

双作用和单作用气动头

Double and single acting pneumatic actuator



公称特征

- ◆ 压力额定值最高8 bar (有润滑空气)。
- ◆ 温度：
 - 标准驱动装置 (NBR) -20°C至+85°C。
 - 高温驱动装置 (FPM/Viton型) -20°C至150°C。
- ◆ 应急手动驱动装置。
- ◆ 终身润滑保证。
- ◆ 单作用和双作用驱动装置有相同的阀体尺寸。

单作用型

- ◆ 同心弹簧一套。
- ◆ 安全拆卸。

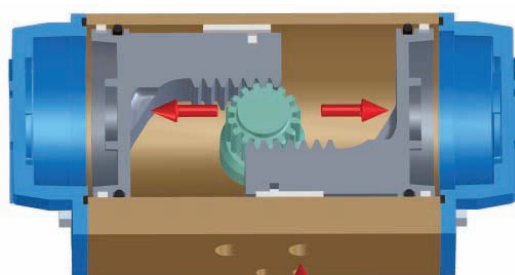
Nominal Characteristics

- ◆ Pressure rating max 8 bar (with lubricated air)
- ◆ Temperatures:
 - -20°C to +85°C for standard actuator (NBR)
 - -20°C to +150°C for high temp. actuator (FPM/type Viton)
- ◆ Emergency manual actuator
- ◆ Life guarantee lubricated
- ◆ Same body dimensions for single and double acting actuators

Single Acting Type

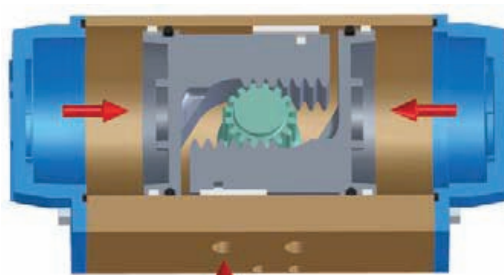
- ◆ Concentric spring set
- ◆ Safe dismantling

图示



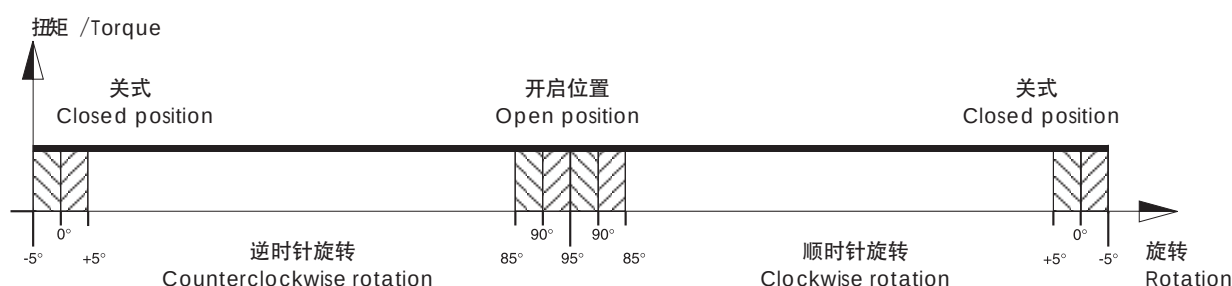
开启 / Open

Presentation



闭合 / Closed

从上面看
Top view



如何选择双作用气缸

- 参阅上表，您可以看到双作用气缸的扭矩在整个作用过程中是恒定不变的。
- 下面的建议供使用者来选择适合自己要求的双作用气缸
- ◆确定气动阀门的最大扭矩。
 - ◆取25% 到50% 的安全系数（依阀门类型和工作条件而定）。
 - ◆将计算出的扭矩值与下表中的扭矩值进行比较（并对压缩空气的压力），找出最相近的扭矩，或向上取较大值。
 - ◆向左看，表格最左列既是所需的气缸的系列号。

