DATA SHEET

AT-HDC EN

AT-HDC

Compact scotch yoke pneumatic actuators (metric version)

Application

Rotary pneumatic actuators for remote operation (on/off or modulating duties) of industrial valves such as ball valves, butterfly valves and plug valves.

The AT-HDC actuators are available in two configurations: double acting and single acting.

Mechanical Spring Return is for fail-safe applications and can be assembled for "Fail Close" or "Fail Open" safety function.

Double acting actuators can be used for a "Fail Last" Position safety function.

Special features

- Power module with tie rods as standard.
- Available configurations suitable for a wide temperature range from -60°C up to +150°C.
- Symmetrical yoke available for a wide torque range coverage.
- Two indipendent external travel stop adjustments.
- Wide variety of power modules, manual override and accessories in combination with standardized central bodies.
- Ancillary attachments according to international standards for direct mounting of control devices.
- Fixing points for control panel in both central module sides.
- Extended working temperature range as standard.
- Direct mounting over the valve with standardized bottom flange interface.
- Low friction mechanism for maximum efficiency.
- Greased for life.
- Easy maintenance.
- Unique and patented mechanism for high frequency cicle service.
- Weatherproof design with high corrosion resistance material and multilayer coating.
- Special coating available in compliance with customer specification.
- Bottom flange interface and stem connection in full compliace to ISO 5211 to allow direct mounting over the valve.

DOUBLE ACTING

SINGLE ACTING

Fig. 1: *AIR TORQUE AT-HDC actuators*

Versions

- Spring return.
- Double acting.

Manual overrides

- Actuator with jack screw.
- Actuator with manual hydraulic pump.

Further versions

- Actuator with Damper system.
- Actuator with hydraulic power cylinder for high pressure supply.
- Actuator suitable for sweet dry natural gas as power media.

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Principle of operation

1. DOUBLE ACTING

Refer to Fig. 2.

In case of the double acting configuration air pressure is necessary for both strokes (A and B).

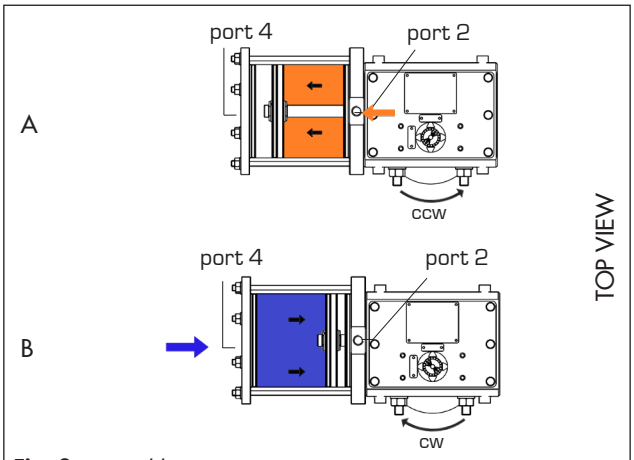


Fig. 2: *Double acting operation*

2. SINGLE ACTING

Refer to Fig. 3.

Air supplied through Port 2 (A') applies a linear force on the piston surface generating the yoke rotation and driving the valve to a defined position. At the same time the actuator spring is compressed exhausting the air through Port 4.

When air pressure is discharged through Port 2 (B'), the spring is automatically released, driving the yoke and the piston back to the original position and thus the valve to the fail-safe position.

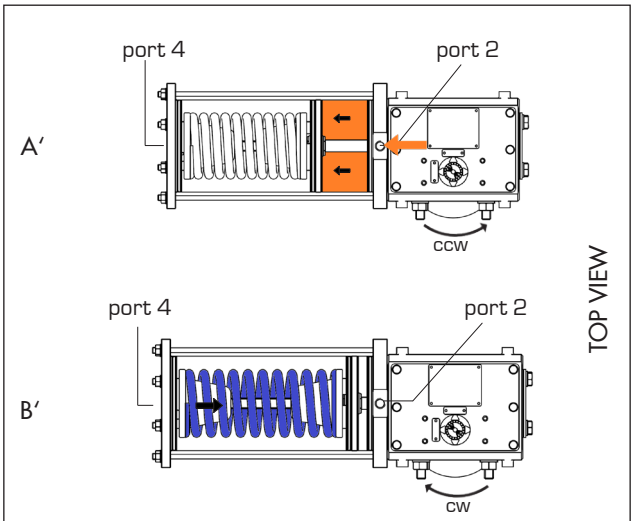


Fig. 3: *Single acting operation*

Direction of action and stroke adjustment

The standard rotating direction for the AT-HDC actuators is clockwise to close (from TOP VIEW).

Standard AT-HDC actuators are designed for 90° rotating angle, with travel stop allowing adjustment for ±5° on both the close (0°) and open (90°) position.

For single acting actuator in case of pressure, power or signal failure the springs drive the actuator in the fail position that can be FAIL OPEN or FAIL CLOSE.

Power operating media

Dry or lubricated air, inert/non-corrosive gases or hydraulic oil.

- Make sure the operating media is compatible with the actuator internal parts and lubricant.
- In case of pressure medium different than Group 2 fluids according to the PED 2014/68/EU, contact Air Torque.
- Sweet dry natural gas specific configuration.
- The operating media must have a dew point equal to 20°C (-4°F) or at least 10°C (18°F) below the ambient temperature.
- The maximum particle size contained into the operating media must not exceed 40 µm.

Further information

- The AT-HDC actuators can be controlled by directly mounted devices or remote control systems.

Installation

Refer to the EB AT-HDC mounting and operating instructions.

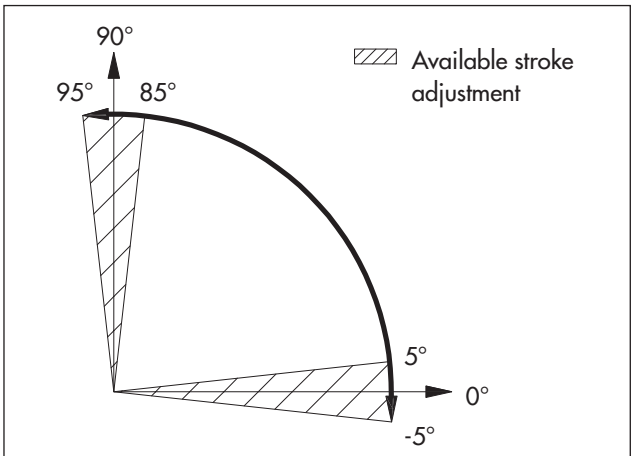


Fig. 4: *Stroke adjustment range*

Fast acting

The Fast Acting (FA) actuators are special actuators able to stroke faster respect the standard actuators. They are available both in double acting and in spring return configutations.

This type of actuators has enlarged ports and internal canalization which allows an higher flow rate of the the actuator and so a quicker operation in closing and/or opening direction.

Difference working temperature range configurations

In case minimum working temperature up to -60°C or maximum working temperature up to +150°C are required, the

following special product configation are available:

- S v*ersion for standard operating temperature range:*

-40° C (-40° F) → +80° C (+176° F);

– L version for extreme low operating temperature range:
-60° C (-76° F) → +80° C (+176° F);

– H version for high operating temperature range:

-15° C (+5° F) → +150° C (+302° F).

Special painting according to ISO 12944-2

Different protection levels available in order to meet the field corrosion resistance requirements.

The protection levels are different combination of materials and painting cycles/types.

According to the ISO 12944-2 the standard available protection levels with single layer painting go approx. from the C3 level up to C5 level.

Special paint systems are available according to customer specification, including multilayer painting.

Natural gas operated actuator

The AT-HDC actuators are operated with dry air or inert gas. Special actuator configurations are available to operate with natural gas (sweet and dry or sour) as supply media.

Contact AIR TORQUE for further detailed information.

