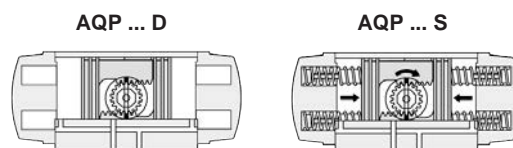


## Description

The new rack and pinion pneumatic actuator AQP motion combines innovative design features with technical performances, resulting in one of the most effective actuators for the HVAC market.

## Product features

- Function **AQP...D** double acting  
**AQP...S** single acting
- Nominal torque 20 ÷ 522 Nm  
(double acting at 6 bar air supply)
- Supply pressure 3 ÷ 8 bar
- Supply fluids Filtered air or neutral gas
- Working temperature -20°C ÷ 80°C
- Connection Mounting face for valves according to EN ISO 5211,  
for solenoid valves and accessories to VDI/VDE 3845 (NAMUR)
- Lubrication Factory lubricated for the life of actuator  
under normal working conditions



## Design properties

- Specially designed for HVAC applications.
- Compact design with identical body and end caps for double acting and spring return types, allowing field conversion by adding or removing spring cartridges.
- Body made of extruded anodized aluminum with smooth cylinder surface and low friction for a higher cycle life.
- Symmetric rack and pinion design for high-cycle life and fast operation. Reverse rotation can be accomplished by inverting the pistons.
- Two independent external travel stop adjustments, enabling an easy and precise adjustment of +5°, in order to get a precise valve positioning.
- One-piece blow-out proof, drive shaft with bearing guided one-piece pinion for improved safety and max. cycle life.
- Fully machined piston teeth for accurate low backlash rack and pinion engagement and maximum efficiency.
- Preloaded spring cartridges with coated springs for simple versatile range and corrosion resistance. Spring return actuator can be disassembled without danger on field.
- High quality bearings and seals for low friction, high cycle life and a wide operating temperature range.
- End caps, passivated and Polyester® coated (RAL 7036).
- All used screws in stainless steel for life time corrosion resistance.
- Easy conversion from double to single acting and vice versa.
- Lower inventory with greater flexibility.
- Position indicator with graduated ring indicating accurate angle.
- Perfectly sized range to fit Aquaria Plus torques.
- Full compliance to latest worldwide standards.

## Materials

Body	Extruded aluminium EN AW-6063 natural anodized
End caps	EN AC-46000, passivated and Polyester® coated (RAL 7036)
Pistons	EN AC-46000
Springs	SiCr spring alloy steel, Epoxy coated
Shaft	C22, Nitox (AQP050-300), nickel plated (AQP350-450)
Position indicator	PA66 + 30%GF + carbon black



## Type Code

<b>AQP200</b>	<b>D</b>	<b>F05 - F07</b>	<b>11</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

<b>1 Actuator size</b>	<b>AQP050-450</b>	
<b>2 Function</b>	<b>D</b>	Double acting
	<b>S12</b>	Single acting + number of springs
<b>3 Mounting face for valve</b>	<b>F05 - F12</b>	According to EN ISO5211
<b>4 Shaft connection</b>	<b>[mm]</b>	Dimension of shaft connection

## Function

### AQP...D Double acting actuator

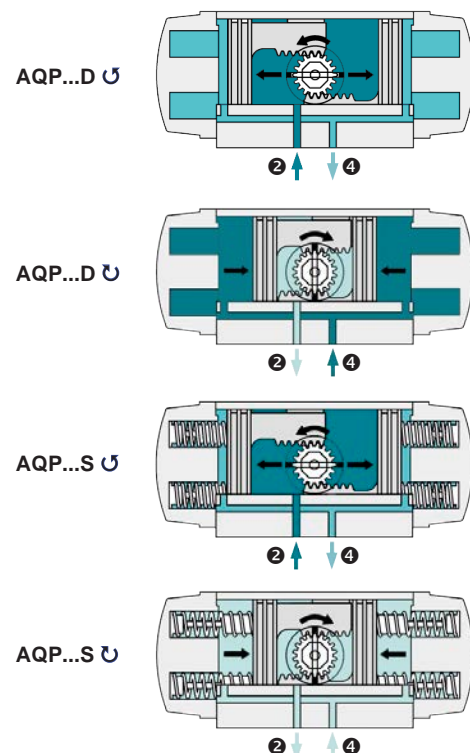
Air supplied to port **2** moves pistons toward endposition.  
(-> 90° counterclockwise rotation)

Air supplied to port **4** moves pistons toward center position.  
(-> 90° clockwise rotation)

### AQP...S Single acting actuator

Air supplied to port **2** moves pistons toward endposition, compressing springs.  
(-> 90° counterclockwise rotation)

Air failure allows springs to move pistons toward center position.  
(-> 90° clockwise rotation)



