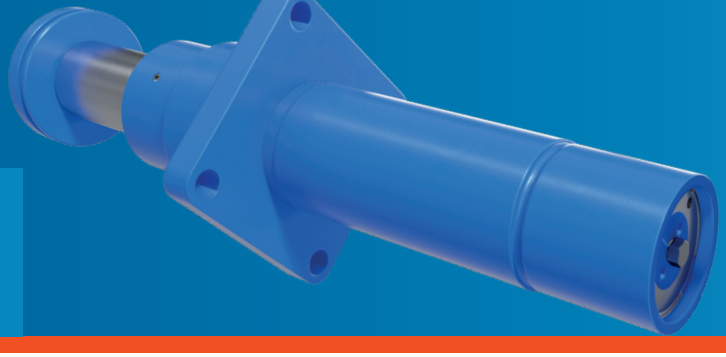
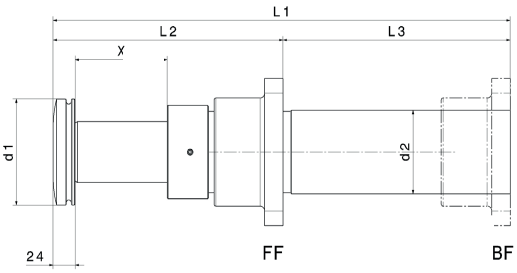
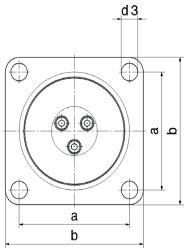
HYDRAULIC BUFFER SP



M 1501 486 E-EN-2021-11





FF = Front frame
Special mounting plate on request

BF = Back frame
up to max. 400 mm stroke

Impact Force [kN] of type																					
Damping Capacity [kJ]	65						80						100				125				
	X = Stroke [mm]																				
	100	200	300	400	600	800	100	200	300	400	600	800	200	400	600	800	100	200	400	600	800
1	12	5,5	4	3	2	1,5	12	6	4	3	2	2	6	3	2	1	12	6	3	2	1,5
2,5	29	15	10	7	5	4	29	15	10	7	6	5	15	7	5	4	29	15	7	5	4
5	59	29	20	15	10	7	59	29	20	15	12	10	29	15	10	7	59	29	15	10	7
10	118	59	39	29	20	15	118	59	39	29	24	20	59	29	20	15	118	59	29	20	15
20		118	78	59	39	29	235	118	78	59	47	39	118	59	39	29	235	118	59	39	29
30		176	118	88	59	44	353	176	118	88	71	59	176	88	59	44	353	176	88	59	44
40			157	118	78	59		235	157	118	94	78	235	118	78	59	471	235	118	78	59
50			196	147	118	74		294	196	147	118	98	294	147	98	74	588	294	147	98	74
60				176	156	88		353	235	176	141	118	353	176	118	88		353	176	118	88
80						118			314	235	188	157	470	235	157	118		471	235	157	118
100										294	235	196		294	196	147		588	294	196	147
150														441	294	221			441	294	221
200															392	294			588	392	294
300																				588	441
350																				686	515
400																					588
450																					661
max. End Force [kN]	200	200	200	170	150	120	350	350	350	300	300	250	470	440	400	355	700	700	700	660	620
L_1	495	805	1100	1395	1890	2455	470	755	1035	1315	1600	1885	780	1350	1920	2490	482	745	1275	1775	2295
L_2	250	350	450	580	780	980	280	360	470	670	770	870	470	670	870	1070		470	680	930	980
L_3	245	455	650	815	1110	1475	190	395	565	645	830	1015	310	680	1050	1420		275	595	845	1315
d_1	108	108	108	108	108	108	128	128	128	128	128	128	148	148	148	148	163	163	163	163	163
d_2 *)	85	85	85	85	85	85	105	105	105	105	105	105	125	125	125	125	150	150	150	150	150
d_3	18	18	18	18	18	18	18	18	18	18	18	18	26	26	26	26	26	26	26	26	26
a	120	120	120	120	120	120	120	120	120	120	120	120	210	210	210	210	210	210	210	210	210
b	150	150	150	150	150	150	150	150	150	150	150	150	270	270	270	270	270	270	270	270	270

