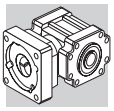
Bonfiglioli
Tecnoingranaggi

KR series

Precision right-angle gearboxes

Bonfiglioli
power, control and green solutions

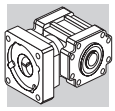


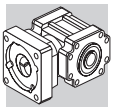
SUMMARY

Revisions

Refer to page 22 for the catalogue revision index.

Visit www.bonfiglioli.com to search for catalogues with up-to-date revisions.





1 GENERAL INFORMATION

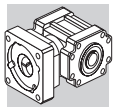
1.1 SYMBOLS, UNITS AND DEFINITIONS

Values depending on the APPLICATION

term	u.m.	definition
A_2	[N]	Thrust force on output shaft
$A_{2\ EQU}$	[N]	Equivalent thrust force applying on output shaft
$A_{2\ MAX}$	[N]	Maximum thrust force applying on output shaft
R_2	[N]	Radial force on output shaft
$R_{2\ EQU}$	[N]	Equivalent radial force applying on output shaft
$R_{2\ MAX}$	[N]	Maximum radial force applying on output shaft
ED	[min]	Loading time
ED%	[%]	Loading time %
$L_{10h\ TARGET}$	[h]	Output shaft bearings' desired basic rating life
$M_{1\ PEAK}$	[Nm]	Maximum input torque (usually motor)
$M_{2(1)}$ ... $M_{2(n)}$	[Nm]	Output torque at each of the time periods t_1 ... t_n
$M_{2\ EQU}$	[Nm]	Equivalent output torque
$M_{2\ MAX}$	[Nm]	Maximum output torque in case of emergency
$M_{T2\ EQU}$	[Nm]	Equivalent tilting moment applying on output shaft
$M_{T2\ MAX}$	[Nm]	Maximum tilting moment applying on output shaft
n_2	[min^{-1}]	Output speed
$n_{2(1)}$ ... $n_{2(n)}$	[min^{-1}]	Output speed based on the time periods t_1 ... t_n
$n_{2\ EQU}$	[min^{-1}]	Equivalent output speed
$n_{2\ MAX}$	[min^{-1}]	Maximum output speed
T	[C°]	Ambient temperature
t_1 ... t_n	[s]	Time periods of motion
t_Σ	[s]	Cycle duration including pause
Z	[1/h]	Cycle number per hour

Values depending on the GEAR DRIVE SELECTION

term	u.m.	definition
$A_{2\ 3\ max}$	[N]	Admissible thrust force on output shaft
$A_2'_{max}$	[N]	Thrust force acting simultaneously with the rated radial force
$R_{1\ max}$	[N]	Admissible radial force at midpoint of input shaft
$R_{2\ 3\ max}$	[N]	Admissible radial force at midpoint of output shaft
C_B	[Nm]	Constant for bearing's lifetime calculation
C_t	$\left[\frac{Nm}{arcmin}\right]$	Torsional stiffness
f_n	—	Speed factor
f_z	—	Cycle factor
f_T	—	Temperature adjusting factor
i	—	Gearbox ratio
J_G	[$kgcm^2$]	Mass moment of inertia of the gearhead
K_n	—	Speed constant
L_{10h}	[h]	Bearings' basic rating life
L_Z	[mm]	Factor for bearing's lifetime calculation
$M_{a\ 2}$	[Nm]	Maximum acceleration output torque
$M_{n\ 2}$	[Nm]	Rated output torque
$M_{p\ 2}$	[Nm]	Emergency stop output torque
$M_{T2\ max}$	[Nm]	Maximum tilting moment applying on output shaft
$n_{1\ max}$	[min^{-1}]	Maximum momentary input speed. The speed the unit can be driven at occasionally and in non-repetitive conditions For cycle duty type S5, it cannot be applied continuously for more than 30 seconds
p	—	Bearing lifetime exponent
η	[%]	Gear efficiency
φ_R	[arcmin]	Reduced backlash is calculated in static conditions and with the application of a torque equal to 2% of the gear unit rated torque
φ_S	[arcmin]	Standard backlash is calculated in static conditions and with the application of a torque equal to 2% of the gear unit rated torque



1.2 SELECTING THE GEAR UNIT

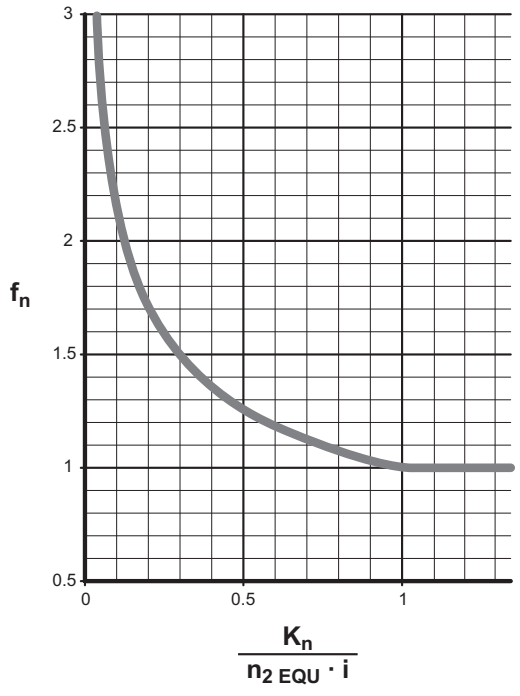
(a)	Ratio	i	—	$i = \frac{n_1}{n_2}$
(b)	Equivalent output torque	$M_{2\,EQU}$	[Nm]	$M_{2\,EQU} = \sqrt[3]{\frac{n_{2(1)} \cdot t_1 \cdot \lvert M_{2(1)} \rvert^3 + \ldots + n_{2(n)} \cdot t_n \cdot \lvert M_{2(n)} \rvert^3}{n_{2(1)} \cdot t_1 + \ldots + n_{2(n)} \cdot t_n}}$
(c)	Equivalent output speed	$n_{2\,EQU}$	[min^{-1}]	$n_{2\,EQU} = \frac{n_{2(1)} \cdot t_1 + n_{2(2)} \cdot t_2 + \ldots + n_{2(n)} \cdot t_n}{t_\Sigma}$
(d)	Speed factor	f_n	—	If $\frac{K_n}{n_{2\,EQU} \cdot i} \geq 1 \Rightarrow f_n = 1$ If $\frac{K_n}{n_{2\,EQU} \cdot i} < 1 \Rightarrow f_n$ = Obtain from diagram
(e)	Loading time % Loading time	ED% ED	[%] [min]	$ED\% = \frac{t_1 + t_2 + \ldots + t_n}{t_\Sigma} \cdot 100$ $ED = t_1 + t_2 + \ldots + t_n$
(f)	Cycle number per hour	Z	[1/h]	$Z = \frac{3600}{t_\Sigma}$
(g)	Cycle factor	f_z	—	see table below
(h)	Temperature adjusting factor	f_T	—	If T ≤ 30°C ⇨ $f_T = 1$ If T > 30°C ⇨ $f_T = 1 + \frac{T° - 30\ C}{100\,°C}$
(i)	Maximum input torque	$M_{1\,PEAK}$	[Nm]	a) maximum possible application torque b) limited motor torque by inverter c) maximum motor torque

Z	f_z
Z ≤ 1000	1.00
1000 < Z ≤ 1500	1.25
1500 < Z ≤ 2500	1.50
2500 < Z ≤ 4000	1.75
4000 < Z ≤ 6000	2.00
Z > 6000	contact us

