure (delivery)	Working pressure 3000 bar (0,2 – 0,03 l/min)	U	-	-	•	-	-
	Working pressure 2100 bar (0,62 - 0,24 l/min)	KAG	-	-	•	-	-
	Working pressure 1500 bar (0,2 - 0,05 l/min)	V	-	-	•	-	-
	Working pressure 1000 bar (0,5 - 0,1 l/min)	TA	-	-	•	-	-
	Working pressure 700 bar (0,8 - 0,16 l/min)	HA	•	-	•	•	•
	Working pressure 350 bar (1,2 - 0,2 l/min)	MA	•	•	•	•	•
	Working pressure 80 bar (2,5 - 0,3 l/min)	SA	•	•	•	•	•
Options	Ready for air remote control (except **V, U** and **KAG models)**	B	-	-	•	-	•
	With gauge inserted on the pump (standard **V, U** and **KAG**)	G	•	-	•	•	-
	With remote control (excluded **V, U** and **KAG**)	R	-	-	•	-	•

MODEL CODING

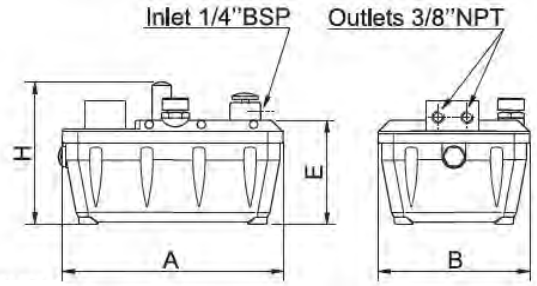
Pump version	Base version (valve)	Tank capacity	Working pressure	Options
MLP	2	1	HA	R

MLP

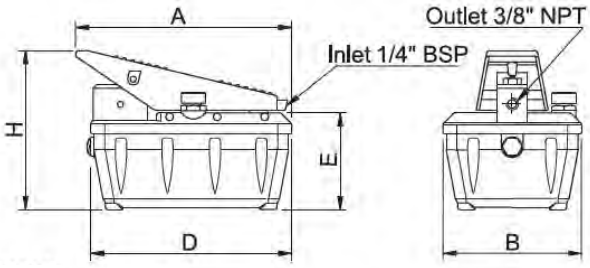
AIR-HYDRAULIC PUMPS
FROM 80 TO 1000 bar



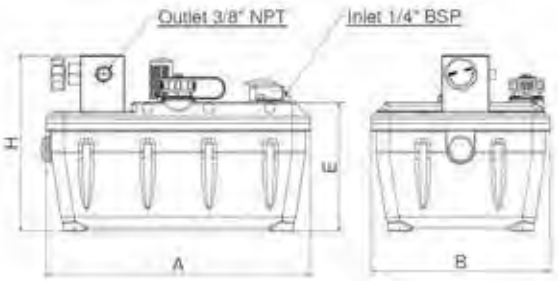
MLP0



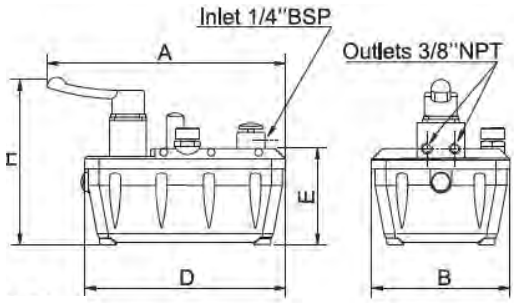
MLP1



MLP2



MLP3



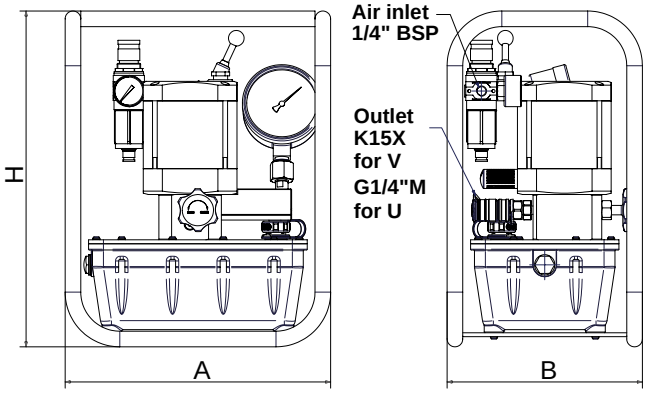
MLP4

FEATURES AND DIMENSIONS

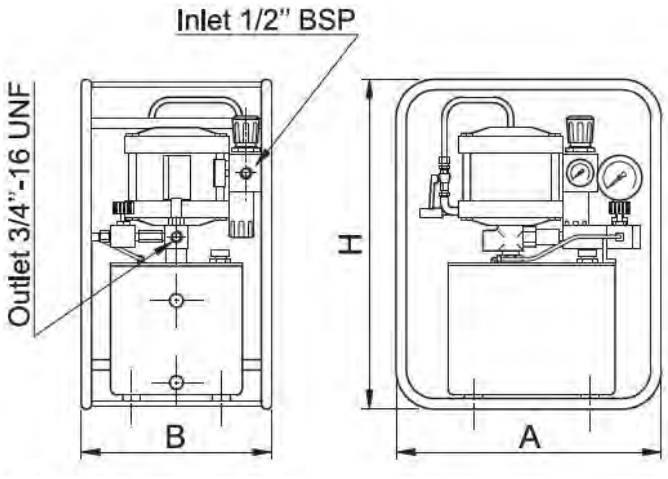
VERSION	VALVE	FOR USE WITH CYLINDERS	OIL TANK	USABLE OIL VOLUME	MODEL	DIMENSIONS MM					Weight
			litres	litres		A	B	D	E	H	kg
0	P and T block	according to the chosen on-line valve	2.4	1.9	**MLP01 # #**	280	190	-	136	201	4.7
			5	4	**MLP02 # #**	315	270	-	156	221	13.1
			10	8	**MLP03 # #**	420	385	-	156	221	20.5
1	Cetop 03 base plat	according to the chosen valve	2.4	1.9	**MLP11 # #**	280	190	-	136	171	4.7
			5	4	**MLP12 # #**	315	270	-	156	191	13.1
			10	8	**MLP13 # #**	420	385	-	156	191	20.5
2	3/3 pedal control valve	Single acting	2.4	1.9	**MLP21 # #**	300	190	280	136	220	5.5
			5	4	**MLP22 # #**	325	270	315	156	237	13.9
			10	8	**MLP23 # #**	420	385	410	156	237	21.3
3	3/2 manual control valve	Single acting	2.4	1.9	**MLP31 # #**	280	190	280	136	186	4.9
			5	4	**MLP32 # #**	315	270	315	156	203	13.3
			10	8	**MLP33 # #**	410	385	410	156	203	20.7
4	4/3 manual control valve	Double acting	2.4	1.9	**MLP41 # #**	335	190	280	136	240	5.1
			5	4	**MLP42 # #**	350	270	315	156	257	13.5
			10	8	**MLP43 # #**	420	385	410	156	257	20.9

MLP

AIR-HYDRAULIC PUMPS
FROM 1500 TO 3000 bar



MLP##V/MLP##U



MLP23KAG

FEATURES AND DIMENSIONS

VERSION	VALVE	OIL TANK	USABLE OIL VOLUME	PRESSURE MAX	MODEL	DIMENSIONS MM			WEIGHT
		litres	litres	bar		A	B	H	kg
V	3/2 manual control valve	2.4	1.9	1500	**MLP21V**	340	230	390	15
		5	4		**MLP22V**	495	325	500	25.7
		10	8		**MLP23V**	580	440	500	34.3
U		2,4	1,9	3000	**MLP21U**	340	230	390	15
		5	4		**MLP22U**	495	325	500	25,7
		10	8		**MLP23U**	580	440	500	34,3
KAG		10	8	2100	**MLP23KAG**	495	325	580	30

MC

MICRO HYDRAULIC POWER PACKS / 700 bar

FEATURES

These very small single stage power packs have been specifically designed for small tools.
They are designed to be specifically easy to use.
Lightness and compactness are the main features of this unit.

All models are equipped with:

- Single-phase electric motor 230 V - 50 Hz - 0,25 Kw.
- 3-way 2 position solenoid.
- Relief Valve.
- Plastic tank.
- Plastic casing with integrated handle.
- Oil level indicator.
- Electric cable 2,5 m. length with Schuko plug.
- 3 m. remote control cable.

Power packs with different voltage motors can be supplied upon request.

OPERATIONAL AREAS

- Micro pumps are the ideal to control small tools like mini-presses, shears and nut-cutters.
- **They are compact and light (9 kg)** therefore perfect in all applications where the pump has to be easy to carry.

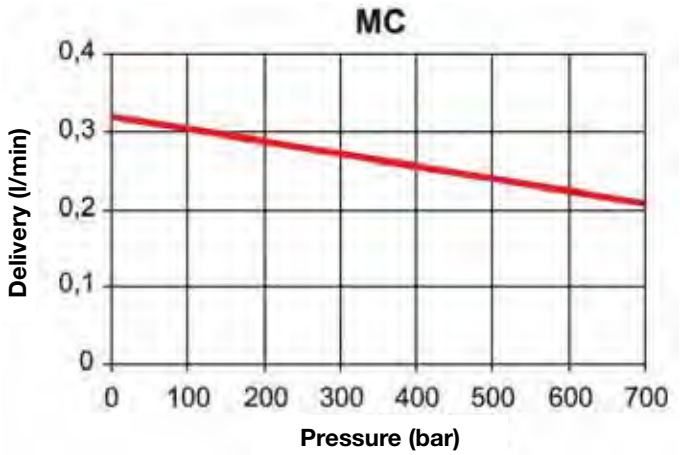
OPTIONS

- **Series MC5#** on power units with 500 bar setting.

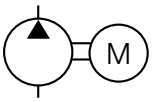
ACCESSORIES

- **ZMT** carry belt.

DELIVERY DIAGRAM

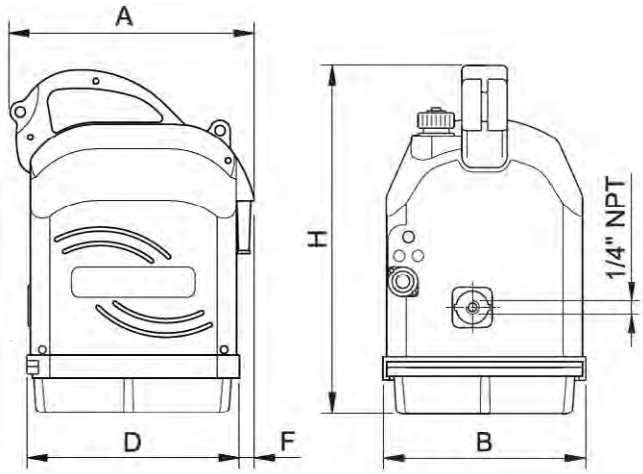


US series nut cutters when used with Micro power packs form a practical and handy set.



• RESERVOIR CAPACITY	11 l
• DELIVERY AT 700 bar	0,21 l min
• POWER RATING	0,25 kW
• MAX PRESSURE	700 bar

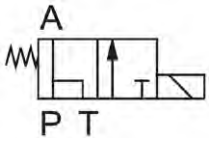
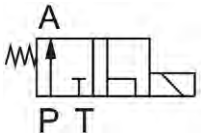
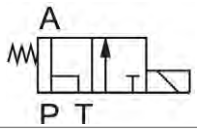
MC
MICRO HYDRAULIC POWER PACKS / 700 bar



SELECTION CHART

MAXIMUM PRESSURE	DELIVERY AT MINIMUM PRESSURE	DELIVERY AT MAXIMUM PRESSURE	RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM					WEIGHT
bar	l/min	l/min	litres	litres		A	B	D	F	H	kg
700	0.32	0.21	1	0.8	**MC71**	245	197	212	15	345	9
					MC72						
					MC73						

FUNCTION CHART

MODEL	For use with	Remote control funcion	SYMBOL
MC71	Single acting	Advance - Return (1 push button)	
MC72		Advance – Hold - Return (2 push buttons)	
MC73		Advance - Return (integrated control located at the end of the hose assembly - 1 push button)	

MODEL CODING

MC	7	#
Series	Pressure setting	Control type

MD

MIDI HYDRAULIC POWER PACKS 700 / 1000 / 1500 bar

FEATURES - SERIES 700 bar

These two-stage Hydraulic Power Packs are particularly light and compact with excellent technical features.

A large range of manual and electric controlled valves, allowes them to be used with single and double acting cylinders

All models are equipped with:

- Single phase electric motor 230 V - 50 Hz / 0,75 kW, 2800 rpm.
- Two-stage piston pump.
- Manual or electric 3 or 4-ways valves with or without pilot check.
- Relief valve.
- Plastic reservoir.
- Plastic frame with carrying handle (excluding H version).
- Protective cage (only H version) dim. AxBxH - 400x250x420 mm.
- Oil level gauge.
- Electric cable 5 m.
- Remote control 3 m (for electric valves).

FEATURES - SERIES 1000 / 1500 bar

Same characteristics of the 700 bar series aside from:

- Manual or electric 3 ways - 2 positions valve.
- Pressure regulation valve.
- G16 Gauge.

These can be supplied if requested with voltage motor, air operated motor or with different capacity reservoir.

OPERATIONAL AREAS

700 bar series: considering that are very easy to hadle they are ideal for medium sized tools. Particolarly suitable to be used with cutters, small presses, pipe bending machines and spreaders.

1000 bar series: suitable to be used with tensioner mod. UTN and UTH (p. 151).

1500 bar series: suitable to be used with tensioner mod. UTV (p. 153).

OPTIONS - SERIES 700 bar

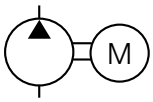
- **R version** 3 m remote control useful to activate the motor. Available in power pack with manual valve series **MDM##**.
- **H version** power pack with high flow pump: 1° stage 6,0 l/min - 2° stage 0,6 l/min - motor 1,1 kW.
- **J version** with pressure regulation valve.

OPTIONS - SERIES 1000 / 1500 bar

R version 3 m remote control usefull to operate the motor.

ACCESSORIES

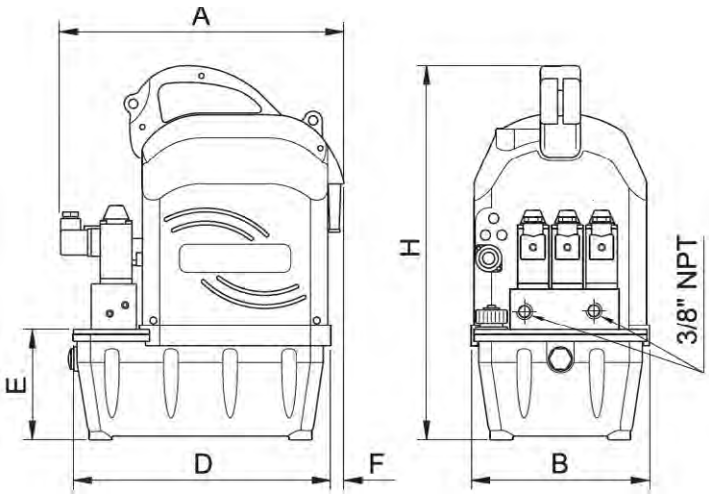
- **RP52** gauge adaptor for G106 gauge. (700 bar versions only).



• RESERVOIR CAPACITY	2,6 l
• DELIVERY AT 65 BAR	2,4 l/min - 6,0 l/min
• DELIVERY AT 700 BAR	0,4 l/min - 0,6 l/min
• POWER RATING	0,75 - 1,1 kW
• MAX PRESSURE	700 bar

MD

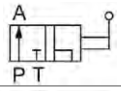
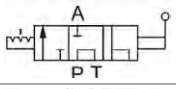
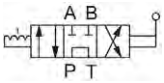
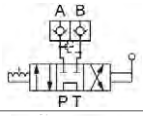
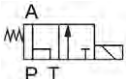
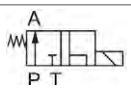
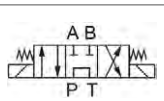
MIDI HYDRAULIC POWER PACKS / 700 bar



SELECTION CHART

OIL DELIVERY		PRESSURE RATING		RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM						WEIGHT
1°Stage	2°Stage	1°Stage	2°Stage				A	B	D	E	F	H	kg
l/min	l/min	bar	bar	litres	litres								
2.4	0.4	65	700	2.6	2.4	**MDM21**	329	197	287	119	15	406	16
						MDM31	366						16.3
						MDM41							16.3
						MDM42							16.5
						MDE21R	316						16.3
						MDE22R							16.3
						MDE41R							18.5

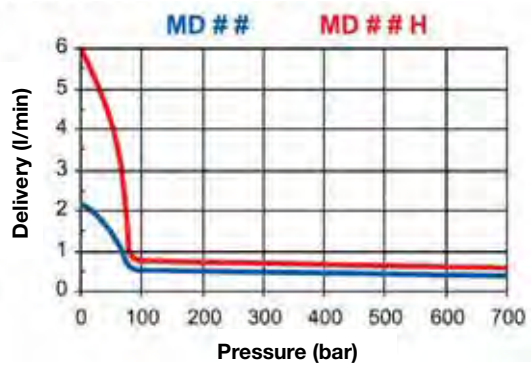
FUNCTION CHART

MODEL	FOR USE WITH	VALVE FUNCTION	SYMBOL
MDM21	Single acting	Advance - Return	
MDM31		Advance - Hold - Return	
MDM41	Double acting	Advance - Hold - Return	
MDM42		Advance - Hold with pilot check - Return	
MDE21R	Single acting	Advance - Return	
MDE22R		Advance - Hold - Return	
MDE41R	Double acting	Advance - Hold - Return	

MODEL CODING / 700 bar SERIES

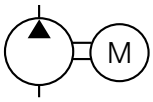
MD	M21	R	#	J
Series	Valve type	Remote control	Standard pump H high flow pump	Pressure regulation valve

DELIVERY DIAGRAM / 700 bar SERIES

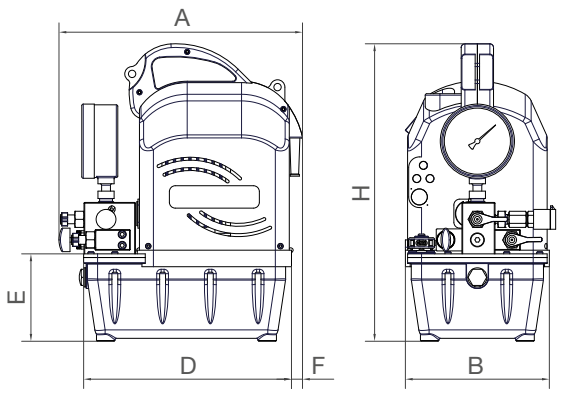


MD

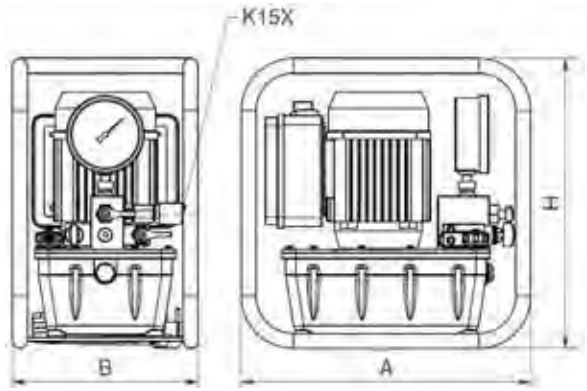
MIDI HYDRAULIC POWER PACKS 1000 / 1500 bar



• RESERVOIR CAPACITY	2,6 l
• DELIVERY AT MAX PRESSURE	0,2 - 0,3 l/min
• POWER RATING	0,75 kW
• MAX PRESSURE	1000 - 1500 bar

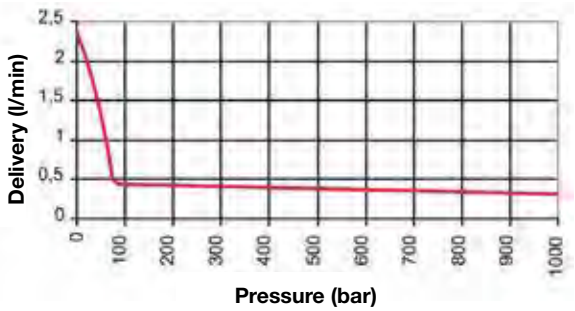


MDM31GJT

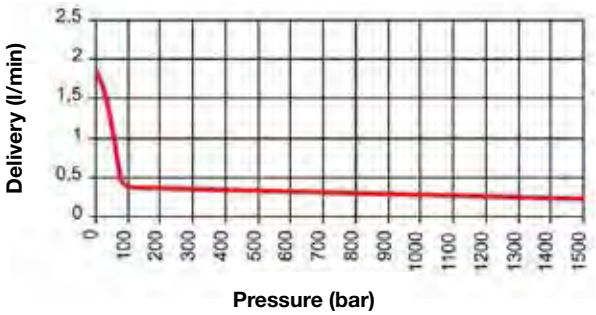


MDM31GJV

DELIVERY DIAGRAM MDM31GJT



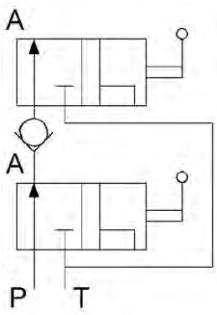
DELIVERY DIAGRAM MDM31GJV



SELECTION CHART

OIL DELIVERY		PRESSURE RATING		RESERVOIR CAPACITY	USABLE OIL VOLUME	MODEL	DIMENSIONS MM						WEIGHT
1°Stage	2°Stage	1°Stage	2°Stage										
l/min	l/min	bar	bar	litres	litres		A	B	D	E	F	H	kg
2.3	0.3	65	1000	2.6	2.4	MDM31GJT	329	197	287	119	15	406	16.5
1.8	0.2		1500			MDM31GJV	390	250	-	-	-	390	24.5

FUNCTION CHART

MODEL	MDM31GJT	MDM31GJV
Valve function	Advance - Return	
SYMBOL		

MODEL CODING / 1000 / 1500 bar SERIES

MD	M21	G	J	R	V
Series	Valve type	Gauge G16	Pressure regulation valve	Remote control	**T** = max. w. pressure 1000 bar **V** = max. w. pressure 1500 bar

MD

700 bar HYDRAULIC POWER PACKS FOR TORQUE WRENCHES OF SMALL AND MEDIUM CAPACITY

For big capacity torque wrenches check models MEE10WR/4, MME10WR/4 and MPE10WR/4

FEATURES - 700 bar SERIES

Specifically designed for torque wrenches, these power packs combine maximum operating efficiency with a compact and lightweight design. Thanks to their compact dimensions and weight, they are easy to carry and are supplied with a handle or a protective frame.

All models are equipped with:

- 1/4" NPT male coupler on advance line and female on return line equipped with dust caps.
- Two-stage piston pump.
- Electric or pneumatic 4 ways 2 position valve.
- Pressure regulating valve.
- Pressure gauge.
- Relief valve.
- Plastic tank.
- Plastic case with integrated handle (mod. **MDWR**).
- Protection cage (mod. **MDWRH**, **MDWRP** and **MDWRHE**).
- Oil level gauge.
- 3 m. remote control.
- 5 m. electric cable.
- Heat exchanger (mod. **MDWRHE**).

4 different models are available:

- **MDWR** with 2,4/0,4 l/min pump and electric single phase 0,75 kW motor.
- **MDWRH** with 6/0,6 l/min pump and electric single phase 1,1 kW motor.
- **MDWRP** with 6/0,6 l/min pump and air 1,5 kW motor.
- **MDWRHE** with 6/0,6 l/min pump and electric single phase 1,1 kW motor and heat exchanger.

OPERATIONAL AREAS

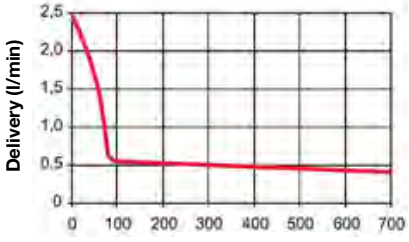
Ideal if combined with torque wrenches.

Power packs with different voltage motors and 4 exits can be supplied upon request (p. 148).

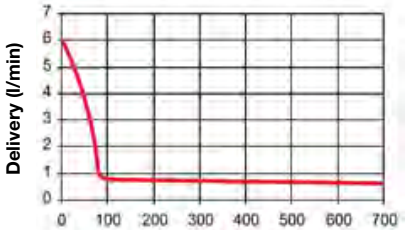
FLEXIBLE HOSES: Two hoses are necessary to connect the torque wrench, each of them supplied with one male and one female coupler at the ends **STQ##FM**.

Power packs with different voltage motors and 4 exits can be supplied upon request.

DELIVERY DIAGRAM MDWR

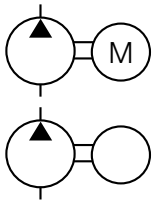


DELIVERY DIAGRAM MDWRP / MDWRHE



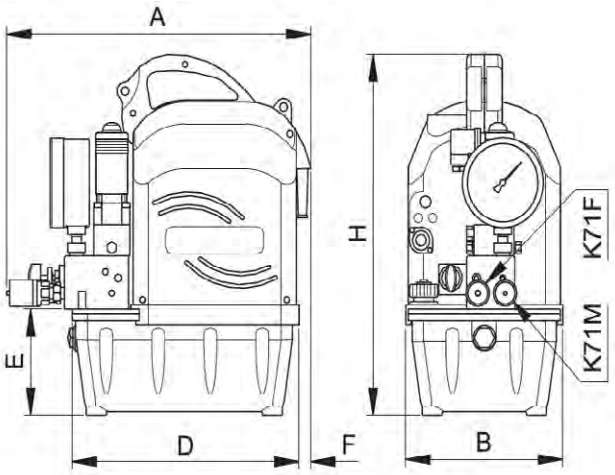
MDW

700 bar HYDRAULIC POWER PACKS FOR TORQUE WRENCHES OF SMALL AND MEDIUM CAPACITY



RESERVOIR CAPACITY	2,6 l
DELIVERY AT 700 BAR	0,4 - 6,0 l/min
POWER RATING	0,75 - 1,5 kW
AIR CONSUMPTION	2130 l/min
MAX PRESSURE	700 bar

For big capacity torque wrenches check models MEE10WR/4, MME10WR/4 e MPE10WR/4



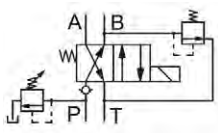
SELECTION CHART

MODEL	OIL DELIVERY		PRESSURE		MOTOR		
	1°Stage	2°Stage	1°Stage	2°Stage	Power supply	Power	Speed
	l/min	l/min	bar	bar		kW	rpm/min
MDWR	2.4	0.4	65	700	230V - 50 Hz	0.75	2800
MDWRH	6	0.6				1.1	
MDWRP					Air	1.5	
MDWRHE					230V - 50 Hz	1.1	

DIMENSIONS CHART

MODEL	RESERVOIR CAPACITY	USABLE OIL VOLUME	DIMENSIONS MM						WEIGHT
	litres	litres	A	B	D	E	F	H	kg
MDWR	2.6	2.4	381	197	287	119	15	406	18.5
MDWRH			400	250	-	-	-	420	23.8
MDWRP			380	230	-	-	-	390	17.5
MDWRHE			540	285	540	119	-	420	30.3

FUNCTION CHART

MODEL	FOR USE WITH	VALVE FUNCION	SYMBOL
MDWR	Torque wrenches	Advance-return	
MDWRH			
MDWRP			
MDWRHE			

MODULAR POWER PACKS

MODULAR HYDRAULIC POWER PACKS / 700 bar

FEATURES

These hydraulic power packs are designed to be modular in order to guarantee the complete interchangeability of the components. Thanks to this feature it is possible to order customized models.
The top plate is used as a base on which to mount all the modular components motors, valves and accessories. The valves are also mounted on a plate to allow the pressure adjustment on the return line.

The power packs are manufactured under high quality controls to ensure:

SAFETY

- The valves are set in our Factory and each component is in compliance with “2006/42/CE Machine Directive” and its following amendments. Furthermore they are CE marked in relation to the 2014/30 UE norms (electromagnetic compatible) and 2014/35 UE (low tension).

DURABILITY

- The components are all carefully chosen and this ensures excellent performance results, power/weight ratio, limited dimensional requirements and easy maintenance.

ENVIRONMENT

- They are easy to use, quiet, reliable and guarantee the maximum performance.

The various models consist of:

- **Motor,** available in five versions: three-phase electric, single phase electric, petrol engine, air motor and battery motor. Furthermore our electric motors are provided with magneto-thermal cut-out with 0 voltage disconnection, complete with 5 m power cord, CEE plug and Class IP54 protection.
- **Pump** available in 12 versions from 0,45 to 10 l/min.
- Relief **valve** adjustable from outside on all pumps and various types of manual, electric, air-operated and spring centred valves at your choice.
- **Tank** from 5 to 60 litres.
- **Options** to customize the power unit.

Check the chart on the next page for the correct interpretation of the hydraulic power units.

OPERATIONAL AREAS

They are essential for lifting and jacking systems with single and double acting cylinders and for all heavy duty or complex operations that cannot be performed with manual pumps.

Refer to section **How to choose a pump** to determine the correct matching pump/cylinder (p. 65).

To chose your torque wrench refer to the corresponding section (p. 148).

