



AEL7 Series Electric Linear Actuator

Description

The AEL7 Series linear electric actuators are a cost effective heavy duty range of linear electric actuators only suitable for the modulation of Spirax Sarco Group valves. The AEL7 Series actuators must not be used for any other purpose. Actuators available with a spring extend failure function are referred to as AEL7T. Full nomenclature details can be found on page 27 of this document.

Simple to commission and especially suited to the steam generation and distribution areas of the steam ecosystem where robustness and reliability are key requirements, the AEL7 Series is compatible with the complete Spira-trol™ 2-port and 3-port ranges. It is also suitable for the Hiter Series 85 and Series 1000 ranges for more arduous applications.

Typical applications for the heavy duty AEL7 Series actuator include:

- Level control including boiler feed water
- Desuperheater TCV
- Thermal oil applications

The AEL7 Series actuator can be used as a problem solver* where:

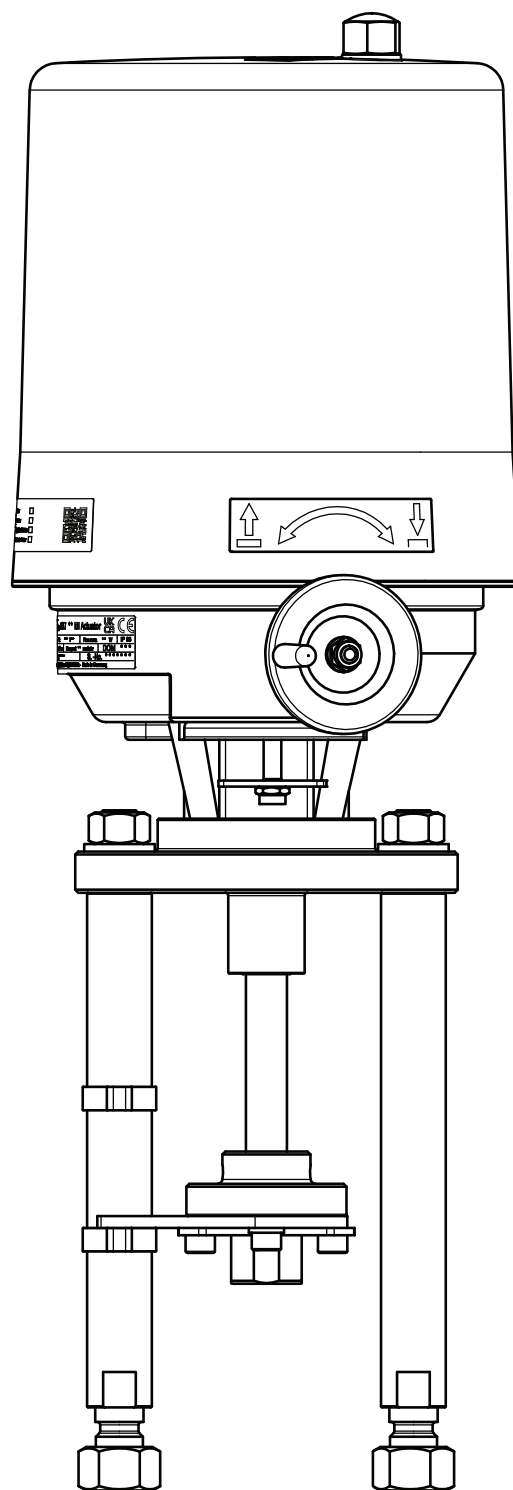
- Vibration levels can be problematic – e.g. vent valves
- Steam systems where water hammer can be experienced

* The source of the problem should always be targeted in parallel with the use of the AEL7 to mitigate the risk of failure

The AEL7 electric linear actuators (with the exclusion of AEL7T) use two physical force dependent (torque) switches to determine the end position of the actuator stroke in both directions and stop the actuator motor i.e. uses the end stops within the valve in order to determine stroke. The force dependent switches do not require any adjustment to correspond to valves with different lengths of stroke thereby minimising the risk of damage due to incorrect set up or in-service wear and tear.

The AEL7T versions require the setting of end position with travel dependent switches due to the spring extend function.

Actuators will normally be supplied fitted to the control valve. When supplied separately, ensure the actuator selected is capable of providing the force necessary to close the two-port or three-port control valve against the expected differential pressure.



Available types

These electric linear actuators are available on 4 different supply variants: 230 Vac, 115 Vac, 24 Vac, and 24 Vdc. The standard version is suitable for VMD (Valve Motor Drive) input power signal. If required the actuator can be fitted with a positioner input card that can accept (4 - 20 mA or 2 - 10 Vdc) control signals.

This can either be used in conjunction with the positioner for 2 - 10 V or 4 - 20 mA input signals, or as feedback for VMD. Also available are auxiliary limit switches and anti - condense heater.

These actuators can be used with the following valves, in conjunction with an appropriate valve adaptor and mounting flange.

2 - Port	DN15 - DN300 (½" - 12")	Spira-trol™ L, K, and J series control valves
		Hiter series 85 and 1000
3 - Port	DN15 - DN200 (½" - 8")	Spira-trol™ Q series control valves



WARNING

Mains connection is required for the installation of the AEL7T Series actuator and therefore requires specialist knowledge of electrical circuits and systems, and the inherent dangers. A working knowledge of linear actuators is also required. Only suitably qualified personnel can operate the actuator under these conditions.

Standards and approvals:

This equipment is  marked and conforms to the following:

Electrical safety	2014/35/EU (Low Voltage Directive)
Operational safety	EN 60204-1:2018 (Machinery Directive)
	EN14597 (AEL7T only; Temperature control devices and temperature limiters for heat generating systems)
Operational requirements	EN15714-2 (Electric actuators for industrial valves - Basic requirements)
	Modulating actuator Class C acc. to DIN EN ISO 22153
Installation requirements	EN 61000-6-4:2007/A1:2011 (Electromagnetic compatibility)
	EN 60529:92 + A1:00 + A2:13 (Ingress Protection)
Material requirements	REACH and UK REACH

Certification options:

The DN15-100 Spira-trol™ 'L' and 'K' series valves are available with EN14597 certification for the complete assembly when used with the AEL7T spring extend actuator for high limit applications (Temperature control devices and temperature limiters for heat generating systems). Certification must be specified at time of order.

The EN14597 certification is only valid for DN15-100 (½" to 4") standard trim type valves with seat options:

- **T** - 431 stainless steel
- **P** - Full PEEK

All other size, trim and seat option types are out of scope of this safety standard.

