

【Rotary Actuator NCRA1 Series How to Order】

NCRA1

NCRA1 **B** **S** 50 - **90** **C** Z

With auto switch

NCDRA1 **B** **S** 50 - **90** **C** Z - **M9BW**

Built-in magnet

Mounting

| | |
|----------|------------|
| B | Basic type |
|----------|------------|

Shaft type

| | |
|----------|--------------|
| S | Single shaft |
| W | Double shaft |

※Size 30 is double shaft only!

Size

| |
|-----|
| 30 |
| 50 |
| 63 |
| 80 |
| 100 |

Air cushion

| | |
|----------|------------------|
| Nil | None |
| C | With air cushion |

Rotating angle

| | |
|------------|------|
| <Standard> | |
| 90 | 90° |
| 180 | 180° |
| <Option>※ | |
| 100 | 100° |
| 190 | 190° |

※Size 30 is 90°, 180° only.

Number of auto switches

| | |
|----------|--------|
| Nil | 2 pcs. |
| S | 1 pc. |

※Up to two auto switches are mountable.

Auto switch

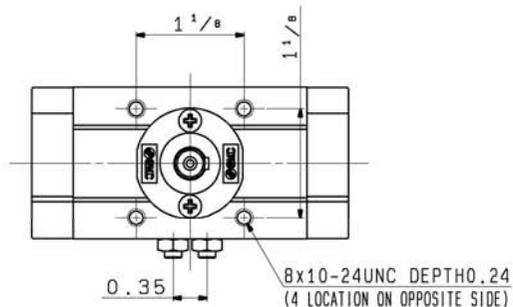
| | |
|------------|---------------------------------------|
| Nil | Without auto switch (Built-in magnet) |
|------------|---------------------------------------|

※For applicable auto switch model, refer to the table below.

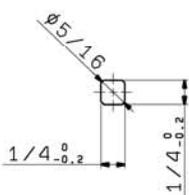
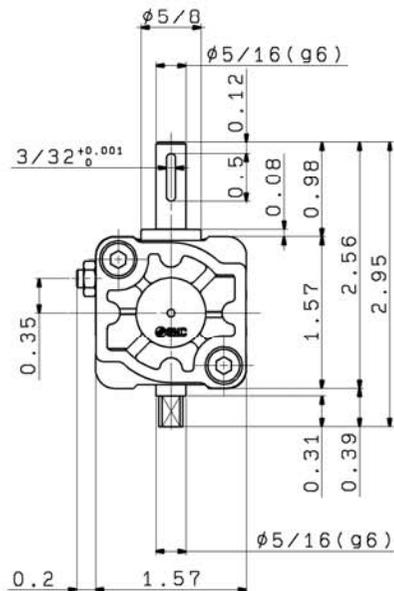
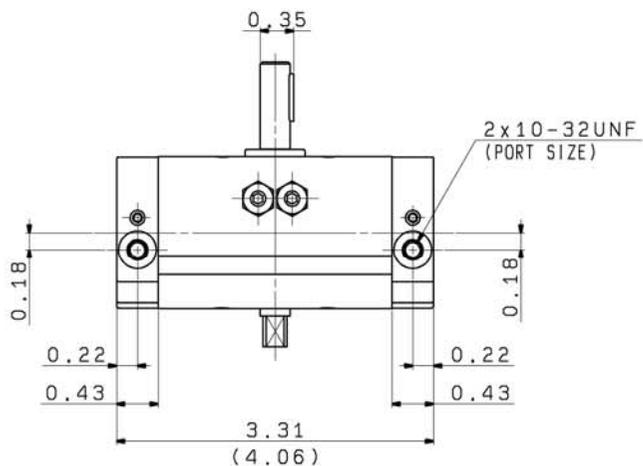
NCRA Series variations

series variations

| Size | | | 30 | 50 | 63 | 80 | 100 |
|----------------|------------------|---|----|----|----|----|-----|
| Rotating angle | 90° | | ○ | ○ | ○ | ○ | ○ |
| | 100° | | - | ○ | ○ | ○ | ○ |
| | 180° | | ○ | ○ | ○ | ○ | ○ |
| | 190° | | - | ○ | ○ | ○ | ○ |
| Shaft type | Single shaft | S | - | ○ | ○ | ○ | ○ |
| | Double shaft | W | ○ | ○ | ○ | ○ | ○ |
| Air cushion | None | | ○ | ○ | ○ | ○ | ○ |
| | With air cushion | | - | ○ | ○ | ○ | ○ |
| Variations | With auto switch | | ○ | ○ | ○ | ○ | ○ |
| Mounting | Basic type | | ○ | ○ | ○ | ○ | ○ |

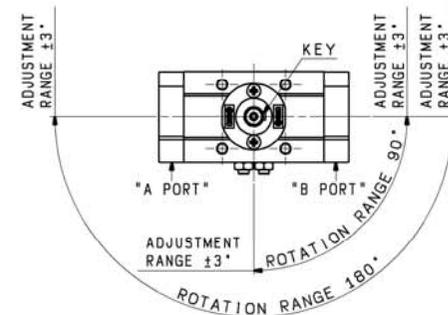


※THIS DRAWING SHOWS THE CONDITION THAT PRESSURE IS APPLIED FROM THE RIGHT PORT. ("B" PORT SIDE)
 ※() ARE THE DIMENSIONS FOR ROTATION OF 180°



SPECIFICATIONS

| | |
|---|--------------------------------------|
| OPERATING PRESSURE RANGE | 0.1~1.0MPa |
| OPERATING TEMPERATURE RANGE | 0~60 °C (BUT NO FREEZING IS ALLOWED) |
| ALLOWABLE KINETIC ENERGY | 0.01J |
| ROTATION RANGE IS AS SHOWN DOWN. | |
| WHEN "A" PORT SIDE IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE. | |



