B Type Pneumatic Actuator

CH-air B Type/ 01

Jan 2008

Competitive ATEX approved pneumatic actuator

The CH-air B Type actuator is assembled using machined internal components which produces a finished product with a low friction coefficient. This produces an actuator that offers durability and reliability in service.

It is compliant with all the usual actuator norms making it compatible with similarly compliant valves, and position monitoring, control and feedback devices.

Safety is a key feature, particularly in spring return models, where the use of pre-loaded spring capsules which fully relax before the actuator's end cap is removed, protect engineers when servicing the actuator.

The CH-air B Type actuators carry the CE mark. In all but the smallest and largest actuator sizes, the actuator has dual ISO:5211 drillings and a double square drive, making the mounting of the CH-air B Type actuators flexible and easy.

The actuator is of rack and pinion design with an anti blow-out proof pinion, and its extruded aluminium body is hard anodized to protect it against oxidization in non-aggressive atmospheres.

An impressive 18 models make up the range of the aluminium version, offering a maximum double acting torque output of 8900Nm at 5.5 bar air supply, and 3100Nm end of spring torque for the largest spring return model, based on 5.5 bar air supply.

The CH-B Type actuators are ATEX approved making them safe to install in hazardous atmospheres.

Quick guide to the CH-air B Type standard features :

Robust rack and pinion construction

ATEX Ex II 2 GD Approved for use in hazardous areas

CE Marked

Hard anodised aluminium body

Safe to dismantle for routine maintenance

Compliant with all actuator standards

Position feedback and control devices are quick and easy to mount.

CH-BS Type actuators for large torque output requirements up to 44,000 Nm

For those really large output requirements, our 'BS' model, manufactured from steel, can produce 44,700Nm at 5.5 bar in its double acting configuration, and 15,100Nm end of spring in the largest spring return model.

The CH-air BS actuators are available on a factory lead time and offer a competitive solution for large torque requirements.

CH-air B Type

Materials of construction:

Body	Extruded aluminium alloy
End caps	Die cast aluminium
Pistons	Die cast aluminium
Pinion	Alloy steel
Sliding parts	Polyoxymethylene
Fasteners	Stainless steel
Springs	Pre-compressed cartridge
Seals	NBR Nitrile rubber & VITON

Air volumes:

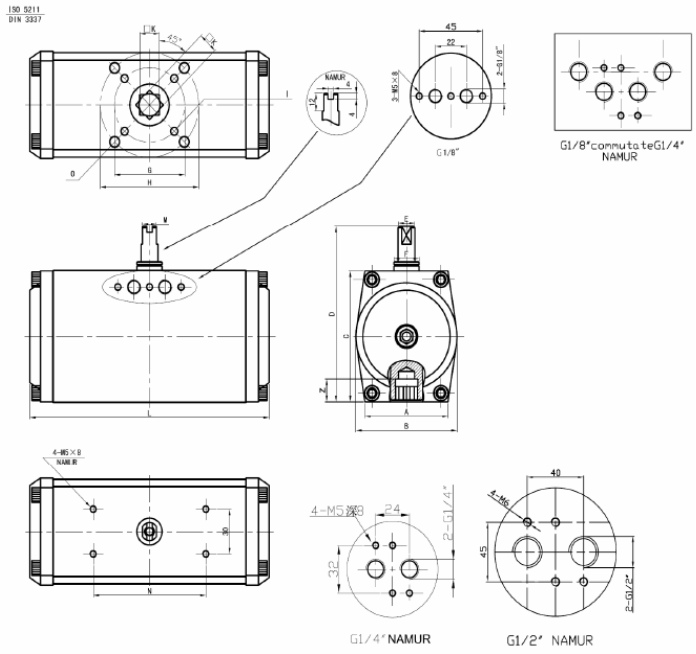
Modelo Model	Volumen apertura Volume opening	Volumen cierre Volume closing	Modelo Model	Volumen apertura Volume opening	Volumen cierre Volume closing
B-32DA	0.04	0.04	B-160DA	3.65	5.03
B -45DA	0.08	0.11	B-190DA	5.90	7.90
B-52DA	0.11	0.14	B-210DA	7.40	9.70
B-63DA	0.20	0.23	B-240DA	10.70	14.30
B-75DA	0.29	0.38	B-270DA	16.90	22.50
B-83DA	0.41	0.55	B-300DA	23.80	29.70
B-92DA	0.62	0.91	B-350DA	35.10	46.30
B-105DA	0.94	1.18	B-400DA	52.60	36.00
B-125DA	1.47	1.85	B-500DA	132.60	110.00
B-140DA	2.43	3.20	B-600DA	252.50	210.00

