专注于缓冲阻尼技术
FOCUS ON DAMPING TECHNOLOGY

MADE IN CHINA

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专注于缓冲阻尼技术 FOCUS ON DAMPING TECHNOLOGY

November 2016

BDC Hydraulic Shock Absorbers & Dampers

专注于缓冲阻尼技术
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About Us

BDC Focus on Industrial Damping Technology. BDC is a premier supplier of engineered Mechanical Shock Absorbers, Deceleration Devices and products for Hydraulic/Pneumatic Actuation and Motion Control applications. Our products and services can be found in use throughout the global Industrial, Rail and Transportation, Automation and Infrastructure markets.

BDC's highly engineered critical components and customized technology solutions to stay at the forefront of new technologies, six-sigma and lean manufacturing research and development provide the low cost and high quality products for our customers around the world.

We offer a broad range of highly engineered products to extend equipment life, improve comfort and increase safety and reliability. Contact us today to see how our products can benefit your specific equipment application needs or alternatively you may find one of our many representatives to help you meet your product requirements.

For more information, visit **www.bdctec.cn**

Applications








Catalog

Hydraulic Shock Absorbers & Dampers

Overview

BD series is the standard industrial hydraulic shock absorbers. You only need rotate the adjustment knob changing the damping force to get the best energy absorption in different working conditions (weight, impact velocity, driving force etc.) and also provide best convenient model selection and application flexibility for customers because single model can meet wide ranges of operation conditions. End users also can adjust the knob to recover the best energy absorption if working condition changes. BDC can supply broadest ranges of adjustable shock absorbers and mounting accessories for current buffer market.

How to use

BD hydraulic shock absorbers use the advanced 0~12step ranges to rotate, get visible damping force curve and achieve perfect energy absorption.
"0"to get the minimum damping force, "12"is the maximum and the initial setting is "0". You must adjust the knob changing the damping force to get the best energy absorption before using otherwise it can't protect your machines and even damage it per emergency deceleration, and also it will shorten the service life. Thus correct adjustment is most important, not only for confirming the best damping step, but also to avoid damaging when incorrect adjustment occurred.

Adjustment Skills

Make sure the adjustment knob number is in "0", installing the shock absorbers and start, then to rotate the knob to check the decelerating conditions through watching and listening. If the damping force is too small (no obvious decelerating phenomenon in entire stroke and you can hear "PENG" in the end), please adjust to next step. In order to avoid damaging the shock absorbers, please rotate the knob step by step(rotate from 0 to 4 is not allowed, should be 0 to 1,then to 2, to 3,to4,step by step). When the movement velocity is controlled, smoothly decelerated and only can hear "CHI", It indicated this step is the best, then to use the hex keys to lock the set screws. If shock absorbers suddenly decelerated when moved in beginning or central and hear a large impacting noise "PENG" please adjust the knob to smaller step to get smoothly impact deceleration, if the knob already in "0", please use the small model; If suddenly decelerating happen in the end and make a big noise, and the knob is in 12 step, we recommend you to use the larger model.

Performance and Advantages

1. Damping adjustment design: adopt the advanced 0~12gear range to adjust, get visible damping force curve and achieve perfect energy absorption.

2. Orifices design: Giving up the single orifice design of European and American brands, adopting the newest multiple orifices design. In same working condition, new design generated the smallest damping force and get best energy absorption in a shortest stopping time. And also avoiding equipment damaged, reducing the noise, saving maintenance costs and shortening the cycle time to improve the productivity.

3. Cylinder and adjustment knob design: cylinder outer diameter range M10~M115; cylinder and adjustment knob can be perfectly assembled per installation and adjustment experiences.

4. Seal design: cylinder diameter OD ≥M20, all rod seals and rod wiper are used polyurethane materials, together with high intensity chrome plated piston rods, it can drastically improve the buffers service life and endure the harsh working conditions.

5. New bearing design to resist side load: use unique long front bearing + DU bushing to drastically resist the side load. This design can guarantee products service life and reduce the dependence on the installation accuracy.

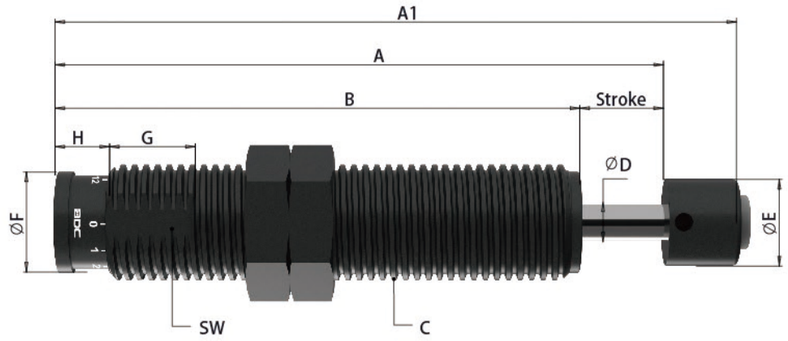
6. New product to endure the most side load angle to 30°: Supply special models BD25-25SP and BD36-25SP to accommodate the rotated working station purpose .It can be smoothly worked without any special accessories.

7. Impact velocity range: 0.02~5m/s, out of this range, customized service can be offered. The highest velocity can be up to 20m/s.

8. Range of temperature: If use special seal material and hydraulic oil, the standard temperature range from -10℃ ~80℃ can be extended to -30℃~100℃.

9. Customized service: Based on the world class engineering team, BDC can provide special hydraulic damping technology solution and reliable verified testing reports.

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/hr) ETC	Cylinder Diameter (mm) C	Page
BD10-07(B)	7	6	14500	M10x1.0	5-6
BD12-10(B)	10	16	24500	M12x1.0	5-6
BD12-14(B)	14	22	35500	M12x1.0	5-6
BD14-12(B)	12	28	46500	M14x1.5	5-6
LRBD14-12(B)	12	28	46500	M14x1.5	5-6
BD16-12(B)	12	33	55000	M16x1.5	5-6
LRBD16-12(B)	12	33	55000	M16x1.5	5-6
BD20-16(B)	16	65	65000	M20x1.5	5-6
LRBD20-16(B)	16	65	65000	M20x1.5	5-6
BD25-25(B)	25	220	111000	M25x1.5	7-8
LRBD25-25(B)	25	220	111000	M25x1.5	7-8
BD25-25(B)-SP	22	200	100000	M25x1.5	7-8
LRBD25-25(B)-SP	22	200	100000	M25x1.5	7-8
BD25-40(B)	40	300	182000	M25x1.5	7-8
LRBD25-40(B)	40	300	182000	M25x1.5	7-8
BD25-80(B)	80	390	210000	M25x1.5	7-8
BD27-25F(B)	25	220	111000	M27x1.5	7-8
LRBD27-25F(B)	25	220	111000	M27x1.5	7-8
BD27-25(B)	25	220	111000	M27x3.0	7-8
LRBD27-25(B)	25	220	111000	M27x3.0	7-8
BD27-40(B)	40	300	182000	M27x3.0	7-8
LRBD27-40(B)	40	300	182000	M27x3.0	7-8
BD30-35(B)	35	350	135000	M30x1.5	7-8
BD33-25(B)	25	300	120000	M33x1.5	7-8
LRBD33-25(B)	25	300	120000	M33x1.5	7-8
BD33-50(B)	50	500	150000	M33x1.5	7-8
LRBD33-50(B)	50	500	150000	M33x1.5	7-8
BD36-25(B)	25	330	125000	M36x1.5	7-8
LRBD36-25(B)	25	330	125000	M36x1.5	7-8
BD3625(B)-SP	25	330	125000	M36x1.5	7-8
LRBD3625(B)-SP	25	330	125000	M36x1.5	7-8
BD36-50(B)	50	550	160000	M36x1.5	7-8
LRBD36-50(B)	50	550	160000	M36x1.5	7-8
BD42-25(B)	25	700	185000	M42x1.5	9-10
LRBD42-25(B)	25	700	185000	M42x1.5	9-10
BD42-50(B)	50	1350	255000	M42x1.5	9-10
LRBD42-50(B)	50	1350	255000	M42x1.5	9-10
BD42-75(B)	75	2100	285000	M42x1.5	9-10
LRBD42-75(B)	75	2100	285000	M42x1.5	9-10
BD45-25(B)	25	700	185000	M45x1.5	9-10
LRBD45-25(B)	25	700	185000	M45x1.5	9-10
BD45-50(B)	50	1350	255000	M45x1.5	9-10
LRBD45-50(B)	50	1350	255000	M45x1.5	9-10
BD45-75(B)	75	2100	285000	M45x1.5	9-10
LRBD45-75(B)	75	2100	285000	M45x1.5	9-10
BD64-50(B)	50	2500	250000	M64x2.0	9-10
LRBD64-50(B)	50	2500	250000	M64x2.0	9-10
BD64-100(B)	100	5000	350000	M64x2.0	9-10
LRBD64-100(B)	100	5000	350000	M64x2.0	9-10
BD64-150(B)	150	7500	450000	M64x2.0	9-10
LRBD64-150(B)	150	7500	450000	M64x2.0	9-10
BD85-50(B)	50	2500	380000	M85x2.0	11-12
BD85-90(B)	90	4300	680000	M85x2.0	11-12
BD85-125(B)	125	6000	100000	M85x2.0	11-12
BD85-165(B)	165	7500	1300000	M85x2.0	11-12
BD115-50(B)	50	4000	1600000	M115x2.0	11-12
BD115-100(B)	100	8000	1850000	M115x2.0	11-12
BD115-150(B)	150	12000	2200000	M115x2.0	11-12
BD115-200(B)	200	16000	2500000	M115x2.0	11-12
BD115-250(B)	250	21000	2800000	M115x2.0	11-12

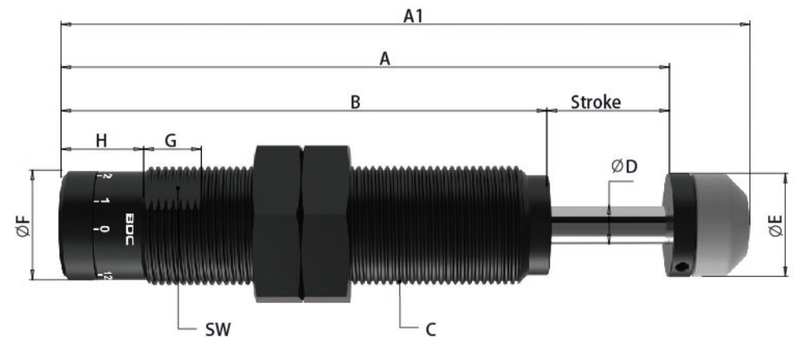


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/h) ETC	Effective Weight (kg) We	Recoil Force (N)		Weight (kg)
					Min	Max	
BD10-07(B)	7	6	14500	0.1-20	2	5	0.03
BD12-10(B)	10	16	24500	1-60	4	7	0.05
BD12-14(B)	14	22	35500	1-80	4	9	0.06
BD14-12(B)	12	28	46500	1-150	4	9	0.08
LRBD14-12(B)	12	28	46500	25-495	4	9	0.08
BD16-12(B)	12	33	55000	1-200	5	10	0.1
LRBD16-12(B)	12	33	55000	30-660	5	10	0.1
BD20-16(B)	16	65	65000	1.5-400	7	14	0.18
LRBD20-16(B)	16	65	65000	70-1230	7	14	0.18

Dimension (Unit: mm)

Model	A1	A	B	C	D	E	F	G	H	SW
BD10-07(B)	74.5	64.5	57.5	M10x1.0	3	8.5	8	7	7.7	8.8
BD12-10(B)	86	75	65.5	M12x1.0	4	10.5	10	12	7	11
BD12-14(B)	95.5	84.5	70.5	M12x1.0	4	10.5	10	12	7	11
BD14-12(B)	96	85	73	M14x1.5	4	10.5	12	12	7	13
LRBD14-12(B)	96	85	73	M14x1.5	4	10.5	12	12	7	13
BD16-12(B)	96	84.5	72.5	M16x1.5	5	12	14	12	7	14
LRBD16-12(B)	96	84.5	72.5	M16x1.5	5	12	14	12	7	14
BD20-16(B)	115	97.5	81.5	M20x1.5	6	17.8	18	15	13	18.5
LRBD20-16(B)	115	97.5	81.5	M20x1.5	6	17.8	18	15	13	18.5

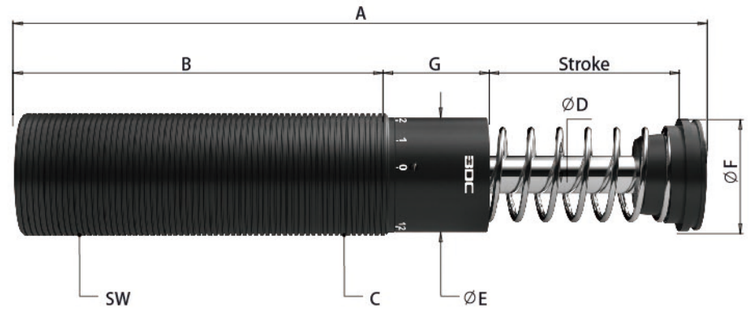


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/h) ETC	Effective Weight (kg) We	Recoil Force (N)		Weight (kg)
					Min	Max	
BD25-25(B)	25	220	111000	9-1230	15	33	0.36
LRBD25-25(B)	25	220	111000	120-4500	15	33	0.36
BD25-25(B)-SP	22	200	100000	9-1200	15	33	0.37
LRBD25-25(B)-SP	22	200	100000	120-4300	15	33	0.37
BD25-40(B)	40	300	182000	9-3000	22	43	0.39
LRBD25-40(B)	40	300	182000	120-9000	22	43	0.39
BD25-80(B)	80	390	210000	15-3000	22	47	0.92
BD27-25F(B)	25	220	111000	9-1230	15	33	0.37
LRBD27-25F(B)	25	220	111000	120-4500	15	33	0.37
BD27-25(B)	25	220	111000	9-1230	15	33	0.37
LRBD27-25(B)	25	220	111000	120-4500	15	33	0.37
BD27-40(B)	40	300	182000	9-3000	22	43	0.43
LRBD27-40(B)	40	300	182000	120-9000	22	43	0.43
BD30-35(B)	35	350	135000	25-6800	23	47	0.61
BD33-25(B)	25	300	120000	28-7000	24	49	0.77
LRBD33-25(B)	25	300	120000	130-23000	24	49	0.77
BD33-50(B)	50	500	150000	55-14500	25	52	0.96
LRBD33-50(B)	50	500	150000	260-48000	25	52	0.96
BD36-25(B)	25	330	125000	30-7500	25	51	0.83
LRBD36-25(B)	25	330	125000	135-24500	25	51	0.83
BD3625(B)-SP	25	330	125000	30-7500	25	51	0.85
LRBD3625(B)-SP	25	330	125000	135-24500	25	51	0.85
BD36-50(B)	50	550	160000	60-15000	26	65	1.06
LRBD36-50(B)	50	550	160000	280-49500	26	65	1.06