AEL7 Technical specification

Actuator Model	AEL71	AEL71T ¹	AEL72	AEL72T ¹	AEL73	AEL74	AEL75	AEL76	AEL77	AEL78
Thrust kN (lbf)	1.2 (270)	0.9 (202)	2 (450)	2.1 (472)	4 (900)	6 (1349)	8 (1798)	12 (2698)	15 (3372)	20 (4496)
Full Load Speed mm/s (in/sec) @ 24 Vac – 240 Vac (50/60Hz)										
Low	0.2 (0.008)	0.29 (0.011)	0.4 (0.016)	0.29 (0.011)	0.4 (0.016)	0.6 (0.024)	0.7 (0.028)	0.4 (0.016)	0.4 (0.016)	
Medium					0.8 (0.031)		1.4 (0.055)			0.8 (0.031)
High			1.7 (0.067)							
Full load Speed mm/s (in/sec) @ 24 Vdc										
Low	0.5 (0.019)						0.7 (0.028)	0.4 (0.016)	0.4 (0.016)	
Medium			0.8 (0.031)		0.8 (0.031)	0.8 (0.031)	1.4 (0.055)			1 (0.039)
High			1.7 (0.067)							
Set Stroke, mm (in) ³	20 (0.79)	30 (1.18)								70 (2.76)
Maximum stroke, mm (in)		35 (1.38)	40 (1.57)	35 (1.38)	40 (1.57)	50 (1.97)	60 (2.36)			100 (3.94)
Motor Brake										Vac Only
Ambient temperature	-20 °C ... 60 °C (-4 °F ... 140 °F)									
Media temperature	-20 °C ... 300 °C (425 °C with extended valve bonnet ⁶) -4 °F ... 572 °F (797 °F with extended valve bonnet ⁶)									
Enclosure rating	IP54		IP 65	IP54	IP 65					
Enclosure material	Thermoplastic						Steel			
Manual override	Crank handle					Hand wheel				
Conduit entries	2 x M20 x 1.5, 1 x M16 x 1.5					3 x M20 x 1.5				
Electrical connection	Terminal board									
Thread Adapter ⁴	M8	M8 and M12				M12			M30 x 1.5	
AEL7 Actuator Options										
2WE	2 auxiliary limit switches 5 A - 230 Vac									
POT ²	Potentiometer 1000 Ω for all strokes									
Positioner card	Input 0/2...10 V, 0 (4)...20 mA, output 0/2...10 V, 0 (4)...20 mA									
Heater	100-230 Vac / 24 Vac/dc									
Shutdown module ⁵			FSC20		FSC20		FSC40			FSC60

¹ Not available 24 Vdc.

² Required for Positioner Card.

³ Actuator supplied with stroke at this setting. Actuator travel can be adjusted up to the maximum stroke. See IM-P713-01.

⁴ Supplied as Standard. Other options available as a cost option. Refer to Mounting Tables for configuration requirements.

⁵ Factory fitment only. Not available 24 Vac.

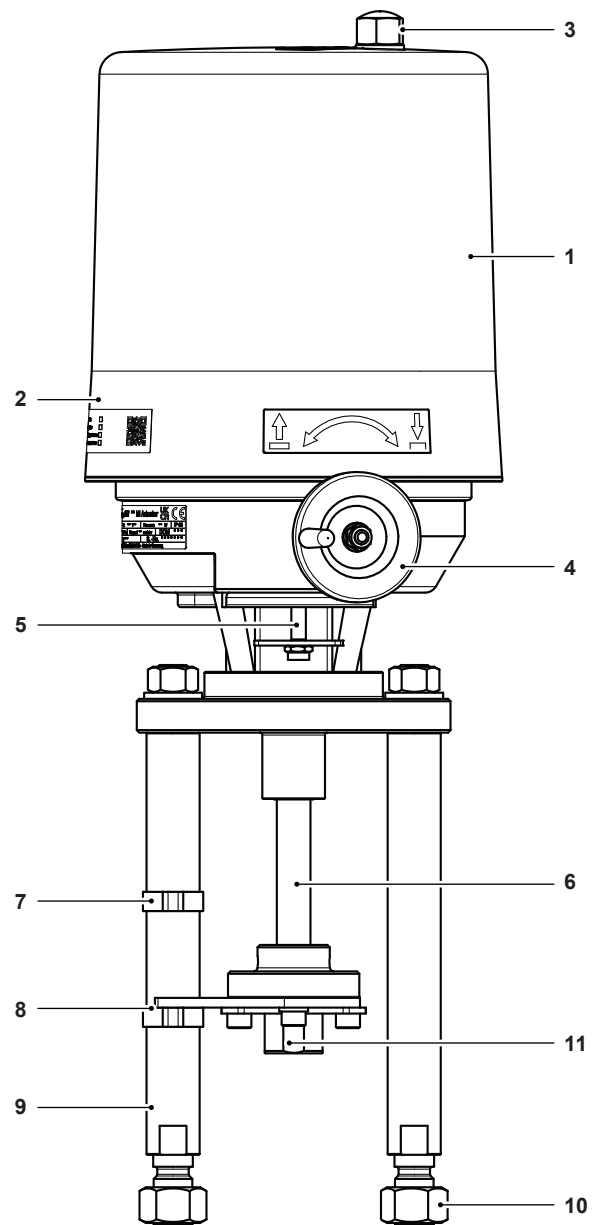
⁶ Bonnet must not be insulated.

Materials

No.	Description	Materials	Surface finish
1	Cover	Polycarbonate 1 - 6 kN (225 - 1349 lbf)	None
		Carbon steel 8 kN+ (1798 lbf)	Painted
2	Housing	Machined Aluminium	None
		Cast Aluminium	Painted
3	Cover Nut ¹	Polycarbonate 1 - 6 kN (225 - 1349 lbf)	None
		Carbon steel 8 kN+ (1798 lbf)	Galvanic zinc plated
4	Hand wheel ²	Polycarbonate 8 kN+ (1798 lbf)	None
5	Clutch	Carbon steel	Painted
6	Actuator Spindle	Carbon steel	None
7	Stroke Indicator	Carbon steel	None
8	Anti-Rotation Plate and Indicator	Carbon steel	None
9	Actuator Pillar	Carbon steel	Galvanic zinc plated
10	Pillar Nut	Carbon steel	None
11	Actuator Adaptor	Carbon steel	None
12	Boot (1.2 kN (270 lbf) only)	EPDM	None

¹ Internal O - seal in place of gasket for 1 - 6 kN (225 - 1349 lbf) actuators

² 1 - 4 kN (225 - 900 lbf) actuators use a hand with crank (See IM-P713-01 for details)



AEL7 Valve Adapter and Mounting Flange Selection - Spira-trol™ K & L

Actuator	Thrust kN (lbf)	DN15 - DN50 (½" - 2")			DN65 - DN100 (2½" - 4")			DN125 - DN300 (5" - 12")		
		Flange	Thread	Adapter	Flange	Thread	Adapter	Flange	Thread	Adapter
AEL71	1.2 (270)	EL5970	M8	Integral						
AEL71T	0.9 (202)			AEL7XM8 ¹	EL5971	M12	Integral			
AEL72	2.0 (450)									
AEL72T	2.1 (472)									
AEL73	4.0 (900)									
AEL74	6.0 (1349)									
AEL75	8.0 (1798)									
AEL76	12.0 (2698)				EL5972		AEL7XM12 ²	EL5974	M30 x 1.5	Integral
AEL77	15.0 (3372)									
AEL78	20.0 (4496)									

¹ Included in the standard scope of supply AEL71 to AEL75

² Adapter must be ordered separately

AEL7 Valve Adapter and Mounting Flange Selection - Spira-trol™ J

Actuator	Thrust kN (lbf)	DN15 - DN50 (½" - 2")			DN65 - DN100 (2½" - 4")			DN125 - DN300 (5" - 12")		
		Flange	Thread	Adapter	Flange	Thread	Adapter	Flange	Thread	Adapter
AEL71	1.2 (270)	EL5971J	M8	AEL7XJ01 ¹	EL5972J	M12	AEL7XJ02 ¹			
AEL71T	0.9 (202)									
AEL72	2.0 (450)									
AEL72T	2.1 (472)									
AEL73	4.0 (900)									
AEL74	6.0 (1349)									
AEL75	8.0 (1798)									
AEL76	12.0 (2698)				EL5972J		AEL7XM12 ¹	EL5974	M30 x 1.5	Integral
AEL77	15.0 (3372)									
AEL78	20.0 (4496)									

