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Protection and Serviceability

Representation	Type	Part and Protection				suitable for
		Body	End Caps	Drive Shaft	Pistons	
	A	ALODUR	chromatized and polyester coated	carbon steel ENP	normal anodized	general service
	Coating Colour	30 - 35 µm bright S.S.	80 - 90 µm S.S. Ral 9007	25 - 30 µm	15 - 20 µm black	
	B	ALODUR + PTFE coating	chromatized and polyester coated	carbon steel ENP	normal anodized	general service, acid or basic solutions in low concentration
	Coating Colour	30-35/25-30 µm light grey	80 - 90 µm S.S. Ral 9007	25 - 30 µm	15 - 20 µm black	
	D	ALODUR +PTFE coating	chromatized and PTFE coating	carbon steel ENP	normal anodized	aggressive environment, acid or basic solutions
	Coating Colour	30-35/25-30 µm light grey	80 - 90 µm light grey	25 - 30 µm	15 - 20 µm black	
	E	ALODUR +PTFE coating	chromatized and PTFE coating	stainless steel	normal anodized	acid or basic solutions, seawater
	Coating Colour	30-35/25-30 µm light grey	80 - 90 µm light grey		15 - 20 µm black	
	P	ALODUR	resin impregnated + hard anodized	carbon steel ENP	normal anodized	acid or basic solutions, seawater
	Coating Colour	30-35 µm bright S.S.	30 - 35 µm bright S.S.	25 - 30 µm	15 - 20 µm black	
	EC	ALODUR+ EPOXY	chromatiert + EPOXY	Edelstahl	normal anodized	general service, acid or basic solutions in low concentration
	Coating Colour	80-95 µm blue grey	80 - 95 µm blue grey		15 - 20 µm black	

Conditions of Usage

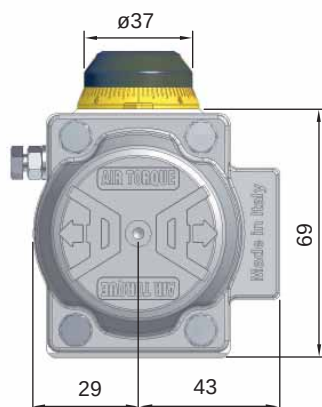
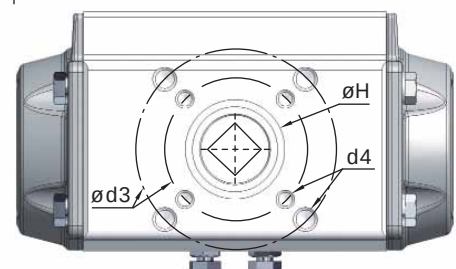
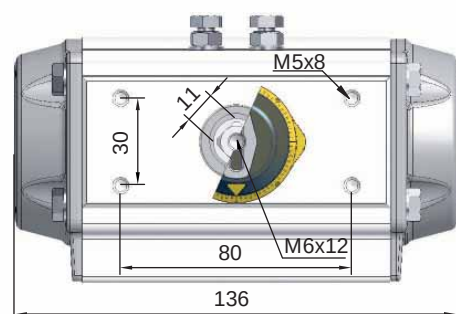
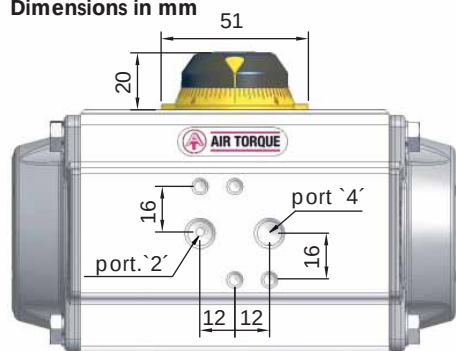
DR/SC05000 only available in protection A or P

Air Supply	Temperature Range according to Design	max. press.	Turning Range ±4° adjustable
filtered, lubricated or dry air, non corrosive media, Dp -20°C (Dew Point) (Dp min. 10°C < T _{area}), particle size < 30 µm	standard -20°C to +80°C low temperature -40°C to +80°C high temperature -15°C to +150°C	8 bar	90° 120°-135°-180° o.r.

