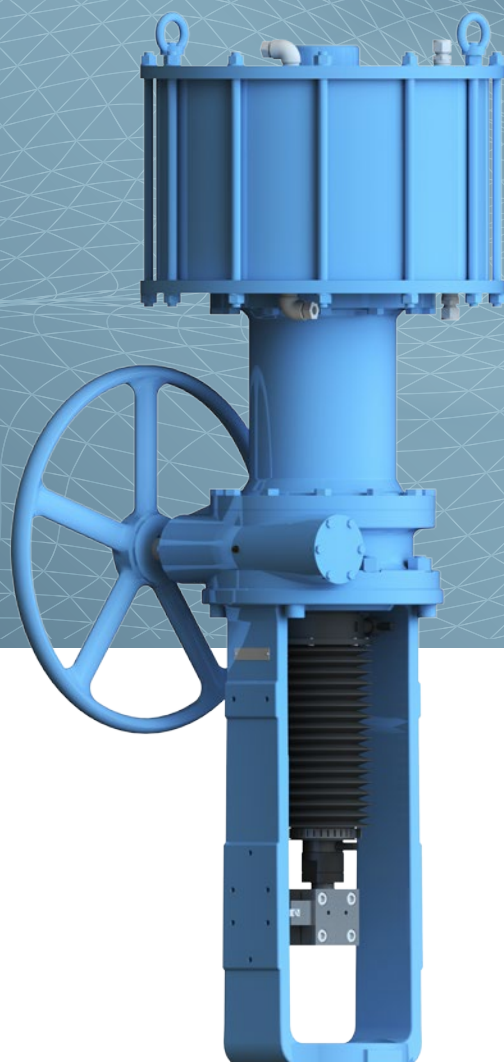


Double Acting **Piston Cylinder Actuators**

Series UA - 30



Revolutionizing Flow Control

Contents

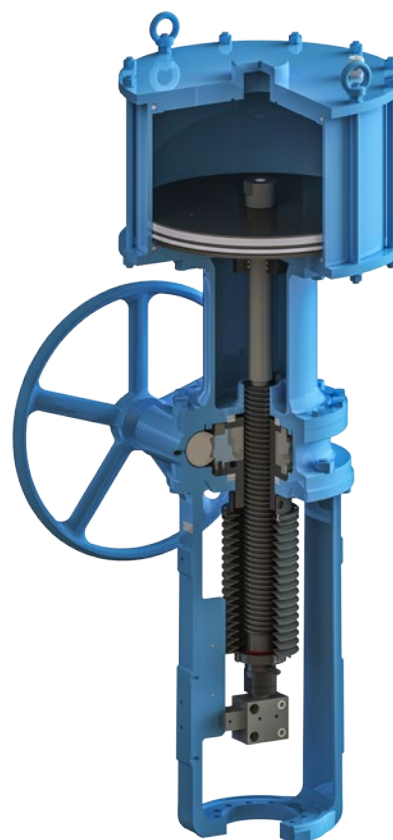
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Introduction

Series UA-30 double acting piston cylinder actuator is a linear actuated type, that provides accurate throttling or on-off operation for Globe control valves, Gate valves, Louvers, Dampers.

