



LSP-SR Piston Actuator Spring-return piston actuator



LINEAR PNEUMATIC ACTUATOR - PRODUCT BULLETIN

Output Thrust to 200KN

Temperatures from -40°C to 204°C

MODULAR DESIGN, HIGH CYCLE LIFE, HIGH RELIABILITY.



SUZHOU SIP STARD AUTOMATION

1999

The company was founded in 1999

10,800,000

The registered capital is RMB 10.8 million

13,000^{m²}

The company's production and office building area of 13,000 m²

100,000+

Annual output of more than 100,000 sets of valve actuators of various specifications.

About Company

Suzhou SIP Stard Automation Co.,LTD specialises in valve control technology, design and manufacture of valve gear operators and pneumatic actuators. STARD AUTOMATION was founded in 1999 and has more than 25 years of history. The factory area is 13,000m².

STARD AUTOMATION offers a wide range of gearboxes and actuators covering the following categories:

- Part-turn manual Gear Operators
- Part-turn motorised Gear Operators
- Multi-turn Gearbox
- Declutchable Gearbox
- High Efficiency Gear Operators
- Specialised Application Gearbox
- Scotch Yoke Actuator
- Linear Pneumatic Actuator

Production capacity:

Product torque coverage: 150NM~250,000NM, annual output of valve actuators up to 100,000 units.



13

Stard Automation currently offers 13 major product series

80+

In more than 80 models

150~250000Nm

With the torque ranging from 150Nm to 250,000Nm.



Oil And Gas



General Industry



Chemical



Water Resources



Power Plant



Large Vessels / Marine

STARD AUTOMATION specializes in manufacturing actuators and related equipment for the oil and gas, chemical, water, marine, power generation, and general industrial sectors. We provides high - quality actuators which are durable, reliable, and capable of withstanding extreme conditions.

Product Categories

STARD AUTOMATION currently offers 13 major product series in more than 80 models, with the torque ranging from 150Nm to 250,000Nm and the main material optional in HT250\QT450\ WCB\YL113 aluminum die-cast alloys/304 and 316 stainless steels, which make them possible to match various requirements and working conditions. Gear operators of all series are designed and tested as per the requirements of JB/T 8531-2013 "Specifications for Valve Manual Actuators" and all flange interfaces are designed and manufactured to ISO 5211/ISO 5210.

STARD AUTOMATION's gear operators are available up to IP67, with IP68 as an option, and they can be used in oil and gas, power plants, water resources, marine, offshore, and general industrial applications. They can be used to drive ball valves, butterfly valves, plug valves, gate valves, gates, globe valves, control valves and other valves.

Customer Service

STARD AUTOMATION's customer service is outstanding. For actuator products, we offer a complete support programme including free replacement and maintenance. Whether in the power generation, water or petrochemical industries, we are always there to meet the needs of our customers, ensuring customer satisfaction and the smooth operation of our actuators under extreme conditions.

We are committed to providing durable, reliable actuators that can withstand extreme environments and contribute to controlling costs, reducing emissions and creating a safe environment with superior customer service in a variety of industries.

LSP-SR Piston Actuator

Spring-return piston actuator

Overview:

The LSP-SR are medium to large spring-return piston actuators that provide accurate, high thrust output for short to long travel applications. The actuator is suitable for gate, globe, and control valve applications.

The LSP-SR actuator features a modular design and provides linear motion, making it suitable for automation in switching and control applications for most types of rising stem valves.

These actuators feature an internal bias spring that forces the actuator piston rod to extend or retract upon a loss of supply pressure, thereby ensuring a fail-closed or fail-open mode of operation.

Standard stroke ranges from 25 to 610 mm (1 to 24 inches) and cylinder diameters range from 300 to 900 mm (12 to 36 inches). Thrust capacity can be extended to 200KN.



Features:

- High Thrust Capacity - Maximum thrust up to 200KN can be produced.
- Low Friction - Low friction piston seals and either chrome plated cylinder bores reduce sliding friction and wear.
- Manual Override - An optional side-mounted handwheel is capable of extending or retracting the actuator manually and can be engaged at any position from full open to full closed.
- Wide range of applications - Standard construction provides up to 610 mm (24 inches) of travel and up to 900 mm (36 inches) of cylinder diameter. Larger configurations are available on request.
- Wide Temperature Range - Standard constructions offer a temperature range of -20°C to 100°C, however higher or lower temperatures are possible. Special constructions can operate as low as -40°C and as high as 204°C.

Specifications:

Operating Pressure

Minimum: 3 barg
 Maximum Allowable: 10.5 barg
 For information on supply pressures below 3 barg or above 10.5 barg, please consult STARD AUTOMATION sales team.

Travel

25 mm (1 inch) through 610 mm (24 inch)
 See table 4

Thrust Capabilities

See table 1
 Designed to meet the application requirements.

Piston Diameter and Area

See table 4
 For cylinder diameters less than 300 mm or greater than 900 mm, please contact the STARD AUTOMATION sales team.

Operative Temperature Limits

Standard: - 20°C to 100°C
 Low Temperature: - 40°C to 80°C
 High Temperature: - 20°C to 204°C

Yoke Boss and Valve Stem Diameter

See table 4

Pressure Connections

See figure 2 and table 5
The size and number of air supply interfaces can be customized.

Instrument Mounting

Mounting kits are available for use with the positioner

Manual Override (Optional)

Size 12 to 24: Mechanical Handwheel
Size 26~36: Hydraulic Hand-pump

Weights

See tables 9 and 10

Construction Materials

PART	MATERIAL	OPTIONAL
Yoke	Carbon Steel	Stainless Steel
Piston	Carbon Steel	Stainless Steel
Cylinder	Carbon Steel	Stainless Steel
Upper/Lower Covers	Carbon Steel	Stainless Steel
Tie Rod Nut	Carbon Steel	Stainless Steel
Piston Rod	Stainless Steel	Stainless Steel
Stem Connector	Carbon Steel	Stainless Steel

Options

Screw Rod Manual Override
Mechanical Handwheel (Gearbox)
Hydraulic Manual Override

Dimensions

See figure 3 and tables 6,7, 8, 9

Lifting Point Load Ratings

See table 2

Optional Certifications

ATEX 2014/34/EU Machinery Directive 2006/42/EC
Safety Instrumented System,
SIL 2 Capable - certified by TUV NORD