MODULAR POWER PACKS

SELECTION CHART

	Notes	Description	Model	Motor type ME	MM	MP	MS
PUMP		Delivery l/min BP/AP 0,9 / 0,45 Axial piston pump	A	*	*	-	-
		Delivery l/min BP/AP 4,7 / 0,45 Axial piston pump	B	*	*	-	-
		Delivery l/min BP/AP - / 0,9 Axial piston pump	C	*	*	-	-
		Delivery l/min BP/AP 1,8 / 0,9 Axial piston pump	D	*	*	*	*
		Delivery l/min BP/AP 2,4 / 0,9 Axial piston pump	H	*	*	-	-
		Delivery l/min BP/AP 9,4 / 0,9 Axial piston pump	E	*	*	*	*
		Delivery l/min BP/AP - / 1,8 Axial piston pump	F	*	-	-	*
		Delivery l/min BP/AP 4,7 / 1,8 Axial piston pump	G	*	-	-	*
		Delivery l/min BP/AP - / 1,6 Axial piston pump	L	*	-	-	-
		Delivery l/min BP/AP 11,6 / 1,6 Combined piston/gear pump	K*	*	-	-	-
		Delivery l/min BP/AP 10 / 1,8 Combined piston/gear pump	T**	*	-	-	-
		Delivery l/min BP/AP 10 / 2,5 Radial piston pum	V*	*	-	-	-
RESERVOIR	Different volumes are available upon request	5 litres	05	*	*	*	-
		10 litres high	10	*	*	*	-
		10 litres low	11	*	*	*	*
		20 litres	20	*	*	*	*
		30 litres * Tank available for K and V pumps only	30	*	-	-	-
		40 litres	40	*	*	*	*
		50 litres * Tank available for V pumps only	50	*	-	-	-
		60 litres	60	*	*	-	-
VALVE	S version spring valve	P and T outlet with by pass	M20	*	*	*	*
		Manual controlled valve 3 way 2 pos.	M21	*	*	*	*
		Manual controlled valve 3 way 3 pos.	M31	*	*	*	*
		Manual controlled valve 3 way 3 pos. with check	M32	*	*	*	*
		Manual controlled valve 4 way 3 pos.	M41	*	*	*	*
		Manual controlled valve 4 way 3 pos. with check	M42	*	*	*	*
		Manual controlled valve 4 way 3 pos. return at 150 bar	M51	*	*	*	*
		Manual controlled valve 4 way 3 pos. with check, return at 150 bar	M52	*	*	*	*
		Manual controlled valve 4 way 3 pos. with conterbalance valve on A, return at 150 bar	M53	*	*	*	*
	P version air valve	Solenoid valve 3 way 2 pos. normally open	E21	*	*	P *	-
		Solenoid valve 3 way 2 pos. normally closed	E22	*	*	P *	-
		Solenoid valve 3 way 3 pos.	E31	*	*	P *	-
		Solenoid valve 4 way 3 pos.	E41	*	*	P *	-
		Solenoid valve 4 way 3 pos. with check	E42	*	*	P *	-
		Solenoid valve 4 way 3 pos. return at 150 bar	E51	*	*	P *	-
		Solenoid valve 4 way 3 pos. with check, return at 150 bar	E52	*	*	P *	-
		Solenoid valve 4 way 3 pos. with counterbalance valve on A, return at 150 bar	E53	*	*	P *	-
		Solenoid valve 4 way 2 pos. for torque wrenches	EW	*	*	P *	-
OPTIONS		Pressure gauge ***	G	*	*	*	*
		Protective housing (standard for air motor type MS)	C	*	*	*	*
		Protective housing with 4 pivoting wheels Ø 80x25 mm	W	*	*	*	*
		Mushroom emergency buttom	N	*	*	*	*
		Hand activated remote control	R	*	*	*	-
		Pedal activated remote control	F	*	*	*	-
		Pressure sensor and pressure gauge	P	*	*	-	-
		Compressed air lubricator reduction filter	L	-	-	*	-
		Unidirectional flow regulator	U	*	*	*	*
		Unidirectional flow regulator with fine regulation	H	*	*	*	*
		Heat exchanger	E	*	*	-	-
		Filter on return line****	S	*	*	*	*
ACCESSORIES		Rain proof cover for power packs	ZMD	*	*	*	*
		Rain proof / dust proof polyester waterproof cover for power packs	ZMK	*	*	*	*
CUSTOMISATION		Without hand whell adjustable max. pressure valve	Z	*	*	*	*
		Without magneto-thermal cut-out	Y	*	*	-	-

MODULAR POWER PACKS

* **K** and **V** pumps can be paired only with 30 and 50 l tanks.

** Pump **T** available with **20**, **40** and **60** liters tanks only.

*** Gauge Ø 100 with hand operated valves - Ø 63 with solenoid valves and hand operated valves with pilot check.

Digital gauges upon request.

**** Filter not available for 5 liters and 10 liters tank high.

Example:

MPE10P41R Air Motor power pack, 9,4/0,9 l/min pump, 10 litres tank, 4 way-3 positions air control valve, remote control.

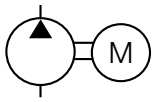
NOTE: for the Accessories, add the letters in alphabetic order.

MODEL CODING

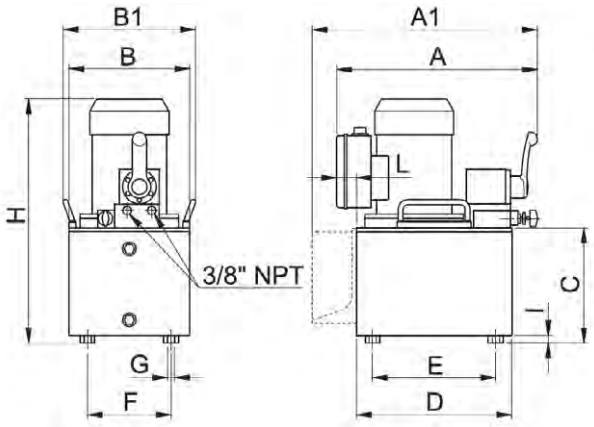
ME	A	05	M21	5
Motor type	Pump type	Reservoir	Valve type	Accessories and customisation

ME

MODULAR POWER PACKS WITH 3-PHASE ELECTRIC MOTOR



• RESERVOIR CAPACITY	5 - 60 l
• DELIVERY AT 700 BAR	0,45 - 2,5 l/min
• POWER RATING	0,75 - 3 kW
• MAX PRESSURE	700 bar



SELECTION CHART

Reservoir capacity	Usable oil volume	Dimensions mm											
litres	litres	A	A1 (2)	B	B1	C	D	E	F	G	H (1)	I	L
5	3.5	370	470	245	270	129	315	250	170	M8	390	10	40
10 high	9					227					488		
10 low	7	447	-	360	378	129	410	320	270		390		-
20	17.5				-	257				Ø9	518	40	
40	34	440				362		320	270		622		
60	60	457		600			440	350	510				
MEK 30	30	440		360			410	320	270		660		
MEV 30	18.5										685		
MEK 50	54	457		600			440	350	510		660		
MEV 50	33										685		

1) Add 16 mm for models **MEC**, **MEH**, **MED**, **MEE**.
Add 44 mm for models **MEL**, **MEF**, **MEG**, **MET**.

2) Only for power packs with 5 litres and 10 litres high tank with remote control model **R** or **F**.

OPERATIONAL CHARATERISTICS

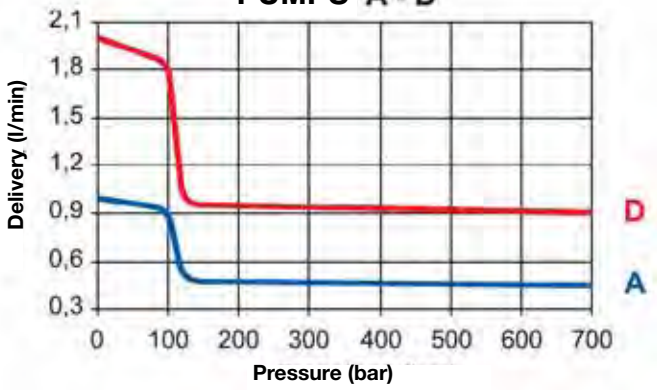
MODEL	OIL DELIVERY		PRESSURE		MOTOR		
	1°Stage	2°Stage	1°Stage	2°Stage	Voltage	Power	Speed
	l/min	l/min	bar	bar		kW	rpm/min
MEA	0.9	0.45	100	700	400V - 50 Hz (motors with different voltage upon request)	0.75	1400
MEB	4.7		85				
MEC	-	0.9	-			1.1	2800
MED	1.8		100				
MEH	2.4		85				1400
MEE	9.4						2800
MEL	-	1.6	-			2.2	1400
MEK	10.6		70				
MEF	-	1.8	-				2800
MEG	4.7		85				
MET	10						
MEV		2.5				3	1400

MEK power packs are particularly indicated for intensive use or if a silent product is required.

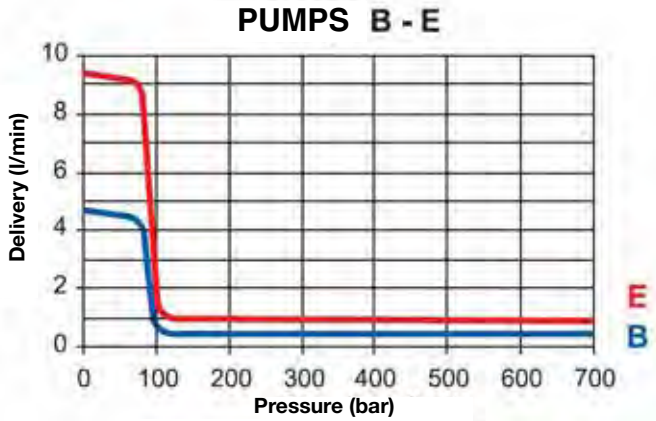
ME

MODULAR POWER PACKS
WITH 3-PHASE ELECTRIC MOTOR

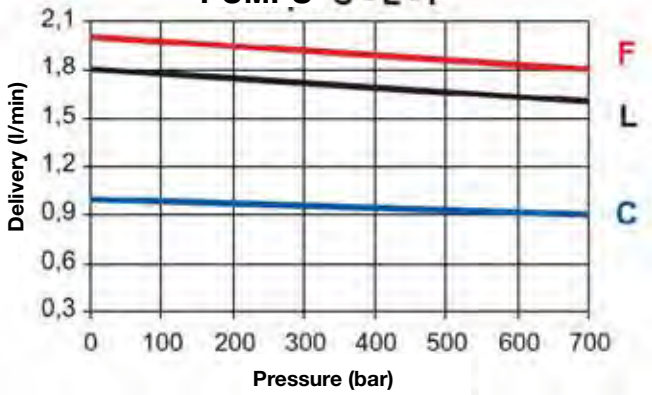
PUMPS A - D



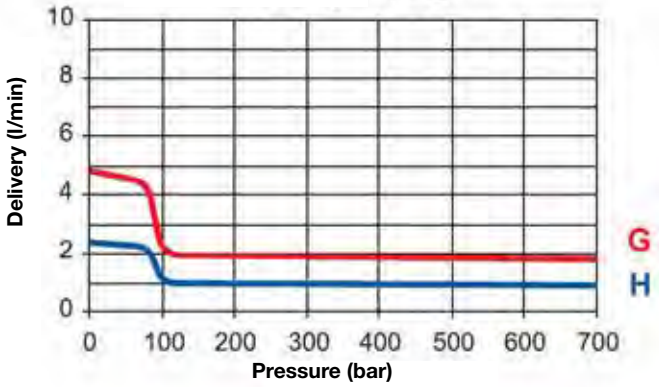
PUMPS B - E



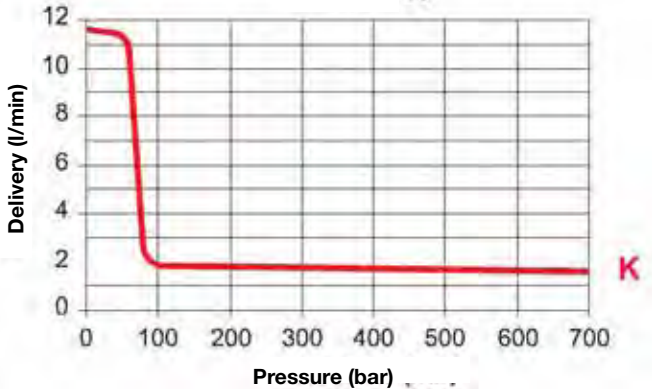
PUMPS C - L - F



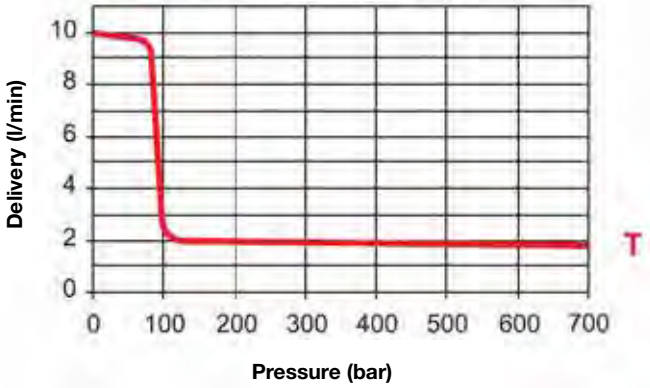
PUMPS H - G



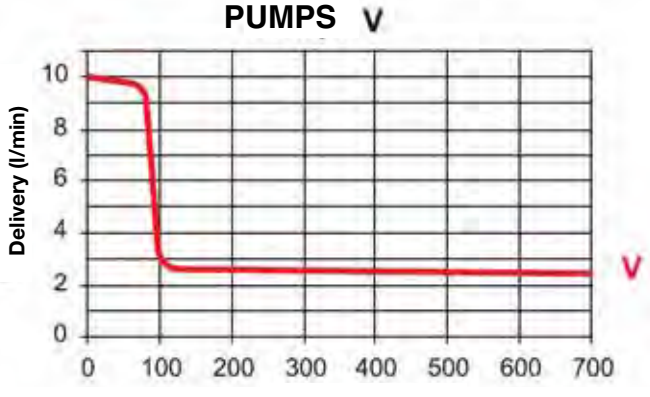
PUMPS K



PUMPS T

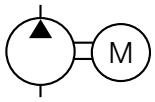


PUMPS V

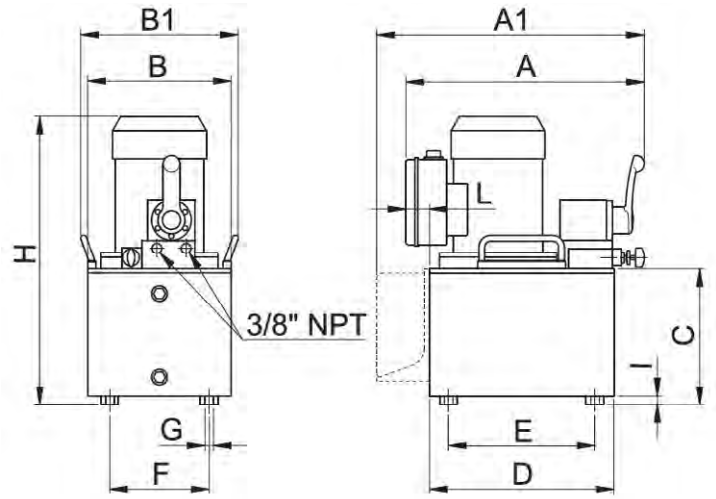


MM

MODULAR POWER PACKS WITH SINGLE PHASE ELECTRIC MOTOR



RESERVOIR CAPACITY	5 - 60 l
DELIVERY AT 700 BAR	0,45 - 0,9 l/min
POWER RATING	0,75 - 1,5 kW
MAX PRESSURE	700 bar



SELECTION CHART

RESERVOIR CAPACITY	USABLE OIL VOLUME	DIMENSIONS MM										
litres	litres	A	A1 (2)	B	B1	C	D	E	F	G	H (1)	I
5	3.8	370	470	245	270	129	315	250	170	M8	410	10
10 high	8.8					227					508	
10 low	7.7	447	-	360	378	129	410	320	270		410	
20	17.7				-	257				Ø9	538	40
40	35.8	440				362					642	
60	51	457		600			440	350	510			

1) Add 48 mm for models **MMC**, **MMH**.

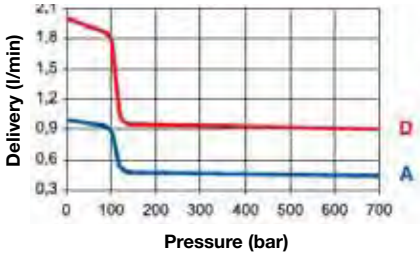
2) Only for 5 litres and 10 litres high tanks with remote control model **R** or **F**.

OPERATIONAL CHARATERISTICS

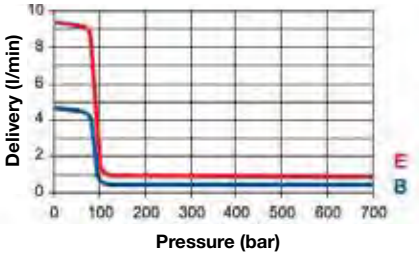
MODEL	OIL DELIVERY		PRESSURE		MOTOR		
	1°Stage	2°Stage	1°Stage	2°Stage	Power supply	Power	Speed
	l/min	l/min	bar	bar		kW	rpm/min
MMA	0.9	0.45	100	700	**230V - 50 Hz** (motors with different voltage upon request)	0.75	1400
MMB	4.7		85				
MMC (1)	-	0.9	-			1.5	2800
MMD	1.8		100				1400
MMH (1)	2.4		85				2800
MME	9.4						

DELIVERY DIAGRAM

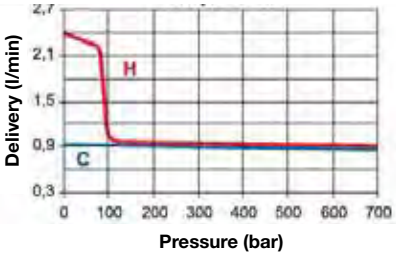
PUMPS A - D



PUMPS B - E

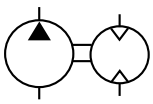


PUMPS C - H

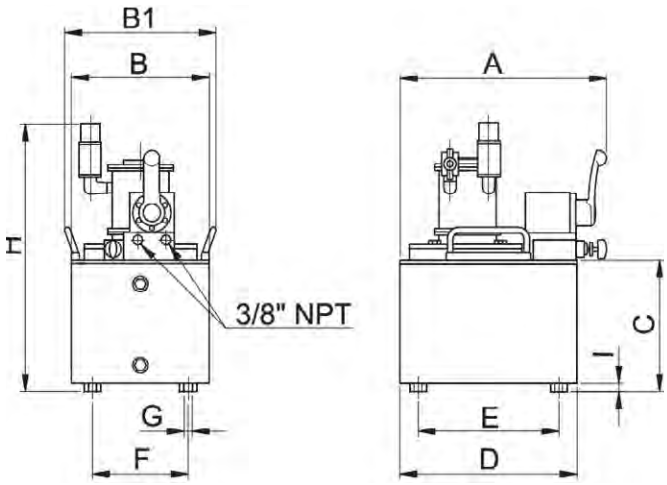


MP

MODULAR POWER PACKS WITH AIR MOTOR



RESERVOIR CAPACITY	5 - 40 l
DELIVERY AT 700 BAR	0,9 l/min
POWER RATING	2,6 kW
MAX PRESSURE	700 bar
CONSUMPTION	3400 l/min



DIMENSIONS CHART

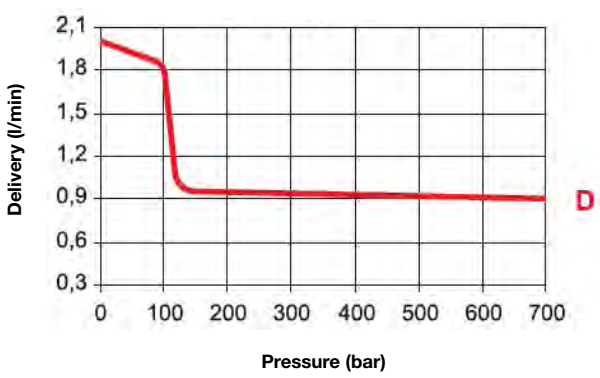
Reservoir capacity	Usable oil volume	Dimensions mm										
litres	litres	A	A1	B	B1	C	D	E	F	G	H ①	I
5	3.5	370	470	245	270	129	315	250	170	M8	390	10
10 high	9					227					488	
10 low	7.5	447	-	360	378	129	410	320	270		390	
20	17.5				-	257				Ø9	518	40
40	34					362					622	

OPERATIONAL CHARATERISTICS

MODEL	OIL DELIVERY		PRESSURE		MOTOR	
	1°Stage	2°Stage	1°Stage	2°Stage	Power	Speed
	l/min	l/min	bar	bar	kW	rpm/min
MPD	1.8	0.9	100	700	2.6	3000
MPE	9.4		85			

DELIVERY DIAGRAM

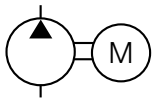
PUMPS D



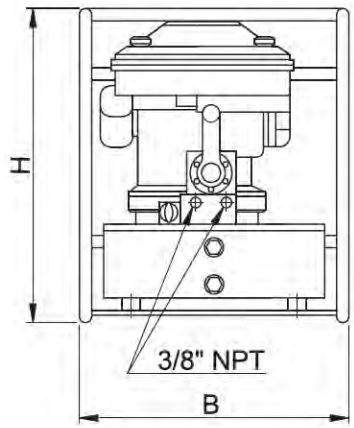
PUMPS E

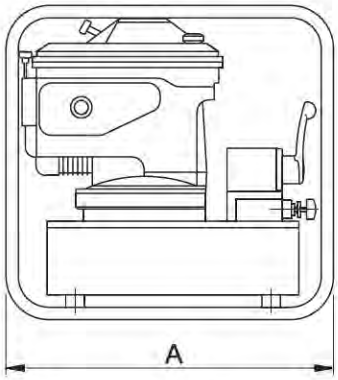
MS

MODULAR POWER PACKS WITH PETROL ENGINE



RESERVOIR CAPACITY	10 - 40 l
DELIVERY AT 700 BAR	0,9 - 1,8 l/min
POWER RATING	4,4 HP - 3,3 CV
MAX PRESSURE	700 bar
CONSUMPTION	1,2 l/h with full load 0,9 l/h at 75% capacity





DIMENSIONS CHART

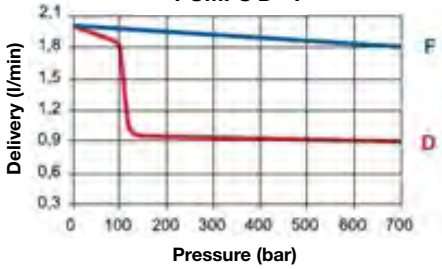
Reservoir capacity	Usable oil volume	Dimensions mm		
litres	litres	A	B	H
10 low	7.5	620	450	500
20	17.5			650
40	34			780

OPERATIONAL CHARATERISTICS

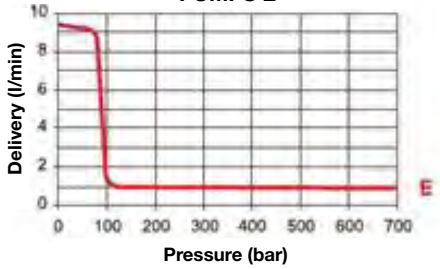
MODEL	OIL DELIVERY		PRESSURE		MOTOR	
	1°Stage	2°Stage	1°Stage	2°Stage	Power	Speed
	l/min	l/min	bar	bar	kW	rpm/min
MSD	1.8	0.9	100	700	4,4 HP - 3,3 kN	3000
MSE	9.4		85			
MSF	-	1.8	-			
MSG	4.7		85			

DELIVERY DIAGRAM

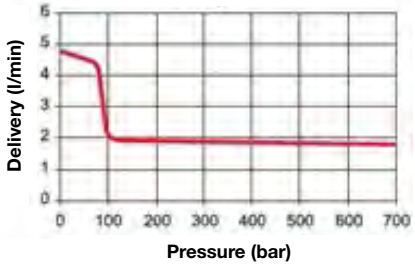
PUMPS D - F

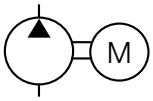


PUMPS E



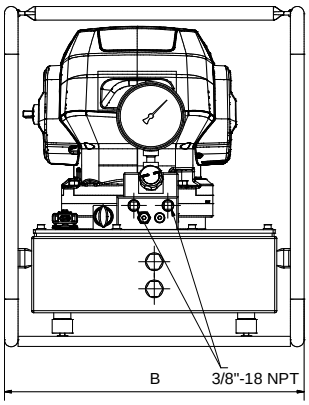
PUMPS G

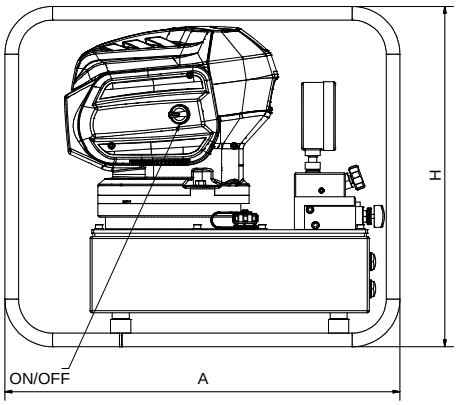




• RESERVOIR CAPACITY	10 l
• DELIVERY AT 700 BAR	0,6 l/min
• MAX PRESSURE	700 bar
• POWER RATING	1,5 kW

MBE
BATTERY PUMP





FEATURES

This pump is structured with the highest technology carefully studied to ensure longevity, the best performance and reliability and exceptional handiness.

The axial piston pump generates a maximum working pressure of 700 bar with an oil flow of 0,6 l per minute. The pump is equipped with a low pressure stage set at 85 bar with an oil flow of 6,0 l per minute to quickly fill in the circuit or to quickly approach the cylinder to the load.

The pump is fitted with a 10 liter low tank,transport handles for the standard version, protective and transpoprt cage for the C version, manual position or spring centered valves, ON/OFF switch button.

OPERATIONAL CHARATERISTICS

MODEL	OIL DELIVERY		PRESSURE		MOTOR			BATTERY *		
	1° Stage	2° Stage	1° Stage	2° Stage	Voltage	Power	Speed	Tension	Capacity	Duration **
	l/min	l/min	bar	bar	V	kW	npm	V	Ah	Min
MBE11	6,0	0,6	85	700	82	1,5	2200	82	8	15 ÷ 25

*** Not included, it can be added upon rquest**

**** Discontinuos, it can vary depending on the conditions and the pressure.**

MBE
BATTERY PUMP

FEATURES

The functioning is smart, quick and practical thanks to the **ON/OFF** motor switch button positioned on the left side of the pump. The power pack can be equipped with different manual valves (3/2 handwheel valve, 3/3-4/3 manual position or spring centered valves) positioned over the **3/8"-18 NPT** exits.

The standard pump is equipped with:

- The 82 V 1500 W eletric motor pump which can be used with an extractable battery, external ON/OFF switch and internal security key.
- High pressure axial piston pump.
- Base plate useful to house different manual valves.
- 10 - 20 - 40 liter reservoir.
- Protection and transport cage.
- Two position filler and briefing cap.

SIZE TABLE

MODEL	Oil volume reservoir	Oil volume usable	Dimensions mm			Weight ***
	litres	litres	A	B	H	Kg
MBE11###	10	7.0	480	390	430	43
MBE11###C			620	450	500	46

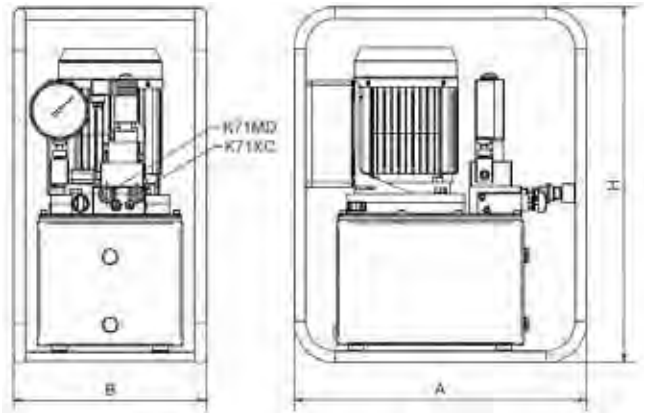
*** Including oil, excluding battery

The 82 V 8 Ah battery and the quick battery charger are equipped separately, they are not included with the power pack.

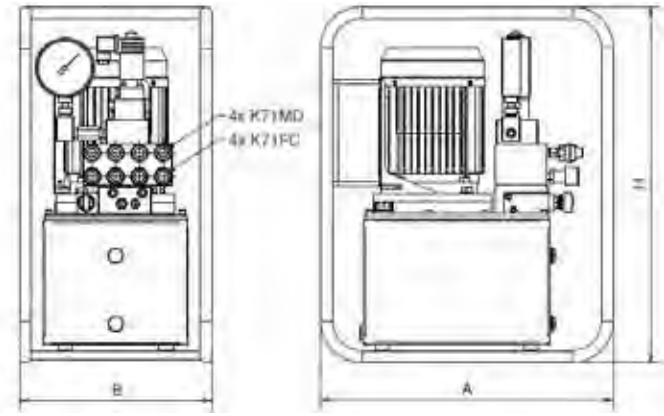
RESERVOIR CAPACITY	10 l
DELIVERY AT 700 BAR	9,4 - 0,9 l/min
MAX PRESSURE	700 bar

M#E10WR / M#E10WR4

HYDRAULIC POWER PACKS FOR BIG CAPACITY 700 bar TORQUE WRENCHES



M#E10WR



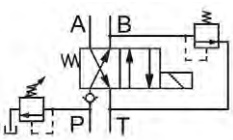
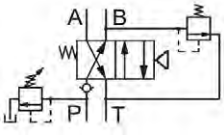
M#E10WR4

OPERATIONAL CHARATERISTICS

MODEL	OIL DELIVERY		PRESSURE		OUTLETS	MOTOR		
	1°Stage	2°Stage	1°Stage	2°Stage		Power supply	Power	Speed
	l/min	l/min	bar	bar			kW	rpm/min
MEE10WR	9.4	0.9	85	700	1	Three-phase electric motor 400V - 50 Hz	1.1	2800
MEE10WR4					4			
MME10WR					1	Single phase electric motor 230V - 50 Hz	1.5	2800
MME10WR4					4			
MPE10WR					1	Air motor 7 - 10 bar 3400 l/min	2.6	3000
MPE10WR4					4			

MODEL	Reservoir capacity	Usable oil volume	Dimensions mm		
	litres	litres	A	B	H
M#E10WR / M#E10WR4	10	8.8	495	325	600

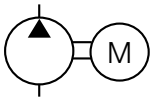
FUNCTION CHART

MODEL	For use with	Valve function	Symbol
MME10WR MEE10WR	Torque wrenches	Advance - Return	
MME10WR4 MEE10WR4			
MPE10WR			
MPE10WR4			

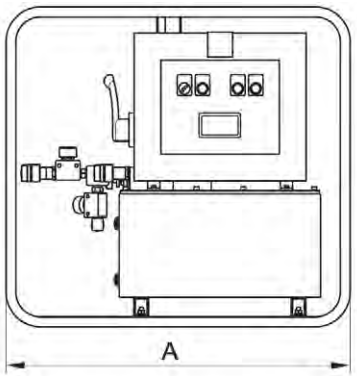
These power packs pre equipped with a male 1/4 NPT quick coupler on the outlet and 1/4 NPT female on the inlet, complete with protection caps, DN 100 mm, analogic gauge, protection and transportation cage and distance remote control.

