

# Simple Specials:



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## How to Order When Combining Made-to-Order Specifications

How to order when combining two specifications: simple specials (XA□) and made-to-order common specifications (XB□, XC□).

■How to Order Example: 1 (Enter the symbol in alphabetical order.)

CDQ2B25 - 30D - **XA7B6**

Note) "X" of XB6 is not necessary.

### ●Made to Order

Symbol	Specifications
<b>XA7</b>	Change of rod end shape
<b>XB6</b>	Heat resistant cylinder

■How to Order Example: 2 (Enter the symbol in numerical order when alphabetical letters are the same.)

CDQ2B25 - 30DZ - M9BW - **XC4C6**

Note) "X" of XC6 is not necessary.

### ●Made to Order

Symbol	Specifications
<b>XC4</b>	With heavy duty scraper
<b>XC6</b>	Made of stainless steel

\* Please contact SMC for the availability of a desired combination of simple specials and made-to-order specifications or a combination of three or more made-to-order specifications.

# Simple Specials: -XA0 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Part of the CG1 series (model highlighted in red) is to be discontinued as of the end of February 2025.  
Please select the CG1-Z1 series instead.

Symbol

## 1 Change of Rod End Shape

**-XA0 to XA30**

### Applicable Series

Series			Action	Symbol for change of rod end shape	Note
CJP2	Pin cylinder	CJP2	Double acting, Single rod	XA0/1/10/11	ø6, ø10, ø16
CJ2	Standard type	CJ2-Z	Double acting, Single rod	XA0/1/10/11	
			Single acting (Spring return/extend)	XA0/1/10/11	
	Non-rotating rod type	CJ2W-Z	Double acting, Double rod	XA0/1/10/11	
		CJ2K-Z	Double acting, Single rod	XA0/1/10/11	
	With speed controller type		Single acting (Spring return/extend)	XA0/1/10/11	
		CJ2Z-Z	Double acting, Single rod	XA0/1/10/11	
		CJ2ZW-Z	Double acting, Double rod	XA0/1/10/11	
		Direct mount type	CJ2RA-Z	Double acting, Single rod	XA0/1/10/11
			Single acting (Spring return/extend)	XA0/1/10/11	
	Non-rotating rod, Direct mount type	CJ2RK-Z	Double acting, Single rod	XA0/1/10/11	
		Single acting (Spring return/extend)	XA0/1/10/11		
Smooth cylinder	CJ2Y-Z	Double acting, Single rod	XA0/1/10/11		
	CM2	Standard type	CM2-Z	Double acting, Single rod	XA0 to 30
			Single acting (Spring return/extend)	XA0 to 30	
Standard type (Air-hydro type)		CM2W-Z	Double acting, Double rod	XA0 to 30	
		CM2H	Double acting, Single rod	XA0 to 30	
Non-rotating rod type		CM2WH	Double acting, Double rod	XA0 to 30	
		CM2K-Z	Double acting, Single rod	XA0,1,6,10,11,13,14,17,19,21	
		CM2KW-Z	Double acting, Double rod	XA0,1,6,10,11,13,14,17,19,21	
		CM2K-Z	Single acting (Spring return/extend)	XA0,1,6,10,11,13,14,17,19,21	
Direct mount type		CM2R-Z	Double acting, Single rod	XA0 to 30	
Non-rotating rod, Direct mount type		CM2RK-Z	Double acting, Single rod	XA0,1,6,10,11,13,14,17,19,21	
Centralized piping type		CM2□□P	Double acting, Single rod	XA0 to 30	
End lock cylinder		CBM2	Double acting, Single rod	XA0 to 30	
Smooth cylinder	CM2Y-Z	Double acting, Single rod	XA0 to 30		
CG1	Air cylinder	CG1-Z1	Double acting, Single rod	XA0 to 30	Excludes cylinders with a rod end bracket
	Standard type	CG1-Z	Double acting, Single rod	XA0 to 30	
			CG1W-Z	Double acting, Double rod	XA0 to 30
	Standard type (Air-hydro type)	CG1H-Z	Double acting, Single rod	XA0 to 30	
	Non-rotating rod type	CG1K-Z	Double acting, Single rod	XA0 to 30	
	Direct mount type	CG1R-Z	Double acting, Single rod	XA0 to 30	
	End lock cylinder	CBG1-Z1	Double acting, Single rod	XA0 to 30	
		CBG1	Double acting, Single rod	XA0 to 30	
	Smooth cylinder	CG1Y-Z	Double acting, Single rod	XA0 to 30	
CG3	Air cylinder	CG3-Z1	Double acting, Single rod	XA0 to 30	
	Standard type	CG3	Double acting, Single rod	XA0 to 30	

# Simple Specials: -XA0 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

## 1 Change of Rod End Shape

**-XA0 to XA30**

Series			Action	Symbol for change of rod end shape	Note
<b>MB</b>	Standard type	<b>MB-Z</b>	Double acting, Single rod	XA0 to 30	Only 1 end can be changed. A special order is required for changes to both ends.
		<b>MBW-Z</b>	Double acting, Double rod	XA0 to 30	
	Non-rotating rod type	<b>MBK-Z</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	
	With end lock type	<b>MBB</b>	Double acting, Single rod	XA0 to 30	
	Smooth cylinder	<b>MBY-Z</b>	Double acting, Single rod	XA0 to 30	
<b>MB1</b>	Standard type	<b>MB1-Z</b>	Double acting, Single rod	XA0 to 30	Only 1 end can be changed. A special order is required for changes to both ends.
		<b>MB1W-Z</b>	Double acting, Double rod	XA0 to 30	
	Non-rotating rod type	<b>MB1K-Z</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	
<b>CA2</b>	Standard type	<b>CA2-Z</b>	Double acting, Single rod	XA0 to 30	Only 1 end can be changed. A special order is required for changes to both ends.
		<b>CA2W-Z</b>	Double acting, Double rod	XA0 to 30	
	Non-rotating rod type	<b>CA2K</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	
	Standard type (Air-hydro type)	<b>CA2□H</b>	Double acting, Single rod	XA0/1/3/5 to 8/10/11/13 to 23/26 to 30	
	End lock cylinder	<b>CBA2</b>	Double acting, Single rod	XA0 to 30	
	Smooth cylinder	<b>CA2Y-Z</b>	Double acting, Single rod	XA0 to 30	
<b>CS1</b>	Standard type	<b>CS1</b>	Double acting, Single rod	XA0 to 30	
		<b>CS1W</b>	Double acting, Double rod	XA0 to 30	
	Low friction type	<b>CS1□Q</b>	Double acting, Single rod	XA0 to 30	
<b>CS2</b>	Standard type	<b>CS2</b>	Double acting, Single rod	XA0 to 30	
		<b>CS2W</b>	Double acting, Double rod	XA0 to 30	
	Long stroke	<b>CS2-V</b>	Double acting, Single rod	XA0 to 30	
	Axial centralized piping	<b>CS2□P</b>	Double acting, Single rod	XA0 to 30	
	Smooth cylinder	<b>CS2Y</b>	Double acting, Single rod	XA0 to 30	
<b>CJ5</b>	Stainless steel cylinder	<b>CJ5-S</b>	Double acting, Single rod	XA0/1/10/11	
<b>CG5</b>	Stainless steel cylinder	<b>CG5-S</b>	Double acting, Single rod	XA0 to 30	
<b>CN CL</b>	Cylinder with lock	<b>CNG</b>	Double acting, Single rod	XA0 to 30	
		<b>CNA2</b>	Double acting, Single rod	XA0 to 30	
		<b>CNS</b>	Double acting, Single rod	XA0 to 30	
		<b>CLS</b>	Double acting, Single rod	XA0 to 30	
<b>MWB</b>	Cylinder with lock	<b>MWB</b>	Double acting, Single rod	XA0 to 30	
	Lock unit	<b>MWB-UT</b>	—	XA1 to 30	Except XA2, XA9, XA12, XA24, XA25
<b>CL</b>	Fine lock cylinder	<b>CLJ2</b>	Double acting, Single rod	XA0/1/10/11	
		<b>CLM2</b>	Double acting, Single rod	XA0 to 30	
		<b>CLG1</b>	Double acting, Single rod	XA0 to 30	
<b>CL</b>	Locked-up cylinder	<b>CL1</b>	Double acting, Single rod	XA0 to 30	
<b>CV</b>	Valve mounted cylinder	<b>CVJ5</b>	Double acting, Single rod	XA0/1/10/11	
		<b>CVJ3</b>	Single acting (Spring return/extend)	XA0/1/10/11	
		<b>CVM5</b>	Double acting, Single rod	XA0 to 30	
		<b>CVM3</b>	Single acting (Spring return/extend)	XA0 to 30	
		<b>CV3</b>	Double acting, Single rod	XA0 to 30	
		<b>CVS1</b>	Double acting, Single rod	XA0 to 30	
		<b>CVM5K</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	
		<b>CVM3K</b>	Single acting (Spring return/extend)	XA0/1/6/10/11/13/14/17/19/21	
		<b>CV3K</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	ø40 to ø63
		<b>CVS1K</b>	Double acting, Single rod	XA0/1/6/10/11/13/14/17/19/21	ø40 to ø63