Figure 1. LSP-SR Piston Actuator

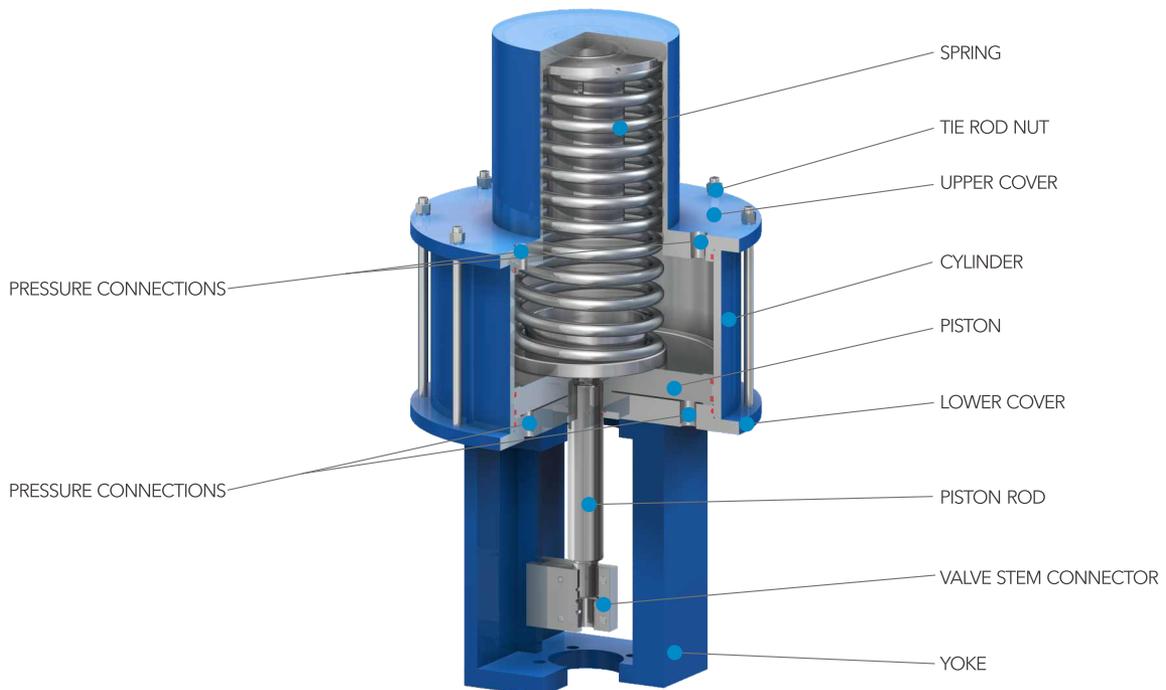


Table 1. Thrust (3 barg~10.5 barg)

ACTUATOR SIZE		THRUST AT SUPPLY PRESSURE											
		3 barg		4 barg		5 barg		6 barg		7 barg		10.5 barg	
mm	Inch	N	lbf	N	lbf	N	lbf	N	lbf	N	lbf	N	lbf
300	12	8054	1811	10739	2414	13424	3018	16108	3621	18793	4225	16108	3621
350	14	10963	2464	14617	3286	18271	4107	21925	4929	25579	5750	21925	4929
400	16	14318	3219	19091	4292	23864	5365	28637	6438	33410	7511	28637	6438
450	18	18122	4074	24162	5432	30203	6790	36243	8147	42284	9505	36243	8147
500	20	22373	5029	29830	6706	37288	8382	44745	10059	52203	11735	44745	10059
550	22	27071	6086	36094	8114	45118	10143	54141	12171	63165	14199	54141	12171
600	24	32216	7242	42955	9656	53694	12070	64433	14485	75172	16899	64433	14485
650	26	37810	8500	50413	11333	63016	14166	75619	16999	88222	19832	75619	16999
700	28	43850	9857	58467	13143	73084	16429	87700	19715				
750	30	50338	11316	67118	15088	83897	18860	100676	22632				
800	32	57274	12875	76365	17167	95456	21459	114547	25750				
850	34	64657	14535	86209	19380	107761	24225	129313	29070				
900	36	72487	16295	96649	21727	120812	27159	144974	32590				

Table 2. Lifting Point Load Ratings

ACTUATOR SIZE		NUMBER OF LIFTING POINTS USED	MAXIMUM LOAD	
mm	Inch		kg	lbs
300	12	2	800	1760
350	14	2	800	1760
400	16	2	1250	2750
450	18	2	1250	2750
500	20	2	1250	2750
550	22	2	2000	4400
600	24	2	2000	4400
650	26	2	2000	4400
700	28	2	2000	4400
750	30	2	2000	4400
800	32	2	3200	7040
850	34	2	3200	7040
900	36	2	3200	7040

Table 3. Handwheel Specification
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		GEARBOX MANUAL OVERRIDE							
		OUTPUT THRUST		HANDWHEEL DIAMETER		TURNS		MAXIMUM RIM FORCE REQUIRED	
mm	Inch	N	lbf	mm	inch	Turns per mm of Travel	Turns per inch of Travel	N	lbf
300	12	60000	13488	400	16	0.92	23.3	300	67
350	14	60000	13488	400	16	0.92	23.3	300	67
400	16	120000	26976	500	20	1.46	37	320	72
450	18	120000	26976	500	20	1.46	37	320	72
500	20	120000	26976	500	20	1.46	37	320	72
550	22	170000	38216	500	20	2.10	53	320	72
600	24	170000	38216	500	20	2.10	53	320	72

Note:
 1. When the actuator thrust exceeds 170,000 N, hydraulic manual override or other manual methods should be considered.
 2. For larger mechanical handwheels, please consult STARD AUTOMATION.

Suitable for supply pressures of 7 barg to 10.5 barg

ACTUATOR SIZE		GEARBOX MANUAL OVERRIDE							
		OUTPUT THRUST		HANDWHEEL DIAMETER		TURNS		MAXIMUM RIM FORCE REQUIRED	
mm	Inch	N	lbf	mm	inch	TURNS PER mm OF TRAVEL	TURNS PER INCH OF TRAVEL	N	lbf
300	12	100000	22480	400	16	1.46	37	320	72
350	14	100000	22480	400	16	1.46	37	320	72
400	16	170000	38216	500	20	2.10	53	320	72
450	18	170000	38216	500	20	2.10	53	320	72

Note:

1. When the actuator thrust exceeds 170,000 N, hydraulic manual override or other manual methods should be considered.

2. For larger mechanical handwheels, please consult STARD AUTOMATION.

Table 4. Standard Constructions
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		PISTON ROD THREAD	VALVE STEM CONNECTION SIZE		YOKE BOSS DIAMETER		VALVE TRAVEL			
			mm	Inch	mm	Inch	Minimum		Maximum	
mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	M24X1.5	19	1	90	3-9/16	25	1	154	6
	12	M24X1.5	25	1	127	5	25	1	203	8
350	12	M24X1.5	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	14	M24X1.5	25	1	127	5	25	1	203	8
400	14	M24X1.5	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	16	M36X3	25	1	127	5	25	1	203	8
450	16	M36X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	18	M36X3	25	1	127	5	25	1	203	8
500	18	M36X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	20	M42X3	25	1	127	5	25	1	203	8
550	20	M42X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	22	M42X3	25	1	127	5	25	1	203	8
600	22	M42X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	24	M48X3	25	1	127	5	25	1	203	8
650	24	M48X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	26	M48X3	25	1	127	5	25	1	203	8
700	26	M48X3	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	28	M56X4	25	1	127	5	25	1	203	8
750	28	M56X4	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	30	M56X4	25	1	127	5	25	1	203	8
800	30	M56X4	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	32	M56X4	25	1	127	5	25	1	203	8
850	32	M56X4	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	34	M80X4	25	1	127	5	25	1	203	8
900	34	M80X4	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24
	36	M80X4	25	1	127	5	25	1	203	8
	36	M80X4	32or51	1 1/4or2	127or178	5Hor7	>203	>8	610	24

Note:

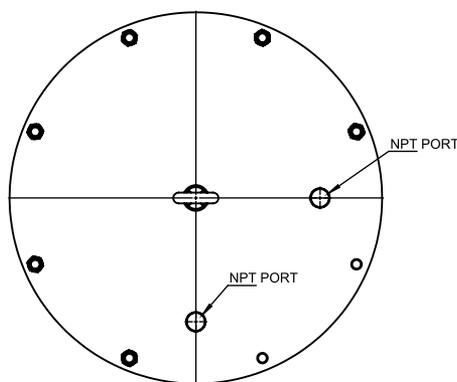
1. For other sizes, please consult the sales team at STARD AUTOMATION.