HOW TO ORDER

NCRA1BW30-90Z

ROTATION ANGLE
 90: 90° 180:180°
 MOUNTING STYLE
 B: BASIC
 SIZE
 30: φ30
 ROD END SHAPE
 W: DOUBLE SHAFT

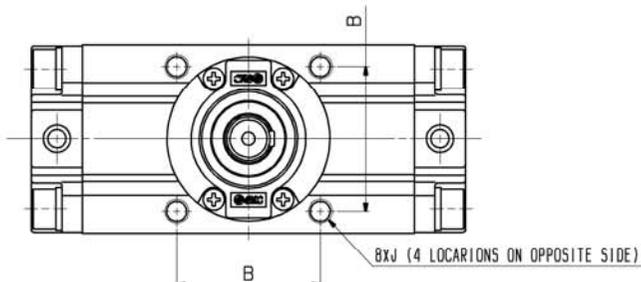
| ITEM | PART NO | PART NAME | MATERIAL | QTY | REMARKS |
|-----------------------|---------|-----------------|-----------------------|------------|----------------|
| | | | | | FINISH |
| | | | | | PAINT |
| | | | | | MASS |
| | | | | | PACKING |
| REV | QTY | DESCRIPTION | DATE PREPARED | REV NO | MODEL QTY |
| | | INITIAL RELEASE | 2015-10-22 H. SHIMANE | | |
| TOLERANCES JIS B 0405 | | | GRADE | SCALE | |
| RANGE (mm) | T | M | C/ | DATE | |
| 0.5-0.63 | 0.05 | 0.1 | 0.2 | 2015-10-22 | |
| 0.63-0.8 | 0.05 | 0.1 | 0.3 | DESIGNED | H. Shimane |
| 0.8-1.0 | 0.05 | 0.1 | 0.3 | DATE | 2015-10-22 |
| 1.0-1.5 | 0.1 | 0.2 | 0.5 | CHECKED | T. Kobayashi |
| 1.5-2.0 | 0.15 | 0.3 | 0.8 | DATE | 2015-10-22 |
| 2.0-3.0 | 0.2 | 0.5 | 1.2 | APPROVED | M. Magaribuchi |
| 3.0-5.0 | 0.3 | 0.8 | 2 | DATE | 2015-10-23 |
| 5.0-10.0 | 0.5 | 1.2 | 3 | | |
| DWG NO | | | | | THIRD ANGLE |
| DWG NO | | | | | REVISION |
| DWG NO | | | | | © NCRA1BW30-※Z |

SMC Corporation

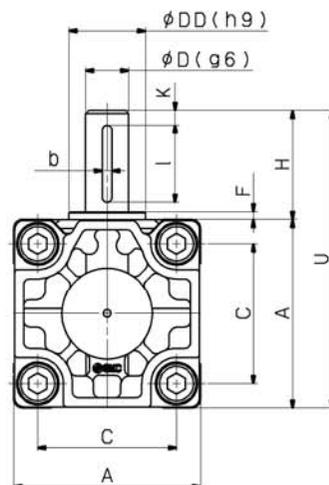
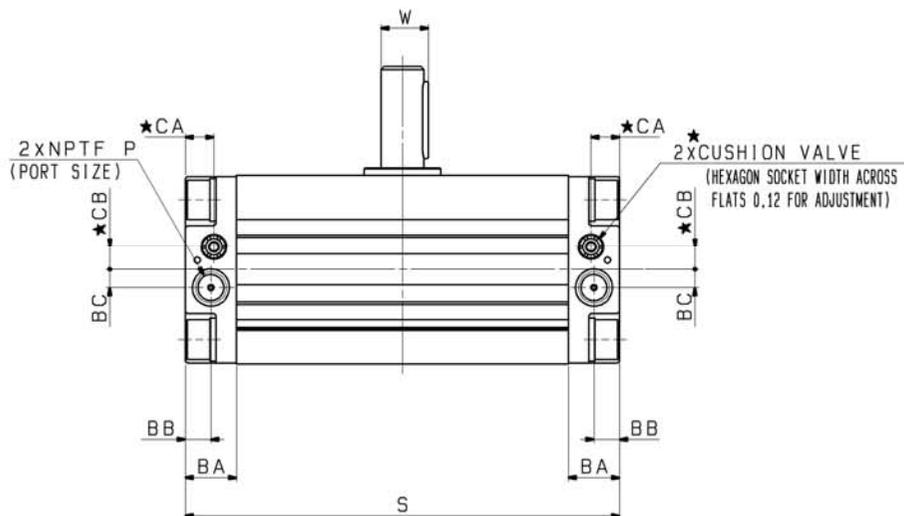
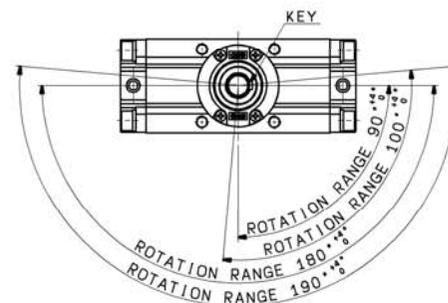
| MODEL NUMBER | A | B | C | D | DD | F | H | J | K | P | S | U | W | B | BB | BCC | ACB | KEY | | ALLOWABLE KINETIC ENERGY E | | |
|--|------|-------|------|------|-------|------|------|-----------------------|-----|-----|-------|------|------|------|------|------|------|------|-----------|----------------------------|--------------|-------|
| | | | | | | | | | | | | | | | | | | b | TOLERANCE | WITHOUT CUSHION | WITH CUSHION | |
| NCRA1BS 50- ⁹⁰ / ₁₀₀ *Z | 2.44 | 1 7/8 | 1.81 | 9/16 | 1 | 0.1 | 1.42 | 5/16-18UNC DEPTH 0.31 | 0.2 | 1/8 | 5.67 | 3.86 | 0.62 | 0.67 | 0.33 | 0.24 | 0.37 | 0.3 | 1/8 | 1 | 0.05J | 0.98J |
| NCRA1BS 50- ¹⁸⁰ / ₁₉₀ *Z | | | | | | | | | | | 6.97 | | | | | | | | | 1.25 | 0.12J | 1.5J |
| NCRA1BS 63- ⁹⁰ / ₁₀₀ *Z | 2.99 | 2 3/8 | 2.24 | 5/8 | 1 1/8 | 0.1 | 1.61 | 3/8-16UNC DEPTH 0.47 | 0.2 | 1/8 | 6.42 | 4.61 | 0.70 | 0.79 | 0.39 | 0.28 | 0.43 | 0.31 | 3/16 | | | |
| NCRA1BS 63- ¹⁸⁰ / ₁₉₀ *Z | | | | | | | | | | | 7.93 | | | | | | | | | | | |
| NCRA1BS 80- ⁹⁰ / ₁₀₀ *Z | 3.62 | 2 7/8 | 2.76 | 3/4 | 1 3/8 | 0.12 | 1.97 | 1/2-13UNC DEPTH 0.51 | 0.2 | 1/4 | 7.32 | 5.59 | 0.83 | 0.93 | 0.47 | 0.31 | 0.51 | 0.35 | 3/16 | | | |
| NCRA1BS 80- ¹⁸⁰ / ₁₉₀ *Z | | | | | | | | | | | 9.06 | | | | | | | | | 1.5 | 0.16J | 2.0J |
| NCRA1BS100- ⁹⁰ / ₁₀₀ *Z | 4.41 | 3 3/8 | 3.35 | 1 | 1 5/8 | 0.16 | 2.36 | 1/2-13UNC DEPTH 0.55 | 0.2 | 3/8 | 9.65 | 6.77 | 1.11 | 0.98 | 0.49 | 0.31 | 0.55 | 0.39 | 1/4 | | | |
| NCRA1BS100- ¹⁸⁰ / ₁₉₀ *Z | | | | | | | | | | | 12.24 | | | | | | | | | 1.75 | 0.54J | 2.9J |