Torque Output (Nm) - Double Acting

Model	Air supply pressure in Bar					
	4	5	5.5	6	7	8
CH-B 32	6.1	7.6	8.4	9.2	10.7	12.2
CH-B 45	12.1	15.1	16.6	18.1	21.1	24.2
CH-B 52	16.1	20.2	22.2	24.2	28.2	32.3
CH-B 63	28.4	35.5	39.1	42.6	49.7	56.8
CH-B 75	40.3	50.3	55.4	60.4	70.5	80.5
CH-B 83	61.6	77.1	84.8	92.5	107.9	123.3
CH-B 92	90.9	113.6	125.0	136.3	159.1	181.8
CH-B105	131.6	164.4	180.9	197.3	230.2	263.1
CH-B125	205	256	282	308	359	410
CH-B140	351	439	482	526	614	702
CH-B160	535	668	735	802	935	1069
CH-B190	861	1077	1185	1292	1508	1723
CH-B210	1052	1316	1447	1579	1842	2105
CH-B240	1546	1933	2126	2320	2706	3093
CH-B270	2349	2936	3229	3523	4110	4697
CH-B300	3052	3815	4197	4578	5341	6104
CH-B350	4570	5712	6283	6854	7997	9139
CH-B400	6511	8139	8953	9767	11394	13022
CH-BS 500	16956	21195	23315	15434	29673	33912
CH-BS 600	32556	40694	44764	48833	56972	65111

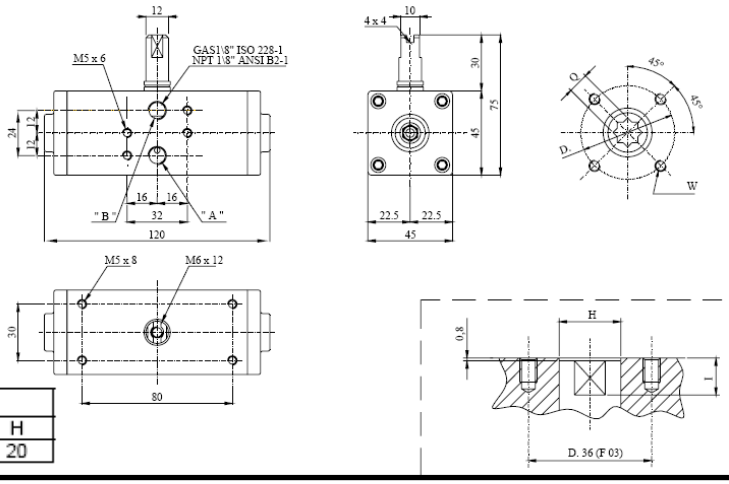
Dimensions:

Models CH-B 45 to CH-B 350



Modelo Model	A	B	C	D	E	F	G	H	I	L	M	T/ DIN	N	O	P	Q	R	S	DIÁMETRO	W	ISO 5211	Conexión de aire Air Connection
B-45	146	65	58			80	30		14				10	12	20	11			36/50	M5/M6	F03/F05	G1/8"
B-52	146	74	59			80	30		14				10	12	20	11			36/50	M5/M6	F03/F05	G1/4"
B-63	168	88	72			80	30		18				10	12	20	14			36/50/70	M5/M6/M8	F03/F05/F07	G1/4"
B-75	184	100	83			80	30		18				10	12	20	14			50/70	M6/M8	F05/F07	G1/4"
B-83	204	109	90			80	30		21				10	14	20	17			50/70	M6/M8	F05/F07	G1/4"
B-92	260	120	104			80	30		21				14	18	20	17			50/70	M6/M8	F05/F07	G1/4"
B-105	268	133	115			80	30		21				14	20	20	17			70/102	M8/M10	F07/F10	G1/4"
B-125	298	155	140			130	30		26				20	28	20	22			70/102	M8/M10	F07/F10	G1/4"
B-140	390	171.5	152			130	30		31				20	28	20	27			102/125	M10/M12	F10/F12	G1/4"
B-160	458	197	175.8			130	30		31				28	36	20	27			102/125	M10/M12	F10/F12	G1/4"
B-190	525	230	206			130	30		31				32	45	30	27			140	M16	F14	G1/4"
B-210	532	255	226			130	30		40				32	45	30	36			140	M16	F14	G1/4"
B-240	602	290	256			130	30		50				32	45	30	36			140	M16	F14	G1/2"
B-270	722	320	294			130	30		50				32	45	30	46			165	M20	F16	G1/2"
B-300	742	348	324			130	30		60				32	45	30	46			165	M20	F16	G1/2"
B-350	860	402	380			130	30		60				32	45	30	46			165	M20	F16	G1/2"

