

PNEUMATIC ACTUATOR EB-SYD, DOUBLE ACTING



The double acting version of this series is available in 10 sizes, constructed to the scotch-yoke principle.

TECHNICAL DATA

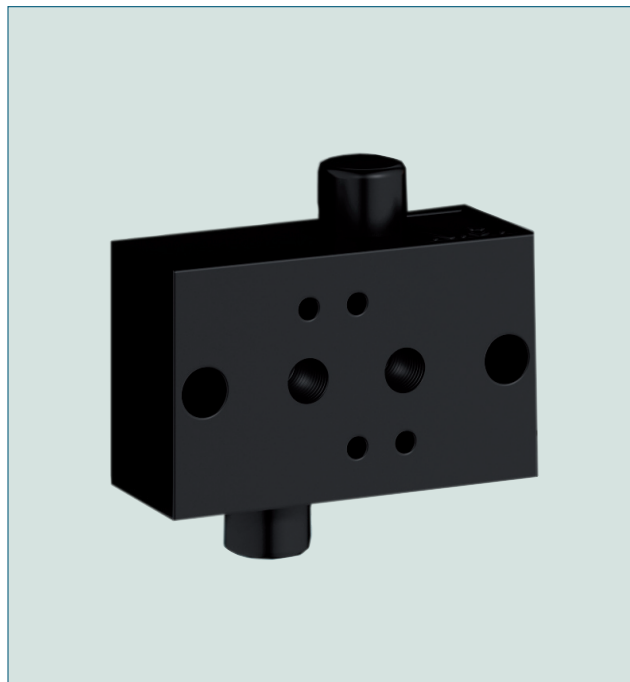
Torque:	249 - 34.036 in. lb. (based on supply pressure of 90 psi)
Limit of travel:	exactly adjustable between $\pm 3^\circ$.
Limit switches and solenoid valve mounting:	VDI / VDE 3845
Supply pressure:	min. 36 psi, max. 145 psi
Supply quality:	clean and dry in accordance with (ISO 8573-1, Class 5) for cycles ≥ 4 /min please lubricate.
Temperature range:	-4°F to +176°F (standard) -40°F to +176°F (low temperature) +5°F to +284°F (high temperature)
Valve interface:	EN ISO 5211
Actuator cylinder:	high quality marine grade Aluminium alloy, hard anodized. Other coatings upon request.

FEATURES

- Maintenance-free
- Suitable for all $\frac{1}{4}$ turn valves
- Blow-out proof shaft
- Torques in agreement with EN ISO 5211
- High visibility position indicator
- All fasteners made of stainless steel

KEY BENEFITS

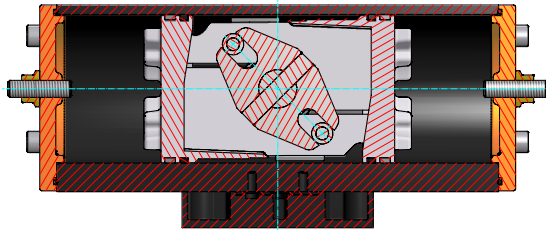
- High opening- and closing- torques produced by scotch-yoke mechanism
- Ideal sliding properties provided by low friction multiple piston guides
- Operational safety and long service life assured by precise machining of parts
- Low air consumption



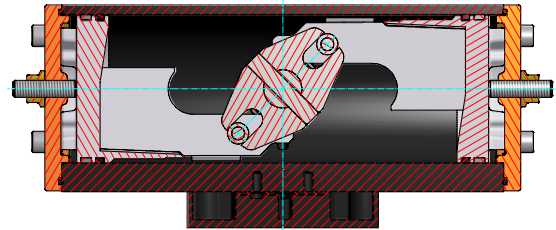
The EBRO Speed Control block allows the adjustment of closing times up to 60 sec. (depending on actuator size). It can be mounted directly to be on the actuator.

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FUNCTION



Open



Close

When the left control connection is pressurized, the pistons are pushed together with the yoke turning counter-clockwise to open the valve. When the right control connection is pressurized,

the yoke turns clockwise to close the valve.

The stroke of the piston can be limited by adjusting the screws located in the end covers.

