

HV Series

ISO 3320 Hydraulic Cylinders

MACRODYNE

Version 3.50 , 18.10.2021

www.macrodyne.cn



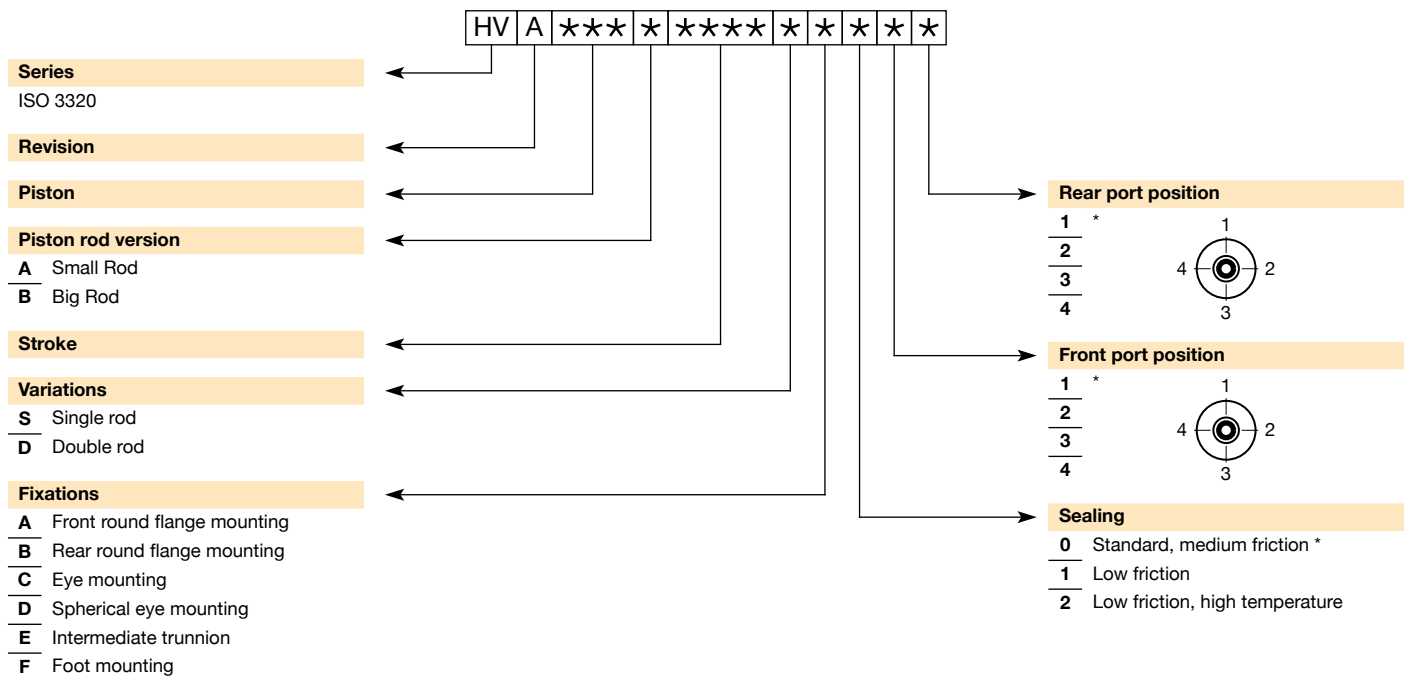
Technical characteristics

Standard	ISO 3320																			
Rated pressure	160 bar																			
Test pressure	240 bar																			
Ambient temperature	-20°C → +80°C																			
	-20°C → +160°C with Viton seals																			
Fluid temperature	-20°C → +80°C																			
	-20°C → +160°C with Viton seals																			
Fluid	Mineral oil - Other fluids to order																			
Piston (mm)	32		40		50		63		80		100		125		160		200		250	
Rod (mm)	20	22	28	28	36	36	45	45	56	56	70	70	90	90	110	110	140	140	180	
Maximum speed (m/s) - standard seals	0,5									0,4										
Maximum speed (m/s) - low-friction seals	1																			