K_n - speed constant

i	KR 010	KR 020	KR 030	KR 040
1	1200	1200	1000	800
2	2400	2400	2000	1600
5	3000	3000	2800	2500

f_n - speed factor

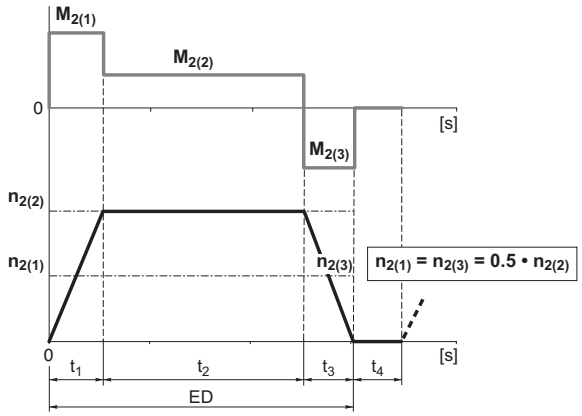


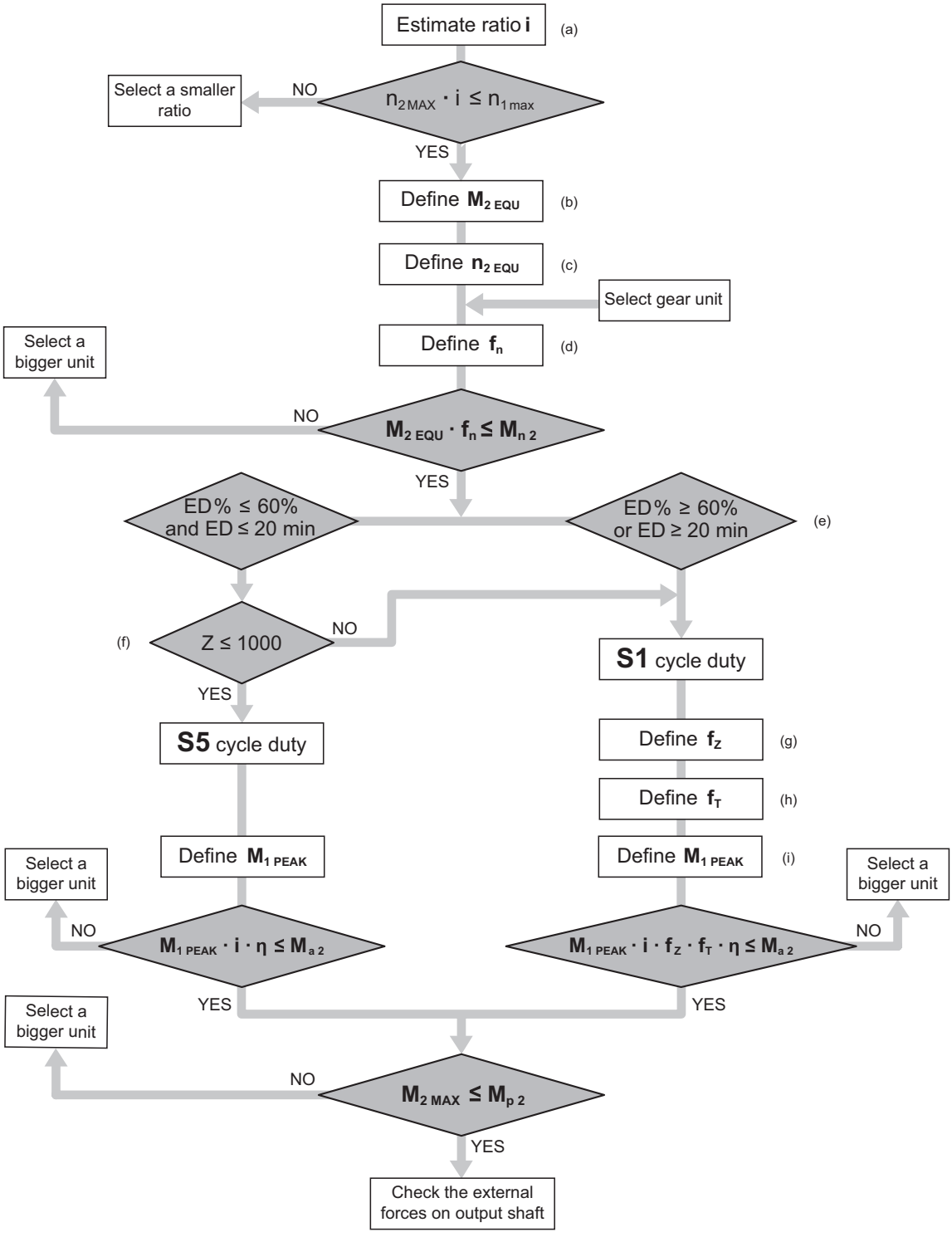
Load diagram

M_2: Output torque

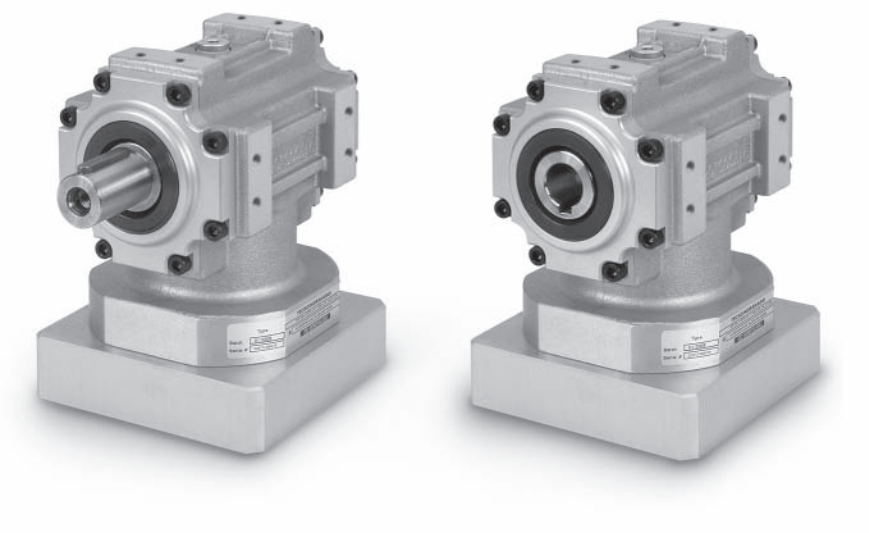
Speed diagram

n_2: Output speed

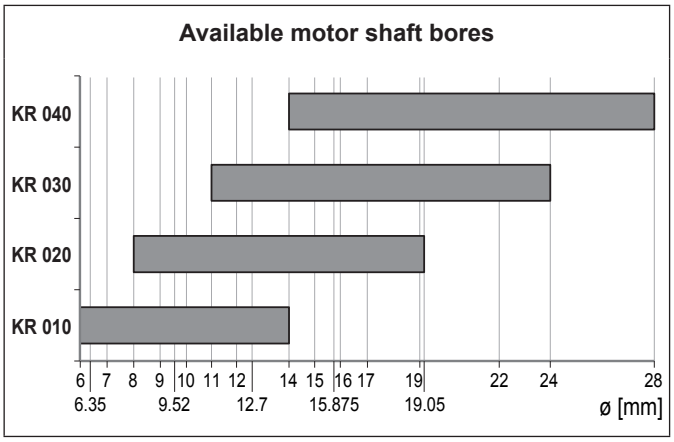




2 FEATURES OF KR SERIES



Distribution of nominal torque	M_{n2} [Nm]		
[i]	**1**	**2**	**5**
KR 010	10	7	3
KR 020	24	15	10
KR 030	55	37	22
KR 040	120	85	45



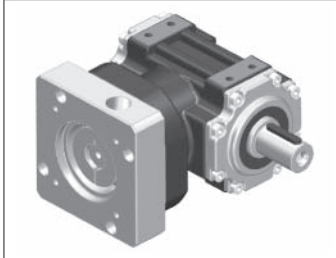
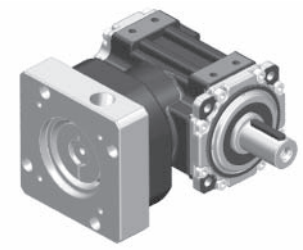
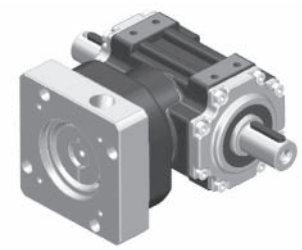
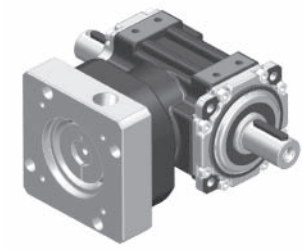
Bevel helical units type KR, manufactured under the most stringent quality specifications, are designed for dynamic and accurate applications where light weight and space effectiveness are a factor.
Many options can be selected from the catalogue as far as motor adapters and output shaft configurations that facilitate the installation on the driven equipment.

- Available in one only backlash option (φ_S = 8')
- Single reduction: ratios i = 1, 2, 5
- Radial ball bearings (SB) are of standard supply, while taper roller bearings (HB) can be optionally specified for particularly demanding loading conditions
- Degree of protection IP65
- Oil seals from Viton® compound as standard
- Max. noise level $L_P \leq 70$ dB(A) @ $n_1 = 3000$ min^{-1}
- Units are factory charged with synthetic lubricant suitable for operation at ambient temperatures in the range 0°…40°C. The lubricant quantity is affected by mounting position, that therefore will have to be specified at the time of ordering. In the absence of contamination lubricant does not require periodical changes.
  The type of lubricant, whether grease or oil, depends on type of duty, as charted below:

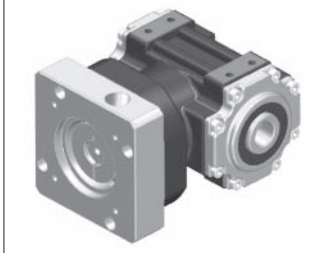
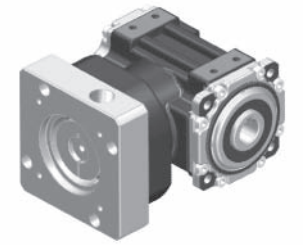
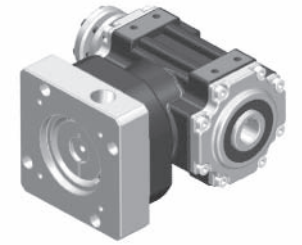
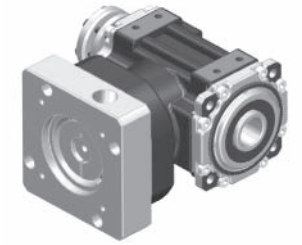
duty	**KR 010 ... KR 040**
S1 (continuous)	synthetic oil viscosity ISO VG 220
S5 (intermittent)	NLGI grease consistency 00

2.1 VERSIONS

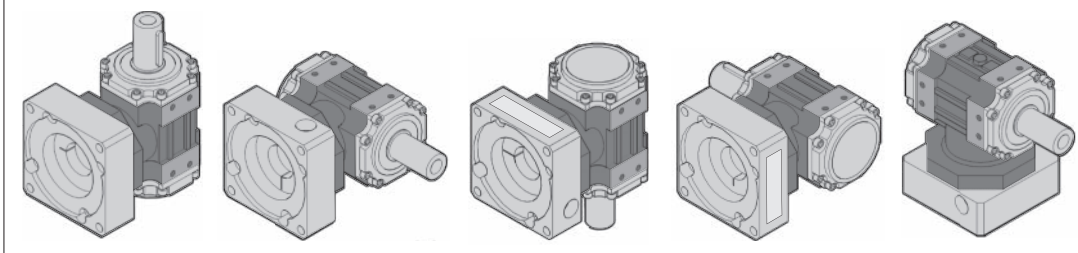
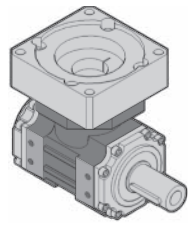
Parallel shaft

LP	LPF	LD	LDF
			
single extension	single extension + flange	double extension	double extension + flange