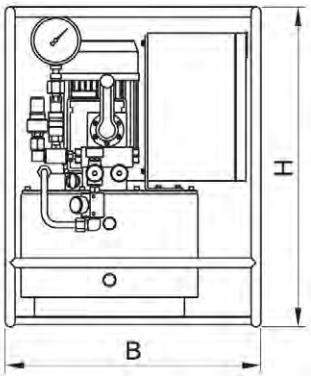
ME-PP / MM-PP

MODULAR POWER PACKS FOR GEOTECHNICAL STRUCTURAL TESTS STANDARD VERSION



• RESERVOIR CAPACITY	10 - 40 l
• DELIVERY AT 700 BAR	0,9 l/min
• POWER RATING	1,1 - 1,5 kW
• MAX PRESSURE	700 bar





FEATURES

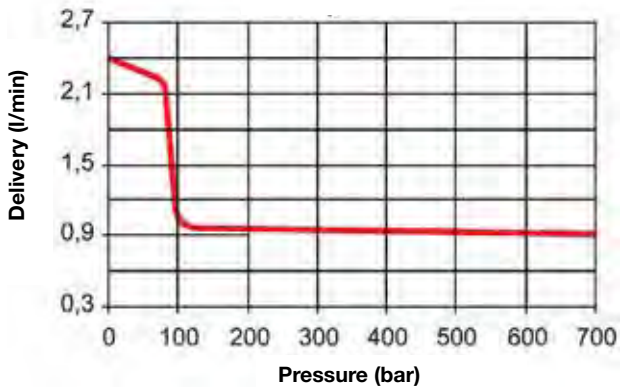
Many years of experience in the geotechnical field, in particular test piles, have enabled EUROPRESS to develop a complete product with special features answering the demands of this industry.

The main features of the power pack, the core of the system are:

- Digital display that can be set up on the desired pressure values.
- Automatic pressure reactivation (also in case of structural yieldness).
- Hysteresis cycle system settings.
- Automatic or manual control.
- Possibility to make test cycles by decreasing pressure.
- It can be used with single and double acting cylinders.
- External pressure setting (50-700 bar range).
- Single or 3-phase electric motor.
- Two stage pump 2,4/0,9 l/min at 1400 rpm.
- Manual 4 way 3 pos valve with pilot check.
- 10, 20 or 40 litres tank.
- Protective and transport cage.
- 100 mm diameter analogic gauge.

OPERATIONAL AREAS

Non destructive tests on concrete structures, tests on construction materials and geotechnical experiments both on site and in laboratories.



OPERATIONAL CHARACTERISTICS

MODEL	OIL DELIVERY		PRESSURE		MOTOR			RESERVOIR CAPACITY	USABLE OIL VOLUME	DIMENSIONS MM		
	1°Stage	2°Stage	1°Stage	2°Stage	Power supply	Power	Speed					
	l/min	l/min	bar	bar		kW	rpm	litres	litres	A	B	H
MEH11M52PP	2.4	0.9	85	700	400V - 50 Hz	1.1	1400	10	7.5	750	520	500
MEH20M52PP								20	17.5			650
MEH40M52PP								40	34			780
MMH11M52PP					230V - 50 Hz	1.5		10	7.5			500
MMH20M52PP								20	17.5			650
MMH40M52PP								40	34			780

ME-PP / MM-PP

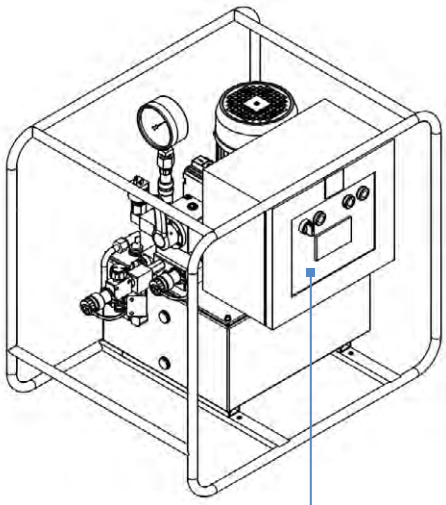
MODULAR POWER PACKS FOR GEOTECHNICAL STRUCTURAL TEST ADVANCED VERSION

ME-PP3 / MM-PP3

FEATURES

These power packs have the same characteristics and ancillaries as the standard base version except for **the 4 channel digital screen** (1 pressure + 3 stroke positions). The operator has the possibility to keep under control in real time 4 different signals.

These power packs can be connected directly to the PC thanks to an USB port. This function is useful to download the information obtained from the tests.



DIGITAL 4 CHANNEL INDICATOR

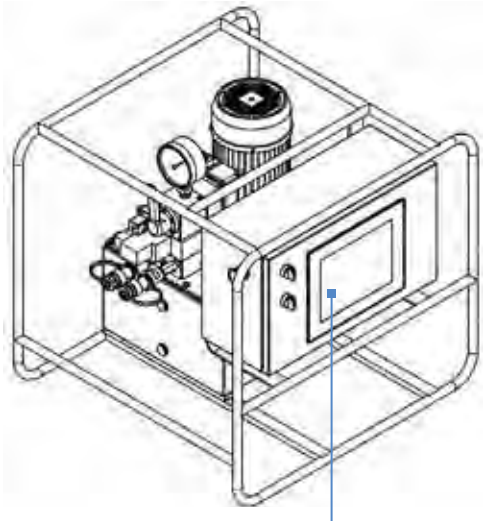
ME-PPD / MM-PPD

FEATURES

These power packs have **the most advanced technology regarding geotechnical tests**.
They have the same characteristics and ancillaries as the standard versions but they have the freedom to check and customize all the functioning parameters and automatic work instructions; all these features make the -D version particularly suitable for the experts of this industry.

The main features are:

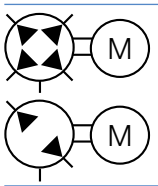
- HMI 10.1" touch screen display.
- Real time 4 signal visualisation (1 pressure + 3 stroke positions).
- Free planning of lifting / lowering at different pressures.
- Free planning of goal reaching / pressure maintaining.
- → **P(t) can be defined by the operator**.
- Visualize final graphics.
- Allows the direct connection to the PC through a USB port which is useful to download the information of the tests accomplished in CSV format (M.Excel) (pressure, movements, time, average movements and other parameters are available on request).



DISPLAY HMI TOUCHSCREEN 10.1"

SPLIT FLOW

SYNCHRONOUS LIFTING SYSTEM POWER PACKS



• RESERVOIR CAPACITY	10 - 60 l
• DELIVERY AT 700 BAR	0,45 - 0,9 l/min
• POWER RATING	2,2 kW
• MAX PRESSURE	700 bar

FEATURES

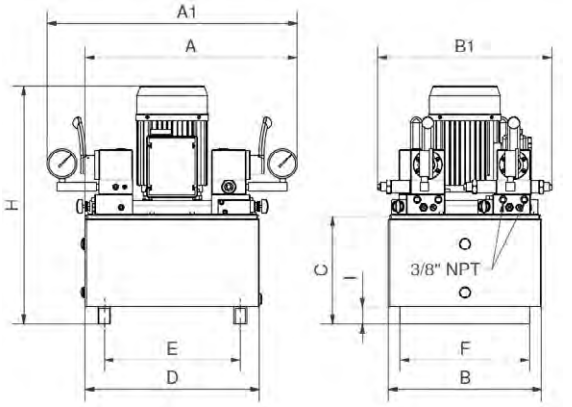
The **Split Flow** hydraulic power packs have two or four independent outlets delivering a constant amount of oil even if the pressure in each line is not the same.

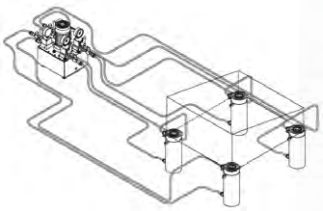
They are equipped with:

- 3-phase electric motor.
- Matched pump and tank.
- 2 or 4 (one for each port) 4-way, 3-position manual control valves with piloted check and 150 bar pressure setting on return B port.
- Pressure gauges (one for each port).

OPERATIONAL AREAS

They are an efficient and economical solution particularly suitable to pressure up a maximum of 4 cylinders even with different loads. Given that they are based on equal geometrical pressure lines, without any external control on the stroke, **Split Flow** power packs provide for ±3% synchronous lifting with visual control of the operations.





OPERATIONAL CHARACTERISTICS ACCORDING TO THE CHOSEN PUMP

MODEL	NU. OUTLETS	OIL DELIVERY		PRESSURE		MOTOR		
		1°Stage	2°Stage	1°Stage	2°Stage	Power supply	Power	Speed
		l/min	l/min	bar	bar		kW	rpm/min
MEM	2	-	0,9	-	700	**400V - 50 Hz**	2,2	2800
MEN	2	2,2		85				
MEQ	4	-	0,45					

OPERATIONAL CHARACTERISTICS ACCORDING TO THE CHOSEN TANK

Reservoir capacity	Usable oil	Dimensions mm									
litres	**litres**	**A**	**A1**	**B**	**B1**	**C**	**D**	**E**	**F**	**H**	**I**
10 low	7,7	500	700	360	410	127	410	320	270	437	10
20	17,7		590			255			305	565	40
40	35,8	515		600			440	325	510		
60	49,8	-					680				

MODEL CODING

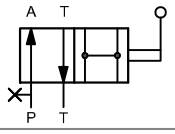
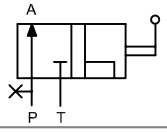
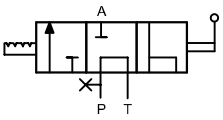
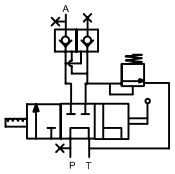
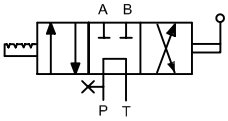
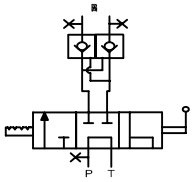
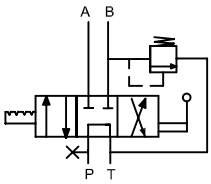
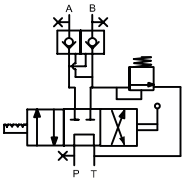
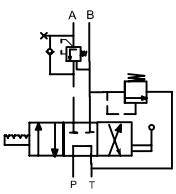
ME	#	#	M53	G
Motor type	Pump type	Reservoir capacity	Valve type	Pressure Gauge

Furthermore, they are also useful for synchronous lowering operations under load only when using double acting cylinders.

When using single acting cylinders, the synchronous moviment is guaranteed only during the lifting phase. To control thelowering contact the technical office to have further information.

VMM
VALVES FOR MODULAR POWER PACKS

MANUAL CONTROLLED VALVES SELECTION CHART

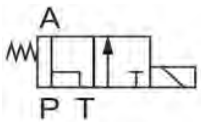
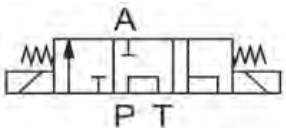
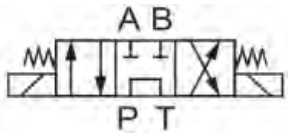
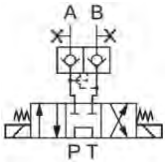
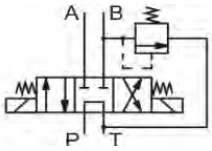
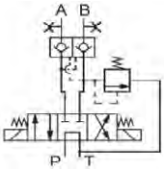
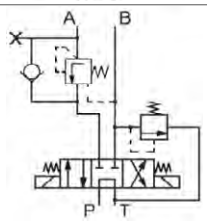
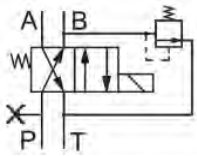
MODEL	For use with	Valve function	Symbol
VMM20	To shift control to in-line valve	Outlet P and T with by pass	
VMM21	Single acting	Advance - Hold - Return	
VMM31 *		Advance - Hold - Return	
VMM32		Advance - Hold with pilot check - Return	
VMM41 *	Double acting	Advance - Hold - Return	
VMM42		Advance - Hold with pilot check - Return	
VMM51		Advance - Hold - Return at 150 bar	
VMM52		Advance - Hold with pilot check - Return at 150 bar	
VMM53		Advance - Hold with counterbalance valve on A Return at 150 bar	

* To be used with cylinders for lifting with controlled flow.

VME

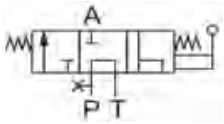
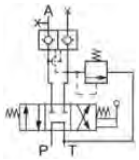
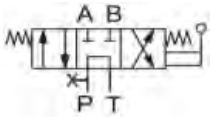
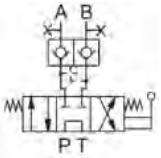
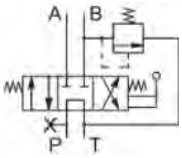
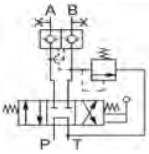
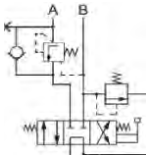
VALVES FOR MODULAR POWER PACKS

ELECTRIC CONTROLLED VALVES SELECTION CHART (230 VAC VOLTAGE)

MODEL	For use with	Valve function	Symbol
VME21	Single acting	Advance - Return	
VME22 *		Advance - Hold - Return	
VME31 *		Advance - Hold - Return	
VME41 *	Double acting	Advance - Hold - Return	
VME42		Advance - Hold with pilot check - Return	
VME51		Advance - Hold - Return at 150 bar	
VME52		Advance - Hold with pilot check - Return at 150 bar	
VME53		Advance - Hold with counterbalance valve on A Return at 150 bar	
VMEW		Advance - Hold for use torque wrenches	

* To be used with cylinders for lifting with controlled flow.

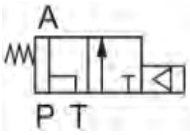
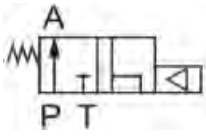
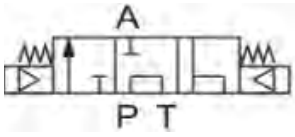
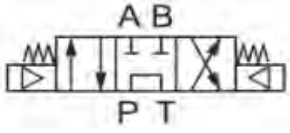
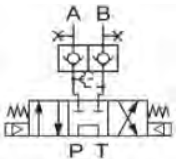
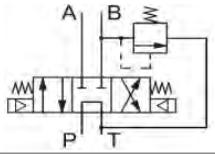
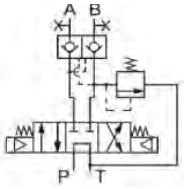
MANUAL CONTROLLED VALVES SELECTION CHART / SPRING RETURN IN CENTRAL POSITION

MODEL	To use with	Valve function	Symbol
VMS31 *	Single acting	Advance - Hold - Return a molla	
VMS32		Advance - Hold with pilot check - Return	
VMS41 *	Double acting	Advance - Hold - Return	
VMS42		Advance - Hold with pilot check - Return	
VMS51		Advance - Hold - Return at 150 bar	
VMS52		Advance - Hold with pilot check - Return at 150 bar	
VMS53		Advance - Hold with counterbalance valve on A Return at 150 bar	

* To be used with cylinders for lifting with controlled flow.

VMP
VALVES FOR MODULAR POWER PACKS

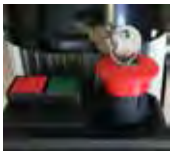
TABLE FOR PNEUMATIC CONTROLLED VALVE FUNCTIONS

MODEL	For use with	Valve function	Symbol
VMP21	Single acting	Advance - Return	
VMP22		Advance - Hold with pilot check - Return	
VMP31 *		Advance - Hold - Return	
VMP41 *	Double acting	Advance - Hold - Return	
VMP42		Advance - Hold with pilot check - Return	
VMP51		Advance - Hold with pilot check - Return at 150 bar	
VMP52		Advance - Hold with counterbalance valve on A Return at 150 bar	

* To be used with cylinders for lifting with controlled flow.

OPTIONS

FOR MODULAR POWER PACKS
700 bar

					
G	**C**	**W**	**N**	**R**	**F**
					
P	**L**	**U**	**H**	**E**	**S**

OPERATIONAL AREAS

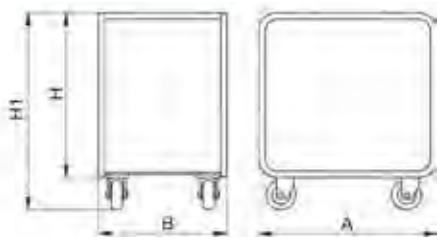
- **G** - Glycerine filled pressure gauge Ø 100 with manual valve and Ø 63 with solenoids and with controlled check manual or counterbalance valves(digital gauge upon request).
- **C** - Protective housing (standard for MS power packs).
- **W** - Protective housing with 4 pivoting wheels Ø 80x25 mm).
- **N** - Emergency button.
- **R** - Manual activated remote control, 5 metres long.
- **F** - Pedal activated remote control, 5 metres long.
- **P** - Pressure switch and pressure gauge.
- **L** - Filter and pressure reducer for air motor models.
- **U** - Unidirectional flow regulator.
- **H** - Unidirectional flow regulator with fine regulation, mounting plate.
- **E** - Heat exchanger.
- **S** - Filter on return line(not available for 5 l and 10 l tank power packs tank high).

CUSTOMIZED VERSIONS

- **Z** - Without hand wheel adjustable pressure valve.
- **Y** - Without magneto-thermal switch For electric motor models.

ACCESSORIES

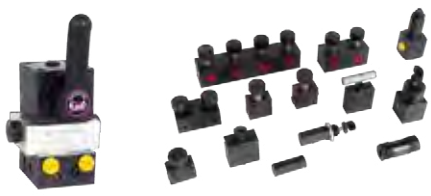
- **ZMD##** Rain proof cover kit for power pack's housing.
- **ZMK##** Rain proof / dust proof polyester waterproof cover for power packs.



DIMENSIONS OF PROTECTIVE HOUSING

With reservoir	Dimensions mm				Accessories	
Litres	**A**	**B**	**H**	**H1**	ZMD##	ZMK##
5	495	325	500	595	ZMD10	ZMD05
10 high			600	695		ZMD10
10low	580	440	500	595	ZMD20	ZMD11
20			640	735		ZMD20
40			760	855		ZMD40
60	700	540			ZMD60	ZMD60
MEK 30 - MEV 30	580	440			ZMD20	ZMD40
MEK 50 - MEV 50	700	540			ZMD60	ZMD60

VALVES AND ACCESSORIES



PRESSURE GAUGES AND GAUGE ADAPTORS 700 / 1000 / 3000 / 4000 bar

• MAX WORKING PRESSURE	1000 - 4000 bar
• DIAL DIAMETER	63 - 100 mm
• ACCURACY OF FULL SCALE	1% - 1,6%
• SCALE	bar - bar/kN

FEATURES

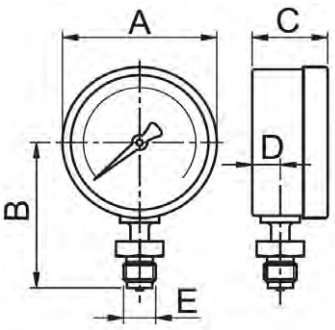
PRESSURE GAUGES

They are available with 63 or 100 mm diameter dial with bar and **PSI**. The 1000 bar gauges are glycerine filled while the 1600, 3000, 4000 bar are dry. The **G106L** pressure gauge has a 1/4" NPT screw connection for direct insertion on the left side of the pump head.

The model **G10** exists also in the double scale version, bar and Kn, to be used up to 700 bar, and differenciated for cylilnder with hollow piston (**G10F##**) and for cylinder with normal piston (**G10S##**).

GAUGE ADAPTORS

Manufactured in steel, they are available in five versions to suit the gauge diameter and distance from the equipment.



SELECTION CHART FOR DOUBLE SCALE GAUGES

MODEL	Scale bar	Scale kN	For cylinders	Dim
G10F1020	700	0-121 / 0-225	CMF 10/20 ton	See G10
G10F3060		0-327 / 0-578	CMF/COF 30/60 ton	
G10S1020		0-109 / 0-194	CGS/CMC/CMI/CMP/COI 10 ton CGS/CMC/CMP 20 ton	
G10S2530		0-228 / 0-303	CMI 25 ton CGG/CGS/CMC/CMI/CMP/ COI 30 ton	
G10S50100		0-486 / 0-911	CGG/CGS/CMC/CMI/CML/ CMP/COI/COS 50/100 ton	

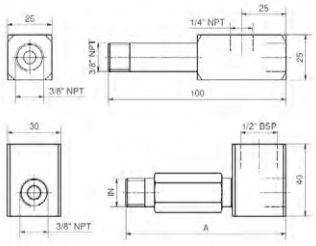
PRESSURE GAUGE SELECTION CHART 700 / 1000 bar

Digital gauges can be supplied upon request.
Adapters are available for **1000, 1600, 3000 bar gauges**.

Max working pressure	Full scale	Dial diameter	Precsion class DIN16005	Scale indexing	Thread	MODEL	Dimensions mm				Weight
bar	bar	mm	%	bar	E		A	B	C	D	kg
700	1000	63	1.6	50	1/4" NPT	G106L G106	68	54	32	13	0.2
1000	1000	100	1	20	1/2" BSP Swivelling	G10	101	98	49	15.5	0.8

PRESSURE GAUGE SELECTION CHART 1600 / 3000 / 4000 bar

Max working pressure	Full scale	Dial diameter	Precsion class DIN16005	Scale index-ing	Thread	MODEL	Dimensions mm				Weight
bar	bar	mm	%	bar	E		A	B	C	D	kg
1600	1600	100	1	50	1/2" BSP * Swivelling	G16	101	98	49	15.5	0.6
3000	3000				1/2" BSP Swivelling	G30					
4000	4000			100	M16x1,5 female	G40		77	60	24.5	



PRESSURE CHART FOR 1000 bar GAUGE ADAPTORS TO BE MOUNTED IN-LINE

MODEL	Max working pressure	Gauge connection	in/out connection	A dimension	Weight
	bar			mm	kg
RP52	1000	1/4" NPT	3/8" NPT	100	0.4
RP26		1/2" BSP	IN 1/4" NPT / OUT 3/8" NPT	62	0.26
RP50			3/8" NPT	60	0.28
RP501				90	0.33
RP502				140	0.42

K

QUICK COUPLERS
700 bar

• MAX WORKING PRESSURE	700 bar
• THREAD	1/4” - 3/8” NPT

FEATURES

Quick release coupers are available in **screw** and **flat face** versions and are compatible with all the EUROPRESS product range and also interchangeable with most couplings used on high pressure hydraulic equipment.

Flat face snap couplers are especially recommended because:

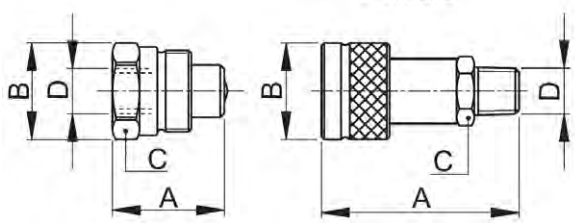
- Anti-drip with negligible air or fluid inclusion during coupling and uncoupling operations.
- Easy to clean.
- Rotary motion which prevents hose twisting;
- Safe coupling system (two voluntary movemens are necessary for uncoupling).

It’s important to drop the pressure inside the cylinder before disconnecting the quick coupler to avoid problems if re-inserting or lowering the load. In case some pressure persists it is possible to use the apposite tool **KTS38**.

Couplers with **Viton seals** are available on request.

When using screw couplings, the nut of the female part must always be fully tightened on the male part. If the two parts are not fully connected the oil can not pass through the coupler, and damage or injury can occur.

MALE FEMALE



SELECTION CHART FOR QUICK COUPLERS 700 bar

Working pressure	Coupling type	Thread type	Coupler type	MODEL	Dimensions mm			Weight
bar		D			A	B	C	g
700	Screw	1/4” NPT	**Complete** (K71M+K71F+K71C+K71D)	**K71**	-	-	-	-
			Male with female thread	**K71M**	39	30	19	75
			Female with male thread	**K71F**	60.5	30	22	140
			Female with female thread	**K71X**	58	30	22	150
			Cap for female	**K71C**	-	-	-	-
			Cap for male	**K71D**	-	-	-	-
		3/8” NPT	**Complete** (K73M+K73F+K73C+K73D)	**K73**	-	-	-	-
			Male with female thread	**K73M**	40.5	36	32	120
			Female with male thread	**K73F**	72	35.5	24	200
			Female with female thread	**K73X**	76	35.5	24	210
			Cap for female	**K73C**	-	-	-	-
			Cap for male	**K73D**	-	-	-	-
	Flat face	1/4” NPT	**Complete** (KP71M+KP71X)	**KP71**	-	-	-	-
			Male with female thread	**KP71M**	48	24	22	90
			Female with female thread	**KP71X**	58	29	22	210
		3/8” NPT	**Complete** (KP73M+KP73X)	**KP73**	-	-	-	-
			Male with female thread	**KP73M**	55	26	24	100
			Female with female thread	**KP73X**	60	29	24	220

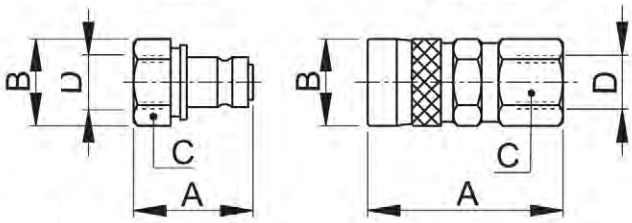
QUICK COUPLERS
1000 / 1500 / 2000 bar

• MAX WORKING PRESSURE	1000 - 2000 bar
• THREAD	1/4” - 3/8” NPT - 1/4” BSP

FEATURES

These couplings are compatible with the whole EUROPRESS product range and high pressure accessories. They are available with the quick release coupling version to ensure easy and fast coupling and have a dust protection cap.

MALE FEMALE



SELECTION CHART FOR QUICK COUPLERS 1000 / 1500 / 2000 bar

Working pressure	Coupling type	Thread type	Coupler type	MODEL	Dimensions mm			Weight
bar		D			A	B	C	g
1000	Quick release	1/4”NPT	**Complete** (K11M+K11X)	**K11**	-	-	-	-
			Male with female thread	**K11M**	36	25	22	60
			Female with female thread	**K11X**	58,5	27,5	24	150
		3/8”NPT	**Complete** (K13M+K13X)	**K13**	-	-	-	-
			Male with female thread	**K13M**	37	27	24	70
			Female with female thread	**K13X**	60,5	27,5	24	175
1500		1/4”BSP	**Complete** (K15M+K15X)	**K15**	-	-	-	-
			Male with female thread	**K15M**	37	25	22	65
			Female with female thread	**K15X**	58,5	27,5	24	150
2500			**Complete** (K25M+K25X)	**K25**	-	-	-	-
			Male with female thread	**K25M**	38	25	22	65
			Female with female thread	**K25X**	67	30	24	210

Cuplers for higher pressures 3000 bar K30# and 4000 bar K40# can be supplied.

R

MANIFOLDS / FITTINGS
1000 / 2000 / 3000 bar

• MAX WORKING PRESSURE	1000 bar
• APPLICATIONS	3 - 9

FEATURES

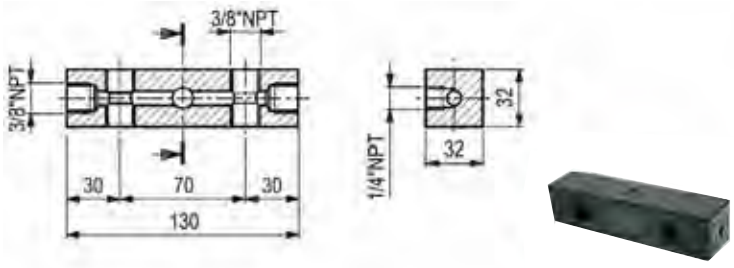
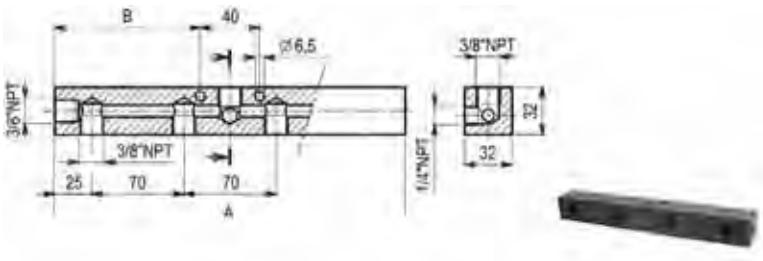
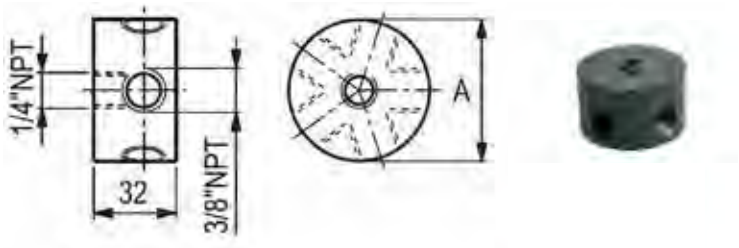
Manifolds.

They are available in various sizes with axialor or radial outlets, they are 1/4" NPT threaded for the insertion of the pressure gauge.

Fittings.

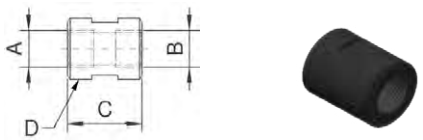
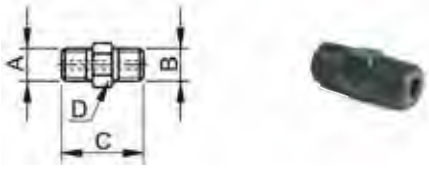
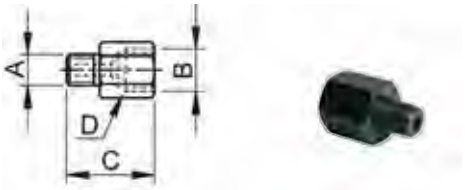
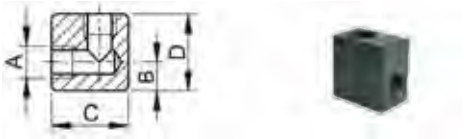
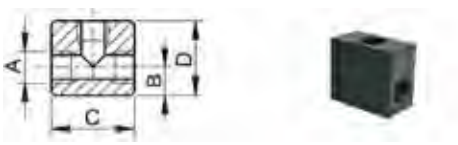
The fittings range at 1000 bar guarantees a 4 safety factor if used at 700 bar w.p., and a 2,8 safety factor if used at 1000 bar w.p.