¹ Adapter must be ordered separately

AEL7 Valve Adapter and Mounting Flange Selection - Spira-trol™ Q

Actuator	Thrust kN (lbf)	DN15 - DN50 (½" - 2")			DN65 - DN100 (2½" - 4")			DN125 - DN300 (5" - 12")		
		Flange	Thread	Adapter	Flange	Thread	Adapter	Flange	Thread	Adapter
AEL71	1.2 (270)	EL5970 ³	M8	Integral						
AEL71T	0.9 (202)			AEL7XM8 ¹	EL5971	M12	Integral			
AEL72	2.0 (450)									
AEL72T	2.1 (472)									
AEL73	4.0 (900)									
AEL74	6.0 (1349)									
AEL75	8.0 (1798)									
AEL76	12.0 (2698)				EL5972		AEL7XM12 ²	EL5974	M30 x 1.5	Integral
AEL77	15.0 (3372)									
AEL78	20.0 (4496)									

¹ Included in the standard scope of supply AEL71 to AEL75

² Adapter must be ordered separately

³ Spacer 3570003 also required

AEL7 Valve Adapter and Mounting Kit Selection - Hiter S85 and S1000

Valve Model	Ø (")	AEL74		Qty Required	AEL78			
		Mounting Kit	Bolts		Mounting Kit	Bolts		
08-18-58-68-02-12-52-62	½	AEL7Y1	012XA125111Z Ø ⁵ / ₁₆ "-18UNC x 1½" Hex Head. ASTM A307 gr.A Zinc Plated"	4				
	¾							
	1							
	1½							
01-11-51-61-21-71 Full Bore	1							
	1½							
01-11-51-61-21-71 Red. Bore	1½							
08-18-58-68	2	AEL7Y3		Ø ⁵ / ₁₆ "-18UNC x 1½" Hex Head. ASTM A307 gr.A Zinc Plated"	8			
01-11-51-61-21-71 Full Bore								
01-11-51-61-21-71 Red. Bore								
02-12-52-62	3	AEL7Y4						
08-18-58-68-02-12-52-62								
01-11-51-61-21-71 Full Bore								
01-11-51-61-21-71 Red.								
08-18-58-68-02-12-52-62	4	AEL7Y3						
01-11-51-61-21-71 Full Bore								
01-11-51-61-21-71 Red. Bore								
51-61-71 - Stroke 2"	6						Y6	n/a
51-61-71 - Stroke 3"	6							
51-61-71 - Stroke 4"	6							
51-61-71 - Stroke 2"	8							
51-61-71 - Stroke 4"	8							

AEL7 VMD Upgrade Requirements

Use the table to identify the components required to customise a basic VMD actuator or convert to modulating control (positioner card).

Actuator type	Thrust kN (lbf)	Voltage	Switch upgrade	Potentiometer upgrade ¹	Positioner upgrade Kit ²	Positioner ³	Heater	
AEL7 VMD	1 (225)	230 Vac	AEL7X016	AEL7X001*	AEL71PEL1	AEL7X241	AEL7X181	
		110 Vac				AEL7X233	AEL7X183	
		24 Vac			n/a ⁴			
		24 Vdc			n/a ⁴			
	2 - 4 (450 - 900)	230 Vac	AEL7X010	AEL7X002*	AEL73PEL1	AEL7X241	AEL7X191	
		110 Vac				AEL7X233	AEL7X193	
		24 Vac			n/a ⁴			
		24 Vdc			n/a ⁴			
	6 (1349)	230 Vac	AEL7X011	AEL7X003*	AEL74PEL1	AEL7X241	AEL7X201	
		110 Vac				AEL7X233	AEL7X203	
		24 Vac			n/a ⁴			
		24 Vdc			n/a ⁴			
	8 - 15 (1798 - 3372)	230 Vac	AEL7X012	AEL7X004	AEL77PEL1	AEL7X241	AEL7X211	
		110 Vac				AEL7X233	AEL7X213	
		24 Vac			AEL78PEL4	AEL7X224		
		24 Vdc				AEL7X224		
	20 (4496)	230 Vac			AEL78PEL1	AEL7X241	AEL7X211	
		110 Vac				AEL7X233	AEL7X213	
		24 Vac				AEL78PEL4		AEL7X224
		24 Vdc						AEL7X224

¹ Requires switch upgrade to be fitted

² Requires potentiometer to be fitted (contains wiring loom, positioner guard and location piece)

³ Requires positioner upgrade kit to be fitted

⁴ 24 Vdc positioner upgrade is a factory only option

AEL7 Spares and accessories

Use the table to identify spare parts for AEL7 (VMD and Positioner)

Actuator Type	Thrust kN (lbf)	Voltage	Switch Replacement	Potentiometer Replacement	Positioner Replacement	Heater Replacement
AEL7	1 (225)	230 Vac	AEL7X017	AEL7X001*	AEL7X241	AEL7X181
		110 Vac			AEL7X233	AEL7X183
		24 Vac				
		24 Vdc			AEL7X224	
	2 - 4 (450 - 900)	230 Vac	AEL7X014	AEL7X002*	AEL7X241	AEL7X191
		110 Vac			AEL7X233	AEL7X193
		24 Vac				
		24 Vdc			AEL7X224	
	6 (1349)	230 Vac	AEL7X015	AEL7X003*	AEL7X241	AEL7X201
		110 Vac			AEL7X233	AEL7X203
		24 Vac				
		24 Vdc			AEL7X224	
	8 - 20 (1798 - 4496)	230 Vac	AEL7X012	AEL7X004	AEL7X241	AEL7X211
		110 Vac			AEL7X233	AEL7X213
		24 Vac				
		24 Vdc			AEL7X224	

AEL7 Switch kit contents

Switch Kit	AEL7X016/010/011	AEL7X017/014/015
Transmitter Plate	●	
Auxiliary switch cams (incl. lock nut and knurled nut)	●	
Potentiometer cam	●	
Feedback bar	●	
End position Switch PCB	●	●

AEL7T accessories

Actuator Type	Thrust kN (lbf)	Voltage	Aux. Switch	Potentiometer	Positioner
AEL7T	1 (225)	230 Vac	AEL7T010	AEL7T001	AEL7X241
		110 Vac			AEL7X233
		24 Vac			
	2 (450)	230 Vac			AEL7X241
		110 Vac			AEL7X233
		24 Vac			

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW UNDER**

Actuator Type	Cage Type	Standard Cage (S)														
	Valve size	DN15 - DN25 (½" - 1")														
	Kvs	0.01 - 0.5			1			1.6			2.5			4		
	Cv	0.012 - 0.58			1.2			1.8			2.9			4.6		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	77.9 (1130)	25.0 (363)	77.3 (1121)	50.7 (735)	25.0 (363)
AEL72	2.0 (450)											103.4 (1500)		103.4 (1500)	103.4 (1500)	
AEL73	4.0 (900)															

Actuator Type	Cage Type	Standard Cage (S)												Low Noise Cage (P1)		
	Valve size	DN15 - DN25 (½" - 1")														
	Kvs	4.9 - 6.3			7.2			10			11			2.5 - 4 - 6.3 - 10		
	Cv	5.7 - 7.3			8.3			12			12.7			2.9 - 4.6 - 7.3 - 12		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	39.7 (576)	24.8 (360)	25.0 (363)	29.9 (434)	18.1 (263)	24.8 (360)	23.0 (334)	13.5 (196)	18.9 (274)	17.6 (255)	9.9 (144)	14.2 (206)	17.6 (255)	9.9 (144)	14.2 (206)
AEL72	2.0 (450)	79.5 (1153)	64.6 (937)		61.3 (889)	49.5 (718)	25.0 (363)	48.5 (703)	38.9 (564)	25.0 (363)	38.3 (555)	30.5 (422)	25.0 (363)	38.3 (555)	30.5 (422)	25.0 (363)
AEL73	4.0 (900)	103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)		103.4 (1500)	102.6 (1488)		89.9 (1304)	82.2 (1192)		89.9 (1304)	82.2 (1192)	