HV Series

ISO 3320 Hydraulic Cylinders

Codification



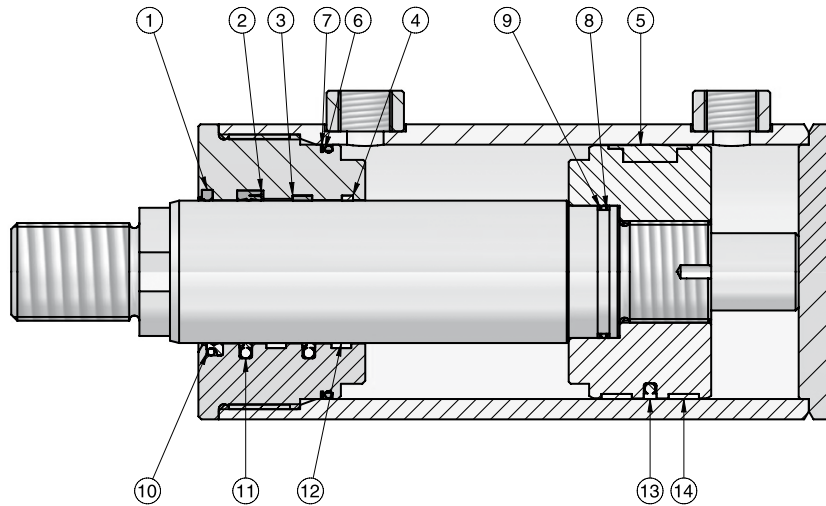
A spacer is installed for strokes higher than 1000 mm
 Overall length of the cylinder increases this way:
 1001 - 1500: +50mm total length
 1501 - 2000: +100mm total length
 2001 - 2500: +150mm total length
 2501 - 3000: +200mm total length

*Default option

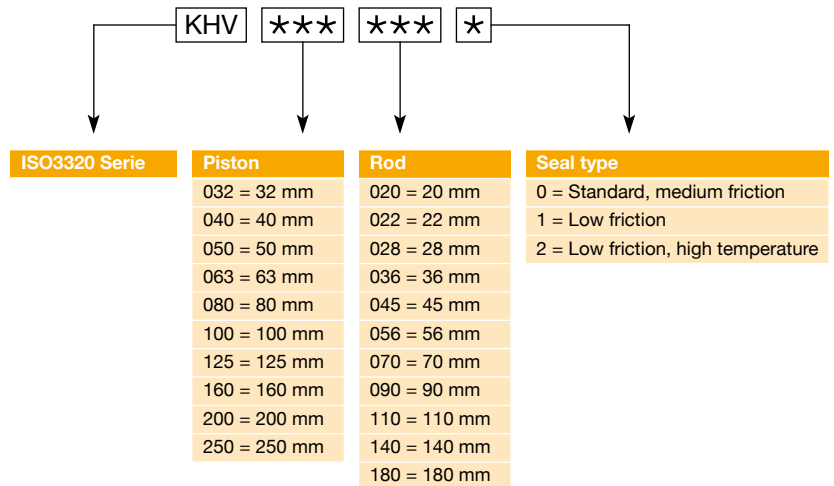
HV Series

ISO 3320 Hydraulic Cylinders

Seal kit



Position	Description
1	Wiper
2	Rod seal
3	Piston-rod guide ring
4	Piston-rod guide band
5	Piston seal
6	O-ring
7	Anti-extrusion seal
8	O-ring
9	Anti-extrusion seal
10	Wiper (low friction)
11	Rod seal (LF)
12	Piston-rod guide band (LF)
13	Piston seal (LF)
14	Piston-rod guide band (LF)

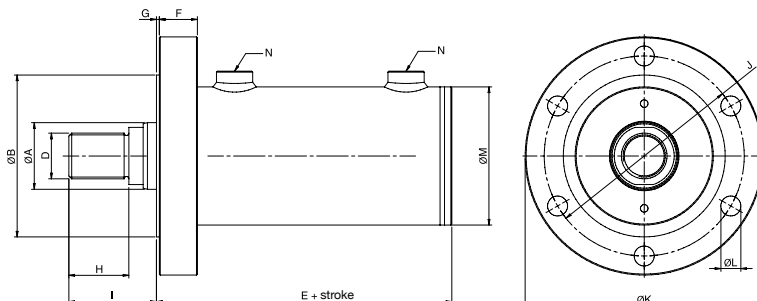
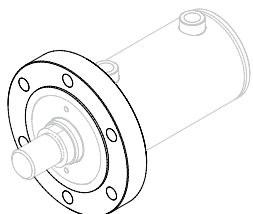


