

Datasheet

Pneumatic actuators

Si-503 EN

Edition: 2022-06

- Compact design
- Patented backlash-free torque transmission
- Low friction seals
- Optimized torque curve
- Standardised connections between valve and accessories



Type A - DA
Type A - SC
Type A - SO

Double acting actuator
Single acting actuator (spring to close)
Single acting actuator (spring to open)



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Product Information

Somas actuators are designed for optimal function in control and on/off applications. The type A pneumatic actuators are specifically made to fit the Somas range of valves. They can also be used with most 90° rotary valves. The A-DA actuator is double acting and the A-SC and A-SO actuators are single acting spring return for fail safe operation.

Somas offer a patented backlash-free transmission friction coupling (valid for $D \leq 50$) to optimize control performance and eliminate backlash. The actuators are designed to fit valves and accessories with the ISO 5211 and VDI/VDE 3845.

Somas actuators have a torque curve corresponding to the torque demand for ball segment, butterfly, and ball valves. Low-friction seals allow for a low starting torque.

Single or dual- cylinder units are used depending on the required torque and air supply pressure.

Single acting actuators are optimised according to compact dimensions. The springs are supplied in a cartridge to reduce the risk of injury and to simplify maintenance.

Adjustable travel stops are provided for both open and closed positions.



Mounting

The standard actuator mounting is perpendicular to the pipeline as shown in position A (see Fig.1).

Position B, C or D is available on request (specify when ordering).

Always specify mounting position when ordering.

The actuator is mounted in position A if the position is not stated.

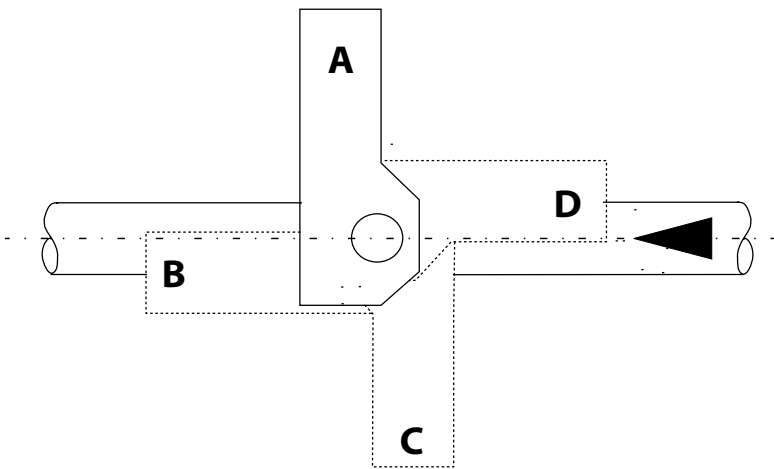
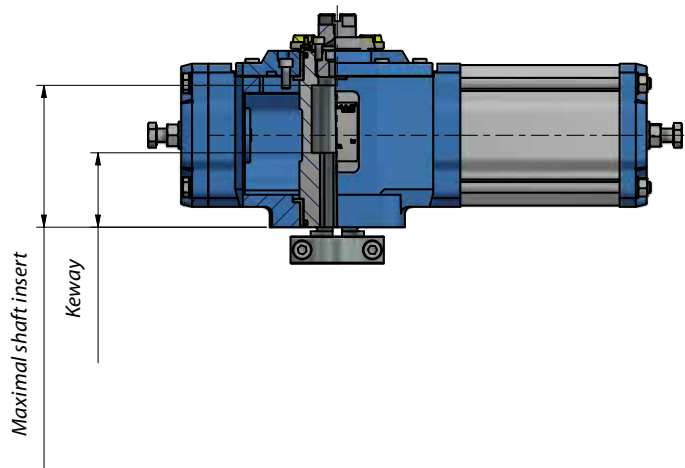


Fig.1 Mounting

Maximal shaft insert

Actuator	Length keyway	Maximal shaft insert
A10	39	75
A20	55	104
A30	87	159
A40	80	243
A50	189	328

Fig.1.5 Maximal shaft insert





Torque

The linear motion from the piston is converted into a rotary motion via a linkage mechanism. The curve shows the output torque from the actuator as a function of the actuator shaft angle (see Fig.2).

Maximum torque is achieved in the closed position which corresponds to the demand of ball segment valves, ball valves and metal seated butterfly valves.

For butterfly valves, the dynamic torque can be high in case of high differential pressure across the valve. This increased torque demand is normally covered by the actuator selection tables.

