

Available with actuator function: DOUBLE ACTING , SINGLE ACTING (Failsafe), MODULATING (with optional positioner)



Type: 4300

Pneumatic actuator direct mounted



Type: 4310

Actuator fitted via mounting kit

Awaiting image

Type: 4320

Actuator fitted via TSM stem extension

Pneumatic Actuator features:

- Rack and pinion construction
- Hard anodised extruded aluminium body
- Epoxy coated cast aluminium end caps
- Pre-tensioned spring sets, no special tools needed to change
- Low friction sliding parts
- Factory lubricated for life (high temperate grease available)
- ATEX approved for use in Zone 1 EExd applications
- Local visual position indicator
- ISO5211, VDI-VDE3845 & Namur compliant

Applications:

Water, oil, air and many corrosive media, subject to compatibility with wetted parts in contact with media. The 4300 Series have graphite seats and are API607 firesafe tested and approved.

Valve actuators sized on a maximum differential pressure of 10 bar wet service, operated at least once per day. If the intended duty differs from these parameters, or is dry (air or gas), please call to check actuator sizing as a larger output valve actuator may be required.

Maximum working temperature of a direct mounted assembly is +80C. For higher working temperatures , consider models that have a mounting kit or TSM stem extension between the valve and actuator which uses air cooling to dissipate the rising heat from the valve away from the actuator.

Ball valve information:

Full bore 2 piece construction, flanged ASA150, providing full unrestricted flow and a very low pressure drop across the valve. Designed for automation with integrally cast ISO5211 actuator mounting platform. Turning the ball through 90° fully opens the valve, turning back through 90° fully closes the valve and isolates the flow. End connections are flanged PN16 (PN40 up to and including 2")

These ball valves are suitable for flammable service applications. They carry full fire safe approval in accordance with API 607 latest edition.

Specifications:	
Actuator housing	Hard anodised aluminium
Hazardous area rating	ATEX II 2GD EExd
Actuator temp limits	-20 to +80°C
Assembly temp limits	PA4100 +80°C Direct mounted
	PA4110 +120°C Via mounting kit
	PA4120 +100°C Via extension
Valve body	CF8M (Cast 316SS)
Valve ball	316SS
Valve seats	RPTFE with GRAPHITE seals
Valve pressure rating	ANSI Class 150
Valve temp limits	-50 to +215°C
Size range	1/2" to 4"

How this air operated 1/4 turn valve works (on-off):

Within the cylindrical bore of the actuator are 2 opposing aluminium pistons, each with an integrally cast rack, which is driven by a bearing supported nickel plated steel pinion.

The housing has air ports drilled to allow compressed air supplied via the air connection ports to flow either in to the cavity between the pistons to drive them apart, which via the rack & pinion system, rotates the actuator's output drive shaft, or into the cylinder between the pistons and end caps to drive the pistons together, which reverses the direction of rotation of the output shaft. Final open and closed positions are set with adjustable mechanical stops.

Actuator body coating options:

Standard: Hard anodized extruded aluminium body, with epoxy coated aluminium end caps.

ENP: Electroless nickel plated body and end caps

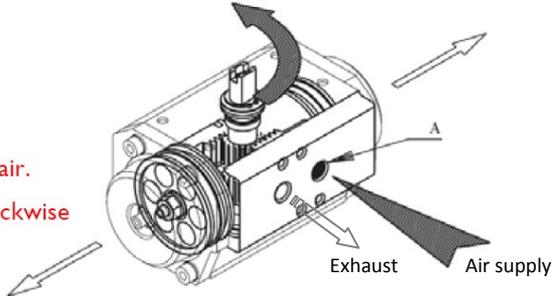
Teflon®: PTFE coated aluminium body & end caps

Epoxy: Epoxy coated aluminium body & end caps to your colour

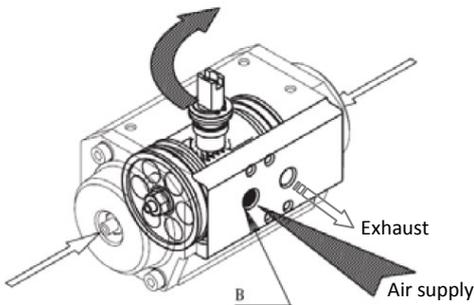
Actuator Information - air ports and standard direction of rotation (closes clockwise)

