

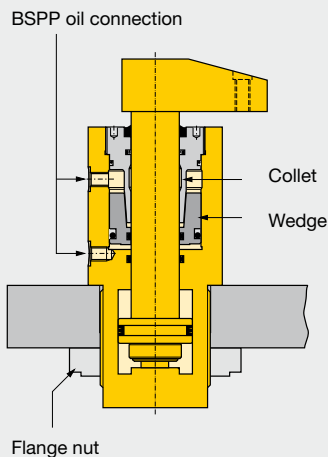
Swing cylinders - Collet-Lok® design

Shown: MPTR-100V, MPFR-100V



MP series

Enerpac Collet-Lok® cylinders are designed to mechanically hold the workpiece after hydraulic pressure is removed. Clamping capacities range from 4,4 to 37,8 kN.



Hydraulic pressure pushes the collet up a wedge, locking the plunger in the clamping position.

Lower flange Collet-Lok® swing cylinder mounted on a pallet.



Ideal when live hydraulics are not available

- Double acting Collet-Lok® action allows fully automated operation
- Additional level of safety since live hydraulics are not required to maintain clamping force
- Collet-Lok® swing cylinders can be mounted by the flange or threaded into the fixture. Flanged models have manifold ports and tubing ports.
- Viton seals are standard.

Selection chart

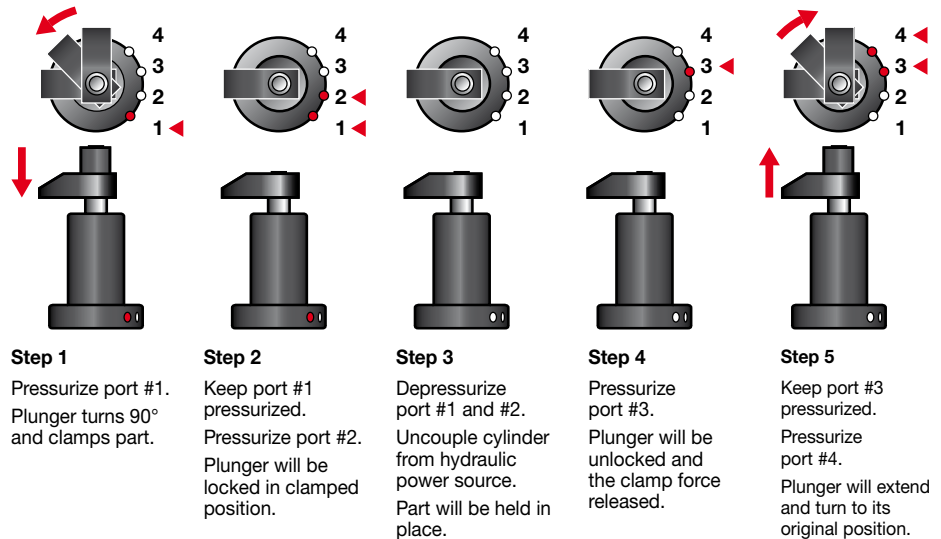
Clamping force ¹⁾	Stroke		Left turning	Right turning	Cylinder effective area		Oil capacity		Max. oil flow ¹⁾	Standard clamp arm
	kN	mm			cm ²	cm ³				
	Clamp	Total			Clamp	Un-clamp	Clamp	Un-clamp	l/min	Sold separately
				90°						
▼ Lower flange										
			Model number							
4,4	8	24,2	MPFL-50V	MPFR-50V	1,6	4,5	3,9	10,9	0,5	MA-540
8,9	12	28,2	MPFL-100V	MPFR-100V	3,2	7,1	9,0	19,9	1,0	MA-1050
37,8	10	42	MPFL-300V*	MPFR-300V*	13,2	22,2	55,7	93,4	4,0	MA-3070
▼ Threaded body										
			Model number							
8,9	12	28,2	MPTL-100V	MPTR-100V	3,2	7,1	9,0	19,9	0,5	MA-1050
37,8	10	42	MPTL-300V*	MPTR-300V*	13,2	22,2	55,7	93,4	4,0	MA-3070

¹⁾ Using standard clamp arm. Clamp arms are sold separately (14).