# Simple Specials: -XA0 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

## 1 Change of Rod End Shape

-XA0 to XA30

### ⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "\*" will be as follows to the rod diameter (D).  
Enter any special dimension you desire.  
 $D \leq 6 \rightarrow D - 1 \text{ mm}$ ,  $6 < D \leq 25 \rightarrow D - 2 \text{ mm}$ ,  $D > 25 \rightarrow D - 4 \text{ mm}$
- In the case of double rod type and single acting retraction type, enter the dimensions when the rod is retracted.
- The same shape as the standard type is "A0".  
(The specifications of A0 are that only dimensions A and H are changed from the standard type. Excludes MWB-UT.)
- For the MWB-UT, there is no need to specify an H dimension.
- For the MWB-UT, to change 1 side, specify on 1 Simple Specials specification sheet, and to change both sides, specify on 2 Simple Specials specification sheets.

<b>Symbol: A0</b> 	<b>Symbol: A1</b> 	<b>Symbol: A2</b> 	<b>Symbol: A3</b> 
<b>Symbol: A4</b> 	<b>Symbol: A5</b> 	<b>Symbol: A6</b> 	<b>Symbol: A7</b> 
<b>Symbol: A8</b> 	<b>Symbol: A9</b> 	<b>Symbol: A10</b> 	<b>Symbol: A11</b> 
<b>Symbol: A12</b> 	<b>Symbol: A13</b> 	<b>Symbol: A14</b> 	<b>Symbol: A15</b> 

# Simple Specials: -XA0 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

## 1 Change of Rod End Shape

Symbol

-XA0 to XA30

<p>Symbol: <b>A16</b></p>	<p>Symbol: <b>A17</b></p>	<p>Symbol: <b>A18</b></p>	<p>Symbol: <b>A19</b></p>
<p>Symbol: <b>A20</b></p>	<p>Symbol: <b>A21</b></p>	<p>Symbol: <b>A22</b></p>	<p>Symbol: <b>A23</b></p>
<p>Symbol: <b>A24</b></p>	<p>Symbol: <b>A25</b></p>	<p>Symbol: <b>A26</b></p>	<p>Symbol: <b>A27</b></p>
<p>Symbol: <b>A28</b></p>	<p>Symbol: <b>A29</b></p>	<p>Symbol: <b>A30</b></p>	

# Simple Specials: XA1/2/6/7/11/17/18: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

## 2 CUJ (ø6 to ø20): Change of Rod End Shape

Symbol  
**-XA1/2/6/7/11/17/18**

### Applicable Series

Series			Action	Symbol for change of rod end shape
CUJ	Standard type	CUJ	Double acting, Single rod	ø6 to ø10 XA1/XA10/XA11/XA18 ø12 to ø20 XA1/XA2/XA6/XA7/XA11 XA17/XA18

### ⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "\*" will be as follows to the rod diameter (D).  
Enter any special dimension you desire.  
ø6 to ø16 → D - 1 mm    ø20 → D - 2 mm
- It is impossible to manufacture when XA17 and XA18 are the same male thread diameter as the piston rod external diameter.
- Please contact SMC separately for the piston rod end pattern part numbers other than the table above and the cases other than the manufacturing conditions.

<b>Symbol: A1</b> 	<b>Symbol: A2</b> 	<b>Symbol: A6</b> 	<b>Symbol: A7</b> 
<b>Symbol: A11</b> 	<b>Symbol: A17</b> 	<b>Symbol: A18</b> 	

### Conditions of Manufacture

ø6 to ø10

Symbol	Conditions of Manufacture
<b>XA1</b>	ø6 øM: 3.5 mm or less
	ø8 øM: 4.5 mm or less
	ø10 øM: 5 mm or less
<b>XA11</b>	ø6 SR2 mm or more
	ø8 SR2.5 mm or more
	ø10 SR3 mm or more
<b>XA18</b>	ø6 H1: M3 only, X: 48 mm or less
	ø8 H1: M4 only, X: 48 mm or less
	ø10 H1: M5 only, X: 48 mm or less

ø12 to ø20

Symbol	Conditions of Manufacture
<b>XA1</b>	ø12 øM: 3 to 5.4 mm
	ø16 øM: 3 to 7 mm
	ø20 øM: 4 to 8 mm
<b>XA2</b>	ø12 øJ: 4 mm or more, øI: 6 mm or less
	ø16 øJ: 4 mm or more, øI: 6 mm or less
	ø20 øJ: 5 mm or more, øI: 11 mm or less
<b>XA6</b>	ø12 H: M4 or less
	ø16 H: M6 or less
	ø20 H: M6 or less
<b>XA7</b>	ø12 H: M4 or less
	ø16 H: M5 or less
	ø20 H: M6 or less

Symbol	Conditions of Manufacture
<b>XA11</b>	ø12 SR3 mm only
	ø16 SR4 mm only
	ø20 SR5 mm only
<b>XA17</b>	ø12 H1: M5 or more, X: 20 mm or less
	ø16 H1: M6 or more, X: 22.5 mm or less
	ø20 H1: M8 or more, X: 26.5 mm or less
<b>XA18</b>	ø12 H1: M5 or more, X: 20 mm or less
	ø16 H1: M6 or more, X: 22.5 mm or less
	ø20 H1: M8 or more, X: 26.5 mm or less

# Simple Specials: XA1/2/6/7/11/17/18: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

## 3 CQS/CQ2/RQ/CLQ (ø12 to ø25): Change of Rod End Shape

**-XA1/2/6/7/11/17/18**

### Applicable Series

Series		Action	Symbol for change of rod end shape
CQS	Standard type	CQS Double acting, Single rod Spring acting (Spring return) <sup>(Note)</sup>	XA1/XA2/XA6
		CQSW Double acting, Double rod	XA7/XA11
	Long stroke	CQS Double acting, Single rod	XA17/XA18
	Anti-lateral load	CQS-S Double acting, Single rod	
		CQSK Double acting, Single rod	XA1/XA2 XA6/XA11
	Non-rotating rod type	CQSKW Double acting, Double rod (Non-rotating side)	
		CQSKW Double acting, Double rod (Round rod side)	XA1/XA2/XA6/XA7 XA11/XA17/XA18
	Longer life cylinder	CQS-XB24 Double acting, Single rod	XA6/XA7/XA17/XA18

(Note) Single acting, spring extend type is available as a special order.

### ⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "\*" will be as follows to the rod diameter (D). Enter any special dimension you desire.  
ø12, ø16 → D - 1 mm ø20, ø25 → D - 2 mm
- In the case of double rod, fill in the dimension when the rod is retracted.
- It is impossible to manufacture when XA17 and XA18 are the same male thread diameter as the piston rod external diameter.
- Please contact SMC separately for the piston rod end pattern part numbers other than the table above and the cases other than the manufacturing conditions.
- For the CQS-XB24 and CQ2-XB24, the L dimension should be made smaller than that of the standard product.

Series		Action	Symbol for change of rod end shape
CQ2 (ø12 to ø25)	Standard type	CQ2-Z Double acting, Single rod Spring acting (Spring return)	XA1/XA2/XA6 XA7/XA11 XA17/XA18
		CQ2W-Z Double acting, Double rod	
	Axial piping type (Centralized piping type)	CQP2 Double acting, Single rod Single acting (Spring return)	
		CQ2K-Z Double acting, Single rod	XA1/XA2/XA6 XA11/XA17
	Non-rotating rod type	CQ2KW-Z Double acting, Double rod (Non-rotating side)	
		CQ2KW-Z Double acting, Double rod (Round rod side)	XA1/XA2/XA6/XA7 XA11/XA17/XA18
	Longer life cylinder	CQ2-XB24 Double acting, Single rod	XA6/XA7 XA17/XA18
RQ	Standard type	RQ Double acting, Single rod	XA1/XA2/XA6/XA7 XA11/XA17/XA18
CLQ (ø20 to ø25)	With lock	CLQ Double acting, Single rod	XA1/XA2/XA6/XA7 XA11/XA17/XA18

<b>Symbol: A1</b> 	<b>Symbol: A2</b> 	<b>Symbol: A6</b> 	<b>Symbol: A7</b> 
<b>Symbol: A11</b> 	<b>Symbol: A17</b> 	<b>Symbol: A18</b> 	

### Conditions of Manufacture

Change of rod end shape/Symbol	Single rod type	Double rod type
XA1	For ø12 øM: 3 mm or more 5 mm or less	øM: ø5 mm or less
	ø16 øM: 3 mm or more 7 mm or less	øM: ø7 mm or less
	ø20 øM: 4 mm or more 8 mm or less	øM: ø8 mm or less
	ø25 øM: 4 mm or more 10 mm or less	øM: ø10 mm or less
XA2	For ø12 øJ: 4 mm or more, W1: 6 mm or less	øJ: 3 mm or more, W1: 6 mm or less
	ø16 øJ: 4 mm or more, W1: 6 mm or less	øJ: 4 mm or more, W1: 6 mm or less
	ø20 øM: 5 mm or more, W1: 11 mm or less	øJ: 5 mm or more, W1: 11 mm or less
	ø25 øJ: 6 mm or more, W1: 13 mm or less	øJ: 6 mm or more, W1: 13 mm or less
XA6	For ø12 H: M4 or less	H: M4 or less
	ø16 H: M6 or less	H: M6 or less
	ø20 H: M6 or less	H: M6 or less
	ø25 H: M8 or less	H: M8 or less
XA7	For ø12 H: M4 or less	H: M4 or less
	ø16 H: M5 or less	H: M5 or less
	ø20 H: M6 or less	H: M6 or less
	ø25 H: M8 or less	H: M8 or less

Change of rod end shape/Symbol	Single rod type	Double rod type
XA11	For ø12 SR3 mm only	SR3 mm or more
	ø16 SR4 mm only	SR4 mm or more
	ø20 SR5 mm only	SR5 mm or more
	ø25 SR6 mm only	SR6 mm or more
XA17	For ø12 H: M5 or more, X: 20 mm or less	H: M5 or less
	ø16 H: M6 or more, X: 22.5 mm or less	H: M6 or less
	ø20 H: M8 or more, X: 26.5 mm or less	H: M8 or less
	ø25 H: M10 or more, X: 33 mm or less	H: M10 or less
XA18	For ø12 H: M5 or more, X: 20 mm or less	H: M5 or less
	ø16 H: M6 or more, X: 22.5 mm or less	H: M6 or less
	ø20 H: M8 or more, X: 26.5 mm or less	H: M8 or less
	ø25 H: M10 or more, X: 33 mm or less	H: M10 or less

# Simple Specials:

## -XA1 to XA23/-XA26 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

**4** CQ2/RQ/CLQ ( $\phi 32$  to  $\phi 100$ )/CQ2 large bore size ( $\phi 125$  to  $\phi 200$ ) : Change of Rod End Shape **-XA1 to XA23/-XA26 to XA30**

### Applicable Series

Series			Action	Symbol for change of rod end shape
CQ2	Standard type	CQ2-Z	Double acting, Single rod Spring acting (Spring return) <sup>(Note)</sup>	XA1 to 23 XA26 to 30
		CQ2W-Z	Double acting, Double rod	
	Axial piping type (Centralized piping type)	CQP2	Double acting, Single rod Single acting (Spring return)	
		Anti-lateral load	CQ2-S-Z	
	Long stroke	CQ2-Z	Double acting, Single rod	
	Non-rotating rod type	CQ2K-Z	Double acting, Single rod Double acting, Double rod (Non-rotating side)	XA1/XA2/XA6 XA10 to XA14 XA19/XA21
		CQ2KW-Z	Double acting, Double rod (Round rod side)	XA1 to 23 XA26 to 30

Note) Single acting, spring extend type is available as a special order.

Series		Action	Symbol for change of rod end shape
CQ2	Large bore size $\phi 125$ to $\phi 200$	CQ2-Z Double acting, Single rod	XA1 to 23
		CQ2W-Z Double acting, Double rod	XA26 to 30
	Longer life cylinder ( $\phi 32$ , $\phi 40$ )	CQ2-XB24 Double acting, Single rod	XA6/XA7 XA17/XA18
RQ	Standard type	RQ Double acting, Single rod	XA1 to 23 XA26 to 30
CLQ	With lock	CLQ Double acting, Single rod	XA1 to 23 XA26 to 30

### ⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "\*" will be as follows to the rod diameter (D).  
Enter any special dimension you desire.  
D – 2 mm
- In the case of double rod, fill in the dimension when the rod is retracted.
- The L dimension of the CQ2-XB24 should be made smaller than that of the standard product.