*) Recommended minimum installation space d4 + 5 mm
The specified final forces are already applied with a damping efficiency of 0.85
All dimensions in mm

HYDRAULIC BUFFER SP

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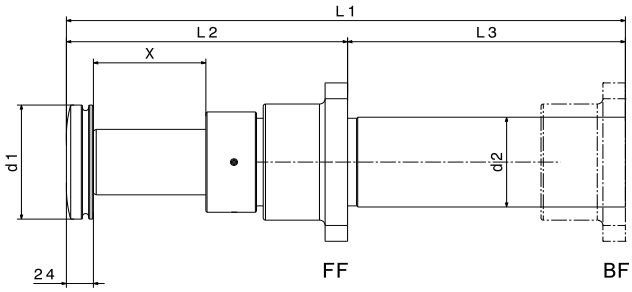
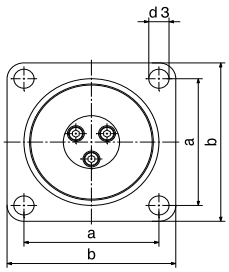




FF = Front flange
BF = Back flange (up to 400 mm stroke)

Identification example:

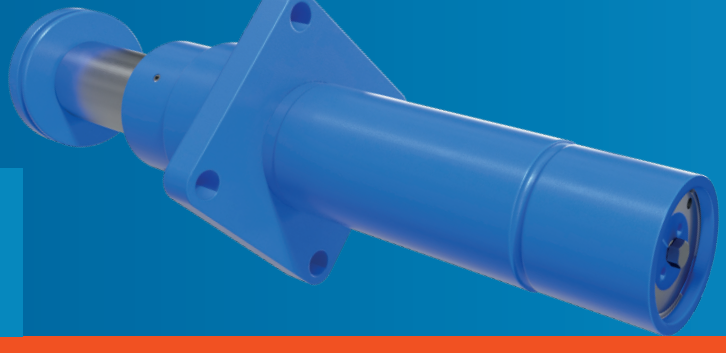
Type	Design	Mounting plate	Stroke/ metering pin
SP	65	FF	106

Stroke [mm]	At max. energy absorption W E_{kin} [kJ]		End force [kN]	Dimensions in mm							
				L_1	L_2	L_3	d_1	d_2	d_3	a	b
100	17	=	200	495	250	245	108	85	18	120	150
200	34	=	200	805	350	455	108	85	18	120	150
300	51	=	200	1100	450	650	108	85	18	120	150
400	58	=	170	1395	580	815	108	85	18	120	150
600	77	=	150	1890	780	1110	108	85	18	120	150
800	82	=	120	2455	980	1475	108	85	18	120	150

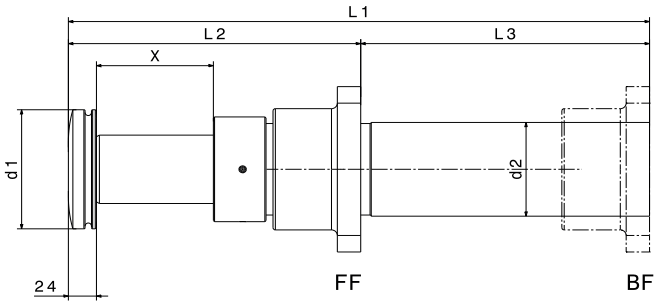
Stroke [mm]	Design mass [t]							
	up to 5	up to 10	up to 20	up to 40	up to 80	up to 150	up to 300	up to 600
100	102	104	106	108	110	112	114	116
200	202	204	206	208	210	212	214	216
300	302	304	306	308	310	312	314	316
400	402	404	406	408	410	412	414	416
600	602	604	606	608	610	612	612	616
800	802	804	806	808	810	812	812	816