Table 1: *Technical data*

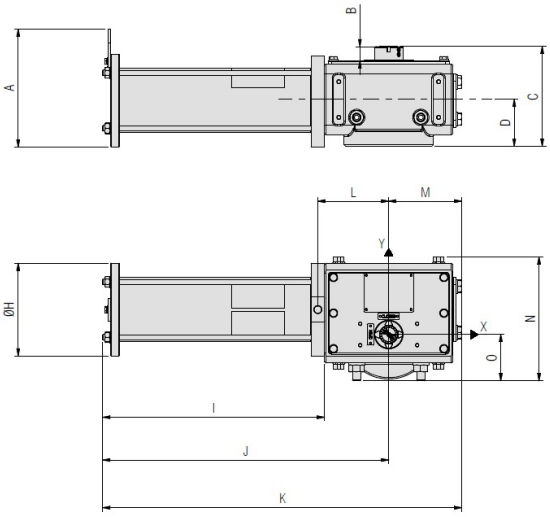
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	0,46	0,47	1,10						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

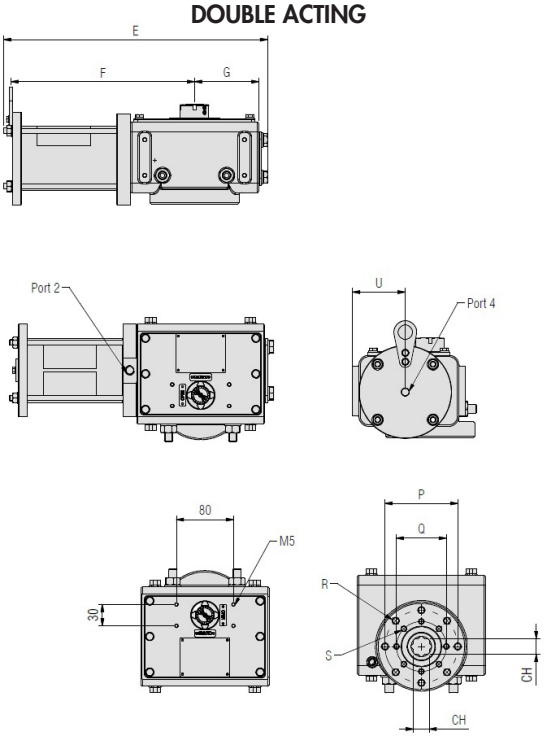
Note:

- Maximum transmissible torque: 500 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	165	165		-	-	-
B	20	20		-	-	-
C	140	140		-	-	-
D	66	66		-	-	-
E	370	-		-	-	-
F	258	-		-	-	-
G	90	-		-	-	-
H	-	130		-	-	-
I	-	311		-	-	-
J	-	401		-	-	-
K	-	504		-	-	-
L	-	100		-	-	-
M	-	102		-	-	-
N	-	174		-	-	-
O	-	65		-	-	-
Approx. Weight (Kg)	16,2	19	20	-	-	-

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F07+F10
R / S	M10/M8
Ø P	102
Ø Q	70
CH	22D80

Center of gravity

		X	Y
DA		53,8	-45,4
SPRING SET	02	100,6	-45,8
	04	28,55	45,94
	06	-	-
	08	-	-
	10	-	-

Fig. 1: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	69	66	82	79	96	92	110	105	124	119	137	132	151	145	274	263
Run	34	33	41	40	48	46	55	53	62	59	69	66	75	72	137	132
End	69	66	82	79	96	92	110	105	124	119	137	132	151	145	274	263

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	99					65	79	93	146	120	134	147	161	175	189	216
	Run	40					20	27	34	41	48	55	62	69	76	83	97
	End	58					25	38	52	66	79	93	107	121	134	148	176
04	Start	146									92	106	120	133	147	161	188
	Run	59									28	35	42	49	56	63	77
	End	86									32	46	60	74	87	101	129
06	Start	Configuration not available															
	Run																
	End																
08	Start	Configuration not available															
	Run																
	End																
10	Start	Configuration not available															
	Run																
	End																

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

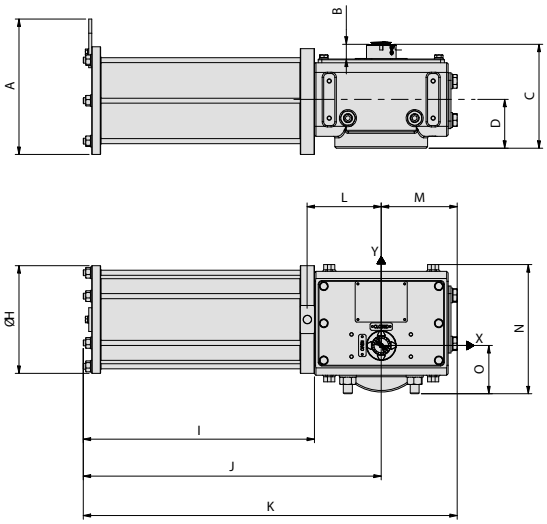
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	0,73	0,73	1,20						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

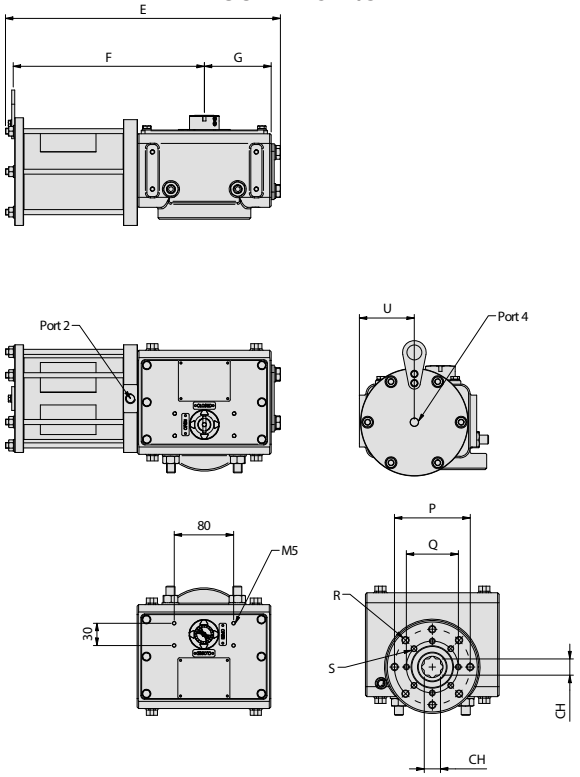
Note:

- Maximum transmissible torque: 500 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	182	182				-
B	20	20				-
C	140	140				-
D	66	66				-
E	370	-				-
F	258	-				-
G	90	-				-
H	-	130				-
I	-	311				-
J	-	401				-
K	-	504				-
L	-	100				-
M	-	102				-
N	-	174				-
O	-	65				-
Approx. Weight (Kg)	18	22	23	24	23	-

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F07+F10
R / S	M10/M8
Ø P	102
Ø Q	70
CH	22D80

Center of gravity

		X	Y
DA		27,90	45,64
SPRING SET	02	29,11	46,03
	04	29,16	46,05
	06	29,41	46,12
	08	29,48	46,17
	10	-	-

Fig. 2: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	107	104	129	125	150	146	172	167	193	188	214	209	236	230	274	263
Run	54	52	64	63	75	73	86	84	96	94	107	104	118	115	137	132
End	107	104	129	125	150	146	172	167	193	188	214	209	236	230	274	263

SINGLE ACTING																
Spring	**Position**	**Spring torque**	**Supply pressure**													
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	99		70	92	113	135	156	177	199	220	242	263	285	306	328	370
	Run	40		23	34	45	56	66	77	88	99	109	120	131	142	152	174
	End	58		30	51	73	94	116	137	158	180	201	223	244	266	287	330
04	Start	146				85	107	128	150	171	193	214	236	257	278	300	343
	Run	59				24	35	46	57	68	79	90	101	111	122	133	154
	End	86				26	47	68	90	111	133	154	176	197	219	240	283
06	Start	211								122	143	164	186	207	229	250	293
	Run	88								38	49	60	71	82	93	104	125
	End	136								47	68	90	111	133	154	175	218
08	Start	272											157	178	200	221	264
	Run	110											45	56	68	79	101
	End	165											49	71	92	114	157
10	Start	Configuration not available															
	Run																
	End																

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

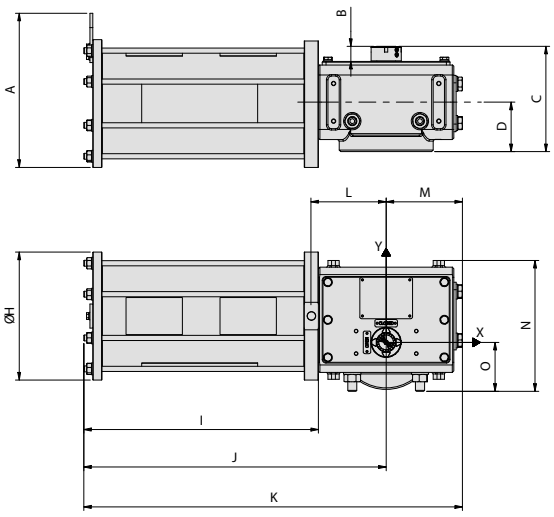
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	1,15	1,14	1,30						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

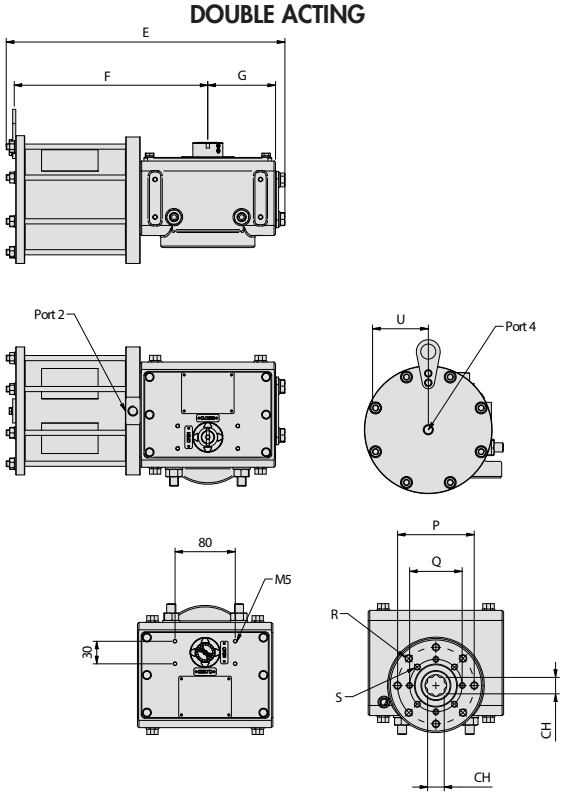
Note:

- Maximum transmissible torque: 500 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	205	205				
B	20	20				
C	140	140				
D	66	66				
E	370	-				
F	258	-				
G	90	-				
H	170	170				
I	311	311				
J	401	401				
K	504	504				
L	100	100				
M	102	102				
N	174	174				
O	65	65				
Approx. Weight (Kg)	21	26	26	27	27	27

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F07+F10
R / S	M10/M8
Ø P	102
Ø Q	70
CH	22D80

Center of gravity

		X	Y
DA		28,86	45,95
SPRING SET	02	29,88	46,29
	04	29,91	46,30
	06	30,10	46,30
	08	30,18	46,37
	10	30,15	46,39

Fig. 3: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	168	165	201	198	235	231	268	264	302	297	335	330	369	362	274	263
Run	84	82	101	99	117	115	134	132	151	148	168	165	184	181	137	132
End	168	165	201	198	235	231	268	264	302	297	335	330	369	362	274	263

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	99	109	143	176	210	243	277	310	344	377	411	444	478	M.O.P. exceeded		
	Run	40	43	60	77	93	110	127	144	160	177	194	211	228			
	End	58	69	102	136	169	203	236	270	303	337	370	404	437			
04	Start	146	81	115	148	182	215	249	282	316	349	383	416	450	483	M.O.P. exceeded	
	Run	59	21	40	57	74	91	107	124	141	158	175	191	208	225		
	End	86	22	55	89	122	156	189	223	256	290	323	357	390	424		
06	Start	211				132	166	199	233	266	300	333	367	400	434	467	M.O.P. exceeded
	Run	88				44	61	78	95	112	129	145	162	179	196	213	
	End	136				58	91	125	158	192	225	259	292	326	359	393	
08	Start	272						170	204	237	271	304	338	371	405	438	M.O.P. exceeded
	Run	110						52	70	87	104	121	138	155	172	188	
	End	165						63	96	130	163	197	230	264	297	331	
10	Start	361									217	251	284	318	351	385	452
	Run	146									64	82	100	117	134	151	185
	End	218									74	108	141	175	208	242	309

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

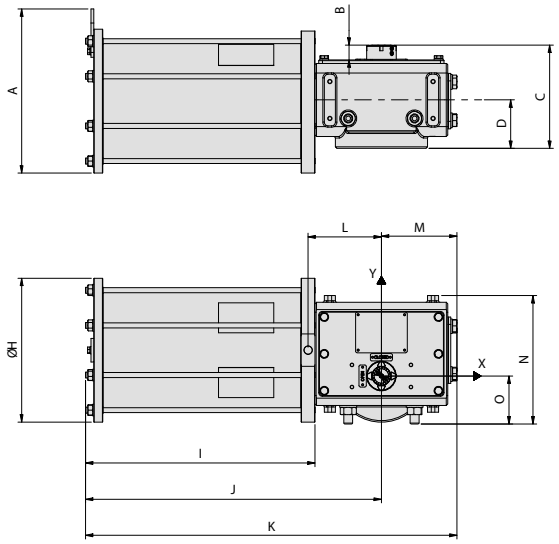
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	1,66	1,64	1,40						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

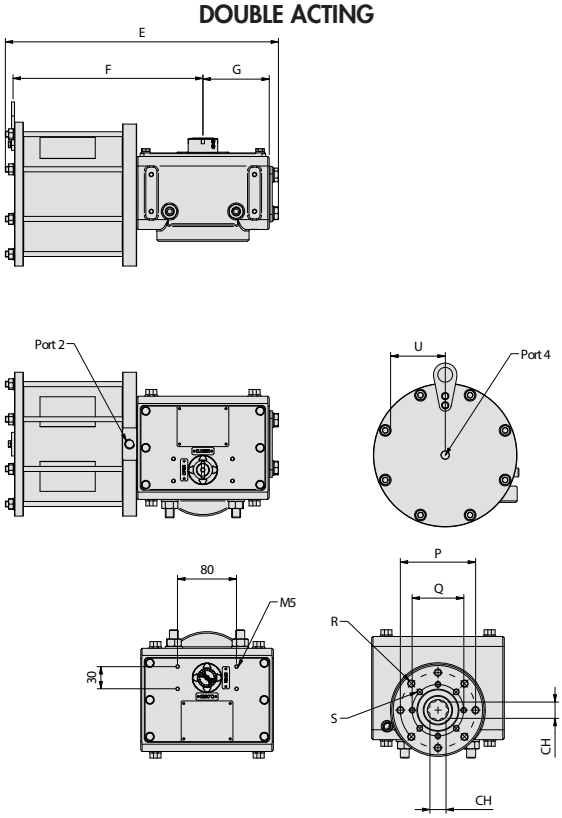
Note:

- Maximum transmissible torque: 500 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	222	-	222			
B	20	-	20			
C	140	-	140			
D	66	-	66			
E	370	-	-			
F	258	-	-			
G	90	-	-			
H	130	-	130			
I	311	-	311			
J	401	-	401			
K	504	-	504			
L	100	-	100			
M	102	-	102			
N	174	-	174			
O	65	-	65			
Approx. Weight (Kg)	25	-	30	31	24	31

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F07+F10
R / S	M10/M8
Ø P	102
Ø Q	70
CH	22D80

Center of gravity

		X	Y
DA		29,67	46,19
SPRING SET	02	-	-
	04	30,57	46,19
	06	30,70	46,54
	08	29,48	46,16
	10	30,73	46,54

Fig. 4: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	241	238	289	286	338	334	386	382	434	429	482	477	M.O.P. exceeded			
Run	121	119	145	143	169	167	193	191	217	215	241	238				
End	241	238	289	286	338	334	386	382	434	429	482	477				

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	Configuration not available															
	Run																
	End																
04	Start	146	155	203	252	300	348	396	445	493	M.O.P. exceeded						
	Run	59	60	85	109	133	157	181	205	230							
	End	86	95	144	192	240	288	337	385	433							
06	Start	211	105	154	202	250	298	347	395	443	491	M.O.P. exceeded					
	Run	88	29	55	79	104	128	152	176	201	225						
	End	136	31	79	127	175	224	272	320	368	417						
08	Start	272			173	221	269	317	366	414	462	M.O.P. exceeded					
	Run	110			53	79	103	128	152	176	201						
	End	165			65	114	162	210	258	307	355						
10	Start	361					216	264	313	361	409	457	M.O.P. exceeded				
	Run	146					63	89	114	139	163	187					
	End	218					73	121	169	218	266	314					

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

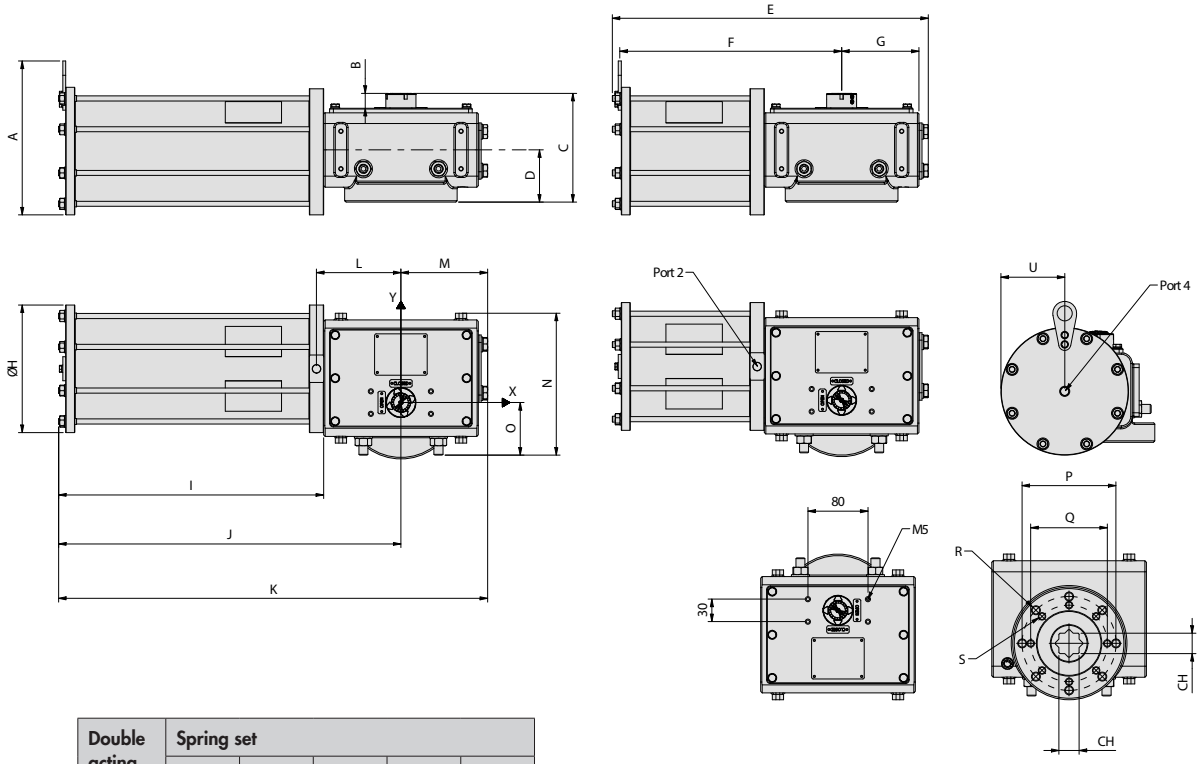
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	1,39	1,39	1,50						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

