

Description

- Standard cylinder in threaded, partly welded circular design
- Strokes up to 2000 mm
- Piston diameter: 25 – 200 mm
- End position damping optionally adjustable by damping cartridge; a check valve guarantees a throttle-free piston extension out of the damping and the full pressure loading of the effective piston area and with it the full piston force
- 7 forms of construction, as single rod or double rod cylinder
- Construction of all types by screwing-on of components
- End position dampings are precisely adjustable
- Generously dimensioned start-up check valves allow a high speed extension with the full pressure loading of the effective piston area.
- By their slim, compact design and their short overall length they can be installed perfectly even under difficult conditions. The narrow graduation of the piston diameters between 12 and 150 mm ensures high flexibility.
- The types 0-8 are available with different piston rod designs. Additionally, the single types can be combined with each other.

Technical data

- Operating pressure 125 bar (12,5 MPa)
- Hydraulic fluid temperature range: - 20 ... + 80 °C
- Viscosity range: (20 ... 80) 10⁻⁶ m/s
- Piston velocity: ≤ 0,5 m/s

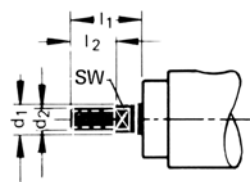
Hydraulic pressure substancesfluids:

- Mineral oils, HFD liquids in combination with seals made of PTFE and fluoric elastomeres HFA, HFB and HFC liquids on request.

