Products
Media No. 4005

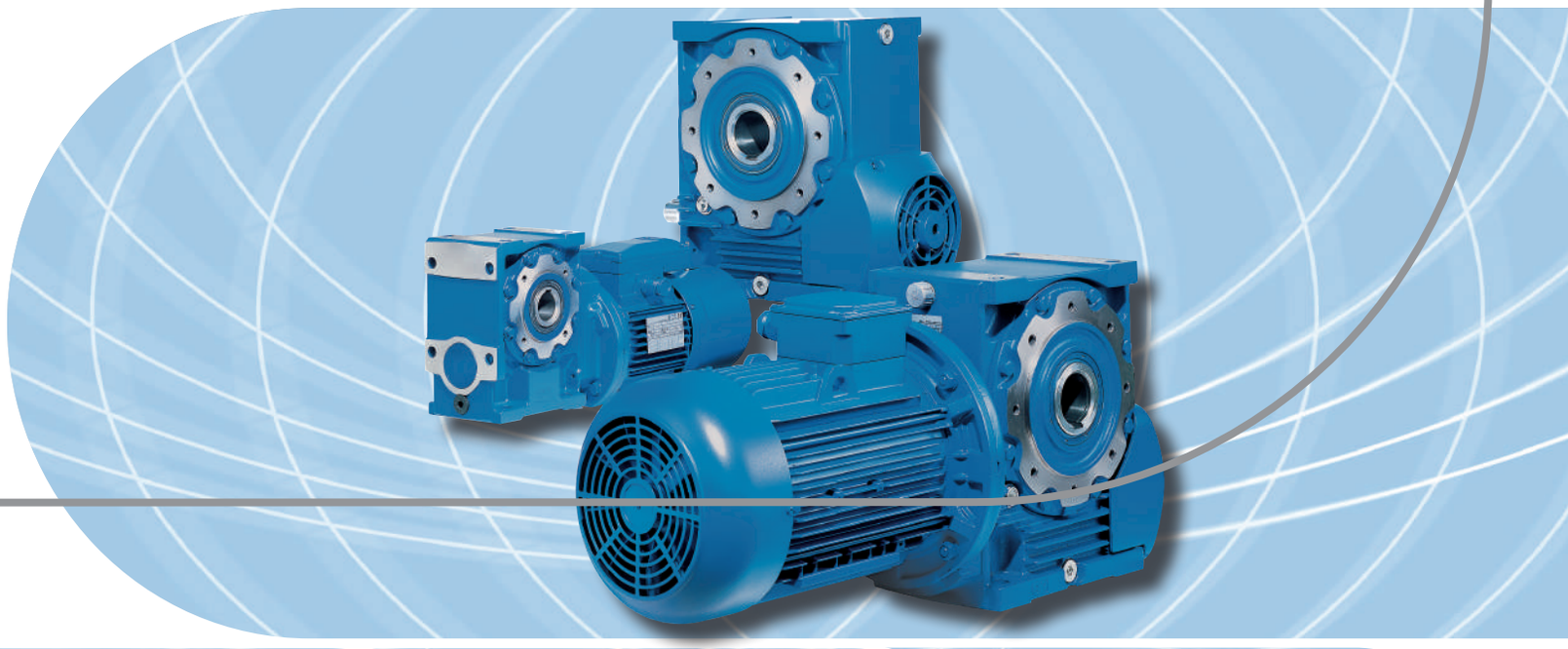
Rossi
Habasit Group

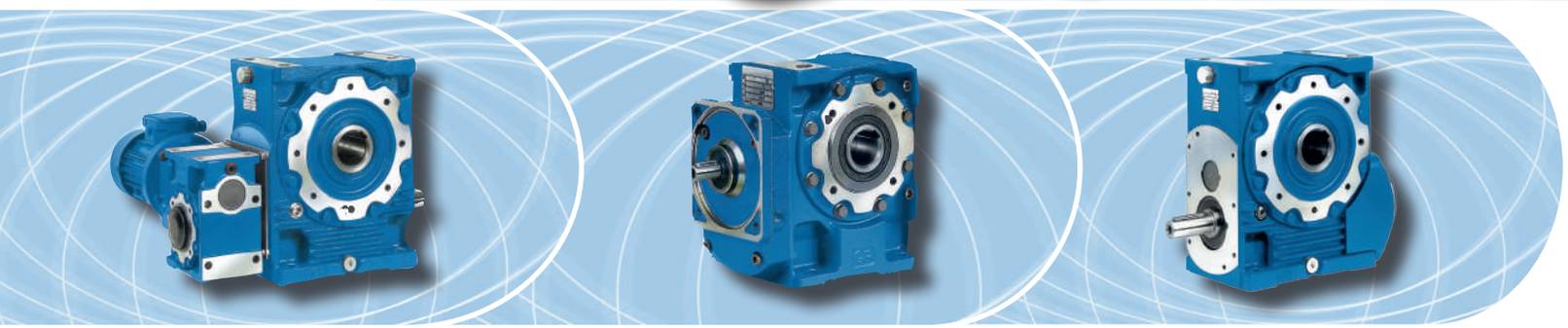
A04

Worm gear reducers and gearmotors

North America Issue

Edition October 2011





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Further technical information

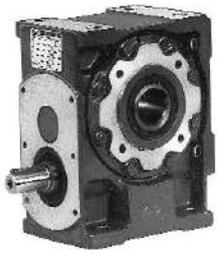
In the event that you require further technical information regarding any of the under mentioned subjects:
— shaft mounting arrangements;
— oversized hollow low speed shaft;
— square flange for servomotors;
— shaft-mounting arrangements;
— fan cooling;
— bearings lubrication pump;
— bi-metal type thermostat;
— hollow low speed shaft washer;
— hollow low speed shaft washer with locking rings or bush;
— hollow low speed shaft protection;
— design for agitators, aerators, fans;
— design for extruders;
please refer to our detailed product catalogues available by contacting Rossi.

1 - Symbols

L_{WA}	[dB(A)]	sound power level;
$\overline{L}_{pA}$	[dB(A)]	mean sound pressure level;
η	–	efficiency of the gear reducer;
z	[start/h]	frequency of starting;
z_0	[start/h]	no-load starting frequency;
J_0		moment of inertia (of mass) of the motor;
J		external moment of inertia (of mass) (gear reducers, couplings, trasmission, gear driven machine) referred to motor shaft;
M_N	[lb in]	nominal torque of motor
M_2	[lb in]	output torque due to the motor's rated power;
M_{N2}	[lb in]	nominal output torque of gear reducer at speed n_2;
M_S	[lb in]	starting torque of motor, with direct on-line start
M_f	[lb in]	braking torque setting of the motor;
F_{r1}	[lb]	radial load on high speed shaft end;
F_{r2}	[lb]	radial load on low speed shaft end;
F_{a2}	[lb]	axial load on low speed shaft end;
n_1	[rpm]	input speed;
n_2	[rpm]	output speed;
n_{N2}	[rpm]	nominal output speed;
P_1	[hp]	rated motor power;
P_2	[hp]	output power of gear reducer;
P_{N2}	[hp]	nominal output power of gear reducer;
*P*t	[hp]	thermal power;
Pt_N	[hp]	nominal thermal power
i	–	transmission ratio;
i_N	–	nominal transmission ratio
*t*a	[s]	starting time;
*t*f	[s]	braking time;
φa$_1$	[rad]	revolution of motor shaft;
φf$_1$	[rad]	revolution of motor shaft;

Worm gear reducers

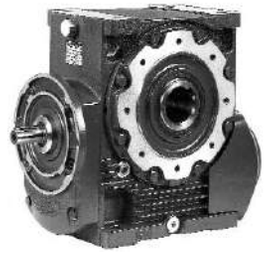
32 ... 81



R V
with worm gear pair

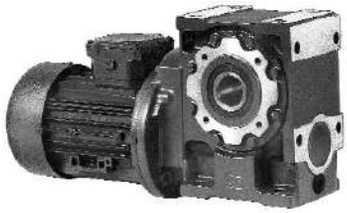
100 ... 250

R IV
with 1 cylindrical gear pair plus worm



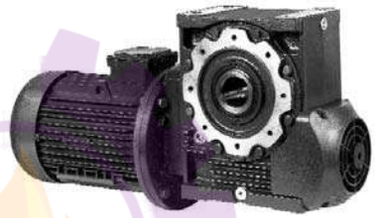
Motoriduttori a vite - Worm gearmotors

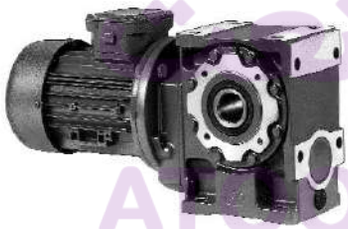
32 ... 81



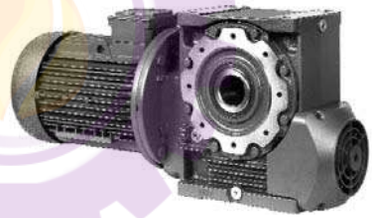
MR V
with worm gear pair

100 ... 250

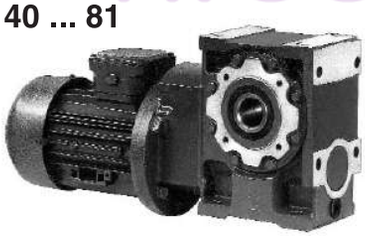




MR IV
with 1 cylindrical gear pair plus worm

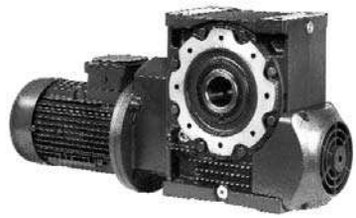


40 ... 81



MR 2IV
with 2 cylindrical gear pairs plus worm

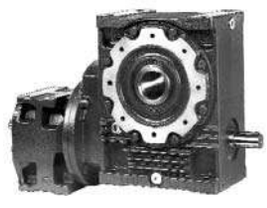
100 ... 126



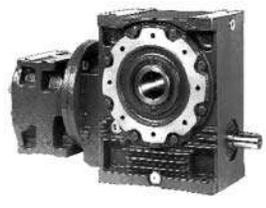
Combined gear reducer and gearmotors units

R V + R V

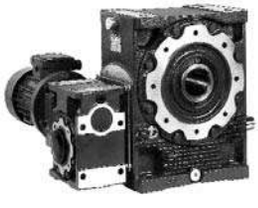
R V + R IV



MR V + R 2I, 3I

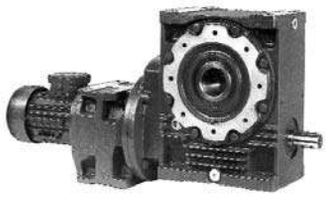


MR IV + R 2I, 3I



R V + MR V

R V + MR IV

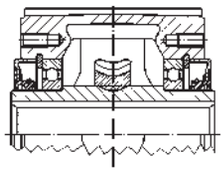


MR V + MR 2I, 3I

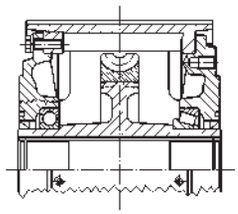
MR IV + MR 2I, 3I

Gear reducers and gearmotors (worm wheel)

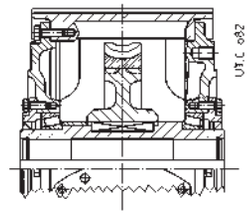
32 ... 50



63 ... 160 161

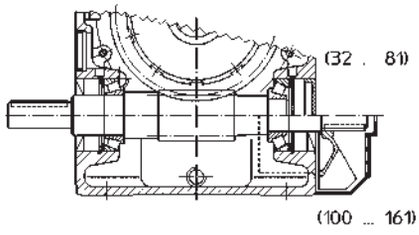


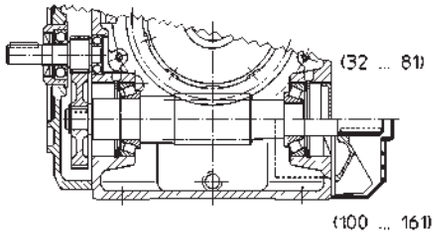
200, 250



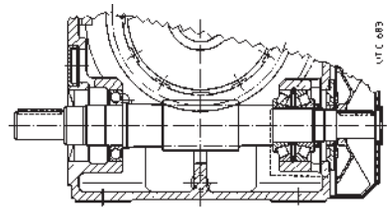
Gear reducers (worm)

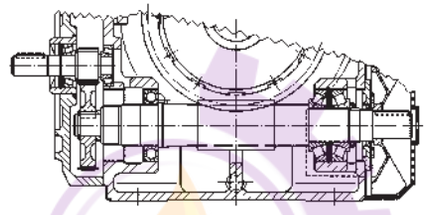
32* ... 161





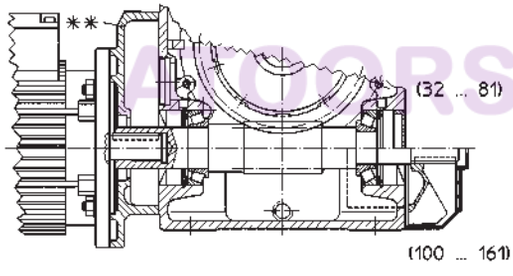
200, 250

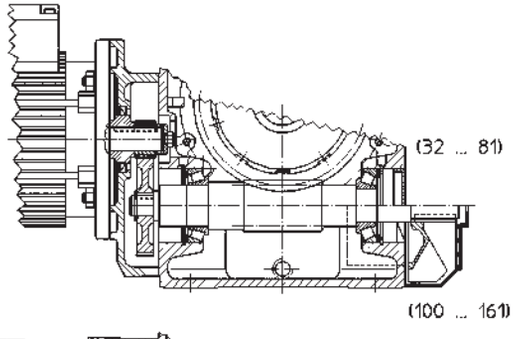


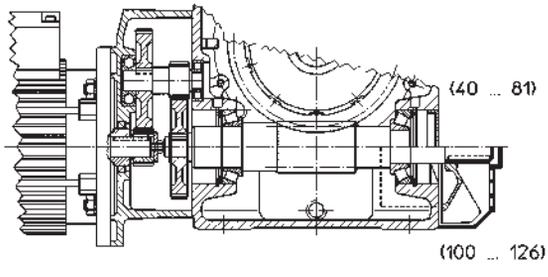


Gearmotors (worm)

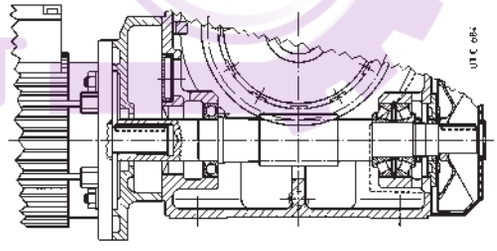
32* ... 161

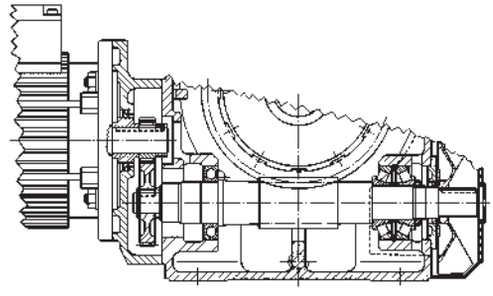






200, 250





* Size **32**: double row angular contact ball bearing plus ball bearing.
** For MR V 32, 40 with motor size 63 and 71, MR V 50 with motor size 71 and 80, MR V 63 ... 81 with motor 80 and 90 motor flange is usually integral with casing.

2 - Specifications

Universal mounting having **feet integral with casing** on 3 faces (sizes 32 .. 81) or on 2 faces (sizes 100 ... 250) and **B14 flange** on 2 faces. Design and strength of the casing permit **interesting shaft mounting solutions**

Thickened size and performance gradation (some sequential sizes are obtained with the same casing and many components in common)

High, reliable and tested performances (Ni bronze); optimization of worm gear pair performances (ZI involute profile and adequately conjugate worm wheel profile)

Compactness, standardized dimensions and compliance with standards

IEC standardized motor

Rigid and precise cast iron monolithic casing

Generous internal space between train of gears and casing allowing:

— high oil capacity;
— lower oil pollution;
— greater duration of worm wheel and worm bearings;
— lower running temperature.

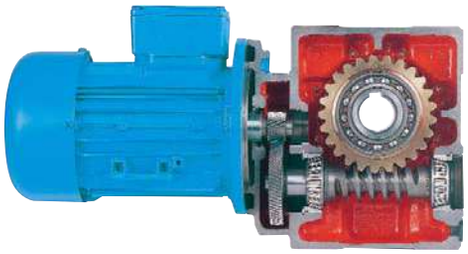
Possibility of fitting particularly powerful motors and transmitting high nominal and maximum torques

Improved and up-graded modular construction both for component parts and assembled product which ensures manufacturing and product management flexibility

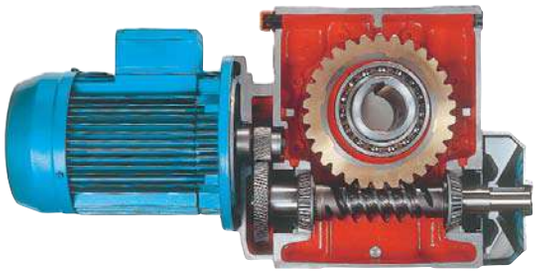
High manufacturing quality standard

Possibility of obtaining multiple drives and at synchronous speed

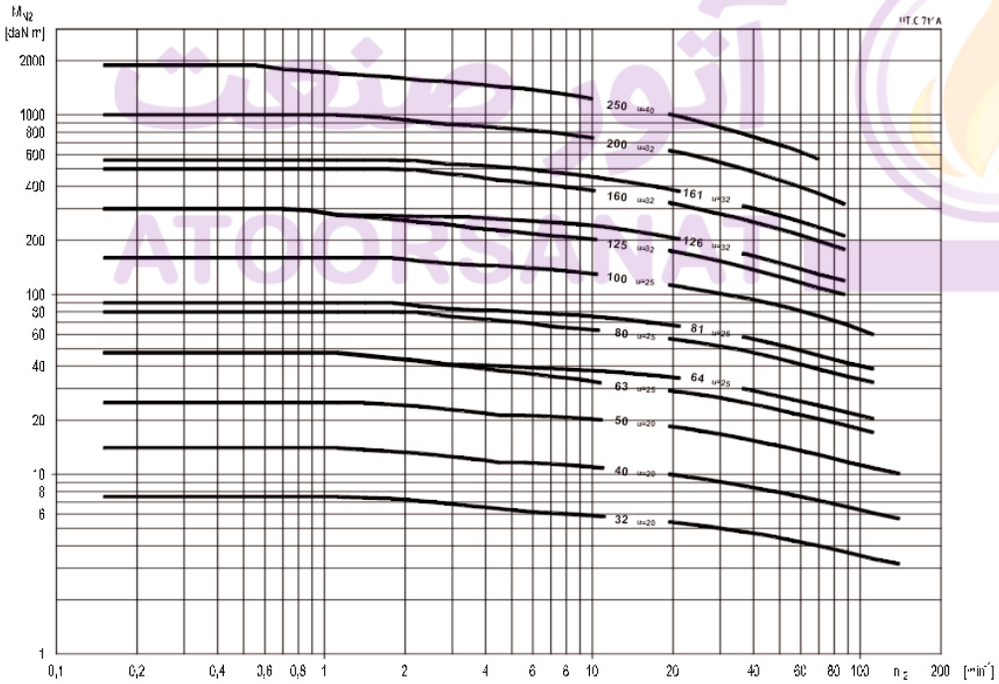
Wide design and acccessory availability: shaft-mounting arrangements, mixed keying systems with key and locking elements (rings for sizes 32 ... 50, bush for sizes 63 ... 250), **square flanges for servomotors** and hub clamp, **reduced backlash**, etc.



32 ... 81



100 ... 250



Reduced maintenance

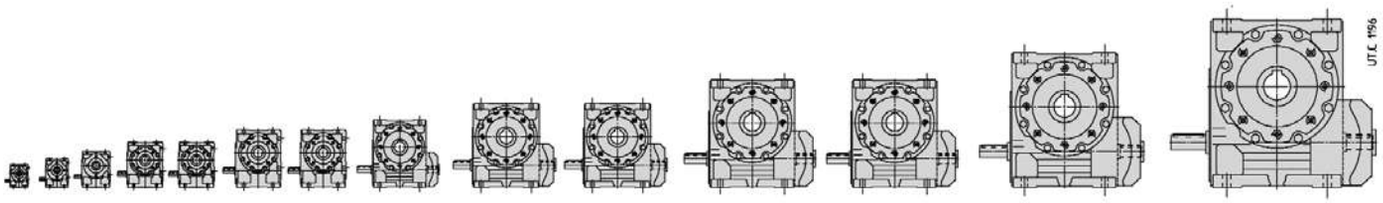
A combination of modern concepts, analytical calculations carried out on **each single part**, use of the very latest machine tools, plus systematic checks on materials, assembling and workmanship, gives this series of gear reducers **high efficiency**, running **precision**, **regular** motion and **noiselessness**, **constant** performances, **life and reliability**, strength and overload withstanding and suitability for **heaviest applications**, wide size and ratio range, excellent service - **the advantages typically associated with high quality worm gear reducers produced in large series.**

a - Gear reducer

Structural features

Main specifications are:

— **universal mounting** having **feet integral with casing** (lower, upper feet and vertical on the face opposite to motor for sizes 32 ... 81; lower and upper feet for sizes 100 ... 250) and **B14 flange** (integral with casing for sizes 32 ... 50) on 2 faces of hollow low speed shaft output. **B5 flange** with spigot «recess» which can be mounted onto B14 flanges (see chap. 16). Design and strength of the casing permit **interesting shaft mounting solutions**;



1)	32	40	50	63	64	80	81	100	125	126	160	161	200	250
H	2.8	3.23	3.94	4.92		5.91		7.09	8.86		11.02		13.19	16.14
H_0	1.89	2.2	2.64	3.15		3.94		4.92	5.91		7.09		8.86	11.02
D	0.748	0.945	1.102	1.26		1.496	1.575	1.89	2.362		2.576	2.953	3.543	4.331
M_{N2}*	355	630	1132	1950	2375	3730	4425	7345	11770	14000	21800	25700	50000	71000
$M_{2\ Size}$	670	1280	2212	4206		7080	7975	14160	26500		45000	50000	87500	165000
F_{r2}	400	560	800	1180		1800		2800	4000		6000	6700	10000	14000

* concerning n_1 = 1 800 rpm and transmission ratio stated in the scheme.
1) H, H_0 shaft height; D Ø low speed shaft end [in]: M_{N2}, $M_{2\ Size}$ torque [lb in]; F_{r2} radial load [lb].

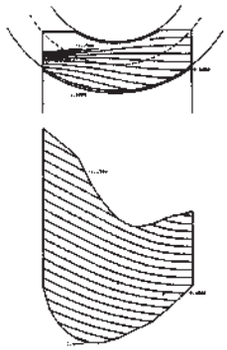
— tickened size (10 sizes with 4 size pairs with final centre distance 32 ... 250) and performance gradation; the size pairs are obtained with the same casing and with many components in common;
— gear reducer structure sized so as to accept particularly powerful motors — both MR V and MR IV — and to permit the transmission of high nominal and maximum torques at low output speeds, this being the particular advantage of worm gear pairs;
— gearmotor sizes 40 ... 126 with **2** cylindrical coaxial gear pair **first stage** in order to obtain high — **reversible** and irreversible — transmission ratios with standardized motor (63 ... 112) in a compact and economy way;
— normally, gearmotors MR V sizes 32, 40 (with motor sizes 63 and 71) 50 (with motor sizes 71 and 80) and 63 ... 81 (with motor sizes 80 and 90) have motor flange **integral** with the casing;
— hollow low speed shaft with keyway, and (sizes 63 ... 250) with circlip groove for removal purposes: in spheroidal cast iron (grey cast iron for sizes 32 and 40) integral with wormwheel (sizes 32 ... 161) or steel (sizes 200 and 250); standard (left or right extension) or double extension low speed shaft (see ch. 16).
— gear reducers: input face with machined surface (R V) or flange (R IV) and with fixing holes: wormshaft end with key, and reduced wormshaft end with circlip groove (the same as for R IV, MR IV, MR 2IV, MR V 160 ... 250 with coupling);
— gearmotors: **IEC standardized motor directly** keyed into the worm (MR V), for motor sizes 200 ... 250 **patented** keying system to obtain easier installing and removing and avoid fretting corrosion; standardized motor with pinion directly mounted onto the shaft end (MR IV, MR 2IV);
— **fan cooling** (sizes 100 ... 250); use of **double extension worm-shaft** simply obtained by removing the fan cowl centre disc; for MR V 81 with motor 100 and 112, fan incorporated in motor mounting flange;
— bearings on worm: double row angular contact ball bearing plus ball bearing (size 32); face-to-face taper roller bearings (sizes 40 ... 161); paired back-to-back taper roller bearings plus one ball bearing (sizes 200 and 250);
— bearings on wormwheel: ball bearings (sizes 32 ... 160); taper roller bearings (sizes 161 ... 250);
— 200 UNI ISO 185 **cast iron monolithic casing** with transverse stiffening ribs, and high oil capacity;
— oil bath lubrication with **synthetic oil** (ch. 15) for **«long-life»** lubrication: units provided with one plug (sizes 32 ... 64) or two plugs (sizes 80 and 81) supplied **filled with oil**; with filler plug with **valve**, drain plug and level plug (sizes 100 ... 250) supplied **without oil**; sealed;
— paint: external coating in epoxy powder paint (sizes 32 ... 81) or in synthetic paint (sizes 100 ... 250) appropriate for resistance to normal industrial environments and suitable for the application of further coats of synthetic paint; colour blue RAL 5010 DIN 1843; internal protection in epoxy powder paint (sizes 32 ... 81) or in epoxy resin paint (sizes 100 ... 250) appropriate for resistance to synthetic oils;
— possibility of obtaining combined gear reducer and gearmotor units providing high transmission ratios with different train of gears depending on overall dimension, efficiency, and final output speed requirements.

Train of gears:

— worm gear pair; 1 cylindrical gear pair plus worm; with 2 cylindrical gear pairs plus worm gear pair (gearmotor only);
— worm gear pairs, with **whole-number** transmission ratios (i = 10 ... 63) **identical** for the different sizes; i = **7** for MR V 32 ... 81;
— 10 sizes having 4 sizes pairs (standard and strengthened) with final reduction centre distance to R 10 series (32 ... 250) for a total of **14 sizes**;
— nominal transmission ratios to R 10 series (10 ... 315; up to 16 000 for combined units);
— casehardened and hardened cylindrical worm in 16 CrNi4 or 20 MnCr5 UNI 7846-78 steel (depending on size) with ground and **superfinished involute** profile **(ZI)**;
— wormwheel with profile especially conjugate to the worm through hob optimization, with hub in spheroidal or grey cast iron (depending on size) and **Ni bronze** CuSn12Ni2-B (EN1982-98) gear rim with high pureness and controlled phosphor contents;
— casehardened and hardened cylindrical gear pair in 16CrNi4 UNI 7846-78 steel with ground profile and helical toothing;
— train of gear load capacity calculated for breakage and wear; thermal capacity verified.

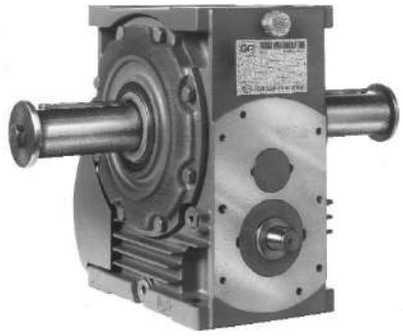
Specific standards:

— nominal transmission ratios and main dimensions according to standard numbers ISO 3-73;
— basic rack to, ISO/R 1122/2-69;
— shaft heights to ISO 496-73;
— fixing flanges B14 and B5 (the latter with spigot «recess») taken from IEC 72.2;
— medium series fixing holes to ISO/R 273;
— cylindrical shaft ends (long or short) to ISO/R775/88 with tapped butt-end hole to DIN 332 BI. 2-70, NF E 22.056 excluding d-D diameter ratio;
— parallel keys to ISO/R 773-69 except for specific cases of motor-to-gear reducer coupling where key height is reduced;
— mounting positions derived from IEC 34;7;
— worm gear pair load capacity and efficiency to **BS 721-83** integrated with ISO/CD 14521.



Lines of contact and area of action determined by computer to check on each individual gear pair design.

Fan cowl centre disc removed so as to utilize double extension wormshaft.



Gear reducer design UO2B: reduced wormshaft end (also suitable for R IV, MR IV, MR 2IV, MR V 160 ... 250 with coupling). Double extension low speed shaft.

b - Electric motor

Standard design:

- **IEC standardized** motor;
- asynchronous three-phase, totally-enclosed, externally ventilated, with cage rotor;
- single polarity, frequency 50 Hz, voltage Δ 230 V Y 400 V ± 10%[1] up to size 132, Δ 400 V ± 10% from size 160 upwards;
- IP 55 protection, insulation class F, temperature rise class B[1];
- rated power delivered on continuous duty (S1) and at standard voltage and frequency; maximum ambient temperature 104 °F (40 °C), altitude 3 200 ft: consult us if higher;
- capacity to withstand one or more overloads up to 1,6 times the nominal load for a maximum total period of 2 min per single hour;
- starting torque with direct on-line start at least 1,6 times the nominal (usually is higher);
- mounting position B5 and derivates as shown in the following table.
- **suitable for the running with inverter** (generous electromagnetic sizing, low-loss electrical stamping, phase separators, etc.)
- design available for every application need: flywheel, independent cooling fan, independent cooling fan and encoder, etc.

For other specifications and details see **specific literature**.

1) Max and min limits of motor supply; temperature rise class F for some motors with power or power-to-size correspondence not according to standard and motors 200 LR 6, 200 L 6.

Motor size	Main coupling dimensions UNEL 13117-71 (BI 1.A-65, IEC 72.2)	
	Shaft end Ø D × E	Flange Ø P B5
63, 71 B5R[1]	0,433 × 0,91	5,51
71, 80 B5R[1]	0,551 × 1,18	6,3
80, 90 B5R	0,748 × 1,57	7,87
90, 100 B5R[1], **112M B5R**[1]	0,945 × 1,97	7,87
100, 112, 132M B5R[1]	1,102 × 2,36	9,84
132, 160 B5R	1,496 × 3,15	11,81
160	1,654 × 4,33	13,78
180, 200 B5R	1,89 × 4,33	13,78
200	2,165 × 4,33	15,75
225, 250 B5R	2,362 × 5,51	17,72

1) Motor length **Y** and overall dimension **Y**$_1$ (ch. 10 and 12) increase of 0,55 in for sizes 71, 0,71 in for size 80, 0,87 in for sizes 100 and 112, 1,14 in for sizes 132.

Brake motor (prefix to designation: **F0**):

- **IEC standardized** motor having the same specifications as normal motor;
- particularly strong construction to withstand braking stresses; **maximum noiselessness**;
- spring-loaded **d.c.** electromagnetic brake feeding from the terminal box; brake can also be fed independently direct from the line;
- braking torque **proportionate** to motor torque (normally $M_f \approx 2\ M_N$) adjustable by adding or removing couples of springs;
- high frequency of starting enabled;
- rapid, precise stopping;
- hand lever for manual release with automatic return; removable lever rod.

For other specifications and details see **specific literature**.

Frequency of starting z

As a general rule, the maximum permissible frequency of starting z for direct on-line start (maximum starting time 0,5 ÷ 1 s) is 63 starts/h up to size 90, 32 starts/h for sizes 100 ... 132 and 16 starts/h for sizes 160 ... 250 (star-delta starting is advisable for sizes 160 .. 250).

Brake motors can withstand a starting frequency double that of normal motors as described previously.

A greater frequency of starting z is often required for brake motors. In this case it is necessary to verify that:

$$z \leq z_0 \cdot \frac{J_0}{J_0 + J} \cdot \left[1 - \left(\frac{P}{P_1}\right)^2 \cdot 0{,}6\right]$$

where:

z_0, J_0, P_1 are shown in the following table;

J is the external moment of inertia (of mass) in lb ft^2, (gear reducers, see ch 14 couplings, driven machine) referred to the motor shaft;

P is the power in hp absorbed by the machine referred to the motor shaft (therefore taking into account efficiency).

If during starting the motor has to overcome a resisting torque, verify the frequency of starting by means of the following formula:

$$z \leq 0{,}63 \cdot z_0 \cdot \frac{J_0}{J_0 + J} \cdot \left[1 - \left(\frac{P}{P_1}\right)^2 \cdot 0{,}6\right]$$

Short time duty (S2) and intermittent periodic duty (S3); duty cicles S4 - S10

Duty			Motor size[1] 63 ... 90	100 ... 132	160 ... 280
S2	duration of running	**90 min**	1	1	1,06
		60 min	1	1,06	1,12
		30 min	1,12	1,18	1,25
		10 min	1,25	1,25	1,32
S3	cyclic duration factor	**60%**	1,06*		
		40%	1,12*		
		25%	1,25		
		15%	1,32		
S4 ... S10			consult us		

1) For motor sizes 90LC 4, 112MC 4, 132MC 4, consult us.

* These values become **1,12,1,18** for brake motors.

2 - Specifications

Principal specifications of normal and brake motors (50 Hz)

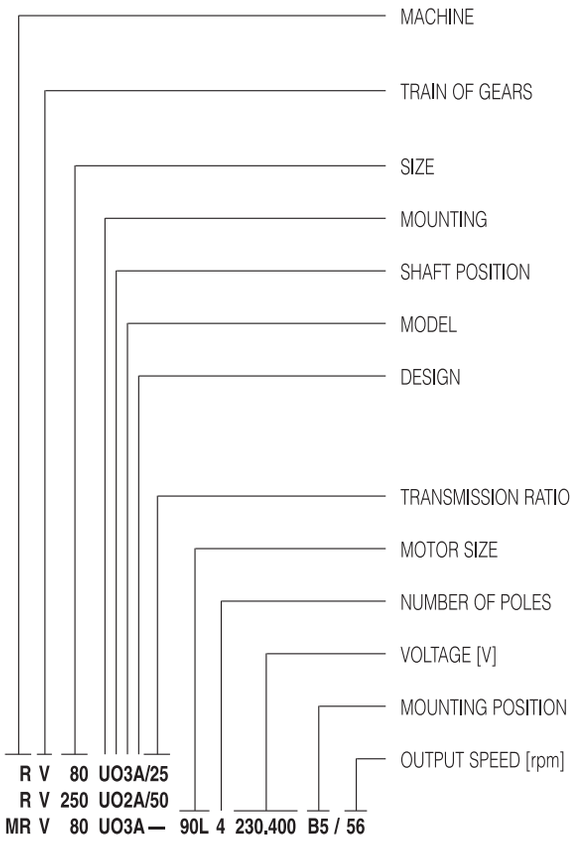
Motor size	Mf_{max} ≃ lb in 2) 4)	**2**-poles - 3 400 rpm[1] P_1 hp	J_0 ≃ lb ft² 2)	z_0 3)	$\frac{M_{start}}{M_N}$ ≃ 3)	**4**-poles - 1 700 rpm[1] P_1 hp	J_0 ≃ lb ft² 2)	z_0 3)	$\frac{M_{start}}{M_N}$ ≃ 3)	**6**-poles - 1 100 rpm[1] P_1 hp	J_0 ≃ lb ft² 2)	z_0 3)	$\frac{M_{start}}{M_N}$ 3)
63 A	30	0,25	0,0047	4 750	3,7	0,16	0,0047	12 500	3,6	0,12	0,0095	12 500	3,4
63 B	30	0,33	0,0071	4 750	3,7	0,25	0,0071	12 500	3,2	0,16	0,0095	12 500	2,9
63 C	30	0,5	0,0071	4 000	3,6	0,33	0,0071	10 000	3,1	—	—	—	—
71 A	45	0,5	0,0095	4 000	3,4	0,33	0,0119	10 000	3,2	0,25	0,0285	11 200	3,2
71 B	45	0,75	0,0119	4 000	3,4	0,5	0,0166	10 000	3,1	0,33	0,0285	11 200	2,6
71 C	65	1	0,0142	3 000	3,4	0,75	0,019	8 000	3	0,5	0,0308	10 000	2,6
80 A	90	1	0,019	3 000	3,4	0,75	0,0356	8 000	3,2	0,5	0,0451	9 500	2,6
80 B	132	1,5	0,0261	3 000	2,7	1	0,0451	7 100	3,6	0,75	0,057	9 000	2,6
80 C	132	2	0,0308	2 500	3,3	1,5	0,0593	5 000	3,4	1	0,0783	7 100	2,6
80 D	132	—	—	—	—	2	0,0664	5 000	2,7	—	—	—	—
90 S	132	2	0,0285	2 500	3,6	1,5	0,0736	5 000	3	1	0,0831	7 100	2,8
90 SB	132	2,5	0,0332	2 500	3,4	—	—	—	—	—	—	—	
90 L	236	3	0,0403	2 500	3,5	2	0,0973	4 000	3,3	1,5	0,1187	5 300	2,8
90 LB	236	—	—	—	—	2,5	0,1044	4 000	3,3	—	—	—	—
90 LG	236	4	0,0451	1 800	3,4	3	0,1139	3 150	3,4	2	0,1305	5 000	3,1
100 LR	355	—	—	—	—	3	0,121	3 150	3,2	—	—	—	—
100 L	355	4	0,0831	1 800	3,3	4	0,1637	3 150	3,5	2	0,2468	3 550	3,2
100 LB	355	5,4	0,102	1 500	4,8	—	—	—	—	2,5	0,28	3 150	3,3
112 M	670	5,4	0,1092	1 500	4,8	5,4	0,2302	2 500	3,8	3	0,337	2 800	3,5
112 MB	355	7,5	0,1281	1 400	4,7	—	—	—	—	—	—	—	—
112 L	670	10	0,1804	1 060	4,9	7,5	0,2729	1 800	3,8	4	0,401	2 500	3,6
132 S	670	7,5	0,2349	1 250	2,9	7,5	0,5126	1 800	3,6	4	0,5126	2 360	2,8
132 SB	450	10	0,28	1 120	3,6	—	—	—	—	—	—	—	—
132 MR	900	12,5	0,3251	1 060	4,5	—	—	—	—	5,4	0,7261	1 500	3,5
132 M	900	15	0,4224	850	4,5	10	0,7261	1 250	3,5	7,5	0,8875	1 320	2,8
132 L	1 320	20	0,5363	710	4,6	12,5	0,8875	1 120	4,3	10	1,2625	1 000	2,9
132 LG	1 320	—	—	—	—	15	1,0062	900	4,1	—	—	—	—
160 MR	750	15	0,9255	450	2,1	—	—	—	—	—	—	—	—
160 M	1 500	20	1,0441	425	2,4	15	1,7086	900	2	10	2,2781	1 120	2
160 L	2 240	25	1,1628	400	2,6	20	1,9934	800	2,3	15	2,8239	950	2,3
180 M	2 240	30	1,1153	355	2,5	25	2,3493	630	2,3	—	—	—	—
180 L	2 650	—	—	—	—	30	3,0849	500	2,4	20	3,5596	630	2,3
200 LR	3550	40	4,3901	160	2,4	—	—	—	—	25	4,5088	500	2,1
200 L	3550	50	4,7461	160	2,5	40	4,7461	400	2,4	30	5,6953	400	2,4
200 LG	—	—	—	—	—	—	—	—	—	—	—	—	—
225 S	—	—	—	—	—	50	7,5937	—	2,3	—	—	—	—
225 M	—	—	—	—	—	60	9,7294	—	2,4	40	11	—	2,4
250 M	—	—	—	—	—	75	12	—	2,3	50	14	—	2,6
280 S	—	—	—	—	—	100	21	—	2,5	60	20	—	2,4
280 M	—	—	—	—	—	120	25	—	2,7	75	25	—	2,5
315 S	—	—	—	—	—	150	27	—	2,6	100	34	—	2,3
315 M	—	—	—	—	—	180	50	—	2,5	120	61	—	2,5
315 MB	—	—	—	—	—	—	—	—	—	150	71	—	2,4
315 MC	—	—	—	—	—	220	59	—	2,5	—	—	—	—

1) Motor speed on the basis of which the gearmotor speeds n_2 have been calculated.
2) Moment of inertia values J_0, braking torque values Mf are valid for brake motor (size ≤ 200L), only.
3) For size ≤ 132, M_{start} / M_N values and no load starting frequency z_0 [start./h] values are valid for brake motor, only.
4) Motor is usually supplied with lower braking torque setting (see **specific literature**).
5) For 2 pole 4 lb in.
* Power or motor power-to-size correspondence not according to standard.

Specific standards:

— Electric Standard to NEMA - MG 1;
— Dimensional Standard to IEC 72-2 (DIN 42677);
— protection to IEC 34-5;
— mounting positions to IEC 34-7;
— sound levels to IEC 34.9
— balancing and vibration velocity (vibration under standard rating N) to IEC 34-14; motors are balanced with half key inserted into shaft extension;
— cooling to IEC 34-6: standard type IC 411 (TEFC); type IC 416 for non-standard design with axial independent cooling fan.

3 - Designation



R	gear reducer
MR	gearmotor
V	worm gear pair
IV	1 cylindrical gear pair plus worm
2IV	2 cylindrical gear pair plus worm
32 ... 250	final reduction centre distance [mm]
U	universal
O	orthogonal
3	sizes 32 ... 81
2	sizes 100 ... 250
A	standard
B	reduced wormshaft end
C	double extension wormshaft with reduced end
D	double extension wormshaft
63A ... 250M	
2 ... 6	
230.400	size ⩽ 132
400	size ⩾ 160
B5	
B5R	for some combinations (see ch. 10)

The designation is to be completed stating mounting position, through only if **different** from **B3**[1] (B3 or B8 for sizes ⩽ 64).

E.g.: R V 80 UO3A/25 **mounting position V5**;

Where brake motor is required, insert the letters **F0** before motor size.

E.g.: MR V 80 UO3A - **F0** 90L 4 230.400 B5/56

In the case of gear reducers sizes 200 and 250, mounting position B7, the designation is to be completed stating input speed n_1.

E.g.: R V 250 UO2A/50 n_1 = **560 rpm, mounting position B7**

Where motor is supplied by the Buyer, omit voltage and add **motor supplied by us**.

E.g.: MR V 80 UO3A - 90L 4 ... B5/56 **motor supplied by us**.

In the event of a gear reducer or gearmotor being required in a design **different** from those stated above, specify it in detail (ch. 16).

1) To make things easier, the designation of mounting position (see ch. 8 and 10) is referred to foot mounting only, even if gear reducers are in universal mounting (e.g.: B14 flange mounting and derivatives; B5 flange mounting and derivatives, see ch. 16).

4 - Thermal power Pt [hp]

Nominal thermal power Pt_N, indicated in red in ch. 7 and 9 is that which can be applied at the gear reducer input when operating on continuous duty at a maximum ambient temperature of 104 °F (40 °C) and air velocity ⩾ 0,38 *ft*/s, without exceeding 203 °F (95 °C) approximately oil temperature.

Thermal power Pt can be higher than the nominal Pt_N, described above, as per the following formula: $Pt = Pt_N \cdot ft$ where *ft* is the thermal factor depending on ambient temperature and type of duty as indicated in the table.