Note:

- Maximum transmissible torque: 1.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING **DOUBLE ACTING**



	Double acting	Spring set				
		02	04	06	08	10
A	205	205			-	-
B	20	20			-	-
C	145	145			-	-
D	70	70			-	-
E	421	-			-	-
F	295	-			-	-
G	103	-			-	-
H	170	170			-	-
I	353	353			-	-
J	456	456			-	-
K	571	571			-	-
L	112	112			-	-
M	115	115			-	-
N	189	189			-	-
O	70	70			-	-
Approx. Weight (Kg)	26	33	34	34	-	-

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F10-F12
R / S	M12/M10
Ø P	125
Ø Q	102
CH	27D

Center of gravity

		X	Y
DA		-79,38	44,46
SPRING SET	02	-145,9	45,30
	04	-146,5	45,34
	06	-147,4	45,36
	08	-	-
	10	-	-

Fig. 5: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	215	212	258	254	302	297	345	339	388	381	431	424	474	466	274	263
Run	108	106	129	127	151	148	172	169	194	191	215	212	237	233	137	132
End	215	212	258	254	302	297	345	339	388	381	431	424	474	466	274	263

SINGLE ACTING																
Spring	**Position**	**Spring torque**	**Supply pressure**													
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	361						206	249	292	335	378	421	464	507	550	637
	Run	148						61	83	106	128	150	171	193	215	236	280
	End	225						70	113	156	199	242	285	328	371	414	500
04	Start	447								240	283	327	370	413	456	499	585
	Run	183								66	90	112	134	156	178	200	243
	End	277								70	113	156	199	242	285	328	414
06	Start	544											306	350	393	436	522
	Run	223											89	113	135	157	201
	End	340											102	145	188	231	318
08	Start	Configuration not available															
	Run																
	End																
10	Start	Configuration not available															
	Run																
	End																

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

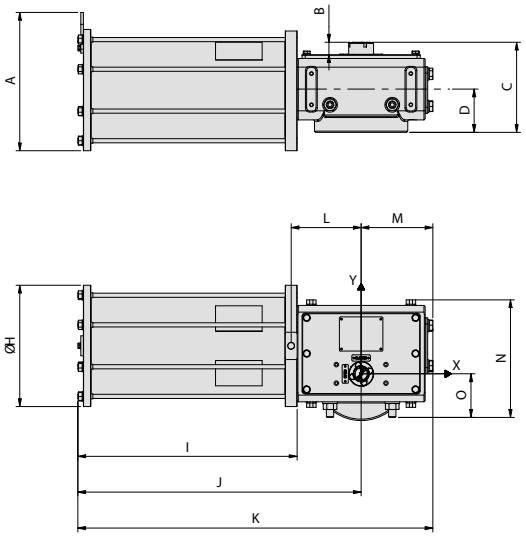
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	2,01	2,00	1,60						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

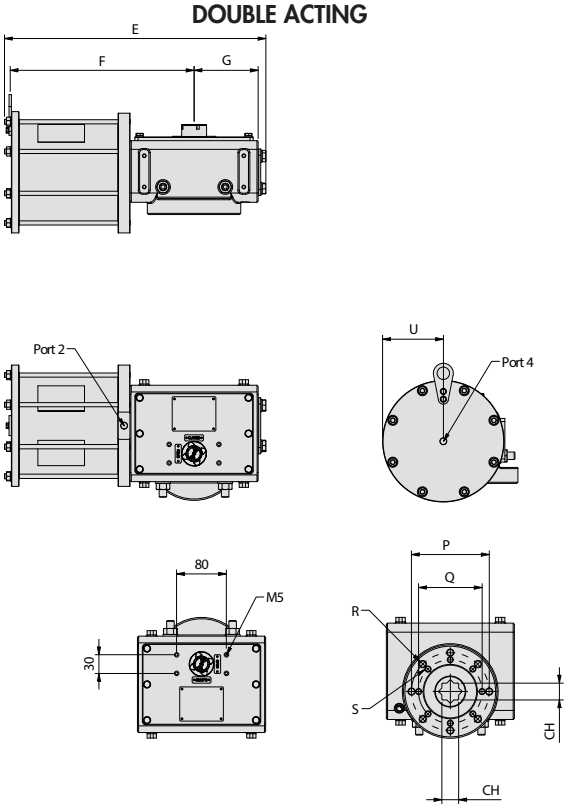
Note:

- Maximum transmissible torque: 1.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	222	222				
B	20	20				
C	145	145				
D	70	70				
E	421	-				
F	295	-				
G	103	-				
H	195	195				
I	353	353				
J	456	456				
K	571	571				
L	112	112				
M	115	115				
N	189	189				
O	70	70				
Approx. Weight (Kg)	29	37	38	38	38	39

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F10-F12
R / S	M12/M10
Ø P	125
Ø Q	102
CH	27D

Center of gravity

		X	Y
DA		-90,97	44,85
SPRING SET	02	-155,1	45,55
	04	-156,7	45,56
	06	-157,5	45,55
	08	-158,1	45,59
	10	-160,5	45,64

Fig. 6: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	310	307	372	368	434	429	496	491	558	552	620	613	682	675	274	263
Run	155	153	186	184	217	215	248	245	279	276	310	307	341	337	137	132
End	310	307	372	368	434	429	496	491	558	552	620	613	682	675	274	263

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	361			209	271	333	395	457	519	581	643	706	768	830	892	M.O.P. exceeded
	Run	148			62	95	127	158	190	221	252	283	314	345	376	408	
	End	225			73	135	197	259	321	383	445	507	569	631	693	755	
04	Start	447					282	344	406	468	530	592	654	716	778	840	964
	Run	183					89	121	153	184	216	247	278	309	341	372	434
	End	277					111	173	235	297	359	421	483	545	607	669	793
06	Start	544						281	343	405	467	529	591	653	715	777	901
	Run	223						75	109	141	173	205	236	268	299	330	392
	End	340						76	138	200	262	324	386	449	511	573	697
08	Start	639								340	402	464	527	589	651	713	837
	Run	264								96	130	162	194	226	257	288	351
	End	404								105	167	229	291	353	415	477	601
10	Start	756										410	472	534	596	658	782
	Run	307										110	144	177	209	241	304
	End	459										112	174	236	299	361	485

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

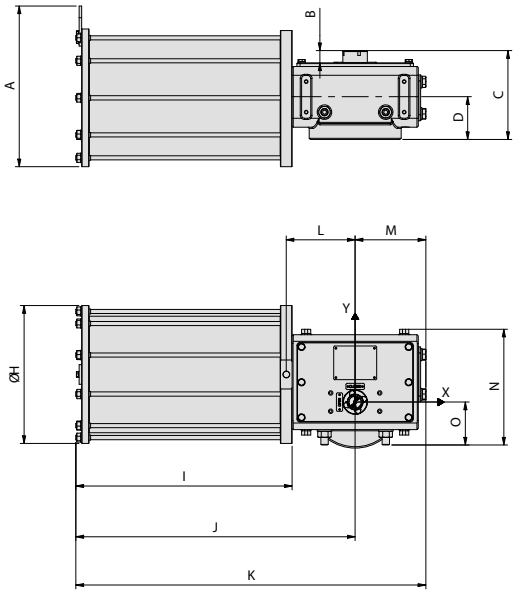
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	2,74	2,72	1,70						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