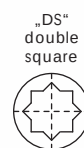
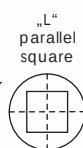
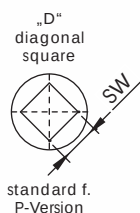
DR	Output Torque for Double Acting Actuators in Nm												
	2,5bar	3bar	3,5bar	4bar	4,2 bar	4,5bar	5bar	5,5bar	6bar	6,5bar	7bar	7,5bar	8bar
00010U	6,0	7,2	8,4	9,6	10,1	10,8	12,0	13,2	14,4	15,6	16,8	18,0	19,1
00015U	8.3	10	11.6	13.3	14	15	16.6	18.3	19.9	21.6	23.3	24.9	26.6
00030U	14.7	17.6	20.5	23.5	24.6	26.4	29.3	32	35.2	38.1	41	44	46.9
00060U	29.1	34.9	40.7	46.5	48.9	52.4	58.2	64	69.8	75.6	81.4	87.3	93.1
00100U	45.8	54.9	64.1	73.2	76.9	82.4	91.5	101	110	120	128	138	146
00150U	66.5	79.8	93.1	106	112	120	133	146	160	173	186	199	213
00220U	107	129	150	172	181	193	215	236	258	279	301	322	344
00300U	138	166	194	222	233	249	277	305	332	360	388	415	443
00450U	217	261	304	348	365	391	435	478	522	565	609	652	696
00600U	284	340	397	454	477	511	567	624	681	737	794	851	908
00900U	383	459	536	613	643	689	766	842	919	996	1072	1149	1225
01200U	532	638	745	851	893	957	1064	1170	1276	1383	1489	1595	1702
02000U	893	1072	1251	1430	1501	1608	1787	1966	2144	2318	2502	2684	2859
03000U	1297	1556	1815	2075	2179	2334	2594	2853	3112	3372	3631	3890	4150
04000U	1795	2154	2513	2872	3015	3231	3590	3949	4308	4667	5026	5400	5744
05000U	2252	2703	3153	3604	3784	4054	4504	4955	5405	5855	6306	6756	7207
10000U	4169	5003	5837	6671	7005	7505	8339	9173	10007	10841	11674		

example of layout DR900 at 5,5bar air supply -> 842Nm output torque

Dimensions in mm



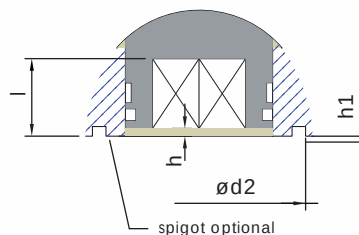
optional squares



standard f.
A-Version

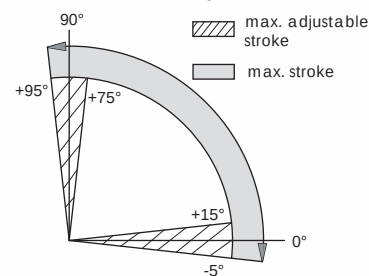
ISO 5211 - available flanges

		Standard	optional	
ISO 5211		F04	F03 + F05	
Ø d2		30	25	-
d3		42	36	50
Ø d4		M5 x 8	M5 x 8	M6 x 9
Ø H		30	25	
SW x l min.	D	-	9 x 11 - 11 x 12	
	DS	11 x 12	11 x 12	
h min.		0,5	0,5	0,5
h1		1.5	1.5	-

**Connection / Attachment**

Pressure connection port 2 and 4	G1/8"
Ancillaries attachment	AA0

Rotation and Stroke adjustment



Pressure	Output torque for double acting and spring return in Nm											Spring torque 90° 0°	approx. weight in kg
	2,5 bar 0° 90°	3 bar 0° 90°	3,5 bar 0° 90°	4 bar 0° 90°	4,2 bar 0° 90°	4,5 bar 0° 90°	5 bar 0° 90°	5,5 bar 0° 90°	6 bar 0° 90°	7 bar 0° 90°	8 bar 0° 90°		
DR	8.3	10	11.6	13.3	14	15	16.6	18.3	19.9	23.3	26.6	-	1.1

Springset

SC S1	5,0	3,0	7,0	4,7	8,0	6,3	10,0	8,0	9,4	8,3	11,7	9,6	13,3	11,3							5,3	3,3	1,12		
SC S2	4,0	1,9	6,0	3,6	7,7	5,3	9,3	6,9	9,0	7,4	11,0	8,6	12,7	10,2	14,3	11,9					6,4	4	1,14		
SC S3			5,3	2,5	7,0	4,2	8,7	5,8	8,2	6,6	10,3	7,5	12,0	9,2	13,7	10,8	15,3	12,5			7,4	4,6	1,16		
SC S4					6,3	3,0	8,0	5,0	7,6	5,8	9,7	6,4	11,3	8,1	13,0	9,8	14,7	11,4	18,0	14,7		8,5	5,3	1,18	
SC S5							7,3	3,7	7,0	4,9	9,0	5,4	10,7	7,0	12,3	8,7	14,0	10,0	17,3	13,7	20,6	17,0	9,6	5,9	1,2
SC S6											8,4	4,3	10,0	6,0	11,7	7,6	13,3	9,3	16,7	12,6	20,0	16,0	10,6	6,6	1,22
SC S7													9,4	4,9	11,0	6,6	13,0	8,2	16,0	11,6	19,3	14,9	11,7	7,3	1,24
SC S8															10,4	6,0	12,0	7,2	15,3	10,5	18,7	13,8	12,8	7,9	1,26

