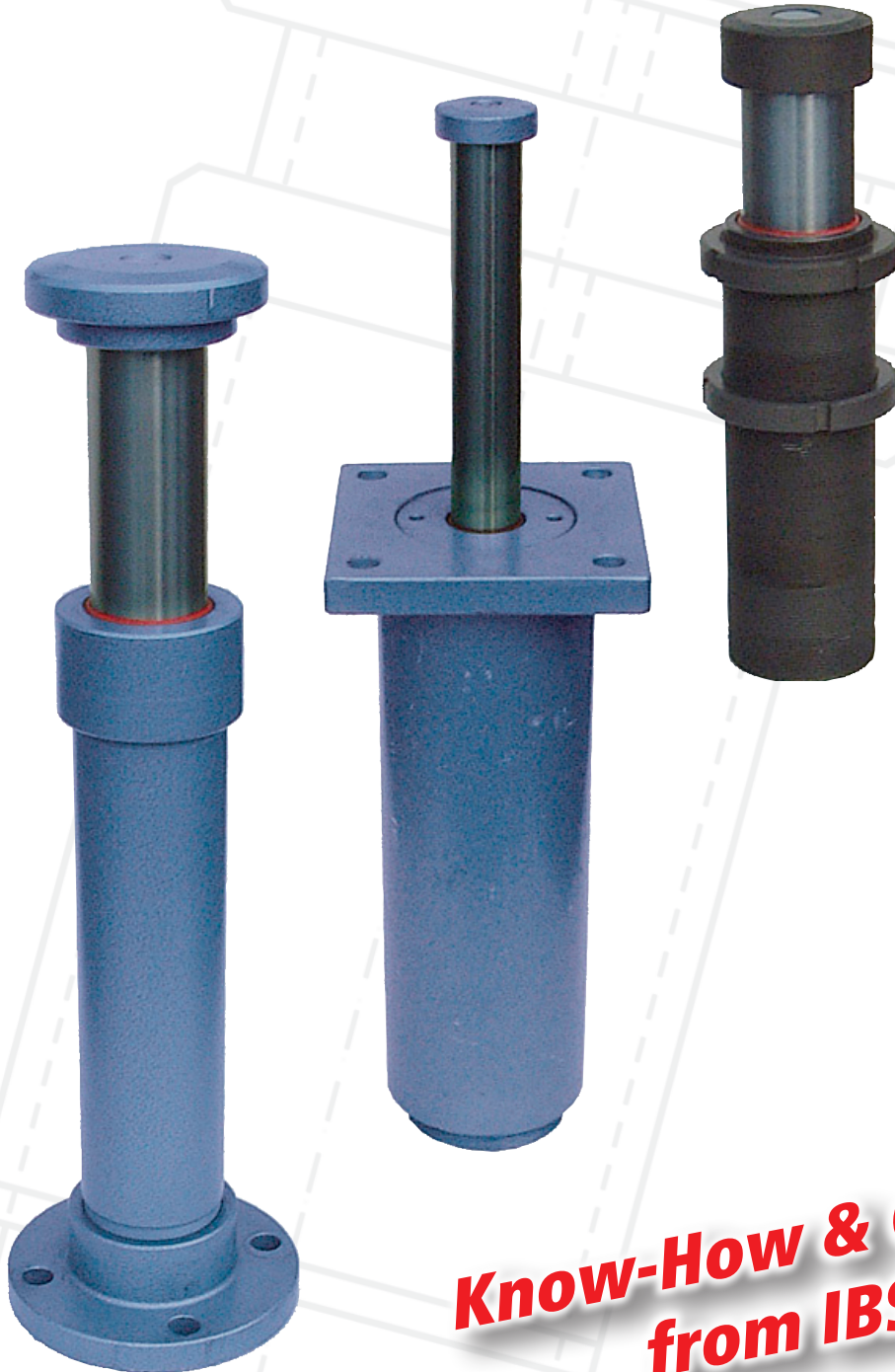




Intelligent Brake-Systems



**Know-How & Quality  
from IBS**

**Hydraulic Buffer**



# Hydraulic Buffer

**INDUSTRIAL BRAKES · THRUSTERS · PRESSURE OIL UNITS · COUPLINGS · HYDRAULIC BUFFERS  
CELLULAR BUFFERS · RAIL CLAMPS · STORM PROTECTION · SHEAVES · REPAIR · SERVICE**

