Butterfly Valve

# Concentric Butterfly Valve to DIN/EN
# Lug Type
# PN10, DN40 ~ DN500

# Series 81L(E)-PN10

## Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

## Standards

- End dimensions acc. to DIN2633
- Inspection & test acc. to EN12266

## Limitation

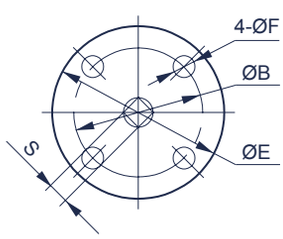
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

PMA: See Table A
TMA: See Table B
Selection:

**Material of Body:**
CF8M/CF8/CI/DI

## Options

- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon

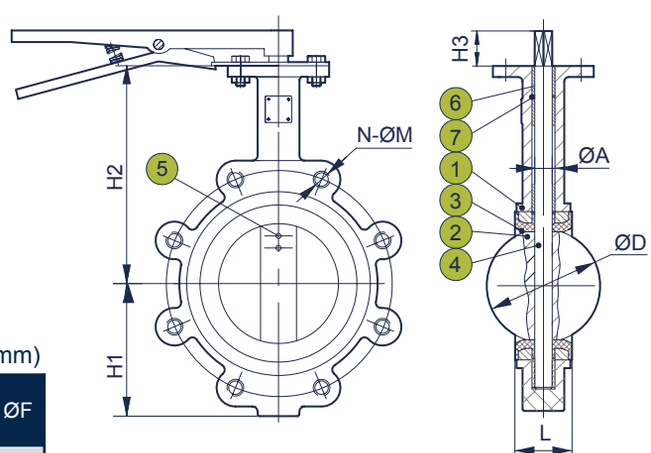



DN40-DN500

(2)

| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.




Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 1½" | 40 | 70 | 110 | 32 | 35 | 42.4 | 110 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 2" | 50 | 76 | 162 | 32 | 45 | 52.9 | 125 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 2½" | 65 | 80 | 175 | 32 | 48 | 64.6 | 145 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 3" | 80 | 95 | 181 | 32 | 49 | 79.04 | 160 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 4" | 100 | 114 | 200 | 32 | 55 | 104.4 | 180 | 8-M16 | 15.8 | 11 | 92 | 70 | 9 |
| 5" | 125 | 127 | 213 | 32 | 58 | 129.5 | 210 | 8-M16 | 19.05 | 14 | 92 | 70 | 9 |
| 6" | 150 | 140 | 225 | 32 | 59 | 155.8 | 240 | 8-M20 | 19.05 | 14 | 92 | 70 | 9 |
| 8" | 200 | 173 | 260 | 36 | 64 | 202.7 | 295 | 8-M20 | 22.2 | 17 | 125 | 102 | 11 |
| 10" | 250 | 203 | 292 | 36 | 70 | 250.7 | 350 | 12-M20 | 28.6 | 22 | 125 | 102 | 11 |
| 12" | 300 | 237 | 337 | 36 | 80 | 301.9 | 400 | 12-M20 | 31.8 | 22 | 150 | 125 | 13 |
| 14" | 350 | 279 | 368 | 45 | 80 | 333.3 | 460 | 16-M20 | 31.8 | 22 | 150 | 125 | 13 |
| 16" | 400 | 304 | 400 | 51 | 90 | 389.6 | 515 | 16-M20 | 33.3 | 22 | 210 | 165 | 22 |
| 18" | 450 | 362 | 422 | 51 | 109 | 439.9 | 565 | 20-M24 | 38.0 | 27 | 210 | 165 | 22 |
| 20" | 500 | 368 | 479 | 64 | 135 | 491.6 | 620 | 20-M24 | 41.15 | 27 | 210 | 165 | 22 |

| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |

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Butterfly Valve

# Concentric Butterfly Valve to DIN/EN
# Lug Type
# PN10, DN600 ~ DN1000

# Series 81L(E)-PN10

## Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

## Standards

- End dimensions acc. to DIN2633
- Inspection & test acc. to EN12266

## Limitation

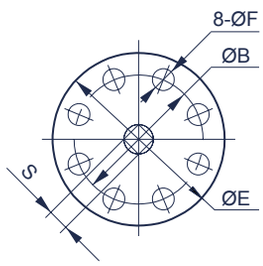
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

## Options

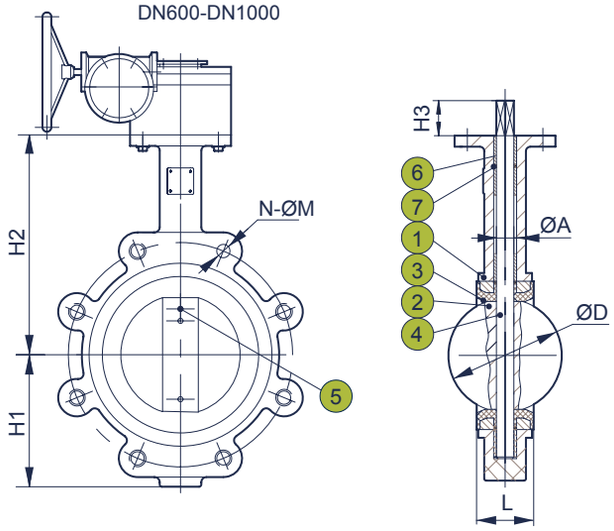
- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon

PMA: See Table A
TMA: See Table B
Selection:

**Material of Body:**
CF8M/CF8/CI/DI




DN600-DN1000




| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.

| Table A: Maximum Pressure Rating | | | |
|---|---|---|---|
| SIZE | RUBBER SEAT | PTFE SEAT | PTFE SEAT+ PTFE COATED DISC |
| ≤ DN150 (6") | 13.7 bar (200psi) | 13.7 bar (200psi) | 10.3 bar (150 psi) |
| DN200 (8") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 10.3 bar (150 psi) |
| DN250(10")~ DN300(12") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 6.9 bar (100 psi) |
| DN350(14")~ DN600(24") | 10.3 bar (150 psi) | 6.9 bar (100 psi) | 6.9 bar (100 psi) |
| ≥ DN600 (24") | 6.9 bar (100 psi) | - | - |
| Gear Operation Recommendation | ≥ DN300 (12") | ≥ DN150 (6") | ≥ DN100 (4") |

Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 24" | 600 | 444 | 562 | 70 | 156 | 592.3 | 725 | 20-M27 | 50.65 | 36 | 300 | 254 | 18 |
| 28" | 700 | 520 | 630 | 70 | 156 | 694.1 | 840 | 24-M27 | 63.35 | 40 | 300 | 254 | 18 |
| 30" | 750 | 621 | 648 | 72 | 169 | 744.2 | - | - | 63.35 | 40 | 300 | 254 | 18 |
| 32" | 800 | 590 | 690 | 72 | 169 | 794.2 | 950 | 24-M30 | 63.35 | 40 | 300 | 254 | 18 |
| 36" | 900 | 623 | 768 | 77 | 211 | 863.4 | 1050 | 28-M30 | 74.25 | 53 | 300 | 254 | 18 |
| 40" | 1000 | 670 | 850 | 77 | 211 | 963.4 | 1160 | 28-M33 | 84.2 | 60 | 300 | 254 | 18 |

| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |



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Butterfly Valve

# Concentric Butterfly Valve to DIN/EN
# Lug Type
# PN16, DN40 ~ DN500

# Series 81L(E)-PN16

## Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

## Standards

- End dimensions acc. to DIN2633
- Inspection & test acc. to EN12266

## Limitation

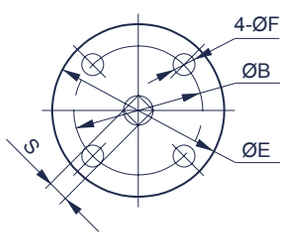
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

PMA: See Table A
TMA: See Table B
Selection:

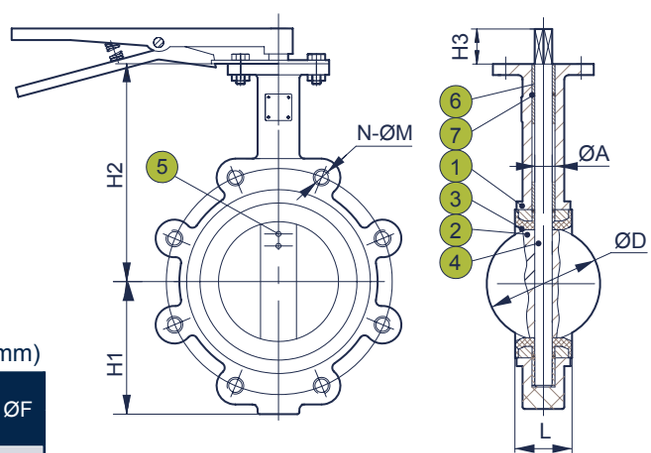
**Material of Body:**
CF8M/CF8/CI/DI

## Options

- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon




DN40-DN500






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| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.

Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 1½" | 40 | 70 | 110 | 32 | 35 | 42.4 | 110 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 2" | 50 | 76 | 162 | 32 | 45 | 52.9 | 125 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 2½" | 65 | 80 | 175 | 32 | 48 | 64.6 | 145 | 4-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 3" | 80 | 95 | 181 | 32 | 49 | 79.04 | 160 | 8-M16 | 12.7 | 9 | 92 | 70 | 9 |
| 4" | 100 | 114 | 200 | 32 | 55 | 104.4 | 180 | 8-M16 | 15.8 | 11 | 92 | 70 | 9 |
| 5" | 125 | 127 | 213 | 32 | 58 | 129.5 | 210 | 8-M16 | 19.05 | 14 | 92 | 70 | 9 |
| 6" | 150 | 140 | 225 | 32 | 59 | 155.8 | 240 | 8-M20 | 19.05 | 14 | 92 | 70 | 9 |
| 8" | 200 | 173 | 260 | 36 | 64 | 202.7 | 295 | 12-M20 | 22.2 | 17 | 125 | 102 | 11 |
| 10" | 250 | 203 | 292 | 36 | 70 | 250.7 | 355 | 12-M24 | 28.6 | 22 | 125 | 102 | 11 |
| 12" | 300 | 237 | 337 | 36 | 80 | 301.9 | 410 | 12-M24 | 31.8 | 22 | 150 | 125 | 13 |
| 14" | 350 | 279 | 368 | 45 | 80 | 333.3 | 470 | 16-M24 | 31.8 | 22 | 150 | 125 | 13 |
| 16" | 400 | 304 | 400 | 51 | 90 | 389.6 | 525 | 16-M27 | 33.3 | 22 | 210 | 165 | 22 |
| 18" | 450 | 362 | 422 | 51 | 109 | 439.9 | 585 | 20-M27 | 38.0 | 27 | 210 | 165 | 22 |
| 20" | 500 | 368 | 479 | 64 | 135 | 491.6 | 650 | 20-M30 | 41.15 | 27 | 210 | 165 | 22 |

| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |

Butterfly Valve

# Concentric Butterfly Valve to DIN/EN
# Lug Type
# PN16, DN600 ~ DN1000

# Series 81L(E)-PN16

## Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

## Standards

- End dimensions acc. to DIN2633
- Inspection & test acc. to EN12266

## Limitation

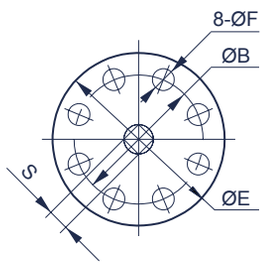
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

## Options

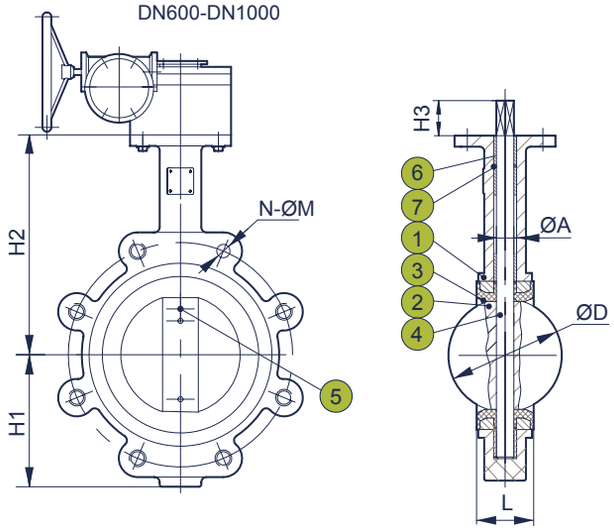
- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon

PMA: See Table A
TMA: See Table B
Selection:

**Material of Body:**
CF8M/CF8/CI/DI




DN600-DN1000




| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.

| Table A: Maximum Pressure Rating | | | |
|---|---|---|---|
| SIZE | RUBBER SEAT | PTFE SEAT | PTFE SEAT+ PTFE COATED DISC |
| ≤ DN150 (6") | 13.7 bar (200psi) | 13.7 bar (200psi) | 10.3 bar (150 psi) |
| DN200 (8") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 10.3 bar (150 psi) |
| DN250(10")~ DN300(12") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 6.9 bar (100 psi) |
| DN350(14")~ DN600(24") | 10.3 bar (150 psi) | 6.9 bar (100 psi) | 6.9 bar (100 psi) |
| ≥ DN600 (24") | 6.9 bar (100 psi) | - | - |
| Gear Operation Recommendation | ≥ DN300 (12") | ≥ DN150 (6") | ≥ DN100 (4") |

Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 24" | 600 | 444 | 562 | 70 | 156 | 592.3 | 770 | 20-M33 | 50.65 | 36 | 300 | 254 | 18 |
| 28" | 700 | 520 | 630 | 70 | 156 | 694.1 | 840 | 24-M33 | 63.35 | 40 | 300 | 254 | 18 |
| 30" | 750 | 621 | 648 | 72 | 169 | 744.2 | - | - | 63.35 | 40 | 300 | 254 | 18 |
| 32" | 800 | 590 | 690 | 72 | 169 | 794.2 | 950 | 24-M36 | 63.35 | 40 | 300 | 254 | 18 |
| 36" | 900 | 623 | 768 | 77 | 211 | 863.4 | 1050 | 28-M36 | 74.25 | 53 | 300 | 254 | 18 |
| 40" | 1000 | 670 | 850 | 77 | 211 | 963.4 | 1170 | 28-M39 | 84.2 | 60 | 300 | 254 | 18 |

| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |



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Butterfly Valve

# Concentric Butterfly Valve to ANSI/ASME Lug Type

## CLASS125/CLASS150, 1½" ~ 20"

## Series 81L(E)-CL125/CL150

### Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

### Standards

- End dimensions acc. to B16.5 (<28") and B16.47A (≥28")
- Inspection & test acc. to API598

### Limitation

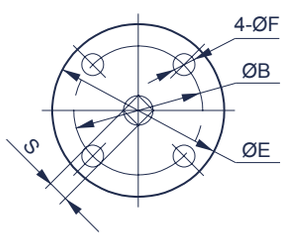
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

PMA: See Table A
TMA: See Table B
Selection:

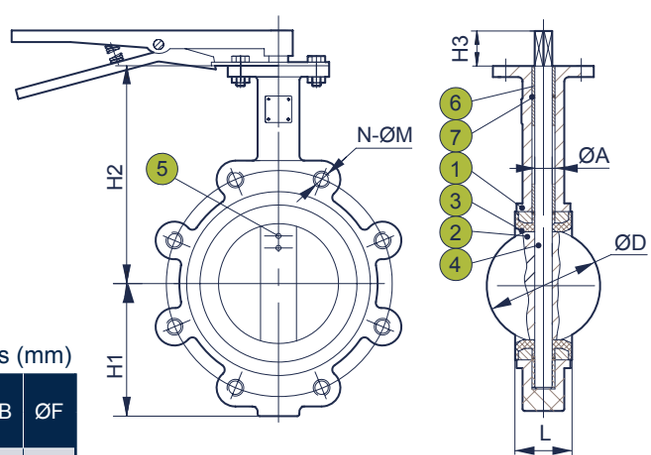
**Material of Body:**
CF8M/CF8/CI/DI

### Options

- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon




DN40-DN500




| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.

Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 1½" | 40 | 70 | 110 | 32 | 35 | 42.4 | 98.5 | 4-1/2"-13 | 12.7 | 9 | 92 | 70 | 9 |
| 2" | 50 | 76 | 162 | 32 | 45 | 52.9 | 120.5 | 4-5/8"-11 | 12.7 | 9 | 92 | 70 | 9 |
| 2½" | 65 | 80 | 175 | 32 | 48 | 64.6 | 139.5 | 4-5/8"-11 | 12.7 | 9 | 92 | 70 | 9 |
| 3" | 80 | 95 | 181 | 32 | 49 | 79.04 | 152.5 | 4-5/8"-11 | 12.7 | 9 | 92 | 70 | 9 |
| 4" | 100 | 114 | 200 | 32 | 55 | 104.4 | 190.5 | 8-5/8"-11 | 15.8 | 11 | 92 | 70 | 9 |
| 5" | 125 | 127 | 213 | 32 | 58 | 129.5 | 216.0 | 8-3/4"-10 | 19.05 | 14 | 92 | 70 | 9 |
| 6" | 150 | 140 | 225 | 32 | 59 | 155.8 | 241.5 | 8-3/4"-10 | 19.05 | 14 | 92 | 70 | 9 |
| 8" | 200 | 173 | 260 | 36 | 64 | 202.7 | 298.5 | 8-3/4"-10 | 22.2 | 17 | 125 | 102 | 11 |
| 10" | 250 | 203 | 292 | 36 | 70 | 250.7 | 362.0 | 12-7/8"-9 | 28.6 | 22 | 125 | 102 | 11 |
| 12" | 300 | 237 | 337 | 36 | 80 | 301.9 | 432.0 | 12-7/8"-9 | 31.8 | 22 | 150 | 125 | 13 |
| 14" | 350 | 279 | 368 | 45 | 80 | 333.3 | 476.0 | 12-1"-8 | 31.8 | 22 | 150 | 125 | 13 |
| 16" | 400 | 304 | 400 | 51 | 90 | 389.6 | 539.5 | 16-1"-8 | 33.3 | 22 | 210 | 165 | 22 |
| 18" | 450 | 362 | 422 | 51 | 109 | 439.9 | 578.0 | 16-1⅛"-7 | 38.0 | 27 | 210 | 165 | 22 |
| 20" | 500 | 368 | 479 | 64 | 135 | 491.6 | 635.0 | 20-1⅛"-7 | 41.15 | 27 | 210 | 165 | 22 |

| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |



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Butterfly Valve

# Concentric Butterfly Valve to ANSI/ASME Lug Type

## CLASS125/CLASS150, 24" ~ 40"  Series 81L(E)-PN125/CL150

### Features

- Suitable for use in HVAC, irrigation, industrial applications where positive shutoff is required
- Single through-put shaft provides most economical pricing
- 10 position lever or gear operation
- Alloy material available on request

### Standards

- End dimensions acc. to B16.5 (<28") and B16.47A (≥28")
- Inspection & test acc. to API598

### Limitation

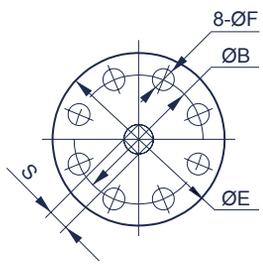
- Do not use EPDM when hydrocarbons are present.
- Kindly anticipate increased torque for PTFE coated disc + PTFE seat option; gear operation recommended for sizes ≥ 4".
- End-of-line service at half rating

### Options

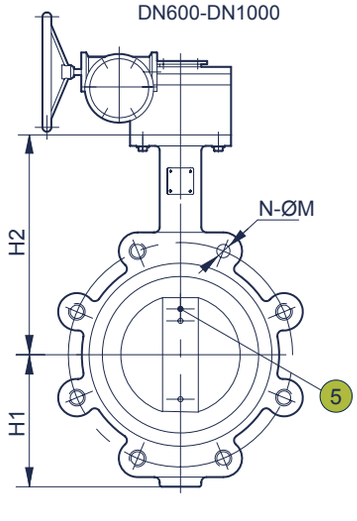
- Double "half pin" style available for increased performance and lifecycle
- Coated disc available in: rubber, PTFE, nylon

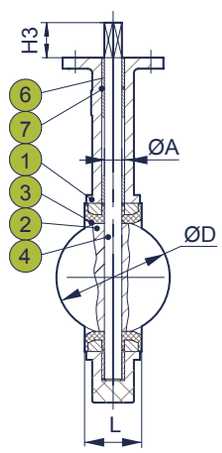
PMA: See Table A
TMA: See Table B
Selection:

**Material of Body:**
CF8M/CF8/CI/DI




DN600-DN1000




| Materials List | | |
|---|---|---|
| NO | PARTS NAME | MATERIAL |
| 1 | BODY | CF8M / CF8 / CI / DI |
| 2 | DISC* | CF8M / CF8 / CI / DI |
| 3 | SEAT | NBR / EPDM / VITON |
| 4 | STEM | SS410 |
| 5 | TAPER PIN | SS |
| 6 | BUSHING | PTFE |
| 7 | O-RING | EPDM |

*Coated disc option available.
Enclosed a condensed table, for complete options, contact DIE ERSTE directly.

| Table A: Maximum Pressure Rating | | | |
|---|---|---|---|
| SIZE | RUBBER SEAT | PTFE SEAT | PTFE SEAT+ PTFE COATED DISC |
| ≤ DN150 (6") | 13.7 bar (200psi) | 13.7 bar (200psi) | 10.3 bar (150 psi) |
| DN200 (8") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 10.3 bar (150 psi) |
| DN250(10")~ DN300(12") | 13.7 bar (200psi) | 10.3 bar (150 psi) | 6.9 bar (100 psi) |
| DN350(14")~ DN600(24") | 10.3 bar (150 psi) | 6.9 bar (100 psi) | 6.9 bar (100 psi) |
| ≥ DN600 (24") | 6.9 bar (100 psi) | - | - |
| Gear Operation Recommendation | ≥ DN300 (12") | ≥ DN150 (6") | ≥ DN100 (4") |

Dimensions (mm)

| Size | | H1 | H2 | H3 | L | ØD | ØC | N-ØM | ØA | S | ØE | ØB | ØF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IN | DN | | | | | | | | | | | | |
| 24" | 600 | 444 | 562 | 70 | 156 | 592.3 | 749.5 | 20-1¼"-7 | 50.65 | 36 | 300 | 254 | 18 |
| 28" | 700 | 520 | 630 | 70 | 156 | 694.1 | - | - | 63.35 | 40 | 300 | 254 | 18 |
| 30" | 750 | 621 | 648 | 72 | 169 | 744.2 | 914.5 | 28-1¼"-7 | 63.35 | 40 | 300 | 254 | 18 |
| 32" | 800 | 590 | 690 | 72 | 169 | 794.2 | - | - | 63.35 | 40 | 300 | 254 | 18 |
| 36" | 900 | 623 | 768 | 77 | 211 | 863.4 | 1086.0 | 32-1½"-6 | 74.25 | 53 | 300 | 254 | 18 |
| 40" | 1000 | 670 | 850 | 77 | 211 | 963.4 | - | - | 84.2 | 60 | 300 | 254 | 18 |

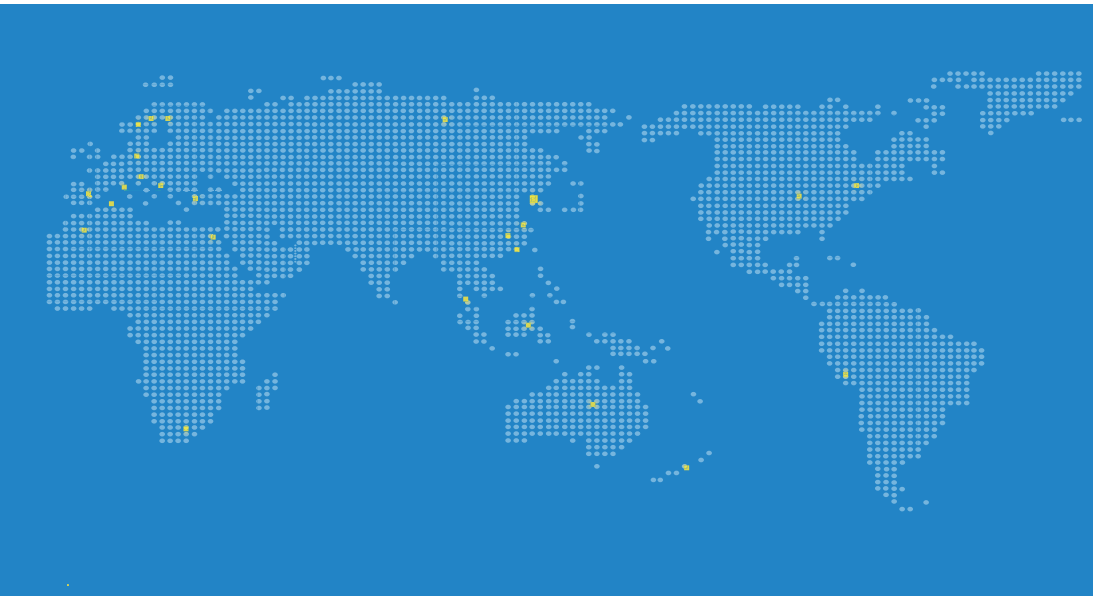
| Table B: Temperature Rating | |
|---|---|
| SEAT | APPLICABLE TEMPERATURE |
| NBR | -20°C to +80°C(-4°F to 176°F ) |
| EPDM | -20°C to +120°C(-4°F to 248°F ) |
| VITON | -10°C to +200°C(+14°F to 392°F ) |
| PTFE | -20°C to +150°C(-4°F to 302°F ) |



