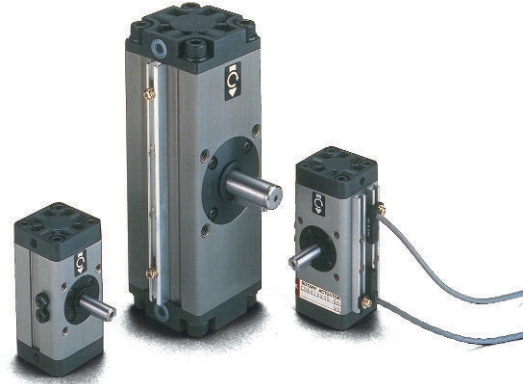


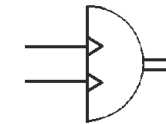
**RACK & PINION TYPE
ROTARY ACTUATOR
BORE SIZES Ø30, 50, 63, 80, 100MM
SERIES NCRA1**

- ✓ 90°, 180° rotation
- ✓ Optional magnetic piston for autoswitches
- ✓ Low friction resistance

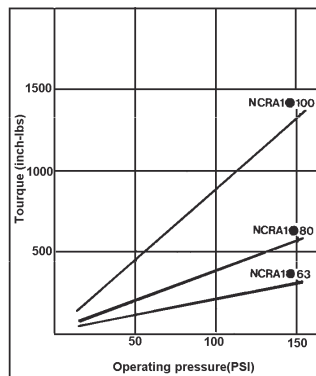
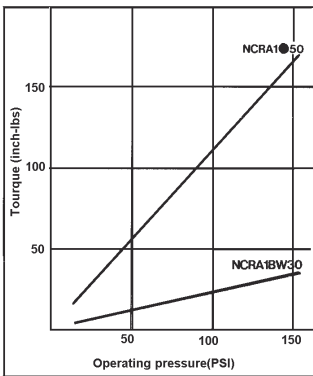


TECHNICAL

Fluid	Air (No Lubrication)				
Proof Pressure	1.5MPa / 225 PSI				
Max Operating Pressure	1MPa / 150 PSI				
Min Operating Pressure	0.1MPa / 15 PSI				
Ambient and Operating Fluid Temperature	5 ~ 60°C / 40 ~ 140°F				
Piston Diameter (mm)	30	50	63	80	100
Min Speed sec/90°	1	2	3	4	5
Max Speed sec/90°	0.2				
Stroke Tolerance	Adjustable ±6°	+4° -0°			
Allowable Kinetic Energy (Nm)	0.01	0.05	0.12	0.16	0.55



**TORQUE
SPECIFICATIONS
SERIES NCRA1**



DIMENSIONS
SEE NEXT PAGE

**HOW TO
ORDER
NCRA1 ROTARY ACTUATOR**

NC ● RA1BW ● — ● — ●

PISTON
-Basic
DMagnetic

BORE (MM)
30 ...1 3/16"
50 ...2"
63 ...2 1/2"
80 ...3 1/8"
100 ...4"

ROTATION
90 ...90°
180 ...180°

AUTO SWITCH TYPE
See Accessories Section

ADJUSTABLE CUSHION
CBoth End Cushion

SHAFT
SSingle Rod End
WDouble Rod End
: 30mm Bore
Double Rod End Only



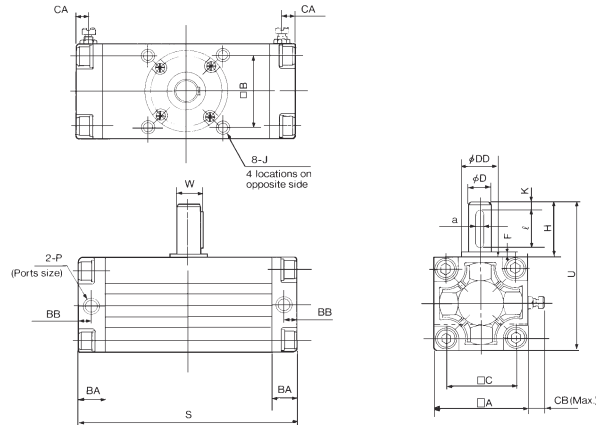
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ACCESSORIES
AUTO SWITCHES

