

型号构成 Model

SL 300 100 DA TDM 66 T HW FS

驱动头系列号: SL
Actuator Series: SL

气压缸规格: 50~600
Cylinder Size: 50~600

行程: 50, 100, 200, 300, 400, 500
Stroke: 50, 100, 200, 300, 400, 500

动作形式 Acting Type
Da: 双动作型 Double acting
S: 单动作型 Single acting

● 液压源故障动作 (单作用型)
Hydraulic failure acting (Single acting)

FS: 故障轴伸出 (Failure to extend rod)
FR: 故障轴缩回 (Failure to retract rod)

● 附属机构 (选择)
Special code (Selective)

HW: 手轮 (Jack Screw Manual Override)
HY: 液压手动装置 (Hydraulic Override)

● 温度 (Temperature)

T: 低温 Low temperature (-45~80℃)
M: 高温 High temperature (20~120℃)

● 弹簧终点推力 (Spring End Force)

40 = 4000N
66 = 6600N, 160 = 16000N

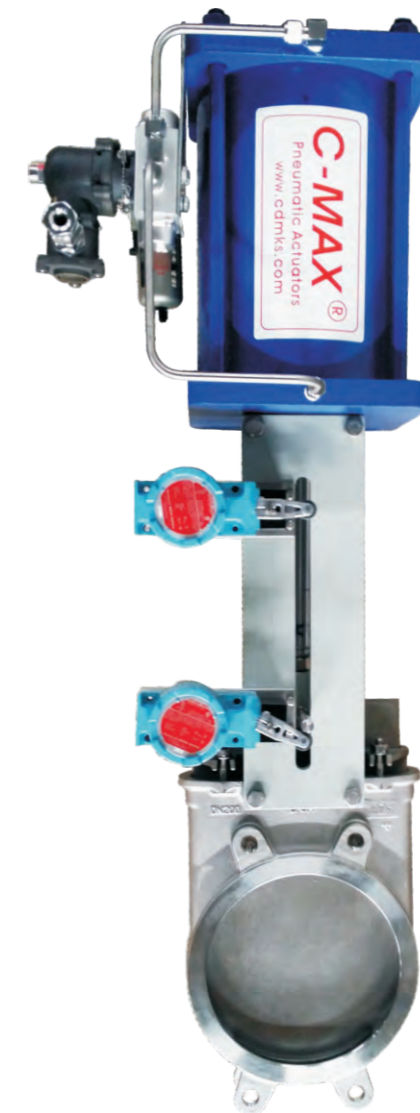
● 气缸数量 (Number of Cylinder)

无标记 (No code): 单气缸 (single Cylinder)
TDM: 串联气缸 (Tandem Cylinder)

C-MAX[®]



SL-Series Pneumatic Linear Valve Operators SL 系列直行程阀门驱动装置



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概述

DESCRIPTION

C-MAX SL系列直行程阀门气动执行机构已经在广泛的领域得到应用，实践证明该系列线性阀执行机构适用于大多数明杆阀门实现安全的开关及调节的自动化控制，SL系列直行程阀门气动执行机构严格按照质量标准制造，确保使用的可靠性和安全性，该样本列出了标准型号的产品，旨在涵盖范围广泛的应用系列，同时可以根据用户要求的推力和行程进行设计制造，或那些超出了本文的范围，包括直行程液压执行机构。

The C-MAX SL Pneumatic Series represents a broad range of field proven linear valve actuators suitable for automating most types of rising stem valves in safety shutdown and control applications. The SL actuators are manufactured in accordance with strict quality standards and assure reliability and safety in your specific service. This catalog lists standard models intended to cover a wide range of sizing applications. Custom designed models are also available for specialized thrust or stroke requirements, or those beyond the scope of this listing, including linear hydraulic operated actuators.

