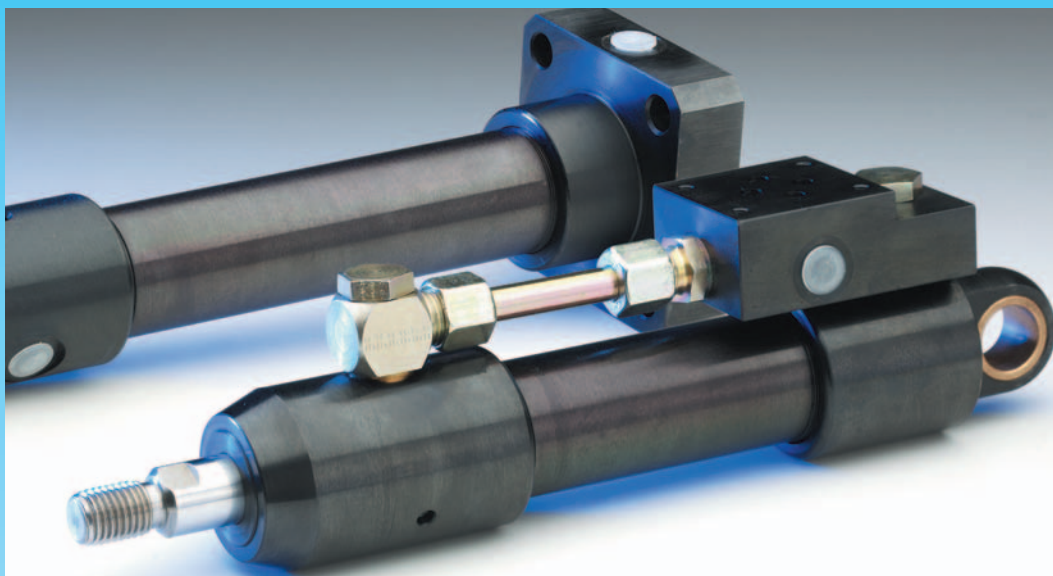


ZU 250 Series



250 bar hydraulic cylinder

Piston Ø 20-100 mm

Lengths of stroke at your option (take account of the buckling strength, see page 35)

- Round, compact design; black blued
- Piston rod hard chromium plated; with dust seal
- Particularly suited for installation into machines and appliances

Determine your 250 bar hydraulic cylinder:

Ordering example: **ZU250-G 25/140 Dbb-H03 E11g G1/4" As4**

Cylinder type

① Mounting type

② piston Ø

③ Length of stroke

④ Functional type

⑤ Seal type

⑥ Options

End of piston rod

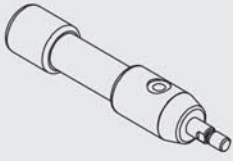
Connections

⑦ Cover design (for front mounting type)

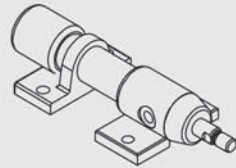
Special versions upon request

1 Mounting types

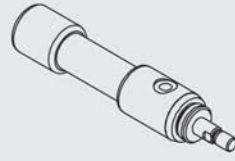
A Basic design



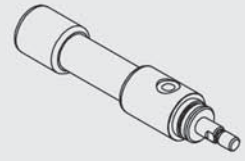
H Foot mounting



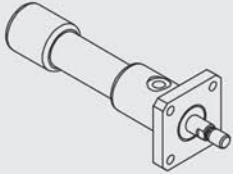
G Thread mounting



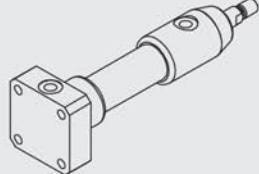
Gz Thread mounting with centering



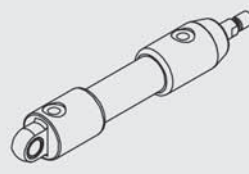
Fv Front flange



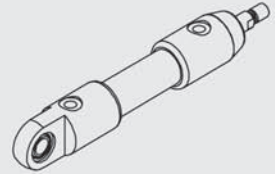
Fh Back flange



Si Swivelling support

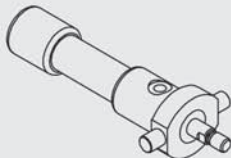


Sk Hinged support

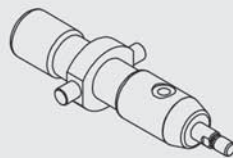


Special mounting types: (upon request)