DA

Opening by air.
Counter-clockwise



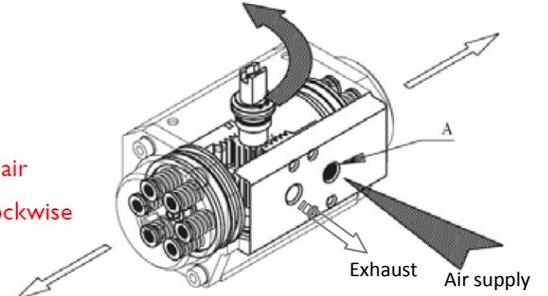
Closing by air
Clockwise



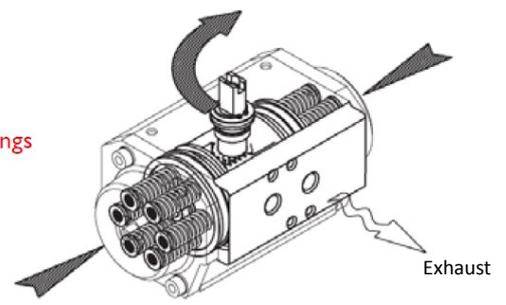
Double acting actuators - standard shaft rotation

SR

Opening by air
Counter-clockwise



Closing by springs
Clockwise

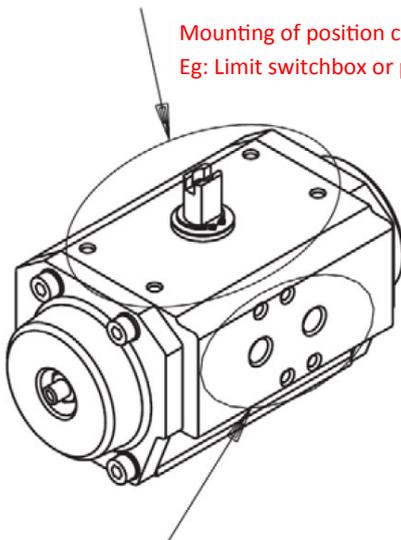


Single acting actuators - standard shaft rotation

Actuator Information - standards for mounting valves and accessories

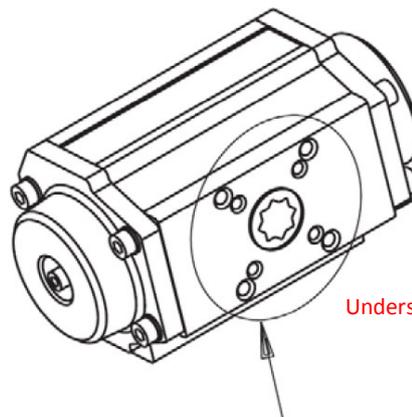
VDI-VDE 3845 (NAMUR)

Mounting of position control & monitoring devices
Eg: Limit switchbox or positioner



VDI-VDE 3845 (NAMUR)

Mounting of Namur pilot solenoid valves



Underside of actuator

ISO 5211 - DIN 3337

Valve mounting

Method of assembly and accessories for position feedback, position monitoring and position control



Safety Notice:

Ensure positioner, switchbox and/ or solenoid are compatible with the intended installation area - is it a safe area, or a hazardous area? If hazardous, which Zone? We can supply either. Call to check if unsure.

Positioner: Sets the degree of opening of the actuator (and therefore valve) proportional to a control input signal. This signal can be either 4-20mA, or 0-15psi.