## Torques [Nm]

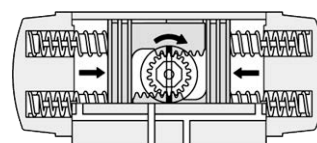
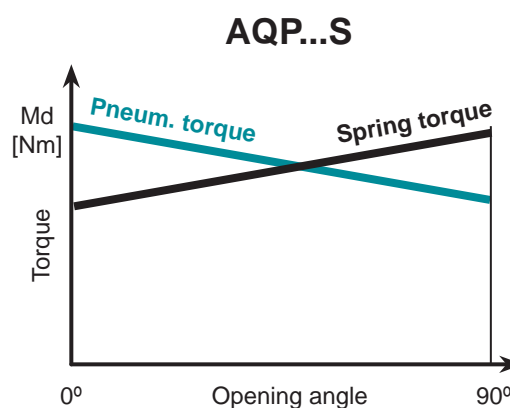
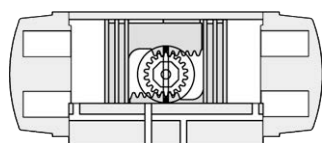
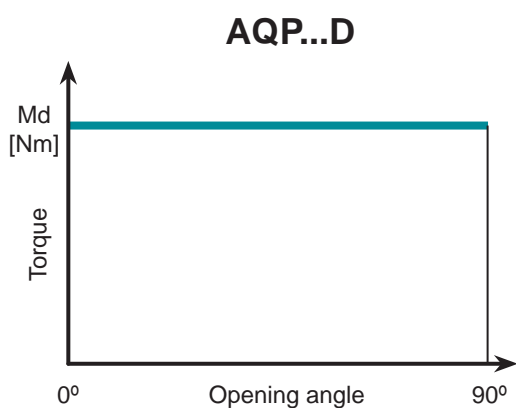
### AQP...D - Double acting actuators

	Pneumatical torque at air supply of			
	5.5 bar	6 bar	7 bar	8 bar
AQP 050 D	18,3	19,9	23,3	26,6
AQP 100 D	32,2	35,2	41,0	46,9
AQP 200 D	64	69,8	81,4	93,1
AQP 250 D	100,7	109,8	128,1	146,4
AQP 300 D	146	160	186	213
AQP 350 D	236	258	301	344
AQP 400 D	305	332	388	443
AQP 450 D	478	522	609	696

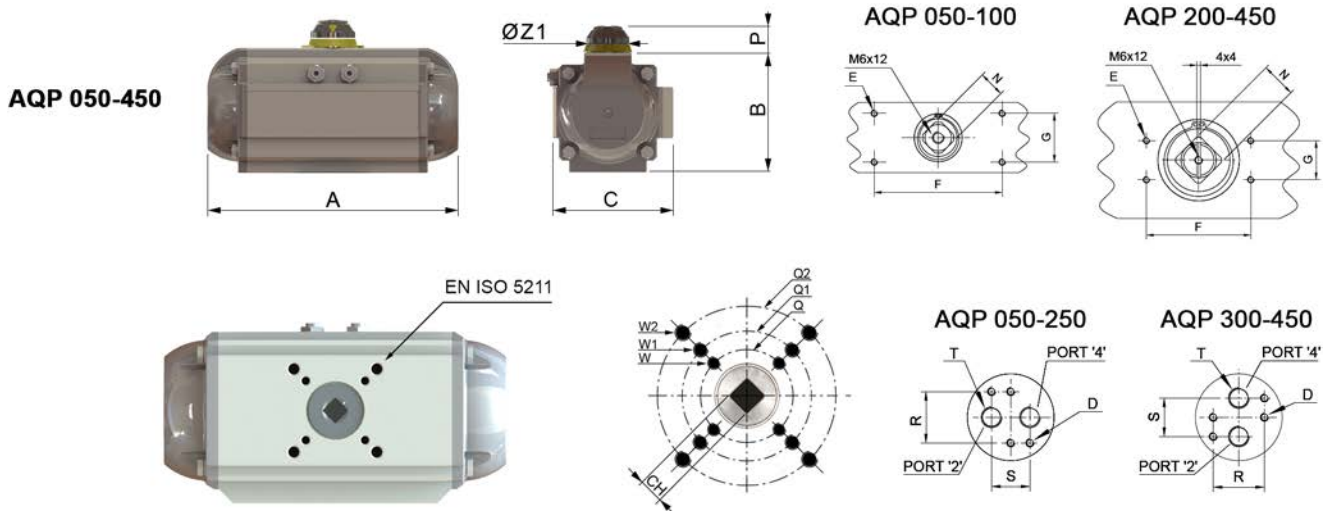
## Torques [Nm]