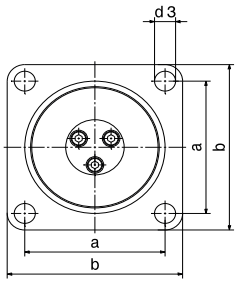
Stroke [mm]	Weight [kg]		max. restoring energy [kN]
	FF	BF	
100	19,2	19,2	10
200	25,2	25,2	10
300	31,4	33,7	11
400	37,3	39,6	12
600	44,9	-	25
800	56,3	-	25

HYDRAULIC BUFFER SP



M 1501 494 E-EN-08-2022





FF = Front flange
BF = Back flange (up to 400 mm Stroke)

Identification example:

Type	Design	Mounting plate	Stroke/ metering pin
SP	80	FF	106

Stroke [mm]	At max. energy absorption W E_{kin} [kJ]		End force [kN]	Dimensions in mm							
				L_1	L_2	L_3	d_1	d_2	d_3	a	b
100	30	=	350	470	280	190	128	105	18	120	150
200	60	=	350	755	360	395	128	105	18	120	150
300	89	=	350	1035	470	565	128	105	18	120	150
400	102	=	300	1315	670	645	128	105	18	120	150
500	128	=	300	1600	770	830	128	105	18	120	150
600	128	=	300	1885	870	1015	128	105	18	120	150

Stroke [mm]	Design mass								
	up to 5	up to 10	up to 20	up to 40	up to 80	up to 150	up to 300	up to 600	up to 800
100	102	104	106	108	110	112	114	-	-
200	202	204	206	208	210	212	214	216	-
300	302	304	306	308	310	312	314	316	-
400	402	404	406	408	410	412	414	416	418
500	502	504	506	508	510	512	514	516	518
600	602	604	606	608	610	612	614	616	618

Stroke [mm]	Weight [kg]		max. restoring energy [kN]
	FF	BF	
100	23,6	24,3	25
200	32,6	33,3	25
300	40,9	41,6	25
400	49,3	50,0	25
500	57,8	-	25
600	66,2	-	25

HYDRAULIC BUFFER SP

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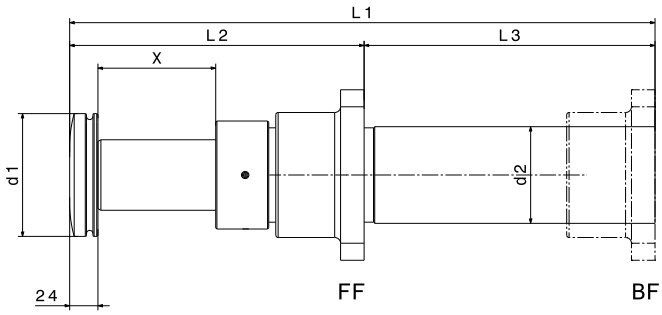
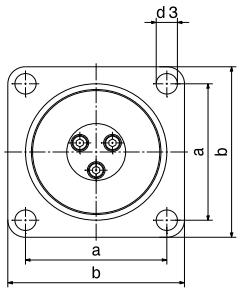




FF = Front flange
BF = Back flange (up to 400 mm Stroke)

Identification example:

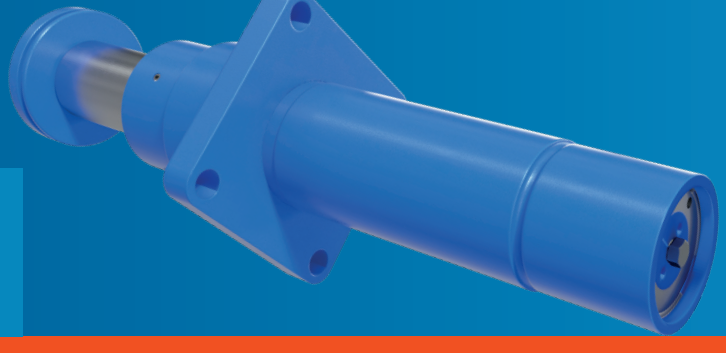
Type	Design	Mounting plate	Stroke/ metering pin
SP	100	FF	204

