COTSWOLD FLUID POWER LTD

Fluid Power Solutions

DATA SHEET - PNEUMATIC LINEAR ACTUATOR

CFP20140 DOUBLE ACTING SERIES

- Product configurator
- Product breakdown
- Product information
- Dimensions
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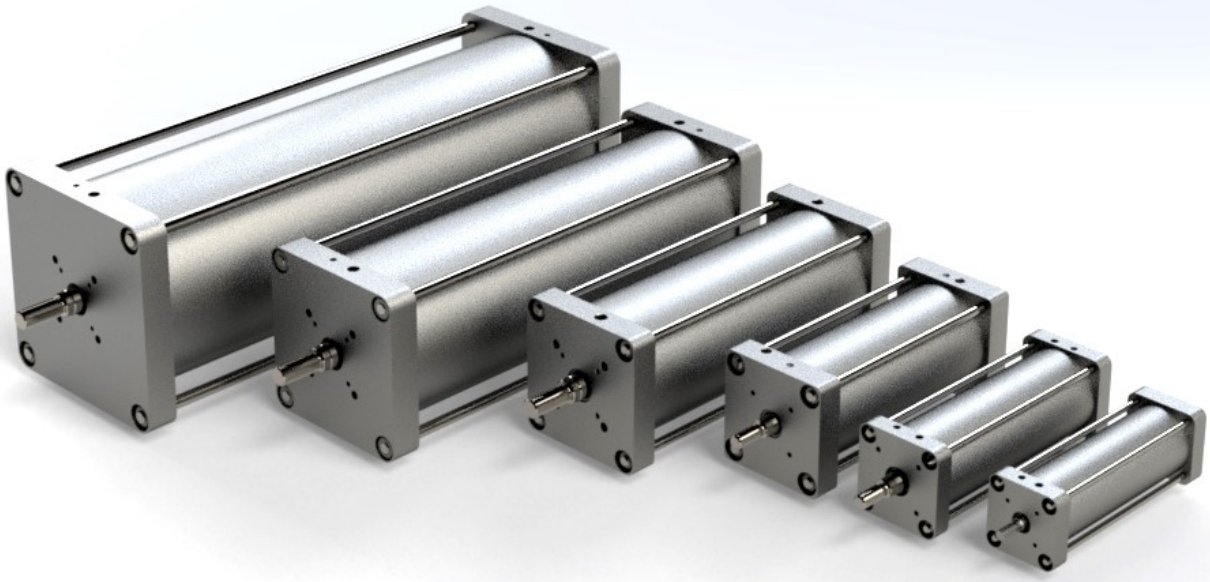
- Company information



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1.0 Product Configurator

Part number breakdown:

CFP20140 - C/F - M/I - *BORE* - *STROKE*

'CFP20140' denotes Cotswold Fluid Power's range of double-acting, aluminium construction Pneumatic Liner Actuators.

'C/F' determines whether the actuator will be fitted with adjustable pneumatic cushioning. Cushioning will impact both the actuators size and function.

- ***'C'*** - Actuator is fitted with adjustable pneumatic cushioning.
- ***'F'*** - Actuator is NOT fitted with adjustable pneumatic cushioning.

'M/I' determines whether the actuator will be fitted with magnetic position sensing. Position sensing will impact the function of the actuator but not the size.

- ***'M'*** - Actuator is fitted with magnetic position sensing.
- ***'I'*** - Actuator is NOT fitted with magnetic position sensing.

'BORE' is the diameter in millimeters of pressure area within the Actuator. Bore size determines the amount of force that the Actuator produces. There are 6 Bore sizes in this range.

- '***100***'
- '***125***'
- '***160***'
- '***200***'
- '***250***'
- '***320***'

'STROKE' is the linear travel of the Actuator. This is bespoke to order and can be chosen in increments of 1mm. Standard stroke values are detailed in the technical information section.

Example:

Part number *'CFP20140 - C - I - 200 - 400'* describes a double-acting aluminium construction Pneumatic Liner Actuator, that has a 200mm bore, a 400mm stroke, is fitted with adjustable pneumatic cushioning and has no magnetic position sensing.