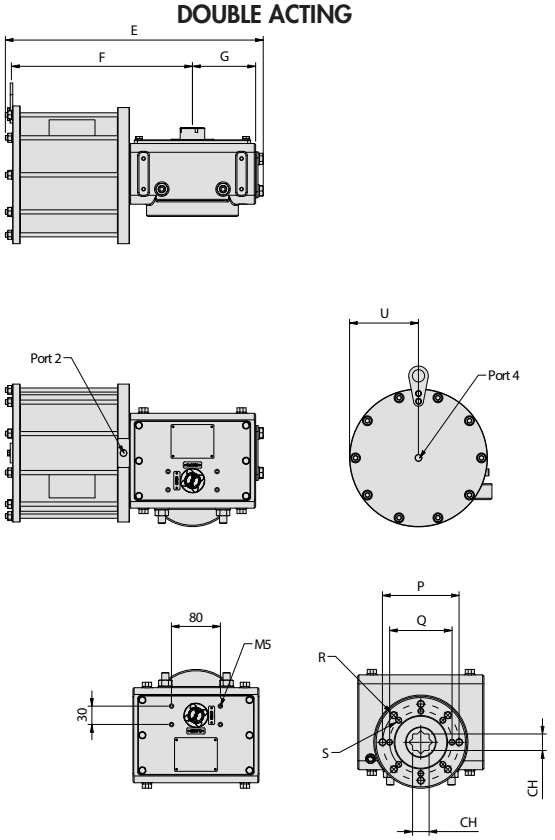
Note:

- Maximum transmissible torque: 1.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	262	262				
B	20	20				
C	145	145				
D	70	70				
E	421	-				
F	295	-				
G	103	-				
H	225	225				
I	353	353				
J	456	456				
K	571	571				
L	112	112				
M	115	115				
N	189	189				
O	70	70				
Approx. Weight (Kg)	35	46	46	46	47	47

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F10-F12
R / S	M12/M10
Ø P	125
Ø Q	102
CH	27D

Center of gravity

		X	Y
DA		-107,3	45,41
SPRING SET	02	-174,7	45,98
	04	-175,3	45,99
	06	-175,9	46,00
	08	-176,4	46,03
	10	-177,8	46,06

Fig. 7: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	422	419	507	502	591	586	675	670	760	753	844	837	929	921	M.O.P. exceeded	
Run	211	209	253	251	295	293	338	335	380	377	422	419	464	460		
End	422	419	507	502	591	586	675	670	760	753	844	837	929	921		

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	361	197	282	366	451	535	619	704	788	873	957	M.O.P. exceeded				
	Run	148	56	100	143	186	229	271	313	356	398	440					
	End	225	61	146	230	314	399	483	568	652	737	821					
04	Start	447			314	399	483	568	652	737	821	905	990	M.O.P. exceeded			
	Run	183			106	149	192	235	277	320	362	404	447				
	End	277			144	228	313	397	481	566	650	735	819				
06	Start	544				336	420	505	589	673	758	842	927	M.O.P. exceeded			
	Run	223				105	149	193	235	278	321	363	405				
	End	340				131	216	300	385	469	554	638	722				
08	Start	639					356	440	525	609	694	778	862	947	M.O.P. exceeded		
	Run	264					105	150	193	236	279	321	364	406			
	End	404					121	205	290	374	458	543	627	712			
10	Start	756							470	554	639	723	808	892	977	M.O.P. exceeded	
	Run	307							143	188	232	275	318	360	403		
	End	459							173	257	342	426	510	595	679		

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

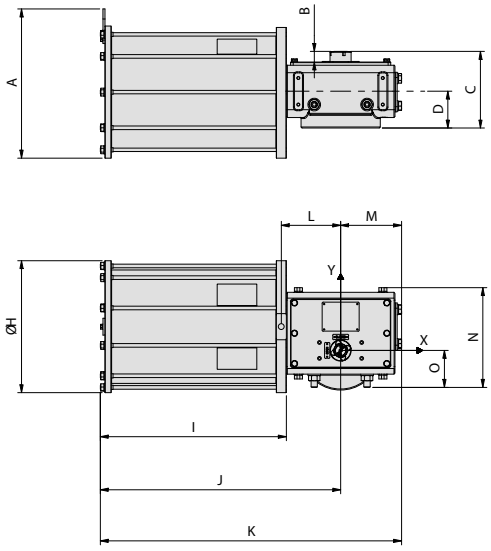
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	3,59	3,55	1,80						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

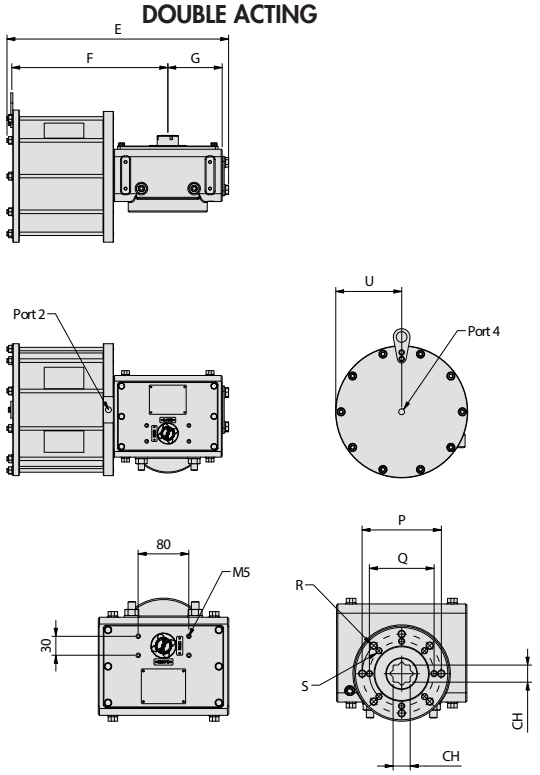
Note:

- Maximum transmissible torque: 1.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	282	282				
B	20	20				
C	145	145				
D	70	70				
E	421	-				
F	295	-				
G	103	-				
H	250	250				
I	353	353				
J	456	456				
K	571	571				
L	112	112				
M	115	115				
N	189	189				
O	70	70				
Approx. Weight (Kg)	40	51	51	52	52	53

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard
ISO 5211	F10-F12
R / S	M12/M10
Ø P	125
Ø Q	102
CH	27D

Center of gravity

		X	Y
DA		-177,9	45,69
SPRING SET	02	-181,4	46,18
	04	-182,3	46,19
	06	-182,8	46,20
	08	-183,2	46,22
	10	-184,6	46,25

Fig. 8: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																	
Position	**Supply pressure**																
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar		
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	
Start	551	548	662	657	772	767	882	877	992	986	M.O.P. exceeded						
Run	276	274	331	329	386	383	441	438	496	493							
End	551	548	662	657	772	767	882	877	992	986							

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	361	326	437	547	657	768	878	988	M.O.P. exceeded							
	Run	148	123	179	235	290	345	401	456								
	End	225	190	301	411	521	631	742	852								
04	Start	447	275	385	495	606	716	826	936	M.O.P. exceeded							
	Run	183	85	142	198	254	309	365	420								
	End	277	104	214	325	435	545	655	766								
06	Start	544		322	432	543	653	763	873	984	M.O.P. exceeded						
	Run	223		98	156	212	268	323	379	434							
	End	340		118	228	338	449	559	669	779							
08	Start	639			368	478	589	699	809	919	M.O.P. exceeded						
	Run	264			111	169	226	281	337	393							
	End	404			133	243	353	464	574	684							
10	Start	756				423	534	644	754	865	975	M.O.P. exceeded					
	Run	307				118	177	234	290	346	402						
	End	459				126	236	347	457	567	678						

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

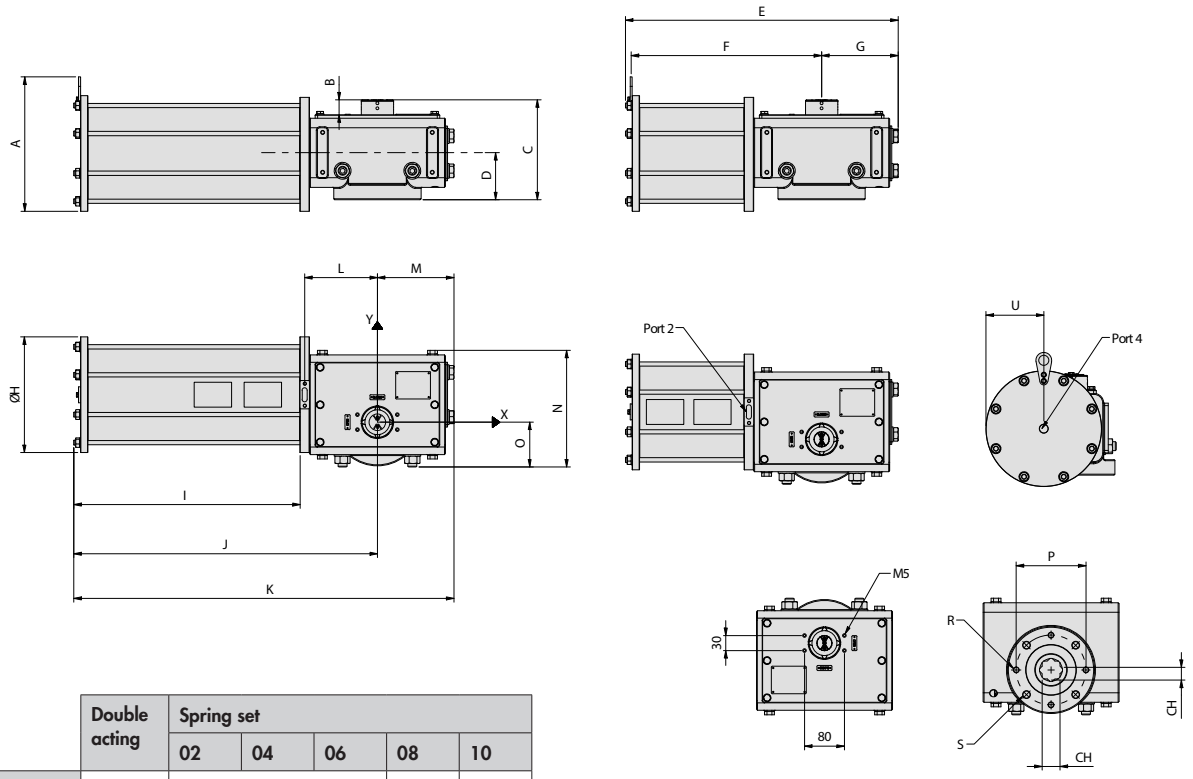
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	3,24	3,42	1,60						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