## Special Features

- ➔ Very wide buffer range  
from 50 mm – 1,600 mm stroke  
from 10 kN – 1,000 kN impact force
- ➔ Special buffer characteristics at no extra charge
- ➔ Piston rod hard chromium plating and teflonized
- ➔ Hydraulic buffer including weldable or boltable buffer mounting plate



## Mounting Systems

- ➔ Front Flange
- ➔ Back or Foot Flange
- ➔ Parallel Surface Mounting Bracket
- ➔ Hinged head and Hinged foot mounting
- ➔ Special Mountings to Customers' Requirements

## Optional Extras

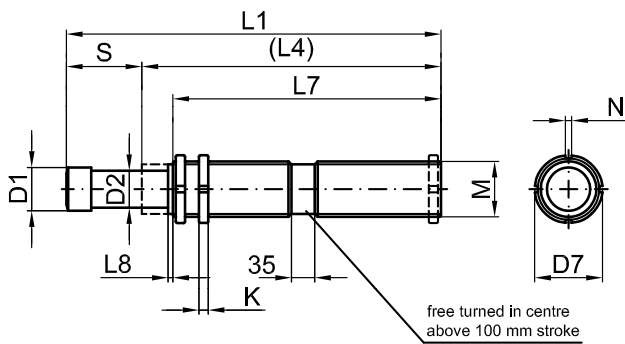
- ➔ Special Paint
- ➔ Bellows or Buffer Plunger Protection Tube
- ➔ External Oil and Gas Reservoirs
- ➔ Mounting Plates
- ➔ Buffer Head with Plastic Impact Plate
- ➔ Buffer Head Collector System for Herkules Buffers
- ➔ Control Equipment, e.g. for Gas Pressure, Buffer Stroke, Buffer Plunger Recoil

# Hydraulic Buffer IBH-P Ø 50

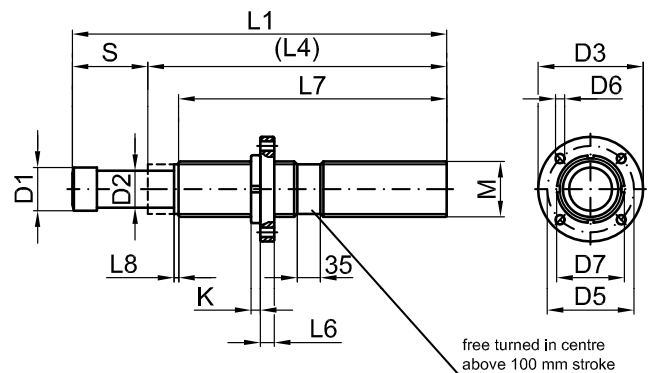


Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request					
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/stroke] <sup>1)</sup>	max. Energy-Absorption/h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle	Weight for design		
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	Deviation [°] <sup>4)</sup>	W [kg] <sup>1)</sup>	F [kg]	S [kg]
50	50	70	3.2	200	1.0	4.7	4.0	4.2	6.2	7.3
	75	70	4.8	300		5.3	3.5	4.9	6.9	8.0
	100	60	5.4	400		6.6	3.0	5.4	7.4	8.5
	150	50	6.8	600		6.6	2.5	6.9	8.9	10.0

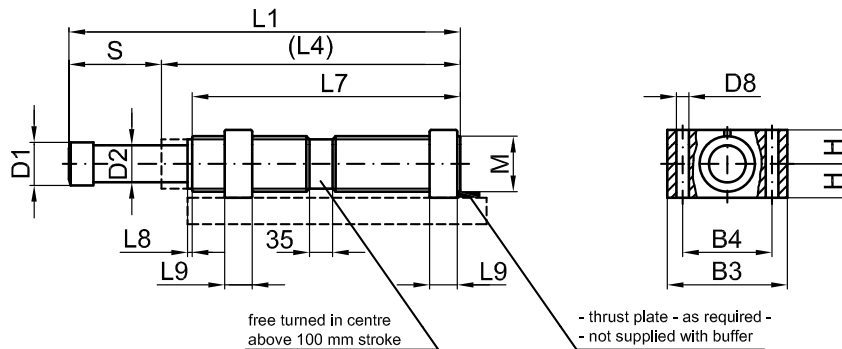
<sup>1)</sup> Data for standard characteristic  $k=1,1$  at 30 °C ambient temperature  
<sup>2)</sup> at 30 °C ambient temperature  
<sup>3)</sup> at 5 bar gas pressure (nitrogen)  
<sup>4)</sup> at max. buffer force  
 Intermediate length and special designs on request. Subject to modifications and amendments!