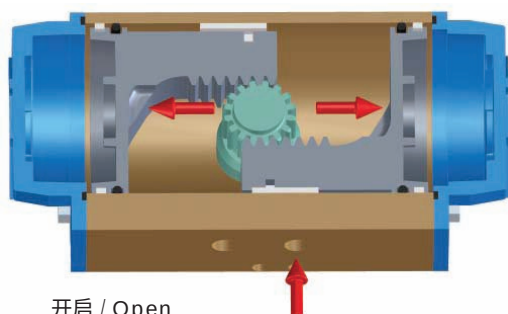
How to choose a double acting actuator

- Referring to the above chart, you can see that the torque of a double acting actuator is constant during the complete action. The user can proceed to the choice of the proper model according to his requirements and to the following suggestions:
- ◆Define the maximum torque of the valve to automate.
 - ◆Increase by 25-50% (depending on the valve type and the working conditions) the torque value, in order to obtain a safety rate.
 - ◆Then check and compare the obtained torque value with the torque table below (in correspondence with the air pressure supplied) to find a torque value equal or bigger.
 - ◆Once the torque value is found, select the proper actuator model by shifting to the left column.

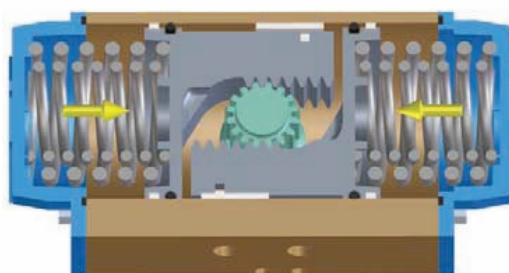
双作用气动头扭矩表(Nm) Torque output double acting actuator(Nm)

型号 Model	气压 (bar)/Air supply pressure(bar)							
	2.5	3	4	5	5.5	6	7	8
DA 32	3.5	4.2	6	7.5	8	9	10	11.5
DA 52	8.8	10.7	14.5	18.3	20.2	22.1	25.9	29.8
DA 63	15.6	19.1	25.9	32.8	36.2	39.6	46.5	53.3
DA 75	28.9	35.1	47.5	59.8	66	72.2	84.5	96.9
DA 85	41.4	50.4	68.6	86.7	95.8	104.9	123	141.2
DA 100	65.7	79.8	108	136.3	150.4	164.6	192.8	221.1
DA 115	108.8	132.2	178.9	225.6	248.9	272.3	319	365.7
DA 125	143.3	174	235.3	296.6	327.3	358	419.3	480.6
DA 140	206	247	329.4	411.8	453	493.4	575	658.5
DA 160	284	340	454	567	624	681	794	908
DA 180	383	459	613	766	842	919	1072	1225
DA 200	532	638	851	1064	1170	1276	1489	1702
DA 240	1160	1392.5	1857	2321	2553	2785	3249	3713
DA 270	1632	1958	2611	3264	3590	3916	4569	5222