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NOAH
Actuation

# Part-turn Actuator






**NOAH ACTUATION CO., LTD**

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TEL +82-2-806-4263 / FAX +82-2-806-4266

Overseas Sales: noah@emico.co.kr

Domestic Sales: actuator@emico.co.kr

**www.emico.co.kr**



N2 BS C E – Ver.A



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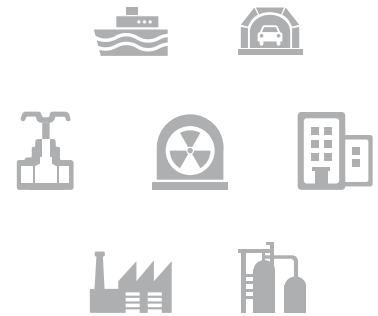

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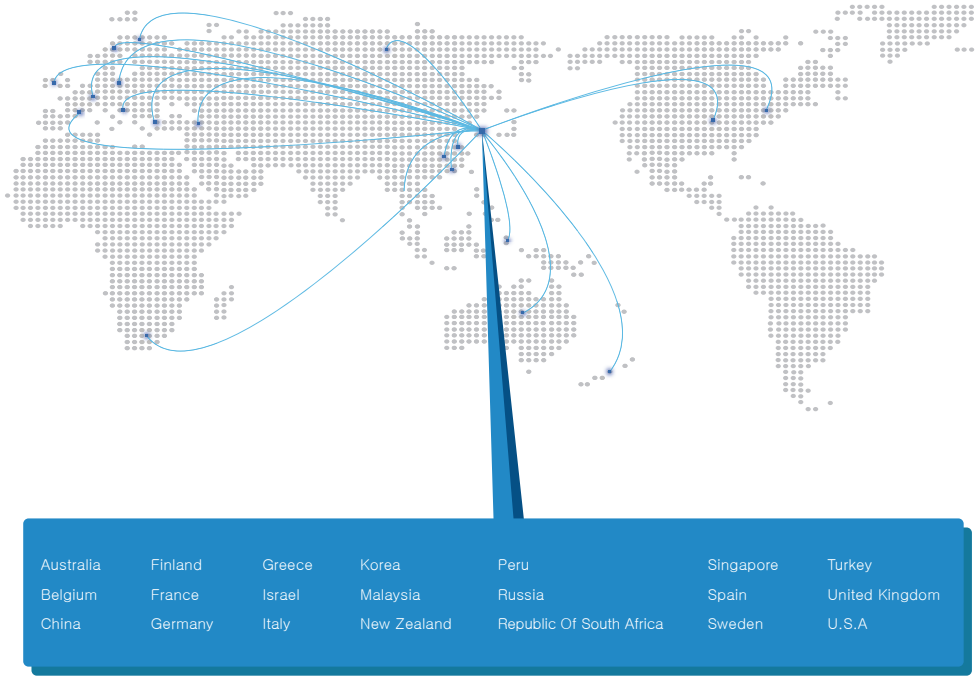



***NOAH***, founded in 1977, is the leading manufacturer of electric actuators in Korea and provides the best quality products with high technology and satisfactory services.

***NOAH*** supplies electric actuators especially to buildings, plant, steelworks, power plants over 40 countries as well as domestic sales.
***NOAH*** has launched spring return actuator for the first time in Korea and accelerated to expand market and to satisfy customers' need by specialized products.
We have made concerted efforts with expertise in electric actuators and continuous investment in R&D to be the world best in the market.

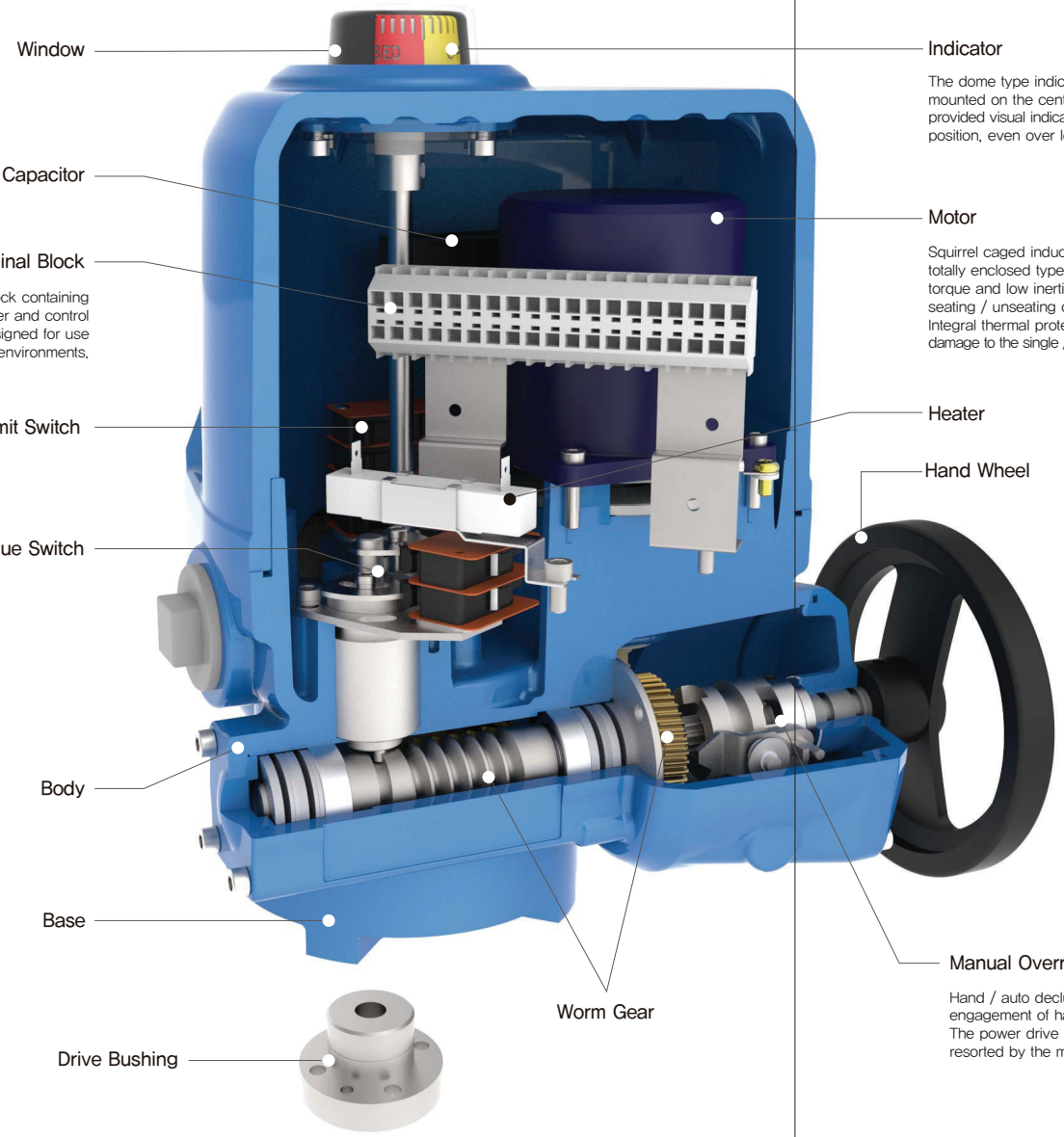
We promise we do everything we can to supply the reliable products and competent services.





| | | | | | | |
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| Australia | Finland | Greece | Korea | Peru | Singapore | Turkey |
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| China | Germany | Italy | New Zealand | Republic Of South Africa | Sweden | U.S.A |

# Configuration




- **SEALING**

Standard enclosure with o-ring sealing is watertight to IEC IP67, NEMA 6. The actuator is available with optional explosion proof enclosure.