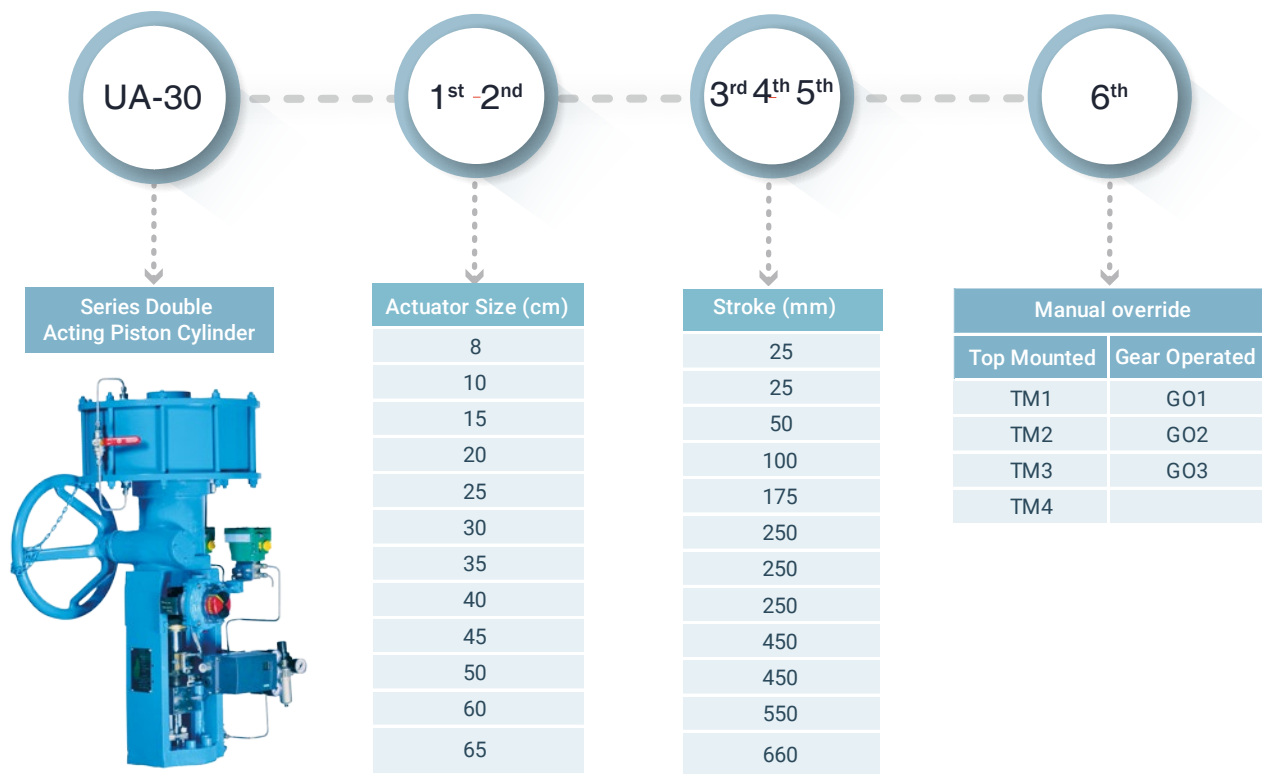
Main Features

- Stable piston arrangement with PTFE wear rings
- Optimised weight to thrust ratios
- Design validated by cyclic operational tests
- Perfect sealing
- High thrust capability of using air supplies up to 10 bar
- Multi-size options with long stroke capability
- Honed and hard chrome plated cylinders
- Stem protective gaiters also available
- Better ergonomics and effortless operation