Piston rod design

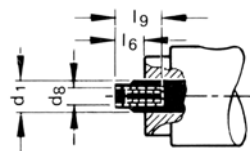
External thread

Reference number 0



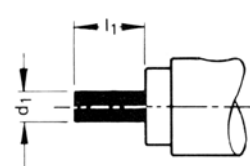
Internal thread

Reference number 1



Cylindrical

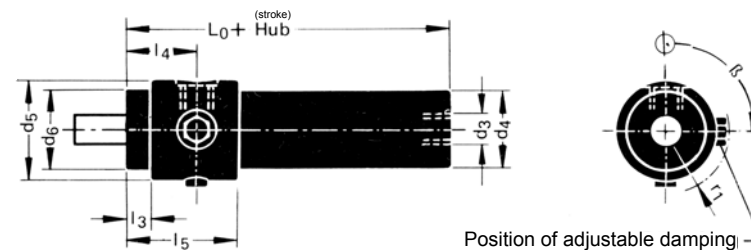
Reference number 2



Forms of construction · damping in the front

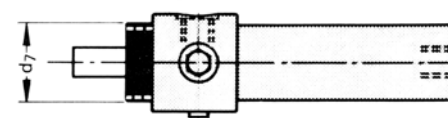
Basic type

Reference number 0



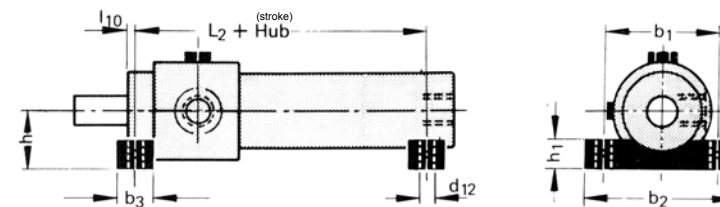
Threaded flange

Reference number 1



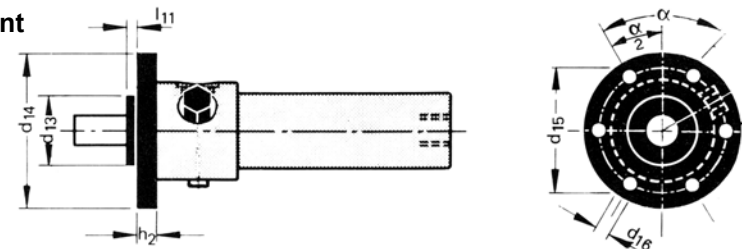
Foot mounting

Reference number 2



Flange in the front

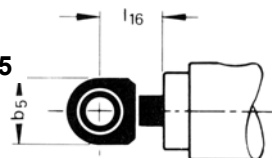
Reference number 3



Piston rod design

Swivel eye

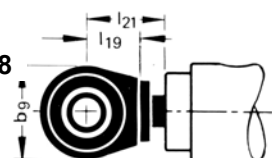
Reference number 5



for missing dimensions see form of construction

Clevis eye

Reference number 8

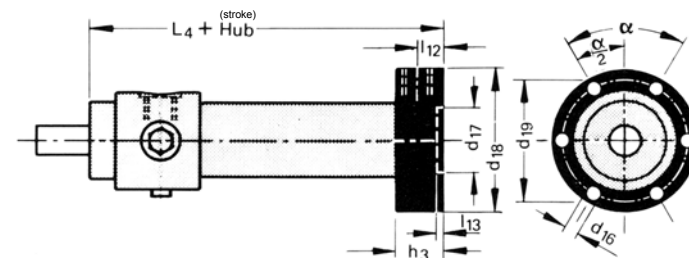


for missing dimensions see form of construction

Forms of construction · damping in the front

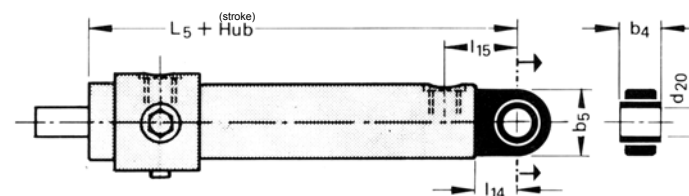
Flange in the back

Reference number 4



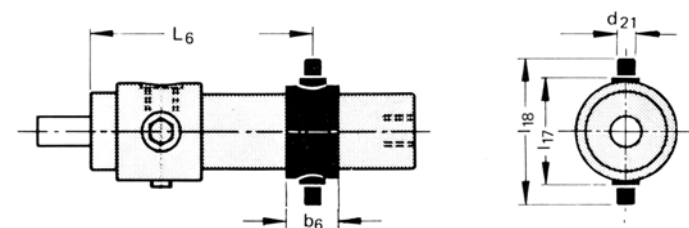
Swivel eye

Reference number 5



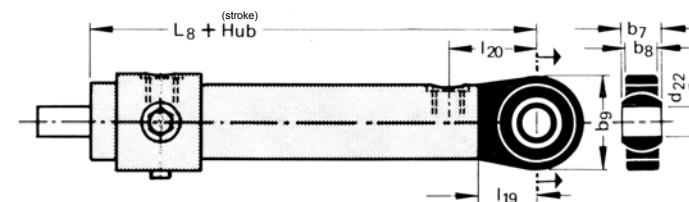
