Ball Valve

DIRECT MOUNT 4-SEAT 3-WAY/4-WAY FLANGE END BALL VALVE

Model : Series M4F – SIL 3 Capable

- **Body Material**
  ASTM CF8M, A216 WCB
  DIN1.4408, 1.0619
- **Size Range**
  1/2" ~ 12" (DN15~DN300)
- **Pressure Rating**
  ANSI Class 150, 300
  DIN PN16, PN40
  JIS10K, 20K
- **End Connection**
  Flanged
- **Inspection Standard**
  API 598, EN 12266-1
- **Features**
  Investment casting body and end cap
  Self adjusting stem packing
  Anti blow-out proof stem
  L/T/X-port available
  Dual ISO 5211 direct-mounting pad
  Floating ball design for 4" (DN100) and under
  Trunnion ball design for 5" (DN125) and above
- **Temperature Range**
  -4°F to 350°F (-20°C to 180°C) with PTFE seats

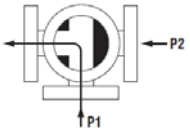
Materials List:

NO.	NAME OF PARTS	MATERIALS	OPTION
1	FLANGE END	A351 Gr. CF8M	A216 Gr. WCB
2	GASKET	PTFE	———
3	BODY	A351 Gr. CF8M	A216 Gr. WCB
4	BALL	SS 316	———
5	SEATS	PTFE	———
6	STEM	SS 316	———
7	THRUST WASHER	RPTFE	———
8	O-RING	VITON	———
9	STEM PACKING	PTFE	———
10	GLAND	SS 304	———
11	BELLEVILLE WASHER	SS 301	———
12	STEM NUT	SS 304	———
13	NUT STOP	SS 304	———
14	SPACE WASHER	SS 304	———
15	PLATER	SS 304	———
16	HANDLE NUT	SS 304	———
17	HANDLE	SS 304	———
18	COVER	PLASTISOL	———
19	STOP PIN	SS 304	———
20	PIN	SS 316	———

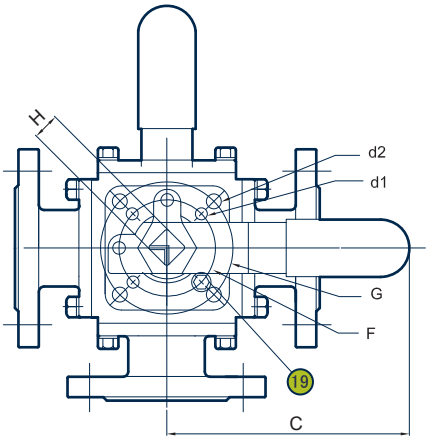


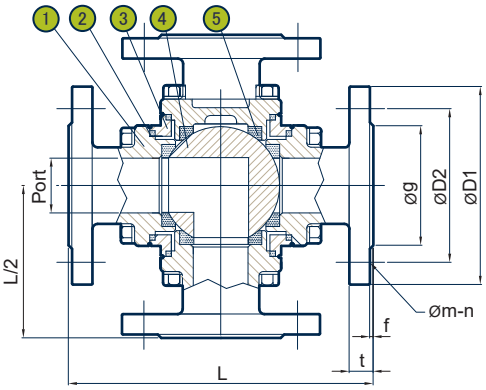
Application Limitation

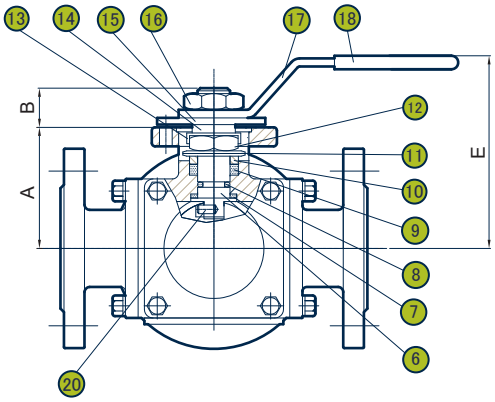
Referring to below diagram, there is a limitation to the differential pressure between flow P2 and P1.Where P2>P1, leakage from P2 to P1 could occur. The same logic follows for other L/T flow patterns.



PORT \ TURN	0°	90°	180°	270°
L				
T				





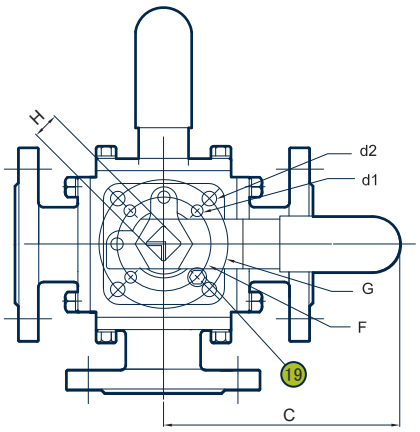


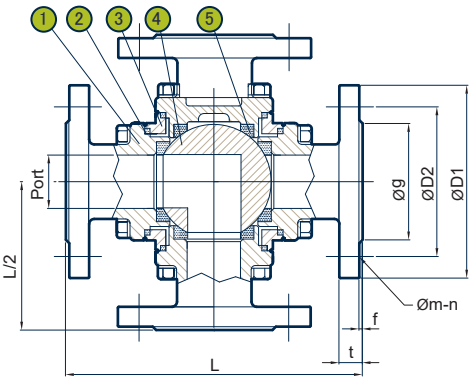
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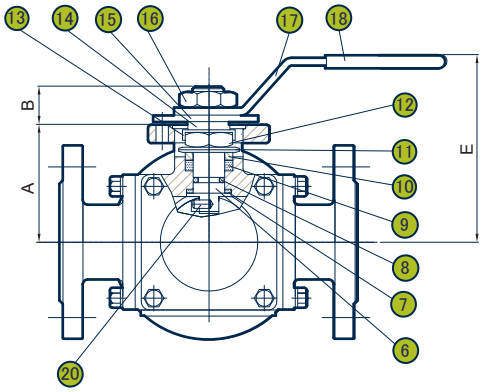
Ball Valve