HV Series

ISO 3320 Hydraulic Cylinders

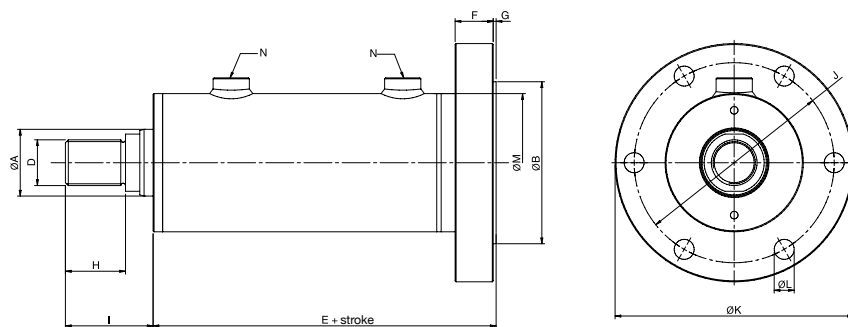
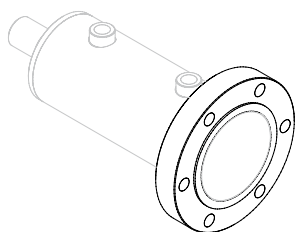
Fixing accessories

Front Round Flange



Ø	ØA	E	B	D	F	G	H	I	J	K	L	M	N
32	20	107	52	M14 x 1,5	15	2	18	35	67	80	7	42	1/4"G
40	22	97	60	M16 x 1,5	15	2	22	40	82	100	9	50	3/8"G
	28												
50	28	104	75	M20 x 1,5	18	2	28	48	103	125	11	60	3/8"G
	36												
63	36	106	90	M27 x 2	20	2	36	58	120	145	13	75	3/8"G
	45												
80	45	126	110	M33 x 2	28	2	45	68	142	170	15	95	3/8"G
	56												
100	56	138	135	M42 x 2	30	3	56	85	170	202	17	115	1/2"G
	70												
125	70	210	170	M48 x 2	40	3	63	92	210	250	21	145	3/4"G
	90												
160	90	238	215	M80 x 3	54	3	95	130	270	320	29	185	1"G
	110												
200	110	278	270	M80 x 3	65	3	95	130	330	385	32	230	1 1/4"G
	140												
250	140	338	330	M110 x 3	65	5	110	150	390	440	29	298	1 1/4"G
	180												

Rear Round Flange



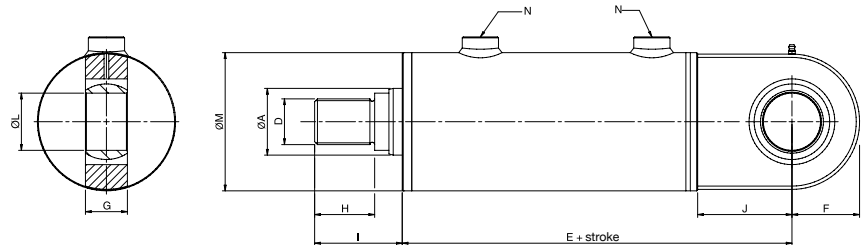
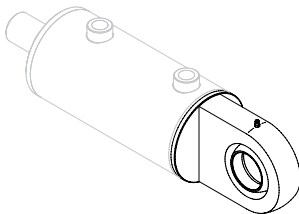
Ø	ØA	E	B	D	F	G	H	I	J	K	L	M	N
32	20	125	52	M14 x 1,5	15	2	18	35	67	80	7	42	1/4"G
40	22	130	60	M16 x 1,5	15	2	22	40	82	100	9	50	3/8"G
	28												
50	28	139	75	M20 x 1,5	18	2	28	48	103	125	11	60	3/8"G
	36												
63	36	149	90	M27 x 2	20	2	36	58	120	145	13	75	3/8"G
	45												
80	45	171	110	M33 x 2	28	2	45	68	142	170	15	95	3/8"G
	56												
100	56	185	135	M42 x 2	30	3	56	85	170	202	17	115	1/2"G
	70												
125	70	260	170	M48 x 2	40	3	63	92	210	250	21	145	3/4"G
	90												
160	90	308	215	M80 x 3	54	3	95	130	270	320	29	185	1"G
	110												
200	110	363	270	M80 x 3	65	3	95	130	330	385	32	230	1 1/4"G
	140												
250	140	408	330	M110 x 3	65	5	110	150	390	440	29	298	1 1/4"G
	180												