Wherever nominal thermal power Pt_N, is indicated in the catalogue it should be verified that the applied power P_1 is less than or equal to the *P*t value ($P_1 \leqslant Pt = Pt_N \cdot ft$). If $P_1 > Pt$, consider the use of special lubricant: consult us.

For B6 or B7 mounting position gear reducers and gearmotors with train of gears **V** multiply Pt_N by **0,9**.

Thermal power needs not be taken into account when maximum duration of continuous running time is 1 ÷ 3 h (from small to large gear reducer sizes) followed by rest periods long enough to restore the gear reducer to near ambient temperature (likewise 1 ÷ 3 h). In case of maximum ambient temperature above 104 °F (40 °C) or below 32 °F (0 °C) consult us.

Maximum ambient temperature °F (°C)	Duty: continuous S1	Duty: on intermittent load S3 ... S6 — Cyclic duration factor [%] for 60 min running [1]			
		60	**40**	**25**	**15**
104 **(40)**	1	1,18	1,32	1,5	1,7
86 **(30)**	1,18	1,4	1,6	1,8	2
68 **(20)**	1,32	1,6	1,8	2	2,24
50 **(10)**	1,5	1,8	2	2,24	2,5

1) $\frac{\text{Duration of running on load [min]}}{60} \cdot 100$

5 - Service factor fs

Service factor *fs* takes into account the different running conditions (nature of load, running time, frequency of starting, other considerations) which must be referred to when performing calculations of gear reducer selection and verification.

The powers and torques shown in the catalogue are nominal (i.e. valid for *fs* = 1) for gear reducers, corresponding to the *fs* indicated for gearmotors.

Details of service factor and considerations.

Given *fs* values are valid for:

— electric motor with cage rotor, direct on-line starting up to 12,5 hp, star-delta starting for higher power ratings; for direct on-line starting above 12,5 hp or for brake motors, select *fs* according to a frequency of starting double the actual frequency; for internal combustion engines multiply *fs* by 1,25 (multicylinder) or 1,5 (single-cylinder);

— maximum time on overload 15 s; on starting 3 s; if over and/or subject to heavy shock effect, consult us;

— a whole number of overload cycles (or start) **imprecisely** completed in 1, 2, 3 or 4 revolutions of low speed shaft; if **precisely** a continuous overloads should be assumed;

— **standard** level of reliability; if a **higher** degree of reliability is required (particularly difficult maintenance conditions, key importance of gear reducer to production, personnel safety, etc.) multiply *fs* by **1,25** ÷ **1,4**.

Motors having a starting torque not exceeding nominal values (star-delta starting, particular types of motor operating on direct current, and single-phase motors), and particular types of coupling between gear reducer and motor, and gear reducer and driven machine (flexible, centrifugal, fluid and safety couplings, clutches and belt drives) affect service factor favourably, allowing its reduction in certain heavy-duty applications; consult us if need be.

Service factor based: on the **nature of load** and **running time** (this value is to be multiplied by the values shown in the tables alongside).

Nature of load of the driven machine		Running time [h]				
Ref.	Description	**3 150** ⩽ 2 h/d	**6 300** 2 ÷ 4 h/d	**12 500** 4 ÷ 8 h/d	**25 000** 8 ÷ 16 h/d	**50 000** 16 ÷ 24 h/d
a	**Uniform**	0,67	0,85	1	1,25	1,6
b	**Moderate overloads** (1,6 × normal)	0,85	1,06	1,25	1,6	2
c	**Heavy overloads** (2,5 × normal)	1	1,25	1,5	1,9	2,36

Service factor based on **frequency of starting** referred to the nature of load.

Load ref.	Frequency of starting *z* [starts/h]							
	4	**8**	**16**	**32**	**63**	**125**	**250**	**500**
a	1	1,06	1,12	1,18	1,25	1,32	1,4	1,5
b	1	1	1,06	1,12	1,18	1,25	1,32	1,4
c	1	1	1	1,06	1,12	1,18	1,25	1,32

6 - Selection

a - Gear reducer

Determining the gear reducer size

— Make available all necessary data: required output power P_2 of gear reducer, speeds n_2 and n_1, running conditions (nature of load, running time, frequency of starting z, other considerations) with reference to ch. 5.
— Determine service factor fs on the basis of running conditions (ch. 5).
— Select the gear reducer size (also, the train of gears and transmission ratio i at the same time) on the basis of n_2, n_1 and of a power P_{N2} greater than or equal to $P_2 \cdot fs$ (ch. 7).
— Calculate power P_1 required at input side of gear reducer using the formula $\frac{P_2}{\eta}$, where $\eta = \frac{P_{N2}}{P_{N1}}$ is the efficiency of the gear reducer (ch. 7).

When for reasons of motor standardization, power P_1 applied at input side of gear reducer turns out to be higher than the power required (considering motor/gear reducer efficiency), it must be certain that this excess power applied will never be required, and frequency of starting z is so low as not to affect service factor (ch. 5).

Otherwise, make the selection by multiplying P_{N2} by $\frac{P_1 \text{ applied}}{P_1 \text{ required}}$.

Calculations can also be made on the basis of torque instead of power; this method is even preferable for low n_2 values.

Verifications

— Verify possible radial loads F_{r1}, F_{r2} and axial load F_{a2} by referring to instructions and values given in ch. 12 and 13.
— When the load chart is available, and/or there are overloads — due to starting on full load (mainly for high inertias and low transmission ratios), braking, shocks, irreversible or with low reversibility gear reducers in which the wormwheel becomes driving member due to the driven machine inertia, applied power higher than that required, other static or dynamic causes — verify that the maximum torque peak (ch. 14) is always less than M_{2max} (ch. 7); if it is higher or cannot be evaluated, in the above cases, install a safety device so that M_{2max} will never be exceeded.
— When nominal thermal power Pt_N is indicated in red in ch. 7, verify that $P_1 \leqslant Pt$ (ch. 4).

Designation for ordering

When ordering give the complete designation of the gear reducer as shown in ch. 3. The following information is to be given:
design and mounting position (only when different from B3, B3 or B8 for size ⩽ 64) (ch. 8); input speed n_1 for sizes 200 and 250 mounting position B7, — for the remainder, only if greater than 1 400 rpm or less than 355 rpm, accessories and non-standard designs, if any (ch. 16).

E.g.: R V 80 UO3A/25 mounting position V5
R V 250 UO2A/50 n_1 = 560 rpm, mounting position B7.

b - Gearmotor

Determining the gearmotor size

— Make available all necessary data: required output power P_2 of gearmotor, speed n_2, running conditions (nature of load, running time, frequency of starting z, other considerations) with reference to ch. 5.
— Determine service factor fs on the basis of running conditions (ch. 5).
— Select the gearmotor size on the basis of n_2, fs, P_2 (ch. 9).

When for reasons of motor standardization, power P_2 available in catalogue is much greater than that required, the gearmotor can be selected on the basis of a lower service factor ($fs \cdot \frac{P_2 \text{ required}}{P_2 \text{ available}}$) provided it is certain that this excess power available will never be required and frequency of starting z is low enough not to affect service factor (ch. 5).

Calculations can also be made on the basis of torque instead of power; this method is even preferable for low n_2 values.

Verifications

— Verify possible radial load F_{r2} and axial load F_{a2} referring to directions and values given in ch. 13.
— For the motor, verify frequency of starting z when higher than that normally permissible, referring to directions and values given in ch. 2b; this will normally be required for brake motors only.
— When a load chart is available, and/or there are overloads – due to starting on full load (especially with high inertias and low transmission ratios), braking, shocks, irreversible or with low reversibility gear reducers in which the wormwheel becomes driving member due to the driven machine inertia, other static or dynamic causes – verify that the maximum torque peak (ch. 14) is always less than M_{2max} (ch. 7); if it is higher or cannot be evaluated, in the above instances, install suitable safety devices so that M_{2max} will never be exceeded. M_{2max} value can be read off in ch. 7 against the corresponding speed n_2 and transmission ratio i of the worm gear pair.
— When nominal thermal power Pt_N is indicated in red in ch. 9, verify that $P_1 \leqslant Pt$ (ch. 4).

Designation for ordering

When ordering give the complete designation of the gearmotor as shown in ch. 3. The following information is to be given: design and mounting position of gearmotor (only if different from B3, B3 or B8 for size ⩽ 64) (ch. 10), voltage and mounting position of motor; accessories and non-standard designs, if any (ch. 16).

E.g: MR V 80 UO3A - 90L 4 230.400 B5/56 mounting position V5;
MR V 200 UO2A - F0 180M 4 400 B5/56 gearmotor with flexible coupling.

When motor is supplied by the Buyer, do not specify voltage, and complete the designation with the words: motor supplied by us.

E.g.: MR V 200 UO2A - 180M 4 ... B5/35 motor supplied by us.

The motor supplied by the Buyer must be to **UNEL standards** with mating surfaces machined under accuracy rating (UNEL 13501-69) and is to be sent **carriage and expenses paid to our factory** for fitting to the gear reducer.

c - Combined gear reducer and gearmotor units

Combined units are obtained by coupling together **normal single** gear reducers and/or gearmotors.

Determining the final gear reducer size

— Make available all necessary data relating to the output of the final gear reducer: required torque M_2 speed n_2, running conditions (nature of load, running time, frequency of starting z, other considerations) with reference to ch. 5.
— Determine service factor fs on the basis of running conditions (ch. 5) and of n_2 (see *, ** ch. 11).
— Select the final gear reducer size and the corresponding efficiency η (ch. 11, table A), on the basis of n_2 and a torque value M_{N2} greater than or equal to $M_2 \cdot fs$ (the η value shown can be taken as valid even if the final gear reducer's train of gears is type IV). For $fs < 1$ verify that $M_2 \leqslant M_{2\ Size}$.

Determining the type of combined unit

— Select the final gear reducer basic reference, and the type and size of initial gear reducer or gearmotor (ch. 11 table B), on the basis of the final gear reducer size, and of the type of combined unit selected.

When selecting the type of unit, refer to the drawings in table B bearing in mind the following considerations:

gear reducer: gives greater operational flexibility; stress deriving from starting and heavy duty can be diminished thanks to the possibility of locating couplings (flexible, centrifugal, fluid, safety or friction type), belt drives, etc. between gear reducer and motor.;

gearmotor: provides a more compact and economical solution compared to the equivalent gear reducer combined unit;

combined units **R V** + R V or MR V; **R V** + R IV or MR IV: input and output shafts can be either parallel or orthogonal, overall dimensions are kept to a minimum, especially within the plane perpendicular to the low speed shafts; these units are normally irreversible; the latter two types give higher transmission ratios than the former two types as well as higher efficiency, with the same transmission ratio;

combined units **MR V** + R 2I, 3I or MR 2I, 3I: input and output shafts are orthogonal, overall dimensions kept at minimum along the direction of the low speed shaft; high efficiency;

combined units **MR IV** + R 2I, 3I or MR 2I, 3I: the same as above but with the possibility of higher transmission ratios, and with overall dimensions of the initial gear reducer or gearmotor contained within those planes defined by the mounting feet.

6 - Selection

Selection of initial gear reducer or gearmotor

— Calculate the speed n_2 and the required power P_2 at the initial gear reducer or gearmotor output, using the following formulae:

$$n_2 \text{ initial} = n_2 \text{ final} \cdot i \text{ final}$$

$$P_2 \text{ initial} = \frac{M_2 \text{ final} \cdot n_2 \text{ final}}{955 \cdot \eta \text{ final}} \text{ [hp]}$$

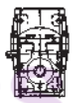
— In the case of gear reducer, establish input speed n_1 at the input of the initial gear reducer.
— Make the selection of initial gear reducer or gearmotors as shown in ch. 6, paragraph a) or b) of this catalogue (in the case of worm gear reducers and gearmotors), or of catalogue E (in the case of coaxial gear reducers and gearmotors), bearing in mind that sizes are pre-established (and cannot be changed on account of couplings being standard) and that it is not necessary to verify the service factor.

Designation for ordering

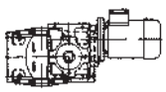
When ordering combined units, the single gear reducers or gearmotors must be designed **separately**, as indicated in ch. 6 paragraph a) or b), of this catalogue (for the final gear reducer and initial worm gear reducer or gearmotor) or of catalogue E (for initial coaxial gear reducer or gearmotor), bearing in mind the following):

— for all combined units, insert the words **coupled with** between the final gear reducer designation and that of the initial gear reducer or gearmotor;
— in the case of **R V** + R V or MR V and **R V** + R IV or MR IV, select the initial gear reducer or gearmotor stating the coupling **position** where applicable;
— when ordering **MR V** + R 2I, 3I or MR 2I, 3I and **MR IV** + R 2I, 3I or MR 2I, 3I always add the words **without motor** to the final gear reducer designation and select for the initial gear reducer or gearmotor **oversized B5 flange** design (for size 63 also add – **Ø 28**); in case of initial gear reducer or gearmotor size 32 or 40 select **FC1A** flange design.

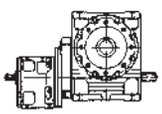
E.g: R V 100 UO2A/25
coupled with
R V 50 UO3A/32



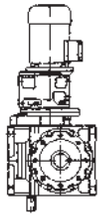
R V 100 UO2A/25 mounting position V5 coupled with
MR V 50 UO3A - 71A 4 230.400 B5/28 pos. 3



MR V 200 UO2A - 180L 4 ... B5/43,8 without motor
coupled with
R 2I 100 UC2A/29,3 oversized B5 flange



MR IV 200 UO2A - 132MB 4 ... B5/17,1 without motor, mounting position B6, double extension low speed shaft
coupled with
MR 3I 80 UC2A - 80A 4 230.400 B5/18,5
mounting position V5 oversized B5 flange



Considerations on selection

Motor power

Taking into account the efficiency of the gear reducer, and other drives — if any — motor power is to be as near as possible to the power rating required by the driven machine: accurate calculation is therefore recommended.

The power required by the machine can be calculated, seeing that it is related directly to several requirements of the work to be carried out, to friction (starting, sliding or rolling friction) and inertia (particularly when mass and/or acceleration or deceleration are considerable). It can also be determined experimentally on the basis of tests, comparison with existing applications, or readings taken with amperometers or wattmeters.

An oversized motor would involve: a greater starting current and consequently larger fuses and heavier cable; a higher running cost as power factor (cos φ) and efficiency would suffer; greater stress on the drive, causing danger of mechanical failure, drive being normally proportionate to the power rating required by the machine, not to motor power.

Only high values of ambient temperature, altitude, frequency of starting or other particular conditions require an increase in motor power.

Driving machines with high kinetic energy

When driving machines with high inertias and/or speeds, **avoid** the use of **irreversible** gear reducers or gearmotors, rather select a train of gears with higher efficiency (e.g. IV, 2IV in place of V), keeping the same transmission ratio, as stopping and braking can cause very high overloads (ch. 14).

Drives with low input speed ($n_1 < 355$ rpm)

Wherever possible select the following transmission $i = 20$ for sizes 32 ... 50, $i = 25$ for sizes 63 ... 100, $i = 32$ for sizes 125 ... 200, $i = 40$ for size 250, these being the ratios capable of transmitting highest torque (for performance figures see table A ch. 11; for sizes 32 and 40, consult us).

Input speed

For n_1 higher than 1 800 rpm, **power** and **torque** ratings relating to a given transmission ratio vary as shown in the table alongside. In this case no loads should be imposed on the high speed shaft end.

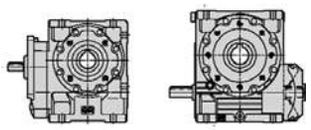
For variable n_1, the selection should be carried out on the basis of n_{1max}; but it should also be verified on the basis of $n_{1\,min}$.

When there is a belt drive between motor and gear reducer, different input speeds n_1, should be examined in order to select the most suitable unit from engineering and economy standpoints alike (our catalogue favours this method of selection as it shows a number of input speed values n_1 relating to a determined output speed n_{N2} in the same section).

n_1 rpm	P_{N2}	M_{N2}
2 800	1,4	0,71
2 240	1,25	0,8
1 800	1,12	0,9
1 400	1	1

Input speed should not be higher than 1 800 rpm, unless conditions make it necessary; better to take advantage of the transmission, and use an input speed lower than 900 rpm.

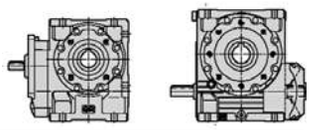
7 - Nominal powers and torques (gear reducers)



Speed n_{N2} rpm	n_1 rpm	Train of gears i 1)	P hp / M lb in 2)	Gear reducer size 32	40	50	63	64	80	81	100	125	126	160	161	200	250
180	1 800	**V** 10	P_{N1}	0,89	1,56	2,77 2,2	4,71 3,6	5,6 3,6	8,5 5,5	10,1 5,5	16	25,3	30,1 25	46,138	55 38		
			P_{N2}	0,77	1,36	2,43	4,21	5	7,7	9,1	14,5	23	27,4	42,2	50	–	–
			M_{N2}	269	475	850	1 470	1 750	2 680	3 190	5 100	8 100	9 600	14 800	17 600		
			M_{2max}	*488*	*870*	*1 540*	*2 730*	*2 960*	*4 900*	*5 300*	*9 200*	*14 500*	*15 800*	*27 700*	*31 900*		
140	1 800	**V** 13	P_{N1}	0,73	1,29	2,32	3,8 3	4,52 3	7,1 4,7	8,5 4,7	13,8	22,1	26,2	40,3	47,9 35	72 53	
			P_{N2}	0,62	1,1	2	3,32	3,96	6,3	7,5	12,3	19,9	23,7	36,6	43,5	66	–
			M_{N2}	281	500	910	1 510	1 800	2 860	3 400	5 600	9 100	10 800	16 700	19 800	30 100	
			M_{2max}	*492*	*920*	*1 650*	*2 780*	*3 020*	*5 200*	*5 600*	*10 300*	*16 500*	*18 000*	*30 900*	*33 600*	*54 700*	
112	1 800	**V** 16	P_{N1}	0,64	1,14	2	3,29 2,8	3,92 2,8	6,2 4,3	7,3 4,3	11,6	18,7	22,2	34,3	40,8 31	62 51	110 78
			P_{N2}	0,53	0,96	1,7	2,84	3,38	5,4	6,4	10,3	16,6	19,7	30,7	36,5	56	100
			M_{N2}	298	540	950	1 590	1 900	3 020	3 590	5 800	9 300	11 100	17 200	20 400	31 400	56 100
			M_{2max}	*520*	*930*	*1 630*	*2 870*	*3 110*	*5 400*	*5 800*	*10 400*	*16 200*	*17 600*	*33 000*	*35 900*	*54 300*	*97 900*
	1 120	**V** 10	P_{N1}	0,65	1,18	2,08 1,7	3,54 2,9	4,22 2,9	6,6 4,4	7,8 4,4	12,5	20	23,8 18	35,527	42,2 27		
			P_{N2}	0,55	1	1,79	3,12	3,72	5,9	7	11,2	18	21,4	32,2	38,4	–	–
			M_{N2}	311	560	1 010	1 760	2 090	3 300	3 920	6 300	10 100	12 100	18 100	21 600		
			M_{2max}	*570*	*1 020*	*1 810*	*3 270*	*3 550*	*5 900*	*6 400*	*11 300*	*17 900*	*19 500*	*32 900*	*37 800*		
90	1 800	**V** 20	P_{N1}	0,59	1,04	1,82 1,4	2,67	3,18 2,6	4,9 3,9	5,8 3,9	9,5	15,5	18,5	28,4	33,7 29	55 43	94 66
			P_{N2}	0,46	0,83	1,48	2,28	2,71	4,23	5	8,3	13,6	16,2	25,2	29,9	49	84
			M_{N2}	325	580	1 030	1 600	1 900	2 960	3 530	5 800	9 600	11 400	17 600	21 000	34 300	59 000
			M_{2max}	*570*	*1 030*	*1 870*	*2 870*	*3 120*	*5 400*	*5 900*	*10 400*	*17 200*	*18 700*	*33 000*	*35 800*	*60 200*	*105 400*
	1 120	**V** 13	P_{N1}	0,54	0,95	1,75	2,87 2,4	3,42 2,4	5,3 3,7	6,3 3,7	10,7	17,1	20,4 16	31,725	37,7 25	58 38	
			P_{N2}	0,45	0,8	1,48	2,47	2,94	4,63	5,5	9,4	15,3	18,2	28,6	34	52	–
			M_{N2}	327	580	1 080	1 810	2 150	3 390	4 030	6 900	11 200	13 300	20 900	24 900	38 300	
			M_{2max}	*580*	*1 060*	*1 920*	*3 400*	*3 700*	*6 400*	*6 900*	*12 500*	*20 100*	*21 800*	*37 800*	*41 100*	*69 100*	
71	1 800	**V** 25	P_{N1}	0,47	0,87	1,53 1,3	2,51 2	2,99 2	4,67 3,1	5,6 3,1	9,1	13	15,5	23,6	28	43	78 63
			P_{N2}	0,36	0,68	1,22	2,04	2,42	3,85	4,58	7,6	11,3	13,5	20,7	24,7	38,1	70
			M_{N2}	318	590	1 070	1 780	2 120	3 370	4 010	6 700	9 900	11 800	18 100	21 600	33 400	60 800
			M_{2max}	*560*	*1 000*	*1 830*	*3 200*	*3 480*	*5 900*	*6 400*	*11 700*	*17 300*	*18 800*	*31 600*	*34 300*	*59 300*	*104 300*
	1 120	**V** 16	P_{N1}	0,48	0,85	1,55	2,51	2,99 2,2	4,77 3,4	5,7 3,4	8,9	14,2	16,9 14	26,822	31,9 22	49,136	88 57
			P_{N2}	0,39	0,7	1,29	2,13	2,53	4,09	4,87	7,7	12,5	14,8	23,8	28,3	44,2	79
			M_{N2}	350	630	1 160	1 910	2 280	3 680	4 380	7 000	11 200	13 400	21 400	25 500	39 800	71 500
			M_{2max}	*590*	*1 060*	*1 870*	*3 370*	*3 660*	*6 400*	*6 900*	*12 300*	*19 500*	*21 200*	*38 300*	*41 600*	*67 900*	*122 500*
	710	**V** 10	P_{N1}	0,48	0,87	1,55	2,62	3,12 2,4	4,9 3,6	5,8 3,6	9,5	15,513	18,4 13	27,120	32,2 20		
			P_{N2}	0,4	0,73	1,31	2,27	2,7	4,29	5,1	8,4	13,8	16,4	24,3	29	–	–
			M_{N2}	352	650	1 160	2 020	2 400	3 810	4 530	7 400	12 300	14 600	21 600	25 700		
			M_{2max}	*640*	*1 150*	*2 060*	*3 660*	*3 970*	*6 900*	*7 500*	*13 000*	*21 200*	*23 000*	*39 200*	*45 000*		
56	1 800	**V** 32	P_{N1}	0,38	0,69	1,18	1,95	2,32 1,8	3,63 2,8	4,32 2,8	7,1	11,4	13,6	20,7	24,6 20	38,131	58
			P_{N2}	0,28	0,52	0,91	1,54	1,83	2,93	3,48	5,8	9,5	11,3	17,4	20,7	32,4	51
			M_{N2}	313	590	1 020	1 730	2 060	3 280	3 900	6 500	10 600	12 600	19 500	23 200	36 300	56 900
			M_{2max}	*530*	*990*	*1 740*	*3 110*	*3 370*	*5 900*	*6 400*	*11 500*	*19 200*	*20 800*	*36 000*	*39 100*	*66 600*	*101 200*
	1 120	**V** 20	P_{N1}	0,44	0,79	1,39 1,1	1,99	2,36	3,67	4,37 3,1	7,3	12,1	14,4	22	26,1 20	43,431	74 48
			P_{N2}	0,34	0,6	1,09	1,65	1,97	3,11	3,7	6,2	10,4	12,4	19,2	22,9	38,4	66
			M_{N2}	379	680	1 230	1 860	2 220	3 500	4 160	7 000	11 800	14 000	21 600	25 800	43 200	74 200
			M_{2max}	*630*	*1 170*	*2 060*	*3 340*	*3 630*	*6 300*	*6 900*	*11 700*	*20 400*	*22 200*	*38 000*	*41 300*	*74 000*	*126 100*
	710	**V** 13	P_{N1}	0,4	0,71	1,28	2,16	2,57 2	4,03 3	4,8 3	8,1	13,2	15,7 12	24,418	29 18	45,228	
			P_{N2}	0,32	0,58	1,06	1,82	2,16	3,43	4,09	7	11,6	13,8	21,7	25,8	40,5	–
			M_{N2}	373	670	1 220	2 100	2 500	3 960	4 720	8 000	13 400	15 900	25 100	29 800	46 700	
			M_{2max}	*650*	*1 180*	*2 150*	*3 800*	*4 120*	*7 200*	*7 800*	*13 800*	*23 400*	*25 400*	*43 700*	*46 700*	*82 300*	
45	1 800	**V** 40	P_{N1}	0,3	0,53	0,95	1,58	1,88	2,89	3,44 2,5	5,6	8,9	10,5	16,6	19,7	30	54 44
			P_{N2}	0,21	0,39	0,71	1,22	1,45	2,27	2,7	4,55	7,2	8,6	13,7	16,3	25,1	45,2
			M_{N2}	300	540	990	1 710	2 030	3 180	3 790	6 400	10 100	12 000	19 200	22 900	35 200	63 300
			M_{2max}	*510*	*940*	*1 680*	*3 040*	*3 310*	*5 800*	*6 200*	*10 700*	*18 300*	*19 900*	*35 900*	*39 000*	*64 400*	*113 400*
	1 120	**V** 25	P_{N1}	0,36	0,65	1,16	1,9 1,6	2,26 1,6	3,59 2,4	4,27 2,4	6,9	9,7	11,6	17,9	21,3	34,429	61 46
			P_{N2}	0,26	0,49	0,89	1,49	1,77	2,88	3,43	5,7	8,3	9,9	15,5	18,5	30,1	54
			M_{N2}	369	680	1 250	2 090	2 490	4 050	4 820	8 000	11 700	13 900	21 800	26 000	42 300	76 400
			M_{2max}	*630*	*1 130*	*2 070*	*3 720*	*4 040*	*6 900*	*7 500*	*13 800*	*20 400*	*22 100*	*37 400*	*40 700*	*72 500*	*128 300*
	710	**V** 16	P_{N1}	0,35	0,63	1,15	1,87	2,23 1,8	3,55 2,8	4,22 2,8	6,8	10,9	13 10	20,516	24,4 16	37,827	68 42
			P_{N2}	0,28	0,5	0,94	1,55	1,84	2,98	3,54	5,8	9,4	11,2	17,9	21,3	33,6	61
			M_{N2}	398	710	1 330	2 200	2 620	4 230	5 000	8 200	13 400	15 900	25 400	30 200	47 700	86 500
			M_{2max}	*660*	*1 210*	*2 150*	*3 820*	*4 150*	*7 300*	*8 000*	*13 900*	*22 600*	*24 600*	*44 700*	*48 600*	*79 300*	*143 300*
	450	**V** 10	P_{N1}	0,35	0,63	1,13	1,91	2,26	3,56	4,24 3,1	7	11,4 9,6	13,6 9,6	20,515	24,4 15		
			P_{N2}	0,28	0,51	0,93	1,62	1,93	3,07	3,65	6,1	10	11,9	18,2	21,6	–	–
			M_{N2}	391	720	1 300	2 280	2 700	4 300	5 100	8 500	14 000	16 700	25 400	30 300		
			M_{2max}	*720*	*1 300*	*2 340*	*4 180*	*4 540*	*7 700*	*8 400*	*14 500*	*24 400*	*26 400*	*45 200*	*51 900*		

Values in red state nominal thermal power Pt_N (ambient temperature 104°F (40 °C), continuous duty see ch. 4).
For n_1 higher than 1 400 rpm or lower than 355 rpm see ch. 6 and page 18.
1) Values given for train of gears **IV** are nominal; see page 18 for effective transmission ratios.
2) M_{2max} represents maximum torque peak the gear reducer will withstand.

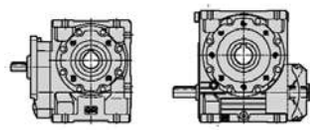
7 - Nominal powers and torques (gear reducers)



Speed n_{N2} rpm	n_1	Train of gears i 1)	P hp / M lb in 2)	Gear reducer size 32	40	50	63	64	80	81	100	125	126	160	161	200	250
35,5	1 800	**IV** 50	P_{N1}	0,33	0,56	1,02	1,63	1,94 1,7	3,11 2,5	3,71 2,5	6	9,9	11,8 8,6	18,3 14	21,7 14	33,7 23	60 36
			P_{N2}	0,24	0,43	0,8	1,31	1,56	2,53	3,01	4,94	8,3	9,9	15,5	18,4	29,1	53
			M_{N2}	427	750	1 400	2 330	2 770	4 510	5 400	8 800	14 500	17 300	27 500	32 700	51 800	93 900
			M_{2max}	*710*	*1 240*	*2 280*	*4 060*	*4 410*	*7 800*	*8 500*	*14 400*	*24 500*	*26 600*	*48 500*	*52 700*	*85 400*	*152 200*
	1 800	**V** 50	P_{N1}	0,23	0,41	0,73	1,22	1,46	2,26	2,69	4,19	7	8,3	12,8	15,3	24,4	42,6
			P_{N2}	0,16	0,29	0,52	0,91	1,08	1,72	2,05	3,28	5,6	6,7	10,4	12,4	20,1	35,5
			M_{N2}	274	500	920	1 600	1 900	3 020	3 590	5 800	9 800	11 600	18 200	21 700	35 200	62 200
			M_{2max}	*452*	*880*	*1 670*	*2 830*	*3 080*	*5 300*	*5 800*	*10 000*	*17 700*	*19 300*	*34 100*	*37 000*	*64 600*	*115 300*
	1 120	**V** 32	P_{N1}	0,28	0,51	0,9	1,47	1,75 1,4	2,76 2,2	3,28 2,2	5,5	8,8	10,5	15,9	18,9 14	30 22	45,3
			P_{N2}	0,2	0,37	0,66	1,12	1,33	2,15	2,56	4,35	7,1	8,5	13,1	15,6	25,2	39,4
			M_{N2}	359	670	1 190	2 020	2 400	3 880	4 610	7 800	12 800	15 300	23 600	28 100	45 300	71 000
			M_{2max}	*610*	*1 130*	*2 020*	*3 570*	*3 880*	*6 800*	*7 400*	*12 900*	*22 500*	*24 400*	*41 100*	*44 600*	*78 000*	*122 600*
	710	**V** 20	P_{N1}	0,33	0,58	1,05	1,46	1,74	2,74	3,26 2,6	5,5	9,1	10,9	16,8	20 15	33,4 23	58 35
			P_{N2}	0,24	0,43	0,8	1,18	1,41	2,26	2,68	4,65	7,7	9,2	14,4	17,1	29,1	51
			M_{N2}	427	770	1 410	2 100	2 500	4 000	4 760	8 300	13 800	16 400	25 600	30 400	51 600	90 100
			M_{2max}	*710*	*1 290*	*2 360*	*3 730*	*4 050*	*7 200*	*7 800*	*13 500*	*23 500*	*25 500*	*44 100*	*47 900*	*83 900*	*151 500*
	450	**V** 13	P_{N1}	0,29	0,51	0,92	1,59	1,9	2,98	3,55 2,5	6	9,7	11,5 8,6	18,5 14	22,1 14	34,7 21	
			P_{N2}	0,23	0,41	0,75	1,31	1,56	2,49	2,96	5,1	8,4	10	16,2	19,3	30,6	–
			M_{N2}	414	750	1 360	2 390	2 840	4 530	5 400	9 200	15 300	18 200	29 600	35 200	55 800	
			M_{2max}	*730*	*1 320*	*2 430*	*4 300*	*4 670*	*8 000*	*8 700*	*15 700*	*26 500*	*28 800*	*50 800*	*55 200*	*92 300*	
28	1 800	**IV** 63	P_{N1}	0,26	0,52	0,95	1,25	1,49	2,38	2,83 2,3	4,9	8,2	9,8 7,8	14,9 12	17,7 12	29,6 19	52 31
			P_{N2}	0,18	0,38	0,69	0,99	1,17	1,9	2,26	3,98	6,8	8	12,4	14,8	25,1	44,7
			M_{N2}	418	820	1 510	2 200	2 620	4 230	5 000	8 900	14 800	17 600	27 600	32 800	55 700	99 300
			M_{2max}	*710*	*1 380*	*2 500*	*3 950*	*4 290*	*7 600*	*8 200*	*14 000*	*24 700*	*26 800*	*47 700*	*51 800*	*90 000*	*163 000*
	1 800	**V** 63	P_{N1}		0,3	0,57	0,94	1,11	1,76	2,09	3,34	5,4	6,5	9,7	11,6	18,5	32,8
			P_{N2}	–	0,2	0,38	0,67	0,79	1,29	1,54	2,52	4,21	5	7,7	9,1	14,9	26,8
			M_{N2}		436	850	1 470	1 750	2 850	3 390	5 600	9 300	11 100	16 900	20 100	32 800	59 200
			M_{2max}		*660*	*1 300*	*2 540*	*2 840*	*5 200*	*5 700*	*9 800*	*16 300*	*17 800*	*31 200*	*33 900*	*59 000*	*106 400*
	1 120	**V** 40	P_{N1}	0,22	0,4	0,7	1,18	1,4	2,18	2,6 2	4,27	6,8	8,1	12,9	15,3 13	23,7 20	41,4 32
			P_{N2}	0,15	0,27	0,5	0,87	1,03	1,66	1,98	3,33	5,3	6,4	10,4	12,4	19,4	34,5
			M_{N2}	337	620	1 130	1 960	2 330	3 740	4 450	7 500	12 000	14 300	23 400	27 800	43 700	77 800
			M_{2max}	*580*	*1 050*	*1 920*	*3 470*	*3 770*	*6 400*	*7 000*	*12 300*	*21 300*	*23 100*	*40 500*	*44 000*	*77 600*	*137 800*
	710	**V** 25	P_{N1}	0,26	0,47	0,86	1,43	1,7 1,3	2,69 2	3,2 2	5,2	7,2	8,5	13,2	15,8	26,4 21	47,5 33
			P_{N2}	0,19	0,34	0,63	1,08	1,28	2,08	2,48	4,1	6	7,1	11,2	13,4	22,7	41,3
			M_{N2}	418	760	1 400	2 390	2 850	4 620	5 500	9 100	13 300	15 900	24 900	29 700	50 300	91 700
			M_{2max}	*710*	*1 280*	*2 350*	*4 190*	*4 550*	*7 800*	*8 500*	*15 500*	*23 300*	*25 300*	*43 100*	*46 800*	*83 300*	*150 800*
	450	**V** 16	P_{N1}	0,25	0,45	0,83	1,35	1,61	2,57	3,06 2,3	5	8,2	9,7 7,4	15,4 12	18,4 12	27,9 20	50 31
			P_{N2}	0,2	0,35	0,65	1,09	1,3	2,11	2,51	4,16	6,9	8,2	13,2	15,7	24,4	44,4
			M_{N2}	439	790	1 470	2 440	2 900	4 730	5 600	9 300	15 400	18 400	29 600	35 200	54 700	99 600
			M_{2max}	*710*	*1 280*	*2 410*	*4 290*	*4 650*	*8 300*	*9 000*	*15 400*	*25 600*	*27 800*	*50 900*	*55 300*	*88 700*	*158 300*
22,4	1 800	**IV** 80	P_{N1}	0,21	0,42	0,76	1,25	1,48 1,2	2,36 1,8	2,81 1,8	4,55	6,4	7,6	11,6	13,9 11	23,2 18	42 29
			P_{N2}	0,14	0,29	0,54	0,91	1,08	1,76	2,1	3,48	5,2	6,2	9,6	11,4	19,3	35,6
			M_{N2}	408	790	1 480	2 530	3 010	4 900	5 800	9 700	14 100	16 800	26 600	31 600	53 700	98 800
			M_{2max}	*680*	*1 340*	*2 480*	*4 440*	*4 820*	*8 300*	*9 000*	*16 400*	*25 000*	*27 200*	*46 400*	*50 300*	*86 500*	*156 900*
	1 120	**IV** 50	P_{N1}	0,23	0,39	0,71	1,13	1,35	2,17	2,58 2,2	4,23	7,1	8,4 6,5	13,3 10	15,8 10	23,7 17	43,2 27
			P_{N2}	0,16	0,29	0,55	0,88	1,05	1,72	2,05	3,41	5,8	6,9	11	13,1	20,2	37,1
			M_{N2}	470	820	1 530	2 530	3 010	4 940	5 900	9 800	16 200	19 200	31 500	37 500	57 600	106 000
			M_{2max}	*780*	*1 330*	*2 470*	*4 400*	*4 780*	*8 500*	*9 200*	*16 200*	*27 100*	*29 400*	*52 900*	*57 400*	*94 200*	*168 500*
	1 120	**V** 50	P_{N1}	0,16	0,3	0,54	0,9	1,07	1,68	2	3,13	5,2	6,2	9,9	11,8	19,3	34
			P_{N2}	0,1	0,2	0,37	0,64	0,76	1,23	1,47	2,36	4,03	4,79	7,8	9,3	15,5	27,9
			M_{N2}	295	560	1 040	1 790	2 130	3 470	4 130	6 600	11 300	13 500	21 900	26 100	43 700	78 500
			M_{2max}	*461*	*890*	*1 760*	*3 220*	*3 500*	*6 100*	*6 600*	*11 600*	*20 400*	*22 200*	*39 500*	*42 900*	*76 900*	*138 000*
	710	**V** 32	P_{N1}	0,21	0,37	0,67	1,09	1,3	2,06	2,45 1,8	4,1	6,7	8 6,6	12,1	14,4 10	23,2 16	33,9
			P_{N2}	0,14	0,26	0,47	0,8	0,95	1,55	1,84	3,16	5,3	6,3	9,7	11,6	19	28,9
			M_{N2}	408	730	1 350	2 270	2 700	4 400	5 200	9 000	15 000	17 800	27 600	32 800	54 000	82 200
			M_{2max}	*680*	*1 230*	*2 210*	*3 980*	*4 330*	*7 700*	*8 300*	*14 800*	*25 600*	*27 800*	*47 200*	*51 300*	*91 200*	*141 000*
	450	**V** 20	P_{N1}	0,24	0,43	0,77	1,02	1,22	1,95	2,32	4,06	6,7	7,9	12,5	14,9 11	24,8 17	44,3 26
			P_{N2}	0,17	0,31	0,57	0,81	0,97	1,57	1,87	3,32	5,5	6,6	10,5	12,5	21,2	38,2
			M_{N2}	470	860	1 590	2 270	2 710	4 410	5 200	9 300	15 500	18 400	29 500	35 100	59 400	107 100
			M_{2max}	*780*	*1 400*	*2 570*	*4 140*	*4 510*	*8 000*	*8 700*	*14 800*	*26 300*	*28 500*	*50 000*	*54 300*	*95 900*	*169 300*
18	1 800	**IV** 100	P_{N1}	0,16	0,33	0,59	0,94	1,12	1,81	2,15 1,6	3,62	6,1	7,2 5,6	10,8 8,8	12,8 8,8	20,5 14	29,5
			P_{N2}	0,1	0,22	0,4	0,66	0,79	1,3	1,55	2,67	4,58	5,4	8,3	9,9	16,3	24,5
			M_{N2}	366	770	1 410	2 360	2 810	4 650	5 500	9 500	16 000	19 100	29 700	35 300	57 800	87 000
			M_{2max}	*600*	*1 300*	*2 330*	*4 200*	*4 560*	*8 100*	*8 800*	*15 300*	*26 800*	*29 100*	*50 800*	*55 200*	*97 400*	*148 700*

Values in red state nominal thermal power Pt_N (ambient temperature 104°F (40 °C), continuous duty see ch. 4).
For n_1 higher than 1 400 rpm or lower than 355 rpm see ch. 6 and page 18.
1) Values given for train of gears **IV** are nominal; see page 18 for effective transmission ratios.
2) M_{2max} represents maximum torque peak the gear reducer will withstand.

