

# PNEUMATIC ACTUATOR EB-SYS, SINGLE-ACTING



EB-SYS single-acting pneumatic actuators are available in either "spring opens" and "spring closes" versions.

## TECHNICAL DATA

Torque:	35 - 3590 Nm
Limit of travel:	exactly adjustable between $-8^{\circ}/+3^{\circ}$
Limit switches and solenoid valve mounting:	VDI / VDE 3845
Supply pressure:	min. 2,5 bar, max. 8 bar
Supply quality:	Filtered compressed air dry or lubricated. The pressure condensation point in accordance with (ISO 8573-1:2010, Class3) has to be $\geq -20^{\circ}\text{C}$ or $10^{\circ}\text{C}$ under ambient temperature. The maximum particle size in accordance with (ISO 8573-1:2010, Class 5) should not exceed 40 $\mu\text{m}$ . For cycles $\geq 4$ /min please lubricate.
Temperature range:	$-20^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ (standard) $-40^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ (low temperature) $-15^{\circ}\text{C}$ to $+120^{\circ}\text{C}$ (high temperature)
Valve interface:	EN ISO 5211
Actuator cylinder:	Anodized aluminium, Other coatings upon request.

## FEATURES

- Maintenance-free
- Suitable for all  $\frac{1}{4}$  turn valves
- Blow-out proofed shaft
- Torques in agreement with EN ISO 5211
- Optical position indicator with integrated operator for limit switches
- All fasteners made of stainless steel
- SIL 2 (SIL 3 as redundant system) acc. to IEC 61508