C-MAX SL系列直行程阀门气动执行机构适用于大多数类型的楔形闸阀、平板闸阀、刀闸阀、截止阀、罐阀和轨道球阀和轨道旋塞阀。其他应用包括风门等。

The C-MAX SL actuators are designed to operate most types of wedge gate valves, slab gate valves, knife gate valves, globe valves, tank valves and rising stem ball and plug valves. Other applications include louvers.

产品特性

FEATURES

SL系列直行程阀门驱动装置包含以下特性

The SL Series linear valve actuators incorporates the following features

弹簧杆螺母被锁定,以防止未经许可拆卸弹簧筒 Spring rod nut is locked to prevent unauthorized disassembly of the spring cartridge	外部拉杆在超压情况发生时可以起到释放能量的作用，便于检查和维修 External pull rod can rise to release the energy in case of overpressure condition, easy to check and repair
活塞杆退回位置及活塞杆伸出长度可调节，特殊要求的行程调节，请咨询工厂 Adjustable travel stop for the rod-retract position, piston bottoms out for the rod-extend position. Specific travel applications available, consult factory	气缸板采用了气动分配槽，使得起始推力最大化 Cylinder plate cylinder plate adopts pneumatic distribution channel, the initial thrust maximization
邵氏70度的丁晴橡胶密封圈,可根据要求提供其它材料的密封圈 70 durometer Nitrile seals, other seal materials available upon request	传动杆材料是合金钢镀铬,可选用不锈钢 Drive rod material is alloy steel chrome plated, with option for stainless steel
所有型号产品标准结构带有活塞环、传动杆衬套 Piston wear band, drive rod bushing are standard for all models	推力、行程和供给压力的请咨询工厂 Consult factory for custom thrust, travel and pressure requirements
气缸材料碳钢喷涂PTFE Pneumatic cylinder material is PTFE coated carbon steel.	工厂面漆是C-MAX蓝色光泽、聚氨酯面漆5017。其他颜色/涂料可按要求提供 Factory finish is C-MAX Blue gloss Polyurethane top-coat to RAL 5017. Other colors/coatings available upon request
气缸隔板和气缸端盖材料为碳钢 Cylinder plate and endcap material is carbon steel	可拆卸安装基座允许实地配套阀门 Removable mounting pedestal allows field adaption to the valve
	旋转阀杆连接器为便于安装和行程调整 Swivel stem connector for ease of installation and stroke adjustment

规范和标准

SPECIFICATIONS AND APPROVALS

SL系列直行程阀门驱动装置的设计和制造满足

The SL Series of linear valve actuators are designed and manufactured as follows

压力等级150 psig Pressure rating of 150 psig	耐压测试压力225 psig Static pressure test to 225 psig
标准型的操作温度范围：-23°C to +74°C Standard operating temperature range -23°C to +74°C	低温型适用温度范围：-40°C to +65°C Low temperature option available, -40°C to +65°C
高温型适用温度范围：-10°C to +150°C High temperature option available,	可按客户需求压力范围提供 Custom pressure ratings available
驱动装置设计和制造按照ISO 9001:2008质量保证体系 Actuators designed and manufactured under an accredited ISO QA program	设计制造标准：ISO/FDIS 12490 Designed and manufactured standard: ISO/FDIS 12490