Trunnion

Reference number 6



Swivel bearing

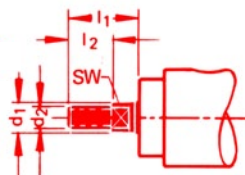
Reference number 8



Piston rod design

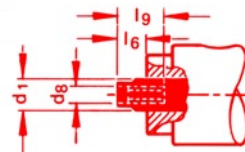
External thread

Reference number 0



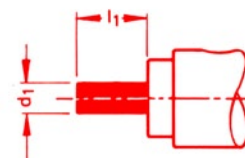
Internal thread

Reference number 1



Cylindrical

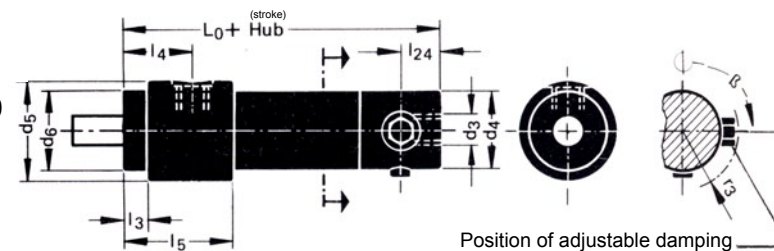
Reference number 2



Forms of construction · damping in the back

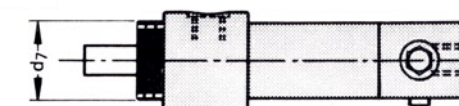
Basic type

Reference number 0



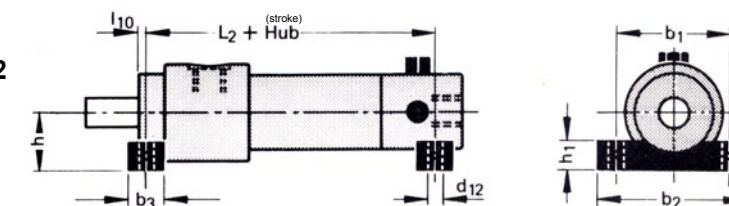
Threaded flange

Reference number 1



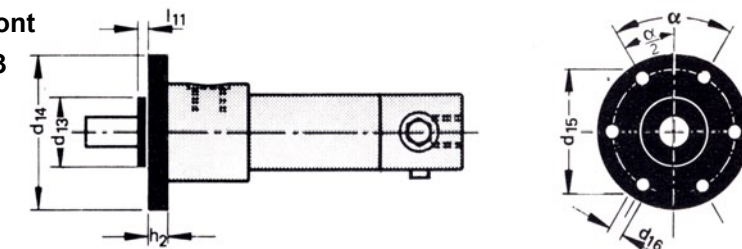
Foot mounting

Reference number 2



Flange in the front

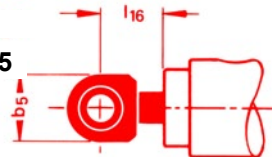
Reference number 3



Piston rod design

Swivel eye

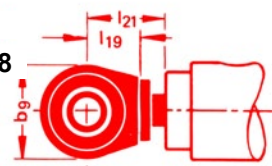
Reference number 5



for missing dimensions see form of construction

Clevis eye

Reference number 8

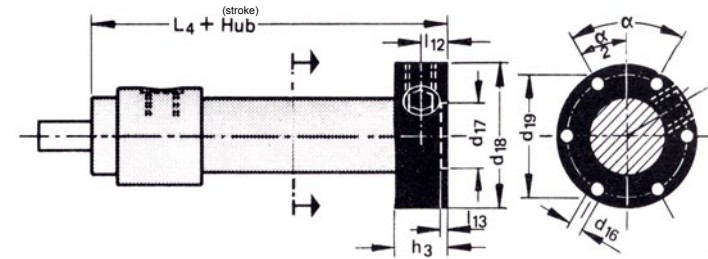


for missing dimensions see form of construction

Forms of construction · damping in the back

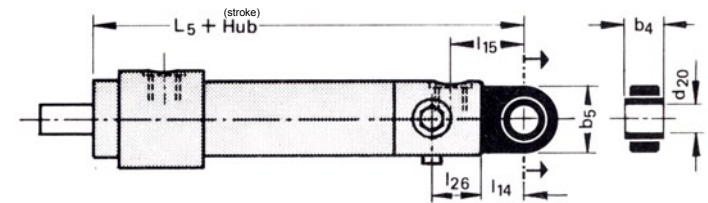