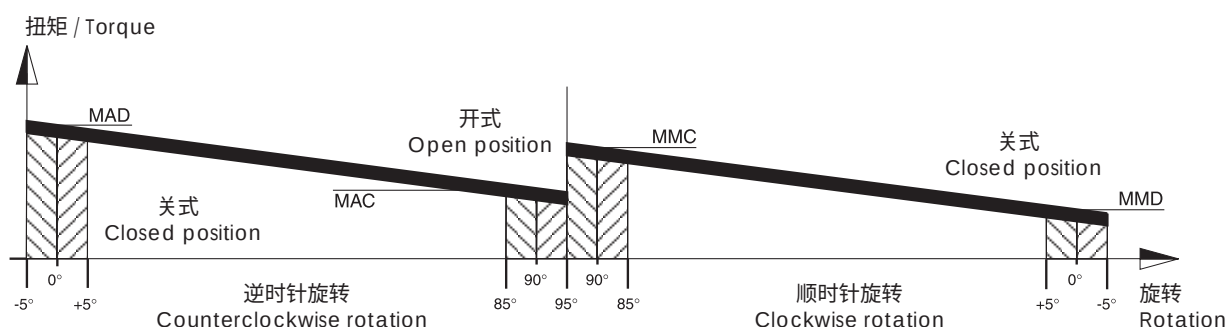
图示



Presentation



从上面看
Top view



如何选择单作用气缸

参阅上图，您会发现单作用气缸的扭矩在整个过程中是线性下降的。

这是因为在压力的作用下，首先活塞的运动受弹簧的阻力作用是线性的，然后积聚在活塞的反向运动中被线性下降释放出来。

打开过程：

气缸有以下的扭矩值：

◆MAD=弹簧释放状态下的扭矩。

◆MAC=弹簧压缩状态下的扭矩。

关闭过程：

◆MMC=弹簧压缩状态下的扭矩。

◆MMD=弹簧释放状态下的扭矩。

下面的建议供使用者参考来选择适合自己要求的单作用气缸：

◆确定气动阀的最大扭矩。

◆取25%到50%的安全系数（依阀门类型的工作条件而定），计算出所需气缸的扭矩值。

◆把计算出的扭矩值与下表中的扭矩进行比较（并对应压缩空气的压力），找到最相近的扭矩值，但在MMD和MAC之间则以其中的较小值为准。

◆向左看，表格最左列即是所需的气缸的系列号。

How to choose a single acting actuator

Referring to the above chart, you can see that the torque of a single acting actuator is constant, but is a decreasing one. This is due to the action of the spring, that counteract with the piston movement when compressed; and accumulate energy that will be available in a decreasing way during the rotation universal. The torque to the actuator is defined by 4 fundamental values:

Opening rotation:

◆MAD=actuator torque with released springs.

◆MAC=actuator torque with compressed springs.

Closing rotation:

◆MMC=torque with compressed springs.

◆MMD=torque with released springs.

The user can proceed to the choice of the proper model accordingly to his requirements and to the following suggestions:

◆Define the maximum torque of the valve to automate.

◆Increase by 25-50%(depending on the valve type and the working conditions) the torque value, in order to obtain a safety rate.

◆Then check and compare the obtained torque value with the torque table below (in correspondence to the air pressure supplied) to find a torque value equal or higher, but considering the lower value between MMD and MAC.

◆Once the torque value is found, select the proper actuator model by shifting to the left in column.