MANIFOLDS

Type	MODEL		N° usage	A mm	B mm
Multi level manifold	**RB386**		6	-	-
Single level manifold	**RM387**		7	260	110
	RB389		9	400	180
Radial manifold	**RK383**		3	45	-
	RK385		5	55	-
	RK387		7	65	-

FITTINGS

*Swivelling

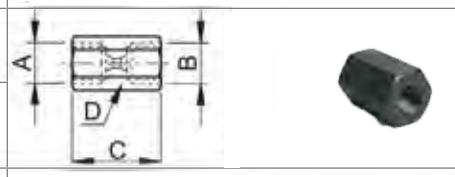
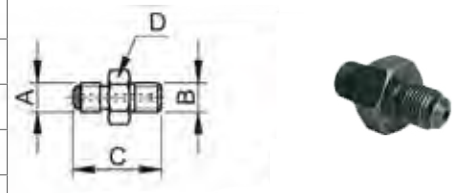
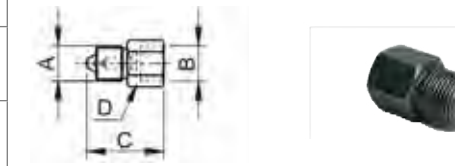
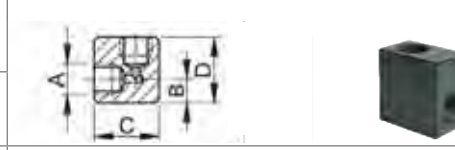
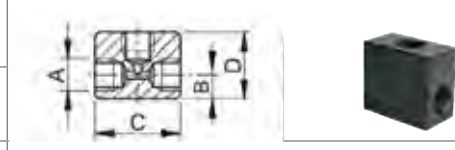
Type	MODEL		Dimensions			
			A	B	C	D
Plug	RC14		1/4" NPT	-	10.5	-
	RC38		3/8" NPT			
Coupling	RS14		1/4" NPT	1/4" NPT	32	Ø22
	RS38		3/8" NPT	3/8" NPT	34	Ø28
	RS52		1/4" NPT			
Nipple	RN14		1/4" NPT	1/4" NPT	39	17
	RN141				70	
	RN38		3/8" NPT	3/8" NPT	41	
	RN381				70	
	RN382				120	
	RN52			1/4" NPT	41	
	RN521				70	
Reducing connector	RR23		1/4" BSP 120°	3/8" NPT	41	24
	RR24		1/4" NPT		40	
	RR52		3/8" NPT	1/4" NPT	40	19
	RR02		1/2" BSP			22
	RR26		1/4" NPT	1/2" BSP		30
	RR26 O *		1/4" NPT		48	27
	RR501		3/8" NPT		40	30
	RR53			1/4" BSP 120°	36	19
	RR72		3/4"- 16 UNF 60°	3/8" NPT	45	22
Elbow	RE14		1/4" NPT	15	35	35
	RE38		3/8" NPT	15	40	40
Tee	RT14		1/4" NPT	12.5	40	35
	RT38		3/8" NPT	15	45	40
Cross	RX14		1/4" NPT	-	45	45
	RX38		3/8" NPT	-		

R

FITTINGS

- MAX WORKING PRESSURE **2000 - 3000 bar**

* Swivelling ** Specifically for flexible hoses.

Type	Press. bar	MODEL		Dimensions			
				A	B	C	D
Plug	2000	**RC15**		1/4" BSP 120°	-	28	22
	3000	**RC34**		3/4" - 16 UNF 60°	-	32	
Coupling	2000	**RS15**		1/4" BSP 120°	1/4" BSP 120°	40	19
	3000	**RS34**		3/4" - 16 UNF 60°	3/4" - 16 UNF 60°	42	27
Nipple	2000	**RN15**		1/4" BSP 120°	1/4" BSP 120°	46	22
		RN29			1/4" NPT	43	
		RN53			3/8" NPT	45	
		RN17		1/4" BSP **	1/4" BSP **	34	
		RN31			1/4" NPT	37	
		RN55			3/8" NPT	39	
	3000	**RN32**		1/4" BSP 120°	1/4" BSP **	40	22
		RN33		M16x1,5 60°	1/4" BSP **	39	
		RN28			1/2" BSP	44	
		RN34		3/4" - 16 UNF 60°	3/4" - 16 UNF 60°	54	
		RN34 O *	INTERNAL CONE 60°		3/4" - 16 UNF 60°	63	
		RN49			1/4" BSP 120°	50	
		RN51			1/4" BSP **	44	
		RN50			M16x1,5 60°	50	
Reducing connector	2000	**RR49**		3/4" - 16 UNF 60°	1/4" BSP 120°	42	22
		RR03		1/4" BSP 120°	1/2" BSP		30
	3000	**RR51 O ***		3/8" BSP 60°		53	27
		RR12 O *		1/2" BSP 60°			
		RR50 O *		3/4" - 16 UNF 60°		58	
Elbow	2000	**RE15**		1/4" BSP 120°	12.5	35	35
	3000	**RE34**		3/4" - 16 UNF 60°	12.5	40	40
Tee	2000	**RT15**		1/4" BSP 120°	12.5	45	35
	3000	**RT34**		3/4" - 16 UNF 60°	15	45	45
Cross	2000	**RX15**		1/4" BSP 120°	-	45	45
	3000	**RX34**		3/4" - 16 UNF 60°	-	55	55

HIGH PRESSURE HOSES
700 / 1000 / 1800 / 2500 / 2800 bar

• MAX PRESSURE	700 - 2800 bar
• INTERNAL DIAMETER	4,6 - 6,4 mm

FEATURES

These hoses are suitable for all hydraulic applications and consist of 2, 4, or 6 steel wire spirals (depending on the operating pressure) which are extremely resistant to traction. Their outer polyurethane (700 -1000 bar) or polyamide (1800 - 2000 and 2500 bar) cover provides excellent scraping protection and the minimal expansion during operations guarantee excelent efficiency.
All the hoses with the two couplers are equipped flushed a with ISO VG 32 oil.

SELECTION CHART FOR 700 / 1000 bar

MODEL	Max. working pressure	Fitting thread	Length	Coupling – A side	Coupling – B side	Nipple	Min. burst pressure	Safety factor @ 700 bar	Safety factor @ 1000 bar	Internal diameter	Minimum bending radius	Oil volume	Weight
							bar			mm	mm	cm³/m	kg/m
SN10	1000	3/8” NPT - 3/8” NPT male	10 = 1 m 20 = 1,8 m 30 = 3 m etc.	-	-	-	2800	4	2.8	6.4	70	32.2	0.32
SN10M	700			K73M	-								
SN10MM				K73M	K73M								
SN10HT	700 @ 120° C	3/8” NPT - 3/8” NPT male		-	-						40		0.25
SQ10	1000	1/4” NPT - 1/4” NPT male		-	-						70		0.32
SQ10M	700			K71M	-								
SQ10MM				K71M	K71M								
SR10	1000	1/4” BSP - 1/4” BSP swivel female		-	-								

- Bolt tensioner hoses: **SN##FT** (with K13X coupler)
- Torque wrenche hoses: **SQ##FM** (male coupler on one side and female coupler on the other).

The maximum operating pressure of the **pump-hose-coupling** system is the working pressure of the lowest rated part.

The oil volume required to fill the hoses needs to be taken into account when selecting the pump model.

Hoses with different dimensions, working pressures and cuplings from the ones in the catalogue can be supplied upon request.

SELECTION CHART FOR 1800 / 2500 / 2800 bar

MODEL	Max. working pressure	Fitting thread	Length	Coupling – A side	Coupling – B side	Nipple	Min. burst pressure	Safety factor	Internal diameter	Minimum bending radius	Oil volume	Weight
	bar						bar		mm	mm	cm³/m	kg/m
SM10	1800	1/4” BSP - 1/4” BSP swivel female	10 = 1 m 20 = 2 m 30 = 3 m etc.	-	-	-	4500	2.5	4.8	130	18	0.28
SM10P						RN32						
SH10	2500					-	6250			175		0.41
SH10P						RN51						
SH10H	2800					-	7000		4.6	220	16.6	0.56

ST

HIGH PRESSURE TWIN HOSES
700 / 1000 bar

• MAX PRESSURE	700 - 1000 bar
• INTERNAL DIAMETER	6,4 mm

FEATURES

These hoses are suitable for torque wrenches and double acting cylinders (oil return), they are composed of two steel spirals extremely resistant to traction.
The external polyurethane covering guarantees an excellent protection to abrasions and scrapings while the minimum expansion during operations ensure the maximum efficiency of the system.
All the hoses ending with double couplers are already flushed with ISO VG 32 oil.

SELECTION CHART FOR 700 bar HOSES

MODEL	Max. working pressure	Fitting thread	Length	Hoses 'A'		Hoses 'R'		Min. burst pressure	Safety factor @ 700 bar	Internal diameter	Minimum bending radius	Oil volume	Weight
				Coupling – A side	Coupling – B side	Coupling – A side	Coupling – B side						
								bar		mm	mm	cm³/m	kg/m
STN10	1000	3/8" NPT - 3/8" NPT male	10 = 1 m 20 = 1,8 m 30 = 3 m etc.	-	-	-	-	2800	4	6.4	70	32.2	0.64
STN10M	700			K73M	-	K73M	-						
STN10MM				K73M	K73M	K73M	K73M						
STN10FM				K73M	K73X	K73X	K73M						
STQ10	1000	1/4" NPT - 1/4" NPT male		-	-	-	-						
STQ10M	700			K71M	-	K71M	-						
STQ10MM				K71M	K71M	K71M	K71M						
STQ10FM				K71M	K71X	K71X	K71M						
STQ10W				K71X	K71X	K71M	K71M						

The maximum operating pressure of the pump-hose-coupling system is the working pressure of the lowest rated part.

The oil volume required to fill the hoses needs to be taken into account when selecting the pump model.

- CONTAINER SIZE **1 - 10 litres**

ZOH
HYDRAULIC OIL

FEATURES

EUROPRESS high pressure hydraulic oil is a ISO VG 32 mineral based oil with excellent viscosity and lubrication properties. The use of EUROPRESS oil will ensure maximum efficiency and long life service of the equipment. EUROPRESS hydraulic oil is non foaming, will not leave gummy deposits nor corrode valve seats, seals or gaskets or the cylinder walls. Supplied in 1, 5 and 10 litres containers.

CODE

ZOH1	1 litre Container
ZOH5	5 litre Container
ZOH10	10 litre Container

TECHNICAL DATA

Appearance	Clear yellow
Viscosity index	min 109
Viscosity (mm2/s @ 40°C)	32
Density (kg/m3 @ 15°C)	875
Flash point (°C)	220
Pour point (°C)	-25
Operating temperature range (°C)	5-80
Ideal operating temperature (°C)	10-40

Always use **EUROPRESS hydraulic oil or oil having the same technical characteristics**. Different oil types might damage the seals or gaskets and equipment and would make the guarantee null and void.

In case of different temperatures, biodegradable oil or water and glycole based fluid contact EUROPRESS' technical department.

RESPECT THE PLANET! Do not disperse the product in the environment, dispose of it in an eco-sustainable way according national and international standards.

VL / VR

IN-LINE VALVES
700 / 1000 / 2000 / 3000 bar
REGULATING VALVES

- MAX PRESSURE **700 - 3000 bar**

FEATURES

These valves provide the means to control cylinders and actuators operating at pressures of 700, 1000, 2000, 3000 bar.

Specifications:

- **VL** Manual and electric control valves to operate single acting (3-way) and double acting (4 way) systems.
- **VR** Regulating, shut-off and check valve to isolate and monitor hydraulic systems.

Control voltage for solenoids is 24 VDC.

Different voltages are available on request.

HOW TO SELECT A VALVE

When selecting a valve various elements must be taken into account:

- **Single acting cylinders:** these require a 3-way valve (3 outlets: pressure P, tank T, cylinder A).
- **Double acting cylinders:** these require a 4-way valve (4 outlets pressione P, tank T, extension A, return B).
- **Positions:** these are the valve lever position points:
  - extension and retractionof the cylinder (2 position valve).
  - extension, holding and return (3 position valve).
- **Centre:** intermediate position.

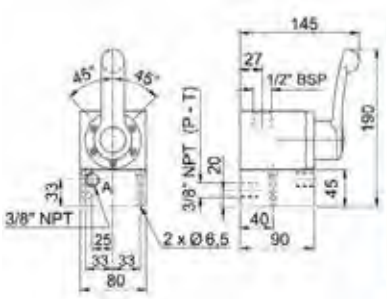
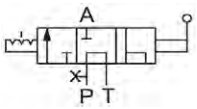
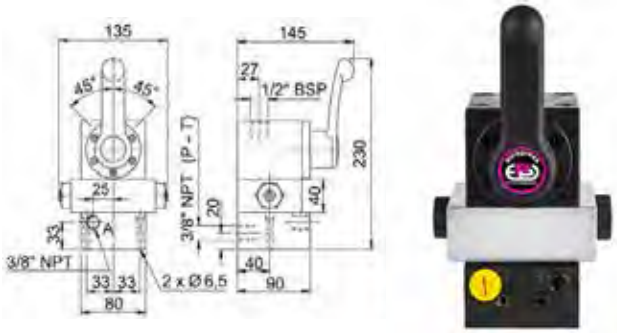
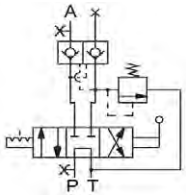
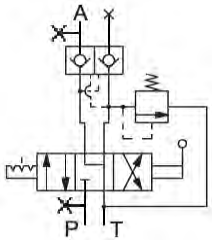
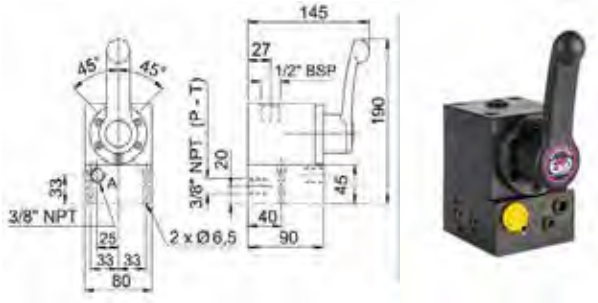
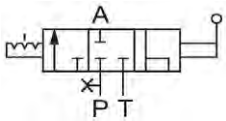
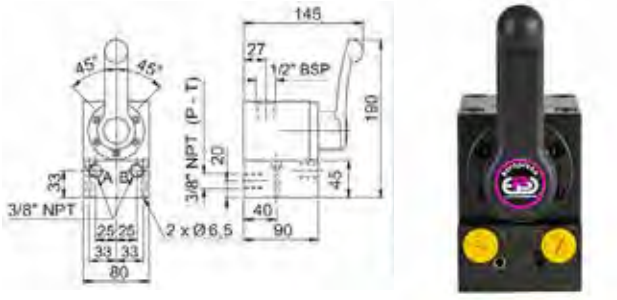
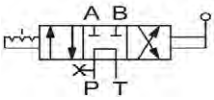
The centre may be **open** and in this case the valve connects the pump (P) and users (A, B) to the discharge outlet (T), or **closed**, and in this case all outlets are closed (if you want to isolate the cylinder but use the pump to feed other users).

When using closed centre valves the pump must be **switched off** when the valve lever is in central position to prevent the overheating of the oil.

For the installation of the valves on **PN** hand pumps refer to the relevant section.

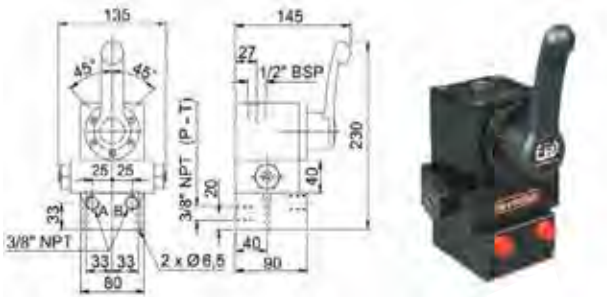
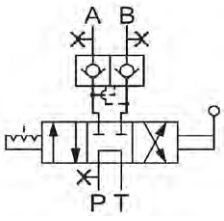
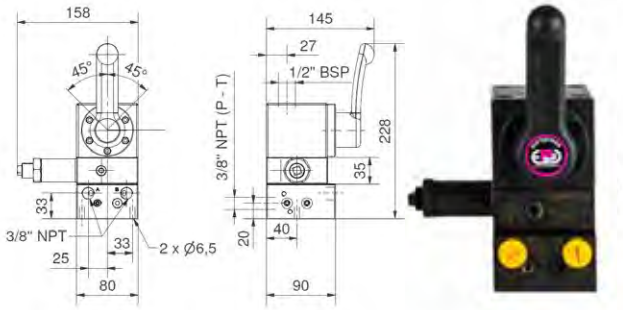
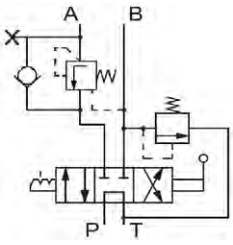
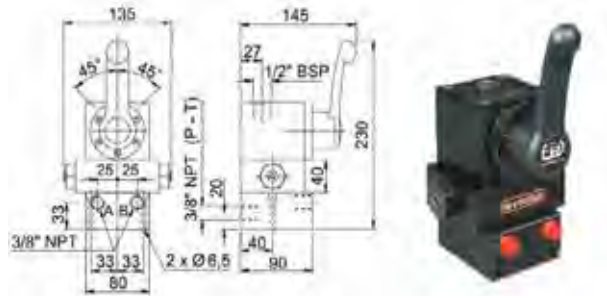
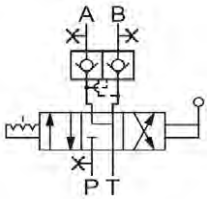
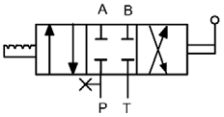
For the installation of the valves on the modular units refer to the relevant section.

VLM PRESSURE 700 bar

MODEL	Description		Symbol
VLM31	3-way 3 position manual control valve. • Advance • Hold • Return		
VLM32	3-way 3 position manual control valve pilot operated check valve. • Advance • Hold with pilot check • Return		
VLM35	3-way 3 position manual control valve pilot operated check valve, P closed. • Advance • Hold with pilot check • Return		
VLM36	3-way 3 position manual control valve closed centre. • Advance • Hold • Return		
VLM41	4-way 3 position Manual control valve. • Advance • Hold • Return		

VLM
IN-LINE MANUAL VALVES

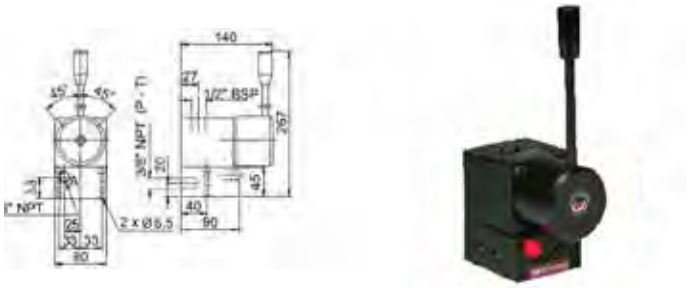
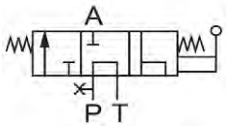
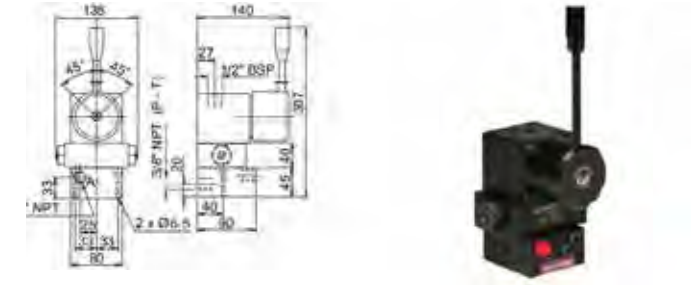
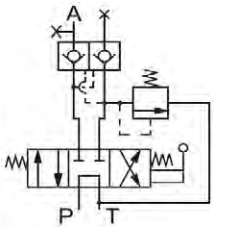
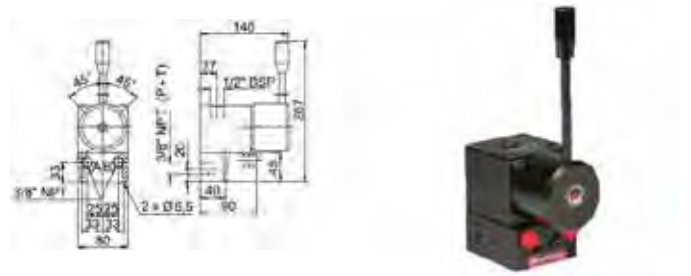
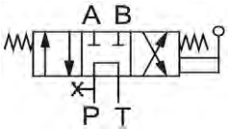
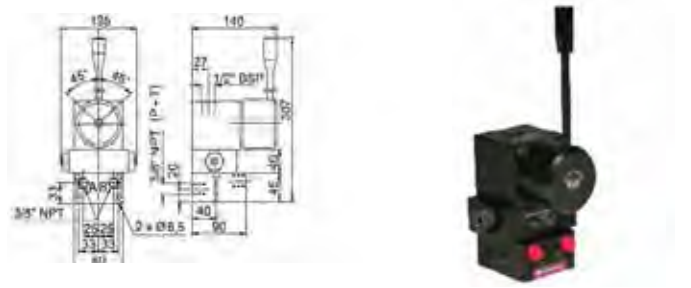
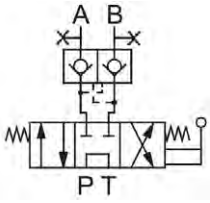
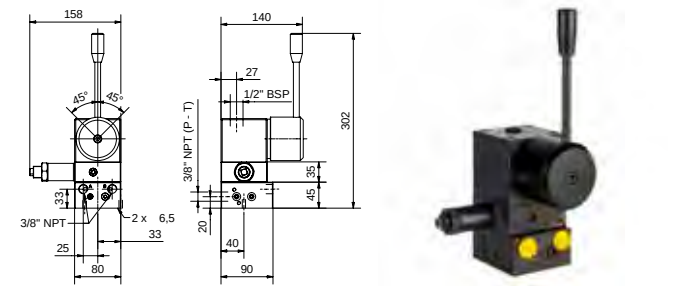
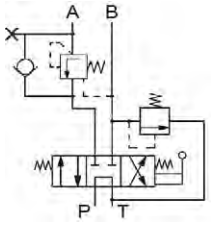
VLM PRESSURE 700 bar

MODEL	Description		Symbol
VLM42	4-way 3 position manual control valve pilot operated check valve. • Advance • Hold with pilot check • Return		
VLM53	4-way 3 position manual control valve counterbalance valve. • Advance • Hold with counterbalance valve on A • Return		
VLM45	4-way 3 position manual control valve counterbalance valve. • Advance • Hold with counterbalance valve on A • Return		
VLM46	4-way 3 position manual control valve closed centre. • Advance • Hold • Return		

VLS

IN-LINE MANUAL VALVES
SPRING RETURN IN CENTRAL POSITION

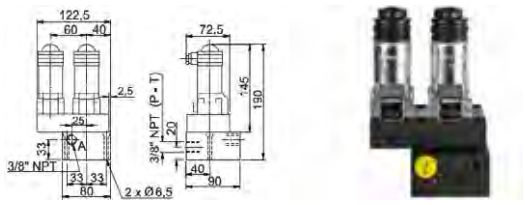
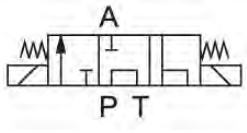
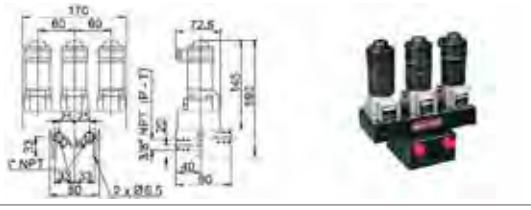
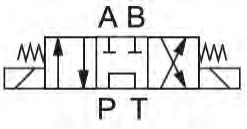
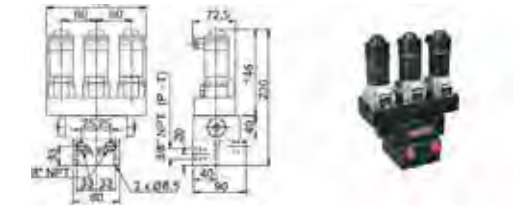
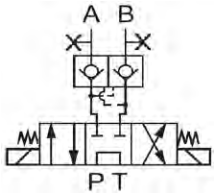
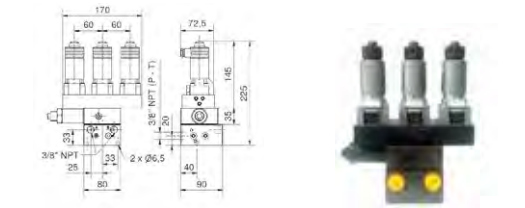
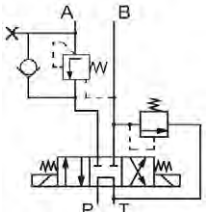
VLS PRESSURE 700 bar

MODEL	Description		Symbol
VLS31	3-way 3 position manual control valve. • Advance • Hold • Spring return in central position		
VLS32	3-way 3 position manual control valve pilot operated check valve. • Advance • Hold with pilot check • Spring return in central position		
VLS41	4-way 3 position manual control valve. • Advance • Hold • Spring return in central position		
VLS42	4-way 3 position manual control valve pilot operated check valve. • Advance • Hold with pilot check • Spring return in central position		
VLS53	4-way 3 position manual control valve counterbalance valve. • Advance • Hold with counterbalance valve on A • Spring return in central position		

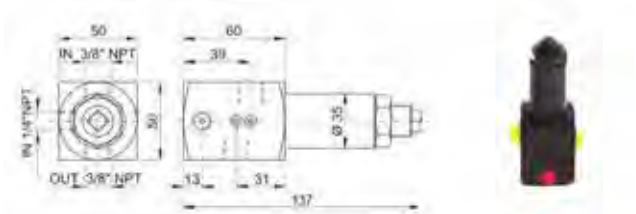
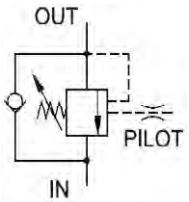
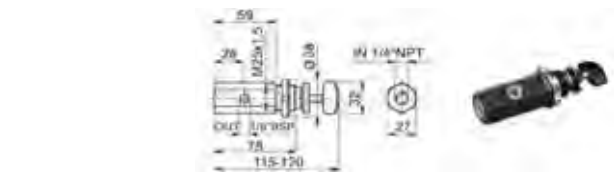
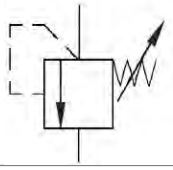
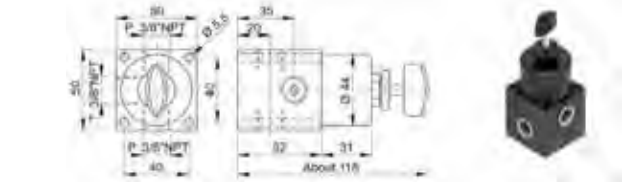
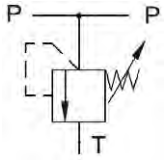
VLE / VR

VLE / IN-LINE ELECTRIC VALVES
VR / IN-LINE REGULATING VALVES

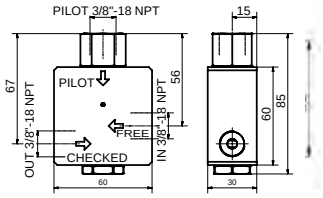
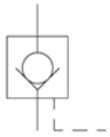
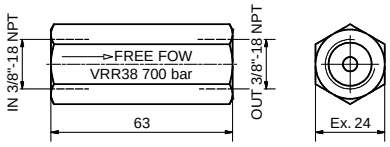
VLE PRESSURE 700 bar

MODEL	Description		Symbol
VLE31	3-way 3 position electric control valve. • Advance • Hold • Return		
VLE41	4-way 3 position electric control valve. • Advance • Hold • Return		
VLE42	4-way 3 position electric control valve. • Advance • Hold • Return		
VLE53	4-way 3 position electric control valve counterbalance valve. • Advance • Hold with counterbalance valve on A • Return		

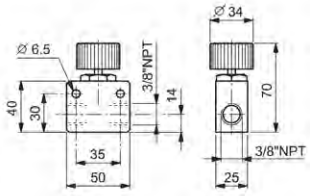
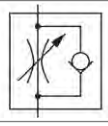
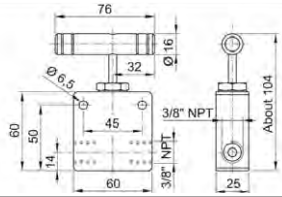
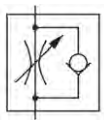
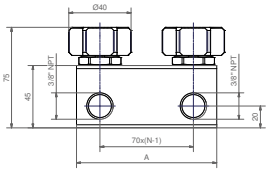
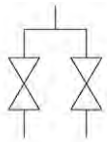
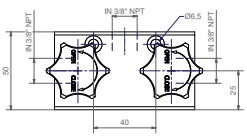
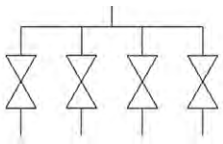
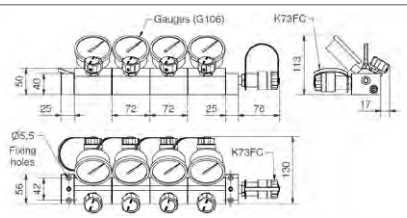
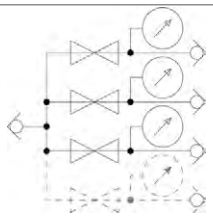
VR PRESSURE 700 bar

MODEL	Description		Symbol
VRB38A	Counterbalance valve. It allows the hold of the load; calibrated during assembling, it controls automatically the down stroke speed without pressure oscillations nor load jumpings. Only for double acting cylinders.		
VRM14	Pressure relief valve, it limits the circuit pressure to the required value (between 50 and 700 bar) by using the wheel control valve. It can be flange mounted.		
VRM381	Pressure relief valve, it limits the circuit pressure to the required value (between 50 and 700 bar) by using the wheel control valve. Suitable to be mounted in line.		