	Part No. Grommet Type	Part No. Connector Type	Type	Load Voltage	Load Current	Power Source	Internal Voltage Drop	Indicator Lamp	Lead Wire Length
Diameter 30mm	D-A73L	D-A73CL	Reed	24VDC 100VAC	5~40mA 5~20mA		Max 2.4V	ON:RED L.E.D	
	D-A80L	D-A80CL	Reed	24VDC/AC or less 100VDC/AC	Max 50mA Max 20mA			None	
	D-F79L	~	3 Wire Solid State NPN	28VDC or less	Max 150mA	5~28VDC	0.8V Max	ON:RED L.E.D	
	D-F7PL	~	3 Wire Solid State PNP	28VDC or less	Max 100mA	5~28VDC	0.8V Max	ON:RED L.E.D	
	D-J79L	D-J79CL	2 Wire Solid State	28VDC or less	5~150mA	~	3V Max	ON:RED L.E.D	
Diameter 50 - 100	D-A53L		Reed	24VDC 100VAC		5~50mA	2.4V or less	ON:Red L.E.D	3m
	D-A54L		Reed	24VDC 100VAC		5~50mA	2.4V or less	ON:Red L.E.D	3m
	D-A64L		Reed	24VDC/AC or less 100VDC/AC 200VAC/DC		Max 50mA		None	3m
	D-F59L		3 Wire Solid State NPN	28VDC or less	Max 150mA	5~24VDC	0.8V or less	ON:Red L.E.D	3m
	D-F5PL		3 Wire Solid State PNP	28VDC or less	Max 100mA	5~24VDC	0.8V or less	ON:Red L.E.D	3m
	D-J59L		2 Wire Solid State	10~28VDC	5~150mA	-	3V or less	ON:Red L.E.D	3m
Ambient Temperature	-10~60DEG C								
Protection Structure	IP67								

Note: Pre-wired Switches with 3/4 Pin Connectors available, please consult SMC Customer Service

DIMENSIONS
WITHOUT AUTO SWITCH
SINGLE ROD END NCRA1BS50~100



Model	P (NPTF)	□A	□B	□C	□D	□DD	F	H	J	K	S*	U	W	BA	BB	CA	CB	KEY		
																		a	Tolerance	ℓ
NCRA1BS50-__	1/8	2.44	1 7/8	1.81	9/16 -0.000236 -0.000659	1 0 -0.00205	0.1	1.42	5/16-18UNC Depth0.31	0.2	5.67 (6.97)	3.86	0.62	0.67	0.33	0.33	0.51	1/8		1
NCRA1BS63-__	1/8	2.99	2 3/8	2.24	5/8 -0.000659 -0.00276	1 1/8 0 -0.00244	0.1	1.61	3/8-16UNC Depth0.47	0.2	6.42 (7.93)	4.61	0.70	0.79	0.39	0.39	0.55	3/16	+0.001	1.25
NCRA1BS80-__	1/4	3.62	2 7/8	2.76	3/4 -0.000787 -0.00276	1 3/8 0 -0.00244	0.12	1.97	1/2-13UNC Depth0.51	0.2	7.32 (9.06)	5.59	0.83	0.93	0.47	0.47	0.71	3/16	0	1.5
NCRA1BS100-__	3/8	4.41	3 3/8	3.35	1 -0.000787	1 5/8 0 -0.00244	0.16	2.36	1/2-13UNC Depth0.55	0.2	9.65(12.24)	6.77	1.11	0.98	0.49	0.49	0.71	1/4		1.75