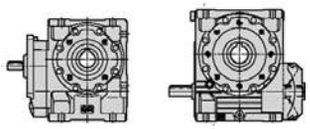
7 - Nominal powers and torques (gear reducers)



Speed n_{N2} rpm	n_1 rpm	Train of gears i 1)	P [hp] / M [lb in] 2)	Gear reducer size 32	40	50	63	64	80	81	100	125	126	160	161	200	250
18	1 120	**IV** 63	P_{N1}	0,19	0,37	0,67	0,88	1,02	1,63	1,94	3,44	5,8	6,9	10,7	12,8 9,2	21,4 15	38,5 23
			P_{N2}	0,13	0,26	0,48	0,68	0,78	1,27	1,51	2,73	4,62	5,5	8,7	10,4	17,7	32,2
			M_{N2}	459	900	1 670	2 420	2 800	4 560	5 400	9 800	16 200	19 300	31 200	37 100	63 100	115 100
			M_{2max}	*760*	*1 460*	*2 700*	*4 170*	*4 670*	*8 200*	*8 900*	*15 600*	*27 100*	*29 400*	*53 000*	*57 600*	*99 000*	*179 800*
	1 120	**V** 63	P_{N1}		0,2	0,38	0,67	0,78	1,27	1,52	2,45	3,99	4,75	7,2	8,6	14,1	25,2
			P_{N2}	–	0,13	0,25	0,45	0,53	0,89	1,06	1,77	2,97	3,53	5,5	6,6	11	20,2
			M_{N2}		446	870	1 600	1 870	3 160	3 760	6 300	10 500	12 500	19 600	23 300	39 000	71 500
			M_{2max}		*670*	*1 330*	*2 580*	*2 890*	*5 300*	*5 900*	*10 400*	*19 300*	*20 900*	*36 000*	*39 100*	*69 800*	*126 700*
	710	**V** 40	P_{N1}	0,16	0,29	0,51	0,86	1,02	1,63	1,94	3,17	5,1	6,1	9,8	11,7 9,4	18 15	31,9 23
			P_{N2}	0,1	0,19	0,35	0,61	0,72	1,18	1,41	2,37	3,9	4,65	7,7	9,1	14,4	25,9
			M_{N2}	366	670	1 230	2 160	2 570	4 200	5 000	8 400	13 900	16 500	27 300	32 400	51 200	92 000
			M_{2max}	*600*	*1 160*	*2 090*	*3 820*	*4 150*	*7 400*	*8 000*	*13 900*	*24 100*	*26 200*	*46 200*	*50 200*	*88 800*	*162 000*
	450	**V** 25	P_{N1}	0,19	0,34	0,62	1,03	1,22	1,96	2,33 1,7	3,81	5,2	6,2	9,6	11,4	19,1 16	34,9 25
			P_{N2}	0,13	0,23	0,44	0,75	0,89	1,46	1,74	2,92	4,24	5	8	9,5	16	29,8
			M_{N2}	459	820	1 540	2 630	3 130	5 100	6 100	10 200	14 900	17 700	27 900	33 200	56 100	104 300
			M_{2max}	*760*	*1 410*	*2 540*	*4 670*	*5 100*	*8 800*	*9 500*	*17 400*	*26 400*	*28 700*	*48 400*	*52 600*	*91 900*	*167 100*
14	1 800	**IV** 125	P_{N1}	0,12	0,25	0,45	0,75	0,89	1,4	1,67	2,76	4,64	5,5	8,8	10,4 8	16,2 12	28,5 20
			P_{N2}	0,07	0,16	0,29	0,51	0,6	0,98	1,16	1,98	3,38	4,02	6,6	7,9	12,4	22,4
			M_{N2}	312	690	1 270	2 260	2 690	4 360	5 200	8 800	14 800	17 600	29 400	35 000	55 300	99 600
			M_{2max}	*467*	*1 180*	*2 200*	*4 020*	*4 360*	*7 600*	*8 200*	*14 400*	*25 200*	*27 400*	*49 500*	*53 800*	*94 400*	*168 000*
	1 120	**IV** 80	P_{N1}	0,15	0,29	0,53	0,86	1,02	1,66	1,98 1,5	3,28	4,52	5,4	8,1	9,7	16,1 13	29,6 21
			P_{N2}	0,1	0,19	0,36	0,6	0,72	1,2	1,42	2,42	3,57	4,25	6,5	7,7	13,1	24,5
			M_{N2}	450	840	1 600	2 700	3 220	5 400	6 400	10 900	15 700	18 600	29 000	34 600	58 600	109 400
			M_{2max}	*720*	*1 430*	*2 630*	*4 840*	*5 300*	*9 000*	*9 800*	*17 800*	*26 700*	*29 500*	*51 000*	*55 400*	*95 900*	*176 700*
	710	**IV** 50	P_{N1}	0,16	0,26	0,49	0,8	0,91	1,5	1,79	2,98	4,93	5,9	9,5 8	11,4 8	16,6 13	30,4 21
			P_{N2}	0,11	0,19	0,37	0,61	0,7	1,17	1,39	2,34	3,95	4,7	7,8	9,2	13,9	25,7
			M_{N2}	500	860	1 620	2 760	3 150	5 300	6 300	10 600	17 500	20 800	34 900	41 600	62 600	115 800
			M_{2max}	*840*	*1 460*	*2 700*	*4 970*	*5 300*	*9 500*	*10 300*	*18 100*	*31 000*	*33 700*	*61 000*	*66 200*	*103 700*	*190 600*
	710	**V** 50	P_{N1}	0,12	0,22	0,4	0,65	0,77	1,23	1,46	2,3	3,85	4,58	7,4	8,9	14,8	26,7 21
			P_{N2}	0,07	0,14	0,26	0,44	0,52	0,86	1,02	1,66	2,85	3,39	5,7	6,7	11,6	21,3
			M_{N2}	312	610	1 140	1 940	2 310	3 800	4 530	7 400	12 700	15 100	25 100	29 900	51 400	94 600
			M_{2max}	*467*	*910*	*1 780*	*3 480*	*3 900*	*6 700*	*7 300*	*12 800*	*23 000*	*25 000*	*44 600*	*48 500*	*86 300*	*158 300*
	450	**V** 32	P_{N1}	0,15	0,27	0,48	0,78	0,93	1,5	1,78 1,5	3,04	4,97	5,9 4,8	9 7,6	10,7 7,6	17,1 12	24,4
			P_{N2}	0,1	0,18	0,33	0,55	0,65	1,08	1,29	2,24	3,76	4,48	7	8,3	13,6	20,3
			M_{N2}	450	800	1 470	2 460	2 930	4 850	5 800	10 100	16 900	20 100	31 200	37 200	61 100	91 100
			M_{2max}	*720*	*1 330*	*2 440*	*4 410*	*4 790*	*8 300*	*9 100*	*16 100*	*28 500*	*31 000*	*53 100*	*57 700*	*100 700*	*149 200*
11,2	1 800	**IV** 160	P_{N1}		0,19	0,35	0,56	0,66	1,05	1,25	2,01	3,44	4,09	6,6	7,8	13,2	23,5 18
			P_{N2}	–	0,11	0,22	0,36	0,43	0,71	0,84	1,39	2,44	2,9	4,78	5,7	9,9	18,1
			M_{N2}		620	1 190	2 020	2 400	3 930	4 680	7 800	13 300	15 900	26 600	31 600	55 000	100 400
			M_{2max}		*910*	*1 790*	*3 500*	*3 920*	*7 100*	*7 700*	*13 200*	*24 500*	*26 600*	*46 500*	*50 500*	*89 100*	*163 700*
	1 120	**IV** 100	P_{N1}	0,11	0,23	0,41	0,66	0,79	1,27	1,51	2,58	4,34	5,2 4,2	7,7 6,5	9,2 6,5	14,8 10	21
			P_{N2}	0,07	0,15	0,27	0,45	0,53	0,88	1,05	1,83	3,16	3,76	5,8	6,8	11,3	16,9
			M_{N2}	384	830	1 520	2 560	3 030	5 000	6 000	10 500	17 700	21 100	32 900	39 100	64 600	96 700
			M_{2max}	*610*	*1 370*	*2 500*	*4 600*	*5 000*	*8 700*	*9 500*	*16 900*	*30 000*	*32 500*	*56 300*	*61 100*	*106 300*	*158 600*
	710	**IV** 63	P_{N1}	0,13	0,26	0,47	0,63	0,7	1,18	1,36	2,4	4	4,76	7,6	9 7,3	15 11	27,3 18
			P_{N2}	0,09	0,17	0,32	0,47	0,53	0,89	1,03	1,85	3,13	3,73	6	7,2	12,2	22,3
			M_{N2}	492	960	1 770	2 650	2 970	5 100	5 800	10 500	17 400	20 700	34 000	40 500	68 600	125 900
			M_{2max}	*820*	*1 620*	*2 950*	*4 370*	*4 890*	*9 000*	*9 800*	*17 400*	*30 900*	*33 600*	*60 800*	*66 000*	*113 800*	*202 900*
	710	**V** 63	P_{N1}		0,14	0,26	0,49	0,54	0,93	1,09	1,8	2,9	3,45	5,3	6,4	10,6	19
			P_{N2}	–	0,08	0,16	0,31	0,35	0,61	0,72	1,24	2,06	2,45	3,92	4,66	8	14,7
			M_{N2}		454	900	1 740	1 950	3 430	4 030	6 900	11 500	13 700	21 900	26 100	44 700	82 200
			M_{2max}		*680*	*1 340*	*2 610*	*2 920*	*5 400*	*6 000*	*10 500*	*20 600*	*23 100*	*40 500*	*44 000*	*77 600*	*143 800*
	450	**V** 40	P_{N1}	0,11	0,2	0,36	0,62	0,73	1,15	1,36	2,27	3,78	4,5	7,5	8,9 6,9	13,6 11	23,8 17
			P_{N2}	0,07	0,13	0,23	0,42	0,5	0,8	0,95	1,63	2,75	3,28	5,6	6,7	10,5	18,8
			M_{N2}	384	700	1 300	2 350	2 790	4 490	5 300	9 200	15 400	18 400	31 500	37 500	58 600	105 300
			M_{2max}	*610*	*1 190*	*2 300*	*4 200*	*4 560*	*7 900*	*8 600*	*15 100*	*26 700*	*29 000*	*51 600*	*56 100*	*97 300*	*178 200*
9	1 800	**IV** 200	P_{N1}		0,12	0,23	0,42	0,47	0,81	0,92	2,19	3,61	4,3	6,6	7,9 5,8	12,6 9,1	17,7
			P_{N2}	–	0,07	0,13	0,25	0,28	0,51	0,58	1,53	2,58	3,08	4,84	5,8	9,5	14,1
			M_{N2}		464	920	1 780	2 000	3 590	4 100	11 000	18 400	21 900	34 600	41 200	67 900	101 000
			M_{2max}		*680*	*1 340*	*2 620*	*2 930*	*5 400*	*6 000*	*18 000*	*32 000*	*34 700*	*60 200*	*65 400*	*111 400*	*162 000*
	1 120	**IV** 125	P_{N1}	0,08	0,17	0,31	0,51	0,61	0,96	1,14	1,91	3,28	3,9	6,4	7,6 5,9	11,8 9,3	20,7 15
			P_{N2}	0,04	0,1	0,19	0,33	0,4	0,65	0,77	1,32	2,3	2,73	4,64	5,5	8,7	15,7
			M_{N2}	327	710	1 340	2 390	2 840	4 620	5 500	9 500	16 100	19 200	33 100	39 400	62 200	112 400
			M_{2max}	*469*	*1 190*	*2 330*	*4 290*	*4 660*	*8 300*	*9 000*	*15 800*	*28 000*	*30 400*	*54 400*	*59 100*	*102 400*	*183 400*

Values in red state nominal thermal power Pt_N (ambient temperature 104°F (40 °C), continuous duty see ch. 4).
For n_1 higher than 1 400 rpm or lower than 355 rpm see ch. 6 and page 18.
1) Values given for train of gears **IV** are nominal; see page 18 for effective transmission ratios.
2) M_{2max} represents maximum torque peak the gear reducer will withstand.

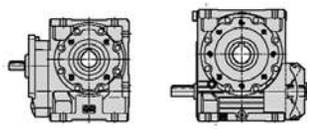
7 - Nominal powers and torques (gear reducers)



Speed n_{N2} rpm	n_1	Train of gears i 1)	P [hp] M [lb in] 2)	Gear reducer size 32	40	50	63	64	80	81	100	125	126	160	161	200	250
9	710	**IV** 80	P_{N1}	0,11	0,2	0,38	0,63	0,7	1,17	1,39	2,34	3,22	3,78	5,9	6,9	11,3	20,6 17
			P_{N2}	0,07	0,13	0,25	0,42	0,48	0,81	0,96	1,67	2,48	2,91	4,59	5,4	9	16,7
			M_{N2}	483	900	1 710	2 990	3 360	5 700	6 800	11 800	17 100	20 100	32 300	37 700	63 100	117 400
			M_{2max}	*780*	*1 580*	*2 890*	*5 400*	*5 800*	*10 000*	*10 900*	*20 300*	*28 000*	*31 300*	*56 100*	*62 900*	*108 600*	*1 98 300*
	450	**IV** 50	P_{N1}	0,11	0,18	0,33	0,56	0,61	1,08	1,23	2,07	3,48	4	6,7	7,9 6,2	11,6	20,8 17
			P_{N2}	0,07	0,13	0,24	0,42	0,46	0,82	0,93	1,59	2,73	3,13	5,3	6,3	9,5	17,3
			M_{N2}	530	900	1 700	3 010	3 260	5 900	6 600	11 300	19 100	21 900	37 700	44 600	67 400	123 200
			M_{2max}	*920*	*1 530*	*2 970*	*5 400*	*5 500*	*10 500*	*11 200*	*19 800*	*34 300*	*37 000*	*67 800*	*73 600*	*108 500*	*201 900*
	450	**V** 50	P_{N1}	0,08	0,15	0,29	0,46	0,55	0,87	1,03	1,67	2,81	3,34	5,4	6,4	11	19,5 16
			P_{N2}	0,05	0,09	0,18	0,3	0,36	0,58	0,69	1,15	1,99	2,37	3,94	4,69	8,3	15
			M_{N2}	327	630	1 230	2 100	2 490	4 050	4 820	8 100	13 900	16 600	27 600	32 800	57 800	105 300
			M_{2max}	*469*	*910*	*1 790*	*3 500*	*3 920*	*7 200*	*8 000*	*13 800*	*25 100*	*27 300*	*49 400*	*53 700*	*94 000*	*168 800*
7,1	1 800	**IV** 250	P_{N1}								1,61	2,72	3,24	5,4	6,4 5,3	10,2 8,1	17,8 13
			P_{N2}	–	–	–	–	–	–	–	1,09	1,87	2,22	3,84	4,58	7,4	13,3
			M_{N2}								9 800	16 600	19 800	34 400	40 900	66 200	118 600
			M_{2max}								*16 400*	*29 800*	*32 400*	*58 000*	*63 000*	*107 100*	*196 500*
	1 120	**IV** 160	P_{N1}		0,13	0,25	0,39	0,46	0,74	0,87	1,41	2,44	2,89	4,59	5,5	9,3	16,5 14
			P_{N2}	–	0,07	0,14	0,24	0,29	0,47	0,56	0,93	1,66	1,97	3,2	3,81	6,7	12,2
			M_{N2}		650	1 270	2 190	2 560	4 210	5 000	8 400	14 600	17 300	28 600	34 000	60 000	109 400
			M_{2max}		*910*	*1 790*	*3 510*	*3 930*	*7 200*	*8 000*	*14 100*	*26 300*	*28 500*	*50 600*	*55 000*	*96 400*	*177 600*
	710	**IV** 100	P_{N1}	0,07	0,16	0,29	0,48	0,54	0,89	1,06	1,83	3,02	3,59	5,5	6,6 5,2	10,7 8	14,7
			P_{N2}	0,04	0,1	0,18	0,31	0,35	0,6	0,71	1,25	2,12	2,53	3,99	4,74	7,9	11,6
			M_{N2}	397	870	1 620	2 800	3 190	5 400	6 400	11 300	18 800	22 400	35 900	42 800	71 000	104 500
			M_{2max}	*620*	*1 480*	*2 700*	*5 000*	*5 400*	*9 700*	*10 500*	*18 800*	*33 300*	*36 200*	*64 100*	*69 700*	*119 000*	*165 100*
	450	**IV** 63	P_{N1}	0,09	0,18	0,32	0,44	0,47	0,85	0,95	1,63	2,83	3,23	5,3	6,2	10,4	18,5 14
			P_{N2}	0,06	0,12	0,21	0,32	0,34	0,63	0,71	1,23	2,16	2,47	4,12	4,86	8,2	14,8
			M_{N2}	520	1 020	1 860	2 880	3 060	5 600	6 300	11 000	18 900	21 600	36 700	43 200	73 100	132 000
			M_{2max}	*870*	*1 730*	*3 240*	*4 560*	*5 100*	*9 400*	*10 500*	*18 400*	*34 000*	*36 600*	*66 000*	*71 700*	*126 200*	*230 500*
	450	**V** 63	P_{N1}		0,1	0,19	0,34	0,38	0,67	0,75	1,28	2,13	2,54	3,96	4,66	7,7	13,9
			P_{N2}	–	0,05	0,11	0,21	0,23	0,42	0,47	0,84	1,44	1,71	2,75	3,24	5,6	10,3
			M_{N2}		474	930	1 820	2 040	3 740	4 180	7 400	12 700	15 100	24 300	28 600	49 200	91 100
			M_{2max}		*680*	*1 340*	*2 620*	*2 930*	*5 400*	*6 000*	*10 600*	*20 700*	*23 200*	*43 500*	*48 500*	*84 300*	*156 600*
5,6	1 800	**IV** 315	P_{N1}								1,19	2,09	2,4	3,92	4,58	7,9	14
			P_{N2}	–	–	–	–	–	–	–	0,77	1,39	1,6	2,68	3,14	5,6	10,2
			M_{N2}								8 600	15 500	17 800	30 000	35 100	62 500	113 600
			M_{2max}								*14 400*	*27 900*	*30 300*	*53 900*	*58 600*	*102 800*	*185 700*
	1 120	**IV** 200	P_{N1}		0,08	0,16	0,28	0,32	0,56	0,63	1,5	2,48	2,91	4,57	5,4	8,7 7,2	12,2
			P_{N2}	–	0,04	0,09	0,16	0,18	0,34	0,38	1,01	1,7	2	3,24	3,86	6,4	9,5
			M_{N2}		482	950	1 860	2 080	3 810	4 270	11 600	19 500	22 900	37 300	44 400	73 100	108 700
			M_{2max}		*680*	*1 340*	*2 620*	*2 930*	*5 400*	*6 000*	*19 400*	*34 600*	*37 600*	*66 800*	*72 500*	*126 500*	*172 400*
	710	**IV** 125	P_{N1}	0,05	0,12	0,21	0,37	0,41	0,7	0,8	1,34	2,32	2,74	4,49	5,3	8,5	15 11
			P_{N2}	0,03	0,07	0,13	0,23	0,26	0,45	0,51	0,89	1,56	1,84	3,13	3,72	6,1	11
			M_{N2}	341	750	1 400	2 600	2 890	5 100	5 800	10 100	17 200	20 400	35 300	41 900	68 600	123 900
			M_{2max}	*481*	*1 240*	*2 430*	*4 680*	*4 920*	*9 100*	*9 800*	*17 100*	*31 000*	*33 700*	*61 600*	*66 900*	*114 100*	*205 200*
	450	**IV** 80	P_{N1}	0,07	0,14	0,25	0,44	0,48	0,83	0,95	1,62	2,29	2,58	4,12	4,74	7,9	14,1
			P_{N2}	0,04	0,09	0,16	0,29	0,31	0,55	0,63	1,12	1,72	1,93	3,14	3,62	6,1	11,2
			M_{N2}	499	960	1 790	3 250	3 490	6 200	7 100	12 500	18 700	21 100	34 900	40 200	67 900	124 100
			M_{2max}	*820*	*1 660*	*3 110*	*5 800*	*6 000*	*10 900*	*11 900*	*22 100*	*29 100*	*32 600*	*58 500*	*65 500*	*114 200*	*219 800*
4,5	1 120	**IV** 250	P_{N1}								1,11	1,9	2,21	3,66	4,36	7,1	12,3 10
			P_{N2}	–	–	–	–	–	–	–	0,72	1,25	1,45	2,5	2,97	4,94	8,9
			M_{N2}								10 400	17 900	20 800	35 900	42 700	71 000	127 500
			M_{2max}								*18 000*	*32 200*	*35 000*	*64 000*	*69 600*	*121 000*	*218 300*
	710	**IV** 160	P_{N1}		0,09	0,17	0,28	0,32	0,53	0,61	0,99	1,79	2,07	3,36	3,85	6,6	11,6
			P_{N2}	–	0,05	0,1	0,17	0,19	0,33	0,37	0,63	1,16	1,35	2,26	2,58	4,55	8,3
			M_{N2}		670	1 320	2 380	2 630	4 610	5 300	8 900	16 100	18 600	31 800	36 400	64 100	117 000
			M_{2max}		*950*	*1 860*	*3 640*	*4 080*	*7 500*	*8 400*	*14 700*	*28 800*	*31 500*	*57 200*	*62 200*	*109 300*	*197 800*
	450	**IV** 100	P_{N1}	0,05	0,11	0,2	0,33	0,37	0,63	0,73	1,27	2,14	2,47	3,9	4,63	7,4	10,4
			P_{N2}	0,03	0,06	0,12	0,21	0,23	0,41	0,47	0,84	1,45	1,67	2,71	3,21	5,3	7,9
			M_{N2}	424	900	1 680	2 980	3 270	5 800	6 700	11 900	20 300	23 400	38 500	45 700	75 300	112 800
			M_{2max}	*650*	*1 550*	*2 900*	*5 400*	*5 400*	*10 500*	*11 200*	*20 400*	*36 600*	*39 500*	*69 400*	*75 400*	*131 600*	*175 600*
3,55	1 120	**IV** 315	P_{N1}								0,82	1,46	1,67	2,81	3,23	5,4	9,6
			P_{N2}	–	–	–	–	–	–	–	0,51	0,93	1,07	1,84	2,11	3,63	6,7
			M_{N2}								9 100	16 700	19 100	33 000	38 000	65 300	120 900
			M_{2max}								*14 900*	*29 300*	*32 500*	*59 500*	*64 600*	*113 600*	*209 900*

Values in red state nominal thermal power Pt_N (ambient temperature 104°F (40 °C), continuous duty see ch. 4).
For n_1 higher than 1 400 rpm or lower than 355 rpm see ch. 6 and page 18.
1) Values given for train of gears **IV** are nominal; see page 18 for effective transmission ratios.
2) M_{2max} represents maximum torque peak the gear reducer will withstand.

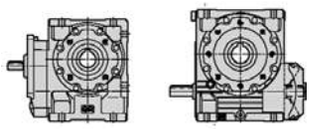
7 - Nominal powers and torques (gear reducers)



Speed n_{N2} rpm	n_1	Train of gears i 1)	P [hp] M [lb in] 2)	Gear reducer size 32	40	50	63	64	80	81	100	125	126	160	161	200	250
3,55	710	**IV** 200	P_{N1}	–	0,06	0,11	0,2	0,22	0,39	0,43	1,03	1,75	2	3,28	3,77	6,1	8,5
			P_{N2}		0,03	0,06	0,11	0,12	0,22	0,25	0,67	1,16	1,32	2,24	2,57	4,28	6,4
			M_{N2}		500	990	1 920	2 150	3 950	4 420	12 100	20 900	23 900	40 600	46 700	77 500	116 700
			M_{2max}		*710*	*1 390*	*2 710*	*3 040*	*5 600*	*6 200*	*20 900*	*37 700*	*39 900*	*73 100*	*79 000*	*136 700*	*178 300*
	450	**IV** 125	P_{N1}	0,04	0,08	0,15	0,26	0,28	0,49	0,56	0,94	1,67	1,89	3,1	3,67	6	10,6 8,9
			P_{N2}	0,02	0,05	0,08	0,16	0,17	0,31	0,34	0,6	1,08	1,22	2,08	2,46	4,08	7,4
			M_{N2}	352	800	1 470	2 810	2 990	5 500	6 100	10 700	18 800	21 300	36 900	43 700	72 600	132 300
			M_{2max}	*497*	*1 280*	*2 510*	*4 900*	*5 100*	*9 800*	*10 400*	*18 500*	*33 900*	*36 200*	*66 500*	*72 200*	*125 700*	*231 400*
2,8	710	**IV** 250	P_{N1}								0,76	1,36	1,52	2,6	2,98	4,85	8,7
			P_{N2}	–	–	–	–	–	–	–	0,48	0,86	0,96	1,71	1,96	3,27	6
			M_{N2}								10 800	19 400	21 700	38 800	44 400	74 200	136 300
			M_{2max}								*19 300*	*34 900*	*36 500*	*68 900*	*75 200*	*130 300*	*240 200*
	450	**IV** 160	P_{N1}		0,06	0,12	0,2	0,21	0,38	0,43	0,69	1,28	1,44	2,39	2,74	4,55	8,1
			P_{N2}	–	0,03	0,06	0,12	0,12	0,22	0,25	0,42	0,8	0,9	1,54	1,76	3,01	5,6
			M_{N2}		700	1 370	2 560	2 710	4 970	5 600	9 300	17 500	19 600	34 200	39 200	66 800	124 100
			M_{2max}		*980*	*1 930*	*3 770*	*4 220*	*7 700*	*8 600*	*15 200*	*29 800*	*33 300*	*61 600*	*66 700*	*117 800*	*218 000*
2,24	710	**IV** 315	P_{N1}								0,57	1,04	1,14	2,01	2,29	3,71	6,7
			P_{N2}	–	–	–	–	–	–	–	0,34	0,64	0,7	1,26	1,44	2,41	4,51
			M_{N2}								9 700	18 000	19 700	35 800	40 800	68 300	127 800
			M_{2max}								*15 400*	*30 300*	*33 500*	*63 600*	*68 500*	*123 700*	*226 100*
	450	**IV** 200	P_{N1}		0,04	0,07	0,13	0,15	0,26	0,3	0,68	1,22	1,31	2,31	2,6	4,22	5,7
			P_{N2}	–	0,02	0,04	0,07	0,08	0,15	0,16	0,43	0,79	0,85	1,53	1,72	2,86	4,22
			M_{N2}		520	1 020	1 990	2 220	4 080	4 570	12 300	22 500	24 100	43 700	49 200	81 700	120 700
			M_{2max}		*730*	*1 440*	*2 800*	*3 140*	*5 700*	*6 400*	*22 100*	*40 500*	*41 000*	*75 200*	*81 500*	*147 100*	*183 500*
1,8	450	**IV** 250	P_{N1}								0,52	0,95	1	1,81	2,03	3,34	6
			P_{N2}	–	–	–	–	–	–	–	0,32	0,59	0,62	1,15	1,29	2,16	4,03
			M_{N2}								11 300	20 800	22 100	41 200	46 200	77 300	144 100
			M_{2max}								*20 000*	*37 500*	*37 500*	*70 800*	*75 200*	*139 200*	*259 400*
1,4	450	**IV** 315	P_{N1}								0,39	0,72	0,75	1,39	1,55	2,61	4,69
			P_{N2}	–	–	–	–	–	–	–	0,23	0,43	0,45	0,85	0,94	1,64	3,03
			M_{N2}								10 200	19 100	20 000	37 800	42 300	73 200	135 600
			M_{2max}								*15 800*	*31 100*	*34 000*	*65 400*	*68 500*	*128 000*	*244 000*

Values in red state nominal thermal power Pt_N (ambient temperature 104°F (40 °C), continuous duty see ch. 4).
For n_1 higher than 1 400 rpm or lower than 355 rpm see ch. 6 and page 18.
1) Values given for train of gears **IV** are nominal; see page 18 for effective transmission ratios.
2) M_{2max} represents maximum torque peak the gear reducer will withstand.

7 - Nominal powers and torques (gear reducers)



Summary of transmission ratios *i* and torques valid for $n_1 \leqslant$ 90 rpm

M_{N2} and M_{2max} are respective nominal and peak torques valid for $n_1 \leqslant$ **90 rpm**.

R V

i	*M* lb in	Gear reducer size													
		32	**40**	**50**	**63**	**64**	**80**	**81**	**100**	**125**	**126**	**160**	**161**	**200**	**250**
10	M_{N2}	0,54	0,99	1,8	3,32	3,42	6,4	7,1	11,7	20,2	22,3	38,4	43,7	–	–
	M_{2max}	*0,97*	*1,77*	*3,25*	*6*	*6*	*11,4*	*12*	*21,1*	*36,4*	*37,8*	*69*	*79*		
13	M_{N2}	0,54	0,99	1,83	3,3	3,4	6,4	7,1	12,3	21,5	23,5	41,4	46,9	78	–
	M_{2max}	*0,97*	*1,78*	*3,3*	*5,9*	*5,9*	*11,6*	*12,1*	*22,1*	*36,3*	*39,9*	*74*	*80*	*136*	
16	M_{N2}	0,52	0,95	1,76	3,24	3,32	6,2	6,9	11,8	20,7	22,6	41,1	46,6	73	132
	M_{2max}	*0,82*	*1,59*	*3,13*	*5,8*	*5,8*	*11,2*	*11,7*	*21,3*	*37,2*	*38,4*	*74*	*79*	*113*	*210*
20	M_{N2}	0,57[1]	1,03[1]	1,89[1]	3,09	3,13	5,9	6,5	11,2	20,5	22,3	39,9	45,1	76	138
	M_{2max}	*1,02*	*1,85*	*3,4*	*4,73*	*5,3*	*9,7*	*10,9*	*19,1*	*36,8*	*37,9*	*72*	*77*	*138*	*249*
25	M_{N2}	0,55	1	1,84	3,49[1]	3,6[1]	6,5[1]	7,3[1]	12,9[1]	19,9	21,4	37,8	42,7	72	133
	M_{2max}	*0,96*	*1,78*	*3,31*	*6,3*	*6,3*	*11,7*	*12,4*	*23,3*	*30,1*	*33,8*	*60*	*68*	*118*	*231*
32	M_{N2}	0,52	0,94	1,74	3,2	3,35	6,2	6,9	12,3	21,9[1]	24[1]	41,8[1]	47,4[1]	79[1]	119
	M_{2max}	*0,87*	*1,65*	*3,09*	*5,8*	*5,8*	*11,1*	*11,6*	*21,4*	*39,4*	*40,8*	*74*	*81*	*144*	*181*
40	M_{N2}	0,47	0,87	1,59	2,97	3,04	5,8	6,4	11	20,3	22	39,9	45,1	76	138[1]
	M_{2max}	*0,68*	*1,32*	*2,59*	*5,1*	*5,2*	*10,4*	*10,5*	*19,7*	*36,5*	*37,4*	*70*	*75*	*136*	*249*
50	M_{N2}	0,37	0,72	1,41	2,66	2,76	5,3	5,9	9,9	18,5	19,8	36,8	41,5	70	131
	M_{2max}	*0,52*	*1,01*	*1,98*	*3,87*	*4,34*	*7,9*	*8,9*	*15,6*	*30,7*	*33,7*	*64*	*69*	*126*	*236*
63	M_{N2}	–	0,53	1,05	2,04	2,27	4,19	4,69	8,2	16,1	17,8	33,5	37,7	63	120
	M_{2max}		*0,75*	*1,48*	*2,88*	*3,22*	*5,9*	*6,6*	*11,6*	*22,7*	*25,5*	*47,8*	*53*	*93*	*182*

R IV

i_N	Gear reducer size				*M*	Gear reducer size										
	32	**40, 50, 125, 126**	**63, 64, 80, 81, 100**	**160, 161, 200, 250**												
	i 2)	*i* 2)	*i* 2)	*i* 2)	lb in	**32**	**40**	**50**	**63, 64**	**80**	**81**	**100**	**125, 126**	**160**	**161**	**200**	**250**
50	51,8 2,59	49,9 3,12[3]	50,9 3,18	50,8 3,17	M_{N2}	0,65	1,15	2,13	3,92	6,9	7,4	12,7	24,1	43,1	47,8	73	132
					M_{2max}	*1,02*	*1,73*	*3,33*	*6,2*	*11,8*	*12,2*	*22,1*	*40,3*	*78*	*84*	*122*	*213*
63	64,8	62,4	63,6	63,5	M_{N2}	0,63	1,22	2,21	3,63	6,7	7,6	13,4	24,6	43,1	47,8	82	152
					M_{2max}	*0,96*	*1,89*	*3,56*	*5,7*	*10,5*	*11,4*	*20,6*	*40,1*	*78*	*81*	*141*	*253*
80	82,9	78	79,5	79,3	M_{N2}	0,59	1,18	2,16	4,2	7,1	8	14,2	23	43,1	47,8	85	154
					M_{2max}	*0,88*	*1,78*	*3,36*	*6,5*	*11,8*	*12,5*	*23,7*	*34*	*65*	*73*	*127*	*248*
100	104	99,8	102	102	M_{N2}	0,51	1,11	2,05	3,83	6,9	7,8	13,7	26,1[1]	44,3	49,6	89	127
					M_{2max}	*0,72*	*1,65*	*3,09*	*5,8*	*11,3*	*11,6*	*22,3*	*41,4*	*75*	*81*	*154*	*197*
125	130	125	127	127	M_{N2}	0,39	1	1,88	3,59	6,6	7,5	12,9	24,2	43,1	47,8	86	159[1]
					M_{2max}	*0,55*	*1,41*	*2,76*	*5,3*	*10,5*	*11*	*20*	*37,9*	*73*	*75*	*141*	*269*
160	–	156	159	159	M_{N2}	–	0,76	1,49	2,92	6	6,7	11,8	22,3	43,1	47,8	82	155
					M_{2max}		*1,07*	*2,11*	*4,34*	*8,4*	*9,4*	*16,6*	*34,1*	*69*	*69*	*130*	*245*
200	–	197	200	–	M_{N2}	–	0,56	1,11	2,34	4,43	4,96	13,8	26,6	44,3	49,6	89	131
					M_{2max}		*0,79*	*1,56*	*3,41*	*6,2*	*7*	*22,3*	*41,4*	*75*	*81*	*154*	*203*
200	–	203 6,36	204 6,38	204 6,38	M_{N2}	–	0,56	1,11	2,34	4,43	4,96	13,8	26,6	44,3	49,6	89	131
					M_{2max}		*0,79*	*1,56*	*3,41*	*6,2*	*7*	*22,3*	*41,4*	*75*	*81*	*154*	*203*
250	–	254	255	255	M_{N2}	–	–	–	–	–	–	13,3	25,6	43,1	47,8	86	168
					M_{2max}							*20*	*37,9*	*73*	*75*	*141*	*277*
315	–	318	319	319	M_{N2}	–	–	–	–	–	–	12,1	23,7	43,1	47,8	86	164
					M_{2max}							*17,1*	*34,1*	*69*	*69*	*130*	*245*

1) For these transmission ratios (which will transmit higher torques at lower speeds) torque increases further as n_1 decreases, as stated in table A ch. 11; for sizes 32 and 40 consult us.
2) Gear ratio of input cylindrical gear pair.
3) For sizes 125 and 126 it is equal to 3,13.

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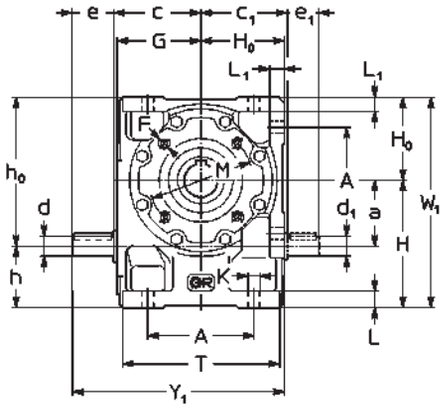
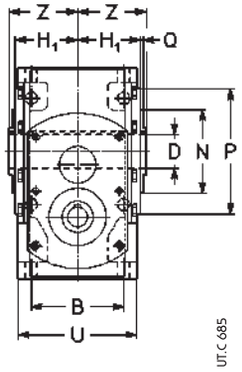
8 - Designs, dimensions, mounting positions and oil quantities

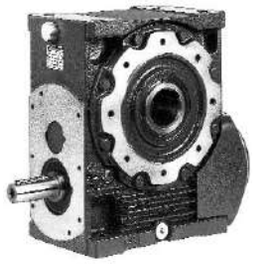


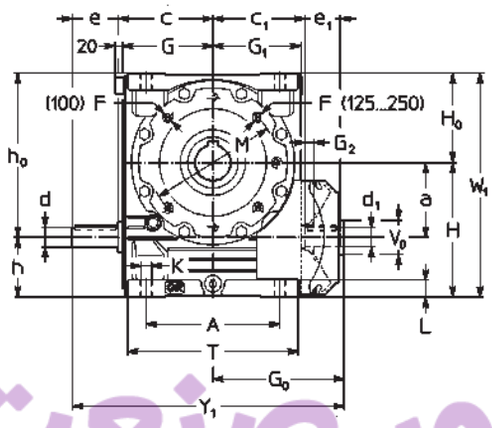


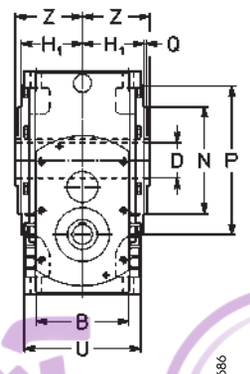
R V 32 ... 81

Design

standard	**UO3A**
double extension worm	**UO3D**
reduced worm shaft end	**UO3B**[1]
double extension worm with reduced shaft end	**UO3C**[1]







R V 100 ... 250

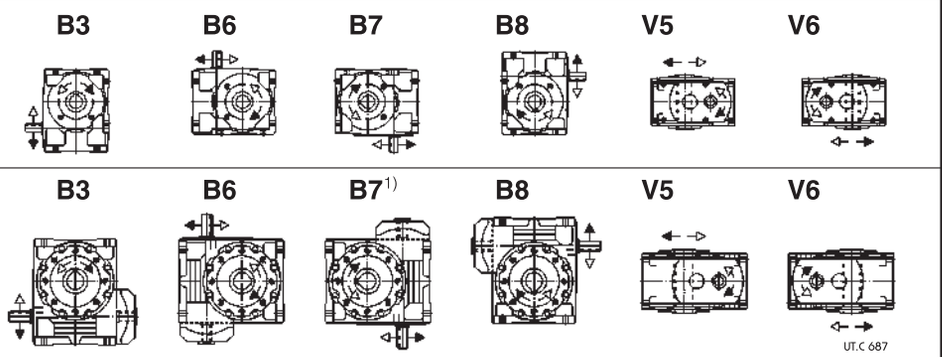
Design

standard	**UO2A**[5]
reduced worm shaft end	**UO2B**[1] [5]

Size	a	A	B	D Ø H7	c c_1	d Ø e	c e	d Ø UO3B[1] UO3C[1] UO2B[1]	Y_1 e_1	d_1 Ø	F [2]	G_0 G_1	G_2	H h11	H_0 h11 G	H_1 h12	h h11 h_0 h11	K Ø	L L_1	M Ø	N Ø h6	P Ø Q	T U	V_0 Ø max	W_1	Y_1	Z	Mass lb
32	1,26	2,4	2,05	0,748	2,01	0,551 0,98	1,97	0,39 0,55	4,41	0,43 0,79	M5[6]	— —	—	2,8	1,89	1,36	3,15 1,54	0,28	0,39 0,33	2,95	2,165[7]	3,54 0,12	3,58 2,6	—	4,69	4,88	1,54	6,6
40	1,57	2,76	2,44	0,945	2,34[4]	0,63 1,18	2,34	0,47 0,55	5,12	0,55 0,98	M6[6]	— —	—	3,23	2,2	1,63	3,78 1,65	0,37	0,47 0,39	3,35	2,677[7]	4,13 0,12	4,17 3,15	—	5,43	5,75	1,81	11
50	1,97	3,39	2,95	1,102	2,78	0,748 1,18	2,78	0,47 0,55	5,98	0,63 1,18	M6[6]	—	—	3,94	2,64	1,93	4,61 1,97	0,37	0,51 0,47	3,94	3,346[7]	4,72 0,12	4,96 3,74	—	6,57	6,61	2,09	19,8
63, 64	2,48	4,02	3,54	1,26	3,27	0,748 1,57	3,35	0,67 0,67	7,17	0,75 1,18	M8	—	—	4,92	3,15	2,3	5,63 2,44	0,45	0,63 0,55	3,94	3,15	4,72 0,12	5,94 4,49	—	8,07	7,99	2,48	31
80 **81**	3,15	5,2	4,17	1,496 **(80)** 1,575 **(81)**	4,06	0,945 1,97	4,13	0,67 0,67	8,74	0,94 1,42	M10	—	—	5,91	3,94	2,74	7,09 2,76	0,55	0,79 0,67	5,12	4,331	6,3 0,14	7,44 5,31	—	9,84	9,96	2,95	53
100	3,94	7,09	5,16	1,89	5,12	1,102 2,36	5,12	0,79 0,83	13,03	1,1 1,65	M12	4,8 7,09	0,43	7,09	4,92	3,33	8,86 3,15	0,63	0,91 —	6,5	5,118	7,87 0,14	9,29 6,5	1,77	12,01	14,57	3,54	95
125, 126	4,92	8,86	6,1	2,362	6,1	1,26 3,15	6,1	0,98 1,02	15,83	1,26 2,28	M12[8]	5,83 8,7	0,59	8,86	5,91	3,92	10,83 3,94	0,71	1,1 —	8,46	7,087	9,84 0,16	11,3 7,64	1,97	14,76	17,95	4,17	163
160 **161**	6,3	10,71	7,2	2,756 **(160)** 2,953 **(161)**	7,36	1,496 3,15	7,13	1,38 1,42	18,58	1,5 2,28	M14[8]	7,01 10,04	0,59	11,02	7,09	4,67	13,39 4,72	0,87	1,3 —	10,43	9,055	11,81 0,16	13,58 9,13	2,36	18,11	20,55	4,92	287
200	7,87	13,46	8,43	3,543	9,13[4]	1,89 4,33	8,9	1,38 1,42	23,07	1,89 3,23	M16[8]	8,74 12,76	0,79	13,19	8,86	5,41	16,73 5,31	1,06	1,57 —	11,81	9,843	13,78 0,2	16,97 10,63	3,15	22,05	26,22	5,91	514
250	9,84	16,73	9,84	4,331	11,5[4]	2,362 4,13	11,06	1,57 1,81	27,8	2,17 3,23	M20[8 3]	10,91 14,92	0,79	16,14	11,02	6,42	20,87 6,3	1,3	1,97 —	15,75	13,78	17,72 0,2	21,14 12,6	3,15	27,17	30,55	7,09	842

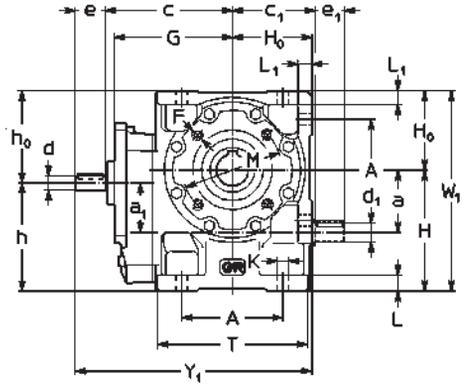
1) Only for $i \geq 16$.
2) Working length of thread 2 · F
3) Holes turned through 22° 30' with respect to the drawing.
4) Size 40: c_1 = 2,26; size 200: c_1 = 9,25; size 250: c_1 = 11,3.
5) Prearranged design for double extension worm shaft (see ch. 2).
6) Holes turned through 45° with respect to the drawing.
7) Tolerance t8.

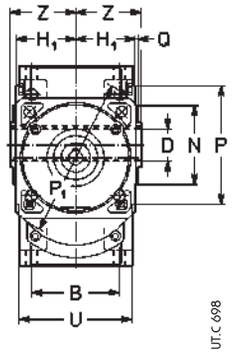
Mounting positions - direction of rotation **- and oil quantities** [gal]



Size	B3	B6, B7	B8	V5, V6
32	0,04	0,05	0,04	0,04
40	0,07	0,09	0,07	0,07
50	0,11	0,16	0,11	0,11
63, 64	0,21	0,3	0,21	0,21
80, 81	0,34	0,58	0,45	0,34
100	0,5	1,4	1,1	0,8
125, 126	0,9	2,6	2,2	1,5
160, 161	1,5	4,8	4	2,6
200	2,5	8,7	7,9	5,3
250	4,5	15,1	13,5	9

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (**B3** and **B8** for sizes ⩽ 64) which, being standard, is **omitted** from the designation.
1) Sizes 200 and 250 in mounting position **B7**, with $n_1 > 710$ rpm carry a price addition.