<b>Symbol: A1</b> 	<b>Symbol: A2</b> 	<b>Symbol: A3</b> 	<b>Symbol: A4</b> 
<b>Symbol: A5</b> 	<b>Symbol: A6</b> 	<b>Symbol: A7</b> 	<b>Symbol: A8</b> 
<b>Symbol: A9</b> 	<b>Symbol: A10</b> 	<b>Symbol: A11</b> 	<b>Symbol: A12</b> 



# Simple Specials: -XA1 to XA23/-XA26 to XA30: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

**4** CQ2/RQ/CLQ ( $\phi 32$  to  $\phi 100$ )/CQ2 large bore size ( $\phi 125$  to  $\phi 200$ ) : Change of Rod End Shape **-XA1 to XA23/-XA26 to XA30**

Symbol

<p>Symbol: <b>A13</b></p>	<p>Symbol: <b>A14</b></p>	<p>Symbol: <b>A15</b></p>	<p>Symbol: <b>A16</b></p>
<p>Symbol: <b>A17</b></p>	<p>Symbol: <b>A18</b></p>	<p>Symbol: <b>A19</b></p>	<p>Symbol: <b>A20</b></p>
<p>Symbol: <b>A21</b></p>	<p>Symbol: <b>A22</b></p>	<p>Symbol: <b>A23</b></p>	<p>Symbol: <b>A26</b></p>
<p>Symbol: <b>A27</b></p>	<p>Symbol: <b>A28</b></p>	<p>Symbol: <b>A29</b></p>	<p>Symbol: <b>A30</b></p>

# Simple Specials: -XA1/6/7/17/18: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

**5 MU (ø25 to ø63): Change of Rod End Shape**

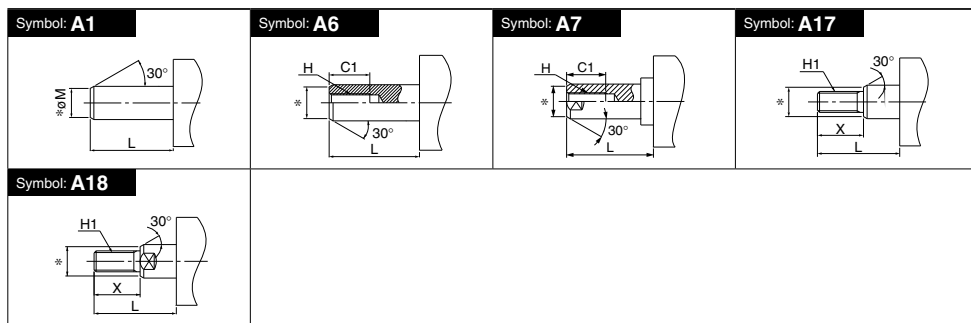
**-XA1/6/7/17/18**

## Applicable Series

Series			Action	Symbol for change of rod end shape
<b>MU</b>	Standard type	<b>MU-Z</b>	Double acting, Single rod	XA1, XA6, XA7, XA17, XA18

## ⚠ Precautions

- 1) SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- 2) Standard dimensions marked with "\*" will be  $D - 2$  mm to the rod diameter (D).
- 3) The parts of XA1 marked \* (øM) can be changed, so specify the diameter within the øM manufacturing conditions in the Conditions of Manufacture below.
- 4) The parts of XA6, XA7, XA17, and XA18 marked \* cannot be changed.
- 5) Please contact SMC separately for the piston rod end pattern part numbers other than the table above and the cases other than the manufacturing conditions.



## Conditions of Manufacture

Symbol	Size	Conditions of manufacture
<b>XA1</b>	25	øM: ø5 to ø10
	32	øM: ø7 to ø12
	40	øM: ø8 to ø14
	50	øM: ø11 to ø18
<b>XA6</b>	63	øM: ø12 to ø18
	25	H: M8 or less
	32	H: M10 or less
	40	H: M10 or less
<b>XA7</b>	50	H: M12 or less
	63	H: M12 or less
	25	H: M8 or less
	32	H: M10 or less
<b>XA17</b>	40	H: M10 or less
	50	H: M12 or less
	63	H: M12 or less
	25	H: M8 or less

Symbol	Size	Conditions of manufacture	
		H1	X
<b>XA17</b>	25	M6	24 or less
		M8	70 or less
		M10	90 or less
	32	M8	40 or less
		M10	80 or less
		M12	100 or less
	40	M10	50 or less
		M12	100 or less
		M14	120 or less
	50	M14	80 or less
		M16	130 or less
		M18	160 or less
<b>XA18</b>	63	M14	60 or less
		M16	110 or less
		M18	160 or less
	25	M16	160 or less

Symbol	Size	Conditions of manufacture	
		H1	X
<b>XA18</b>	25	M6	24 or less
		M8	70 or less
		M10	90 or less
	32	M8	40 or less
		M10	80 or less
		M12	100 or less
	40	M10	50 or less
		M12	100 or less
		M14	120 or less
	50	M14	80 or less
		M16	130 or less
		M18	160 or less
<b>XA18</b>	63	M14	60 or less
		M16	110 or less
		M18	160 or less
	25	M16	160 or less

# Simple Specials: -XA1 to XA38: Change of Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

## 6 RSQ (ø12 to ø50)/RSG (ø40, ø50): Change of Rod End Shape

Symbol  
**-XA1 to XA38**

### Applicable Series

Series		Action	Symbol for change of rod end shape
RSQ RSG	Stopper cylinder	RSQ-Z	Double acting
	Fixed mounting height	RSQ-Z <sup>(Note)</sup>	Double acting with spring loaded
	Stopper cylinder	RSG	Single acting
	Adjustable mounting height	RSG	Double acting with spring loaded
			Single acting

(Note) Size ø12 is the same shape as the existing model (RSQ).

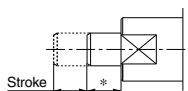
- For chamfered type (XA35 to XA38), make the H dimension to be equal to or less than the values on Table (1). (For the case with larger dimension than Table (1), it will be made-to-order separately.)

**Table (1)**

Bore size (mm)	H (mm)
ø12, ø16	40
ø20, ø32	63
ø40, ø50	83

### ⚠ Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "\*" will be D – 2 mm to the rod diameter (D).
- Enter any special dimension you desire.
- The following diagram shows piston rod at spring extend.



For the lengthwise dimension, enter the amount that you wish to add to the standard dimension.

(If the length is the same as the standard type, \* in the figure on the left becomes 0.)

### Round Bar

<b>Symbol: A1</b> 	<b>Symbol: A3</b> 	<b>Symbol: A6</b> 	<b>Symbol: A7</b> 
<b>Symbol: A8</b> 	<b>Symbol: A10</b> 	<b>Symbol: A11</b> 	<b>Symbol: A13</b> 
<b>Symbol: A17</b> 	<b>Symbol: A18</b> 	<b>Symbol: A19</b> 	<b>Symbol: A32</b> 
<b>Symbol: A33</b> 	<b>Symbol: A34</b> 		

### Chamfered Type

<b>Symbol: A35</b> 	<b>Symbol: A36</b> 	<b>Symbol: A37</b> 	<b>Symbol: A38</b> 
------------------------	------------------------	------------------------	------------------------

# Simple Specials: -XA1/6/17/21: Change of Guide Rod End Shape

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

## 7 MGP/MGQ: Change of Guide Rod End Shape

-XA1/6/17/21

### Applicable Series

Series			Action	Symbol for change of rod end shape
MGP	Standard type	MGPM-Z	Slide bearing	XA1, 6, 17, 21
		MGPL-Z	Ball bushing bearing	XA1, 6
	With air cushion	MGPA-Z	Slide bearing	XA1, 6, 17, 21
		MGPL-AZ	Ball bushing bearing	XA1, 6
MLGP	With lock	MGPA-AZ	Slide bearing	XA1, 6
		MGPL-AZ	Ball bushing bearing	XA1, 6
MGQ	Standard type	MGQM-Z	Slide bearing	XA1, 6, 17, 21
		MGQL-Z	Ball bushing bearing	XA1, 6
MVGQ	With valve	MGQM	Slide bearing	XA1, 6, 17, 21
		MGQL	Ball bushing bearing	XA1, 6
MVGQ	With valve	MVGQM	Slide bearing	XA1, 6, 17, 21
		MVGQL	Ball bushing bearing	XA1, 6

\* For MGP, this is only applicable for the standard products (Basic type, With air cushion).