VR PRESSURE 700 bar

MODEL	Description		Symbol
VRP38	Pilot operated check valve. It allows the free flow in one way and shuts off the flow in the opposite direction. Pilot ratio 1.4		
VRR38	One-way check valve. It shuts off the oil flow in one direction. ΔP = 1 bar		

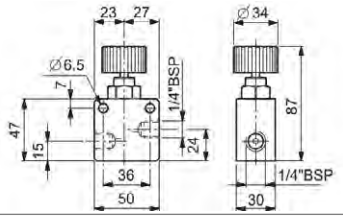
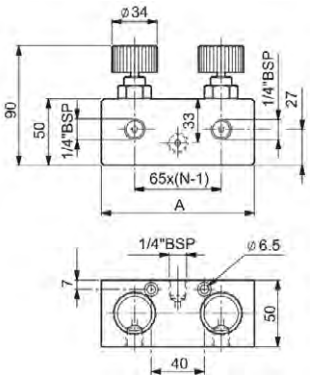
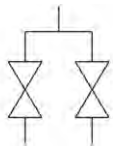
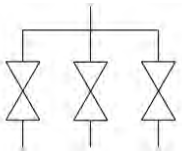
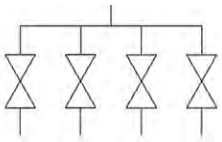
VR PRESSURE 1000 bar

MODEL	Description		Symbol
VRF38	One exit needle valve. It shuts down the flow of a circuit.		
VRU38	One-way flow control valve. Allows the control of the load while lowering.		
VRH38	One-way flow control valve fine adjustable. Allows the control of the load while lowering.		
VRF382	Double outlet needle valve. To split the flow in two separate ways. A = 120		
VRF384	Needle valve with four outlets to split the flow in four separate ways. A = 260		
VRF38#MGF	Needle valve with # outlets. It's equipped with female couplers and gauges. It's a compact and ergonomic solution for the control of various exits.		

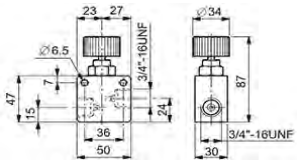
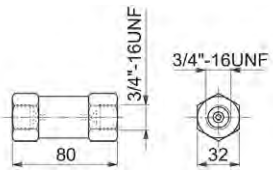
VR

IN-LINE REGULATING VALVES

VR PRESSURE 2000 bar

MODEL	Description		Symbol
VRF15	One exit needle valve. To shut off a flow of a circuit.		
VRF152	Double outlet needle valve. To split the flow in two separate ways. A = 115		
VRF153	Needle valve with three outlets to split the flow in three sepa-rate ways. A = 180		
VRF154	Needle valve with four outlets to split the flow in four separate ways. A = 245		

VR PRESSURE 3000 bar

MODEL	Description		Symbol
VRF34	One exit needle valve. To shut off a flow of a circuit.		
VRR34	One-way check valve. To shut off the oil flow in one direction.		

HYDRAULIC TOOLS

UE
PULLERS AND EXTRACTORS

FEATURES

They UE extractor series consists of two parts:

- **Mechanical**, to be connected to the pieces which have to be extracted, it's composed by high quality steel which ensures duration and reliability through time. It's available in two different types, jaw type, to allow the grip on parts shrinked on axles, or press type, for parts like the above ones which are equipped of attachment holes or in connection with ancillaries for external or internal use, for the extraction of peculiar parts.
- **Hydraulic**, it provides the necessary force, in this set are included one PNP series pump, one CMF cylinder with one ZTE threaded saddle, one 1,8 m long hose, one male quick coupler and one G106L manometer.

Pullers of **UE** range may be supplied in 5 tonnage types (5 - 10 - 20 - 30 - 50) and in 4 configurations, i.e.:

- **UEC# (complete puller set)** which includes all mechanical parts and hydraulic components.
- **UEG# (jaw puller)** consisting of 3 jaw puller and hydraulic components.
- **UET# (press puller set)** consisting of pressure puller internal and external puller, hydraulic components.
- **UEZ# (self aligning puller)** a 3 jaw puller is also available for a more precise and easy positioning on the workplace.

OPERATIONAL AREAS

Indispensable when extracting gears, bearings, couplers and bushings etc.
A correct assessment of the item to be extracted as well as the force required is essential for the correct selection of the puller component.

ACCESSORIES

UEB# carry case (except for the 50 ton model).

OPTIONS

Z Version (UEC#Z) complete puller supplied with self aligning type jaw puller (UEZ) instead of the standard type jaw puller (UEG).

Each puller has a different operating pressure which must never be exceeded. Please refer to data charts.

The safety regulations laid down in the operating and maintenance manual must be observed at all times.

UEC
COMPLETE HYDRAULIC PULLERS

SELECTION CHART FOR COMPLETE PULLERS

		MODEL				
DESCRIPTION		**UEC5**	**UEC10**	**UEC20**	**UEC30**	**UEC50**
HYDRAULIC PARTS UEU#		**UEU5**	**UEU10**	**UEU20**	**UEU30**	**UEU50**
Hand pump	1	PNP130	PNP130	PNP131	PNP131	PNP141
Cylinder		CMI5N125	CMF10N50E	CMF20N50E	CMF30N50E	CMF60N75E
Hose		SN20M	SN20M	SN20M	SN20M	SN20M
Pressure gauge		G106L	G106L	G106L	G106L	G106L
Max. operating pressure		**Refer to the capacity of each mechanical component**				
MECHANICAL PARTS UEC#M	**Pos.**	**UEC5M**	**UEC10M**	**UEC20M**	**UEC30M**	**UEC50M**
Jaw pullers	2	UEG5M	UEG10M	UEG20M	UEG30M	UEG50M
Press, internal & External puller	3	UET5M	UET10M	UET20M	UET30M	UET50M

ACCESSORIES CARRY CASE UEB

MODEL	For use with	Notes
UEB10	UEC10	-
UEB20	UEC20	
UEB30	UEC30	Consisting of UEB10 + UEB20

Pullers for specific applications, different tonnes and special use may be supplied on request.

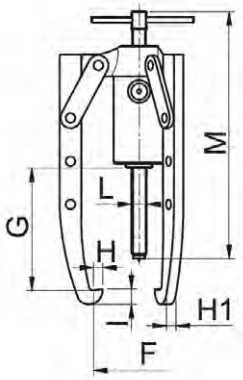
UEG / UEZ

DOUBLE & TRIPLE GRIP JAW PULLERS SETS

• FORCE 5 - 50 t

FEATURES AND OPERATIONAL AREAS

The jaw type pullers are used for the extraction of pulleys, bushes and inner bearing shrinked on axles.
The lifting and the transport of the puller can be realized by hand for **UEG5**, **UEG10** and **UEG20** models by grabbing it from the arm of the traverse, while the heavier models have to be lifted by using a belt and lifting equipment such as cranes, bridge cranes and forklifts.



SELECTION CHART FOR STANDARD (UEG) AND SELF ALIGNING TYPE (UEZ) JAW PULLERS

DESCRIPTION			MODEL				
STANDARD JAW PULLERS			UEG5	UEG10	UEG20	UEG30	UEG50
SELF ALIGNING JAW PULLERS			-	UEZ10	UEZ20	UEZ30	UEZ50
HYDRAULIC PARTS - UEU#		Pos.	UEU5	UEU10	UEU20	UEU30	UEU50
Hand pump		1	PNP130	PNP130	PNP131	PNP131	PNP141
Cylinder			CMI5N125	CMF10N50E	CMF20N50E	CMF30N50E	CMF60N75E
Hose			SN20M	SN20M	SN20M	SN20M	SN20M
Pressure gauge			G106L	G106L	G106L	G106L	G106L
Max operating pressure - 2/3 jaws		-	700 bar	375/560 bar	400/600 bar	405/615 bar	390/580 bar
MECHANICAL PARTS	UEG#M	3	UEG5M	UEG10M	UEG20M	UEG30M	UEG50M
	UEZ#M	4	-	UEZ10M	UEZ20M	UEZ30M	UEZ50M
Protection saddle		2	-	UETS10	UETS20	UETS30	UETS50
Number of jaws		-	2	* 2/3	2/3	2/3	2/3
Minimum spread (mm)		F	73	50	70	90	120
Maximum spread (mm)			195	350	480	580	920
Maximum reach (mm)		G	220	268	335	425	731
Jaw width (mm)		H	18	14	18	25	30
Jaw depth (mm)		H1	26	15	20	22	25
Jaw thickness (mm)		I	11	25	32	42	50
Adjusting screw thread		L	-	3/4'' - 16 UNF	1'' - 8 UNC	1 ¼'' - 7 UNC	1 ⅝'' - 5,5 UNS
Adjusting screw length (mm)		M	-	400	670	790	975
Weight 2/3 jaws		kg	5	12	22/27	36/45	85/103

The jaw puller UEZ is equipped with a self aligning mechanical device to synchronise closing of the jaws on the workpiece allowing the positioning to be more accurate and precise.

Pullers for specific applications and different tonnes, and for special use may be supplied on request.

UET
HYDRAULIC PRESS PULLER SETS

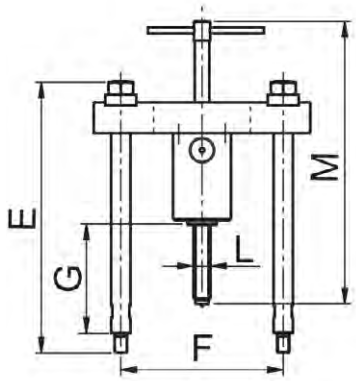
FEATURES AND OPERATIONAL AREAS

The tie rod pullers are used for the extraction of pulleys, bushes and inner bearings raceways pressed on axles which have threaded holes suitable to receive the threaded extremity of the tie rod.

With this configuration it's possible to connect the tie rods thanks to the connecting coupling **UETR**.

For other applications they can be used in combination with **UEE** external pullers and **UEI** internal pullers (see the below section).

The lifting and the transport of the puller can be done, for the **UET10** model, by grabbing it from the arm of the traverse, while the heavier models have to be lifted by using a belt and lifting equipment such as cranes, bridge cranes and forklifts.



SELECTION CHART FOR PRESS PULLERS

		MODEL														
DESCRIPTION		**UET5**		**UET10**		**UET20**				**UET30**			**UET50**	
HYDRAULICS PARTS - UEU#	**Pos.**	**UEU5**		**UEU10**		**UEU20**				**UEU30**			**UEU50**	
Hand pump	**1**	PNP130		PNP130		PNP131				PNP131			PN141	
Cylinder		CMI5N125		CMF10N50E		CMF20N50E				CMF30N50E			CMF60N75E	
Hose		SN20M		SN20M		SN20M				SN20M			SN20M	
Pressure gauge		G106L		G106L		G106L				G106L			G106L	
Max. operating pressure	-	700 bar		560 bar		600 bar				615 bar			580 bar	
MECHANICAL PARTS UET#M	**Pos.**	**UET5M**		**UET10M**		**UET20M**				**UET30M**			**UET50M**	
Internal puller	2	-		UEI10		UEI20				UEI30			UEI50	
External puller	3	-		UEE10		UEE20				UEE30			UEE50	
Protection saddle	4	UETS5		UETS10		UETS20				UETS30			UETS50	
Number of legs	5	2	2	2	2	2	2	2	2	2	2	2	2	2
Leg length(mm)	E	180	360	209	460	209	336	515	665	328	582	836	820	1075
Maximum reach (mm)	G	100	280	-21	230	-56	71	250	400	4	258	512	399	655
Minimum spread (mm)	F min.	82		115		135				180			230	
Maximum spread (mm)	F max.	235		260		345				440			580	
Adjusting screw thread	L	-		3/4'' - 16 UNF		1'' - 8 UNC				1 ¼'' - 7 UNC			1 ⅝'' - 5,5 UNS	
Adjusting screw length (mm)	M	-		400		670				790			975	
Weight	kg	5		13		32				55			115	

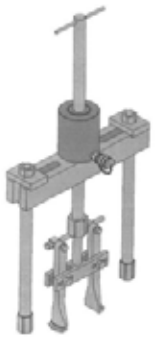
UEI / UEE

EXTERNAL AND INTERNAL PULLERS

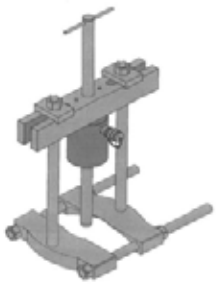
FEATURES AND OPERATIONAL AREAS

These pullers are used for the extraction of bushes or bearing races on axles with limited space.

They must be used combined with the corresponding UET tie rod puller.



UET + UEI

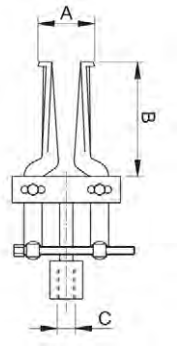


UET + UEE

SELECTION CHART FOR INTERNAL PULLER (UEI)

UEI

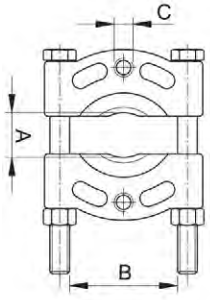
MODEL	FORCE	PRESSURE	DIMENSIONS MM				WEIGHT
	t	bar	A min.	A max.	B	C	kg
UEI10	5	280	40	145	115	3/4'' - 16 UNF	2
UEI20	10	300	32	160	140	1'' - 8 UNC	2,5
UEI30	15	310	60	240	150	1 ¼'' - 7 UNC	6
UEI50	25	290	60	240	150	1 ⅝'' - 5,5 UNS	6



SELECTION CHART FOR EXTERNAL PULLER (UEE)

UEE

MODEL	FORCE	PRESSURE	DIMENSIONS MM				WEIGHT
	t	bar	A min.	A max.	B	C	kg
UEI10	7	370	10	110	110	5/8'' - 18 UNF	2,5
UEI20	13	400	11	134	152	5/8” - 18 UNF	5,5
UEI30	20	410	15	250	260	1'' - 14 UNF	25
UEI50	33	385	15	250	260	1 ¼” - 12 UNF	25



UML
LIGHTWEIGHT ALUMINIUM JACKS

FEATURES

UML are self contained compact lifting units with the capacity to lift up to 100 tonnes. They are portable, efficient and reliable.

They are available in three different versions:

- **Standard** with plain ram for vertical lifting or horizontal pushing on the front face.
- **Lock ring** with screwed ram and locking collar, an ideal solution to support the load mechanically for long periods.
- **With claw** for conventional load lifting or lifting from very low heights on the claw.

  These models have extended bases for maximum stability.

All models are provided with:

- A built-in safety valve to prevent overload.
- A release valve controller by an operating lever to lift and lower the jack.
- Built-in carry handle for models over 15 tonnes.

OPERATIONAL AREAS

Thanks to their light weight and easy handling these jacks are particularly versatile and suitable for many applications as: industrial, civil, ship repair, and railway industries.

For aereonautical use, to lift aereoplanes, it is necessary to purchase the specific custom saddle for each aircraft.

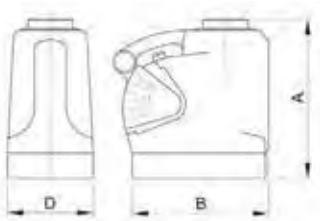
In the claw version the load to be lifted must not exceed the value indicated on the claw and in the chart.

Follow EUROPRESS safety instructions, check useful pages 176.

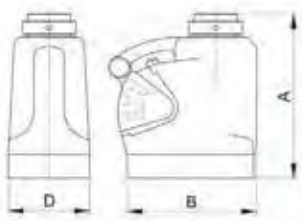
UML

LIGHTWEIGHT ALUMINIUM JACKS

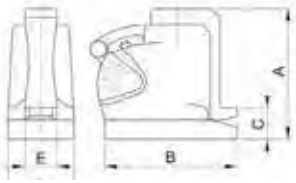
• FORCE	6,5 - 100 t
• STROKE	75 - 305 mm



UML#N



UML#G



UML#C

SELECTION CHART ALUMINIUM JACKS

Type	Pushing force	Maximum load on the claw	Stroke	MODEL	Dimensions mm					Weight
	t	t	mm		A	B	C	D	E	kg
Standard	6,5	-	75	**UML6N75**	140	158		76		3,6
	10	-	115	**UML10N115**	182	171				6,3
	15	-	152	**UML15N152**	230	197		92		10
	20	-	152	**UML20N152**	263	178		121		11
			305	**UML20N305**	438	246				17
	30	-	152	**UML30N152**	263	197		140		15,4
			305	**UML30N305**	451	273				23,4
	60	-	152	**UML60N152**	293	251		190		27,5
			305	**UML60N305**	500	339				43,7
	100	-	152	**UML100N152**	313	310		241		49
With safety lock ring	20	-	152	**UML20G152**	289	178		121		10,9
			305	**UML20G305**	464	246				16,7
	30	-	152	**UML30G152**	292	197		140		15,4
			305	**UML30G305**	479	273				23,4
	60	-	152	**UML60G152**	330	251		190		27,5
			305	**UML60G305**	536	339				43,7
	100		152	**UML100G152**	357	310		241		53
With claw	20	8	152	**UML20C152**	276	214	67	121	60	14,5
			305	**UML30C305**	452					22,2
	30	12	152	**UML30N152**	281	235	73	140	76	20,3
			305	**UML30C305**	470					31
	60	24	152	**UML60C152**	327	286	73	190	108	43,1
			305	**UML60C305**	533					64,9

• FORCE	5 t
• STROKE	150 mm

UMP

UNIVERSAL HYDRAULIC JACK PRIMUS

FEATURES

It's a compact hydraulic lifter with integrated hand pump and cylinder and it's manufactured in steel and aluminum.

Thanks to its special rubber reservoir it can be used in **any working position**.

A built in safety valve prevents overloads.

All models are supplied with a protection ring, a pushing saddle and a lifting toe.

The load can be lifted by the head, by the lifting toe or by the foot by using the available accessories such as eye-lefts and nipples. The hand wheel release valve allows an accurate and precise lowering of the load.

It can be used in environments with temperatures from -30°C up to +60°C.

OPERATIONAL AREAS

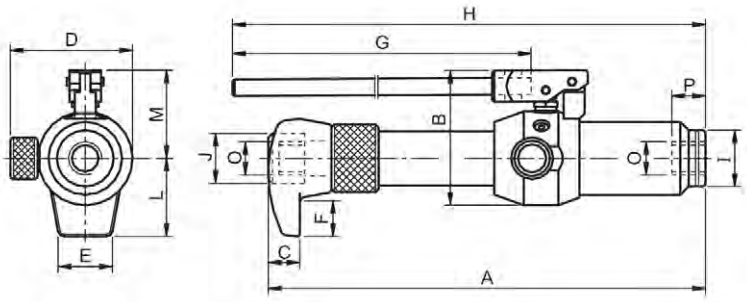
The special design of the PRIMUS-lifter allows it to be used in any working position which gives this jack a very wide range of heavy duty field applications.
Used widely in the mining, shipbuilding, railway and steel structural industries it is also suitable for use in rescue applications.
The PRIMUS-lifter is an essential piece of equipment for any repair facility.

OPTIONS

- **S Version, (UMP5M150WS)** Tool without bracket.

ACCESSORIES

- **ZUN5 Nipple**, necessary to screw the clevis eye on the top side.
- **ZEU5 Clevis eye**, it can be screwed on the rod (without nipple) or on top side of the cylinder (with nipple). Hole dimensions 22 mm.



SELECTION CHART

Pushing force	Stroke	Lift per handle stroke	Handle effort	Reservoir capacity	MODEL	Dimensions mm														Weight
t	mm	mm	N	cm³		A	B	C	D	E	F	G	H	I	J	L	M	O	P	kg
5	150	1,3	275	260	**UMP5M150WS**	416	130	30	116	48	35	400	565	54	48	75	85	M32x2	20	9,3

UMS
STEEL HYDRAULIC JACKS

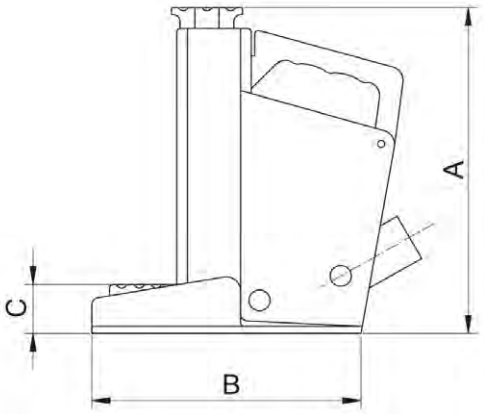
• FORCE	5 t
• STROKE	178 mm

FEATURES

- **Reduced front profile** which allows the jack to be inserted in very limited load spaces. This jack has a claw of only 41 mm of height from the ground level which allows the lifting of very low loads.
- **The claw is manufactured in high tensile steel** which slides inside the jack and therefore is perfectly guided and has excellent resistance to off-centre loads.
- **It can lift the maximum load either by the foot or by the claw.**
- **Lateral stability** is ensured by the extended base.
- **Easy application:** thanks to the single mechanism
- operating both the pump and the release valve this jack is very easy to use, even in harsh conditions.
- The built in relief valve avoids any possible over pressures. Besides an internal stop valve avoids the collapse of the cylinder is case of accidental overloads.

OPERATIONAL AREAS

This jack, designed with a high safety factor to operate in heavy duty conditions, is made from steel without any aluminium components. It is widely used in the machinery moving, mining, ship repair and railway industries.



SELECTION CHART

Pushing force	Maximum load on the claw	Stroke	MODEL	Dimensions mm				Weight
t	t	mm		A	B	C	width	kg
5	5	178	**UMS5N175**	325	220	41	114	18

• FORCE	10 - 20 t
• STROKE	150 mm
• MAX WORKING PRESSURE	700 bar

UJ

EUROJACK HEAD AND TOE LIFTING JACK

FEATURES

This power jack with adjustable lifting toe is designed to lift large loads from very low positions.
They are provided with extendable bases to ensure maximum stability.
The lifting toe can be positioned at three different levels with only 25 mm minimum clearance needed. The head of the jack may also be used to lift vertically, or if the jack is turned onto its side it can be used for pushing.

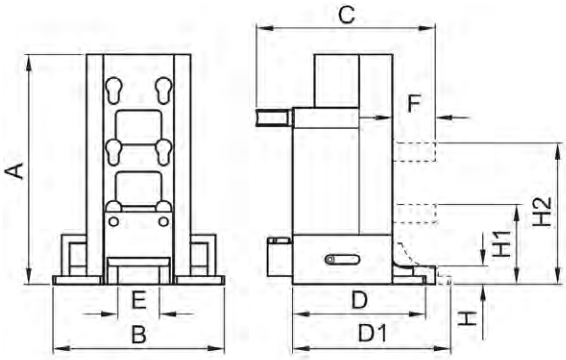
For the 20 ton model reduce the load to 15 and 10 ton respectively on the 2nd and 3rd level.

If used in pairs connect the lifters in parallel so that they receive the same force.

Hand pump model **PN131** is the recommended pump to operate the **UJ** power.

OPERATIONAL AREAS

Particularly suitable for lifting, moving and levelling of machineries and heavy equipments from very low positions.



SELECTION CHART

Pushing force	Stroke	Oil volume	MODEL	Dimensions mm										Weight
t / kN	mm	cm³		A	B	C	D	D1	E	F	H	H1	H2	kg
10 / 95	150	238	**UJ10**	280	206	215	160	190	50	50	25	100	175	22
20 / 199	150	498	**UJ20**	314	271	290	230	265	70	70	30	110	190	45

UB
PIPE BENDERS

- CAPACITY **3/8” - 3”**

FEATURES

They are available in two versions:

- **UB#** - with **hand pump** and former sets for use on Nominal Bore Tubes from 3/8” to 3”.

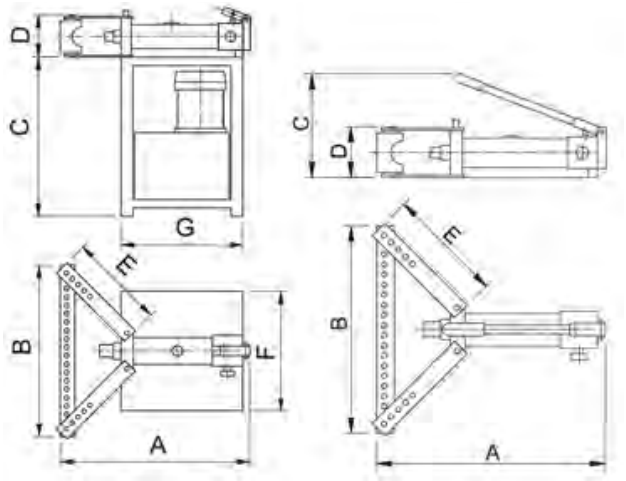
If necessary this particularly silent and fast version can also be manually operated.

OPERATIONAL AREAS

UB pipe benders are suitable for cold-bending without filling the tubes from 3/8” to 3” sized nominal bore to obtain discontinous right and left bends up to 90°.

They are suitable only for commercial gas hoses up to their nominal diameter (UNI EN10255 L01 only for BS1387 L - UNI8863 - DIN2440).

They can bend hoses of smaller diameter and bigger thickness proportionally.



Pipe benders may be supplied upon request for pipe sizes up to 6” or for special applications.

EUROPRESS technical department is available to design special customised solutions.

UL
LOAD CELLS

FEATURES

Designed to measure forces and loads,they are avaible in two versions:

- **UL - with solid rod:** equipped with a spherical pushing saddle for off centre load alignments.
- **ULF - with hollow rod:** to insert threaded rods or tie bars.

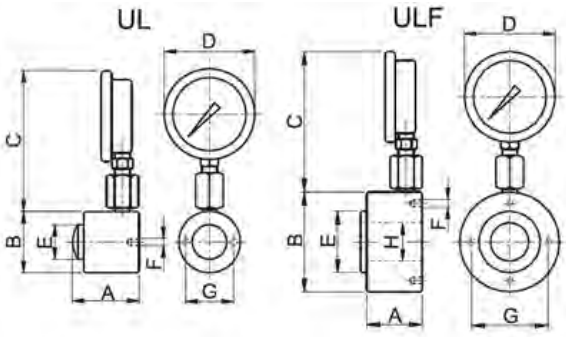
All models are supplied with pressure gauges marked in kg and with a maximum indicating pointer to measure the maximum load. Degree of accuracy: ± 2,5%.

OPERATIONAL AREAS

They are used in many sectors and whenever it is necessary to measure forces and loads.
Because of the nitride treatment they are suitable for outdoor operations or in very aggressive environment

OPTIONS

- **F Version**
  Load cell complete with 1 m flexible hose.



SELECTION CHART

Capacity	MODEL	Dimensions mm								Weight
KG		A	B	C	D	E	F	G	H	kg
5500	**UL05**	85	80	217	118	45	2 x M6	65	-	3,7
11000	**UL10**									
23000	**UL23**	93	105			65	2 x M8	90	-	6,5
15000	**ULF15**	80	130			80	4 x M8	100	50	7

MODEL CODING

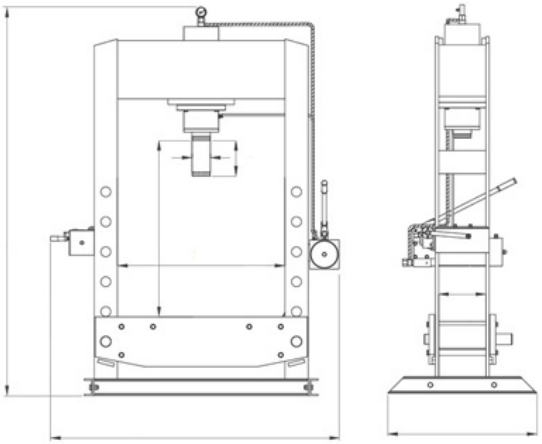
UL	—	5	#
Load cell	— = with solid rod **F** = with hollow rod	Capacity in tonnes	**F** = with 1 m flexbible hose

UP
PRESSES

FEATURES

Made of steel and equipped with an hydraulic part, they are produced on request and can be customised according to specific needs.

The hydraulic part is made of standard products with a single or double acting cylinder, a single or double stage pump, and a gauge to guarantee a better safety and they are completed with a winch in order to lift the bed quickly and easily.



For more detailed technical information please call the sales department and visit the website.

Products subject to periodical variations.
For more detailed technical information please call the sales department and visit the website.

SELECTION CHART

FORCE	MODEL	Dimensions mm								Weight
t		A	B	C	D	E	F	G	H	kg
30	**UPM30N190**	2000	600	1300	695	1000	170	190	60	280
40	**UPM40N190**	2100	850	1420	770	1135	200	190	60	405
50	**UPM50N190**	2110	850	1420	770	1135	210	190	60	455
70	**UPM70N210**	2235	900	1580	880	1120	270	210	90	700
100	**UPM100N215**	2290	900	1740	1010	1055	285	215	110	960

• FORCE	1054 - 6498 kN
• THROUGH HOLE	100 - 400 mm
• MAX WORKING PRESSURE	800 bar

UHL
SMOOTH BORE HYDRALIC NUTS

BAT bolting advanced technologies

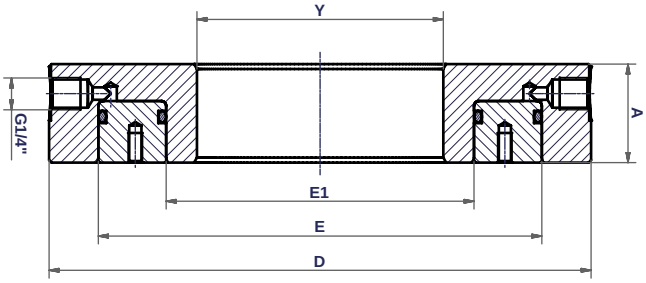
FEATURES AND OPERATIONAL AREAS

The UHL smooth bore Hydraulic Nuts are used in heavy industry and shipyards for mounting bearings, gears or propellers on tapered seatings. They can be used with threaded shafts, on which a reaction nut is installed behind the nut, or with non protruding shafts fitted with axial threaded holes to which a reaction plate can be fitted. Due to the higher force generated if compared to the threaded version, this design results much more versatile and generically applicable to many cases.
Built to withstand pressure up to 800 bar, the hydraulic nuts are able to supply all the force necessary even for the most difficult cases. The hydraulic nuts are supplied with two ports on the sides only, one fitted with a K11M coupler, while the other port is plugged and can be used to connect a pressure transducer or a pressure gauge.