DIRECT MOUNT 4-SEAT 3-WAY/4-WAY FLANGE END BALL VALVE

Model : Series M4F – SIL 3 Capable







Dimensions (inch/mm):

SIZE inch DN	A	B	C	d1	d2	E	F	G	H	Port	L					
											150#	300#	PN16	PN40	J10K	J20K
1/2"	1.65	0.43	5.12	0.24	0.24	4.13	1.42	1.65	0.35	0.59	5.98	6.30	6.30	6.30	5.98	6.30
DN15	42	11	130	6.0	6.0	105	36	42	9	15	152	160	160	160	152	160
3/4"	1.91	0.55	6.50	0.24	0.28	4.33	1.65	1.97	0.43	0.79	6.57	6.97	6.97	6.97	6.57	6.97
DN20	48.5	14	165	6.0	7.1	110	42	50	11	20	167	177	177	177	167	177
1"	2.19	0.55	6.50	0.24	0.28	4.65	1.65	1.97	0.43	0.98	7.48	7.87	7.48	7.48	7.48	7.48
DN25	55.5	14	165	6.0	7.1	118	42	50	11	25	190	200	190	190	190	190
1-1/4"	2.48	0.67	8.07	0.28	0.36	4.65	1.97	2.76	0.55	1.26	8.19	8.19	8.19	8.19	8.19	8.19
DN32	63	17	205	7.1	9.2	118	50	70	14	32	208	208	208	208	208	208
1-1/2"	2.89	0.63	8.07	0.28	0.36	5.04	1.97	2.76	0.55	1.50	8.66	9.21	9.21	9.21	8.66	9.21
DN40	73.5	16	205	7.1	9.2	128	50	70	14	38	220	234	234	234	220	234
2"	3.64	0.83	12.80	0.36	0.45	5.51	2.76	4.02	0.67	1.97	9.96	10.75	10.75	10.75	9.96	10.75
DN50	92.5	21	325	9.2	11.4	140	70	102	17	50	253	273	273	273	253	273

Dimensions CLASS 150 (inch/mm):

SIZE inch DN	D1	D2	g	t	f	m	n	L-Port Weight lbs kg	T-Port Weight lbs kg
1/2"	3.50	2.38	1.38	0.44	0.06	0.63	0.16	7.63	7.58
DN15	89	60.5	35	11.2	1.6	16	4	3.46	3.44
3/4"	3.86	2.76	1.69	0.44	0.06	0.63	0.16	8.95	8.91
DN20	98	70	43	11.2	1.6	16	4	4.06	4.04
1"	4.25	3.13	2.01	0.44	0.06	0.63	0.16	13.23	13.10
DN25	108	79.5	51	11.2	1.6	16	4	6.00	5.94
1-1/4"	4.61	3.50	2.52	0.50	0.06	0.63	0.16	18.74	18.47
DN32	117	89	64	12.7	1.6	16	4	8.50	8.38
1-1/2"	5.00	3.88	2.87	0.56	0.06	0.63	0.16	27.51	27.29
DN40	127	98.5	73	14.3	1.6	16	4	12.48	12.38
2"	5.98	4.74	3.62	0.62	0.06	0.75	0.16	47.09	46.83
DN50	152	120.5	92	15.8	1.6	19	4	21.36	21.24

Dimensions CLASS 300 (inch/mm):

SIZE inch DN	D1	D2	g	t	f	m	n
1/2"	3.74	2.62	1.38	0.57	0.06	0.63	0.16
DN15	95	66.5	35	14.5	1.6	16	4
3/4"	4.61	3.25	1.69	0.63	0.06	0.75	0.16
DN20	117	82.5	43	16.0	1.6	19	4
1"	4.88	3.50	2.01	0.69	0.06	0.75	0.16
DN25	124	89	51	17.5	1.6	19	4
1-1/4"	5.28	3.88	2.52	0.77	0.06	0.75	0.16
DN32	134	98.5	64	19.5	1.6	19	4
1-1/2"	6.14	4.51	2.87	0.83	0.06	0.87	0.16
DN40	156	114.5	73	21	1.6	22	4
2"	6.50	5.00	3.62	0.89	0.06	0.75	0.31
DN50	165	127	92	22.5	1.6	19	8

Dimensions PN16 (mm):

SIZE	D1	D2	g	t	f	m	n
1/2"	95	65	45	14	2.0	14	4
3/4"	105	75	58	16	2.0	14	4
1"	115	85	68	16	2.0	14	4
1-1/4"	140	100	78	16	2.0	18	4
1-1/2"	150	110	88	16	3.0	18	4
2"	165	125	102	18	3.0	18	4

Dimensions PN40 (mm):

SIZE	D1	D2	g	t	f	m	n
1/2"	95	65	45	16	2.0	14	4
3/4"	105	75	58	18	2.0	14	4
1"	115	85	68	18	2.0	14	4
1-1/4"	140	100	78	18	2.0	18	4
1-1/2"	150	110	88	18	3.0	18	4
2"	165	125	102	20	3.0	18	4

Dimensions J10K (mm):

SIZE	D1	D2	g	t	f	m	n
1/2"	95	70	51	12	1.0	15	4
3/4"	100	75	56	14	1.0	15	4
1"	125	90	67	14	1.0	19	4
1-1/4"	135	100	76	16	2.0	19	4
1-1/2"	140	105	81	16	2.0	19	4
2"	155	120	96	16	2.0	19	4

Dimensions J20K (mm):

SIZE	D1	D2	g	t	f	m	n
1/2"	95	70	51	14	1.0	15	4
3/4"	100	75	56	16	1.0	15	4
1"	125	90	67	16	1.0	19	4
1-1/4"	135	100	76	18	2.0	19	4
1-1/2"	140	105	81	18	2.0	19	4
2"	155	120	96	18	2.0	19	8