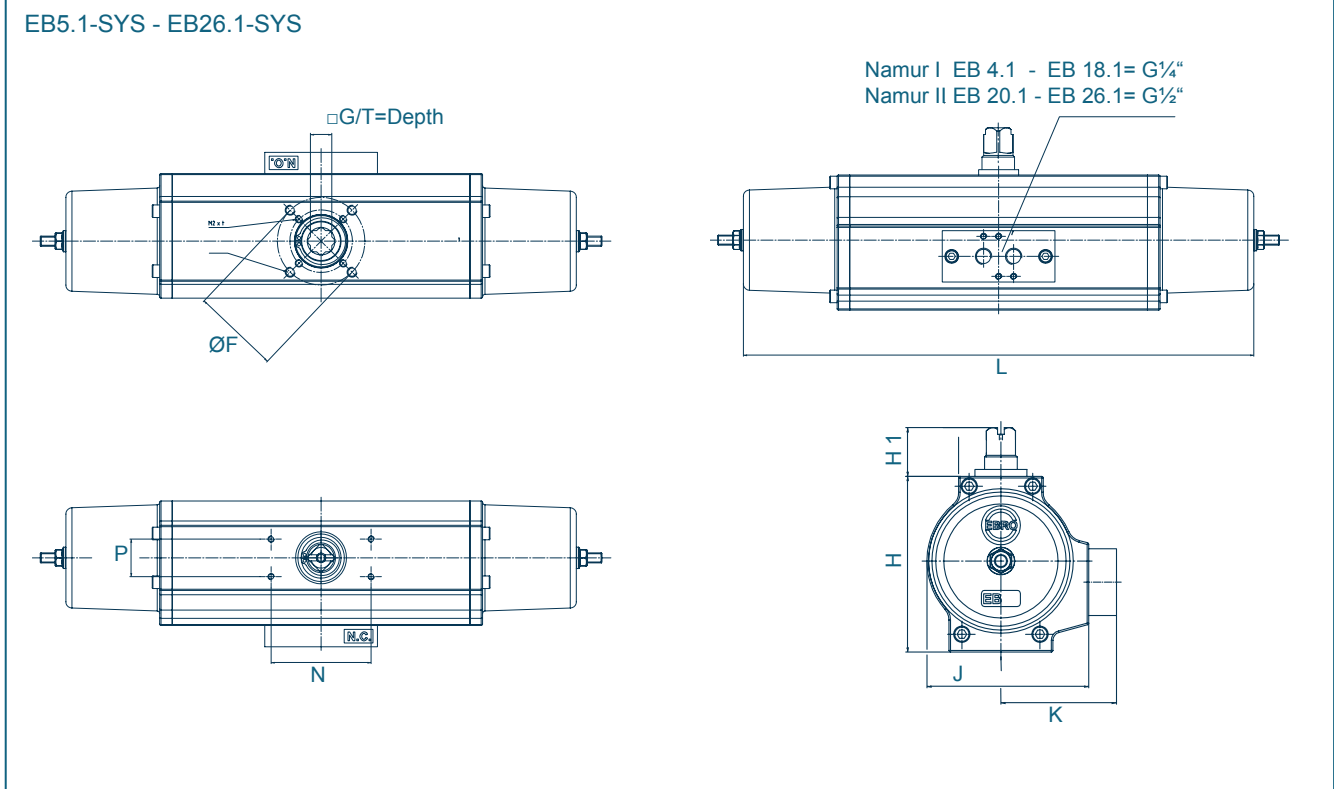
## KEY BENEFITS

- High opening- and closing- torques provided by scotch-yoke concept
- Ideal sliding properties provided by low friction multiple piston guides
- Operational safety and long service life assured by precise machining of parts
- Spring cartridges ensure safe and easy maintenance without special tools
- ATEX: EX II 2 GD c Tx



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

# PNEUMATIC ACTUATOR EB-SYS, SINGLE-ACTING



Type	ØF	Dimensions [mm]									Weight [kg]
		G	H	H1	J	K	L	N	P	T	
EB 5.1	F04/05*	11/12/14	77	30	72	57	280	80	30	13/16	2,4
EB 6.1	F04/05/07*	11/12/14/16/17	91	30	88	65	351	80	30	19	4,3
EB 8.1	F05/07/10	12/14/16/17/22	108	30	100	71	408	80	30	19	6,3
EB 9.1	F07/10	14/16/17/22	120	30	113	78	476	80	30	24	9,3
EB 10.1	F07/10	14/16/17/22	129	30	122	82	557	80	30	24	12,5
EB 12.1	F10/12	17/22/24/27	156	30	145	93	661	80	30	29	21,1
EB 14.1	<b>F12/16/25**</b>	<b>36</b>	189	30	148	102	697	80	30	38	32,8
EB 16.1	<b>F12/16/25**</b>	<b>46</b>	212	30	150	102	856	80	30	48	48,0
EB 18.1	<b>F12/16/25**</b>	<b>46</b>	243	30	196	103	902	80	30	48	63,7
EB 20.1	<b>F12/16/25**</b>	<b>46</b>	272	30	234	120	1027	80	30	48	94,3
EB 22.1	<b>F16/25**</b>	<b>55</b>	283	30	244	125	1127	80	30	59	114,9
EB26.1	<b>F16/25**</b>	<b>55</b>	350	30	336	168	1472	80	30	59	228,6

\* F04/F05 no combined flange available (Standard = **BOLD**)

\*\* F25 up to 4,000 Nm transferable

## CLOSING TIME\* AND AIR CONSUMPTION

Type	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 18.1	EB 20.1	EB 22.1	EB 26.1
Closing time EB-SYS in sec.*	0,15	0,20	0,45	0,48	0,50	0,70	<1,5	<1,5	<1,5	<1,5	<2,0	<2,0
Filling volume Standard liter/stroke at 1 atm.**	0,27	0,56	0,89	1,40	1,95	3,37	4,52	6,49	10,00	13,64	17,50	36,20

\* closing times with unthrottled air exhaust and air supply, 6 bar control pressure at no load operation