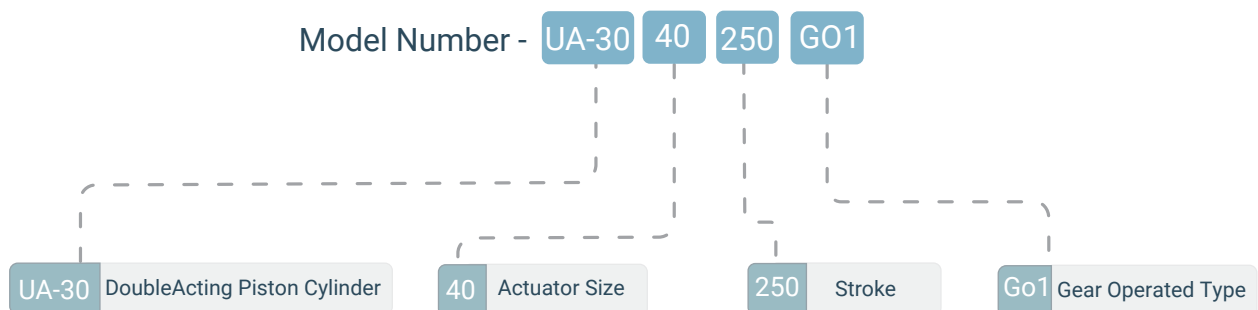


Model Numbering Method

Series UA-30 Actuator Code



Sample Model Numbering



General Description

Actuator Size	Refer table - 1
Operating Pressure	Minimum - 0.3 Kg/cm ²
	Maximum - 10 Kg/Cm ²
Actuator Thrust	Refer table - 2
Effective Piston Area	Refer table - 3
Cylinder Material	Seamless carbon steel pipe with honed & hard chrome plated
High Frequency Response	The double acting construction allows quick response to instrument signals.
Ambient Condition	Nitrile seal/ PTFE wear ring - 20 C to 80 C
	Viton seal/ PTFE wear ring - 20 C to 180 C
	EPDM seal/ PTFE wear ring - 40 C to 140 C
Travel / Stroke	Refer table - 1
Handwheels	Size 8 Cm - 20 Cm actuators are available with a top-mounted handwheel. All other actuator sizes can accommodate a gear operated side-mounted handwheel.(Refer table - 3)
Special Applications	Marine, Offshore services
Operating Supply Gases	Air, Other gases(optional)
Service	On-Off and Regulating service
Pneumatic Connection	Size up to size- 20 Cm comes with ¼" NPT (F) Other sizes come with ½" NPT (F)

Technical Data | Table-1

Actuator Size	Actuator Stem Dia	Effective Piston Area		Travel / Stroke (Max)	
		in ²	mm ²	Inches	mm
8	10	8.8	5675	1	25
10	20	13.4	8659	1	25
15	20	29.2	18869	2	50
20	20	51.2	33006	4	100
25	24	79.2	51071	7	175
30	32	113	73062	10	250
35	32	136.6	88141	10	250
40	40	185	119459	10	250
45	44	235.7	152053	18	450
50	46	286	184517	18	450
60	55	423.8	273397	22	550
65	55	498.6	321699	26	660