Suitable for supply pressures of 7 barg to 10.5 barg

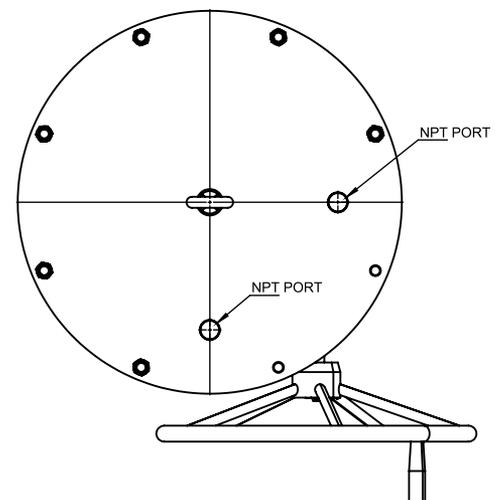
ACTUATOR SIZE		PISTON ROD THREAD	VALVE STEM CONNECTION SIZE		YOKE BOSS DIAMETER		VALVE TRAVEL			
			mm	Inch	mm	Inch	Minimum		Maximum	
mm	Inch		mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	M36X3	19	1	90	3-9/16	25	1	154	6
	12	M36X3	25	1	127	5	25	1	203	8
350	12	M36X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	14	M36X3	25	1	127	5	25	1	203	8
400	14	M36X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	16	M42X3	25	1	127	5	25	1	203	8
450	16	M42X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	18	M42X3	25	1	127	5	25	1	203	8
500	18	M42X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	20	M48X3	25	1	127	5	25	1	203	8
550	20	M48X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	22	M48X3	25	1	127	5	25	1	203	8
600	22	M48X3	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	24	M56X4	25	1	127	5	25	1	203	8
650	24	M56X4	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24
	26	M56X4	25	1	127	5	25	1	203	8
650	26	M56X4	32or51	1 1/4or2	127or178	5Hor7	25	1	610	24

Note: 1.For other sizes, please consult the sales team at STARD AUTOMATION.

Figure 2.Position of Pressure Connections



ACTUATOR WITHOUT MANUAL OVERRIDE



ACTUATOR WITH MANUAL OVERRIDE

Table 5. Pressure Connections

ACTUATOR SIZE		SUPPLY CONNECTION
mm	Inch	
300	12	NPT 1/2
350	14	NPT 1/2
400	16	NPT 1
450	18	NPT 1
500	20	NPT 1
550	22	NPT 1
600	24	NPT 1
650	26	NPT 1
700	28	NPT 1
750	30	NPT 1
800	32	NPT 1
850	34	NPT 1
900	36	NPT 1

- 1. See Figure 2.
- 2. The size and number of air supply interfaces can be customized.
- 3. The air supply ports at the top and bottom are symmetrically positioned.

Figure 3. LSP-SR Spring-return Actuator

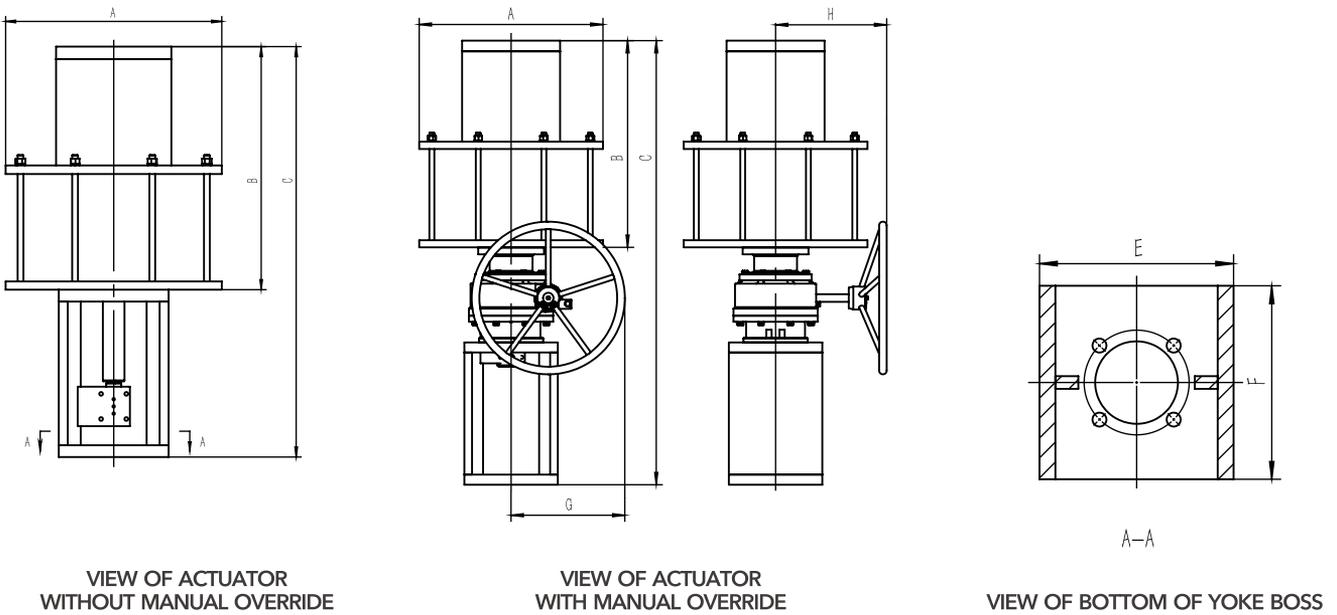


Table 6. Dimensions A, G, and H
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		A		G		H	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	390	15	282	11	232	9
350	14	440	17	282	11	232	9
400	16	490	19	372	15	363	14
450	18	550	22	372	15	363	14
500	20	600	24	372	15	363	14
550	22	650	26	416	16	375	15
600	24	710	28	416	16	375	15
650	26	760	30				
700	28	810	32				
750	30	860	34				
800	32	910	36				
850	34	960	38				
900	36	1010	40				