Model CH-B 32

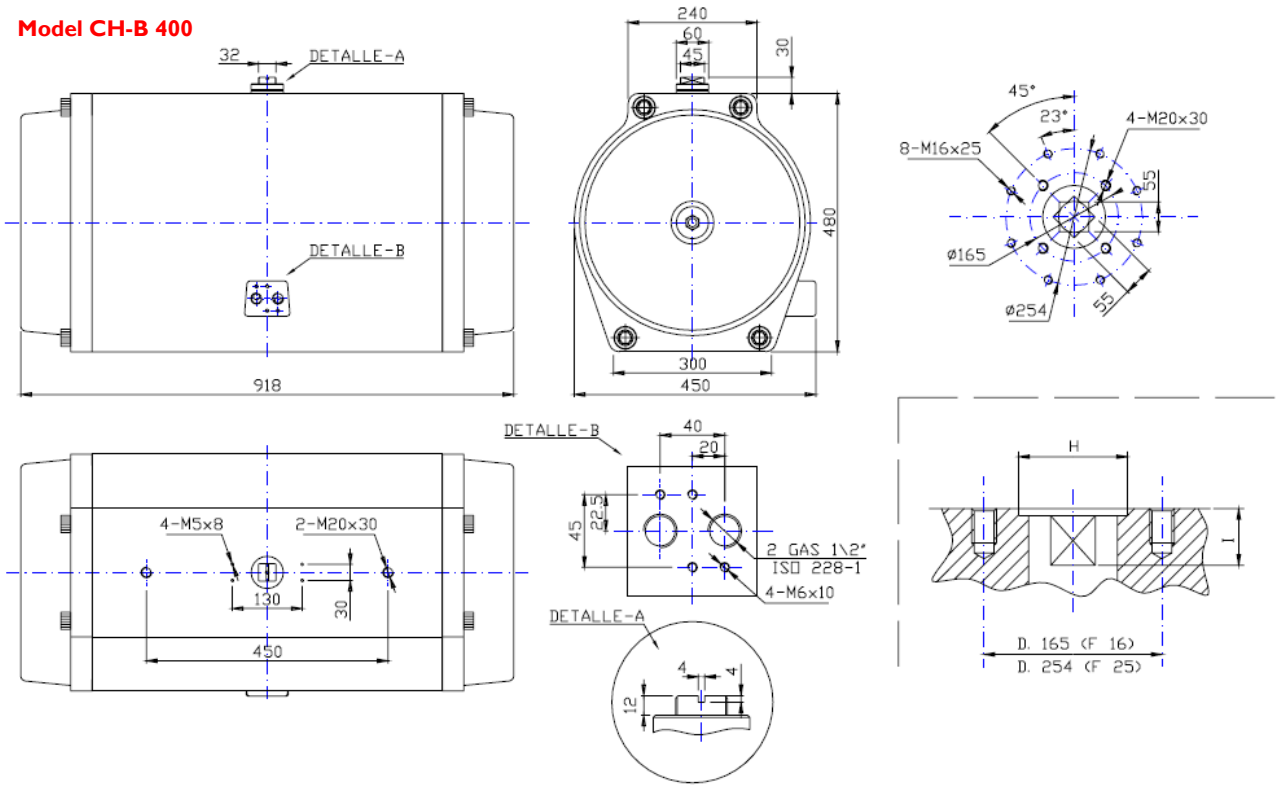


Model CH-B 32 - *Specifications*

ISO 5211	D	W	Q	I	H
F03	36	M- 5 x 8	9	10	20

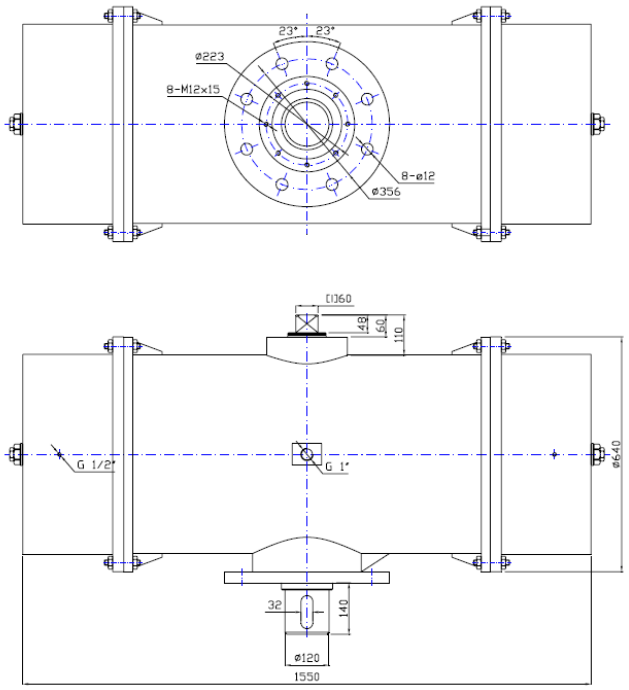
Dimensions:

Model CH-B 400

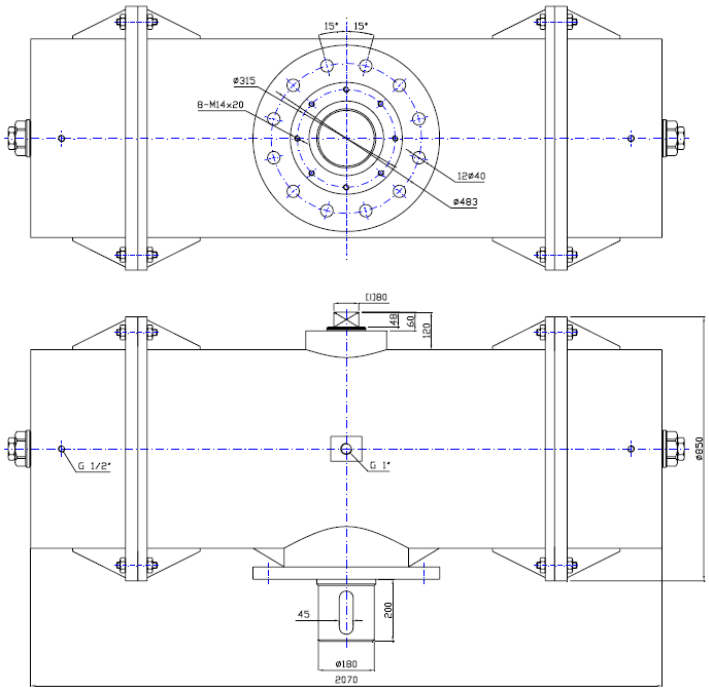


Type CH-BS high output steel actuators - overall dimensions

Model CH-BS 500



Model CH-BS 600



Torque output (Nm) - Spring return models (Best balance shown. Other spring combinations available on request.)