Flange in the back

Reference number 4



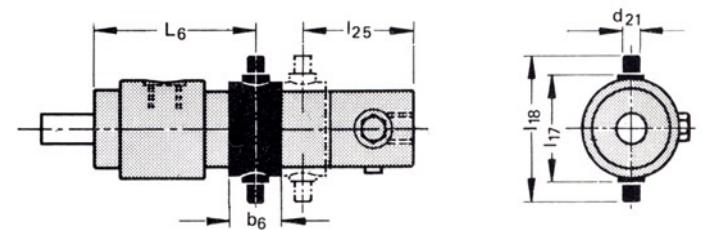
Swivel eye

Reference number 5



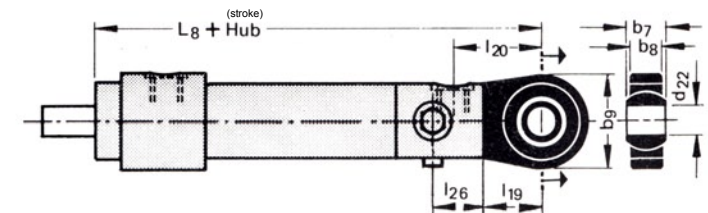
Trunnion

Reference number 6



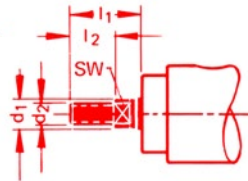
Swivel bearing

Reference number 8

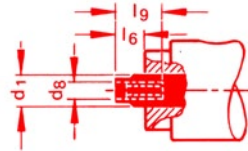


Piston rod design

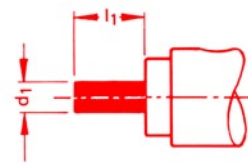
External thread
Reference number 0



Internal thread
Reference number 1

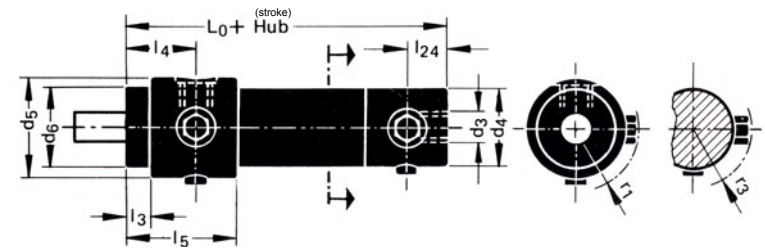


Cylindrical
Reference number 2

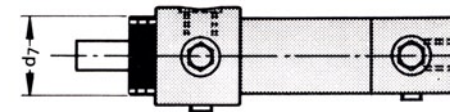


Forms of construction · damping on both sides

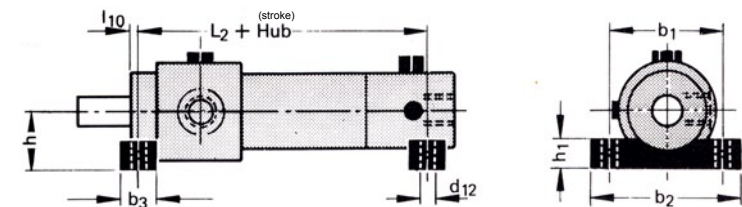
Basic form
Reference number 0



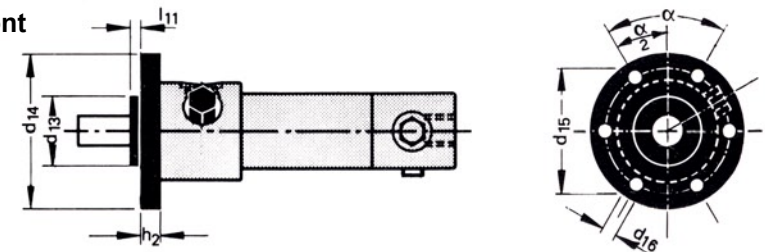
Threaded flange
Reference number 1



Foot mounting
Reference number 2



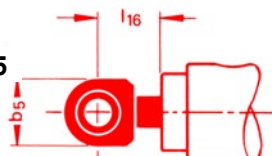
Flange in the front
Reference number 3



Piston rod design

Swivel eye

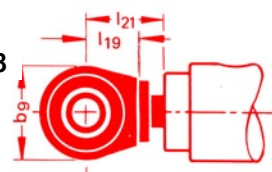
Reference number 5



for missing dimensions see form of construction

Clevis eye

Reference number 8

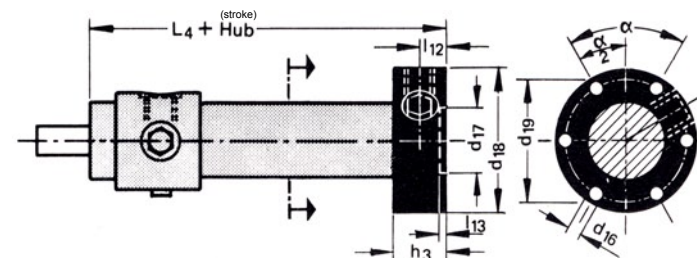