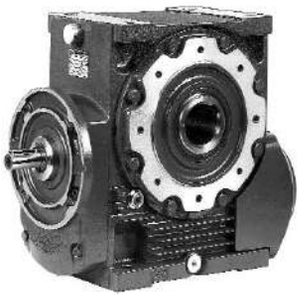


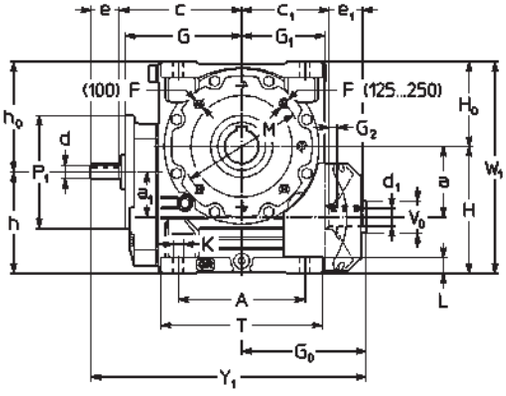
UTC 698

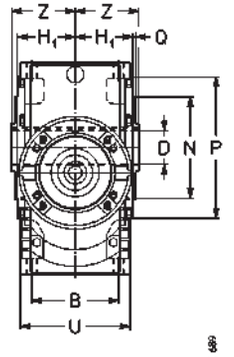
R IV 32 ... 81

Design

standard	**UO3A**
worm extension	**UO3D**







UTC 699

R IV 100 ... 250

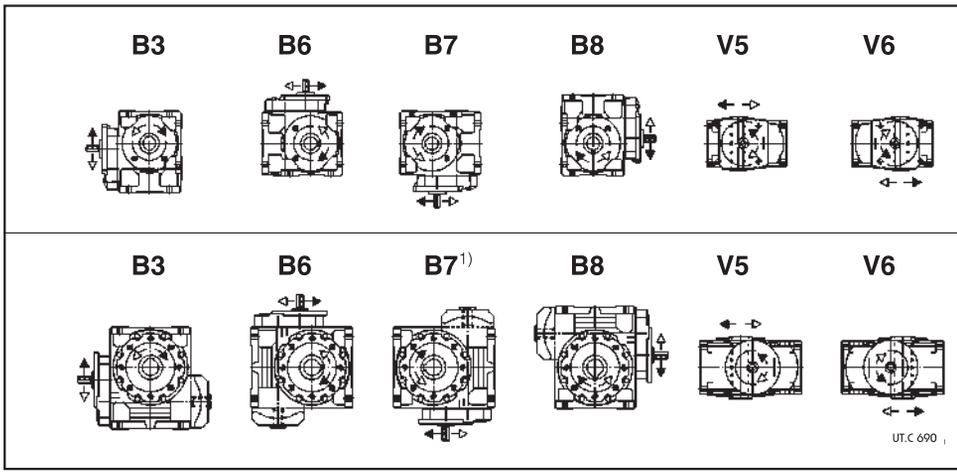
Design

standard	**UO2A**[1]

Size	a	a_1	A	B	c	c_1	D Ø H7	d Ø e	d_1 Ø e_1 2)	F	G G_0	G_1 G_2	H h11	H_0 h11 G	H_1 h12	h h11 h_0 h11	K Ø	L L_1	M Ø	N Ø h6	P Ø Q	P_1 Ø	T	U	V_0 Ø max	W_1	Y_1	Z	Mass lb
32	1,26	1,26	2,4	2,05	3,19	2,01	0,748	0,433 0,79	0,43 0,79	M5[4]	– 2,99	– –	2,8	1,89	1,36	1,89 2,8	0,28	0,39 0,33	2,95	2,165[5]	3,54 0,12	5,51[6]	3,58	2,6	–	4,88	5,87	1,54	11
40	1,57	1,57	2,76	2,44	3,78	2,26	0,945	0,433 0,91	0,55 0,98	M6[4]	– 3,43	– –	3,23	2,2	1,63	2,2 3,23	0,37	0,47 0,39	3,35	2,677[5]	4,13 0,12	5,51[6]	4,17	3,15	–	5,43	6,89	1,81	15
50	1,97	1,57	3,39	2,95	4,21	2,78	1,102	0,433 0,91	0,63 1,18	M6[4]	– 3,86	– –	3,94	2,64	1,93	3,03 3,54	0,37	0,51 0,47	3,94	3,346[5]	4,72 0,12	5,51[6]	4,96	3,74	–	6,57	7,76	2,09	24
63, 64	2,48	1,97	4,02	3,54	5	3,27	1,26	0,551 1,18	0,75 1,18	M8	– 4,65	– –	4,92	3,15	2,3	3,66 4,41	0,45	0,63 0,55	3,94	3,15	4,72 0,12	6,3[6]	5,94	4,49	–	8,07	9,33	2,48	37
80 **81**	3,15	1,97	5,2	4,17	5,79	4,06	1,496 **(80)** 1,575 **(81)**	0,551 1,18	0,94 1,42	M10	– 5,43	– –	5,91	3,94	2,74	5,12 4,72	0,55	0,79 0,67	5,12	4,331	6,3 0,14	6,3[6]	7,44	5,31	–	9,84	10,91	2,95	60
100	3,94	2,48	7,09	5,16	7,13	5,12	1,89	0,748* 1,57*	1,1 1,65	M12	7,09 6,69	4,8 0,43	7,09	4,92	3,33	6,38 5,63	0,63	0,91 –	6,5	5,118	7,87 0,14	7,87	9,29	6,5	1,77	12,01	15,79	3,54	106
125, 126	4,92	3,15	8,86	6,1	8,5	6,1	2,362	0,945* 1,97*	1,26 2,28	M 12[8]	8,7 8,07	5,83 0,59	8,86	5,91	3,92	7,68 7,09	0,71	1,1 –	8,46	7,087	9,84 0,16	7,87	11,3	7,64	1,97	14,76	19,17	4,17	181
160 **161**	6,3	3,94	10,71	7,2	10,16	7,36	2,756 **(160)** 2,953 **(161)**	1,102* 2,36*	1,5 2,28	M 14[8]	10,04 9,72	7,01 0,59	11,02	7,09	4,67	9,45 8,66	0,87	1,3 –	10,43	9,055	11,81 0,16	9,84	13,58	9,13	2,36	18,11	22,56	4,92	322
200	7,87	3,94	13,46	8,43	11,93	9,25	3,543	1,102* 2,36*	1,89 3,23	M16[8]	12,76 11,5	8,74 0,79	13,19	8,86	5,41	12,8 9,25	1,06	1,57 –	11,81	9,843	13,78 0,2	9,84	16,97	10,63	3,15	22,05	27,05	5,91	549
250	9,84	4,92	16,73	9,84	14,69	11,3	4,331	1,26 3,15	2,17 3,23	M20[8,3]	14,92 14,17	10,91 0,79	16,14	11,02	6,42	15,94 11,22	1,3	1,97 –	15,75	13,78	17,72 0,2	11,81	21,14	12,6	3,15	27,17	32,76	7,09	899

1) Prearranged design for worm shaft extension (see ch. 2).
2) Working length of thread 2 · F.
3) Holes turned through 22° 30' with respect to the drawing.
4) Holes turned through 45° with respect to the drawing.
5) Tolerance t8.
6) Square flange: for dimensions see ch. 16.
* When $i_N \geq 200$ the shaft end will be:
size 100: d = 0,65, e = 1,181;
sizes 125, 126: d = 0,748, e = 1,575;
sizes 160 ... 200: d = 0,945, e = 1,969.

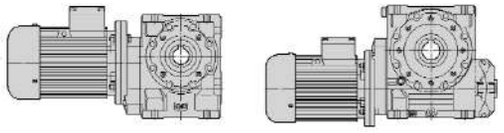
Mounting positions - direction of rotation **- and oil quantities** [gal]



Size	B3	B6, B7	B8	V5, V6
32	0,05	0,07	0,05	0,05
40	0,08	0,11	0,08	0,08
50	0,13	0,18	0,13	0,13
63, 64	0,26	0,34	0,26	0,26
80, 81	0,4	0,66	0,53	0,4
100	0,55	1,66	1,19	0,87
125, 126	1	3,06	2,32	1,66
160, 161	1,72	5,49	4,36	2,96
200	2,75	10	8,32	5,6
250	4,83	17,7	14	9,43

Unless otherwise stated, gear reducers are supplied in mounting position **B3** (**B3** and **B8** for sizes ⩽ 64) which, being standard, is **omitted** from the designation.
1) Sizes 100 ... 250 in mounting position **B6** carry a price addition.

9 - Manufacturing programme (gearmotors)

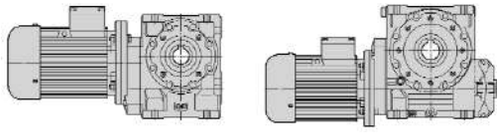


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,12	**2,52**	0,07	1 712	0,9	**MR 2IV 50 - 63 A 6**	10,9 x 40
	3,15	0,07	1 448	1,18	**MR 2IV 50 - 63 A 6**	10,9 x 32
	4,03	0,07	1 170	0,85	**MR 2IV 40 - 63 A 6**	10,9 x 25
	4,03	0,08	1 190	1,5	**MR 2IV 50 - 63 A 6**	10,9 x 25
	5,04	0,08	972	1,06	**MR 2IV 40 - 63 A 6**	10,9 x 20
	5,04	0,08	988	1,9	**MR 2IV 50 - 63 A 6**	10,9 x 20
	4,99	0,07	837	1,12	**MR IV 50 - 63 A 6**	3,5 x 63
	6,19	0,08	781	1,18	**MR 2IV 40 - 63 A 6**	7,11 x 25
	6,29	0,07	695	0,95	**MR IV 40 - 63 A 6**	3,5 x 50
	6,19	0,08	793	2,24	**MR 2IV 50 - 63 A 6**	7,11 x 25
	6,29	0,07	716	1,8	**MR IV 50 - 63 A 6**	3,5 x 50
	7,74	0,08	647	1,5	**MR 2IV 40 - 63 A 6**	7,11 x 20
	7,86	0,07	590	1,25	**MR IV 40 - 63 A 6**	3,5 x 40
	7,86	0,08	609	2,24	**MR IV 50 - 63 A 6**	3,5 x 40
	9,67	0,09	575	1,6	**MR 2IV 40 - 63 A 6**	7,11 x 16
	9,82	0,08	499	1,7	**MR IV 40 - 63 A 6**	3,5 x 32
	9,82	0,08	511	3	**MR IV 50 - 63 A 6**	3,5 x 32
	10,6	0,07	444	0,85	**MR IV 32 - 63 A 6**	2,59 x 40
	12,6	0,08	409	2,12	**MR IV 40 - 63 A 6**	3,5 x 25
	13,3	0,08	374	1,18	**MR IV 32 - 63 A 6**	2,59 x 32
	15,7	0,08	339	2,65	**MR IV 40 - 63 A 6**	3,5 x 20
	17	0,08	308	1,5	**MR IV 32 - 63 A 6**	2,59 x 25
	17,5	0,07	269	1,7	**MR V 40 - 63 A 6**	63
	21,2	0,09	255	1,8	**MR IV 32 - 63 A 6**	2,59 x 20
	22	0,08	222	1,32	**MR V 32 - 63 A 6**	50
	22	0,08	228	2,5	**MR V 40 - 63 A 6**	50
	26,5	0,09	221	2	**MR IV 32 - 63 A 6**	2,59 x 16
	27,5	0,08	188	1,8	**MR V 32 - 63 A 6**	40
	34,4	0,09	157	2,24	**MR V 32 - 63 A 6**	32
	44	0,09	128	2,8	**MR V 32 - 63 A 6**	25
0,16	**3,15**	0,1	1 930	0,9	**MR 2IV 50 - 63 B 6**	10,9 x 32
	3,89	0,09	1 521	0,95	**MR 2IV 50 - 63 A 4**	10,9 x 40
	4,03	0,1	1 587	1,18	**MR 2IV 50 - 63 B 6**	10,9 x 25
	4,86	0,1	1 282	1,32	**MR 2IV 50 - 63 A 4**	10,9 x 32
	5,04	0,11	1 317	1,4	**MR 2IV 50 - 63 B 6**	10,9 x 20
	4,99	0,09	1 116	0,85	**MR IV 50 - 63 B 6**	3,5 x 63
	6,23	0,1	1 035	0,9	**MR 2IV 40 - 63 A 4**	10,9 x 25
	6,23	0,1	1 051	1,7	**MR 2IV 50 - 63 A 4**	10,9 x 25
	6,29	0,1	954	1,32	**MR IV 50 - 63 B 6**	3,5 x 50
	7,78	0,11	858	1,18	**MR 2IV 40 - 63 A 4**	10,9 x 20
	7,86	0,1	787	0,9	**MR IV 40 - 63 B 6**	3,5 x 40
	7,78	0,11	870	2,12	**MR 2IV 50 - 63 A 4**	10,9 x 20
	7,71	0,09	761	1,18	**MR IV 50 - 63 A 4**	3,5 x 63
	7,86	0,1	811	1,7	**MR IV 50 - 63 B 6**	3,5 x 40
	9,57	0,1	688	1,32	**MR 2IV 40 - 63 A 4**	7,11 x 25
	9,71	0,1	629	1	**MR IV 40 - 63 A 4**	3,5 x 50
	9,82	0,1	666	1,25	**MR IV 40 - 63 B 6**	3,5 x 32
	9,57	0,11	705	2,36	**MR 2IV 50 - 63 A 4**	7,11 x 25
	9,71	0,1	648	1,9	**MR IV 50 - 63 A 4**	3,5 x 50
	9,82	0,11	682	2,24	**MR IV 50 - 63 B 6**	3,5 x 32
	12	0,11	571	1,7	**MR 2IV 40 - 63 A 4**	7,11 x 20
	12,1	0,1	531	1,32	**MR IV 40 - 63 A 4**	3,5 x 40
	12,6	0,11	545	1,6	**MR IV 40 - 63 B 6**	3,5 x 25
	12,1	0,11	550	2,36	**MR IV 50 - 63 A 4**	3,5 x 40
	13,3	0,1	498	0,9	**MR IV 32 - 63 B 6**	2,59 x 32
	15	0,12	503	1,7	**MR 2IV 40 - 63 A 4**	7,11 x 16
	15,2	0,11	448	1,8	**MR IV 40 - 63 A 4**	3,5 x 32
	15,7	0,11	451	2	**MR IV 40 - 63 B 6**	3,5 x 20
	16,4	0,1	400	0,9	**MR IV 32 - 63 A 4**	2,59 x 40
	17	0,11	410	1,12	**MR IV 32 - 63 B 6**	2,59 x 25
	17,5	0,1	359	1,25	**MR V 40 - 63 B 6**	63
	17,5	0,1	371	2,36	**MR V 50 - 63 B 6**	63

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,16	**20,5**	0,11	336	1,18	**MR IV 32 - 63 A 4**	2,59 x 32
	19,4	0,11	366	2,24	**MR IV 40 - 63 A 4**	3,5 x 25
	21,2	0,11	340	1,4	**MR IV 32 - 63 B 6**	2,59 x 20
	22	0,1	297	1	**MR V 32 - 63 B 6**	50
	22	0,11	304	1,8	**MR V 40 - 63 B 6**	50
	24,3	0,12	302	2,8	**MR IV 40 - 63 A 4**	3,5 x 20
	26,2	0,11	276	1,5	**MR IV 32 - 63 A 4**	2,59 x 25
	27,5	0,11	250	1,32	**MR V 32 - 63 B 6**	40
	27	0,11	247	1,8	**MR V 40 - 63 A 4**	63
	27,5	0,11	255	2,36	**MR V 40 - 63 B 6**	40
	32,8	0,12	227	1,9	**MR IV 32 - 63 A 4**	2,59 x 20
	34	0,11	202	1,32	**MR V 32 - 63 A 4**	50
	34,4	0,11	209	1,7	**MR V 32 - 63 B 6**	32
	34	0,11	208	2,36	**MR V 40 - 63 A 4**	50
	41	0,13	196	2	**MR IV 32 - 63 A 4**	2,59 x 16
	42,5	0,11	169	1,8	**MR V 32 - 63 A 4**	40
	44	0,12	170	2,12	**MR V 32 - 63 B 6**	25
	42,5	0,12	173	3,15	**MR V 40 - 63 A 4**	40
	53,1	0,12	141	2,24	**MR V 32 - 63 A 4**	32
	55	0,12	140	2,65	**MR V 32 - 63 B 6**	20
	68	0,12	115	2,8	**MR V 32 - 63 A 4**	25
	85	0,13	94	3,55	**MR V 32 - 63 A 4**	20
	106	0,13	79	3,75	**MR V 32 - 63 A 4**	16
	131	0,14	66	4,25	**MR V 32 - 63 A 4**	13
	170	0,14	51	5,3	**MR V 32 - 63 A 4**	10
0,25	**1,82**	0,14	4 793	1,12	**MR 2IV 80 - 71 A 6**	12,1 x 50
	1,82	0,14	4 793	1,25	**MR 2IV 81 - 71 A 6**	12,1 x 50
	2,27	0,15	4 045	1,4	**MR 2IV 80 - 71 A 6**	12,1 x 40
	2,27	0,15	4 045	1,6	**MR 2IV 81 - 71 A 6**	12,1 x 40
	2,84	0,15	3 283	0,95	**MR 2IV 63 - 71 A 6**	12,1 x 32
	2,84	0,15	3 364	1,8	**MR 2IV 80 - 71 A 6**	12,1 x 32
	2,84	0,15	3 364	2	**MR 2IV 81 - 71 A 6**	12,1 x 32
	3,64	0,16	2 691	1,32	**MR 2IV 63 - 71 A 6**	12,1 x 25
	3,64	0,16	2 745	2,36	**MR 2IV 80 - 71 A 6**	12,1 x 25
	3,64	0,16	2 745	2,65	**MR 2IV 81 - 71 A 6**	12,1 x 25
	4,35	0,16	2 279	1,5	**MR 2IV 63 - 71 A 6**	10,1 x 25
	4,35	0,16	2 321	2,8	**MR 2IV 80 - 71 A 6**	10,1 x 25
	4,35	0,16	2 321	3,15	**MR 2IV 81 - 71 A 6**	10,1 x 25
	4,86	0,15	1 923	0,85	**MR 2IV 50 - 63 B 4**	10,9 x 32
	4,59	0,14	1 916	1	**MR IV 63 - 71 A 6**	3,8 x 63
	4,59	0,14	1 916	1,12	**MR IV 64 - 71 A 6**	3,8 x 63
	4,59	0,14	1 985	2	**MR IV 80 - 71 A 6**	3,8 x 63
	4,59	0,14	1 985	2,24	**MR IV 81 - 71 A 6**	3,8 x 63
	5,56	0,15	1 756	1	**MR 2IV 50 - 71 A 6**	7,91 x 25
	5,4	0,15	1 791	1,6	**MR 2IV 63 - 71 A 6**	6,36 x 32
	5,79	0,15	1 625	1,4	**MR IV 63 - 71 A 6**	3,8 x 50
	5,79	0,15	1 625	1,6	**MR IV 64 - 71 A 6**	3,8 x 50
	5,79	0,15	1 675	2,65	**MR IV 80 - 71 A 6**	3,8 x 50
	6,23	0,16	1 577	1,12	**MR 2IV 50 - 63 B 4**	10,9 x 25
	6,95	0,16	1 455	1,25	**MR 2IV 50 - 71 A 6**	7,91 x 20
	6,91	0,16	1 464	2,12	**MR 2IV 63 - 71 A 6**	6,36 x 25
	7,24	0,16	1 370	1,8	**MR IV 63 - 71 A 6**	3,8 x 40
	7,24	0,16	1 370	2,12	**MR IV 64 - 71 A 6**	3,8 x 40
	7,78	0,16	1 306	1,4	**MR 2IV 50 - 63 B 4**	10,9 x 20
	7,71	0,14	1 142	0,8	**MR IV 50 - 63 B 4**	3,5 x 63
	8,55	0,16	1 171	1,5	**MR 2IV 50 - 71 A 6**	5,15 x 25
	8,68	0,15	1 073	1,12	**MR IV 50 - 71 A 6**	2,54 x 50
	9,05	0,16	1 137	2,36	**MR IV 63 - 71 A 6**	3,8 x 32
	9,57	0,16	1 032	0,85	**MR 2IV 40 - 63 B 4**	7,11 x 25
	9,57	0,16	1 057	1,6	**MR 2IV 50 - 63 B 4**	7,11 x 25
	9,71	0,15	972	1,25	**MR IV 50 - 63 B 4**	3,5 x 50
	10,8	0,15	887	0,8	**MR IV 40 - 71 A 6**	2,54 x 40
	10,7	0,16	970	1,8	**MR 2IV 50 - 71 A 6**	5,15 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.

9 - Manufacturing programme (gearmotors)

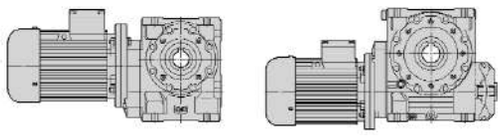


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,25	**10,8**	0,16	909	1,4	**MR IV 50 - 71 A 6**	2,54 x 40
	10,8	0,17	968	2,65	**MR IV 63 - 71 A 6**	3,18 x 32
	12	0,16	856	1,12	**MR 2IV 40 - 63 B 4**	7,11 x 20
	12,1	0,15	797	0,9	**MR IV 40 - 63 B 4**	3,5 x 40
	12	0,17	875	2	**MR 2IV 50 - 63 B 4**	7,11 x 20
	12,1	0,16	825	1,6	**MR IV 50 - 63 B 4**	3,5 x 40
	13,6	0,16	746	1,06	**MR IV 40 - 71 A 6**	2,54 x 32
	13,6	0,16	763	1,9	**MR IV 50 - 71 A 6**	2,54 x 32
	15	0,18	755	1,12	**MR 2IV 40 - 63 B 4**	7,11 x 16
	15,2	0,16	672	1,18	**MR IV 40 - 63 B 4**	3,5 x 32
	15,2	0,17	690	2,12	**MR IV 50 - 63 B 4**	3,5 x 32
	17,4	0,17	608	1,32	**MR IV 40 - 71 A 6**	2,54 x 25
	17,5	0,15	539	0,85	**MR V 40 - 71 A 6**	63
	17,4	0,17	624	2,5	**MR IV 50 - 71 A 6**	2,54 x 25
	17,5	0,15	557	1,6	**MR V 50 - 71 A 6**	63
	20,5	0,16	504	0,8	**MR IV 32 - 63 B 4**	2,59 x 32
	19,4	0,17	548	1,5	**MR IV 40 - 63 B 4**	3,5 x 25
	19,4	0,17	561	2,65	**MR IV 50 - 63 B 4**	3,5 x 25
	21,7	0,17	502	1,7	**MR IV 40 - 71 A 6**	2,54 x 20
	22	0,16	456	1,18	**MR V 40 - 71 A 6**	50
	21,7	0,18	515	3,15	**MR IV 50 - 71 A 6**	2,54 x 20
	22	0,16	469	2,24	**MR V 50 - 71 A 6**	50
	24,3	0,17	453	1,9	**MR IV 40 - 63 B 4**	3,5 x 20
	26,2	0,17	414	1	**MR IV 32 - 63 B 4**	2,59 x 25
	27,1	0,19	438	1,8	**MR IV 40 - 71 A 6**	2,54 x 16
	27	0,16	371	1,18	**MR V 40 - 63 B 4**	63
	27,5	0,17	382	1,6	**MR V 40 - 71 A 6**	40
	27	0,16	384	2,24	**MR V 50 - 63 B 4**	63
	30,4	0,19	393	2	**MR IV 40 - 63 B 4**	3,5 x 16
	32,8	0,18	341	1,25	**MR IV 32 - 63 B 4**	2,59 x 20
	34	0,16	303	0,9	**MR V 32 - 63 B 4**	50
	34,4	0,17	314	1,12	**MR V 32 - 71 A * 6**	32
	34	0,17	312	1,6	**MR V 40 - 63 B 4**	50
	34,4	0,17	320	2,12	**MR V 40 - 71 A 6**	32
	34	0,17	320	2,8	**MR V 50 - 63 B 4**	50
	41	0,19	294	1,32	**MR IV 32 - 63 B 4**	2,59 x 16
	42,5	0,17	254	1,18	**MR V 32 - 63 B 4**	40
	44	0,18	255	1,4	**MR V 32 - 71 A * 6**	25
	42,5	0,18	260	2,12	**MR V 40 - 63 B 4**	40
	44	0,18	259	2,65	**MR V 40 - 71 A 6**	25
	53,1	0,18	211	1,5	**MR V 32 - 63 B 4**	32
	55	0,18	210	1,8	**MR V 32 - 71 A * 6**	20
	53,1	0,18	216	2,65	**MR V 40 - 63 B 4**	32
	68	0,19	172	1,8	**MR V 32 - 63 B 4**	25
	68	0,19	174	3,35	**MR V 40 - 63 B 4**	25
	85	0,19	141	2,36	**MR V 32 - 63 B 4**	20
	106	0,2	119	2,5	**MR V 32 - 63 B 4**	16
	131	0,2	99	2,8	**MR V 32 - 63 B 4**	13
	170	0,21	77	3,55	**MR V 32 - 63 B 4**	10
	243	0,21	56	4,25	**MR V 32 - 63 B 4**	7
0,33	**1,82**	0,19	6 657	0,8	**MR 2IV 80 - 71 B 6**	12,1 x 50
	1,82	0,19	6 657	0,9	**MR 2IV 81 - 71 B 6**	12,1 x 50
	2,27	0,2	5 618	1	**MR 2IV 80 - 71 B 6**	12,1 x 40
	2,27	0,2	5 618	1,12	**MR 2IV 81 - 71 B 6**	12,1 x 40
	2,81	0,2	4 422	1,12	**MR 2IV 80 - 71 A 4**	12,1 x 50
	2,81	0,2	4 422	1,25	**MR 2IV 81 - 71 A 4**	12,1 x 50
	2,84	0,21	4 672	1,32	**MR 2IV 80 - 71 B 6**	12,1 x 32
	2,84	0,21	4 672	1,5	**MR 2IV 81 - 71 B 6**	12,1 x 32
	3,64	0,22	3 738	0,95	**MR 2IV 63 - 71 B 6**	12,1 x 25
	3,52	0,21	3 725	1,5	**MR 2IV 80 - 71 A 4**	12,1 x 40
	3,52	0,21	3 725	1,6	**MR 2IV 81 - 71 A 4**	12,1 x 40
	3,64	0,22	3 812	1,7	**MR 2IV 80 - 71 B 6**	12,1 x 25
	3,64	0,22	3 812	1,9	**MR 2IV 81 - 71 B 6**	12,1 x 25

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,33	**4,39**	0,21	3 024	1	**MR 2IV 63 - 71 A 4**	12,1 x 32
	4,39	0,21	3 024	1,06	**MR 2IV 64 - 71 A 4**	12,1 x 32
	4,35	0,22	3 165	1,06	**MR 2IV 63 - 71 B 6**	10,1 x 25
	4,39	0,22	3 090	1,9	**MR 2IV 80 - 71 A 4**	12,1 x 32
	4,39	0,22	3 090	2,12	**MR 2IV 81 - 71 A 4**	12,1 x 32
	4,35	0,22	3 224	2	**MR 2IV 80 - 71 B 6**	10,1 x 25
	4,35	0,22	3 224	2,24	**MR 2IV 81 - 71 B 6**	10,1 x 25
	4,59	0,19	2 661	0,8	**MR IV 64 - 71 B 6**	3,8 x 63
	4,59	0,2	2 757	1,4	**MR IV 80 - 71 B 6**	3,8 x 63
	4,59	0,2	2 757	1,6	**MR IV 81 - 71 B 6**	3,8 x 63
	5,62	0,22	2 470	1,32	**MR 2IV 63 - 71 A 4**	12,1 x 25
	5,62	0,22	2 470	1,4	**MR 2IV 64 - 71 A 4**	12,1 x 25
	5,79	0,21	2 256	1	**MR IV 63 - 71 B 6**	3,8 x 50
	5,79	0,21	2 256	1,18	**MR IV 64 - 71 B 6**	3,8 x 50
	5,62	0,22	2 520	2,5	**MR 2IV 80 - 71 A 4**	12,1 x 25
	5,62	0,22	2 520	2,8	**MR 2IV 81 - 71 A 4**	12,1 x 25
	5,79	0,21	2 327	1,9	**MR IV 80 - 71 B 6**	3,8 x 50
	5,79	0,21	2 327	2,24	**MR IV 81 - 71 B 6**	3,8 x 50
	6,23	0,22	2 190	0,8	**MR 2IV 50 - 63 C 4**	10,9 x 25
	6,95	0,22	2 020	0,9	**MR 2IV 50 - 71 B 6**	7,91x20
	6,72	0,22	2 093	1,5	**MR 2IV 63 - 71 A 4**	10,1 x 25
	6,72	0,22	2 093	1,6	**MR 2IV 64 - 71 A 4**	10,1 x 25
	7,1	0,2	1 807	1	**MR IV 63 - 71 A 4**	3,8 x 63
	7,1	0,2	1 807	1,12	**MR IV 64 - 71 A 4**	3,8 x 63
	7,24	0,22	1 903	1,32	**MR IV 63 - 71 B 6**	3,8 x 40
	7,24	0,22	1 903	1,5	**MR IV 64 - 71 B 6**	3,8 x 40
	7,1	0,21	1 871	2	**MR IV 80 - 71 A 4**	3,8 x 63
	7,1	0,21	1 871	2,24	**MR IV 81 - 71 A 4**	3,8 x 63
	7,78	0,22	1 813	1	**MR 2IV 50 - 63 C 4**	10,9 x 20
	8,6	0,22	1 617	1,06	**MR 2IV 50 - 71 A 4**	7,91x25
	8,68	0,21	1 490	0,8	**MR IV 50 - 71 B 6**	2,54x50
	8,35	0,22	1 678	1,6	**MR 2IV 63 - 71 A 4**	6,36x32
	8,35	0,22	1 678	1,9	**MR 2IV 64 - 71 A 4**	6,36x32
	8,95	0,22	1 527	1,4	**MR IV 63 - 71 A 4**	3,8 x 50
	8,95	0,22	1 527	1,6	**MR IV 64 - 71 A 4**	3,8 x 50
	9,05	0,23	1 580	1,7	**MR IV 63 - 71 B 6**	3,8 x 32
	9,05	0,23	1 580	2	**MR IV 64 - 71 B 6**	3,8 x 32
	9,57	0,22	1 468	1,12	**MR 2IV 50 - 63 C 4**	7,11x25
	9,71	0,21	1 350	0,9	**MR IV 50 - 63 C 4**	3,5 x 50
	10,7	0,23	1 340	1,32	**MR 2IV 50 - 71 A 4**	7,91x20
	10,8	0,22	1 263	1,06	**MR IV 50 - 71 B 6**	2,54 x 40
	11,2	0,23	1 287	1,8	**MR IV 63 - 71 A 4**	3,8 x 40
	11,2	0,23	1 287	2,12	**MR IV 64 - 71 A 4**	3,8 x 40
	12	0,23	1 215	1,4	**MR 2IV 50 - 63 C 4**	7,11 x 20
	12,1	0,22	1 146	1,12	**MR IV 50 - 63 C 4**	3,5 x 40
	13,6	0,22	1 037	0,75	**MR IV 40 - 71 B 6**	2,54 x 32
	13,2	0,23	1 091	1,5	**MR 2IV 50 - 71 A 4**	5,15 x 25
	13,4	0,22	1 016	1,12	**MR IV 50 - 71 A 4**	2,54 x 50
	13,6	0,23	1 060	1,4	**MR IV 50 - 71 B 6**	2,54 x 32
	14	0,24	1 061	2,36	**MR IV 63 - 71 A 4**	3,8 x 32
	15,2	0,22	933	0,85	**MR IV 40 - 63 C 4**	3,5 x 32
	15,2	0,23	959	1,5	**MR IV 50 - 63 C 4**	3,5 x 32
	16,8	0,22	832	0,8	**MR IV 40 - 71 A 4**	2,54 x 40
	17,4	0,23	844	0,95	**MR IV 40 - 71 B 6**	2,54 x 25
	16,5	0,24	901	1,9	**MR 2IV 50 - 71 A 4**	5,15 x 20
	16,8	0,23	857	1,4	**MR IV 50 - 71 A 4**	2,54 x 40
	17,4	0,24	867	1,8	**MR IV 50 - 71 B 6**	2,54 x 25
	17,5	0,21	774	1,12	**MR V 50 - 71 B 6**	63
	16,7	0,24	907	2,65	**MR IV 63 - 71 A 4**	3,18 x 32
	17,5	0,23	817	2	**MR V 63 - 71 B 6**	63
	17,5	0,23	817	2,24	**MR V 64 - 71 B 6**	63
	19,4	0,23	762	1,06	**MR IV 40 - 63 C 4**	3,5 x 25
	20,6	0,26	785	2	**MR 2IV 50 - 71 A 4**	5,15 x 16
	19,4	0,24	780	1,9	**MR IV 50 - 63 C 4**	3,5 x 25
	21	0,23	700	1,06	**MR IV 40 - 71 A 4**	2,54 x 32
	21,7	0,24	698	1,25	**MR IV 40 - 71 B 6**	2,54 x 20
	22	0,22	634	0,9	**MR V 40 - 71 B 6**	50

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

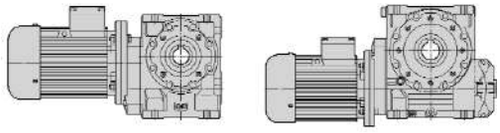


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,33	**21**	0,24	716	1,9	**MR IV 50 - 71 A 4**	2,54 x 32
	21,7	0,25	715	2,24	**MR IV 50 - 71 B 6**	2,54 x 20
	22	0,23	652	1,6	**MR V 50 - 71 B 6**	50
	22	0,24	682	2,65	**MR V 63 - 71 B 6**	50
	24,3	0,24	630	1,32	**MR IV 40 - 63 C 4**	3,5 x 20
	24,3	0,25	643	2,36	**MR IV 50 - 63 C 4**	3,5 x 20
	26,8	0,24	569	1,32	**MR IV 40 - 71 A 4**	2,54 x 25
	27	0,22	515	0,85	**MR V 40 - 63 C 4**	63
	27	0,22	515	0,85	**MR V 40 - 71 A 4**	63
	27,5	0,23	531	1,18	**MR V 40 - 71 B 6**	40
	26,8	0,25	581	2,36	**MR IV 50 - 71 A 4**	2,54 x 25
	27	0,23	533	1,6	**MR V 50 - 71 A 4**	63
	27,5	0,24	547	2	**MR V 50 - 71 B 6**	40
	27	0,24	557	2,65	**MR V 63 - 71 A 4**	63
	30,4	0,26	546	1,4	**MR IV 40 - 63 C 4**	3,5 x 16
	32,8	0,25	473	0,9	**MR IV 32 - 63 C 4**	2,59 x 20
	34,4	0,24	436	0,8	**MR V 32 - 71 B *6**	32
	33,5	0,25	468	1,6	**MR IV 40 - 71 A 4**	2,54 x 20
	34	0,23	433	1,18	**MR V 40 - 63 C 4**	50
	34	0,23	433	1,18	**MR V 40 - 71 A 4**	50
	34,4	0,24	444	1,5	**MR V 40 - 71 B 6**	32
	33,5	0,25	478	3	**MR IV 50 - 71 A 4**	2,54 x 20
	34	0,24	444	2,12	**MR V 50 - 71 A 4**	50
	34,4	0,25	455	2,65	**MR V 50 - 71 B 6**	32
	41	0,27	408	1	**MR IV 32 - 63 C 4**	2,59 x 16
	42,5	0,24	353	0,85	**MR V 32 - 63 C 4**	40
	44	0,25	355	1,06	**MR V 32 - 71 B * 6**	25
	41,9	0,27	404	1,8	**MR IV 40 - 71 A 4**	2,54 x 16
	42,5	0,24	361	1,5	**MR V 40 - 63 C 4**	40
	42,5	0,24	361	1,5	**MR V 40 - 71 A 4**	40
	44	0,25	360	1,9	**MR V 40 - 71 B 6**	25
	42,5	0,25	370	2,65	**MR V 50 - 71 A 4**	40
	53,1	0,25	294	1,06	**MR V 32 - 63 C 4**	32
	53,1	0,25	294	1,06	**MR V 32 - 71 A * 4**	32
	55	0,25	292	1,32	**MR V 32 - 71 B * 6**	20
	53,1	0,25	300	1,9	**MR V 40 - 63 C 4**	32
	53,1	0,25	300	1,9	**MR V 40 - 71 A 4**	32
	55	0,26	296	2,36	**MR V 40 - 71 B 6**	20
	68	0,26	239	1,32	**MR V 32 - 63 C 4**	25
	68	0,26	239	1,32	**MR V 32 - 71 A * 4**	25
	68	0,26	242	2,5	**MR V 40 - 63 C 4**	25
	68	0,26	242	2,5	**MR V 40 - 71 A 4**	25
	85	0,26	196	1,7	**MR V 32 - 63 C 4**	20
	85	0,26	196	1,7	**MR V 32 - 71 A * 4**	20
	85	0,27	198	3	**MR V 40 - 71 A 4**	20
	106	0,28	165	1,8	**MR V 32 - 63 C 4**	16
	106	0,28	165	1,8	**MR V 32 - 71 A * 4**	16
	106	0,28	167	3,15	**MR V 40 - 71 A 4**	16
	131	0,28	137	2	**MR V 32 - 63 C 4**	13
	131	0,28	137	2	**MR V 32 - 71 A * 4**	13
	170	0,29	107	2,5	**MR V 32 - 63 C 4**	10
	170	0,29	107	2,5	**MR V 32 - 71 A * 4**	10
	243	0,3	77	3	**MR V 32 - 63 C 4**	7
	243	0,3	77	3	**MR V 32 - 71 A * 4**	7
0,5	**1,82**	0,29	10 128	1	**MR 2IV 100 - 80 A 6**	12,1 x 50
	2,27	0,31	8 533	1,32	**MR 2IV 100 - 80 A 6**	12,1 x 40
	2,81	0,29	6 544	0,75	**MR 2IV 80 - 71 B 4**	12,1 x 50
	2,81	0,29	6 544	0,85	**MR 2IV 81 - 71 B 4**	12,1 x 50
	2,84	0,31	6 914	0,9	**MR 2IV 80 - 71 C 6**	12,1 x 32
	2,84	0,31	6 914	1	**MR 2IV 81 - 71 C 6**	12,1 x 32
	2,84	0,32	7 065	1,7	**MR 2IV 100 - 80 A 6**	12,1 x 32
	3,52	0,31	5 514	1	**MR 2IV 80 - 71 B 4**	12,1 x 40
	3,52	0,31	5 514	1,12	**MR 2IV 81 - 71 B 4**	12,1 x 40
	3,64	0,33	5 642	1,18	**MR 2IV 80 - 71 C 6**	12,1 x 25
	3,64	0,33	5 642	1,32	**MR 2IV 81 - 71 C 6**	12,1 x 25
	3,64	0,33	5 764	2,24	**MR 2IV 100 - 80 A 6**	12,1 x 25

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,5	**4,39**	0,32	4 573	1,25	**MR 2IV 80 - 71 B 4**	12,1 x 32
	4,39	0,32	4 573	1,5	**MR 2IV 81 - 71 B 4**	12,1 x 32
	4,35	0,34	4 881	2,65	**MR 2IV 100 - 80 A 6**	10,1 x 25
	4,59	0,3	4 080	0,95	**MR IV 80 - 71 C 6**	3,8 x 63
	4,59	0,3	4 080	1,06	**MR IV 81 - 71 C 6**	3,8 x 63
	4,59	0,31	4 232	1,8	**MR IV 100 - 80 A 6**	3,8 x 63
	5,62	0,33	3 656	0,9	**MR 2IV 63 - 71 B 4**	12,1 x 25
	5,62	0,33	3 656	0,95	**MR 2IV 64 - 71 B 4**	12,1 x 25
	5,79	0,31	3 339	0,8	**MR IV 64 - 71 C 6**	3,8 x 50
	5,62	0,33	3 730	1,7	**MR 2IV 80 - 71 B 4**	12,1 x 25
	5,62	0,33	3 730	1,9	**MR 2IV 81 - 71 B 4**	12,1 x 25
	5,79	0,32	3 444	1,25	**MR IV 80 - 71 C 6**	3,8 x 50
	5,79	0,32	3 444	1,5	**MR IV 81 - 71 C 6**	3,8 x 50
	5,79	0,33	3 563	2,36	**MR IV 100 - 80 A 6**	3,8 x 50
	6,72	0,33	3 098	1	**MR 2IV 63 - 71 B 4**	10,1 x 25
	6,72	0,33	3 098	1,12	**MR 2IV 64 - 71 B 4**	10,1 x 25
	7,1	0,3	2 674	0,75	**MR IV 64 - 71 B 4**	3,8 x 63
	7,24	0,32	2 816	0,9	**MR IV 63 - 71 C 6**	3,8 x 40
	7,24	0,32	2 816	1	**MR IV 64 - 71 C 6**	3,8 x 40
	6,72	0,34	3 181	1,8	**MR 2IV 80 - 71 B 4**	10,1 x 25
	6,72	0,34	3 181	2,12	**MR 2IV 81 - 71 B 4**	10,1 x 25
	7,1	0,31	2 769	1,32	**MR IV 80 - 71 B 4**	3,8 x 63
	7,1	0,31	2 769	1,5	**MR IV 81 - 71 B 4**	3,8 x 63
	7,24	0,33	2 887	1,7	**MR IV 80 - 71 C 6**	3,8 x 40
	7,24	0,33	2 887	1,9	**MR IV 81 - 71 C 6**	3,8 x 40
	8,35	0,33	2 483	1,06	**MR 2IV 63 - 71 B 4**	6,36 x 32
	8,35	0,33	2 483	1,25	**MR 2IV 64 - 71 B 4**	6,36 x 32
	8,67	0,34	2 446	1,25	**MR 2IV 63 - 80 A 6**	5,08 x 25
	8,67	0,34	2 446	1,4	**MR 2IV 64 - 80 A 6**	5,08 x 25
	8,95	0,32	2 260	0,95	**MR IV 63 - 71 B 4**	3,8 x 50
	8,95	0,32	2 260	1,12	**MR IV 64 - 71 B 4**	3,8 x 50
	9,05	0,34	2 338	1,12	**MR IV 63 - 71 C 6**	3,8 x 32
	9,05	0,34	2 338	1,32	**MR IV 64 - 71 C 6**	3,8 x 32
	8,35	0,34	2 547	2,12	**MR 2IV 80 - 71 B 4**	6,36 x 32
	8,35	0,34	2 547	2,5	**MR 2IV 81 - 71 B 4**	6,36 x 32
	8,95	0,33	2 334	1,7	**MR IV 80 - 71 B 4**	3,8 x 50
	8,95	0,33	2 334	2,12	**MR IV 81 - 71 B 4**	3,8 x 50
	9,05	0,34	2 399	2,24	**MR IV 80 - 71 C 6**	3,8 x 32
	9,05	0,34	2 399	2,65	**MR IV 81 - 71 C 6**	3,8 x 32
	10,7	0,34	1 983	0,9	**MR 2IV 50 - 71 B 4**	7,91 x 20
	10,7	0,34	2 019	1,4	**MR 2IV 63 - 71 B 4**	6,36 x 25
	10,7	0,34	2 019	1,6	**MR 2IV 64 - 71 B 4**	6,36 x 25
	11,2	0,34	1 904	1,25	**MR IV 63 - 71 B 4**	3,8 x 40
	11,2	0,34	1 904	1,5	**MR IV 64 - 71 B 4**	3,8 x 40
	10,8	0,34	1 990	1,32	**MR IV 63 - 71 C 6**	3,18 x 32
	10,8	0,34	1 990	1,5	**MR IV 64 - 71 C 6**	3,18 x 32
	11,2	0,35	1 955	2,24	**MR IV 80 - 71 B 4**	3,8 x 40
	11,2	0,35	1 955	2,8	**MR IV 81 - 71 B 4**	3,8 x 40
	13,2	0,34	1 615	1	**MR 2IV 50 - 71 B 4**	5,15 x 25
	13,4	0,32	1 504	0,75	**MR IV 50 - 71 B 4**	2,54 x 50
	13,6	0,34	1 569	0,95	**MR IV 50 - 71 C 6**	2,54 x 32
	14	0,35	1 570	1,6	**MR IV 63 - 71 B 4**	3,8 x 32
	14	0,35	1 570	1,9	**MR IV 64 - 71 B 4**	3,8 x 32
	14	0,36	1 617	3	**MR IV 80 - 71 B 4**	3,8 x 32
	16,5	0,35	1 334	1,25	**MR 2IV 50 - 71 B 4**	5,15 x 20
	16,8	0,34	1 269	0,95	**MR IV 50 - 71 B 4**	2,54 x 40
	17,4	0,35	1 283	1,18	**MR IV 50 - 71 C 6**	2,54 x 25
	16,9	0,34	1 284	1,12	**MR IV 50 - 80 A 6**	2,03 x 32
	16,7	0,36	1 343	1,8	**MR IV 63 - 71 B 4**	3,18 x 32
	16,7	0,36	1 343	2,12	**MR IV 64 - 71 B 4**	3,18 x 32
	17,5	0,33	1 209	1,32	**MR V 63 - 71 C 6**	63
	17,5	0,33	1 209	1,32	**MR V 63 - 80 A 6**	63
	17,5	0,33	1 209	1,5	**MR V 64 - 80 A 6**	63
	17,5	0,35	1 251	2,5	**MR V 80 - 80 A 6**	63
	20,6	0,38	1 162	1,32	**MR 2IV 50 - 71 B 4**	5,15 x 16
	21,7	0,36	1 033	0,85	**MR IV 40 - 71 C 6**	2,54 x 20
	21	0,35	1 060	1,25	**MR IV 50 - 71 B 4**	2,54 x 32
	21,7	0,36	1 058	1,5	**MR IV 50 - 71 C 6**	2,54 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