The pumps dedicated to operate the hydraulic nuts are fitted with the fittings necessary for an optimal connection.

- Wide dimensional range from 100 mm to 400 mm as standard.
- The smooth hole, calibrated H7, allows an easy installation on the shaft, not requiring to screw the nut.
- The models over 30 kg of weight are provided with threaded holes for eyebolts.
- Particular or larger models are available on request.

Bottom surface must be in contact with a solid, flat and indeformable ground.



SELECTION CHART

PUSHING FORCE	WORKING PRESSURE	PUSHING AREA	STROKE	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø EXTERNAL PISTON	Ø INTERNAL PISTON	Ø THROUGH HOLE	WEIGHT
kN	bar	cm2	mm	cm3		All dimensions (mm)					kg
						A	D	E1	E2	Y	
1054	800	132	10	132	**UHL100**	40	220	180	125	100	9,5
1100	800	137	10	137	**UHL125**	40	245	200	150	125	9,8
1173	800	147	10	147	**UHL150**	40	270	226	180	150	12,5
1286	800	161	11	177	**UHL175**	45	305	250	205	175	17
1602	800	200	12	240	**UHL200**	50	330	280	230	200	21
2070	800	259	12	310	**UHL225**	50	365	313	255	225	23
2553	800	319	12	383	**UHL250**	50	390	345	280	250	28
3228	800	403	12	484	**UHL275**	50	430	380	305	275	34
3511	800	439	13	570	**UHL300**	55	470	410	335	300	44
4021	800	503	13	653	**UHL325**	55	500	440	360	325	49
4863	800	608	13	790	**UHL350**	55	540	475	385	350	57
5781	800	723	13	939	**UHL375**	55	575	510	410	375	65
6498	800	812	15	1218	**UHL400**	60	620	545	440	400	83

UHM

HYDRAULIC THREADED NUT

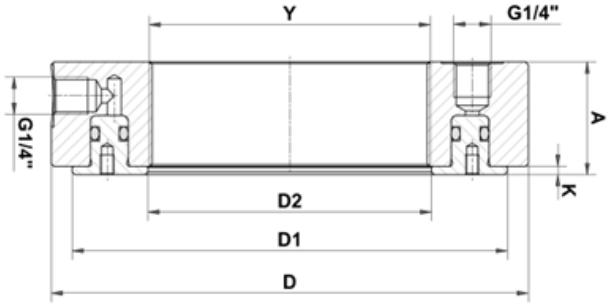
• FORCE	183 - 1583 kN
• THROUGH HOLE	M50 - Tr500
• MAX WORKING PRESSURE	300 - 600 bar

BAT
bolting advanced technologies

FEATURES AND OPERATIONAL AREAS

The **UHM** Hydraulic Nuts are used for mounting and dismounting bearings on tapered seating, directly or through conical adapter or withdrawal sleeve.
Their design is aimed at reducing the operation time and make it easier.
Built to withstand pressure up to 800 bar, the hydraulic nuts are able to supply all the force necessary also for the most difficult cases. The hydraulic nuts are supplied with a **K11M** coupler at one port, while the other ports are plugged.
The pumps dedicated to operate the hydraulic nuts are fitted with the fittings necessary for an optimal connection.

- Wide dimensional range from 50 mm to 500 mm as standard.
- Available in **UHW version with Imperial thread** from 1,967" to 19,682".
- The coupling can be fitted to any of the ports available according to the space constraints.
- The installation of the nut on the thread is facilitated by the holes provided for the insertion of tommy bars.
- The models over 30 kg of weight are provided with threaded holes for eyebolts.
- Particular or larger models are available on request.

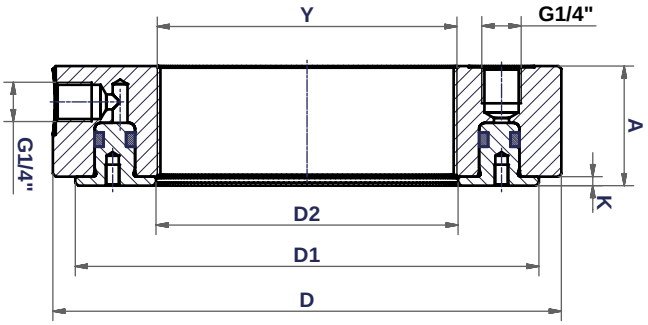


SELECTION CHART

PUSHING FORCE	WORKING PRESSURE	PUSHING AREA	STROKE	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø EXTERNAL PISTON	Ø INTERNAL PISTON	PISTON PROJECTION	THREAD	WEIGHT
kN	bar	cm2	mm	cm3		All dimensions (mm)						kg
						A	D	D1	D2	K	Y	
183	600	30	4	12	**UHM50**	40	110	98	51	2	M 50x1,5	2,6
188	600	31	4	13	**UHM55**	40	118	105	56	2	M 55x2	2,7
190	600	32	4	13	**UHM60**	40	125	112	61	2	M 60x2	2,8
213	600	35	4	14	**UHM65**	40	132	118	66	3	M 65x2	3,1
245	600	41	4	16	**UHM70**	40	140	123	71	3	M 70x2	3,3
274	600	46	4	18	**UHM75**	40	145	128	76	3	M 75x2	3,5
299	600	50	4	20	**UHM80**	40	150	133	81	3	M 80x2	3,7
301	600	50	4	20	**UHM85**	40	155	138	86	3	M 85x2	3,8
302	600	50	5	25	**UHM90**	40	160	143	91	3	M 90x2	4,1
314	600	52	5	26	**UHM95**	40	165	148	96	3	M 95x2	4,3

UHM

HYDRAULIC THREADED NUT



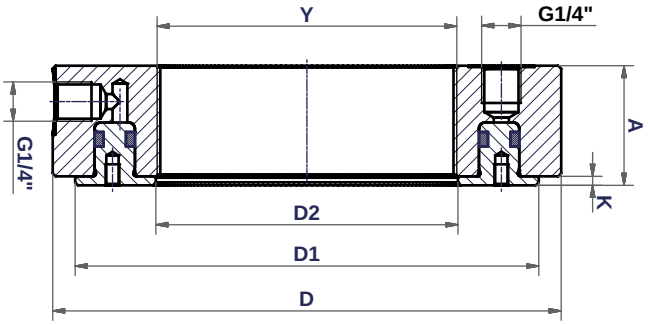
SELECTION CHART

PUSHING FORCE	WORKING PRESSURE	PUSHING AREA	STROKE	OIL VOLUME	MODEL	CLOSED HEIGHT	Ø EXTERNAL	Ø EXTERNAL PISTON	Ø INTERNAL PISTON	PISTON PROJECTION	THREAD	WEIGHT
kN	bar	cm 2	mm	cm 3		All dimensions (mm)						kg
						A	D	D1	D2	K	Y	
327	600	54	5	27	**UHM100**	40	170	155	101	3	M 100x2	4,5
340	600	57	5	28	**UHM105**	42	175	160	106	6	M 105x2	4,7
352	600	59	5	29	**UHM110**	42	180	165	111	6	M 110x2	5
365	600	61	5	30	**UHM115**	43	185	170	116	6	M 115x2	5,2
378	600	63	5	31	**UHM120**	43	190	175	121	6	M 120x2	5,4
391	600	65	5	33	**UHM125**	44	195	180	126	7	M 125x2	5,6
390	600	65	5	32	**UHM130**	44	200	185	131	7	M 130x2	5,8
399	600	67	5	33	**UHM135**	45	205	190	136	7	M 135x2	6
412	600	69	5	34	**UHM140**	45	210	196	141	7	M 140x2	6,2
424	600	71	5	35	**UHM145**	46	215	202	146	7	M 145x2	6,5
436	600	73	5	36	**UHM150**	46	220	207	151	7	M 150x2	6,7
486	600	81	5	40	**UHM155**	46	225	214	156	7	M 155x3	7
512	600	85	6	51	**UHM160**	47	235	220	161	7	M 160x3	7,7
560	600	93	6	56	**UHM165**	47	240	225	166	7	M 165x3	8,2
580	600	97	6	58	**UHM170**	48	245	232	171	7	M 170x3	8,6
608	600	101	6	61	**UHM180**	48	255	243	181	7	M 180x3	9,1
691	600	115	8	92	**UHM190**	50	270	255	191	8	M 190x3	10,5
759	600	127	8	101	**UHM200**	50	280	267	201	8	M 200x3	11,5
528	400	132	8	106	**UHM205**	51	290	272	207	8	Tr 205x4	12,3
538	400	135	9	121	**UHM210**	52	295	278	212	9	Tr 210x4	12,7
549	400	137	9	124	**UHM215**	53	300	283	217	9	Tr 215x4	13,2
577	400	144	9	130	**UHM220**	53	305	288	222	9	Tr 220x4	13,5
611	400	153	10	153	**UHM225**	54	315	296	227	9	Tr 225x4	15
643	400	161	10	161	**UHM230**	54	320	302	232	9	Tr 230x4	15,3
650	400	162	10	162	**UHM235**	54	325	307	237	9	Tr 235x4	15,5
659	400	165	10	165	**UHM240**	55	330	312	242	9	Tr 240x4	16,1
724	400	181	10	181	**UHM250**	56	345	325	252	10	Tr 250x4	18
749	400	187	11	206	**UHM260**	57	355	337	262	10	Tr 260x4	19
785	400	196	12	236	**UHM270**	58	370	348	272	10	Tr 270x4	21,1
817	400	204	12	245	**UHM275**	58	375	337	277	10	Tr 275x4	21,5
849	400	212	12	255	**UHM280**	59	380	342	282	10	Tr 280x4	22,3
875	400	219	13	284	**UHM290**	60	390	352	292	10	Tr 290x4	23,3
921	400	230	13	299	**UHM295**	60	400	362	297	10	Tr 295x4	25

UHM

HYDRAULIC THREADED NUT

BAT
bolting advanced technologies



SELECTION CHART

PUSHING FORCE	WORKING PRESSURE	PUSHING AREA	STROKE	OIL VOLUME	MODEL	CLOSED H EIGHT	Ø EXTERNAL	Ø EXTERNAL PISTON	Ø INTERNAL PISTON	PISTON PROJECTION	THREAD	WEIGHT
kN	bar	cm2	mm	cm3		All dimensions (mm)						kg
						A	D	D1	D2	K	Y	
955	400	239	13	310	**UHM300**	61	405	365	302	10	Tr 300x4	25,8
753	300	251	13	326	**UHM310**	62	415	375	312	10	Tr 310x5	27
763	300	254	13	331	**UHM315**	62	420	385	317	10	Tr 315x5	27,5
796	300	265	14	372	**UHM320**	63	430	405	322	10	Tr 320x5	29,9
811	300	270	14	379	**UHM330**	64	440	415	332	11	Tr 330x5	31
822	300	274	14	383	**UHM335**	64	445	420	337	11	Tr 335x5	32
850	300	283	14	397	**UHM340**	65	450	425	342	11	Tr 340x5	32,5
861	300	287	14	402	**UHM345**	65	455	430	347	11	Tr 345x5	33,5
918	300	306	14	429	**UHM350**	66	465	438	352	11	Tr 350x5	35
911	300	304	15	456	**UHM355**	67	470	445	357	11	Tr 355x5	36,5
941	300	314	15	470	**UHM360**	67	475	450	362	11	Tr 360x5	37
950	300	317	15	475	**UHM365**	67	482	455	367	11	Tr 365x5	38
964	300	321	16	514	**UHM370**	68	490	460	372	11	Tr 370x5	40
994	300	331	16	530	**UHM375**	68	495	465	377	11	Tr 375x5	41
1006	300	335	16	536	**UHM380**	69	500	472	382	11	Tr 380x5	41,5
1037	300	346	16	553	**UHM385**	69	505	478	387	11	Tr 385x5	42
1075	300	358	16	574	**UHM395**	69	512	488	397	11	Tr 395x5	43
1104	300	368	17	626	**UHM400**	71	525	495	402	11	Tr 400x5	47
1149	300	383	17	651	**UHM410**	71	535	505	412	11	Tr 410x5	48
1162	300	387	17	658	**UHM415**	71	540	510	417	11	Tr 415x5	49
1174	300	391	17	665	**UHM420**	72	545	517	422	12	Tr 420x5	50
1198	300	399	17	679	**UHM430**	74	555	527	432	12	Tr 430x5	52
1211	300	404	17	686	**UHM435**	74	560	533	437	12	Tr 435x5	53
1289	300	430	17	731	**UHM440**	74	565	538	442	12	Tr 440x5	54
1315	300	438	17	745	**UHM450**	76	580	548	452	12	Tr 450x5	58
1341	300	447	18	805	**UHM460**	76	590	560	462	12	Tr 460x5	59,5
1367	300	456	18	820	**UHM470**	76	600	570	472	12	Tr 470x5	61
1393	300	464	18	836	**UHM480**	76	612	582	482	12	Tr 480x5	63
1555	300	518	19	985	**UHM490**	80	625	593	492	13	Tr 490x5	69
1583	300	528	20	1056	**UHM500**	80	635	605	502	13	Tr 500x5	70

• FORCE	5 - 10 t
• STROKE	50 mm
• MAX WORKING PRESSURE	700 bar

UA
FLANGE SPREADER

FEATURES

The **UA Europress** flange spreader is completely Nitreg treated (except the aluminium parts) for a superior strength and resistence to corrosion.

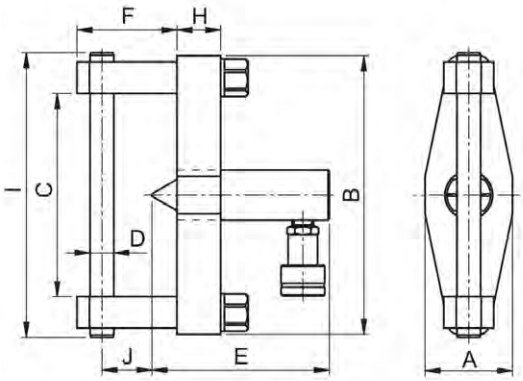
It's equipped with a standard **CMI Europress** cylinder, easy to use, safe and lightweight. It's available in the version of 5 and 10 ton, with a working pressure of 700 bar.

The flanges can be regulated to reach an opening from 48 to 223 mm. It's supplied equipped with the coupler.

OPERATIONAL AREAS

They are mostly used in the petrol chemistry industry, industrial and shipyards maintenance.

For the best use of UA Flange Spreader we recommend our hand pumps model **PS100** or **PNP130**.



SELECTION CHART

PUSHING FORCE	FLANGE OPENING	STROKE	OIL VOLUME	MODEL	DIMENSIONS MM									WEIGHT
t	mm	mm	cm³		A	B	C	D	E	F	H	I	J	kg
5	3 - 25	50	35	**UA5**	70	220	48 - 161	19	143	80	35	227	40	4
10	4 - 35	50	80	**UA10**	100	300	64 - 223	32	153	90	50	315	50	9,5

UD
HYDRAULIC SPREADERS

• FORCE	1 - 20 t
• MAX WORKING PRESSURE	700 bar

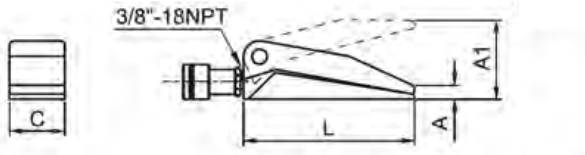
BAT bolting advanced technologies

FEATURES AND OPERATIONAL AREAS

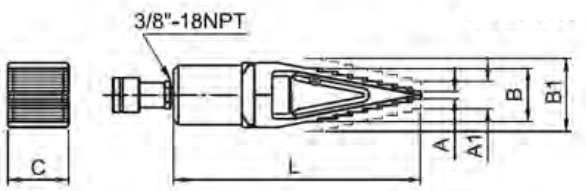
Depending on the model they are ideal for lifting and levelling of machinery, splitting flanges, and for reforming bodywork.

Pistons are spring return on all models and the tool can be ordered in the following versions:

- **Spreader** 1 ton capacity **(UD1N)**.
- **Spreader** 20 ton capacity **(UDS20N10)**.
- **Spreader** set composed of UD1N + hand pump **PNP130** + hose **SN10M (UD1NC)**.
- **Spreader set** composed of **UDS20N10** + hand pump **PNP130** + hose **SN10M (UDS20C)**.



UD1N



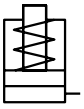
UDS20N10

Follow EUROPRESS safety instructions, see useful pages (p. 176).

Sets of different strokes and characteristics from the standard can be supplied on specific request.

SELECTION CHART

FORCE	MODEL	DIMENSIONS MM						WEIGHT
t		A	A1	B	B1	L	C	kg
1	**UD1N**	14	80	-	-	170	52	3,5
17	**UDS20N10**	8	18	54	64	246	60	3,7



• FORCE	5 - 50 t
• NUT THREAD	M8 - M39
• MAX WORKING PRESSURE	700 bar

US
NUT CUTTERS

FEATURES

US series nut cutters feature **opposed double blades which** allow nut cutting in one single operation (EUROPRESS patented system).
This system reduces cutting time and allows operation in small spaces. The nuts to be cut may be in high tensile steel with hardnes up to 44 HRCHRC.

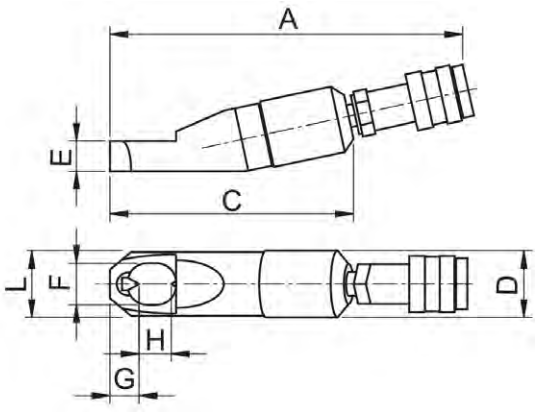
After cutting, the piston is retracted by spring return. Worn-out blades may be re-sharpened or replaced.

OPERATIONAL AREAS

US nut cutters are designed to cut any nuts that are difficult to remove; they are appropriate for maintenance jobs on pipes and flanges, in the mining, steel structural work and railway sectors, these being a few of the many applications.

ACCESSORIES

- **US#R** spare blade set.



Take care when using the cutter to ensure the blade is completely square to the nut to be cut. This will prevent any side loading or damage to the cutter or the blades.

SELECTION CHART

BOLT RANGE	HEXAGON NUT RANGE	FORCE	OIL VOLUME	MODEL	DIMENSIONS MM										WEIGHT
mm	mm	t	cm³		A	B	C	D	E	F	G	H max.	H min.	L	kg
M8÷M12	13÷19	5	12	**US1319**	218	62	137	42	19	26	18	23	8	40	1,2
M12÷M16	19÷24	11	25	**US1924**	243	73	161	59	25	34	22	28	12	55	2,3
M16÷M22	24÷32	16	48	**US2432**	265	78	180	70	30	41	24	36	16	63	3,2
M22÷M27	32÷41	22	72	**US3241**	304	88	222	84	35	55	28	45	22	78	5,1
M27÷M33	41÷50	32	119	**US4150**	351	118	283	104	42	70	32,5	54	27	96	10,4
M33÷M39	50÷60	50	220	**US5060**	403	139	333	124	52	82	38	64	33	118	17,5

UW
TORQUE WRENCHES

BAT
bolting advanced technologies

FEATURES AND OPERATIONAL AREAS

The torque wrenches are used in all industrial sectors on pumps, valves, compressors, flanges, heat exchangers, presses, steel mills, machine tools, etc.

Through the correspondence between pressure and torque, determined using the graph provided, torque is controlled by setting the output pressure of a separate power unit of the series MDW or MME10WR/4.

The hydraulic hoses are connected to a swivel coupler that can be rotated through 360° allowing hoses to be conveniently set free of obstructions.

The construction in high strength light alloy offers a particularly favourable torque/weight ratio and very limited dimensions.

TWO VERSIONS ARE AVAILABLE

1) With square drive

- Designed to be used in combination with standard sockets, this wrench is the most versatile solution for the largest part of operative conditions.
- The square drive, promptly switchable between tightening and untightening function, can be easily removed to fit special direct drives to the wrench.
- The reaction arm, secured by a quick release lock, can be rapidly oriented to suit specific operative conditions.

Accessories are available upon request or can be custom made, such as:

- Special reaction arms.
- Male - hexagon adaptors.
- Female direct fit adaptors.
- Transducerized sockets for direct torque reading.

2) With hexagon cassette head

- This version is fitted with a female, open hexagon that fits directly onto the nut or the bolt head It is the ideal solution in the cases where there is limited access overhead or with bolts having a long thread protrusion preventing the use of bushings.
- The tool is composed of a body, that is the power operator, and an interchangeable cassette head corresponding to the size of the hexagon to be driven. The change of the head is quick and easy, just requiring to release and reinsert a pin.

Accessories are available upon request or can be custom made, such as:

- Reducing sleeves for use with a range of smaller sizes
- Reaction extensions
- Square adaptors
- Male hexagonal adaptors.

• FORCE	661 - 2644 kN
• STROKE	25 - 100 mm
• MAX WORKING PRESSURE	700 bar

UTD

BOLT TENSIONERS FOR ANCHOR BARS

BAT bolting advanced technologies

FEATURES AND OPERATIONAL AREAS

The **UTD** bolt tensioner series are designed to pull **Dywidag** or similar anchorage threaded bars.
The bars available on the market are characterized from different values of tension. For this reason the user will have to verify the correct force to be applied.

It's important to know that the threaded bar sticks out sufficiently to receive the puller and the reaction nut. This projection must be taken into consideration while installing the threaded bar.

They are built to be as light as possible given that they are fabricated in light alloy. The models which are lighter than 25 kg are equipped with a handle necessary for transport while the heavier ones are equipped with eye-lets.

They are typically built as oil return cylinder with 50 mm of stroke but they are also available in single acting gravity or spring return UTD60M25 (spring return) version or UTD60G25 (gravity return) version.

Every bolt tensioner can also be used with smaller diameter axles than the maximum expected, corresponding to the hole. In this case it's suggested to use reducing rings, which are available on request, positioning them under the reaction nut in order to distribute the force and the keep the system centered. To facilitate the rotation of the spherical nut are available on requested hexagonal wrenches that can be activated withtommy bars through the passages which are located on the lower part of the body.

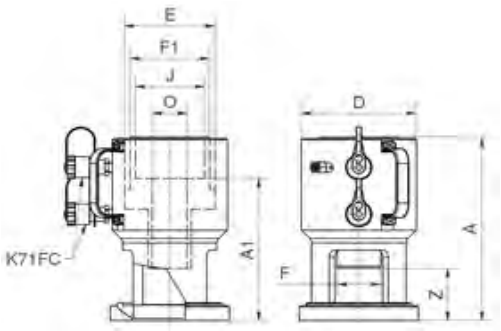
To operate: we suggest you to use **PN26#G** + **MDM41G** with 2 hoses **SNQ#M** of different length.

DYWIDAG TYPE BAR:

Y = Pre-pressing steel DYWIDAG Y1050H

B = GEWI® B500B Threadbar

P = GEWI® Plus S670/800 Threadbar



SELECTION CHART

Dywidag bars	Type	Load Fp0.1k	0,8 x Fp0.1k	Load Ftk	0,7 x Ftk	MODEL	Stroke	Ø Piston	Net closed height	Ø Piston	Ø External	Ø Piston	Ø Piston	Ø Through	Ø Recess at rod end	Useful height	Pushing area	Pushing force	Pull area	Pulling force @150bar	Oil volume	Pulling oil volume	Weight
	See notes	kN	kN	kN	kN		mm	A mm	A1 mm	E mm	D mm	F1 mm	F mm	O mm	J mm	Z mm	cm²	kN	cm²	kN	cc	cc	Kg
18	P	170	136	204	143	UTD060O050	50	268	208	125	159	110	60	48	95	78	94,4	661	27,7	42	472	138	13,7
22	P	255	204	304	213																		
25	P	329	263	393	275																		
32	B	402	322	442	309																		
28	P	413	330	493	345	UTD060M025	25	225	180												236	69	10,5
30	P	474	379	565	396																		
26,5	Y	525	420	580	406																		
40	B	628	502	691	484	UTD060G025	25	200	155												236	69	10
35	P	645	516	770	539																		
32	Y	760	608	845	592																		
36	Y	960	768	1070	749	UTD100O050	50	326	256	155	197	130	75	60	110	121	144,5	1012	56	84	723	280	22,5
43	P	973	778	1162	813																		
50	B	982	786	1080	756																		
40	Y	1190	952	1320	924																		
47	Y	1650	1320	1820	1274	UTD160O050	50	364	304	190	248	160	85	68	120	149	226,8	1587	82,5	124	1134	619	40,5
57,5	P	1740	1392	2077	1454																		
63,5	B	1758	1406	2217	1552	UTD250O100	100	494	414	250	318	200	120	95	165	149	377,8	2644	177	265	3778	1767	95
63,5	P	2122	1698	2534	1774																		
75	P	2960	2368	3534	2474																		

UT

BOLT TENSIONERS 1000 / 1500 bar

BAT
bolting advanced technologies

FEATURES

EUROPRESS bolt tensioners are made of an hydraulic part with a supporting base (bridge) to which a threaded puller and a polygonal wrench in its various sizes may be added.
This allows to cover a large number of tie rods and to optimize the number of bolt tensioners necessary.

According to their technical characteristics, they differ as:

UTN series at 1000 bar, provide a traction force of about the 70% of the break point of a steel bolt grade 8.8 of the biggest size (value of max thread in the chart).
They are equipped with **K13M** coupler.

UTH series at 1000 bar, with most of these you can obtain a traction force equal to 70% of the yield stress of a steel bolt grade 10.9 of the maximum size (value of max thread in the chart).
They are equipped with **K13M** coupler.

UTV series at 1500 bar, that can develop a traction force of about the 70% of the break point of a steel bolt grade 10.9 of the biggest size (value of max thread in the chart). They have reduced overall dimensions if referred to the 1000 bar series, due to their high working pressure.
They are equipped with a **K15M** coupler, and have a second auxiliary hole (1/4" BSP) that can be joined with a quick coupler (to be ordered separately) for in line connections.

All tensioners are supplied with tommy bar to operate the threaded puller and the polygonal wrench.

The gas nitriding treatment (Nitreg) provided to all steel of EUROPRESS products makes them particularly fit for working outside or in aggressive locations, thanks to their high resistance to corrosion.

The tensioner maximum capacity refers to its maximum working pressure; for smaller loads reduce the pressure in a proportional way.

If you use a tensioning system where you choose to tension in various steps (50%, 33% or even 25% of the points) for space reasons, take care to alternate the tensioners and to locate them in opposite positions.

OPERATIONAL AREAS

The big advantage of tensioning is given by the fact that it is possible to charge in advance a tie rod with the required load in an extremely precise manner, thus avoiding the force losses due to the frictions of the traditional torque tightening.

Their great facility of use, the possibility to save time and staff and their precision are all factors that make this technique particularly useful in those sectors where a perfect coupling or flange tightness is essential for the safety of people and machinery. In particular in the industrial and oil sectors and in all situations where it is necessary to tighten with extreme accuracy nuts or threaded tie rods. They are widely used to tighten valves, pumps, heat exchangers, flanges, etc.

To operate in complete safety be careful that the threaded screw sticks out of the nut at least as much as the measure of the external diameter of the tensioner.