Note: - Call Enerpac for models with UNF thread and SAE port connections.
- Minimum working pressure for Collet-Lok® system is 100 bar.

* This product is made to order. Please contact Enerpac for delivery information before specifying in your design.

Collet-Lok® sequence



Product dimensions in mm []

Left turning models *	A	B	C	C1	D	D1	F	H1	H2	H3
					Ø	Ø	Ø			
▼ Lower flange										
MPFL-50V	201,2	177	171,2	25	58	85	19	10	12,5	-
MPFL-100V	222,9	194,7	192,9	25	68	100	22,3	10	12,5	-
MPFL-300V	322	280	275	25	89,8	130	34,9	11	12,5	-
▼ Threaded body										
MPTL-100V	213,2	185	121,3	90,5	M48 x 1,5	64	22,3	31,5	67	75,5
MPTL-300V	310,5	268,5	163	115	M80 x 2,0	89	34,9	38	92	100,5

Note: Dimensions shown with standard clamp arm.

* For nonrotational model replace "L" with "N". Example: MPFN-100V.

Installation dimensions in mm

Clamping force ¹⁾ kN	Fixture hole Ø D3	Mounting thread J mm	Minimum depth J2
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▼ Lower flange

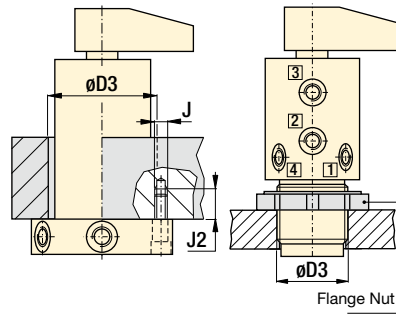
4,4	58,4 ±0,3	M6 x 1	18
8,9	68,6 ±0,3	M8 x 1,25	19
37,8	90,5 ±0,3	M10 x 1,5	19

Clamping force ¹⁾ kN	Fixture hole Ø D3	Mounting flange Sold separately □ 87 ▶	Mounting nut Sold separately □ 86 ▶
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▼ Threaded body

8,9	M48 x 1,5	MF-482	FN-482
37,8	M80 x 2	MF-802	FN-802

¹⁾ With standard clamp arm.



Oil port functions

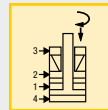
- 1 90° Rotation and clamp
- 2 Locks system
- 3 Unlocks system
- 4 Unclamp and 90° rotation

Force: 4,4 - 37,8 kN

Stroke: 24,0 - 42,0 mm

Pressure: 100 - 350 bar

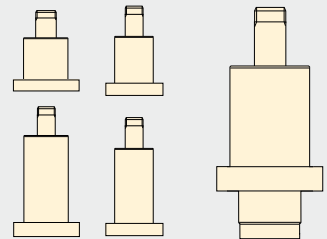
- E Cilindros giratorios
- F Vérins de bridage pivotants
- D Schwenkspannzylinder



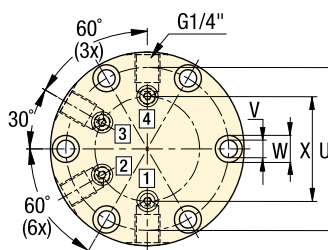
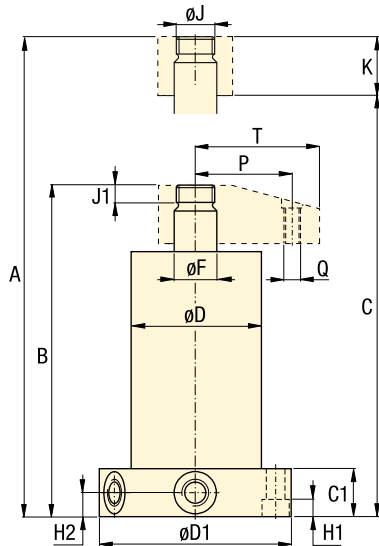
Custom Options Available