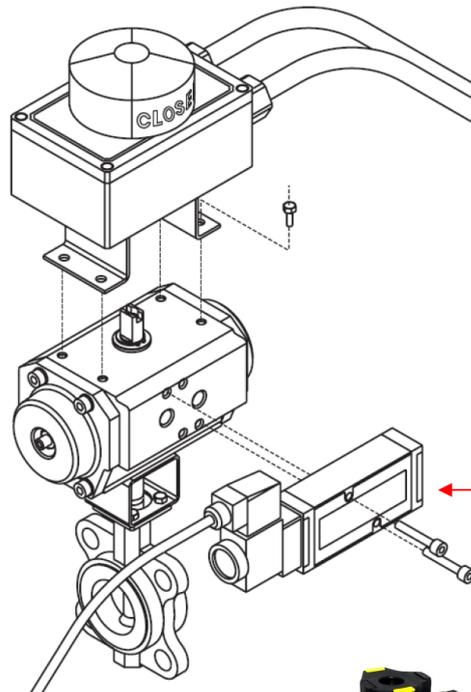
Switchbox: Internal switches, activated by cams or similar, driven by the actuator’s pinion, make a circuit at end of travel (ie: full open, or full closed) to provide remote end of travel confirmation. Also has local visual position indicator

Solenoid: Provides electrical control of the pneumatic actuator. Air remains energised permanently, the solenoid valve switches to control the opening and closing of the actuator.

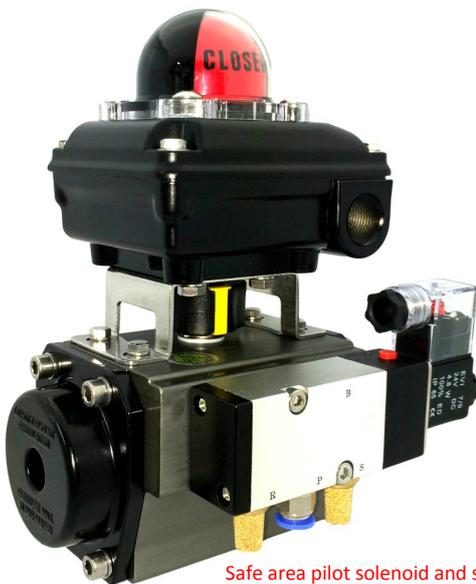
Safe area switchbox fitted



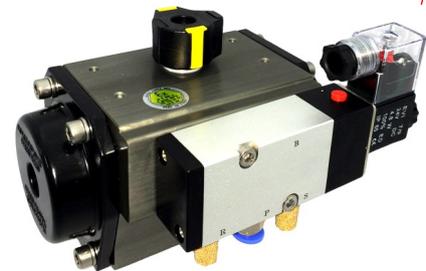
Fit limit switchbox or positioner



Fit Namur pilot solenoid



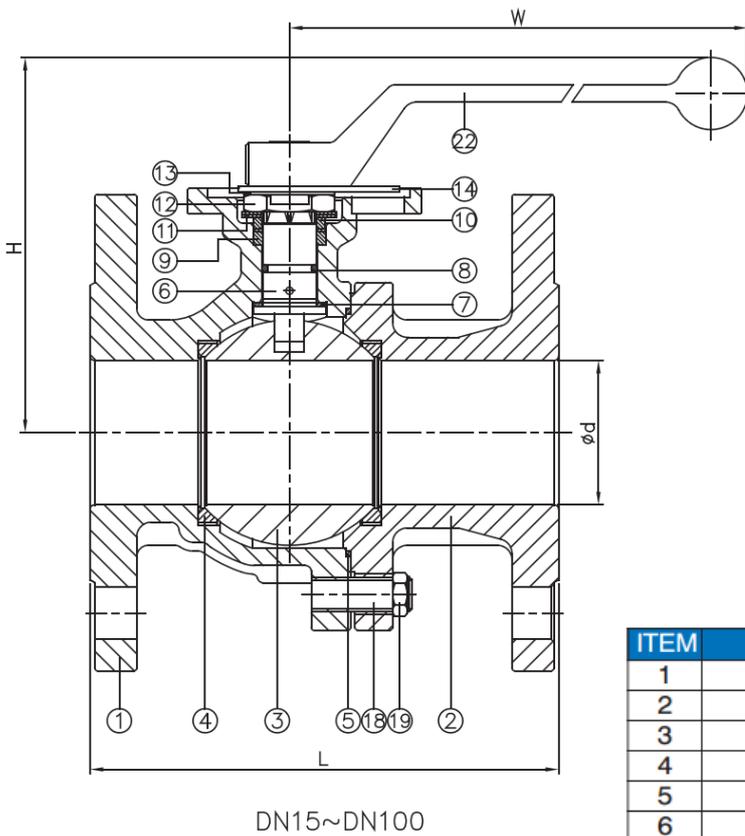
Safe area pilot solenoid and switchbox fitted. The solenoid can be pre-wired to the switch-box.