UTN / UTH

BOLT TENSIONERS 1000 bar

BAT bolting advanced technologies

SELECTION CHART

COMPLETE BOLT TENSIONER	Hydraulic part	Threaded puller	Polygonal wrench
UTN4864M48	UTN4864	UTB484	UTC48
UTN4864M56		UTB564	UTC56
UTN4864M64		UTB644	UTC64
UTN6476M64	UTN6476	UTB645	UTC64
UTN6476M72		UTB725	UTC72
UTN6476M76		UTB765	UTC76
UTN76100M76	UTN76100	UTB766	UTC76
UTN76100M80		UTB806	UTC80
UTN76100M90		UTB906	UTC90
UTN76100M100		UTB1006	UTC100

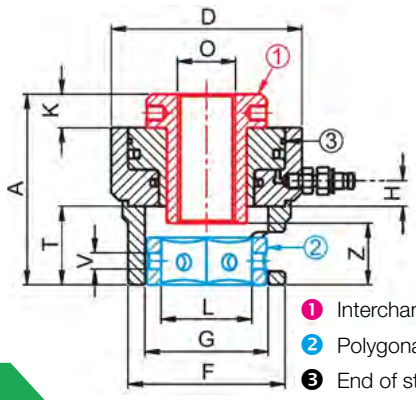
COMPLETE BOLT TENSIONER	Hydraulic part	Threaded puller	Polygonal wrench
UTH1624M16	UTH1624	UTB161	UTC16
UTH1624M20		UTB201	UTC20
UTH1624M24		UTB241	UTC24
UTH2739M27	UTH2739	UTB272	UTC27
UTH2739M30		UTB302	UTC30
UTH2739M36		UTB362	UTC36
UTH2739M39		UTB392	UTC39
UTH3952M39	UTH3952	UTB393	UTC39
UTH3952M42		UTB423	UTC42
UTH3952M45		UTB453	UTC45
UTH3952M48		UTB483	UTC48
UTH3952M52		UTB523	UTC52
UTH4864M48	UTH4864	UTB484	UTC48
UTH4864M56		UTB564	UTC56
UTH4864M64		UTB644	UTC64
UTH6476M64	UTH6476	UTB645	UTC64
UTH6476M72		UTB725	UTC72
UTH6476M76		UTB765	UTC76
UTH76100M76	UTH76100	UTB766	UTC76
UTH76100M80		UTB806	UTC80
UTH76100M90		UTB906	UTC90
UTH76100M100		UTB1006	UTC100

UTN / UTH

BOLT TENSIONERS 1000 bar

• FORCE	659 - 4369 kN
• STROKE	15 mm
• MAX WORKING PRESSURE	1000 bar
• THREADED PULLER	M16 - M100

BAT
bolting advanced technologies



1 Interchangable puller
2 Polygonal wrench
3 End of stroke indicator ring

SELECTION CHART

OPERATING FORCE @ 1000 bar	PRESSURE	PUSHING AREA	OIL VOLUME	SCREW	MODEL	DIMENSIONS MM								THREAD SIZE	POLIGONAL WRENCH		WEIGHT
kN	bar	cm²	cm³	mm		A	Ø D	Ø F	Ø G	H	T	Z	K	O	L	Ø V	kg
659	519	127	191	M48	UTN4864M48	185	195	165	130	20	80	65	35	M48x5	76	12	24
909	715			M56	UTN4864M56									M56x5,5	86		
1198	942			M64	UTN4864M64									M64x6	96		
1198	626	191	287	M64	UTN6476M64	200	240	200	150	25	95	80	40	M64x6	96	20	37
1549	810			M72	UTN6476M72									M72x6	106		
1742	910			M76	UTN6476M76									M76x6	111		
1742	601	290	438	M76	UTN76100M76	230	295	245	190	30	115	100	45	M76x6	111		59
1946	672			M80	UTN76100M80									M80x6	116		
2504	864			M90	UTN76100M90									M90x6	131		
2898	1000			M100	UTN76100M100									M100x6	146		
99	381	26	39	M16	UTH1624M16	122	85	70	55	22	40	25	20	M16x2	24,5	8	3,4
154	595			M20	UTH1624M20									M20x2,5	30,5		
222	857			M24	UTH1624M24									M24x3	36,5		
289	542	53	80	M27	UTH2739M27	145	125	100	80	21	60	45	25	M27x3	41,5	10	7,5
353	661			M30	UTH2739M30									M30x3,5	46,5		
515	963			M36	UTH2739M36									M36x4	55,5		
534	1000			M39	UTH2739M39									M39x4	60,5		
615	632	97	146	M39	UTH3952M39	165	170	135	110	17,5	70	55	30	M39x4	60,5	12	15
706	727			M42	UTH3952M42									M42x4,5	66		
824	848			M45	UTH3952M45									M45x4,5	71		
928	956			M48	UTH3952M48									M48x5	76		
972	1000			M52	UTH3952M52									M52x5	81		
928	553	168	252	M48	UTH4864M48	185	215	165	130	20	80	65	35	M48x5	76	12	27
1278	762			M56	UTH4864M56									M56x5,5	86		
1679	1000			M64	UTH4864M64									M64x6	96		
1685	701	240	360	M64	UTH6476M64	200	255	200	150	25	95	80	40	M64x6	96	20	39
2179	907			M62	UTH6476M72									M72x6	106		
2403	1000			M76	UTH6476M76									M76x6	111		
2450	561	436	655	M76	UTH76100M76	230	340	245	190	30	115	100	45	M76x6	111		71
2736	626			M80	UTH76100M80									M80x6	116		
3522	806			M90	UTH76100M90									M90x6	131		
4369	1000			M100	UTH76100M100									M100x6	146		

• FORCE	103 - 3546 kN
• STROKE	10 - 15 mm
• MAX WORKING PRESSURE	1500 bar
• THREADED PULLER	M16 - M100 3/4"- 10 - 4"- 8

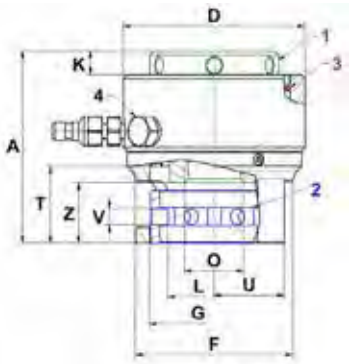
UTV

BOLT TENSIONERS 1500 bar

BAT bolting advanced technologies

FEATURES

They are supplied with a K15M quick male coupler. Connection thread: G ¼" with bonded seal counter bore and with 120° sealing cone. Special bridges or threaded bushes of different dimensions or pitches from the standard can be supplied, min. engaged thread is H=D. The maximum load is estimated at 70% the Rp 0.2% (considering a 10.9 screw). Minimum engaged thread must be equal to the stud external diameter (E.G. 64 mm engaged thread for m64 stud to be tensioned).



1. Interchangeable puller
2. Polygonal wrench
3. End of stroke indicator ring
4. G1/4" for chain connection

THREAD SIZE SELECTION CHART

Force@ 1500 bar	Maximum orce / recomeded pressure		Stroke	Oil voulume	Thread size	MODEL	A	Ø D	Ø F	Ø G	*Minimum centre distance between bordering stud bolts	Bearing protrusion	Exagonal wrench		T	U	Z	Weight	Hydraulic part	Threaded puller	Exagonal wrench
					O							K	L	Ø V							
kN	kN	bar	mm	cm³	mm		mm	mm	mm	mm	mm	mm	mm		mm	mm	mm	kg			
186	103	831	10	12	M16x2	UTV01M16	91	72	68	49	45	12	25	8	35	27	18	1,9	UTV01	UTB01M16	UTCE024
	161	1298			M20x2,5	UTV01M20					47		31				21			UTB01M20	UTCE030
	186	1500			M24x3	UTV01M24					49		37				25			UTB01M24	UTCE036
	186	1500			M27x3	UTV01M27	95		72	55	55		43		41	30	28	2	UTV011	UTB01M27	UTCE042
292	161	827	10	19	M20x2,5	UTV02M20	102	85	80	63	54	14	31	8	43	35	21	2,8	UTV02	UTB02M20	UTCE030
	232	1192			M24x3	UTV02M24					57		37				25			UTB02M24	UTCE036
	292	1500			M27x3	UTV02M27					60		42				28			UTB02M27	UTCE042
	292	1500			M30x3	UTV02M30					63		47				31			UTB02M30	UTCE046
427	302	1061	10	28	M27x3	UTV03M27	126	102	92	73	66	15	42	8	49	40	28	4,8	UTV03	UTB03M27	UTCE042
	369	1296			M30x3	UTV03M30					68		47				31			UTB03M30	UTCE046
	427	1500			M33x3.5	UTV03M33					70		51				34			UTB03M33	UTCE050
	427	1500			M36x4	UTV03M36					73		56				37			UTB03M36	UTCE055
567	456	1206	10	38	M33x3.5	UTV04M33	143	118	112	90	80	16	51	8	57	50	34	7,4	UTV04	UTB04M33	UTCE050
	537	1421			M36x4	UTV04M36					83		56				37			UTB04M36	UTCE055
	567	1500			M39x4	UTV04M39					86		61	12			40			UTB04M39	UTCE060
	567	1500			M42x4,5	UTV04M42					89		66				43			UTB04M42	UTCE065
804	642	1198	10	54	M39x4	UTV05M39	152	138	120	98	90	18	61	12	64	53	40	10	UTV05	UTB05M39	UTCE060
	738	1377			M42x4,5	UTV05M42					92		66				43			UTB05M42	UTCE065
	804	1500			M45x4,5	UTV05M45					95		71				46			UTB05M45	UTCE070
	804	1500			M48x5	UTV05M48					98		76				50			UTB05M48	UTCE075
1084	859	1189	10	72	M45x4,5	UTV06M45	169	158	145 68 68 68	116 49 49 49	105	20	71	12	75	63	46	14,3	UTV06	UTB06M45	UTCE070
	969	1341			M48x5	UTV06M48					108		76				49			UTB06M48	UTCE075
	1084	1500			M52x5	UTV06M52					111		81				53			UTB06M52	UTCE080
	1084	1500			M56x5,5	UTV06M56					114		86				57			UTB06M56	UTCE085

* Dimensions referred to the edge of the standard nut and to the flat part on the sides of the bridge (dim. U) for non adjoining tensioners. The dimension U indicates the minimum distance in relation to the minimum diameter of the flange face.

UTV

BOLT TENSIONERS 1500 bar

BAT bolting advanced technologies

THREAD SIZE SELECTION CHART

Force@ 1500 bar	Maximum force / recomeded pressure		Stroke	Oil voulume	Thread size	MODEL	DIMENSIONS				*Minimum centre distance between bordering stud bolts	Bearing protrusion	Exagonal wrench	DIMENSIONS				Weight	Hydraulic part	Threaded puller	Exagonal wrench
					O		A	Ø D	Ø F	Ø G		K	L	T	U	Z					
kN	kN	bar	mm	cm³	mm		mm											kg			
1084	859	1189	10	72	M45x4,5	UTV06M45	169	158	145	116	105	20	71	12	75	63	46	14,3	UTV06	UTB06M45	UTCE070
	969	1341			M48x5	UTV06M48					108		76				49			UTB06M48	UTCE075
	1084	1500			M52x5	UTV06M52					111		81				53			UTB06M52	UTCE080
	1084	1500			M56x5,5	UTV06M56					114		86				57			UTB06M56	UTCE085
1352	1157	1284	10	90	M52x5	UTV07M52	180	177	155	128	117	20	81	12	86	69	53	17,6	UTV07	UTB07M52	UTCE080
	1336	1482			M56x5,5	UTV07M56					120		86				57			UTB07M56	UTCE085
	1352	1500			M60x5,5	UTV07M60					122		91				61			UTB07M60	UTCE090
	1352	1500			M64x6	UTV07M64					125		96				65			UTB07M64	UTCE095
1708	1554	1365	12	137	M60x5,5	UTV08M60	188	203	178	142	133	25	91	12	88	78	61	23,8	UTV08	UTB08M60	UTCE090
	1708	1500			M64x6	UTV08M64					135		96				65			UTB08M64	UTCE095
	1708	1500			M68x6	UTV08M68					137		101				69			UTB08M68	UTCE100
	1708	1500			M72x6	UTV08M72					140		106				73			UTB08M72	UTCE105
2106	2010	1432	12	168	M68x6	UTV09M68	204	227	200	157	149	30	101	16	99	85	69	31	UTV09	UTB09M68	UTCE100
	2106	1500			M72x6	UTV09M72					151		106				73			UTB09M72	UTCE105
	2106	1500			M76x6	UTV09M76					153		111				77			UTB09M76	UTCE110
	2106	1500			M80x6	UTV09M80					155		116				81			UTB09M80	UTCE115
2795	2559	1373	15	280	M76x6	UTV10M76	228	255	225	175	167	30	111	16	107	98	77	47	UTV10	UTB10M76	UTCE110
	2795	1500			M80x6	UTV10M80					169		116				81			UTB10M80	UTCE115
	2795	1500			M85x6	UTV10M85					171		121				86			UTB10M85	UTCE120
	2795	1500			M90x6	UTV10M90					175		131				91			UTB10M85	UTCE130
3546	3256	1377	15	355	M85x6	UTV11M85	263	297	250	197	192	40	121	16	127	110	86	68	UTV11	UTB11M85	UTCE120
	3546	1500			M90x6	UTV11M90					195		131				91			UTB11M90	UTCE130
	3546	1500			M95x6	UTV11M95					197		136				96			UTB11M95	UTCE135
	3546	1500			M100x6	UTV11M100					200		146				101			UTB11M100	UTCE140
	3546	1500			M105x6	UTV11M105					202		152				106			UTB11M105	UTCE150
	3546	1500			M110x6	UTV11M110					205		157				112			UTB11M110	UTCE155

UTV

BOLT TENSIONERS 1500 bar

BAT bolting advanced technologies

IMPERIAL THREAD SELECTION CHART

Force @ 1500 bar	Maximum force / recomeded pressure		Stroke	Oil volume	Thread size	MODEL	Dimensions				*Minumum centre distance between	Bearing protrusgion	Exagonal wrench		Dimensions			Weight	Hydraulic part	Threaded puller	Exagonal wrench
					O		A	ØD	ØF	ØG		K	L	ØV	T	U	Z				
kN	kN	bar			mm		mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg			
	142	1145			3/4"-10UNC	UTV01I075	91		68	49	47		33		35	27	24	1,9	UTV01	UTB01I075	UTCE032
186	186	1500	10	12	7/8"-9UNC	UTV01I088		72			50	12	37	8			27			UTB01I088	UTCE036
	186	1500			1"-8UN	UTV01I100	95		72	55	55		43		41	30	31	2	UTV011	UTB01I100	UTCE042
	142	729			3/4"-10UNC	UTV02I075					55		33				24			UTB02I075	UTCE032
	196	1007			7/8"-9UNC	UTV02I088					58		37				27			UTB02I088	UTCE036
292	257	1320	10	19	1"-8UN	UTV02I100	102	85	80	63	60	14	43	8	43	35	31	2,8	UTV02	UTB02I100	UTCE042
	292	1500			1 1/8"-8UN	UTV02I113					63		47				34			UTB02I113	UTCE046
	257	903			1"-8UN	UTV03I100					65		43				31			UTB03I100	UTCE042
	336	1180			1 1/8"-8UN	UTV03I113					68		47				34			UTB03I113	UTCE046
427	424	1489	10	28	1 1/4"-8UN	UTV03I125	126	102	92	73	71	15	51	8	49	40	37	4,8	UTV03	UTB03I125	UTCE050
	427	1500			1 3/8"-8UN	UTV03I138					74		56				41			UTB03I138	UTCE055
	424	1122			1 1/4"-8UN	UTV04I125					81		51	8			37			UTB04I125	UTCE050
	524	1386			1 3/8"-8UN	UTV04I138					84		56				41			UTB04I138	UTCE055
567	567	1500	10	38	1 1/2"-8UN	UTV04I150	143	118	112	90	86	16	61	12	57	50	45	7,4	UTV04	UTB04I150	UTCE060
	567	1500			1 5/8"-8UN	UTV04I163					89		66				47			UTB04I163	UTCE065
	633	1181			1 1/2"-8UN	UTV05I150					90		61				45			UTB05I150	UTCE060
	753	1405			1 5/8"-8UN	UTV05I163					91		66				47			UTB05I163	UTCE065
804	804	1500	10	54	1 3/4"-8UN	UTV05I175	152	138	120	98	93	18	71	12	64	53	50	10	UTV05	UTB05I175	UTCE070
	804	1500			1 7/8"-8UN	UTV05I188					94		76				54			UTB05I188	UTCE075
	884	1223			1 3/4"-8UN	UTV06I175					105		71				50			UTB06I175	UTCE070
	1025	1418			1 7/8"-8UN	UTV06I188					108		76				54			UTB06I188	UTCE075
1084	1084	1500	10	72	2"-8UN	UTV06I200	169	158	145	116	110	20	81	12	75	63	57	14,3	UTV06	UTB06I200	UTCE080
	1084	1500			2 1/4"-8UN	UTV06I225					115		91				65			UTB06I225	UTCE090
	1176	1305			2"-8UN	UTV07I200					116		81				57			UTB07I200	UTCE080
1352	1352	1500	10	90	2 1/4"-8UN	UTV07I225	180	177	155	128	122	20	91	12	86	69	65	17,6	UTV07	UTB07I225	UTCE090
	1352	1500			2 1/2"-8UN	UTV07I250					127		101				70			UTB07I250	UTCE100
	1708	1500			2 1/2"-8UN	UTV08I250					136		101	12			69			UTB08I250	UTCE100
1708	1708	1500	12	137	2 3/4"-8UN	UTV08I275	188	203	178	142	142	25	111	16	88	78	78	23,8	UTV08	UTB08I275	UTCE110
	2106	1500			2 3/4"-8UN	UTV09I275					150		111				78			UTB09I275	UTCE110
2106	2106	1500	12	168	3"-8UN	UTV09I300	204	227	200	157	154	30	121	16	99	85	86	31	UTV09	UTB09I300	UTCE120
	2762	1482			3"-8UN	UTV10I300					167		121				86			UTB10I300	UTCE120
2795	2795	1500	15	280	3 1/4"-8UN	UTV10I325	228	255	225	175	173	30	131	16	107	98	86	47	UTV10	UTB10I325	UTCE130
	2795	1500			3 1/2"- 8UN	UTV10I350					178		136				90			UTB10I350	UTCE135
	3263	1380			3 1/4"-8UN	UTV11I325					191		131				86			UTB11I325	UTCE130
	3546	1500			3 1/2"- 8UN	UTV11I350					194		136				91			UTB11I350	UTCE135
3546	3546	1500	15	355	3 3/4"-8UN	UTV11I375	263	297	250	197	198	40	144	16	127	110	102	68	UTV11	UTB11I375	UTCE145
	3546	1500			4"- 8UN	UTV11I400					201		157				107			UTB11I400	UTCE155

AUTOMOTIVE EQUIPMENT

MOBILE FOLDING FLOOR CRANE	
UGC	P. 157

TROLLEY JACKS	
UGJ	P. 158

HYDRAULIC LIFTING TABLES	
UGT	P. 159

HYDRAULIC BOTTLE JACKS	
UMB	P. 160

UGC
MOBILE FOLDING FLOOR CRANE

FEATURES

UGC floor cranes are built with polyamide pivoting wheels and are compleatly foldable, this makes them easy to maneuver, even in tight spaces.

The extendible jib is equipped with an handle to facilitate positioning.

it is fitted with 3 opening positions, each one with its lifting force listed.

The hhydraulic unit can rotate 135° to ease the activation by the operator.

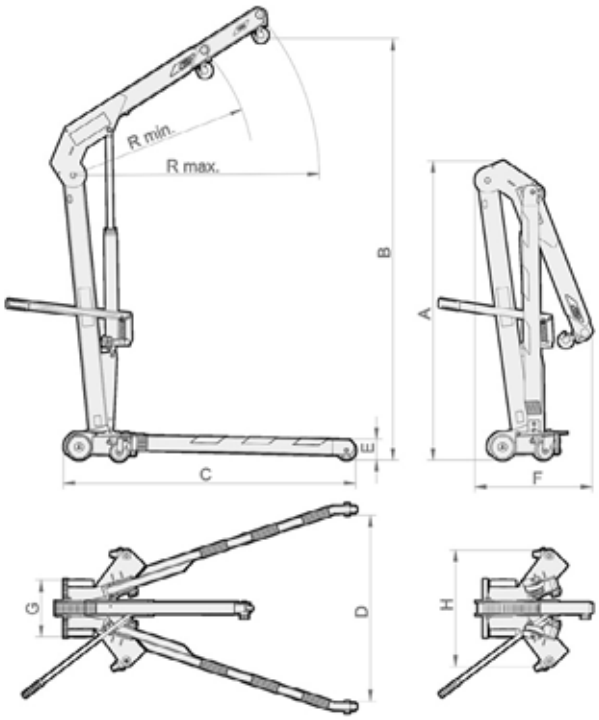
The cylinder inside has a safety valve and a stroke limitation device.

OPERATIONAL AREAS

These cranes are used in a wide variety of applications including, machinery and engine removal, and machine shops. **UGC** cranes are essential for lifting, moving and positioning of motors and engines and where space is limited.

Products subject to periodic variations. for more detailed information please call the sales department or visit our website.

Always check that the pin is fully secured in the correct locating hole,depending on the jib position and the load to be lifted.



SELECTION CHART

FORCE	MODEL	DIMENSIONS MM									WEIGHT
T		A	B	C	D	E	R min.	R max.	F	G	kg
650	**UGC5**	1580	2200	1450	830	112	960	1300	615	300	80
1000	**UGC10**	1580	2200	1525	970	112	960	1300	615	300	81
2000	**UGC20**	1740	2460	1830	1100	150	1200	1610	680	300	145

UGJ

TROLLEY JACKS

- FORCE **2 - 10 t**

FEATURES

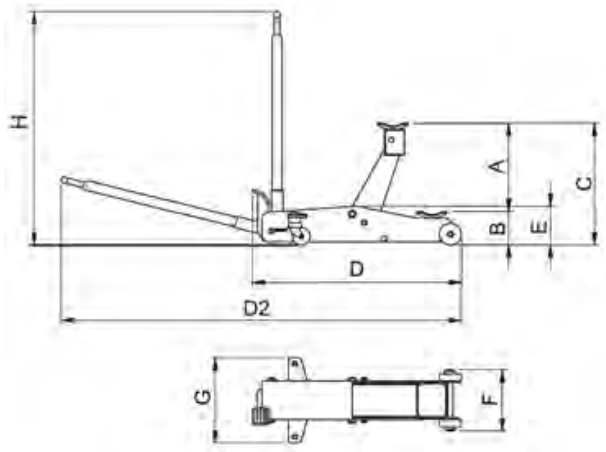
UGJ trolley jacks feature polyamide swivel castors for smooth and quiet operations. All models are fitted with a foot pedal for fast approach to the load. In addition all models are fitted with a safety valve and stroke limiting device. 2 and 3 ton models have fixed and swivel plyamide wheels, that do not damege the floors and are very quiet in operation.

OPERATIONAL AREAS

These jacks are used mainly in machine shops and garages to lift vehicles.

Check that the saddle is placed centrally under the load to be lifted.

Products subject to periodic variations. For more detailed information please call the ssales department or visit our website.



SELECTION CHART

FORCE	MODEL	DIMENSIONS MM									WEIGHT
T		A	B	C	D	D2	E	F	G	H	kg
2	**UGJ2**	365	125	490	900	1610	135	257	360	980	35
3	**UGJ3**	380	145	525	1220	1650	135	257	360	980	36
6	**UGJ6**	380	195	575	1300	2215	220	336	414	1150	81
10	**UGJ10**	380	195	575	1600	2530	270	386	414	1150	121

• FORCE	2,5 t

UGT
HYDRAULIC LIFTING TABLES

FEATURES

The **UGT** hydraulic lifting table has been designed to enable the operator to work in a very comfortable position.

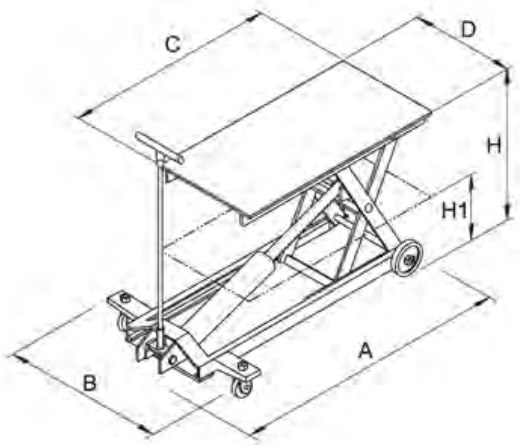
The table can be locked mechanically by safety pins at three different positions.

UGT tables are equipped with hand pump and foot pedal for fast approach to the load.
The cylinder is fitted with a safety valve and stroke limitation device. The polyamide fixed and swivel wheels are quiet in operation, and do not cause damage to floors.

OPERATIONAL AREAS

In machine shops, garages, and a variety of industrial uses.

Use the foot pedal for a fast approach to the load.



SELECTION CHART

FORCE	MODEL	DIMENSIONS MM						WEIGHT
Kg		A	B	C	D	H	H1	kg
2,5	**UGT2**	1440	800	1060	540	880	300	187

UMB

HYDRAULIC BOTTLE JACKS

• FORCE	3 - 50 t
• STROKE	105 - 150 mm

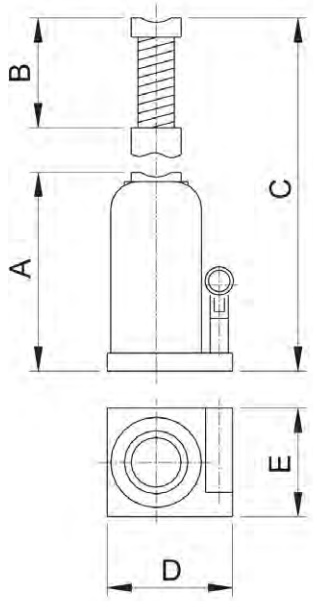
FEATURES

UMB bottle jacks are made up of a signle base, cylinder, reservoir and pump unit.
All jacks are supplied with a operating lever. 25, 30 and 50 tonne models have a carry handle for ease of transport.
All models can be used horizontally with the pumping unit below the cylinder. The seals are easily replaced cutting service time down to the minimum. Jacks are fitted with a stroke limiting device and safety valves.

OPERATIONAL AREAS

These jacks are ideal for a variety of lifting or pushing jobs and can be used in many different industries.

Products subject to periodic variations.
For more detailed information please call the ssales department or visit our website.



SELECTION CHART

FORCE	STROKE	MODEL	DIMENSIONS MM						WEIGHT
T	mm		A	B	C	D	E	G	kg
3	105	**UMB3N105**	168	65	338	117	75	24	3,7
3	150	**UMB3N150**	210		425	117	75	24	4
5		**UMB5N150**	212	75	437	125	75	29	4,5
8		**UMB8N150**	219		444	144	90	38	6,3
10		**UMB10N150**	219		444	144	90	38	6,5
12		**UMB12N150**	226		451	165	110	45	8,5
15		**UMB15N150**	228		453	165	110	45	9
20		**UMB20N150**	234		459	173	120	61	11
25		**UMB25N150**	242		467	196	144	69	15,5
30		**UMB30N150**	242		467	196	144	69	15,5
50	140	**UMB50N140**	260	-	400	214	165	80	27

EPP SYSTEMS FOR SPECIAL APPLICATIONS

SYNCHRONOUS LIFTING SYSTEMS

RAILWAYS APPLICATIONS

TROLLEY FOR HEAVY LOADS

SYNCHROLIFT

SYNCHRONOUS LIFTING SYSTEM

FEATURES

Synchrolift is the most sophisticated method for the lifting and lowering of any kind of load in a perfectly synchronised way and with the highest degree of precision.

This system splits the oil flow coming out from a hydraulic power pack and directs it towards different lifting points; it controls and monitors the different flows thanks to a range of electric valves controlled by a PLC system. The PLC system controls the flow in the direction of a number of cylinders, checking the signals issued by dynamic transducers and activating appropriately the monitoring valves.

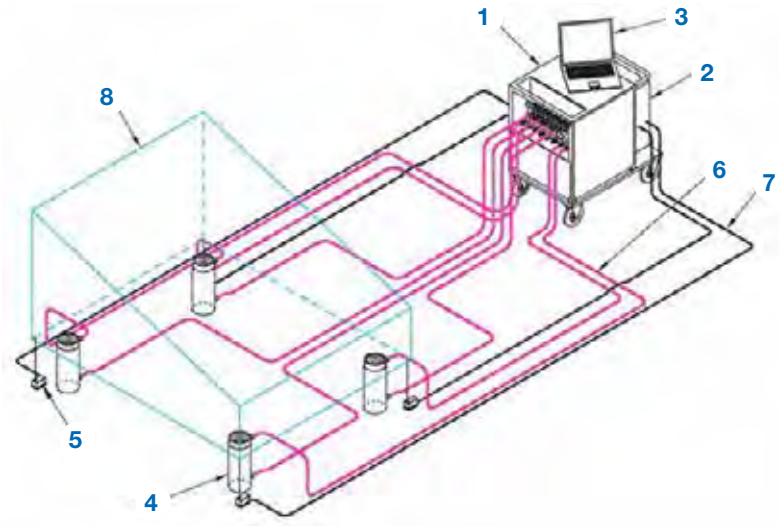
This electric system enables the regulation of the movement of the cylinders stopping and/or slowing down those that exceed the difference in allowed movement as chosen by the client.

A PC or a touchscreen display provides for its control system.

Synchrolift is easy to control, multipurpose and extremely accurate, it can handle simultaneously many lifting points, even with different capacity cylinders.

OPERATIONAL AREAS

Our Synchrolift system is necessary every time hydraulic cylinders with different loads are required to lift and lower the same rate (e.g. lifting a 3000 t bridge with 1 mm precision, or squaring a building damaged by seismic activity are only two of the many applications of a synchronised lifting system).



1. Hydraulic power pack
2. Electronic control base
3. Laptop PC or touchscreen display
4. Hydraulic cylinders
5. Stroke transducers
6. High pressure hoses
7. Electric connecion cables
8. Structure to be lifted

Our Technical Department is at your disposal to study the best technical and operational solution, and deliver tailored requirements on demand.

LIFTING POINTS	4 - 32
FORCE FOR EACH POINT	50 - 1000 t
MAX PRESSURE	700 bar
MAX PRECISION	1 mm

SYNCHROLIFT

SYNCHRONOUS LIFTING SYSTEM

THE SYNCHROLIFT IS COMPOSED BY

COMANDING SYSTEM		
SYNCHRO ## points	**ESY##V**	Electronic control base (## points) with dedicated PLC control which allows to monitor and to control each lifting point and displays and registers all data + ## stroke transducers + control valves.
	ESY##VC	Electronic control base (## points) with dedicated PLC control which allows to monitor and to control each lifting point and displays and registers all data + ## stroke transducers + control valves + carriage + transport and protection crankcase.
HYDRAULIC COMPONENTS		
Power source		Customized hydraulic power pack.
Cylinders		A wide range of standard or customized hydraulic cylinders.
Connections		Hoses, fittings and quick couplers according to your needs.

##: number of lifting points (from 4 up to a maximum of 32 - bigger expansion can be con-sidered on request).

CMI25N400MLP-FS

TROLLEY MOUNTED HYDRAULIC LIFTER FOR WAGONS AND WAGONS BODIES

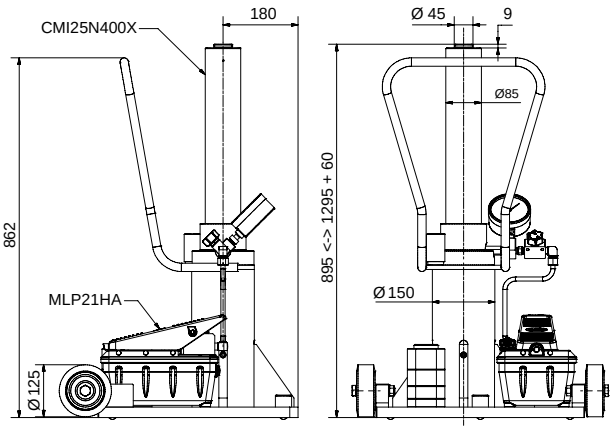
FEATURES

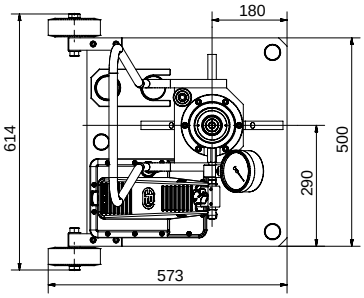
The hydraulic lifter is constituted by an alloy structure which supports a single acting spring return CMI25N400X hydraulic cylinder powered by a pedal control MLP21HA air-hydraulic pump.
The technical and dimensional details are shown in the drawing underneath.
Jacks of differend stroke and characteristics from the standard can be produced upon request.