Dimension (Unit: mm)

Model	A1	A	B	C	D	E	F	G	H	SW
BD25-25(B)	143	126.5	101.5	M25x1.5	8	22	23	12	17	23.2
LRBD25-25(B)	143	126.5	101.5	M25x1.5	8	22	23	12	17	23.2
BD25-25(B)-SP	152	140	117.5	M25x1.5	10	22	23	12	17	23.2
LRBD25-25(B)-SP	152	140	117.5	M25x1.5	10	22	23	12	17	23.2
BD25-40(B)	195	179	139	M25x1.5	8	22	23	12	17	23.2
LRBD25-40(B)	195	179	139	M25x1.5	8	22	23	12	17	23.2
BD25-80(B)	343.5	327	247	M25x1.5	8	22	23	12	27	23.2
BD27-25F(B)	143	126.5	101.5	M27x1.5	8	22	23	12	17	23.2
LRBD27-25F(B)	143	126.5	101.5	M27x1.5	8	22	23	12	17	23.2
BD27-25(B)	143	126.5	101.5	M27x3.0	8	22	23	12	17	23.2
LRBD27-25(B)	143	126.5	101.5	M27x3.0	8	22	23	12	17	23.2
BD27-40(B)	195	179	139	M27x3.0	8	22	23	12	17	23.2
LRBD27-40(B)	195	179	139	M27x3.0	8	22	23	12	17	23.2
BD30-35(B)	184	168.5	133	M30x1.5	10	28	28	15	18	28.5
BD33-25(B)	165	149.5	124.5	M33x1.5	10	28	30	22	16.5	31
LRBD33-25(B)	165	149.5	124.5	M33x1.5	10	28	30	22	16.5	31
BD33-50(B)	232	216.5	166.5	M33x1.5	10	28	30	22	16.5	31
LRBD33-50(B)	232	216.5	166.5	M33x1.5	10	28	30	22	16.5	31
BD36-25(B)	165	149.5	124.5	M36x1.5	10	28	33	22	16.5	34
LRBD36-25(B)	165	149.5	124.5	M36x1.5	10	28	33	22	16.5	34
BD3625(B)-SP	173	157.5	132.5	M36x1.5	14	28	33	22	16.5	34
LRBD3625(B)-SP	173	157.5	132.5	M36x1.5	14	28	33	22	16.5	34
BD36-50(B)	232	216.5	166.5	M36x1.5	10	28	33	22	16.5	34
LRBD36-50(B)	232	216.5	166.5	M36x1.5	10	28	33	22	16.5	34

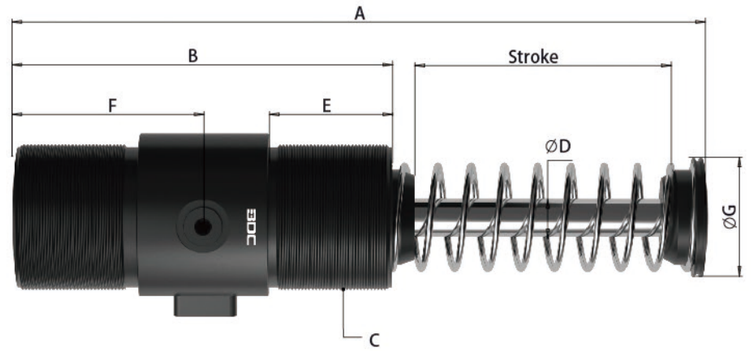


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) E_T	Max. Energy /Hour (Nm/h) E_TC	Effective Weight (kg) We	Recoil Force (N)		Weight (kg)
					Min	Max	
BD42-25(B)	25	700	185000	40-6000	20	41	1.1
LRBD42-25(B)	25	700	185000	300-19000	20	41	1.1
BD42-50(B)	50	1350	255000	50-8000	22	43	1.4
LRBD42-50(B)	50	1350	255000	600-26000	22	43	1.4
BD42-75(B)	75	2100	285000	60-10000	22	45	1.5
LRBD42-75(B)	75	2100	285000	900-33000	22	45	1.5
BD45-25(B)	25	700	185000	40-6000	20	41	1.2
LRBD45-25(B)	25	700	185000	300-19000	20	41	1.2
BD45-50(B)	50	1350	255000	50-8000	22	43	1.6
LRBD45-50(B)	50	1350	255000	600-26000	22	43	1.6
BD45-75(B)	75	2100	285000	60-10000	22	45	1.9
LRBD45-75(B)	75	2100	285000	900-33000	22	45	1.9
BD64-50(B)	50	2500	250000	100-24000	46	100	3.1
LRBD64-50(B)	50	2500	250000	4000-76000	46	100	3.1
BD64-100(B)	100	5000	350000	120-48000	56	120	4.2
LRBD64-100(B)	100	5000	350000	8000-130000	56	120	4.2
BD64-150(B)	150	7500	450000	150-72000	60	125	5.4
LRBD64-150(B)	150	7500	450000	12000-230000	60	125	5.4

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	SW
BD42-25(B)	167.5	99	M42x1.5	14	39	38	33	40
LRBD42-25(B)	167.5	99	M42x1.5	14	39	38	33	40
BD42-50(B)	233.5	132	M42x1.5	14	39	38	41	40
LRBD42-50(B)	233.5	132	M42x1.5	14	39	38	41	40
BD42-75(B)	299	170	M42x1.5	14	39	38	44	40
LRBD42-75(B)	299	170	M42x1.5	14	39	38	44	40
BD45-25(B)	167.5	99	M45x1.5	14	39	38	33	43
LRBD45-25(B)	167.5	99	M45x1.5	14	39	38	33	43
BD45-50(B)	233.5	132	M45x1.5	14	39	38	41	40
LRBD45-50(B)	233.5	132	M45x1.5	14	39	38	41	40
BD45-75(B)	299	170	M45x1.5	14	39	38	44	40
LRBD45-75(B)	299	170	M45x1.5	14	39	38	44	40
BD64-50(B)	238.5	133	M64x2.0	20	60	59	42	-
LRBD64-50(B)	238.5	133	M64x2.0	20	60	59	42	-
BD64-100(B)	355.5	194	M64x2.0	20	60	59	48.5	-
LRBD64-100(B)	355.5	194	M64x2.0	20	60	59	48.5	-
BD64-150(B)	484	259	M64x2.0	20	60	59	61.5	-
LRBD64-150(B)	484	259	M64x2.0	20	60	59	61.5	-



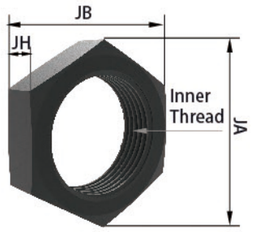
Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/h) ETC	Effective Weight (kg) We	Recoil Force (N)		Weight (kg)
					Min	Max	
BD85-50(B)	50	2500	380000	210-38000	45	95	7
BD85-90(B)	90	4300	680000	300-45000	49	100	9
BD85-125(B)	125	6000	1000000	300-43000	53	115	11
BD85-165(B)	165	7500	1300000	360-45000	60	122	14
BD115-50(B)	50	4000	1600000	370-44000	49	102	16
BD115-100(B)	100	8000	1850000	370-57000	52	113	19
BD115-150(B)	150	12000	2200000	370-89000	60	121	20
BD115-200(B)	200	16000	2500000	390-118000	66	135	31
BD115-250(B)	250	21000	2800000	440-145000	71	144	34

Dimension (Unit: mm)

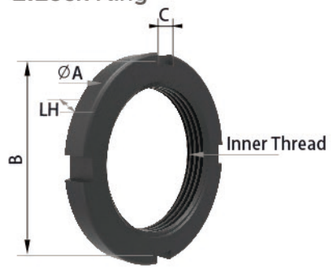
Model	A	B	C	D	E	F	G
BD85-50(B)	245	140	M85x2.0	22	51	70	69
BD85-90(B)	323	179	M85x2.0	22	71	90	69
BD85-125(B)	399	217	M85x2.0	22	71	109	69
BD85-165(B)	494	256	M85x2.0	22	71	128	81
BD115-50(B)	313	203	M115x2.0	35	80	102	88
BD115-100(B)	414	254	M115x2.0	35	105	127	88
BD115-150(B)	516	305	M115x2.0	35	108	153	88
BD115-200(B)	643	356	M115x2.0	35	108	178	88
BD115-250(B)	745	406	M115x2.0	35	108	203	88

1.Jam Nut



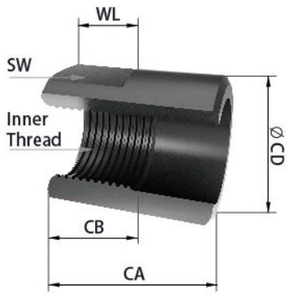
Model	JA	JB	JH	Inner Thread
JN-10	15	13	4	M10x1.0
JN-12	16.2	14	5	M12x1.0
JN-14	22	19	6	M14x1.5
JN-16	22	19	6	M16x1.5
JN-20	29	25	8	M20x1.5
JN-25	37	32	10	M25x1.5
JN-27F	37	32	10	M27x1.5
JN-27	37	32	10	M27x3.0
JN-30	41	35.5	10	M30x1.5
JN-33	53.2	46	10	M33x1.5
JN-36	53.2	46	10	M36x1.5

2.Lock Ring



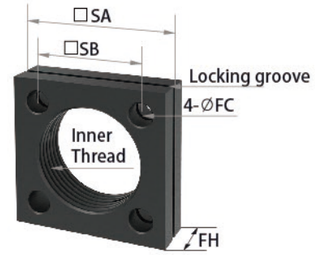
Model	LA	LB	LC	LH	Inner Thread
LR42	58	52	6	9	M42x1.5
LR45	58	52	6	9	M45x1.5
LR64	75	69.5	7	10	M64x2.0
LR85	110	100	10	16	M85x2.0
LR115	150	138	14	20	M115x2.0

3.Stop Collar



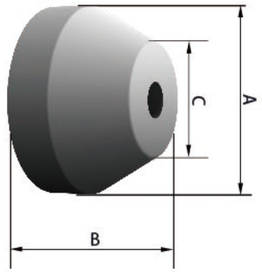
Model	CA	CB	CD	WL	SW	Inner Thread
SC10	20	10	14	10	12.5	M10x1.0
SC12	20	10	17	10	15	M12x1.0
SC14	20	10	21	12	19	M14x1.5
SC16	20	10	21	12	19	M16x1.5
SC20	25	13	25.4	12	23	M20x1.5
SC25	32	16	32	15	30	M25x1.5
SC27F	32	16	35	15	32	M27x1.5
SC27	32	16	35	15	32	M27x3.0
SC30	41	20	38	17	34	M30x1.5
SC33	41	25	38	17	36	M33x1.5
SC36	63.5	30	43	18	41	M36x1.5
SC42	62	40	56	25	53	M42x1.5
SC45	62	40	56	25	53	M45x1.5
SC64	89	50	76	30	73	M64x2.0
SC85	95	50	98	35	95	M85x2.0
SC115	130	50	138	40	135	M115x2.0

4.Square Flange



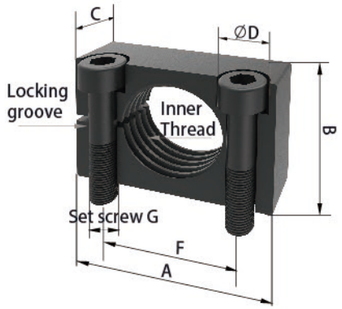
Model	SA	SB	FH	FC	Inner Thread
SF42	60	41	14	9	M42x1.5
SF45	60	41	14	9	M45x1.5
SF64	90	70	16	11	M64x2.0
SF85	104	76	19	13	M85x2.0
SF115	140	111	19	18	M115x2.0

5.Urethane Cap



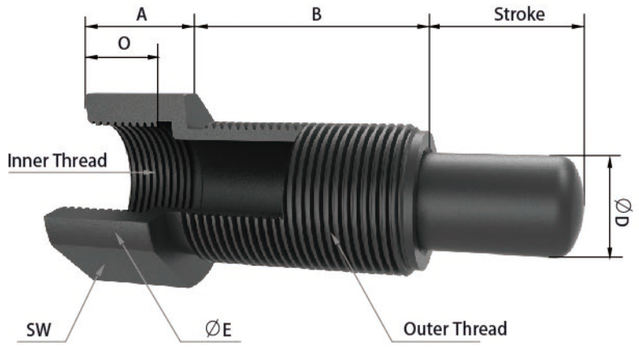
Model	A	B	C
UC30/33/36	31.7	21	18
UC42/45	42	25	24
UC64	64	28	34
UC85	80	30	54
UC115	110	31	75

6.Mounting Block(Foot Mount)



Model	A	B	C	D	E	F	G	Inner Thread
MB10	25	14	10	8	5	16	M4	M10x1.0
MB12	32	16	12	9	6	20	M5	M12x1.0
MB14	32	20	12	9	6	20	M5	M14x1.5
MB16	36	22	16	11	7	24	M6	M16x1.5
MB20	40	25	20	11	7	28	M6	M20x1.5
MB25	46	32	25	11	7	32	M6	M25x1.5
MB27F	48	32	25	11	7	35	M6	M27x1.5
MB27	48	32	25	11	7	35	M6	M27x3.0
MB30	53	37	25	11	7	39	M6	M30x1.5
MB33	56	40	25	11	7	42	M6	M33x1.5
MB36	61	42	25	11	7	45	M6	M36x1.5
MB42	80	56	25	14	9	60	M8	M42x1.5
MB45	80	56	25	14	9	60	M8	M45x1.5
MB64	100	80	25	16	11	78	M10	M64x2.0
MB85	120	100	30	22	15	98	M14	M85x2.0
MB115	120	100	30	25	17	98	M16	M115X2.0

7.Side Load Adapter



Model	A	B	Stroke	D	E	SW	O	Inner Thread	Outer Thread
SL14-12	14	19.5	12	6	22	19	9	M14x1.5	M14x1.5
SL16-12	19	22.8	12	8	22	19	13	M16x1.5	M16x1.5
SL20-16	20	34	16	12	30	25	12	M20x1.5	M20x1.5
SL25-25	20	42	25	16	35	31	14	M25x1.5	M25x1.5
SL27-25F	20	42	25	16	35	32	15	M27x1.5	M27x1.5
SL27-25M	20	42	25	16	35	32	15	M27x3.0	M27x3.0
SL30-35	25	57	35	20	40	36	16	M30x1.5	M30x1.5
SL33-25	22	47	25	20	44	40	15	M33x1.5	M33x1.5
SL36-25	22	47	25	20	44	41	15	M36x1.5	M36x1.5

Attention: Only used together with non-button shock tubes The max side load angle is 30°.