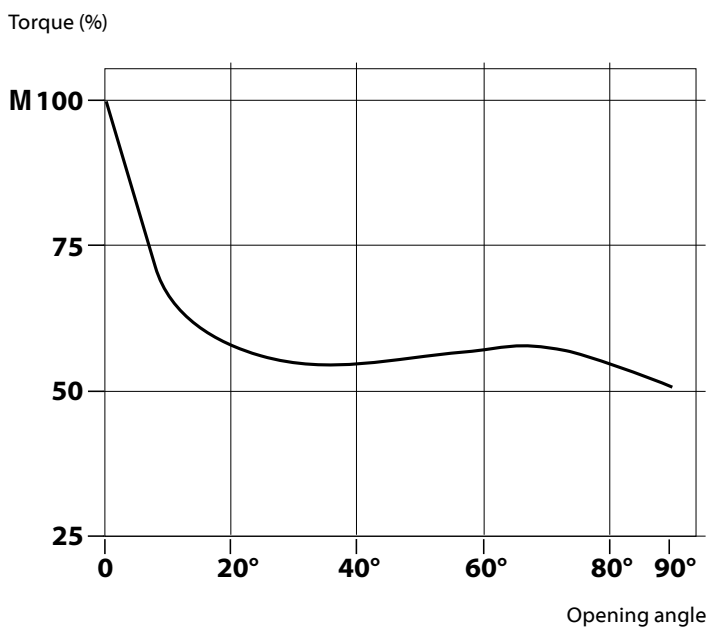


Fig.2 Double acting actuator type A



Torque

The highest specified value for each size, in the table below, is the upper limit of permitted transfer torque in Nm.

Actuator Type	5,5 bar																	
	DA						SC						SO					
	Air opens			Air closes			Air opens			Spring closes			Spring opens			Air closes		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
	BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
A11	84	58	55	55	58	84	-	-	-	-	-	-	-	-	-	-	-	-
A13	140	97	91	91	97	140	69	35	21	60	51	55	60	33	23	58	50	58
A21	196	113	88	88	113	196	-	-	-	-	-	-	-	-	-	-	-	-
A22	413	239	186	186	239	413	-	-	-	-	-	-	-	-	-	-	-	-
A23	441	255	199	199	255	441	304	151	104	98	107	144	225	108	70	128	142	203
A24							590	293	200	196	214	288	450	217	140	263	294	425
A31	761	439	342	342	439	761	-	-	-	-	-	-	-	-	-	-	-	-
A32	1609	928	725	725	928	1609	-	-	-	-	-	-	-	-	-	-	-	-
A33	-	-	-	-	-	-	1220	594	394	430	464	614	989	470	297	811	554	795
A34	-	-	-	-	-	-	2363	1143	753	861	929	1228	1979	939	595	1055	1152	1603
A41	2914	1578	1399	1399	1578	2914	-	-	-	-	-	-	-	-	-	-	-	-
A42	6117	3352	3009	3009	3352	6117	-	-	-	-	-	-	-	-	-	-	-	-
A43	-	-	-	-	-	-	5082	2304	1693	1827	1680	2275	3937	1718	1176	2293	2154	3118
A44	-	-	-	-	-	-	9897	4461	3254	3654	3360	4551	7874	3435	2351	4714	4450	6498
A51	9552	5173	4586	4586	5173	9552	-	-	-	-	-	-	-	-	-	-	-	-
A52	19925	10919	9782	9782	10919	19925	-	-	-	-	-	-	-	-	-	-	-	-

Information

DA = Double Acting
 SC = Spring to Close
 SO = Spring to Open

BTO = Break To Open / Break Torque to Open
 RTO = Run To Open / Run Torque to Open
 ETO = End To Open / End Torque to Open
 BTC = Break To Close / Break Torque to Close
 RTC = Run To Open / Run Torque to open
 ETC = End To Close / End Torque to Close

Type A size A11, A21 and so on, has one cylinder.
 Type A size A22, A32 and so on, has two cylinders.

Cylinder volume (litre)

Type	DA	SC (Spring to close)	SO (Spring to open)
A11	0.22	-	-
A13	0.38	0.38	0.38
A21	0.42	-	-
A22	0.8	-	-
A23	1.12	1.1	1.1
A24	1.5	2.2	2.2
A31	1.74	-	-
A32	3.2	-	-
A33	4.7	4.7	4.7
A34	6.2	9.2	9.2
A41	6.5	-	-
A42	12	-	-
A43	17.5	17.5	17.5
A44	23	33.7	33.7
A51	22.1	-	-
A52	40.6	-	-



Torque

The highest specified value for each size, in the table below, is the upper limit of permitted transfer torque in Nm.

