G series

Helical gearmotor
G MR 2I 63 UP2A - 24 x 200 - 13,1 B3
HB3 90S 4 230.400-50 B5 ,VA

Configured product

Designation

G MR 2I 63 UP2A - 24 x 200 - 13,1 B3
HB3 90S 4 230.400-50 B5 ,VA

Helical gearmotor G series
Input speed n_1 1 420 min^{-1}
Coupled with motor
Mounting position B3

Accessories

Standard low speed shaft [AN1]
Reaction bolt using disc springs [B1]

Helical gearmotor - Technical data

Transmission ratio		13.1
Effective ratio i_{EFF}		13.07
Output speed n_2	[min^{-1}]	108.67
Input speed n_1	[min^{-1}]	1 420
Applied power P_1	[hp]	0
Output torque M_2	[Lb-in]	821.58
Service factor s_f (installed power)		3.329
Nominal efficiency η		0.96
Gearmotor mass (without motor)	[lb]	41.67
Moment of inertia (of mass) J_1	[lb ft^2]	0.0024
Sound levels (to ISO/CD 8579, tolerance +3 ***dB(A)***)		
sound power level L_{WA}	[dB(A)]	78
sound pressure level L_{pA}	[dB(A)]	69
Angular backlash at a distance of 3.28 [ft] from the low speed shaft centre		
min	[rad]	0.0028
max	[rad]	0.0056
min	[arcmin]	9.6
max	[arcmin]	19
Torsional stiffness in condition of nominal load	[lb in / arcmin]	159.31

Lubrication

Gearmotor supplied with oil		
Approximate lubricant quantity	[gal]	0.24
ISO viscosity grade		
mineral oil - Environment temperature 32 ÷ 68 [° F]	[cSt]	150
mineral oil - Environment temperature 50 ÷ 104 [° F]		220
synthetic oil - Environment temperature 32 ÷ 104 [° F]		220

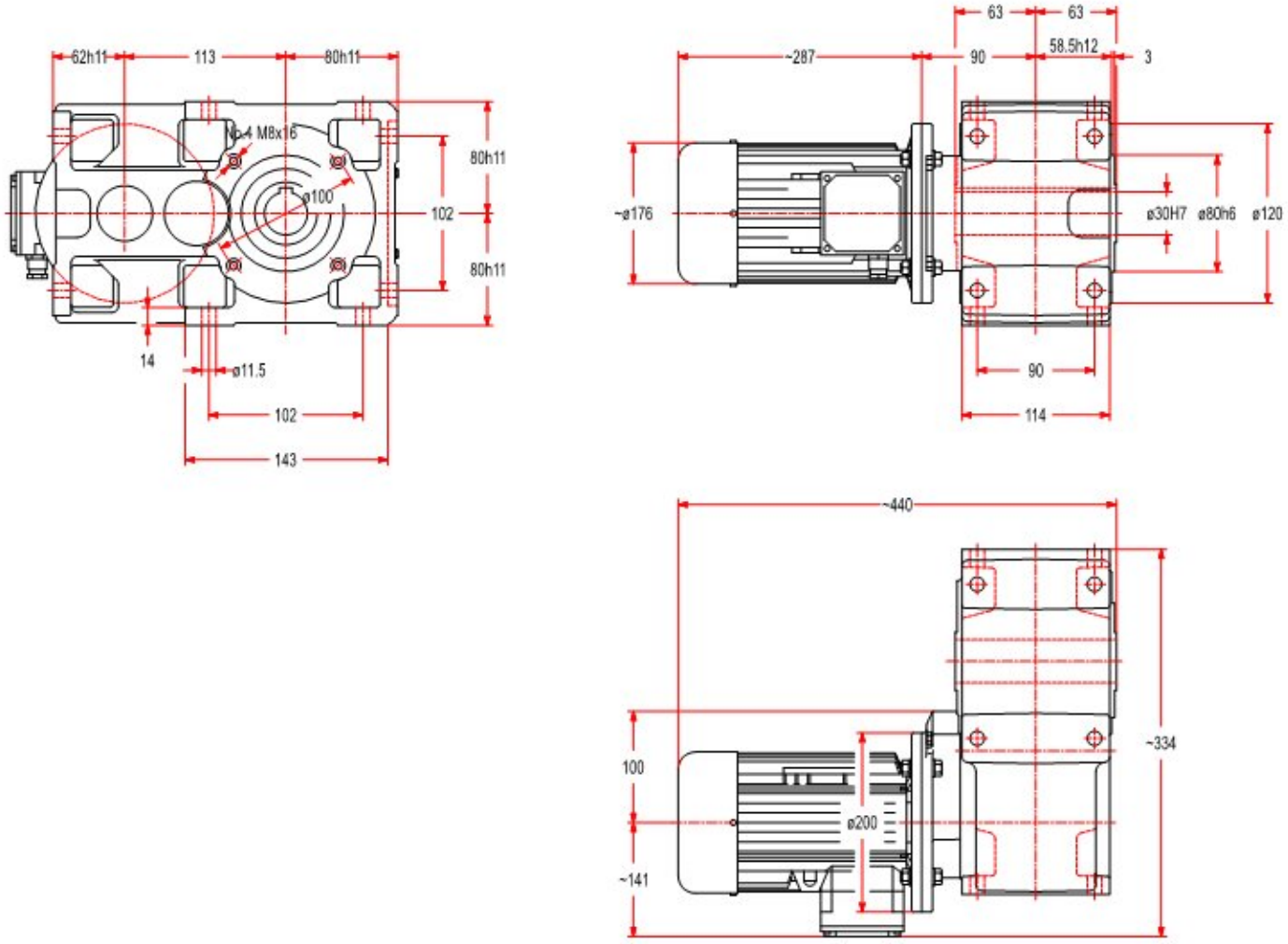
Overall guide to oil-change interval (not according ATEX directive)

