Euro Press Pack Hydraulic Cylinders

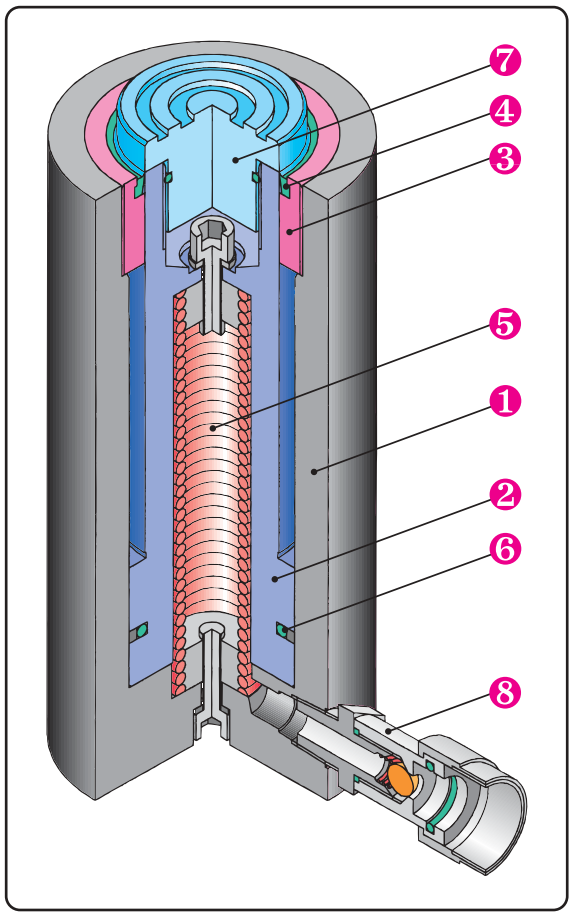
Specific features

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 makes EPP products suitable for use in harsh environments.

Furthermore, E.P.P. cylinders can withstand off-centred and 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.



Cylinder body 1 2 3

The cylinder body, piston and end of stroke nut are in high quality tempered steel and have been treated with a special nitriding process so that these parts have a high wear resistance and are corrosion protected; they have a long outdoor service life even in sea-water and aggressive atmospheres.

Wiper 4

The wiper prevents contamination and thus increases the service life of the cylinder.

Return spring 5

This spring ensures fast piston retraction irrespective of the cylinder position.

Seal 6

The compact seal provides good resistance to wear and extrusion.

Saddle 7

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

Quick coupler 8

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

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Euro Press Pack Cylinders

How to choose a cylinder

Some essential information is necessary to choose the correct cylinder. This information includes:

- **Force**
- **Stroke**
- **Closed height**

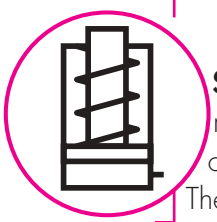
In the **Useful pages** you may find some calculation examples. P. 110

And some supplementary data such as:

- **Required oil volume**
- **Operational speed**

There are three main types of cylinders: load return, spring return and oil 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 assisted return, in which the piston is retracted by means of an internal compression or 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, (double acting): the piston is retracted hydraulically by pumping oil into the anular chamber of the cylinder.
These cylinders are ideal for use in production applications where a fast cycle time is required. When being used in a lifting application, lowering of the load can be controlled by fitting a pilot check valve and one-way flow distributor into the circuit.
The return pressure can be set at a lower value when it is only needed to retract the piston. The cylinders of the **COF, COI, COS** ranges belong to this group.
When it is necessary also to exert a pulling force, we recommend cylinders belonging to the **COD** ranges. These cylinders are supplied complete with the required threads and connections and may also be operated at the maximum working pressure on both sides of the piston.

Example: cylinder

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 mobile integral 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 in the base and integral saddle.