Actuator Type	4,0 bar																	
	DA						SC/SCL(A13)						SOL					
	Air opens			Air closes			Air opens			Spring closes			Spring opens			Air closes		
	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°	0°	45°	90°	90°	45°	0°
	BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC	BTO	RTO	ETO	BTC	RTC	ETC
A11	61	42	40	40	42	61	-	-	-	-	-	-	-	-	-	-	-	-
A13	102	71	67	67	71	102	48	27	18	40	34	38	46	27	21	33	30	35
A21	142	83	65	65	83	142	-	-	-	-	-	-	-	-	-	-	-	-
A22	300	175	136	136	175	300	-	-	-	-	-	-	-	-	-	-	-	-
A23	370	216	168	168	216	370	166	74	43	98	107	144	160	81	55	78	91	134
A24	528	308	240	240	308	528	320	142	81	196	214	288	319	162	110	195	232	351
A31	553	323	251	251	323	553	-	-	-	-	-	-	-	-	-	-	-	-
A32	1170	683	532	532	683	1170	-	-	-	-	-	-	-	-	-	-	-	-
A33	1500	961	873	873	961	1500	656	277	147	430	464	614	672	331	220	326	373	535
A34	2100	1226	954	954	1226	2100	1261	524	270	861	929	1228	1343	663	440	674	774	1117
A41	2118	1151	1027	1027	1151	2118	-	-	-	-	-	-	-	-	-	-	-	-
A42	4447	2438	2156	2156	2438	4447	-	-	-	-	-	-	-	-	-	-	-	-
A43	5750	3153	2788	2788	3157	5750	2816	1111	637	1827	1680	2275	2764	1223	854	1481	1436	2092
A44	8000	4387	3879	3879	4387	8000	5449	2122	1186	3654	3360	4551	5529	2446	1708	3044	2965	4353
A51	6945	3807	3368	3368	3807	6945	-	-	-	-	-	-	-	-	-	-	-	-
A52	14485	7942	7023	7023	7945	14485	-	-	-	-	-	-	-	-	-	-	-	-

Information

DA = Double Acting
 SC = Spring to Close
 SCL = Spring to Close Low air supply design
 SO = Spring to Open
 SOL = Spring to Open Low air supply design

BTO = Break To Open / Break Torque to Open
 RTO = Run To Open / Run Torque to Open
 ETO = End To Open / End Torque to Open
 BTC = Break To Close / Break Torque to Close
 RTC = Run To Open / Run Torque to Close
 ETC = End To Close / End Torque to Close

Type A size A11, A21 and so on, has one cylinder.
 Type A size A22, A32 and so on, has two cylinders.

Cylinder volume (litre)

Type	DA	SC (Spring to close)	SO (Spring to open)
A11	0.22	-	-
A13	0.38	0.38	0.38
A21	0.42	-	-
A22	0.8	-	-
A23	1.12	1.1	1.1
A24	1.5	2.2	2.2
A31	1.74	-	-
A32	3.2	-	-
A33	4.7	4.7	4.7
A34	6.2	9.2	9.2
A41	6.5	-	-
A42	12	-	-
A43	17.5	17.5	17.5
A44	23	33.7	33.7
A51	22.1	-	-
A52	40.6	-	-



Actuator selection table for Ball segment and Butterfly Valves
Valves with differential pressure $\Delta p > 10$ (bar)
Air supply 5.5 bar minimum

Valve type	KVTW/KVXW	KVTF/KVXF	KVTF/KVXF	KVTF/KVXF	KVT/KVX	VSS	VSS	MTV,MTVL,MTVF
Valve body	-A, -D	-C	-B	-B	-A	-A,-F	-A,-F,-L	-A,-F,-L
Rating	PN25-40	PN25-40	PN25	PN50	PN100	PN25	PN50	PN25
Data sheet	Si-113,114	Si-112	Si-110	Si-111	Si-	Si-203	Si-204	Si-205
Actuator type	DN	DN	DN	DN	DN	DN	DN	DN
Double acting (DA)								
A11-DA	25/2-40	25/2-40	-	-	-	-	-	-
A13-DA	50	50	-	-	25/5-40	-	-	-
A21-DA	65-100	65-100	80-100	-	50	80-100	80-100	80-100
A22-DA	150	150	125	80-100	80	125-200	80-150	125-200
A23-DA	-	-	-	-	100	250	-	250
A31-DA	200-250	200-250	150-200	150	-	300	200-250	300
A32-DA	-	300	250	200	150	350-400	300	350-400
A41-DA	-	350-400	300-350	250	-	450-600	350-400	500
A42-DA	-	-	400-600	-	-	700-800	500	-
A51-DA	-	-	700	-	-	900-1200	600	-
A52-DA	-	-	-	-	-	-	-	-
Single acting (SC/SO)								
A13-SC/SO	25/2-50	25/2-50	-	-	-	-	-	-
A23-SC/SO	65-100	65-100	80-100	-	25/5-50	80	-	80
A24-SC/SO	150	150	125	80-100	80	100-200	80-100	100-200
A33-SC/SO	200-250	200-250	150-200	150	100	250-300	150-200	250-300
A34-SC/SO	-	300	250	200	-	350	250-300	350
A43-SC	-	350-400	300-350	250	-	400-450	350-400	400
A43-SO	-	-	300-350	250	150	400-450	350-400	400
A44-SC	-	-	400	-	-	500-600	500	500
A44-SO	-	-	400	-	-	500-700	500	500



Actuator selection table for Ball segment and Butterfly Valves

Valves with differential pressure $\Delta p \leq 10$ (bar)