for missing dimensions see form of construction

Forms of construction · damping on both sides

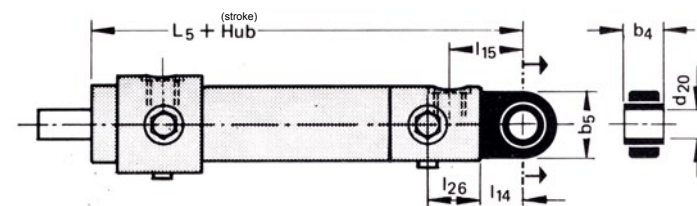
Flange in the back

Reference number 4



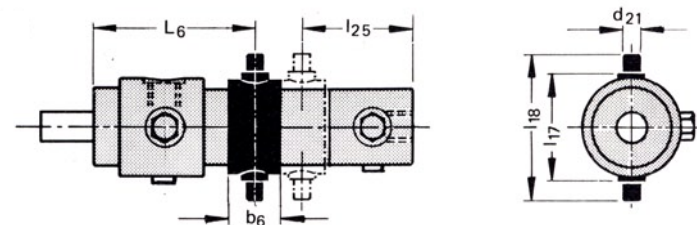
Swivel eye

Reference number 5



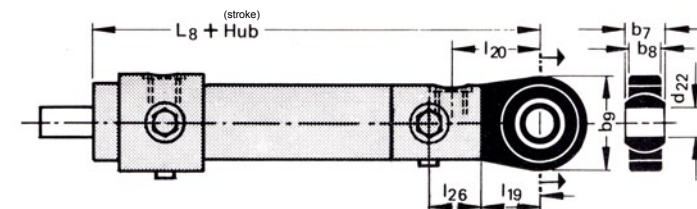
Trunnion

Reference number 6



Swivel bearing

Reference number 8



Piston rod design, reference number 0 – 8

damping in the front, in the back or on both sides

Kst.A = dimension belongs to piston rod

Piston rod dimensions	Piston-Ø	Kst-A	25	30	35	40	50	60	70	80	90	100	120	150									
	b ₄	5	16	22	22	22	22	32	32	32	35	35	45	45	50	50	55	55	65	65	90	90	
b ₅	5	26	36	32	32	36	36	44	44	44	44	50	50	60	60	66	66	72	72	84	84	110	110
b ₇	8	10	12	12	14	14	16	16	17	17	20	20	22	22	22	22	25	25	32	32	48	48	
b ₈	8	7	9	9	10	10	12	12	13	13	16	16	18	18	18	18	20	20	25	25	40	40	
b ₉	8	30	40	40	45	45	55	55	60	60	70	70	80	80	80	80	90	90	110	110	150	150	
Piston rod-Ø d1	0	12	18	18	20	25	25	30	30	40	32	40	40	45	45	50	50	60	60	80	80	100	
d ₂	0	M 10	M 14 x 1,5		M16x1,5	M 22x 1,5		M24x1,5		M35x1,5 M26x1,5		M35x1,5		M40x1,5	M40x1,5		M50x1,5		M72x1,5		M85x1,5		