Pressure max.	Rotation (STD) (C)	Screw stroke adjustment	Chamber Ø (mm)	Air volume (L)		Moving time (sec.) (A)		Operating temperature (°C) (B)		
				OPEN	CLOSE	OPEN	CLOSE	ST (Standard)	HT (High temperature)	LLT (Extreme low temperature)
8 bar	0° - 90°	for 1° 1/6 rotation	50	0,09	0,15	D 0,20 S 0,25	D 0,25 S 0,30	- 40 to + 80	- 15 to + 150	- 55 to + 80

(A) The above indicated moving time of the actuator is obtained under the following test conditions: (1) room temperature, (2) actuator stroke 90°, (3) solenoid valve with Ø 4 mm and flow capacity Qn 400 L/min., (4) inside pipe Ø 8 mm, (5) medium clean air, (6) air supply pressure 5.5 bar (79.75 Psi), (7) actuator without external resistance load. **Caution:** It has to be expected, e.g. for field applications, when one or more of the above parameters are different, the moving time will be different.

(B) Every temperature range option requires proper components and lubricant. Please contact Air Torque GmbH.

Operating Medium:

The operating medium must be free of dust and oil. The maximum particle size must not exceed 30µ. (ISO 8573 Part1, Class5). In order to prevent water condensation and/or solidification (ice when actuator works below 0°C), the operating medium must have a dew point equal to -20°C or at least 10°C below the ambient temperature (ISO 8573 Part1, Class3)



Actuator Sizes German

Valve attachment

Actuator Sizes international

Type	Flange ISO 5211	Double Square	Square	Type Marking
DR/SC 00010U	F03 / F04	9 / 11	-	AT 045
DR/SC 00015U	F03F05 / F04	11	9 / 11	AT 051U
DR/SC 00030U	F03F05 / F04F07 / F05F07 / F05	11 / 14	9 / 14	AT 101U
DR/SC 00060U	F04F07 / F05F07 / F05	14 / 17	11 / 14 / 17	AT 201U
DR/SC 00100U	F05F07 / F07	17	11 / 14 / 17	AT 251U
DR/SC 00150U	F05F07 / F07F10 / F07	17 / 22	14 / 17 / 22	AT 301U
DR/SC 00220U	F07F10 / F10	17 / 22	14 / 22	AT 351U
DR/SC 00300U	F07F10 / F10	22 / 27	17 / 22	AT 401U
DR/SC 00450U	F10F12 / F12	27	22 / 27	AT 451U
DR/SC 00600U	F10F12 / F12	27	22 / 27	AT 501U
DR/SC 00900U	F10F12 / F14	27 / 36	22 / 36	AT 551U
DR/SC 01200U	F10F12 / F14	27 / 36	22 / 36	AT 601U
DR/SC 02000U	F12 / F14 / F16	36 / 46	27 / 46	AT 651U
DR/SC 03000U	F12 / F14 / F16	36 / 46	27 / 46	AT 701U
DR/SC 04000U	F14 / F16 / F16F25	46 / 55	55	AT 751U
DR/SC 05000U	F16F25 / F25	46 / 55	55	AT 801U
DR/SC 10000U	F16F25F30 / F30	55 / 75	75	AT 1004U

- Standard bold printet

- all types except P version with double flange in some sizes + double square
- Version P P only available with single flange and square
- EC Version only available with stainless steel drive shaft and double square

How to order:

Pos.1: Actuator type - Feature 1

- D - double acting
- S - single acting

Pos.2: Actuator type - Feature 2

- R - Clockwise (CW) > for double acting actuators
- L - CounterCW >
- C - Spring close > for single acting actuators
- O - Spring open >

Pos.3: Size

- last digit = 0 -> turning range 90°
- last digit = 2 -> turning range 120°
- last digit = 3 -> turning range 135°
- last digit = 5 -> turning range 145°
- last digit = 8 -> turning range 180°

Pos.4: Number of springs per side

- only for single acting actuators

Pos.5: Actuator type - Feature 3

- U (Upgrade) = Edition 2010
- without attribute = Edition 2000

Pos.6: Flange Connection

- possible combinations -> s. top table

Pos.7: Key Size

- possible combinations -> s. top table

Pos.8: Protection Levels

- Versions: A/B/D/E/P/EC/S*

Pos.9: Cam

- without attribute = conical cam with graduated ring
- Z (cylindric) = multifunktional indicator

Pos.10: Special Attributes

- 3 - 3 position
- B - 100% or 50% stroke adjustment
- D - hydraulic damper
- F - special colour
- FM - Fail Mid
- H - high temperature
- N - internal character
- Q - for assembly across the line
- S - fast acting
- T - extreme low temperature
- W - control medium clean water
- Y - centerring*
- G - automatic safety device**

Ordering Example:

Position	1	2	3	4	5	6	7	8	9	10
Example	S	C	00100	-4	U	F05F07	17	A	Z	H

Single acting actuator, spring close, size 00100, 4 springs per side (symmetric sizing for control pressure = 4bar),
Edition 2010, double flange F05F07, double square 17, version A, multifunction indicator, high temperature

*Details for S = stainless steel see
data sheet 0306 / 0524

**not for P-Version, included in standard version

***on request for some sizes