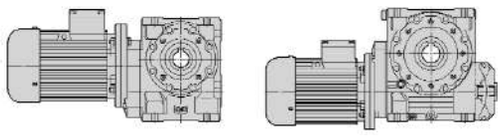


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,5	**21,7**	0,36	1 046	1,4	**MR IV 50 - 80 A 6**	2,03 x 25
	22	0,34	964	1,06	**MR V 50 - 71 C 6**	50
	21,4	0,37	1 088	2,36	**MR IV 63 - 71 B 4**	3,18 x 25
	22	0,35	1 010	1,8	**MR V 63 - 71 C 6**	50
	22	0,35	1 010	1,8	**MR V 63 - 80 A 6**	50
	22	0,35	1 010	2,12	**MR V 64 - 80 A 6**	50
	26,8	0,36	843	0,9	**MR IV 40 - 71 B 4**	2,54 x 25
	27,5	0,34	785	0,8	**MR V 40 - 71 C 6**	40
	26,8	0,37	860	1,6	**MR IV 50 - 71 B 4**	2,54 x 25
	27,1	0,39	914	1,6	**MR IV 50 - 71 C 6**	2,54 x 16
	27	0,34	788	1,06	**MR V 50 - 71 B 4**	63
	27,5	0,35	809	1,4	**MR V 50 - 71 C 6**	40
	26,7	0,4	940	2,36	**MR IV 63 - 71 B 4**	3,18 x 20
	27	0,35	825	1,8	**MR V 63 - 71 B 4**	63
	27	0,35	825	2,12	**MR V 64 - 71 B 4**	63
	27,5	0,37	841	2,36	**MR V 63 - 71 C 6**	40
	27,5	0,37	841	2,36	**MR V 63 - 80 A 6**	40
	33,5	0,37	693	1,12	**MR IV 40 - 71 B 4**	2,54 x 20
	34	0,35	641	0,8	**MR V 40 - 71 B 4**	50
	34,4	0,36	657	1	**MR V 40 - 71 C 6**	32
	33,5	0,38	707	2	**MR IV 50 - 71 B 4**	2,54 x 20
	33,9	0,4	741	1,9	**MR IV 50 - 80 A 6**	2,03 x 16
	34	0,35	658	1,4	**MR V 50 - 71 B 4**	50
	34,4	0,37	673	1,8	**MR V 50 - 71 C 6**	32
	34	0,37	685	2,36	**MR V 63 - 71 B 4**	50
	41,9	0,4	598	1,18	**MR IV 40 - 71 B 4**	2,54 x 16
	42,5	0,36	534	1	**MR V 40 - 71 B 4**	40
	44	0,37	532	1,32	**MR V 40 - 71 C 6**	25
	41,9	0,4	607	2,24	**MR IV 50 - 71 B 4**	2,54 x 16
	42,5	0,37	548	1,8	**MR V 50 - 71 B 4**	40
	44	0,38	544	2,24	**MR V 50 - 71 C 6**	25
	42,5	0,38	567	3	**MR V 63 - 71 B 4**	40
	53,1	0,37	435	0,71	**MR V 32 - 71 B * 4**	32
	55	0,38	432	0,9	**MR V 32 - 71 C * 6**	20
	53,1	0,37	445	1,32	**MR V 40 - 71 B 4**	32
	55	0,38	437	1,6	**MR V 40 - 71 C 6**	20
	53,1	0,38	454	2,24	**MR V 50 - 71 B 4**	32
	55	0,39	447	2,8	**MR V 50 - 71 C 6**	20
	68	0,38	354	0,9	**MR V 32 - 71 B * 4**	25
	68	0,39	359	1,7	**MR V 40 - 71 B 4**	25
	68	0,39	365	3	**MR V 50 - 71 B 4**	25
	85	0,39	290	1,12	**MR V 32 - 71 B * 4**	20
	85	0,4	293	2	**MR V 40 - 71 B 4**	20
	106	0,41	245	1,18	**MR V 32 - 71 B * 4**	16
	106	0,42	248	2,12	**MR V 40 - 71 B 4**	16
	131	0,42	203	1,4	**MR V 32 - 71 B * 4**	13
	131	0,42	205	2,5	**MR V 40 - 71 B 4**	13
	170	0,43	158	1,7	**MR V 32 - 71 B * 4**	10
	170	0,43	160	3	**MR V 40 - 71 B 4**	10
	243	0,44	114	2	**MR V 32 - 71 B * 4**	7
	243	0,44	115	3,75	**MR V 40 - 71 B 4**	7
0,75	**2,27**	0,46	12 684	0,85	**MR 2IV 100 - 80 B 6**	12,1 x 40
	2,81	0,45	10 003	0,95	**MR 2IV 100 - 80 A 4**	12,1 x 50
	2,84	0,47	10 502	1,18	**MR 2IV 100 - 80 B 6**	12,1 x 32
	3,52	0,47	8 425	1,25	**MR 2IV 100 - 80 A 4**	12,1 x 40
	3,64	0,49	8 568	1,5	**MR 2IV 100 - 80 B 6**	12,1 x 25
	4,39	0,47	6 798	0,85	**MR 2IV 80 - 71 C 4**	12,1 x 32
	4,39	0,47	6 798	1	**MR 2IV 81 - 71 C 4**	12,1 x 32
	4,39	0,49	6 977	1,7	**MR 2IV 100 - 80 A 4**	12,1 x 32
	4,35	0,5	7 255	1,8	**MR 2IV 100 - 80 B 6**	10,1 x 25
	4,59	0,46	6 291	1,18	**MR IV 100 - 80 B 6**	3,8 x 63
	5,62	0,49	5 544	1,12	**MR 2IV 80 - 71 C 4**	12,1 x 25
	5,62	0,49	5 544	1,25	**MR 2IV 81 - 71 C 4**	12,1 x 25
	5,26	0,47	5 681	0,9	**MR 2IV 80 - 80 A 4**	8,08 x 40
	5,26	0,47	5 681	1	**MR 2IV 81 - 80 A 4**	8,08 x 40
	5,62	0,51	5 708	2,24	**MR 2IV 100 - 80 A 4**	12,1 x 25

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,75	**5,79**	0,49	5 296	1,6	**MR IV 100 - 80 B 6**	3,8 x 50
	6,72	0,5	4 729	1,25	**MR 2IV 80 - 71 C 4**	10,1 x 25
	6,72	0,5	4 729	1,5	**MR 2IV 81 - 71 C 4**	10,1 x 25
	6,58	0,49	4 729	1,12	**MR 2IV 80 - 80 A 4**	8,08 x 32
	6,58	0,49	4 729	1,32	**MR 2IV 81 - 80 A 4**	8,08 x 32
	7,1	0,46	4 115	0,9	**MR IV 80 - 71 C 4**	3,8 x 63
	7,1	0,46	4 115	1	**MR IV 81 - 71 C 4**	3,8 x 63
	6,88	0,46	4 249	0,9	**MR IV 80 - 80 B 6**	2,54 x 63
	6,88	0,46	4 249	1	**MR IV 81 - 80 B 6**	2,54 x 63
	6,72	0,52	4 859	2,5	**MR 2IV 100 - 80 A 4**	10,1 x 25
	7,1	0,48	4 288	1,7	**MR IV 100 - 80 A 4**	3,8 x 63
	7,24	0,51	4 449	2,24	**MR IV 100 - 80 B 6**	3,8 x 40
	8,42	0,5	3 743	0,8	**MR 2IV 63 - 80 A 4**	8,08 x 25
	8,42	0,5	3 743	0,9	**MR 2IV 64 - 80 A 4**	8,08 x 25
	8,42	0,51	3 837	1,5	**MR 2IV 80 - 80 A 4**	8,08 x 25
	8,42	0,51	3 837	1,8	**MR 2IV 81 - 80 A 4**	8,08 x 25
	8,95	0,49	3 469	1,18	**MR IV 80 - 71 C 4**	3,8 x 50
	8,95	0,49	3 469	1,4	**MR IV 81 - 71 C 4**	3,8 x 50
	8,67	0,49	3 581	1,12	**MR IV 80 - 80 B 6**	2,54 x 50
	8,67	0,49	3 581	1,32	**MR IV 81 - 80 B 6**	2,54 x 50
	8,95	0,51	3 588	2,24	**MR IV 100 - 80 A 4**	3,8 x 50
	10,7	0,51	3 001	0,95	**MR 2IV 63 - 71 C 4**	6,36 x 25
	10,7	0,51	3 001	1,12	**MR 2IV 64 - 71 C 4**	6,36 x 25
	10,5	0,5	2 993	0,85	**MR 2IV 63 - 80 A 4**	5,08 x 32
	10,5	0,5	2 993	1	**MR 2IV 64 - 80 A 4**	5,08 x 32
	11,2	0,5	2 831	0,85	**MR IV 63 - 71 C 4**	3,8 x 40
	11,2	0,5	2 831	1	**MR IV 64 - 71 C 4**	3,8 x 40
	10,8	0,5	2 923	0,8	**MR IV 63 - 80 B 6**	2,54 x 40
	10,8	0,5	2 923	0,95	**MR IV 64 - 80 B 6**	2,54 x 40
	10,5	0,51	3 082	1,6	**MR 2IV 80 - 80 A 4**	5,08 x 32
	10,5	0,51	3 082	1,9	**MR 2IV 81 - 80 A 4**	5,08 x 32
	11,2	0,52	2 906	1,5	**MR IV 80 - 71 C 4**	3,8 x 40
	11,2	0,52	2 906	1,8	**MR IV 81 - 71 C 4**	3,8 x 40
	10,6	0,49	2 891	1,18	**MR IV 80 - 80 A 4**	2,54 x 63
	10,6	0,49	2 891	1,4	**MR IV 81 - 80 A 4**	2,54 x 63
	10,8	0,52	3 000	1,5	**MR IV 80 - 80 B 6**	2,54 x 40
	10,8	0,52	3 000	1,8	**MR IV 81 - 80 B 6**	2,54 x 40
	11,2	0,53	2 990	3	**MR IV 100 - 80 A 4**	3,8 x 40
	13,4	0,52	2 437	1,12	**MR 2IV 63 - 80 A 4**	5,08 x 25
	13,4	0,52	2 437	1,32	**MR 2IV 64 - 80 A 4**	5,08 x 25
	14	0,52	2 334	1,06	**MR IV 63 - 71 C 4**	3,8 x 32
	14	0,52	2 334	1,25	**MR IV 64 - 71 C 4**	3,8 x 32
	13,4	0,5	2 355	0,85	**MR IV 63 - 80 A 4**	2,54 x 50
	13,4	0,5	2 355	1	**MR IV 64 - 80 A 4**	2,54 x 50
	13,5	0,52	2 410	1	**MR IV 63 - 80 B 6**	2,54 x 32
	13,5	0,52	2 410	1,18	**MR IV 64 - 80 B 6**	2,54 x 32
	13,4	0,53	2 500	2,12	**MR 2IV 80 - 80 A 4**	5,08 x 25
	13,4	0,53	2 500	2,5	**MR 2IV 81 - 80 A 4**	5,08 x 25
	14	0,53	2 403	2	**MR IV 80 - 71 C 4**	3,8 x 32
	14	0,53	2 403	2,36	**MR IV 81 - 71 C 4**	3,8 x 32
	13,4	0,51	2 422	1,6	**MR IV 80 - 80 A 4**	2,54 x 50
	13,4	0,51	2 422	1,9	**MR IV 81 - 80 A 4**	2,54 x 50
	13,5	0,53	2 481	2	**MR IV 80 - 80 B 6**	2,54 x 32
	13,5	0,53	2 481	2,36	**MR IV 81 - 80 B 6**	2,54 x 32
	16,7	0,53	1 996	1,18	**MR IV 63 - 71 C 4**	3,18 x 32
	16,7	0,53	1 996	1,4	**MR IV 64 - 71 C 4**	3,18 x 32
	16,7	0,52	1 967	1,12	**MR IV 63 - 80 A 4**	2,54 x 40
	16,7	0,52	1 967	1,32	**MR IV 64 - 80 A 4**	2,54 x 40
	17,3	0,54	1 958	1,32	**MR IV 63 - 80 B 6**	2,54 x 25
	17,3	0,54	1 958	1,6	**MR IV 64 - 80 B 6**	2,54 x 25
	17,5	0,5	1 797	0,9	**MR V 63 - 80 B 6**	63
	17,5	0,5	1 797	1,06	**MR V 64 - 80 B 6**	63
	16,7	0,54	2 048	2,24	**MR IV 80 - 71 C 4**	3,18 x 32
	16,7	0,54	2 048	2,65	**MR IV 81 - 71 C 4**	3,18 x 32
	16,7	0,54	2 019	2,12	**MR IV 80 - 80 A 4**	2,54 x 40
	16,7	0,54	2 019	2,5	**MR IV 81 - 80 A 4**	2,54 x 40
	17,5	0,52	1 860	1,7	**MR V 80 - 80 B 6**	63
	17,5	0,52	1 860	2	**MR V 81 - 80 B 6**	63
	21	0,52	1 576	0,85	**MR IV 50 - 71 C 4**	2,54 x 32

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

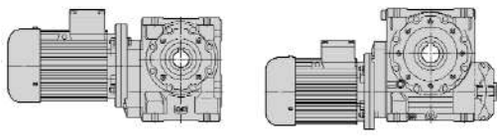


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,75	**21,7**	0,53	1 555	0,95	**MR IV 50 - 80 B 6**	2,03 x 25
	21,4	0,55	1 618	1,6	**MR IV 63 - 71 C 4**	3,18 x 25
	21,4	0,55	1 618	1,9	**MR IV 64 - 71 C 4**	3,18 x 25
	20,9	0,54	1 621	1,4	**MR IV 63 - 80 A 4**	2,54 x 32
	20,9	0,54	1 621	1,7	**MR IV 64 - 80 A 4**	2,54 x 32
	22	0,52	1 501	1,18	**MR V 63 - 80 B 6**	50
	22	0,52	1 501	1,4	**MR V 64 - 80 B 6**	50
	21,4	0,56	1 654	3	**MR IV 80 - 71 C 4**	3,18 x 25
	21,4	0,56	1 654	3,55	**MR IV 81 - 71 C 4**	3,18 x 25
	20,9	0,55	1 668	2,65	**MR IV 80 - 80 A 4**	2,54 x 32
	20,9	0,55	1 668	3,15	**MR IV 81 - 80 A 4**	2,54 x 32
	22	0,54	1 549	2,24	**MR V 80 - 80 B 6**	50
	22	0,54	1 549	2,65	**MR V 81 - 80 B 6**	50
	26,8	0,54	1 279	1,12	**MR IV 50 - 71 C 4**	2,54 x 25
	26,2	0,53	1 286	1	**MR IV 50 - 80 A 4**	2,03 x 32
	27,1	0,55	1 279	1,18	**MR IV 50 - 80 B 6**	2,03 x 20
	27,5	0,52	1 202	0,95	**MR V 50 - 80 B 6**	40
	26,7	0,59	1 397	1,6	**MR IV 63 - 71 C 4**	3,18 x 20
	26,7	0,59	1 397	1,9	**MR IV 64 - 71 C 4**	3,18 x 20
	26,8	0,56	1 312	1,8	**MR IV 63 - 80 A 4**	2,54 x 25
	26,8	0,56	1 312	2,12	**MR IV 64 - 80 A 4**	2,54 x 25
	27	0,52	1 226	1,18	**MR V 63 - 71 C 4**	63
	27	0,52	1 226	1,4	**MR V 64 - 71 C 4**	63
	27	0,52	1 226	1,18	**MR V 63 - 80 A 4**	63
	27	0,52	1 226	1,4	**MR V 64 - 80 A 4**	63
	27,5	0,55	1 250	1,6	**MR V 63 - 80 B 6**	40
	27,5	0,55	1 250	1,9	**MR V 64 - 80 B 6**	40
	27	0,54	1 265	2,24	**MR V 80 - 80 A 4**	63
	27	0,54	1 265	2,65	**MR V 81 - 80 A 4**	63
0,6	**33,5**	0,55	1 031	0,75	**MR IV 40 - 71 C 4**	2,54 x 20
	33,5	0,56	1 051	1,32	**MR IV 50 - 71 C 4**	2,54 x 20
	33,5	0,55	1 042	1,25	**MR IV 50 - 80 A 4**	2,03 x 25
	34	0,53	978	0,95	**MR V 50 - 71 C 4**	50
	34	0,53	978	0,95	**MR V 50 - 80 A 4**	50
	34,4	0,55	1 000	1,18	**MR V 50 - 80 B 6**	32
	33,4	0,6	1 137	2	**MR IV 63 - 71 C 4**	3,18 x 16
	33,4	0,6	1 137	2,5	**MR IV 64 - 71 C 4**	3,18 x 16
	33,5	0,6	1 127	1,9	**MR IV 63 - 80 A 4**	2,54 x 20
	33,5	0,6	1 127	2,24	**MR IV 64 - 80 A 4**	2,54 x 20
	34	0,55	1 018	1,6	**MR V 63 - 71 C 4**	50
	34	0,55	1 018	1,9	**MR V 64 - 71 C 4**	50
	34	0,55	1 018	1,6	**MR V 63 - 80 A 4**	50
	34	0,55	1 018	1,9	**MR V 64 - 80 A 4**	50
	34,4	0,56	1 030	2	**MR V 63 - 80 B 6**	32
	34,4	0,56	1 030	2,36	**MR V 64 - 80 B 6**	32
	41,9	0,59	888	0,8	**MR IV 40 - 71 C 4**	2,54 x 16
	44	0,55	791	0,85	**MR V 40 - 80 B * 6**	25
	41,9	0,6	902	1,5	**MR IV 50 - 71 C 4**	2,54 x 16
	41,9	0,57	856	1,5	**MR IV 50 - 80 A 4**	2,03 x 20
	42,5	0,55	815	1,18	**MR V 50 - 71 C 4**	40
	42,5	0,55	815	1,18	**MR V 50 - 80 A 4**	40
	44	0,56	809	1,5	**MR V 50 - 80 B 6**	25
	41,9	0,61	917	2,36	**MR IV 63 - 80 A 4**	2,54 x 16
	42,5	0,57	844	2	**MR V 63 - 71 C 4**	40
	42,5	0,57	844	2	**MR V 63 - 80 A 4**	40
	53,1	0,56	661	0,9	**MR V 40 - 71 C 4**	32
	55	0,57	650	1,06	**MR V 40 - 80 B * 6**	20
	52,3	0,61	730	1,7	**MR IV 50 - 80 A 4**	2,03 x 16
	53,1	0,57	675	1,5	**MR V 50 - 71 C 4**	32
	53,1	0,57	675	1,5	**MR V 50 - 80 A 4**	32
	55	0,58	664	1,9	**MR V 50 - 80 B 6**	20
	53,1	0,58	692	2,5	**MR V 63 - 80 A 4**	32
	68	0,58	533	1,12	**MR V 40 - 71 C 4**	25
	68	0,58	533	1,12	**MR V 40 - 80 A * 4**	25
	68	0,59	543	2	**MR V 50 - 71 C 4**	25
	68	0,59	543	2	**MR V 50 - 80 A 4**	25
	85	0,58	431	0,75	**MR V 32 - 71 C * 4**	20
	85	0,59	436	1,32	**MR V 40 - 71 C 4**	20
	85	0,59	436	1,32	**MR V 40 - 80 A * 4**	20

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
0,75	**85**	0,6	444	2,36	**MR V 50 - 71 C 4**	20
	85	0,6	444	2,36	**MR V 50 - 80 A 4**	20
	106	0,61	364	0,8	**MR V 32 - 71 C * 4**	16
	106	0,62	368	1,5	**MR V 40 - 71 C 4**	16
	106	0,62	368	1,5	**MR V 40 - 80 A * 4**	16
	106	0,63	373	2,5	**MR V 50 - 71 C 4**	16
	106	0,63	373	2,5	**MR V 50 - 80 A 4**	16
	131	0,63	302	0,95	**MR V 32 - 71 C * 4**	13
	131	0,63	304	1,7	**MR V 40 - 71 C 4**	13
	131	0,63	304	1,7	**MR V 40 - 80 A * 4**	13
	131	0,64	307	3	**MR V 50 - 71 C 4**	13
	131	0,64	307	3	**MR V 50 - 80 A 4**	13
	170	0,63	235	1,12	**MR V 32 - 71 C * 4**	10
	170	0,64	238	2	**MR V 40 - 71 C 4**	10
	170	0,64	238	2	**MR V 40 - 80 A * 4**	10
	243	0,65	170	1,4	**MR V 32 - 71 C * 4**	7
	243	0,66	171	2,5	**MR V 40 - 71 C 4**	7
	243	0,66	171	2,5	**MR V 40 - 80 A * 4**	7
1	**1,83**	0,61	21 019	0,9	**MR 2IV 125 - 90 S 6**	12 x 50
	2,29	0,63	17 299	1,18	**MR 2IV 125 - 90 S 6**	12 x 40
	2,84	0,65	14 321	0,85	**MR 2IV 100 - 80 C 6**	12,1 x 32
	2,86	0,66	14 507	1,5	**MR 2IV 125 - 90 S 6**	12 x 32
	3,52	0,64	11 489	0,95	**MR 2IV 100 - 80 B 4**	12,1 x 40
	3,64	0,67	11 684	1,12	**MR 2IV 100 - 80 C 6**	12,1 x 25
	3,53	0,67	11 939	1,8	**MR 2IV 125 - 90 S 6**	9,75 x 32
	3,53	0,67	11 939	2	**MR 2IV 126 - 90 S 6**	9,75 x 32
	4,39	0,66	9 514	1,25	**MR 2IV 100 - 80 B 4**	12,1 x 32
	4,34	0,66	9 621	1,9	**MR 2IV 125 - 90 S 6**	6,34 x 40
	4,34	0,66	9 621	2,12	**MR 2IV 126 - 90 S 6**	6,34 x 40
	4,53	0,65	9 042	1,6	**MR IV 125 - 90 S 6**	3,86 x 63
	4,53	0,65	9 042	1,8	**MR IV 126 - 90 S 6**	3,86 x 63
	4,59	0,63	8 578	0,9	**MR IV 100 - 80 C 6**	3,8 x 63
	5,45	0,67	7 805	0,9	**MR 2IV 81 - 80 C 6**	8,08 x 25
	5,62	0,69	7 784	1,6	**MR 2IV 100 - 80 B 4**	12,1 x 25
	5,79	0,66	7 222	1,18	**MR IV 100 - 80 C 6**	3,8 x 50
	5,7	0,68	7 565	2	**MR IV 125 - 90 S 6**	3,86 x 50
	5,7	0,68	7 565	2,36	**MR IV 126 - 90 S 6**	3,86 x 50
	6,58	0,67	6 449	0,85	**MR 2IV 80 - 80 B 4**	8,08 x 32
	6,58	0,67	6 449	1	**MR 2IV 81 - 80 B 4**	8,08 x 32
	6,72	0,71	6 626	1,8	**MR 2IV 100 - 80 B 4**	10,1 x 25
	7,1	0,66	5 848	1,25	**MR IV 100 - 80 B 4**	3,8 x 63
	7,24	0,7	6 067	1,6	**MR IV 100 - 80 C 6**	3,8 x 40
	7,13	0,7	6 222	2,65	**MR IV 125 - 90 S 6**	3,86 x 40
	8,42	0,7	5 233	1,12	**MR 2IV 80 - 80 B 4**	8,08 x 25
	8,42	0,7	5 233	1,32	**MR 2IV 81 - 80 B 4**	8,08 x 25
	8,67	0,67	4 884	0,85	**MR IV 80 - 80 C 6**	2,54 x 50
	8,67	0,67	4 884	1	**MR IV 81 - 80 C 6**	2,54 x 50
	8,35	0,7	5 310	2,12	**MR 2IV 100 - 80 B 4**	6,36 x 32
	8,95	0,69	4 893	1,6	**MR IV 100 - 80 B 4**	3,8 x 50
	9,05	0,72	5 000	2,24	**MR IV 100 - 80 C 6**	3,8 x 32
	10,5	0,7	4 203	1,18	**MR 2IV 80 - 80 B 4**	5,08 x 32
	10,5	0,7	4 203	1,4	**MR 2IV 81 - 80 B 4**	5,08 x 32
	10,6	0,66	3 943	0,85	**MR IV 80 - 80 B 4**	2,54 x 63
	10,6	0,66	3 943	1	**MR IV 81 - 80 B 4**	2,54 x 63
	10,8	0,7	4 091	1,12	**MR IV 80 - 80 C 6**	2,54 x 40
	10,8	0,7	4 091	1,32	**MR IV 81 - 80 C 6**	2,54 x 40
	11,2	0,72	4 077	2,24	**MR IV 100 - 80 B 4**	3,8 x 40
	13,4	0,71	3 323	0,8	**MR 2IV 63 - 80 B 4**	5,08 x 25
	13,4	0,71	3 323	0,95	**MR 2IV 64 - 80 B 4**	5,08 x 25
	13,5	0,71	3 286	0,75	**MR IV 63 - 80 C 6**	2,54 x 32
	13,5	0,71	3 286	0,9	**MR IV 64 - 80 C 6**	2,54 x 32
	13,4	0,72	3 409	1,6	**MR 2IV 80 - 80 B 4**	5,08 x 25
	13,4	0,72	3 409	1,9	**MR 2IV 81 - 80 B 4**	5,08 x 25
	13,4	0,7	3 303	1,18	**MR IV 80 - 80 B 4**	2,54 x 50
	13,4	0,7	3 303	1,4	**MR IV 81 - 80 B 4**	2,54 x 50
	13,5	0,73	3 383	1,4	**MR IV 80 - 80 C 6**	2,54 x 32

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

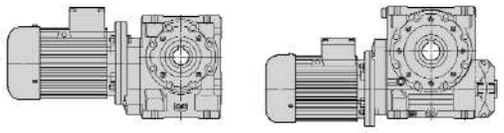


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
1	**13,5**	0,73	3 383	1,7	**MR IV 81 - 80 C 6**	2,54 x 32
	14	0,74	3 350	3	**MR IV 100 - 80 B 4**	3,8 x 32
	16,7	0,71	2 683	0,8	**MR IV 63 - 80 B 4**	2,54 x 40
	16,7	0,71	2 683	0,95	**MR IV 64 - 80 B 4**	2,54 x 40
	17,3	0,73	2 670	1	**MR IV 63 - 80 C 6**	2,54 x 25
	17,3	0,73	2 670	1,18	**MR IV 64 - 80 C 6**	2,54 x 25
	17,2	0,72	2 644	0,9	**MR IV 63 - 90 S 6**	2 x 32
	17,5	0,68	2 450	0,75	**MR V 64 - 80 C 6**	63
	17,5	0,68	2 450	0,75	**MR V 64 - 90 S 6**	63
	16,7	0,73	2 753	1,5	**MR IV 80 - 80 B 4**	2,54 x 40
	16,7	0,73	2 753	1,8	**MR IV 81 - 80 B 4**	2,54 x 40
	17,3	0,75	2 737	1,9	**MR IV 80 - 80 C 6**	2,54 x 25
	17,3	0,75	2 737	2,24	**MR IV 81 - 80 C 6**	2,54 x 25
	17,5	0,7	2 537	1,25	**MR V 80 - 90 S 6**	63
	17,5	0,7	2 537	1,5	**MR V 81 - 90 S 6**	63
	17,5	0,73	2 628	2,36	**MR V 100 - 90 S 6**	63
	20,9	0,73	2 211	1	**MR IV 63 - 80 B 4**	2,54 x 32
	20,9	0,73	2 211	1,25	**MR IV 64 - 80 B 4**	2,54 x 32
	22	0,75	2 143	1,18	**MR IV 63 - 90 S 6**	2 x 25
	22	0,75	2 143	1,4	**MR IV 64 - 90 S 6**	2 x 25
	22	0,71	2 047	0,85	**MR V 63 - 80 C 6**	50
	22	0,71	2 047	1,06	**MR V 64 - 80 C 6**	50
	22	0,71	2 047	0,85	**MR V 63 - 90 S 6**	50
	22	0,71	2 047	1,06	**MR V 64 - 90 S 6**	50
	20,9	0,76	2 274	1,9	**MR IV 80 - 80 B 4**	2,54 x 32
	20,9	0,76	2 274	2,36	**MR IV 81 - 80 B 4**	2,54 x 32
	22	0,76	2 191	2,24	**MR IV 80 - 90 S 6**	2 x 25
	22	0,74	2 113	1,6	**MR V 80 - 90 S 6**	50
	22	0,74	2 113	2	**MR V 81 - 90 S 6**	50
	22	0,76	2 175	3	**MR V 100 - 90 S 6**	50
0,84	**27,1**	0,75	1 744	0,85	**MR IV 50 - 80 C 6**	2,03 x 20
	26,8	0,76	1 789	1,32	**MR IV 63 - 80 B 4**	2,54 x 25
	26,8	0,76	1 789	1,6	**MR IV 64 - 80 B 4**	2,54 x 25
	27	0,72	1 672	0,9	**MR V 63 - 80 B 4**	63
	27	0,72	1 672	1,06	**MR V 64 - 80 B 4**	63
	27,5	0,74	1 705	1,12	**MR V 63 - 80 C 6**	40
	27,5	0,74	1 705	1,4	**MR V 64 - 80 C 6**	40
	27,5	0,74	1 705	1,12	**MR V 63 - 90 S 6**	40
	27,5	0,74	1 705	1,4	**MR V 64 - 90 S 6**	40
	26,8	0,78	1 833	2,5	**MR IV 80 - 80 B 4**	2,54 x 25
	26,8	0,78	1 833	3	**MR IV 81 - 80 B 4**	2,54 x 25
	27	0,74	1 724	1,7	**MR V 80 - 80 B 4**	63
	27	0,74	1 724	2	**MR V 81 - 80 B 4**	63
	27,5	0,76	1 753	2,12	**MR V 80 - 90 S 6**	40
	27,5	0,76	1 753	2,5	**MR V 81 - 90 S 6**	40
	33,5	0,76	1 421	0,95	**MR IV 50 - 80 B 4**	2,03 x 25
	34,4	0,74	1 364	0,85	**MR V 50 - 80 C 6**	32
	33,5	0,82	1 537	1,4	**MR IV 63 - 80 B 4**	2,54 x 20
	33,5	0,82	1 537	1,6	**MR IV 64 - 80 B 4**	2,54 x 20
	34,4	0,82	1 506	1,5	**MR IV 63 - 90 S 6**	2 x 16
	34,4	0,82	1 506	1,8	**MR IV 64 - 90 S 6**	2 x 16
	34	0,75	1 388	1,12	**MR V 63 - 80 B 4**	50
	34	0,75	1 388	1,4	**MR V 64 - 80 B 4**	50
	34,4	0,77	1 404	1,4	**MR V 63 - 80 C 6**	32
	34,4	0,77	1 404	1,7	**MR V 64 - 80 C 6**	32
	34,4	0,77	1 404	1,4	**MR V 63 - 90 S 6**	32
	34,4	0,77	1 404	1,7	**MR V 64 - 90 S 6**	32
	33,5	0,83	1 560	2,5	**MR IV 80 - 80 B 4**	2,54 x 20
	33,5	0,83	1 560	3	**MR IV 81 - 80 B 4**	2,54 x 20
	34	0,77	1 424	2,12	**MR V 80 - 80 B 4**	50
	34	0,77	1 424	2,5	**MR V 81 - 80 B 4**	50
	34,4	0,78	1 439	2,65	**MR V 80 - 90 S 6**	32
	41,9	0,78	1 168	1,12	**MR IV 50 - 80 B 4**	2,03 x 20
	42,5	0,75	1 111	0,9	**MR V 50 - 80 B 4**	40
	44	0,77	1 104	1,12	**MR V 50 - 80 C 6**	25
	41,9	0,83	1 250	1,8	**MR IV 63 - 80 B 4**	2,54 x 16
	41,9	0,83	1 250	2,12	**MR IV 64 - 80 B 4**	2,54 x 16
	42,5	0,78	1 150	1,5	**MR V 63 - 80 B 4**	40
	42,5	0,78	1 150	1,8	**MR V 64 - 80 B 4**	40
	44	0,79	1 131	1,9	**MR V 63 - 80 C 6**	25

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
1	**44**	0,79	1 131	2,24	**MR V 64 - 80 C 6**	25
	44	0,79	1 131	1,9	**MR V 63 - 90 S 6**	25
	44	0,79	1 131	2,24	**MR V 64 - 90 S 6**	25
	42,5	0,79	1 174	2,65	**MR V 80 - 80 B 4**	40
0,73	**55**	0,77	887	0,75	**MR V 40 - 80 C * 6**	20
	52,3	0,83	996	1,25	**MR IV 50 - 80 B 4**	2,03 x 16
	53,1	0,78	920	1,12	**MR V 50 - 80 B 4**	32
	55	0,79	905	1,32	**MR V 50 - 80 C 6**	20
	53,1	0,79	943	1,8	**MR V 63 - 80 B 4**	32
	53,1	0,79	943	2,12	**MR V 64 - 80 B 4**	32
0,84	**68**	0,78	727	0,8	**MR V 40 - 80 B * 4**	25
	68	0,8	741	1,4	**MR V 50 - 80 B 4**	25
	68	0,82	756	2,36	**MR V 63 - 80 B 4**	25
	85	0,8	594	1	**MR V 40 - 80 B * 4**	20
	85	0,82	605	1,7	**MR V 50 - 80 B 4**	20
	85	0,86	636	2,5	**MR V 63 - 80 B 4**	20
	106	0,85	502	1,06	**MR V 40 - 80 B * 4**	16
	106	0,86	509	1,9	**MR V 50 - 80 B 4**	16
	106	0,87	516	3,15	**MR V 63 - 80 B 4**	16
	131	0,86	415	1,18	**MR V 40 - 80 B * 4**	13
	131	0,87	419	2,12	**MR V 50 - 80 B 4**	13
	170	0,87	324	1,5	**MR V 40 - 80 B * 4**	10
	170	0,88	327	2,65	**MR V 50 - 80 B 4**	10
	243	0,9	233	1,8	**MR V 40 - 80 B * 4**	7
	243	0,9	235	3,35	**MR V 50 - 80 B 4**	7
1,5	**2,29**	0,92	25 372	0,85	**MR 2IV 126 - 90 L 6**	12 x 40
	2,83	0,92	20 546	0,85	**MR 2IV 125 - 90 S 4**	12 x 50
	2,83	0,92	20 546	0,95	**MR 2IV 126 - 90 S 4**	12 x 50
	2,86	0,96	21 277	1	**MR 2IV 125 - 90 L 6**	12 x 32
	2,86	0,96	21 277	1,12	**MR 2IV 126 - 90 L 6**	12 x 32
	3,53	0,95	16 990	1,12	**MR 2IV 125 - 90 S 4**	12 x 40
	3,53	0,95	16 990	1,25	**MR 2IV 126 - 90 S 4**	12 x 40
	3,53	0,98	17 510	1,18	**MR 2IV 125 - 90 L 6**	9,75 x 32
	4,39	0,97	13 954	0,85	**MR 2IV 100 - 80 C 4**	12,1 x 32
	4,41	1	14 272	1,4	**MR 2IV 125 - 90 S 4**	12 x 32
	4,41	1	14 272	1,6	**MR 2IV 126 - 90 S 4**	12 x 32
	4,53	0,95	13 262	1,06	**MR IV 125 - 90 L 6**	3,86 x 63
	4,53	0,95	13 262	1,18	**MR IV 126 - 90 L 6**	3,86 x 63
	5,62	1,02	11 416	1,12	**MR 2IV 100 - 80 C 4**	12,1 x 25
	5,45	1,01	11 741	1,7	**MR 2IV 125 - 90 S 4**	9,75 x 32
	5,45	1,01	11 741	2	**MR 2IV 126 - 90 S 4**	9,75 x 32
	5,7	1	11 095	1,4	**MR IV 125 - 90 L 6**	3,86 x 50
	5,7	1	11 095	1,6	**MR IV 126 - 90 L 6**	3,86 x 50
	6,72	1,04	9 719	1,25	**MR 2IV 100 - 80 C 4**	10,1 x 25
	6,58	1,01	9 665	1,18	**MR 2IV 100 - 90 S 4**	8,08 x 32
	7,1	0,97	8 577	0,85	**MR IV 100 - 80 C 4**	3,8 x 63
	6,88	0,97	8 855	0,85	**MR IV 100 - 90 L 6**	2,54 x 63
	6,7	1,01	9 515	1,7	**MR 2IV 125 - 90 S 4**	6,34 x 40
	6,7	1,01	9 515	2,12	**MR 2IV 126 - 90 S 4**	6,34 x 40
	7	1	8 973	1,4	**MR IV 125 - 90 S 4**	3,86 x 63
	7	1	8 973	1,7	**MR IV 126 - 90 S 4**	3,86 x 63
	7,13	1,03	9 126	1,8	**MR IV 125 - 90 L 6**	3,86 x 40
	7,13	1,03	9 126	2,12	**MR IV 126 - 90 L 6**	3,86 x 40
	8,42	1,03	7 675	0,9	**MR 2IV 81 - 80 C 4**	8,08 x 25
	8,42	1,05	7 885	1,5	**MR 2IV 100 - 90 S 4**	8,08 x 25
	8,95	1,02	7 177	1,12	**MR IV 100 - 80 C 4**	3,8 x 50
	8,67	1,02	7 409	1,06	**MR IV 100 - 90 L 6**	2,54 x 50
	8,38	1,06	7 939	2,36	**MR 2IV 125 - 90 S 4**	6,34 x 32
	8,81	1,04	7 470	1,9	**MR IV 125 - 90 S 4**	3,86 x 50
	8,81	1,04	7 470	2,24	**MR IV 126 - 90 S 4**	3,86 x 50
	8,8	1,05	7 549	2,12	**MR IV 125 - 90 L 6**	3,12 x 40
	10,5	1,02	6 165	0,8	**MR 2IV 80 - 80 C 4**	5,08 x 32
	10,5	1,02	6 165	0,95	**MR 2IV 81 - 80 C 4**	5,08 x 32
	11	1,01	5 777	0,8	**MR IV 81 - 90 L 6**	2 x 50
	10,7	1,07	6 325	1,8	**MR 2IV 100 - 80 C 4**	6,36 x 25
	10,5	1,05	6 320	1,7	**MR 2IV 100 - 90 S 4**	5,08 x 32

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

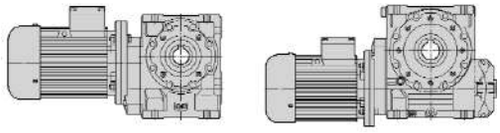


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
1,5	**11,2**	1,06	5 980	1,5	**MR IV 100 - 80 C 4**	3,8 x 40
	10,6	1,01	6 017	1,12	**MR IV 100 - 90 S 4**	2,54 x 63
	10,8	1,06	6 174	1,5	**MR IV 100 - 90 L 6**	2,54 x 40
	11	1,07	6 141	2,5	**MR IV 125 - 90 S 4**	3,86 x 40
	13,4	1,06	5 000	1,06	**MR 2IV 80 - 80 C 4**	5,08 x 25
	13,4	1,06	5 000	1,25	**MR 2IV 81 - 80 C 4**	5,08 x 25
	13,4	1,03	4 844	0,8	**MR IV 80 - 80 C 4**	2,54 x 50
	13,4	1,03	4 844	0,95	**MR IV 81 - 80 C 4**	2,54 x 50
	13,5	1	4 682	0,85	**MR IV 81 - 90 S 4**	2 x 63
	13,8	1,05	4 819	0,9	**MR IV 80 - 90 L 6**	2 x 40
	13,8	1,05	4 819	1,06	**MR IV 81 - 90 L 6**	2 x 40
	13,4	1,09	5 135	2,12	**MR 2IV 100 - 90 S 4**	5,08 x 25
	14	1,09	4 914	2	**MR IV 100 - 80 C 4**	3,8 x 32
	13,4	1,06	5 010	1,5	**MR IV 100 - 90 S 4**	2,54 x 50
	13,5	1,09	5 073	2	**MR IV 100 - 90 L 6**	2,54 x 32
	16,7	1,15	4 330	1,06	**MR 2IV 80 - 80 C 4**	5,08 x 20
	16,7	1,15	4 330	1,25	**MR 2IV 81 - 80 C 4**	5,08 x 20
	16,7	1,07	4 038	1,06	**MR IV 80 - 80 C 4**	2,54 x 40
	16,7	1,07	4 038	1,25	**MR IV 81 - 80 C 4**	2,54 x 40
	17	1,05	3 911	0,95	**MR IV 80 - 90 S 4**	2 x 50
	17	1,05	3 911	1,12	**MR IV 81 - 90 S 4**	2 x 50
	17,2	1,08	3 979	1,18	**MR IV 80 - 90 L 6**	2 x 32
	17,2	1,08	3 979	1,4	**MR IV 81 - 90 L 6**	2 x 32
	17,5	1,03	3 720	0,85	**MR V 80 - 90 L 6**	63
	17,5	1,03	3 720	1	**MR V 81 - 90 L 6**	63
	16,7	1,17	4 406	2,24	**MR 2IV 100 - 90 S 4**	5,08 x 20
	16,7	1,11	4 196	2,24	**MR IV 100 - 80 C 4**	3,18 x 32
	16,7	1,11	4 162	2	**MR IV 100 - 90 S 4**	2,54 x 40
	17,3	1,13	4 112	2,5	**MR IV 100 - 90 L 6**	2,54 x 25
	17,5	1,07	3 854	1,6	**MR V 100 - 90 L 6**	63
1,17	**20,9**	1,08	3 243	0,85	**MR IV 64 - 80 C 4**	2,54 x 32
1,19	**22**	1,1	3 143	0,8	**MR IV 63 - 90 L 6**	2 x 25
1,19	**22**	1,1	3 143	0,95	**MR IV 64 - 90 L 6**	2 x 25
	20,9	1,11	3 335	1,32	**MR IV 80 - 80 C 4**	2,54 x 32
	20,9	1,11	3 335	1,6	**MR IV 81 - 80 C 4**	2,54 x 32
	21,3	1,1	3 252	1,18	**MR IV 80 - 90 S 4**	2 x 40
	21,3	1,1	3 252	1,5	**MR IV 81 - 90 S 4**	2 x 40
	22	1,12	3 213	1,5	**MR IV 80 - 90 L 6**	2 x 25
	22	1,12	3 213	1,8	**MR IV 81 - 90 L 6**	2 x 25
	22	1,08	3 098	1,12	**MR V 80 - 90 L 6**	50
	22	1,08	3 098	1,32	**MR V 81 - 90 L 6**	50
	20,9	1,13	3 416	2,65	**MR IV 100 - 90 S 4**	2,54 x 32
	22	1,11	3 190	2,12	**MR V 100 - 90 L 6**	50
	26,8	1,11	2 623	0,9	**MR IV 63 - 80 C 4**	2,54 x 25
	26,8	1,11	2 623	1,06	**MR IV 64 - 80 C 4**	2,54 x 25
	26,6	1,1	2 609	0,85	**MR IV 63 - 90 S 4**	2 x 32
	26,6	1,1	2 609	1	**MR IV 64 - 90 S 4**	2 x 32
	27,5	1,09	2 501	0,95	**MR V 64 - 90 L 6**	40
	26,8	1,14	2 688	1,7	**MR IV 80 - 80 C 4**	2,54 x 25
	26,8	1,14	2 688	2	**MR IV 81 - 80 C 4**	2,54 x 25
	26,6	1,13	2 683	1,5	**MR IV 80 - 90 S 4**	2 x 32
	26,6	1,13	2 683	1,8	**MR IV 81 - 90 S 4**	2 x 32
	27	1,08	2 529	1,12	**MR V 80 - 80 C 4**	63
	27	1,08	2 529	1,32	**MR V 81 - 80 C 4**	63
	27	1,08	2 529	1,12	**MR V 80 - 90 S 4**	63
	27	1,08	2 529	1,32	**MR V 81 - 90 S 4**	63
	27,5	1,12	2 571	1,5	**MR V 80 - 90 L 6**	40
	27,5	1,12	2 571	1,7	**MR V 81 - 90 L 6**	40
	26,8	1,17	2 759	3,35	**MR IV 100 - 90 S 4**	2,54 x 25
	27	1,11	2 601	2,12	**MR V 100 - 90 S 4**	63
	33,5	1,2	2 254	0,95	**MR IV 63 - 80 C 4**	2,54 x 20
	33,5	1,2	2 254	1,12	**MR IV 64 - 80 C 4**	2,54 x 20
	34	1,14	2 106	1,06	**MR IV 63 - 90 S 4**	2 x 25
	34	1,14	2 106	1,25	**MR IV 64 - 90 S 4**	2 x 25
	34,4	1,2	2 209	1,06	**MR IV 63 - 90 L 6**	2 x 16
	34	1,1	2 036	0,8	**MR V 63 - 80 C 4**	50
	34	1,1	2 036	0,95	**MR V 64 - 80 C 4**	50
	34	1,1	2 036	0,8	**MR V 63 - 90 S 4**	50
	34	1,1	2 036	0,95	**MR V 64 - 90 S 4**	50
	34,4	1,12	2 059	1	**MR V 63 - 90 L 6**	32