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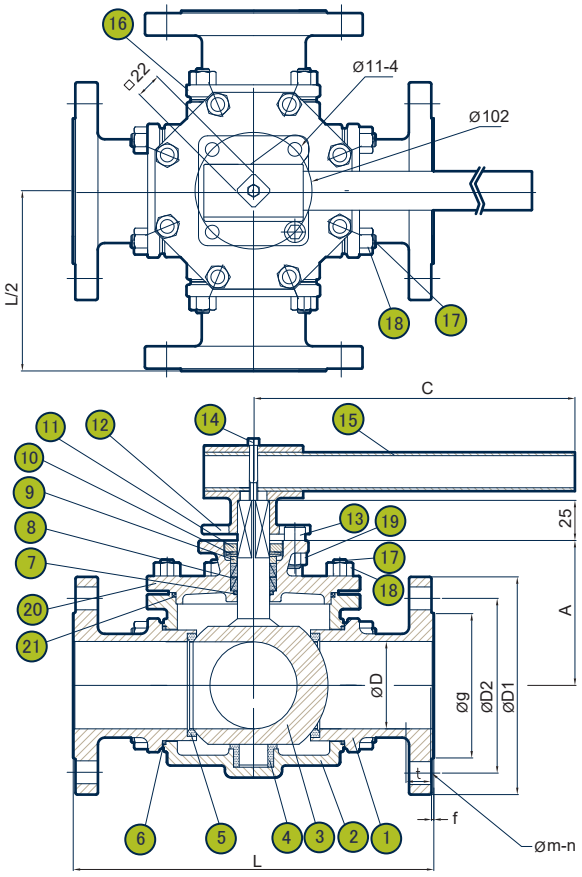
Ball Valve

DIRECT MOUNT 4-SEAT 3-WAY/4-WAY FLANGE END BALL VALVE

Model : Series M4F – SIL 3 Capable

Materials List:

NO.	NAME OF PARTS	MATERIALS
1	FLANGE END	A351 Gr. CF8M
2	BODY	A351 Gr. CF8M
3	BALL & STEM	SS 316
4	HOUSING	PTFE+STAINLESS
5	SEATS	PTFE
6	GASKET	PTFE
7	O-RING	VITON
8	STEM PACKING	PTFE
9	GLAND WASHER	SS 304
10	DISK WASHER	SS 301
11	GLAND	SS 304
12	HANDLE HEAD	A351 Gr. CF8
13	STOP PIN	SS 304
14	BOLT	SS 304
15	LEVER	CARBON STEEL
16	BLANK END	A351 Gr. CF8M
17	CONNECTION BOLTS	B8
18	BOLT NUTS	SS 304
19	STOP PIN NUT	SS 304
20	BONNET	A351 Gr. CF8M
21	BONNET GASKET	PTFE



Dimensions (inch/mm):

SIZE inch DN	A	C	D	L			
				PN16	PN40	CLASS 150	CLASS 300
2-1/2"	4.69	15.75	2.44	11.81	11.81	11.81	11.81
DN65	119	400	62	300	300	300	300
3"	5.39	19.69	2.99	12.01	12.99	12.01	12.99
DN80	137	500	76	305	330	305	330
4"	6.18	25.59	3.78	14.53	15.51	14.53	15.51
DN100	157	650	96	369	394	369	394

Dimensions CLASS 150 (inch/mm):

SIZE inch DN	D1	D2	g	t	f	m	n	L-Port Weight lbs kg	T-Port Weight lbs kg
2-1/2"	7.01	5.51	4.13	0.71	0.06	0.75	0.16	63.40	62.70
DN65	178	140	105	18	1.6	19	4	28.76	28.44
3"	7.48	6.02	5.00	0.75	0.06	0.75	0.16	78.40	75.40
DN80	190	153	127	19	1.6	19	4	35.56	34.20
4"	9.02	7.52	6.18	0.94	0.06	0.75	0.31	64.02	138.05
DN100	229	191	157	24	1.6	19	8	64.02	62.62

Dimensions CLASS 300 (inch/mm):

SIZE inch DN	D1	D2	g	t	f	m	n
2-1/2"	7.48	5.87	4.13	0.98	0.06	0.87	0.31
DN65	190	149	105	25	1.6	22	8
3"	8.27	6.61	5.00	1.14	0.06	0.87	0.31
DN80	210	168	127	29	1.6	22	8
4"	10.00	7.87	6.18	1.26	0.06	0.87	0.31
DN100	254	200	157	32	1.6	22	8

Dimensions PN16 (mm):

SIZE	D1	D2	g	t	f	m	n
2-1/2"	185	145	122	18	3	18	4
3"	200	160	138	20	3	18	8
4"	220	180	158	20	3	18	8

Dimensions PN40 (mm):

SIZE	D1	D2	g	t	f	m	n
2-1/2"	185	145	122	22	3	18	8
3"	200	160	138	24	3	18	8
4"	235	190	162	24	3	22	8

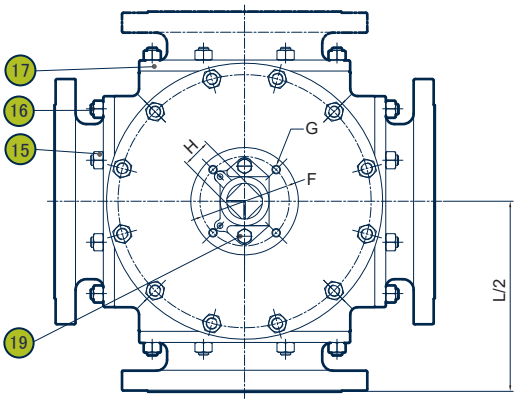
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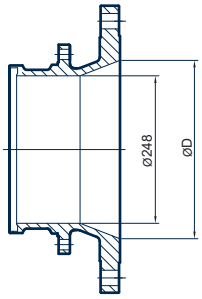
DIRECT MOUNT 4-SEAT 3-WAY/4-WAY FLANGE END BALL VALVE