SR Model	Qty of springs	4 Bar air pressure		5 Bar air pressure		6 Bar air pressure		Spring output torque	
		0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End
CH-B 45	8	7.2	4.3					7.4	4.6
	9	6.6	3.4	9.6	6.4			8.3	5.2
	10			9.0	5.4			9.2	5.8
	11					11.4	7.4	10.1	6.4
	12					10.8	6.5	11.1	7.0
CH-B 52	8	9.0	5.7					9.9	6.8
	9			12.2	8.5			11.1	7.6
	10			11.3	7.2			12.4	8.5
	11					14.4	9.9	13.6	9.3
	12					13.5	8.6	14.8	10.1
CH-B 60	8	16.9	10.8					16.7	10.9
	9	15.4	8.6	22.5	15.7			18.8	12.3
	10			21.1	13.5			20.9	13.7
	11			19.7	11.3	26.8	18.4	22.9	15.0
	12					25.3	16.2	25.0	16.4
CH-B 75	8	22.5	15.9					23.2	16.9
	9			30.3	22.9			26.1	19.0
	10			28.1	19.8			29.0	21.1
	12					33.8	23.8	34.7	25.3
CH-B 83	8	35.0	22.8					36.8	25.3
	9			47.1	33.5			41.4	28.5
	10			43.8	28.7			46.0	31.6
	12					52.5	34.4	55.2	38.0
CH-B 92	8	51.6	33.0					55.0	37.3
	9			69.4	48.5			61.9	42.0
	10			64.5	41.2			68.7	46.7
	11					82.2	56.7	75.6	51.4
	12					77.3	49.5	82.5	56.0
CH-B105	8	78.3	48.7					78.7	50.6
	10			97.8	60.8			98.4	63.3
	12					117.4	73.0	118.1	75.9
CH-B125	8	116.8	73.0					125.4	83.8
	9			156.8	107.5			141.1	94.2
	10			145.8	91.0			156.8	104.7
	11					186.8	126.5	172.4	115.2
	12					175.7	110.0	188.1	125.7
CH-B140	8	206.5	133.8					206.3	137.3
	10			258.4	167.5			257.9	171.6
	12					309.3	200.2	309.5	205.9
CH-B160	8	299.8	184.2					333.0	223.0
	9			403.4	273.3			375.0	251.0
	10			374.0	229.5	508.0	363.5	417.0	279.0
	11					478.6	319.6	458.0	307.0

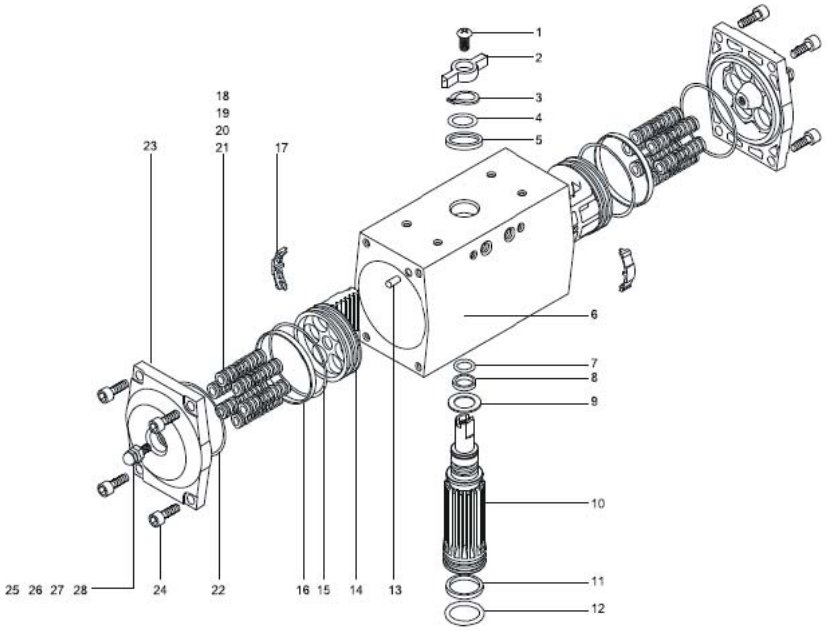
Torque output (Nm) - Spring return models (Best balance shown. Other spring combinations available on request.)