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Hydraulic Cylinders

Hydraulic cylinders index

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CMC

Extra flat cylinders, spring return

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ACCESSORIES:

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

STANDARD:

•Tilt saddle mounting **holes**.

FEATURES

The **CMC** range of cylinders have grooves machined into the rod end to improve load grip, models over 20 tonne also have two threaded holes in the rod end to facilliatate the fitting of a tilt saddle.
All models have two through holes to allow for the cylinder to be bolted down onto a work surface, flat sides also allow them to be used horizontally. Models over 5 tonne are fitted with a wiper seal and from 75 tonne onwards they are fitted with a removeable carry handle.

The CMC5N6 model is supplied with a K71F coupler (1/4" NPT connection).

OPERATIONAL AREAS

These extra compact lightweight cylinders are the ideal solution to operate in the narrowest working areas.
They are used to precision level machinery, transformers, bridge sections etc. and in the ship building industry can be used to raise engines into position and remove propellers.

For lifting machinery from very low positions the **UJ** claw lifters can also be used, the claw has three different levels.

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Due to the small oil capacity of these cylinders the small **PS** hand pumpsare recommended to operate these cylinders.

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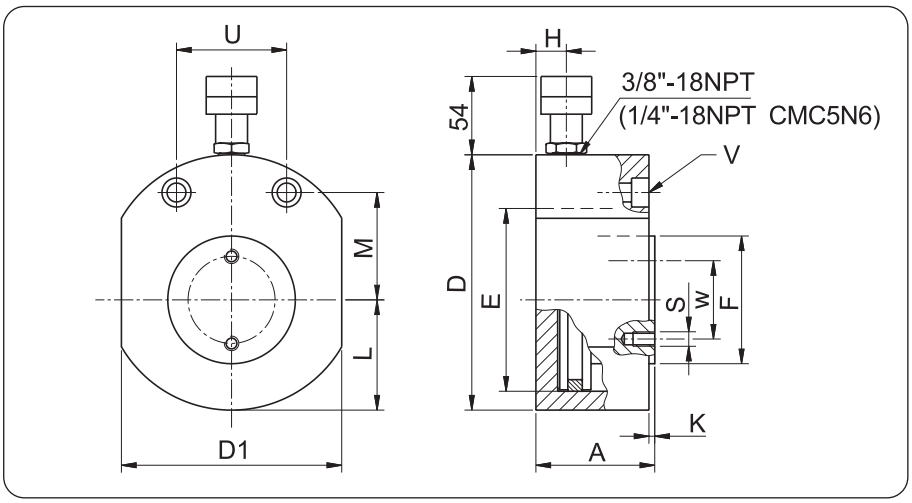
CMC

Extra flat cylinders, spring return



Force: **5-150 t**

Stroke: **6-15 mm**

Maximum working pressure: **700 bar**

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

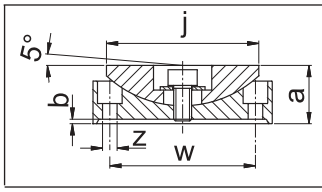
Selection chart

Pushing force	Stroke	Oil volume	Model	Closed height	External Dia.	External dimension	Piston Dia.	Rod Dia.	Coupler height	Projection rod	Distance from rod axis to the external Dia.	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 tilt saddle	Weight
t*/kN	mm	cm³		Dimensions mm													Kg
				A	D	D1	E	F	H	K	L	M	U	V	W	S	
5/49,5	6	4	**CMC5N6****	33	59	41	30	24	16	1	20,5	22,5	28,5	M5	-	-	0,6
5/49,5	15	11	**CMC5N15**	42	59	41	30	24	19	1	20,5	22,5	28,5	M5	-	-	0,8
10/111	10	16	**CMC10N10**	43	78	58	45	35	19	1	29	34	37	M6	-	-	1,6
20/198	10	28	**CMC20N10**	52	100	76	60	45	19	1	39	40	50	M10	-	-	2,8
30/309	10	44	**CMC30N10**	59	115	95	75	55	19	1	48	44	52	M10	44	2xM5	4,2
50/496	15	106	**CMC50N15**	68	143	120	95	80	19	1	60	54	67	M12	65	2xM6	6,9
75/727	15	156	**CMC75N15**	80	166	142	115	100	19	2	71	67	76	M12	65	2xM6	12,0
100/929	15	199	**CMC100N15**	86	178	160	130	100	20	2	80	75	76	M12	65	2xM6	14,5
150/1407	15	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) quick coupler