HV Series

ISO 3320 Hydraulic Cylinders

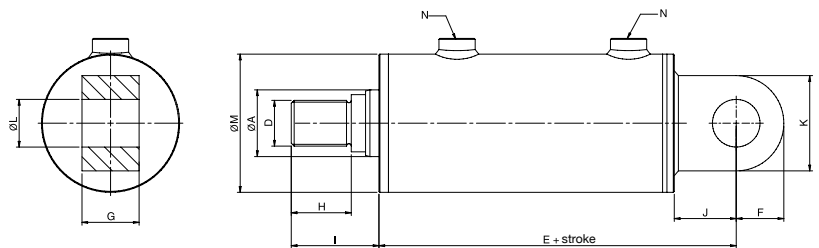
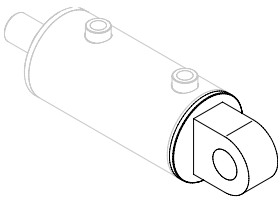
Fixing accessories

Spherical eye mounting



Ø	ØA	E	D	F	G	H	I	J	L	M	N
32	20	145	M14 x 1,5	22,8	16	18	35	38	20	42	1/4"G
40	22	142	M16 x 1,5	27,5	20	22	40	45	25	50	3/8"G
	28										
50	28	157	M20 x 1,5	32,5	22	36	48	51	29	60	3/8"G
	36										
63	36	167	M27 x 2	41,5	25	36	58	61	35	75	3/8"G
	45										
80	45	195	M33 x 2	50	28	45	68	69	40	95	3/8"G
	56										
100	56	226	M42 x 2	61,5	35	56	85	88	50	115	1/2"G
	70										
125	70	310	M48 x 2	71	44	63	92	99	60	145	3/4"G
	90										
160	90	379	M80 x 3	90	55	95	130	141	80	185	1"G
	110										
200	110	433	M80 x 3	115	70	95	130	155	100	230	1 1/4"G
	140										
250	140	468	M110 x 3	147,5	70	110	150	165	110	298	1 1/4"G
	180										

Eye mounting



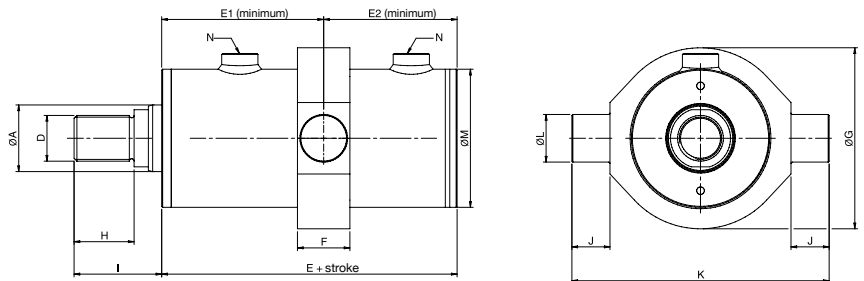
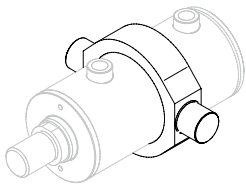
Ø	ØA	E	D	F	G	H	I	J	K	L	M	N
32	20	127	M14 x 1,5	13	16	18	35	20	26	12	42	1/4"G
40	22	122	M16 x 1,5	16	20	22	40	25	32	16	50	3/8"G
	28											
50	28	132	M20 x 1,5	20	25	36	48	28	40	20	60	3/8"G
	36											
63	36	138	M27 x 2	25	32	36	58	32	50	25	75	3/8"G
	45											
80	45	171	M33 x 2	32	40	45	68	45	64	32	95	3/8"G
	56											
100	56	193	M42 x 2	40	50	56	85	55	80	40	115	1/2"G
	70											
125	70	275	M48 x 2	50	60	63	92	65	100	50	145	3/4"G
	90											
160	90	313	M80 x 3	63	80	95	130	75	126	63	185	1"G
	110											
200	110	373	M80 x 3	80	100	95	130	95	160	80	230	1 1/4"G
	140											
250	140	468	M110 x 3	100	120	110	150	130	200	100	298	1 1/4"G
	180											