手动操作

MANUAL OPERATE

手动螺旋操作

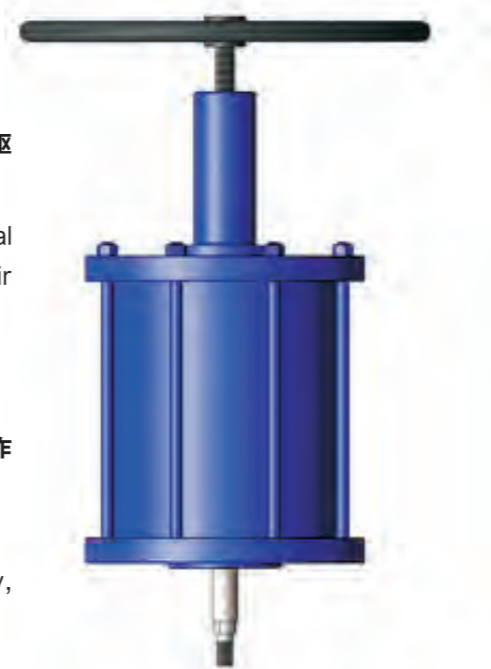
Manual Jackscrew Override

SI系列直行程阀门驱动装置可以配带单向螺杆手轮手动装置，在紧急情况下以及空气或电力出现故障时使用。单向螺杆手轮手动装置也可以用来使驱动装置处于中间行程的一个特定位置。

The SL Series of linear valve actuators are available with a unidirectional manual jackscrew handwheel override for emergency use when plant air or power gas is unavailable. The override can also be used to hold the actuator in a particular position.

对于要求推力高、安装单向螺杆手轮手动装置尺寸空间不允许或缺乏可操作性时，可以使用液压手动操作机构。

For models where a jackscrew override is not feasible due to high thrust requirements, dimensional clearance or lack of accessibility, a manual hydraulic override is available.



液压手动装置

Hydraulic Manual Override



SL阀门驱动装置可以配带一个液压手动装置（HY），双向为双作用，单向为弹簧复位用，类型“FS”或“FR”。

The SL actuators are also available with a manual hydraulic override (- 'HY'), bidirectional for double-acting and unidirectional for spring-return, type 'FS' or 'FR'.

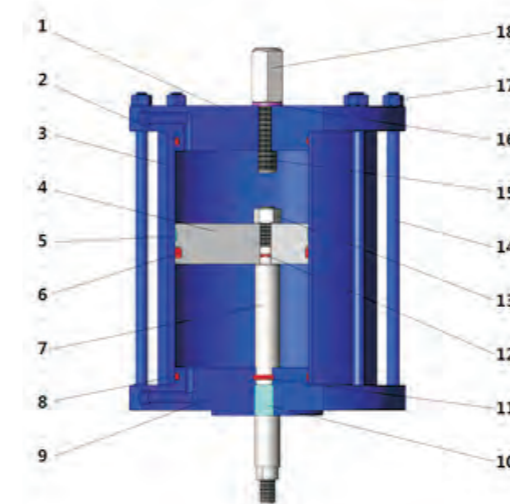
液压手动装置（HY）也可以被用作起阻尼作用来精确地控制气缸速度。

The 'HY' override can also be used as a dampener for precise control of the cylinder speed.