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2.0 Product Breakdown

CFP 20140 - Pneumatic Linear Actuator

PISTON

A two part piston design CNC machined from aluminium billets, with a clear, hard anodized finished for improved corrosion resistance.

END-CAPS

CNC machined from aluminium billets, with a clear, hard anodized finished for improved corrosion resistance. All porting and interface connections machined as standard.

CYLINDER BARREL

Clear, hard anodized cylinder barrel, bore sizes range from ø100mm - ø320mm.

CUSHION ADJUSTING

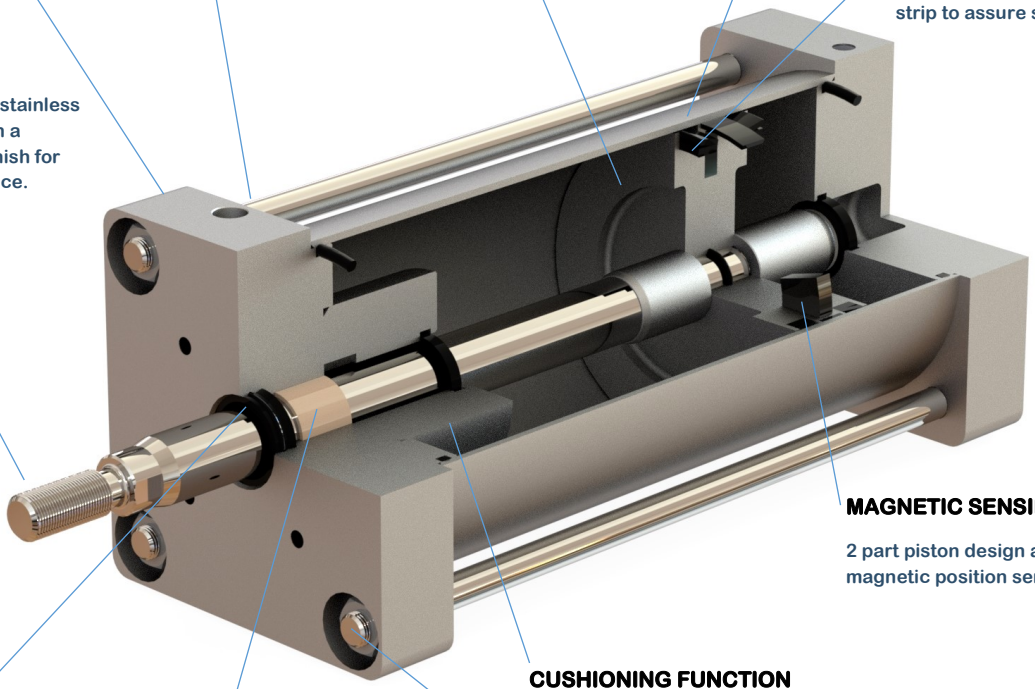
Cushioning force can be adjusted manually on either direction of stroke.

PISTON SEALS

2 x U-seals isolate either end of the actuator, separated by a bearing strip to assure smooth actuation.

PISTON ROD

CNC machined 316 stainless steel piston rod with a precision ground finish for optimum performance.



MAGNETIC SENSING

2 part piston design allows option of including magnetic position sensing within the piston.

FRONT SEAL

Dual function seal both wipes and seals around the piston rod, allows for a more compact design.

CUSHIONING FUNCTION

Adjustable function can be included on either end of the actuator stroke.

BEARING

Composite bearing consisting of steel outer layer and an inner layer of porous bronze with a lead and PTFE inlay ensures smooth rod travel.