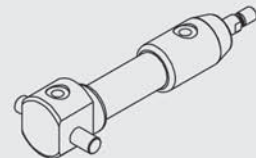
Sv Front support bolt



Sm Centered support bolt



S Back support bolt



2 Piston Ø

Piston Ø (mm)	20	25	32	40	50	55	63	70	80	90	100
Piston surface pushing (cm ²)	3.14	4.90	8.05	12.5	19.6	23.7	31.1	38.5	50.2	63.6	78.5
Piston surface pulling (cm ²)	2.0	2.9	4.9	7.6	11.6	15.6	18.6	25.9	30.6	44.0	50.2

3 Length of stroke

Lengths of stroke at your option: We manufacture any length of stroke you desire.

4 Functional types

D Double - effect



pushing and pulling

E Single - effect



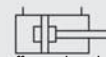
pushing

Ez Single - effect



pulling

Dbb Double - effect



Double effect with end position damping on both sides

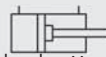
Special functional types: (upon request)

Dd Double - effect



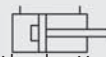
with through piston rod

Dbv Double - effect



with end position damping at the front

Dbh Double - effect



with end position damping at the back

F Single - effect



pushing with spring return mechanism

Fz Single - effect



pulling with spring return mechanism

5 Seal types

Standard version: H00 for hydraulic fluid (mineral oil). Seal types for other pressure media upon request.

Seal types	H00	H03	H06	H11
Piston seal, grooved ring	●			
Piston seal, PTFE gliding ring		●	●	●
Rod seal, grooved ring	●	●		
Rod seal, PTFE gliding ring			●	●
Dust seal	●	●	●	●
O-rings Nitril	●	●	●	
O-rings Viton				●
	piston speed			
max. 0.5 m/s	●	●		
max. 10 m/s			●	●
	temperature range			
-20/+100 °C	●	●	●	
-20/+200 °C				●

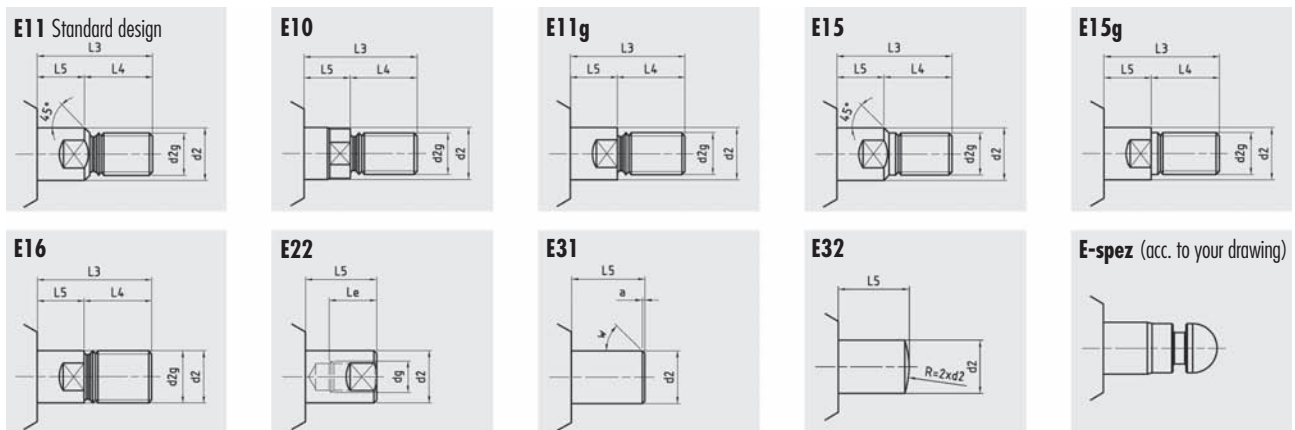
6 Options

End of piston rod:

Standard version: E11

Additional versions as shown in the illustrations are manufactured based on the catalog if not otherwise specified by the customer.