Air supply 5.5 bar minimum

Valve type	KVTW/KVXW	KVTF/KVXF	VSS	MTV,MTVL,MTVF
Valve body	-A, -D	-C	-A,-F	-A,-F,-L
Rating	PN25-40	PN25-40	PN25	PN25
Data sheet	Si-113,114	Si-112	Si-203	Si-205
Actuator type	DN	DN	DN	DN
Double acting (DA)				
A11-DA	25/2-50	25/2-40	-	-
A13-DA	65-100	65-100	-	-
A21-DA	150	150	80-150	80-150
A22-DA	200	200	200-250	200-250
A23-DA	-	-	250	250
A31-DA	250	-	300-350	300-350
A32-DA	-	-	400	400
A41-DA	-	-	-	500
A42-DA	-	-	-	-
A51-DA	-	-	-	-
A52-DA	-	-	-	-
Single acting (SC/SO)				
A13-SC/SO	25/2-50	25/2-50	-	-
A23-SC/SO	65-100	65-100	80	80
A24-SC/SO	150-200 ¹⁾	150-200 ¹⁾	100-200	100-200
A33-SC/SO	250	250	250-300	250-300
A34-SC/SO	-	-	350	350
A43-SC	-	-	400-450	400
A43-SO	-	-	400-450	400
A44-SC	-	-	-	500
A44-SO	-	-	-	500

1) = No HiCo seats, for valves with HiCo seats use table for $\Delta p > 10$ (bar)

Accessories

To achieve certain functions, the actuators can be fitted with different types of accessories; such as positioners, solenoid valves and limit switches.

Somas offer many alternative solutions including mechanical micro switches and different types of solid state proximity switches.

Solenoid valves for on/off applications can be mounted on the actuator.

For positioner See data sheet Si-805EN and Si-811EN, and for Locking Device see data sheet Si-522 on

www.somas.se.

Design options

In addition to the standard design the actuators are available in different optional designs according to the information below.

- E = ATEX design
- H = High temperature design
- NM = Emergency operator
- LDC = Locking device (closed position)
- V = Larger air connections
- X = Special design
- B = Bronze bushing in lever

Standard actuators will be delivered if there are no option codes stated when ordering.



Actuator selection table for Ball segment and Butterfly Valves
Valves with differential pressure $\Delta p > 10$ (bar)
Air supply 4 bar minimum

Valve type	KVTW/KVXW	KVTF/KVXF	KVTF/KVXF	KVTF/KVXF	KVT/KVX	VSS	VSS	MTV,MTVL,MTVF
Valve body	-A, -D	-C	-B	-B	-A	-A,-F	-A,-F,-L	-A,-F,-L
Rating	PN25-40	PN25-40	PN25	PN50	PN100	PN25	PN50	PN25
Data sheet	Si-113,114	Si-112	Si-110	Si-111	Si-	Si-203	Si-204	Si-205
Actuator type	DN	DN	DN	DN	DN	DN	DN	DN
Double acting (DA)								
A11-DA	25/2-40	25/2-40	-	-	-	-	-	-
A13-DA	50	50	-	-	25/5-25	-	-	-
A21-DA	-	-	-	-	40	80	-	80
A22-DA	65-100	65-100	80-100	80	50	100-200	80-100	100-200
A23-DA	150	150	125	-	80	-	150	-
A24-DA	200	-	-	100	-	-	-	-
A31-DA	-	200	150	-	100	250	200	250
A32-DA	250	250-300	200-250	150	150	300-350	250-300	300-350
A33-DA	-	-	-	200	-	400	-	400
A34-DA	-	-	-	-	-	450	-	-
A41-DA	-	350	300	250	-	-	350-400	-
A42-DA	-	400	350-400	-	-	500-750	500	500
A43-DA	-	-	500-600	-	-	800	-	-
A44-DA	-	-	-	-	-	-	-	-
A51-DA	-	-	-	-	-	900	600	-
A52-DA	-	-	700	-	-	1000-1200	-	-
Single acting (SC/SO)								
A13-SCL/SOL	25/2-40	25/2-40	-	-	-	-	-	-
A23-SC/SOL	50-100	50-100	80-100	-	25/5-50	80-100	-	80
A24-SC/SOL	150	150	125	80-100	80	125-200	80-100	100-200
A33-SC/SOL	200-250	200-250	150-200	150	100	250-300	150-200	250-300
A34-SC/SOL	-	300	250	200	150	350	250-300	350
A43-SC/SOL	-	350	300-350	250	-	400-450	350-400	400
A44-SC	-	400	400	-	-	500-600	500	500
A44-SOL	-	-	400	-	-	500-600	500	500



Actuator selection table for Ball segment and Butterfly Valves
Valves with differential pressure $\Delta p \leq 10$ (bar)
Air supply 4 bar minimum