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN32 - DN50 (1¼" - 2")
- FLOW UNDER**

	Cage Type	Standard Cage (S)														
	Valve size	DN32 - DN50 (1¼" - 2")														
Actuator Type	Kvs	4			6.3			10			16			17.5 - 18		
	Cv	4.6			7.3			12			18			20.2 - 21		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	77.7 (1127)	52.0 (754)		42.2 (612)	27.3 (396)		25.0 (363)	15.5 (225)	20.9 (303)	19.8 (287)	12.0 (174)	16.4 (238)	14.4 (209)	8.3 (120)	11.8 (171)
AEL72	2.0 (450)	103.4 (1500)	103.4 (1500)	25.0 (363)	82.0 (1189)	67.1 (973)	25.0 (363)	50.5 (732)	40.9 (593)	25.0 (363)	40.9 (593)	33.0 (479)	25.0 (363)	30.7 (445)	24.6 (357)	25.0 (363)
AEL73	4.0 (900)										93.5 (1356)	85.6 (1242)		71.5 (1037)	65.3 (947)	
AEL74	6.0 (1349)				103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)							
AEL75*	8.0 (1798)										103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)	

Actuator Type	Cage Type	Standard Cage (S)									Low Noise Cage (P1 - P2 - P3 - A1 - A2)		
	Valve size	DN32 - DN50 (1¼" - 2")											
	Kvs	25			31 - 36			46 - 50			All Kvs		
	Cv	29			36 - 42			53 - 58			All Cv		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	6.2 (90)	2.9 (42)	4.8 (70)	4.4 (64)	1.8 (26)	3.3 (48)	2.5 (36)	0.6 (9)	1.7 (25)	2.5 (36)	0.6 (9)	1.7 (25)
AEL72	2.0 (450)	15.0 (218)	11.7 (170)	13.6 (197)	11.5 (167)	8.8 (128)	10.3 (149)	7.5 (109)	5.6 (81)	6.7 (97)	7.5 (109)	5.6 (81)	6.7 (97)
AEL73	4.0 (900)	37.1 (538)	33.8 (490)	25.0 (363)	29.1 (422)	26.5 (384)	25.0 (363)	20.1 (292)	18.2 (264)	19.3 (280)	20.1 (292)	18.2 (264)	19.3 (280)
AEL74	6.0 (1349)	59.1 (857)	55.8 (809)		46.8 (679)	44.1 (640)		32.7 (474)	30.8 (447)	25.0 (363)	32.7 (474)	30.8 (447)	25.0 (363)
AEL75*	8.0 (1798)	81.1 (1176)	77.8 (1128)		64.3 (933)	61.7 (895)		45.2 (656)	43.3 (62)		45.2 (656)	43.3 (628)	

* Not - be used with 316L plug and stem

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW UNDER**

Actuator Type	Cage Type	Standard Cage (S)														
	Valve size	DN65 - DN100 (2½" - 4")														
	Kvs	16			25			36			73 - 90			100 - 117		
Actuator Type	Cv	18			29			42			85 - 104			116 - 135		
	Actuator thrust kN (lbf)	P	H	D	N - P	H	D	P	H	D	P	H	D	P	H	D
AEL71	1.2 (270)	13.4 (194)	3.0 (44)	11.8 (171)	4.0 (58)		3.3 (48)	2.2 (32)		1.7 (25)	0.4 (6)					
AEL72	2.0 (450)	29.7 (431)	19.3 (280)		11.0 (160)	6.6 (96)	10.3 (149)	7.2 (104)	3.3 (48)	6.7 (97)	3.2 (46)	3.3 (48)	2.9 (42)	1.5 (22)	0.4 (6)	1.3 (19)
AEL73	4.0 (900)	70.4 (1021)	60.0 (870)		28.7 (416)	24.2 (351)		19.8 (287)	16.6 (241)	19.3 (280)	10.3 (149)	8.5 (123)	10.0 (145)	6.0 (87)	4.9 (71)	5.9 (86)
AEL74	6.0 (1349)		100.8 (1462)		46.3 (672)	41.8 (606)		32.3 (468)	29.1 (422)		17.4 (252)	15.6 (226)	17.1 (248)	10.6 (154)	9.4 (136)	10.4 (151)
AEL75	8.0 (1798)			25.0 (363)	64.0 (928)	59.5 (863)	25.0 (363)	44.9 (651)	41.7 (605)		24.4 (354)	22.6 (328)	24.1 (350)	15.1 (219)	13.9 (202)	14.9 (216)
AEL76	12.0 (2698)	103.4 (1500)	103.4 (1500)		99.2 (1439)	94.7 (1374)		70.1 (1017)	66.9 (970)	25.0 (363)	38.6 (560)	36.8 (560)		24.2 (351)	23.0 (334)	24.0 (348)
AEL77*	15.0 (3372)							88.9 (1289)	85.7 (1243)		49.2 (714)	47.3 (686)	25.0 (363)	31.0 (450)	29.8 (432)	25.0 (363)
AEL78*	20.0 (4496)				103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)		66.9 (970)	65.1 (944)		42.3 (614)	41.1 (596)	

Actuator Type	Cage Type	Standard Cage (S)			Low Noise Cage (P1 - A1 - P2 - A2 - P3)					
	Valve size	DN65 - DN100 (2½" - 4")			DN65 - DN80 (2½" - 3")			DN100 (4")		
	Kvs	160 - 180			All Kvs					
	Cv	185 - 208			All Cv					
	Actuator thrust kN (lbf)	P	H	D	P	H	D	P	H	D
AEL72	2.0 (450)	0.5 (7)		0.4 (6)	1.5 (22)	0.4 (6)	1.3 (19)	0.5 (7)		0.4 (6)
AEL73	4.0 (900)	3.3 (48)	2.6 (38)	3.2 (46)	6.0 (87)	4.9 (71)	5.9 (86)	3.3 (48)	2.6 (38)	3.2 (46)
AEL74	6.0 (1349)	6.1 (88)	5.4 (78)	6.0 (87)	10.6 (154)	9.4 (136)	10.4 (151)	6.1 (88)	5.4 (78)	6.0 (87)
AEL75	8.0 (1798)	9.0 (131)	8.2 (119)	8.9 (129)	15.1 (219)	13.9 (202)	14.9 (216)	9.0 (131)	8.2 (119)	8.9 (129)
AEL76	12.0 (2698)	14.6 (212)	13.9 (202)	14.5 (210)	24.2 (351)	23.0 (334)	24.0 (348)	14.6 (212)	13.9 (202)	14.5 (210)
AEL77*	15.0 (3372)	18.9 (274)	18.1 (263)	18.8 (273)	31.0 (450)	29.8 (432)	25.0 (363)	18.9 (274)	18.1 (263)	18.8 (273)
AEL78*	20.0 (4496)	25.9 (376)	25.2 (365)	25.0 (363)	42.3 (614)	41.1 (596)		25.9 (376)	25.2 (365)	25.0 (363)

* Not - be used with 316L plug and stem

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P&C) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW UNDER**

	Cage Type	Standard Cage (S)														
	Valve size	DN15 - DN25 (½" - 1")														
Actuator Type	Kvs	0.01 - 0.5			1			1.6			2.5			4		
	Cv	0.012 - 0.58			1.2			1.8			2.9			4.6		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
AEL72	20.0 (4496)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)

Actuator Type	Cage Type	Standard Cage (S)												Low Noise Cage (P1 - A1)		
	Valve size	DN15 - DN25 (½" - 1")														
	Kvs	4.9 - 6.3			7.2			10			11			2.5 - 4 - 6.3 - 10		
	Cv	5.7 - 7.3			8.3			12			12.7			2.9 - 4.6 - 7.3 - 12		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
AEL72	20.0 (4496)															