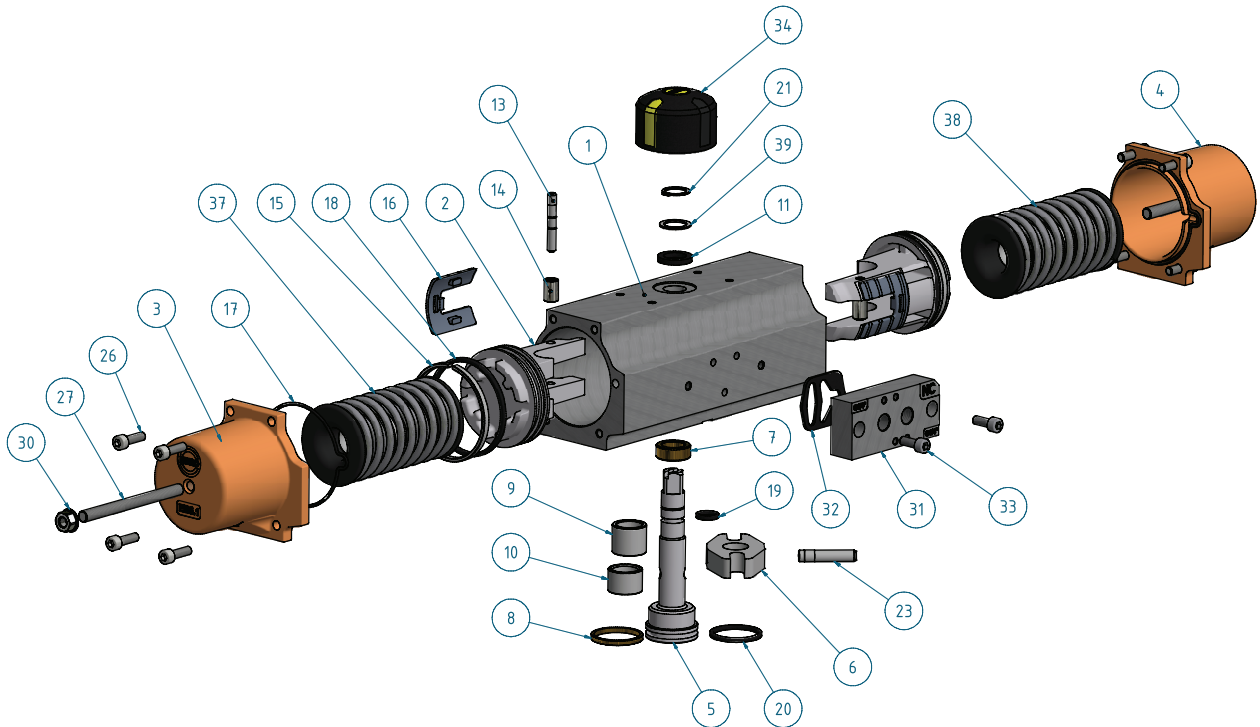
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\*\* air consumption = filling volume x control pressure

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

# PNEUMATIC ACTUATOR EB-SYS, SINGLE-ACTING

Only for EB-SYS (4.1 - 12.1)