- **WIRING**

Electric wiring of control circuit is standardized for single and three phase power supply in a single module. Multiple terminal contacts sufficiently cover additional requirements such as auxiliary contacts for interlocking and other options.

- **COMPONENT ARRANGEMENT**

Mechanical and electrical module can be separated easily to improve assembling, maintenance and alteration of electrical requirements. Actuator has enough internal space for optional accessories.

- **HAND WHEEL**

Size of hand wheel is designed for safe and efficient emergency manual operation.

- **MANUAL OVERRIDE**

Hand / auto declutching lever for hand wheel engagement. The power drive is automatically restored by motor start.

- **ADAPTION**

Base mounting is standard to ISO5211.
Drive bushing is removable for maching to valve stem requirement. The actuator position on the valve can be selected for 4 positions by means of 4 bolt holes in the drive bushing.

- **HEATER**

A space heater inside the actuator prevents condensation due to temperature and weather changes. Standard heater keeps all electrical components in the actuator clean and dry.

- **LIMIT SWITCHES**

The limit switch is activated by means of a simple and yet reliable cam mechanism mounted and driven by the center column. The valve position can be accurately and easily set with the simple adjustable switch mechanism. The set position is permanent and is not affected by over-travel resulting form manual operation.

- **TORQUE SWITCHES**

Cam activated torque switches are easily adjustable to provide over-load protection.

- **SELF LOCKING**

Rolled steel wormgear on aluminium bronze wormwheel self-locks to prevent valve back drive on control signal or power failure.

- **WORM GEAR**

The precision worm and worm wheel mechanism transfers high torque with high efficiency and low sound level (Max 50db), even though small in size. Additional benefits include low backlash and longer life. Various output torques (60N.m~3,500N.m) cater for valves from 2" to 24"

## Performance

| Type | Max Output Torque | | Operating Time (90°/sec) | | Rated Current (A) 60Hz | | | | | | | Motor | | | Duty Cycle | Max Stem Dia | Handle Turns | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Kg.m | N.m | 50Hz | 60Hz | DC 12V | DC 24V | AC 110V | AC 220V | AC 230V | AC 380V | AC 440V | DC (W) | AC (W) | Class | S4 (%) | mm | | kg |
| NA006 | 6 | 60 | 18 | 16 | 7.3 | 3.0 | 0.85 | 0.42 | 0.42 | 0.15 | 0.15 | 15 | 15 | F | 50 | 22 | 8.5 | 11 |
| NA009 | 9 | 90 | 20 | 17 | 8.2 | 4.3 | 1.35 | 0.55 | 0.55 | 0.19 | 0.19 | 25 | 25 | F | 50 | 22 | 8.5 | 11 |
| NA015 | 15 | 150 | 23 | 20 | 10.2 | 4.3 | 1.75 | 1.0 | 1.0 | 0.3 | 0.33 | 40 | 40 | F | 50 | 22 | 10 | 14 |
| NA019 | 19 | 190 | 23 | 20 | 12 | 5.0 | 1.9 | 1.05 | 1.05 | 0.31 | 0.33 | 40 | 40 | F | 50 | 22 | 10 | 14 |
| NA028 | 28 | 280 | 29 | 25 | 14 | 7.0 | 2.0 | 1.05 | 1.05 | 0.35 | 0.32 | 40 | 40 | F | 50 | 32 | 13.3 | 17 |
| NA038 | 38 | 380 | 29 | 25 | 19.8 | 13.5 | 2.1 | 1.3 | 1.3 | 0.4 | 0.37 | 120 | 60 | F | 30 | 32 | 13.3 | 17 |
| NA050 | 50 | 500 | 29 | 25 | 24.5 | 14.5 | 3.8 | 1.45 | 1.45 | 0.51 | 0.5 | 120 | 90 | F | 25 | 32 | 13.3 | 17 |
| NA060 | 60 | 600 | 38 | 31 | 24.7 | 15.0 | 2.4 | 1.6 | 1.6 | 0.47 | 0.48 | 120 | 90 | F | 25 | 42 | 15 | 24 |
| NA080 | 80 | 800 | 38 | 31 | – | 16.0 | 3.15 | 2.0 | 2.0 | 0.62 | 0.62 | 120 | 180 | F | 25 | 42 | 15 | 25 |
| NA100 | 100 | 1000 | 38 | 31 | – | – | 3.5 | 2.1 | 2.1 | 0.7 | 0.7 | – | 180 | F | 25 | 42 | 15 | 25 |
| NA120 | 120 | 1200 | 36 | 30 | – | – | 4.0 | 2.4 | 2.4 | 0.9 | 0.75 | – | 180 | F | 25 | 42 | 15 | 25 |
| NA150 | 150 | 1500 | 111 | 93 | – | – | 2.4 | 1.6 | 1.6 | 0.47 | 0.48 | – | 90 | F | 25 | 75 | 45 | 65 |
| NA200 | 200 | 2000 | 114 | 93 | – | – | 3.15 | 2.1 | 2.1 | 0.62 | 0.62 | – | 180 | F | 25 | 75 | 45 | 65 |
| NA250 | 250 | 2500 | 114 | 93 | – | – | 3.5 | 2.2 | 2.2 | 0.7 | 0.7 | – | 180 | F | 25 | 75 | 45 | 65 |
| NA300 | 300 | 3000 | 144 | 120 | – | – | 3.15 | 2.1 | 2.1 | 0.62 | 0.62 | – | 180 | F | 25 | 75 | 60 | 65 |
| NA350 | 350 | 3500 | 144 | 120 | – | – | 3.5 | 2.2 | 2.2 | 0.7 | 0.7 | – | 180 | F | 25 | 75 | 60 | 65 |

## Standard Specification

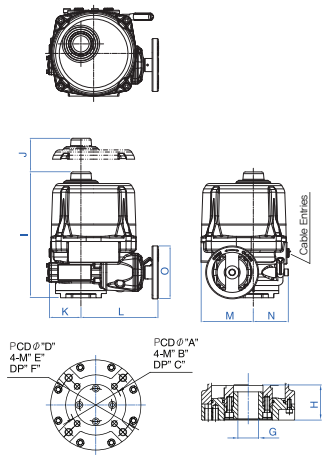
| | | |
|---|---|---|
| Enclosure | Watertight Ingress Protection 67 NEMA 6 | |
| Ambient Temperation | –20℃ ~ +70℃ , 150℃ / 1hr (Option: –60℃, 400℃ / 1hr) | |
| Power Supply | 110 ~ 230 VAC 50/60Hz , 380 / 440 VAC 50/60Hz (Option : AC 24V , DC 24V, DC 12V) | |
| Torque Switches | 2 Open / Close (Except NA006, NA009) | |
| Limit Switches | 2 Open / Close | |
| Stall Protection | Built – in Thermal Protection | |
| Travel Angle | 90±5℃ | |
| Indicator | Continuous Position Indicator | |
| Manual Override | Hand / Auto Declutching Mechanism | |
| Self Locking | Provided by means of Worm Gearing | |
| Mechanical Stops | External Adjustable Screws | |
| Space Heater | 20W | |
| Conduit Entries | NA006~009 | 2–PF 3/4" (Option : PF 1", NPT 3/4", NPT 1", M20 Pitch1.5, M25 Pitch1.5) |
| | NA015~350 | 3–PF 3/4" (Option : PF 1", NPT 3/4", NPT 1", M20 Pitch1.5, M25 Pitch1.5) |
| Lubrication | Shell Gadus S2 V220 2 | |
| External Material | Aluminium Alloy | |
| Surface Treatment | Anodizing | |
| External Coating | Polyester(TGIC–Free) | |