Intermediate capacities

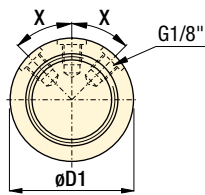
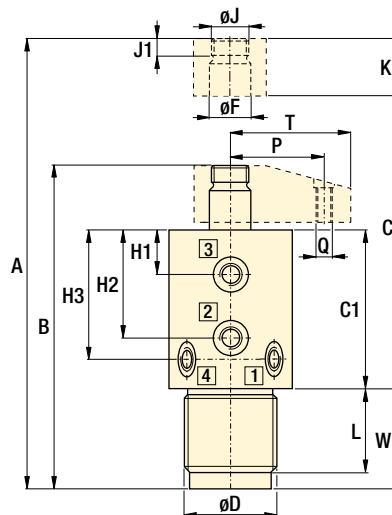
Different flange locations



MPF models



MPT models



X = 45° MPT-100 models

X = 30° MPT-300 models

	J	J1	K	L	P	Q	T	U	V	W	X	Right turning models	
								Ø	Ø	Ø	kg		
Lower flange ▼													
	M16 x 1,5	8	30	-	40	M8 x 1,25	54	70,1	9	Ø 14	48,0	2,3	MPFR-50V*
	M20 x 1,5	9	30	-	50	M10 x 1,5	64	84,1	9	Ø 14	54,1	3,5	MPFR-100V*
	M33 x 2,0	10	47	-	70	M16 x 2	93	112,1	11	Ø 17	96,1	12,0	MPFR-300V*
Threaded body ▼													
	M20 x 1,5	9	30	41,5	50	M10 x 1,5	64	-	-	61,9	-	3,0	MPTR-100V*
	M33 x 2,0	10	47	85	70	M16 x 2	93	-	-	99,5	-	11,0	MPTR-300V*

Flexible Machining Systems
See Yellow Pages (□ 224)

Options

Clamp arms □ 14 ▶

Collet-Lok® work supports □ 16 ▶

Sequence valves □ 152 ▶

Accessories □ 86 ▶

Important

Minimum unlock pressure must be at least 105 bar above lock pressure.

Swing cylinders, MA-series *Dimensions & options*

Force: 4,4 - 37,8 kN

Pressure: 100 - 350 bar

- E** Brazos de amarre
- F** Bras de bridage
- D** Spannarme

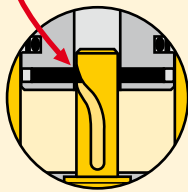
Important

Do not exceed maximum oil flow. If flow rates are exceeded, swing cylinder indexing mechanism may be permanently damaged.

When designing custom clamp arms, the flow rates must be further reduced. This rating should be in proportion to the mass and the center of gravity of the clamp arm.

Example:
If the mass of the arm is twice that of the long arm, flow rates must be reduced by 50%.

Index mechanism



Options

Gauges

□190 ▶



Flow control valves

□155 ▶



Sequence valves

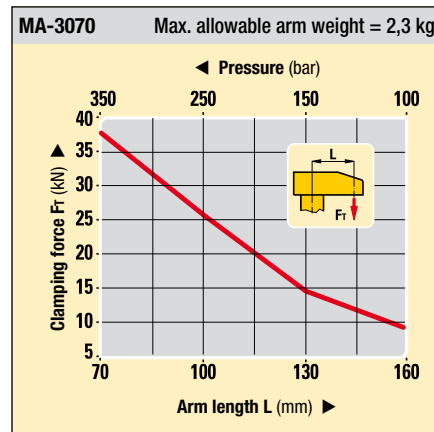
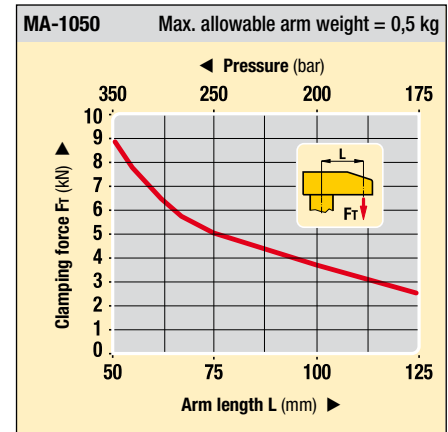
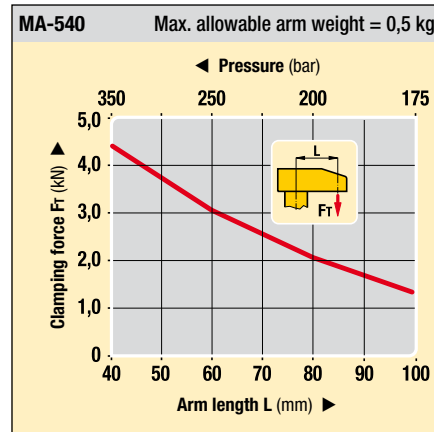
□152 ▶