d ₈	1	M8x0,75	M12x1,5		M14x1,5		M18x1,5		M22x1,5		M24x1,5		M28x1,5		M32x1,5		M35x1,5		M42x1,5		M60x1,5		
d ₉	H8	1	8,5	13	13	15	15	19	19	23	23	25	25	29	29	33	33	36	36	43	43	62	62
d ₁₀	1	11,5	17	17	19	24	24	28	28	38	38	30	38	38	42	42	47	47	57	57	77	77	96
d ₁₁	1	2	2,5	2,5	2,5	3	3	4	4	4	4	4	4	4	5	5	5	5	5	5	6	6	8
d ₂₀	H7	5	12	16	16	18	18	20	20	22	22	25	25	30	30	32	32	36	36	45	45	60	60
d ₂₂	H7	8	12	16	16	18	18	20	20	22	22	25	25	32	32	32	32	36	36	45	45	70	70
l ₁	0	26	32	32	35	35	50	50	50	50	55	55	60	60	65	65	75	75	80	80	110	110	
l ₂	0	15	22	22	22	22	30	30	32	32	35	35	40	40	45	45	50	50	55	55	80	80	
l ₆	1	10	12	12	13	13	14	14	18	18	18	18	20	20	24	24	30	30	32	32	36	36	
l ₇	1	7	9	9	8	8	8	8	10	10	10	10	10	10	12	12	12	12	12	12	15	15	
l ₉	1	18	25	25	29	29	35	35	35	35	38	38	44	44	49	49	55	55	55	55	67	67	
l ₁₆	5	32	36	36	40	40	50	50	55	55	63	63	70	70	78	78	86	86	98	98	125	125	
l ₁₉	8	20	26	26	29	29	35	35	38	38	44	44	50	50	50	50	58	58	70	70	100	100	
l ₂₁	8	36	46	46	52	52	59	59	67	67	76	76	86	86	90	90	108	108	127	127	176	176	
sw	0	10	15	15	17	22	22	24	24	24	27	36	36	36	36	41	41	50	50	70	70	85	