Model : Series M4F – SIL 3 Capable

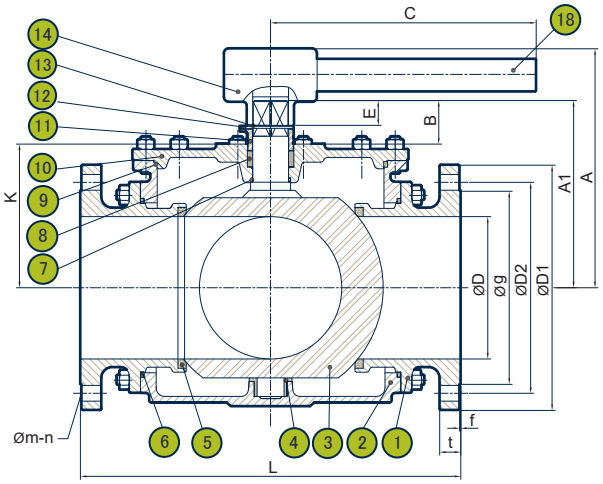
Materials List:

NO.	NAME OF PARTS	MATERIALS	
1	FLANGE END	ASTM A351 Gr. CF8M	ASTM A261 Gr. WCB
2	BODY	ASTM A351 Gr. CF8M	ASTM A261 Gr. WCB
3	BALL & STEM	SS 316	SS 304/SS 316
4	HOUSING	PTFE+STAINLESS	PTFE+STAINLESS
5	SEATS	PTFE	PTFE
6	GASKET	PTFE	PTFE
7	O-RING	VITON	VITON
8	STEM PACKING	PTFE	PTFE
9	BONNET GASKET	PTFE	PTFE
10	BONNET	ASTM A351 Gr. CF8M	ASTM A261 Gr. WCB
11	GLAND	ASTM A351 Gr. CF8	ASTM A261 Gr. WCB
12	STOP	SS 304	SS 304
13	STOP RING	SS 304	SS 304
14	HANDLE HEAD	ASTM 65-45-12	ASTM 65-45-12
15	BOLTS	SS 304/(B8)	CARBON STEEL/(B7)
16	NUT	SS 304/(B8)	CARBON STEEL/(B7)
17	BLANK END	ASTM A351 Gr. CF8M	ASTM A216 Gr. WCB
18	LEVER	CABON STEEL	CABON STEEL
19	GLAND BOLTS	SS 304/(B8)	CARBON STEEL/(B7)





12”(STD. PORT)



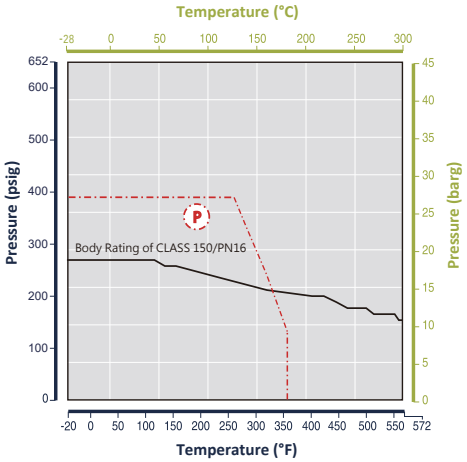
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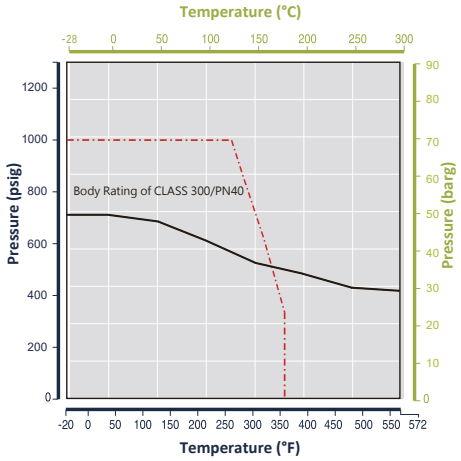
SIZE inch DN	A	A1	B	C	D	E	F	G	H	K	L	d1	d2	g	m	t	f	n	L-Port Weight lbs kg	T-Port Weight lbs kg
5" DN125	10.04 255	7.81 198.5	2.4 59	39.45 860	4.92 125	1.42 36	4.92 125	M12	1.42 28	5.53 140.5	16.46 418	10 254	8.5 215.9	7.3 186	0.87 22	0.94 23.9	0.06 1.6	8	204.32 92.68	202.52 91.86
6" DN150	11.57 294	8.74 222	2.4 62	47.25 1200	5.90 150	1.42 36	4.92 125	M12	1.42 36	6.28 159.5	16.85 427	11 279.3	9.5 241.5	8.5 216	0.87 22	1 25.4	0.06 1.6	8	275.27 124.86	266.89 121.06
8" DN200	13.19 335	10.35 263	2.4 62	59 1500	7.88 200	1.42 36	4.92 125	M12	1.42 36	7.91 201	20.94 532	13.5 343	11.75 298.45	10.63 270	0.87 22	1.13 28.6	0.06 1.6	8	518.97 235.40	507.72 230.30
10" DN250	16.06 408	13.58 345	3.66 93	59 2000	9.84 248	2.32 59	5.51 140	M16	1.42 36	9.92 252	26 660	16 406.4	14.25 362	12.75 324	1.00 25.4	1.19 30.2	0.06 1.6	12	753.98 342.00	
12" DN300 STD.PORT	16.06 408	13.58 345	3.66 93	59 2000	11.81 300	2.32 59	5.51 140	M16	1.42 36	9.92 252	26 660	19.01 483	17 432	15 381	1.023 26	1.28 32.5	0.06 1.6	12	837.76 380.00	795.87 361.00