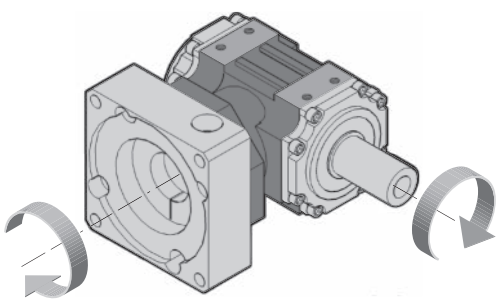
Hollow shaft

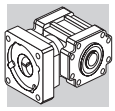
H	HF	S	SF
			
keyed (KR 030...KR 040)	keyed shaft + flange (KR 030...KR 040)	with shrink disc	with shrink disc + flange

2.2 MOUNTING POSITIONS

U	VA
	

2.3 COORDINATED SHAFT ROTATION

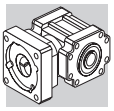




3 ORDERING CODE

KR | **030** | **1** | **STD** | **LP** | **60A** | **CD** | **14** | **S1** | **U** | **SB**

- **SB** OUTPUT SHAFT BEARINGS
  - **SB** standard
  - **HB** reinforced (KR 020 ... KR 040)
- **U** MOUNTING POSITION
  - **U** **VA** (7)
- **S1** DUTY
  - **S1** continuous duty
  - **S5** intermittent duty
- **14** INPUT SHAFT BORE (12) (14) (16) (18)
- **CD** MOTOR COUPLING
  - **CD** clamping device
- **60A** INPUT SECTION
  - **25 ... 180** motor adapter (12) (14) (16) (18) (20)
  - **FM** without motor adapter
- **LP** VERSION (7)
  - Parallel shaft: **LP** **LPF** **LD** **LDF**
  - Hollow shaft: **H** (KR 030 ... KR 040) **HF** (KR 030 ... KR 040) **S** **SF**
- **STD** BACKLASH
  - **STD** $\varphi s = 8'$
- **1** GEAR RATIO
  - **1** **2** **5**
- **030** FRAME SIZE
  - **010** **020** **030** **040**
- **KR** SERIES
  - **KR**



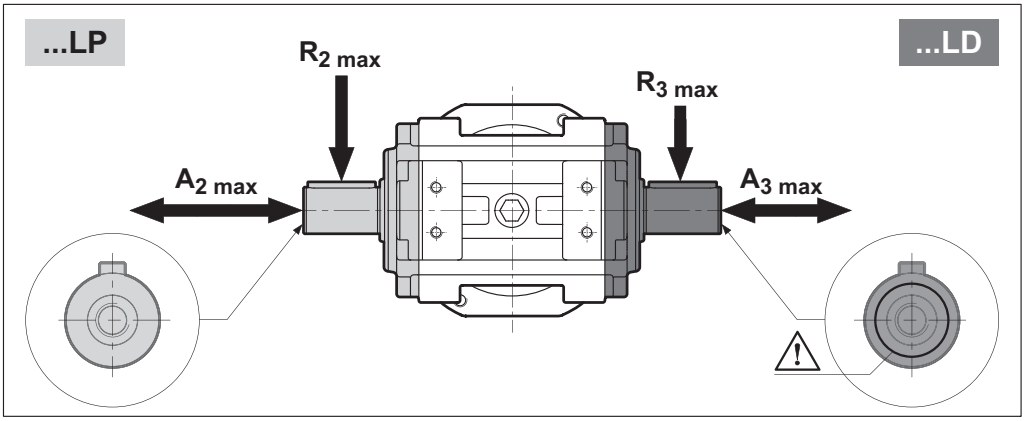
4 TECHNICAL SPECIFICATIONS

KR 010						
	$M_{n\,2}$ [Nm]	$M_{a\,2}$ [Nm]	$M_{p\,2}$ [Nm]	$n_{1\,max}$ [min^{-1}]	φs [arcmin]	η %
i = 1	10	14	20	4000	8’	97
i = 2	7	10	15	5000		
i = 5	3	4	6	5000		

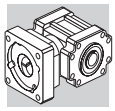
KR 020						
	$M_{n\,2}$ [Nm]	$M_{a\,2}$ [Nm]	$M_{p\,2}$ [Nm]	$n_{1\,max}$ [min^{-1}]	φs [arcmin]	η %
i = 1	24	35	50	4000	8’	97
i = 2	15	21	30	5000		
i = 5	10	13	20	5000		

KR 030						
	$M_{n\,2}$ [Nm]	$M_{a\,2}$ [Nm]	$M_{p\,2}$ [Nm]	$n_{1\,max}$ [min^{-1}]	φs [arcmin]	η %
i = 1	55	75	110	3500	8’	97
i = 2	37	52	75	4500		
i = 5	22	29	45	4500		

KR 040						
	$M_{n\,2}$ [Nm]	$M_{a\,2}$ [Nm]	$M_{p\,2}$ [Nm]	$n_{1\,max}$ [min^{-1}]	φs [arcmin]	η %
i = 1	120	170	240	3500	8’	97
i = 2	85	120	170	4500		
i = 5	45	60	90	4500		



		$R_{2\,max}$ [N]	$A_{2\,max}$ [N]	$A_2'_{max}$ [N]	$R_{3\,max}$ [N]	$A_{3\,max}$ [N]	$A_3'_{max}$ [N]
KR 010	**SB**	1000	—	200	500	—	100
KR 020	**SB**	1500	—	300	750	—	150
	HB	3000	1500	600	3000	1500	600
KR 030	**SB**	2000	—	400	1000	—	200
	HB	4000	2000	800	4000	2000	800
KR 040	**SB**	3000	—	600	1500	—	300
	HB	5500	2750	1100	5500	2750	1100



5 MASS MOMENT OF INERTIA

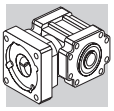
5.1 KR 010...KR 040 with standard ball bearings - SB

KR 010			
		J_G [kgcm^2]	
	SB	6 ≤ D ≤ 9.52	10 ≤ D ≤ 14
i = 1	S, SF	0.52	0.52
	LP, LPF	0.38	0.38
	LD, LDF	0.39	0.39
i = 2	S, SF	0.27	0.29
	LP, LPF	0.24	0.25
	LD, LDF	0.24	0.25
i = 5	S, SF	0.20	0.21
	LP, LPF	0.19	0.21
	LD, LDF	0.19	0.21

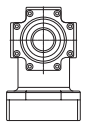
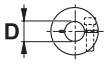
KR 020			
		J_G [kgcm^2]	
	SB	8 ≤ D ≤ 12.7	14 ≤ D ≤ 19.05
i = 1	S, SF	1.61	1.80
	LP, LPF	1.34	1.52
	LD, LDF	1.37	1.55
i = 2	S, SF	0.86	1.05
	LP, LPF	0.80	0.98
	LD, LDF	0.80	0.99
i = 5	S, SF	0.66	0.84
	LP, LPF	0.64	0.83
	LD, LDF	0.65	0.83

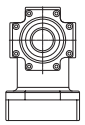
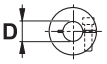
KR 030				
		J_G [kgcm^2]		
	SB	11 ≤ D ≤ 12.7	14 ≤ D ≤ 19	22 ≤ D ≤ 24
i = 1	H, HF	4.37	4.45	4.64
	S, SF	5.00	5.08	5.27
	LP, LPF	4.70	4.78	4.97
	LD, LDF	4.63	4.71	4.90
i = 2	H, HF	2.04	2.12	2.31
	S, SF	2.20	2.28	2.47
	LP, LPF	2.12	2.20	2.39
	LD, LDF	2.11	2.19	2.37
i = 5	H, HF	1.47	1.55	1.74
	S, SF	1.50	1.57	1.76
	LP, LPF	1.48	1.56	1.75
	LD, LDF	1.48	1.56	1.75

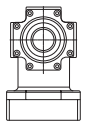
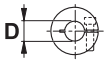
KR 040				
		J_G [kgcm^2]		
	SB	14 ≤ D ≤ 19	22 ≤ D ≤ 24	D = 28
i = 1	H, HF	17.19	17.37	17.77
	S, SF	20.46	20.65	21.05
	LP, LPF	18.21	18.40	18.80
	LD, LDF	18.90	19.08	19.48
i = 2	H, HF	4.47	4.65	5.06
	S, SF	5.29	5.47	5.87
	LP, LPF	4.73	4.91	5.31
	LD, LDF	4.90	5.08	5.48
i = 5	H, HF	5.23	5.42	5.82
	S, SF	5.36	5.55	5.95
	LP, LPF	5.27	5.46	5.86
	LD, LDF	5.30	5.49	5.89