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
1,5	**34,4**	1,12	2 059	1,18	**MR V 64 - 90 L 6**	32
	33,5	1,22	2 288	1,8	**MR IV 80 - 80 C 4**	2,54 x 20
	33,5	1,22	2 288	2,12	**MR IV 81 - 80 C 4**	2,54 x 20
	34	1,16	2 158	2	**MR IV 80 - 90 S 4**	2 x 25
	34	1,16	2 158	2,36	**MR IV 81 - 90 S 4**	2 x 25
	34	1,13	2 089	1,4	**MR V 80 - 80 C 4**	50
	34	1,13	2 089	1,7	**MR V 81 - 80 C 4**	50
	34	1,13	2 089	1,4	**MR V 80 - 90 S 4**	50
	34	1,13	2 089	1,7	**MR V 81 - 90 S 4**	50
	34,4	1,15	2 111	1,8	**MR V 80 - 90 L 6**	32
	34,4	1,15	2 111	2,24	**MR V 81 - 90 L 6**	32
1,01	**41,9**	1,14	1 713	0,75	**MR IV 50 - 80 C 4**	2,03 x 20
1,02	**44**	1,13	1 619	0,75	**MR V 50 - 90 L * 6**	25
	41,9	1,22	1 834	1,18	**MR IV 63 - 80 C 4**	2,54 x 16
	41,9	1,22	1 834	1,4	**MR IV 64 - 80 C 4**	2,54 x 16
	42,5	1,21	1 798	1,12	**MR IV 63 - 90 S 4**	2 x 20
	42,5	1,21	1 798	1,32	**MR IV 64 - 90 S 4**	2 x 20
	42,5	1,14	1 687	1	**MR V 63 - 80 C 4**	40
	42,5	1,14	1 687	1,18	**MR V 64 - 80 C 4**	40
	42,5	1,14	1 687	1	**MR V 63 - 90 S 4**	40
	42,5	1,14	1 687	1,18	**MR V 64 - 90 S 4**	40
	44	1,16	1 659	1,25	**MR V 63 - 90 L 6**	25
	44	1,16	1 659	1,5	**MR V 64 - 90 L 6**	25
	41,9	1,24	1 864	2,24	**MR IV 80 - 80 C 4**	2,54 x 16
	41,9	1,24	1 864	2,65	**MR IV 81 - 80 C 4**	2,54 x 16
	42,5	1,23	1 826	2	**MR IV 80 - 90 S 4**	2 x 20
	42,5	1,23	1 826	2,5	**MR IV 81 - 90 S 4**	2 x 20
	42,5	1,16	1 722	1,8	**MR V 80 - 80 C 4**	40
	42,5	1,16	1 722	2,24	**MR V 81 - 80 C 4**	40
	42,5	1,16	1 722	1,8	**MR V 80 - 90 S 4**	40
	42,5	1,16	1 722	2,24	**MR V 81 - 90 S 4**	40
	44	1,18	1 694	2,36	**MR V 80 - 90 L 6**	25
	52,3	1,21	1 460	0,85	**MR IV 50 - 80 C 4**	2,03 x 16
1,17	**53,1**	1,14	1 349	0,75	**MR V 50 - 80 C 4**	32
1,12	**55**	1,16	1 328	0,95	**MR V 50 - 90 L * 6**	20
	53,1	1,23	1 463	1,4	**MR IV 63 - 90 S 4**	2 x 16
	53,1	1,23	1 463	1,7	**MR IV 64 - 90 S 4**	2 x 16
	53,1	1,17	1 383	1,25	**MR V 63 - 80 C 4**	32
	53,1	1,17	1 383	1,5	**MR V 64 - 80 C 4**	32
	53,1	1,17	1 383	1,25	**MR V 63 - 90 S 4**	32
	53,1	1,17	1 383	1,5	**MR V 64 - 90 S 4**	32
	55	1,23	1 407	1,6	**MR V 64 - 90 L 6**	20
	53,1	1,25	1 486	2,65	**MR IV 80 - 90 S 4**	2 x 16
	53,1	1,25	1 486	3,15	**MR IV 81 - 90 S 4**	2 x 16
	53,1	1,19	1 410	2,36	**MR V 80 - 80 C 4**	32
	53,1	1,19	1 410	2,8	**MR V 81 - 80 C 4**	32
	53,1	1,19	1 410	2,36	**MR V 80 - 90 S 4**	32
	53,1	1,19	1 410	2,8	**MR V 81 - 90 S 4**	32
	68	1,17	1 087	1	**MR V 50 - 80 C 4**	25
	68	1,17	1 087	1	**MR V 50 - 90 S * 4**	25
	68	1,2	1 108	1,6	**MR V 63 - 80 C 4**	25
	68	1,2	1 108	1,9	**MR V 64 - 80 C 4**	25
	68	1,2	1 108	1,6	**MR V 63 - 90 S 4**	25
	68	1,2	1 108	1,9	**MR V 64 - 90 S 4**	25
	68	1,22	1 128	3	**MR V 80 - 90 S 4**	25
	68	1,22	1 128	3,55	**MR V 81 - 90 S 4**	25
	85	1,2	888	1,18	**MR V 50 - 80 C 4**	20
	85	1,2	888	1,18	**MR V 50 - 90 S * 4**	20
	85	1,26	933	1,7	**MR V 63 - 80 C 4**	20
	85	1,26	933	2	**MR V 64 - 80 C 4**	20
	85	1,26	933	1,7	**MR V 63 - 90 S 4**	20
	85	1,26	933	2	**MR V 64 - 90 S 4**	20
	84,6	1,27	944	1,9	**MR V 63 - 90 L 6**	13
	84,6	1,27	944	2,24	**MR V 64 - 90 L 6**	13
1,18	**106**	1,24	737	0,75	**MR V 40 - 80 C * 4**	16
	106	1,26	746	1,25	**MR V 50 - 80 C 4**	16
	106	1,26	746	1,25	**MR V 50 - 90 S * 4**	16
	106	1,27	756	2,12	**MR V 63 - 80 C 4**	16
	106	1,27	756	2,12	**MR V 63 - 90 S 4**	16
	131	1,26	609	0,85	**MR V 40 - 80 C * 4**	13

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

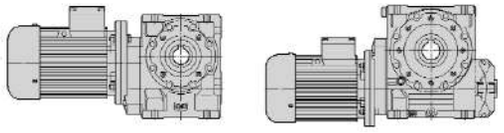


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
1,5	131	1,28	615	1,5	MR V 50 - 80 C 4	13
	131	1,28	615	1,5	MR V 50 - 90 S *4	13
	131	1,29	622	2,5	MR V 63 - 90 S 4	13
	170	1,28	475	1	MR V 40 - 80 C *4	10
	170	1,29	479	1,8	MR V 50 - 80 C 4	10
	170	1,29	479	1,8	MR V 50 - 90 S *4	10
	170	1,32	489	3	MR V 63 - 90 S 4	10
	243	1,32	342	1,25	MR V 40 - 80 C *4	7
	243	1,33	344	2,24	MR V 50 - 80 C 4	7
	243	1,33	344	2,24	MR V 50 - 90 S *4	7
2	3,53	1,3	23 168	0,8	MR 2IV 125 - 90 L 4	12 x 40
	3,53	1,3	23 168	0,9	MR 2IV 126 - 90 L 4	12 x 40
	4,41	1,36	19 462	1,06	MR 2IV 125 - 90 L 4	12 x 32
	4,41	1,36	19 462	1,18	MR 2IV 126 - 90 L 4	12 x 32
	4,53	1,3	18 084	0,8	MR IV 125 - 90 LC 6	3,86 x 63
	4,53	1,3	18 084	0,9	MR IV 126 - 90 LC 6	3,86 x 63
	4,37	1,34	19 341	1,4	MR IV 160 - 100 LA 6	4 x 63
	4,37	1,34	19 341	1,6	MR IV 161 - 100 LA 6	4 x 63
	5,45	1,38	16 011	1,18	MR 2IV 125 - 90 L 4	9,75 x 32
	5,45	1,38	16 011	1,4	MR 2IV 126 - 90 L 4	9,75 x 32
	5,59	1,33	14 988	0,9	MR IV 125 - 100 LA 6	3,13 x 63
	5,59	1,33	14 988	1,06	MR IV 126 - 100 LA 6	3,13 x 63
	5,7	1,37	15 129	1	MR IV 125 - 90 LC 6	3,86 x 50
	5,7	1,37	15 129	1,18	MR IV 126 - 90 LC 6	3,86 x 50
	5,5	1,4	16 095	1,9	MR IV 160 - 100 LA 6	4 x 50
	5,5	1,4	16 095	2,12	MR IV 161 - 100 LA 6	4 x 50
	6,58	1,38	13 180	0,85	MR 2IV 100 - 90 L 4	8,08 x 32
	6,7	1,38	12 975	1,32	MR 2IV 125 - 90 L 4	6,34 x 40
	6,7	1,38	12 975	1,5	MR 2IV 126 - 90 L 4	6,34 x 40
	6,68	1,41	13 350	1,4	MR 2IV 125 - 100 LA 6	5,15 x 32
	7	1,36	12 236	1,06	MR IV 125 - 90 L 4	3,86 x 63
	7	1,36	12 236	1,25	MR IV 126 - 90 L 4	3,86 x 63
	7,04	1,4	12 497	1,18	MR IV 125 - 100 LA 6	3,13 x 50
	7,04	1,4	12 497	1,4	MR IV 126 - 100 LA 6	3,13 x 50
	7,13	1,41	12 445	1,32	MR IV 125 - 90 LC 6	3,86 x 40
	7,13	1,41	12 445	1,6	MR IV 126 - 90 LC 6	3,86 x 40
	6,88	1,46	13 363	2,65	MR IV 160 - 100 LA 6	4 x 40
	6,88	1,46	13 363	3	MR IV 161 - 100 LA 6	4 x 40
	8,42	1,44	10 752	1,12	MR 2IV 100 - 90 L 4	8,08 x 25
	8,95	1,39	9 786	0,8	MR IV 100 - 90 L *4	3,8 x 50
	8,67	1,39	10 103	0,8	MR IV 100 - 90 LC 6	2,54 x 50
	8,38	1,44	10 826	1,7	MR 2IV 125 - 90 L 4	6,34 x 32
	8,38	1,44	10 826	2	MR 2IV 126 - 90 L 4	6,34 x 32
	8,81	1,42	10 186	1,4	MR IV 125 - 90 L 4	3,86 x 50
	8,81	1,42	10 186	1,6	MR IV 126 - 90 L 4	3,86 x 50
	8,8	1,44	10 294	1,6	MR IV 125 - 100 LA 6	3,13 x 40
	8,8	1,44	10 294	1,9	MR IV 126 - 100 LA 6	3,13 x 40
	8,8	1,44	10 294	1,6	MR IV 125 - 90 LC 6	3,13 x 40
	8,8	1,44	10 294	1,9	MR IV 126 - 90 LC 6	3,13 x 40
	8,66	1,48	10 793	3,15	MR IV 160 - 100 LA 6	3,17 x 40
	10,5	1,43	8 618	1,18	MR 2IV 100 - 90 L 4	5,08 x 32
	11,2	1,45	8 155	1,12	MR IV 100 - 90 L *4	3,8 x 40
	10,6	1,38	8 205	0,85	MR IV 100 - 90 L 4	2,54 x 63
	11	1,42	8 123	0,95	MR IV 100 - 100 LA 6	2 x 50
	10,7	1,57	9 202	2,12	MR 2IV 126 - 90 L 4	6,34 x 25
	11	1,46	8 375	1,8	MR IV 125 - 90 L 4	3,86 x 40
	11	1,46	8 375	2,24	MR IV 126 - 90 L 4	3,86 x 40
	11	1,49	8 562	2,12	MR IV 125 - 90 LC 6	3,13 x 32
	11	1,49	8 562	2,5	MR IV 126 - 90 LC 6	3,13 x 32
1,52	13,8	1,43	6 571	0,8	MR IV 81 - 90 LC 6	2 x 40
	13,4	1,49	7 002	1,5	MR 2IV 100 - 90 L 4	5,08 x 25
	14	1,49	6 701	1,5	MR IV 100 - 90 L *4	3,8 x 32
	13,4	1,45	6 832	1,06	MR IV 100 - 90 L 4	2,54 x 50
	13,8	1,48	6 764	1,32	MR IV 100 - 100 LA 6	2 x 40
	13,5	1,49	6 918	1,5	MR IV 100 - 90 LC 6	2,54 x 32
	13,6	1,5	6 933	2,12	MR IV 125 - 90 L 4	3,13 x 40
	13,6	1,52	7 083	2,36	MR IV 125 - 100 LA 6	2,54 x 32

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
2 1,65	16,7	1,46	5 506	0,75	MR IV 80 - 90 L *4	2,54 x 40
1,65	16,7	1,46	5 506	0,9	MR IV 81 - 90 L *4	2,54 x 40
1,65	17	1,44	5 333	0,8	MR IV 81 - 90 L 4	2 x 50
1,64	17,2	1,48	5 426	0,85	MR IV 80 - 90 LC 6	2 x 32
1,64	17,2	1,48	5 426	1	MR IV 81 - 90 LC 6	2 x 32
	16,7	1,6	6 009	1,6	MR 2IV 100 - 90 L 4	5,08 x 20
	16,7	1,52	5 722	1,7	MR IV 100 - 90 L *4	3,18 x 32
	16,7	1,51	5 676	1,5	MR IV 100 - 90 L 4	2,54 x 40
	17,2	1,52	5 559	1,7	MR IV 100 - 100 LA 6	2 x 32
	17,3	1,54	5 607	1,8	MR IV 100 - 90 LC 6	2,54 x 25
	17,5	1,46	5 255	1,18	MR V 100 - 100 LA 6	63
	17,5	1,46	5 255	1,18	MR V 100 - 90 LC 6	63
	17	1,55	5 760	2,8	MR IV 125 - 90 L 4	3,13 x 32
	17,5	1,5	5 399	1,9	MR V 125 - 100 LA 6	63
	17,5	1,5	5 399	2,36	MR V 126 - 100 LA 6	63
	20,9	1,51	4 548	0,95	MR IV 80 - 90 L *4	2,54 x 32
	21,3	1,5	4 435	0,9	MR IV 80 - 90 L 4	2 x 40
	20,9	1,51	4 548	1,18	MR IV 81 - 90 L *4	2,54 x 32
	21,3	1,5	4 435	1,06	MR IV 81 - 90 L 4	2 x 40
	22	1,53	4 382	1,12	MR IV 80 - 90 LC 6	2 x 25
	22	1,53	4 382	1,32	MR IV 81 - 90 LC 6	2 x 25
	22	1,47	4 225	0,8	MR V 80 - 100 LA 6	50
	22	1,47	4 225	1	MR V 81 - 100 LA 6	50
	22	1,47	4 225	0,8	MR V 80 - 90 LC 6	50
	22	1,47	4 225	1	MR V 81 - 90 LC 6	50
	21,4	1,57	4 630	2,12	MR IV 100 - 90 L *4	3,18 x 25
	20,9	1,55	4 658	1,9	MR IV 100 - 90 L 4	2,54 x 32
	22	1,57	4 498	2,12	MR IV 100 - 100 LA 6	2 x 25
	22	1,52	4 350	1,5	MR V 100 - 100 LA 6	50
	22	1,52	4 350	1,5	MR V 100 - 90 LC 6	50
	22	1,55	4 451	2,5	MR V 125 - 100 LA 6	50
	26,8	1,56	3 666	1,25	MR IV 80 - 90 L *4	2,54 x 25
	26,6	1,54	3 658	1,12	MR IV 80 - 90 L 4	2 x 32
	26,8	1,56	3 666	1,5	MR IV 81 - 90 L *4	2,54 x 25
	26,6	1,54	3 658	1,32	MR IV 81 - 90 L 4	2 x 32
	27	1,48	3 449	0,85	MR V 80 - 90 L 4	63
	27	1,48	3 449	1	MR V 81 - 90 L 4	63
	27,5	1,53	3 505	1,06	MR V 80 - 100 LA 6	40
	27,5	1,53	3 505	1,25	MR V 81 - 100 LA 6	40
	27,5	1,53	3 505	1,06	MR V 80 - 90 LC 6	40
	27,5	1,53	3 505	1,25	MR V 81 - 90 LC 6	40
	26,8	1,6	3 762	2,36	MR IV 100 - 90 L 4	2,54 x 25
	27	1,52	3 547	1,6	MR V 100 - 90 L 4	63
	27,5	1,57	3 596	2,12	MR V 100 - 100 LA 6	40
	27,5	1,57	3 596	2,12	MR V 100 - 90 LC 6	40
1,42	34	1,55	2 872	0,8	MR IV 63 - 90 L 4	2 x 25
1,42	34	1,55	2 872	0,95	MR IV 64 - 90 L 4	2 x 25
1,42	34,4	1,53	2 808	0,85	MR V 64 - 90 LC 6	32
	34	1,59	2 943	1,5	MR IV 80 - 90 L 4	2 x 25
	34	1,59	2 943	1,8	MR IV 81 - 90 L 4	2 x 25
	34	1,54	2 849	1,06	MR V 80 - 90 L 4	50
	34	1,54	2 849	1,25	MR V 81 - 90 L 4	50
	34,4	1,57	2 878	1,32	MR V 80 - 100 LA 6	32
	34,4	1,57	2 878	1,6	MR V 81 - 100 LA 6	32
	34,4	1,57	2 878	1,32	MR V 80 - 90 LC 6	32
	34,4	1,57	2 878	1,6	MR V 81 - 90 LC 6	32
	33,5	1,69	3 175	2,65	MR IV 100 - 90 L 4	2,54 x 20
	34	1,58	2 921	2	MR V 100 - 90 L 4	50
	42,5	1,65	2 451	0,8	MR IV 63 - 90 L 4	2 x 20
	42,5	1,65	2 451	0,95	MR IV 64 - 90 L 4	2 x 20
1,65	42,5	1,55	2 301	0,75	MR V 63 - 90 L 4	40
1,65	42,5	1,55	2 301	0,9	MR V 64 - 90 L 4	40
1,57	44	1,58	2 263	0,95	MR V 63 - 100 LA* 6	25
1,57	44	1,58	2 263	1,12	MR V 64 - 100 LA* 6	25
1,57	44	1,58	2 263	0,95	MR V 63 - 90 LC 6	25
1,57	44	1,58	2 263	1,12	MR V 64 - 90 LC 6	25
	41,9	1,69	2 542	1,7	MR IV 80 - 90 L *4	2,54 x 16
	42,5	1,68	2 490	1,5	MR IV 80 - 90 L 4	2 x 20
	41,9	1,69	2 542	2	MR IV 81 - 90 L *4	2,54 x 16
	42,5	1,68	2 490	1,8	MR IV 81 - 90 L 4	2 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

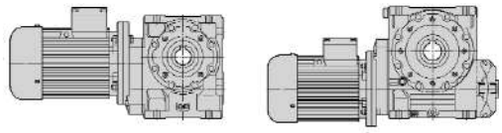


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
2	**42,5**	1,58	2 349	1,32	**MR V 80 - 90 L 4**	40
	42,5	1,58	2 349	1,6	**MR V 81 - 90 L 4**	40
	44	1,61	2 311	1,8	**MR V 80 -100 LA 6**	25
	44	1,61	2 311	2,12	**MR V 81 -100 LA 6**	25
	44	1,61	2 311	1,8	**MR V 80 - 90 LC 6**	25
	44	1,61	2 311	2,12	**MR V 81 - 90 LC 6**	25
	41,9	1,71	2 576	3,15	**MR IV 100 - 90 L 4**	2,54 x 16
	42,5	1,62	2 407	2,65	**MR V 100 - 90 L 4**	40
	53,1	1,68	1 994	1,06	**MR IV 63 - 90 L 4**	2 x 16
	53,1	1,68	1 994	1,25	**MR IV 64 - 90 L 4**	2 x 16
	53,1	1,59	1 886	0,9	**MR V 63 - 90 L 4**	32
	53,1	1,59	1 886	1,06	**MR V 64 - 90 L 4**	32
	53,1	1,71	2 027	1,9	**MR IV 80 - 90 L 4**	2 x 16
	53,1	1,71	2 027	2,36	**MR IV 81 - 90 L 4**	2 x 16
	53,1	1,62	1 923	1,7	**MR V 80 - 90 L 4**	32
	53,1	1,62	1 923	2	**MR V 81 - 90 L 4**	32
1,3	**68**	1,6	1 482	0,71	**MR V 50 - 90 L *4**	25
	68	1,63	1 511	1,18	**MR V 63 - 90 L 4**	25
	68	1,63	1 511	1,4	**MR V 64 - 90 L 4**	25
	68,8	1,7	1 560	1,25	**MR V 63 -100 LA*6**	16
	68	1,66	1 538	2,24	**MR V 80 - 90 L 4**	25
	68	1,66	1 538	2,65	**MR V 81 - 90 L 4**	25
1,42	**85**	1,63	1 211	0,85	**MR V 50 - 90 L *4**	20
	85	1,72	1 272	1,25	**MR V 63 - 90 L 4**	20
	85	1,72	1 272	1,5	**MR V 64 - 90 L 4**	20
	84,6	1,73	1 287	1,7	**MR V 64 -100 LA*6**	13
	84,6	1,73	1 287	1,4	**MR V 63 - 90 LC 6**	13
	84,6	1,73	1 287	1,7	**MR V 64 - 90 LC 6**	13
	85	1,74	1 287	2,36	**MR V 80 - 90 L 4**	20
	85	1,74	1 287	2,8	**MR V 81 - 90 L 4**	20
	106	1,71	1 017	0,95	**MR V 50 - 90 L *4**	16
	106	1,74	1 031	1,5	**MR V 63 - 90 L 4**	16
	106	1,74	1 031	1,8	**MR V 64 - 90 L 4**	16
	106	1,76	1 043	2,8	**MR V 80 - 90 L 4**	16
	106	1,76	1 043	3,35	**MR V 81 - 90 L 4**	16
	131	1,74	839	1,06	**MR V 50 - 90 L *4**	13
	131	1,76	848	1,8	**MR V 63 - 90 L 4**	13
	131	1,76	848	2,12	**MR V 64 - 90 L 4**	13
	170	1,76	654	1,32	**MR V 50 - 90 L *4**	10
	170	1,8	667	2,24	**MR V 63 - 90 L 4**	10
	243	1,81	469	1,6	**MR V 50 - 90 L *4**	7
	243	1,83	475	2,65	**MR V 63 - 90 L 4**	7
2,5	**4,41**	1,68	24 003	0,85	**MR 2IV 125 - 90 LB 4**	12 x 32
	4,41	1,68	24 003	1	**MR 2IV 126 - 90 LB 4**	12 x 32
	4,37	1,65	23 854	1,18	**MR IV 160 -100 LB 6**	4 x 63
	4,37	1,65	23 854	1,32	**MR IV 161 -100 LB 6**	4 x 63
	4,37	1,71	24 634	2,12	**MR IV 200 -100 LB 6**	4 x 63
	5,45	1,71	19 746	1	**MR 2IV 125 - 90 LB 4**	9,75 x 32
	5,45	1,71	19 746	1,18	**MR 2IV 126 - 90 LB 4**	9,75 x 32
	5,59	1,64	18 485	0,85	**MR IV 126 -100 LB 6**	3,13 x 63
	5,5	1,73	19 850	1,5	**MR IV 160 -100 LB 6**	4 x 50
	5,5	1,73	19 850	1,8	**MR IV 161 -100 LB 6**	4 x 50
	6,7	1,7	16 002	1,06	**MR 2IV 125 - 90 LB 4**	6,34 x 40
	6,7	1,7	16 002	1,25	**MR 2IV 126 - 90 LB 4**	6,34 x 40
	6,68	1,74	16 465	1,12	**MR 2IV 125 -100 LB 6**	5,15 x 32
	6,68	1,74	16 465	1,4	**MR 2IV 126 -100 LB 6**	5,15 x 32
	7	1,68	15 092	0,85	**MR IV 125 - 90 LB 4**	3,86 x 63
	7	1,68	15 092	1	**MR IV 126 - 90 LB 4**	3,86 x 63
	7,04	1,72	15 413	0,95	**MR IV 125 -100 LB 6**	3,13 x 50
	7,04	1,72	15 413	1,12	**MR IV 126 -100 LB 6**	3,13 x 50
	6,88	1,8	16 481	2,12	**MR IV 160 -100 LB 6**	4 x 40
	6,88	1,8	16 481	2,5	**MR IV 161 -100 LB 6**	4 x 40
	8,42	1,77	13 261	0,9	**MR 2IV 100 - 90 LB 4**	8,08 x 25
	8,38	1,77	13 352	1,4	**MR 2IV 125 - 90 LB 4**	6,34 x 32
	8,38	1,77	13 352	1,6	**MR 2IV 126 - 90 LB 4**	6,34 x 32
	8,81	1,76	12 562	1,12	**MR IV 125 - 90 LB 4**	3,86 x 50
	8,81	1,76	12 562	1,32	**MR IV 126 - 90 LB 4**	3,86 x 50

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
2,5	**8,8**	1,77	12 696	1,25	**MR IV 125 -100 LB 6**	3,13 x 40
	8,8	1,77	12 696	1,5	**MR IV 126 -100 LB 6**	3,13 x 40
	8,66	1,83	13 311	2,5	**MR IV 160 -100 LB 6**	3,17 x 40
	8,66	1,83	13 311	3	**MR IV 161 -100 LB 6**	3,17 x 40
	10,5	1,76	10 629	1	**MR 2IV 100 - 90 LB 4**	5,08 x 32
	11,2	1,78	10 058	0,9	**MR IV 100 - 90 LB*4**	3,8 x 40
	11	1,75	10 019	0,75	**MR IV 100 -100 LB 6**	2 x 50
	10,7	1,93	11 349	1,4	**MR 2IV 125 - 90 LB 4**	6,34 x 25
	10,7	1,93	11 349	1,7	**MR 2IV 126 - 90 LB 4**	6,34 x 25
	11	1,81	10 329	1,5	**MR IV 125 - 90 LB 4**	3,86 x 40
	11	1,81	10 329	1,8	**MR IV 126 - 90 LB 4**	3,86 x 40
	13,4	1,84	8 636	1,25	**MR 2IV 100 - 90 LB 4**	5,08 x 25
	14	1,83	8 264	1,18	**MR IV 100 - 90 LB*4**	3,8 x 32
	13,4	1,79	8 426	0,9	**MR IV 100 - 90 LB 4**	2,54 x 50
	13,8	1,82	8 342	1,06	**MR IV 100 -100 LB 6**	2 x 40
	13,6	1,84	8 551	1,7	**MR IV 125 - 90 LB 4**	3,13 x 40
	13,6	1,84	8 551	2	**MR IV 126 - 90 LB 4**	3,13 x 40
	13,6	1,88	8 735	1,9	**MR IV 125 -100 LB 6**	2,54 x 32
	13,6	1,88	8 735	2,24	**MR IV 126 -100 LB 6**	2,54 x 32
1,64	**17,2**	1,82	6 692	0,85	**MR IV 81 -100 LB*6**	2 x 32
	16,7	1,97	7 411	1,32	**MR 2IV 100 - 90 LB 4**	5,08 x 20
	16,7	1,87	7 057	1,32	**MR IV 100 - 90 LB*4**	3,18 x 32
	16,7	1,86	7 000	1,18	**MR IV 100 - 90 LB 4**	2,54 x 40
	17,2	1,87	6 856	1,4	**MR IV 100 -100 LB 6**	2 x 32
	17,5	1,8	6 481	0,95	**MR V 100 -100 LB 6**	63
	17	1,92	7 104	2,24	**MR IV 125 - 90 LB 4**	3,13 x 32
	17,5	1,84	6 659	1,6	**MR V 125 -100 LB 6**	63
	17,5	1,84	6 659	1,9	**MR V 126 -100 LB 6**	63
1,81	**20,9**	1,86	5 609	0,8	**MR IV 80 - 90 LB*4**	2,54 x 32
1,81	**20,9**	1,86	5 609	0,95	**MR IV 81 - 90 LB*4**	2,54 x 32
1,82	**21,3**	1,84	5 470	0,85	**MR IV 81 - 90 LB 4**	2 x 40
1,82	**22**	1,89	5 404	0,9	**MR IV 80 -100 LB*6**	2 x 25
1,82	**22**	1,89	5 404	1,06	**MR IV 81 -100 LB*6**	2 x 25
2,07	**22**	1,82	5 211	0,8	**MR V 81 -100 LB 6**	50
	21,4	1,94	5 710	1,7	**MR IV 100 - 90 LB*4**	3,18 x 25
	20,9	1,91	5 744	1,6	**MR IV 100 - 90 LB 4**	2,54 x 32
	22	1,87	5 365	1,25	**MR V 100 -100 LB 6**	50
	21,8	2,05	5 929	2,36	**MR IV 125 - 90 LB 4**	3,13 x 25
	22	1,92	5 489	2,12	**MR V 125 -100 LB 6**	50
	22	1,92	5 489	2,5	**MR V 126 -100 LB 6**	50
2	**26,8**	1,92	4 521	1	**MR IV 80 - 90 LB*4**	2,54 x 25
2	**26,6**	1,9	4 512	0,9	**MR IV 80 - 90 LB 4**	2 x 32
2	**26,8**	1,92	4 521	1,18	**MR IV 81 - 90 LB*4**	2,54 x 25
2	**26,6**	1,9	4 512	1,06	**MR IV 81 - 90 LB 4**	2 x 32
2,04	**27**	1,82	4 253	0,8	**MR V 81 - 90 LB 4**	63
2,02	**27,5**	1,89	4 323	0,85	**MR V 80 -100 LB 6**	40
	27,5	1,89	4 323	1	**MR V 81 -100 LB 6**	40
	26,8	1,97	4 640	2	**MR IV 100 - 90 LB 4**	2,54 x 25
	27	1,87	4 375	1,25	**MR V 100 - 90 LB 4**	63
	27,5	1,94	4 435	1,7	**MR V 100 -100 LB 6**	40
	27,5	1,96	4 482	2,65	**MR V 125 -100 LB 6**	40
1,42	**34**	1,91	3 543	0,75	**MR IV 64 - 90 LB 4**	2 x 25
	34	1,96	3 630	1,18	**MR IV 80 - 90 LB 4**	2 x 25
	34	1,96	3 630	1,4	**MR IV 81 - 90 LB 4**	2 x 25
	34	1,9	3 514	0,85	**MR V 80 - 90 LB 4**	50
	34	1,9	3 514	1	**MR V 81 - 90 LB 4**	50
	34,4	1,94	3 550	1,12	**MR V 80 -100 LB 6**	32
	34,4	1,94	3 550	1,32	**MR V 81 -100 LB 6**	32
	33,4	2,09	3 936	2,24	**MR IV 100 - 90 LB*4**	3,18 x 16
	33,5	2,08	3 916	2,12	**MR IV 100 - 90 LB 4**	2,54 x 20
	34	1,94	3 602	1,6	**MR V 100 - 90 LB 4**	50
	34,4	1,98	3 626	2,12	**MR V 100 -100 LB 6**	32
1,83	**42,5**	2,04	3 023	0,8	**MR IV 64 - 90 LB 4**	2 x 20
1,57	**44**	1,95	2 791	0,75	**MR V 63 -100 LB*6**	25
1,57	**44**	1,95	2 791	0,9	**MR V 64 -100 LB*6**	25
	41,9	2,08	3 135	1,32	**MR IV 80 - 90 LB*4**	2,54 x 16
	42,5	2,07	3 071	1,25	**MR IV 80 - 90 LB 4**	2 x 20
	41,9	2,08	3 135	1,6	**MR IV 81 - 90 LB*4**	2,54 x 16
	42,5	2,07	3 071	1,5	**MR IV 81 - 90 LB 4**	2 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

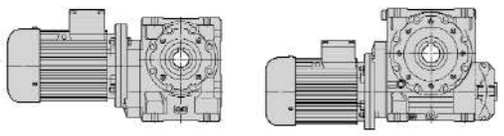


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
2,5	**42,5**	1,95	2 897	1,12	**MR V 80 - 90 LB 4**	40
	42,5	1,95	2 897	1,32	**MR V 81 - 90 LB 4**	40
	44	1,99	2 850	1,4	**MR V 80 - 100 LB 6**	25
	44	1,99	2 850	1,7	**MR V 81 - 100 LB 6**	25
	41,9	2,11	3 177	2,65	**MR IV 100 - 90 LB 4**	2,54 x 16
	42,5	2	2 969	2,12	**MR V 100 - 90 LB 4**	40
1,99	**53,1**	2,07	2 460	0,85	**MR IV 63 - 90 LB 4**	2 x 16
1,99	**53,1**	2,07	2 460	1	**MR IV 64 - 90 LB 4**	2 x 16
1,81	**53,1**	1,96	2 326	0,75	**MR V 63 - 90 LB 4**	32
1,81	**53,1**	1,96	2 326	0,9	**MR V 64 - 90 LB 4**	32
	53,1	2,11	2 500	1,6	**MR IV 80 - 90 LB 4**	2 x 16
	53,1	2,11	2 500	1,9	**MR IV 81 - 90 LB 4**	2 x 16
	53,1	2	2 372	1,4	**MR V 80 - 90 LB 4**	32
	53,1	2	2 372	1,6	**MR V 81 - 90 LB 4**	32
	53,1	2,03	2 413	2,65	**MR V 100 - 90 LB 4**	32
2	**68**	2,01	1 864	0,95	**MR V 63 - 90 LB 4**	25
2	**68**	2,01	1 864	1,12	**MR V 64 - 90 LB 4**	25
	68	2,05	1 897	1,8	**MR V 80 - 90 LB 4**	25
	68	2,05	1 897	2,12	**MR V 81 - 90 LB 4**	25
	85	2,12	1 569	1	**MR V 63 - 90 LB 4**	20
	85	2,12	1 569	1,18	**MR V 64 - 90 LB 4**	20
	85	2,14	1 587	1,9	**MR V 80 - 90 LB 4**	20
	85	2,14	1 587	2,24	**MR V 81 - 90 LB 4**	20
1,81	**106**	2,11	1 255	0,75	**MR V 50 - 90 LB*4**	16
	106	2,14	1 272	1,25	**MR V 63 - 90 LB 4**	16
	106	2,14	1 272	1,5	**MR V 64 - 90 LB 4**	16
	106	2,17	1 286	2,36	**MR V 80 - 90 LB 4**	16
	106	2,17	1 286	2,8	**MR V 81 - 90 LB 4**	16
1,97	**131**	2,15	1 034	0,9	**MR V 50 - 90 LB*4**	13
	131	2,17	1 046	1,4	**MR V 63 - 90 LB 4**	13
	131	2,17	1 046	1,7	**MR V 64 - 90 LB 4**	13
	131	2,19	1 056	2,65	**MR V 80 - 90 LB 4**	13
	131	2,19	1 056	3,15	**MR V 81 - 90 LB 4**	13
	170	2,17	806	1,06	**MR V 50 - 90 LB*4**	10
	170	2,22	822	1,8	**MR V 63 - 90 LB 4**	10
	170	2,22	822	2,12	**MR V 64 - 90 LB 4**	10
	243	2,23	579	1,32	**MR V 50 - 90 LB*4**	7
	243	2,25	585	2,24	**MR V 63 - 90 LB 4**	7
3	**4,41**	2	28 544	0,8	**MR 2IV 126 - 90 LC 4**	12 x 32
	4,37	1,96	28 366	0,95	**MR IV 160 - 112 M 6**	4 x 63
	4,37	1,96	28 366	1,12	**MR IV 161 - 112 M 6**	4 x 63
	4,37	2,03	29 295	1,8	**MR IV 200 - 112 M 6**	4 x 63
	5,45	2,03	23 482	0,85	**MR 2IV 125 - 90 LC 4**	9,75 x 32
	5,45	2,03	23 482	1	**MR 2IV 126 - 90 LC 4**	9,75 x 32
	5,5	2,06	23 606	1,25	**MR IV 160 - 112 M 6**	4 x 50
	5,5	2,06	23 606	1,5	**MR IV 161 - 112 M 6**	4 x 50
	5,5	2,12	24 306	2,65	**MR IV 200 - 112 M 6**	4 x 50
	6,71	2,08	19 478	0,95	**MR 2IV 125 - 100 LA 4**	7,91 x 32
	6,71	2,08	19 478	1,12	**MR 2IV 126 - 100 LA 4**	7,91 x 32
	7	1,99	17 947	0,85	**MR IV 126 - 90 LC 4**	3,86 x 63
	7,04	2,05	18 329	0,8	**MR IV 125 - 112 M 6**	3,13 x 50
	7,04	2,05	18 329	0,95	**MR IV 126 - 112 M 6**	3,13 x 50
	6,75	2,05	19 186	1,25	**MR IV 160 - 100 LA 4**	4 x 63
	6,75	2,05	19 186	1,5	**MR IV 161 - 100 LA 4**	4 x 63
	6,88	2,14	19 599	1,8	**MR IV 160 - 112 M 6**	4 x 40
	6,88	2,14	19 599	2,12	**MR IV 161 - 112 M 6**	4 x 40
	8,26	2,07	15 765	1	**MR 2IV 125 - 100 LA 4**	5,15 x 40
	8,26	2,07	15 765	1,18	**MR 2IV 126 - 100 LA 4**	5,15 x 40
	8,38	2,11	15 878	1,18	**MR 2IV 125 - 90 LC 4**	6,34 x 32
	8,38	2,11	15 878	1,4	**MR 2IV 126 - 90 LC 4**	6,34 x 32
	8,63	2,04	14 880	0,8	**MR IV 125 - 100 LA 4**	3,13 x 63
	8,63	2,04	14 880	0,95	**MR IV 126 - 100 LA 4**	3,13 x 63
	8,81	2,09	14 939	0,95	**MR IV 125 - 90 LC 4**	3,86 x 50
	8,81	2,09	14 939	1,12	**MR IV 126 - 90 LC 4**	3,86 x 50
	8,8	2,11	15 098	1,06	**MR IV 125 - 112 M 6**	3,13 x 40
	8,8	2,11	15 098	1,25	**MR IV 126 - 112 M 6**	3,13 x 40
	8,5	2,15	15 930	1,7	**MR IV 160 - 100 LA 4**	4 x 50