## Optional Specification

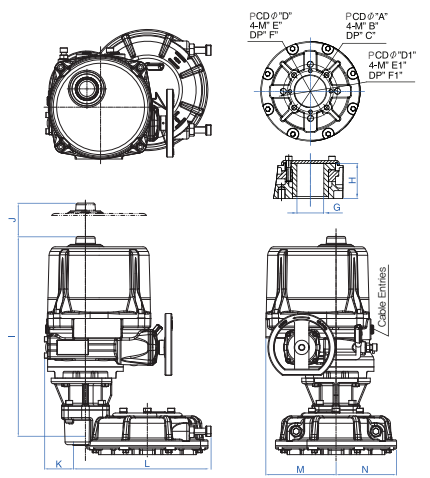
| | |
|---|---|
| E X P | Explosion Proof / Ex d IIC T4 – S2 15min |
| IP68 | Watertight Enclosure IP68 / NEMA 6P |
| A L S | Auxiliary Open, Close Limit Switches |
| A T S | Auxiliary Open, Close Torque Switches (Except NA006, NA009) |
| P I U | Potentiometer (1K–Ohm) |
| P C U | Proportional Control Unit<br>Input : DC 4–20mA, 0–5VDC, 0–10VDC, 1–5VDC, 2–10VDC / Output : DC 4–20mA |
| C P T | Current Position Transmitter / Output : DC 4–20mA |
| L C U | Local Control Unit |
| I M S | Integral Motor Starter (On–Off Action) |
| E X T | Travel Angle (120 °, 135 °, 180 °, 270 °, 300 °) |
| D C M | Power Supply DC 24V (NA006 ~ NA080), DC 12V (NA006 ~ NA060) |
| Field–Bus | Profi–Bus, Mod–Bus, Can–Bus |

## Dimension

MODEL : NA006~NA120




MODEL : NA150~NA350




| Type | | NA006 NA009 | NA015 NA019 | NA028 NA038 NA050 | NA060, NA080 NA100, NA120 | NA150, NA200, NA250, NA300, NA350 | |
|---|---|---|---|---|---|---|---|
| A | | PCD70 | PCD70 | PCD102 | PCD125 | PCD125 | |
| B | | 4–M8 | 4–M8 | 4–M10 | 4–M12 | 4–M12 | |
| C | | 12 | 12 | 18 | 22 | 22 | |
| Flange ISO5211 | | F07 | F07 | F10 | F12 | F12 | |
| D | D1 | – | PCD102 | PCD125 | PCD140 | PCD140 | PCD165 |
| E | E1 | – | 4–M10 | 4–M12 | 4–M16 | 4–M16 | 4–M20 |
| F | F1 | – | 15 | 18 | 22 | 22 | 25 |
| Flange ISO5211 | | – | F10 | F12 | F14 | F14 | F16 |
| Option | | PCD82 | PCD82 | – | PCD102(F10) | – | |
| G(MAX) | Key | 22 | 22 | 32 | 42 | 75 | |
| | Square | 20 | 20 | 26 | 34 | 65 | |
| H | | 46 | 46 | 55 | 62 | 100 | |
| I | | 269 | 298 | 307 | 336 | 547.5 | |
| J | | 108 | 108 | 130 | 178 | 178 | |
| K | | 51 | 81 | 83 | 103 | 103 | |
| L | | 179 | 183 | 198 | 217 | 315 | |
| M | | 103.5 | 124 | 142 | 176 | 176 | |
| N | | 78.5 | 83 | 88 | 103 | 152 | |
| O | | 102 | 102 | 125 | 155 | 170 | |
| Cable Entries | | 2–PF3/4? | 3–PF3/4? | 3–PF3/4? | 3–PF3/4? | 3–PF3/4? | |
| | | 2–M20x1.5 | 3–M20x1.5 | 3–M20x1.5 | 3–M20x1.5 | 3–M20x1.5 | |
| | | 2–M25x1.5 | 3–M25x1.5 | 3–M25x1.5 | 3–M25x1.5 | 3–M25x1.5 | |
| | | 2–NPT1? | 3–NPT1? | 3–NPT1? | 3–NPT1? | 3–NPT1? | |
| | | 2–NPT3/4? | 3–NPT3/4? | 3–NPT3/4? | 3–NPT3/4? | 3–NPT3/4? | |

## NA Option Specification

### Optional

#### ALS (Auxiliary Limit Switches)

Provide dry contact signal to check valve's positions (cam switches structure).

#### ATS (Auxiliary Torque Switches)

Provide dry contact signal send to customer's panel as fault signal (cam switches structure).

#### CPT (Current Position Transmitter)

Combined with P.I.U and transfer output signal (DC 4–20mA) from P.I.U's value of resistance.

- Output Signal : DC 4–20mA



#### PCU (Proportional Control Unit)

Combined with P.I.U and control the valve's position proportionally by input signal and provide valve's position as their output signal.

- Input signal : DC 4–20mA, 0–5VDC, 0–10VDC, 1–5VDC, 2–10VDC
- Output signal : DC 4–20mA



#### PIU (Position Indication Unit)

Provide resistance value (0~1KΩ) according to valve's position.

#### LCU (Local Control Unit)

LCU can be installed either on the actuator or distantly by cable. It can be controlled conveniently as it consists of Local / Remote Switch, Open / Stop / Close Switch and LED Lamp



#### Field–Bus

Field–Bus can control 126pcs of electric actuators at the same time using communication hardware system based on PC.

(Profi–Bus PROFIBUS, Mod–Bus Modbus, Can–Bus)
For more information please contact noah actuation.







## NA Integral Standard Specification

| | | |
|---|---|---|
| Main Power | 110/220 VAC 50/60Hz , 380/440 VAC 50/60Hz | |
| Internal Control Power | 24 VDC | |
| External Control Power | 110 VAC, 24 VDC | |
| Torque Switches | 2 Open / Close (Except NA006, NA009) | |
| Limit Switches | 2 Open / Close | |
| Control Unit | 1. Non Instrusive Push Butttons [Open/ Stop/ Close]<br>2. Non Instrusive Selector Switch [Remote / Off / Local]<br>3. Reversing Contactor<br>4. Phase Discriminator | |
| Position Indicator | Digital Display (0~100%) | |
| Remote Dry Contact (Max 250VAC 5A) | 1. Full Open / Close<br>2. Opening / Closing<br>3. Open / Close Over Torque<br>4. Monitor ( Remote / Local ) | |
| Conduit Entries | Standard | 1–PF 1" , 2–PF 3/4" |
| | Option | 1–NPT 1" , 2–NPT 3/4"<br>1–M25 Pitch 1.5 , 2–M20 Pitch 1.5 |
| Potentiometer | 0 ~ 1 KΩ | |
| Lubrication | Shell Gadus S2 V220 2 | |
| External Materials | Aluminium Alloy | |
| Surface Treatment | Anodizing | |
| External Coating | Polyester(TGIC–Free) | |

## NA Integral Optional Specification

| | |
|---|---|
| P C U | PCU enables the actuator to be controlled form a distance.<br>Input: DC 4–20mA, DC 0–5VDC, 0–10VDC, 1–5VDC, 2–10VDC / Output: DC 4–20mA |
| C P T | CPT outputs signal by converting the actuator's place value to ampere.<br>Output Signal: DC 4–20mA |
| Field Bus | FDB is used when controlling actuators using communication hardware system based on PC.<br>Profi–Bus PROFIBUS, Mod–Bus Modbus, Can–Bus |