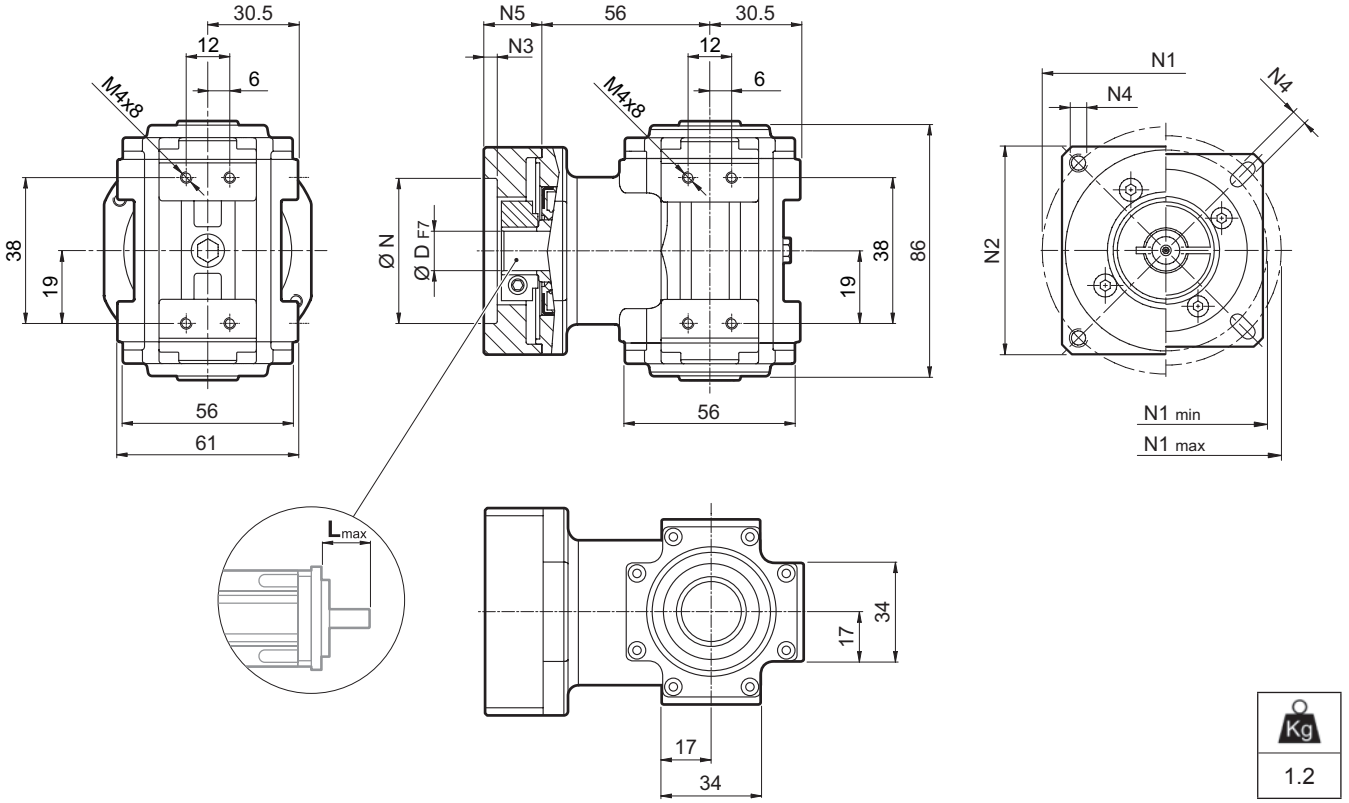
5.2 KR 020...KR 040 with taper roller bearings - HB

KR 020			
		J_G [kgcm^2]	
		 	
	HB 	8 ≤ D ≤ 12.7	14 ≤ D ≤ 19.05
i = 1	S, SF	1.87	2.06
	LP, LPF	1.60	1.78
	LD, LDF	1.62	1.81
i = 2	S, SF	0.93	1.12
	LP, LPF	0.86	1.05
	LD, LDF	0.87	1.05
i = 5	S, SF	0.67	0.85
	LP, LPF	0.66	0.84
	LD, LDF	0.66	0.84

KR 030				
		J_G [kgcm^2]		
		 		
	HB 	11 ≤ D ≤ 12.7	14 ≤ D ≤ 19	22 ≤ D ≤ 24
i = 1	H, HF	5.48	5.56	5.75
	S, SF	6.11	6.19	6.38
	LP, LPF	5.81	5.89	6.08
	LD, LDF	5.74	5.82	6.01
i = 2	H, HF	2.92	3.00	3.19
	S, SF	3.08	3.16	3.35
	LP, LPF	3.01	3.09	3.27
	LD, LDF	2.99	3.07	3.26
i = 5	H, HF	1.51	1.59	1.78
	S, SF	1.54	1.62	1.81
	LP, LPF	1.53	1.61	1.80
	LD, LDF	1.53	1.60	1.79

KR 040				
		J_G [kgcm^2]		
		 		
	HB 	14 ≤ D ≤ 19	22 ≤ D ≤ 24	D = 28
i = 1	H, HF	18.82	19.01	19.41
	S, SF	22.10	22.28	22.69
	LP, LPF	19.85	20.04	20.44
	LD, LDF	20.53	20.72	21.12
i = 2	H, HF	4.88	5.06	5.47
	S, SF	5.70	6.28	6.28
	LP, LPF	5.13	5.72	5.72
	LD, LDF	5.31	5.89	5.89
i = 5	H, HF	5.30	5.48	5.89
	S, SF	5.43	6.02	6.02
	LP, LPF	5.34	5.93	5.93
	LD, LDF	5.37	5.95	5.95

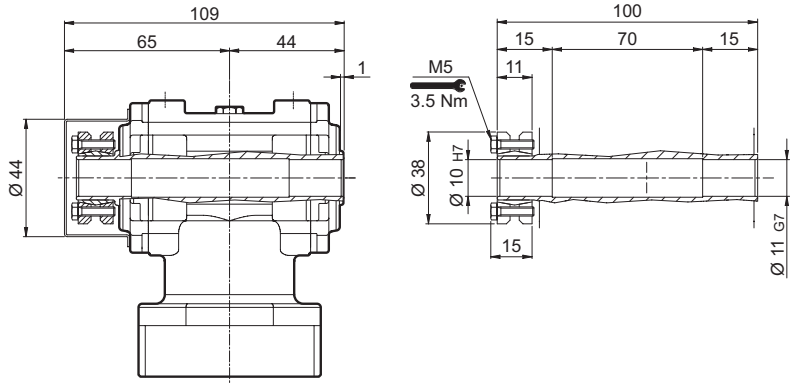
6 DIMENSIONS



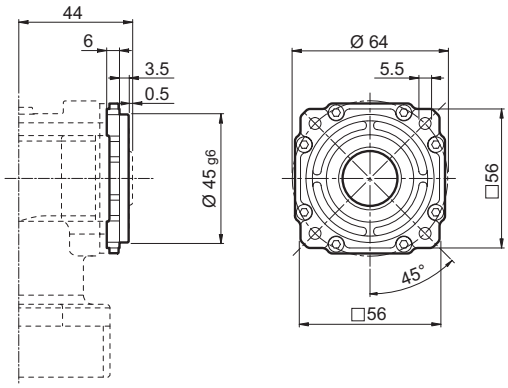
Kg
1.2

	D											N	N1		N2	N3	N4	N5	L_{max}
													min	max					
25AH	6	6.35	7	8	9	9.52	–	–	–	–	–	25	39	56					
26AH	6	6.35	7	8	9	9.52	–	–	–	–	–	26	39	56					
28AH	6	6.35	7	8	9	9.52	–	–	–	–	–	28	39	56					
30AH	6	6.35	7	8	9	9.52	–	–	–	–	–	30	39	56					
32AH	6	6.35	7	8	9	9.52	–	–	–	–	–	32	39	56	65	3.5	4.5	25	25
34AH	6	6.35	7	8	9	9.52	–	–	–	–	–	34	40	56					
36AH	6	6.35	7	8	9	9.52	–	–	–	–	–	36	42	56					
39AH	6	6.35	7	8	9	9.52	–	–	–	–	–	39	45	56					
40AH	6	6.35	7	8	9	9.52	–	–	–	–	–	40	46	56					
38B	6	6.35	7	8	9	9.52	10	11	12	12.7	–	38.1	66.6		60	3	M4x10	18	25
40B	6	6.35	7	8	9	9.52	10	11	12	12.7	–	40	63		60	3	M4x10	18	25
50A	6	6.35	7	8	9	9.52	10	11	12	12.7	–	50	60		60	3	M4x10	18	25
50B	6	6.35	7	8	9	9.52	10	11	12	12.7	14	50	65		60	3	M5x12	23	30
50BH	6	6.35	7	8	9	9.52	10	11	12	12.7	14	50	65		65	3	5.5	25	32
50C	6	6.35	7	8	9	9.52	10	11	12	12.7	14	50	70		60	3	M4x10	23	30
55MH	6	6.35	7	8	9	9.52	10	11	12	12.7	–	55	80		65	2	5.5	16	23
60A	6	6.35	7	8	9	9.52	10	11	12	12.7	–	60	75		63	3	M5x12	18	25
60A1	6	6.35	7	8	9	9.52	10	11	12	12.7	14	60	75		63	3	M5x12	23	30
60B	6	6.35	7	8	9	9.52	10	11	12	12.7	14	60	85		75	3	M5x12	23	30
60C	6	6.35	7	8	9	9.52	10	11	12	12.7	14	60	90		75	3	M5x12	23	30
70A	6	6.35	7	8	9	9.52	10	11	12	12.7	14	70	85		75	3	M6x15	23	30
70B	6	6.35	7	8	9	9.52	10	11	12	12.7	14	70	90		75	3	M5x12	23	30
73A	6	6.35	7	8	9	9.52	10	11	12	12.7	14	73	98.4		85	3	M5x12	25	32
80A	6	6.35	7	8	9	9.52	10	11	12	12.7	14	80	100		85	3	M6x15	23	30