Suitable for supply pressures of 7 barg to 10.5 barg

ACTUATOR SIZE		A		G		H	
mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	400	15	372	15	363	14
350	14	450	17	372	15	363	14
400	16	500	19	416	16	375	15
450	18	560	22	416	16	375	15
500	20	610	24				
550	22	660	26				
600	24	720	28				
650	26	770	30				

Table 7. Dimensions B and C
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	25	1	525	20.7	813	32	812.5	32	1042	41	1042	41
		51	2	608	23.9	935	36.8	934.5	36.8	1164	45.8	1164	45.8
		76	3	656	25.8	1020	40.2	1020	40.2	1249	49.2	1249	49.2
		102	4	710	28	1113	43.8	1113	43.8	1342	52.8	1342	52.8
		127	5	733	28.9	1174	46.2	1173.5	46.2	1403	55.2	1403	55.2
		140	5.5	788	31	1248	49.1	1248	49.1	1477	58.1	1477	58.1
		152	6	808	31.8	1286	50.6	1286	50.6	1515	59.6	1515	59.6
		178	7	912	35.9	1429	56.3	1429	56.3	1658	65.3	1658	65.3
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1796	70.7	1796	70.7
		229	9	1116	43.9	1710	67.3	1709.5	67.3	1939	76.3	1939	76.3
		254	10	1216	47.9	1847	72.7	1847	72.7	2076	81.7	2076	81.7
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2148	84.6	2148	84.6
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2214	87.2	2214	87.2
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2357	92.8	2357	92.8
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)		

Table 7. Dimensions B and C
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
350	14	25	1	525	20.7	813	32	812.5	32	1042	41	1042	41
		51	2	608	23.9	935	36.8	934.5	36.8	1164	45.8	1164	45.8
		76	3	656	25.8	1020	40.2	1020	40.2	1249	49.2	1249	49.2
		102	4	710	28	1113	43.8	1113	43.8	1342	52.8	1342	52.8
		127	5	733	28.9	1174	46.2	1173.5	46.2	1403	55.2	1403	55.2
		140	5.5	788	31	1248	49.1	1248	49.1	1477	58.1	1477	58.1
		152	6	808	31.8	1286	50.6	1286	50.6	1515	59.6	1515	59.6
		178	7	912	35.9	1429	56.3	1429	56.3	1658	65.3	1658	65.3
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1796	70.7	1796	70.7
		229	9	1116	43.9	1710	67.3	1709.5	67.3	1939	76.3	1939	76.3
		254	10	1216	47.9	1847	72.7	1847	72.7	2076	81.7	2076	81.7
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2148	84.6	2148	84.6
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2214	87.2	2214	87.2
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2357	92.8	2357	92.8
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
400	16	25	1	525	20.7	813	32	812.5	32	1125	44.3	1125	44.3
		51	2	608	23.9	935	36.8	934.5	36.8	1247	49.1	1247	49.1
		76	3	656	25.8	1020	40.2	1020	40.2	1332	52.4	1332	52.4
		102	4	710	28	1113	43.8	1113	43.8	1425	56.1	1425	56.1
		127	5	733	28.9	1174	46.2	1173.5	46.2	1486	58.5	1486	58.5
		140	5.5	788	31	1248	49.1	1248	49.1	1560	61.4	1560	61.4
		152	6	808	31.8	1286	50.6	1286	50.6	1598	62.9	1598	62.9
		178	7	912	35.9	1429	56.3	1429	56.3	1741	68.5	1741	68.5
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1879	74	1879	74
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2022	79.6	2022	79.6
		254	10	1216	47.9	1847	72.7	1847	72.7	2159	85	2159	85
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2231	87.8	2231	87.8
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2297	90.4	2297	90.4
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2440	96.1	2440	96.1
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
450	18	25	1	525	20.7	813	32	812.5	32	1125	44.3	1125	44.3
		51	2	608	23.9	935	36.8	934.5	36.8	1247	49.1	1247	49.1
		76	3	656	25.8	1020	40.2	1020	40.2	1332	52.4	1332	52.4
		102	4	710	28	1113	43.8	1113	43.8	1425	56.1	1425	56.1
		127	5	733	28.9	1174	46.2	1173.5	46.2	1486	58.5	1486	58.5
		140	5.5	788	31	1248	49.1	1248	49.1	1560	61.4	1560	61.4
		152	6	808	31.8	1286	50.6	1286	50.6	1598	62.9	1598	62.9
		178	7	912	35.9	1429	56.3	1429	56.3	1741	68.5	1741	68.5
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1879	74	1879	74
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2022	79.6	2022	79.6
		254	10	1216	47.9	1847	72.7	1847	72.7	2159	85	2159	85
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2231	87.8	2231	87.8
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2297	90.4	2297	90.4
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2440	96.1	2440	96.1
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	

Table 7. Dimensions B and C
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
500	20	25	1	525	20.7	813	32	812.5	32	1125	44.3	1125	44.3
		51	2	608	23.9	935	36.8	934.5	36.8	1247	49.1	1247	49.1
		76	3	656	25.8	1020	40.2	1020	40.2	1332	52.4	1332	52.4
		102	4	710	28	1113	43.8	1113	43.8	1425	56.1	1425	56.1
		127	5	733	28.9	1174	46.2	1173.5	46.2	1486	58.5	1486	58.5
		140	5.5	788	31	1248	49.1	1248	49.1	1560	61.4	1560	61.4
		152	6	808	31.8	1286	50.6	1286	50.6	1598	62.9	1598	62.9
		178	7	912	35.9	1429	56.3	1429	56.3	1741	68.5	1741	68.5
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1879	74	1879	74
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2022	79.6	2022	79.6
		254	10	1216	47.9	1847	72.7	1847	72.7	2159	85	2159	85
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2231	87.8	2231	87.8
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2297	90.4	2297	90.4
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2440	96.1	2440	96.1
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
550	22	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
600	24	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	

Note: (1) Please consult STARD AUTOMATION's sales team.

Table 7. Dimensions B and C
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
650	26	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
700	28	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	
750	30	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
		610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	

Table 7. Dimensions B and C
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
800	32	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
850	34	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
900	36	25	1	525	20.7	813	32	812.5	32	1241	48.9	1241	48.9
		51	2	608	23.9	935	36.8	934.5	36.8	1363	53.7	1363	53.7
		76	3	656	25.8	1020	40.2	1020	40.2	1448	57	1448	57
		102	4	710	28	1113	43.8	1113	43.8	1541	60.7	1541	60.7
		127	5	733	28.9	1174	46.2	1173.5	46.2	1602	63.1	1602	63.1
		140	5.5	788	31	1248	49.1	1248	49.1	1676	66	1676	66
		152	6	808	31.8	1286	50.6	1286	50.6	1714	67.5	1714	67.5
		178	7	912	35.9	1429	56.3	1429	56.3	1857	73.1	1857	73.1
		203	8	1012	39.8	1567	61.7	1566.5	61.7	1995	78.5	1995	78.5
		229	9	1116	43.9	1710	67.3	1709.5	67.3	2138	84.2	2138	84.2
		254	10	1216	47.9	1847	72.7	1847	72.7	2275	89.6	2275	89.6
		267	10.5	1268	49.9	1919	75.5	1918.5	75.5	2347	92.4	2347	92.4
		279	11	1316	51.8	1985	78.1	1984.5	78.1	2413	95	2413	95
		305	12	1420	55.9	2128	83.8	2127.5	83.8	2556	100.6	2556	100.6
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

Note: (1) Please consult STARD AUTOMATION's sales team.

