

Purchase drawing Actuator AL77	Respons. dept	Date	Reg.
	STDB	2018-07-04	TB101
Prepared			
Ludvig Sanner			

General: The purpose of this document is to be able to order an actuator.

Reference: See 1CS152680.

Supplier: Axel Larsson Maskinaffär AB (700491)

SIT art. no	Description	AL art.no	Code	Remark
1CS152680-1	Actuator	2605956	AL77 240-SRFQ F07-10/22	Fail open
1CS152680-2	Actuator	2605954	AL77 240-SR F07-10/22	Fail closed
1CS152680-3	Actuator	2605930	AL77 210-SRHT F05-07/14	
1CS152680-4	Actuator	2605972	AL77 265-SR F12/27	
1CS152680-5	Actuator	2605955	AL77 240-SRQ F07-10/22	
1CS152680-6	Actuator	2605959	AL77 240-SRLT F07-10/22	
1CS152680-7	Actuator	2605178	AL77 210-DA F05-07/14	
1CS152680-8	Actuator	2605895	AL77 220-SRQ F05-07/14	
1CS152680-9	Actuator	2605942	AL77 220-SRLT F05-07/14	
1CSA14763-1	Actuator	2605890	AL77 250-SRQ F10-F12/22 spec.	Fail closed
1CS122933-1	Actuator	2605945	AL77 220-SRF F05-07/14	Fail open
E1B100063664	Actuator	2605994	AL77 280-SRLT F12 F16/46	Fail closed
E1B100065993	Actuator	2605987	AL77 260-SR F10-12/27	Fail closed
C-2605893	Actuator	2605893	AL77 230-SRQ F07-10/17	Fail closed
1CSA11971-1	Actuator	2605970	AL 77 260-SR-F10-12/27	Fail closed.

Documentation to be Supplied

All documentation should be clearly marked with purchase number and position

Component data sheets (Y/N)	Y
Operation and maintenance (Y/N)	Y
Certificates	Declaration of conformity Material identification and test certificates NDE, heat treatment and test reports

GS/AS with the same Doc.no yes <input checked="" type="checkbox"/>	Latest revision	Archive	HG/UPS
Approved Andreas Lundin	A) First issue		9830
Checked Dobromira Zbichorska-Olsson	B) C-2605893 added/J.Gliving-180904 C) SS/OEMF/181005/1CSA11971-added.	No.	E1B100301946

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ACTUATOR

AL 77-200

Design

AL77-200 is a Pneumatic actuator for quarter turn valves. The actuators are available in double acting DA and spring return SR version. Scotch yoke mechanical design gives an increased torque in start and end position of the stroke. This design gives a very reliable and a smaller actuator according to required force. The actuator have two main designs, one or two pistons, to get a full range to always be able to choose the best actuator for each valve. Valve interface according to ISO 5211/DIN3337 and solenoid and switch connection according to NAMUR (VDI/VDE3845).

Approvals

AL 77-200 is ATEX-approved and type approved by Det Norske Veritas, Lloyds Register of Shipping and USSR Register.



Material specification

Cylinder, end plate, pistons	Aluminium
Driving shaft	Stainless steel (210-260) Zinc plated steel (270-280)
Piston sealings	Filled PTFE
Retaining ring, lock nuts	Stainless steel (210-260)
Screws	Zinc plated steel (270-280)
Corrosion protection	Anodized

Pressure/Temperature/Media

Max. operating pressure	10 bar
Ambiente temperature	-20°C – +80°C. Other versions on request.
Operating medium	Air or inert gases. Low pressure hydraulics on request.

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Operating times

Seconds - at 6 bar

Type	DA		SR
	Anti-clockwise	Clockwise	Anti-clockwise/Clockwise
AL 77-210	<0,25	<0,5	<0,5
AL 77-220	<0,25	<0,3	<0,3
AL 77-230	<1	<0,25	<0,25
AL 77-240	<1	<1	<1
AL 77-250	<1,5	<2,5	<2,5
AL 77-260	<2	<2,5	<2,5
AL 77-265	<1,5	<1,5	<1,5
AL 77-270	<4	<6	<6
AL 77-280	<5	<5	<5