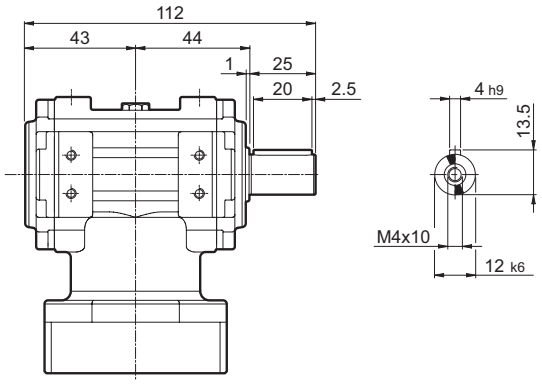
KR 010... S



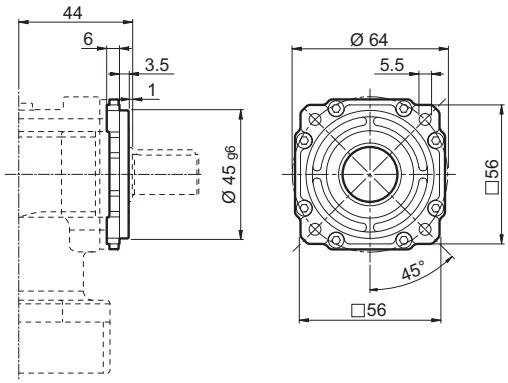
KR 010... SF



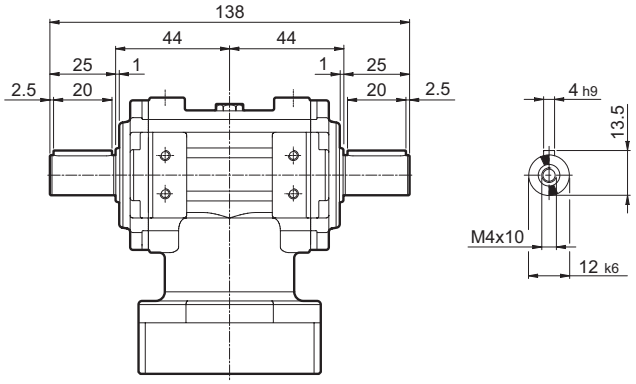
KR 010... LP



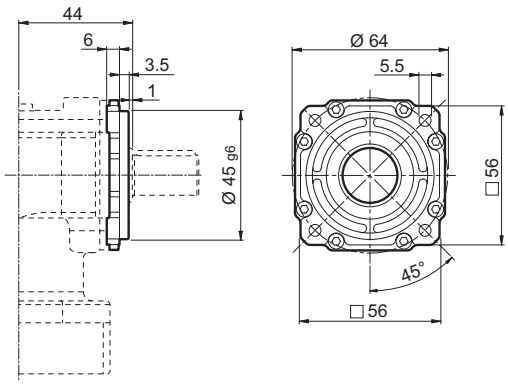
KR 010... LPF

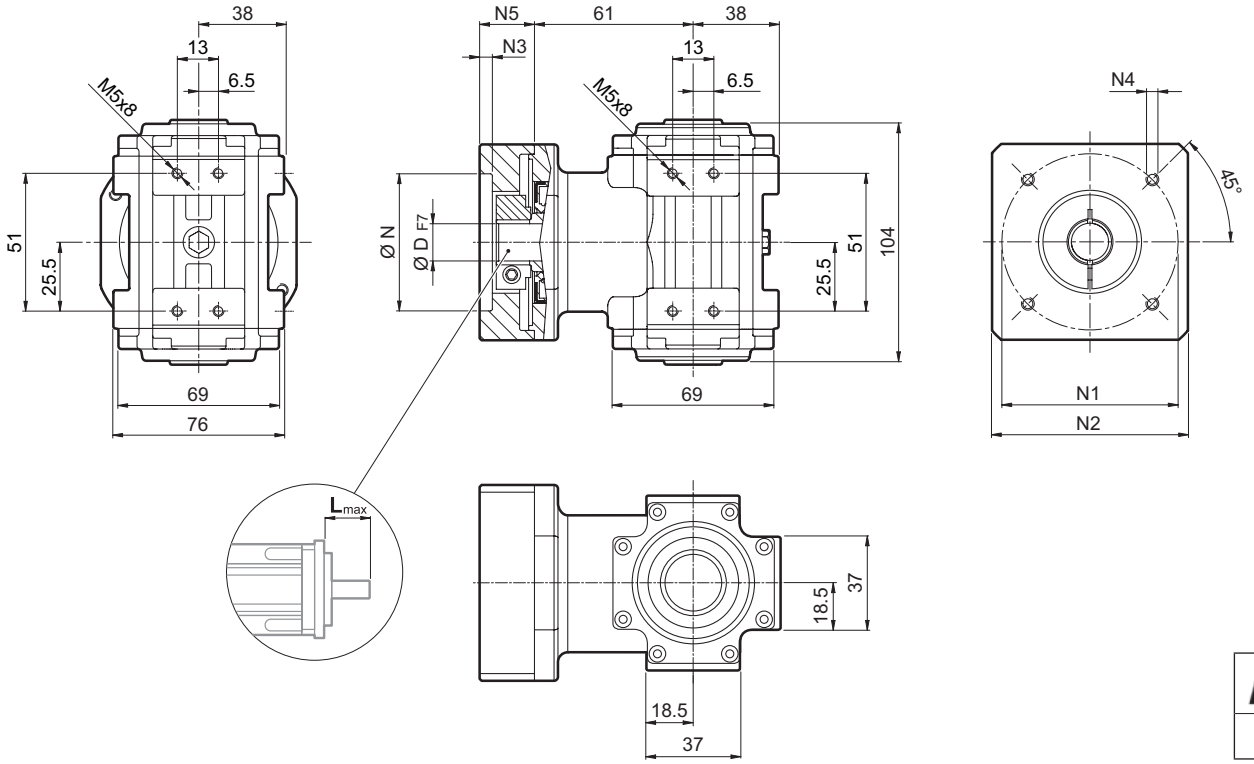


KR 010... LD



KR 010... LDF

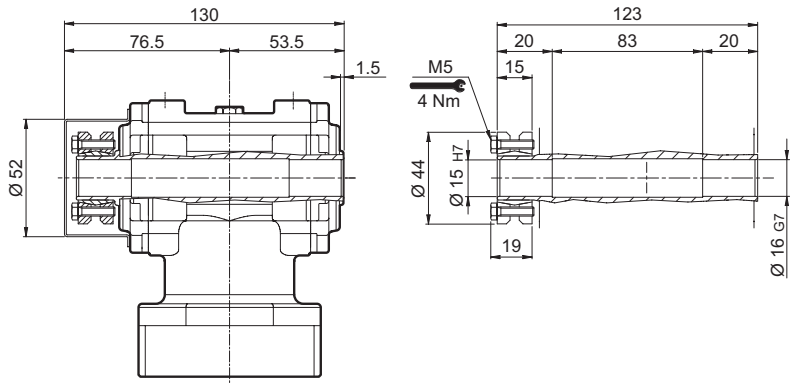




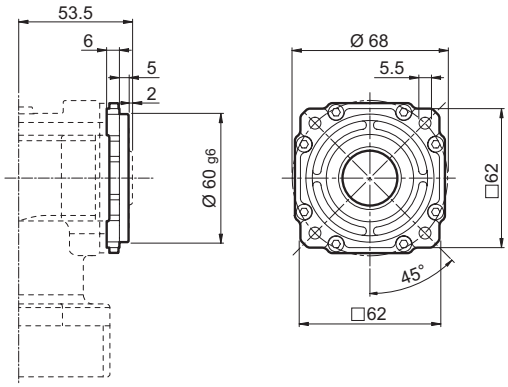
Kg
2.6

	D							N	N1	N2	N3	N4	N5	L_{max}
40B1	8	9	9.52	11	12	12.7	14	40	63	80	4	M4x10	34	40
45A	8	9	9.52	11	12	12.7	–	45	63	80	4	M4x10	34	40
50B1	8	9	9.52	11	12	12.7	14	50	65	80	4	M5x16	34	40
50BH1	8	9	9.52	11	12	12.7	14	50	65	80	4	5.5	34	40
50C1	8	9	9.52	11	12	12.7	14	50	70	80	4	M4x10	34	40
50D	8	9	9.52	11	12	12.7	14	50	95	80	4	M6x10	34	40
55A	8	9	9.52	11	12	12.7	14	55.5	125.7	105	4	M6x16	34	40
60A2	8	9	9.52	11	12	12.7	14	60	75	80	4	M5x16	34	40
60AH2	8	9	9.52	11	12	12.7	14	60	75	90	4	5.5	34	40
60B1	8	9	9.52	11	12	12.7	14	60	85	80	4	M5x16	34	40
60C1	8	9	9.52	11	12	12.7	14	60	90	80	4	M5x16	34	40
70A1	8	9	9.52	11	12	12.7	14	70	85	80	4	M6x20	34	40
70AH1	8	9	9.52	11	12	12.7	14	70	85	90	4	6.5	34	40
70B1	8	9	9.52	11	12	12.7	14	70	90	80	4	M5x16	34	40
73A1	8	9	9.52	11	12	12.7	14	73	98.4	85	4	M5x16	34	40
80A1	8	9	9.52	11	12	12.7	14	80	100	90	4	M6x16	34	40
95A	8	9	9.52	11	12	12.7	14	95	115	100	4	M8x20	34	40
95B	8	9	9.52	11	12	12.7	14	95	130	115	4	M8x20	34	40
110A	8	9	9.52	11	12	12.7	14	110	130	115	4	M8x20	34	40
110B	8	9	9.52	11	12	12.7	14	110	145	120	6.5	M8x20	44	50
110B1	8	9	9.52	11	12	12.7	14	110	145	120	6.5	M8x20	54	60