TIE-RODS

316 SS bar stock secured at either end using zinc plated steel polymer locking nuts (nyloc).

Product information

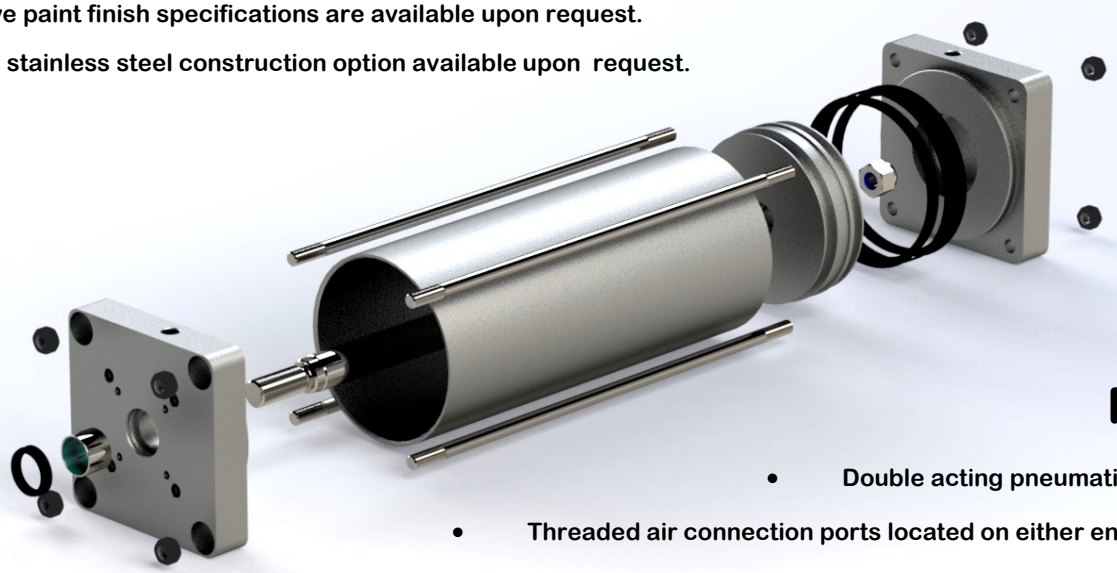
The ‘CFP20140’ is a range of double acting linear pneumatic actuators. Bore sizes range from ø100mm to ø320mm. Actuator stroke length is bespoke to customer request.

The actuator offers a robust tie-rod construction utilising Anodized Aluminium in the end-caps, piston and body, as well as precision ground 316 Stainless Steel piston rod and tie rods.

The materials achieve a base C3 Class corrosion resistance.

Alternative paint finish specifications are available upon request.

Complete stainless steel construction option available upon request.



Features

- Double acting pneumatic linear actuator
- Threaded air connection ports located on either end of the actuator
- Optional magnetic position sensing installed
- Optional adjustable cushioning function installed in either stroke direction
- Optional manual override control
- Working pressure range: 1 - 10 bar
- Working temperature range: -20°C - +70°C

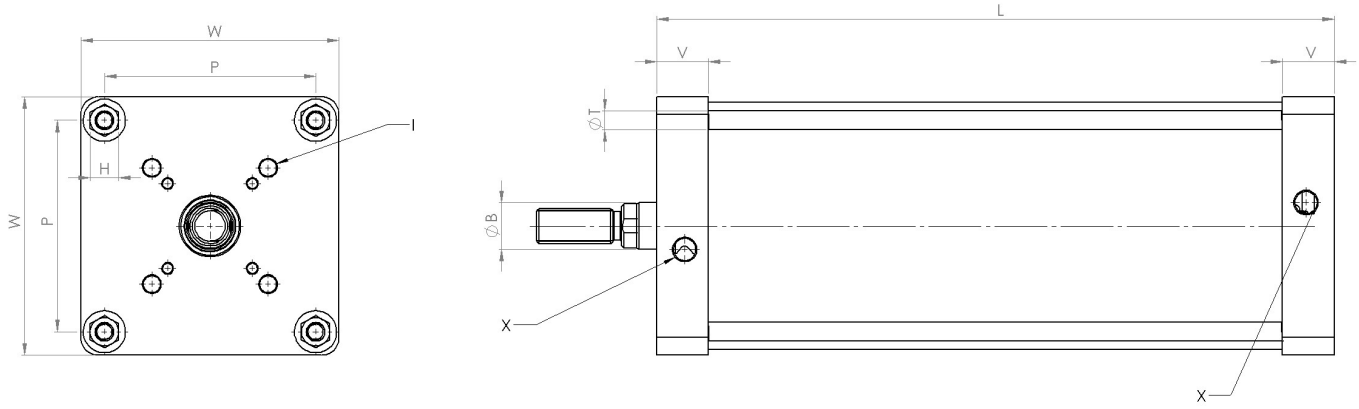
Technical data *(5 bar working pressure)*

ø Bore (mm)	Min. Stroke (mm)	Max. Stroke * (mm)	Theoretical Actuation Force (Extend) (N)	Theoretical Actuation Force (Retract) (N)
100	10	1000	3,927	3,681
125	10	1000	6,136	5,734
160	10	1000	10,053	9,651
200	10	1000	15,708	15,080
250	10	1000	24,543	23,915
320	10	1000	40,212	39,584

*Larger strokes are available upon special request.