BD Series Ordering Sample

BD 14 - 12 B -SC

- BD Adjustable Series
- Cylinder Diameter
- Stroke
- NB Non-Button
- B: Steel Button
- Accessories

Accessories

1. SC：Stop Collar
2. SF：Square Flange
3. SL：Side Load Adapter
4. UC：Urethane Cap
5. MB：Mounting Block(Foot Mount)

Cycle life of shock absorbers can be ensured and prolonged only by proper operation.

Ensure that the model selection of shock absorbers is correct

Recommend to use our free selection service to make sure the selection is economical and reliable.

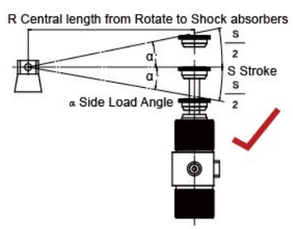
Correct Installation method

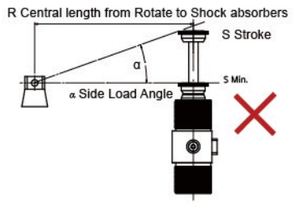
1. Make sure the load of installation location is enough
2. The side load angle of installation is less than 2°; if larger than 2°, the piston rod will be bent due to the high side load, it caused oil leakage and shortened life span due to piston rod restoration failure and oil seal failure.
3. Shock absorbers can't be used as limiting device, you should install the stop collar at the point of stroke length 1mm advanced, Please don`t remove the steel button, otherwise the piston rod will be bump against to end and damaged it.
4. Make sure the screw and bolts are fixed, use thread glue to ensure it can't be moved when working.
5. Two or more shock absorbers are parallel used in same time, please choose the same models and if it's adjustable, please rotate the knob to the same step.
6. In rotary operation，We recommend to use the shock absorbers without urethane cap. In order to keep the side load angle is less than 2°, Installation method must be guaranteed below 2 points in same time:

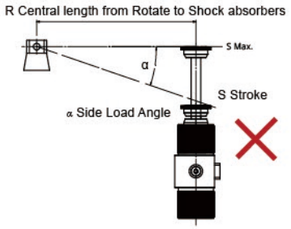
1) The distance between the rotation center and the shock absorber is 15 times of stroke length.

2) Follow below instruction to install: When stroke length moves half , there should be no side load impacting.

If it can't be matched the above two points, please install side load adapter.







To avoid external conditions damaging the shock absorbers

1. Shock absorbers are filled with hydraulic oil, fire and burning is forbidden.
2. Make sure the working temperature is （-10℃~80℃）, if you will use in special temperature, please contact us.
3. Don't put together with corrosive materials such as acid, solvent and emulsion cutting oil, to avoid dusty and steam.
4. Don't paint in surface of shock absorbers, it will affect the heat radiation
5. Don't paint or marked in the piston rod, it caused oil leaking to shorten the life span.

Overview

The design of BC self-compensating shock absorbers is compact and with high performance, it can get higher energy absorption in same size comparing with adjustable series. It is mostly used in standard location with stable working condition (weight, impact velocity and driving force etc.).

Performance and Advantages

1. One-piece design of shock tube and piston: all BC series makes shock tube and piston in one-piece solid. In same model, this design can get more than 200% energy absorption than other brands.
2. Seal design: Use Japan imported NBR rod seal + NBR rod wiper in shock absorbers with outer tube diameter less than M14; Above M20 models, use Polyurethane rod seal+ polyurethane rod wiper, together with high strength chrome plated piston rod, it dramatically lasting service life and improved the performance in harsh work conditions.
3. New bearing design to resist side load: use unique long front bearing + bearing bushing to drastically resist the side load. This design can guarantee products service life and reduce the dependence on the installation accuracy.
4. Impact velocity range: 0.02~5m/s, out of this range, customized service can be offered. The highest velocity can be up to 20m/s.
5. Range of temperature: If use special seal material and hydraulic oil, the standard temperature range from -10℃ ~80℃ can be extended to -30℃~100℃.
6. Customized service: Based on the world class engineering team, BDC can provide special hydraulic damping technology solution and reliable verified testing reports.

Ordering Sample

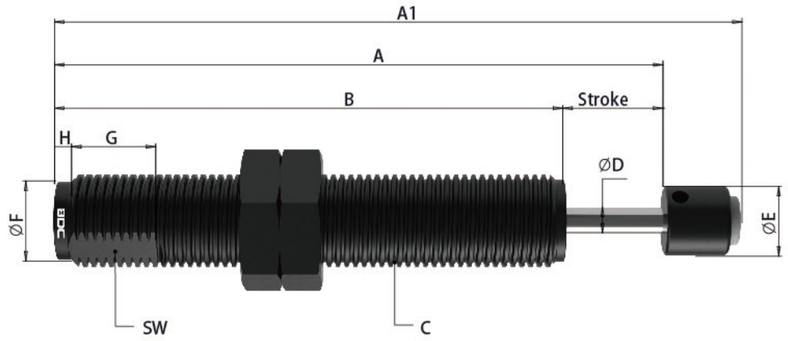
BC 10 − 8 B C −SC

- Self-Compensating Series
- Cylinder Diameter
- Stroke
- NB: Non-Button
- B: Steel Button
- Accessories

Accessories

SC：Stop Collar
MB：Mounting Block(Foot Mount)
SL：Side Load Adapter

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) Er	Cylinder Diameter (mm) C	Page
BC06−04(B)	4	10	M6x0.75	18−19
BC08−06(B)	6	5	M8x1.0	18−19
BC10−08(B)	8	10	M10x1.0	18−19
BC12−10(B)	10	16	M12x1.0	18−19
BC14−12(B)	12	25	M14x1.5	18−19
BC14−15(B)	15	35	M14x1.5	18−19
BC20−15(B)	15	50	M20x1.5	21
BC20−20(B)	20	75	M20x1.5	21
BC20−30(B)	30	95	M20x1.5	21
BC20−50(B)	50	145	M20x1.5	21
BC25−25(B)	25	220	M25x1.5	21
BC25−40(B)	40	270	M25x1.5	21
BC25−50(B)	50	300	M25x1.5	21
BC25−80(B)	80	390	M25x1.5	21
BC36−25(B)	25	330	M36*1.5	21
BC36−50(B)	50	550	M36*1.5	21
BC36−80(B)	80	680	M36*1.5	21

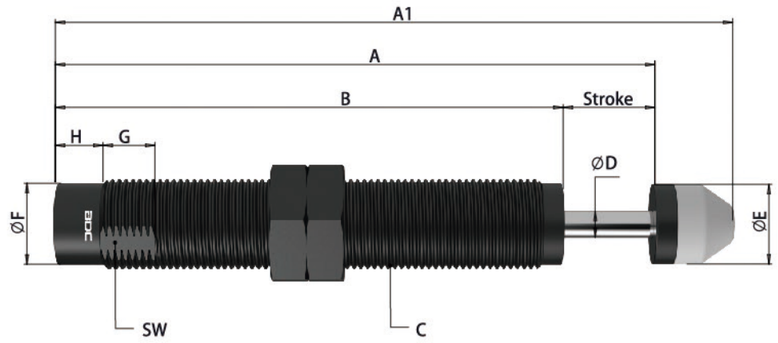


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/hr) ETC	Effective Weight (kg) We			Recoil Force (N)		Weight (g)
				-1(Soft)	-2(Middle)	-3(hard)	Min	Max	
BC06-04(B)	4	10	3000	5.1-1.1	7.9-2.8	1.6-4.0	2.2	3	4
BC08-06(B)	6	5	8100	0.6-2.7	2.5-7.6	7.2-22	2.4	4	14
BC10-08(B)	8	10	14800	2.9-8.7	7.0-20	17-54	3.3	7	21
BC12-10(B)	10	16	34000	1.2-2.2	1.8-9.5	8.0-65	6.5	13.5	38
BC14-12(B)	12	25	41000	2.0-10	8-50	35-160	6.9	14	67
BC14-15(B)	15	35	51200	2.4-19	10-47	41-170	7.2	14.6	74

Dimension (Unit: mm)

Model	A1	A	B	C	D	E	F	G	H	SW
BC06-04(B)	36.5	32.5	28.5	M6x0.75	1.8	4.6	5.1	0.7	4	1.5
BC08-06(B)	50	42.5	36.5	M8x1.0	3	6.8	6.7	0.7	5	1.5
BC10-08(B)	57	50	42.5	M10x1.0	3	7.5	8.4	0.8	5	1.5
BC12-10(B)	70.5	59.5	49.5	M12x1.0	4	10.5	10	5	6	10
BC14-12(B)	90	79	67	M14x1.5	4	10.5	12	13	2	12
BC14-15(B)	101.5	90.5	75.5	M14x1.5	4	10.5	12	13	2	12



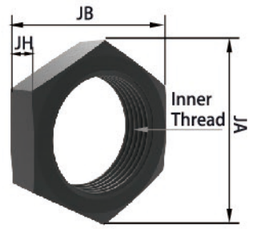
Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Max. Energy /Hour (Nm/hr) ETC	Effective Weight (kg) We			Recoil Force (N)		Weight (g)
				-1(Soft)	-2(Middle)	-3(hard)	Min	Max	
BC20-15(B)	15	50	38000	11-60	35-180	120-480	8	16	183
BC20-20(B)	20	75	55000	11-67	51-215	144-585	8.2	16.5	204
BC20-30(B)	30	95	65000	11-40	21-129	40-1670	8.6	17.8	226
BC20-50(B)	50	145	75000	10-43	24-73	45-1850	9.2	19.2	288
BC25-25(B)	25	220	111000	27-235	141-1260	707-7230	18.5	36.7	293
BC25-40(B)	40	270	182000	31-97	52-225	150-4550	20.6	41.3	343
BC25-50(B)	50	300	200000	35-110	60-245	142-2665	21.2	42.8	458
BC25-80(B)	80	390	210000	36-112	56-263	125-3650	22	44.5	579
BC36-25(B)	25	330	125000	48-325	156-1750	1209-10890	25	65	760
BC36-50(B)	50	550	160000	48-155	91-364	365-7050	24.8	45	995
BC36-80(B)	80	680	230000	65-210	140-490	471-10900	25	45	1280

Dimension (Unit: mm)

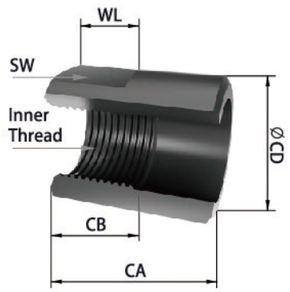
Model	A1	A	B	C	D	E	F	G	H	SW
BC20-15(B)	108	93	78	M20x1.5	6	16	18	13	7.5	18.5
BC20-20(B)	148.5	131	111	M20x1.5	6	17.8	18	12	10	18.2
BC20-30(B)	169.5	152	122	M20x1.5	6	17.8	18	12	10	18.2
BC20-50(B)	230.5	213	163	M20x1.5	6	17.8	18	12	10	18.2
BC25-25(B)	147.5	131	106	M25x1.5	8	22	22.8	12	10	23.2
BC25-40(B)	201	185	145	M25x1.5	8	22	22.8	12	10	23.2
BC25-50(B)	237	221	171	M25x1.5	8	22	22.8	12	10	23.2
BC25-80(B)	336	320	240	M25x1.5	8	22	22.8	12	50	23.2
BC36-25(B)	172	148	123	M36*1.5	10	28	27.8	16.5	11	28
BC36-50(B)	221	197	147	M36*1.5	10	28	34	16.5	11	34
BC36-80(B)	352	328	244	M36*1.5	10	28	34	16.5	11	34

1. Jam Nut



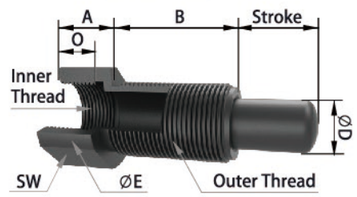
Model	JA	JB	JH	Inner Thread
JN-06	9.2	8	3	M6x0.75
JN-08	14	12	4	M8x1.0
JN-10	15	13	4	M10x1.0
JN-12	16.2	14	5	M12x1.0
JN-14	22	19	6	M14x1.5
JN-20	29	25	8	M20x1.5
JN-25	37	32	10	M25x1.5
JN-36	53.2	46	10	M36x1.5