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DIRECT MOUNT 4-SEAT 3-WAY/4-WAY FLANGE END BALL VALVE

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P PTFE

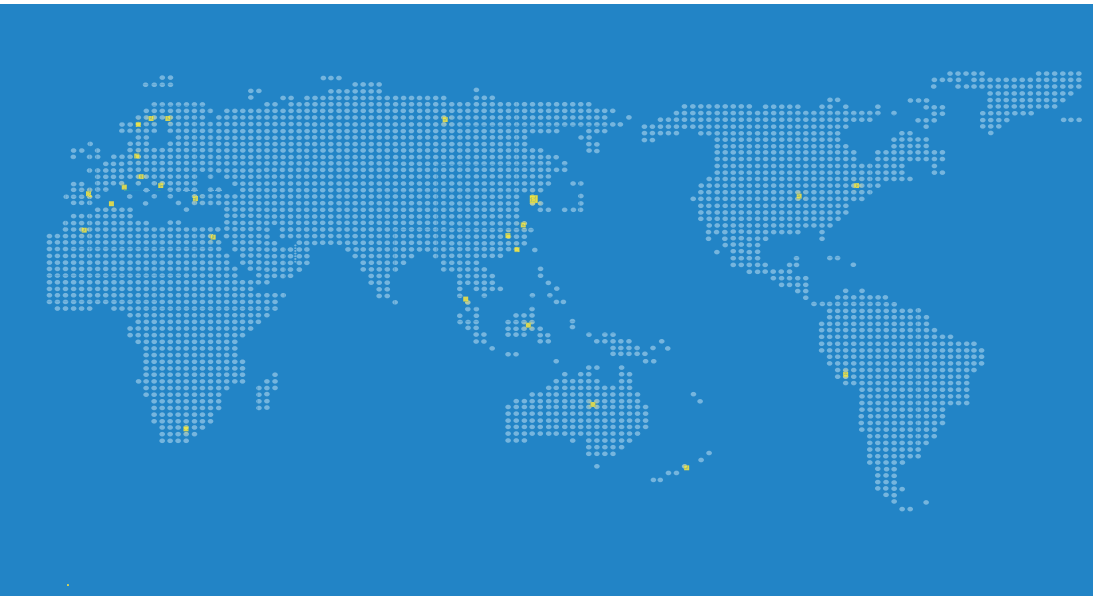
This table express Seat material resistance as declared by the original manufacturers. The values are to be considered with other parameters such as size, seat design and temperature limitations as governed by relevant standards such as ASME B16.34 or EN-12516.

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Due to continuous development of the products, DIE ERSTE reserves the right to alter the dimension and information contained in the document as required without notice. For specific performance data and proper material selection, plesase consult with your DIE ERSTE representatives.

NOAH
Actuation

Part-turn Actuator





NOAH ACTUATION CO., LTD

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N2 BS C E – Ver.A



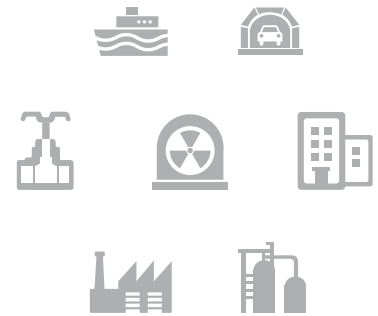
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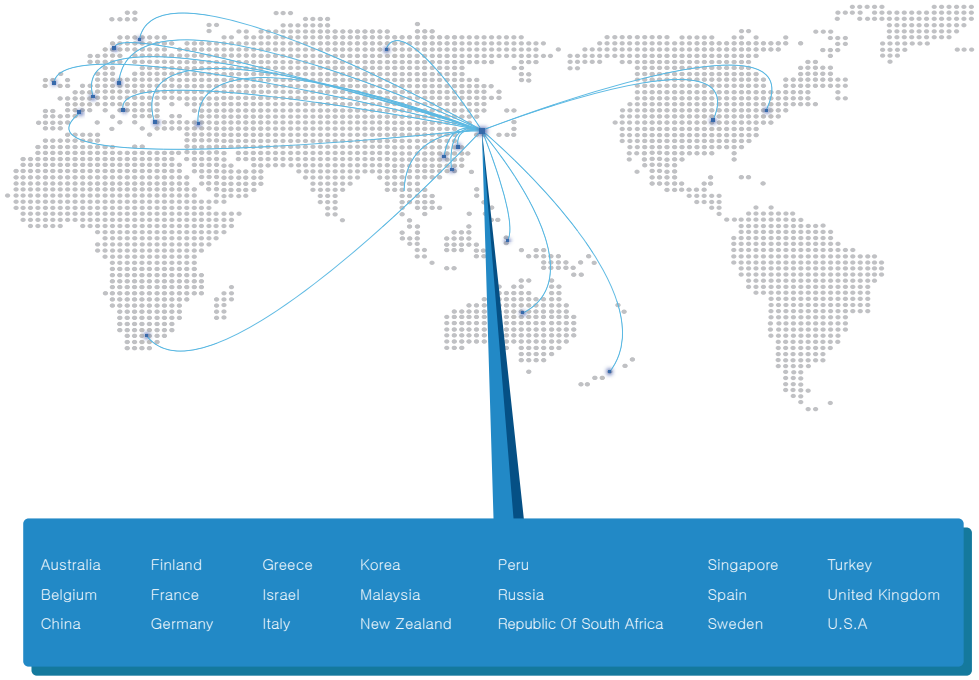
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NA Integral Optional Specification	9