SPECIFICATIONS

OPERATING PRESSURE RANGE 0.1~1.0MPa
 OPERATING TEMPERATURE RANGE 0~60 °C (BUT NO FREEZING IS ALLOWED)
 ALLOWABLE KINETIC ENERGY E J
 ROTATION RANGE IS AS SHOWN DOWN.
 WHEN LEFT PORT IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE.



*THIS DRAWING SHOWS THE CONDITION THAT PRESSURE IS APPLIED FROM THE RIGHT PORT.
 DIMENSIONS MARKED BY * ARE FOR "WITH CUSHION" STYLE



HOW TO ORDER

NCRA1BS50-90*Z

MOUNTING STYLE: B: BASIC
 ROD END SHAPE: S: SINGLE SHAFT
 AIR CUSHION: - : WITHOUT AIR CUSHION, C : WITH AIR CUSHION
 ROTATION ANGLE: 90: 90°, 180: 180°, 100: 100°, 190: 190°
 SIZE: 50: phi 50, 80: phi 80, 63: phi 63, 100: phi 100

| ITEM | PART NO | PART NAME | MATERIAL | QTY | REMARKS |
|-----------------------|---------|-----------------------|----------|------------|----------------|
| | | | | | FINISH |
| | | | | | PAINT |
| | | | | | MASS |
| | | | | | PACKING |
| D - INITIAL RELEASE | | 2015-10-22 H. Shimane | | - | |
| REV | QTY | DESCRIPTION | DATE | PREPARED | REV NO |
| TOLERANCES JIS B 0405 | | GRADE | | SCALE | |
| RANGE (mm) | T | M | C | DATE | R. Tomita |
| 0.5-0.63 | 0.05 | 0.1 | 0.3 | 2015-10-22 | FREE |
| 0.6-0.66 | 0.05 | 0.1 | 0.3 | DATE | H. Shimane |
| 0.6-0.90 | 0.1 | 0.2 | 0.5 | 2015-10-22 | DWG NAME |
| 0.9-0.120 | 0.15 | 0.3 | 0.8 | DATE | T. Kobayashi |
| 0.12-0.140 | 0.2 | 0.5 | 1.2 | 2015-10-22 | CHECKED |
| 0.14-0.160 | 0.3 | 0.8 | 2 | DATE | M. Magaribuchi |
| 0.16-0.200 | 0.5 | 1.2 | 3 | 2015-10-23 | APPROVED |