2. Stop Collar



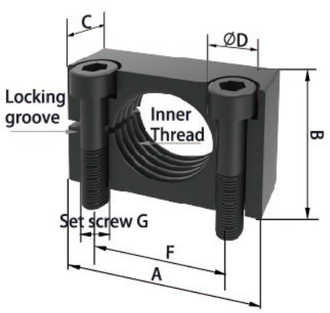
Model	CA	CB	CD	WL	SW	Inner Thread
SC08	12	8	12	6	10	M8x1.0
SC10	20	10	14	10	12.5	M10x1.0
SC12	20	10	17	10	15	M12x1.0
SC14	20	10	21	12	19	M14x1.5
SC20	25	13	25.4	12	23	M20x1.5
SC25	32	16	32	15	30	M25x1.5
SC36	63.5	30	43	18	41	M36x1.5

3. Side Load Adapter



Model	A	B	Stroke	D	E	SW	O	Inner Thread	Outer Thread
SL14-12	14	19.5	12	6	22	19	9	M14x1.5	M14x1.5
SL14-15	14	26.5	15	6	22	19	10	M14x1.5	M14x1.5
SL20-15	20	34	15	12	30	25	12	M20x1.5	M20x1.5
SL25-25	20	42	25	16	35	31	14	M25x1.5	M25x1.5
SL36-25	22	47	25	20	44	41	15	M36x1.5	M36x1.5

4. Mounting Block(Foot Mount)



Model	A	B	C	D	E	F	G	Inner Thread
MB8	25	14	10	8	5	16	M4	M8x1.0
MB10	25	14	10	8	5	16	M4	M10x1.0
MB12	32	16	12	9	6	20	M5	M12x1.0
MB14	32	20	12	9	6	20	M5	M14x1.5
MB20	40	25	20	11	7	28	M6	M20x1.5
MB25	46	32	25	11	7	32	M6	M25x1.5
MB36	61	42	25	11	7	45	M6	M36x1.5

Overview

BHD Air bag heavy-duty hydraulic Buffers, use the world advanced air bag restoration design. Enlarge the energy absorption performance and working stroke (energy absorption to 900KJ/C, stroke to 1500mm). Use new bladder design instead of traditional spring to restore, it shortened the total length of buffers and the compression ratio when bladder completely pressed. It makes sure BHD products have lower peak damping force and lower restoration characteristic. BHD bladder designed heavy duty buffers is the global leading technology, provide the complete models and specifications. It is general used in all heavy industrial area, especially leading solutions for stacking machine in automatic warehousing industry.

Energy absorption theory

Hydraulic oil goes through multiple orifices in working, the sticky damping force happened. It makes impact energy converted to heat energy, hydraulic oil that extruded from orifices reduce the volume of bladders; when it returning, compressed bladders expanded, hydraulic oil goes to the shock tube, thus piston rod restored.

Performance and Advantages

1. Compact design, wide range of applications; safely and smoothly down for long stroke models, best energy absorption reached to 900KJ/C
2. BHD series is the customized products, special design for multiple orifices per different working parameters, it can make the best energy absorption performance.
3. The design meets the standard of OSHA,AISE,CMMA and other rules like DIN and FEM safety regulations
4. Impact velocity range: 6m/s, maximum impacted cycle times is 60 times/hour
5. Nitrogen Gas bladders design for piston rod restoration purpose, resilience force is small.
6. Special epoxy painted cylinders and high quality chrome plated piston rod has good causticity to endure bad outside working condition
7. More accessories can be selected: including Bellows, U clamp, safety chain and sensors for piston rod restoration.
8. Special seal material and unique hydraulic oil, the standard temperature range from （-10℃~60℃） extended to（-35℃~100℃）.
9. Customized service, provide special design products per request.

Ordering Sample

BHD 3.0 x2−FF−C

- Air-Bag-Like Heavy-duty Hydraulic Buffers
- Model
- FF：Front Flange
- FR：Rear Flange
- TF：Front Flange+ Rear Flange
- FM：Foot Mount
- CM：U Clevis
- SC：Safety Chain
- SS：Safety Sensor
- PB：Piston Rod Bellow

Application data needed

Moving Body Weight：W (kg)

Impact Velocity：V (m/s)

Driving Force：Fp (N)

Number of buffers in Parallel：n (pcs)

Impact Cycles per hour：a(Cycle/hour)

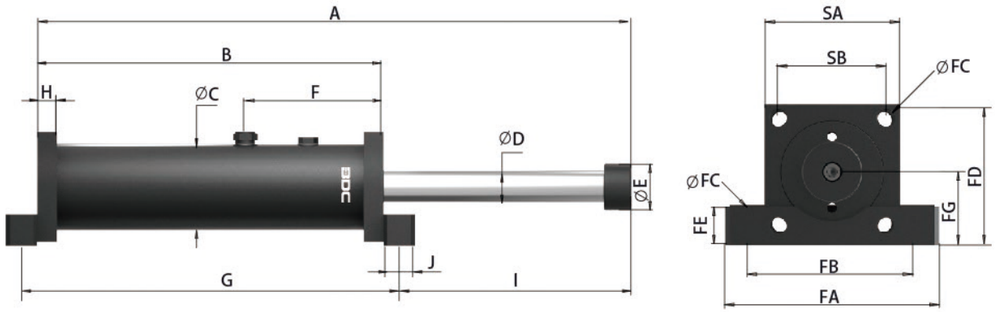
Others(Such as Temperature，Environment etc.)

Note:

1. BHD Series is customized products, need users' application data to design correct orifices
2. We recommend install piston rod bellow, if the working condition is dusty or bad, especially for long life cycle requested.
3. If the install location is higher than 2 Meters, we recommend you use Safety-Chain to avoid falling accident.
4. If you need the signal that shows piston rod completely returned or not, we recommend install safety sensor.

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) E_T	Cylinder Diameter (mm) C	Page
BHD1.5x(Stroke)	50−600	3200−14200	90	25
BHD2.0x(Stroke)	250−1400	14400−41650	110	26
BHD3.0x(Stroke)	50−1422	9600−4170294	130	27
BHD3.5x(Stroke)	50−1200	13000−182750	155	28
BHD4.0x(Stroke)	50−1200	15100−271600	200	29
BHD5.0x(Stroke)	100−1200	46700−467000	215	30
BHD6.0x(Stroke)	100−1200	76500−805000	275	31

BHD Air-Bag-Like Heavy-Duty Hydraulic Buffers

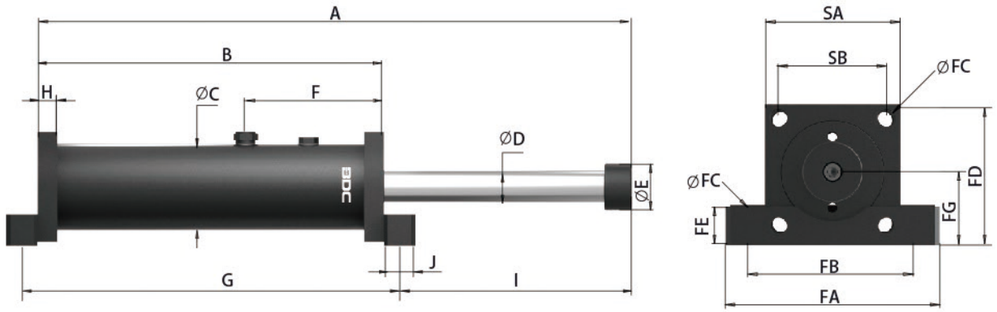


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD1.5x2	50	3200	189000	70000	220	120	90	M12	10
BHD1.5x4	100	6100	368000	70000	220	120	90	M12	12
BHD1.5x6	150	9100	546700	70000	220	120	90	M12	12
BHD1.5x8	200	12200	732500	70000	220	120	90	M12	13
BHD1.5x10	250	15200	781000	70000	220	120	90	M12	14
BHD1.5x12	300	18300	877900	70000	220	120	90	M12	16
BHD1.5x14	350	20900	972900	70000	220	120	90	M12	17
BHD1.5x16	400	23300	1069800	60000	220	120	90	M12	18
BHD1.5x18	450	25300	1166700	48000	220	120	90	M12	19
BHD1.5x20	500	27200	1263600	39000	220	120	90	M12	20
BHD1.5x24	600	35500	1457400	28000	220	120	90	M12	23
BHD1.5x28	700	33600	1649300	21000	220	120	90	M12	27
BHD1.5x32	800	36500	1839300	16460	220	120	90	M12	32

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD1.5x2	310	208	90	28	50	144	240	20	86	32	165	140	14	125	32	65
BHD1.5x4	410	258	90	28	50	144	290	20	136	32	165	140	14	125	32	65
BHD1.5x6	510	308	90	28	50	144	340	20	186	32	165	140	14	125	32	65
BHD1.5x8	613	360	90	28	50	144	392	20	237	32	165	140	14	125	32	65
BHD1.5x10	715	411	90	28	50	144	443	20	288	32	165	140	14	125	32	65
BHD1.5x12	817	462	90	28	50	144	494	20	339	32	165	140	14	125	32	65
BHD1.5x14	918	512	90	28	50	144	544	20	390	32	165	140	14	125	32	65
BHD1.5x16	1019	563	90	28	50	144	595	20	440	32	165	140	14	125	32	65
BHD1.5x18	1121	614	90	28	50	144	646	20	491	32	165	140	14	125	32	65
BHD1.5x20	1223	665	90	28	50	144	697	20	542	32	165	140	14	125	32	65
BHD1.5x24	1427	767	90	28	50	144	799	20	644	32	165	140	14	125	32	65
BHD1.5x28	1692	868	90	28	50	144	900	745	644	32	165	140	14	125	32	65
BHD1.5x32	1830	968	90	28	50	144	100	846	644	32	165	140	14	125	32	65

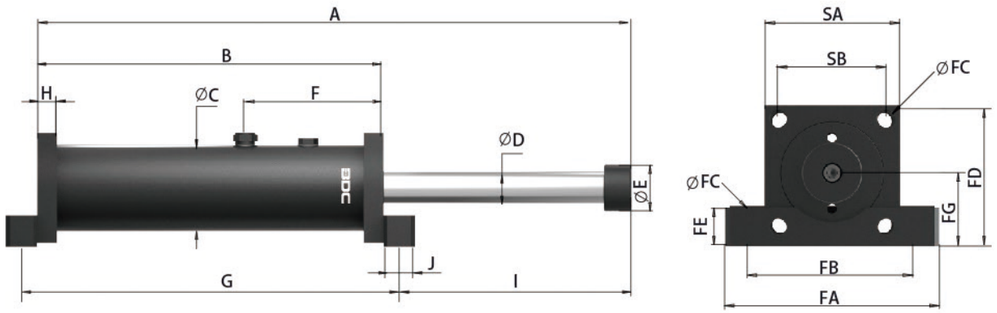


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD2.0x6	150	14400	862100	111200	535	140	111	M16	19
BHD2.0x8	200	19200	913700	111200	535	140	111	M16	21
BHD2.0x10	250	24000	1033200	111200	535	140	111	M16	23
BHD2.0x12	300	28600	1152700	111200	535	140	111	M16	25
BHD2.0x14	350	32300	1272100	111200	535	140	111	M16	27
BHD2.0x16	400	36000	1391600	111200	535	140	111	M16	29
BHD2.0x18	450	39700	1511100	111200	535	140	111	M16	31
BHD2.0x20	500	43300	1628300	111200	535	140	111	M16	33
BHD2.0x24	600	50700	1867200	111200	535	140	111	M16	36
BHD2.0x28	700	58200	2106200	111200	535	140	111	M16	42
BHD2.0x32	800	70700	2527900	100000	535	140	111	M16	49
BHD2.0x36	900	77900	2762200	100000	535	140	111	M16	53
BHD2.0x40	1000	84400	2996500	100000	535	140	111	M16	56
BHD2.0x48	1200	95400	3465000	100000	535	140	111	M16	64
BHD2.0x56	1400	104200	3957000	100000	535	140	111	M16	73

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD2.0x6	533	339	110	40	60	179	379	25	194	40	220	178	17	146	40	76
BHD2.0x8	655	390	110	40	60	179	430	25	245	40	220	178	17	146	40	76
BHD2.0x10	757	441	110	40	60	179	481	25	296	40	220	178	17	146	40	76
BHD2.0x12	859	492	110	40	60	179	532	25	347	40	220	178	17	146	40	76
BHD2.0x14	960	543	110	40	60	179	583	25	397	40	220	178	17	146	40	76
BHD2.0x16	1062	594	110	40	60	179	634	25	448	40	220	178	17	146	40	76
BHD2.0x18	1164	645	110	40	60	179	685	25	499	40	220	178	17	146	40	76
BHD2.0x20	1265	695	110	40	60	179	735	25	550	40	220	178	17	146	40	76
BHD2.0x24	1469	797	110	40	60	179	837	25	652	40	220	178	17	146	40	76
BHD2.0x28	1672	899	110	40	60	179	939	25	753	40	220	178	17	146	40	76
BHD2.0x32	1953	1079	110	40	60	260	1119	25	854	40	220	178	17	146	40	76
BHD2.0x36	2151	1179	110	40	60	260	1219	25	952	40	220	178	17	146	40	76
BHD2.0x40	2351	1279	110	40	60	260	1319	25	1052	40	220	178	17	146	40	76
BHD2.0x48	2751	1478	110	40	60	260	1519	25	1252	40	220	178	17	146	40	76
BHD2.0x56	3171	1689	110	40	60	260	1729	25	1462	40	220	178	17	146	40	76