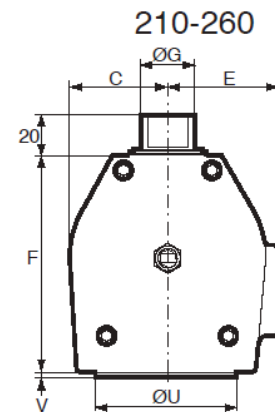
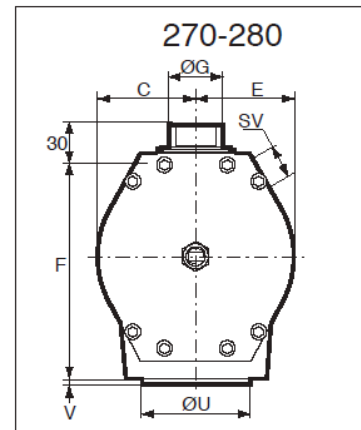
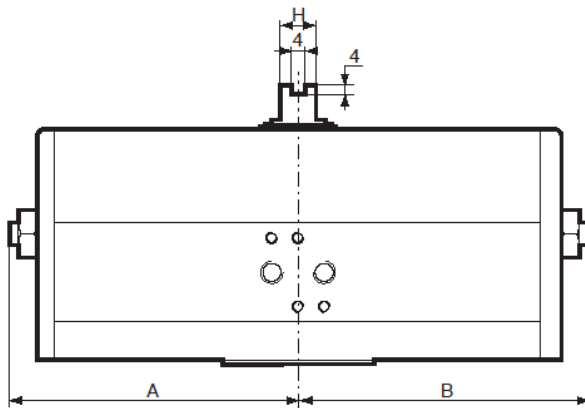
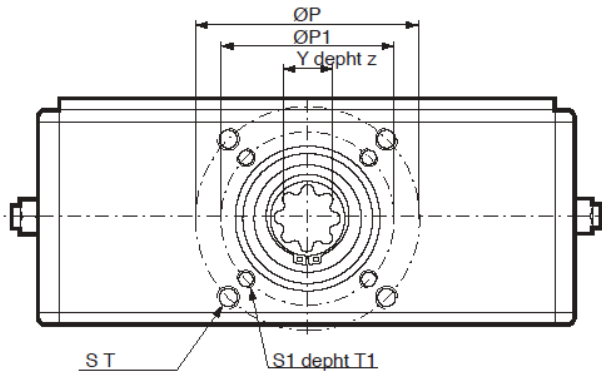
The times relate to full air flow and may increase depending on solenoid valves and th dimensions of connecting pipes.

Air consumption

 Dm³ - Free air at 6 bar

Type	DA		SR
	Anti-clowise	Clockwise	
AL 77-210	0,6	1,1	1,1
AL 77-220	1,1	1,3	1,3
AL 77-230	2,2	4,0	4,0
AL 77-240	4,4	5,0	5,0
AL 77-250	6,9	13,0	13,0
AL 77-260	13,8	16,0	16,0
AL 77-265	32,0	56,0	56,0
AL 77-270	33,0	54,0	54,0
AL 77-280	66,0	67,0	67,0

Dimensions – DA



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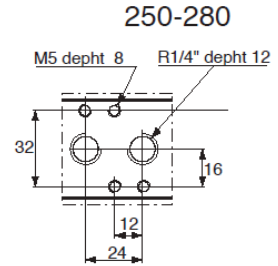
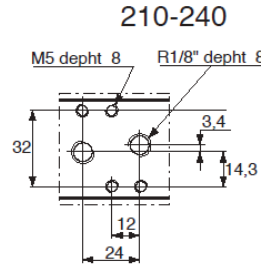
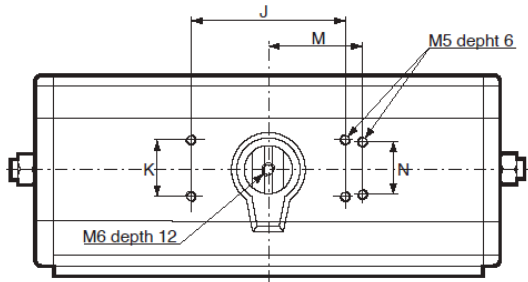
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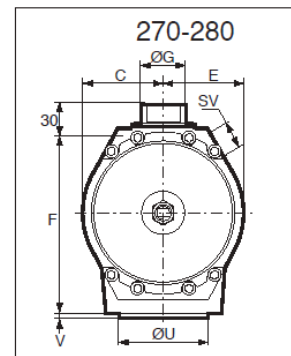
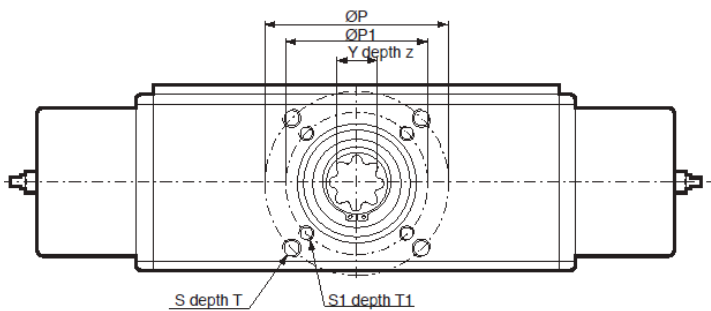