Valve type	KVTW/KVXW	KVTF/KVXF	VSS	MTV,MTVL,MTVF
Valve body	-A, -D	-C	-A,-F	-A,-F,-L
Rating	PN25-40	PN25-40	PN25	PN25
Data sheet	Si-113,114	Si-112	Si-203	Si-205
Actuator type	DN	DN	DN	DN
Double acting (DA)				
A11-DA	25/2-50	25/2-50	-	-
A13-DA	-	-	-	-
A21-DA	65-100 ¹⁾	65-100 ¹⁾	80-100	80-100
A22-DA	150	150	125-200	125-200
A23-DA	200	200		
A24-DA	200 ¹⁾	200 ¹⁾	250	250
A31-DA	250 ¹⁾	250 ¹⁾	300	300
A32-DA	-	-	350-400	350-400
A33-DA	-	-	400	400
A34-DA	-	-	450	-
A41-DA	-	-	500	500
A42-DA	-	-	-	-
A43-DA	-	-	-	-
A44-DA	-	-	-	-
A51-DA	-	-	-	-
A52-DA	-	-	-	-
Single acting (SC/SO)				
A13-SCL/SOL	25/2-40	25/2-40		
A23-SC/SOL	50-100	50-100	80-100	80-100
A24-SC/SOL	150-200	150-200	125-200	125-200
A33-SC/SOL	250 ¹⁾	250 ¹⁾	250-300	250-300
A34-SC/SOL	-	-	350-400	350-400
A43-SC/SOL	-	-	450-500	500
A44-SC	-	-	-	-
A44-SOL	-	-	-	-

1) = No HiCo seats, for valves with HiCo seats use table for $\Delta p > 10$ (bar)

Designation for low air supply (4 bar)

The following actuators will have an additional code (L) as the return spring is not the same as in the actuators for 5.5 bar.

SC (Spring closes)

A13-SCL.

SO (Spring opens)

A13-SOL, A23-SOL, A24-SOL, A33-SOL, A34-SOL, A43-SOL, A44-SOL.

The code for low air supply design has to be specified when ordering.



Actuator selection table for ball valves type SKV (air supply min. 5.5 bar)

Double acting actuator type DA							Double acting actuator type DA						
Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)					Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		10	20	30	40	50			10	20	30	40	50
25	15	A11-DA	A11-DA	A11-DA	A11-DA	A11-DA	25	15	A11-DA	A11-DA	A11-DA	A11-DA	A13-DA
40	15	A11-DA	A11-DA	A11-DA	A11-DA	A13-DA	40	15	A11-DA	A11-DA	A11-DA	A13-DA	A13-DA
50	20	A11-DA	A11-DA	A13-DA	A13-DA	A21-DA	50	20	A13-DA	A13-DA	A13-DA	A21-DA	A21-DA

Double acting actuator type DA							Double acting actuator type DA						
Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)					Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		5	10	15	20	25			5	10	15	20	25
80	25	A21-DA	A21-DA	A22-DA	A22-DA	A22-DA	80	25	A22-DA	A22-DA	A22-DA	A22-DA	A22-DA
100	30	A22-DA	A22-DA	A22-DA	A23-DA	A31-DA	100	30	A22-DA	A23-DA	A31-DA	A31-DA	A32-DA
125	35	A31-DA	A31-DA	A31-DA	A31-DA	A32-DA	125	35	A31-DA	A31-DA	A32-DA	A32-DA	A32-DA
150	40	A31-DA	A31-DA	A32-DA	A32-DA	A32-DA	150	40	A32-DA	A32-DA	A41-DA	A41-DA	A41-DA
200	50	A32-DA	A32-DA	A41-DA	A41-DA	A42-DA	200	50	A32-DA	A41-DA	A42-DA	A42-DA	A42-DA
250	70	A41-DA	A41-DA	A42-DA	A42-DA	A42-DA	250	70	A42-DA	A42-DA	A51-DA	A51-DA	A52-DA
300	80	A41-DA	A42-DA	A42-DA	A51-DA	A51-DA	300	80	A42-DA	A51-DA	A52-DA	A52-DA	A52-DA
350	90	A51-DA	A51-DA	A51-DA	A51-DA	A52-DA	350	90	A51-DA	A52-DA	A52-DA	A52-DA	A52-DA ¹
400	100	A51-DA	A51-DA	A51-DA	A52-DA	A52-DA	400	100	A51-DA	A52-DA	A52-DA	-	-

¹ Air supply = 6 bar

The information will also be found in the data sheet for the actual valve type.



Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)				
		10	20	30	40	50
25	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO
40	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO	A23-SC/SO
50	20	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		10	20	30	40	50
25	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO
40	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A23-SC/SO	A23-SC/SO
50	20	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)				
		5	10	15	20	25
80	25	A23-SC/SO	A23-SC/SO	A23-SC/SO	A24-SC/SO	A24-SC/SO
100	30	A23-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO	A33-SC/SO
125	35	A33-SC/SO	A33-SC/SO	A33-SC/SO	A33-SC/SO	A34-SC/SO
150	40	A33-SC/SO	A33-SC/SO	A34-SC/SO	A34-SC/SO	A34-SC/SO
200	50	A34-SC/SO	A34-SC/SO	A43-SC/SO	A43-SC/SO	A43-SC/SO
250	70	A43-SC/SO	A43-SC/SO	A44-SC/SO	A44-SC/SO	A44-SC/SO
300	80	A43-SC/SO	A44-SC/SO	A44-SC/SO	-	-

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		5	10	15	20	25
80	25	A24-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO
100	30	A24-SC/SO	A33-SC/SO	A33-SC/SO	A33-SC/SO	A34-SC/SO
125	35	A33-SC/SO	A34-SC/SO	A34-SC/SO	A34-SC/SO	A34-SC/SO
150	40	A34-SC/SO	A34-SC/SO	A43-SC/SO	A43-SC/SO	A43-SC/SO
200	50	A34-SC/SO	A43-SC/SO	A44-SC/SO	A44-SC/SO	A44-SC/SO
250	70	A44-SC/SO	A44-SC/SO	-	-	-
300	80	A44-SC/SO	-	-	-	-

The information will also be found in the data sheet for the actual valve type.

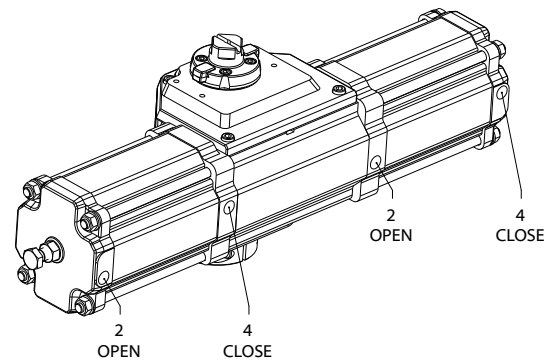
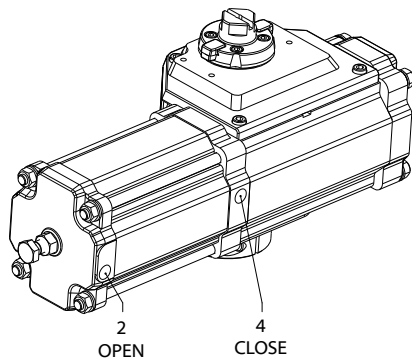
SC = Spring to close

SO = Spring to open

Air connections

Type A size A11, A21 and so on, has one cylinder.

Type A size A22, A32 and so on, has two cylinders.





Actuator selection table for ball valves type SKV (air supply min. 4 bar)

Double acting actuator type DA							Double acting actuator type DA						
Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)					Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		10	20	30	40	50			10	20	30	40	50
25	15	A11-DA	A11-DA	A11-DA	A11-DA	A11-DA	25	15	A11-DA	A11-DA	A11-DA	A13-DA	A13-DA
40	15	A11-DA	A11-DA	A11-DA	A13-DA	A13-DA	40	15	A11-DA	A11-DA	A13-DA	A13-DA	A13-DA
50	20	A21-DA	A21-DA	A21-DA	A21-DA	A22-DA	50	20	A21-DA	A21-DA	A21-DA	A22-DA	A22-DA

Double acting actuator type DA							Double acting actuator type DA						
Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)					Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		5	10	15	20	25			5	10	15	20	25
80	25	A21-DA	A22-DA	A22-DA	A22-DA	A22-DA	80	25	A22-DA	A22-DA	A23-DA	A24-DA	A24-DA
100	30	A22-DA	A22-DA	A23-DA	A23-DA	A31-DA	100	30	A23-DA	A24-DA	A24-DA	A32-DA	A33-DA
125	35	A31-DA	A31-DA	A31-DA	A32-DA	A32-DA	125	35	A31-DA	A32-DA	A32-DA	A33-DA	A33-DA
150	40	A31-DA	A32-DA	A32-DA	A33-DA	A41-DA	150	40	A32-DA	A33-DA	A41-DA	A42-DA	A43-DA
200	50	A32-DA	A33-DA	A41-DA	A42-DA	A42-DA	200	50	A41-DA	A42-DA	A42-DA	A43-DA	A44-DA
250	70	A41-DA	A42-DA	A42-DA	A43-DA	A43-DA	250	70	A42-DA	A43-DA	A51-DA	A52-DA	-
300	80	A42-DA	A42-DA	A43-DA	A44-DA	A52-DA	300	80	A43-DA	A44-DA	A52-DA	A52-DA	-
350	90	A51-DA	A51-DA	A51-DA	A52-DA	A52-DA	350	90	A52-DA	A52-DA	-	-	-
400	100	A51-DA	A52-DA	A52-DA	A52-DA	-	400	100	A52-DA	-	-	-	-

¹ Air supply = 6 bar

The information will also be found in the data sheet for the actual valve type.



Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)				
		10	20	30	40	50
25	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO
40	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A23-SC/SO	A23-SC/SO
50	20	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		10	20	30	40	50
25	15	A13-SC/SO	A13-SC/SO	A13-SC/SO	A13-SC/SO	A23-SC/SO
40	15	A13-SC/SO	A13-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO
50	20	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO	A23-SC/SO

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with PTFE 53 seats at Δp (bar)				
		5	10	15	20	25
80	25	A23-SC/SO	A23-SC/SO	A23-SC/SO	A24-SC/SO	A24-SC/SO
100	30	A23-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO	A33-SC/SO
125	35	A33-SC/SO	A33-SC/SO	A33-SC/SO	A33-SC/SO	A34-SC/SO
150	40	A33-SC/SO	A33-SC/SO	A34-SC/SO	A34-SC/SO	A34-SC/SO
200	50	A34-SC/SO	A34-SC/SO	A43-SC/SO	A43-SC/SO	A43-SC
200	50					A44-SO
250	70	A43-SC/SO	A43-SC/SO	A44-SC/SO	A44-SC/SO	A44-SC/SO
300	80	A43-SC/SO	A44-SC/SO	A44-SC	-	-

Single acting actuator type SC/SO

Valve DN	Shaft dia. (mm)	Actuator for ball valve with HiCo seats at Δp (bar)				
		5	10	15	20	25
80	25	A24-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO	A24-SC/SO
100	30	A24-SC/SO	A33-SC/SO	A33-SC/SO	A33-SC/SO	A34-SC/SO
125	35	A33-SC/SO	A33-SC/SO	A34-SC/SO	A34-SC/SO	A34-SC/SO
150	40	A34-SC/SO	A34-SC/SO	A43-SC/SO	A43-SC/SO	A43-SC/SO
200	50	A34-SC/SO	A43-SC/SO	A44-SC/SO	A44-SC/SO	-
250	70	A44-SC/SO	A44-SC/SO	-	-	-
300	80	A44-SO	-	-	-	-

The information will also be found in the data sheet for the actual valve type.

SC = Spring to close

SO = Spring to open

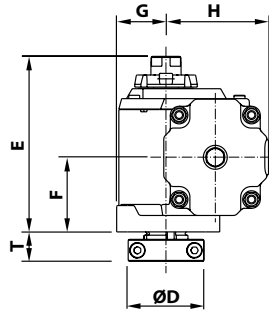
See the information at page 11 for codes for actuators for the low air supply design.

Accessories

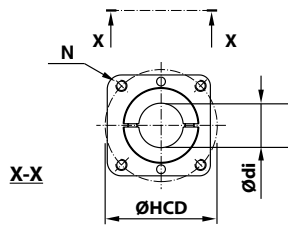




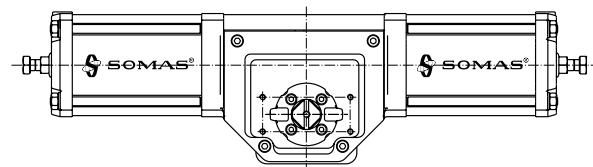
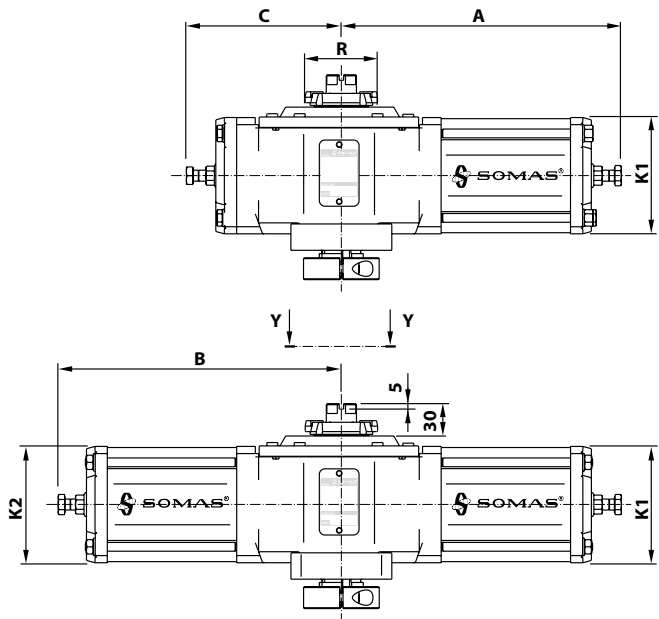
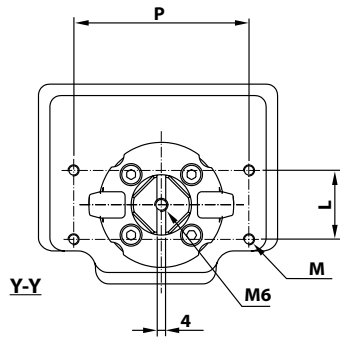
Measure T and $\varnothing D$ is valid only for $\varnothing di$ 15-50