Design W



Design F



Design S

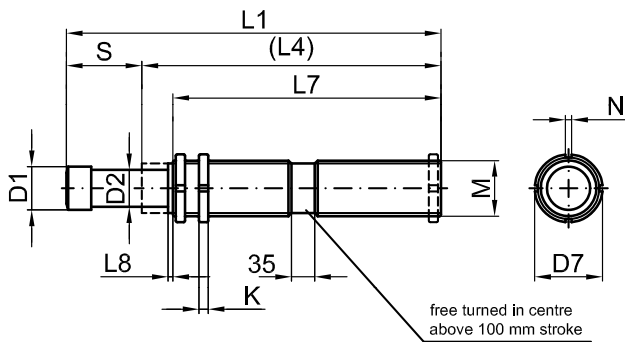
Dimensions:													in mm							
Piston-Ø	Stroke S	B3	B4	D1	D2	D3	D5	D6	D7	D8	H	K	L1	L4	L6	L7	L8	L9	M	N
50	50	120	90	60	48	136	115	13	85	17	50	12	280	230	25	185	9	30	M 64 x 2	8
	75												360	285		240				
	100												425	325		280				
	150												560	410		365				

# Hydraulic Buffer IBH-P Ø 63

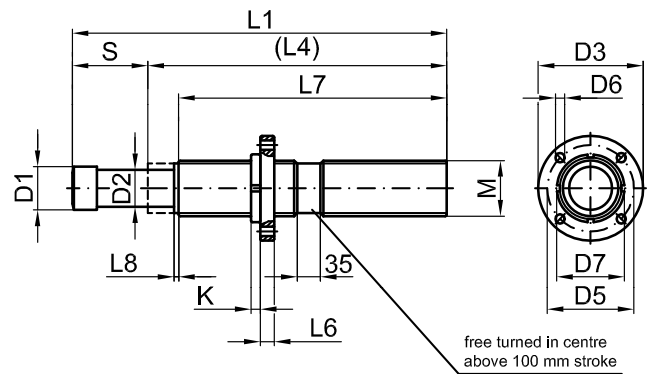


Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speed on request					
Piston-Ø	Stroke S	max.	max. Energy-	max. Energy-	Static recoil forces		max. Angle	Weight for design		
[mm]	[mm]	Buffer force [kN]	Absorp./Stroke [kJ/Hub] <sup>1)</sup>	absorption/h [kJ/h] <sup>2)</sup>	Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	Deviation [°] <sup>4)</sup>	W [kg]	F [kg]	S [kg]
63	50	100	4.5	320	1.5	10	4.2	7.8	10.9	11.6
	75	100	6.8	480		11	3.2	8.8	11.9	12.6
	100	90	8.2	640		13	2.6	10.3	13.4	14.1
	150	80	10.9	960		17	2.2	12.9	16.0	16.7

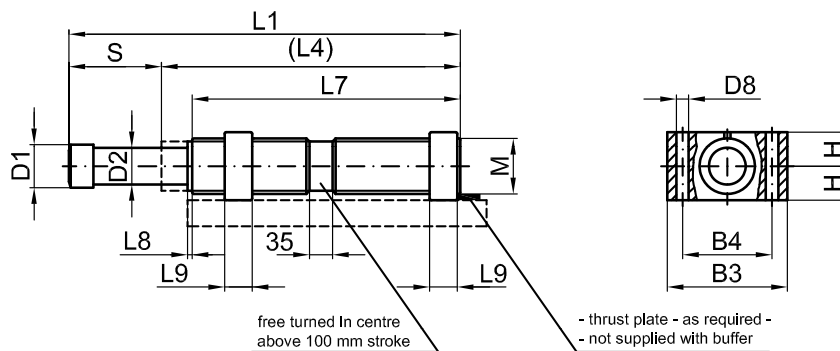
<sup>1)</sup> Data for standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)  
<sup>2)</sup> at 30 °C ambient temperature                      <sup>4)</sup> at max. buffer force      Intermediate length and special designs on request.  
 Subject to modifications and amendments!