* (In Parentheses) are the dimensions for rotations of 180° and 190°

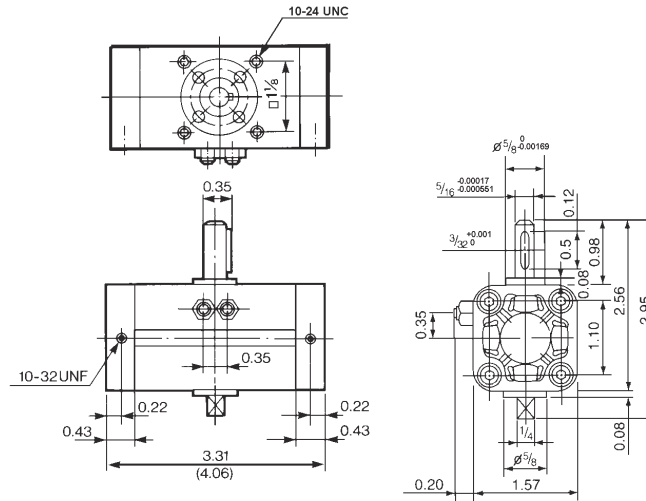
MORE DIMENSIONS
SEE NEXT PAGE

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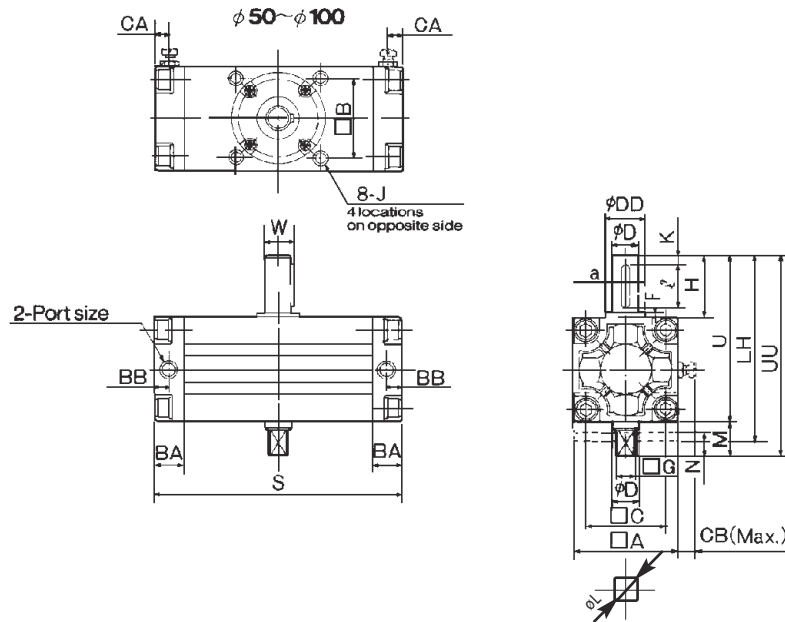


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DIMENSIONS
WITHOUT AUTO SWITCH
DOUBLE ROD END NCRA1BW30



DIMENSIONS
WITHOUT AUTO SWITCH
DOUBLE ROD END NCRA1BW50~100



Model	P (NPTF)	□A	□B	□C	□D	□DD	F	□G	H	J	K	φL	M	N	S*	U	UU	W				
NCRA1BW50-__	1/8	2.44	1 7/8	1.81	9/16	-0.000236 -0.000669	1	0	-0.00205	0.1	7/16	1.42	5/16-18UNC Depth0.31	0.2	9/16	0.79	0.59	5.67 (6.97)	3.86	4.65	0.62	
NCRA1BW63-__	1/8	2.99	2 3/8	2.24	5/8	-0.000236 -0.000669	1	1/8	0	-0.00244	0.1	1/2	1.61	3/8-16UNC Depth0.47	0.2	5/8	0.87	0.67	6.42 (7.93)	4.61	5.47	0.70
NCRA1BW80-__	1/4	3.62	2 7/8	2.76	3/4	-0.000276 -0.000787	1	3/8	0	-0.00244	0.12	5/8	1.97	1/2-13UNC Depth0.51	0.2	3/4	0.98	0.79	7.32 (9.06)	5.59	6.57	0.83
NCRA1BW100-__	3/8	4.41	3 3/8	3.35	1	-0.000276 -0.000787	1	5/8	0	-0.00244	0.16	3/4	2.36	1/2-13UNC Depth0.55	0.2	1	1.18	0.98	9.65(12.24)	6.77	7.95	1.11

Model	BA	BB	CA	CB	KEY		
					a	Tolerance	l
NCRA1BW50-__	0.67	0.33	0.33	0.51	1/8		1
NCRA1BW63-__	0.79	0.39	0.39	0.55	3/16	+0.001	1.25
NCRA1BW80-__	0.93	0.47	0.47	0.71	3/16	0	1.5
NCRA1BW100-__	0.98	0.49	0.49	0.71	1/4		1.75

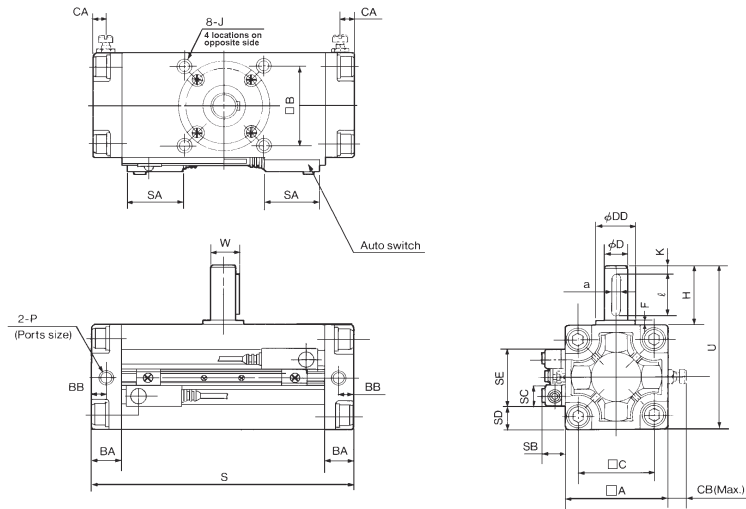
* (In Parentheses) are the dimensions for rotations of 180° and 190°