Contact “Sales@cotswoldfluidpower.co.uk” for further information.

Major Dimensions *(All units in 'mm' unless otherwise stated)*



øBore	øB	L **	W	V	øT	H (A/F)	P	X	I***
100	20	130 (+ STROKE)	110	30	10	17	87	G 1/4"	F07
125	32	134 (+ STROKE)	140	30	12	19	108	G 1/4"	F10
160	32	165 (+ STROKE)	180	44	16	24	140	G 1/4"	F10
200	40	178 (+ STROKE)	220	44	16	24	180	G 1/2"	F10 + F14
250	40	181 (+ STROKE)	270	50	16	24	226	G 1/2"	F10 + F14
320	40	186 (+ STROKE)	350	50	18	27	290	G 1/2"	F10 + F14

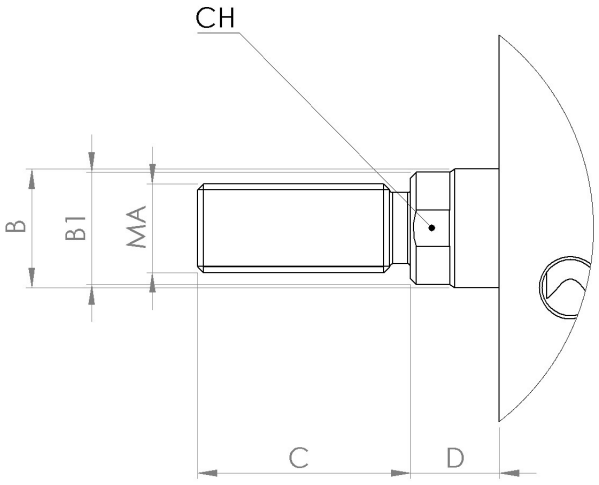
** "L" specifies the length of the of the "NON-CUSHIONED" configuration of the cylinder.

Length of cylinder on a "CUSHIONED" configuration will vary depending on the direction and length of cushioning required.

*** "I" states standard ISO flange interface connections. Alternative interface connections are available upon special request.

Contact "Sales@cotswoldfluidpower.co.uk" for further information.

Piston-Rod Dimensions



øBore	øB	MA	C	D	CH	øB1
100	20	M16 x 1.5	32	16	16	18
125	32	M20 x 1.5	54	24	26	28
160	32	M20 x 1.5	54	24	26	28
200	40	M30 x 1.5 *(stroke < 450mm)* M36 x 2 *(stroke ≥ 450mm)*	72	30	32	38
250	40	M30 x 1.5 *(stroke < 450mm)* M36 x 2 *(stroke ≥ 450mm)*	72	30	32	38
320	40	M36 x 2	72	30	32	38

Manual override information

- The CFP20140 series of pneumatic actuators has the ability to be installed with a manual override function. If installed this will give the user manual control over the actuator in the form of a hand wheel in the event of air supply failure.
- The manual override is operated by turning the handwheel attached to the gear box mounted to the rear of the cylinder.
- Manual override can be installed to any bore and/or stroke actuator within the CFP20140 range.
- All operation/maintenance instructions concerning the manual override function will be provided.