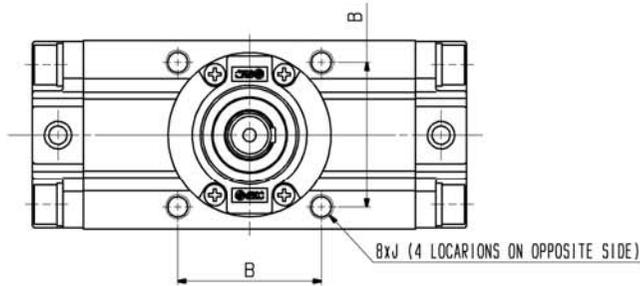
ROTARY ACTUATOR

© NCRA1BS*-**Z

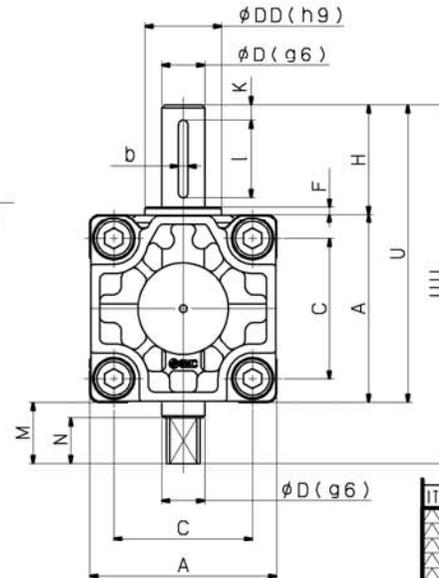
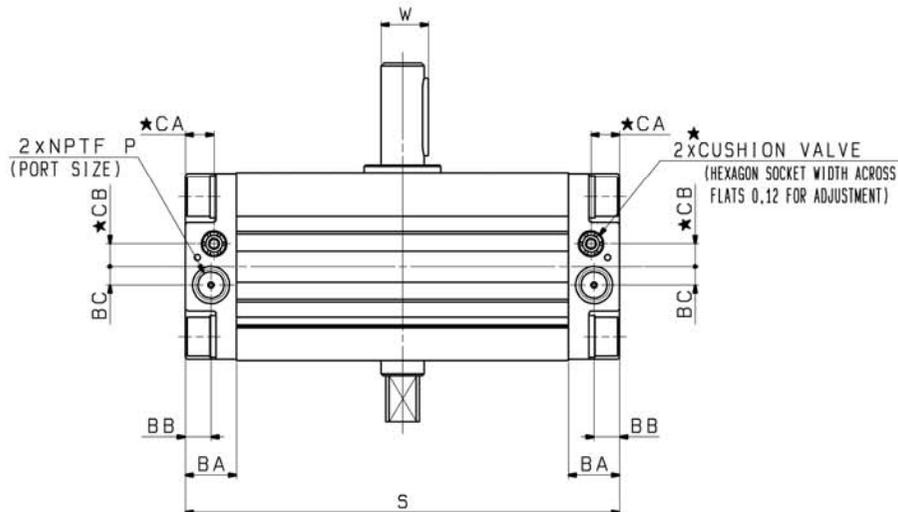
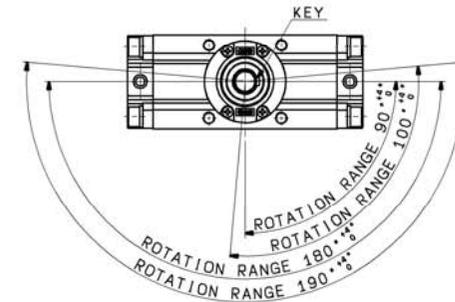
| MODEL NUMBER | A | B | C | D | DD | F | G | H | J | K | L | M | N | P | S | U | UU | W | B | A | B | C | C | A | C | B | KEY | | ALLOWABLE KINETIC ENERGY E | |
|--|------|-------|------|------|-------|------|-------|------|-----------------------|-----|------|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-----------|----------------------------|--------------|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | b | TOLERANCE | WITHOUT CUSHION | WITH CUSHION |
| NCRA1BW 50- ⁹⁰ / ₁₀₀ *Z | 2.44 | 17/8 | 1.81 | 9/16 | 1 | 0.1 | 7/16 | 1.42 | 5/16-18UNC DEPTH 0.31 | 0.2 | 9/16 | 0.79 | 0.59 | 1/8 | 5.67 | 3.86 | 4.65 | 0.62 | 0.67 | 0.33 | 0.24 | 0.37 | 0.3 | 1/8 | 1 | 0.05J | 0.98J | | | |
| NCRA1BW 50- ¹⁸⁰ / ₁₈₀ *Z | | | | | | | | | 3/8-16UNC DEPTH 0.47 | 0.2 | 5/8 | 0.87 | 0.67 | 1/8 | 6.42 | 4.61 | 5.47 | 0.70 | 0.79 | 0.39 | 0.28 | 0.43 | 0.31 | 3/16 | 1.25 | 0.12J | 1.5J | | | |
| NCRA1BW 63- ⁹⁰ / ₁₀₀ *Z | 2.99 | 2 3/8 | 2.24 | 5/8 | 1 1/8 | 0.1 | 1 1/2 | 1.61 | 1/2-13UNC DEPTH 0.51 | 0.2 | 3/4 | 0.98 | 0.79 | 1/4 | 7.32 | 5.59 | 6.57 | 0.83 | 0.93 | 0.47 | 0.31 | 0.51 | 0.35 | 3/16 | 1.5 | 0.16J | 2.0J | | | |
| NCRA1BW 63- ¹⁸⁰ / ₁₈₀ *Z | | | | | | | | | 1/2-13UNC DEPTH 0.55 | 0.2 | 1 | 1.18 | 0.98 | 3/8 | 9.65 | 6.77 | 7.95 | 1.11 | 0.98 | 0.49 | 0.31 | 0.55 | 0.39 | 1/4 | 1.75 | 0.54J | 2.9J | | | |
| NCRA1BW 80- ⁹⁰ / ₁₀₀ *Z | 3.62 | 2 7/8 | 2.76 | 3/4 | 1 3/8 | 0.12 | 5/8 | 1.97 | | | | | | | | | | | | | | | | | | | | | | |
| NCRA1BW 80- ¹⁸⁰ / ₁₈₀ *Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NCRA1BW100- ⁹⁰ / ₁₀₀ *Z | 4.41 | 3 3/8 | 3.35 | 1 | 1 5/8 | 0.16 | 3/4 | 2.36 | | | | | | | | | | | | | | | | | | | | | | |
| NCRA1BW100- ¹⁸⁰ / ₁₈₀ *Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

SPECIFICATIONS

OPERATING PRESSURE RANGE 0.1~1.0MPa
 OPERATING TEMPERATURE RANGE 0~60 °C (BUT NO FREEZING IS ALLOWED)
 ALLOWABLE KINETIC ENERGY E J
 ROTATION RANGE IS AS SHOWN DOWN.
 WHEN LEFT PORT IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE.



*THIS DRAWING SHOWS THE CONDITION THAT PRESSURE IS APPLIED FROM THE RIGHT PORT.
 DIMENSIONS MARKED BY * ARE FOR "WITH CUSHION" STYLE



HOW TO ORDER

NCRA1BW50-90*Z

MOUNTING STYLE: B: BASIC
 ROD END SHAPE: W: DOUBLE SHAFT
 AIR CUSHION: - : WITHOUT AIR CUSHION, C : WITH AIR CUSHION
 ROTATION ANGLE: 90: 90°, 180: 180°, 100: 100°, 190: 190°
 SIZE: 50: φ50, 80: φ80, 63: φ63, 100: φ100