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P&C) Spira - trol
- DN32 - DN50 (1¼" - 1")
- FLOW UNDER**

Actuator Type	Cage Type	Standard Cage (S)														
	Valve size	DN32 - DN50 (1¼" - 2")														
	Kvs	4			6.3			10			16			17.5 - 18		
	Cv	4.6			7.3			12			18			20.2 - 21		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	13.1 (190)	16.6 (241)	
AEL72	20.0 (4496)													19.0 (276)	19.0 (276)	

Actuator Type	Cage Type	Standard Cage (S)									Low Noise Cage (P1 - P2 - P3 - A1 - A2)		
	Valve size	DN32 - DN50 (1¼" - 2")											
	Kvs	25			31 - 36			46 - 50			All Kvs		
	Cv	29			36 - 42			53 - 58			All Cv		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
	AEL71	1.2 (270)	9.8 (142)	6.5 (94)	8.3 (120)	7.6 (110)	4.9 (71)	6.4 (93)	5.1 (74)	3.3 (48)	4.3 (62)	5.1 (74)	3.3 (48)
AEL72	20.0 (4496)	18.6 (270)	15.3 (222)	17.1 (248)	14.6 (212)	12.0 (174)	13.5 (196)	10.2 (148)	8.3 (120)	9.4 (136)	10.2 (148)	8.3 (120)	9.4 (136)

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P&C) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW UNDER**

Actuator Type	Cage Type	Standard Cage (S)																								
	Valve size	DN65 - DN100 (2½" - 4")																								
	Kvs	16			25			36			73 - 90			100 - 117												
	Cv	18			29			42			85 - 104			116 - 135												
	Actuator thrust kN (lbf)	P	H	D	P	H	D	P	H	D	P	H	D	P	H	D										
AEL71	1.2 (270)	18.2 (264)	7.8 (113)	16.6 (241)	7.2 (104)	2.7 (39)	6.4 (93)	4.8 (70)	1.6 (23)	4.3 (62)	2.4 (35)	0.6 (9)	2.1 (30)	1.3 (19)	0.2 (3)	1.1 (16)										
AEL72	2.0 (450)	19.0 (276)	19.0 (276)	19.0 (276)	14.2 (206)	9.7 (141)	13.5 (196)	9.9 (144)	6.6 (96)	9.4 (136)	5.2 (75)	3.4 (49)	4.9 (71)	3.1 (45)	2.0 (29)	2.9 (42)										
AEL73	4.0 (900)				19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	12.3 (178)	10.5 (152)	12.0 (174)	7.6 (110)	6.5 (94)	7.5 (109)								
AEL74	6.0 (1349)												19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	17.6 (255)	19.0 (276)	12.2 (177)	11.0 (160)	12.0 (174)		
AEL75	8.0 (1798)																			19.0 (276)		19.0 (276)	19.0 (276)	16.7 (242)	15.5 (225)	16.5 (239)
AEL76	12.0 (2698)																							19.0 (276)	19.0 (276)	19.0 (276)

Actuator Type	Cage Type	Standard Cage (S)			Low Noise Cage (P1 - A1 - P2 - A2 - P3)					
	Valve size	DN65 - DN100 (2½" - 4")			DN65 - DN80 (2½" - 3")			DN100 (4")		
	Kvs	160 - 180			All Kvs					
	Cv	185 - 208			All Cv					
	Actuator thrust kN (lbf)	P	H	D	P	H	D	P	H	D
AEL71	1.2 (270)	0.6 (9)		0.5 (7)	1.3 (19)	0.2 (3)	1.1 (16)	0.6 (9)		0.5 (7)
AEL72	2.0 (450)	1.8 (26)	1.0 (15)	1.7 (25)	3.1 (45)	2.0 (29)	2.9 (42)	1.8 (26)	1.0 (15)	1.7 (25)
AEL73	4.0 (900)	4.6 (67)	3.9 (57)	4.5 (65)	7.6 (110)	6.5 (94)	7.5 (109)	4.6 (67)	3.9 (57)	4.5 (65)
AEL74	6.0 (1349)	7.4 (107)	6.7 (97)	7.3 (106)	12.2 (177)	11.0 (160)	12.0 (174)	7.4 (107)	6.7 (97)	7.3 (106)
AEL75	8.0 (1798)	10.2 (148)	9.5 (138)	10.1 (146)	16.7 (242)	15.5 (225)	16.5 (239)	10.2 (148)	9.5 (138)	10.1 (146)
AEL76	12.0 (2698)	15.9 (231)	15.2 (220)	15.8 (229)	19.0 (276)	19.0 (276)	19.0 (276)	15.9 (231)	15.2 (220)	15.8 (229)

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

Maximum differential pressures in bar (psi) for Class VI shut - off
- PTFE Seat (G) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW UNDER

	Cage Type	Standard Cage (S)														
	Valve size	DN15 - DN25 (½" - 1")														
Actuator Type	Kvs	0.01 - 0.5			1			1.6			2.5			4		
	Cv	0.012 - 0.58			1.2			1.8			2.9			4.6		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)
AEL72	2.0 (450)															
AEL73	4.0 (900)															

Actuator Type	Cage Type	Standard Cage (S)												Low Noise Cage (P1)		
	Valve size	DN15 - DN25 (½" - 1")														
	Kvs	4.9 - 6.3			7.2			10			11			2.5 - 4 - 6.3 - 10		
	Cv	5.7 - 7.3			8.3			12			12.7			2.9 - 4.6 - 7.3 - 12		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	
AEL72	2.0 (450)															
AEL73	4.0 (900)															

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

**Maximum differential pressures in bar (psi) for Class VI shut - off
- PTFE Seated (G) Spira - trol
- DN32 - DN50 (1¼" - 2")
- FLOW UNDER**

	Cage Type	Standard Cage (S)														
	Valve size	DN32 - DN50 (1¼" - 2")														
Actuator Type	Kvs	4			6.3			10			16			17.5 - 18		
	Cv	4.6			7.3			12			18			20.2 - 21		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)
AEL72	2.0 (450)															
AEL73	4.0 (900)															

Actuator Type	Cage Type	Standard Cage (S)									Low Noise Cage (P1)		
	Valve size	DN32 - DN50 (1¼" - 2")											
	Kvs	25			31 - 36			46 - 50			All Kvs		
	Cv	29			36 - 42			53 - 58			All Cv		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)
AEL72	2.0 (450)												
AEL73	4.0 (900)												

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

**Maximum differential pressures in bar (lbf) for Class VI shut - off
- PTFE Seated (G) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW UNDER**

Actuator Type	Cage Type	Standard Cage (S)																
	Valve size	DN65 - DN100 (2½" - 4")																
	Kvs	16			25			36			73 - 90			100 - 117				
	Cv	18			29			42			85 - 104			116 - 135				
	Actuator thrust kN (lbf)	P	H	D	N - P	H	D	P	H	D	P	H	D	P	H	D		
AEL71	1.2 (270)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	3.0 (44)	4.0 (58)	3.4 (49)	1.6 (23)	3.1 (45)	2.1 (30)	1.0 (15)	1.9 (28)			
AEL72	2.0 (450)							4.0 (58)		4.0 (58)	4.0 (58)	4.0 (58)	3.9 (57)	2.8 (41)	3.7 (54)			
AEL73	4.0 (900)												4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	
AEL74	6.0 (1349)																	