HV Series

ISO 3320 Hydraulic Cylinders

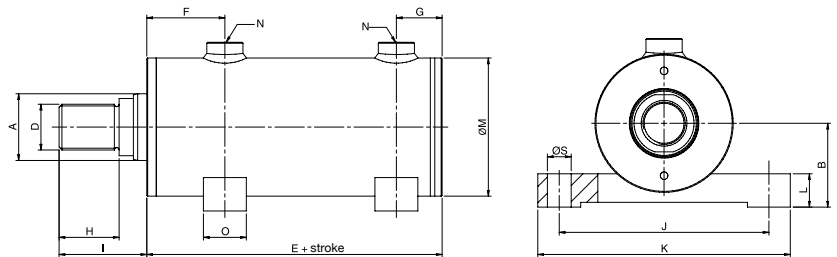
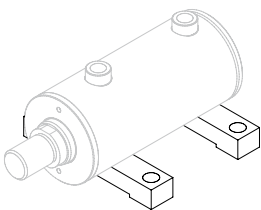
Fixing accessories

Intermediate trunnion



Ø	ØA	E	E1	E2	D	F	G	H	I	J	K	L	M	N
32	20	107	65	58	M14 x 1,5	20	56	18	35	12	80	16	42	1/4"G
40	22	97	74	64	M16 x 1,5	24	70	22	40	16	102	20	50	3/8"G
	28													
50	28	104	80	69	M20 x 1,5	30	85	28	48	20	125	25	60	3/8"G
	36													
63	36	106	84	70	M27 x 2	40	105	36	58	25	155	32	75	3/8"G
	45													
80	45	126	95	75	M33 x 2	40	125	45	68	25	175	32	95	3/8"G
	56													
100	56	138	106	82	M42 x 2	45	156	56	85	32	220	40	115	1/2"G
	70													
125	70	210	140	115	M48 x 2	55	190	63	92	40	270	50	145	3/4"G
	90													
160	90	238	175	130	M80 x 3	70	250	95	130	50	350	63	185	1"G
	110													
200	110	278	190	145	M80 x 3	90	300	95	130	63	426	80	230	1 1/4"G
	140													
250	140	338	257	210	M110 x 3	110	345	110	150	80	520	100	298	1 1/4"G
	180													

Foot mounting



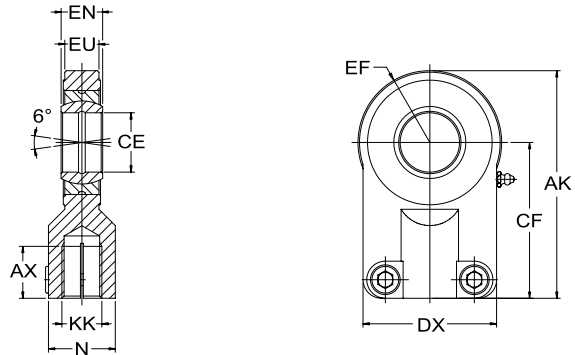
Ø	ØA	E	B	D	H	I	J	K	L	M	N	O	S
32	20	107	28	M14 x 1,5	18	35	75	95	16	42	1/4"G	20	11
40	22	97	35	M16 x 1,5	22	40	94	118	20	50	3/8"G	25	13
	28												
50	28	104	40	M20 x 1,5	36	48	105	130	20	60	3/8"G	25	15
	36												
63	36	106	50	M27 x 2	36	58	130	160	25	75	3/8"G	30	17
	45												
80	45	126	62	M33 x 2	45	68	160	195	30	95	3/8"G	40	19
	56												
100	56	138	73	M42 x 2	56	85	185	225	30	115	1/2"G	40	23
	70												
125	70	210	88	M48 x 2	63	92	220	265	35	145	3/4"G	45	25
	90												
160	90	238	100	M80 x 3	95	130	295	355	40	185	1"G	60	35
	110												
200	110	278	115	M80 x 3	95	130	355	425	50	230	1 1/4"G	70	41
	140												
250	140	338	140	M110 x 3	110	150	425	510	65	298	1 1/4"G	78	47
	180												