- Single acting cylinder.
- Spring return CMI25N400X.
- Force: 150 kN a 453 bar.
- Stroke: 400 mm.
- Air-hydraulic pump MLP21HA.
- Ratio 122:1.
- Flow at nil pressure: 0,8 l/m.
- Extension time at nil pressure: 1,7 min.
- Weight: about 50 kg.

OPERATIONAL AREAS

They are used exclusively in lifting Vivalto train wagons with SIEMENS bogies for the regulation of the suspension by adding spacers between the side frame and the pneumatic suspension.
This operation occurs by acting on the stud which projects from the pneumatic element through the hole in the side frame.





CMI25N150-FS

MODULAR LIFTING SET WITH STACKABLE ELEMENTS

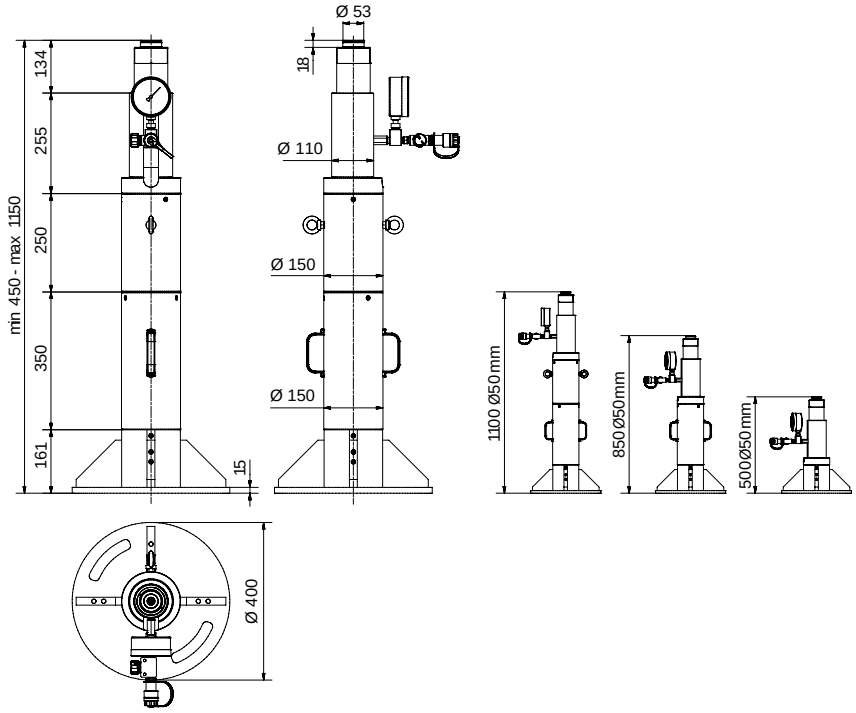
FEATURES

The systems is combinable in all of its three main parts which allows to use simple alloy components in column and just a few screws.

This set is composed of CMI25N150 + ZTT31 + GAUGE + VRU38.

- Main strokes: 1100/850/500 mm.
- 2 spacer 50 mm thickness which allow to vary +/- 50 mm the total height of the system.
- Maximum load applicable: 232 kN.
- Stackable tubes and round base plate.

Sets of different strokes and characteristics from the standard can be supplied on specific request.



UEG20N10X / UEG20N10X1 / UET20N130X

PULLER FOR SIEMENS SF400 BOGIES

FEATURES

These pullers are planned for the dismantling of the conical pivots in the anti- torsion bar links and of the primary suspension bushings of Siemens SF400 bogies.

Technical features:

- **UEG20N10X** puller for the extraction of the tapered pins of the torsion bar links of Siemens SF400 bogies - bogie side - force 20 t - stroke 10 mm.
- **UEG20N10X1** puller for the extraction of the tapered pins of the torsion bar links of Siemens SF400 bogies - wagon bogie side - force 20 t - stroke 10 mm.
- **UET20N130X** puller for the extraction of the primary suspension bushings of Siemens SF400 bogies - force 20 t - stroke 130 mm.

It is recommended to use the **PNP130** hand pump or the pedal control **MLP21HA** air-hydraulic pump.

Follow EUROPRESS safety Instruction, see useful pages.

EUROPRESS technical department is available to design special customised solutions.

UEG20N10X

UEG20N10X1

UET

UMM##

TROLLEY FOR HEAVY LOADS

FEATURES AND OPERATIONAL AREAS

The **"Trolley"** solution was born from the need to have a modular and integrated system, easy to handle, and designed to be used safely.

It is possible to mount on it a cylinder with tonnage according to customer preference starting from 100 ton.

It is equipped with thick and large wheels to facilitate transit on uneven terrain, and with a power pack with remote control to operate the cylinder from a safe distance.

The handle design has been studied to have a perfect balance of the whole tool.

Given the variety of applications (forces, strokes and weight) these equipments are planned on the customer's specific request.

They can be adapted with different tons and strokes from the COI series; they're alimented by mono/three-phase and pneumatic electric power packs all equipped with remote control.

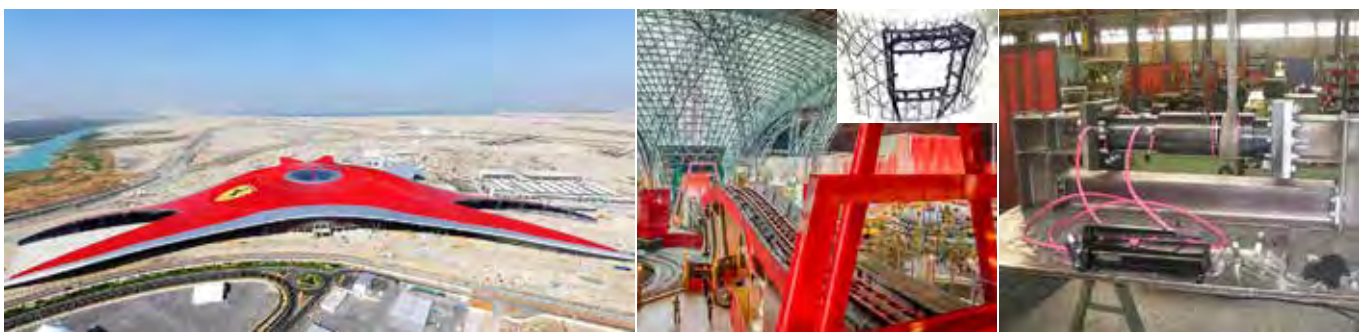
A spacer can be placed on the head of the cylinder, depending on the load, which makes them suitable for every situation.

APPLICATIONS FOR EPP PRODUCTS

Synchonized lifting system on the Piacenza Brescia motorway viaduct for the substitution of the anti-vibration supports. Ponte Sarmato, Italy.

System composed by CGG special cylinders for the particle detector which is positioned at the end of the lhc acceleration ring of the cern. Geneva, Switzerland.

Long stroke cylinders useful for the operation of a mechanical arm for the installation of offshore wind turbine towers. U.K.



Hydraulic equipment for the substitution of tensioned bars at Ferrari World. Abu Dhabi, UAE.

APPLICATIONS FOR EPP PRODUCTS

Positioning of the roof insole in the new high speed Belfiore station with the help of ME power packs and CGG cylinders. Florence, Italy.

Fastening of the rudder blades on the respective rods with hydraulics nuts and 1500 hydraulics power packs. Doha, Quatar.

Crimping equipment for the hoses of a nuclear power plant. China.

Beams tensioning of the roof of the new Juventus Stadium. Turin, Italy.

APPLICATIONS FOR EPP PRODUCTS

Deflection test on prestressed beams with Europress big tonnage cylinders and power packs.

CMF hollow cylinders and double stage PN hand pumps for the positioning of the deck and of the tie-rods which tie the latter to the arches of the new “Ponte Teodorico”. Ravenna, Italy.

Numerous special EUROPRESS cylinders and power packs have been vital for the operations of shifting and correct positioning of the structural parts of the Tokamak, the beating heart of the ITER reactor. San Paul Les Durance, France.

Lifting of the shell of the container for the construction of a reactor destined to the oil sector. The cylinders are operated by a Split Flow Power pack.

APPLICATIONS FOR EPP PRODUCTS

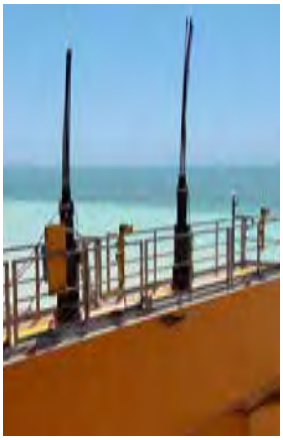


Example of telescopic cylinders, EPP valves and power packs for operations such as inspections, installations, and maintenances of railway infrastructures and vehicles.

Quality testing of chains for tracks - Spindle extraction during the maintenance of the lathe.


Pumps and cylinders for railway type liftings.

Monitoring system for loads on bearing points of a bridge.


Strand jack system for the synchronized lifting of heavy loads by using metal cables.

APPLICATIONS FOR EPP PRODUCTS

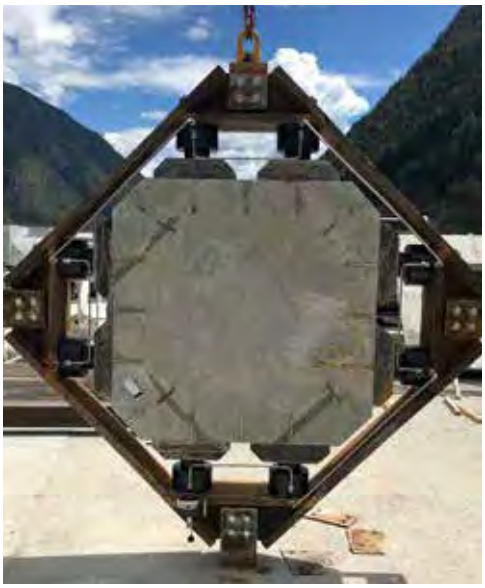
COF Hollow ram cylinders for anchor bars stringing on a railway bridge.

Combination of machinaries for the crimping and expansion of aluminum hoses during crimping.

High tonnage cylinders with wheels for applications where mobility is important.

Stabilization systems for wind turbines' foundations with special cylinders and power packs suitable for marine enviroment.

Push load test on a ceiling using COD25N260 cylinder during extraordinary maintenance works in a residential building. Milan, Italy.



Special cylinders for high temperatures, fitted on resistance verification equipment to test flameproof concrete tunnel segments

In the following pages you'll find information and suggestions concerning the safe use and the correct selection of your **EUROPRESS** High-pressure Hydraulic Equipment.

Please refer to Sections How to choose a cylinder (page 12)

How to choose a pump (page 65)

Components of an hydraulic system (page 68)

We hope these pages are helpful but if you should require more information our Technical Department is at your disposal to study special projects or applications to provide an effective and convenient solution.

BASICS FOR HYDRAULIC CALCULATIONS

The calculation examples given serve as a basis for the use of hydraulic systems.

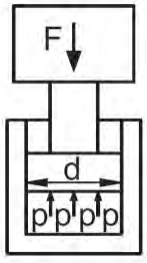
1 / FORCE OF AN HYDRAULIC CYLINDER

The force of an hydraulic cylinder results from the pressure in the cylinder, p, on the piston of the cylinder.

THE FORMULA: **F** (kg) = **p** (bar) • **A** (cm^2) [with g = $\frac{10N \cdot m}{s^2}$]

MEANS:

F = force acting on the cylinder in kg
P = operating pressure in bar
A = the cylinder effective area in cm^2 which is calculated from the piston diameter:



A (cm^2) $\frac{d(mm)^2 \cdot \pi}{400}$ (π = 3,1416)

EXAMPLE 1

A CGG100P50 cylinder is required to lift a load of 72 t.
What operating pressure is required?

A (cm^2) $\frac{d(mm)^2 \cdot \pi}{400}$

with piston diameter **CGS100P50**

➔ **d** = 130 mm

➔ **A** = $\frac{130^2 \cdot 3,1416}{400}$ cm^2 = 132,7 cm^2

The result of **F(kg)** = **p(bar)** • **A(cm^2)** after its inversion,

is **p(bar)** = $\frac{F(kg)}{A(cm^2)}$ dove **F** = 72 t = 72.000 kg

➔ **p** = $\frac{72.000}{132,7}$ bar = 542 bar

The required operating system is 542 bar.

EXAMPLE 2

A CM110N100 cylinder lifts a load;
The gauge shows an operating pressure of 520 bar.
What is the weight of the load?

A (cm^2) $\frac{d(mm)^2 \cdot \pi}{400}$

With piston diameter **CMI10N100**

➔ **d** = 45 mm

➔ **A** = $\frac{45^2 \cdot 3,1416}{400}$ cm^2 = 15,9 cm^2

F(kg) = **p(bar)** • **A(cm^2)**

F = (520 • 15,9) kg = 8270 kg

The lifted load has a weight of 8270 kg.

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2 / ACTUATING PUMPS

When an hydraulic cylinder is operated by a hand pump, the cylinder plunger moves a certain distance per pump actuation. This distance depends on the cylinders effective area and on the pump's oil flow per stroke. When two-speed hand pumps are used, the low pressure oil flow **VLP** applies for cylinder movements without load and the high pressure oil flow **VHP** applies for cylinder movements with loads.

THE FORMULA: **S** (mm) = $\frac{V(cm^3) \cdot 10}{A(cm^2)}$

MEANS:

S = cylinder's shift in mm

V = pump's oil flow per stroke in cm^3

A = cylinder area in cm^2

EXAMPLE 3

A **CM110N100** cylinder is operated by a **PL131** hand pump.

What is the distance the supported load moves per pump actuating?

➔ **A** = 15,9 cm^2 (see example 2)

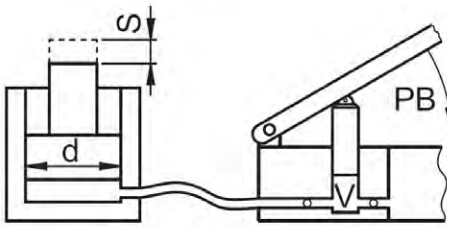
S (mm^2) = $\frac{V(cm^3) \cdot 10}{A(cm^2)}$

having an oil flow per stroke of **PN131**

➔ **V** = 3,4 cm^3

➔ **S** = $\frac{3,5 \cdot 10}{15,9}$ mm = 2,2 mm

The supported load moves 2,2 mm per pump full stroke actuation.



EXAMPLE 4

A **CGG100P50** (stroke H = 50mm) is operated by a **PL162** hand pump.

A non-load stroke of **L** = 30 mm has to be accounted for.

How many pump actuations **PB** are necessary to extend the cylinder completely?

➔ **A** = 132,7 cm^2 (See example 1)

meaning for the non-load stroke $\mathbf{S}_{VLP}$(mm) = $\frac{V_{BP}(cm^3) \cdot 10}{A(cm^2)}$

PL162 having a LP-oil flow per stroke of

➔ $\mathbf{V}_{VLP}$ = 32 cm^3

➔ $\mathbf{S}_{VLP}$ = $\frac{32 \cdot 10}{132,7}$ mm = 2,4 mm

the number of pump actuations in the non -load mode is calculated byway of non-load stroke divided by the movement covered per pump actuation:

$\mathbf{PB}_{VLP}$ = $\frac{L(mm)}{S_{BP}(mm)}$ = $\frac{30}{2,4}$ =13 pump actuations

Meaning for stroke under load $\mathbf{S}_{VHP}$(mm) = $\frac{V_{AP}(cm^3) \cdot 10}{A(cm^2)}$

PL162 having a LP-oil flow per stroke of

➔ $\mathbf{V}_{AP}$ = 3 cm^3

➔ $\mathbf{S}_{VHP}$ = $\frac{3 \cdot 10}{132,7}$ mm = 0,23 mm

the number of pump actuations under load is calculated from the remaining stroke divided by the distance covered per pump actuation:

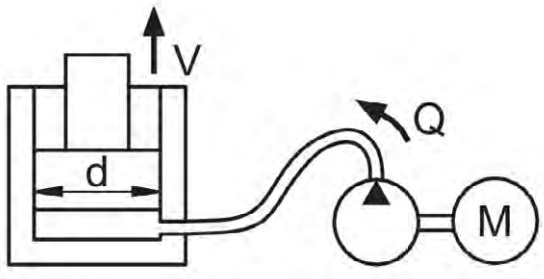
$\mathbf{PB}_{VHP}$ = $\frac{H(mm) - L(mm)}{S_{AP}(mm)}$ = $\frac{50-30}{0,23}$ = 87 pump actuations

Total = $\mathbf{PB}_{AP}$ + $\mathbf{PB}_{AP}$ = 13 + 87 = **100 pump actuations.**

3 / SPEED OF EXTENDING

The time an hydraulic cylinder needs for extending, being operated by an electric pump, depends on the cylinder effective area and on the oil flow of the electric pump.

When two-speed pumps are used the LP-oil volume $\mathbf{Q}_{LP}$ appliesfor cylinder movements wihout load and the HP-oil volume $\mathbf{Q}_{HP}$ applies for cylinder movements with load



FORMULA: **V** (mm)/s = $\frac{Q(l/min) \bullet 166,67}{A(cm^2)}$

THE FORMULA:

v = speed of the cylinder in mm/s

Q = the oil flow of the pump in l/min

A = cylinder area in cm^2

EXAMPLE 5

A **CGG100P50** cylinder operated by an electric pump **MEF10M31**.

What is the cylinder's speed of full extension?

➔ **A** = 132,7 cm^2 (see example 1)

v (mm/s) = $\frac{Q(l/min) \bullet 166,67}{A(cm^2)}$

having an oil flow **MEF10M31 ➔Q** = 1,8 l/min

➔ **v** = $\frac{1,8 \bullet 166,67}{132,7}$ mm = 2,2 mm/s

The cylinder's speed of full extension is 2,2 mm/s.

UNITS OF MEAUSUREMENT

The details given in the present catalogue are expressed in the units of measurements of the international System currently in force. The table below facilitates conversion into a commonly used equivalent systems of measurements.

1 bar = 0,1 MPa
1 bar = 10 N/cm²
1 bar = 1,0197 kgf/cm²
1 bar = 14,5 psi
1 MPa = 10 bar
1 N/cm² = 0,1 bar
1 kgf/cm² = 0,9806 bar
1 psi = 0,0689 bar
1 kN = 0,10197 t
1 N = 0,10197 kgf
1 N = 0,2248 lbf
1 ton (short) = 907,18 kg
1 ton (short) = 2000 l
1 kW = 1,359 HP
1 HP = 0,735 kW
1 Nm = 0,10197 kgf • m
1 lbf • ft = 0,13825 kgf • m
1 gal (UK) = 4,546 l
1 gal (US) = 3,785 l
1 in³ = 16,387 cm³
1 in² = 6,451 cm²
1 in = 25,4 mm

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SAFETY INSTRUCTIONS
MAINTENANCE AND USE ISTRUCTIONS

CYLINDERS

Always provide a solid support for the entire cylinder base area.
For an improved stability, use its accessories.

Make sure that the two areas on which the cylinder develop its force are sufficiently strong and non-deformable.

Never use cylinders without the saddle, as they distribuite the load evenly and prevent damage to the piston.

The cylinder saddle must be in contact with the load and the cylinder movement must be in axis with the load movement.

Avoid any lifting of off centred loads which could damage the cylinder. The use of a tilt saddle allows a misalignment of the load ± 5°.

To hold the lifted load use a needle or a pilot check valve in addition to the pump or power pack valve. In case the load has to be held over a long period use a cylinder with a safety lock nut.

Never work near the load supported only by the hydraulic components.
The safety lock nut of the cylinders has to be continuously screwed down onto the body of the cylinder during the lifting operation.

Never place any part of your body under the load and for additional safety it's best if you support the load mechanically.

Keep your hydraulic equipment away from temperatures above 65°C (150°F).

EPP components are treated against corrosion. Nevertheless in case of operations in very humid areas or marine environments, please contact our Technical Department for more information.

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SAFETY INSTRUCTIONS
MAINTENANCE AND USE ISTRUCTIONS

Avoid retracting the piston too quickly if it is still under load.
A sudden retraction creates pressure shocks in the hydraulic circuit.
Slowly turn the hand pump and power pack release valve.
when 3 or 4- ways valves are used in a maintained position it is advised to insert a flux regulation valve between the directional valve and the cylinder in order to have a controlled lowering speed of the load.
When lowering the load with more than one cylinder working in parallel avoid discharging the pressure one cylinder at a time because this could transfer all the load on the next cylinders which could result dangerously over-charged.

Never exceed the maximum working pressure indicated for any cylinder range.

Do not use any component with a load exceeding their nominal capacity. Always use a gauge to check the circuit pressure or tonnage.

EUROPRESS CYLINDERS HAVE BEEN DESIGNED WITH GREAT SAFETY MARGINS. DESPITE THEIR SAFETY, ALWAYS KEEP IN CONSIDERATION THE LOAD TO BE LIFTED, ALWAYS CHOOSE A CYLINDER WITH AT LEAST 20% MORE CAPACITY THAN THE REQUESTED LOAD.

HYDRAULIC HOSES

Always keep the hoses away from the area under the load.

Do not lift any hydraulic component by the hose.

Before connecting, clean the couplers properly and to avoid contamination use the dust caps when not connected.
Be sure to screw the female coupler until it is flush to allow the oil flow in both directions (screw type couplers).

Only disconnect the cylinder from the pump when the rod has fully retracted and the pressure inside has been released.

Do not fold hoses.
The bending radius must not be under 70 mm.
Do not walk over or drop heavy objects on them.

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SAFETY INSTRUCTIONS
MAINTENANCE AND USE INSTRUCTIONS

PUMPS

Never refill the pump above the indicated level and whilst the pump is connected to a partially extended cylinder.

We recommend to use EUROPRESS hydraulic oil only.
Its viscosity and lubrification features guarantee the highest operational efficiency and a longer life of the equipment.
The hydraulic oil temperature must not exceed 60°C (140° F).
To operate at higher temperatures or with different fluids please contact our Technical Department.

Do not use any extension on the pumph handle.
It is easy to operate hand pumps when properly handled.

We recommend to read carefully EUROPRESS safety instructions before using products.

Use your fingers to close the release valve, a tool could cause damage.

Use EUROPRESS hydraulic oil only, to keep the seals intact.

This catalogue has been prepared with the utmost care.

All data and information have been checked and verified before printing. In spite of this and due to the continuous improvement and evolution of the EUROPRESS production range, we take the right to modify or abolish any products from this catalogue. Consequently information included here could vary with no prior notice.

Small differences could arise due to production tolerances.

Please contact EUROPRESS if dimensions are essential.

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EUROPRESS GUARANTEE

All EUROPRESS products are covered by a one year guarantee against any defects in materials or workmanship. This guarantee does not cover normal wear and tear, improper use or any applications not in compliance with our recommended instructions, or where the equipment is used with unsuitable fluids, modifications and/ or alterations (including those resulting from repair or attempted repair by persons not authorized by EURO PRESS PACK), or damage caused by transportation.

To report any flaw, defect, non conformity, and/or to claim action under this guarantee, the Customer shall inform EURO PRESS PACK in writing within 5 days after receipt of the goods, or in case of hidden defect, within 5 days after such defect has been discovered. Before returning the goods to EURO PRESS PACK for possible remedy under guarantee, the purchaser shall have received EURO PRESS PACK's authorization.

If EURO PRESS PACK is firmly convinced that its own product is defective, EURO PRESS PACK will provide free of charge for repair or replacement. The transport costs to and from EURO PRESS PACK are at the customer's charge.

If the intervention of EURO PRESS PACK personnel or of our authorized distributors is requested on the site for installation of the replaced items (provided it is ascertained that they are covered by this guarantee) the costs of transfer of such personnel, their travelling hours and travel expenses are at the Customer's charge, whereas only the actual working hours will be at the charge of EURO PRESS PACK or of its authorized distributor.

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The maximum amount payable by EURO PRESS PACK for damages will at all events be limited to the actually paid purchase price and shall therefore never exceed this price.

QUALITY CERTIFICATION
Euro Press Pack has always been a Company very attentive to quality norms. This means that both the design of our products than their manufacturing are planned considering the Good Manufacturing Practice.
All necessary controls are made to grant our customers the highest possible quality standard. In this way the final product is produced and checked according to the defined procedures and this assures that the quality system is efficient, controlled and proved.

QUALITY SYSTEM CERTIFICATE ISO 9001
Certification for design, manufacturing, marketing and repair of high pressure components.

ENVIRONMETAL SYSTEM CERTIFICATE ISO 14001
System certification for design and manufacture, through the various step of cutting, mechanical machining, surface treatments, painting, assembly, testing, packing and dispatch, sales and service of high pressure hydraulic fluid components.

ANSI B30.1
All cylinders comply to the standard laid down by the American National Standards institute (apart from CGS#P#, CGG#P#, and CGR cylinders).

EN 60204-1
The electric parts of the machines are made according the standard of EN 60204-1.

SAE 100R10
The 700 bar hoses exceed this norm.

2006/42/CE - 2014/35/EU- 2014/30/EU
All our power packs conform the CE norm on the machine directive, low tension and electromagnetic compatibility.

CE mark.
All EUROPRESS products meet the European safety directives. Except certain systems or utensils which are designed for a specific use and are certified as machineries, all the cylinders, pumps and power packs of generic purpose are accompanied by certificates. The CE certification is responsibility of the construction of the machinery in which all the components are assembled.

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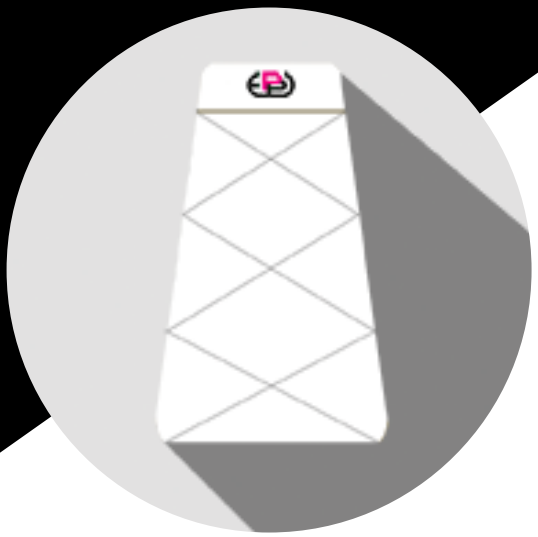

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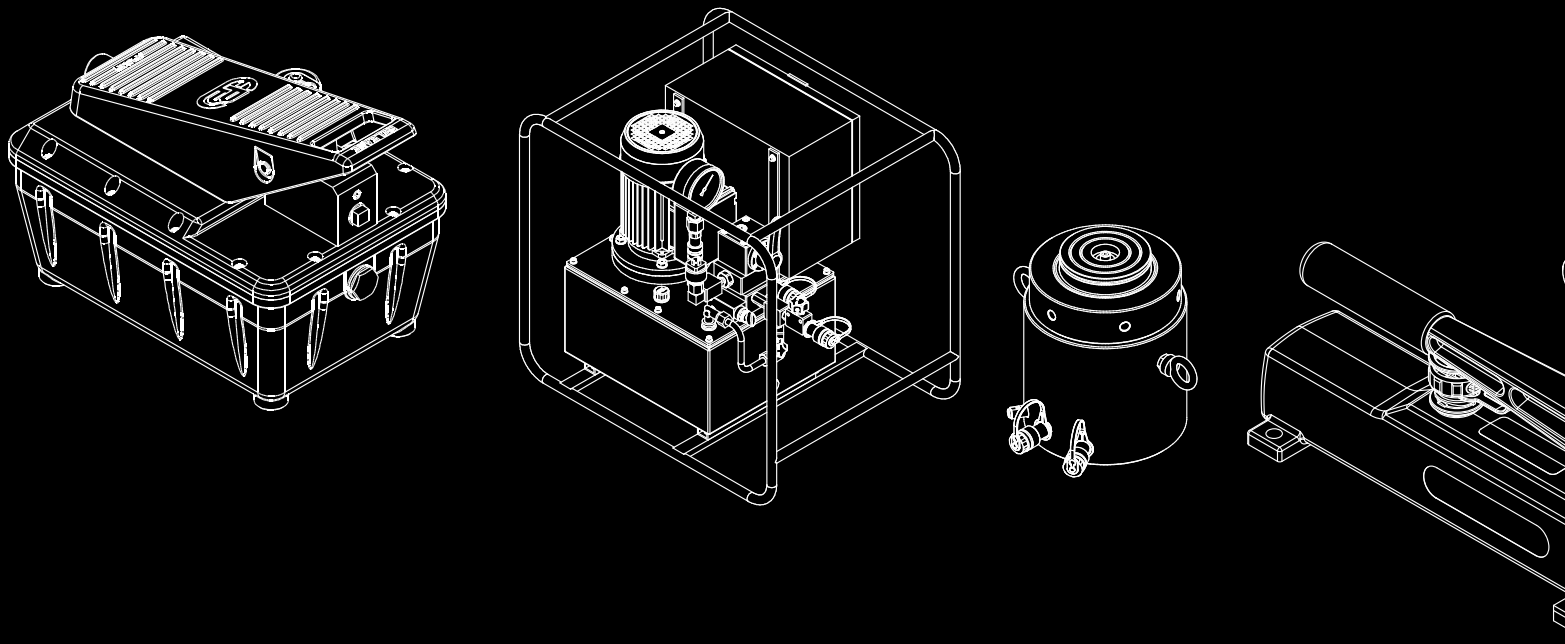

E.P.P. EURO PRESS PACK SpA

Via M. Disma, 87 - 16042 Carasco - Genova - Italy

Tel. 00 39 0185 35271 - sales@europresspack.it

www.europresspack.com

EUROPRESS DEUTSCHLAND Gmbh

D - 90427 NÜRNBERG - Brettergartenstr., 14

Tel. 00 49 (0) 911 32483-0 - info@europress-deutschland.de

www.europresspack.com

EPP MAGNUS Ltd

NORWICH NR6 6AY - UK - 7, Burton Close

Tel. 00 44 (0) 1603 400861 - welcome@epp-magnus.co.uk

www.europresspack.com

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