Tailor-made versions are available upon request.



Connections:

are manufactured based on the catalog if not otherwise specified by the customer.

The position of the connections can be specified by the customer.

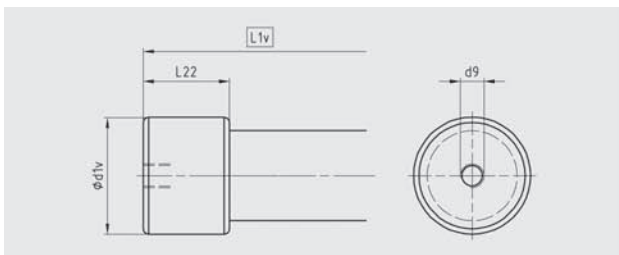
Larger and other (metric) connections are available upon request.

Vent screws (ES):

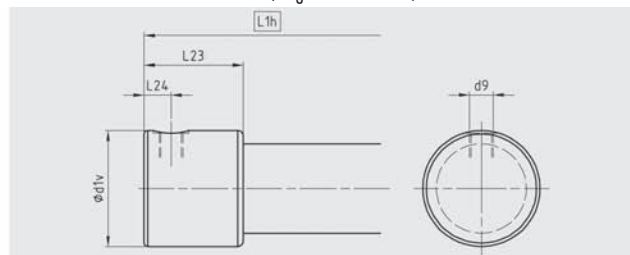
are attached to order and in accordance with the position specified by the customer.

7 Cover design (for mounting / fastening on the cylinder head)

As1 Cover with axial connection (length measure L1v) standard version



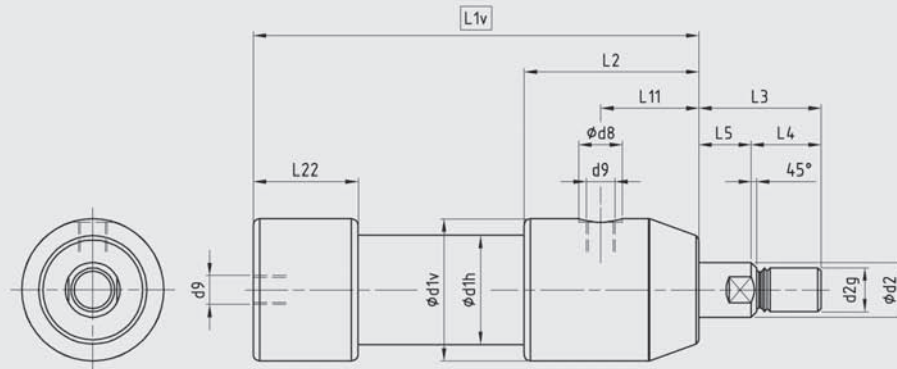
As4 Cover with lateral connection (length measure L1h)