| ITEM | PART NO | PART NAME | MATERIAL | QTY | REMARKS |
|-----------------------|---------|-----------------------|----------|-------------------------|---------|
| | | | | | FINISH |
| | | | | | PAINT |
| | | | | | MASS |
| | | | | | PACKING |
| ① - INITIAL RELEASE | | 2015-10-22 H. Shimane | | - | |
| REV | QTY | DESCRIPTION | DATE | PREPARED | REV NO |
| | | | | | |
| TOLERANCES JIS B 0405 | | GRADE | | SCALE | |
| RANGE (mm) | T | M | C | FREE | |
| 0.5-0.63 | 0.05 | 0.1 | 0.2 | DRAWN R. Tomita | |
| 0.63-0.8 | 0.05 | 0.1 | 0.3 | DATE 2015-10-22 | |
| 0.8-1.0 | 0.05 | 0.1 | 0.3 | DESIGNED H. Shimane | |
| 1.0-1.5 | 0.05 | 0.1 | 0.3 | DATE 2015-10-22 | |
| 1.5-2.0 | 0.05 | 0.1 | 0.3 | CHECKED T. Kobayashi | |
| 2.0-3.0 | 0.05 | 0.1 | 0.3 | DATE 2015-10-22 | |
| 3.0-4.0 | 0.05 | 0.1 | 0.3 | APPROVED M. Magaribuchi | |
| 4.0-5.0 | 0.05 | 0.1 | 0.3 | DATE 2015-10-23 | |
| 5.0-6.3 | 0.05 | 0.1 | 0.3 | | |

ROTARY ACTUATOR

© NCRA1BW***Z

ZSBTARON (C) ON 940

NOTE) 0.5m is the standard lead wire length.
When it is 3m, L is added to the end of the part number. Regarding lead wire length other than that, refer to the auto switch guide.

| REED SWITCH TYPE | |
|------------------------|----------------------------------|
| MODEL | D-A93(V) |
| LOAD VOLTAGE | AC100V/DC24V |
| LOAD CURRENT RANGE | 5~20mA/5~40mA |
| RESPONSE TIME | 1.2ms |
| SHOCK RESISTANCE | 300 ^m /s ² |
| INTERNAL VOLTAGE DROOP | 2.7V OR LESS |

| SOLID STATE SWITCH TYPE | |
|-------------------------|-----------------------------------|
| MODEL | D-M9N(V) D-M9B(V) |
| POWER SOURCE | DC5-12-24V (DC4.5-28V) |
| CURRENT CONSUMPTION | 10mA OR LESS |
| LOAD VOLTAGE | DC28V OR LESS (DC24V (DC10-28V)) |
| RESPONSE TIME | 1ms OR LESS |
| SHOCK RESISTANCE | 1000 ^m /s ² |
| INTERNAL VOLTAGE DROOP | 0.8V OR LESS 4V OR LESS |

SPECIFICATIONS

OPERATING PRESSURE RANGE 0.1~1.0MPa
OPERATING TEMPERATURE RANGE 0~60°C (BUT NO FREEZING IS ALLOWED)
ALLOWABLE KINETIC ENERGY E J
ROTATION RANGE IS AS SHOWN DOWN.
WHEN LEFT PORT IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE.

CAUTION

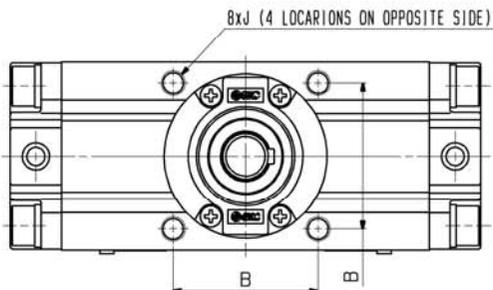
PLEASE REFER AUTO SWITCH GUIDE OF BEST PNEUMATICS FOR SPECIFICATIONS WHICH ARE NOT DESCRIBED OR OTHER MODEL.

HOW TO ORDER
NCDRA1BS□-□□Z-□□
BUILT-IN MAGNET
MOUNTING STYLE B: BASIC
ROD END SHAPE S: SINGLE SHAFT
SIZE 50: #50 80: #80 63: #63 100: #100
NO. OF SWITCHES MOUNTED -: 2 S: 1
AIR CUSHION -: WITHOUT AIR CUSHION C: WITH AIR CUSHION
ROTATION ANGLE 90: 90° 180: 180° 100: 100° 190: 190°
AUTO SWITCH -: WITHOUT SWITCH T: TYPE OF SWITCH

| REED SWITCH SYMBOL | TYPE |
|--------------------|--------|
| A90 | D-A90 |
| A93 | D-A93 |
| A96 | D-A96 |
| A90V | D-A90V |
| A93V | D-A93V |
| A96V | D-A96V |

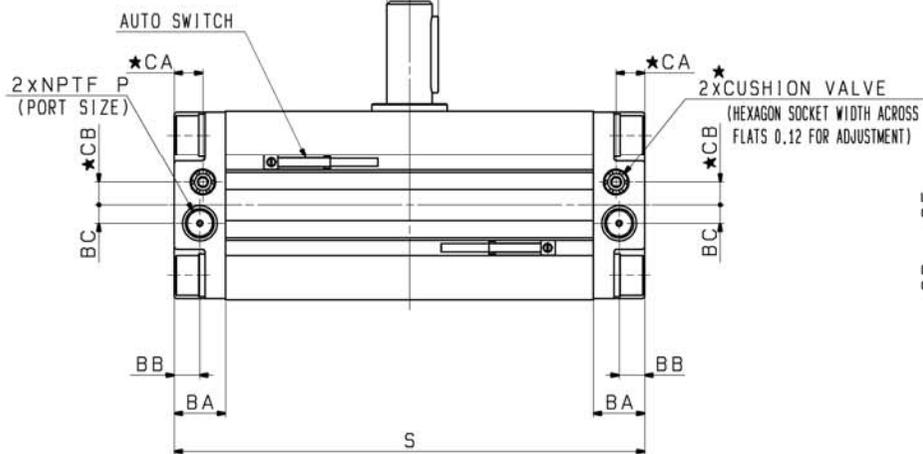
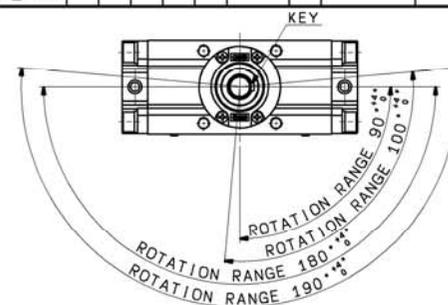
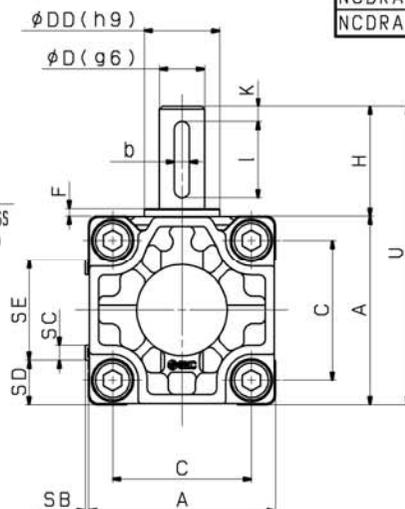
| SOLID STATE SWITCH SYMBOL | TYPE |
|---------------------------|---------|
| M9N | D-M9N |
| M9P | D-M9P |
| M9B | D-M9B |
| M9NV | D-M9NV |
| M9PV | D-M9PV |
| M9BV | D-M9BV |
| M9NW | D-M9NW |
| M9PW | D-M9PW |
| M9BW | D-M9BW |
| M9NWV | D-M9NWV |
| M9PVV | D-M9PVV |
| M9BVV | D-M9BVV |