Safe area Namur solenoid fitted.

Typical Valve Data 1

Materials of Construction



ITEM	PARTS	MATERIAL	
1	BODY	ASTM A351-CF8M	ASTM A216-WCB
2	CAP		
3	BALL	SOLID: ASTM A351-CF8M / HOLLOW: ASTM A240-316	
4	SEAT	PTFE / RTFE	
5	SEAL	GRAPHITE	
6	STEM	ASTM A276-316	
7	THRUST WASHER	CTFE	
8	O-RING	VITON	
9	PACKING	GRAPHITE	
10	GLAND RING	AISI 304	
11	BELLEVILLE WASHER	AISI 301	
12	STEM NUT	AISI 304	
13	LOCKING WASHER		
14	FLAT WASHER		
15	HANDLE HEAD		
16	STOP PIN		
17	BOLT		
18	STUD		
19	NUT		
20	STEEL TUBE		
21	HANDLE SLEEVE	PVC	
22	HANDLE	AISI 301	
23	SOCKET SET SCREW	AISI 301	

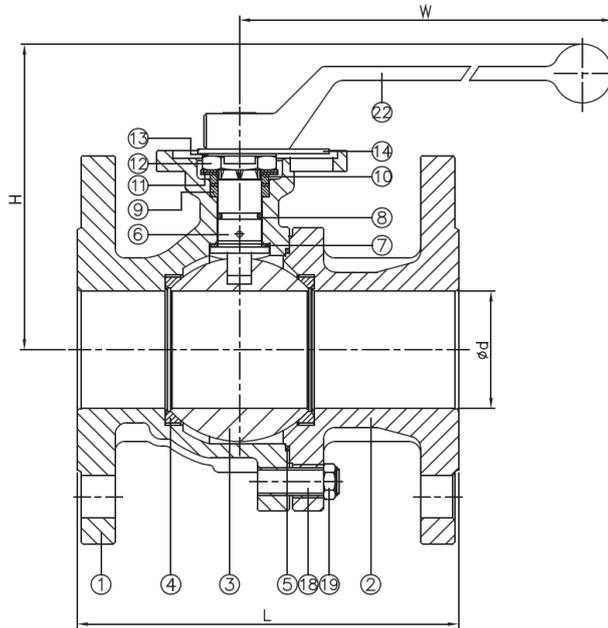
- ABOVE MENTIONED MATERIALS APPLY TO FIRE SAFE DESIGN

Typical Approvals



Typical Valve Data 2

Typical Dimensions



DN15~DN100

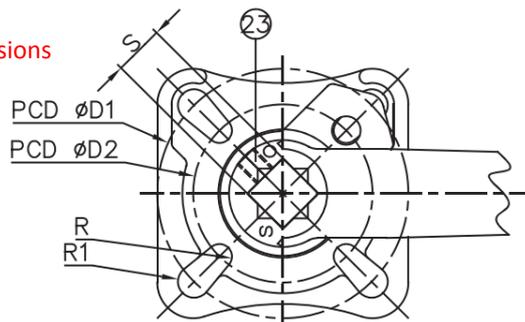
DN	d	CLASS 150			CLASS 300			D1	D2	R	R1	S	Torque(N-M)
		L	H	W	L	H	W						
15	15	108	85	190	140	84.5	197.5	42	36	2.75	2.75	9	5.2
20	20	117	89.5	190	152	94.5	197.5	42	36	2.75	2.75	9	8
25	24	127.5	94.2	190	165	99.5	197.5	50	42	2.75	3.5	11	12.5
32	30	140.5	97.9	190	178	105	197.5	50	42	2.75	3.5	11	12
40	38	165	120.9	235	190	124.5	247.5	70	50	3.5	4.5	14	24.5
50	50	178	129.9	235	216	129	247.5	70	50	3.5	4.5	14	32
65	64	190.5	156.3	325	241	154.5	340	102	70	4.5	5.5	17	38
80	76	203	163.3	325	282	165.5	340	102	70	4.5	5.5	17	45
100	98	229	190.9	325	305	188	340	125	102	5.5	6.5	22	55