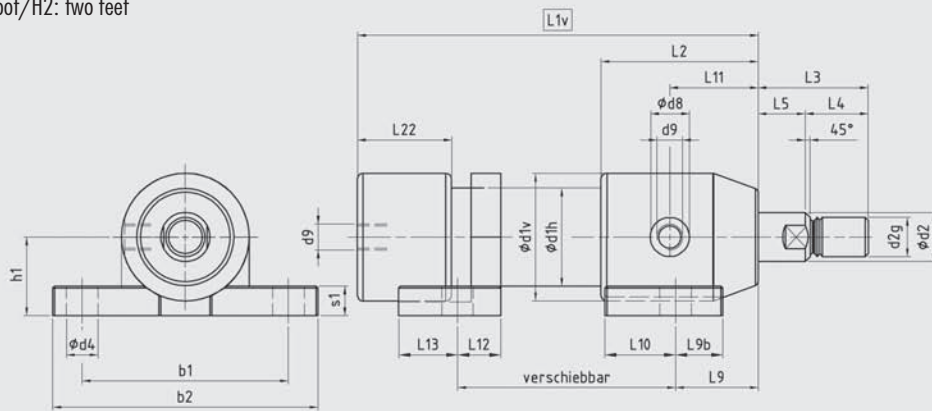
Piston Ø	20	25	32	40	50	55	63	70	80	90	100
L22	39	41	44	48	56	57	59	61	64	62	78
L23	45	45	53	55	67	67	68	68	72	70	82
L24	12	12	15	15	19	19	19	19	20	20	22

Dimension drawings/Dimensions

A Basic design



H/H2 H: front foot/H2: two feet



Piston Ø	20	25	32	40	50	55	63	70	80	90	100
d1v	35	42	52	65	80	90	100	110	125	135	150
d1h	26	33	40	50	65	70	80	90	100	112	124
d2-f7	12	16	20	25	32	32	40	40	50	50	60
d2g	M10	M12	M16	M20	M24	M24	M33	M33	M42	M42	M48
d4	9	11	13	16	17	17	22	22	26	26	29
d8	16	16	20	20	26	26	26	26	33	33	33
d9	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 1/2"
b1	60	70	85	105	130	140	155	170	190	210	230
b2	76	90	110	135	162	176	195	210	240	260	280
h1±0,1	22	25	32	40	50	56	63	70	80	90	100
s1	8.5	10	14	15	17	18	20	22	23	24	26
L2	61	61	72	80	95	100	107	115	125	132	145
L3	32	40	47	56	63	63	77	77	91	91	100
L4	16	22	26	32	35	35	45	45	55	55	60
L5	16	18	21	24	28	28	32	32	36	36	40
L9	36	33	39	42	50	54	59	63	69	72	80
L9b	17	20	20	24	25	28	30	32	34	37	40
L10	23	26	30	36	40	42	44	48	51	55	60
L11	31	31	39	45	53	58	65	72	79	85	90
L12	15	18	20	22	26	28	30	32	34	37	40
L13	20	24	27	30	35	38	40	43	45	50	54
L22	39	41	44	48	56	57	59	61	64	62	78
L23	45	45	53	55	67	67	68	68	72	70	82
L24	12	12	15	15	19	19	19	19	20	20	22

Functional type

Length measurements L1v (with standard cover design As1) and length measurements L1h (with cover design As4)

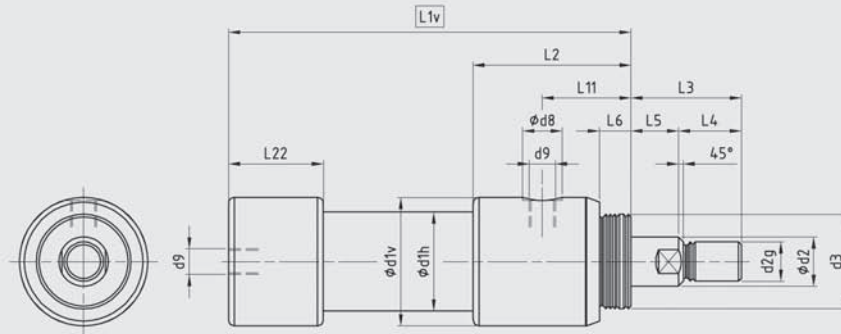
D/E/Ez	L1v = stroke +	91	96	112	124	141	150	161	174	185	197	209
	L1h = stroke +	97	100	121	131	152	160	170	181	193	205	213
Dbb	L1v = stroke +	103	110	128	142	161	170	183	196	209	221	237
	L1h = stroke +	109	114	137	149	172	180	192	203	217	229	241