| MODEL NUMBER | A | B | C | D | DD | F | H | J | K | P | S | U | W | B | BB | BCC | CA | CB | |
|---|------|-----|------|------|----|-----|------|----------------------|---------------------|-----|------|------|------|------|------|------|------|------|------|
| NCDRA1BS 50- ⁹⁰ / ₁₀₀ *Z-*** | 2.44 | 1/8 | 1.81 | 9/16 | 1 | 0.1 | 1.42 | 5/16-18UNC DEPTH0.31 | 0.2 | 1/8 | 6.14 | 3.86 | 0.62 | 0.67 | 0.33 | 0.24 | 0.37 | 0.3 | |
| NCDRA1BS 50- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | 7.44 | | | | | | | | |
| NCDRA1BS 63- ⁹⁰ / ₁₀₀ *Z-*** | 2.99 | 2/8 | 2.24 | 5/8 | 1 | 1/8 | 0.1 | 1.61 | 3/8-16UNC DEPTH0.47 | 0.2 | 1/8 | 6.89 | 4.61 | 0.70 | 0.79 | 0.39 | 0.28 | 0.43 | 0.31 |
| NCDRA1BS 63- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | 8.41 | | | | | | | | |
| NCDRA1BS 80- ⁹⁰ / ₁₀₀ *Z-*** | 3.62 | 7/8 | 2.76 | 3/4 | 1 | 3/8 | 0.12 | 1.97 | 1/2-13UNC DEPTH0.51 | 0.2 | 1/4 | 7.83 | 5.59 | 0.83 | 0.93 | 0.47 | 0.31 | 0.51 | 0.35 |
| NCDRA1BS 80- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | 9.57 | | | | | | | | |
| NCDRA1BS100- ⁹⁰ / ₁₀₀ *Z-*** | 4.41 | 3/8 | 3.35 | 1 | 1 | 5/8 | 0.16 | 2.36 | 1/2-13UNC DEPTH0.55 | 0.2 | 3/8 | 10.2 | 6.77 | 1.11 | 0.98 | 0.49 | 0.31 | 0.55 | 0.39 |
| NCDRA1BS100- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | 12.8 | | | | | | | | |



*THIS DRAWING SHOWS THE CONDITION THAT PRESSURE IS APPLIED FROM THE RIGHT PORT.
DIMENSIONS MARKED BY * ARE FOR "WITH CUSHION" STYLE

| MODEL NUMBER | SB | SC | SD | SE | D | KEY TOLERANCE | ALLOWABLE KINETIC ENERGY E | | |
|---|------|-----|------|-----|------|---------------|----------------------------|--------------|-------|
| | | | | | | | WITHOUT CUSHION | WITH CUSHION | |
| NCDRA1BS 50- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 0.57 | 1.3 | 1/8 | | 1 | 0.05J | 0.98J |
| NCDRA1BS 50- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |
| NCDRA1BS 63- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 0.85 | 1.3 | 3/16 | +0.001 | 1.25 | 0.12J | 1.5J |
| NCDRA1BS 63- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |
| NCDRA1BS 80- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 1.16 | 1.3 | 3/16 | | 1.5 | 0.16J | 2.0J |
| NCDRA1BS 80- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |
| NCDRA1BS100- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 1.56 | 1.3 | 1/4 | | 1.75 | 0.54J | 2.9J |
| NCDRA1BS100- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |



| ITEM | PART NO | PART NAME | MATERIAL | QTY | REMARKS |
|-----------------|-----------------------------|----------------------|----------------|----------------------|-------------|
| | | | FINISH | | |
| | | | PAINT | | |
| | | | MASS | | |
| | | | PACKING | | |
| INITIAL RELEASE | | 2015-10-22H. Shimane | | | |
| REV. QTY | DESCRIPTION | DATE PREPARED | REV. NO | MATERIAL | MODEL QTY |
| | TOLERANCES JIS B 0405 GRADE | DATE | R. Tomita | SCALE | THIRD ANGLE |
| | RANGE (mm) | DESIGNED | H. Shimane | FREE | |
| | 0.5-0.63 | DATE | 2015-10-22 | DWG NAME | |
| | 0.6-0.8 | CHECKED | T. Kobayashi | ROTARY ACTUATOR | |
| | 0.8-1.0 | DATE | 2015-10-22 | DWG NO | |
| | 1.0-1.5 | APPROVED | M. Magaribuchi | (C) NCDRA1BS***Z-*** | |
| | 1.5-2.0 | DATE | 2015-10-23 | | |

FINISH: 表面処理 / PAINT: 塗装 / MASS: 質量
PACKING: 包装区分 / MATERIAL: 材質
MATERIAL SIZE: 材料寸法

DWG NAME

DWG REC

DWG ID|BA45166500

SMC Corporation

-Z-**M8TARDON ON 9A0

NOTE) 0.5m is the standard lead wire length.
When it is 3m, L is added to the end of the part number. Regarding lead wire length other than that, refer to the auto switch guide.