Unit: mm

NPS	d	CLASS 150			CLASS 300			D1	D2	R	R1	S	Torque(in-lb)
		L	H	W	L	H	W						
1/2"	0.59	4.25	3.35	7.48	5.51	3.33	7.78	1.65	1.42	0.11	0.11	0.35	46
3/4"	0.79	4.61	3.52	7.48	5.98	3.72	7.78	1.65	1.42	0.11	0.11	0.35	70.8
1"	0.94	5.02	3.71	7.48	6.5	3.92	7.78	1.97	1.65	0.11	0.14	0.43	110.6
1-1/4"	1.18	5.53	3.85	7.48	7.01	4.13	7.78	1.97	1.65	0.11	0.14	0.43	106.2
1-1/2"	1.5	6.5	4.76	9.25	7.48	4.9	9.74	2.76	1.97	0.14	0.18	0.55	216.8
2"	1.97	7.01	5.11	9.25	8.5	5.08	9.74	2.76	1.97	0.14	0.18	0.55	283.2
2-1/2"	2.52	7.5	6.15	12.8	9.49	6.08	13.39	4.02	2.76	0.18	0.22	0.67	336.3
3"	2.99	7.99	6.43	12.8	11.1	6.52	13.39	4.02	2.76	0.18	0.22	0.67	398.3
4"	3.86	9.02	7.52	12.8	12.01	7.4	13.39	4.92	4.02	0.22	0.26	0.87	486.8

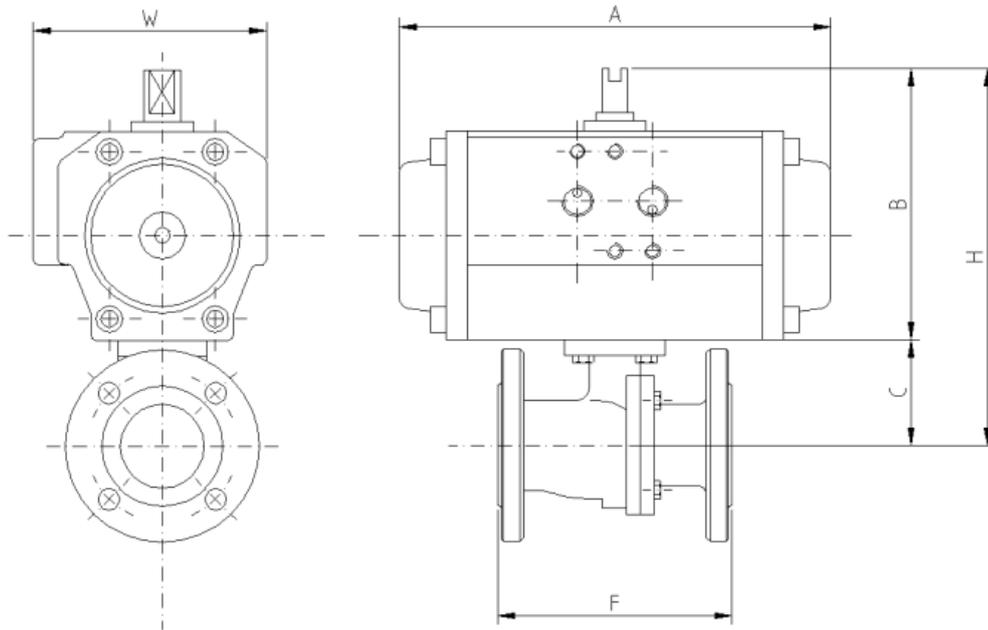
Unit: inch

ISO5211 Platform Dimensions



Typical Assembly Dimensions

Type: 4200 Air actuator direct mounted to full bore stainless steel PN16 flanged firesafe ball valve