Minimum length measurements L1v and L1h

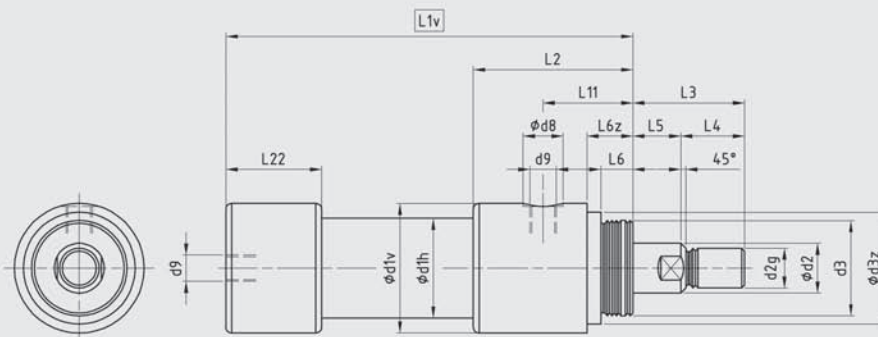
L1v =	101	103	117	129	152	158	167	177	190	195	224
L1h =	107	107	126	136	163	168	176	184	198	203	228

Dimension drawings/Dimensions

G Thread mounting



Gz Thread mounting with centering

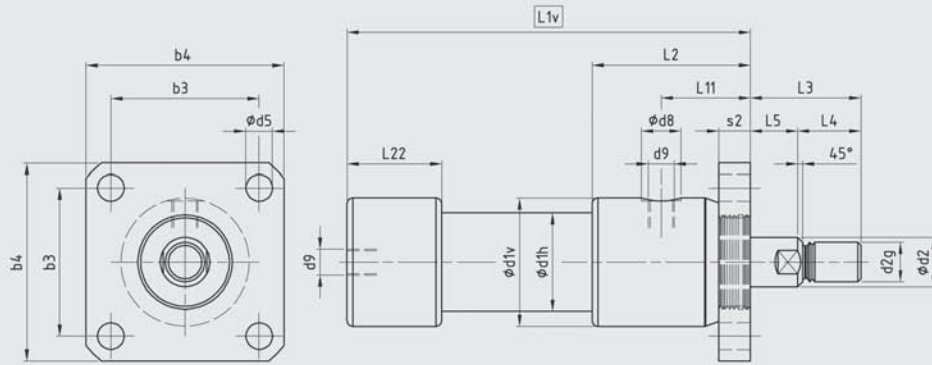


Piston Ø	20	25	32	40	50	55	63	70	80	90	100
d1v	35	42	52	65	80	90	100	110	125	135	150
d1h	26	33	40	50	65	70	80	90	100	112	124
d2-f7	12	16	20	25	32	32	40	40	50	50	60
d2g	M10	M12	M16	M20	M24	M24	M33	M33	M42	M42	M48
d3	G 3/4"	G 1"	G 1 1/4"	G 1 1/2"	G 2"	G 2"	G 2 1/2"	G 2 1/2"	G 3"	G 3"	G 4"
d3z-h7	28	38	46	56	70	75	90	90	110	110	125
d8	16	16	20	20	26	26	26	26	33	33	33
d9	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 1/2"
L2	61	61	72	80	95	100	107	115	125	132	145
L3	32	40	47	56	63	63	77	77	91	91	100
L4	16	22	26	32	35	35	45	45	55	55	60
L5	16	18	21	24	28	28	32	32	36	36	40
L6	9	11	14	16	20	20	25	25	35	35	40
L6z	13.5	16	21	23	30	30	35	35	49	49	54
L11	31	31	39	45	53	58	65	72	79	85	90
L22	39	41	44	48	56	57	59	61	64	62	78
L23	45	45	53	55	67	67	68	68	72	70	82
L24	12	12	15	15	19	19	19	19	20	20	22

