E-PUB-04-0016
Version 02, 2019-06-25

eDART actuators are engineered to be competitive in every field: they are of a conventional design and are easy for technicians to maintain; they have barrel sealing O-Rings and a dual O-Rings on the piston for superior leakage prevention; they are individually pressure tested for peace of mind and plant conformance.

Applications

- Dart valves
- Pinch valves
- Knife Gate valves
- Diaphragm valves
- Y-pattern valves
- eDART valves
- Dosing valves
- Sluice Gate Control
- Third party valves

Benefits

- Dual piston O-Rings and PTFE wear strip increase maintenance periods
- Easy for plant technicians to maintain due to familiar standard tie bar design
- Spring actions are piped double acting for exceptional control
- Engineered feedback linkages to position give better linear response
- Internal magnetic feedback option for difficult or impossible mechanical feedback applications

Options

- Double Acting (DA)
- Fail Retracted (FR)
- Fail Extended (FE)
- Stroke may be limited either with an internal hard stop or by shortening the barrel as required
- Full stainless steel construction for corrosion resistance
- Internal (Linear Pot) Feedback

Features

- Double piston seal and continuous PTFE wear strip for reliably long service and reduced wear
- Variety of stroke lengths available
- Compact and robust design
- Self-contained spring pack – welded pre-compressed safe design
- 8 bar rated

Material of Construction

- End plates – mild steel galvanised and E-Coated
- Cover plate –stainless steel
- Cylinder tube – glass reinforced fibre
- Shaft – stainless steel
- Guide Bush – vesconite
- O-rings – Buna N or Viton
- Wear strip – PTFE

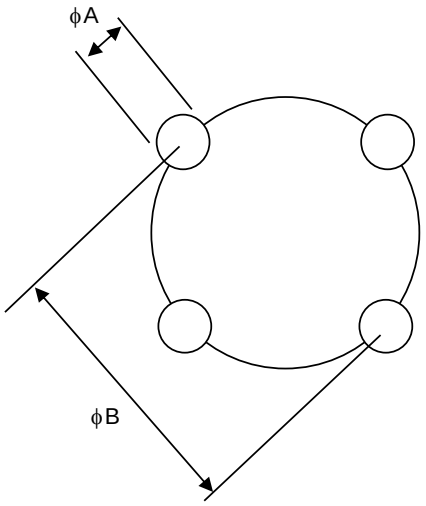
Standard Sizes

Size	Stroke [mm]	Notes
160	105; 165	Spring Pack is only available in 105mm stroke
200	175; 250	Spring Pack is only available in 175mm stroke
250	280	Spring Pack is only available in 280mm stroke
300	350; 450	There are two standard strokes on this model
400	490; 510; 585; 620	Customisable lengths
550	680	Customisable lengths

Double Acting Strokes can be customised and Biased Strokes can be reduced
Air Springs are offered where mechanical springs are

Mounting Details

Actuator size	Thread (A)	øB PCD	Thread depth
160	4x M12	120 mm	12 mm
200		150 mm	
250		200 mm	
300	4x M16		
400		300 mm	15 mm
550	8x M16		20 mm



Air hole Details

Actuator size	*Air hole fitting size*
160	¼" NPT
200	
250	
300	*½" NPT*
400	
550	

Actuator Thrusts

The thrusts developed by the actuators are tabulated below.

Force [tonnes]		*Actuator Size*					
		160	*200*	*250*	*300*	*400*	*550*
Pressure [bar(g)]	*1*	0.20	0.32	0.5	0.72	1.3	2.4
	2	0.41	0.64	1.0	1.4	2.6	4.8
	3	0.61	0.96	1.5	2.2	3.8	7.3
	4	0.82	1.3	2.0	2.9	5.1	9.7
	4.5	***0.92***	***1.4***	***2.3***	***3.2***	***5.8***	***11***
	5	1.0	1.6	2.5	3.6	6.4	12
	6	1.2	1.9	3.0	4.3	7.7	15
	7	1.4	2.2	3.5	5.0	9.0	17
	8	1.6	2.6	4.0	5.8	10	19

Free Air Volumes

The free air volumes required by the actuators are tabulated below.

Free Air [litres]			*Actuator Working Pressure [bar(g)]*					
		stroke	*1.0 bar*	*2.0 bar*	*4.0 bar*	*4.5 bar*	*5.0 bar*	*8.0 bar*
Actuator Size	*160*	*105 mm*	4.2 l	6.3 l	10 l	11 l	13 l	19 l
		165 mm	6.6 l	9.9 l	16 l	18 l	20 l	30 l
	200	*175 mm*	11 l	16 l	27 l	30 l	33 l	49 l
		250 mm	16 l	23 l	39 l	43 l	47 l	70 l
	250	*280 mm*	27 l	41 l	68 l	75 l	82 l	120 l
	300	*350 mm*	49 l	74 l	120 l	130 l	150 l	220 l
		450 mm	63 l	95 l	160 l	170 l	190 l	280 l
	400	*490 mm*	120 l	180 l	300 l	340 l	370 l	550 l
		700 mm	170 l	260 l	440 l	480 l	520 l	780 l
	550	*680 mm*	320 l	480 l	800 l	880 l	960 l	1400 l

Internal Feedback

eDART has developed an internal feedback mechanism using a Magnetic ***Linear Pot*** and positioner for use when mechanical feedback is either unwieldy or impossible. This is preferred on the larger sizes of actuators (where stroke > 300 mm).

Modular Volume Tank

Volume tanks may be offered should a fail action be required and a standard spring will not suffice. Various solenoids and switching valves can be piped to achieve any desired action.

Air Springs

Excess volume in the actuator can be used and is often a good solution for fail action. However, this is only applicable for modulating service and the actuator needs to be larger compared to the double acting actuator without fail action.