Handwheel

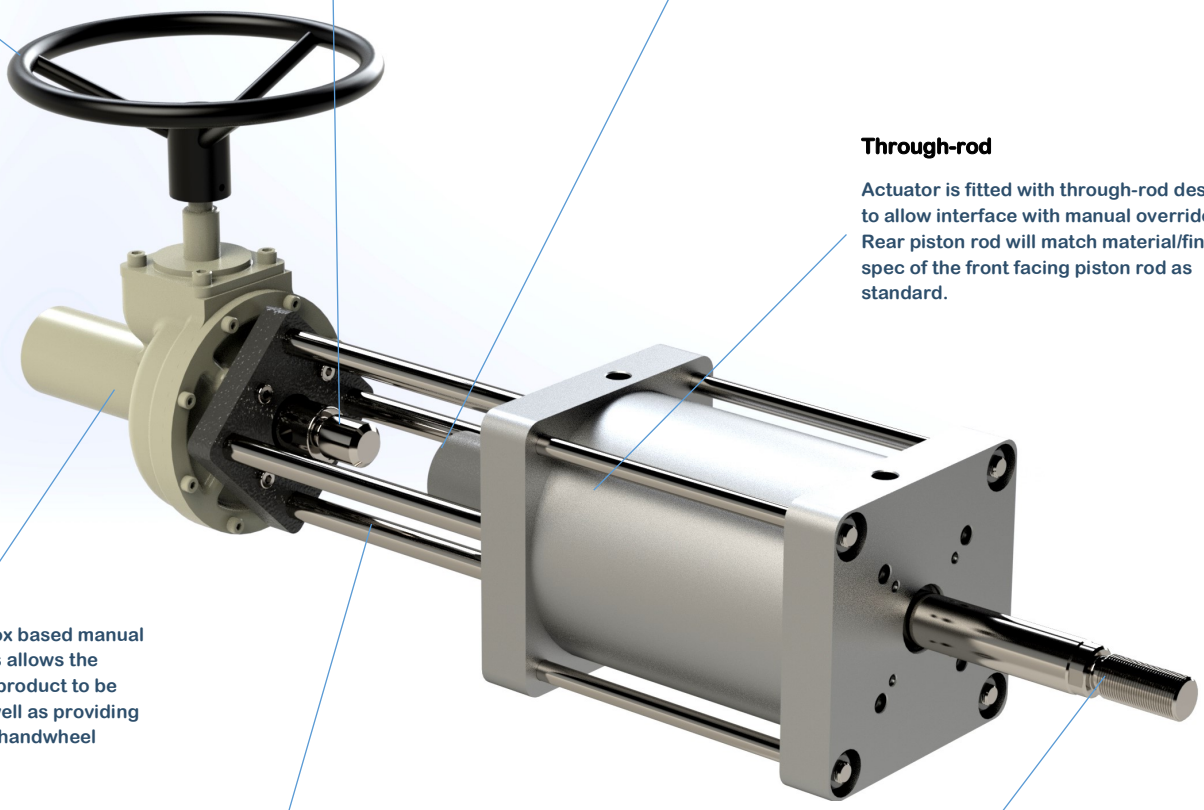
Painted steel handwheel, size will vary depending on the bore/stroke of the actuator.

Leadscrew

The stainless steel leadscrew will be pitched specific to each actuator bore size. This will ensure smooth actuation when under manual control.

Coupling

Under normal air conditions the manual override will be not be used. In case of air fail the manual override can be manually coupled to the actuator to engage manual override control.



Through-rod

Actuator is fitted with through-rod design to allow interface with manual override. Rear piston rod will match material/finish spec of the front facing piston rod as standard.

Gearbox

CFP utilises a gearbox based manual override design. This allows the overall length of the product to be greatly reduced as well as providing a more user friendly handwheel operation.

Bridgeworks

The mountings and bridge works for the manual override feature are stainless steel construction. All materials achieve a standard C3 corrosion resistance class, higher corrosion resistance can be achieved upon special request.

Standard function

Under normal air conditions the actuator will function as a standard CFP20140 series actuator, stroke and forces will not be altered by the manual override system.

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6.0 Company information

COTSWOLD FLUID POWER LTD design, manufacture and supply fluid power components and provide complete solutions for our customers with over 30 years' experience.

We have a standard range of pneumatic components as well as having the ability to source fluid power components from a wide range of manufacturers world wide.

We design and manufacture special valves, control systems, manifolds and actuators to meet customers' specific requirements.

For all sales and design enquiries or further information please do not hesitate to contact one of our team:

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