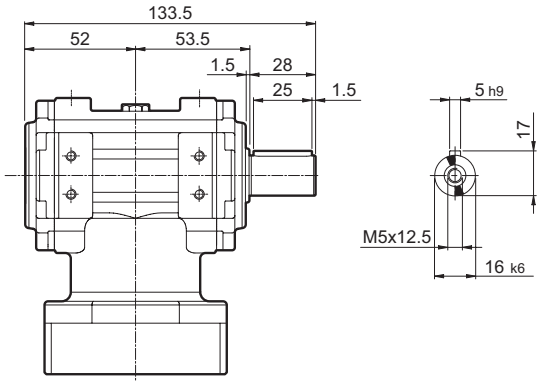
KR 020... S



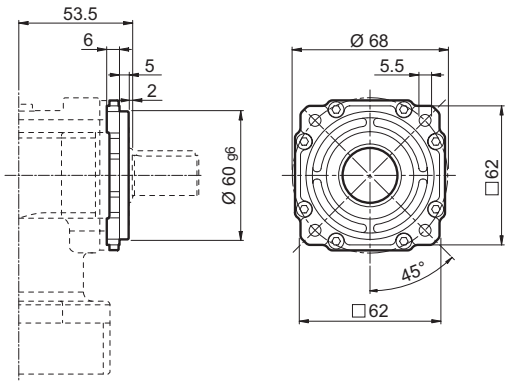
KR 020... SF



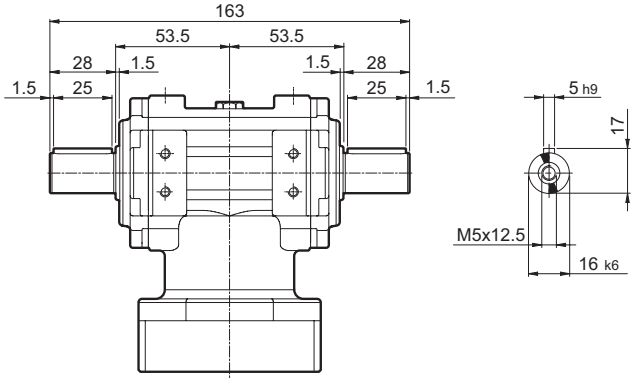
KR 020... LP



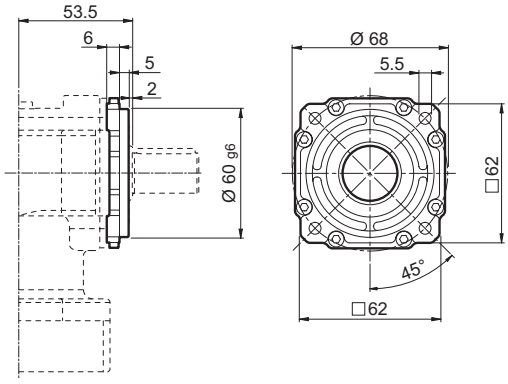
KR 020... LPF

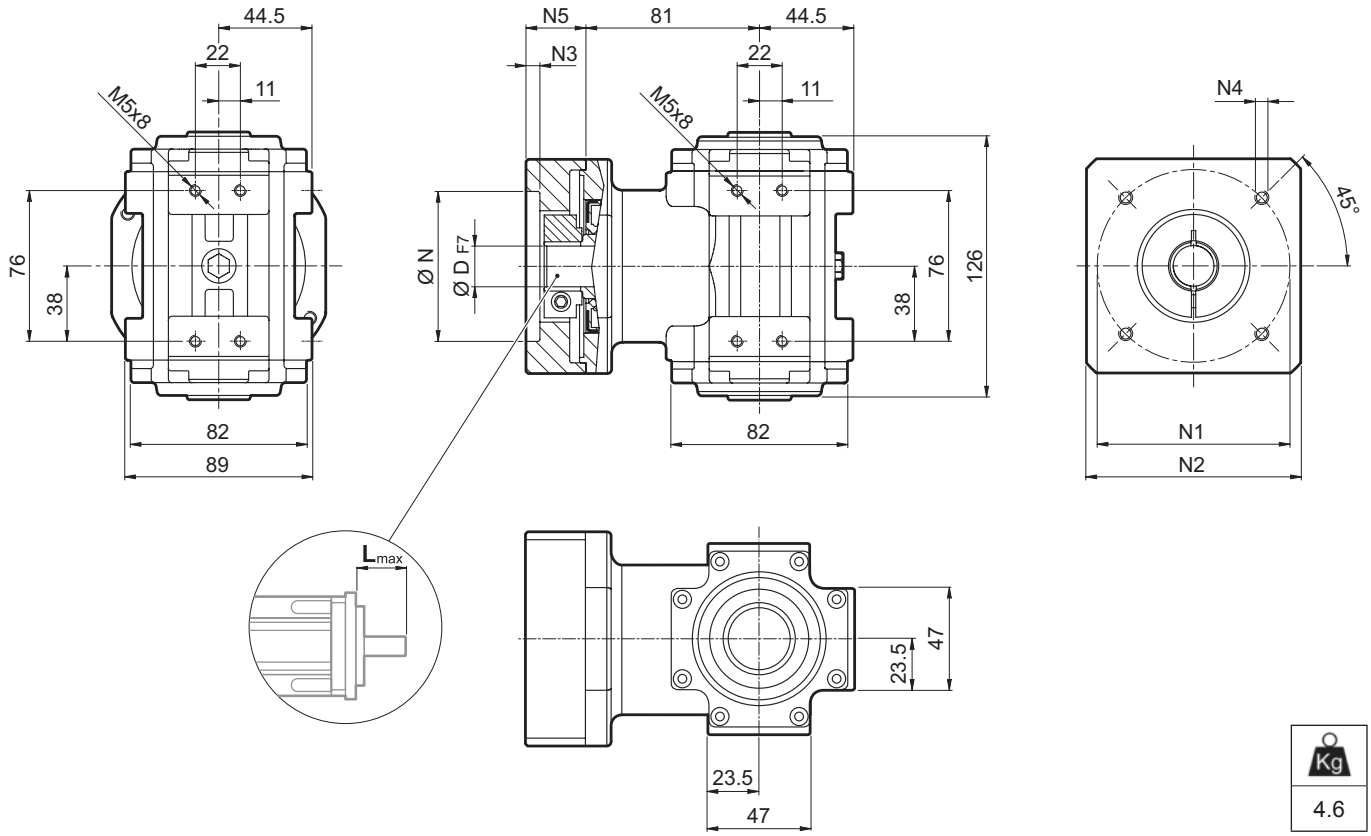


KR 020... LD



KR 020... LDF

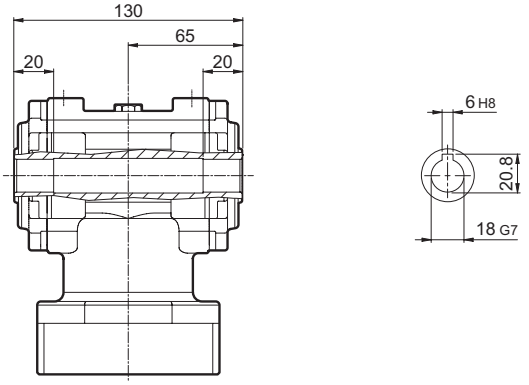




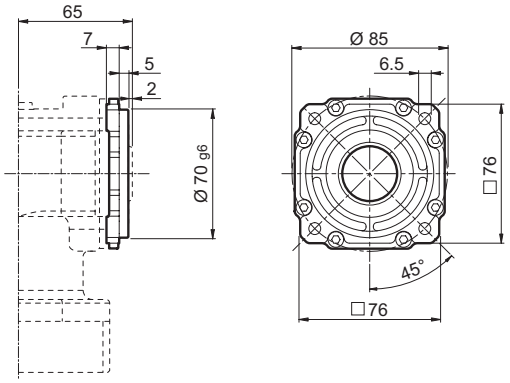
Kg
4.6

	D										N	N1	N2	N3	N4	N5	L_{max}
50D	11	12	12.7	14	15	15.875	16	19	–	–	50	95	100	5	M6x14	28	40
55A	11	12	12.7	14	15	15.875	16	19	–	–	55.5	125.7	105	5	M6x16	28	40
60A2	11	12	12.7	14	15	15.875	16	19	–	–	60	75	100	5	M5x14	28	40
60AH2	11	12	12.7	14	15	15.875	16	19	–	–	60	75	100	5	6.5	33	40
60B1	11	12	12.7	14	15	15.875	16	19	–	–	60	85	100	6.5	M5x14	28	40
70A1	11	12	12.7	14	15	15.875	16	19	–	–	70	85	100	5	M6x14	28	40
70AH1	11	12	12.7	14	15	15.875	16	19	–	–	70	85	100	5	6	33	40
70B1	11	12	12.7	14	15	15.875	16	19	–	–	70	90	100	5	M5x12	28	40
80A1	11	12	12.7	14	15	15.875	16	19	–	–	80	100	100	5	M6x16	28	40
80AH1	11	12	12.7	14	15	15.875	16	19	–	–	80	100	100	5	6.5	28	40
95A	11	12	12.7	14	15	15.875	16	19	–	–	95	115	100	5	M8x18	28	40
95A1	11	12	12.7	14	15	15.875	16	19	22	24	95	115	100	5	M8x18	38	50
95B	11	12	12.7	14	15	15.875	16	19	–	–	95	130	115	5	M8x18	28	40
110A	11	12	12.7	14	15	15.875	16	19	–	–	110	130	115	5	M8x18	28	40
110A1	11	12	12.7	14	15	15.875	16	19	22	24	110	130	115	6.5	M8x20	38	50
110B	11	12	12.7	14	15	15.875	16	19	22	24	110	145	120	6.5	M8x20	38	50
110B1	11	12	12.7	14	15	15.875	16	19	22	24	110	145	120	6.5	M8x20	48	60
130A	11	12	12.7	14	15	15.875	16	19	22	24	130	165	140	6.5	M10x20	38	50
130A1	11	12	12.7	14	15	15.875	16	19	22	24	130	165	140	6.5	M10x25	48	60