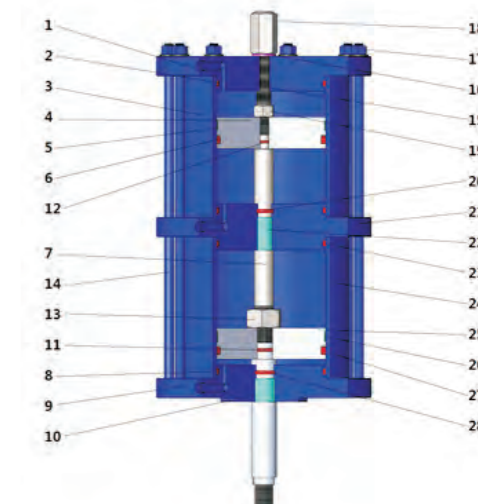
组装图

ASSEMBLY DRAWING

双动作型 Double Acting



单气缸
Single Power Cylinder



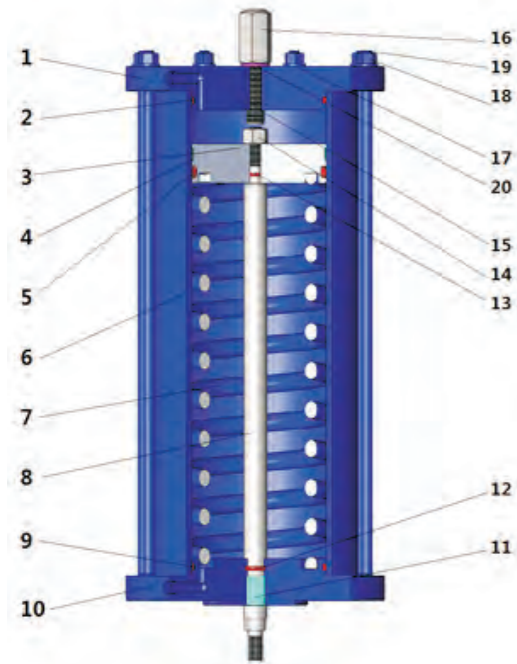
串联气缸
Tandem Power Cylinder

序号 No.	零件名称 Name	材质 Material	序号 No.	零件名称 Name	材质 Material
1	端盖 End Cap	碳钢 Carbon Steel	15	调节螺柱 Adjust Stud	合金钢 Alloy Steel
2	O型圈 O-Ring	NBR	16	垫片 Gasket	橡胶 Rubber
3	气缸 Cylinder	碳钢 Carbon Steel	17	螺母 Nut	2H
4	活塞 Piston	碳钢 Carbon Steel	18	盖形螺母 Cap nut	碳钢 Carbon Steel
5	导向环 Guide Ring	PTFE	19	螺母 Nut	2H
6	O型圈 O-Ring	NBR	20	O型圈 O-Ring	NBR
7	活塞杆 Center Bar	合金钢 Alloy Steel	21	隔板 Adapter	碳钢 Carbon Steel
8	O型圈 O-Ring	NBR	22	滑动轴承 Sliding Bearing	金属衬TFE Metal+TFE
9	底盖 Low Cap	碳钢 Carbon Steel	23	O型圈 O-Ring	NBR
10	滑动轴承 Sliding Bearing	金属衬TFE Metal+TFE	24	气缸 Cylinder	碳钢 Carbon Steel
11	O型圈 O-Ring	NBR	25	活塞 Piston	碳钢 Carbon Steel
12	O型圈 O-Ring	NBR	26	导向环 Guide Ring	PTFE
13	螺母 Nut	2H	27	O型圈 O-Ring	NBR
14	螺柱 Stud	合金钢 Alloy Steel	28	O型圈 O-Ring	NBR