Design W



Design F

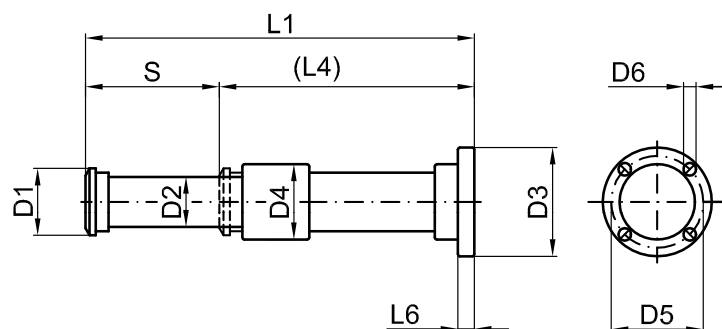
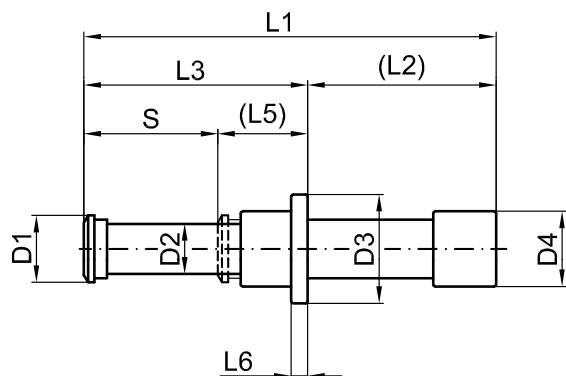


Design S

Dimensions:													in mm							
Piston-Ø	Stroke S	B3	B4	D1	D2	D3	D5	D6	D7	D8	H	K	L1	L4	L6	L7	L8	L9	M	N
63	50	150	120	79	60	175	140	18	105	21	59	16	280	230	25	185	9	30	M82 x 2	8
	75												360	285		240				
	100												425	325		280				
	150												560	410		365				

Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request				
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/Stroke] <sup>1)</sup>	max. Energy-absorption/h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle Deviation		Weight
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	EF [°] <sup>4)</sup>	FF [°] <sup>4)</sup>	EF, FF [kg]
63	100	200	18.2	1200	1.5	13	4.2	3.5	14
	150	200	27.3	1800		17	3.2	2.4	17
	200	200	36.4	2400		19	2.6	2.0	19
	250	190	43.2	2850		20	2.4	1.8	21
	300	180	49.1	3240		20	2.2	1.6	24
	400	150	54.5	3600		20	2.0	1.4	29
	500	130	59.1	3900		20	1.6	1.2	34
	600	110	60.0	3960		20	1.4	1.0	39

<sup>1)</sup> Data for standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)      Intermediate length and special designs on request.  
<sup>2)</sup> at 30 °C ambient temperature      <sup>4)</sup> at max. buffer force      Subject to modifications and amendments!



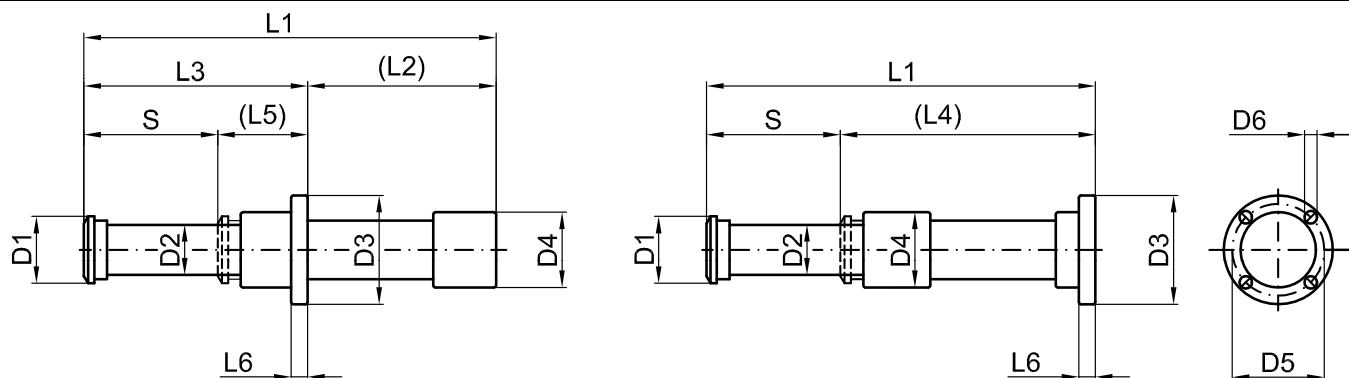
Design EF

Design FF

Dimension:						in mm							
Piston-Ø	Stroke S	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6
63	100	95	60	168	92	135	18	425	230	195	325	95	25
	150							560	315	245	410		
	200							700	405	295	500		
	300							980	585	395	680		
	400							1265	770	495	865		
	500							1555	960	595	1055		
	600							1840	1145	695	1240		

Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request				
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/Hub] <sup>1)</sup>	max. Energy-Absorp./h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle Deviation		Weight
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	EF [°] <sup>4)</sup>	FF [°] <sup>4)</sup>	EF, FF [kg]
80	100	260	23.6	1500	2.5	16	5.0	4.0	23
	150	260	35.5	2250		20	4.5	3.5	27
	200	260	47.3	3000		20	4.0	3.0	32
	300	240	65.5	4000		25	3.0	2.0	39
	400	220	80.0	5000		30	2.0	1.3	47
	500	200	90.9	6000		30	1.5	1.0	55
	600	180	98.2	7000		30	1.3	0.8	64
	800	140	101.8	9000		30	0.8	0.6	80

<sup>1)</sup> Data for standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)      Intermediate length and special designs on request.  
<sup>2)</sup> at 30 °C ambient temperature      <sup>4)</sup> at max. buffer force      Subject to modifications and amendments!



Design EF

Design FF

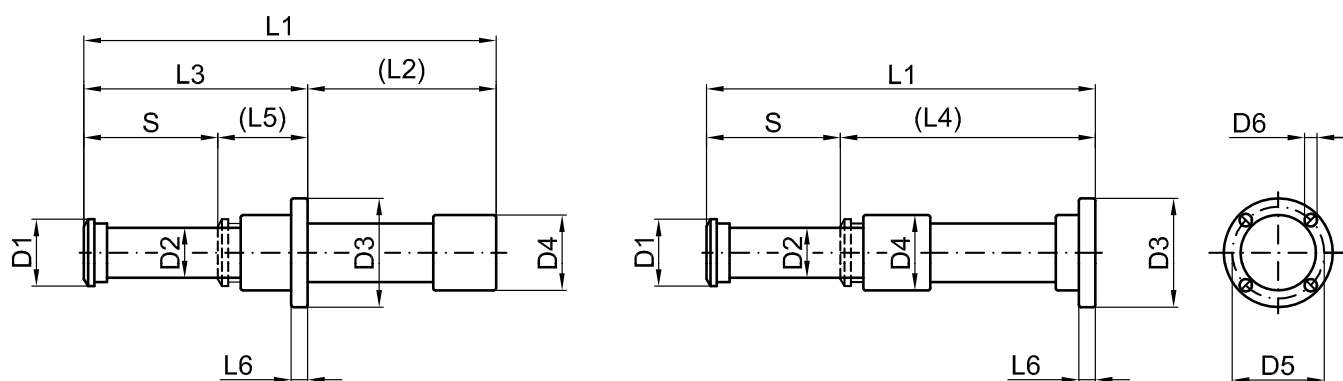
Dimensions:							in mm						
Piston-Ø	Stroke S	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6
80	100	118	75	205	122	165	18	440	235	205	340	105	25
	150							580	325	255	430		
	200							730	425	305	530		
	300							1010	605	405	710		
	400							1285	780	505	885		
	500							1575	970	605	1075		
	600							1865	1160	705	1265		
	800							2450	1545	905	1650		

# Hydraulic Buffer IBH-N Ø 100



Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request				
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/Hub] <sup>1)</sup>	max. Energy-Absorption/h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle Deviation		Weight
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	EF [°] <sup>4)</sup>	FF [°] <sup>4)</sup>	EF, FF [kg]
100	100	520	47	3000	3.9	38	5.0	4.5	39
	200	520	95	6000		38	4.5	4.0	54
	250	500	114	7500		40	4.0	3.5	60
	300	480	131	9000		40	3.5	3.0	67
	400	440	160	12000		40	2.5	2.0	82
	500	400	182	13500		40	2.0	1.7	94
	600	360	196	15000		46	1.7	1.5	104
	800	300	218	17000		46	1.3	1.0	126

<sup>1)</sup> Data at standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)      Intermediate length and special designs on request.  
<sup>2)</sup> at 30 °C ambient temperature      <sup>4)</sup> at max. buffer force      Subject to modifications and amendments!