Types, reference numbers 0-8

damping in the front, in the back or on both sides

Bf = dimension belongs to type number:

Piston-Ø	Bf	25	30	35	40		50		60		70		80		90		100		120		150		
		0	12	18	18	20	25	25	30	30	40	32	40	40	45	45	50	50	60	60	80	80	100
Piston rod-Ø d1		0	12	18	18	20	25	25	30	30	40	32	40	40	45	45	50	50	60	80	80	100	
b1		2	48	62	62	70	70	85	85	100	100	112	112	125	125	140	140	156	156	180	180	232	232
b2		2	65	80	80	92	92	110	110	130	130	145	145	156	156	178	178	195	195	230	230	290	290
b3		2	18	18	18	22	22	24	24	28	28	32	32	32	32	40	40	40	40	45	45	56	56
b4		5	16	22	22	22	22	32	32	32	32	35	35	45	45	50	50	55	55	65	65	90	90
b5		5	26	32	32	36	36	38	38	44	44	50	50	60	60	66	66	72	72	84	84	110	110
b6		6	25	28	28	38	38	38	38	50	50	50	50	56	56	60	60	66	66	80	80	100	100
b7		8	10	12	12	14	14	16	16	17	17	20	20	22	22	22	22	25	25	32	32	48	48
b8		8	7	9	9	10	10	12	12	13	13	16	16	18	18	18	18	20	20	25	25	40	40
b9		8	30	40	40	45	45	55	55	60	60	70	70	80	80	80	80	90	90	110	110	150	150
d3	normal	0	R 1/8"	R 1/4"			R 3/8"			R 1/2"						R 3/4"							
d4		0	52	45	45	50	50	60	60	75	75	85	85	95	95	105	105	120	120	140	140	180	180
d5		0	55	56	56	63	63	78	70	94	94	98	98	115	115	120	120	134	134	165	165	210	210
d6		0	40	40	40	50	50	50	50	60	60	72	72	72	72	85	85	100	100	110	110	140	140
d7		1	M40x1,5			M50x1,5			M60x1,5			M72x1,5			M 85x2		M 100x2						
d12		2	9	9	9	11	11	14	14	16	16	18	18	18	22	22	22	22	26	26	33	33	
d13	f7	3	40	40	40	50	50	50	50	60	60	72	72	72	85	85	100	100	110	110	140	140	
d14		3	86	86	86	92	92	116	116	132	132	146	146	152	152	170	170	185	185	230	230	280	280
d15		3	72	72	72	78	78	96	96	112	112	126	126	132	132	148	148	162	162	200	200	248	248
d16		4	6,6	6,6	6,6	6,6	6,6	9	9	9	9	9	9	9	11	11	14	14	16	16	18	18	
d17	H8	4	25	30	35	40	40	50	50	60	60	70	70	80	80	90	90	100	100	120	120	150	150
d18		4	80	80	80	86	86	108	108	122	122	134	134	140	140	156	156	176	176	222	222	270	270
d19		4	65	65	65	72	72	88	88	102	102	114	114	122	122	134	134	152	152	192	192	238	238
d20	H7	5	12	16	16	18	18	20	20	22	22	25	25	30	30	32	32	36	36	45	45	60	60
d21	f7	6	14	18	18	20	20	22	22	25	25	30	30	36	36	40	40	45	45	50	50	65	65
d22	H7	8	12	16	16	18	18	20	20	22	22	25	25	32	32	32	32	36	36	45	45	70	70
damping path			15	15	15	20	20	20	20	28	28	30	30	30	30	30	30	35	35	35	35	35	35
h		2	28	28	28	32	32	38	38	45	45	52	52	57	57	64	64	70	70	85	85	110	110
h1		2	12	14	14	12	12	18	18	20	20	20	20	32	32	30	30	30	30	35	35	48	48
h2		3	8	9	9	11	11	12	12	14	14	16	16	20	20	21	21	24	24	28	28	30	30
h3		4	28	28	28	28	28	34	34	34	34	34	34	34	34	34	34	45	45	45	45	4550	4550
Stroke	min	6	70	20	20	25	25	20	20	30	30	25	25	20	20	20	20	35	35	35	35	45	45
L0		0	112	127	127	128	128	148	148	170	170	168	168	184	184	195	195	238	238	237	237	271	271
L2		2	133	135	135	138	138	163	163	176	176	178	178	201	201	213	213	251	251	287	287	339	339
L4		4	128	135	135	151	151	175	175	188	188	197	197	226	226	237	237	255	255	282	282	317	317
L5		5	150	167	167	173	173	203	203	221	221	228	228	264	264	279	279	324	324	335	335	386	386
L6	min	6	102	105	105	122	122	136	136	149	149	155	155	178	178	189	189	203	203	171	171	200	200
L8		8	153	173	173	179	179	214	214	232	232	242	242	276	276	289	289	339	339	353	353	421	421
l3		0	10	12	12	14	14	16	16	18	18	20	20	25	25	26	26	30	30	34	34	36	36
l4		0	36	37	37	44	44	53	53	55	55	55	55	66	66	71	71	82	82	59	59	73	73
l5		0	82	82	82	94	94	108	108	115	115	120	120	140	140	149	149	158	158	169	169	190	190
l10		2	1	3	3	3	3	4	4	4	4	4	4	9	9	6	6	10	10	11,5	11,5	8	8
l11		3	2	3	3	3	3	4	4	4	4	4	4	5	5	5	5	6	6	6	6	6	6
l12		4	14	14	14	14	14	19	19	19	19	19	19	19	19	19	19	22,5	22,5	22,5	22,5	25	25
l13		4	2	3	3	3,5	3,5	4	4	5	5	5	5	6	6	6	6	7	7	8	8	9	9
l14		5	17	20	20	23	23	24	24	27	27	30	30	38	38	40	40	43	43	52	52	65	65
l15		5	26	34	34	35	35	38	38	42	42	45	45	53	53	55	55	62	62	86	86	103	103
l17		6	44	55	60	66	66	76	76	94	94	106	106	120	120	132	132	160	160	170	170	226	226
l18		6	64	79	84	92	92	102	102	126	126	146	146	164	164	192	192	220	220	230	230	330	330
l19		8	20	26	26	29	29	35	35	38	38	44	44	50	50	50	50	58	58	70	70	100	100
l20		8	29	40	40	41	41	49	49	53	53	59	59	65	65	65	65	77	77	104	104	138	138
l24		4	25	26	26	16	16	22	22	24	24	18	18	18	18	18	18	34	34	34	34	38	38