Actuator Type	Cage Type	Standard Cage (S)			Low Noise Cage (P1)					
	Valve size	DN65 - DN100 (2½" - 4")			DN65 - DN80 (2½" - 3")			DN100 (4")		
	Kvs	160 - 180			All Kvs					
	Cv	185 - 208			All Cv					
	Actuator thrust kN (lbf)	P	H	D	P	H	D	P	H	D
AEL71	1.2 (270)	1.3 (19)	0.6 (9)	1.2 (17)	2.1 (30)	1.0 (15)	1.9 (28)	1.3 (19)	0.6 (9)	1.2 (17)
AEL72	2.0 (450)	2.4 (35)	1.7 (25)	2.3 (33)	3.9 (57)	2.8 (41)	3.7 (54)	2.4 (35)	1.7 (25)	2.3 (33)
AEL73	4.0 (900)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)	4.0 (58)
AEL74	6.0 (1349)									

Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

Maximum differential pressures in bar (psi) for Class IV shut - off
- Hard Facing (W) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW UNDER

Actuator Type	Cage Type	Standard Cage (S)															
	Valve size	DN15 - DN25 (½" - 1")															
	Kvs	0.01 - 0.5			1			1.6			2.5			4			
	Cv	0.012 - 0.58			1.2			1.8			2.9			4.6			
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	
AEL71	1.2 (270)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	100.1 (1452)	61.9 (898)	25.0 (363)	63.9 (927)	37.4 (542)	25.0 (363)	
AEL72	2.0 (450)																
AEL73	4.0 (900)																
AEL74	6.0 (1349)																

Actuator Type	Cage Type	Standard Cage (S)												Low Noise Cage (P1)		
	Valve size	DN15 - DN25 (½" - 1")														
	Kvs	4.9 - 6.3			7.2			10			11			2.5 - 4 - 6.3 - 10		
	Cv	5.7 - 7.3			8.3			12			12.7			2.9 - 4.6 - 7.3 - 12		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	29.7 (431)	14.8 (215)	23.2 (336)	21.0 (305)	9.2 (133)	15.9 (231)	15.0 (216)	5.5 (80)	10.9 (158)	10.4 (151)	2.6 (38)	7.0 (102)	10.4 (151)	2.6 (38)	7.0 (102)
AEL72	2.0 (450)	69.5 (1008)	54.6 (792)	25.0 (363)	52.4 (760)	40.7 (590)	25.0 (363)	40.5 (587)	30.9 (448)	25.0 (363)	31.1 (451)	23.3 (338)	25.0 (363)	31.1 (451)	23.3 (338)	25.0 (363)
AEL73	4.0 (900)	103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)		103.4 (1500)	94.6 (1372)		82.7 (1199)	75.0 (1088)		82.7 (1199)	75.0 (1088)	
AEL74	6.0 (1349)								103.4 (1500)		103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)	

Maximum differential pressures in bar(psi) for Class IV shut - off
- Hard Facing (W) Spira - trol
- DN32 - DN50 (1¼" - 2")
- FLOW UNDER

Actuator Type	Cage Type	Standard Cage (S)														
	Valve size	DN32 - DN50 (1¼" - 2")														
	Kvs	4			6.3			10			16			17.5 - 18		
	Cv	4.6			7.3			12			18			20.2 - 21		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71	1.2 (270)	61.3 (889)	35.6 (516)	25.0 (363)	29.7 (431)	14.8 (215)	23.2 (336)	15.0 (218)	5.5 (80)	10.9 (158)	10.8 (157)	2.9 (42)	7.3 (106)	6.4 (93)	0.3 (4)	3.8 (55)
AEL72	2.0 (450)	103.4 (1500)	103.4 (1500)		69.5 (1008)	54.6 (792)	25.0 (363)	40.5 (587)	30.9 (448)	25.0 (363)	31.8 (461)	23.9 (347)	25.0 (363)	22.7 (329)	16.6 (241)	20.1 (292)
AEL73	4.0 (900)				103.4 (1500)	103.4 (1500)		103.4 (1500)	103.4 (1500)		76.5 (1110)	63.5 (921)		57.3 (831)	25.0 (363)	
AEL74	6.0 (1349)				103.4 (1500)	103.4 (1500)		103.4 (1500)	98.1 (1423)							

Actuator Type	Cage Type	Standard Cage (S)									Low Noise Cage (P1 - P2 - P3 - A1 - A2)		
	Valve size	DN32 - DN50 (1¼" - 2")											
	Kvs	25			31 - 36			46 - 50			All Kvs		
	Cv	29			36 - 42			53 - 58			All Cv		
	Actuator thrust kN (lbf)	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL72	2.0 (450)	9.2 (133)	5.9 (86)	7.7 (112)	6.2 (90)	3.6 (52)	5.1 (74)	3.1 (45)	1.2 (17)	2.2 (32)	3.1 (45)	1.2 (17)	2.2 (32)
AEL73	4.0 (900)	31.2 (453)	27.9 (405)	25.0 (363)	23.9 (347)	21.2 (307)	22.7 (329)	15.6 (226)	13.7 (199)	14.8 (215)	15.6 (226)	13.7 (199)	14.8 (215)
AEL74	6.0 (1349)	53.2 (772)	49.9 (724)		41.5 (602)	38.9 (564)	25.0 (363)	28.2 (409)	26.3 (381)	25.0 (363)	28.2 (409)	26.3 (381)	25.0 (363)
AEL75	8.0 (1798)											40.8 (592)	
AEL76	12.0 (2698)										65.9 (956)	64.0 (928)	
AEL77	15.0 (3372)										84.8 (1230)	82.9 (1202)	

Maximum differential pressures in bar (psi) for Class IV shut - off
- Hard Facing (W) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW UNDER

Actuator Type	Cage Type	Standard Cage (S)														
	Valve size	DN65 - DN100 (2½" - 4")														
	Kvs	16			25			36			73 - 90			100 - 117		
	Cv	18			29			42			85 - 104			116 - 135		
	Actuator thrust kN (lbf)	P	H	D	N - P	H	D	P	H	D	P	H	D	P	H	D
AEL72	2.0 (450)	21.7 (315)	11.3 (164)	20.1 (292)	5.8 (84)	1.3 (19)	5.1 (74)	2.7 (39)		2.2 (32)						
AEL73	4.0 (900)	62.4 (905)	52.0 (754)	25.0 (363)	23.4 (339)	18.9 (274)	22.7 (329)	15.3 (222)	12.1 (175)	14.8 (215)	6.9 (100)	5.1 (74)	6.7 (97)	3.4 (49)	2.2 (32)	3.2 (46)
AEL74	6.0 (1349)	103.4 (1500)	92.8 (1346)		41.1 (596)	36.6 (531)	25.0 (363)	27.9 (392)	24.7 (358)	25.0 (363)	14.0 (203)	12.2 (177)	13.7 (199)	7.9 (115)	6.8 (99)	7.7 (112)
AEL75	8.0 (1798)		103.4 (1500)		58.7 (851)	54.2 (786)		40.5 (587)	37.3 (541)		21.1 (306)	19.3 (280)	20.8 (302)	12.4 (180)	11.3 (164)	12.3 (178)
AEL76	12.0 (2698)				94.0 (1363)	89.5 (1298)		65.6 (943)	62.4 (905)		35.1 (509)	33.4 (484)	25.0 (363)	21.5 (312)	20.3 (294)	21.3 (309)