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DIMENSIONS

SINGLE ROD END WITH AUTO SWITCH NCDRA1_S_



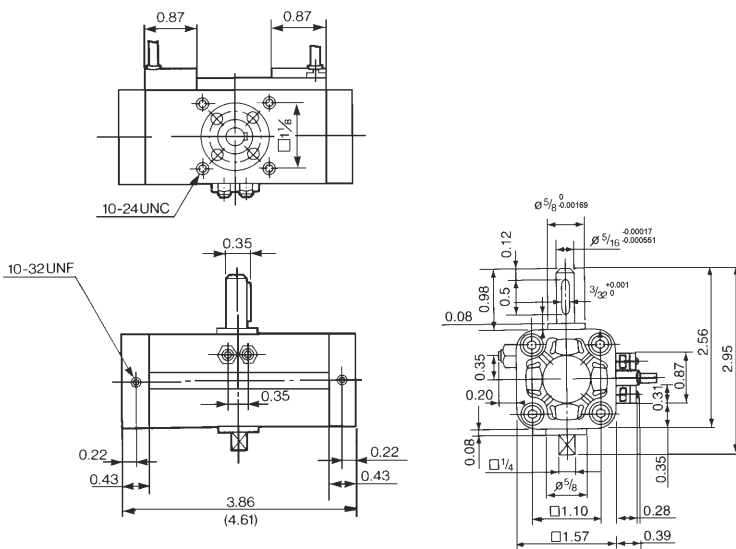
Model	KEY		
	a	Tolerance	ℓ
NCDRA1BS_50-_-A_	1/8		1
NCDRA1BS_63-_-A_	3/16	+0.001	1.25
NCDRA1BS80-_-A_	3/16	0	1.5
NCDRA1BS100-_-A_	1/4		1.75

* (In Parentheses) are the dimensions for rotations of 180° and 190°

Model	P (NPTF)	□A	□B	□C	□D	□DD	F	H	J	K	S*	U	W	BA	BB	CA	CB	SA	SB	SC	SD	SE		
NCDRA1BS_50-_-A_	1/8	2.44	1 7/8	1.81	9/16	$\begin{matrix} -0.000236 \\ -0.000669 \end{matrix}$	1	$\begin{matrix} 0 \\ -0.00205 \end{matrix}$	0.1	1.42	5/16-18UNC Depth0.31	0.2	5.67 (6.97)	3.86	0.62	0.67	0.33	0.33	0.51	1.3	0.53	0.47	0.55	1.34
NCDRA1BS_63-_-A_	1/8	2.99	2 3/8	2.24	5/8	$\begin{matrix} -0.000236 \\ -0.000669 \end{matrix}$	1 1/8	$\begin{matrix} 0 \\ -0.00244 \end{matrix}$	0.1	1.61	3/8-16UNC Depth0.47	0.2	6.42 (7.93)	4.61	0.70	0.79	0.39	0.39	0.55	1.3	0.57	0.47	0.83	1.34
NCDRA1BS80-_-A_	1/4	3.62	2 7/8	2.76	3/4	$\begin{matrix} -0.000276 \\ -0.000787 \end{matrix}$	1 3/8	$\begin{matrix} 0 \\ -0.00244 \end{matrix}$	0.12	1.97	1/2-13UNC Depth0.51	0.2	7.32 (9.06)	5.59	0.83	0.93	0.47	0.47	0.71	1.3	0.61	0.47	1.14	1.34
NCDRA1BS100-_-A_	3/8	4.41	3 3/8	3.35	1	$\begin{matrix} -0.000276 \\ -0.000787 \end{matrix}$	1 5/8	$\begin{matrix} 0 \\ -0.00244 \end{matrix}$	0.16	2.36	1/2-13UNC Depth0.55	0.2	9.65(12.24)	6.77	1.11	0.98	0.49	0.49	0.71	1.3	0.63	0.47	1.54	1.34