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
3	**8,5**	2,15	15 930	2,12	**MR IV 161 - 100 LA 4**	4 x 50
	8,66	2,18	15 830	2,12	**MR IV 160 - 112 M 6**	3,17 x 40
	8,66	2,18	15 830	2,5	**MR IV 161 - 112 M 6**	3,17 x 40
	10,5	2,1	12 640	0,85	**MR 2IV 100 - 90 LC 4**	5,08 x 32
	10,3	2,15	13 112	1,32	**MR 2IV 125 - 100 LA 4**	5,15 x 32
	10,3	2,15	13 112	1,6	**MR 2IV 126 - 100 LA 4**	5,15 x 32
	10,9	2,14	12 378	1,06	**MR IV 125 - 100 LA 4**	3,13 x 50
	10,9	2,14	12 378	1,32	**MR IV 126 - 100 LA 4**	3,13 x 50
	11	2,15	12 283	1,25	**MR IV 125 - 90 LC 4**	3,86 x 40
	11	2,15	12 283	1,5	**MR IV 126 - 90 LC 4**	3,86 x 40
	10,8	2,15	12 479	1,25	**MR IV 125 - 112 M 6**	2,54 x 40
	10,8	2,15	12 479	1,5	**MR IV 126 - 112 M 6**	2,54 x 40
	10,6	2,22	13 178	2,36	**MR IV 160 - 100 LA 4**	4 x 40
	10,6	2,22	13 178	2,8	**MR IV 161 - 100 LA 4**	4 x 40
	13,4	2,18	10 269	1,06	**MR 2IV 100 - 90 LC 4**	5,08 x 25
	13,4	2,13	10 020	0,75	**MR IV 100 - 90 LC 4**	2,54 x 50
	13,8	2,16	9 920	0,9	**MR IV 100 - 112 M 6**	2 x 40
	13,6	2,19	10 168	1,5	**MR IV 125 - 100 LA 4**	3,13 x 40
	13,6	2,19	10 168	1,7	**MR IV 126 - 100 LA 4**	3,13 x 40
	13,6	2,19	10 168	1,5	**MR IV 125 - 90 LC 4**	3,13 x 40
	13,6	2,19	10 168	1,7	**MR IV 126 - 90 LC 4**	3,13 x 40
	13,6	2,23	10 388	1,6	**MR IV 125 - 112 M 6**	2,54 x 32
	13,6	2,23	10 388	1,9	**MR IV 126 - 112 M 6**	2,54 x 32
	13,4	2,27	10 679	2,8	**MR IV 160 - 100 LA 4**	3,17 x 40
	13,4	2,27	10 679	3,35	**MR IV 161 - 100 LA 4**	3,17 x 40
	16,7	2,34	8 813	1,12	**MR 2IV 100 - 90 LC 4**	5,08 x 20
	17	2,18	8 088	0,85	**MR IV 100 - 100 LA 4**	2 x 50
	16,7	2,21	8 324	1	**MR IV 100 - 90 LC 4**	2,54 x 40
	17,2	2,22	8 153	1,18	**MR IV 100 - 112 M 6**	2 x 32
	17,5	2,14	7 708	0,8	**MR V 100 - 112 M 6**	63
	16,8	2,24	8 435	1,6	**MR IV 125 - 100 LA 4**	2,54 x 40
	16,8	2,24	8 435	2	**MR IV 126 - 100 LA 4**	2,54 x 40
	17	2,28	8 448	1,9	**MR IV 125 - 90 LC 4**	3,13 x 32
	17	2,28	8 448	2,24	**MR IV 126 - 90 LC 4**	3,13 x 32
	17,5	2,19	7 919	1,32	**MR V 125 - 112 M 6**	63
	17,5	2,19	7 919	1,6	**MR V 126 - 112 M 6**	63
	17,5	2,25	8 116	2,36	**MR V 160 - 112 M 6**	63
	21,3	2,26	6 704	1,18	**MR IV 100 - 100 LA 4**	2 x 40
	20,9	2,27	6 831	1,32	**MR IV 100 - 90 LC 4**	2,54 x 32
	22	2,3	6 597	1,5	**MR IV 100 - 112 M 6**	2 x 25
	22	2,23	6 379	1,06	**MR V 100 - 112 M 6**	50
	21	2,32	6 980	2,12	**MR IV 125 - 100 LA 4**	2,54 x 32
	21,8	2,43	7 051	2	**MR IV 125 - 90 LC 4**	3,13 x 25
	22	2,28	6 528	1,7	**MR V 125 - 112 M 6**	50
	22	2,28	6 528	2,12	**MR V 126 - 112 M 6**	50
2	**26,6**	2,26	5 366	0,75	**MR IV 80 - 90 LC 4**	2 x 32
2	**26,6**	2,26	5 366	0,9	**MR IV 81 - 90 LC 4**	2 x 32
2,31	**27,5**	2,24	5 141	0,85	**MR V 81 - 112 M 6**	40
	26,6	2,31	5 482	1,5	**MR IV 100 - 100 LA 4**	2 x 32
	26,8	2,34	5 517	1,6	**MR IV 100 - 90 LC 4**	2,54 x 25
	27	2,23	5 203	1,06	**MR V 100 - 100 LA 4**	63
	27	2,23	5 203	1,06	**MR V 100 - 90 LC 4**	63
	27,5	2,3	5 274	1,4	**MR V 100 - 112 M 6**	40
	26,8	2,47	5 798	2,24	**MR IV 125 - 100 LA 4**	2,54 x 25
	27	2,29	5 337	1,7	**MR V 125 - 100 LA 4**	63
	27	2,29	5 337	2,12	**MR V 126 - 100 LA 4**	63
	27,5	2,33	5 331	2,24	**MR V 125 - 112 M 6**	40
2,22	**34**	2,33	4 317	1	**MR IV 80 - 90 LC 4**	2 x 25
2,22	**34**	2,33	4 317	1,18	**MR IV 81 - 90 LC 4**	2 x 25
2,29	**34**	2,25	4 179	0,71	**MR V 80 - 100 LA 4**	50
	34	2,25	4 179	0,85	**MR V 81 - 100 LA 4**	50
2,29	**34**	2,25	4 179	0,71	**MR V 80 - 90 LC 4**	50
2,29	**34**	2,25	4 179	0,85	**MR V 81 - 90 LC 4**	50
2,21	**34,4**	2,3	4 222	0,9	**MR V 80 - 112 M 6**	32
	34,4	2,3	4 222	1,12	**MR V 81 - 112 M 6**	32
	34	2,38	4 414	1,9	**MR IV 100 - 100 LA 4**	2 x 25
	33,5	2,47	4 657	1,8	**MR IV 100 - 90 LC 4**	2,54 x 20
	34	2,31	4 284	1,32	**MR V 100 - 100 LA 4**	50
	34	2,31	4 284	1,32	**MR V 100 - 90 LC 4**	50

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

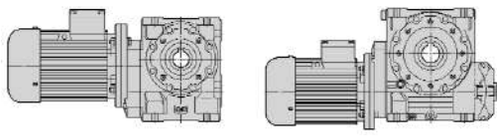


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
3	**34,4**	2,35	4 312	1,8	**MR V 100 -112 M 6**	32
	33,5	2,5	4 707	3	**MR IV 125 -100 LA 4**	2,54 x 20
	34	2,35	4 363	2,24	**MR V 125 -100 LA 4**	50
	42,5	2,46	3 652	1	**MR IV 80 - 90 LC 4**	2 x 20
	42,5	2,46	3 652	1,25	**MR IV 81 - 90 LC 4**	2 x 20
	42,5	2,32	3 445	0,9	**MR V 80 -100 LA 4**	40
	42,5	2,32	3 445	1,12	**MR V 81 -100 LA 4**	40
	42,5	2,32	3 445	0,9	**MR V 80 - 90 LC 4**	40
	42,5	2,32	3 445	1,12	**MR V 81 - 90 LC 4**	40
2,44	**44**	2,37	3 389	1,18	**MR V 80 -112 M 6**	25
	44	2,37	3 389	1,4	**MR V 81 -112 M 6**	25
	42,5	2,51	3 715	2	**MR IV 100 -100 LA 4**	2 x 20
	41,9	2,51	3 778	2,12	**MR IV 100 - 90 LC 4**	2,54 x 16
	42,5	2,38	3 530	1,8	**MR V 100 -100 LA 4**	40
	42,5	2,38	3 530	1,8	**MR V 100 - 90 LC 4**	40
	44	2,42	3 461	2,36	**MR V 100 -112 M 6**	25
	42,5	2,4	3 554	2,8	**MR V 125 -100 LA 4**	40
1,99	**53,1**	2,47	2 925	0,85	**MR IV 64 - 90 LC 4**	2 x 16
1,81	**53,1**	2,33	2 766	0,75	**MR V 64 - 90 LC 4**	32
	53,1	2,51	2 972	1,32	**MR IV 80 - 90 LC 4**	2 x 16
	53,1	2,51	2 972	1,6	**MR IV 81 - 90 LC 4**	2 x 16
	53,1	2,38	2 821	1,18	**MR V 80 -100 LA 4**	32
	53,1	2,38	2 821	1,4	**MR V 81 -100 LA 4**	32
	53,1	2,38	2 821	1,18	**MR V 80 - 90 LC 4**	32
	53,1	2,38	2 821	1,4	**MR V 81 - 90 LC 4**	32
	53,1	2,54	3 008	2,5	**MR IV 100 -100 LA 4**	2 x 16
	53,1	2,42	2 869	2,24	**MR V 100 -100 LA 4**	32
2	**68**	2,39	2 217	0,8	**MR V 63 -100 LA*4**	25
2	**68**	2,39	2 217	0,95	**MR V 64 -100 LA*4**	25
2	**68**	2,39	2 217	0,8	**MR V 63 - 90 LC 4**	25
2	**68**	2,39	2 217	0,95	**MR V 64 - 90 LC 4**	25
	68	2,43	2 256	1,5	**MR V 80 -100 LA 4**	25
	68	2,43	2 256	1,8	**MR V 81 -100 LA 4**	25
	68	2,43	2 256	1,5	**MR V 80 - 90 LC 4**	25
	68	2,43	2 256	1,8	**MR V 81 - 90 LC 4**	25
	68	2,48	2 295	3	**MR V 100 -100 LA 4**	25
	85	2,52	1 866	0,85	**MR V 63 -100 LA*4**	20
	85	2,52	1 866	1	**MR V 64 -100 LA*4**	20
	85	2,52	1 866	0,85	**MR V 63 - 90 LC 4**	20
	85	2,52	1 866	1	**MR V 64 - 90 LC 4**	20
	85	2,54	1 887	1,6	**MR V 80 -100 LA 4**	20
	85	2,54	1 887	1,9	**MR V 81 -100 LA 4**	20
	85	2,54	1 887	1,6	**MR V 80 - 90 LC 4**	20
	85	2,54	1 887	1,9	**MR V 81 - 90 LC 4**	20
	84,6	2,56	1 910	1,8	**MR V 80 -112 M 6**	13
	84,6	2,56	1 910	2,12	**MR V 81 -112 M 6**	13
	85	2,58	1 913	3	**MR V 100 -100 LA 4**	20
	106	2,55	1 513	1,06	**MR V 63 -100 LA*4**	16
	106	2,55	1 513	1,25	**MR V 64 -100 LA*4**	16
	106	2,55	1 513	1,06	**MR V 63 - 90 LC 4**	16
	106	2,55	1 513	1,25	**MR V 64 - 90 LC 4**	16
	106	2,58	1 529	2	**MR V 80 -100 LA 4**	16
	106	2,58	1 529	2,36	**MR V 81 -100 LA 4**	16
	106	2,58	1 529	2	**MR V 80 - 90 LC 4**	16
	106	2,58	1 529	2,36	**MR V 81 - 90 LC 4**	16
	131	2,58	1 244	1,18	**MR V 63 -100 LA*4**	13
	131	2,58	1 244	1,4	**MR V 64 -100 LA*4**	13
	131	2,58	1 244	1,18	**MR V 63 - 90 LC 4**	13
	131	2,58	1 244	1,4	**MR V 64 - 90 LC 4**	13
	131	2,61	1 256	2,24	**MR V 80 -100 LA 4**	13
	131	2,61	1 256	2,65	**MR V 81 -100 LA 4**	13
	131	2,61	1 256	2,24	**MR V 80 - 90 LC 4**	13
	131	2,61	1 256	2,65	**MR V 81 - 90 LC 4**	13
	170	2,64	978	1,5	**MR V 63 -100 LA*4**	10
	170	2,64	978	1,8	**MR V 64 -100 LA*4**	10
	170	2,64	978	1,5	**MR V 63 - 90 LC 4**	10
	170	2,64	978	1,8	**MR V 64 - 90 LC 4**	10
	170	2,66	986	2,8	**MR V 80 -100 LA 4**	10
	170	2,66	986	3,15	**MR V 81 -100 LA 4**	10

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
3	**170**	2,66	986	2,8	**MR V 80 - 90 LC 4**	10
	170	2,66	986	3,15	**MR V 81 - 90 LC 4**	10
	243	2,68	696	1,8	**MR V 63 -100 LA*4**	7
	243	2,68	696	2,24	**MR V 64 -100 LA*4**	7
	243	2,68	696	1,8	**MR V 63 - 90 LC 4**	7
	243	2,68	696	2,24	**MR V 64 - 90 LC 4**	7
4	**4,37**	2,68	38 681	0,8	**MR IV 161 -112 MC 6**	4 x 63
	4,37	2,77	39 948	1,32	**MR IV 200 -112 MC 6**	4 x 63
	4,59	2,86	39 241	2,5	**MR IV 250 -132 S 6**	3,8 x 63
	5,5	2,81	32 190	0,95	**MR IV 160 -112 MC 6**	4 x 50
	5,5	2,81	32 190	1,06	**MR IV 161 -112 MC 6**	4 x 50
	5,5	2,89	33 145	1,9	**MR IV 200 -112 MC 6**	4 x 50
	5,79	2,98	32 434	3,55	**MR IV 250 -132 S 6**	3,8 x 50
3,32	**6,71**	2,83	26 560	0,85	**MR 2IV 126 -100 LB 4**	7,91 x 32
	6,75	2,8	26 162	0,95	**MR IV 160 -100 LB 4**	4 x 63
	6,75	2,8	26 162	1,12	**MR IV 161 -100 LB 4**	4 x 63
	6,88	2,92	26 726	1,32	**MR IV 160 -112 MC 6**	4 x 40
	6,88	2,92	26 726	1,5	**MR IV 161 -112 MC 6**	4 x 40
	6,75	2,89	27 025	1,8	**MR IV 200 -100 LB 4**	4 x 63
	6,88	2,98	27 312	2,36	**MR IV 200 -112 MC 6**	4 x 40
	8,26	2,82	21 498	0,9	**MR 2IV 126 -100 LB 4**	5,15 x 40
	8,8	2,87	20 588	0,8	**MR IV 125 -112 MC 6**	3,13 x 40
	8,8	2,87	20 588	0,95	**MR IV 126 -112 MC 6**	3,13 x 40
	8,5	2,93	21 723	1,25	**MR IV 160 -100 LB 4**	4 x 50
	8,5	2,93	21 723	1,5	**MR IV 161 -100 LB 4**	4 x 50
	8,66	2,97	21 586	1,5	**MR IV 160 -112 MC 6**	3,17 x 40
	8,66	2,97	21 586	1,8	**MR IV 161 -112 MC 6**	3,17 x 40
	8,5	3,01	22 346	2,65	**MR IV 200 -100 LB 4**	4 x 50
	10,3	2,93	17 880	1	**MR 2IV 125 -100 LB 4**	5,15 x 32
	10,3	2,93	17 880	1,18	**MR 2IV 126 -100 LB 4**	5,15 x 32
	10,9	2,91	16 879	0,8	**MR IV 125 -100 LB 4**	3,13 x 50
	10,9	2,91	16 879	0,95	**MR IV 126 -100 LB 4**	3,13 x 50
	10,8	2,93	17 017	0,9	**MR IV 125 -112 MC 6**	2,54 x 40
	10,8	2,93	17 017	1,06	**MR IV 126 -112 MC 6**	2,54 x 40
	10,6	3,03	17 970	1,8	**MR IV 160 -100 LB 4**	4 x 40
	10,6	3,03	17 970	2,12	**MR IV 161 -100 LB 4**	4 x 40
	10,6	3,1	18 399	3,15	**MR IV 200 -100 LB 4**	4 x 40
	13,6	2,99	13 866	1,06	**MR IV 125 -100 LB 4**	3,13 x 40
	13,6	2,99	13 866	1,25	**MR IV 126 -100 LB 4**	3,13 x 40
	13,6	3,05	14 165	1,18	**MR IV 125 -112 MC 6**	2,54 x 32
	13,6	3,05	14 165	1,4	**MR IV 126 -112 MC 6**	2,54 x 32
	13,4	3,09	14 563	2	**MR IV 160 -100 LB 4**	3,17 x 40
	13,4	3,09	14 563	2,36	**MR IV 161 -100 LB 4**	3,17 x 40
	16,7	3,02	11 351	0,75	**MR IV 100 -100 LB*4**	2,54 x 40
	17,2	3,03	11 117	0,85	**MR IV 100 -112 MC 6**	2 x 32
	16,8	3,06	11 502	1,18	**MR IV 125 -100 LB 4**	2,54 x 40
	16,8	3,06	11 502	1,4	**MR IV 126 -100 LB 4**	2,54 x 40
	17,5	2,99	10 798	0,95	**MR V 125 -112 MC 6**	63
	17,5	2,99	10 798	1,18	**MR V 126 -112 MC 6**	63
	17,5	2,99	10 798	0,95	**MR V 125 -132 S 6**	63
	17,5	2,99	10 798	1,18	**MR V 126 -132 S 6**	63
	16,7	3,18	11 983	2,5	**MR IV 160 -100 LB 4**	3,17 x 32
	16,7	3,18	11 983	3	**MR IV 161 -100 LB 4**	3,17 x 32
	17,5	3,07	11 068	1,8	**MR V 160 -112 MC 6**	63
	17,5	3,07	11 068	2,12	**MR V 161 -112 MC 6**	63
	17,5	3,07	11 068	1,8	**MR V 160 -132 S 6**	63
	17,5	3,07	11 068	2,12	**MR V 161 -132 S 6**	63
	21,3	3,08	9 142	0,85	**MR IV 100 -100 LB 4**	2 x 40
	22	3,14	8 995	1,06	**MR IV 100 -112 MC 6**	2 x 25
	22	3,04	8 699	0,75	**MR V 100 -112 MC 6**	50
	21	3,16	9 518	1,6	**MR IV 125 -100 LB 4**	2,54 x 32
	21	3,16	9 518	1,9	**MR IV 126 -100 LB 4**	2,54 x 32
	22	3,11	8 902	1,25	**MR V 125 -112 MC 6**	50
	22	3,11	8 902	1,5	**MR V 126 -112 MC 6**	50
	22	3,11	8 902	1,25	**MR V 125 -132 S 6**	50
	22	3,11	8 902	1,5	**MR V 126 -132 S 6**	50
	21,4	3,37	9 924	2,65	**MR IV 160 -100 LB 4**	3,17 x 25

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

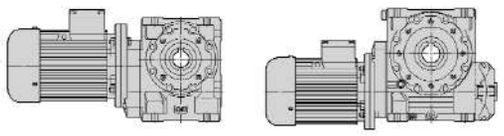


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
4	**21,4**	3,37	9 924	3,15	**MR IV 161 - 100 LB 4**	3,17 x 25
	22	3,17	9 075	2,36	**MR V 160 - 112 MC 6**	50
	22	3,17	9 075	2,8	**MR V 161 - 112 MC 6**	50
	22	3,17	9 075	2,36	**MR V 160 - 132 S 6**	50
	26,6	3,15	7 475	1,12	**MR IV 100 - 100 LB 4**	2 x 32
	27	3,04	7 095	0,8	**MR V 100 - 100 LB 4**	63
	27,5	3,14	7 192	1,06	**MR V 100 - 112 MC 6**	40
	26,8	3,36	7 907	1,7	**MR IV 125 - 100 LB 4**	2,54 x 25
	26,8	3,36	7 907	2	**MR IV 126 - 100 LB 4**	2,54 x 25
	27,1	3,39	7 882	2	**MR IV 125 - 112 MC 6**	2,54 x 16
	27,1	3,39	7 882	2,36	**MR IV 126 - 112 MC 6**	2,54 x 16
	27	3,12	7 278	1,25	**MR V 125 - 100 LB 4**	63
	27	3,12	7 278	1,5	**MR V 126 - 100 LB 4**	63
	27,5	3,17	7 269	1,7	**MR V 125 - 112 MC 6**	40
	27,5	3,17	7 269	2	**MR V 126 - 112 MC 6**	40
	27,5	3,17	7 269	1,7	**MR V 125 - 132 S 6**	40
	27,5	3,17	7 269	2	**MR V 126 - 132 S 6**	40
2,22	**34**	3,18	5 887	0,75	**MR IV 80 - 100 LB*4**	2 x 25
2,22	**34**	3,18	5 887	0,9	**MR IV 81 - 100 LB*4**	2 x 25
2,51	**34,4**	3,14	5 757	0,8	**MR V 81 - 112 MC 6**	32
	34	3,25	6 019	1,4	**MR IV 100 - 100 LB 4**	2 x 25
	34	3,15	5 841	1	**MR V 100 - 100 LB 4**	50
	34,4	3,21	5 879	1,32	**MR V 100 - 112 MC 6**	32
	34,4	3,21	5 879	1,32	**MR V 100 - 132 S 6**	32
	33,5	3,41	6 419	2,12	**MR IV 125 - 100 LB 4**	2,54 x 20
	34	3,21	5 950	1,6	**MR V 125 - 100 LB 4**	50
	34	3,21	5 950	2	**MR V 126 - 100 LB 4**	50
	34,4	3,26	5 979	2,12	**MR V 125 - 112 MC 6**	32
	34,4	3,26	5 979	2,12	**MR V 125 - 132 S 6**	32
2,83	**42,5**	3,36	4 980	0,75	**MR IV 80 - 100 LB*4**	2 x 20
2,83	**42,5**	3,36	4 980	0,9	**MR IV 81 - 100 LB*4**	2 x 20
3,06	**42,5**	3,17	4 697	0,8	**MR V 81 - 100 LB 4**	40
2,79	**44**	3,23	4 621	1,06	**MR V 81 - 112 MC 6**	25
	42,5	3,42	5 067	1,5	**MR IV 100 - 100 LB 4**	2 x 20
	42,5	3,25	4 814	1,32	**MR V 100 - 100 LB 4**	40
	44	3,29	4 720	1,7	**MR V 100 - 112 MC 6**	25
	44	3,29	4 720	1,7	**MR V 100 - 132 S 6**	25
	41,9	3,47	5 212	2,5	**MR IV 125 - 100 LB 4**	2,54 x 16
	42,5	3,27	4 846	2,12	**MR V 125 - 100 LB 4**	40
3,1	**53,1**	3,42	4 053	0,95	**MR IV 80 - 100 LB*4**	2 x 16
3,1	**53,1**	3,42	4 053	1,18	**MR IV 81 - 100 LB*4**	2 x 16
2,79	**53,1**	3,24	3 846	0,85	**MR V 80 - 100 LB 4**	32
3,35	**53,1**	3,24	3 846	1	**MR V 81 - 100 LB 4**	32
	53,1	3,46	4 102	1,8	**MR IV 100 - 100 LB 4**	2 x 16
	53,1	3,3	3 913	1,7	**MR V 100 - 100 LB 4**	32
	53,1	3,35	3 972	2,65	**MR V 125 - 100 LB 4**	32
3,1	**68**	3,32	3 076	1,12	**MR V 80 - 100 LB 4**	25
	68	3,32	3 076	1,32	**MR V 81 - 100 LB 4**	25
	68	3,38	3 129	2,12	**MR V 100 - 100 LB 4**	25
2,57	**85**	3,43	2 544	0,75	**MR V 64 - 100 LB*4**	20
	85	3,47	2 573	1,18	**MR V 80 - 100 LB 4**	20
	85	3,47	2 573	1,4	**MR V 81 - 100 LB 4**	20
	84,6	3,5	2 605	1,5	**MR V 81 - 112 MC 6**	13
	85	3,52	2 609	2,24	**MR V 100 - 100 LB 4**	20
2,79	**106**	3,48	2 063	0,75	**MR V 63 - 100 LB*4**	16
2,79	**106**	3,48	2 063	0,9	**MR V 64 - 100 LB*4**	16
	106	3,51	2 085	1,4	**MR V 80 - 100 LB 4**	16
	106	3,51	2 085	1,7	**MR V 81 - 100 LB 4**	16
	106	3,55	2 105	2,8	**MR V 100 - 100 LB 4**	16
3,02	**131**	3,52	1 696	0,9	**MR V 63 - 100 LB*4**	13
3,02	**131**	3,52	1 696	1,06	**MR V 64 - 100 LB*4**	13
	131	3,55	1 713	1,7	**MR V 80 - 100 LB 4**	13
	131	3,55	1 713	2	**MR V 81 - 100 LB 4**	13
	131	3,59	1 729	3,15	**MR V 100 - 100 LB 4**	13
	170	3,6	1 334	1,12	**MR V 63 - 100 LB*4**	10
	170	3,6	1 334	1,32	**MR V 64 - 100 LB*4**	10
	170	3,62	1 344	2	**MR V 80 - 100 LB 4**	10
	170	3,62	1 344	2,36	**MR V 81 - 100 LB 4**	10

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
4	**243**	3,66	949	1,32	**MR V 63 - 100 LB*4**	7
	243	3,66	949	1,6	**MR V 64 - 100 LB*4**	7
	243	3,68	955	2,5	**MR V 80 - 100 LB 4**	7
	243	3,68	955	3	**MR V 81 - 100 LB 4**	7
5,4	**4,59**	3,81	52 322	1,9	**MR IV 250 - 132 M 6**	3,8 x 63
	5,79	3,97	43 245	2,65	**MR IV 250 - 132 M 6**	3,8 x 50
	6,75	3,73	34 883	0,8	**MR IV 161 - 112 M 4**	4 x 63
	6,75	3,86	36 034	1,4	**MR IV 200 - 112 M 4**	4 x 63
	7,24	4,08	35 519	3,35	**MR IV 250 - 132 M 6**	3,8 x 40
	8,5	3,91	28 964	0,95	**MR IV 160 - 112 M 4**	4 x 50
	8,5	3,91	28 964	1,12	**MR IV 161 - 112 M 4**	4 x 50
	8,5	4,02	29 795	1,9	**MR IV 200 - 112 M 4**	4 x 50
4,18	**10,3**	3,9	23 840	0,9	**MR 2IV 126 - 112 M 4**	5,15 x 32
	10,6	4,04	23 960	1,32	**MR IV 160 - 112 M 4**	4 x 40
	10,6	4,04	23 960	1,6	**MR IV 161 - 112 M 4**	4 x 40
	10,6	4,14	24 531	2,36	**MR IV 200 - 112 M 4**	4 x 40
	13,2	4,23	20 183	0,9	**MR 2IV 126 - 112 M 4**	5,15 x 25
	13,6	3,99	18 488	0,8	**MR IV 125 - 112 M 4**	3,13 x 40
	13,6	3,99	18 488	0,95	**MR IV 126 - 112 M 4**	3,13 x 40
	13,4	4,13	19 417	1,5	**MR IV 160 - 112 M 4**	3,17 x 40
	13,4	4,13	19 417	1,8	**MR IV 161 - 112 M 4**	3,17 x 40
	13,4	4,21	19 811	2,8	**MR IV 200 - 112 M 4**	3,17 x 40
	16,5	4,3	16 407	1,18	**MR 2IV 126 - 112 M 4**	5,15 x 20
	16,8	4,08	15 336	0,9	**MR IV 125 - 112 M 4**	2,54 x 40
	16,8	4,08	15 336	1,06	**MR IV 126 - 112 M 4**	2,54 x 40
	16,9	4,14	15 423	1,25	**MR IV 126 - 132 M 6**	2,03 x 32
	17,5	3,99	14 397	0,85	**MR V 126 - 132 M 6**	63
	16,7	4,24	15 977	1,9	**MR IV 160 - 112 M 4**	3,17 x 32
	16,7	4,24	15 977	2,24	**MR IV 161 - 112 M 4**	3,17 x 32
	17,5	4,09	14 757	1,32	**MR V 160 - 132 M 6**	63
	17,5	4,09	14 757	1,6	**MR V 161 - 132 M 6**	63
	17,5	4,19	15 123	2,65	**MR V 200 - 132 M 6**	63
	21	4,22	12 691	1,18	**MR IV 125 - 112 M 4**	2,54 x 32
	21	4,22	12 691	1,4	**MR IV 126 - 112 M 4**	2,54 x 32
	22	4,14	11 869	0,95	**MR V 125 - 132 M 6**	50
	22	4,14	11 869	1,12	**MR V 126 - 132 M 6**	50
	21,4	4,5	13 232	2	**MR IV 160 - 112 M 4**	3,17 x 25
	21,4	4,5	13 232	2,36	**MR IV 161 - 112 M 4**	3,17 x 25
	22	4,22	12 099	1,8	**MR V 160 - 132 M 6**	50
	22	4,22	12 099	2,12	**MR V 161 - 132 M 6**	50
	26,6	4,2	9 967	0,85	**MR IV 100 - 112 M 4**	2 x 32
	26,8	4,49	10 542	1,25	**MR IV 125 - 112 M 4**	2,54 x 25
	26,8	4,49	10 542	1,5	**MR IV 126 - 112 M 4**	2,54 x 25
	27,1	4,49	10 457	1,7	**MR IV 126 - 132 M 6**	2,03 x 20
	27	4,15	9 704	0,95	**MR V 125 - 112 M 4**	63
	27	4,15	9 704	1,12	**MR V 126 - 112 M 4**	63
	27,5	4,23	9 692	1,25	**MR V 125 - 132 M 6**	40
	27,5	4,23	9 692	1,5	**MR V 126 - 132 M 6**	40
	26,8	4,56	10 742	2,5	**MR IV 160 - 112 M 4**	3,17 x 20
	26,8	4,56	10 742	3	**MR IV 161 - 112 M 4**	3,17 x 20
	27	4,23	9 883	1,7	**MR V 160 - 112 M 4**	63
	27	4,23	9 883	2	**MR V 161 - 112 M 4**	63
	27,5	4,33	9 935	2,36	**MR V 160 - 132 M 6**	40
	27,5	4,33	9 935	2,8	**MR V 161 - 132 M 6**	40
	34	4,33	8 026	1,06	**MR IV 100 - 112 M 4**	2 x 25
	34	4,2	7 788	0,75	**MR V 100 - 112 M 4**	50
	34,4	4,28	7 839	1	**MR V 100 - 132 M 6**	32
	33,5	4,55	8 559	1,6	**MR IV 125 - 112 M 4**	2,54 x 20
	33,5	4,55	8 559	1,9	**MR IV 126 - 112 M 4**	2,54 x 20
	34	4,28	7 933	1,25	**MR V 125 - 112 M 4**	50
	34	4,28	7 933	1,5	**MR V 126 - 112 M 4**	50
	34,4	4,35	7 972	1,6	**MR V 125 - 132 M 6**	32
	34,4	4,35	7 972	1,9	**MR V 126 - 132 M 6**	32
	33,5	4,63	8 725	3,15	**MR IV 160 - 112 M 4**	3,17 x 16
	33,5	4,63	8 725	3,75	**MR IV 161 - 112 M 4**	3,17 x 16
	34	4,35	8 072	2,24	**MR V 160 - 112 M 4**	50
	34	4,35	8 072	2,65	**MR V 161 - 112 M 4**	50
	42,5	4,56	6 755	1,12	**MR IV 100 - 112 M 4**	2 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

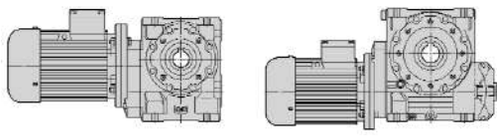


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
5,4	**42,5**	4,33	6 419	1	**MR V 100 - 112 M 4**	40
	44	4,39	6 293	1,25	**MR V 100 - 132 M 6**	25
	41,9	4,62	6 950	1,9	**MR IV 125 - 112 M 4**	2,54 x 16
	41,9	4,62	6 950	2,24	**MR IV 126 - 112 M 4**	2,54 x 16
	42,5	4,36	6 461	1,6	**MR V 125 - 112 M 4**	40
	42,5	4,36	6 461	1,9	**MR V 126 - 112 M 4**	40
	44	4,59	6 576	1,8	**MR V 125 - 132 M 6**	25
	44	4,59	6 576	2,12	**MR V 126 - 132 M 6**	25
	42,5	4,44	6 587	3	**MR V 160 - 112 M 4**	40
	42,5	4,44	6 587	3,55	**MR V 161 - 112 M 4**	40
3,35	**53,1**	4,32	5 128	0,75	**MR V 81 - 112 M 4**	32
	53,1	4,61	5 469	1,4	**MR IV 100 - 112 M 4**	2 x 16
	53,1	4,4	5 217	1,25	**MR V 100 - 112 M 4**	32
	53,1	4,46	5 296	2	**MR V 125 - 112 M 4**	32
	53,1	4,46	5 296	2,36	**MR V 126 - 112 M 4**	32
3,1	**68**	4,43	4 102	0,8	**MR V 80 - 112 M 4**	25
3,71	**68**	4,43	4 102	1	**MR V 81 - 112 M 4**	25
	68	4,5	4 173	1,6	**MR V 100 - 112 M 4**	25
	68	4,67	4 329	2,24	**MR V 125 - 112 M 4**	25
3,94	**85**	4,63	3 431	0,85	**MR V 80 - 112 M 4**	20
	85	4,63	3 431	1	**MR V 81 - 112 M 4**	20
	85	4,69	3 478	1,7	**MR V 100 - 112 M 4**	20
	84,6	4,72	3 514	2	**MR V 100 - 132 M 6**	13
	85	4,72	3 498	2,8	**MR V 125 - 112 M 4**	20
4,29	**106**	4,69	2 780	1,06	**MR V 80 - 112 M 4**	16
	106	4,69	2 780	1,32	**MR V 81 - 112 M 4**	16
	106	4,73	2 806	2	**MR V 100 - 112 M 4**	16
	131	4,74	2 284	1,25	**MR V 80 - 112 M 4**	13
	131	4,74	2 284	1,5	**MR V 81 - 112 M 4**	13
	131	4,78	2 305	2,36	**MR V 100 - 112 M 4**	13
	170	4,83	1 792	1,5	**MR V 80 - 112 M 4**	10
	170	4,83	1 792	1,8	**MR V 81 - 112 M 4**	10
	170	4,86	1 802	2,8	**MR V 100 - 112 M 4**	10
	243	4,91	1 273	1,9	**MR V 80 - 112 M 4**	7
	243	4,91	1 273	2,24	**MR V 81 - 112 M 4**	7
7,5	**4,59**	5,24	71 943	1,4	**MR IV 250 - 132 MB 6**	3,8 x 63
	5,79	5,46	59 462	1,9	**MR IV 250 - 132 MB 6**	3,8 x 50
	6,75	5,3	49 547	1	**MR IV 200 - 112 MC 4**	4 x 63
	6,83	5,3	48 921	1	**MR IV 200 - 132 MB 6**	2,56 x 63
	7,1	5,49	48 731	1,9	**MR IV 250 - 132 S 4**	3,8 x 63
	7,24	5,61	48 838	2,36	**MR IV 250 - 132 MB 6**	3,8 x 40
6,26	**8,5**	5,37	39 825	0,8	**MR IV 161 - 112 MC 4**	4 x 50
6,26	**8,61**	5,37	39 322	0,85	**MR IV 161 - 132 MB 6**	2,56 x 50
	8,5	5,52	40 968	1,4	**MR IV 200 - 112 MC 4**	4 x 50
	8,61	5,52	40 450	1,4	**MR IV 200 - 132 MB 6**	2,56 x 50
	8,95	5,69	40 092	2,65	**MR IV 250 - 132 S 4**	3,8 x 50
	10,6	5,55	32 945	0,95	**MR IV 160 - 112 MC 4**	4 x 40
	10,6	5,55	32 945	1,12	**MR IV 161 - 112 MC 4**	4 x 40
	10,6	5,4	32 241	0,8	**MR IV 161 - 132 S 4**	2,56 x 63
	10,8	5,55	32 529	1,18	**MR IV 161 - 132 MB 6**	2,56 x 40
	10,6	5,69	33 731	1,7	**MR IV 200 - 112 MC 4**	4 x 40
	10,6	5,55	33 121	1,32	**MR IV 200 - 132 S 4**	2,56 x 63
	10,8	5,69	33 305	1,8	**MR IV 200 - 132 MB 6**	2,56 x 40
	11,2	5,82	32 793	3,15	**MR IV 250 - 132 S 4**	3,8 x 40
	13,4	5,67	26 698	1,12	**MR IV 160 - 112 MC 4**	3,17 x 40
	13,4	5,67	26 698	1,32	**MR IV 161 - 112 MC 4**	3,17 x 40
	13,3	5,61	26 568	0,95	**MR IV 160 - 132 S 4**	2,56 x 50
	13,3	5,61	26 568	1,12	**MR IV 161 - 132 S 4**	2,56 x 50
	13,5	5,72	26 818	1,18	**MR IV 160 - 132 MB 6**	2,56 x 32
	13,5	5,72	26 818	1,4	**MR IV 161 - 132 MB 6**	2,56 x 32
	13,3	5,75	27 241	1,9	**MR IV 200 - 132 S 4**	2,56 x 50
	13,5	5,87	27 500	2,24	**MR IV 200 - 132 MB 6**	2,56 x 32
	13,4	5,92	27 873	3,55	**MR IV 250 - 132 S 4**	3,17 x 40
5,85	**16,8**	5,61	21 087	0,8	**MR IV 126 - 112 MC 4**	2,54 x 40
5,59	**16,9**	5,7	21 207	0,75	**MR IV 125 - 132 MB 6**	2,03 x 32
5,59	**16,9**	5,7	21 207	0,9	**MR IV 126 - 132 MB 6**	2,03 x 32
	16,7	5,83	21 969	1,32	**MR IV 160 - 112 MC 4**	3,17 x 32

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
7,5	**16,7**	5,83	21 969	1,6	**MR IV 161 - 112 MC 4**	3,17 x 32
	16,6	5,77	21 881	1,25	**MR IV 160 - 132 S 4**	2,56 x 40
	16,6	5,77	21 881	1,5	**MR IV 161 - 132 S 4**	2,56 x 40
	17,5	5,62	20 290	0,95	**MR V 160 - 132 MB 6**	63
	17,5	5,62	20 290	1,12	**MR V 161 - 132 MB 6**	63
	16,6	5,89	22 329	2,24	**MR IV 200 - 132 S 4**	2,56 x 40
	17,5	5,76	20 794	1,9	**MR V 200 - 132 MB 6**	63
	21	5,8	17 450	0,85	**MR IV 125 - 112 MC 4**	2,54 x 32
	21	5,8	17 450	1	**MR IV 126 - 112 MC 4**	2,54 x 32
	20,9	5,71	17 200	0,75	**MR IV 125 - 132 S 4**	2,03 x 40
	20,9	5,71	17 200	0,9	**MR IV 126 - 132 S 4**	2,03 x 40
	22	5,7	16 320	0,85	**MR V 126 - 132 MB 6**	50
	21,4	6,18	18 194	1,5	**MR IV 160 - 112 MC 4**	3,17 x 25
	21,4	6,18	18 194	1,7	**MR IV 161 - 112 MC 4**	3,17 x 25
	20,8	5,93	17 967	1,5	**MR IV 160 - 132 S 4**	2,56 x 32
	20,8	5,93	17 967	1,8	**MR IV 161 - 132 S 4**	2,56 x 32
	22	5,81	16 637	1,32	**MR V 160 - 132 MB 6**	50
	22	5,81	16 637	1,6	**MR V 161 - 132 MB 6**	50
	20,8	6,04	18 311	3	**MR IV 200 - 132 S 4**	2,56 x 32
	22	5,95	17 042	2,5	**MR V 200 - 132 MB 6**	50
	26,8	6,17	14 496	0,9	**MR IV 125 - 112 MC 4**	2,54 x 25
	26,8	6,17	14 496	1,12	**MR IV 126 - 112 MC 4**	2,54 x 25
	26,2	5,9	14 216	1	**MR IV 125 - 132 S 4**	2,03 x 32
	26,2	5,9	14 216	1,18	**MR IV 126 - 132 S 4**	2,03 x 32
	27	5,71	13 344	0,85	**MR V 126 - 112 MC 4**	63
	27	5,71	13 344	0,85	**MR V 126 - 132 S 4**	63
	27,5	5,81	13 326	0,9	**MR V 125 - 132 MB 6**	40
	27,5	5,81	13 326	1,06	**MR V 126 - 132 MB 6**	40
	26,8	6,28	14 770	1,9	**MR IV 160 - 112 MC 4**	3,17 x 20
	26,8	6,28	14 770	2,24	**MR IV 161 - 112 MC 4**	3,17 x 20
	26,6	6,25	14 816	1,7	**MR IV 160 - 132 S 4**	2,56 x 25
	26,6	6,25	14 816	2	**MR IV 161 - 132 S 4**	2,56 x 25
	26,9	6,3	14 766	2	**MR IV 160 - 132 MB 6**	2,56 x 16
	26,9	6,3	14 766	2,36	**MR IV 161 - 132 MB 6**	2,56 x 16
	27	5,82	13 589	1,25	**MR V 160 - 112 MC 4**	63
	27	5,82	13 589	1,5	**MR V 161 - 112 MC 4**	63
	27	5,82	13 589	1,25	**MR V 160 - 132 S 4**	63
	27	5,82	13 589	1,5	**MR V 161 - 132 S 4**	63
	27,5	5,96	13 661	1,7	**MR V 160 - 132 MB 6**	40
	27,5	5,96	13 661	2	**MR V 161 - 132 MB 6**	40
	27	5,93	13 847	2,36	**MR V 200 - 132 S 4**	63
5,53	**34**	5,95	11 035	0,75	**MR IV 100 - 112 MC 4**	2 x 25
	33,5	6,26	11 768	1,18	**MR IV 125 - 112 MC 4**	2,54 x 20
	33,5	6,26	11 768	1,4	**MR IV 126 - 112 MC 4**	2,54 x 20
	33,5	6,24	11 741	1,06	**MR IV 125 - 132 S 4**	2,03 x 25
	33,5	6,24	11 741	1,25	**MR IV 126 - 132 S 4**	2,03 x 25
	33,9	6,29	11 703	1,25	**MR IV 125 - 132 MB 6**	2,03 x 16
	33,9	6,29	11 703	1,5	**MR IV 126 - 132 MB 6**	2,03 x 16
	34	5,88	10 908	0,9	**MR V 125 - 112 MC 4**	50
	34	5,88	10 908	1,06	**MR V 126 - 112 MC 4**	50
	34	5,88	10 908	0,9	**MR V 125 - 132 S 4**	50
	34	5,88	10 908	1,06	**MR V 126 - 132 S 4**	50
	34,4	5,98	10 962	1,18	**MR V 125 - 132 MB 6**	32
	34,4	5,98	10 962	1,4	**MR V 126 - 132 MB 6**	32
	33,5	6,37	11 998	2,24	**MR IV 160 - 112 MC 4**	3,17 x 16
	33,3	6,34	12 014	2,12	**MR IV 160 - 132 S 4**	2,56 x 20
	33,3	6,34	12 014	2,5	**MR IV 161 - 132 S 4**	2,56 x 20
	34	5,99	11 098	1,6	**MR V 160 - 112 MC 4**	50
	34	5,99	11 098	2	**MR V 161 - 112 MC 4**	50
	34	5,99	11 098	1,6	**MR V 160 - 132 S 4**	50
	34	5,99	11 098	2	**MR V 161 - 132 S 4**	50
	34,4	6,1	11 190	2,12	**MR V 160 - 132 MB 6**	32
	34,4	6,1	11 190	2,5	**MR V 161 - 132 MB 6**	32
	42,5	6,26	9 289	0,8	**MR IV 100 - 112 MC 4**	2 x 20
	42,5	5,95	8 826	0,71	**MR V 100 - 112 MC 4**	40
	44	6,04	8 653	0,95	**MR V 100 - 132 MB 6**	25
	41,9	6,35	9 556	1,4	**MR IV 125 - 112 MC 4**	2,54 x 16
	41,9	6,35	9 556	1,7	**MR IV 126 - 112 MC 4**	2,54 x 16
	41,9	6,32	9 520	1,32	**MR IV 125 - 132 S 4**	2,03 x 20
	41,9	6,32	9 520	1,6	**MR IV 126 - 132 S 4**	2,03 x 20

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.