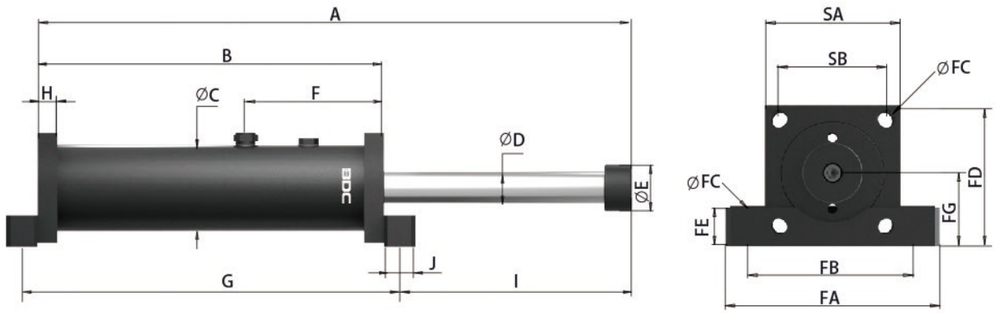


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD3.0x2	50	9600	578500	224000	670	170	125	M20	21
BHD3.0x3	75	14000	659000	224000	710	170	125	M20	22
BHD3.0x5	125	24200	805700	224000	735	170	125	M20	25
BHD3.0x8	200	35700	1021500	224000	755	170	125	M20	29
BHD3.0x10	250	43200	1168300	224000	780	170	125	M20	32
BHD3.0x12	300	50700	1315000	224000	800	170	125	M20	35
BHD3.0x14	350	62900	1605700	224000	800	170	125	M20	43
BHD3.0x16	400	70400	1752400	224000	800	170	125	M20	45
BHD3.0x18	450	77900	1899200	224000	800	170	125	M20	48
BHD3.0x20	500	85400	2046000	224000	800	170	125	M20	51
BHD3.0x24	600	100300	2336600	224000	800	170	125	M20	57
BHD3.0x28	700	115300	2630100	224000	800	170	125	M20	62
BHD3.0x32	800	130200	2920700	180200	800	170	125	M20	68
BHD3.0x36	900	147700	3349500	160100	800	170	125	M20	77
BHD3.0x40	1000	159600	3637200	14000	800	170	125	M20	85
BHD3.0x48	1200	179700	4212800	95600	825	170	125	M20	94
BHD3.0x56	1400	196700	4788300	55600	825	170	125	M20	106
BHD3.0x60	1500	206800	5116300	53200	825	170	125	M20	117

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD3.0x2	336	203	130	45	70	134	253	25	108	50	255	216	22	173	50	88
BHD3.0x3	387	229	130	45	70	134	279	25	133	50	255	216	22	173	50	88
BHD3.0x5	489	280	130	45	70	134	330	25	184	50	255	216	22	173	50	88
BHD3.0x8	640	355	130	45	70	134	405	25	260	50	255	216	22	173	50	88
BHD3.0x10	742	406	130	45	70	134	456	25	311	50	255	216	22	173	50	88
BHD3.0x12	844	457	130	45	70	134	507	25	362	50	255	216	22	173	50	88
BHD3.0x14	995	558	130	45	70	184	608	25	412	50	255	216	22	173	50	88
BHD3.0x16	1097	609	130	45	70	184	659	25	463	50	255	216	22	173	50	88
BHD3.0x18	1199	660	130	45	70	184	710	25	514	50	255	216	22	173	50	88
BHD3.0x20	1301	711	130	45	70	184	761	25	565	50	255	216	22	173	50	88
BHD3.0x24	1504	812	130	45	70	184	862	25	667	50	255	216	22	173	50	88
BHD3.0x28	1707	914	130	45	70	184	964	25	768	50	255	216	22	173	50	88
BHD3.0x32	1910	1015	130	45	70	184	1065	25	870	50	255	216	22	173	50	88
BHD3.0x36	2156	1164	130	45	70	184	1214	25	967	50	255	216	22	173	50	88
BHD3.0x40	2356	1264	130	45	70	184	1314	25	1067	50	255	216	22	173	50	88
BHD3.0x48	2756	1464	130	45	70	184	1514	25	1267	50	255	216	22	173	50	88
BHD3.0x56	3156	1664	130	45	70	234	1714	25	1467	50	255	216	22	173	50	88
BHD3.0x60	3384	1778	130	45	70	234	1828	25	1581	50	255	216	22	173	50	88

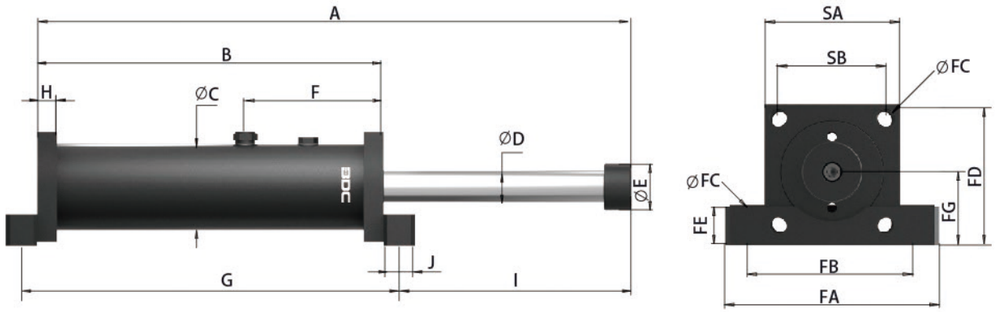


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD3.5x2	50	13000	830000	300000	960	200	160	M20	33
BHD3.5x4	100	25500	1000000	300000	1020	200	160	M20	37
BHD3.5x6	150	38250	1200000	300000	1160	200	160	M20	41
BHD3.5x8	200	51000	1350000	300000	1180	200	160	M20	45
BHD3.5x10	250	63750	1550000	300000	1200	200	160	M20	49
BHD3.5x12	300	76500	1700000	300000	1200	200	160	M20	53
BHD3.5x16	400	102000	2050000	300000	1225	200	160	M20	60
BHD3.5x20	500	127500	2600000	300000	1225	200	160	M20	74
BHD3.5x24	600	153000	2900000	300000	1250	200	160	M20	81
BHD3.5x28	700	178500	3250000	300000	1250	200	160	M20	89
BHD3.5x32	800	204000	3600000	300000	1250	200	160	M20	97
BHD3.5x36	900	198900	3950000	260000	1250	200	160	M20	105
BHD3.5x40	1000	182750	4300000	215000	1250	200	160	M20	112
BHD3.5x48	1200	158100	5000000	155000	1250	200	160	M20	128

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD3.5x2	354	244	155	56	82	139	294	25	85	50	300	250	22	210	50	110
BHD3.5x4	456	295	155	56	82	139	345	25	136	50	300	250	22	210	50	110
BHD3.5x6	556	345	155	56	82	139	395	25	186	50	300	250	22	210	50	110
BHD3.5x8	658	396	155	56	82	139	446	25	237	50	300	250	22	210	50	110
BHD3.5x10	760	447	155	56	82	139	497	25	288	50	300	250	22	210	50	110
BHD3.5x12	862	498	155	56	82	139	548	25	339	50	300	250	22	210	50	110
BHD3.5x16	1064	599	155	56	82	139	649	25	440	50	300	250	22	210	50	110
BHD3.5x20	1323	756	155	56	82	194	806	25	542	50	300	250	22	210	50	110
BHD3.5x24	1527	858	155	56	82	194	908	25	644	50	300	250	22	210	50	110
BHD3.5x28	1729	959	155	56	82	194	1009	25	745	50	300	250	22	210	50	110
BHD3.5x32	1933	1061	155	56	82	194	1111	25	847	50	300	250	22	210	50	110
BHD3.5x36	2137	1163	155	56	82	194	1213	25	949	50	300	250	22	210	50	110
BHD3.5x40	2339	1264	155	56	82	194	1314	25	1050	50	300	250	22	210	50	110
BHD3.5x48	2739	1464	155	56	82	194	1514	25	1250	50	300	250	22	210	50	110

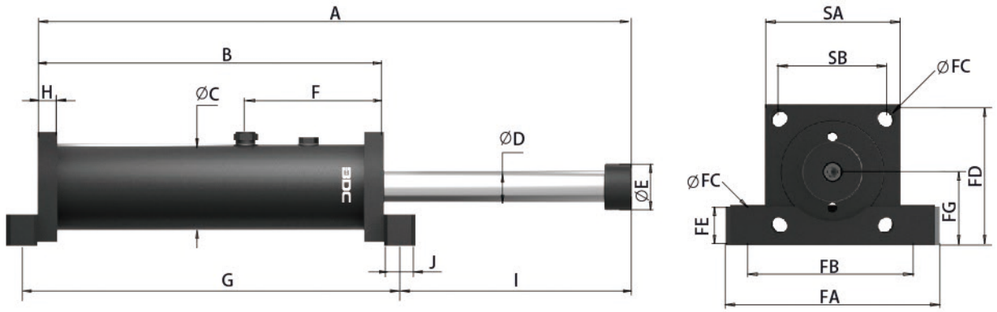


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD4.0x2	50	15100	906000	355000	1200	250	197	M24	64
BHD4.0x4	100	30200	1503152	355000	1200	250	197	M24	70
BHD4.0x6	150	45300	1721000	355000	1200	250	197	M24	76
BHD4.0x8	200	60400	1947562	355000	1200	250	197	M24	82
BHD4.0x10	250	75400	2165410	355000	1200	250	197	M24	87
BHD4.0x12	300	90500	2797169	355000	1200	250	197	M24	108
BHD4.0x16	400	120700	3237222	355000	1200	250	197	M24	120
BHD4.0x20	500	150900	3681633	355000	1200	250	197	M24	131
BHD4.0x24	600	181000	4126043	355000	1200	250	197	M24	144
BHD4.0x28	700	211200	4566096	355000	1200	250	197	M24	157
BHD4.0x32	800	241400	5010506	355000	1200	250	197	M24	170
BHD4.0x36	900	271600	5454916	355000	1200	250	197	M24	183
BHD4.0x40	1000	289990	5894969	290000	1200	250	197	M24	195
BHD4.0x48	1200	329300	6766361	200000	1200	250	197	M24	220

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD4.0x2	430	294	200	63	100	220	344	40	111	50	360	317	27	252	50	127
BHD4.0x4	532	345	200	63	100	220	395	40	162	50	360	317	27	252	50	127
BHD4.0x6	632	395	200	63	100	220	445	40	212	50	360	317	27	252	50	127
BHD4.0x8	735	447	200	63	100	220	497	40	263	50	360	317	27	252	50	127
BHD4.0x10	836	497	200	63	100	220	547	40	314	50	360	317	27	252	50	127
BHD4.0x12	1032	642	200	63	100	310	692	40	365	50	360	317	27	252	50	127
BHD4.0x16	1234	743	200	63	100	310	793	40	466	50	360	317	27	252	50	127
BHD4.0x20	1438	845	200	63	100	310	895	40	568	50	360	317	27	252	50	127
BHD4.0x24	1642	947	200	63	100	310	997	40	670	50	360	317	27	252	50	127
BHD4.0x28	1844	1048	200	63	100	310	1098	40	771	50	360	317	27	252	50	127
BHD4.0x32	2048	1150	200	63	100	310	1200	40	873	50	360	317	27	252	50	127
BHD4.0x36	2252	1252	200	63	100	310	1302	40	975	50	360	317	27	252	50	127
BHD4.0x40	2454	1353	200	63	100	310	1403	40	1076	50	360	317	27	252	50	127
BHD4.0x48	2854	1553	200	63	100	310	1603	40	1276	50	360	317	27	252	50	127

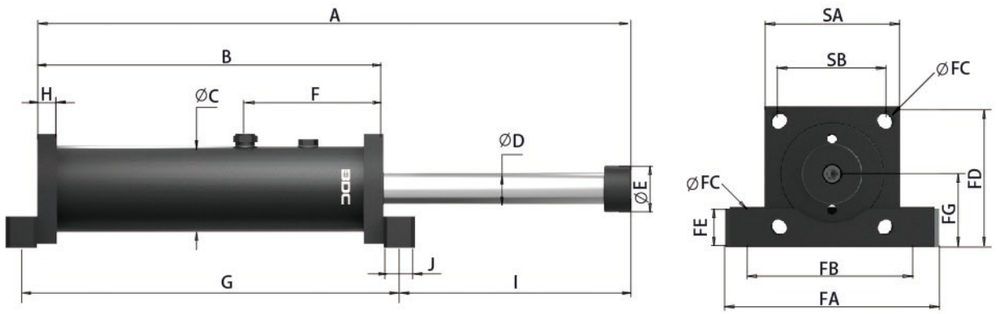


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD5.0x4	100	46700	1762621	550000	1760	275	220	M30	87
BHD5.0x6	150	70000	2002337	550000	1760	275	220	M30	94
BHD5.0x8	200	93500	2242053	550000	1760	275	220	M30	101
BHD5.0x10	250	117000	2477070	550000	1760	275	220	M30	108
BHD5.0x12	300	140000	2716786	550000	1760	275	220	M30	114
BHD5.0x16	400	187000	3196219	550000	1760	250	220	M30	128
BHD5.0x20	500	234000	4145684	550000	1760	250	220	M30	158
BHD5.0x24	600	280000	4625117	550000	1760	250	220	M30	171
BHD5.0x28	700	327000	5099849	550000	1760	250	220	M30	185
BHD5.0x32	800	374000	5579282	550000	1760	250	220	M30	198
BHD5.0x40	1000	467000	6533447	550000	1760	250	220	M30	225
BHD5.0x48	1200	535800	7487613	410000	1760	250	220	M30	242

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD5.0x4	591	375	215	80	125	230	435	40	186	60	400	340	33	278	60	140
BHD5.0x6	693	426	215	80	125	230	486	40	237	60	400	340	33	278	60	140
BHD5.0x8	795	477	215	80	125	230	537	40	288	60	400	340	33	278	60	140
BHD5.0x10	895	527	215	80	125	230	587	40	338	60	400	340	33	278	60	140
BHD5.0x12	997	578	215	80	125	230	638	40	389	60	400	340	33	278	60	140
BHD5.0x16	1201	680	215	80	125	230	740	40	491	60	400	340	33	278	60	140
BHD5.0x20	1504	882	215	80	125	230	942	40	592	60	400	340	33	278	60	140
BHD5.0x24	1708	984	215	80	125	230	1044	40	694	60	400	340	33	278	60	140
BHD5.0x28	1910	1085	215	80	125	230	1145	40	795	60	400	340	33	278	60	140
BHD5.0x32	2114	1187	215	80	125	230	1247	40	897	60	400	340	33	278	60	140
BHD5.0x40	2520	1390	215	80	125	230	1450	40	1100	60	400	340	33	278	60	140
BHD5.0x48	2920	1590	215	80	125	230	1650	40	1300	60	400	340	33	278	60	140