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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.
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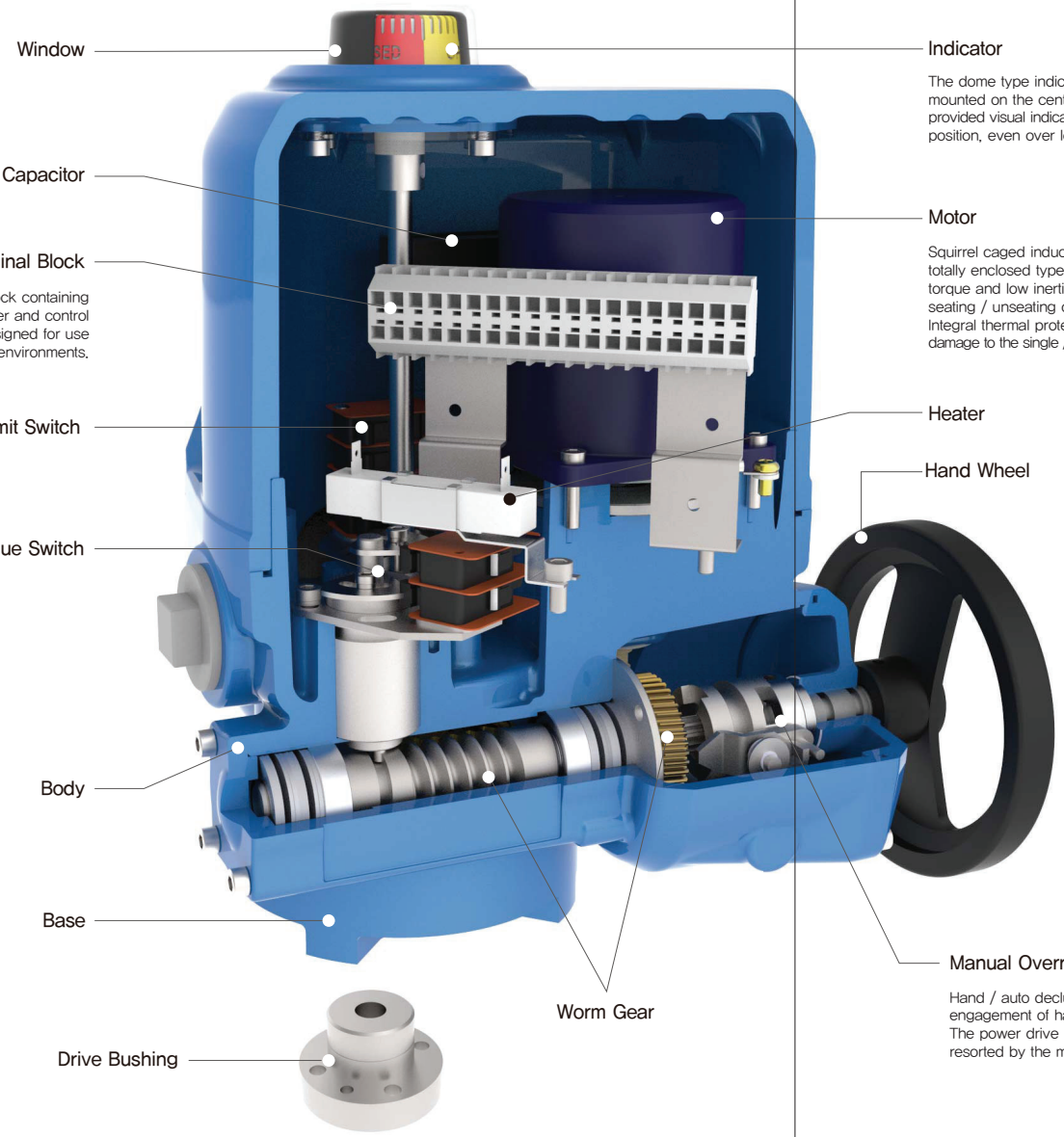
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Configuration



- **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

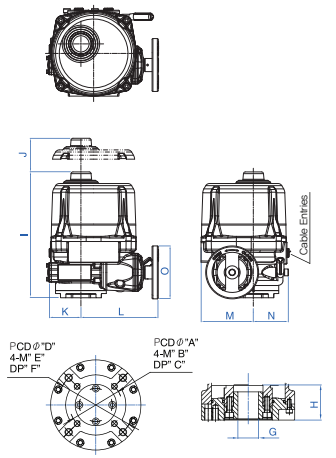
Enclosure	Watertight Ingress Protection 67 NEMA 6	
Ambient Temperation	–20℃ ~ +70℃ , 150℃ / 1hr (Option: –60℃, 400℃ / 1hr)	
Power Supply	110 ~ 230 VAC 50/60Hz , 380 / 440 VAC 50/60Hz (Option : AC 24V , DC 24V, DC 12V)	
Torque Switches	2 Open / Close (Except NA006, NA009)	
Limit Switches	2 Open / Close	
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

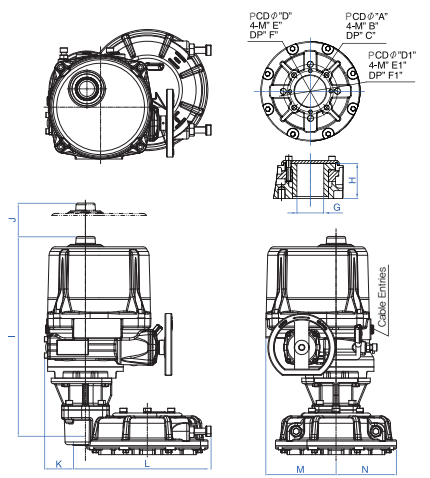
E X P	Explosion Proof / Ex d IIC T4 – S2 15min
IP68	Watertight Enclosure IP68 / NEMA 6P
A L S	Auxiliary Open, Close Limit Switches
A T S	Auxiliary Open, Close Torque Switches (Except NA006, NA009)
P I U	Potentiometer (1K–Ohm)
P C U	Proportional Control Unit Input : DC 4–20mA, 0–5VDC, 0–10VDC, 1–5VDC, 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] 2. Non Instrusive Selector Switch [Remote / Off / Local] 3. Reversing Contactor 4. Phase Discriminator	
Position Indicator	Digital Display (0~100%)	
Remote Dry Contact (Max 250VAC 5A)	1. Full Open / Close 2. Opening / Closing 3. Open / Close Over Torque 4. Monitor (Remote / Local)	
Conduit Entries	Standard	1–PF 1" , 2–PF 3/4"
	Option	1–NPT 1" , 2–NPT 3/4" 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. 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. Output Signal: DC 4–20mA
Field Bus	FDB is used when controlling actuators using communication hardware system based on PC. Profi–Bus PROFIBUS, Mod–Bus Modbus, Can–Bus