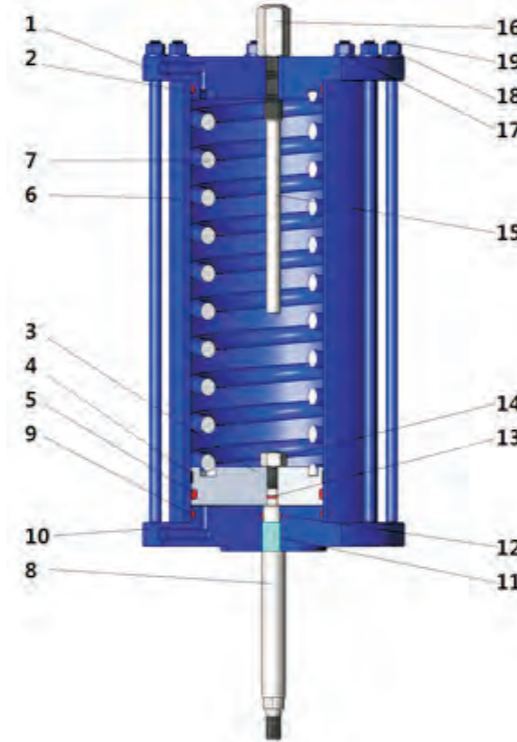
► 弹簧复位型
Spring Return Acting

输出推力
THRUST OUTPUT

气源故障活塞杆缩回
Failure to retract rod



气源故障活塞杆伸出
Failure to extend rod



序号 No.	零件名称 Name	材质 Material	序号 No.	零件名称 Name	材质 Material
1	端盖 End Cap	碳钢 Carbon Steel	11	滑动轴承 Sliding Bearing	金属衬TFE Metal+TFE
2	O型圈 O-Ring	NBR	12	O型圈 O-Ring	NBR
3	活塞 Piston	碳钢 Carbon Steel	13	O型圈 O-Ring	NBR
4	导向环 Guide Ring	PTFE	14	螺母 Nut	2H
5	O型圈 O-Ring	NBR	15	调节螺柱 Adjust Stud	合金钢 Alloy Steel
6	气缸 Cylinder	碳钢 Carbon Steel	16	盖形螺母 Cap nut	碳钢 Carbon Steel
7	弹簧 Spring	合金钢 Alloy Steel	17	弹簧垫圈 Spring Washer	弹簧钢 Spring Steel
8	活塞杆 Center Bar	合金钢 Alloy Steel	18	螺母 Nut	2H
9	O型圈 O-Ring	NBR	19	螺柱 Stud	合金钢 Alloy Steel
10	底盖 Low Cap	碳钢 Carbon Steel			

► 双动作型，单气缸
Double Acting, Single Cylinder

输出推力 Thrust pressure (N)

缸径	行程	气源压力 Air Pressure											
		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
		伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract
50	50-100 100-200	529	445	706	593	883	741	1058	890	1236	1038	1412	1186
80	50-100 100-200 200-300	1356	1224	1808	1632	2260	2040	2712	2448	3165	2856	3616	3264
100	50-100 100-200 200-300	2119	1987	2826	2649	3532	3311	4238	3974	4945	4636	5652	5298
125	50-100 100-200 200-300	3312	3179	4415	4239	5519	5298	6624	6358	7727	7418	8830	8478
150	50-100 100-200 200-300 300-400	4768	4578	6358	6104	7948	7630	9536	9156	11127	10682	12716	12208
200	50-100 100-200 200-300 300-400	8478	8287	11304	11049	14130	13812	16956	16574	19782	19336	22608	22098
250	50-100 100-200 200-300 300-400	13246	12987	17662	17316	22078	21645	26492	25974	30909	30303	35324	34632
300	50-100 100-200 200-300 300-400	19075	18736	25434	24981	31792	31227	38150	37472	44509	43718	50868	49962
350	50-100 100-200 200-300 300-400	25963	25434	34618	33912	43273	42390	51926	50868	60582	59346	69236	67824
400	50-100 100-200 200-300 300-400	33912	33148	45216	44198	56520	55248	67824	66296	79128	77347	90432	88396
450	50-100 100-200 200-300 300-400	42919	41881	57226	55841	71533	69802	85838	83762	100146	97723	114452	111682
500	50-100 100-200 200-300 300-400 400-500	52987	51631	70650	68841	88312	86051	105974	103262	123637	120472	141300	137682
600	50-100 100-200 200-300 300-400 400-500	76302	74945	101736	99927	127170	124909	152604	149890	178038	174872	203472	199854

输出推力

THRUST OUTPUT

► 双动作型，串联气缸 Double Acting, Tandem Cylinder

输出推力 Thrust pressure (N)

缸径	行程	气源压力 Air Pressure											
		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
		伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract	伸出 Extend	缩回 Retract
450	50-100	85076	83720	113435	111627	141794	139533	170152	167440	198512	195347	226870	223254
	100-200												
	200-300												
	300-400												
500	50-100	105211	103855	140282	138474	175353	173092	210422	207710	245494	242329	280564	276948
	100-200												
	200-300												
	300-400												
600	50-100	151411	149292	201882	199056	252352	248820	302822	298484	353293	348348	403764	398112
	100-200												
	200-300												
	300-400												

说明 Notes

1、特殊行程和缸径的直行程气动头可按用户要求设计制造。

special stroke and bore Straight trip pneumatic actuator design and manufacture available according to customer requirements