## COMPONENT PARTS

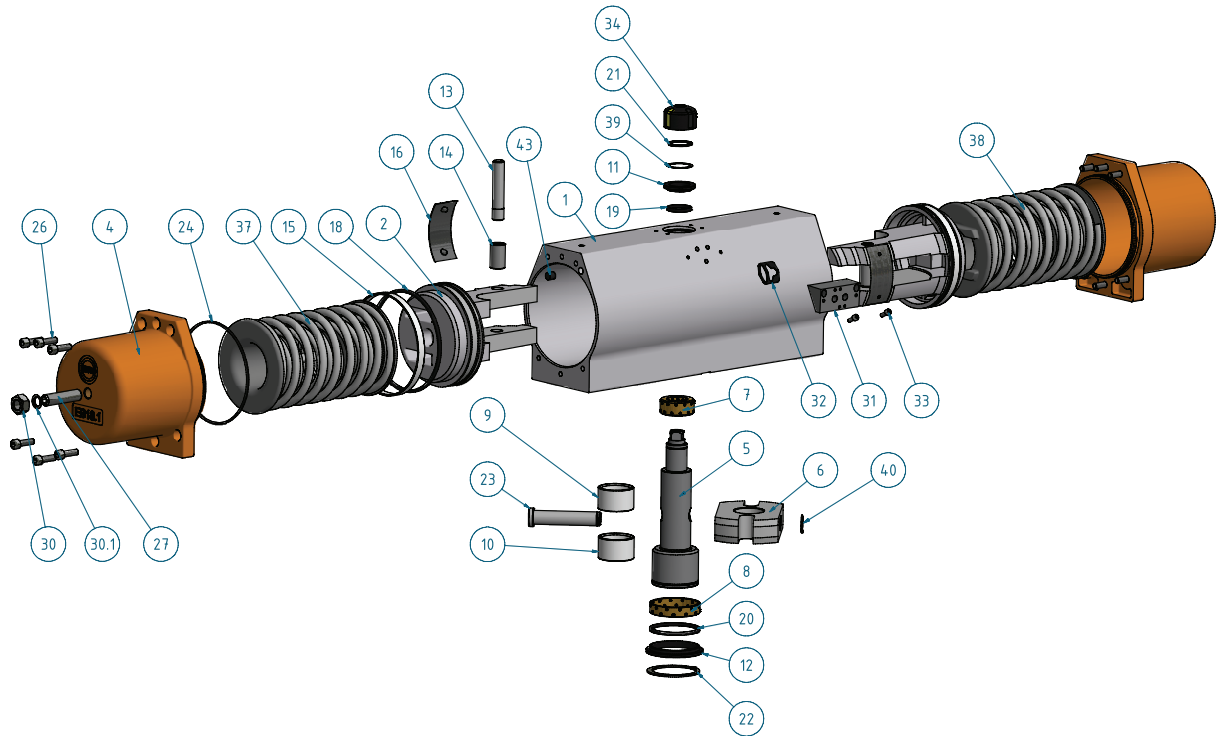
Pt.	Description	Qty.	Material	Pt.	Description	Qty.	Material
1	Actuator cylinder	1	EN AW 6063 - T6	18D	Piston O-Ring	2	NBR 70
2	Piston	2	EN AC 46000	19D	O-Ring, upper shaft	1	NBR 70
3	End cover L SYS	1	EN AC 46000	20D	O-Ring, lower shaft	1	NBR 70
4	End cover R SYS	1	EN AC 46000	21D	Safety ring	1	1.1248
5	Drive shaft	1	1.7131	23	Bolt	1	1.7225
6	Yoke	1	1.7131 / Sint - D30	26	Hex. socket screw	8	A2 - 70
7	Upper shaft bearing	1	Sint - B50	27	Stroke adjusting screw	2	A2 - 70
8	Lower shaft bearing	1	Sint - B50	30	Seal nut	2	A2 - 70
9	Upper piston bearing	1	Technical polymer	31	Valve connection plate	1	EN AC 46000
10	Lower piston bearing	1	Technical polymer	32D	Shaped gasket	1	NBR 70
11	Washer bearing	1	Technical polymer	33	Hex. socket screw	2	A2 - 70
13	Piston bolt	2	1.7131	34	Position indicator	1	techn. Polymer
14	Roller	2	1.3505	37	Spring package	1	FD SiCr / A2
15	Guide band	2	Technical polymer	38	Spring package	1	FD SiCr / A2
16	Slidepad	2	Technical polymer	39	Washer	1	A2
17D	End cover sealing	2	NBR 70				

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

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# PNEUMATIC ACTUATOR EB-SYS, SINGLE-ACTING

Only for EB-SYS (14.1 - 26.1)



## COMPONENT PARTS

Pt.	Description	Qty.	Material	Pt.	Description	Qty.	Material
1	Actuator cylinder	1	EN AW 6063 - T6	21D	Upper safety ring	1	1.1248
2	Piston	2	EN AC 46000	22D	Lower safety ring	1	1.1248
4	End cover SYS	2	EN AC 46000	23	swing bolt	1	1.7225
5	Drive shaft	1	1.7131	24D	Cover O-ring	2	NBR 70
6	Yoke	1	1.7131	26	Hex. socket screw	8/16	A2 - 70
7	Upper shaft bearing	1	Ms & Graphit	27	Stroke adjusting screw	2	A2 - 70
8	Lower shaft bearing	1	Ms & Graphit	30	Seal nut	2	A2 - 70
9	Upper piston bearing	1	technical polymer	30.1	O - Ring	2	NBR 70
10	Lower piston bearing	1	technical polymer	31	Valve connection plate	1	EN AC 46000
11	Upper washer bearing	1	technical polymer	32D	Shaped gasket	1	NBR 70
12	Lower washer bearing	1	technical polymer	33	Hex. socket screw	2	A2 - 70
13	Piston bolt	2	1.7131	34	Position indicator	1	technical polymer
14	Roller	2	1.3505	37	Spring package	1	FD SiCr / A2
15	Guide band	2	technical polymer	38	Spring package	1	FD SiCr / A2
16	Slidepad	2	technical polymer	39	Washer	1	A2
18D	Piston O-Ring	2	NBR 70	40	Safety ring	1	1.1248
19D	O-Ring, upper shaft	1	NBR 70	43	sealing plugs	2	NBR 70
20D	O-Ring, lower shaft	1	NBR 70				