型号 Model	弹簧 Spring set	弹簧扭矩 (Nm) Spring torque		气压 (bar)/Air supply pressure(bar)															
				2.5		3		4		5		5.5		6		7		8	
		驱动装置弹簧扭矩 (Nm)/Torque output spring return actuators(Nm)																	
		0° MMD	90° MMC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC	0° MAD	90° MAC
SR52	01	3.6	4.9	4.5	1.6		6.4	3.5	10.2	7.4									
	02	4.8	6.7			5.2	1.7		9	5.6	12.8	9.4							
	03	5.2	7.5					8.6	4.8	12.4	8.6	14.3	10.5	16.2	12.4				
	04	6.5	9.3					7.3	3	11.2	6.8	13.1	8.7	15	10.6	18.8	14.5		
	05	8.1	11.9							9.5	4.3	11.4	6.2	13.3	8.1	17.1	11.9	20.9 15.7	
SR63	01	5	9.6	8.6	2.6		12	6	18.9	12.8									
	02	6.6	12.3			10.5	3.2		17.4	10.1	24.2	17							
	03	8	14.5					15.9	7.9	22.8	14.8	26.2	18.2	29.6	21.7				
	04	9.6	17.2					14.4	5.2	21.2	12	24.6	15.5	28.1	18.9	34.9	25.8		
	05	12.5	22.1							18.2	7.1	21.7	10.6	25.1	14	31.9	20.9	38.8 27.7	
SR75	01	10.1	19.5	15.8	3.9		22	10.1	34.4	22.5									
	02	13.3	25.6			18.8	4		31.2	16.4	43.5	28.7							
	03	15.1	28.2					29.4	13.8	41.8	26.1	48	32.3	54.1	38.5				
	04	18.3	34.3					26.2	7.7	38.6	20	44.8	26.2	50.9	32.4	63.3	44.8		
	05	23.2	43							33.6	11.3	39.8	17.5	46	23.7	58.3	36.1	70.7 48.4	
SR85	01	16.1	27.3	22.2	7.6		31.3	16.6	49.5	34.8									
	02	19.9	33.7			27.6	10.3		45.7	28.4	63.9	46.6							
	03	24.3	40.8					41.3	21.3	59.4	39.5	68.5	48.6	77.6	57.6				
	04	28.1	47.1					37.5	15	55.7	33.1	64.8	42.2	73.8	51.3	92	69.4		
	05	36.3	60.6							47.5	19.6	56.6	28.7	65.6	37.8	83.8	55.9	101.9 74.1	
SR100	01	24.6	44.6	36	10.1		50.2	24.2	78.4	52.5									
	02	32.6	58.9			42.2	9.9		70.5	38.1	98.7	66.4							
	03	35.9	63.7					67.1	33.3	95.4	61.6	109.5	75.7	123.6	89.9				
	04	43.9	78					59.1	19	87.4	47.3	101.5	61.4	115.7	75.5	143.9	103.8		
	05	55.2	97.2							76.1	28.1	90.2	42.3	104.3	56.4	132.6	84.7	160.8 112.9	
SR115	01	41	74.4	61.3	18.4		84.7	41.8	131.4	88.5									
	02	50.7	94.4			74.9	21.8		121.6	68.5	168.3	115.2							
	03	60.8	108.1					111.6	54.7	158.3	101.5	181.6	124.8	205	148.2				
	04	70.6	128.1					101.8	34.8	148.5	81.5	171.9	104.9	195.2	128.2	241.9	174.9		
	05	90.4	161.8							128.7	47.8	152	71.1	175.4	94.5	222.1	141.2	268.8 187.9	
SR125	01	53.1	99.1	80.2	21.2		110.9	51.9	172.2	113.2									
	02	63.3	117.5			100.7	33.5		162.1	94.8	223.4	156.1							
	03	81.1	148.4					144.2	63.9	205.5	125.2	236.2	155.9	266.8	186.5				
	04	91.3	166.9					134.1	45.5	195.4	106.8	226.1	137.5	256.7	168.1	318	229.4		
	05	119.2	216.2							167.4	57.5	198.1	88.1	228.7	118.8	290.1	180.1	351.4 241.4	