Note:

- Maximum transmissible torque: 2.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING **DOUBLE ACTING**



	Double acting	Spring set				
		02	04	06	08	10
A	270	270			-	-
B	30	30			-	-
C	201	201			-	-
D	95	95			-	-
E	547	-			-	-
F	382	-			-	-
G	154	-			-	-
H	232	232			-	-
I	454	454			-	-
J	609	609			-	-
K	763	763			-	-
L	146	146			-	-
M	154	154			-	-
N	234	234			-	-
O	90	90			-	-
Approx. Weight (Kg)	55	77	77	83	-	-

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard	Optional
ISO 5211	F14	F12
R / S	10/M16	10/M12
Ø P	140	125
CH	36	36

Center of gravity

		X	Y
DA		-94,76	64,6
SPRING SET	02	-200,1	65,5
	04	-201,0	65,5
	06	-213,3	65,7
	08	-	-
	10	-	-

Fig. 9: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	516	509	619	611	722	713	825	815	929	917	1.032	1.018	1.135	1.120	M.O.P. exceeded	
Run	258	255	310	306	361	356	413	407	464	458	516	509	568	560		
End	516	509	619	611	722	713	825	815	929	917	1.032	1.018	1.135	1.120		

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	564			379	482	585	689	792	895	998	1.101	1.205	1.308	1.411	1.514	1.720
	Run	229			123	176	229	281	333	385	436	488	540	592	643	695	798
	End	343			158	262	365	468	571	674	778	881	984	1.087	1.190	1.294	1.500
04	Start	734					482	585	688	791	894	998	1.101	1.204	1.307	1.410	1.617
	Run	298					153	207	260	312	364	416	468	520	572	624	727
	End	447					194	298	401	504	607	710	814	917	1.020	1.123	1.330
06	Start	958							552	655	758	861	965	1.068	1.171	1.274	1.481
	Run	389							158	214	268	321	373	425	478	530	633
	End	583							177	280	383	487	590	693	796	899	1.106
08	Start	Configuration not available															
	Run																
	End																
10	Start	Configuration not available															
	Run																
	End																

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Table 1: *Technical data*

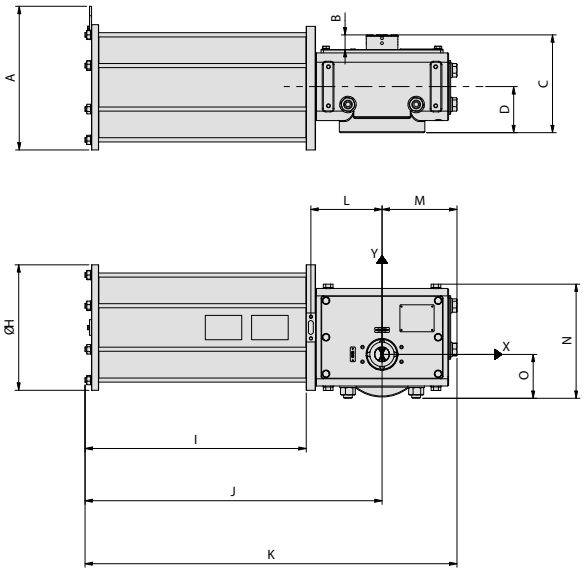
Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	4,25	4,46	1,70						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

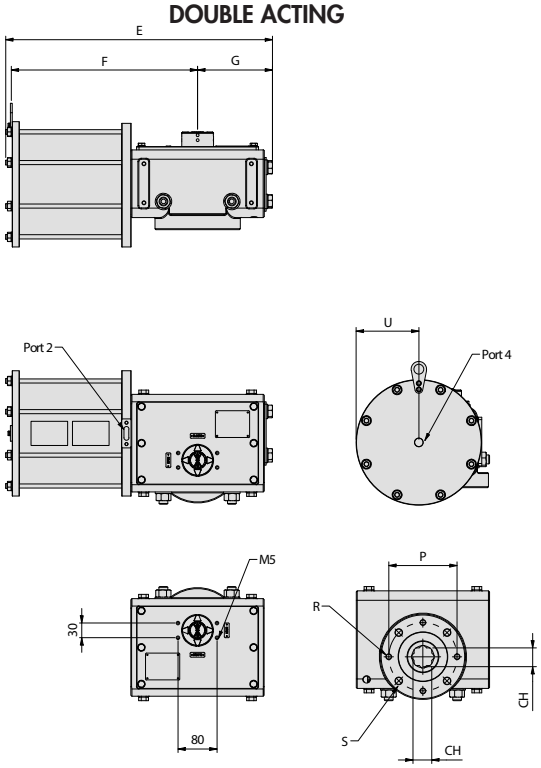
Note:

- Maximum transmissible torque: 2.000 Nm (see M.O.P. for different configurations).

SINGLE ACTING



DOUBLE ACTING



	Double acting	Spring set				
		02	04	06	08	10
A	295	295				
B	30	30				
C	201	201				
D	95	95				
E	547	-				
F	382	-				
G	154	-				
H	257	257				
I	454	454				
J	609	609				
K	763	763				
L	146	146				
M	154	154				
N	234	234				
O	90	90				
Approx. Weight (Kg)	60	82	82	88	88	88

Air connection

	Standard
Port 2	1/4" NPT
Port 4	

ISO 5211 interface

	Standard	Optional
ISO 5211	F14	F12
R / S	10/M16	10/M12
Ø P	140	125
CH	36	36

Center of gravity

		X	Y
DA		-111,4	-40,7
SPRING SET	02	-212,6	-44,5
	04	-213,4	-44,6
	06	-224,0	-45,3
	08	-226,2	-45,4
	10	-225,0	-45,3

Fig. 10: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	674	667	809	801	943	934	1.078	1.067	1.213	1.201	1.348	1.334	1.483	1.468	M.O.P. exceeded	
Run	337	334	404	400	472	467	539	534	606	600	674	667	741	734		
End	674	667	809	801	943	934	1.078	1.067	1.213	1.201	1.348	1.334	1.483	1.468		

SINGLE ACTING																
Spring	**Position**	**Spring torque**	**Supply pressure**													
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	564	331	465	600	735	870	1.005	1.139	1.274	1.409	1.544	1.678	1.813	1.948	M.O.P. exceeded	
	Run	229	96	167	236	304	372	440	507	575	642	710	777	845	912		
	End	343	110	245	380	514	649	784	919	1.053	1.188	1.323	1.458	1.593	1.727		
04	Start	734			496	631	766	901	1.036	1.170	1.305	1.440	1.575	1.709	1.844	1.979	M.O.P. exceeded
	Run	298			161	231	299	368	436	503	571	639	706	774	841	909	
	End	447			209	344	479	614	748	883	1.018	1.153	1.287	1.422	1.557	1.692	
06	Start	958					630	765	899	1.034	1.169	1.304	1.438	1.573	1.708	1.843	M.O.P. exceeded
	Run	389					201	271	340	408	476	544	612	680	748	815	
	End	583					255	390	525	659	794	929	1.064	1.198	1.333	1.468	
08	Start	1.363								783	918	1.053	1.187	1.322	1.457	1.592	1.861
	Run	555								226	298	369	438	507	575	643	779
	End	834								254	389	523	658	793	928	1.062	1.332
10	Start	1.587									782	916	1.051	1.186	1.321	1.455	1.725
	Run	646									165	265	338	408	478	547	684
	End	970									165	300	434	569	704	839	1.108