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

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# PNEUMATIC ACTUATOR EB-SYS, SINGLE-ACTING (SPRING OPEN)

## ACTUATOR TORQUE

Type	Spring -package	Spring Md in Nm		Eff. air torque in Nm at control pressure									
				4 bar		5 bar		6 bar		7 bar		8 bar	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
EB 5.1 SYS25	VI	20	12	31	39	43	51	56	64	69	77	81	89
EB 5.1 SYS30	V	27	17			36	46	49	59	62	72	74	84
EB 5.1 SYS40	IV	35	22					41	54	54	67	66	79
EB 6.1 SYS25	VI	45	27	59	77	85	103	111	129	137	155	163	181
EB 6.1 SYS30	V	57	35			73	95	99	121	125	147	151	173
EB 6.1 SYS40	IV	74	45					82	111	108	137	134	163
EB 8.1 SYS25	VI	67	40	100	127	141	168	183	210	225	252	266	293
EB 8.1 SYS30	V	82	48			126	160	168	202	210	244	251	285
EB 8.1 SYS40	IV	111	65					139	185	181	227	222	268
EB 9.1 SYS25	VI	100	55	152	197	215	260	278	323	341	386	404	449
EB 9.1 SYS30	V	127	69			188	246	251	309	314	372	377	438
EB 9.1 SYS40	IV	153	89					225	289	288	352	351	415
EB 10.1 SYS25	VI	151	89	202	264	291	353	379	441	467	529	556	618
EB 10.1 SYS30	V	182	107			260	335	348	423	436	511	525	600
EB 10.1 SYS40	IV	231	145					299	385	387	473	476	562
EB 12.1 SYS25	VI	224	155	386	455	538	607	691	760	843	912	978	1065
EB 12.1 SYS30	V	309	185			453	577	606	730	758	882	911	1035
EB 12.1 SYS40	IV	392	241					523	674	675	826	828	979
EB14.1 SYS25	VI	312	199	579	692	802	915	1025	1138	1248	1361	1470	1583
EB14.1 SYS30	V	401	257			713	857	936	1080	1159	1303	1381	1525
EB14.1 SYS40	IV	491	314					846	1023	1069	1246	1291	1468
EB16.1 SYS25	VI	513	343	835	1005	1172	1342	1509	1679	1846	2016	2183	2353
EB16.1 SYS30	V	648	433			1037	1252	1374	1589	1711	1926	2048	2263
EB16.1 SYS40	IV	782	523					1240	1499	1577	1836	1914	2173
EB18.1 SYS25	VI	623	371	1133	1385	1572	1824	2011	2263	2450	2702	2889	3141
EB18.1 SYS30	V	803	476			1392	1719	1831	2158	2270	2597	2709	3036
EB18.1 SYS40	IV	979	581					1655	2053	2094	2492	2533	2931
EB20.1 SYS25	VI	894	550	1572	1916	2188	2532	2806	3150	3422	3766	4038	4382
EB20.1 SYS30	V	1139	705			1943	2377	2561	2995	3177	3611	3793	4227
EB20.1 SYS40	IV	1384	860					2316	2840	2932	3456	3548	4072
EB22.1 SYS25	VI	1106	712	2294	2688	3144	3538	3994	4388	4844	5238	5694	6088
EB22.1 SYS30	V	1477	950			2773	3300	3623	4150	4473	5000	5323	5850
EB22.1 SYS40	IV	1849	1188					3251	3912	4101	4762	4951	5612
EB26.1 SYS25	VI	2640	1478	3872	5034	5500	6662	7218	8290	8756	9918	10384	11546
EB26.1 SYS30	V	3168	1795			4972	6345	6600	7973	8228	9601	9856	11229
EB26.1 SYS40	IV	3696	2112					6072	7656	7700	9284	9328	10912