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	6,5	65	1,7
ZTT150	CMC150N15	45	3	118	6,5	80	3,4

CMF

Steel and aluminium hollow piston cylinders, spring return

FEATURES

Available in **steel** and **aluminium**.

All **CMF** cylinders are supplied as standard with a smooth hollow bore saddle which screws into the bore of the rod. The body has a metric collar thread and there are base mounting holes to allow for the fitting of accessories.

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

Cylinders are supplied with anti-corrosive treatment, which is very effective to protect the central bore.

OPERATIONAL AREAS

These cylinders are recommended for tensioning, pulley and bush extracting, hot and cold pulling etc.
They can also be used in both pull and push operations by inserting either a bar or a cable through the hollow saddle. These cylinders are also supplied with the UE pullers.

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ACCESSORIES:

- **ZTE threaded saddle**, for use with threaded bar and extension screws.

STANDARD:

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

Follow our safety instructions see **useful pages** P. 112

Our technical department is available to design **special customised solutions**.

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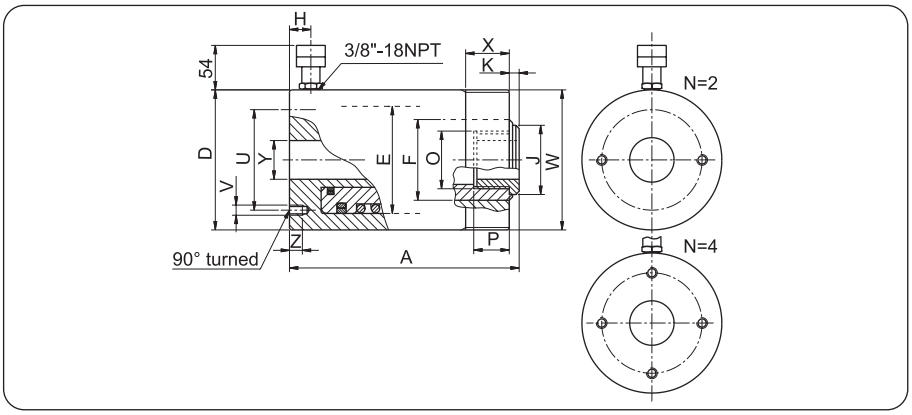
CMF

Steel and aluminium hollow piston cylinders, spring return



Force: **10-100 t**

Stroke: **50-160 mm**

Maximum working pressure: **700 bar**

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

Steel cylinder selection chart

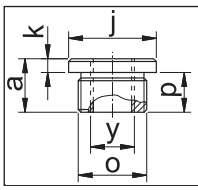
Pushing force	Stroke	Oil volume	Model	Closed height	External Dia.	Piston Dia.	Rod Dia.	Coupler height	Hollow saddle Dia.	Rod projection	Rod internal thread	Rod thread depth	PCD mounting holes	Base mounting holes Holes depth	Collar thread	Collar thread length	Through hole Dia.	Weight
t*/kN	mm	cm³		Dimensions mm A	D	E	F	H	J	K	O	P	U	V / Z	W	X	Y	Kg
10/123	50	88	CMF10N50	132	74	55	40	19	34,5	1	M30x1,5	16	50,8	2xM8 / 8	M74x2	20	21	3,8
	80	141	CMF10N80	176														4,8
20/230	50	164	CMF20N50	150	100	75	56	19	47,5	2	M40x1,5	24	82,6	2xM8 / 10	M100x2	20	28	7,8
	100	328	CMF20N100	221														10,7
	160	525	CMF20N160	305														14,1
30/334	50	239	CMF30N50	160	115	90	65	21	57,5	2	M48x1,5	32	92,2	2xM10 / 12	M115x2	20	34	10,5
	100	477	CMF30N100	233														14,5
	150	716	CMF30N150	303														18,1
60/590	75	632	CMF60N75	219	165	125	90	26	81,5	2	M72x1,5	40	130,2	2xM12 / 16	M165x4	25	54,5	28,9
	150	1264	CMF60N150	331														39,9
100/947	75	1015	CMF100N75	270	215	165	125	36	117,5	4	M102x1,5	55	130	4xM12 / 15	M215x4	35	80,5	59,3