General Description

Available Thrust | Table-2

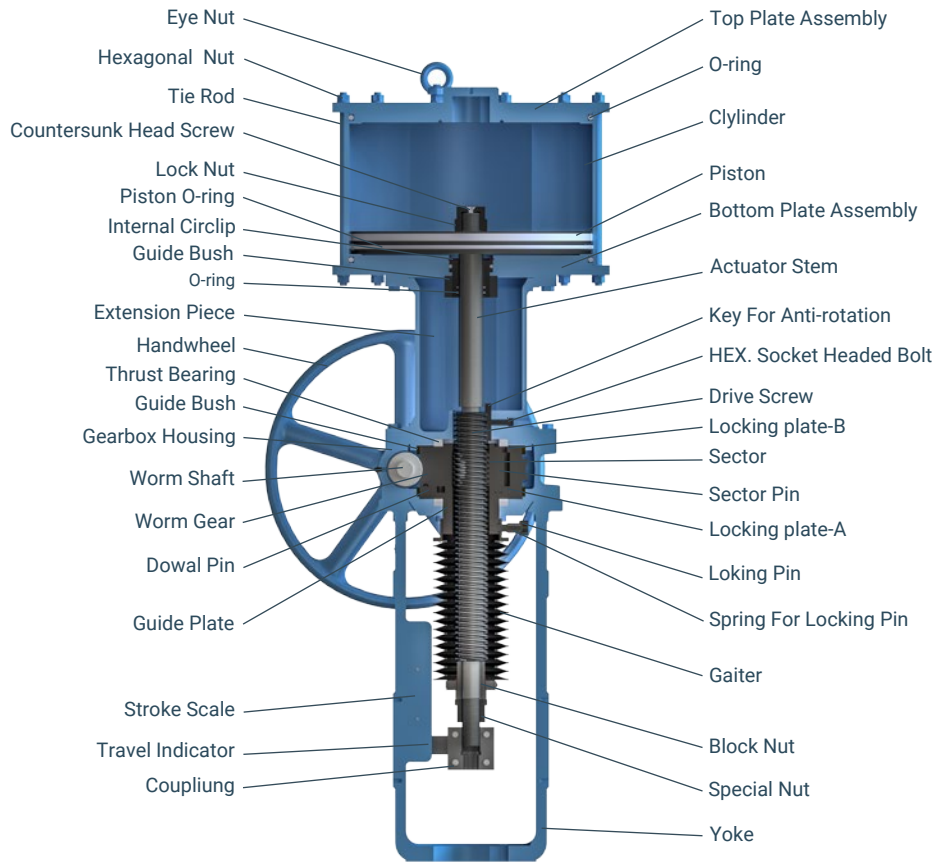
Supply Pressure (Bar)		2	3	4	4.5	5	5.5	6	6.5	7	8	9	10
Actuator Size (cm)	Effective Area (mm) ²	Available Thrust (N)											
		8	5675	1021	1532	2043	2298	2554	2809	3064	3320	3575	4086
10	8659	1559	2338	3117	3507	3897	4286	4676	5066	5455	6234	7014	7793
15	18869	3396	5095	6793	7642	8491	9340	10189	11038	11888	13586	15284	16982
20	33006	5941	8912	11882	13368	14853	16338	17823	19309	20794	23765	26735	29706
25	51071	9193	13789	18385	20684	22982	25280	27578	29876	32174	36771	41367	45963
30	73062	13151	19727	26302	29590	32878	36166	39453	42741	46029	52604	59180	65755
35	88141	15865	23798	31731	35697	39664	43630	47596	51563	55529	63462	71394	79327
40	119459	21503	32254	43005	48381	53757	59132	64508	69884	75259	86011	96762	107513
45	152053	27370	41054	54739	61581	68424	75266	82109	88951	95793	109478	123163	136848
50	184517	33213	49820	66426	74729	83033	91336	99639	107942	116246	132852	149459	166065
60	273397	49211	73817	98423	110726	123029	135332	147634	159937	172240	196846	221452	246057
65	321699	57906	86859	115812	130288	144765	159241	173718	188194	202670	231623	260576	289529

Handwheel Selection | Table-3

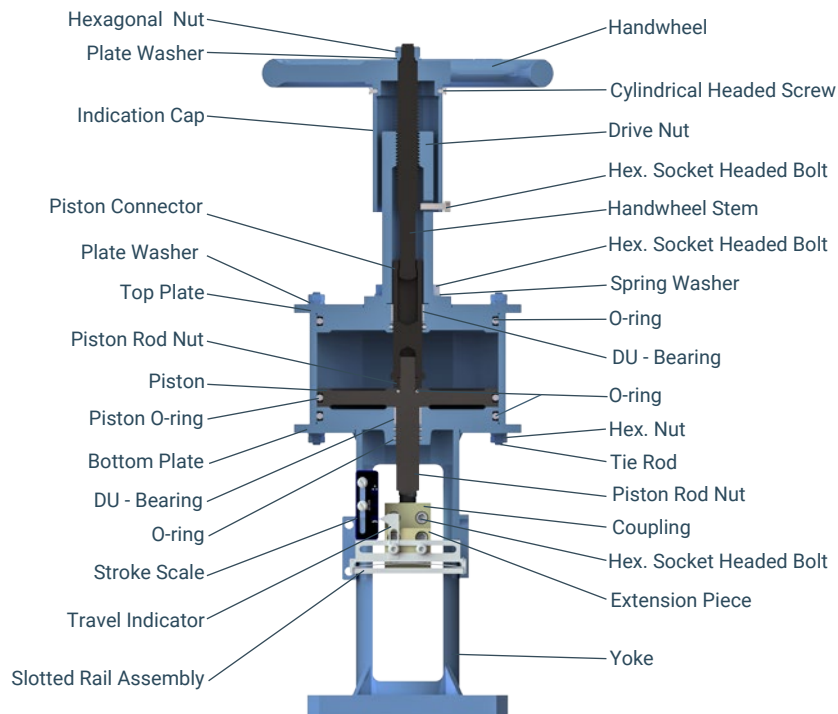
Actuator Size	Max.Travel		Actuator Thrust (Max 10 bar)		Manual override
	cm	Inches	mm	N	
8	1	25	5107	1148	Top Mounted Handwheel Type
10	1	25	7793	1752	
15	2	50	16982	3818	
20	4	100	29706	6678	
25	7	175	45963	10333	
30	10	250	65755	14782	Gear Operated Handwheel Type
35	10	250	79327	17833	
40	10	250	107513	24170	
45	18	450	136848	30765	
50	18	450	166065	37333	
60	22	550	246057	55316	
65	26	660	289529	65089	