### ⚠ Precautions

- Ensure that the cylinder's overall length should not exceed the allowable overall length. In the case of exceeding the allowable overall length, it will be available as specials.
- In fig. (1) and (2) shown below, E' dimension cannot be set to less than E dimension of the standard product. Confirm by referring to the catalog.
- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- When the chamfering of the guide rod end is 30°, the \* dimension is the guide rod diameter (D) - 2 mm. When the chamfering of the guide rod end is C0.5, the \* dimension is the guide rod diameter (D) - 1 mm.

		(mm)
Bore size (mm)	Allowable overall length of cylinder	
12, 16	345	
20 to 32	540	
40 to 63	561	
80, 100	603	

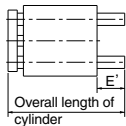


Fig. (1) For XA1, XA6

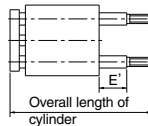
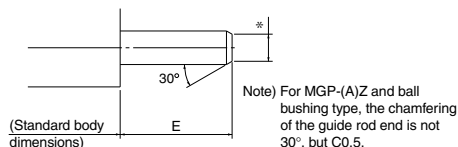


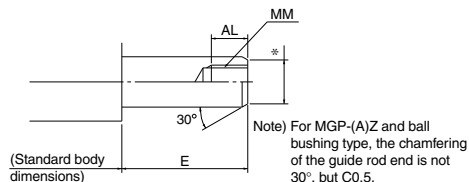
Fig. (2) For XA17, XA21

### Guide Rod End Shape Pattern

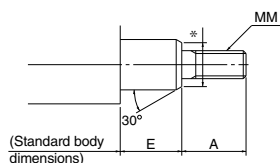
#### -XA1



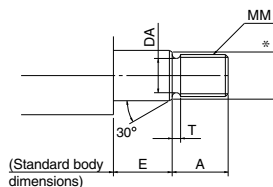
#### -XA6



#### -XA17



#### -XA21



# Simple Specials: -XC14: Change of Trunnion Bracket Mounting Position

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

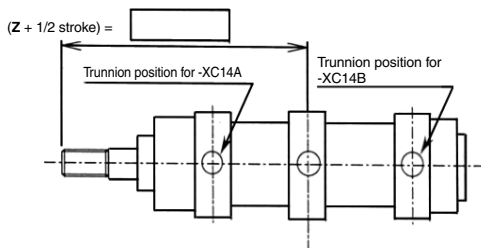
## 8 Change of Trunnion Bracket Mounting Position

Symbol

**-XC14**

The position for mounting the trunnion pivot bracket on the cylinder can be moved from the standard mounting position to any desired position.

Series	Description	Model	Action	Note
<b>MB</b>	Standard type	<b>MB-Z</b>	Double acting, Single rod	
		<b>MBW-Z</b>	Double acting, Double rod	
	Non-rotating rod type	<b>MBK-Z</b>	Double acting, Single rod	
	End lock cylinder	<b>MBB</b>	Double acting, Single rod	
	Smooth cylinder	<b>MBY-Z</b>	Double acting, Single rod	
<b>CA2</b>	Standard type	<b>CA2-Z</b>	Double acting, Single rod	
		<b>CA2W-Z</b>	Double acting, Double rod	
	Non-rotating rod type	<b>CA2K</b>	Double acting, Single rod	Applicable to ø40 to ø63
		<b>CA2KW</b>	Double acting, Double rod	Applicable to ø40 to ø63
	End lock cylinder	<b>CBA2</b>	Double acting, Single rod	
	Air-hydro cylinder	<b>CA2H</b>	Double acting, Single rod	
<b>CS1</b>	Standard type	<b>CA2Y-Z</b>	Double acting, Single rod	
		<b>CS1</b>	Double acting, Single rod	
	Low friction type	<b>CS1W</b>	Double acting, Double rod	
<b>CS2</b>	Standard type	<b>CS1□Q</b>	Double acting, Single rod	Applicable to ø125 to ø160
		<b>CS2</b>	Double acting, Single rod	
		<b>CS2W</b>	Double acting, Double rod	
	Long stroke	<b>CS2-V</b>	Double acting, Single rod	Applicable to ø180 to ø320
	Axial centralized piping	<b>CS2□P</b>	Double acting, Single rod	Applicable to ø180 to ø250
<b>MWB</b>	Smooth cylinder	<b>CS2Y</b>	Double acting, Single rod	Applicable to ø125 to ø160
		<b>MWB</b>	Double acting, Single rod	
		<b>MWBW</b>	Double acting, Double rod	
<b>CNA2</b>	Cylinder with lock	<b>CNA2</b>	Double acting, Single rod	
		<b>CNA2W</b>	Double acting, Double rod	
<b>CNS</b>		<b>CNS</b>	Double acting, Single rod	
<b>CLS</b>		<b>CLS</b>	Double acting, Single rod	
<b>CL1</b>	Lock-up cylinder	<b>CL1</b>	Double acting, Single rod	Applicable to ø40 to ø100
<b>CVS1</b>	Valve mounted cylinder	<b>CVS1</b>	Double acting, Single rod	
		<b>CVS1K</b>	Double acting, Single rod	Applicable to ø40 to ø63



### ⚠ Precautions

- Specify "Z + 1/2 stroke" in the case the trunnion bracket position is not -XC14A, B or trunnion is not a center trunnion.
- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- The possible range of trunnion bracket mounting position is indicated in the table below.
- Some trunnion mounting positions do not allow auto switch mounting. Please consult with SMC for more information.
- When the trunnion position is changed to somewhere close to the cover for the end lock cylinder, there is a possibility that the lock part and the trunnion pivot bracket may interfere with each other. Change the lock position (-X3) at the same time.
- The CS2 series has a greater range of trunnion bracket mounting positions than CS1 series, so the value of "Z + 1/2 stroke" at -XC14A and -XC14B is different.