* nominal value, see kN for the exact force

Aluminium cylinder selection chart

30/334	100	477	CMF30L100	233	120	90	65	21	57,5	2	M48x1,5	32	92,2	2xM10/12	M115x2	20	34	10,4
	150	716	CMF30L150	303														12,8
60/590	75	632	CMF60L75	219	170	125	90	26	81,5	2	M72x1,5	40	130,2	2xM12/16	M165x4	25	54,5	19,7
	150	1264	CMF60L150	331														26,0

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 1/4" – 7 UNC	M48x1,5	0,32
ZTE60	CMF60# ###	47	7	81,5	40	1 5/8" – 5,5 UNS	M72x1,5	0,85

Model coding

CMF	10	N	###
SERIES	Pushing **force** in tonne	**N**= in steel **L**= in aluminium	**Stroke** in mm

CMI

Multi-purpose cylinders, spring return

FEATURES

All 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 carry handle.

A wiper seal is fitted to models above 5 tonne to prevent the penetration of dirt and to extend cylinder life.

OPERATIONAL AREAS

These cylinders can be operated in any position and are extremely versatile and suitable for different applications, including industrial body shops, 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 saddle,** reduces the effects of any possible off-centred load.

STANDARD:

•Base mounting **holes.**

•**Pushing saddle,** prevents any risk of rod deformation.

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

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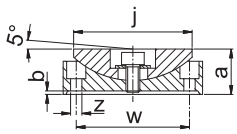
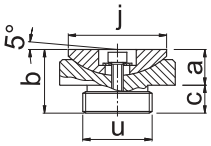
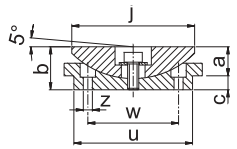
Accessories: ZTT tilt saddles







Model	For use with	a	b	c	j	u	z	w	Kg
ZTT10	CMI10N25	16	1	-	34	-	5,5	24	0,1
ZTT11	CMI10N###	9	21	12	34	M24x2	-	-	0,1
ZTT31	CMI25N### CMI30N210	16	30	14	53	M32x2	-	-	0,3
ZTT51	CMI50N###	18	26	8	68	65	5,5	45	0,8
ZTT101	CMI100N###	22	32	10	88	85	6,5	65	1,6

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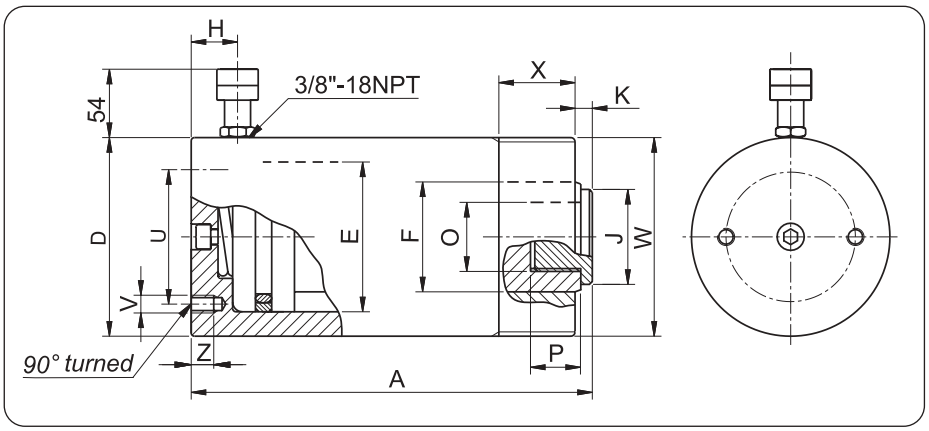
CMI