► 符号描述

Code description

SS: 弹簧起点推力 Start thrust of spring

SE: 弹簧终点推力 End thrust of spring

AS: 气压起点推力 Start thrust of Air

AE: 气压终点推力 End thrust of Air

FS: 故障轴伸出 Failure to extend rod

FR: 故障轴缩回 Failure to retract rod

► 弹簧复位型，单气缸 Spring Return Acting, Single Cylinder

输出推力 Thrust pressure (N)

缸径	行程	弹簧 Spring		形式 TYPE	气源压力 Air Pressure											
		SE	SS		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
					AE	AS	AE	AS	AE	AS	AE	AS	AE	AS	AE	AS
200	50-100 100-200 200-300 300-400	4000	7200	FS	1087	4287	3849	7049	6612	9812	9374	12574	12136	15336	14898	18098
				FR	1278	4478	4104	7104	6930	10130	9756	12956	12582	15782	15408	18608
200	50-100 100-200 200-300 300-400	6600	12000	FS					1812	7212	4574	9974	7336	12736	10098	15498
				FR					2130	7530	4956	10356	7782	13182	10608	16008
250	50-100 100-200 200-300 300-400	6600	12000	FS	987	6387	5316	10716	9645	15045	13974	19374	18303	23703	22632	28032
				FR	1246	6646	5662	11062	10078	15478	14492	19892	18909	24309	23324	28724
250	50-100 100-200 200-300 300-400	16000	28800	FS									1503	14303	5832	18632
				FR										2109	14909	6524
300	50-100 100-200 200-300 300-400	6600	12000	FS	6736	12136	12981	18381	19227	24627	25472	30872	31718	37118	37962	43362
				FR	19075	18736	25434	24981	31792	31227	38150	37472	44509	43718	50868	49962
300	50-100 100-200 200-300 300-400	16000	28800	FS					2427	15227	8672	21472	14918	27718	21162	33962
				FR					2992	15792	9350	22150	15709	28509	22068	34868
300	50-100 100-200 200-300 300-400	25000	45000	FS											3862	24962
				FR												5868
350	50-100 100-200 200-300 300-400	6600	12000	FS	13434	18834	21912	27312	30390	35790	38868	44268	47346	52746	55824	61224
				FR	13963	19363	22618	28018	31273	36673	39926	45326	48582	53982	57236	62636
350	50-100 100-200 200-300 300-400	16000	28800	FS			5112	17912	13590	26390	22068	34868	30546	43346	39024	51824
				FR			5818	18618	14473	27273	23126	35926	31782	44582	40436	53236
350	50-100 100-200 200-300 300-400	25000	45000	FS							5868	25868	14346	34346	22824	42824
				FR							6926	26926	15582	35582	25236	44236
400	50-100 100-200 200-300 300-400	16000	28800	FS	4348	17148	15398	28198	26448	39248	37496	50296	48547	61347	59596	72396
				FR	5112	17912	16416	29216	27720	40520	39024	51824	50328	63128	61632	74432
400	50-100 100-200 200-300 300-400	25000	45000	FS					10248	30248	21296	41296	32347	52347	43396	63396
				FR					11520	31520	22824	42824	34128	54128	45432	65432
400	50-100 100-200 200-300 300-400	45000	81000	FS											7396	43396
				FR												9432

输出推力

THRUST OUTPUT

► 弹簧复位型，单气缸 Spring Return Acting, Single Cylinder

输出推力 Thrust pressure (N)