Accessories

Hydraulic Cylinders

Swivel head ISO 8133

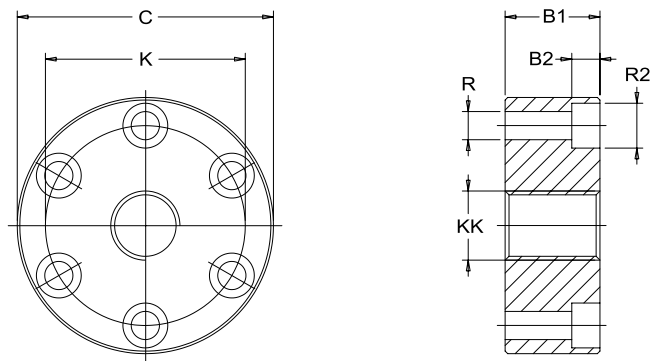
Valid for series
HR, HT and HV



Piston rod	KK (metric)	EN	EU	CE $\varnothing_{-0,008}^0$	EF max.	N max.	DX	CF ^{js13}	AK	AX min.	P/N
14	M12x1,25	14 $_{-0,12}^0$	11	16 $_{-0,008}^0$	21	21	45	48	69	17	HRT014AH
18	M14x1,5	16 $_{-0,12}^0$	13	20 $_{-0,010}^0$	25	25	55	58	83	19	HRT018AH
22	M16x1,5	20 $_{-0,12}^0$	17	25 $_{-0,010}^0$	31	30	62	68	99	23	HRT022AH
28	M20x1,5	22 $_{-0,12}^0$	19	30 $_{-0,010}^0$	38	36	80	85	123	29	HRT028AH
36	M27x2	28 $_{-0,12}^0$	23	40 $_{-0,012}^0$	48	45	90	105	153	37	HRT036AH
45	M33x2	35 $_{-0,15}^0$	30	50 $_{-0,012}^0$	58	55	105	130	188	46	HRT045AH
56	M42x2	44 $_{-0,15}^0$	38	60 $_{-0,015}^0$	75	68	134	150	225	57	HRT056AH
70	M48x2	55 $_{-0,15}^0$	47	80 $_{-0,015}^0$	97,5	78	156	185	282,2	64	HRT070AH
90	M64x3	70 $_{-0,20}^0$	57	100 $_{-0,020}^0$	117,5	100	190	240	357,5	86	HRT090AH

Rod flange ISO 8132

Valid for series
HR, HT and HV



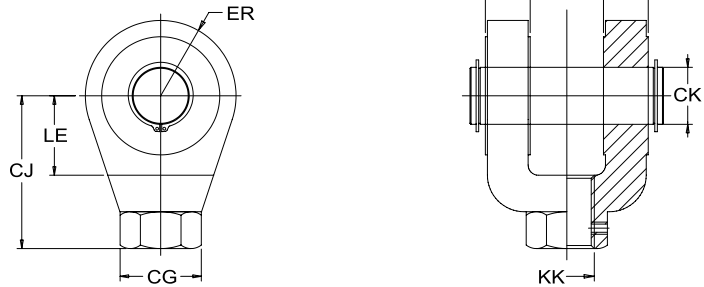
Piston rod	KK (metric)	B1	B2	C \varnothing	K \varnothing	R x N° Q.ty	R2	P/N
14	M12x1,25	17	6,8	56	40	6,6 4	11	HRT014AA
18	M14x1,5	19	9	63	45	9 4	14,5	HRT018AA
22	M16x1,5	23	9	72	54	9 6	14,5	HRT022AA
28	M20x1,5	29	9	82	63	9 6	14,5	HRT028AA
36	M27x2	37	11	100	78	11 6	17,5	HRT036AA
45	M33x2	46	13	120	95	13,5 8	20	HRT045AA
56	M42x2	57	17,5	150	120	17,5 8	26	HRT056AA
70	M48x2	64	21,5	190	150	22 8	33	HRT070AA
90	M64x3	86	25	230	180	26 8	40	HRT090AA