Multi-purpose cylinders, spring return



Force: **5-100 t**

Stroke: **25-350 mm**

Maximum working pressure: **700 bar**

Selection chart

* nominal value, see kN for the exact force

⊗ Mounting holes for ZTT10 tilt saddle

Pushing force	Stroke	Oil volume	Model	Closed height	External Dia.	Piston Dia.	Rod Dia.	Coupler height	Saddle Dia.	Rod projection	Rod internal thread	Rod thread depth	PCD mounting holes	Base mounting holes Holes depth	Collar thread Thread length	Weight
				Dimensions mm										V	W	
t*/kN	mm	cm³		A	D	E	F	H	J	K	O	P	U	Z	X	Kg
5/49,5	25	18	CMI5N25	92	40	30	25	19	24,5	2	M16X1,5	14	25	M6	M40X1,5	1,1
	50	35	CMI5N50	117												1,3
	75	53	CMI5N75	142												1,5
	125	88	CMI5N125	202										10	28	1,9
	175	124	CMI5N175	252												2,3
	225	159	CMI5N225	302												2,7
10/111	25	40	CMI10N25	83	60	45	35	19	33⊗	1⊗	-	-	39	M8	M60X1,5	2,0
	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										12	28	5,6
	250	398	CMI10N250	345												6,5
	300	477	CMI10N300	408				33								7,5
	350	557	CMI10N350	458												8,2
25/232	25	83	CMI25N25	119	85	65	55	19	53	9	M32X2	16	58	M10	M85X2	4,6
	50	166	CMI25N50	144												5,3
	100	332	CMI25N100	214												7,5
	150	498	CMI25N150	264												8,8
	200	664	CMI25N200	314										14	40	10,2
	250	830	CMI25N250	364												11,6
	300	996	CMI25N300	414												13,0
	350	1161	CMI25N350	485				43								15,0
30/309	210	928	CMI30N210	386	102	75	55	47	53	9	M32x2	16	-	-	3 5/16"-12 49	18,4
50/496	50	354	CMI50N50	164	127	95	80	25	65	4	M16	12	95	M12	M125x2	14,2
	100	709	CMI50N100	214												17,4
	150	1063	CMI50N150	264										18	40	20,8
	325	2304	CMI50N325	439												32,6
100/929	100	1327	CMI100N100	246	175	130	100	26	85	4	M16	17	140	M12 18	M168x2 51	39,6
	150	1991	CMI100N150	296												46,0

CML

Aluminium cylinders, spring return

FEATURES

Six models manufactured in a high resistance aluminium alloy complete with a protective treatment, to increase resistance to corrosion. Wiper seals are fitted to prevent the penetration of dirt.

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.

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ACCESSORIES:

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

STANDARD:

•**Pushing saddle,** prevents any risk of rod deformation.

Follow our safety instructions see **useful pages** P. 112

CML cylinders and lightweight **PL** pumps make an extremely light and easy to use pump and cylinder set.