Oil temperature[° F]	Oil change interval [h]	
	mineral oil	synthetic oil
≤ 149	8 000	25 000
149 ÷ 176	4 000	18 000
176 ÷ 203	2 000	12 500
203 ÷ 230	-	9 000

Nominal data

Nominal input power P_{N1}	[hp]	4.9
Nominal output power P_{N2}	[hp]	4.7
Nominal thermal power P_{TN} @68°	[hp]	13.41
Nominal output torque M_{N2}	[Lb-in]	2 734.88
Maximum output torque $M_{2\ MAX}$	[Lb-in]	4 372.27

Main dimensions [mm] (for accessories, see following pages)

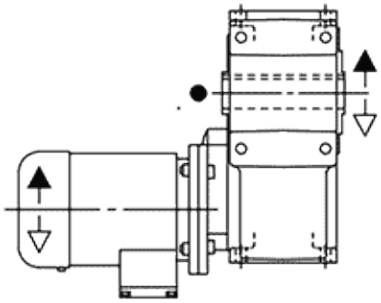


Information

Screws UNI 5737: M 10 x 35

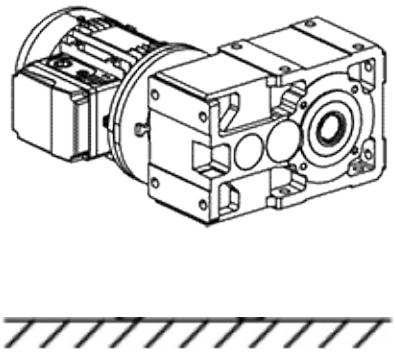
Bolts UNI 5588: M 10

Design: UP2A

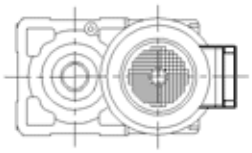


● groove side

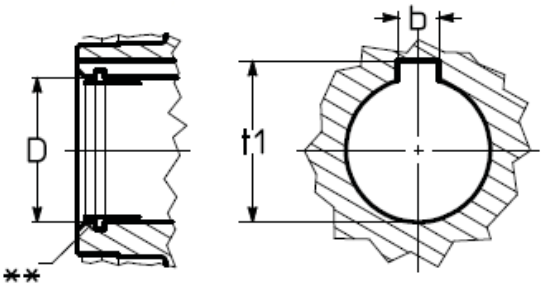
Mounting position: B3



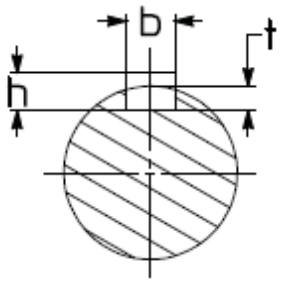
Terminal box position: TB0



Hollow low speed shaft



Gear reducer hollow shaft

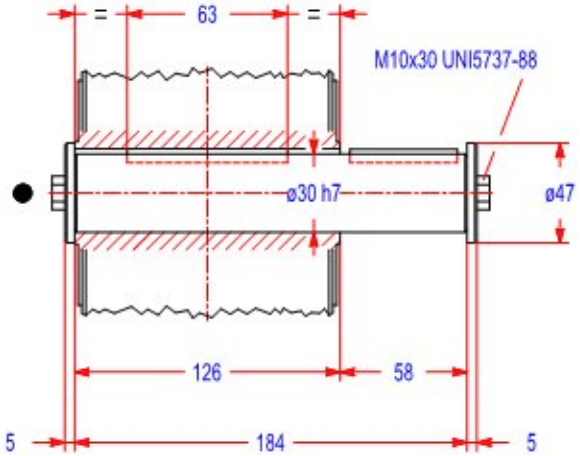


Machine shaft

Hole D Ø H7**	Parallel Key b x h x l* h9 h11	Keyway b H9 hub N9 shaft	Keyway t shaft	Keyway t_1 hub
30	8 x 7 x 63	8	4,5[1)]	32,7[1)]

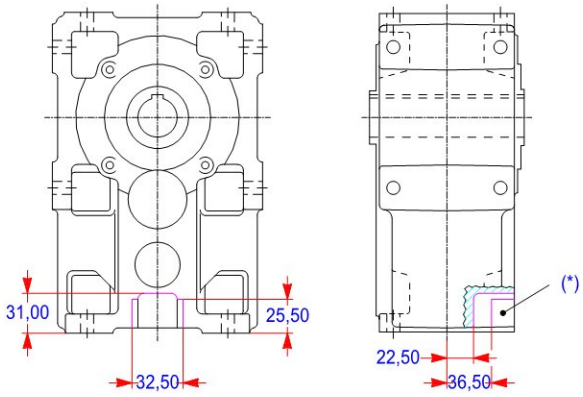
* Recommended length.
** Each hollow shaft type (standard, stepped, with shrink disc) has a slightly oversized diameter D (at the input) to facilitate the assembly of gear reducer on machine shaft end: this, however, does not affect the connection reliability.
1) Values not to standard.