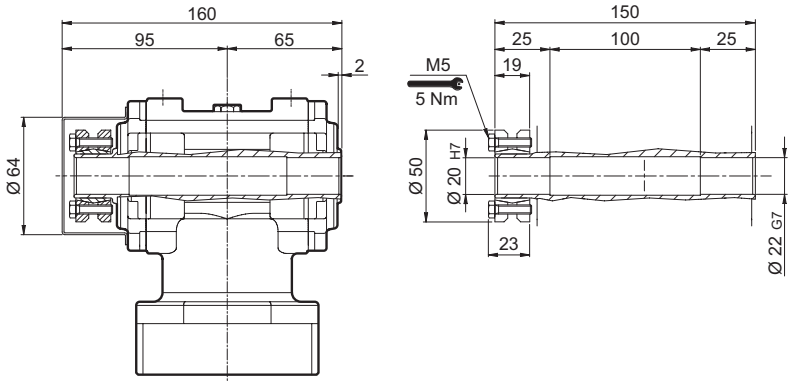
KR 030... H



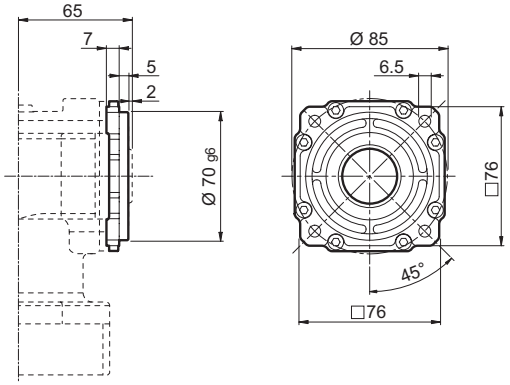
KR 030... HF



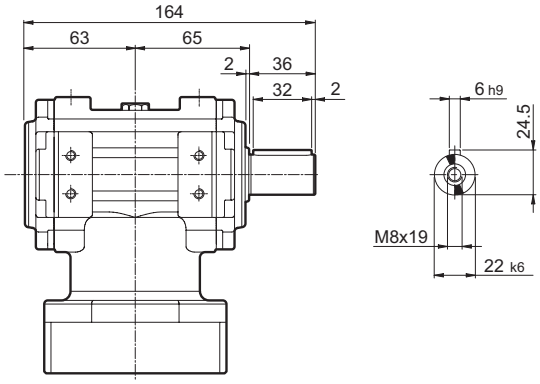
KR 030... S



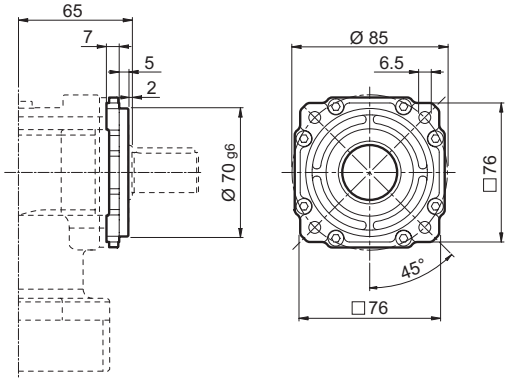
KR 030... SF



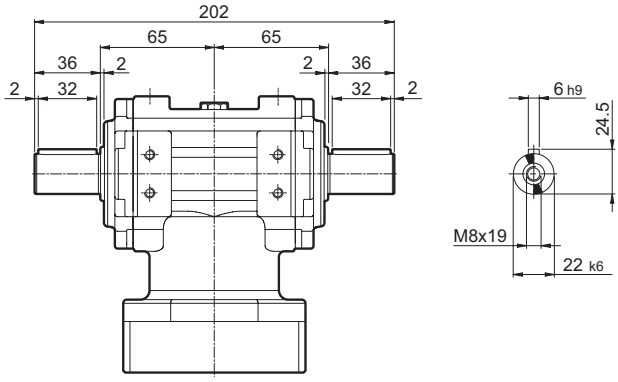
KR 030... LP



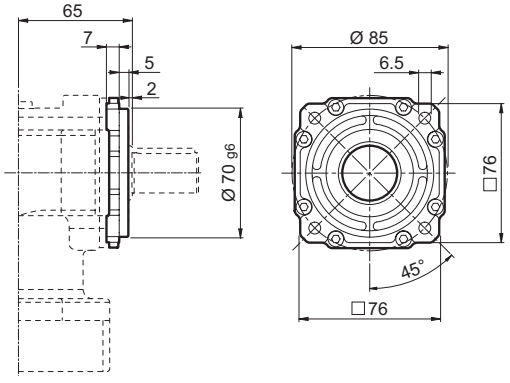
KR 030... LPF

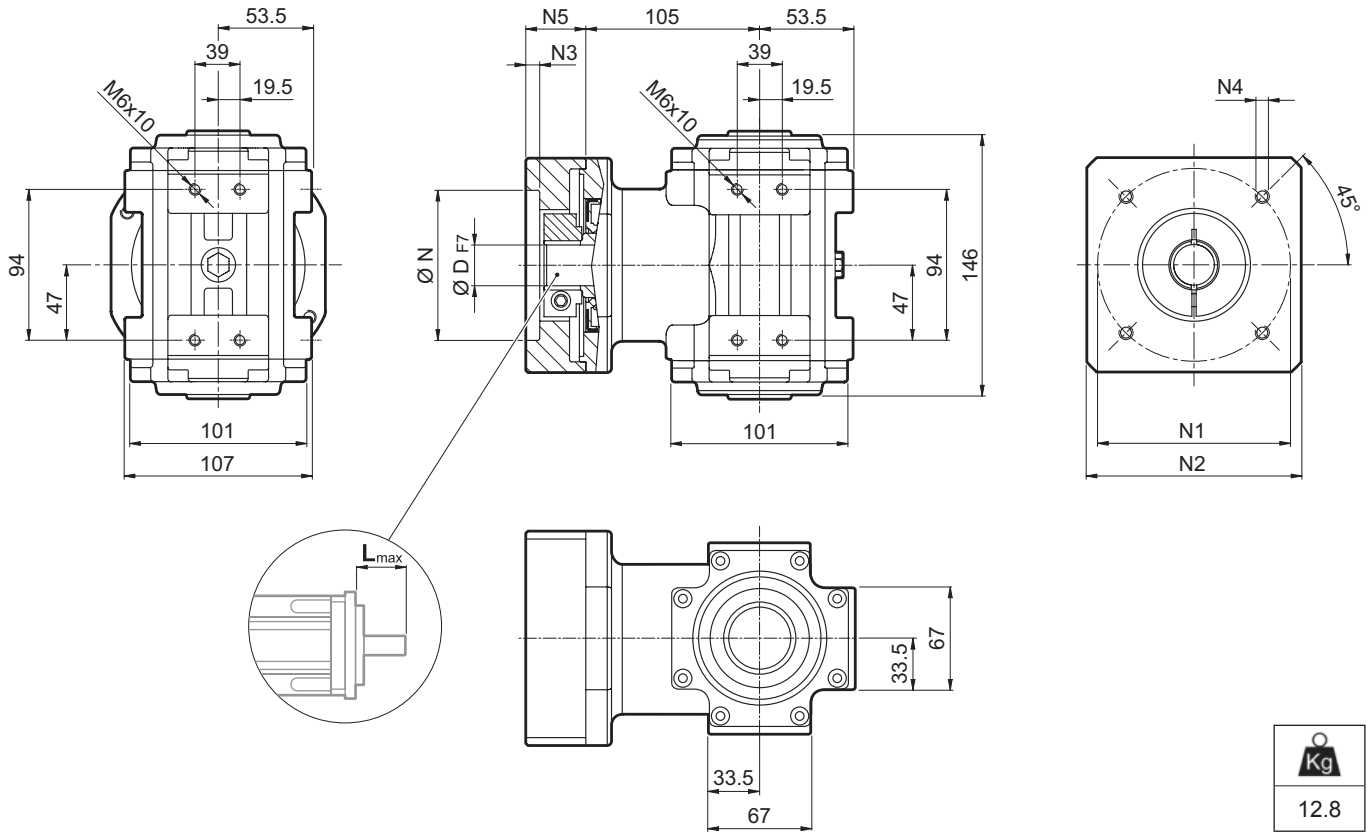


KR 030... LD



KR 030... LDF

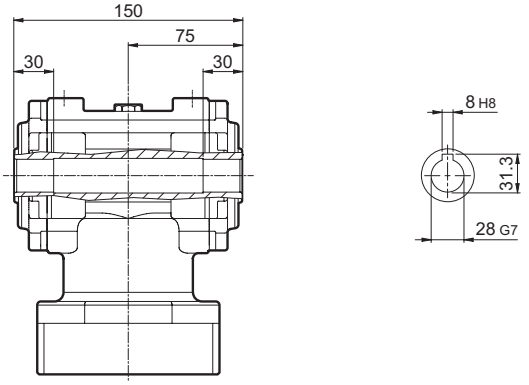




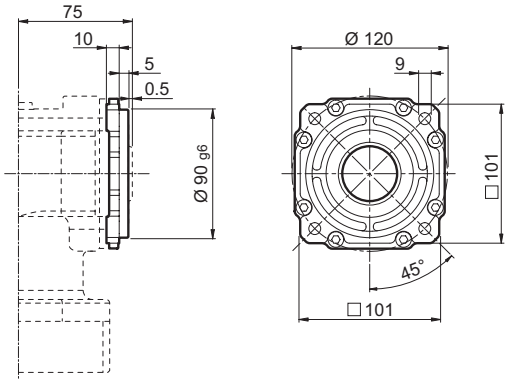
Kg
12.8

	D							N	N1	N2	N3	N4	N5	L_{max}
55A1	14	15.875	16	19	–	–	–	55.5	125.7	130	4	M6x15	39.5	50
80A2	14	15.875	16	19	–	–	–	80	100	130	4	M6x15	39.5	50
95A1	14	15.875	16	19	22	24	–	95	115	130	4	M8x20	39.5	50
110A1	14	15.875	16	19	22	24	–	110	130	130	4	M8x20	39.5	50
110B1	14	15.875	16	19	22	24	–	110	145	130	6.5	M8x20	49.5	60
114A	14	15.875	16	19	22	24	28	114.3	200	170	5.5	M12x25	69.5	80
130A	14	15.875	16	19	22	24	–	130	165	140	4	M10x20	39.5	50
130A1	14	15.875	16	19	22	24	28	130	165	140	4	M10x20	49.5	60
180A	14	15.875	16	19	22	24	28	180	215	190	5.5	M14x25	49.5	60
180A1	14	15.875	16	19	22	24	28	180	215	190	5.5	M14x25	69.5	80