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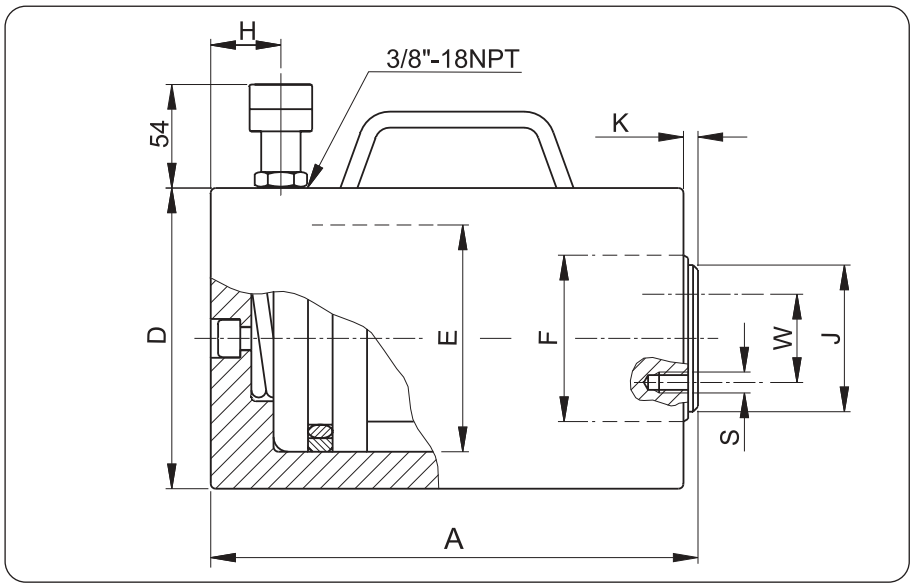
CML

Aluminium cylinders, spring return



Force: **50-100 t**

Stroke: **50-150 mm**

Maximum working pressure: **700 bar**

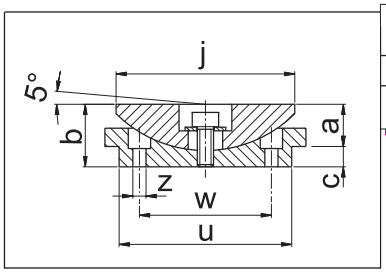
Cylinders with non standard force and stroke can be supplied upon request.

Selection chart

Pushing force	Stroke	Oil volume	Model	Closed height	External Dia.	Piston Dia.	Rod Dia.	Coupler height	Saddle Dia.	Rod projection	PCD mounting holes for the tilt saddle	Tilting saddle base mounting holes	Weight
t*/kN	mm	cm³		Dimensions mm A	D	E	F	H	J	K	W	S	Kg
50/496	50	354	CML50N50	158	130	95	80	25	65	4	4 5	2 x M5	7,0
	100	709	CML50N100	208									8,6
	150	1063	CML50N150	258									10,3
100/929	50	664	CML100N50	196	178	130	100	25	88	4	6 5	2 x M6	16,2
	100	1327	CML100N100	246									18,8
	150	1991	CML100N150	296									21,4

* 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, spring return

FEATURES

Low closed height compared to stroke. **CMP** cylinders have the longest stroke in the spring return pad jack range.

All cylinders have a grooved rod top for improved load grip and there are two threaded holes for mounting a tilt saddle. This is recommended where there is a danger of sideloading.
Wiper seals are fitted to prevent the penetration of dirt.
Base mounting holes are also available as an optional extra.

OPERATIONAL AREAS

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

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ACCESSORIES:

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

OPTIONS:

•**F - Version** cylinder with base mounting **holes** for fixing purposes.