Accessories

Hydraulic Cylinders

Fork joint hinge with pin ISO 8133

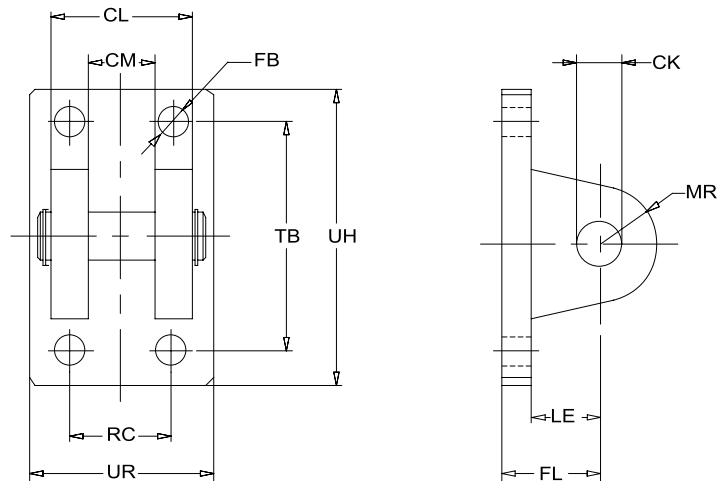
Valid for series
HR, HT and HV



Piston rod	KK (metric)	CK ^{H9} Ø	CL _{máx.}	CM ^{h12}	CJ ^{js13}	LE _{min.}	ER _{máx.}	CG	P/N
14	M12x1,25	12	32	16	36	19	17	21	HRT014AG
18	M14x1,5	14	40	20	38	19	17	21	HRT018AG
22	M16x1,5	20	60	30	54	32	29	32	HRT022AG
28	M20x1,5	20	60	30	60	32	29	32	HRT028AG
36	M27x2	28	80	40	75	39	34	40	HRT036AG
45	M33x2	36	100	50	99	54	50	56	HRT045AG
56	M42x2	45	120	60	113	57	53	56	HRT056AG
70	M48x2	56	140	70	126	63	59	75	HRT070AG
90	M64x3	70	160	80	168	83	78	95	HRT090AG
110	M80x3	70	160	80	168	83	78	95	HRT110AG
140	M100x3	100	230	100	250	90	95	160	HRT140AG

Clevis bracket ISO 8132

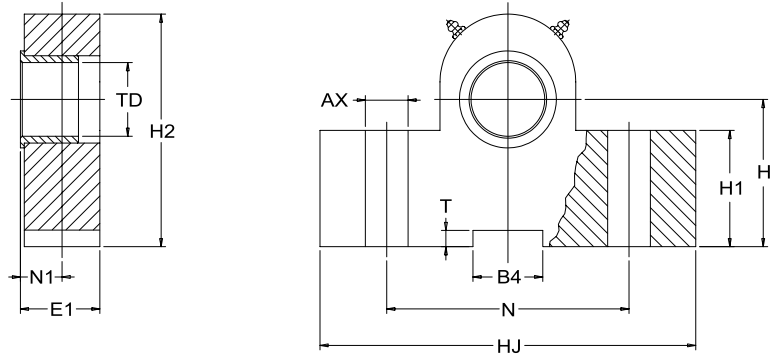
Valid for series
HR, HT and HV



CK ^{H9} Ø	CM ^{A16}	CL ^{h13}	FL ^{js14}	LE	FB Ø	TB ^{js14}	UH	RC ^{js14}	UR	MR	P/N
12	12	28	34	22	9	50	70	20	40	12	HRT012AC
16	16	36	40	27	11	65	90	26	50	16	HRT016AC
20	20	45	45	30	11	75	98	32	58	20	HRT020AC
25	25	56	55	37	13,5	85	113	40	70	25	HRT025AC
32	32	70	65	43	17,5	110	143	50	85	32	HRT032AC
40	40	90	76	52	22	130	170	65	108	40	HRT040AC
50	50	110	95	65	26	170	220	80	130	50	HRT050AC
63	63	140	112	75	33	210	270	100	160	63	HRT063AC
80	80	170	140	95	39	250	320	125	210	80	HRT080AC

Trunnion bracket ISO 8132

Valid for series
HR and HT



Piston	AX ^{H13} Ø	H ^{A16}	H1	H2 _{máx.}	TD ^{H7}	HJ	E1	N	N1	B4 ^{N9}	T ^{+0,3} +0	P/N
25	9	34	25	49	12	63	17	40	8	10	3,3	HRT025AF
32	11	40	30	59	16	80	21	50	10	16	4,3	HRT032AF
40	11	45	38	69	20	90	21	60	10	16	4,3	HRT040AF
50	13,5	55	45	80	25	110	26	80	12	25	5,4	HRT050AF
63	17,5	65	52	100	32	150	33	110	15	25	5,4	HRT063AF
80	22	76	60	120	40	170	41	125	16	36	8,4	HRT080AF
100	26	95	75	140	50	210	51	160	20	36	8,4	HRT100AF
125	33	112	85	177	63	265	61	200	25	50	11,4	HRT125AF
160	39	140	112	220	80	325	81	250	31	50	11,4	HRT160AF