Cylinder dimensions

Type	TYP	KST	KSTH	KSTVV	BAF	BAA	DAE	DKO	MM	HUB	KDI	KSDI	EE
Example	51	0	0	8	02	2	1	050	022	0350	5	0	0

Abbr.	Types of cylinders	Types of cylinders							
TYP	Type of cylinder	41	44	46	47	48	51	55	57
KST	Rod	41	44	46	47	48	51	55	57
	0 Single	X	X	X	X	X	X	X	X
	1 Reciprocal (double rod cylinder)	X					X	X	
	2 Reciprocal, back rod small						X	X	
	3 Reciprocal, back rod big						X	X	
4 Reciprocal, back rod medium						X	X		
KSTH	Piston rod design back rod	41	44	46	47	48	51	55	57
	0 External thread	X	X	X	X	X	X	X	
	1 Internal thread	X					X	X	
	2 Cylindrical								
	4 External thread ISO 4395						X	X	
	5 Swivel head	X							
8 Swivel bearing (T.51,55: DIN 24555)	X					X	X		
KSTV	Piston rod design front rod	41	44	46	47	48	51	55	57
	0 External thread	X	X	X	X	X	X	X	
	1 Internal thread	X		X	X	X	X	X	X
	2 Cylindrical	X		X					
	3 Coupling		X						
	4 External thread ISO 4395						X	X	
	5 Swivel head	X		X	X	X	X	X	
	8 Swivel bearing (T.51,55: DIN 2455)	X		X	X	X	X	X	
BAF	Form of construction	41	44	46	47	48	51	55	57
	00 Basic construction	X		X	X	X	X	X	
	01 Threaded flange	X							
	02 Foot mounting	X	X	X			X	X	
	03 Flange in the front	X	X	X	X	X			X
	04 Flange in the back	X	X	X	X	X			
	05 Swivel eye	X	X	X	X	X	X	X	
	06 Trunnion bearing	X		X	X	X	X	X	
	08 Swivel bearing	X			X	X	X	X	
	10 Cross holes (without groove)								X
	11 Frontal fixing				X	X			
	12 Extensioned tie rod in the front						X	X	
	12 Extensioned tie rod in the back						X	X	
	13 Rectangular flange in the front			X	X	X	X	X	
	14 Rectangular flange in the back			X	X	X	X	X	
	15 Clevis mounting						X	X	
	16* Trunnion on the head						X	X	
	19 Extensioned tie rods on both sides						X	X	
	22 Foot mounting with adjustment spring						X	X	X
23* Rectangular flange in the front (wide)						X	X		
24 Foot plate / adjustment spring / O-ring connection						X	X		
26* Trunnion at the bottom						X	X		
33 Flange at the cylinder				X					

Abbr.	Types of cylinders	Types of cylinders							
		41	44	46	47	48	51	55	57
BAA	Type of construction	41	44	46	47	48	51	55	57
	2 Double acting	X	X	X	X	X	X	X	X
	6 Single acting with spring								X
DAE	Damping	41	44	46	47	48	51	55	57
	0 Without damping	X	X	X	X	X	X	X	X
	1 Damping in the front	X	X	X	X	X	X	X	
	2 Damping in the back	X	X	X	X	X	X	X	
3 Damping on both sides	X	X	X	X	X	X	X		
DKO	Piston diameter	41	44	46	47	48	51	55	57
	See measuring index								
MM	Piston rod diameter	41	44	46	47	48	51	55	57
	See measuring index								
HUB	Stroke	41	44	46	47	48	51	55	57
	Be careful with to buckling								
KDI	Piston seal	41	44	46	47	48	51	55	57
	0 NBR packing rings / PU packing rings	X _s	X	X	X	X	X	X	X
	2 Packing ring / Viton	X	X						
	3 Annulus piston / cast iron		X _s						
	5 Teflon / NBR	X	X	X _s	X _s	X _s	X _s	X _s	X _s
	6 Teflon / Viton	X	X	X	X	X	X	X	X
	7 Compact seal / NBR	X		X	X	X	X	X	X
KSDI	Piston rod sealing	41	44	46	47	48	51	55	57
	0 NBR packing rings / PU packing rings	X _s			X _s	X _s	X _s	X _s	X _s
	1 PU-packing ring U-seal				X	X	X	X	X
	2 Packing ring / Viton	X			X	X	X	X	X
	3 NBR seal kit		X _s	X _s					
	4 Viton-seal kit		X	X					
	5 Teflon / NBR			X	X	X	X	X	X
6 Teflon / Viton			X	X	X	X	X	X	
EE	Hydraulic connections	41	44	46	47	48	51	55	57
	0 Withworth pipe thread	X _s	X _s	X _s	X _s	X _s	X _s	X _s	X _s
	1 Metr. ISO thread	X	X	X	X	X	X	X	
	2 UNF thread	X		X	X	X	X	X	
3 Flange connection			X	X	X	X	X		

Index s = Standard version

* These types of construction are not produced !!!