Follow our safety instructions see **useful pages** P. 112

STANDARD:

•Tilt saddle mounting **holes.**

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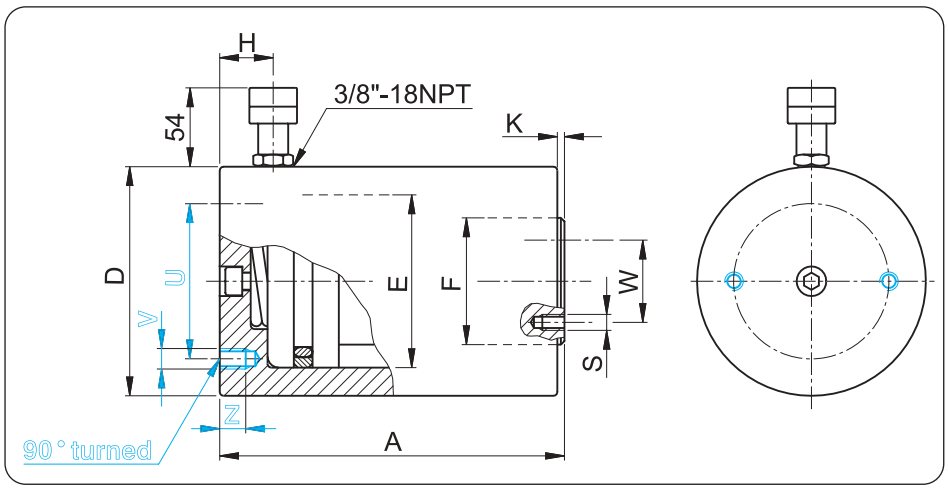
CMP

Low profile cylinders, spring return



Force: **10-100t**

Stroke: **25-50 mm**

Maximum working pressure: **700 bar**

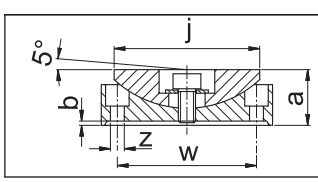
Cylinders with non standard force and stroke can be supplied upon request.

Selection chart

Pushing stroke	Stroke	Oil volume	Model	Closed height	External Dia.	Piston Dia.	Rod Dia.	Coupler height	Rod projection	PCD mounting holes	Base mounting holes Holes depth	PCD mounting holes for the tilt saddle	Tilting saddle mounting holes	Weight
t*/kN	mm	cm³		Dimensions mm A	D	E	F	H	K	U	V Z	W	S	Kg
10/111	25	40	CMP10N25	72	75	45	35	19	1	25	2 x M8 6	24	2 x M5	2,5
	50	80	CMP10N50	97										3,2
20/198	25	71	CMP20N25	75	88	60	45	19	1	60	2 x M10 10	34	2 x M5	3,4
	50	141	CMP20N50	100										4,2
30/309	25	110	CMP30N25	86	102	75	55	19	1	65	2 x M10 13	44	2 x M5	5,0
	50	221	CMP30N50	111										6,1
50/496	25	177	CMP50N25	97	127	95	80	22	1	95	2 x M12 15	65	2 x M6	7,6
	50	354	CMP50N50	122										9,1
100/929	25	332	CMP100N25	116	175	130	100	22	2	140	2 x M12 17	65	2 x M6	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	1	43	5,5	34	0,2
ZTT30	CMP30N ##	19	1	53	6,5	44	0,3
ZTT50	CMP50N ##	25	1	68	6,5	65	0,9
ZTT100	CMP100N ##	34	2	88	6,5	65	1,7

Model coding

CMP	10	N	##	#
SERIES	Pushing **force** in tonne	**N**= Standard	**Stroke** in mm	**F**= with base mounting holes

CMT

Pulling cylinders, spring return, in steel and aluminium

These cylinders can be used with the **PL** lightweight hand pumps with which they make a handy hydraulic set.

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Follow our safety instructions see **useful pages**

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FEATURES

Range in steel
Have a thread on the body, on the rod and in the base to mount the proper accessories. The internal and external nitriding treatment gives them a good resistance to wear and corrosion.

Range in aluminium
Manufactured completely in aluminium (apart from the rod) these cylinders have been given an anodizing treatment to protect them against corrosion.
They have a bellow to protect the rod and from 30 tonne models carrying handles.

OPERATIONAL AREAS

Range in steel
Used in assembling, building and in laboratories to test the resistance of materials.