### MB Series

Bore size (mm)	Symbol	Z + 1/2 stroke (mm)				
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)
				Minimum	Maximum	
32		82.5	95.5 + Stroke	84	94 + Stroke	89 + 1/2 stroke
40		89	97 + Stroke	90	96 + Stroke	93 + 1/2 stroke
50		100.5	109.5 + Stroke	102	108 + Stroke	105 + 1/2 stroke
63		103.5	106.5 + Stroke	105	105 + Stroke	105 + 1/2 stroke
80		127	131 + Stroke	128	130 + Stroke	129 + 1/2 stroke
100		130	128 + Stroke	131	127 + Stroke	129 + 1/2 stroke
125		160	154 + Stroke	160.5	153.5 + Stroke	157 + 1/2 stroke

### CA2/CBA2/CSV1 Series

Bore size (mm)	Symbol	Z + 1/2 stroke (mm)				
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)
				Minimum	Maximum	
40		89	97 + Stroke	89.5	96.5 + Stroke	93 + 1/2 stroke
50		99	107 + Stroke	99.5	106.5 + Stroke	103 + 1/2 stroke
63		103	111 + Stroke	103.5	110.5 + Stroke	107 + 1/2 stroke
80		125	133 + Stroke	125.5	132.5 + Stroke	129 + 1/2 stroke
100		132	138 + Stroke	132.5	137.5 + Stroke	135 + 1/2 stroke

### CS1 Series

Bore size (mm)	Symbol	Z + 1/2 stroke (mm)				
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)
				Minimum	Maximum	
125		170	148 + Stroke	170.5	147.5 + Stroke	159 + 1/2 stroke
140		172.5	145.5 + Stroke	173	145 + Stroke	159 + 1/2 stroke
160		189	157 + Stroke	189.5	156.5 + Stroke	173 + 1/2 stroke
180		203.5	177.5 + Stroke	204	177 + Stroke	190.5 + 1/2 stroke
200		203.5	177.5 + Stroke	204	177 + Stroke	190.5 + 1/2 stroke
250		243.5	217.5 + Stroke	244	217 + Stroke	230.5 + 1/2 stroke
300		263.5	232.5 + Stroke	264	232 + Stroke	248 + 1/2 stroke

# Simple Specials: -XC14: Change of Trunnion Bracket Mounting Position

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

## 8 Change of Trunnion Bracket Mounting Position

Symbol

**-XC14**

### CS2 Series

(mm)

Bore size (mm)	Symbol	Z + 1/2 x Stroke					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
125	165.5	152.5 + Stroke	166	152 + Stroke	159 + 1/2 x Stroke	25	
140	168	150 + Stroke	168.5	149.5 + Stroke	159 + 1/2 x Stroke	30	
160	186	160 + Stroke	186.5	159.5 + Stroke	173 + 1/2 x Stroke	35	
180	200	185 + Stroke	200.5	184.5 + Stroke	192.5 + 1/2 x Stroke	25	
200	200	190 + Stroke	200.5	189.5 + Stroke	195 + 1/2 x Stroke	25	
250	240	221 + Stroke	240.5	220.5 + Stroke	230.5 + 1/2 x Stroke	25	
320	264.5	260.5 + Stroke	265	260 + Stroke	262.5 + 1/2 x Stroke	35	

### MWB Series (Double acting, Single rod/Double rod common/Air cushion type)

(mm)

Z + 1/2 stroke						
Symbol Bore size (mm)	Air cushion/Without rod boot					
	For -XC14A	For -XC14B	For -XC14		Reference	Minimum stroke
			Minimum	Maximum	Standard (Center trunnion)	
32	141.5	154.5 + Stroke	143	153 + Stroke	148 + 1/2 stroke	1
40	162	170 + Stroke	163	169 + Stroke	166 + 1/2 stroke	1
50	178.5	187.5 + Stroke	180	186 + Stroke	183 + 1/2 stroke	1
63	193.5	196.5 + Stroke	195	195 + Stroke	195 + 1/2 stroke	1
80	240	244 + Stroke	241	243 + Stroke	242 + 1/2 stroke	1
100	263	261 + Stroke	264	260 + Stroke	262 + 1/2 stroke	3
Z + 1/2 stroke						
Symbol Bore size (mm)	Air cushion/With rod boot					
	For -XC14A	For -XC14B	For -XC14		Reference	Minimum stroke
			Minimum	Maximum	Standard (Center trunnion)	
32	94.5 + h	107.5 + h + Stroke	96 + h	106 + h + Stroke	101 + h + 1/2 stroke	1
40	111 + h	119 + h + Stroke	112 + h	118 + h + Stroke	115 + h + 1/2 stroke	1
50	120.5 + h	129.5 + h + Stroke	122 + h	128 + h + Stroke	125 + h + 1/2 stroke	1
63	135.5 + h	138.5 + h + Stroke	137 + h	137 + h + Stroke	137 + h + 1/2 stroke	1
80	168 + h	172 + h + Stroke	169 + h	171 + h + Stroke	170 + h + 1/2 stroke	1
100	191 + h	189 + h + Stroke	192 + h	188 + h + Stroke	190 + h + 1/2 stroke	3

### MWB Series (Double acting, Single rod/Double rod common/Rubber bumper type)

(mm)

Symbol Bore size (mm)	Z + 1/2 stroke					
	Rubber bumper/Without rod boot					
	For -XC14A	For -XC14B	For -XC14		Reference	Minimum stroke
			Minimum	Maximum	Standard (Center trunnion)	
32	141.5	160.5 + Stroke	143	159 + Stroke	151 + 1/2 stroke	1
40	162	176 + Stroke	163	175 + Stroke	169 + 1/2 stroke	1
50	178.5	195.5 + Stroke	180	194 + Stroke	187 + 1/2 stroke	1
63	193.5	204.5 + Stroke	195	203 + Stroke	199 + 1/2 stroke	1
80	240	254 + Stroke	241	253 + Stroke	247 + 1/2 stroke	1
100	263	271 + Stroke	264	270 + Stroke	267 + 1/2 stroke	1
Symbol Bore size (mm)	Z + 1/2 stroke					
	Rubber bumper/With rod boot					
	For -XC14A	For -XC14B	For -XC14		Reference	Minimum stroke
			Minimum	Maximum	Standard (Center trunnion)	
32	94.5 + h	113.5 + h + Stroke	96 + h	112 + h + Stroke	104 + h + 1/2 stroke	1
40	111 + h	125 + h + Stroke	112 + h	124 + h + Stroke	118 + h + 1/2 stroke	1
50	120.5 + h	137.5 + h + Stroke	122 + h	136 + h + Stroke	129 + h + 1/2 stroke	1
63	135.5 + h	146.5 + h + Stroke	137 + h	145 + h + Stroke	141 + h + 1/2 stroke	1
80	168 + h	182 + h + Stroke	169 + h	181 + h + Stroke	175 + h + 1/2 stroke	1
100	191 + h	199 + h + Stroke	192 + h	198 + h + Stroke	195 + h + 1/2 stroke	1

### CNA2 Series

(mm)

Z + 1/2 stroke							(mm)
Bore size (mm)	Symbol		Without rod boot				
	For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke	
			Minimum	Maximum			
40	158	166 + Stroke	158.5	165.5 + Stroke	162 + 0.5 stroke	25	
50	177	185 + Stroke	177.5	184.5 + Stroke	181 + 0.5 stroke	25	
63	187	195 + Stroke	187.5	194.5 + Stroke	191 + 0.5 stroke	32	
80	227	235 + Stroke	227.5	234.5 + Stroke	231 + 0.5 stroke	41	
100	252	258 + Stroke	252.5	257.5 + Stroke	255 + 0.5 stroke	45	

# Simple Specials: -XC14: Change of Trunnion Bracket Mounting Position

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

## 8 Change of Trunnion Bracket Mounting Position

Symbol

**-XC14**

### CNS Series

Bore size (mm)	Symbol	<b>Z + 1/2 stroke</b>					
		Without rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
125		375	353 + Stroke	375.5	352.5 + Stroke	364 + 0.5 stroke	25
140		417.5	390.5 + Stroke	418	390 + Stroke	404 + 0.5 stroke	30
160		479	447 + Stroke	479.5	446.5 + Stroke	463 + 0.5 stroke	35
Bore size (mm)	Symbol	<b>Z + <math>\ell</math> + 1/2 stroke</b>					
		With rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
125		398 + $\ell$	376 + $\ell$ + Stroke	398.5 + $\ell$	375.5 + $\ell$ + Stroke	387 + $\ell$ + 1/2 stroke	30
140		440.5 + $\ell$	413.5 + $\ell$ + Stroke	441 + $\ell$	413 + $\ell$ + Stroke	427 + $\ell$ + 1/2 stroke	30
160		500 + $\ell$	468 + $\ell$ + Stroke	500.5 + $\ell$	467.5 + $\ell$ + Stroke	484 + $\ell$ + 1/2 stroke	35