Model	Qty of springs	4 Bar air pressure		5 Bar air pressure		6 Bar air pressure		Spring output torque	
		0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End
CH-B190	8	524	340					469	303
	10			656	426			586	379
	11			614	361			645	417
	12					787	511	703	455
CH-B210	8	589	413					575	417
	10			737	517			719	521
	12					884	620	863	625
CH-B240	8	855	613					840	622
	10			1069	767			1050	778
	12					1283	920	1260	933
CH-B270	9	1289	859					1341	954
	11			1640	1115			1639	1166
	12					2110	1537	1788	1272
CH-B300	8	1754	1166					1697	1168
	10			2193	1458			2122	1460
	12					2631	1749	2546	1752
CH-B350	7	2745	1922					2383	1642
	9			3366	2307			3064	2112
	11					3986	2693	3745	2581
	12					3726	2314	4086	2816
CH-B400	9	3887	2396					3703	2362
	11			4931	3110			4526	2887
	12			4640	2653			4938	3149
	14					5685	3366	5761	3674

CH-BS Steel version high output actuators

CH-B500	7	10559	6543					9372	5629
	8	9646	5055	13885	9294			10711	6433
	9			12971	7806			12050	7237
	11					15382	9070	14728	8846
CH-B600	6	17782	7984					22115	13001
	7			23457	12026			25801	15168
	8					29134	16070	29487	17335

Exploded view:



Num,.	Description *Descripción*	Qty *Cant.*	MATERIAL	PROTECTION *PROTECCIÓN*
1	Indicator screw *Torn. sujec. indicador*	1	ABS	
2	Position Indicator *Indicador posición*	1	ABS	
3	Spring clip *Circlip*	1	Stainless Steel 304 *Acero inox 304*	
4	Metal washer *Arandela metálica*	1	Stainless Steel 304 *Acero inox. 304*	
5	Outside washer *Arandela exterior*	1	Engineering plastics *Plástico induatrial*	
6	Body *Cuerpo*	1	Extruded Aluminum alloy *Aleación aluminio extruido*	
7	O-ring pinion top *Junta*	1	NBR	
8	Bearing piñón top *Guía sup. piñón*	1	Engineering plastic *Plástico industrial*	
9	Inside washer *Arandela interior*	1	Engineering plastic *Plástico industrial*	Hard anodized *Anodizado duro*
10	Pinion *Piñón*	1	Alloy steel *Aleación acero*	Electroless Ni plated *Niquel químico*
11	Bearing pinion bottom *Guia inferior piñón*	1	NBR	
12	O-ring pinion bottom *Junta*	1	Engineering plastic *Plástico Industrial*	
13	Hole sealant *Sello taladro*	2	NBR	
14	Piston *Pistón*	2	Cast Aluminium 304 *Fund. Aluminio 304*	
15	O-ring piston *Junta pistón*	2	NBR	
16	Bearing piston *Anillo antifricción*	2	Engineering plastic *Plástico industrial*	
17	Piston Bearing *Patín antifricción*	2	Engineering plastic *Plástico Industrial*	Anodized/Zinc galvanized *anodizado/galvanizado*
18-21	Spring Group *Grupo muelles*	0~12	Spring steel *Muelle acero*	
22	O-ring end cap *Junta tapa*	2	NBR	
23	End cap *Tapa*	2	Cast Aluminium *Fundición Aluminio*	Polyester paint *Pintura poliester*
24	Cap screw *Tornillo tapa*	8	Stainless Steel 304 *Acero inox. 304*	
25-27	Nut stop screw *Tuerca tornillo*	2	Stainless Steel *Acero inox*	
28	Stop screw *Tornillo tope*	2	Stainless Steel Acero inox 304	