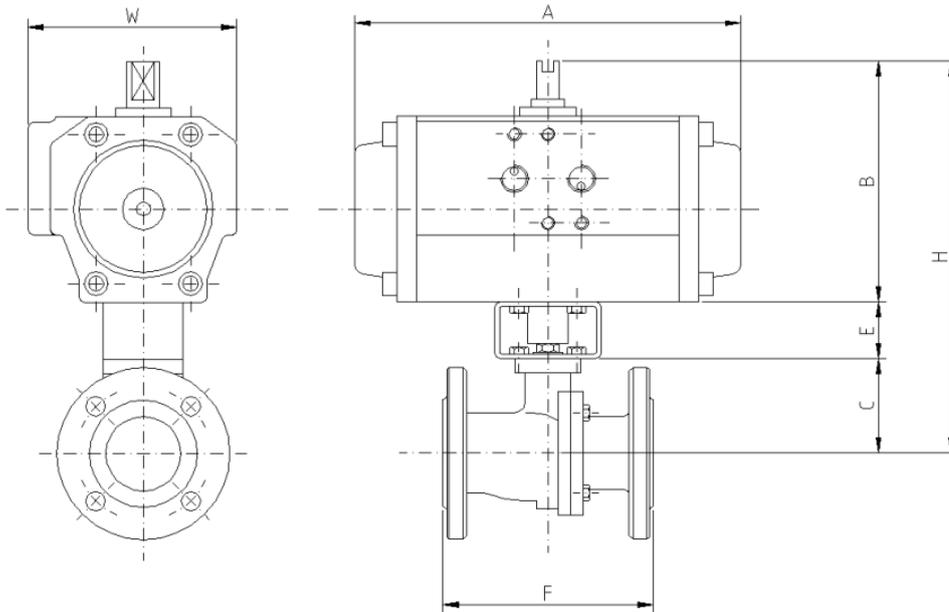


Typical Dimensions:

Double Acting								
	Model	A	B	C	F	H	W	Kilos
1/2"	CH063	156	103	47	108	150	86	3.4
3/4"	CH063	156	103	51	117	154	86	3.8
1"	CH063	156	103	59	127	162	86	4.5
1 1/2"	CH075	210	120	89	165	209	94	9.3
2"	CH075	210	120	97	178	217	94	12.1
2 1/2"	CH075	210	120	116	190	236	94	17.2
3"	CH085	228	130	133	204	263	104	23.7
4"	CH115	310	172	157	229	329	134	40.8
Spring Return								
1/2"	CH063SR	156	103	47	108	150	86	3.7
3/4"	CH075SR	210	120	51	117	171	94	5.5
1"	CH075SR	210	120	59	127	179	94	6.2
1 1/2"	CH085SR	228	130	89	165	219	104	11.2
2"	CH100SR	281	145	97	178	242	120	15.9
2 1/2"	CH100SR	281	145	116	190	261	120	23.2
3"	CH115SR	310	172	133	204	305	134	32.0
4"	CH115SR	310	172	157	229	329	134	43.4

Assembly Dimensions

Type: 4210 Air actuator fitted via mounting kit to full bore 2 way PN16 flanged firesafe stainless steel ball valve



Typical Dimensions:

Double Acting									
	Model	A	B	C	E	F	H	W	Kilos
1/2"	CH063	156	103	47	50	108	200	86	3.6
3/4"	CH063	156	103	51	50	117	204	86	4.0
1"	CH063	156	103	59	50	127	212	86	4.7
1 1/2"	CH075	210	120	89	50	165	259	94	9.5
2"	CH075	210	120	97	50	178	267	94	12.3
2 1/2"	CH075	210	120	116	50	190	286	94	17.4
3"	CH085	228	130	133	70	204	333	104	23.9
4"	CH115	310	172	157	70	229	399	134	41.0
Spring Return									
1/2"	CH063SR	156	103	47	50	108	200	86	3.9
3/4"	CH075SR	210	120	51	50	117	221	94	5.7
1"	CH075SR	210	120	59	50	127	229	94	6.4
1 1/2"	CH085SR	228	130	89	50	165	269	104	11.4
2"	CH100SR	281	145	97	50	178	292	120	16.1
2 1/2"	CH100SR	281	145	116	50	190	311	120	23.5
3"	CH115SR	310	172	133	70	204	375	134	32.2
4"	CH115SR	310	172	157	70	229	399	134	43.6