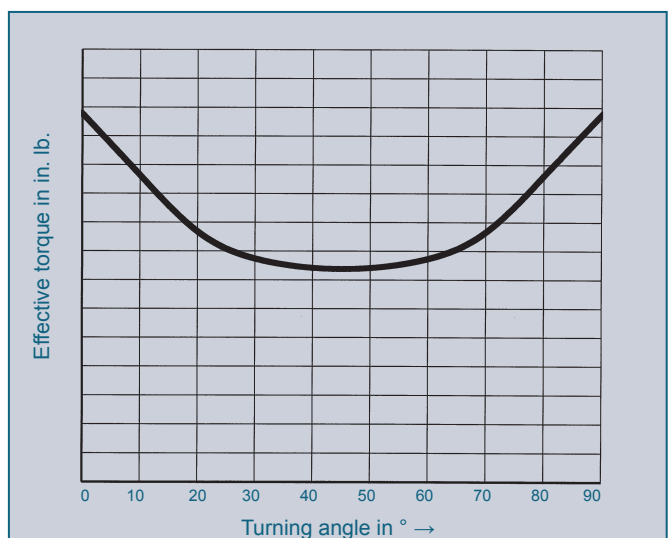
TORQUE (in. lbs.)

Type	Control pressure							
	40 psi	50 psi	60 psi	70 psi	80 psi	90 psi	100 psi	120 psi
EB 4.1	111	138	166	194	221	249	276	332
EB 5.1	309	387	464	542	619	696	774	928
EB 6.1	635	793	952	1111	1269	1428	1587	1904
EB 8.1	1017	1272	1526	1780	2035	2289	2543	3052
EB 9.1	1536	1921	2305	2689	3073	3457	3841	4609
EB 10.1	2157	2696	3235	3774	4313	4852	5391	6470
EB 12.1	3722	4652	5582	6513	7443	8373	9304	11165
EB 14.1	5438	6798	8157	9517	10877	12236	13596	16315
EB 16.1	8224	10280	12337	14393	16449	18505	20561	24673
EB 280	-	18909	22690	26472	30254	34036	37817	45381

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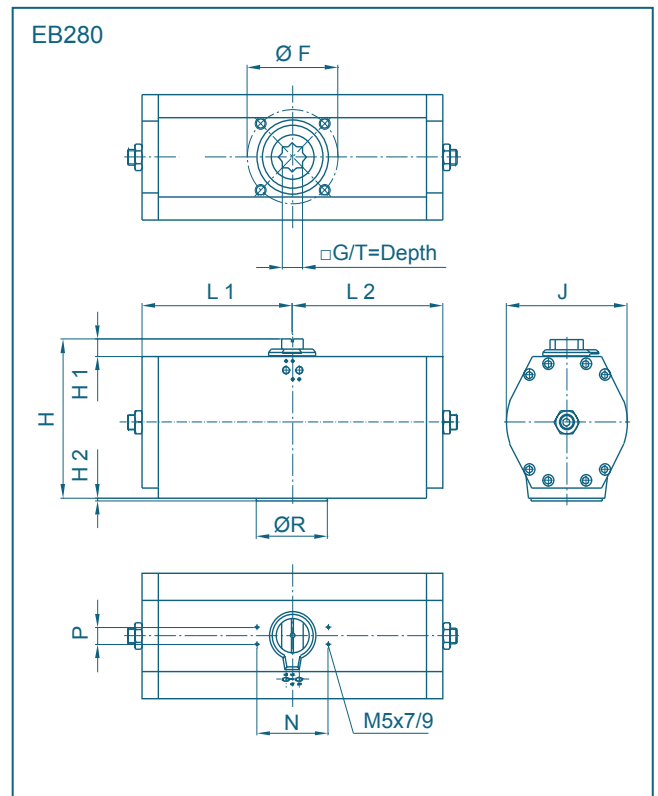
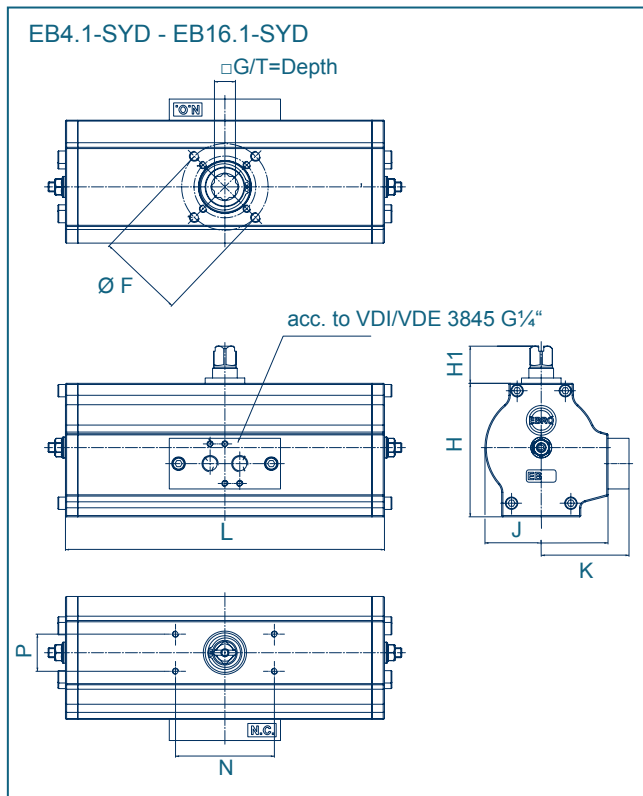
The torques shown in the diagram are measured values. The required size of the actuator can be established by comparing the values of the actuator with the required torque of the valve.