Type	Nom. flange	A	B	C	E	F	G	H	J	K	M	N	FI	P	S	T	FI	PI	SI	TI	U	V	Y	Z	Weight kg
210-DA	F05	45	98	32	41	75	16	10	35.4	35.4	40	30	F05	50	M6	11	-	-	-	-	35	2	14	19	1.2
220-DA	F05	98	98										F05	50	M6	11	-	-	-	-	35		14	19	1.6
230-DA	F07	65	135	49	55	110	25	16	80	30	-	-	F10	102	M10	17	F07	70	M8	14	55	3	17	30	3.5
240-DA	F10	135	135										F10	102	M10	17	F07	70	M8	14	70		30	4.9	
250-DA	F10	90	190	69	75	155	35	22	80	30	-	-	F12	125	M12	21	F10	102	M10	17	70	3	22	37	9.4
260-DA	F12	190	190										F12	125	M12	21	F10	102	M10	17	85		27	37	12.5
265-DA	F12	195	195	76	76	202	35	22	80	30	-	-	F12	125	M12	21	-	-	-	-	85	3	27	37	18.8
270-DA	F14	145	300	110	110	248	60	40					F14	140	M16	25	-	-	-	-	100	4	36	64	32.0
280-DA	F16	300	300	110	110	248	60	40	130	-	-	-	-	-	-	-	-	-	-	100	4	36	64	32.0	
													F16	165	M20	32	F12	125	M12	25	130	5	46	64	42.0

Torque Nm

AL 77	4 bar			5,5 bar			6 bar			7 bar		
	0°	50°	90°	0°	50°	90°	0°	50°	90°	0°	50°	90°
210-DA	25	12	18	34	17	25	38	19	27	44	22	32
220-DA	51	25	36	70	35	50	76	38	54	88	44	63
230-DA	96	47	69	130	66	95	145	72	105	165	83	120
240-DA	195	97	140	270	135	190	290	145	210	340	170	240
250-DA	300	150	215	410	210	300	450	225	320	530	260	380
260-DA	610	300	440	840	420	600	910	460	650	1070	530	770
265-DA	864	406	614	1188	559	844	1296	609	921	1512	711	1075
270-DA	1260	630	910	1730	860	1250	1890	940	1360	2200	1100	1590
280-DA	2540	1270	1830	3500	1750	2500	3800	1900	2740	4450	2220	3190

Dimensions – SR



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Approved
Andreas Lundin

Checked
Dobromira Zbichorska-Olsson

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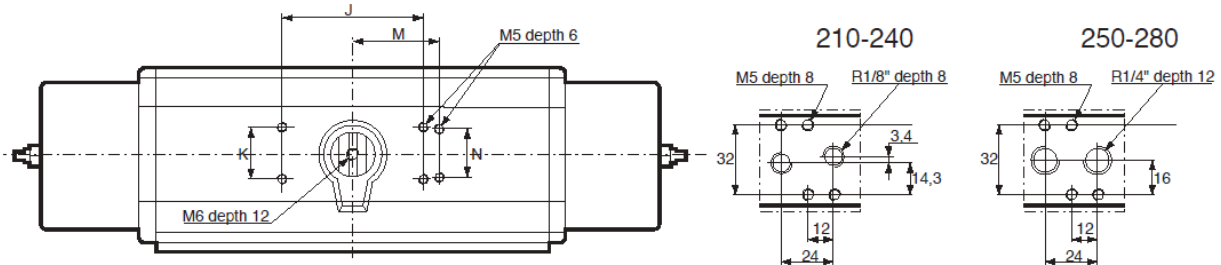
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Type	Nom. flange	A	B	C	E	F	G	H	J	K	M	N	FI	P	S	T	FI	PI	SI	TI	U	V	Y	Z	Weight kg
210-SR	F05	45	150	32	41	75	16	10	35,4	35,4	40	30	F05	50	M6	I1	-	-	-	-	35	2	14	19	1,5
220-SR	F05	150	150										F05	50	M6	I1	-	-	-	-	35		14	19	2,2
230-SR	F07	65	200										F10	102	M10	I7	F07	70	M8	14	55		17	30	4,2
240-SR	F10	200	200	49	55	110	25	16					F10	102	M10	I7	F07	70	M8	14	70		30	7,0	
250-SR	F10	90	285						80	30	-	-	F12	125	M12	I21	F10	102	M10	17	70	3	22	37	12,4
260-SR	F12	285	285										F12	125	M12	I21	F10	102	M10	17	85		27	37	18,5
265-SR	F12	317	317	76	76	202	35	22					F12	125	M12	I21	-	-	-	-	85		27	37	26,6
270-SR	F14	145	510										F14	140	M16	I25	-	-	-	-	100	4	36	64	45,0
280-SR	F16	510	510	110	110	248	60	40	130				F16	165	M20	I32	F12	125	M12	25	130	5	46	64	68,0

Torque Nm – 6 bar / 87 psi

AL 77	Air open			Spring closes		
	0°	60°	90°	90°	30°	0°
210-SR	20	9	11	18	9	12
220-SR	41	18	22	37	18	25
230-SR	78	33	41	69	33	47
240-SR	158	68	84	140	68	96
250-SR	245	105	130	215	105	150
260-SR	500	215	265	440	215	305
265-SR	730	305	330	610	330	440
270-SR	1030	440	550	910	440	620
280-SR	2080	900	1110	1840	900	1260

Options

- Solenoid valves • Positioner • Switch boxes • Extra corrosion protection • Compact declutchable handwheel
- Hydraulic versions • High temperature

Installation / Maintenance

See separate user manual.

 GS/AS with the same Doc.no yes

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