SR140	01	82	152	118.9	36.3		160.1	77.5	242.4	159.8									
	02	92	172			148.9	56.1		231.2	138.5	313.6	220.8							
	03	117	221					204.8	85.7	287.1	168	328.3	209.2	369.5	250.4				
	04	128	240					193.5	64.5	275.8	146.8	317	187.9	358.2	229.1	440.5	311.4		
	05	164	308							238.2	72.8	279.4	113.9	320.5	155.1	402.9	237.4	485.2 319.8	
SR160	2/3	112	166	171	118	228	174	342	288	455	401								
	3/3	199	135	149	84	206	141	319	255	433	368	489	425						
	3/4	233	157			183	108	297	221	410	335	467	391	524	448				
	4/4	266	180					274	188	388	302	444	358	501	415	615	528		
	4/5	299	202					252	155	365	268	422	325	479	382	592	495	706 609	
	5/5	332	224							343	235	400	292	456	349	570	462	683 575	
	5/6	365	247							320	202	377	259	434	315	547	429	661 542	
SR180	6/6	399	269							355	225	411	282	525	396	638	519		
	2/3	237	158	225	146	301	223	455	376	608	529								
	3/3	284	190	193	99	270	175	423	329	576	482	653	558						
	3/4	332	221			238	128	391	281	544	434	621	511	698	587				
	4/4	379	253					360	234	513	387	589	464	666	540	819	693		
	4/5	426	285					328	186	481	340	558	416	634	493	788	646	941 799	
	5/5	474	316							450	292	526	369	603	445	756	599	909 752	
SR200	5/6	521	348							418	245	495	321	571	398	724	551	877 704	
	6/6	568	379									463	274	540	351	693	504	846 657	
	2/3	315	213	319	217	426	323	638	536	851	749								
	3/3	378	255	277	154	383	260	596	473	808	686	915	792						
	3/4	441	298			341	197	553	304	766	623	872	729	979	835				
	4/4	504	340					511	347	723	560	830	666	936	772	1149	985		
	4/5	567	383					468	284	681	497	787	603	894	709	1106	922	1319 1135	
SR240	5/5	630	425							638	434	745	540	851	646	1064	859	1277 1072	
	5/6	693	468							596	371	702	477	809	583	1021	796	1234 1009	
	6/6	756	510									660	414	766	520	879	733	1192 946	
	3/3	842.4	562.6	597.9	318	829.9	550.1	1294	1014.2	1758.1	1478.3	1990.2	1710.4						
	4/4	1123.2	749.5					1107.1	733.4	1571.3	1197.6	1803.3	1429.6	2035.3	1661.6	2499.4	2125.7		
	5/5	1404.0	936.9					919.7	452.6	1383.9	916.8	1615.9	1148.8	1848.1	1381	2312.2	1845.1	2776 2309	
	6/6	1684.8	1124.3							1196.5	636	1428.6	868	1660.7	1100	2124.8	1564.3	2588.8 2028.3	
SR270	3/3	1184.4	790.2	841.7	447.5	1168	773.8	1820.7	1426.5	2473.4	2079.2	2799.8	2405.6						
	4/4	1579.2	1053.6					1557.3	1031.7	2210	1684.4	2536.4	2010.8	2862.7	2337.1	3515.4	2989.8		
	5/5	1974.0	1317.0					1293.9	636.9	1946.6	1289.6	2273	1616	2599.3	1942.3	3252	2595	3904.7 3247.7	
	6/6	2368.8	1580.4							1683.2	894.8	2009.6	1221.2	2335.9	1547.5	2988.6	2200.2	3641.3 2852.9	