Suitable for supply pressures of 7 barg to 10.5 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C											
						WITHOUT MANUAL OVERRIDE						WITH MANUAL OVERRIDE					
						3-9/16		5/5H		7		3-9/16		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	25	1	557	21.9	1008	39.7	1045	41.1	1045	41.1	1192	46.9	1192	46.9	1192	46.9
		51	2	659	25.9	1135	44.7	1135	44.7	1135	44.7	1294	50.9	1294	50.9	1294	50.9
		76	3	684	26.9	1186	46.7	1186	46.7	1186	46.7	1367	53.8	1367	53.8	1367	53.8
		102	4	805	31.7	1318	51.9	1318	51.9	1318	51.9	1487	58.5	1487	58.5	1487	58.5
		127	5	837	33	1443	56.8	1443	56.8	1443	56.8	1557	61.3	1557	61.3	1557	61.3
		140	5.5	900	35.4	1507	59.3	1507	59.3	1507	59.3	1621	63.8	1621	63.8	1621	63.8
		152	6	913	35.9	1519	59.8	1519	59.8	1519	59.8	1697	66.8	1697	66.8	1697	66.8
		178	7	938	36.9	1545	60.8	1545	60.8	1545	60.8	1722	67.8	1722	67.8	1722	67.8
		203	8	1192	46.9	1799	70.8	1799	70.8	1799	70.8	1976	77.8	1976	77.8	1976	77.8
		229	9	1218	48			1964	77.3	1964	77.3			2041	80.4	2041	80.4
		254	10	1243	48.9			1989	78.3	1989	78.3			2103	82.8	2103	82.8
		267	10.5	1256	49.4			2002	78.8	2002	78.8			2136	84.1	2136	84.1
		279	11	1268	49.9			2015	79.3	2015	79.3			2166	85.3	2166	85.3
		305	12	1446	56.9			2192	86.3	2192	86.3			2383	93.8	2383	93.8
610	24	(1)	(1)			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)		
350	14	25	1	621	24.4			1168	46	1168	46			1329	52.3	1329	52.3
		51	2	697	27.4			1245	49	1245	49			1405	55.3	1405	55.3
		76	3	723	28.5			1270	50	1270	50			1478	58.2	1478	58.2
		102	4	773	30.4			1321	52	1321	52			1529	60.2	1529	60.2
		127	5	849	33.4			1483	58.4	1483	58.4			1707	67.2	1707	67.2
		140	5.5	887	34.9			1521	59.9	1521	59.9			1745	68.7	1745	68.7
		152	6	900	35.4			1534	60.4	1534	60.4			1757	69.2	1757	69.2
		178	7	983	38.7			1618	63.7	1618	63.7			1840	72.4	1840	72.4
		203	8	1078	42.4			1711	67.4	1711	67.4			1935	76.2	1935	76.2
		229	9	1103	43.4			1876	73.9	1876	73.9			2037	80.2	2037	80.2
		254	10	1135	44.7			1908	75.1	1908	75.1			2069	81.5	2069	81.5
		267	10.5	1224	48.2			1997	78.6	1997	78.6			2157	84.9	2157	84.9
		279	11	1237	48.7			2010	79.1	2010	79.1			2170	85.4	2170	85.4
		305	12	1262	49.7			2035	80.1	2035	80.1			2221	87.4	2221	87.4
610	24	(1)	(1)			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)		
400	16	25	1	621	24.4			1168	46	1168	46			1329	52.3	1329	52.3
		51	2	697	27.4			1245	49	1245	49			1405	55.3	1405	55.3
		76	3	773	30.4			1321	52	1321	52			1529	60.2	1529	60.2
		102	4	799	31.5			1346	53	1346	53			1554	61.2	1554	61.2
		127	5	830	32.7			1464	57.6	1464	57.6			1688	66.5	1688	66.5
		140	5.5	919	36.2			1553	61.1	1553	61.1			1776	69.9	1776	69.9
		152	6	932	36.7			1565	61.6	1565	61.6			1789	70.4	1789	70.4
		178	7	1033	40.7			1667	65.6	1667	65.6			1891	74.4	1891	74.4
		203	8	1135	44.7			1768	69.6	1768	69.6			1992	78.4	1992	78.4
		229	9	1160	45.7			1934	76.1	1934	76.1			2094	82.4	2094	82.4
		254	10	1186	46.7			1959	77.1	1959	77.1			2119	83.4	2119	83.4
		267	10.5	1300	51.2			2073	81.6	2073	81.6			2234	88	2234	88
		279	11	1313	51.7			2086	82.1	2086	82.1			2246	88.4	2246	88.4
		305	12	1338	52.7			2111	83.1	2111	83.1			2297	90.4	2297	90.4
610	24	(1)	(1)			(1)	(1)	(1)	(1)			(1)	(1)	(1)	(1)		

Suitable for supply pressures of 7 barg to 10.5 barg

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C							
						WITHOUT MANUAL OVERRIDE				WITH MANUAL OVERRIDE			
						5/5H		7		5		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
450	18	25	1	621	24.4	1168	46	1168	46	1329	52.3	1329	52.3
		51	2	678	26.7	1226	48.3	1226	48.3	1386	54.6	1386	54.6
		76	3	754	29.7	1302	51.3	1302	51.3	1510	59.4	1510	59.4
		102	4	824	32.4	1372	54	1372	54	1580	62.2	1580	62.2
		127	5	856	33.7	1489	58.6	1489	58.6	1713	67.4	1713	67.4
		140	5.5	919	36.2	1553	61.1	1553	61.1	1776	69.9	1776	69.9
		152	6	932	36.7	1565	61.6	1565	61.6	1789	70.4	1789	70.4
		178	7	1008	39.7	1641	64.6	1641	64.6	1865	73.4	1865	73.4
		203	8	1084	42.7	1718	67.6	1718	67.6	1942	76.5	1942	76.5
		229	9	1186	46.7	1959	77.1	1959	77.1	2119	83.4	2119	83.4
		254	10	1211	47.7	1984	78.1	1984	78.1	2145	84.4	2145	84.4
		267	10.5	1224	48.2	1997	78.6	1997	78.6	2157	84.9	2157	84.9
		279	11	1237	48.7	2010	79.1	2010	79.1	2170	85.4	2170	85.4
		305	12	1338	52.7	2111	83.1	2111	83.1	2297	90.4	2297	90.4
610	24	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C			
						WITHOUT MANUAL OVERRIDE			
						5/5H		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
500	20	25	1	665	26.2	1252	49.3	1252	49.3
		51	2	741	29.2	1329	52.3	1329	52.3
		76	3	799	31.5	1386	54.6	1386	54.6
		102	4	824	32.4	1411	55.6	1411	55.6
		127	5	919	36.2	1592	62.7	1592	62.7
		140	5.5	1014	39.9	1687	66.4	1687	66.4
		152	6	1027	40.4	1700	66.9	1700	66.9
		178	7	1103	43.4	1776	69.9	1776	69.9
		203	8	1199	47.2	1872	73.7	1872	73.7
		229	9	1281	50.4	2094	82.4	2094	82.4
		254	10	1307	51.5	2119	83.4	2119	83.4
		267	10.5	1338	52.7	2151	84.7	2151	84.7
		279	11	1351	53.2	2164	85.2	2164	85.2
		305	12	1427	56.2	2240	88.2	2240	88.2
610	24	(1)	(1)	(1)	(1)	(1)	(1)		
550	22	25	1	672	26.5	1259	49.6	1259	49.6
		51	2	773	30.4	1360	53.5	1360	53.5
		76	3	849	33.4	1437	56.6	1437	56.6
		102	4	926	36.5	1513	59.6	1513	59.6
		127	5	951	37.4	1624	63.9	1624	63.9
		140	5.5	964	38	1637	64.4	1637	64.4
		152	6	976	38.4	1649	64.9	1649	64.9
		178	7	1129	44.4	1802	70.9	1802	70.9
		203	8	1154	45.4	1827	71.9	1827	71.9
		229	9	1205	47.4	2018	79.4	2018	79.4
		254	10	1230	48.4	2043	80.4	2043	80.4
		267	10.5	1395	54.9	2208	86.9	2208	86.9
		279	11	1408	55.4	2221	87.4	2221	87.4
		305	12	1434	56.5	2246	88.4	2246	88.4
610	24	(1)	(1)	(1)	(1)	(1)	(1)		