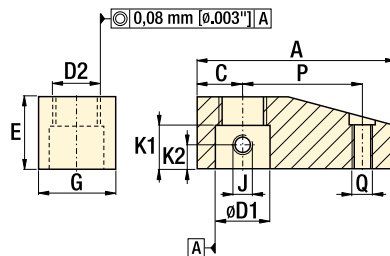
i Determine the right size of your Collet-Lok® swing cylinder

The maximum operating pressure, clamping force and length of the clamp arm will determine your size of swing cylinder. The real operating pressure is a function of both the clamp arm length and clamping force.

In the diagrams below you select the required clamp arm length and clamping force. The use of different length clamp arms requires reduction in applied pressure and resulting clamp force. The diagrams below show this relation.



MA models Standard clamp arms for Collet-Lok® swing clamps



A Product dimensions in mm []

Clamp. force kN	Model number	A	C	D1 ø	D2	E	G	J	K1	K2	P	Q	kg
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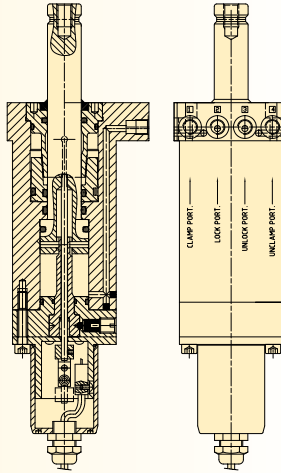
▼ Standard clamp arms for Collet-Lok® swing clamps

4,4	MA-540	74,7	18,0	19,02-19,05	M16 x 2	30	32	M8 x 1,25	19	10	40	M8 x 1,25	0,5
8,9	MA-1050	83,0	19,0	22,30-22,33	M20 x 1,5	30	35	M8 x 1,25	18	10	50	M10 x 1,5	0,5
37,8	MA-3070	128,0	35,0	34,97-35,00	M33 x 2	47	59	M8 x 1,25	32	17	70	M16 x 2	2,3

i Special configurations are available

Model: MPFL100PE001-S

- Body style:** Upper flange
- Clamp capacity:** 9 kN (2000 lbs)
- Clamping stroke:** 18 mm (.71 in.)
- Special feature:** Position sensing



Special features for Swing Cylinders *

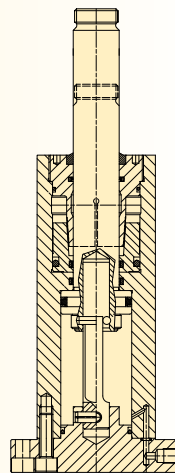
Enerpac can design Collet-Lok® cylinders with special features to meet the needs of your production fixtures:

- Special mounting
- Special manifold port location
- Longer stroke
- Special rotation
- Internal clutch to protect rotation mechanism
- Viton seals
- Special rod end
- Position sensing

* Special features also available for Collet-Lok® Push Cylinders and Work Supports.

Model: MPFN300VE002

- Body style:** Lower flange
- Clamp capacity:** 39 kN (8800 lbs)
- Clamping stroke (straight):** 57,4 mm (2.25 in.)
- Special feature:** Viton seals
Long stroke



Model: MPFL200VE100

- Body style:** Mid-body flange
- Clamp capacity:** 20 kN (3900 lbs)
- Clamping stroke (left hand):** 63,5 mm (2.50 inch)
- Special feature:** Viton seals
Long stroke
Mid-flange body