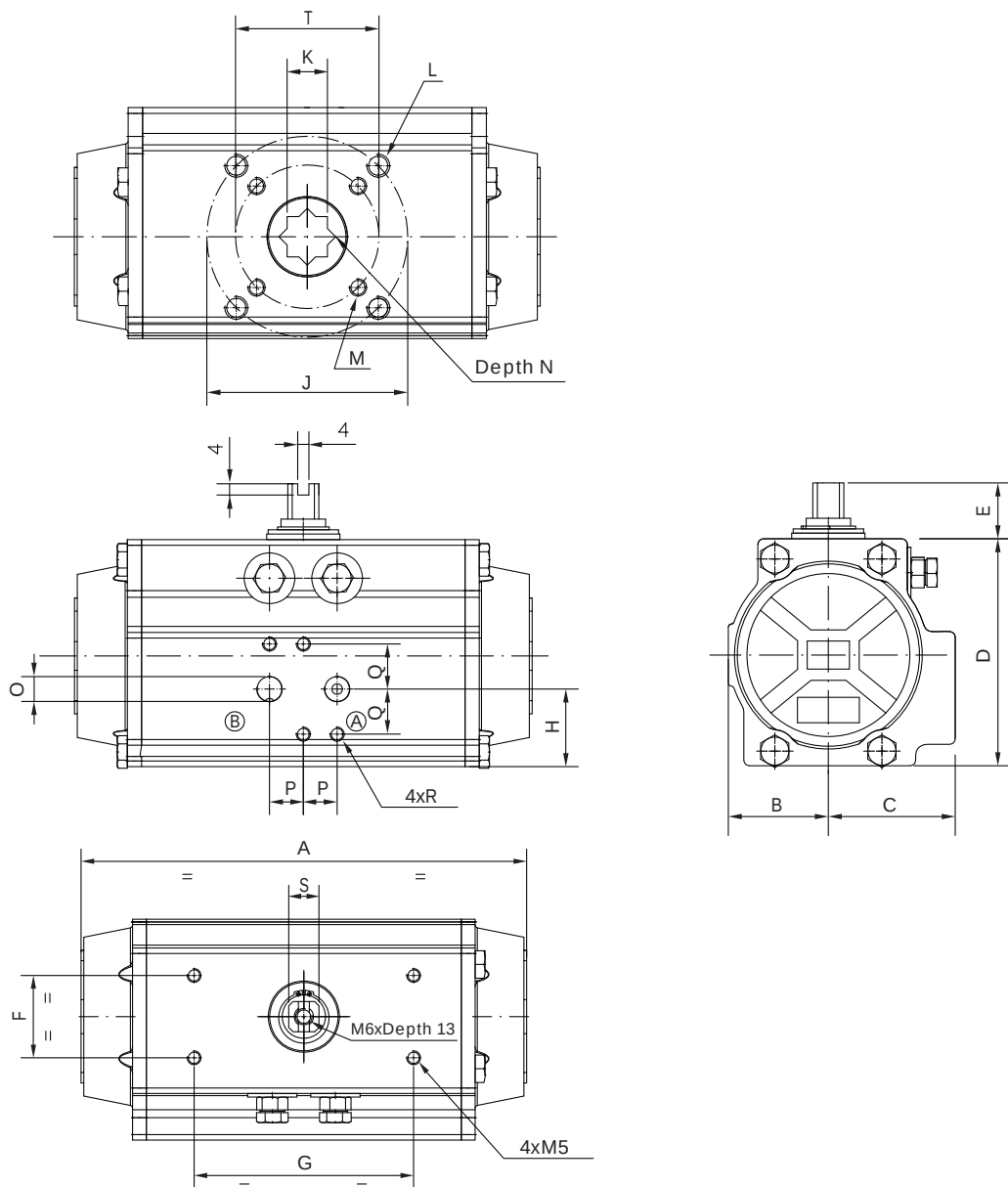
弹簧数量 Spring setting table

从SR 52至SR 125 From SR52 to SR125

数量 Set	外弹簧 External spring	内弹簧 Internal spring	气压(bar) Air supply (bar)
01	1	1	2.5(至)3/2.5 to 3
02	2	-	3(至)4/3 to 4
03	1	2	3(至)5/3 to 5
04	2	1	5(至)6/5 to 6
05	2	2	6(至)7/6 to 7

从SR 200至SR 270 From SR200 to SR270

数量 Set	外弹簧 External spring	中弹簧 Central spring	内弹簧 Internal spring	气压(bar) Air supply (bar)
01	-	2	-	2.5(至)3/2.5 to 3
02	2	-	-	3(至)4/3 to 4
03	1	2	-	3(至)5/3 to 5
04	2	-	2	4(至)5.5/4 to 5.5



◆适用于M O D 52-M O D 100
◆For mod. from 52 to 100

◆依要求提供F04安装孔
◆Upon request F04

◆逆时针旋转
◆CCW rotation

◆顺时针旋转
◆CW rotation

MOD.	ISO 5211	A	B	C	D	E	F	G	H	I	J	K	L	M	N	ISO 7/1	P	Q	R	S
52	F03-F05	139.5	30	41	69.5	20	30	80	26.5	36	50	11	M6x9	M5x7.5	12	1/8"	12	16	M5x7	11
63	F05-F07	162	35.5	45	80.5	20	30	80	27.5	50	70	14	M8x12	M6x8	16	1/8"	12	16	M5x7	14
75	F05-F07	207	42	52.5	97	20	30	80	35	50	70	17	M8x12	M6x8	19	1/8"	12	16	M5x7	17
85	F05-F07	237.5	47.5	58.5	108.5	20	30	80	42	50	70	17	M8x12	M6x8	19	1/8"	12	16	M5x7	17
100	F07-F10	271.5	55	68	121.5	20	30	80	50	70	102	17	M10x14	M8x8	20.5	1/4"	12	16	M5x7	17
115	F07-F10	328	64	73	141.5	30	30	130	50	70	102	22	M10x14	M8x12	24	1/4"	12	16	M5x7	22
125	F07-F10	366	68	80	153.5	30	30	130	61	70	102	22	M10x14	M8x12	24	1/4"	12	16	M5x7	22
140	F10-F12	428	76.5	87.5	176	30	30	130	67	102	125	27	M12x18	M10x15	29	1/4"	12	16	M5x7	27
160	F10-F12	430	86.5	100	192	30	30	130	83.5	102	125	27	M12x18	M10x15	29	1/4"	12	16	M5x7	27
180	F14	482	102	102	222	30	30	130	60	140	-	36	-	M16x25	39	1/4"	12	16	M5x7	36
200	F14	532	112	112	244	30	30	130	63	140	-	36	-	M16x25	39	1/4"	12	16	M5x7	36
240	F16	662	133	133	288	30	30	130	85	165	-	46	-	M20x30	49	3/8"	20	22.5	M6x8	36
270	F16	730	153	153	323	30	30	130	106	165	-	46	-	M20x30	49	1/2"	20	22.5	M6x8	46