ACTUATOR SIZE		MAXIMUM VALVE TRAVEL		B		C			
						WITHOUT MANUAL OVERRIDE			
						5/5H		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
600	24	25	1	672	26.5	1292	50.9	1292	50.9
		51	2	729	28.7	1349	53.1	1349	53.1
		76	3	779	30.7	1400	55.1	1400	55.1
		102	4	875	34.4	1496	58.9	1496	58.9
		127	5	900	35.4	1607	63.3	1607	63.3
		140	5.5	995	39.2	1702	67	1702	67
		152	6	1008	39.7	1715	67.5	1715	67.5
		178	7	1033	40.7	1740	68.5	1740	68.5
		203	8	1110	43.7	1816	71.5	1816	71.5
		229	9	1262	49.7	2108	83	2108	83
		254	10	1287	50.7	2134	84	2134	84
		267	10.5	1300	51.2	2146	84.5	2146	84.5
		279	11	1313	51.7	2159	85	2159	85
		305	12	1465	57.7	2312	91	2312	91
610	24	(1)	(1)	(1)	(1)	(1)	(1)		
650	26	25	1	697	27.4	1318	51.9	1318	51.9
		51	2	722	28.4	1343	52.9	1343	52.9
		76	3	805	31.7	1426	56.1	1426	56.1
		102	4	830	32.7	1451	57.1	1451	57.1
		127	5	906	35.7	1613	63.5	1613	63.5
		140	5.5	1021	40.2	1727	68	1727	68
		152	6	1033	40.7	1740	68.5	1740	68.5
		178	7	1059	41.7	1765	69.5	1765	69.5
		203	8	1237	48.7	1943	76.5	1943	76.5
		229	9	1262	49.7	2108	83	2108	83
		254	10	1287	50.7	2134	84	2134	84
		267	10.5	1300	51.2	2146	84.5	2146	84.5
		279	11	1313	51.7	2159	85	2159	85
		305	12	1338	52.7	2185	86	2185	86
610	24	(1)	(1)	(1)	(1)	(1)	(1)		

Note: (1) Please consult STARD AUTOMATION's sales team.

Table 8. Dimensions E and F
Suitable for supply pressures of 3 barg to 6 barg

ACTUATOR SIZE		WITHOUT MANUAL OVERRIDE								WITH MANUAL OVERRIDE							
		E				F				E				F			
		5H or 3-9/16		7		5H or 3-9/16		7		5H or 3-9/16		7		5H or 3-9/16		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	222	8.7	267	10.5	203	8	229	9	251	9.9	279	11	229	9	229	9
350	14	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
400	16	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
450	18	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
500	20	305	12	305	12	305	12	305	12	305	12	305	12	330	13	330	13
550	22	305	12	305	12	305	12	305	12	305	12	305	12	330	13	330	13
600	24	406	16	406	16	457	18	457	18	476	18.7	476	18.7	457	18	457	18
650	26	406	16	406	16	457	18	457	18	476	18.7	476	18.7	457	18	457	18
700	28	457	18	457	18	457	18	457	18	476	18.7	476	18.7	457	18	457	18
750	30	457	18	457	18	457	18	457	18	476	18.7	476	18.7	457	18	457	18
800	32	457	18	457	18	457	18	457	18	476	18.7	476	18.7	457	18	457	18
850	34	457	18	457	18	457	18	457	18	476	18.7	476	18.7	457	18	457	18
900	36	457	18	457	18	457	18	457	18	476	18.7	476	18.7	457	18	457	18

Suitable for supply pressures of 7 barg to 10.5 barg

ACTUATOR SIZE		WITHOUT MANUAL OVERRIDE								WITH MANUAL OVERRIDE							
		E				F				E				F			
		5H or 3-9/16		7		5H or 3-9/16		7		5H or 3-9/16		7		5H or 3-9/16		7	
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch
300	12	222	8.7	267	10.5	203	8	229	9	251	9.9	279	11	229	9	229	9
350	14	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
400	16	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
450	18	229	9	267	10.5	203	8	229	9	238	9.4	279	11	305	12	305	12
500	20	305	12	305	12	305	12	305	12	305	12	305	12	330	13	330	13
550	22	305	12	305	12	305	12	305	12	305	12	305	12	330	13	330	13
600	24	406	16	406	16	457	18	457	18	476	18.7	476	18.7	457	18	457	18
650	26	406	16	406	16	457	18	457	18	476	18.7	476	18.7	457	18	457	18



Table 9. Approximate Weights for Constructions without Manual Override Suitable for supply pressures of 3 barg to 6 barg