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

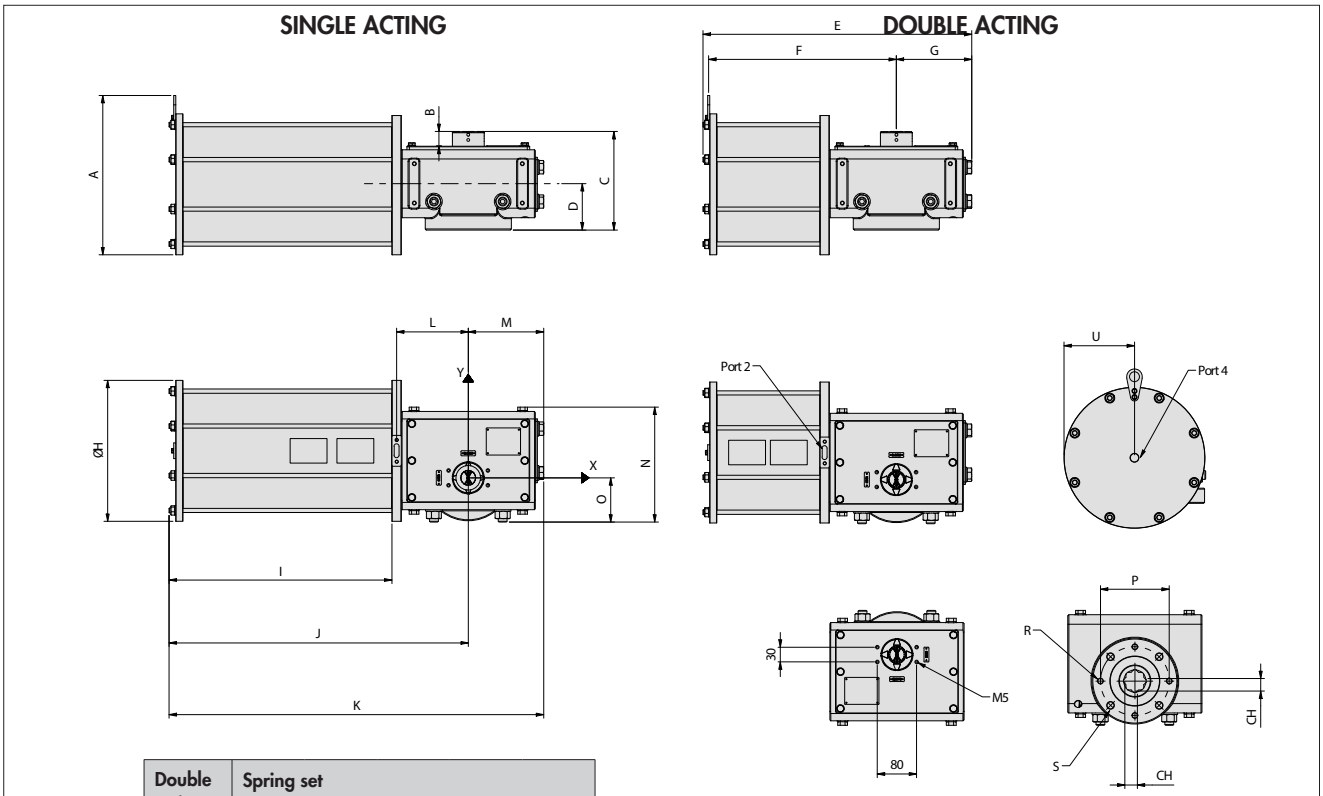
Table 1: *Technical data*

Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	5,38	5,65	1,80						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

Note:

- Maximum transmissible torque: 2.000 Nm (see M.O.P. for different configurations).



	Double acting	Spring set				
		02	04	06	08	10
A	325	325				
B	30	30				
C	201	201				
D	95	95				
E	547	-				
F	382	-				
G	154	-				
H	287	287				
I	454	454				
J	609	609				
K	763	763				
L	146	146				
M	154	154				
N	234	234				
O	90	90				
Approx. Weight (Kg)	68	88	88	93	95	95

Air connection

	Standard
Port 2	1/2" NPT
Port 4	

ISO 5211 interface

	Standard	Optional
ISO 5211	F14	F12
R / S	10/M16	10/M12
Ø P	140	125
CH	36	36

Center of gravity

		X	Y
DA		-42,4	65,2
SPRING SET	02	-45,3	65,8
	04	-45,3	65,9
	06	-45,9	65,9
	08	-46,0	66,0
	10	-45,9	66,0

Fig. 11: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																
Position	**Supply pressure**															
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar	
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing
Start	853	846	1023	1015	1194	1185	1365	1354	1535	1523	1706	1692	1876	1861	M.O.P. exceeded	
Run	426	423	512	508	597	592	682	677	768	762	853	846	938	931		
End	853	846	1023	1015	1194	1185	1365	1354	1535	1523	1706	1692	1876	1861		

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	564	510	680	851	1.021	1.192	1.362	1.533	1.704	1.874	M.O.P. exceeded					
	Run	229	190	277	362	448	534	619	705	790	875						
	End	343	289	460	630	801	971	1.142	1.312	1.483	1.654						
04	Start	734	406	851	747	918	1.088	1.259	1.429	1.600	1.770	1.941	M.O.P. exceeded				
	Run	298	112	362	290	376	462	548	633	719	804	890					
	End	447	119	630	460	630	801	972	1.142	1.313	1.483	1.654					
06	Start	958			611	781	952	1.123	1.293	1.464	1.634	1.805	1.975	M.O.P. exceeded			
	Run	389			190	280	367	453	539	625	711	796	882				
	End	583			236	407	577	748	918	1.089	1.260	1.430	1.601				
08	Start	1.363						871	1.042	1.213	1.383	1.554	1.724	1.895	M.O.P. exceeded		
	Run	555						274	363	451	538	624	710	796			
	End	834						342	513	683	854	1.025	1.195	1.366			
10	Start	1.587							906	1.076	1.247	1.418	1.588	1.759	1.929	M.O.P. exceeded	
	Run	646							259	351	440	527	614	701	787		
	End	970							289	460	630	801	971	1.142	1.313		

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

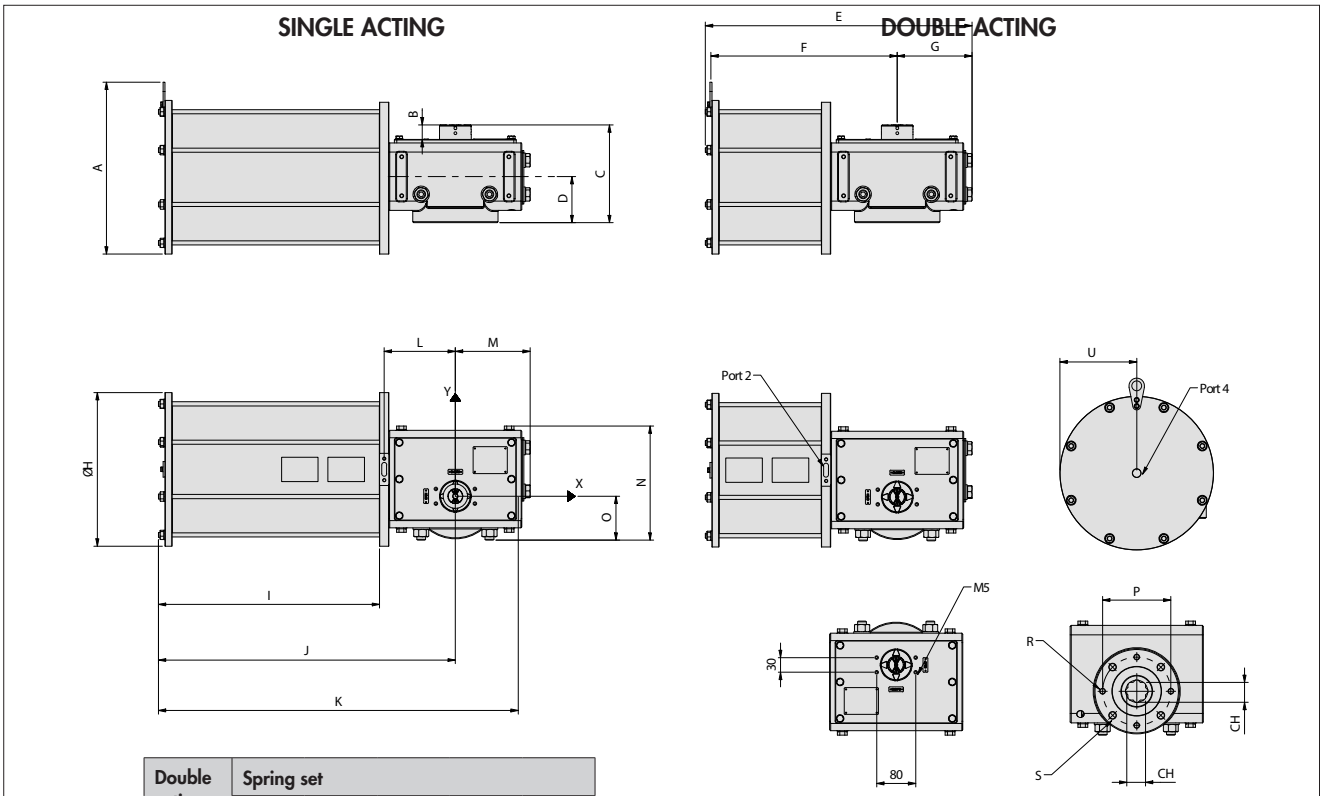
Table 1: *Technical data*

Rotation	Air volume (l)		Approx. moving time (s) [1]				Operating temperature range (°C)		
	Connection port		Double acting		Single acting		S	H	L
0°- 90°	port 2	port 4	opening	closing	opening	closing	-40 to +80	-15 to +150	-60 to +80
	8,35	8,74	1,90						

1. The values refer to specific test conditions; please contact AIR TORQUE for detailed information.

Note:

- Maximum transmissible torque: 2.000 Nm (see M.O.P. for different configurations).