Actuator Type	Cage Type	Standard Cage (S)			Low Noise Cage (P1 - A1 - P2 - A2 - P3)					
	Valve size	DN65 - DN100 (2½" - 4")			DN65 - DN80 (2½" - 3")			DN100 (4")		
	Kvs	160 - 180			All Kvs					
	Cv	185 - 208			All Cv					
	Actuator thrust kN (lbf)	P	H	D	P	H	D	P	H	D
AEL73	4.0 (900)	1.2 (17)	0.5 (7)	1.1 (16)	3.4 (49)	2.2 (32)	3.2 (46)	1.2 (17)	0.5 (7)	1.1 (16)
AEL74	6.0 (1349)	4.0 (58)	3.3 (48)	3.9 (57)	7.9 (115)	6.8 (99)	7.7 (112)	4.0 (58)	3.3 (48)	3.9 (57)
AEL75	8.0 (1798)	6.9 (100)	6.1 (88)	6.8 (99)	12.4 (180)	11.3 (164)	12.3 (178)	6.9 (100)	6.1 (88)	6.8 (99)
AEL76	12.0 (2698)	12.5 (181)	11.8 (171)	12.4 (180)	21.5 (312)	20.3 (294)	21.3 (309)	12.5 (181)	11.8 (171)	12.4 (180)
AEL77	15.0 (3372)				28.3 (410)	27.1 (393)	25.0 (363)	16.7 (242)	16.0 (232)	16.6 (241)
AEL78	20.0 (4496)				39.6 (574)	38.4 (557)		23.8 (345)	23.1 (335)	23.7 (344)

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN15 - DN25 (½" - 1")													
	Kvs		0.01 - 0.5			1			1.6			2.5			4	
	Cv		0.012 - 0.58			1.2			1.8			2.9			4.6	
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H
AEL71T	0.9 (202)	Max.	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)
		Min.	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Actuator Type	Cage Type		Standard Cage (S)											
	Valve size		DN15 - DN25 (½" - 1")											
	Kvs		4.9 - 6.3			7.2			10			11		
	Cv		5.7 - 7.3			8.3			12			12.7		
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71T	0.9 (202)	Max.	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)
		Min.	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN32 - DN50 (1¼" - 2")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN32 - DN50 (1¼" - 2")													
	Kvs		4			6.3			10			16			17.5 - 18	
	Cv		4.6			7.3			12			18			20.2 - 21	
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H
AEL71T	0.9 (202)	Max.	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)	25.0 (363)	103.4 (1500)	103.4 (1500)
		Min.	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Actuator Type	Cage Type		Standard Cage (S)								
	Valve size		DN32 - DN50 (1¼" - 2")								
	Kvs		25			31 - 36			46 - 50		
	Cv		29			36 - 42			53 - 58		
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D
AEL71T	0.9 (202)	Max.	60.4 (876)	56.6 (821)	25.0 (363)	47.0 (682)	44.1 (640)	25.0 (363)	32.5 (471)	30.5 (442)	25.0 (363)
		Min.	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.2 (3)

**Maximum differential pressures in bar (psi) for Class IV shut - off
- Metal Seated (T&S) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN65 - DN100 (2½" - 4")													
	Kvs		16			25			36			73 - 90			100 - 117	
	Cv		18			29			42			85 - 104			116 - 135	
	Thrust kN (lbf)	Pressure	P	H	D	P	H	D	P	H	D	P	H	D	P	H
AEL71T 0.9 (202)	Max.		103.4 (1500)	103.4 (1500)	25.0 (363)	50.9 (738)	45.4 (660)	25.0 (363)	34.2 (496)	30.5 (442)	25.0 (363)	18.1 (263)	16.1 (234)	17.8 (258)	11.3 (164)	10.1 (146)
	Min.		0.0 (0.0)	3.1 (45)	0.0 (0.0)	0.0 (0.0)	3.1 (45)	0.0 (0.0)	0.0 (0.0)	2.9 (42)	0.2 (3)	0.7 (10)	2.5 (36)	1.0 (15)	1.0 (15)	2.1 (30)
AEL72T 2.1 (472)	Max.		31.7 (460)	21.3 (309)	25.0 (363)	11.9 (173)	7.4 (107)	11.2 (162)	7.8 (113)	4.6 (67)	7.3 (106)	3.6 (52)	1.8 (26)	3.3 (48)	1.7 (25)	0.6 (9)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Actuator Type	Cage Type		Standard Cage (S)		
	Valve size		DN65 - DN100 (2½" - 4")		
	Kvs		160 - 180		
	Cv		185 - 208		
	Thrust kN (lbf)	Pressure	P	H	D
AEL71T 0.9 (202)	Max.		6.9 (100)	6.2 (90)	6.8 (99)
	Min.		1.0 (15)	1.8 (26)	1.2 (17)
AEL72T 2.1 (472)	Max.		5.2 (75)	4.4 (64)	5.0 (73)
	Min.		0.0 (0.0)	0.1 (2)	0.0 (0.0)

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P) Spira - trol
- DN15 - DN25 (½" - 1")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN15 - DN25 (½" - 1")													
	Kvs		0.01 - 0.5			1			1.6			2.5			4	
	Cv		0.012 - 0.58			1.2			1.8			2.9			4.6	
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H
AEL71T 0.9 (202)	Max.		19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Actuator Type	Cage Type		Standard Cage (S)											
	Valve size		DN15 - DN25 (½" - 1")											
	Kvs		4.9 - 6.3			7.2			10			11		
	Cv		5.7 - 7.3			8.3			12			12.7		
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D
AEL71T 0.9 (202)	Max.		19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

* Not suitable for use with Spira - trol Steam - Tight (Seat Option C)

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P) Spira - trol
- DN32 - DN50 (1¼" - 2")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN32 - DN50 (1¼" - 2")													
	Kvs		4			6.3			10			16			17.5 - 18	
	Cv		4.6			7.3			12			18			20.2 - 21	
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H
AEL71T 0.9 (202)	Max.		19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Actuator Type	Cage Type		Standard Cage (S)									
	Valve size		DN32 - DN50 (1¼" - 2")									
	Kvs		25			31 - 36			46 - 50			
	Cv		29			36 - 42			53 - 58			
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	D
AEL71T 0.9 (202)	Max.		19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

* Steam - Tight (option C) NOT suitable for Flow Over applications

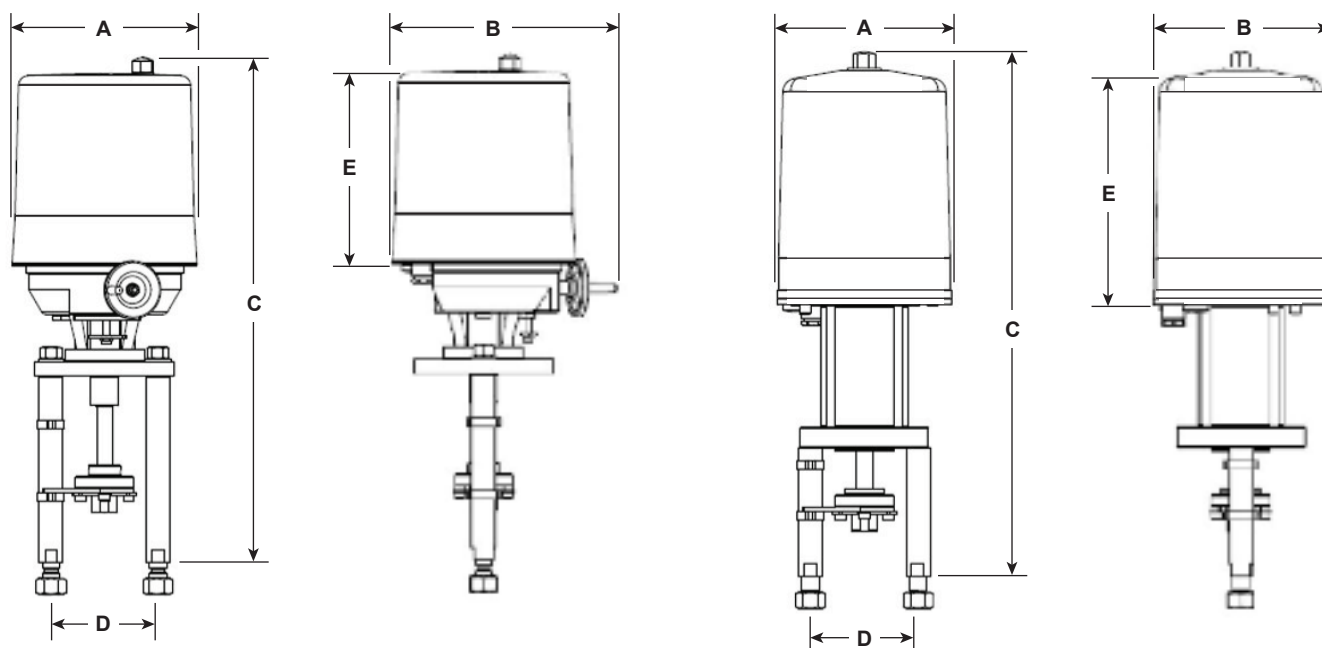
Note: Maximum differential pressure for saturated steam. Refer to Spirax Sarco for other liquids and gases.