TYPE	MAXIMUM VALVE TRAVEL		APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)																											
			250(10)		300(12)		350(14)		400(16)		450(18)		500(20)		550(22)		600(24)		650(26)		700(28)		750(30)		800(32)		850(34)		900(36)	
			mm	Inch	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
FC	25	1	103	226	149	328	221	485	278	612	322	707	435	957	493	1084	690	1518	790	1737	931	2048	1087	2390	1256	2763	1566	3444	1917	4217
	51	2	107	236	158	348	231	509	290	639	336	738	451	991	510	1121	709	1559	810	1782	953	2096	1110	2442	1281	2818	1592	3502	1945	4279
	102	4	116	256	177	389	253	556	315	693	363	799	481	1059	543	1195	745	1640	850	1869	996	2190	1156	2543	1330	2926	1644	3617	2000	4400
	152	6	125	276	195	428	274	602	339	746	390	858	511	1125	576	1268	781	1719	889	1955	1038	2283	1201	2642	1378	3031	1695	3729	2054	4519
	203	8	135	296	213	469	295	650	363	800	418	919	542	1192	610	1342	818	1800	928	2042	1081	2377	1247	2743	1427	3139	1747	3844	2109	4640
	254	10	144	316	231	509	317	697	388	853	445	979	572	1259	644	1416	855	1881	968	2130	1123	2471	1293	2844	1476	3247	1799	3958	2164	4762
	305	12	153	336	250	550	338	744	412	907	473	1040	603	1327	677	1490	892	1962	1008	2217	1166	2566	1339	2945	1525	3355	1851	4072	2219	4883
	356	14	162	356	268	590	360	791	437	961	500	1101	634	1394	711	1564	928	2042	1048	2305	1209	2660	1384	3046	1574	3462	1903	4187	2274	5004
	406	16	171	376	286	630	381	837	461	1014	527	1160	664	1460	744	1637	964	2122	1087	2391	1251	2752	1429	3145	1622	3568	1954	4299	2328	5123
	457	18	180	397	305	670	402	884	485	1068	555	1221	694	1527	778	1711	1001	2202	1126	2478	1294	2847	1475	3246	1671	3676	2006	4414	2384	5244
	508	20	189	417	323	710	423	931	510	1122	582	1281	725	1595	811	1785	1038	2283	1166	2566	1337	2941	1521	3347	1720	3783	2058	4528	2439	5365
	559	22	199	437	341	751	445	979	534	1176	610	1342	755	1662	845	1859	1074	2364	1206	2653	1380	3035	1567	3448	1769	3891	2110	4642	2494	5486
610	24	208	457	360	791	466	1026	559	1229	637	1402	786	1729	879	1933	1111	2445	1246	2741	1422	3129	1613	3549	1818	3999	2162	4757	2549	5607	
FO	25	1	124	273	165	362	236	520	308	678	352	774	473	1040	551	1213	763	1679	877	1929	1117	2456	1356	2984	1568	3450	1878	4131	2412	5305
	51	2	130	285	175	386	249	548	323	710	368	810	491	1080	571	1257	785	1727	900	1981	1142	2512	1384	3044	1597	3514	1909	4199	2444	5377
	102	4	140	309	197	433	274	603	351	772	400	881	526	1158	611	1343	828	1821	947	2083	1192	2622	1437	3162	1654	3639	1969	4333	2509	5519
	152	6	151	332	218	479	298	657	379	834	432	950	561	1235	649	1428	870	1913	992	2183	1241	2730	1490	3277	1710	3763	2029	4464	2572	5657
	203	8	162	356	239	526	323	712	408	897	464	1021	597	1314	688	1514	913	2008	1039	2285	1291	2840	1543	3395	1767	3888	2090	4597	2636	5799
	254	10	172	379	261	573	348	767	436	960	496	1091	633	1392	728	1601	955	2102	1085	2387	1341	2950	1597	3513	1824	4014	2150	4731	2700	5940
	305	12	183	403	282	621	373	822	465	1023	528	1162	669	1471	767	1687	998	2196	1132	2489	1391	3060	1650	3631	1882	4140	2211	4864	2764	6081
	356	14	194	426	304	668	398	877	493	1085	560	1233	704	1549	806	1773	1041	2290	1178	2592	1441	3170	1704	3748	1939	4265	2272	4998	2829	6223
	406	16	204	449	325	714	423	930	521	1147	592	1302	739	1626	845	1858	1083	2383	1223	2692	1490	3278	1756	3864	1995	4388	2331	5129	2892	6361
	457	18	215	473	346	761	448	985	550	1210	624	1373	775	1705	884	1945	1126	2477	1270	2794	1540	3388	1810	3982	2052	4514	2392	5262	2956	6503
	508	20	226	496	367	808	473	1040	578	1273	656	1443	811	1783	923	2031	1169	2571	1316	2896	1590	3498	1863	4099	2109	4640	2453	5396	3020	6644
	559	22	236	520	389	855	498	1095	607	1335	688	1514	846	1862	962	2117	1212	2665	1363	2998	1640	3608	1917	4217	2166	4765	2513	5529	3084	6786
610	24	247	544	410	902	523	1150	636	1398	720	1585	882	1940	1002	2204	1254	2760	1409	3100	1690	3718	1971	4335	2223	4891	2574	5663	3149	6927	

Note: □FC" stands for "power source lost, closed," and "FO" stands for "power source lost, open."

Suitable for supply pressures of 7 barg to 10.5 barg

TYPE	MAXIMUM VALVE TRAVEL		APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)																	
			250(10)		300(12)		350(14)		400(16)		450(18)		500(20)		550(22)		600(24)		650(26)	
			mm	Inch	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
FC	25	1	153	336	199	438	271	595	328	722	422	927	535	1177	593	1304	790	1738	890	1957
	51	2	157	346	208	458	281	619	340	749	436	958	551	1211	610	1341	809	1779	910	2002
	102	4	166	366	227	499	303	666	365	803	463	1019	581	1279	643	1415	845	1860	950	2089
	152	6	175	386	245	538	324	712	389	856	490	1078	611	1345	676	1488	881	1939	989	2175
	203	8	185	406	263	579	345	760	413	910	518	1139	642	1412	710	1562	918	2020	1028	2262
	254	10	194	426	281	619	367	807	438	963	545	1199	672	1479	744	1636	955	2101	1068	2350
	305	12	203	446	300	660	388	854	462	1017	573	1260	703	1547	777	1710	992	2182	1108	2437
	356	14	212	467	318	700	410	901	487	1071	600	1321	734	1614	811	1784	1028	2262	1148	2525
	406	16	221	486	336	740	431	947	511	1124	627	1380	764	1680	844	1857	1064	2342	1187	2611
	457	18	230	507	355	780	452	994	535	1178	655	1441	794	1747	878	1931	1101	2422	1226	2698
	508	20	239	527	373	820	473	1041	560	1232	682	1501	825	1815	911	2005	1138	2503	1266	2786
	559	22	249	547	391	861	495	1089	584	1286	710	1562	855	1882	945	2079	1174	2584	1306	2873
610	24	258	567	410	901	516	1136	609	1339	737	1622	886	1949	979	2153	1211	2665	1346	2961	
FO	25	1	174	383	215	472	286	630	358	788	452	994	573	1260	651	1433	863	1899	977	2149
	51	2	180	395	225	496	299	658	373	820	468	1030	591	1300	671	1477	885	1947	1000	2201
	102	4	190	419	247	543	324	713	401	882	500	1101	626	1378	711	1563	928	2041	1047	2303
	152	6	201	442	268	589	348	767	429	944	532	1170	661	1455	749	1648	970	2133	1092	2403
	203	8	212	466	289	636	373	822	458	1007	564	1241	697	1534	788	1734	1013	2228	1139	2505
	254	10	222	489	311	683	398	877	486	1070	596	1311	733	1612	828	1821	1055	2322	1185	2607
	305	12	233	513	332	731	423	932	515	1133	628	1382	769	1691	867	1907	1098	2416	1232	2709
	356	14	244	536	354	778	448	987	543	1195	660	1453	804	1769	906	1993	1141	2510	1278	2812
	406	16	254	559	375	824	473	1040	571	1257	692	1522	839	1846	945	2078	1183	2603	1323	2912
	457	18	265	583	396	871	498	1095	600	1320	724	1593	875	1925	984	2165	1226	2697	1370	3014
	508	20	276	606	417	918	523	1150	628	1383	756	1663	911	2003	1023	2251	1269	2791	1416	3116
	559	22	286	630	439	965	548	1205	657	1445	788	1734	946	2082	1062	2337	1312	2885	1463	3218
610	24	297	654	460	1012	573	1260	686	1508	820	1805	982	2160	1102	2424	1				