	Double acting	Spring set				
		02	04	06	08	10
A	353	-	353			
B	30	-	30			
C	201	-	201			
D	95	-	95			
E	547	-	-			
F	382	-	-			
G	154	-	-			
H	315	-	315			
I	454	-	454			
J	609	-	609			
K	763	-	763			
L	146	-	146			
M	154	-	154			
N	234	-	234			
O	90	-	90			
Approx. Weight (Kg)	75	-	94	100	100	100

Air connection

	Standard
Port 2	1/2" NPT
Port 4	

ISO 5211 interface

	Standard	Optional
ISO 5211	F14	F12
R / S	10/M16	10/M12
Ø P	140	125
CH	36	36

Center of gravity

		X	Y
DA		-43,7	65,5
SPRING SET	02	-	-
	04	-45,7	66,0
	06	-46,4	66,1
	08	-46,5	66,1
	10	-46,5	66,0

Fig. 12: *Dimensions in mm*

Table 2: *Symmetric yoke Output torques (Nm).*

DOUBLE ACTING																	
Position	**Supply pressure**																
	2,5 bar		3 bar		3,5 bar		4 bar		4,5 bar		5 bar		5,5 bar		10 bar		
	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	opening	closing	
Start	1053	1046	1264	1255	1474	1465	1685	1674	1895	1883	M.O.P. exceeded						
Run	526	523	632	628	737	732	842	837	948	942							
End	1053	1046	1264	1255	1474	1465	1685	1674	1895	1883							

SINGLE ACTING																	
Spring	**Position**	**Spring torque**	**Supply pressure**														
			2,5 bar	3 bar	3,5 bar	4 bar	4,5 bar	5 bar	5,5 bar	6 bar	6,5 bar	7 bar	7,5 bar	8 bar	8,5 bar	9 bar	10 bar
02	Start	Configuration not available															
	Run																
	End																
04	Start	734	606	817	1.027	1.238	1.448	1.659	1.869	M.O.P. exceeded							
	Run	298	218	325	431	537	643	748	854								
	End	447	319	529	740	950	1.161	1.372	1.582								
06	Start	958		680	891	1.102	1.312	1.523	1.733	1.944	M.O.P. exceeded						
	Run	389		227	336	442	549	655	760	866							
	End	583		306	516	727	937	1.148	1.358	1.569							
08	Start	1.363				850	1.061	1.272	1.482	1.693	1.903	M.O.P. exceeded					
	Run	555				262	373	481	588	694	800						
	End	834				321	532	742	953	1.164	1.374						
10	Start	1.587					925	1.135	1.346	1.557	1.767	1.978	M.O.P. exceeded				
	Run	646					270	382	491	598	705	811					
	End	970					308	519	729	940	1.150	1.361					

Note:

- M.O.P. = maximum operating pressure
- Torque values refer to:
  - Clockwise rotation to close.
  - Counter-clockwise rotation to open.

Ordering text

The product information in the How To Order are transferred in the product name plate and in other Air Torque documents (as order acknowledgment, packing list, invoice and certificates). The position of the information could change respect the How To Order. Contact Air Torque for further details.

1

AT-HDC [1]

C: Casted version actuator

W: Welded version actuator

2

Operating temperature:

S: Pneumatic actuator suitable for -40°C (-40°F) to +80°C (+176°F)	**H:** Pneumatic actuator suitable for -15°C (-5°F) to +150°C (+320°F)	**L:** Pneumatic actuator suitable for -60°C (-76°F) to +80°C (+176°F)
Hydraulic actuator suitable for -30°C (-22°F) to +80°C (+176°F)	Hydraulic actuator suitable for -15°C (-5°F) to +110°C (+230°F)	Hydraulic actuator suitable for -60°C (-76°F) to +80°C (+176°F)

3

Actuator rotation:

A: 0°-90° Standard

X: Special to be specified

4

Actuator central module:

035 045 055 065

5

Action:

SC: Spring to Close

SO: Spring to Open

DA: Double Acting

6

Spring set configuration: (only for Spring to Close or Spring to Open)

02: spring set 02
04: spring set 04
06: spring set 06
08: spring set 08
10: spring set 10 (available on some sizes)

00: Double Acting

7

Actuator orientations: (according to Tab. n° HDC51700E)

Spring to close		**Spring to open**		**Double acting**	
1A: Standard	**1M**	**2A:** Standard	**2M**	**3A:** Standard	**3M**
1B	**1N**	**2B**	**2N**	**3B**	**3N**
1C	**1O**	**2C**	**2O**	**3C**	**3O**
1D	**1P**	**2D**	**2P**	**3D**	**3P**
1E	**1Q**	**2E**	**2Q**	**3E**	**3Q**
1F	**1R**	**2F**	**2R**	**3F**	**3R**
1G	**1S**	**2G**	**2S**	**3G**	**3S**
1H	**1T**	**2H**	**2T**	**3H**	**3T**
1I	**1U**	**2I**	**2U**	**3I**	**3U**
1L	**1V**	**2L**	**2V**	**3L**	**3V**

8

Drive connections:

Standard:
T: Double square

Optional type connection (Available on request):
X: Double keys at 180°
L: Parallel square
D: Diagonal square
H: Flat head
W: Double keys at 90°
Q: Four keys at 90°

Standard Drive connections:

035	045	055	065
T-022	**T-027**	**T-036**	**T-046**

Keys according to UNI 6604 A.

9

ISO Flange-ISO 5211:

Model	035	045	055	065
Standard	**F07-F10**	**F10-F12**	**F12**	**F14**
Option			**F14**	**F16**

10

Supply Medium: [2]

P: Dry or lubricated air, inert gas and sweet dry natural gas

H: Hydraulic

11	**Pneumatic cylinder size:**			
	035	045	055	065
	0080 **0100** **0125** **0150**	**0125** **0150** **0175** **0200**	**0175** **0200** **0225** **0250**	**0225** **0250** **0280** **0330**
	Hydraulic cylinder size:			
	035	045	055	065
	0030 **0035**	**0035** **0040**	**0040** **0045**	**0045** **0050**
12	**PED requirement:** **00:** PED not applicable (standard) **01:** PED applicable			
13	**Connections:** [3] **ST:** Standard supply connections **FA:** Fast connections			
14	**Damper requirement:** **00:** Without damper (standard) **DP:** With damper			
15	**Manual override:** **00:** Standard without manual ovveride	**JD:** Declutchable jackscrew Available only for double acting **JS:** Jackscrew Available only for spring return actuator	**HP:** Hydraulic pump Hydraulic manual override (For high temperature contact Air Torque S.p.a)	
16	**Manual override orientation:** (according to Tab. n° HDC51700E) Without manual override **00:** No manual override	With Hydraulic manual override **3A:** Standard for spring to close **4A:** Standard for spring to open **3B** **5B** **4B** **6A** **5A** **6B**		
17	**Manual override options:** Jackscrew: **01:** Standard **02:** Locking system	Declutchable Jackscrew: **01:** Standard **02:** Locking system	Hydraulic: **01:** Removable lever **02:** Lever + Locking system	
18	**Actuator painting system:** **C4:** Standard painting C4 category according to ISO 12944 **C5:** Painting C5 category according to ISO 12944 **XX:** Different painting options are available on request to be specified.			
19	**Actuator color:** **A:** RAL 2008 (Standard color) **X:** Different color options are available on request to be specified.			

[1] In case the product is customized, the suffix may be different and must be agreed in advance.

[2] Make sure the operating media is compatible with the actuator internal parts and lubricants.

[3] The standard Air Torque connection is NPT type. Connection size is shown on datasheet.

If not specified Air Torque STD Indicator will be provided.

Examples of model designation

1	2	3	4	5	6	7	8	9	10
AT-HDC C	**S**	**0-90°**	**035**	**SC**	**02**	**1A**	**T-022**	**F07-F10**	**P**
11	12	13	14	15	16	17	18	19	
0125	**00**	**ST**	**00**	**00**	**00**	**00**	**C4**	**A**	