**Maximum differential pressures in bar (psi) for Class VI shut - off
- Resilient Seated (P) Spira - trol
- DN65 - DN100 (2½" - 4")
- FLOW OVER**

Actuator Type	Cage Type		Standard Cage (S)													
	Valve size		DN65 - DN100 (2½" - 4")													
	Kvs		16			25			36			73 - 90			100 - 117	
	Cv		18			29			42			85 - 104			116 - 135	
	Thrust kN (lbf)	Pressure	N - P	H	D	N - P	H	D	N - P	H	D	N - P	H	D	P	H
AEL71T 0.9 (202)	Max.	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	19.0 (276)	18.1 (263)	16.1 (234)	17.8 (258)	11.3 (164)	10.1 (146)	
	Min.	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.3 (4)	0.0 (0.0)	0.0 (0.0)	0.5 (7)	0.0 (0.0)	0.0 (0.0)	0.5 (7)
AEL72T 2.1 (472)	Max.										13.5 (196)	1.8 (26)	3.3 (48)	1.7 (25)	0.6 (9)	
	Min.										0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Cage Type		Standard Cage (S)			
Valve size		DN65 - DN100 (2½" - 4")			
Actuator Type	Kvs	160 - 180			
	Cv	185 - 208			
	Thrust kN (lbf)	Pressure	P	H	D
AEL71T 0.9 (202)	Max.		6.9 (100)	6.2 (90)	6.8 (99)
	Min.		0.0 (0.0)	0.5 (7)	0.0 (0.0)
AEL72T 2.1 (472)	Max.		5.2 (75)	4.4 (64)	5.0 (73)
	Min.		0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

Dimensions / Weights (approximate) in mm (in) and kg (lb)



AEL7
(AEL74 used for reference)

AEL7T

Actuator	Thrust kN (lbf)	Dimensions (mm)					Weight
		A	B	C	D	E	
AEL71	1.2 (270)	129 (5)	129 (5)	272 (10.7)	100 (3.9)	138 (5.4)	2.1 (4.6)
AEL71T	0.9 (202)	162 (6.4)	162 (6.4)	490 (19.3)		213 (8.4)	8.7 (19.1)
AEL72	2.0 (450)	173 (6.8)	173 (6.8)	374 (14.7)		189 (7.4)	8 (17.6) (8.65 (19) for Super-Capacitor versions)
AEL72T	2.1 (472)	162 (6.4)	162 (6.4)	508 (20)		213 (8.4)	9.3 (20.5)
AEL73	4.0 (900)	173 (6.8)	173 (6.8)	374 (14.7)		189 (7.4)	8 (17.6) (8.65 (19) for Super-Capacitor versions)
AEL74	6.0 (1349)	173 (6.8)	211 (8.3)	474 (18.7)		180 (7.1)	8 (17.6)
AEL75	8.0 (1798)	188 (7.4)	259 (10.2)	527 (20.7)		198 (7.8)	15 (33) (15.65 (34.5) for Super-Capacitor versions)
AEL76	12.0 (2698)						
AEL77	15.0 (3372)						
AEL78	20.0 (4496)	216 (8.5)	282 (11.1)	657 (25.9)	155 (6.1)	228 (9)	19 (41.9) (19.65 (43.3) for Super-Capacitor versions)

Safety information, installation and maintenance

Full details for the safe installation, commissioning and removal of the AEL7 Series actuator can be found in:
IM-P713-01 for AEL7 versions and **IM-P713-02 for AEL7T** versions

Installation and wiring note

The valve should be installed in the horizontal line. The position of the actuator will depend on the type of valve to which it is fitted and the temperature of the media. However, it is not recommended that the actuators be fitted directly below the valve or in a wet environment.

Disposal

This product is recyclable. No ecological hazard is anticipated with the disposal of this product, providing due care is taken.

Selection example

Control Valve	DN20 JE43 HTSUSS Kv10
Kvs	6.3
Connection	PN63
Operating ΔP	30 bar
Electrical Supply	24 Vdc
Control Input Signal	4-20mA
Position Feedback	4-20mA
End-position Feedback	VFC

Information Source		
Maximum ΔP	103.4 bar	Differential Pressure Tables (Class IV) Metal Seated (T & S)
Mounting Flange	EL5971J	AEL7 Valve Adapter and Mounting Flange Selection - Spira-trol™ J
Stem Adapter	AEL7XJ01	
Positioner	AEL7X224 (Supplied with actuator)	Nomenclature and How to Order
Position Feedback	Positioner function	AEL7 Technical Specification
End-position Feedback	AEL7X014	AEL7 Assessories (Positioner)

Nomenclature and How to order

Product	A	Actuator		A
Type	E	Electric		E
Action	L	Linear		L
Series	7	-		7
Thrust	1	1.2 kN (270 lbf)	0.9 kN (202 lbf) for AEL71T	3
	2	2.0 kN (450 lbf)	2.1 kN (472 lbf) for AEL72T	
	3	4.0 kN (900 lbf)		
	4	6.0 kN (1349 lbf)		
	5	8.0 kN (1798 lbf)		
	6	12.0 kN (2698 lbf)		
	7	15.0 kN (3372 lbf)		
	8	20.0 kN (4496 lbf)		
Nominal Stroke	1	20 mm (0.79")	Stroke Setting from factory. For full stroke information and adjustment, refer to IM-P713-01.	2
	2	30 mm (1.18")		
	3	50 mm (1.97")		
	4	70 mm (2.76")		
Speed	1	Low	≤0.7 mm/s (0.027 in/s)	2
	2	Medium	0.8 - 1.5 mm/s (0.031 - 0.05 in/s)	
	3	High	1.6+ mm/s (0.06 in/s)	
Supply Voltage	1	230 Vac		4
	2	115 Vac		
	3	24 Vac		
	4	24 Vdc		
Control Signal	F	VMD	24 Vac	P
	G	VMD	110 Vac	
	J	VMD	230 Vac	
	K	VMD	24 Vdc	
	P	Modulating	(0)4-20 mA / 0(2)-10V Positioner	
Failure Mode	X	None		X
	S	Super-Capacitor	Non-retrofit option. Not suitable for 24 Vac	
	T	Spring Extend	Non-retrofit option. Not suitable for 24 Vdc	
Potentiometer	X	None		A
	A	Potentiometer	1 x 1000Ω ¹	

¹ Required for any actuator with positioner card

How to order example

1-off AEL73242PXA plus Auxiliary travel switch (AEL7X014)
1-off AEL7XJ08 DN15-50 J Series adapter