

# Technical Bulletin A – 160

## Series 1600, 1700

### Linear Piston Actuator

70-16-14-05–EN REV. 2  
10/2021  
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Specification

## Series 1600, 1700 Features

### General

The Series 1700 double acting piston actuator and Series 1600 spring return piston actuators are designed to operate sliding-disc valves, such as wedge gate valves, knife gate valves and parallel slide valves as well as Globe control valves.

This actuator is compact and has a long stroke and large thrust.

### Performance

- Long stroke (maximum 600mm)
- Large Thrust Reliability
- Low hysteresis
- Light weight
- Easy maintenance

### Design Flexibility

- Double acting and spring return acting
- Single piston. Tandem pistons are option
- Wide selection of accessories available

### Scope of Design

- Maximum thrust : 150 to 13439kgf
- Cylinder bore : 140 to 585mm

### Actuation

- Double acting : Series 1700
- Spring acting : Series 1600D for fail open  
Series 1600R for fail Close

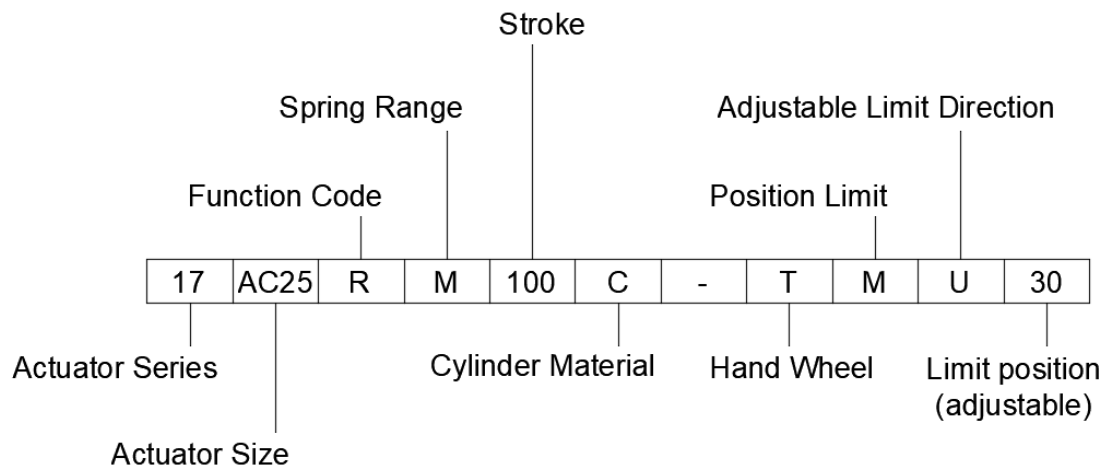
### Working Condition

- Maximum working pressure : 10.3Bar(150Psi)
- Maximum working temperature : 90°C
- Minimum working temperature : -40°C



Figure 1. 1600,1700 Series Piston Actuator.