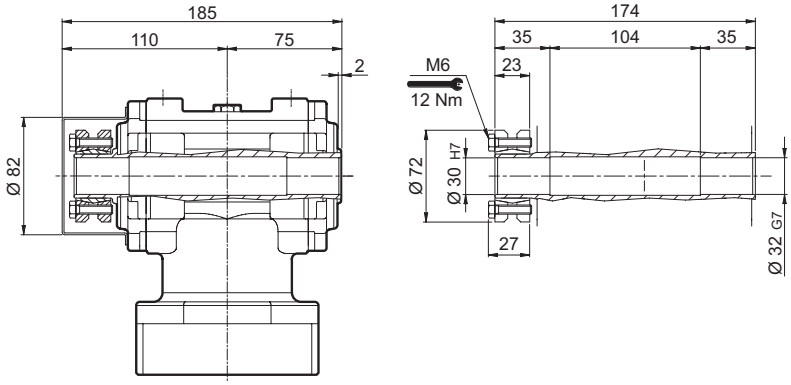
KR 040... H



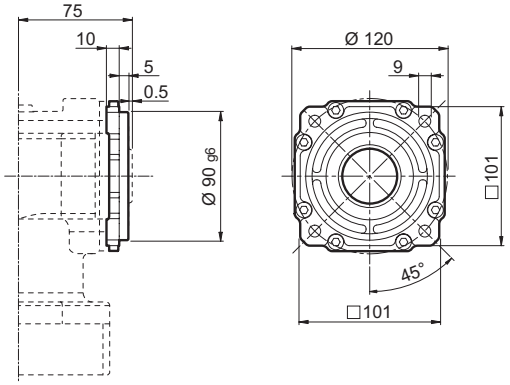
KR 040... HF



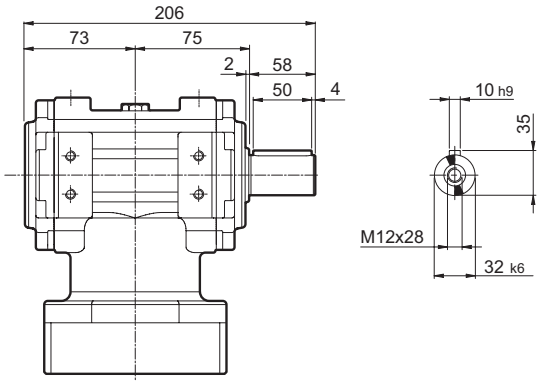
KR 040... S



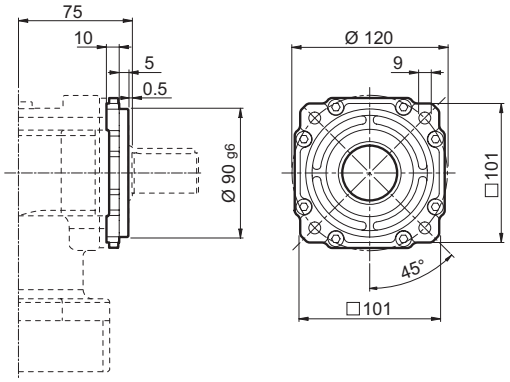
KR 040... SF



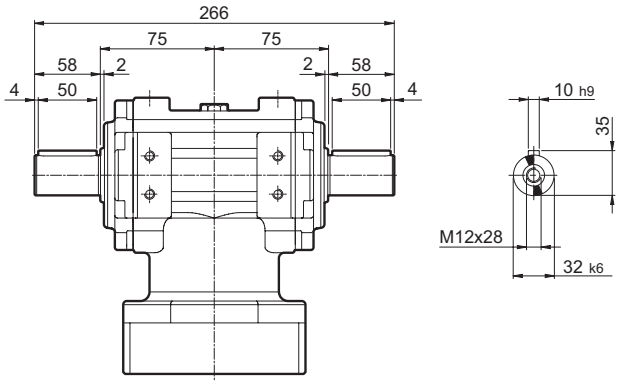
KR 040... LP



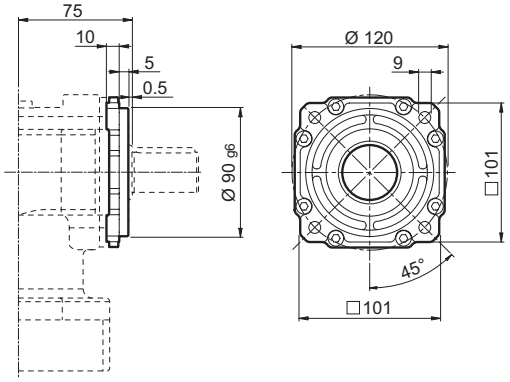
KR 040... LPF



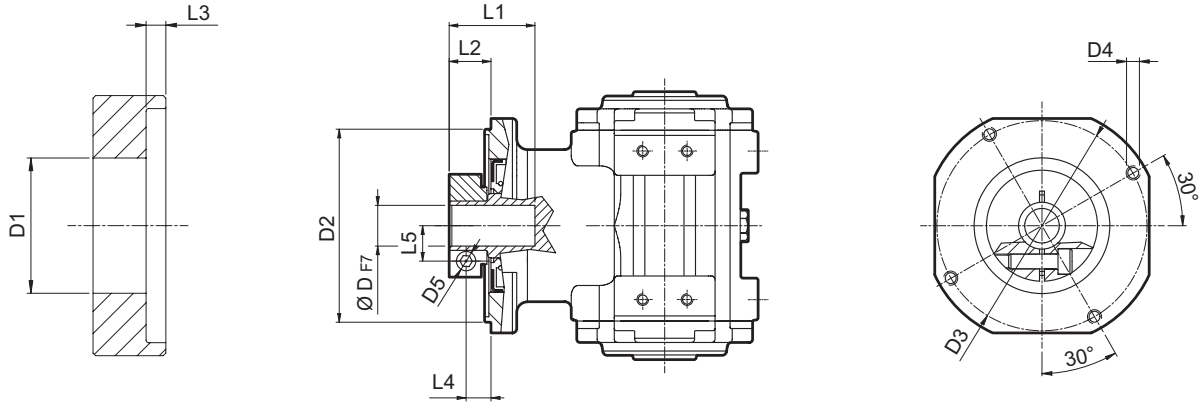
KR 040... LD



KR 040... LDF



6.1 GEARBOX WITHOUT MOTOR ADAPTER - FM

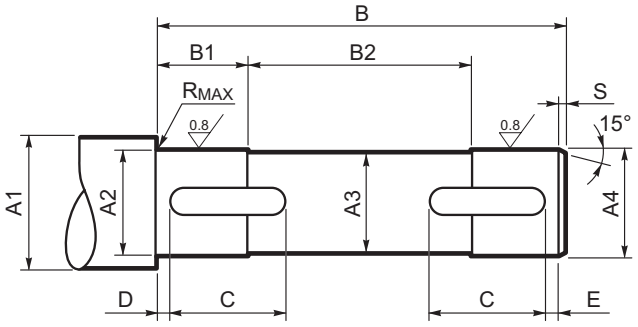


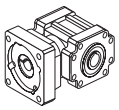
	D				D1	D2	D3	D4	D5	L1	L2	L3	L4	L5	Kg
KR 010	6	6.35	7		32.5	50	42.5	M4x8	M4	28	13.5	3	8.5	8	1.0
	8	9	9.52	10	32.5	50	42.5	M4x8	M4	28	13.5	3	8.5	9	
	11	12	12.7		35.5	50	42.5	M4x8	M4	23	13.5	3	8.5	11	
	14				35.5	50	42.5	M4x8	M4	25	15.5	3	8.9	11.5	
KR 020	8	9	9.52		38	68	76.5	M6x10	M6	36.3	26.3	9.5	18.8	10.5	2.0
	11	12	12.7		43	68	76.5	M6x10	M6	36.3	26.3	9.5	18.8	12.5	
	14	15.875	16	17	48	68	76.5	M6x10	M6	36.3	26.3	9.5	18.8	14.5	
	19	19.05			51	68	76.5	M6x10	M6	36.3	26.3	9.5	18.8	16.5	
KR 030	11	12	12.7		43	90	98	M6x15	M6	35	19.5	7.6	12.1	12.5	3.5
	14	15	15.875	16	48	90	98	M6x15	M6	35	19.5	7.6	12.1	14.5	
	19				51	90	98	M6x15	M6	35	19.5	7.6	12.1	16.5	
	22	24			56.5	90	98	M6x15	M6	37	21.5	7.6	12.1	19	
KR 040	14	15.875	16		48	113	125.5	M8x15	M6	46	27.5	6	20	14.5	10.0
	19				51	113	125.5	M8x15	M6	46	27.5	6	20	16.5	
	22	24			56.5	113	125.5	M8x15	M6	47.5	29	6	20	19	
	28				67	113	125.5	M8x15	M8	47.5	29	6	20	22.5	

6.2 MACHINE SHAFT

Pivot of driven equipment should be made from high grade alloy steel. Table below shows recommended dimensions for the Customer to consider when designing mating shaft. A device retaining the shaft axially is also recommended (not shown).
The number and size of relative tapped holes at shaft end depend on application requirements.

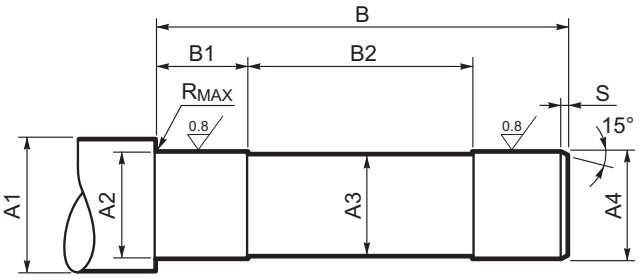
H

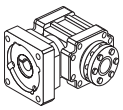


	A1	A2	A3	A4	B	B1	B2	C	D	E	R_{MAX}	 UNI 6604	S
KR 030	≥ 26	18 h7	17	18 h7	129	18	90	32	2	2	0.5	6x6x25 A	1
KR 040	≥ 36	28 h7	27	28 h7	149	28	90	50	2	2	0.5	8x7x35 A	

NB: The choice of driven shaft with a UNI 6604 key as described introduces increased backlash into the application compared to that achieved by a configuration with just the gearbox (φ_S = 8').

S



	A1	A2	A3	A4	B	B1	B2	R_{MAX}	S
KR 010	≥ 15	11 h7	9.5	10 h6	99	13	70	0.5	1
KR 020	≥ 20	16 h7	14.5	15 h6	122	18	83	0.2	
KR 030	≥ 30	22 h7	19.5	20 h6	149	23	100	0.5	
KR 040	≥ 40	32 h7	29.5	30 h6	173	33	104	0.5	

INDEX OF REVISIONS (R)

R4	
	Description
14	Sect. 6 “Dimensions”: - updated availability of motor shaft bores for input flange 40B
12 ... 20	Sect. 6 “Dimensions”: - updated dimensions

120208

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