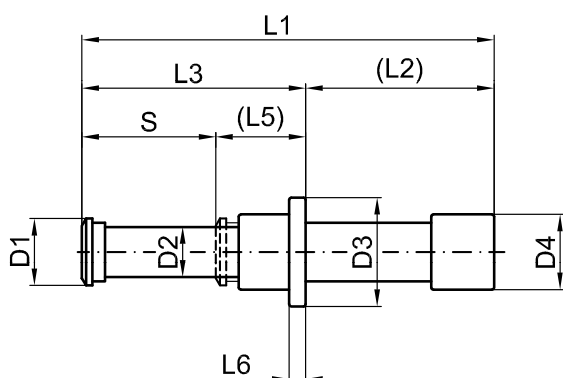
Design EF

Design FF

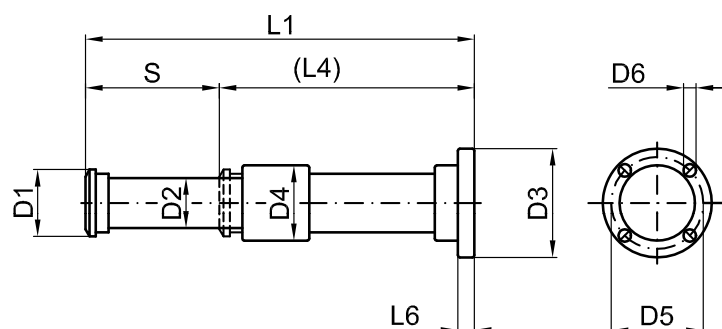
Dimension:							in mm						
Piston-Ø	Stroke S	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6
100	100	138	95	255	148	210	23	460	230	230	360	130	30
	200							750	420	330	550		
	250							890	510	380	640		
	300							1035	605	430	735		
	400							1325	795	530	925		
	500							1610	980	630	1110		
	600							1880	1150	730	1280		
	800							2450	1520	930	1650		

Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request				
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/Hub] <sup>1)</sup>	max. Energy-Absorption/h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle Deviation		Weight ca.
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	EF [°] <sup>4)</sup>	FF [°] <sup>4)</sup>	EF, FF [kg]
120	200	700	127	8000	5.6	70	4.5	3.5	81
	400	650	236	15000		75	2.7	1.7	132
	600	550	300	17000		75	2.3	1.3	159
	800	450	327	19000		75	1.7	0.9	194
	1000	400	364	21000		75	1.3	0.7	228
	1200	400	436	23000		75	1.0	0.6	260

<sup>1)</sup> Data for standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)      Intermediate length and special designs on request.  
<sup>2)</sup> at 30 °C ambient temperature      <sup>4)</sup> at max. buffer force      Subject to modifications and amendments!



Design EF



Design FF

Dimensions:							in mm						
Piston-Ø	Stroke S	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6
120	200	178	115	300	177	245	27	750	400	350	550	150	35
	400							1325	775	550	925		
	600							1880	1130	750	1280		
	800							2450	1500	950	1650		
	1000							3020	1870	1150	2020		
	1200							3590	2240	1350	2390		