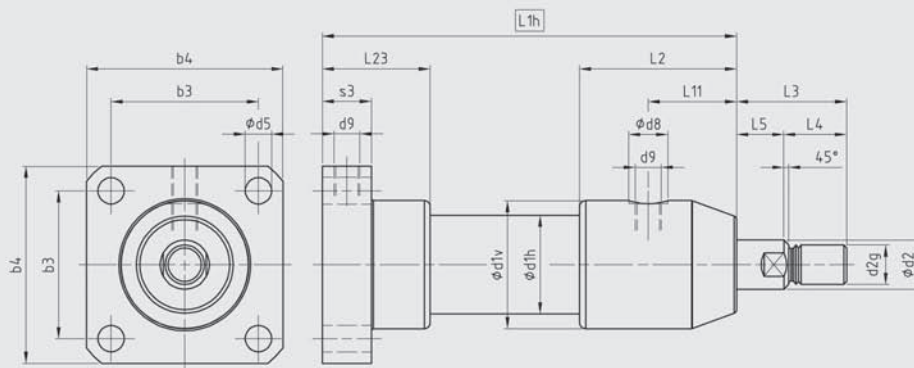
Functional type		Length measurements L1v (with standard cover design As1) and length measurements L1h (with cover design As4)										
D/E/Ez	L1v = stroke +	91	96	112	124	141	150	161	174	185	197	209
	L1h = stroke +	97	100	121	131	152	160	170	181	193	205	213
Dbb	L1v = stroke +	103	110	128	142	161	170	183	196	209	221	237
	L1h = stroke +	109	114	137	149	172	180	192	203	217	229	241
Minimum length measurements L1v and L1h												
	L1v =	101	103	117	129	152	158	167	177	190	195	224
	L1h =	107	107	126	136	163	168	176	184	198	203	228

Dimension drawings/Dimensions

Fv Front flange



Fh Back flange

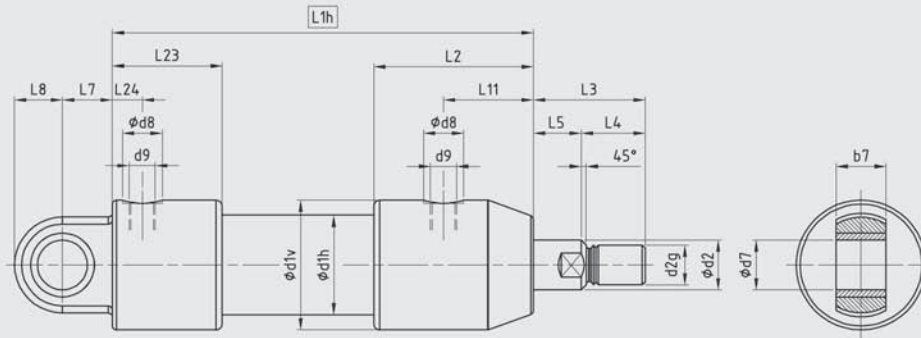


Piston Ø	20	25	32	40	50	55	63	70	80	90	100
d1v	35	42	52	65	80	90	100	110	125	135	150
d1h	26	33	40	50	65	70	80	90	100	112	124
d2-f7	12	16	20	25	32	32	40	40	50	50	60
d2g	M10	M12	M16	M20	M24	M24	M33	M33	M42	M42	M48
d5	7	9	11	13.5	13.5	13.5	17.5	17.5	17.5	17.5	20
d8	16	16	20	20	26	26	26	26	33	33	33
d9	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 1/2"
b3	40	48	62	75	85	95	105	110	125	130	150
b4	55	70	85	100	115	125	140	145	160	165	190
s2	9	11	14	16	20	20	25	25	35	35	40
s3	20	20	25	25	30	30	30	30	30	30	30
L2	61	61	72	80	95	100	107	115	125	132	145
L3	32	40	47	56	63	63	77	77	91	91	100
L4	16	22	26	32	35	35	45	45	55	55	60
L5	16	18	21	24	28	28	32	32	36	36	40
L11	31	31	39	45	53	58	65	72	79	85	90
L22	39	41	44	48	56	57	59	61	64	62	78
L23	45	45	53	55	67	67	68	68	72	70	82
L24	12	12	15	15	19	19	19	19	20	20	22