缸径	行程	弹簧 Spring		形式 TYPE	气源压力 Air Pressure											
		SE	SS		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
					AE	AS	AE	AS	AE	AS	AE	AS	AE	AS	AE	AS
450	50-100 100-200 200-300 300-400	16000	28800	FS	13081	25881	27041	39841	41002	53902	54962	67762	68923	81723	82882	95682
				FR	14119	26919	28426	41226	42733	55533	57038	69838	71346	84146	85652	98452
450	50-100 100-200 200-300 300-400	25000	45000	FS			10841	30841	24802	44802	38762	58762	52723	72723	66682	86682
				FR			12226	32226	26533	46933	40838	60838	55146	75146	69452	89452
450	50-100 100-200 200-300 300-400	45000	81000	FS							2762	38762	16723	52723	30682	66682
				FR							4838	40838	19146	55146	33452	69452
500	50-100 100-200 200-300 300-400 400-500	25000	45000	FS	6631	26631	23841	43841	41051	61051	58262	78262	75472	95472	92682	112682
				FR	7987	27987	25650	45650	43312	63312	60974	80974	78637	98637	96300	116300
500	50-100 100-200 200-300 300-400 400-500	45000	81000	FS					5051	41051	22262	58262	39472	75472	56682	92682
				FR					7312	43312	24974	60974	42637	78637	60300	96300
500	50-100 100-200 200-300 300-400 400-500	65000	117000	FS									3472	55472	20682	72682
				FR									6637	58637	24300	76300
600	50-100 100-200 200-300 300-400 400-500	45000	81000	FS			18927	54927	43909	79909	68890	104890	93872	129872	118854	153854
				FR			20736	56736	46170	82170	71604	107604	97038	133038	122472	158472
600	50-100 100-200 200-300 300-400 400-500	65000	117000	FS					7909	59909	32890	84890	57872	109872	82854	134854
				FR					10170	62170	35604	87604	61038	113038	86472	137472
600	50-100 100-200 200-300 300-400 400-500	86000	156000	FS									18872	88872	43854	113854
				FR										22038	92038	47472

► 弹簧复位型，串联气缸 Spring Return Acting, Tandem Power Cylinder

输出推力 Thrust pressure (N)

缸径	行程	弹簧 Spring		形式 TYPE	气源压力 Air Pressure											
		SE	SS		3 Bar		4 Bar		5 Bar		6 Bar		7 Bar		8 Bar	
					AE	AS	AE	AS	AE	AS	AE	AS	AE	AS	AE	AS
450	50-100 100-200 200-300 300-400	45000	81000	FS	2720	38720	30627	66627	58533	94533	86440	122440	114347	150347	142254	178254
				FR	4076	40076	32425	68435	60794	96794	89152	125152	117512	153512	145870	181870
450	50-100 100-200 200-300 300-400	65000	117000	FS					22533	74533	50440	102440	78347	130347	106254	158254
				FR					24794	76794	53152	105152	81512	133512	109870	161870
450	50-100 100-200 200-300 300-400	86000	156000	FS									11440	81440	39347	109347
				FR									14152	84152	42512	112512
500	50-100 100-200 200-300 300-400 400-500	45000	81000	FS	22855	58855	57474	93474	92092	128092	126710	162710	161329	197329	195948	231948
				FR	24211	60211	59282	95282	94353	130353	129422	165422	164494	200494	199564	235564
500	50-100 100-200 200-300 300-400 400-500	65000	117000	FS									21474	73474	56092	108092
				FR									23282	75282	58353	110353
500	50-100 100-200 200-300 300-400 400-500	86000	156000	FS									17092	87092	51710	121710
				FR									19353	89353	54422	124422
600	50-100 100-200 200-300 300-400 400-500	45000	81000	FS	68292	104292	118056	154056	167806	203820	217484	253484	267348	303348	317112	353112
				FR	70411	106411	120882	156882	171352	207352	221822	257822	272293	308293	322764	358764
600	50-100 100-200 200-300 300-400 400-500	65000	117000	FS	32292	84292	82056	134056	131820	183820	181484	233484	231348	283348	281112	333112
				FR	34411	86411	84882	136882	135352	187352	185822	237822	236293	288293	286764	338764
600	50-100 100-200 200-300 300-400 400-500	86000	156000	FS									43056	113056	92820	162820
				FR									45882	115882	96352	166352