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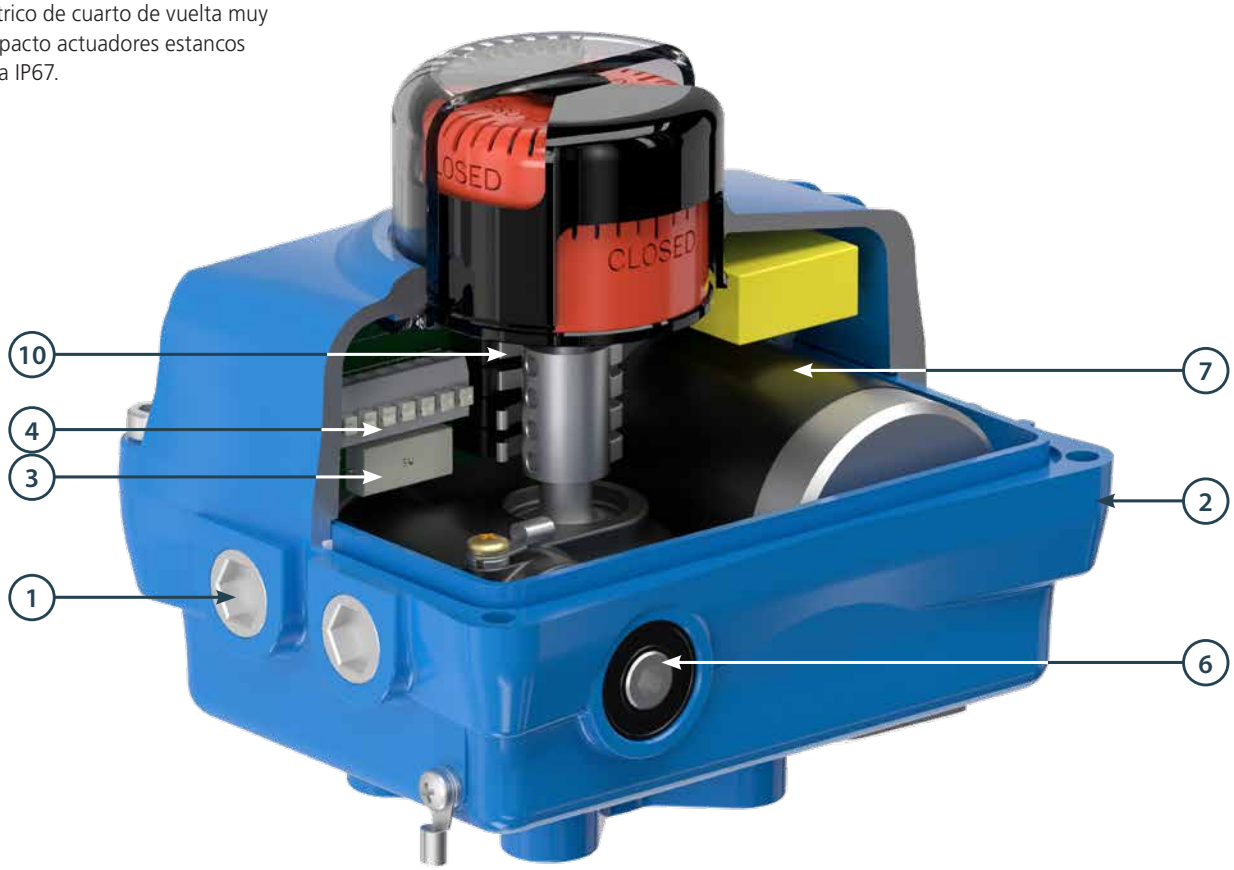
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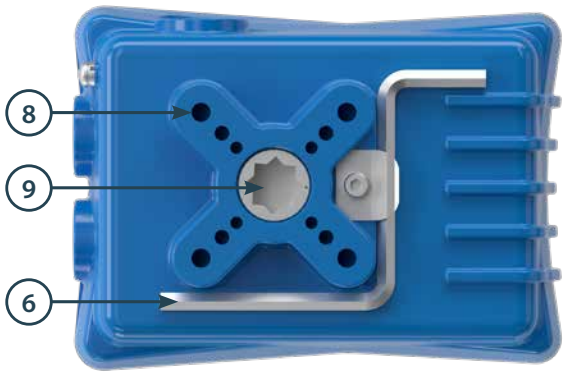
Gama Noah SA

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

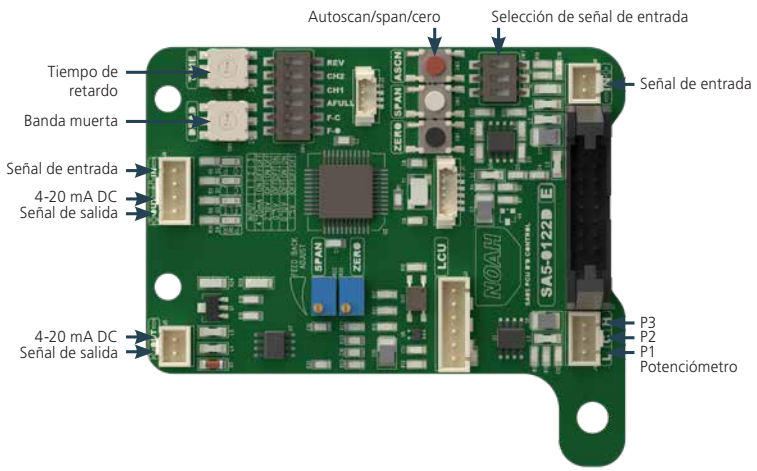
El actuador intenta detenerse en la posición exacta en función del valor ajustado, pero para evitar la caza, se establece un rango de zonas muertas que permiten al actuador abrir y cerrar repetidamente mientras intenta alcanzar la posición exacta debido a la inercia mecánica del motor o de la válvula.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