### AQP...S - Single acting actuators

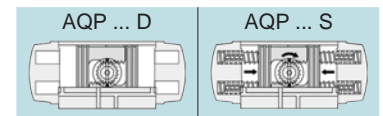
		Pneumatical torque at air supply of								Spring [Nm]	
		5.5 bar		6 bar		7 bar		8 bar		90°	0°
		0°	90°	0°	90°	0°	90°	0°	90°		
AQP050	S 12	10,4	6	12,0	7,2	15,3	10,5	18,7	13,8	12,8	7,9
AQP100	S 12	18,9	12	21,9	14,9	27,7	20,8	33,6	26,7	20,2	13,3
AQP200	S 12	37,5	22,4	43,3	28,3	54,9	39,9	66,5	51,5	41,5	26,5
AQP250	S 12	56,7	31,4	65,8	40,5	84,1	58,8	102	77,1	69,3	44,0
AQP300	S 12	85,4	51,7	99	65	125	92	152	118	94,5	60,8
AQP350	S 12	138	19,2	159	101	202	144	245	187	157	98,4
AQP400	S 12	179	107	206	135	262	190	317	245	198	126
AQP450	S 12	281	169	324	213	411	299	498	386	309	198



## Dimensions



## Dimensions



	A	B	C	D	E	F	G	N	P	R	S	T <sup>1)</sup>	Z1	V <sub>o</sub> [l]	V <sub>c</sub> [l]	t <sub>o</sub> "	t <sub>c</sub> "	[kg]	t <sub>o</sub> "	t <sub>c</sub> "	[kg]
<b>AQP 050</b>	137	69	78,5	M5x8	M5x8	80	30	11	20	32	24	1/8"	42	0,09	0,15	0,2	0,25	1,15	0,25	0,3	1,26
<b>AQP 100</b>	154	85	91,5	M5x8	M5x8	80	30	11	20	32	24	1/8"	42	0,16	0,26	0,25	0,3	1,7	0,3	0,35	1,9
<b>AQP 200</b>	204	102	105	M5x8	M5x8	80	30	17	20	32	24	1/8"	42	0,31	0,49	0,3	0,35	3,0	0,4	0,5	3,4
<b>AQP 250</b>	241	115	118,5	M5x8	M5x8	80	30	17	20	32	24	1/8"	42	0,51	0,78	0,4	0,5	4,2	0,5	0,6	4,8
<b>AQP 300</b>	259	127	130,5	M5x8	M5x8	80	30	17	20	32	24	1/4"	42	0,71	1,11	0,5	0,6	5,7	0,7	0,9	6,6
<b>AQP 350</b>	304	145	148,5	M5x8	M5x8	80	30	27	30	32	24	1/4"	58	1,19	1,80	0,7	0,8	8,8	0,9	1,1	10,2
<b>AQP 400</b>	333	157	159	M5x8	M5x8	80	30	27	30	32	24	1/4"	58	1,54	2,34	0,9	1,1	10,7	1,2	1,4	12,6
<b>AQP 450</b>	395	177	182,5	M5x8	M5x8	80	30	27	30	32	24	1/4"	67,5	2,41	3,78	1,2	1,4	15,5	1,5	1,8	18,7

- 1) BSP / ISO 228 / DIN 259  
 V(l) Volume in litre, V<sub>o</sub> = OPEN, V<sub>c</sub> = CLOSE  
 To calculate the air consumption, multiply the volume in litre by the supply pressure.  
 t<sub>o</sub> / t<sub>c</sub> t<sub>o</sub> = opening time / t<sub>c</sub> = closing time, in seconds

The above mentioned operating times are obtained under the following conditions:  
 - Air supply pressure min. 5,5 bar (80 psi) - at room temperature - medium clean air - actuator stroke 90° - actuator without resistance load  
**Caution:** obviously, during operation, if one or more of the above listed criteria differ, the operating time will be different.

	EN ISO 5211	Q	Q1	W	W1	CH◆ x l
<b>AQP 050</b>	F05	50	-	M6	-	08 x 12
<b>AQP 100</b>	F05	50	-	M6	-	11 x 12
<b>AQP 200</b>	F05-F07	50	70	M6	M8	11 x 12
<b>AQP 250</b>	F05-F07	50	70	M6	M8	11 x 12
<b>AQP 300</b>	F05-F07	50	70	M6	M8	17 x 19
<b>AQP 350</b>	F07-F10	70	102	M8	M10	22 x 24
<b>AQP 400</b>	F07-F10	70	102	M8	M10	22 x 24
<b>AQP 450</b>	F10-F12	102	125	M10	M12	22 x 24

## Accessories

Our wide range of accessories includes position indicators, solenoid valves, flow regulators, etc. Please refer to the corresponding documentation or download it from our website.

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