### CLS Series

CLS Series							(mm)
Bore size (mm)	Symbol	Z + 1/2 stroke					
		Without rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
125		280	258 + Stroke	280.5	257.5 + Stroke	269 + 0.5 stroke	25
140		282.5	255.5 + Stroke	283	255 + Stroke	269 + 0.5 stroke	30
160		321	289 + Stroke	321.5	288.5 + Stroke	305 + 0.5 stroke	35
Bore size (mm)	Symbol	With rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
				For -XC14			
125		303 + 0.2 stroke	281+1.2 stroke	303.5 + 0.2 stroke	280.5 + 1.2 stroke	292 + 0.7 stroke	25
140		305.5 + 0.2 stroke	278.5+1.2 stroke	306 + 0.2 stroke	278 + 1.2 stroke	292 + 0.7 stroke	30
160		345 + 0.2 stroke	310+1.2 stroke	345.5 + 0.2 stroke	309.5 + 1.2 stroke	326 + 0.7 stroke	35

### CL1 Series

Bore size (mm)	Symbol	<b>Z + 1/2 stroke</b>					
		Without rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
40		158	166 + Stroke	158.5	165.5 + Stroke	162 + 1/2 stroke	—
50		177	185 + Stroke	177.5	184.5 + Stroke	181 + 1/2 stroke	—
63		187	195 + Stroke	187.5	194.5 + Stroke	191 + 1/2 stroke	—
80		217	225 + Stroke	217.5	224.5 + Stroke	221 + 1/2 stroke	—
100		232	238 + Stroke	232.5	237.5 + Stroke	235 + 1/2 stroke	—
Bore size (mm)	Symbol	<b>Z + <math>\ell</math> + 1/2 stroke</b>					
		With rod boot					
		For -XC14A	For -XC14B	For -XC14		Reference Standard (Center trunnion)	Minimum stroke
				Minimum	Maximum		
40		166 + $\ell$	174 + $\ell$ + Stroke	166.5 + $\ell$	173.5 + $\ell$ + Stroke	170 + $\ell$ + 1/2 stroke	20
50		185 + $\ell$	193 + $\ell$ + Stroke	185.5 + $\ell$	192.5 + $\ell$ + Stroke	189 + $\ell$ + 1/2 stroke	20
63		195 + $\ell$	203 + $\ell$ + Stroke	195.5 + $\ell$	202.5 + $\ell$ + Stroke	199 + $\ell$ + 1/2 stroke	20
80		226 + $\ell$	234 + $\ell$ + Stroke	226.5 + $\ell$	233.5 + $\ell$ + Stroke	230 + $\ell$ + 1/2 stroke	20
100		241 + $\ell$	247 + $\ell$ + Stroke	241.5 + $\ell$	246.5 + $\ell$ + Stroke	244 + $\ell$ + 1/2 stroke	20

# Simple Specials: -XC15: Change of Tie-rod Length

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

Symbol

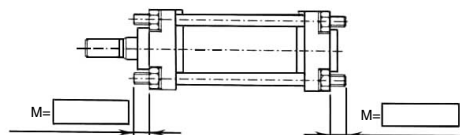
## 9 Change of Tie-rod Length

**-XC15**

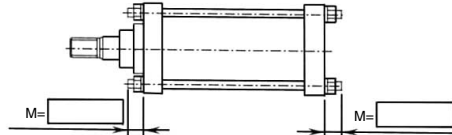
Cylinder with M dimension for tie-rod length changed from the standard length.

Series	Description	Model	Action	Note
CA2	Standard type	CA2-Z	Double acting, Single rod	
		CA2W-Z	Double acting, Double rod	
	Non-rotating rod type	CA2K	Double acting, Single rod	Applicable to ø40 to ø63
		CA2KW	Double acting, Double rod	Applicable to ø40 to ø63
		CA2H	Double acting, Single rod	
	End lock cylinder	CBA2	Double acting, Single rod	
CS1	Standard type	CA2Y-Z	Double acting, Single rod	
		CS1	Double acting, Single rod	
	Low friction type	CS1W	Double acting, Double rod	
		CS1□Q	Double acting, Single rod	Applicable to ø125 to ø160
CS2	Standard type	CS2	Double acting, Single rod	
		CS2W	Double acting, Double rod	
	Long stroke	CS2-V	Double acting, Single rod	Applicable to ø180 to ø320
	Axial centralized piping	CS2□P	Double acting, Single rod	Applicable to ø180 to ø250
	Smooth cylinder	CS2Y	Double acting, Single rod	Applicable to ø125 to ø160
CNA2	Cylinder with lock	CNA2	Double acting, Single rod	
		CNA2W	Double acting, Double rod	
CV	Valve mounted cylinder	CV3	Double acting, Single rod	
		CV3K	Double acting, Single rod	Applicable to ø40 to ø63
		CVS1	Double acting, Single rod	
		CVS1K	Double acting, Single rod	Applicable to ø40 to ø63

### CA2, CNA2, CV series



### CS1, CS2 series



### ⚠ Precautions

- To order, specify the M dimension as well as the part number.
- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Tie-rod length changeable range is described in the below.
- The M dimension of the bracket mounting side of Flange (F, G), Clevis (C, D) types cannot be specified.

### Tie-rod Length Changeable Range

(mm)

Model	CA2, CNA2, CV	CS1							
Bore size (mm)	All bore size	125	140	160	180	200	250	300	
M Min.	0	15.5	18	20.5	22	26	32.5		
M Max.	300 <sup>(1)</sup>			110					

Note 1) The maximum value of M on the rod side for the CNA2 series is 50.

### Tie-rod Length Changeable Range

(mm)

Model	CS2																																							
Bore size (mm)	125				140				160				180				200				250				320															
Mounting bracket	L	B	F	G	C	D	T	L	B	F	G	C	D	T	L	B	F	G	C	D	T	L	B	F	G	C	D	T	L	B	F	G	C	D	T					
M Min.	20	12						21	12						23	14						27	17						28	18					33	21			38	0
M Max.	110																																							



# Simple Specials:

## -XC79: Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

### 10 Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

Symbol

**-XC79**

This simple special is meant for machining additionally tapped hole, drilled hole, and pinned hole, as requested from customer, on parts designed largely for mounting a workpiece, etc. in the combined air cylinders.

But, for each model, since they have the portions which are impossible to machine additionally, refer to the additional machining limitation.