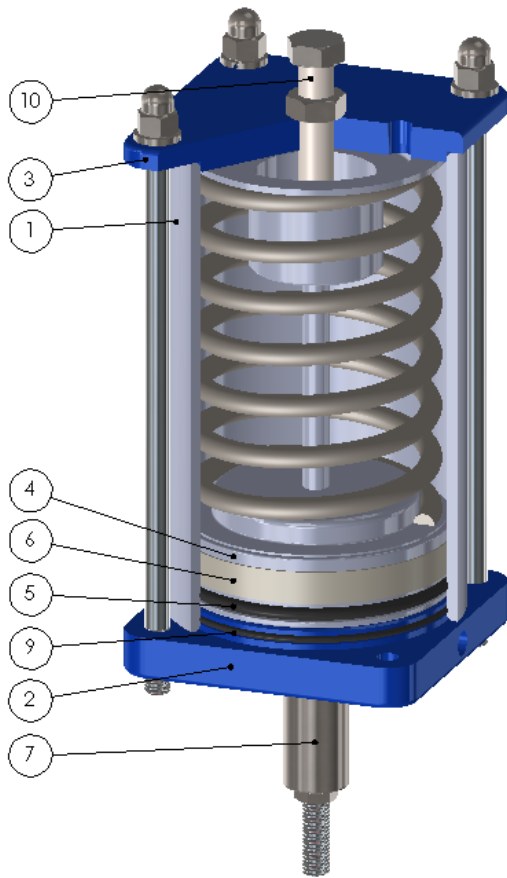
## How to Order



<b>1</b>	Actuator Series		
17	Double acting piston, Linear Type		
16	Spring return piston, Linear Type		
<b>2</b>	Actuator Size		
	17 Series Max. Stroke (mm)	16 Series Max. Stroke (mm)	
AC14	130	50	
AC17	170	50	
AC20	250	50	
AC25	350	100	
AC30	350	130	
AC40	450	200	
AC50	500	200	
AC60	600	250	
<b>3</b>	Function Code		
	Direction	Fail	Air to
R	Reverse	Close	Open
D	Direct	Open	Close
Z	Double Acting		
<b>4</b>	Spring Range		
	Description	Bar	Min. Air supply
M	Standard	2.0 ~ 3.0	5 BarG (72.5 psiG)
W	Weak	1.5 ~ 2.5	4 BarG (58 psiG)
Z	Special		
<b>5</b>	Stroke		
015	17, 16 Series, Design Specification Stroke		
:			
:			
600			

<b>6</b>	Cylinder Materials	
C	Carbon Steel	
Z	Special	
<b>7</b>	Hand Wheel	
X	None	
T	Top	(Up to AC30)
P	Top Side	
S	Side	
Z	Special	
<b>8</b>	Position Limit	
X	None	
M	Mechanical Stopper	
Z	Special	
<b>9</b>	Adjustable Limit Direction	
X	N/A	
U	Up Stop	
D	Down Stop	
<b>10</b>	Limit position (adjustable)	
XX	N/A	
OO	Stroke %	

**Part Material**



No.	Part name	Materials
1	Cylinder	STPG with Cr. Plated
2	Bottom cover	Carbon Steel
3	Head cover	Carbon Steel
4	Piston	Al
5	Piston ring	NBR
6	Wear ring	PTFE
7	Spindle	Stainless Steel
8	Spring	Carbon Steel
9	O-ring	NBR
10	Stopper	Stainless Steel

**THRUST TABLE**

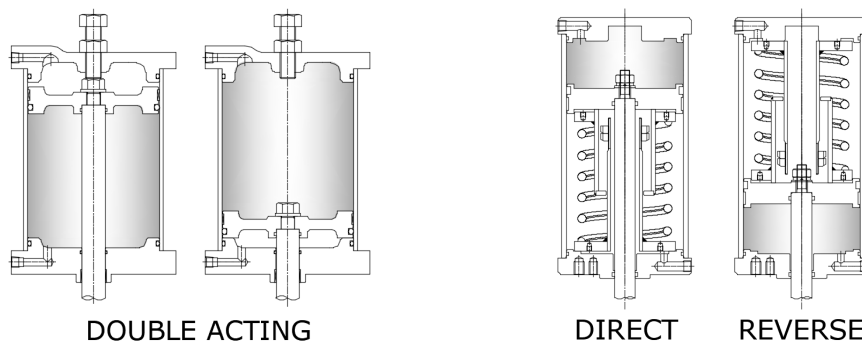
**DOUBLE ACTING (Series 1700)**  
Supply Air : 5.0 kgf/cm<sup>2</sup>G

SIZE	BORE mm	MAX STROKE mm	THRUST (kgf)	
			STEM DOWN	STEM UP
AC14	140	130	769.7	745.1
AC17	160	170	1005.3	980.8
AC20	200	250	1570.8	1535.5
AC25	250	350	2454.4	2419
AC30	300	350	3534.3	3435.8
AC40	390	450	5973	5854.2
AC50	490	500	9428.7	9236.3
AC60	585	600	13439.1	13246.7