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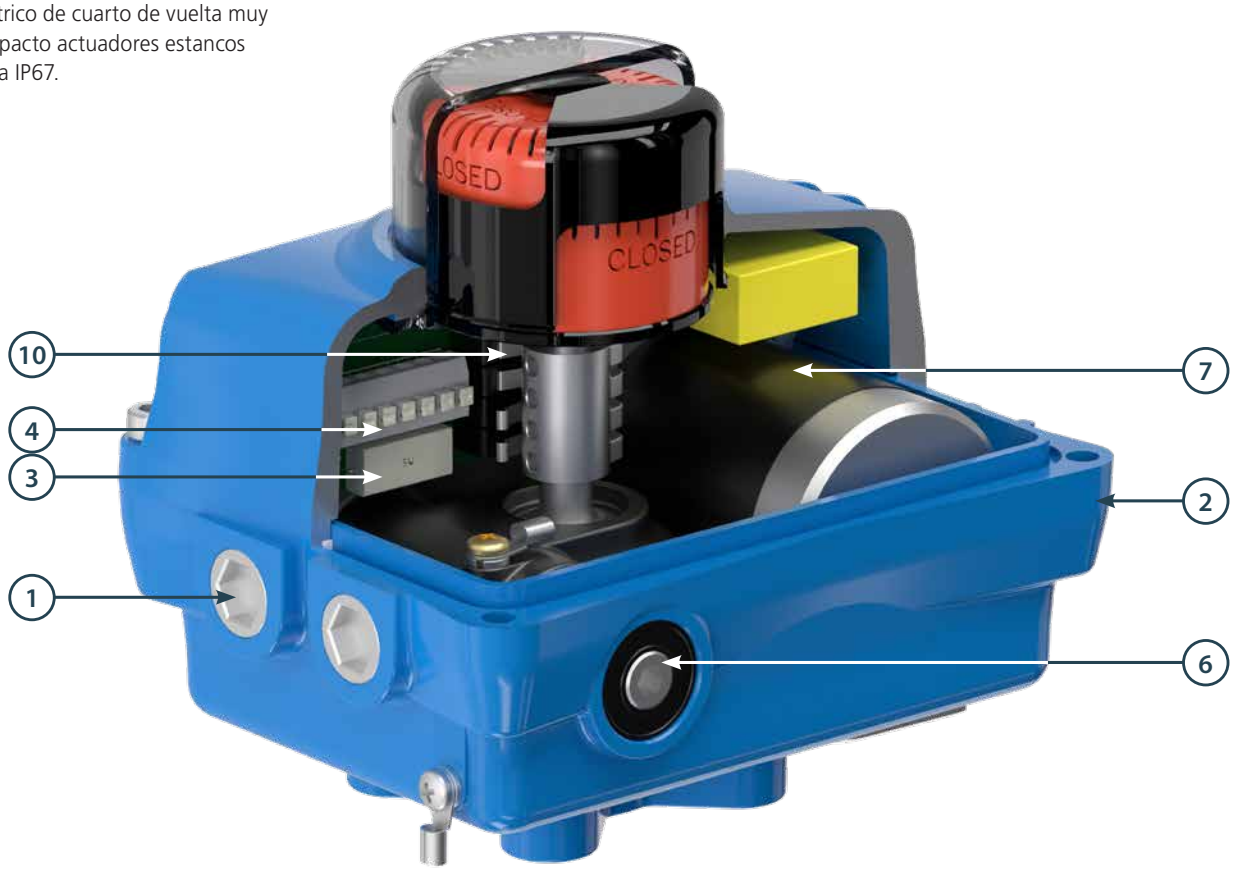
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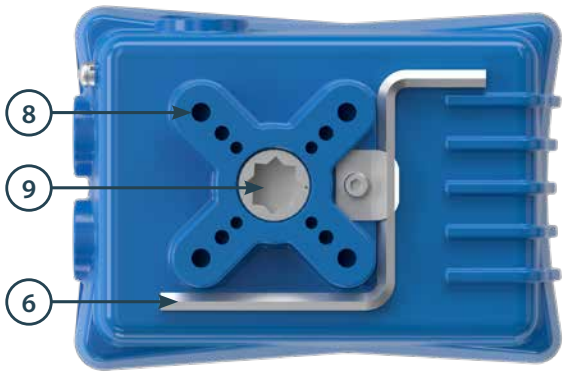
# Gama Noah SA

Actuadores eléctricos compactos
de cuarto de vuelta

## Noah SA

Eléctrico de cuarto de vuelta muy compacto actuadores estancos hasta IP67.






# Interior del actuador Noah SA

### 1. Entrada de cables

Especificación estándar: 2-PF ½"

Opcional: M20 x Paso 1,5, NPT ½"

### 2. Caja exterior

La fundición de aleación de aluminio está tratada con película de óxido y luego recubierta de polvo (poliéster, sin TGIC) para proporcionar el mejor rendimiento de protección contra la corrosión en cualquier entorno.

Opcional - A prueba de explosiones: Exd IIB T4
(excepto modelo SA003)

### 3. Resistencia de caldeo interna

La resistencia interna incorporada evita la condensación y la formación de humedad en el interior del actuador para proteger los componentes internos.

### 4. Bloque de terminales

La regleta de bornes con estructura WAGO permite un cableado sencillo y es muy resistente a las vibraciones y a la corrosión.



### 5. Indicador de posición

Una lámpara LED dentro del indicador ilumina la tapa cuando se completan las operaciones de apertura total y cierre total.
El modelo SA estándar dispone de una cubierta abovedada para el indicador de posición, mientras que la versión antideflagrante utiliza un diseño plano muy robusto apto para la certificación antideflagrante.



### 6. Funcionamiento manual

La gama SA permite el accionamiento manual insertando la llave incluida (fijada en la base del actuador) en el lateral del actuador como se muestra a continuación y girando en sentido horario o antihorario para accionar manualmente el actuador.



### 7. Motor

Las tensiones de alimentación a elección del cliente incluyen monofásica (110/220 VAC) y 24 VDC. Los actuadores de la gama Noah SA incluyen un protector térmico integrado para proteger el motor en caso de sobrecarga.

### 8. Base

Dimensiones de montaje según la norma ISO5211, lo que facilita el montaje directo en válvulas y compuertas

Especificaciones estándar - F03, F05, F07

### 9. Conexión eje de salida / vástago de válvula

La gama SA incluye una conexión estándar de vástago de válvula con 14x14, con insertos opcionales de 11x11 y 9x9 disponibles.

Nota: SA003 : sólo 11x11, 9x9

### 10. Final de carrera

Se incluye un final de carrera mecánico tipo leva que controla con precisión la posición de las válvulas y los dispositivos giratorios. Su diseño y estructura sencillos permiten un ajuste fácil.

## Especificaciones estándar



| | |
|---|---|
| **Grado de estanqueidad** | Grado de protección IP67 |
| **Temperatura de funcionamiento** | Tª amb -20 a +70 °C (-4 a +158 °F) |
| **Alimentación** | 110 / 220 VAC 50/60 Hz / AC/DC 24 V |
| **Indicador** | Tipo cúpula (LED incorporado) |
| **Final de carrera** | 2 uds Abrir/Cerrar + 2 uds Abrir/Cerrar (250 VAC) Contactos sin tensión |
| **Ángulo de recorrido** | 90° ±5° (hasta 270° cuando está extendido) |
| **Autobloqueante** | Prevención de la rotación inversa mediante tornillo sin fin de dos etapas |
| **Mando manual** | Con una llave en L (hexagonal de 6 mm) |
| **Entradas de cable** | 2-PF ½" (Opciones: 2-M20 x Paso 1,5, 2-NPT ½") |
| **Resistencia de caldeo** | 5 W |
| **Material de la carcasa** | Aluminio |
| **Lubricante** | Shell Gadus S2 V220 2 |
| **Acabado de pintura estándar** | Anodizado |

## Datos de rendimiento

| Modelo | Opciones | Par de maniobra | | Tiempo de funcionamiento (90°/seg | | Potencia del motor (W) | Corriente nominal (A) 60 Hz | | | | Ciclo de trabajo | Número de vueltas del volante | Peso | | Rango de aplicación de la válvula (10K) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 fase (AC) | | | DC | | | | | |
| | | Nm | lbf.ft | 50 Hz | 60 Hz | DC motor | 24 V | 110 V | 220 V | 24 V | S2 (min) | | kg | lbs | |
| SA005L | PCU | 50 | 37 | 17 | 14 | 25 | 1,8 | 0,35 | 0,23 | 1,8 | 15 | 6 | 3,2 | 7,1 | Válvula de Mariposa: ~65A Válvulas de Bola: ~32A |
| | SCP | 50 | 37 | 8 | 8 | 25 | - | 0,8 | 0,51 | 0,25 | | 6 | 4,3 | 9,5 | |
| SA009L | PCU | 90 | 66 | 32 | 26 | 25 | 2,1 | 0,35 | 0,25 | 2,1 | 15 | 4,5 | 3,2 | 7,1 | Válvula de Mariposa: ~100A Válvulas de Bola: ~50A |
| | SCP | 90 | 66 | 13 | 15 | 25 | - | 0,8 | 0,51 | 2,25 | | 4,5 | 4,3 | 9,5 | |

## Extras opcionales

| | |
|---|---|
| **AC24V** | Tarjeta de control para alimentación de 24 VAC |
| **Unidad de potenciómetro (PIU)** | Emite la posición del actuador como una señal de 0-1 kΩ |
| **Unidad de control proporcional (PCU)** | Se utiliza para controlar el actuador de forma que el grado de apertura/cierre de la válvula sea proporcional a la señal de entrada. |
| **Transmisor de posición de corriente (CPT)** | Se utiliza cuando se cambia el valor de resistencia de un potenciómetro conectado directamente al actuador a un valor de corriente y se utiliza la posición del actuador como valor de corriente. |
| **Super capacitador (SCP)** | Un dispositivo de super capacitador está incorporado en el actuador de modo que cuando se corta la corriente, funciona en la posición abierta/cerrada/parada establecida por el usuario. |

### Tarjeta PCU

La unidad de control proporcional (PCU) funciona hasta que el estado actual de apertura y cierre coincide con el valor establecido por el sistema de control externo. Proporciona la función de salida y transmisión de una señal de 4-20 mA en proporción al estado de posición actual (0-100%).