Range in aluminium
These are used in shipbuilding and in steel structural works to pull together plates, or prefabricated parts which have to be welded together.

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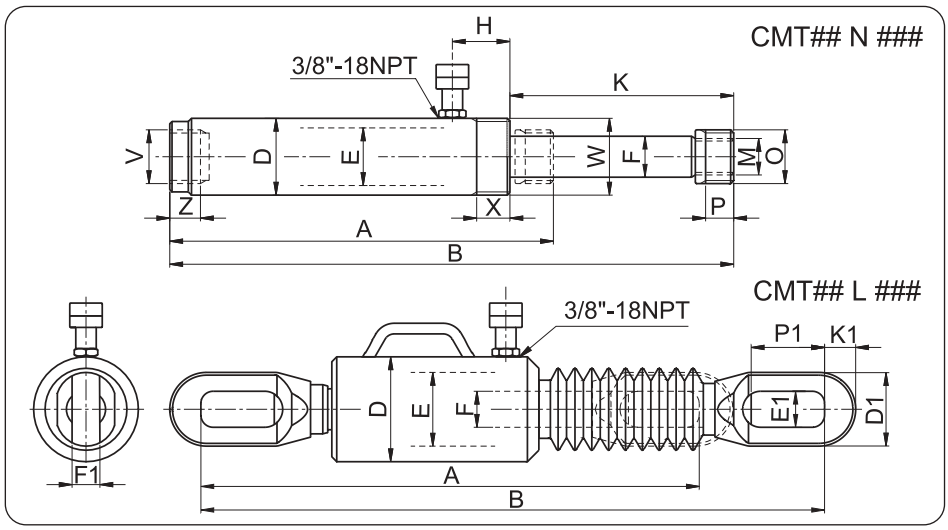
CMT

Pulling cylinders, spring return, in steel and aluminium



Force: **2-60 t**

Stroke: **127-150 mm**

Maximum working pressure: **700 bar**

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

Steel cylinders selection chart

Pulling force	Stroke	Oil volume	Model	Closed height	Extended height	External Dia.	Piston Dia.	Rod Dia.	Coupler distance	Rod projection	Rod thread	Saddle thread	Saddle thread length	Internal base thread	Internal base thread length	Body thread Thread length	Weight
t*/kN	mm	cm³		Dimensions mm													Kg
				A	B	D	E	F	H	K	M	O	P	V	Z	W / X	
2 / 22,9	127	41	CMT2N127	244	371	48	30	22	39	155	M18 x 1,5	3/4" NPT	18	3/4" NPT	20	M40x1,5 / 20	2,9
5 / 55	140	110	CMT5N140	301	441	60	45	32	45	175	M30 x 2	1 1/4" NPT	22	1 1/4" NPT	24	M60x1,5 / 26	4,9
10 / 110	150	236	CMT10N150	302	452	80	55	32	39	189	M30 x 2	-	30	M30 x 2	25	M80x2 / 20	8,0

Aluminium cylinders selection chart

Pulling force	Stroke	Oil volume	Model	Closed height	Extended height	External Dia.	Piston Dia.	Rod Dia.	Eyelet width	Slit width	Eyelet thickness	Eyelet top thickness	Slit length	Weight
t*/kN	mm	cm³		Dimensions mm										Kg
				A	B	D	E	F	D1	E1	F1	K1	P1	
10 / 110	150	236	CMT10L150	526	676	75	55	32	55	32	20	20	100	4,4
30 / 334		716	CMT30L150	612	762	128	90	45	90	44	34	38	100	13,2
60 / 559		1199	CMT60L150	720	870	168	120	65	120	61	50	50	140	27,8

* nominal value, see kN for the exact force

Model coding

CMT	10	N	###
SERIES	Pushing **force** in tonne	**N**= in steel **L**= in aluminium	**Stroke** in mm