Stroke [mm]	At max. energy absorption W E_{kin} [kJ]		End force [kN]	Dimensions in mm							
				L_1	L_2	L_3	d_1	d_2	d_3	a	b
200	80	=	470	780	470	310	148	125	26	210	270
400	150	=	440	1350	670	680	148	125	26	210	270
600	204	=	400	1920	870	1050	148	125	26	210	270
800	241	=	355	2490	1070	1420	148	125	26	210	270

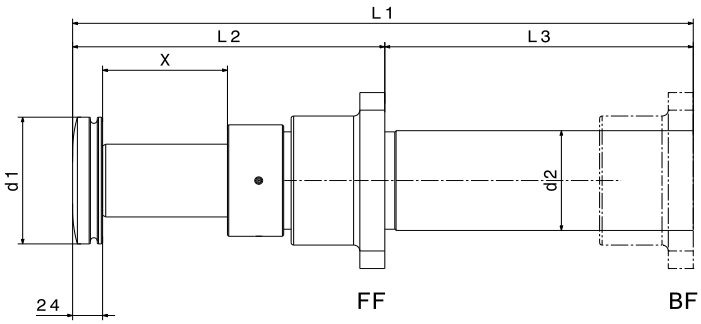
Stroke [mm]	Design mass [t]									
	up to 10	up to 20	up to 40	up to 80	up to 150	up to 300	up to 600	up to 800	up to 1000	up to 2000
200	204	260	208	210	212	214	216	218	220	222
400	404	406	408	410	412	414	416	418	420	422
600	604	606	608	610	612	614	616	618	620	622
800	-	-	808	810	812	814	816	818	820	822

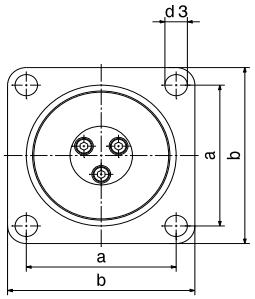
Stroke [mm]	Weight [kg]		max. restoring energy [kN]
	FF	BF	
200	53,4	57,4	30
400	76,1	80,1	30
600	98,8	-	30
800	121,5	-	30

HYDRAULIC BUFFER SP



M 1501 496 E-EN-08-2022





FF = Front flange
BF = Back flange (up to 400 mm stroke)

Identification example:

Type	Design	Mounting plate	Stroke/ metering pin
SP	125	FF	206

Stroke [mm]	At max. energy absorption W E_{kin} [kJ]		End force [kN]	Dimensions in mm							
				L_1	L_2	L_3	d_1	d_2	d_3	a	b
100	60	=	700	482	-	-	163	150	26	210	270
200	120	=	700	745	470	275	163	150	26	210	270
400	238	=	700	1275	680	595	163	150	26	210	270
600	337	=	660	1775	930	845	163	150	26	210	270
800	422	=	620	2295	980	1315	163	150	26	210	270

Stroke [mm]	Design mass [t]									
	up to 10	up to 20	up to 40	up to 80	up to 150	up to 300	up to 600	up to 800	up to 1000	up to 2000
100	-	-	-	110	-	-	-	-	-	-
200	-	206	208	210	212	214	216	218	220	222
400	-	-	408	410	412	414	416	418	420	422
600	-	-	608	610	612	614	616	618	620	622
800	-	-	-	810	812	814	816	818	820	822

Stroke [mm]	Weight [kg]		max. restoring energy [kN]
	FF	BF	
100	-	58,9	55
200	61,7	71,7	55
400	87,4	97,7	55
600	111,0	-	65
800	136,0	-	65