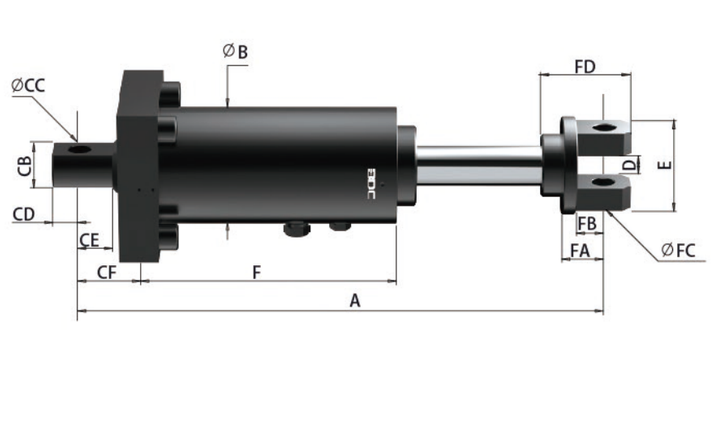


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD6.0x4	100	76500	2404568	900000	2750	330	260	M36	164
BHD6.0x6	150	114000	2704389	900000	2750	330	260	M36	175
BHD6.0x8	200	153000	3004211	900000	2750	330	260	M36	186
BHD6.0x10	250	191000	3316025	900000	2750	330	260	M36	196
BHD6.0x12	300	224000	3621843	900000	2750	330	260	M36	207
BHD6.0x16	400	306000	4233478	900000	2750	330	260	M36	228
BHD6.0x20	500	382000	4845114	900000	2750	330	260	M36	250
BHD6.0x24	600	459000	6086375	900000	2750	330	260	M36	309
BHD6.0x30	750	573000	6997832	900000	2750	330	260	M36	341
BHD6.0x36	900	688500	7915285	900000	2750	330	260	M36	373
BHD6.0x42	1050	803000	8826743	900000	2750	330	260	M36	405
BHD6.0x48	1200	898200	9744196	790000	2750	330	260	M36	438

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD6.0x4	637	391	275	100	160	197	461	50	211	70	450	380	40	333	70	168
BHD6.0x6	737	441	275	100	160	197	511	50	261	70	450	380	40	333	70	168
BHD6.0x8	839	492	275	100	160	197	562	50	312	70	450	380	40	333	70	168
BHD6.0x10	941	543	275	100	160	197	613	50	363	70	450	380	40	333	70	168
BHD6.0x12	1043	594	275	100	160	197	664	50	414	70	450	380	40	333	70	168
BHD6.0x16	1246	696	275	100	160	197	766	50	515	70	450	380	40	333	70	168
BHD6.0x20	1450	798	275	100	160	197	868	50	617	70	450	380	40	333	70	168
BHD6.0x24	1769	1015	275	100	160	312	1085	50	719	70	450	380	40	333	70	168
BHD6.0x30	2073	1167	275	100	160	312	1237	50	871	70	450	380	40	333	70	168
BHD6.0x36	2379	1320	275	100	160	312	1390	50	1024	70	450	380	40	333	70	168
BHD6.0x42	2683	1472	275	100	160	312	1542	50	1176	70	450	380	40	333	70	168
BHD6.0x48	2989	1625	275	100	160	312	1695	50	1329	70	450	380	40	333	70	168



Dimension (Unit: mm)

Model	A	B	D	E	F	CA	CB	CC	CD	CE	CF	FA	FB	FC	FD	FE
BHD3.0x2	432	130	38	90	209	60	38	25	30	37	65	69	32	25	99	50
BHD3.0x3	483	130	38	90	235	60	38	25	30	37	65	69	32	25	99	50
BHD3.0x5	585	130	38	90	286	60	38	25	30	37	65	69	32	25	99	50
BHD3.0x8	736	130	38	90	361	60	38	25	30	37	65	69	32	25	99	50
BHD3.0x10	838	130	38	90	412	60	38	25	30	37	65	69	32	25	99	50
BHD3.0x12	940	130	38	90	463	60	38	25	30	37	65	69	32	25	99	50
BHD4.0x2	570	200	65	140	304	–	–	–	–	–	90	100	50	50	150	100
BHD4.0x4	672	200	65	140	355	–	–	–	–	–	90	100	50	50	150	100
BHD4.0x6	772	200	65	140	405	–	–	–	–	–	90	100	50	50	150	100
BHD4.0x8	875	200	65	140	457	–	–	–	–	–	90	100	50	50	150	100
BHD4.0x10	976	200	65	140	507	–	–	–	–	–	90	100	50	50	150	100
BHD5.0x4	751	215	70	150	386	–	–	–	–	–	100	115	70	60	175	100
BHD5.0x6	853	215	70	150	437	–	–	–	–	–	100	115	70	60	175	100
BHD5.0x8	955	215	70	150	488	–	–	–	–	–	100	115	70	60	175	100
BHD5.0x10	1055	215	70	150	538	–	–	–	–	–	100	115	70	60	175	100
BHD5.0x12	1157	215	70	150	589	–	–	–	–	–	100	115	70	60	175	100

Installation and Routine inspection & Maintenance Notice

Installation request:

Stroke length below 300mm, the max side load angle is 2.5°; above 300mm, the max side load angle can be 1°; make sure all set screws are fixed, recommend using thread glue.

Routine inspection & Maintenance:

In order to enlarge the buffers life span, if the buffer is used in safety emergency application, we recommend you to do the maintenance every 6 months. If the buffer is frequently used, please maintain it every month, details as below:

1. Piston Rod should be handled carefully not to be damaged or scratched, clear up the dusty and corrosive, coating oil to avoid rusty.
2. Please check rod seal to see if oil leakage or not.
3. Whenever necessary, please check the locking condition of Bolt and set screws at any time and fasten tight due to the strong impact
4. Please check the expansion & recovering status of piston rod, compare with the dimension when piston rod completely restored in catalogue. If can't be fully restored, please add pneumatic in air bag, you can ask us to get operation manual.

Overview

BHDA the Adjustable air bag heavy-duty Hydraulic Buffers with inside air bag design, it increased adjustable components on the basis of BHD products stroke less than 300mm. To rotate the adjustment knob-changing the damping force to get the best energy absorption in different working conditions, provide best convenient model selection and application flexibility for customers since single model can meet kinds of different work stations, end users also can adjust the knob to recover the best energy absorption if some station changes.

Adjustment Skills

Marked 1~5step range to rotate, "1"means to get the minimum damping force, the relevant impact velocity is the biggest, "5"is the maximum and impact velocity is the smallest.

Please rotate the knob step by step start from 1, enlarge number from small to large base on the damping force. It will damage the buffers if rotate from large number to small. Need loosen the set screw before you rotate; after finished, please remember to tighten the screws in order to avoid adjustment knob moving caused best step changed in working.

Performance and Advantages

1. Damping force can be changed, provide best convenient model selection and application flexibility for customers.
2. The design meets the standard of OSHA, AISE, CMMA and other rules like DIN and FEM safety regulations
3. Impact velocity range: 0.75~3.25m/s, maximum impacted cycle times is 60 times/hour
4. Nitrogen Gas bladders design for piston rod restoration purpose, resilience force is small.
5. Special epoxy painted cylinders and high quality chrome plated piston rod has good causticity to endure bad outside working condition
6. More accessories can be selected: including Bellows, U clamp, safety chain and sensors for piston rod restoration.
7. Special seal material and unique hydraulic oil, the standard temperature range from （-10℃~60℃） extended to（-35℃~100℃）.
8. Customized service, provide special design products per request.

Ordering Sample

BHDA 3.0 x2−FF−SC

- Air-Bag-Like Heavy-duty Hydraulic Buffers
- Model
- FF：Front Flange
- FR：Rear Flange
- TF：Front Flange+ Rear Flange
- FM：Foot Mount
- CM：U Clevis
- SC：Safety Chain
- SS：Safety Sensor
- PB：Piston Rod Bellow

Application data needed

Moving Body Weight：W (kg)

Impact Velocity：V (m/s)

Driving Force：Fp (N)

Number of buffers in Parallel：n (pcs)

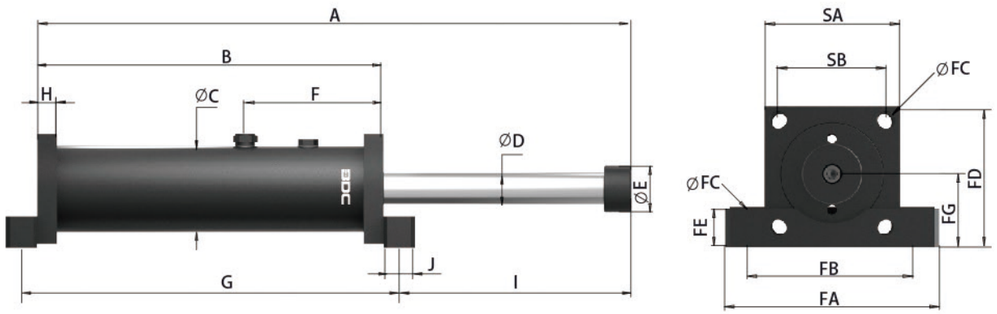
Impact Cycles per hour：a(Cycle/hour)

Others(Such as Temperature，Environment etc.)

Note:

1. BHDA Series is customized products, need users' application data to design correct orifices
2. We recommend install piston rod bellow, if the working condition is dusty or bad, especially for long life cycle requested.
3. If the install location is higher than 2 Meters, we recommend you use Safety-Chain to avoid falling accident.
4. If you need the signal that shows piston rod completely returned or not, we recommend install safety sensor.

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) ET	Cylinder Diameter (mm) C	Page
BHDA3.0x(Stroke)	50−300	9600−50700	130	35−36
BHDA4.0x(Stroke)	50−250	15100−67500	200	35−36
BHDA5.0x(Stroke)	100−300	46700−140000	215	35−36
BHDA6.0x(Stroke)	100−300	76500−224000	275	35−36

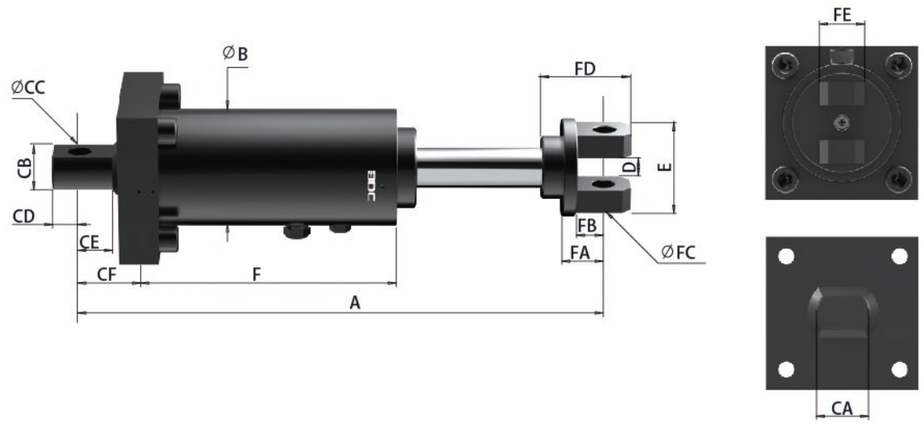


Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (Nm/C) ET	Max. Energy /Hour (Nm/hr) ETC	Max. Damping Force (N) Fp	Nominal Recoil Force (N)	Flange Dimension (mm)			Weight (kg)
						SA	SB	Bolt Specification	
BHD3.0x2	50	9600	578500	224000	670	170	125	M20	21
BHD3.0x3	75	14000	659000	224000	710	170	125	M20	22
BHD3.0x5	125	24200	805700	224000	735	170	125	M20	25
BHD3.0x8	200	35700	1021500	224000	755	170	125	M20	29
BHD3.0x10	250	43200	1168300	224000	780	170	125	M20	32
BHD3.0x12	300	50700	1315000	224000	800	170	125	M20	35
BHDA4.0x2	50	15100	906000	355000	1200	250	197	M24	64
BHDA4.0x4	100	30200	1503152	355000	1200	250	197	M24	70
BHDA4.0x6	150	45300	1721000	355000	1200	250	197	M24	76
BHDA4.0x8	200	60400	1947562	355000	1200	250	197	M24	82
BHDA4.0x10	250	75400	2165410	355000	1200	250	197	M24	87
BHDA5.0x4	100	46700	1762621	550000	1760	275	220	M30	87
BHDA5.0x6	150	70000	2002337	550000	1760	275	220	M30	94
BHDA5.0x8	200	93500	2242053	550000	1760	275	220	M30	101
BHDA5.0x10	250	117000	2477070	550000	1760	275	220	M30	108
BHDA5.0x12	300	140000	2716786	550000	1760	275	220	M30	114
BHDA6.0x4	100	76500	2404568	900000	2750	330	260	M36	164
BHDA6.0x6	150	114000	2704389	900000	2750	330	260	M36	175
BHDA6.0x8	200	153000	3004211	900000	2750	330	260	M36	186
BHDA6.0x10	250	191000	3316025	900000	2750	330	260	M36	196
BHDA6.0x12	300	224000	3621843	900000	2750	330	260	M36	207

Dimension (Unit: mm)