Standard low speed shaft - AN1 (size 63)



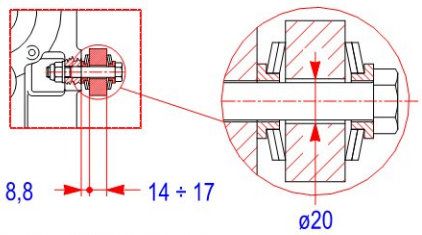
Reaction recess (2I size 63)

Sizes 2I, 3I, 4I 40 ... 125 have a housing with a reaction recess having machined lateral surfaces, laying on the high speed side (opposite to groove), for the seating of springs and torque arm end for shaft mounting



Reaction bolt using disc springs - B1

IMPORTANT: When shaft mounted, the gearmotor must be supported both axially and radially (even for mounting positions B3 ... B8) by the shaft end of driven machine, as well as anchored against rotation only, by means of a reaction having freedom of axial movement and suffi cient clearance in its couplings to permit minor oscillations - always in evidence - without provoking dangerous overloads on the gearmotor. Lubricate with proper products the hinges and the parts subject to sliding; when tightening the screws it is recommended to apply locking adhesives type LOCTITE 601.



Screw : M 12 x 70 (modified bolt)

Disc Spring : A35,5 DIN 2093 n.2

Configured motor

Designation

HB3 90S 4 230.400-50 B5 ,VA

Motor catalog TX - Erp
Pn 1.1 kW (1.5 hp)
Motor specifications • 5 voltage values stated on nameplate: 220.380 @50Hz 230.400 @50Hz 240.415 @50Hz 265.460 @60Hz 277.480 @60Hz
Motor mounting position (IM) B5
Axial independ. cooling fan VA [,VA]

Electric motor technical data TX catalog

Type		HB3 90 S 4
Size		90
Poles		4
Coupling dimensions Ø D x E - Ø P		Ø24 x 50 Ø200
Power supply	[V - Hz]	230.400 - 50
Nominal input power P_{N1}	[hp]	1.5
Nominal speed n_N	[min^{-1}]	1 420
Motor mass	[lb]	41
Directive		Motor ErP
Efficiency class		IE3
Power factor cosφ		0.8
Moment of inertia J_0	[lb ft^2]	0 014.0104
Overtemperature class		B
Insulation class		F
Protection		IP 54
Type of duty		S1
Synchronous speed	[min^{-1}]	1 500

Efficiency

100 %	84.10
75 %	84.80

50 %	83.60

Nominal data

Nominal torque M_N	[Lb-in]	65.50
Nominal starting torque M_s / M_n		3.00
Maximum torque M_{MAX} / M_n		3.50
Starting current ratio i_s / i_n		6.40
Rated current I_n @230 [V]	[A]	4.20
Rated current I_n @400 [V]	[A]	2.40

Construction features

Motor size	Bearing D-E	Bearing N-D-E	Housing	Flange B5	End-shield N-D-E	Terminal box cover	Seal rings D-E	Terminal block (4)	Cable glands	Fan cover	Cooling fan
90 S	6205 2Z	6205 2Z	LL	LL	LL	LL	25 × 46 × 7	M5	2 × M16 + 2 × M25	Painted sheet	Plastic

LL = Light alloy

(4) Terminal block with 6 terminals for cable terminal connection

Axial independent cooling fan

Motor size	V	Hz	Independent cooling fan nameplate				Independent cooling		
			V	Hz	W	A	Kg	type	code
90	**Δ220 Y380**	**50**	**230**	**50/60**	**45 / 39**	**0.31 / 0.25**	**0.9**	**single phase**	**,VA**
90	**Δ230 Y400**	**50**	**230**	**50/60**	**45 / 39**	**0.31 / 0.25**	**0.9**	**single phase**	**,VA**
90	**Δ240 Y415**	**50**	**230**	**50/60**	**45 / 39**	**0.31 / 0.25**	**0.9**	**single phase**	**,VA**
90	**Δ265 Y460**	**60**	**230**	**50/60**	**45 / 39**	**0.31 / 0.25**	**0.9**	**single phase**	**,VA**
90	**Δ277 Y480**	**60**	**230**	**50/60**	**45 / 39**	**0.31 / 0.25**	**0.9**	**single phase**	**,VA**

,VA

Motor main dimensions [mm]