DIMENSIONS

DOUBLE ROD END WITH AUTO SWITCH NCDRA1BW30



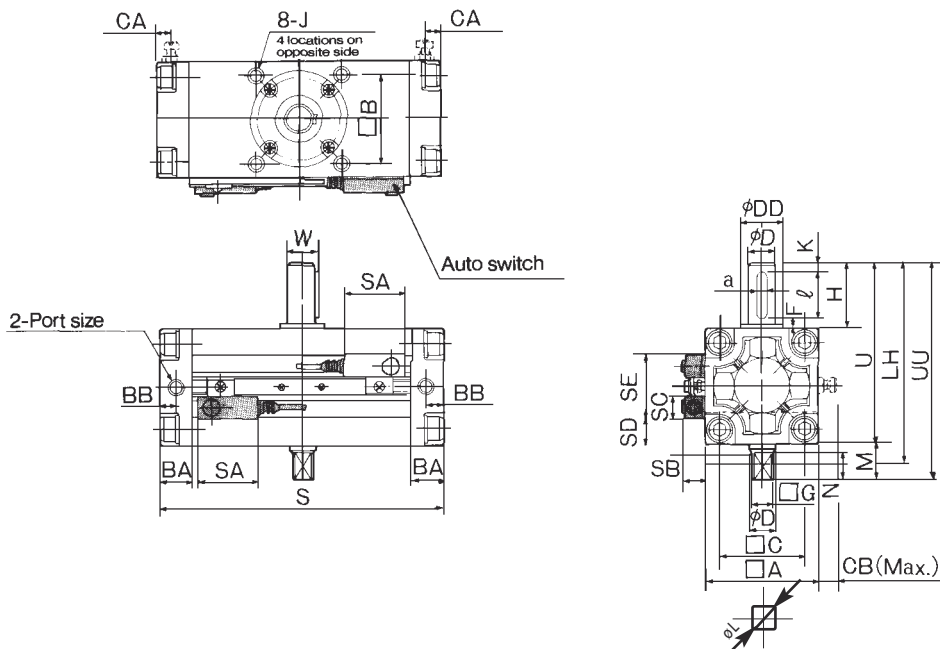
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DIMENSIONS

DOUBLE ROD END WITH AUTO SWITCH NCDRA1BW50~100



Model	P (NPTF)	□A	□B	□C	□D	□DD	F	□G	H	J	K	øL	M	N	S*	U	UU	W		
NCDRA1BW50-_-A_-	1/8	2.44	1 7/8	1.81	9/16	^{-0.000236} _{-0.000669}	1	⁰ _{-0.00205}	0.1	7/16	1.42	5/16-18UNC Depth0.31	0.2	9/16	0.79	0.59	6.14 (7.44)	3.86	4.65	0.62
NCDRA1BW63-_-A_-	1/8	2.99	2 3/8	2.24	5/8	^{-0.000236} _{-0.000669}	1 1/8	⁰ _{-0.00244}	0.1	1/2	1.61	3/8-16UNC Depth0.47	0.2	5/8	0.87	0.67	6.89 (8.41)	4.61	5.47	0.70
NCDRA1BW80-_-A_-	1/4	3.62	2 7/8	2.76	3/4	^{-0.000276} _{-0.000787}	1 3/8	⁰ _{-0.00244}	0.12	5/8	1.97	1/2-13UNC Depth0.51	0.2	3/4	0.98	0.79	7.83 (9.57)	5.59	6.57	0.83
NCDRA1BW100-_-A_-	3/8	4.41	3 3/8	3.35	1	^{-0.000276} _{-0.000787}	1 5/8	⁰ _{-0.00244}	0.16	3/4	2.36	1/2-13UNC Depth0.55	0.2	1	1.18	0.98	10.2(12.80)	6.77	7.95	1.11

Model	BA	BB	CA	CB	SA	SB	SC	SD	SE	KEY		
										a	Tolerance	ℓ
NCDRA1BW50-_-A_-	0.67	0.33	0.33	0.51	1.3	0.53	0.47	0.55	1.34	1/8		1
NCDRA1BW63-_-A_-	0.79	0.39	0.39	0.55	1.3	0.57	0.47	0.83	1.34	3/16	+0.001	1.25
NCDRA1BW80-_-A_-	0.93	0.47	0.47	0.71	1.3	0.71	0.47	1.14	1.34	3/16	0	1.5
NCDRA1BW100-_-A_-	0.98	0.49	0.49	0.71	1.3	0.71	0.47	1.54	1.34	1/4		1.75

* (In Parentheses) are the dimensions for rotations of 180° and 190°



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