Model	A	B	C	D	E	F	G	H	I	J	FA	FB	FC	FD	FE	FG
BHD3.0x2	336	203	130	45	70	134	253	25	108	50	255	216	22	173	50	88
BHD3.0x3	387	229	130	45	70	134	279	25	133	50	255	216	22	173	50	88
BHD3.0x5	489	280	130	45	70	134	330	25	184	50	255	216	22	173	50	88
BHD3.0x8	640	355	130	45	70	134	405	25	260	50	255	216	22	173	50	88
BHD3.0x10	742	406	130	45	70	134	456	25	311	50	255	216	22	173	50	88
BHD3.0x12	844	457	130	45	70	134	507	25	362	50	255	216	22	173	50	88
BHDA4.0x2	430	294	200	63	100	220	344	40	111	50	360	317	27	252	50	127
BHDA4.0x4	532	345	200	63	100	220	395	40	162	50	360	317	27	252	50	127
BHDA4.0x6	632	395	200	63	100	220	445	40	212	50	360	317	27	252	50	127
BHDA4.0x8	735	447	200	63	100	220	497	40	263	50	360	317	27	252	50	127
BHDA4.0x10	836	497	200	63	100	220	547	40	314	50	360	317	27	252	50	127
BHDA5.0x4	591	375	215	80	125	230	435	40	186	60	400	340	33	278	60	140
BHDA5.0x6	693	426	215	80	125	230	486	40	237	60	400	340	33	278	60	140
BHDA5.0x8	795	477	215	80	125	230	537	40	288	60	400	340	33	278	60	140
BHDA5.0x10	895	527	215	80	125	230	587	40	338	60	400	340	33	278	60	140
BHDA5.0x12	997	578	215	80	125	230	638	40	389	60	400	340	33	278	60	140
BHDA6.0x4	637	391	275	100	160	197	461	50	211	70	450	380	40	333	70	168
BHDA6.0x6	737	441	275	100	160	197	511	50	261	70	450	380	40	333	70	168
BHDA6.0x8	839	492	275	100	160	197	562	50	312	70	450	380	40	333	70	168
BHDA6.0x10	941	543	275	100	160	197	613	50	363	70	450	380	40	333	70	168
BHDA6.0x12	1043	594	275	100	160	197	664	50	414	70	450	380	40	333	70	168



Dimension (Unit: mm)

Model	A	B	D	E	F	CA	CB	CC	CD	CE	CF	FA	FB	FC	FD	FE
BHDA3.0x2	432	130	38	90	219	60	38	25	30	37	65	69	32	25	99	50
BHDA3.0x3	483	130	38	90	245	60	38	25	30	37	65	69	32	25	99	50
BHDA3.0x5	585	130	38	90	296	60	38	25	30	37	65	69	32	25	99	50
BHDA3.0x8	736	130	38	90	371	60	38	25	30	37	65	69	32	25	99	50
BHDA3.0x10	838	130	38	90	-	60	38	25	30	37	65	69	32	25	99	50
BHDA3.0x12	940	130	38	90	473	60	38	25	30	37	65	69	32	25	99	50
BHDA4.0x2	570	200	65	140	314	-	-	-	-	-	90	100	50	50	150	100
BHDA4.0x4	672	200	65	140	365	-	-	-	-	-	90	100	50	50	150	100
BHDA4.0x6	772	200	65	140	415	-	-	-	-	-	90	100	50	50	150	100
BHDA4.0x8	875	200	65	140	467	-	-	-	-	-	90	100	50	50	150	100
BHDA4.0x10	976	200	65	140	517	-	-	-	-	-	90	100	50	50	150	100
BHDA5.0x4	751	215	70	150	396	-	-	-	-	-	100	115	70	60	175	100
BHDA5.0x6	853	215	70	150	447	-	-	-	-	-	100	115	70	60	175	100
BHDA5.0x8	955	215	70	150	498	-	-	-	-	-	100	115	70	60	175	100
BHDA5.0x10	1055	215	70	150	548	-	-	-	-	-	100	115	70	60	175	100
BHDA5.0x12	1157	215	70	150	599	-	-	-	-	-	100	115	70	60	175	100

Installation and Routine inspection & Maintenance Notice

Installation request:

Stroke length below 300mm, the max side load angle is 2.5°; above 300mm, the max side load angle can be 1°; make sure all set screws are fixed, recommend using thread glue.

Routine inspection & Maintenance:

In order to enlarge the buffers life span, if the buffer is used in safety emergency application, we recommend you to do the maintenance every 6 months. If the buffer is frequently used, please maintain it every month, details as below:

1. Piston Rod should be handled carefully not to be damaged or scratched, clear up the dusty and corrosive, coating oil to avoid rusty.
2. Please check rod seal to see if oil leakage or not.
3. Whenever necessary, please check the locking condition of Bolt and set screws at any time and fasten tight due to the strong impact
4. Please check the expansion & recovering status of piston rod, compare with the dimension when piston rod completely restored in catalogue. If can't be fully restored, please add pneumatic in air bag, you can ask us to get operation manual.

Overview

BHS Spring-type Heavy-Duty Buffers, the piston rod restored by outside spring, the specialty of this buffer is the stroke length is shorten than cylinder diameter, application in low acceleration requirements devices when in deceleration and in braking devices.

Energy Absorption Theory

Hydraulic oil goes through multiple orifices in working, makes impact energy converted to heat energy; mechanical spring make piston rod restore; compressed foam volume is the same with the volume that piston rod pressed to the shock tube, designed spring restoration force is only to cover friction force of piston rod restoration.

Performance and Advantages

1. The design meets the standard of OSHA,AISE,CMMA and other rules like DIN and FEM safety regulations
2. With outside mechanical spring structure, buffers compressed restoration force is small
3. Special epoxy painted cylinders and high quality chrome plated piston rod has good causticity to endure bad outside working condition
4. More accessories can be selected: including Bellows, safety chain.
5. Special seal material and unique hydraulic oil, the standard temperature range from （-10℃~60℃） extended to（-35℃~100℃）.
6. Customized service, provide special design products per request.

Ordering Sample

BHS 130x150−BC

- BHS — Spring-Type Heavy-Duty Hydraulic Buffers
- 130x150 — Model
- SC：Safety Chain
- PB：Piston Rod Bellow

Application data needed

Moving Body Weight：W (kg)

Impact Velocity：V (m/s)

Driving Force：Fp (N)

Number of buffers in Parallel：n (pcs)

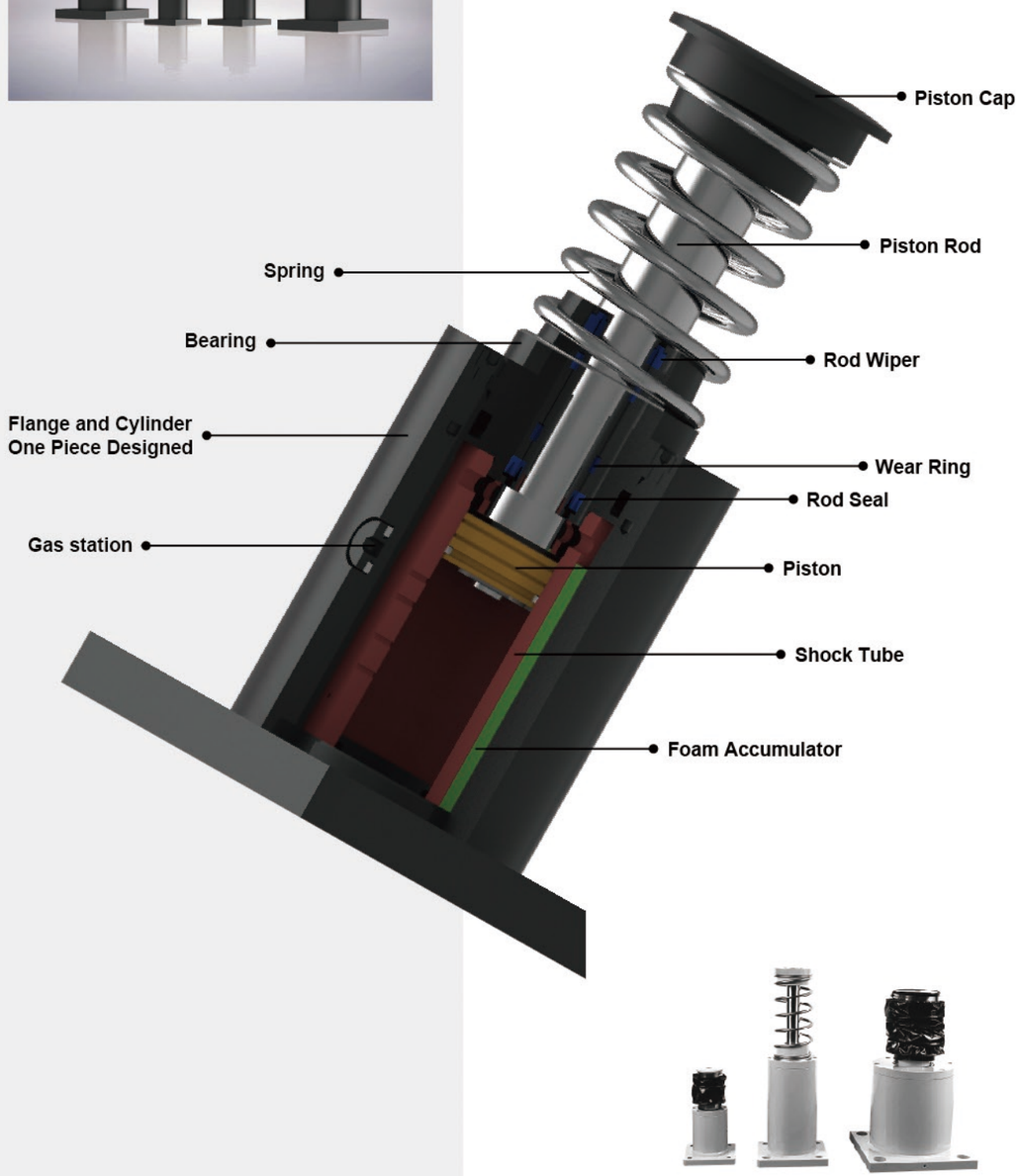
Impact Cycles per hour：a(Cycle/hour)

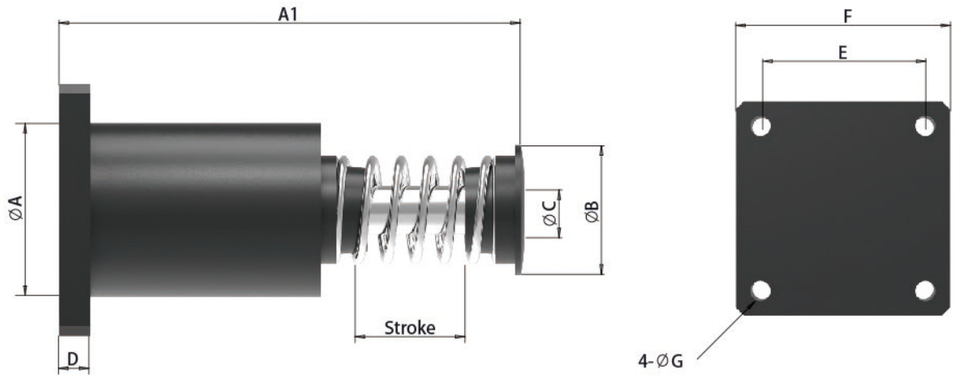
Others(Such as Temperature，Environment etc.)

Note:

1. BHS Series is customized products, need users' application data to design correct orifices
2. Only for Rear Flange installed, customized other installation methods.
3. We recommend install piston rod bellow, if the working condition is dusty or bad, especially for long life cycle requested.
4. If the install location is higher than 2 Meters, we recommend you use Safety-Chain to avoid falling accident.

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) E_T	Cylinder Diameter (mm) C	Page
BHS64x(Stroke)	50	0.5	64	39-40
BHS90x(Stroke)	50-100	4-8	90	39-40
BHS100x(Stroke)	50-100	4.4-8.8	100	39-40
BHS130x(Stroke)	70-150	10-21	130	39-40
BHS170x(Stroke)	80-150	24-45	170	39-40
BHS190x(Stroke)	100-150	40-60	190	39-40
BHS220x(Stroke)	100-150	44-66	220	39-40
BHS250x(Stroke)	100-150	60-180	250	39-40
BHS300x(Stroke)	150-250	117-180	300	39-40
BHS340x(Stroke)	200-300	200-300	340	39-40
BHS360x(Stroke)	250-400	294-470	360	39-40





Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (KJ) ET	Max. Energy /Hour (KJ/hr) ETC	Max. Damping Force (KN)	Recoil Force (N)		Weight (kg)
					Min.	Max.	
BHS64-50	50	0.5	10	12.5	65	148	5
BHS90-50	50	4	80	100	142	305	8.5
BHS90-75	75	6	108	100	105	190	9.5
BHS90-100	100	8	128	100	99	420	12
BHS100-50	50	4.4	79	110	142	305	14
BHS100-100	100	8.8	140	110	99	420	17
BHS130-70	70	10	170	179	182	425	21
BHS130-100	100	15	270	188	178	480	24
BHS130-150	150	21	294	175	183	535	28
BHS170-80	80	24	432	375	182	443	38
BHS170-150	150	45	630	375	183	535	48
BHS190-100	100	40	720	500	178	480	52
BHS190-150	150	60	840	500	183	535	64
BHS220-100	100	44	792	550	405	1340	69
BHS220-150	150	66	924	550	418	1310	76
BHS250-100	100	60	1080	750	385	1110	130
BHS250-150	150	90	1260	750	342	1080	140
BHS250-200	200	120	1560	750	330	1050	150
BHS250-300	300	180	2160	750	380	1220	170
BHS300-150	150	117	1638	975	460	1420	186
BHS300-250	250	180	2340	1125	450	1510	206
BHS340-200	200	200	2600	1250	510	1620	275
BHS340-300	300	300	3600	1250	490	1760	305
BHS360-250	250	294	3822	1470	680	1780	324
BHS360-400	400	470	4700	1470	640	1820	376

Dimension (Unit: mm)

Model	A1	A	B	C	D	E	F	G
BHS64-50	200	64	42	20	12	65	90	11
BHS90-50	240	90	78	30	16	100	130	14
BHS90-75	280	90	78	30	16	100	130	14
BHS90-100	360	90	78	30	16	100	130	14
BHS100-50	240	100	84	30	16	100	130	14
BHS100-100	340	100	84	30	16	100	130	14
BHS130-70	290	130	98	35	19	130	170	22
BHS130-100	350	130	98	35	19	130	170	22
BHS130-150	490	130	98	35	19	130	170	22
BHS170-80	360	170	98	50	22	170	220	26
BHS170-150	500	170	98	50	22	170	220	26
BHS190-100	440	190	98	60	25	220	280	33
BHS190-150	540	190	98	50	25	220	280	33
BHS220-100	440	220	116	60	25	220	280	33
BHS220-150	540	220	116	60	25	220	280	33
BHS250-100	480	250	138	70	32	250	320	33
BHS250-150	650	250	158	70	32	250	320	33
BHS250-200	750	250	158	70	32	250	320	33
BHS250-300	880	250	158	70	32	250	320	33
BHS300-150	650	300	170	80	36	300	400	33
BHS300-250	850	300	170	80	36	300	400	33
BHS340-200	800	340	228	100	45	340	440	39
BHS340-300	1000	340	228	100	45	340	440	39
BHS360-250	900	356	280	100	45	360	460	39
BHS360-400	1200	356	280	100	45	360	460	39

Installation and Routine inspection & Maintenance Notice

Installation request:

Stroke length below 300mm, the max side load angle is 2.5°; above 300mm, the max side load angle can be 1°; make sure all set screws are fixed, recommend using thread glue.