Table 10. Approximate Weights for Constructions with Handwheels Suitable for supply pressures of 3 barg to 6 barg

TYPE	MAXIMUM VALVE TRAVEL		APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)															
			250(10)		300(12)		350(14)		400(16)		450(18)		500(20)		550(22)		600(24)	
			mm	Inch	kg	lbs												
FC	25	1	164	361	212	466	284	625	392	862	436	959	580	1276	666	1465	864	1901
	51	2	170	375	224	494	299	657	409	899	455	1000	601	1322	689	1516	889	1956
	102	4	182	401	249	548	327	720	441	971	491	1081	642	1412	734	1614	938	2063
	152	6	194	428	273	601	355	781	473	1041	527	1160	682	1500	778	1711	986	2169
	203	8	207	455	297	654	384	844	506	1113	564	1241	722	1589	823	1810	1035	2277
	254	10	219	482	322	708	412	907	539	1185	601	1322	763	1679	868	1909	1084	2384
	305	12	231	509	346	762	441	970	571	1257	638	1403	804	1769	912	2007	1133	2492
	356	14	243	536	371	816	469	1033	604	1328	674	1484	845	1859	957	2106	1182	2600
	406	16	255	562	395	869	497	1094	636	1399	710	1563	885	1947	1001	2203	1230	2705
	457	18	268	589	419	923	526	1157	668	1471	747	1643	926	2036	1046	2302	1279	2813
	508	20	280	616	444	976	554	1220	701	1542	784	1724	966	2126	1091	2400	1328	2921
	559	22	292	643	468	1030	583	1283	734	1614	820	1805	1007	2216	1136	2499	1377	3029
610	24	304	670	493	1084	612	1346	766	1686	857	1886	1048	2306	1181	2598	1426	3136	
FO	25	1	186	409	228	501	300	659	422	928	466	1026	588	1293	725	1594	937	2061
	51	2	193	424	242	531	316	695	441	970	487	1072	611	1344	750	1651	965	2123
	102	4	207	454	269	592	348	766	477	1050	529	1163	657	1445	801	1762	1020	2244
	152	6	220	484	296	651	380	835	513	1130	569	1252	702	1544	850	1871	1074	2363
	203	8	234	514	324	712	412	906	550	1210	610	1343	748	1645	901	1982	1129	2484
	254	10	248	545	351	773	444	977	587	1291	652	1434	794	1746	951	2093	1184	2606
	305	12	261	575	379	833	476	1048	624	1372	693	1525	840	1847	1002	2204	1239	2727
	356	14	275	605	406	894	508	1118	660	1453	734	1616	885	1948	1052	2315	1294	2848
	406	16	289	635	433	953	540	1188	696	1532	775	1705	930	2047	1102	2424	1348	2967
	457	18	302	665	461	1014	572	1258	733	1613	816	1796	976	2148	1152	2535	1404	3088
	508	20	316	696	488	1074	604	1329	770	1693	857	1886	1022	2249	1203	2646	1459	3209
	559	22	330	726	516	1135	636	1400	806	1774	899	1977	1068	2350	1253	2758	1514	3330
610	24	344	756	543	1195	668	1470	843	1855	940	2068	1114	2451	1304	2869	1569	3451	

Note: "FC" stands for "power source lost, closed," and "FO" stands for "power source lost, open."

Suitable for supply pressures of 7 barg to 10.5 barg

TYPE	MAXIMUM VALVE TRAVEL		APPROXIMATE WEIGHT FOR ACTUATOR SIZE, kg (lbs)									
			250(10)		300(12)		350(14)		400(16)		450(18)	
			mm	Inch	kg	lbs	kg	lbs	kg	lbs	kg	lbs
FC	25	1	264	581	312	686	434	955	542	1192	636	1399
	51	2	270	595	324	714	449	987	559	1229	655	1440
	102	4	282	621	349	768	477	1050	591	1301	691	1521
	152	6	294	648	373	821	505	1111	623	1371	727	1600
	203	8	307	675	397	874	534	1174	656	1443	764	1681
	254	10	319	702	422	928	562	1237	689	1515	801	1762
	305	12	331	729	446	982	591	1300	721	1587	838	1843
	356	14	343	756	471	1036	619	1363	754	1658	874	1924
	406	16	355	782	495	1089	647	1424	786	1729	910	2003
	457	18	368	809	519	1143	676	1487	818	1801	947	2083
	508	20	380	836	544	1196	704	1550	851	1872	984	2164
	559	22	392	863	568	1250	733	1613	884	1944	1020	2245
610	24	404	890	593	1304	762	1676	916	2016	1057	2326	
FO	25	1	286	629	328	721	450	989	572	1258	666	1466
	51	2	293	644	342	751	466	1025	591	1300	687	1512
	102	4	307	674	369	812	498	1096	627	1380	729	1603
	152	6	320	704	396	871	530	1165	663	1460	769	1692
	203	8	334	734	424	932	562	1236	700	1540	810	1783
	254	10	348	765	451	993	594	1307	737	1621	852	1874
	305	12	361	795	479	1053	626	1378	774	1702	893	1965
	356	14	375	825	506	1114	658	1448	810	1783	934	2056
	406	16	389	855	533	1173	690	1518	846	1862	975	2145
	457	18	402	885	561	1234	722	1588	883	1943	1016	2236
	508	20	416	916	588	1294	754	1659	920	2023	1057	2326
	559	22	430	946	616	1355	786	1730	956	2104	1099	2417
610	24	444	976	643	1415	818	1800	993	2185	1140	2508	

NOTE: "FC" stands for "power source lost, closed," and "FO" stands for "power source lost, open."

**FOCUS ON
VALVE CONTROL TECHNOLOGY**



MODULAR DESIGN, HIGH CYCLE LIFE, HIGH RELIABILITY.



SUZHOU SIP STARD AUTOMATION CO.,LTD.

Add: 16 Xiangpu Road, Suzhou Industrial Park, Suzhou, Jiangsu Province, China

Post code: 215126

Tel: (86)512-88165518

Fax: (86)512-88165522

E-mail: Bennychang@stard-gears.com Billysi@stard-gears.com



www.stard-gears.com