Standard Construction

Series UA - 30 With Side Mounted Gear Operated Handwheel Type

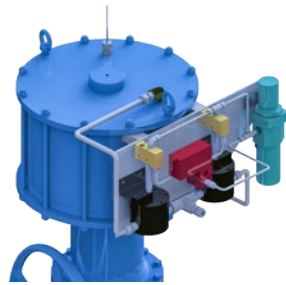


Series UA - 30 With Top Mounted Handwheel Type



Accessories

- Positioner
- Limit switch
- Air pressure regulator
- Air lock relay
- Volume booster
- Quick exhaust valve
- Flow restrictor
- Back-up system with tank
- Junction Box for electrical terminations



Principle of Operation

Series UA-30 double acting piston actuators utilize a pneumatically controlled piston that moves to generate thrust. A seal contained on the circumference of the piston provides a seal between the piston and the cylinder, preventing supply pressure leakage. From an equilibrium state, the actuator operates by reacting to a force unbalance that is created by increasing supply pressure on one side of the piston, and decreasing it on the other. This moves the piston up or down, and results in a repositioning of the attached control valve. Travel can be adjusted using travel limits within a valve positioner, which limit the travel range of the actuator. The optional handwheel manual override does not have the ability to act as a hard travel stop.

Manual override

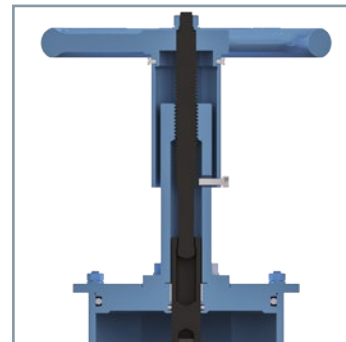
An optional handwheel manual override is capable of extending or retracting the actuator manually and can be engaged at any position from full open to full close.

Two types of hand wheel are available for fitting to the Series UA-30 range of piston cylinder actuators, as follows:

1. Top mounted handwheel
2. Side mounted gear operated handwheel

1. Top mounted hand wheel

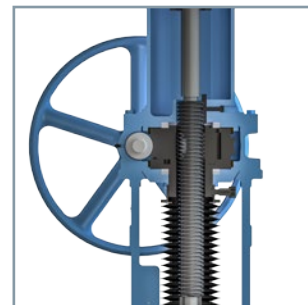
This hand wheel can be used to extend, or retract the stem as well as acting as either a high, or low limit stop. A neutral position is indicated on the mechanism when the actuator is in automatic operational mode. A neutral position is obtained with the handwheel screw in any position other than the indicated central neutral, providing a stop to limit travel in either direction.



Top mounted handwheel

2. Gear Operated hand wheel

Available throughout the range of actuator sizes up to UA-30 Size-60 (600mm), the hand wheels are capable of providing forces in either direction. The gearing has been selected to ensure easy operation up to its maximum thrust capability (see Table-2 on page-5).



Side mounted gear operated type



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With continual development of our products, Unicorn Valves reserve the right to amend and change the design and/or specification without prior notice.

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