Routine inspection & Maintenance:

In order to enlarge the buffers life span, if the buffer is used in safety emergency application, we recommend you to do the maintenance every 6 months. If the buffer is frequently used, please maintain it every month, details as below:

1. Piston Rod should be handled carefully not to be damaged or scratched, clear up the dusty and corrosive, coating oil to avoid rusty.
2. Please check rod seal to see if oil leakage or not.
3. Whenever necessary, please check the locking condition of Bolt and set screws at any time and fasten tight due to the strong impact
4. Please check the expansion & recovering status of piston rod, compare with the dimension when piston rod completely restored in catalogue. If can't be fully restored, please add pneumatic in air bag, you can ask us to get operation manual.

Overview

BHI Hydraulic-Pneumatic Heavy-Duty Buffers, this global advanced damping technology initially used in undercarriage of plane in aerospace, hydraulic oil and nitrogen gas work together to absorb the impact energy. With small volume and high energy's specialty, wide range used in emergency case of heavy duty safety protection device, especially leading solutions for harbor machinery, hydraulic stop buffers of railway industry.

Energy Absorption Theory

Hydraulic Oil goes through multiple orifices in working, the sticky damping force happened. It makes impact energy converted to heat energy, little nitrogen gas in space can be converted to buffers potential energy; when it returning, compressed nitrogen space expanded, overcome the resistance and make partial intrinsic energy to heat energy.

Performance and Advantages

1. Small volume, big energy; in emergency case of heavy duty safety protection area
2. BHI series is the customized products, special design for multiple orifices per different application parameters, it can make the best energy absorption performance.
3. The design meets the standard of OSHA, AISE, CMMA and other rules like DIN and FEM safety regulations
4. In same diameter and same stroke, BHI energy absorption ability is 2 times more than other structures
5. Nitrogen space can realize the decelerating function and piston rod restoration function; the piston rod restoration force in this buffer is much bigger than other models.
6. Special epoxy painted cylinders and high quality chrome plated piston rod has good causticity to endure bad outside working condition
7. Special seal material and unique hydraulic oil, the standard temperature range from （-10℃~60℃） extended to（-35℃~100℃）.
8. More accessories can be selected: including Bellows, safety chain.
9. Customized service, provide special design products per request.

Ordering Sample

BHI 120x200−FR−BC

- BHI — Hydraulic-Pneumatic Heavy-Duty Buffers
- 120x200 — Model
- FF：Front Flange
- FR：Rear Flange
- SC：Safety Chain
- PB：Safety Chain

Application data needed

Moving Body Weight：W (kg)

Impact Velocity：V (m/s)

Driving Force：Fp (N)

Number of buffers in Parallel：n (pcs)

Impact Cycles per hour：a(Cycle/hour)

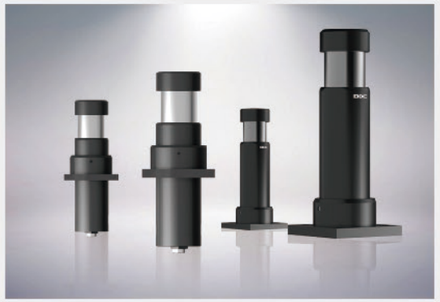
Others(Such as Temperature，Environment etc.)

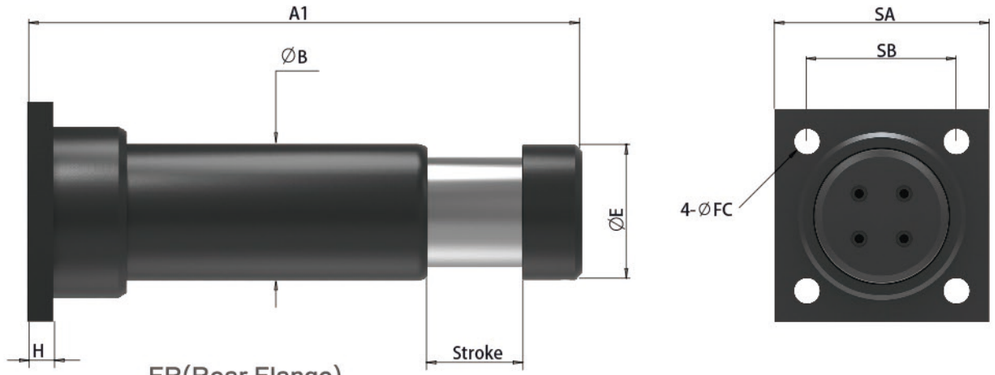
Note:

1. BHI Series is customized products, need users' application data to design correct orifices
2. We recommend install piston rod bellow, if the working condition is dusty or bad, especially for long life cycle requested.
3. If the install location is higher than 2 Meters, we recommend you use Safety-Chain to avoid falling accident.

Model	Stroke (mm) S	Max. Energy /Cycle (Nm) Er	Cylinder Diameter (mm) C	Page
BHI65x(Stroke)	50−100	4−8	65	43−44
BHI85x(Stroke)	50−100	8−16	85	43−44
BHI100x(Stroke)	50−800	10−132	100	43−44
BHI120x(Stroke)	100−1000	32−260	120	43−44
BHI130x(Stroke)	250−800	100−270	130	43−44
BHI150x(Stroke)	115−1000	62−510	150	43−44
BHI180x(Stroke)	100−1000	80−720	180	43−44

BHI Hydraulic-Pneumatic Heavy-Duty Buffers

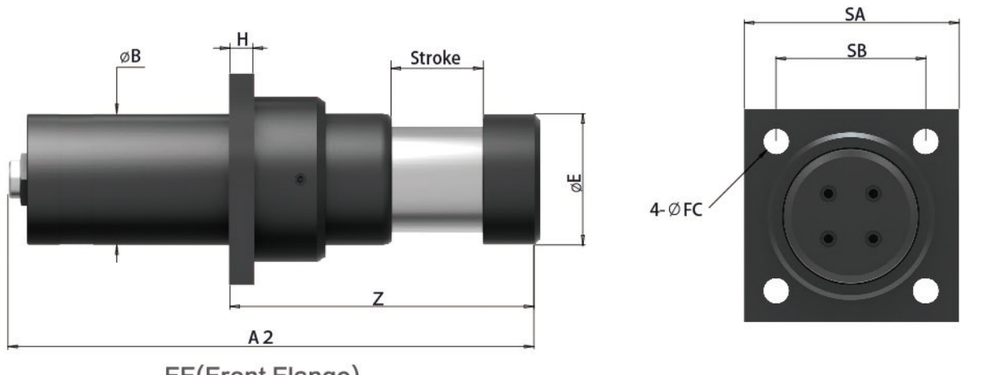




FR(Rear Flange)

Engineering Data

Model	Stroke (mm) S	Max. Energy /Cycle (KJ) Eт	Max. Damping Force (KN) Fp	Recoil Force(KN)		Weight (kg)
				Min.	Max.	
BHI65x50	50	4	100	0.5	1.5	7
BHI65x100	100	8	100	0.5	1.5	9
BHI85x50	50	8	200	1	1.9	14
BHI85x100	100	16	200	1	8	19
BHI100x50	50	10	250	1.65	18	18
BHI100x100	100	20	250	1.65	18	22
BHI100x150	150	30	250	1.65	18	28
BHI100x200	200	40	250	1.65	18	32
BHI100x400	400	80	235	1.65	18	46
BHI100x500	500	94	235	1.65	18	52
BHI100x600	600	112	230	1.65	18	58
BHI100x800	800	132	205	1.65	18	69
BHI120x100	100	32	400	2.8	50	34
BHI120x150	150	48	400	2.8	50	39
BHI120x200	200	64	400	2.8	50	43
BHI120x300	300	94	400	2.8	50	53
BHI120x400	400	125	400	2.8	50	87
BHI120x600	600	188	400	2.8	50	105
BHI120x800	800	225	350	2.8	50	110
BHI120x1000	1000	260	325	2.8	50	116
BHI130x250	250	100	500	3.2	64	72
BHI130x300	300	120	500	3.2	64	79
BHI130x400	400	160	500	3.2	64	90
BHI130x600	600	210	435	3.2	64	119
BHI130x800	800	270	420	3.2	64	140
BHI150x115	115	62	670	5	96	56
BHI150x150	150	82	670	5	96	59
BHI150x400	400	220	670	5	96	98
BHI150x500	500	275	670	5	96	110
BHI150x600	600	330	670	5	96	120
BHI150x800	800	448	700	5	96	165
BHI150x1000	1000	510	635	5	96	180
BHI180x100	100	80	980	8	75	110
BHI180x200	200	160	980	8	80	126
BHI180x250	250	200	980	8	80	140
BHI180x400	400	280	880	8	90	168
BHI180x500	500	350	880	8	100	198
BHI180x600	600	430	890	8	100	235
BHI180x800	800	570	890	8	100	295
BHI180x1000	1000	720	890	8	110	360



FF(Front Flange)

Dimension (Unit: mm)

Model	A1	A2	Z	H	B	SA	SB	FC	E
BHI65x50	312	–	–	15	65	100	70	16	64
BHI65x100	432	–	–	15	65	100	70	16	64
BHI85x50	323	–	–	15	85	128	89	16	84
BHI85x100	463	–	–	15	85	128	89	16	84
BHI100x50	302	301	175	20	100	150	120	18	99
BHI100x100	479	473	245	20	100	150	120	18	99
BHI100x150	618	612	300	20	100	150	120	18	99
BHI100x200	756	750	390	20	100	150	120	18	99
BHI100x400	1351	1345	645	25	100	150	120	18	99
BHI100x500	–	1616	890	20	100	150	120	18	99
BHI100x600	–	1888	1040	20	100	150	120	18	99
BHI100x800	–	2426	1345	20	100	150	120	18	99
BHI120x100	471	467	270	20	120	220	170	26	119
BHI120x150	597	593	330	20	120	220	170	26	119
BHI120x200	724	720	390	20	120	220	170	26	119
BHI120x300	973	969	520	20	120	220	170	26	119
BHI120x400	1225	1221	680	25	120	220	170	26	119
BHI120x600	–	1725	915	25	120	220	170	26	119
BHI120x800	–	2332	1290	25	120	220	170	26	119
BHI120x1000	–	2836	1360	25	120	220	170	26	119
BHI130x250	897	893	545	25	130	270	210	26	129
BHI130x300	1029	1025	605	25	130	270	210	26	129
BHI130x400	1293	1289	735	25	130	270	210	26	129
BHI130x600	–	1917	1060	25	130	270	210	26	129
BHI130x800	–	2445	1350	25	130	270	210	26	129
BHI150x115	517	513	320	20	150	270	210	30	149
BHI150x150	606	602	355	25	150	270	210	30	149
BHI150x400	1249	1245	710	25	150	270	210	30	149
BHI150x500	–	1498	770	25	150	270	210	30	149
BHI150x600	–	1752	885	25	150	270	210	30	149
BHI150x800	–	2363	1240	25	150	270	210	30	149
BHI150x1000	–	2880	1595	25	150	270	210	30	149
BHI180x100	491	471	350	40	180	348	295	30	179
BHI180x200	760	740	450	40	180	348	295	30	179
BHI180x250	850	830	550	40	180	348	295	30	179
BHI180x400	1486	1466	804	40	180	348	295	30	179
BHI180x500	1766	1746	939	40	180	348	295	30	179
BHI180x600	2066	2046	1074	40	180	348	295	30	179
BHI180x800	2666	2646	1344	40	180	348	295	30	179
BHI180x1000	3226	3206	1614	40	180	348	295	30	179

Installation request:

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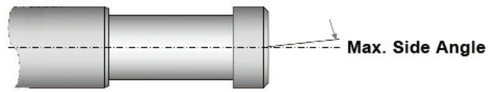

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Air pressure check & Nitrogen filling attention

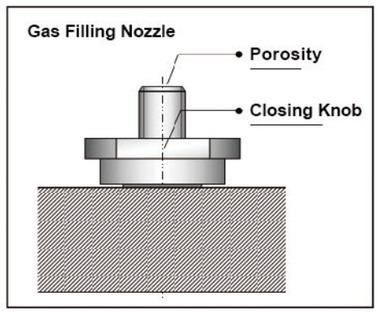
Pressure of Nitrogen gas cavity should be in 3-10bar, standard is 5bar. Open the bolt at the top of piston rod, you can see the gas filling nozzle, open the nozzle, you can check the pressure or fill gas by nozzle aerator.

It is Nitrogen when buffers made and delivered, we recommend to continuously using nitrogen, or you can use other gas but no salty and wet gas.

Gas filling nozzle

The gas filling nozzle that BDC use can keep long time high pressure and keep stable when in vibration. You can use nozzle aerator like tire typed when in filling.

Closing knob: turn right to fasten; turn left to loosen



Nozzle aerator

How to use

◇ Air pressure keeps at 3-5bar in air tank with barometer

◇ Collet of nozzle aerator should be installed in the gas filling nozzle

◇ After installed, turn right to fasten the closing knob

◇ After gas filling finished, move the collet and close the nozzle cap