Mounting pattern according to ISO 5211



VDI/VDE





Actuator type A (DA) double acting

Type	A	B	C	Ødi	ØD	E	F	G	H	K1	K2	L	M	N	P	R	T	ØHCD	Air-conn. G	Weight
A11-F07	215	-	90	15-20	48	128	50	37	73	84	-	30	M5	M8	80	56	14	70	1/4"	3
A13-F07	250	-	90	15-20	48	128	50	37	83	106	-	30	M5	M8	80	56	14	70	1/4"	5
A21-F10	255	-	140	20-30	69	160	68	45	94	106	-	30	M5	M10	80	66	27	102	1/4"	7,5
A22-F10	255	260	-	20-30	69	160	68	45	94	106	106	30	M5	M10	80	66	27	102	1/4"	9
A23-F10	305	-	140	20-30	69	160	68	45	117	152	-	30	M5	M10	80	66	27	102	1/4"	11
A24-F10	305	310	-	20-30	69	160	68	45	117	152	106	30	M5	M10	80	66	27	102	1/4"	15
A31-F14	380	-	215	30-50	98	225	107,5	69	144	152	-	30	M5	M16	130	66	40	140	1/4"	23
A32-F14	380	395	-	30-50	98	225	107,5	69	144	152	152	30	M5	M16	130	66	40	140	1/4"	29
A33-F14	470	-	215	30-50	98	225	107,5	69	183	228	-	30	M5	M16	130	66	40	140	3/8"	36
A34-F14	470	485	-	30-50	98	225	107,5	69	183	228	152	30	M5	M16	130	66	40	140	1/4"+3/8"	53
A41-F16	550	-	315	40-80	98	309	153	97	211	228	-	50	M6	M20	200	66	40	165	3/8"	70
A42-F16	545	560	-	40-80	98	309	153	97	211	228	228	50	M6	M20	200	66	40	165	3/8"	85
A43-F16	680	-	315	40-80	98	309	153	97	279	354	-	50	M6	M20	200	66	40	165	1/2"	142
A44-F16	680	695	-	40-80	98	309	153	97	279	354	228	50	M6	M20	200	66	40	165	3/8"+1/2"	157
A51-F30	745	-	370	70-100	-	412	198	130	314	354	-	50	M6	M20	200	66	-	298	1/2"	198
A52-F30	745	760	-	70-100	-	412	198	130	314	354	354	50	M6	M20	200	66	-	298	1/2"	234

Actuator type A (SC/SO) single acting

Type	A	B	C	Ødi	ØD	E	F	G	H	K1	K2	L	M	N	P	R	T	ØHCD	Air-conn. G	Weight
A13-F07	325	-	90	15-20	48	128	50	37	83	106	-	30	M5	M8	80	56	14	70	1/4"	7
A23-F10	415	-	140	20-30	69	160	68	45	117	152	-	30	M5	M10	80	66	27	102	1/4"	15
A24-F10	415	420	-	20-30	69	160	68	45	117	152	152	30	M5	M10	80	66	27	102	1/4"	24,5
A33-F14	660	-	215	30-50	98	225	107,5	69	183	228	-	30	M5	M16	130	66	40	140	3/8"	56
A34-F14	665	680	-	30-50	98	225	107,5	69	183	228	228	30	M5	M16	130	66	40	140	3/8"	84
A43-F16	920	-	315	40-80	98	309	153	97	279	354	-	50	M6	M20	200	66	40	165	1/2"	156
A44-F16	925	935	-	40-80	98	309	153	97	279	354	354	50	M6	M20	200	66	40	165	1/2"	210

Weight = Weight for actuator without mounting kit



Ordering example

Pneumatic double acting actuator type A32-DA. Mounting position A.

When ordering actuators separately, please specify also the mounting kit you require for the actual valve type.

Material specification

Housing, cover, end cover:	Aluminium (painted)
Cylinder:	Aluminium (painted)
Tie rod:	EN 1.4305
Piston seal:	Carbon filled PTFE + O-ring made of cold-resistant nitrile rubber
Screws/nuts:	Acidproof steel
Connection: (between actuator and accessories)	Plastic tubing (standard) Acidproof steel tubing (option)

Technical specification

Air supply:	4 - 8 bar, clean and dry instrument air acc. to ISO 8573-1
Rotary motion:	Max 95° adjustable travel stops
Ambient temperature:	- 40 to + 90 °C (standard) (+ 120 °C Option O-ring made of Viton)



Type designation, actuator type A

A 32 - DA - H - D50 - F14

1 2 3 4 5 6

1 Type of actuator

2 Actuator size acc. to the selection table

3 Function

DA = Double acting actuator

SC = Single acting actuator (spring to close)

SO = Single acting actuator (spring to open)

SCL = Single acting actuator (spring to close) low air supply design

SOL = Single acting actuator (spring to open) low air supply design

4 Option

E = ATEX design

H = High temperature design

NM = Emergency operator

LDC = Locking device (closed position)

V = Larger air connections

X = Special design

B = Bronze bushing in lever

5 Shaft diameter

6 Mounting pattern for valve attachment (acc. to ISO 5211)

Somas reserves the right to make improvements without prior notice.



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