HOW TO ORDER
NCDRA1BW□-□□Z-□□

BUILT-IN MAGNET

MOUNTING STYLE
B: BASIC

ROD END SHAPE
W: DOUBLE SHAFT

NO. OF SWITCHES MOUNTED
-: 2
S: 1

AIR CUSHION
-: WITHOUT AIR CUSHION
C: WITH AIR CUSHION

ROTATION ANGLE
90: 90° 180: 180°
100: 100° 190: 190°

SIZE
50: φ50 80: φ80
63: φ63 100: φ100

| SYMBOL | TYPE |
|--------|--------|
| A90 | D-A90 |
| A93 | D-A93 |
| A96 | D-A96 |
| A90V | D-A90V |
| A93V | D-A93V |
| A96V | D-A96V |

| SYMBOL | TYPE |
|--------|--------|
| M9N | D-M9N |
| M9P | D-M9P |
| M9B | D-M9B |
| M9NV | D-M9NV |
| M9PV | D-M9PV |
| M9BV | D-M9BV |
| M9NW | D-M9NW |
| M9PW | D-M9PW |
| M9WV | D-M9WV |
| M9BW | D-M9BW |

| REED SWITCH TYPE | |
|-----------------------|----------------------------------|
| MODEL | D-A93(V) |
| LOAD VOLTAGE | AC100V/DC24V |
| LOAD CURRENT RANGE | 5~20mA/5~40mA |
| RESPONSE TIME | 1.2ms |
| SHOCK RESISTANCE | 300 ⁰ /s ² |
| INTERNAL VOLTAGE DROP | 2.7V OR LESS |

| SOLID STATE SWITCH TYPE | |
|-------------------------|-----------------------------------|
| MODEL | D-M9N(V) D-M9B(V) |
| POWER SOURCE | DC5-12-24V (DC4.5-28V) |
| CURRENT CONSUMPTION | 10mA OR LESS |
| LOAD VOLTAGE | DC28V OR LESS (DC24V (DC10-28V)) |
| RESPONSE TIME | 1ms OR LESS |
| SHOCK RESISTANCE | 1000 ⁰ /s ² |
| INTERNAL VOLTAGE DROP | 0.8V OR LESS 4V OR LESS |

SPECIFICATIONS

OPERATING PRESSURE RANGE 0.1~1.0MPa

OPERATING TEMPERATURE RANGE 0~60°C (BUT NO FREEZING IS ALLOWED)

ALLOWABLE KINETIC ENERGY E J

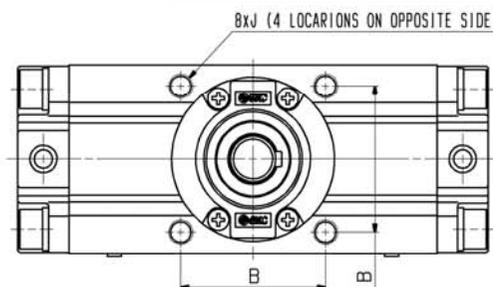
ROTATION RANGE IS AS SHOWN DOWN.

WHEN LEFT PORT IS PRESSURIZED, THE SHAFT ROTATES CLOCKWISE.

CAUTION

PLEASE REFER AUTO SWITCH GUIDE OF BEST PNEUMATICS FOR SPECIFICATIONS WHICH ARE NOT DESCRIBED OR OTHER MODEL.

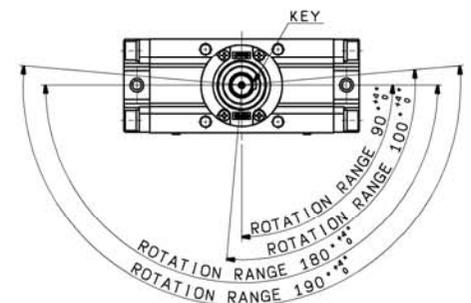
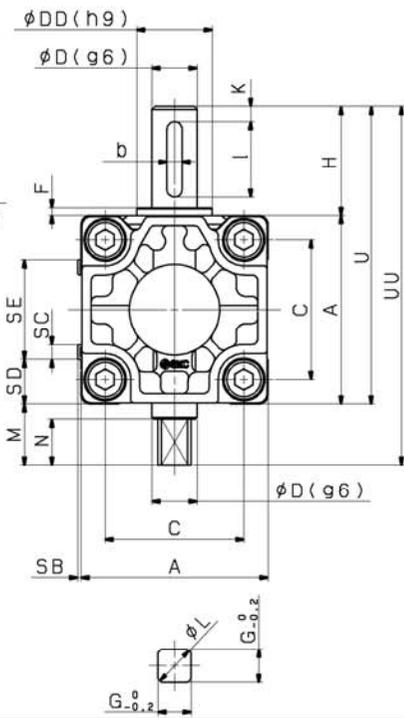
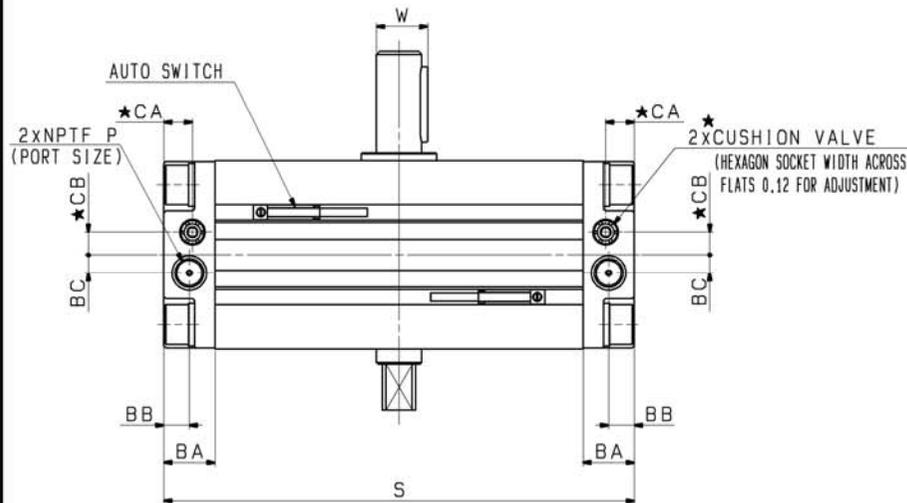
| MODEL NUMBER | A | B | C | D | DD | F | G | H | J | K | L | M | N | P | S | U | UU | W | B | BB | BCC | CACB | |
|--|------|-------|------|------|-------|------|------|------|---------------------|-----|------|------|------|-----|--------------|------|------|------|------|------|------|------|------|
| NCDRA1BW 50- ⁹⁰ / ₁₀₀ *Z-*** | 2.44 | 1.7/8 | 1.81 | 9/16 | 1 | 0.1 | 7/16 | 1.42 | 5/16-18UNC DEPTH.31 | 0.2 | 9/16 | 0.79 | 0.59 | 1/8 | 6.14 7.44 | 3.86 | 4.65 | 0.62 | 0.67 | 0.33 | 0.24 | 0.37 | 0.3 |
| NCDRA1BW 50- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | | | | | 6.89 8.41 | 4.61 | 5.47 | 0.70 | 0.79 | 0.39 | 0.28 | 0.43 | 0.31 |
| NCDRA1BW 63- ⁹⁰ / ₁₀₀ *Z-*** | 2.99 | 2 3/8 | 2.24 | 5/8 | 1 1/8 | 0.1 | 1/2 | 1.61 | 3/8-16UNC DEPTH.47 | 0.2 | 5/8 | 0.87 | 0.67 | 1/8 | 7.83 9.57 | 5.59 | 6.57 | 0.83 | 0.93 | 0.47 | 0.31 | 0.51 | 0.35 |
| NCDRA1BW 63- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | | | | | 10.2 12.8 | 6.77 | 7.95 | 1.11 | 0.98 | 0.49 | 0.31 | 0.55 | 0.39 |
| NCDRA1BW 80- ⁹⁰ / ₁₀₀ *Z-*** | 3.62 | 2 7/8 | 2.76 | 3/4 | 1 3/8 | 0.12 | 5/8 | 1.97 | 1/2-13UNC DEPTH.51 | 0.2 | 3/4 | 0.98 | 0.79 | 1/4 | | | | | | | | | |
| NCDRA1BW 80- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | | | | | | | | | | | | | |
| NCDRA1BW 100- ⁹⁰ / ₁₀₀ *Z-*** | 4.41 | 3 3/8 | 3.35 | 1 | 1 5/8 | 0.16 | 3/4 | 2.36 | 1/2-13UNC DEPTH.55 | 0.2 | 1 | 1.18 | 0.98 | 3/8 | | | | | | | | | |
| NCDRA1BW 100- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | | | | | | | | | | | | | | | |



★THIS DRAWING SHOWS THE CONDITION THAT PRESSURE IS APPLIED FROM THE RIGHT PORT.

DIMENSIONS MARKED BY ★ ARE FOR "WITH CUSHION" STYLE

| MODEL NUMBER | SB | SC | SD | SE | D | KEY TOLERANCE | ALLOWABLE KINETIC ENERGY E | | |
|--|------|-----|------|-----|------|---------------|----------------------------|--------------|--------|
| | | | | | | | WITHOUT CUSHION | WITH CUSHION | |
| NCDRA1BW 50- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 0.57 | 1.3 | 1/8 | +0.001 0 | 1 | 0.05 J | 0.98 J |
| NCDRA1BW 50- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | 1.25 | 0.12 J | 1.5 J |
| NCDRA1BW 63- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 0.85 | 1.3 | 3/16 | | 1.5 | 0.16 J | 2.0 J |
| NCDRA1BW 63- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | 1.75 | 0.54 J | 2.9 J |
| NCDRA1BW 80- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 1.16 | 1.3 | 3/16 | | | | |
| NCDRA1BW 80- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |
| NCDRA1BW 100- ⁹⁰ / ₁₀₀ *Z-*** | 0.06 | 0.2 | 1.56 | 1.3 | 1/4 | | | | |
| NCDRA1BW 100- ¹⁸⁰ / ₁₉₀ *Z-*** | | | | | | | | | |



| ITEM | PART NO | PART NAME | MATERIAL | QTY | REMARKS |
|-----------------------|----------------------|-----------------|----------|---------|------------------------|
| | | | | | FINISH |
| | | | | | PAINT |
| | | | | | MASS |
| | | | | | PACKING |
| INITIAL RELEASE | 2015-10-22H, Shimane | | | | |
| DATE PREPARED | | | | | |
| REV. QTY | DESCRIPTION | DATE | DATE | REV. NO | MODEL |
| | | | | | QTY |
| TOLERANCES JIS B 0405 | GRADE | SCALE | | | |
| RANGE (mm) | T | F | FREE | | |
| 0.5-0.63 | 0.05 | 0.1 | 0.2 | | |
| 0.63-0.8 | 0.05 | 0.1 | 0.3 | | |
| 0.8-1.0 | 0.05 | 0.1 | 0.3 | | |
| 1.0-1.5 | 0.1 | 0.2 | 0.5 | | |
| 1.5-3.0 | 0.15 | 0.3 | 0.8 | | |
| 3.0-6.0 | 0.2 | 0.5 | 1.2 | | |
| 6.0-10.0 | 0.3 | 0.8 | 2 | | |
| 10.0-15.0 | 0.5 | 1.2 | 3 | | |
| DRAWN | R. Tomita | SCALE | | | |
| DATE | 2015-10-22 | FREE | | | |
| DESIGNED | H. Shimane | DWG NAME | | | |
| DATE | 2015-10-22 | ROTARY ACTUATOR | | | |
| CHECKED | T. Kobayashi | DWG NO | | | |
| DATE | 2015-10-22 | | | | |
| APPROVED | M. Magaribuchi | | | | |
| DATE | 2015-10-23 | | | | |
| | | | | | REVISION |
| | | | | | ① NCDRA1BW***-***Z-*** |
| DWG NAME | | DWG REC | | DWG ID | BA45166800 |
| | | | | | SMC Corporation |

FINISH: 表面処理 / PAINT: 塗装 / MASS: 質量
PACKING: 包装区分 / MATERIAL: 材質
MATERIAL SIZE: 材料寸法