#### Applicable Series

Series			Action
MGP	Standard type	MGP-Z	Double acting
	With air cushion	MGP-A-Z	Double acting
	With end lock	MGP-H/R	Double acting
MGQ	Standard type	MGQ	Double acting
MLGP	With lock	MLGP-Z	Double acting

Series			Action
MVGQ	With valve	MVGQ	Double acting
MGG	Standard type	MGG	Double acting
	With end lock	MGG-H/R	Double acting
MGC	Compact type	MGC	Double acting
MLGC	Compact type with lock	MLGC	Double acting
MGF	Standard type	MGF	Double acting
MXH	Standard type	MXH-Z	Double acting

#### Applicable Series and Component Parts Machined Additionally

Applicable series	Component parts applicable for additional machining
MGP, MGQ, MLGP, MVGQ	Plate
MGG, MGC, MLGC	Front plate
MGF	Plate (Upper plate only)
MXH	Table

#### ⚠ Precautions

- We cannot take any responsibility as for the intensity of holes machined additionally and the effects of decreased intensity for the product itself.
- It will not be plated again for the machined part additionally.
- Be sure to fill in "through" for through-hole, and "effective depth" for blind hole.
- When using by machining through-hole additionally, ensure that the tip of the bolt, etc. for mounting workpiece should not stick into the cylinder side. It may result in an unexpected problem.
- Use caution not to interfere the current mounting hole on the standard products with the hole to be machined additionally. But it is possible to drill additionally the larger size of hole at the same position as the current hole.

#### Common Complementary Explanation/Holes which can be additionally machined are the following 3 types.

### Tapped hole

Designated nominal diameter and tapped hole of a pitch are machined additionally. (Maximum nominal thread diameter M20)

Blind hole is deep into the bottom of prepared hole which sums up A to C in the figure below in contrast to the effective depth of tapped hole. When there is a condition which does not allow through-hole, etc., leave sufficient thickness in the inner part of hole.

The diagram shows a cross-section of a tapped hole. The total diameter is labeled 'D (Thread size)'. The depth of the threaded section is labeled 'A (Effective thread depth)'. The depth of the unthreaded section at the bottom is labeled 'B = 3 x P (Incomplete thread section)'. The total depth of the hole is labeled 'C = 0.3 x (D - P)'.

Note) P stands for thread pitch.

### Drilled hole

Drilled hole of a designated internal diameter is machined.

(Maximum hole diameter 20 mm)

If you wish for blind hole, instruct us with effective depth. (Refer to the figure below.) Besides, dimensional accuracy for internal diameter will be  $\pm 0.2$  mm.

The diagram shows a cross-section of a drilled hole. The diameter is labeled 'D'. The depth is labeled 'A (Effective depth)'. The total depth of the hole is labeled 'C = 0.3D'.

### Pinned hole

Pinned hole of a designated diameter (reamer hole) is machined. (Maximum hole diameter 20 mm)

Internal dimension tolerates H7 tolerance to the designated hole diameter. (Refer to the table below.)

Hole dia.	3 or less	Over 3 to 6	Over 6 to 10	Over 10 to 18	Over 18 to 20
Tolerance	+0.01 0	+0.012 0	+0.015 0	+0.018 0	+0.021 0

The diagram shows a cross-section of a pinned hole. The diameter is labeled 'D<sub>H7</sub>'. The depth is labeled 'A (Effective depth)'.

# Simple Specials:

## -XC79: Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

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Please contact your local sales representative for more details.

### 10 Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

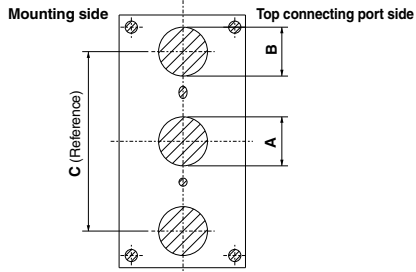
Symbol

**-XC79**

**Limitation for Machining Additionally** Since the slanted lines denote the restricted range for machining additionally, design the dimensions, referring to below.

#### MGP/MLGP series

Plate material: Steel

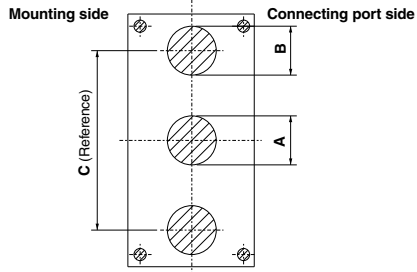


**Dimensional Range Not Possible to Machine Additionally (mm)**

Bore size (mm)	A	B	C
12	8	11	41
16	10	13	46
20	12	15	54
25	14	21	64
32	25	25	78
40	25	25	86
50	30	30	110
63	30	30	124
80	34	34	156
100	42	42	188

#### MGQ/MVGQ series

Plate material: Steel

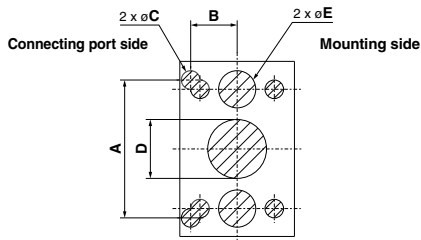


**Dimensional Range Not Possible to Machine Additionally (mm)**

Bore size (mm)	A	B	C
12	8	11	36
16	10	13	38
20	12	15	46
25	14	21	56
32	25	25	80
40	25	25	90
50	30	30	100
63	30	30	110
80	34	34	140
100	42	42	170

#### MGG series

Front plate material: Steel

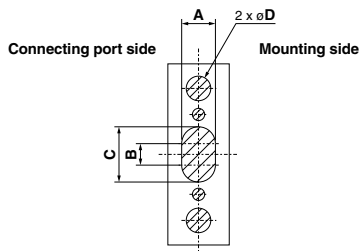


**Dimensional Range Not Possible to Machine Additionally (mm)**

Bore size (mm)	A	B	C	D	E
20	70	17.5	9	24	12.5
25	85	20	13	31	13
32	91	23	13	31	19
40	114	29	19	36	23
50	132	34	19	44	29
63	156	38	19	44	30
80	186	44	26	58	35
100	214	49	26	64	40

#### MGC/MLGC series

Front plate material: Steel



**MGC Dimensional Range Not Possible to Machine Additionally (mm)**

Bore size (mm)	A	B	C	D
20	18	10	28	12.5
25	23	13	36	12.5
32	23	13	36	19
40	27	15	42	23
50	33	19	52	28

**MLGC Dimensional Range Not Possible to Machine Additionally (mm)**

Bore size (mm)	A	B	C	D
20	18	10	28	16
25	23	13	36	20
32	23	13	36	20
40	27	15	42	25

# Simple Specials:

## -XC79: Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

The following changes are dealt with through the Simple Specials System.  
Please contact your local sales representative for more details.

### 10 Tapped Hole, Drilled Hole, Pinned Hole Machined Additionally

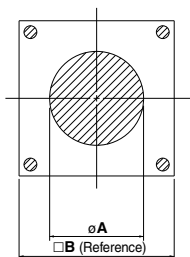
Symbol

**-XC79**

**Limitation for Machining Additionally** Since the slanted lines denote the restricted range for machining additionally, design the dimensions, referring to below.

#### MGF series

Top plate material: Aluminum



Connecting port side

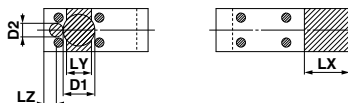
#### Dimensional Range Not Possible to Machine

Model	A	B
MGF40	90	120
MGF63	120	160
MGF100	160	200

(mm)

#### MXH series

Table material: Aluminum



#### Dimensional Range Not Possible to Machine Additionally

Model	D1	D2	LY	LX	LZ
MXH6	11	5.8	9	20	5.5
MXH10	14	6	11	22	6.5
MXH16	18	7.5	16	29	6.5
MXH20	22	9.7	22	32	7

(mm)