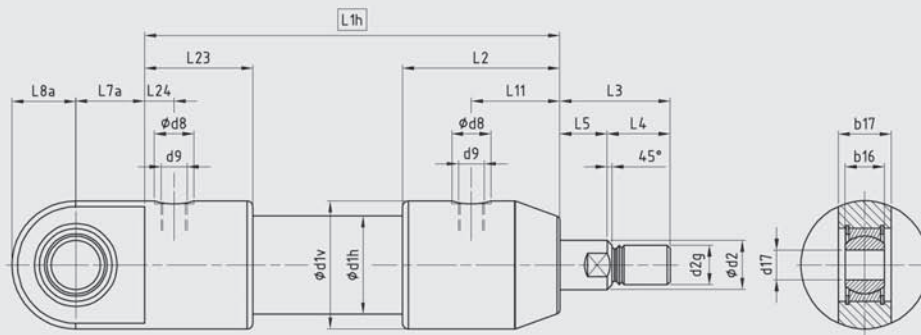
Functional type	Length measurements L1v and length measurements L1h (with cover design As4)											
D/E/Ez	L1v = stroke +	91	96	112	124	141	150	161	174	185	197	209
	L1h = stroke +	97	100	121	131	152	160	170	181	193	205	213
Dbb	L1v = stroke +	103	110	128	142	161	170	183	196	209	221	237
	L1h = stroke +	109	114	137	149	172	180	192	203	217	229	241
Minimum length measurements L1v and L1h												
L1v =	101	103	117	129	152	158	167	177	190	195	224	
L1h =	107	107	126	136	163	168	176	184	198	203	228	

Dimension drawings/Dimensions

Si Swivelling support with bronze sleeve



Sk Hinged support with steel/steel swing bearing



Piston Ø	20	25	32	40	50	55	63	70	80	90	100	
d1v	35	42	52	65	80	90	100	110	125	135	150	
d1h	26	33	40	50	65	70	80	90	100	112	124	
d2-f7	12	16	20	25	32	32	40	40	50	50	60	
d2g	M10	M12	M16	M20	M24	M24	M33	M33	M42	M42	M48	
d7-H7	12	16	20	25	32	32	40	40	50	50	60	
d8	16	16	20	20	26	26	26	26	33	33	33	
d9	G 1/8"	G 1/8"	G 1/4"	G 1/4"	G 3/8"	G 3/8"	G 3/8"	G 3/8"	G 1/2"	G 1/2"	G 1/2"	
d17-H7	12	15	20	25	30	30	40	40	50	50	60	
b7	12	16	20	25	32	32	40	40	50	50	60	
b16	10	12	16	20	22	22	28	28	35	35	44	
b17	13	15	21	27	29	29	34	34	41	41	52	
L2	61	61	72	80	95	100	107	115	125	132	145	
L3	32	40	47	56	63	63	77	77	91	91	100	
L4	16	22	26	32	35	35	45	45	55	55	60	
L5	16	18	21	24	28	28	32	32	36	36	40	
L7	12	16	20	25	32	32	40	40	50	50	60	
L7a	20	25	28	35	42	42	52	52	65	65	78	
L8	11.5	15	19	24	31	31	38	38	48	48	58	
L8a	17.5	21	26	32.5	40	40	50	50	62.5	62.5	75	
L11	31	31	39	45	53	58	65	72	79	85	90	
L23	45	45	53	55	67	67	68	68	72	70	82	
L24	12	12	15	15	19	19	19	19	20	20	22	
Functional type	Length measurements L1h											
D/E/Ez	L1h = stroke +	97	100	121	131	152	160	170	181	193	205	213
Dbb	L1h = stroke +	109	114	137	149	172	180	192	203	217	229	241
	Minimum length measurements L1h											
L1h =		107	107	126	136	163	168	176	184	198	203	228