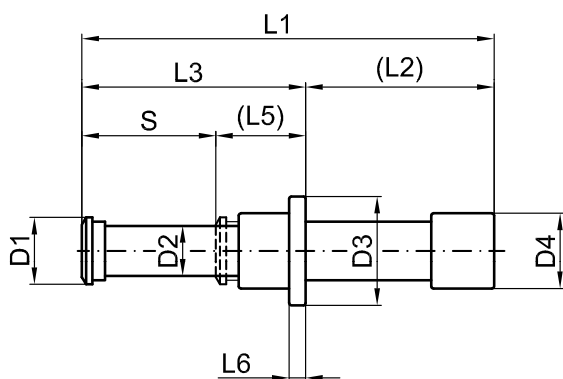
# Hydraulic Buffer

## IBH-N Ø 160

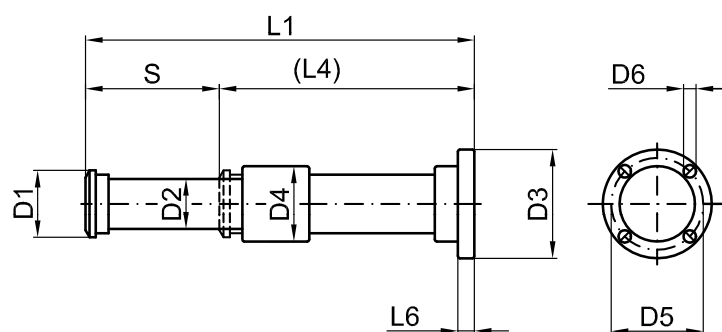


Performance data:					Buffer impact speed $0.5 \text{ m/s} \leq v \leq 4.0 \text{ m/s}$ lower or higher speeds on request				
Piston-Ø	Stroke S	max. Buffer force [kN]	max. Energy-Absorp./Stroke [kJ/Hub] <sup>1)</sup>	max. Energy-Absorption/h [kJ/h] <sup>2)</sup>	Static recoil forces		max. Angle Deviation		Weight
[mm]	[mm]				Beginning of stroke [kN] <sup>3)</sup>	End of stroke [kN] <sup>3)</sup>	EF [°] <sup>4)</sup>	FF [°] <sup>4)</sup>	EF, FF [kg]
160	400	720	262	14400	10	95	5.0	4.0	165
	500	700	318	17500		105	4.5	3.5	195
	600	680	371	20500		105	4.0	3.0	230
	800	630	458	25000		105	3.0	2.0	290
	1000	550	500	28000		115	2.3	1.3	350
	1200	450	491	28000		115	1.7	0.8	410
	1600	400	582	32000		115	1.5	0.6	530

<sup>1)</sup> Data for standard characteristics  $k=1,1$       <sup>3)</sup> at 5 bar gas pressure (nitrogen)      Intermediate length and special designs on request.  
<sup>2)</sup> at 30 °C ambient temperature      <sup>4)</sup> at max. buffer force      Subject to modifications and amendments!



Design EF



Design FF

Dimensions:							in mm						
Piston-Ø	Stroke S	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	L6
160	400	185	150	350	230	295	27	1485	845	640	1085	240	40
	500							1765	1025	740	1265		
	600							2065	1225	840	1465		
	800							2660	1620	1040	1860		
	1000							3225	1985	1240	2225		
	1200							3815	2375	1440	2615		
	1600							4995	3155	1840	3395		

Company \_\_\_\_\_

Project: \_\_\_\_\_

Name/ Person in charge: \_\_\_\_\_

Date: \_\_\_\_\_

**General information****Buffer type**

- IBH-P  IBH-N

**Desired buffer size**Piston- $\varnothing$  x Stroke: \_\_\_\_\_**Fastening type**

- bottom flange FF  wave nut W  
 insert flange EF  flange(adjustable) F  
 pedestal flange S/SF  pivoting design  
 special design  without

Type of machine \_\_\_\_\_

**Field of operation**

- outdoor application  
 indoor application

**Ambient temperatures**

from \_\_\_\_\_°C to \_\_\_\_\_°C

**Surrounding atmosphere**

- normal  dry  humid  
 oily  dusty  aggressive

**Protection devices, control devices**

- cover  screen  bellow  
 position switch  pressure switch  \_\_\_\_\_

**Type of operation**

- emergency-stop application  
 impact at creep speed  
 operational actuation

Stroke frequency \_\_\_\_\_ 1/h

**Information regarding buffer design**

- max. buffer force \_\_\_\_\_ kN  
 max. buffer stroke \_\_\_\_\_ mm  
 max. deceleration \_\_\_\_\_ m/s<sup>2</sup>

**Case of application****A: horizontally moved mass**

- a) mass without propelling force  
 b) mass with propelling force  
 c) mass on driven rolls  
 d) mass with motor drive  
 e) mass with motor drive and kinetic energy of rotating driving parts

**B: vertically moved mass**

- a) free fall  
 b) lowered mass, constant speed

**C: mass on inclined plane**

- a) free rolling, without propelling or braking force  
 b) with propelling or braking force

**D: pendulum, free-falling load**

- a) horizontal buffer axis  
 b) vertical buffer axis

**E: revolving mass with driving torque**

- a) horizontal buffer axis  
 b) vertical buffer axis

**Impact conditions**

- case I  case II\*)  case III  case IV\*)

\*) counter buffer: brand \_\_\_\_\_

constr. size \_\_\_\_\_

throttle \_\_\_\_\_

**Design data for one buffer**

mass to be braked m \_\_\_\_\_ [kg]  
 impact speed v \_\_\_\_\_ [m/s]  
 propelling force F<sub>v</sub> \_\_\_\_\_ [N]