### Banda muerta

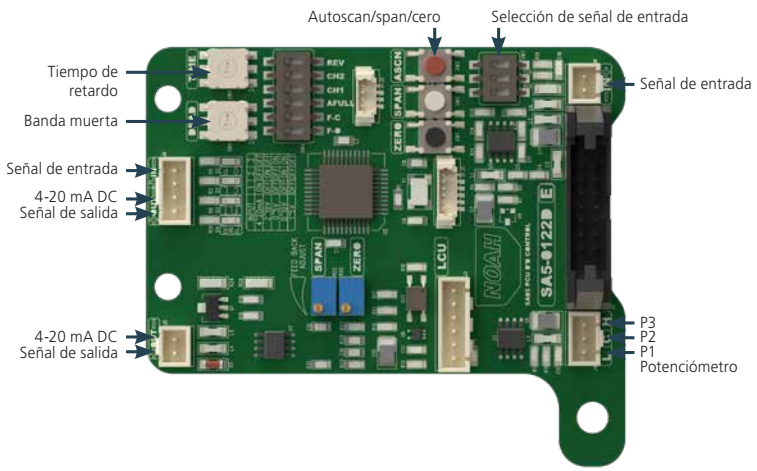
El actuador intenta detenerse en la posición exacta en función del valor ajustado, pero para evitar la caza, se establece un rango de zonas muertas que permiten al actuador abrir y cerrar repetidamente mientras intenta alcanzar la posición exacta debido a la inercia mecánica del motor o de la válvula. (±0,3 mA)

### Tiempo de retardo

La señal de entrada puede verse afectada por ruidos momentáneos o frecuencias externas. El tiempo de retardo se ajusta (mín. 0,5 seg.) para evitar el fenómeno de caza causado por el funcionamiento con la misma entrada de señal durante un cierto periodo de tiempo.

### Escaneo automático

La función de escaneo automático opera automáticamente desde la posición totalmente cerrada a la posición totalmente abierta con una pulsación de 2 segundos, y guarda cada posición.




### Placa de alimentación

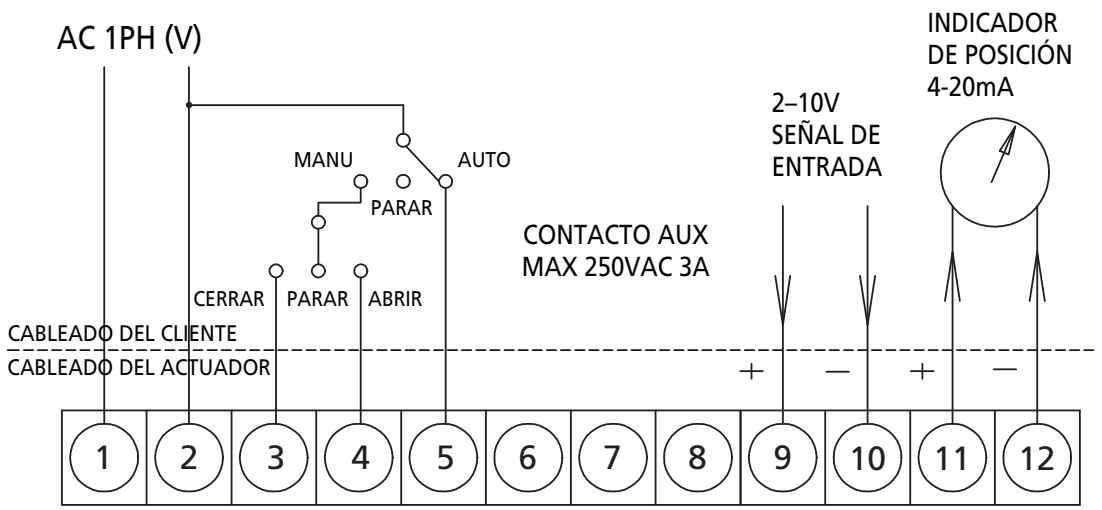
Esta tarjeta convierte la energía de una fuente externa para que el actuador la utilice para operar la tarjeta PCU.

### Potenciómetro

Responsable de la resolución del actuador mediante el uso de 0-1 kΩ y desempeña un papel en el reconocimiento del valor de posición actual. (Opcional 135 Ω)

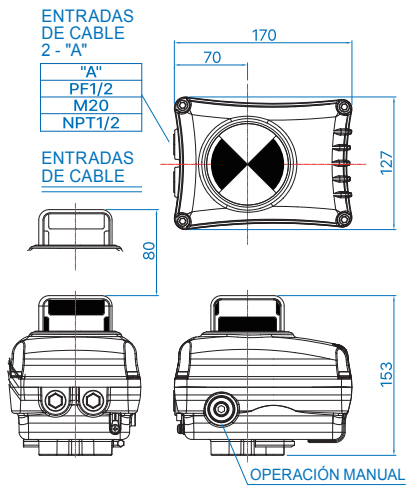
## Esquema eléctrico estándar

**Diagrama cableado estándar de tipo PCU**

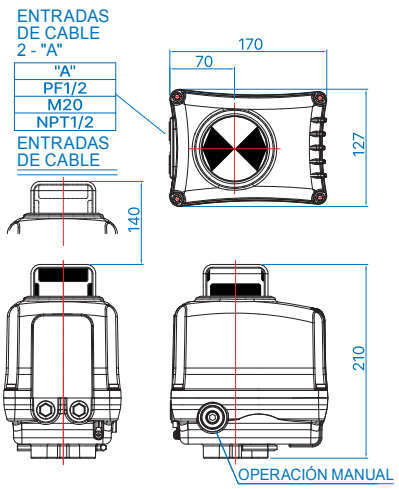


# Datos dimensionales

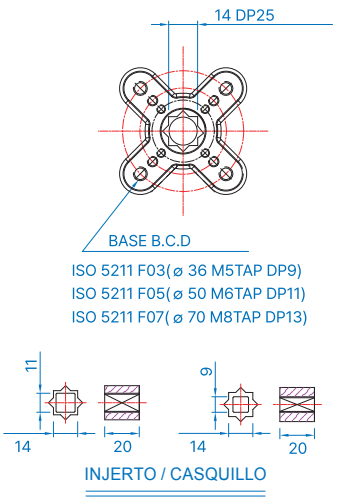
## Noah SA005, SA009




## Noah SA005L, SA009L

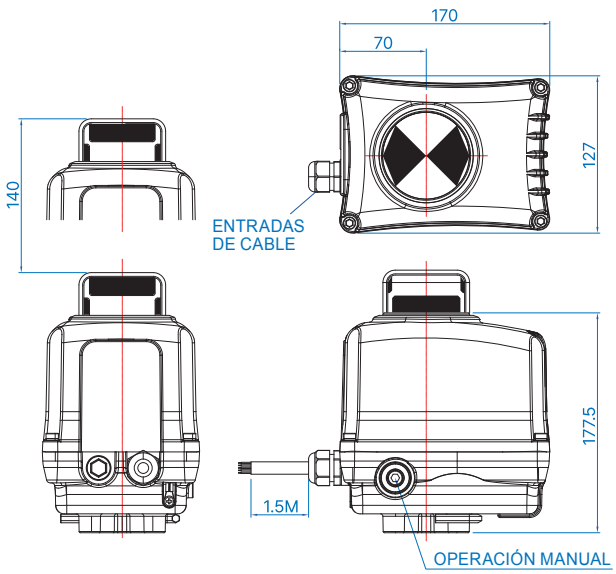



## Base

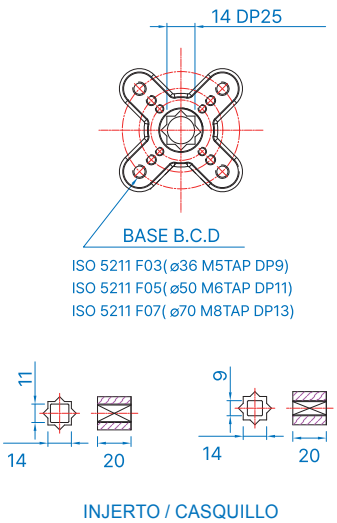



Todas las dimensiones en milímetros

## Noah SCP




## Base




Todas las dimensiones en milímetros