Especially non-lubricant media (e.g. bulk goods and dry gases) may cause an increase of the actuator torque. This is why we recommend to consider a safety of 12%. Choosing an actuator in critical limits, please contact our engineers.



Typical torque curve of a scotch-yoke actuator.

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Type	Dimensions [in]														Weight [lbs]
	ØF	G***	H	H1	H2	J	K	L	L1	L2	N	P	ØR	T	
EB 4.1	F04/05*	0.39/ 0.43 /0.47/0.55	2.6	1.18	-	1.89	1.93	5.83	-	-	3.15	1.18	-	-	2.43
EB 5.1	F04/05*	0.39/0.43/0.47/0.55	3.03	1.18	-	1.89	2.24	6.85	-	-	3.15	1.18	-	-	3.75
EB 6.1	F04/05/07*	0.43/0.47/0.55/0.62/0.66	3.58	1.18	-	2.52	2.6	8.82	-	-	3.15	1.18	-	0.75	6.61
EB 8.1	F05/07/10	0.47/0.55/0.62/0.66/0.86	4.25	1.18	-	3.94	2.8	10.16	-	-	3.15	1.18	-	0.75	9.04
EB 9.1	F07/10	0.55/0.62/0.66/0.86	4.72	1.18	-	4.33	3.07	12.24	-	-	3.15	1.18	-	0.75	14.77
EB 10.1	F07/10	0.55/0.62/0.66/0.86	5.04	1.18	-	4.8	3.23	13.15	-	-	3.15	1.18	-	0.94	16.53
EB 12.1	F10/12	0.66/0.86/0.94/1.06	6.14	1.18	-	5.71	3.66	15.43	-	-	3.15	1.18	-	1.14	28
EB 14.1	F12/16	1.42	7.44	1.18	-	5.91	-	18.46	-	-	3.15	1.18	-	1.50	46.96
EB 16.1	F12/16	1.81	8.35	1.18	-	5.91	-	22.09	-	-	3.15	1.18	-	1.89	63.93
EB 280	F12/16/25	1.25/1.41/1.81	10.94	1.18	0.2	8.66	-	-	10.83	10.83	5.12	1.18	5.12	2.36	92.59

* F04/F05 no combined flange available

** Topflange F16/ F25 via adaption

*** Options (Standard = **BOLD**)

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CLOSING TIME* AND AIR CONSUMPTION