**SPRING RETURN ACTING (Series 1600)**  
**SPRING RANGE : 2~3kgf/cm<sup>2</sup>G**

SIZE	BORE mm	MAX STROKE mm	THRUST (kgf)	
			1600D	1600R
AC14	140	50	307.9	298.1
AC17	160	50	402.1	392.3
AC20	200	50	628.3	614.2
AC25	250	100	981.7	967.6
AC30	300	130	1413.7	1381.9
AC40	390	200	2389.2	2341.7
AC50	490	200	3771.5	3694.5
AC60	585	250	5375.7	5298.7

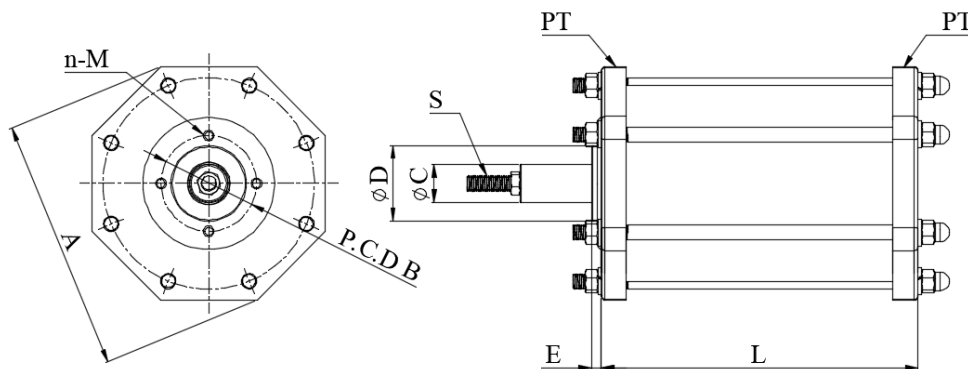
### Cylinder Volume for 1 Stroke



(Unit : Liter)

SIZE	SERIES 1700	SERIES 1600
AC14	2	0.8
AC17	3.5	1.1
AC20	7.9	1.6
AC25	17.2	5
AC30	24.8	9.2
AC40	53.8	23.9
AC50	94.3	37.8
AC60	161.3	67.2

### DIMENSION TABLE



Size	A	P.C.D B	n-M	ØC	ØD	E	S	PT	L	
									1700	1600
AC14	160	76/110	4-M10xP1.5 DP.15 / 4-M12xP1.75 DP.15	25	60	5	M12xP1.75	1/4"	235	333
AC17	194	110	4-M12xP1.75 DP.18	25	80	8	M12xP1.75	1/4"	282	364
AC20	250	110	6-M12xP1.75 DP.18	30	80	9	M18xP1.5	1/4"	380	364
AC25	300	110	6-M12xP1.75 DP.20	30	80	10	M18xP1.5	3/8"	515	504
AC30	356	110/135	6-M12xP1.75 DP.20 / 6-M16xP2.0 DP.20	45	200	5	M27xP3.0	3/8"	534	534
AC40	500	170	6-M16xP2.0 DP.16	55	89	11	M36xP4.0	3/8"	633	767
AC50	560	170	6-M16xP2.0 DP.20	70	102	6	M48xP3.0	1/2"	715	884
AC60	720	230	6-M24xP3.0 DP.30	70	160	-	M48xP3.0	1/2"	815	983

## Warranty / Remedy

Korea Motoyama Inc. warrants goods of its manufacture as being free of defective materials and faulty workmanship for 12 months from the date of shipment, unless otherwise specified. In this period, all of our products claimed by original defects may be returned to our factory after notice and authorization by us. If warranted goods are returned to Korea Motoyama Inc. during the period of coverage, it will be repaired or replaced without charge for those items it finds defective. Such defects shall be exclusive of the effects of corrosion, erosion, normal wear or improper handling and storage. In case our engineers have field service, the user shall detach and install valves by his cost. Determination of the suitability of the Products for the use contemplated by the buyer or buyer's customer(s) is the sole responsibility of the buyer in connection therewith. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.

**Specifications are subject to change without notices.**

 **KOMOTO**  
VALVES & CONTROLS

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