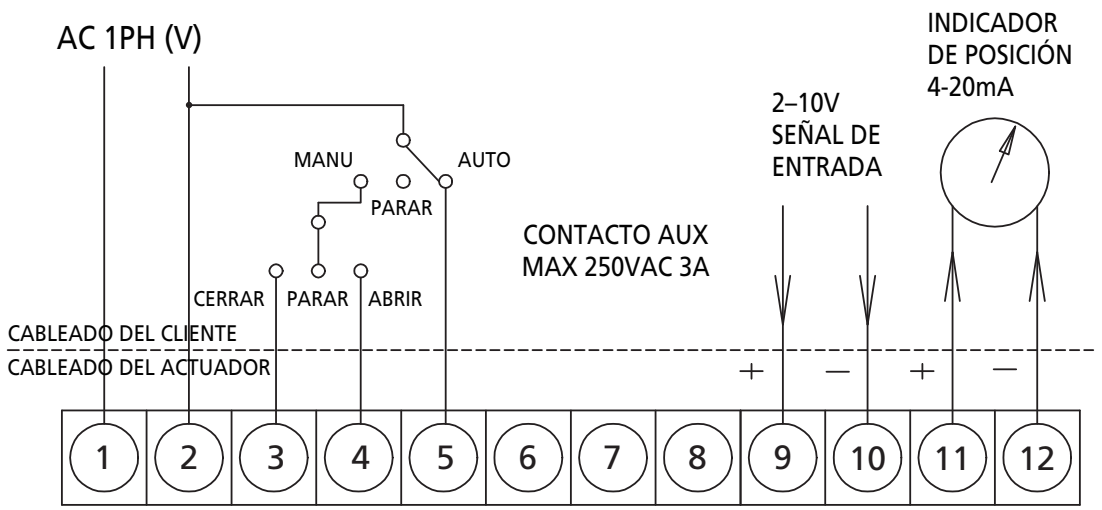
Esta tarjeta convierte la energía de una fuente externa para que el actuador la utilice para operar la tarjeta PCU.

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)

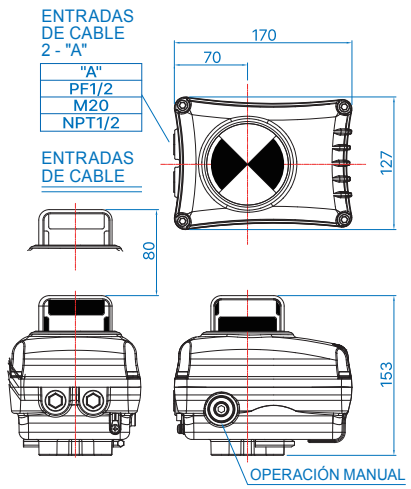
Esquema eléctrico estándar

Diagrama cableado estándar de tipo PCU

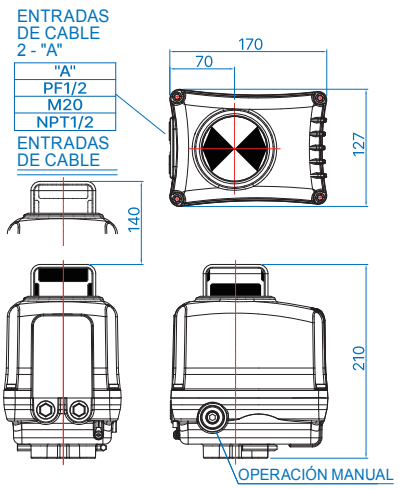


Datos dimensionales

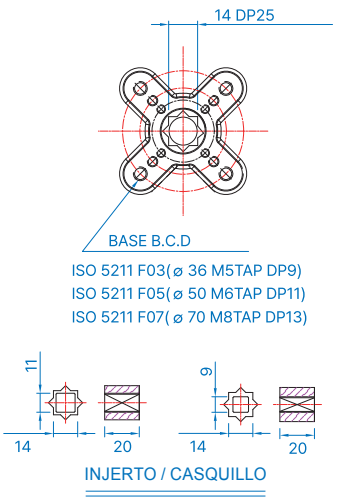
Noah SA005, SA009



Noah SA005L, SA009L

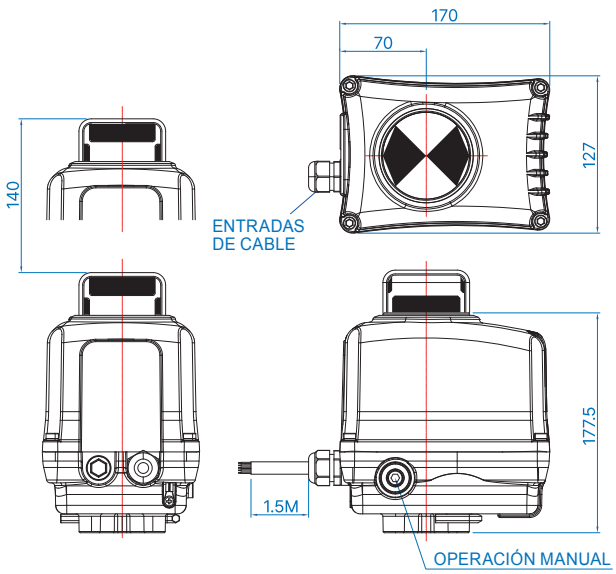


Base

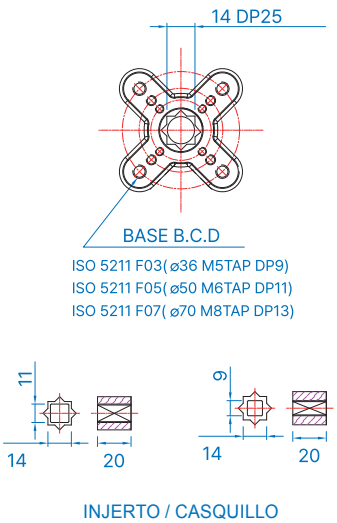


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