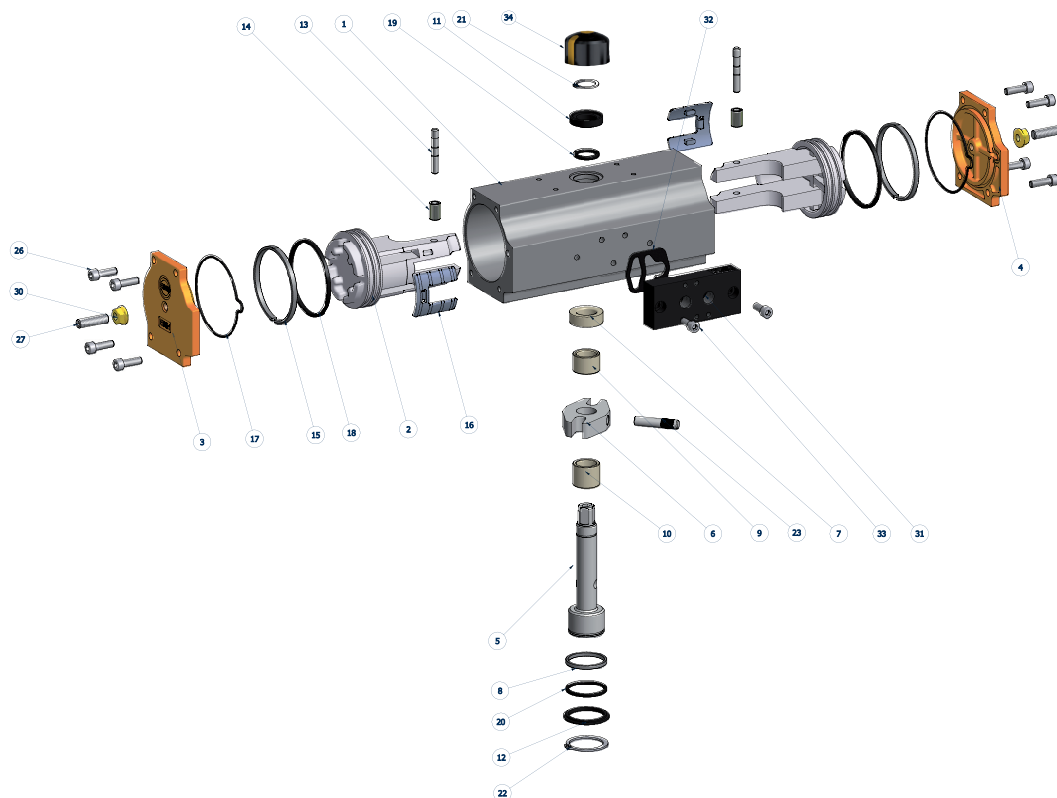
Type	EB4.1	EB 5.1	EB 6.1	EB 8.1	EB 9.1	EB 10.1	EB 12.1	EB 14.1	EB 16.1	EB 280
Closing time EB-SYD in sec.	0.25	0.25	0.35	0.45	0.55	0.7	1	<2.5	<6.0	<5.0
Filling volume NL/Hub at 1 atm:	11	28	56	91	142	198	344	305	885	1355

* = closing times with unthrottled air exhaust and air supply, 87 psi control pressure and 75% load
air consumption = filling volume x control pressure

Closing times can be adjusted up to 60 sec. by using the EBRO speed control block (depending on type of actuator).

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MATERIAL SPECIFICATION AND PARTS LIST



Only for EB-SYD (4.1 - 12.1)

Pt.	Description	Qty.	Material	Pt.	Description	Qty.	Material
1	Actuator cylinder	1	EN AW 6063-T6	17D	End cover sealing	2	70 NBR
2	Piston	2	EN AC 46000	18D	Piston O-Ring	2	70 NBR
3	End cover L	1	EN AC 46000	19D	O-Ring, upper shaft	1	70 NBR
4	End cover R	1	EN AC 46000	20D	O-Ring, lower shaft	1	70 NBR
5	Drive shaft	1	16 Mn Cr 5	21D	Upper safety ring	1	C 75
6	Yoke	1	16 Mn Cr 5 / Sint D30	22D	Lower safety ring	1	C 75
7	Upper shaft bearing	1	Polymer blend	23	Bolt	1	42 Cr Mo 4 V
8	Lower shaft bearing	1	Polymer blend	26	Hex. socket screw	8	A2-70
9	Upper piston bearing	1	Polymer blend	27	Stroke adjusting screw	2	A2-70
10	Lower piston bearing	1	Polymer blend	30	Seal nut	2	St
11	Upper washer bearing	1	Polymer blend	31	Valve connection plate	1	EN AC 46000
12	Lower washer bearing	1	Polymer blend	32D	Shaped gasket	1	70 NBR
13	Piston bolt	2	16 Mn Cr S 5	33	Hex. socket screw	2	A2-70
14	Roller	2	100 Cr 6	34	Position indicator	1	Engineering plastics
15	Guide band	2	Polymer blend				
16	Slidepad	2	Polymer blend				

The spare parts marked with D are integrated in the standard seal set.

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