9 - Manufacturing programme (gearmotors)

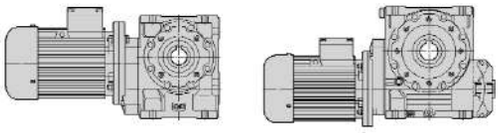


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
7,5	42,5	5,99	8 884	1,12	MR V 125 - 112 MC 4	40
	42,5	5,99	8 884	1,32	MR V 126 - 112 MC 4	40
	42,5	5,99	8 884	1,12	MR V 125 - 132 S 4	40
	42,5	5,99	8 884	1,32	MR V 126 - 132 S 4	40
	44	6,31	9 042	1,32	MR V 125 - 132 MB 6	25
	44	6,31	9 042	1,5	MR V 126 - 132 MB 6	25
	41,6	6,43	9 746	2,65	MR IV 160 - 132 S 4	2,56 x 16
	41,6	6,43	9 746	3,15	MR IV 161 - 132 S 4	2,56 x 16
	42,5	6,11	9 057	2,12	MR V 160 - 132 S 4	40
	42,5	6,11	9 057	2,5	MR V 161 - 132 S 4	40
	53,1	6,34	7 520	1	MR IV 100 - 112 MC 4	2 x 16
	53,1	6,05	7 174	0,9	MR V 100 - 112 MC 4	32
	53,1	6,05	7 174	0,9	MR V 100 - 132 S 4	32
	52,3	6,42	7 727	1,6	MR IV 125 - 132 S 4	2,03 x 16
	52,3	6,42	7 727	1,9	MR IV 126 - 132 S 4	2,03 x 16
	53,1	6,14	7 282	1,5	MR V 125 - 112 MC 4	32
	53,1	6,14	7 282	1,7	MR V 126 - 112 MC 4	32
	53,1	6,14	7 282	1,5	MR V 125 - 132 S 4	32
	53,1	6,14	7 282	1,7	MR V 126 - 132 S 4	32
	53,1	6,22	7 374	2,65	MR V 160 - 132 S 4	32
	53,1	6,22	7 374	3,15	MR V 161 - 132 S 4	32
3,71	68	6,08	5 640	0,71	MR V 81 - 112 MC 4	25
	68	6,19	5 737	1,18	MR V 100 - 112 MC 4	25
	68	6,19	5 737	1,18	MR V 100 - 132 S 4	25
	68	6,42	5 953	1,7	MR V 125 - 112 MC 4	25
	68	6,42	5 953	2	MR V 126 - 112 MC 4	25
	68	6,42	5 953	1,7	MR V 125 - 132 S 4	25
	68	6,42	5 953	2	MR V 126 - 132 S 4	25
	68,8	6,46	5 925	1,9	MR V 125 - 132 MB 6	16
	68,8	6,46	5 925	2,24	MR V 126 - 132 MB 6	16
	68	6,49	6 012	3	MR V 160 - 132 S 4	25
	68	6,49	6 012	3,55	MR V 161 - 132 S 4	25
4,73	85	6,36	4 718	0,75	MR V 81 - 112 MC 4	20
	85	6,45	4 783	1,25	MR V 100 - 112 MC 4	20
	85	6,45	4 783	1,25	MR V 100 - 132 S 4	20
	84,6	6,49	4 831	1,4	MR V 100 - 132 MB 6	13
	85	6,49	4 810	2	MR V 125 - 112 MC 4	20
	85	6,49	4 810	2	MR V 125 - 132 S 4	20
	85	6,49	4 810	2,36	MR V 126 - 132 S 4	20
5,15	106	6,44	3 823	0,95	MR V 81 - 112 MC 4	16
	106	6,5	3 858	1,5	MR V 100 - 112 MC 4	16
	106	6,5	3 858	1,5	MR V 100 - 132 S 4	16
	106	6,56	3 891	2,36	MR V 125 - 132 S 4	16
5,58	131	6,52	3 140	1,06	MR V 81 - 112 MC 4	13
	131	6,58	3 170	1,8	MR V 100 - 112 MC 4	13
	131	6,58	3 170	1,8	MR V 100 - 132 S 4	13
	131	6,66	3 210	2,8	MR V 125 - 132 S 4	13
	170	6,65	2 464	1,32	MR V 81 - 112 MC 4	10
	170	6,68	2 478	2	MR V 100 - 112 MC 4	10
	170	6,68	2 478	2	MR V 100 - 132 S 4	10
	243	6,75	1 751	1,6	MR V 81 - 112 MC 4	7
10	4,59	7,15	98 103	1	MR IV 250 - 132 MC 6	3,8 x 63
	5,79	7,45	81 084	1,4	MR IV 250 - 132 MC 6	3,8 x 50
	5,5	7,32	83 816	1,12	MR IV 250 - 160 M 6	3,17 x 63
	7,1	7,49	66 452	1,4	MR IV 250 - 132 M 4	3,8 x 63
	7,24	7,65	66 598	1,8	MR IV 250 - 132 MC 6	3,8 x 40
	6,93	7,6	69 119	1,6	MR IV 250 - 160 M 6	3,17 x 50
	8,61	7,53	55 160	1,06	MR IV 200 - 132 MC 6	2,56 x 50
	8,61	7,53	55 160	1,06	MR IV 200 - 160 M 6	2,56 x 50
	8,95	7,76	54 671	1,9	MR IV 250 - 132 M 4	3,8 x 50
	8,66	7,8	56 740	2	MR IV 250 - 132 MC 6	3,17 x 40
6,89	10,8	7,57	44 358	0,85	MR IV 161 - 132 MC 6	2,56 x 40
	10,6	7,57	45 165	1	MR IV 200 - 132 M 4	2,56 x 63
	10,8	7,75	45 416	1,32	MR IV 200 - 132 MC 6	2,56 x 40
	10,8	7,75	45 416	1,32	MR IV 200 - 160 M 6	2,56 x 40
	11,2	7,93	44 718	2,36	MR IV 250 - 132 M 4	3,8 x 40
8,49	13,3	7,65	36 229	0,85	MR IV 161 - 132 M 4	2,56 x 50

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
10 7,6	13,5	7,8	36 569	0,85	MR IV 160 - 132 MC 6	2,56 x 32
7,6	13,5	7,8	36 569	1	MR IV 161 - 132 MC 6	2,56 x 32
8,01	13,8	7,73	35 455	1	MR IV 161 - 160 M 6	2 x 40
	13,3	7,84	37 147	1,4	MR IV 200 - 132 M 4	2,56 x 50
	13,5	8	37 500	1,6	MR IV 200 - 132 MC 6	2,56 x 32
	13,4	8,07	38 008	2,65	MR IV 250 - 132 M 4	3,17 x 40
	16,6	7,87	29 838	0,9	MR IV 160 - 132 M 4	2,56 x 40
	16,6	7,87	29 838	1,06	MR IV 161 - 132 M 4	2,56 x 40
	17,5	7,66	27 669	0,85	MR V 161 - 132 MC 6	63
	17,5	7,66	27 669	0,85	MR V 161 - 160 M 6	63
	16,6	8,03	30 449	1,7	MR IV 200 - 132 M 4	2,56 x 40
	17,5	7,86	28 356	1,4	MR V 200 - 132 MC 6	63
	17,5	7,86	28 356	1,4	MR V 200 - 160 M 6	63
	16,7	8,49	31 979	2,65	MR IV 250 - 132 M 4	3,17 x 32
	17,5	8,04	29 028	2,5	MR V 250 - 160 M 6	63
6,56	21	7,91	23 795	0,75	MR IV 126 - 132 M *4	2,54 x 32
	20,8	8,08	24 500	1,12	MR IV 160 - 132 M 4	2,56 x 32
	20,8	8,08	24 500	1,32	MR IV 161 - 132 M 4	2,56 x 32
	22	7,92	22 686	0,95	MR V 160 - 132 MC 6	50
	22	7,92	22 686	1,12	MR V 161 - 132 MC 6	50
	22	7,92	22 686	0,95	MR V 160 - 160 M 6	50
	22	7,92	22 686	1,12	MR V 161 - 160 M 6	50
	20,8	8,24	24 969	2,12	MR IV 200 - 132 M 4	2,56 x 32
	22	8,11	23 240	1,9	MR V 200 - 132 MC 6	50
	22	8,11	23 240	1,9	MR V 200 - 160 M 6	50
	22	8,26	23 662	3,35	MR V 250 - 160 M 6	50
7,78	26,2	8,05	19 385	0,85	MR IV 126 - 132 M 4	2,03 x 32
7,84	27,1	8,43	19 607	0,9	MR IV 126 - 132 MC 6	2,03 x 20
8,09	27,5	7,93	18 172	0,8	MR V 126 - 132 MC 6	40
	26,8	8,56	20 141	1,4	MR IV 160 - 132 M *4	3,17 x 20
	26,6	8,53	20 203	1,25	MR IV 160 - 132 M 4	2,56 x 25
	26,8	8,56	20 141	1,6	MR IV 161 - 132 M *4	3,17 x 20
	26,6	8,53	20 203	1,5	MR IV 161 - 132 M 4	2,56 x 25
	26,9	8,59	20 135	1,5	MR IV 160 - 132 MC 6	2,56 x 16
	26,9	8,59	20 135	1,7	MR IV 161 - 132 MC 6	2,56 x 16
	27	7,93	18 531	0,9	MR V 160 - 132 M 4	63
	27	7,93	18 531	1,06	MR V 161 - 132 M 4	63
	27,5	8,13	18 629	1,25	MR V 160 - 132 MC 6	40
	27,5	8,13	18 629	1,5	MR V 161 - 132 MC 6	40
	27,5	8,13	18 629	1,25	MR V 160 - 160 M 6	40
	27,5	8,13	18 629	1,5	MR V 161 - 160 M 6	40
	26,6	8,65	20 489	2,5	MR IV 200 - 132 M 4	2,56 x 25
	27	8,08	18 882	1,7	MR V 200 - 132 M 4	63
	27,5	8,25	18 916	2,36	MR V 200 - 132 MC 6	40
	27,5	8,25	18 916	2,36	MR V 200 - 160 M 6	40
	33,5	8,53	16 048	0,85	MR IV 125 - 132 M *4	2,54 x 20
	33,5	8,51	16 010	0,8	MR IV 125 - 132 M 4	2,03 x 25
	33,5	8,53	16 048	1	MR IV 126 - 132 M *4	2,54 x 20
	33,5	8,51	16 010	0,95	MR IV 126 - 132 M 4	2,03 x 25
	33,9	8,57	15 959	1,06	MR IV 126 - 132 MC 6	2,03 x 16
	34	8,02	14 875	0,8	MR V 126 - 132 M 4	50
	34,4	8,15	14 948	0,85	MR V 125 - 132 MC 6	32
	34,4	8,15	14 948	1	MR V 126 - 132 MC 6	32
	33,3	8,64	16 382	1,6	MR IV 160 - 132 M 4	2,56 x 20
	33,3	8,64	16 382	1,9	MR IV 161 - 132 M 4	2,56 x 20
	34	8,16	15 134	1,18	MR V 160 - 132 M 4	50
	34	8,16	15 134	1,4	MR V 161 - 132 M 4	50
	34,4	8,32	15 259	1,5	MR V 160 - 132 MC 6	32
	34,4	8,32	15 259	1,8	MR V 161 - 132 MC 6	32
	34,4	8,32	15 259	1,5	MR V 160 - 160 M 6	32
	34,4	8,32	15 259	1,8	MR V 161 - 160 M 6	32
	33,3	8,76	16 594	3,15	MR IV 200 - 132 M 4	2,56 x 20
	34	8,29	15 361	2,24	MR V 200 - 132 M 4	50
	41,9	8,66	13 031	1	MR IV 125 - 132 M *4	2,54 x 16
	41,9	8,62	12 982	1	MR IV 125 - 132 M 4	2,03 x 20
	41,9	8,62	12 982	1,18	MR IV 126 - 132 M 4	2,03 x 20
	42,5	8,17	12 115	0,85	MR V 125 - 132 M 4	40
	42,5	8,17	12 115	1	MR V 126 - 132 M 4	40
	44	8,61	12 330	0,95	MR V 125 - 132 MC 6	25
	44	8,61	12 330	1,12	MR V 126 - 132 MC 6	25

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

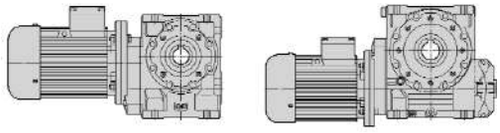


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
10	**41,6**	8,77	13 290	1,9	**MR IV 160 - 132 M 4**	2,56 x 16
	41,6	8,77	13 290	2,24	**MR IV 161 - 132 M 4**	2,56 x 16
	42,5	8,33	12 350	1,6	**MR V 160 - 132 M 4**	40
	42,5	8,33	12 350	1,9	**MR V 161 - 132 M 4**	40
	42,5	8,41	12 478	2,8	**MR V 200 - 132 M 4**	40
	52,3	8,75	10 537	1,18	**MR IV 125 - 132 M 4**	2,03 x 16
	52,3	8,75	10 537	1,4	**MR IV 126 - 132 M 4**	2,03 x 16
	53,1	8,37	9 930	1,06	**MR V 125 - 132 M 4**	32
	53,1	8,37	9 930	1,25	**MR V 126 - 132 M 4**	32
	55	8,7	9 972	1,4	**MR V 126 - 132 MC 6**	20
	53,1	8,48	10 056	1,9	**MR V 160 - 132 M 4**	32
	53,1	8,48	10 056	2,36	**MR V 161 - 132 M 4**	32
	68	8,44	7 824	0,85	**MR V 100 - 132 M 4**	25
	68	8,76	8 118	1,25	**MR V 125 - 132 M 4**	25
	68	8,76	8 118	1,5	**MR V 126 - 132 M 4**	25
	68,8	8,81	8 079	1,4	**MR V 125 - 132 MC 6**	16
	68,8	8,81	8 079	1,7	**MR V 126 - 132 MC 6**	16
	68	8,84	8 198	2,24	**MR V 160 - 132 M 4**	25
	68	8,84	8 198	2,65	**MR V 161 - 132 M 4**	25
	85	8,8	6 522	0,9	**MR V 100 - 132 M 4**	20
	85	8,85	6 559	1,5	**MR V 125 - 132 M 4**	20
	85	8,85	6 559	1,7	**MR V 126 - 132 M 4**	20
	84,6	8,98	6 687	1,7	**MR V 125 - 132 MC 6**	13
	84,6	8,98	6 687	2	**MR V 126 - 132 MC 6**	13
	85	8,92	6 616	2,65	**MR V 160 - 132 M 4**	20
	85	8,92	6 616	3,15	**MR V 161 - 132 M 4**	20
	106	8,87	5 262	1,12	**MR V 100 - 132 M 4**	16
	106	8,94	5 305	1,8	**MR V 125 - 132 M 4**	16
	106	8,94	5 305	2,12	**MR V 126 - 132 M 4**	16
	131	8,97	4 323	1,32	**MR V 100 - 132 M 4**	13
	131	9,08	4 378	2,12	**MR V 125 - 132 M 4**	13
	170	9,11	3 379	1,5	**MR V 100 - 132 M 4**	10
	170	9,17	3 399	2,36	**MR V 125 - 132 M 4**	10
12,5	**7,1**	9,18	81 514	1,12	**MR IV 250 - 132 MB 4**	3,8 x 63
	8,95	9,52	67 063	1,6	**MR IV 250 - 132 MB 4**	3,8 x 50
	10,6	9,28	55 402	0,8	**MR IV 200 - 132 MB 4**	2,56 x 63
	11,2	9,73	54 854	1,9	**MR IV 250 - 132 MB 4**	3,8 x 40
	13,3	9,62	45 566	1,12	**MR IV 200 - 132 MB 4**	2,56 x 50
	13,4	9,9	46 623	2,12	**MR IV 250 - 132 MB 4**	3,17 x 40
9,37	**16,6**	9,66	36 601	0,75	**MR IV 160 - 132 MB 4**	2,56 x 40
9,37	**16,6**	9,66	36 601	0,9	**MR IV 161 - 132 MB 4**	2,56 x 40
	16,6	9,85	37 351	1,4	**MR IV 200 - 132 MB 4**	2,56 x 40
	16,7	10,4	39 228	2,24	**MR IV 250 - 132 MB 4**	3,17 x 32
10,4	**20,8**	9,91	30 054	0,9	**MR IV 160 - 132 MB 4**	2,56 x 32
10,4	**20,8**	9,91	30 054	1,12	**MR IV 161 - 132 MB 4**	2,56 x 32
	20,8	10,1	30 629	1,8	**MR IV 200 - 132 MB 4**	2,56 x 32
	21,4	10,6	31 328	3,15	**MR IV 250 - 132 MB 4**	3,17 x 25
	26,6	10,5	24 783	1	**MR IV 160 - 132 MB 4**	2,56 x 25
	26,6	10,5	24 783	1,18	**MR IV 161 - 132 MB 4**	2,56 x 25
	27	9,73	22 731	0,75	**MR V 160 - 132 MB 4**	63
	27	9,73	22 731	0,9	**MR V 161 - 132 MB 4**	63
	26,6	10,6	25 133	2	**MR IV 200 - 132 MB 4**	2,56 x 25
	27	9,92	23 162	1,4	**MR V 200 - 132 MB 4**	63
10,1	**33,5**	10,4	19 639	0,75	**MR IV 126 - 132 MB 4**	2,03 x 25
	33,3	10,6	20 095	1,25	**MR IV 160 - 132 MB 4**	2,56 x 20
	33,3	10,6	20 095	1,5	**MR IV 161 - 132 MB 4**	2,56 x 20
	34	10	18 564	1	**MR V 160 - 132 MB 4**	50
	34	10	18 564	1,18	**MR V 161 - 132 MB 4**	50
	33,3	10,7	20 355	2,5	**MR IV 200 - 132 MB 4**	2,56 x 20
	34	10,2	18 843	1,9	**MR V 200 - 132 MB 4**	50
	41,9	10,6	15 925	0,8	**MR IV 125 - 132 MB 4**	2,03 x 20
	41,9	10,6	15 925	0,95	**MR IV 126 - 132 MB 4**	2,03 x 20
	42,5	10	14 861	0,8	**MR V 126 - 132 MB 4**	40
	41,6	10,8	16 303	1,6	**MR IV 160 - 132 MB 4**	2,56 x 16
	41,6	10,8	16 303	1,9	**MR IV 161 - 132 MB 4**	2,56 x 16
	42,5	10,2	15 150	1,25	**MR V 160 - 132 MB 4**	40

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
12,5	**42,5**	10,2	15 150	1,5	**MR V 161 - 132 MB 4**	40
	41,6	11	16 631	2,8	**MR IV 200 - 132 MB 4**	2,56 x 16
	42,5	10,3	15 306	2,24	**MR V 200 - 132 MB 4**	40
	52,3	10,7	12 925	0,95	**MR IV 125 - 132 MB 4**	2,03 x 16
	52,3	10,7	12 925	1,12	**MR IV 126 - 132 MB 4**	2,03 x 16
	53,1	10,3	12 181	0,85	**MR V 125 - 132 MB 4**	32
	53,1	10,3	12 181	1,06	**MR V 126 - 132 MB 4**	32
	53,1	10,4	12 336	1,6	**MR V 160 - 132 MB 4**	32
	53,1	10,4	12 336	1,9	**MR V 161 - 132 MB 4**	32
	53,1	10,5	12 455	3	**MR V 200 - 132 MB 4**	32
	68	10,7	9 958	1	**MR V 125 - 132 MB 4**	25
	68	10,7	9 958	1,18	**MR V 126 - 132 MB 4**	25
	68	10,8	10 057	1,8	**MR V 160 - 132 MB 4**	25
	68	10,8	10 057	2,12	**MR V 161 - 132 MB 4**	25
	85	10,8	8 000	0,71	**MR V 100 - 132 MB 4**	20
	85	10,9	8 046	1,18	**MR V 125 - 132 MB 4**	20
	85	10,9	8 046	1,4	**MR V 126 - 132 MB 4**	20
	85	10,9	8 115	2,12	**MR V 160 - 132 MB 4**	20
	85	10,9	8 115	2,65	**MR V 161 - 132 MB 4**	20
	106	10,9	6 454	0,9	**MR V 100 - 132 MB 4**	16
	106	11	6 508	1,4	**MR V 125 - 132 MB 4**	16
	106	11	6 508	1,7	**MR V 126 - 132 MB 4**	16
	106	11	6 552	2,65	**MR V 160 - 132 MB 4**	16
	106	11	6 552	3,15	**MR V 161 - 132 MB 4**	16
	131	11	5 303	1,06	**MR V 100 - 132 MB 4**	13
	131	11,1	5 370	1,7	**MR V 125 - 132 MB 4**	13
	131	11,1	5 370	2	**MR V 126 - 132 MB 4**	13
	170	11,2	4 144	1,25	**MR V 100 - 132 MB 4**	10
	170	11,2	4 169	1,9	**MR V 125 - 132 MB 4**	10
	170	11,2	4 169	2,36	**MR V 126 - 132 MB 4**	10
15 12,2	**5,5**	10,7	122 929	0,75	**MR IV 250 - 160 L 6**	3,17 x 63
	7,1	11	97 463	0,95	**MR IV 250 - 132 MC 4**	3,8 x 63
	6,93	11,1	101 375	1,06	**MR IV 250 - 160 L 6**	3,17 x 50
	8,95	11,4	80 184	1,32	**MR IV 250 - 132 MC 4**	3,8 x 50
	8,5	11,2	83 057	1,06	**MR IV 250 - 160 M 4**	3,17 x 63
	8,66	11,4	83 219	1,32	**MR IV 250 - 160 L 6**	3,17 x 40
10,8	**10,8**	11,4	66 610	0,9	**MR IV 200 - 160 L 6**	2,56 x 40
	11,2	11,6	65 586	1,6	**MR IV 250 - 132 MC 4**	3,8 x 40
	10,7	11,6	68 154	1,5	**MR IV 250 - 160 M 4**	3,17 x 50
	10,8	11,6	68 167	1,5	**MR IV 250 - 160 L 6**	2,56 x 40
	13,3	11,5	54 482	0,95	**MR IV 200 - 132 MC 4**	2,56 x 50
	13,3	11,5	54 482	0,95	**MR IV 200 - 160 M 4**	2,56 x 50
	13,4	11,8	55 745	1,8	**MR IV 250 - 132 MC 4**	3,17 x 40
	13,4	11,8	55 745	1,8	**MR IV 250 - 160 M 4**	3,17 x 40
9,37	**16,6**	11,5	43 762	0,75	**MR IV 161 - 132 MC 4**	2,56 x 40
8,85	**17,2**	11,7	42 788	0,85	**MR IV 161 - 160 L 6**	2 x 32
	16,6	11,8	44 658	1,12	**MR IV 200 - 132 MC 4**	2,56 x 40
	16,6	11,8	44 658	1,12	**MR IV 200 - 160 M 4**	2,56 x 40
	17,2	11,9	43 701	1,32	**MR IV 200 - 160 L 6**	2 x 32
	17,5	11,5	41 589	0,95	**MR V 200 - 160 L 6**	63
	16,7	12,5	46 902	1,9	**MR IV 250 - 132 MC 4**	3,17 x 32
	16,6	12	45 474	2	**MR IV 250 - 160 M 4**	2,56 x 40
	17,2	12,6	46 161	2,24	**MR IV 250 - 160 L 6**	2,56 x 25
	17,5	11,8	42 575	1,7	**MR V 250 - 160 L 6**	63
10,4	**20,8**	11,9	35 934	0,75	**MR IV 160 - 132 MC 4**	2,56 x 32
10,4	**20,8**	11,9	35 934	0,9	**MR IV 161 - 132 MC 4**	2,56 x 32
11,1	**21,3**	11,7	34 833	0,71	**MR IV 160 - 160 M 4**	2 x 40
11,1	**21,3**	11,7	34 833	0,85	**MR IV 161 - 160 M 4**	2 x 40
11,7	**22**	11,6	33 273	0,8	**MR V 161 - 160 L 6**	50
	20,8	12,1	36 622	1,5	**MR IV 200 - 132 MC 4**	2,56 x 32
	21,3	11,9	35 420	1,32	**MR IV 200 - 160 M 4**	2 x 40
	22	11,9	34 085	1,32	**MR V 200 - 160 L 6**	50
	21,4	12,7	37 458	2,65	**MR IV 250 - 132 MC 4**	3,17 x 25
	20,8	12,6	38 213	2,12	**MR IV 250 - 160 M 4**	2,56 x 32
	22	12,1	34 704	2,24	**MR V 250 - 160 L 6**	50
	26,6	12,5	29 631	0,85	**MR IV 160 - 132 MC 4**	2,56 x 25
	26,6	12,5	29 631	1	**MR IV 161 - 132 MC 4**	2,56 x 25

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.

9 - Manufacturing programme (gearmotors)

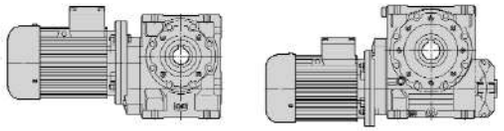


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
15 12,2	**26,6**	12	28 514	0,9	**MR IV 160 - 160 M 4**	2 x 32
12,2	**26,6**	12	28 514	1,06	**MR IV 161 - 160 M 4**	2 x 32
12,4	**27,5**	12,6	28 768	0,95	**MR IV 160 - 160 L 6**	2 x 20
12,4	**27,5**	12,6	28 768	1,12	**MR IV 161 - 160 L 6**	2 x 20
	27	11,6	27 178	0,75	**MR V 161 - 132 MC 4**	63
	27	11,6	27 178	0,75	**MR V 161 - 160 M 4**	63
	27,5	11,9	27 322	0,85	**MR V 160 - 160 L 6**	40
	27,5	11,9	27 322	1	**MR V 161 - 160 L 6**	40
	26,6	12,7	30 051	1,7	**MR IV 200 - 132 MC 4**	2,56 x 25
	26,6	12,3	29 097	1,7	**MR IV 200 - 160 M 4**	2 x 32
	27	11,9	27 693	1,18	**MR V 200 - 132 MC 4**	63
	27	11,9	27 693	1,18	**MR V 200 - 160 M 4**	63
	27,5	12,1	27 743	1,6	**MR V 200 - 160 L 6**	40
	26,6	12,8	30 420	3	**MR IV 250 - 160 M 4**	2,56 x 25
	27	12,1	28 167	2,12	**MR V 250 - 160 M 4**	63
	33,3	12,7	24 027	1,06	**MR IV 160 - 132 MC 4**	2,56 x 20
	33,3	12,7	24 027	1,25	**MR IV 161 - 132 MC 4**	2,56 x 20
	34	12,7	23 456	1	**MR IV 160 - 160 M 4**	2 x 25
	34	12,7	23 456	1,18	**MR IV 161 - 160 M 4**	2 x 25
	34,4	12,7	23 368	1,18	**MR IV 160 - 160 L 6**	2 x 16
	34,4	12,7	23 368	1,4	**MR IV 161 - 160 L 6**	2 x 16
	34	12	22 197	0,8	**MR V 160 - 132 MC 4**	50
	34	12	22 197	1	**MR V 161 - 132 MC 4**	50
	34	12	22 197	0,8	**MR V 160 - 160 M 4**	50
	34	12	22 197	1	**MR V 161 - 160 M 4**	50
	34,4	12,2	22 379	1,06	**MR V 160 - 160 L 6**	32
	34,4	12,2	22 379	1,25	**MR V 161 - 160 L 6**	32
	33,3	12,8	24 338	2,12	**MR IV 200 - 132 MC 4**	2,56 x 20
	34	12,8	23 709	2	**MR IV 200 - 160 M 4**	2 x 25
	34	12,2	22 529	1,6	**MR V 200 - 132 MC 4**	50
	34	12,2	22 529	1,6	**MR V 200 - 160 M 4**	50
	34,4	12,4	22 695	2	**MR V 200 - 160 L 6**	32
	33,3	13	24 541	3,75	**MR IV 250 - 160 M 4**	2,56 x 20
	34	12,3	22 837	2,8	**MR V 250 - 160 M 4**	50
10,9	**41,9**	12,6	19 040	0,8	**MR IV 126 - 132 MC 4**	2,03 x 20
	41,6	12,9	19 492	1,32	**MR IV 160 - 132 MC 4**	2,56 x 16
	41,6	12,9	19 492	1,6	**MR IV 161 - 132 MC 4**	2,56 x 16
	42,5	12,8	18 985	1,25	**MR IV 160 - 160 M 4**	2 x 20
	42,5	12,8	18 985	1,5	**MR IV 161 - 160 M 4**	2 x 20
	42,5	12,2	18 114	1,06	**MR V 160 - 132 MC 4**	40
	42,5	12,2	18 114	1,25	**MR V 161 - 132 MC 4**	40
	42,5	12,2	18 114	1,06	**MR V 160 - 160 M 4**	40
	42,5	12,2	18 114	1,25	**MR V 161 - 160 M 4**	40
	41,6	13,1	19 885	2,36	**MR IV 200 - 132 MC 4**	2,56 x 16
	42,5	12,9	19 203	2,5	**MR IV 200 - 160 M 4**	2 x 20
	42,5	12,3	18 301	1,9	**MR V 200 - 132 MC 4**	40
	42,5	12,3	18 301	1,9	**MR V 200 - 160 M 4**	40
11,9	**52,3**	12,8	15 454	0,95	**MR IV 126 - 132 MC 4**	2,03 x 16
	53,1	12,3	14 565	0,71	**MR V 125 - 132 MC 4**	32
	53,1	12,3	14 565	0,85	**MR V 126 - 132 MC 4**	32
	53,1	13	15 375	1,5	**MR IV 160 - 160 M 4**	2 x 16
	53,1	13	15 375	1,8	**MR IV 161 - 160 M 4**	2 x 16
	53,1	12,4	14 749	1,32	**MR V 160 - 132 MC 4**	32
	53,1	12,4	14 749	1,6	**MR V 161 - 132 MC 4**	32
	53,1	12,4	14 749	1,32	**MR V 160 - 160 M 4**	32
	53,1	12,4	14 749	1,6	**MR V 161 - 160 M 4**	32
	55	12,9	14 794	1,5	**MR V 160 - 160 L 6**	20
	55	12,9	14 794	1,7	**MR V 161 - 160 L 6**	20
	53,1	13,2	15 652	2,8	**MR IV 200 - 160 M 4**	2 x 16
	53,1	12,6	14 892	2,5	**MR V 200 - 160 M 4**	32
	68	12,8	11 906	0,85	**MR V 125 - 132 MC 4**	25
	68	12,8	11 906	1	**MR V 126 - 132 MC 4**	25
	68	13	12 024	1,5	**MR V 160 - 132 MC 4**	25
	68	13	12 024	1,8	**MR V 161 - 132 MC 4**	25
	68	13	12 024	1,5	**MR V 160 - 160 M 4**	25
	68	13	12 024	1,8	**MR V 161 - 160 M 4**	25
	68,8	13,1	11 984	1,8	**MR V 160 - 160 L 6**	16
	68,8	13,1	11 984	2,12	**MR V 161 - 160 L 6**	16
	68	13,1	12 114	2,8	**MR V 200 - 160 M 4**	25
	85	13	9 620	1	**MR V 125 - 132 MC 4**	20

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	fs	Gear reducer - motor 2)	i
15	**85**	13	9 620	1,18	**MR V 126 - 132 MC 4**	20
	85	13,1	9 703	1,8	**MR V 160 - 132 MC 4**	20
	85	13,1	9 703	2,12	**MR V 161 - 132 MC 4**	20
	85	13,1	9 703	1,8	**MR V 160 - 160 M 4**	20
	85	13,1	9 703	2,12	**MR V 161 - 160 M 4**	20
	106	13,1	7 781	1,18	**MR V 125 - 132 MC 4**	16
	106	13,1	7 781	1,4	**MR V 126 - 132 MC 4**	16
	106	13,2	7 834	2,24	**MR V 160 - 160 M 4**	16
	106	13,2	7 834	2,65	**MR V 161 - 160 M 4**	16
	131	13,3	6 420	1,4	**MR V 125 - 132 MC 4**	13
	131	13,3	6 420	1,7	**MR V 126 - 132 MC 4**	13
	131	13,4	6 462	2,65	**MR V 160 - 160 M 4**	13
	131	13,4	6 462	3	**MR V 161 - 160 M 4**	13
	170	13,4	4 985	1,6	**MR V 125 - 132 MC 4**	10
	170	13,4	4 985	1,9	**MR V 126 - 132 MC 4**	10
	170	13,5	5 005	3	**MR V 160 - 160 M 4**	10
	170	13,5	5 005	3,55	**MR V 161 - 160 M 4**	10
20 16,3	**8,5**	15,3	113 259	0,75	**MR IV 250 - 160 L 4**	3,17 x 63
15,8	**8,61**	15,5	113 644	0,95	**MR IV 250 - 180 L 6**	2,56 x 50
	10,7	15,8	92 937	1,06	**MR IV 250 - 160 L 4**	3,17 x 50
	13,4	16,1	76 017	1,32	**MR IV 250 - 160 L 4**	3,17 x 40
14,7	**16,6**	16,1	60 898	0,85	**MR IV 200 - 160 L 4**	2,56 x 40
13,9	**17,2**	16,3	59 593	0,95	**MR IV 200 - 180 L 6**	2 x 32
	16,6	16,4	62 009	1,5	**MR IV 250 - 160 L 4**	2,56 x 40
	17,2	17,2	62 946	1,7	**MR IV 250 - 180 L 6**	2,56 x 25
	17,5	16,1	58 057	1,25	**MR V 250 - 180 L 6**	63
	21,3	16,3	48 300	0,95	**MR IV 200 - 160 L 4**	2 x 40
	22	16,2	46 479	0,95	**MR V 200 - 180 L 6**	50
	20,8	17,2	52 108	1,6	**MR IV 250 - 160 L 4**	2,56 x 32
	21,5	17,4	50 835	2,12	**MR IV 250 - 180 L 6**	2,56 x 20
	22	16,5	47 324	1,7	**MR V 250 - 180 L 6**	50
12,2	**26,6**	16,4	38 883	0,8	**MR IV 161 - 160 L 4**	2 x 32
	26,6	16,7	39 677	1,25	**MR IV 200 - 160 L 4**	2 x 32
	27,5	17,4	39 769	1,4	**MR IV 200 - 180 L 6**	2 x 20
	27	16,2	37 764	0,85	**MR V 200 - 160 L 4**	63
	27,5	16,5	37 832	1,18	**MR V 200 - 180 L 6**	40
	26,6	17,5	41 481	2,24	**MR IV 250 - 160 L 4**	2,56 x 25
	27	16,4	38 409	1,5	**MR V 250 - 160 L 4**	63
	27,5	16,8	38 468	2	**MR V 250 - 180 L 6**	40
15,9	**34**	17,3	31 986	0,85	**MR IV 161 - 160 L 4**	2 x 25
	34	16,3	30 268	0,71	**MR V 161 - 160 L 4**	50
14,4	**34,4**	16,6	30 517	0,75	**MR V 160 - 180 L 6**	32
14,4	**34,4**	16,6	30 517	0,9	**MR V 161 - 180 L 6**	32
	34	17,4	32 330	1,4	**MR IV 200 - 160 L 4**	2 x 25
	34	16,6	30 721	1,12	**MR V 200 - 160 L 4**	50
	34,4	16,9	30 948	1,5	**MR V 200 - 180 L 6**	32
	33,3	17,7	33 465	2,65	**MR IV 250 - 160 L 4**	2,56 x 20
	34	16,8	31 142	2	**MR V 250 - 160 L 4**	50
17,1	**42,5**	17,5	25 889	0,9	**MR IV 160 - 160 L 4**	2 x 20
17,1	**42,5**	17,5	25 889	1,06	**MR IV 161 - 160 L 4**	2 x 20
	42,5	16,7	24 701	0,8	**MR V 160 - 160 L 4**	40
	42,5	16,7	24 701	0,95	**MR V 161 - 160 L 4**	40
	42,5	17,7	26 186	1,8	**MR IV 200 - 160 L 4**	2 x 20
	42,5	16,8	24 956	1,4	**MR V 200 - 160 L 4**	40
	44	17,6	25 212	1,7	**MR V 200 - 180 L 6**	25
	41,6	18	27 341	3,15	**MR IV 250 - 160 L 4**	2,56 x 16
	42,5	17	25 189	2,5	**MR V 250 - 160 L 4**	40
	53,1	17,7	20 965	1,12	**MR IV 160 - 160 L 4**	2 x 16
	53,1	17,7	20 965	1,32	**MR IV 161 - 160 L 4**	2 x 16
	53,1	17	20 112	0,95	**MR V 160 - 160 L 4**	32
	53,1	17	20 112	1,18	**MR V 161 - 160 L 4**	32
	53,1	18	21 344	2	**MR IV 200 - 160 L 4**	2 x 16
	53,1	17,1	20 307	1,8	**MR V 200 - 160 L 4**	32
	55	17,8	20 383	2,12	**MR V 200 - 180 L 6**	20
	53,1	17,7	21 012	2,65	**MR V 250 - 160 L 4**	32
	68	17,5	16 235	0,71	**MR V 126 - 160 L * 4**	25

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)

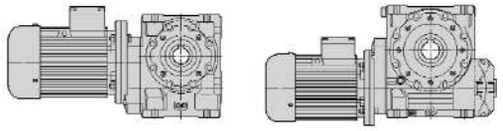


P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	*fs*	Gear reducer - motor 2)	*i*
20	**68**	17,7	16 397	1,12	**MR V 160 - 160 L 4**	25
	68	17,7	16 397	1,32	**MR V 161 - 160 L 4**	25
	68,8	17,8	16 342	1,32	**MR V 160 - 180 L 6**	16
	68,8	17,8	16 342	1,6	**MR V 161 - 180 L 6**	16
	68	17,8	16 519	2	**MR V 200 - 160 L 4**	25
	68,8	18,1	16 600	2,36	**MR V 200 - 180 L 6**	16
	85	17,7	13 118	0,71	**MR V 125 - 160 L * 4**	20
	85	17,7	13 118	0,85	**MR V 126 - 160 L * 4**	20
	85	17,8	13 232	1,32	**MR V 160 - 160 L 4**	20
	85	17,8	13 232	1,6	**MR V 161 - 160 L 4**	20
	84,6	18,1	13 509	1,5	**MR V 160 - 180 L 6**	13
	84,6	18,1	13 509	1,8	**MR V 161 - 180 L 6**	13
	85	18	13 311	2,65	**MR V 200 - 160 L 4**	20
	106	17,9	10 610	0,9	**MR V 125 - 160 L * 4**	16
	106	17,9	10 610	1,06	**MR V 126 - 160 L * 4**	16
	106	18	10 683	1,6	**MR V 160 - 160 L 4**	16
	106	18	10 683	1,9	**MR V 161 - 160 L 4**	16
	106	18,3	10 836	2,8	**MR V 200 - 160 L 4**	16
	131	18,2	8 755	1,06	**MR V 125 - 160 L * 4**	13
	131	18,2	8 755	1,25	**MR V 126 - 160 L * 4**	13
	131	18,3	8 812	1,9	**MR V 160 - 160 L 4**	13
	131	18,3	8 812	2,24	**MR V 161 - 160 L 4**	13
	170	18,3	6 797	1,18	**MR V 125 - 160 L * 4**	10
	170	18,3	6 797	1,4	**MR V 126 - 160 L * 4**	10
	170	18,4	6 824	2,12	**MR V 160 - 160 L 4**	10
	170	18,4	6 824	2,65	**MR V 161 - 160 L 4**	10
25 17,1	**10,8**	19,6	114 644	0,9	**MR IV 250 - 200 LR 6**	2,56 x 40
	13,3	19,8	93 844	1	**MR IV 250 - 180 M 4**	2,56 x 50
	16,6	20,2	76 478	1,18	**MR IV 250 - 180 M 4**	2,56 x 40
	17,5	19,8	71 603	1	**MR V 250 - 200 LR 6**	63
17,2	**21,3**	20,1	59 571	0,8	**MR IV 200 - 180 M 4**	2 x 40
18,6	**22**	20	57 324	0,75	**MR V 200 - 200 LR 6**	50
	20,8	21,2	64 267	1,25	**MR IV 250 - 180 M 4**	2,56 x 32
	22	21,4	61 350	1,6	**MR IV 250 - 200 LR 6**	2 x 25
	22	20,4	58 366	1,32	**MR V 250 - 200 LR 6**	50
19,4	**26,6**	20,6	48 935	1	**MR IV 200 - 180 M 4**	2 x 32
20,1	**27,5**	20,4	46 659	0,95	**MR V 200 - 200 LR 6**	40
	26,6	21,6	51 160	1,8	**MR IV 250 - 180 M 4**	2,56 x 25
	27,5	21,6	49 555	2	**MR IV 250 - 200 LR 6**	2 x 20
	27	20,3	47 371	1,25	**MR V 250 - 180 M 4**	63
	27,5	20,7	47 444	1,6	**MR V 250 - 200 LR 6**	40
	34	21,5	39 874	1,18	**MR IV 200 - 180 M 4**	2 x 25
	34	20,4	37 890	0,95	**MR V 200 - 180 M 4**	50
	34,4	20,8	38 170	1,18	**MR V 200 - 200 LR 6**	32
	33,3	21,8	41 274	2,24	**MR IV 250 - 180 M 4**	2,56 x 20
	34	20,7	38 408	1,6	**MR V 250 - 180 M 4**	50
17,1	**42,5**	21,5	31 929	0,75	**MR IV 160 - 180 M 4**	2 x 20
17,1	**42,5**	21,5	31 929	0,9	**MR IV 161 - 180 M 4**	2 x 20
18,7	**42,5**	20,5	30 464	0,75	**MR V 161 - 180 M 4**	40
	42,5	21,8	32 296	1,5	**MR IV 200 - 180 M 4**	2 x 20
	42,5	20,8	30 779	1,12	**MR V 200 - 180 M 4**	40
	44	21,7	31 094	1,4	**MR V 200 - 200 LR 6**	25
	41,6	22,2	33 720	2,5	**MR IV 250 - 180 M 4**	2,56 x 16
	42,5	20,9	31 066	2	**MR V 250 - 180 M 4**	40
18,6	**53,1**	21,8	25 857	0,9	**MR IV 160 - 180 M 4**	2 x 16
18,6	**53,1**	21,8	25 857	1,06	**MR IV 161 - 180 M 4**	2 x 16
20,5	**53,1**	20,9	24 805	0,8	**MR V 160 - 180 M 4**	32
20,5	**53,1**	20,9	24 805	0,95	**MR V 161 - 180 M 4**	32
	53,1	22,2	26 324	1,7	**MR IV 200 - 180 M 4**	2 x 16
	53,1	21,1	25 045	1,4	**MR V 200 - 180 M 4**	32
	55	21,9	25 139	1,7	**MR V 200 - 200 LR 6**	20
	53,1	21,8	25 915	2,24	**MR V 250 - 180 M 4**	32
	68	21,8	20 222	0,9	**MR V 160 - 180 M 4**	25
	68	21,8	20 222	1,06	**MR V 161 - 180 M 4**	25
	68	22	20 373	1,6	**MR V 200 - 180 M 4**	25
	68,8	22,3	20 473	1,9	**MR V 200 - 200 LR 6**	16
	68	22,1	20 510	3	**MR V 250 - 180 M 4**	25

P_1 hp 1)	n_2 rpm	P_2 hp	M_2 lb in	*fs*	Gear reducer - motor 2)	*i*
25	**85**	22	16 319	1,06	**MR V 160 - 180 M 4**	20
	85	22	16 319	1,32	**MR V 161 - 180 M 4**	20
	85	22,1	16 416	2,12	**MR V 200 - 180 M 4**	20
	106	22,2	13 176	1,32	**MR V 160 - 180 M 4**	16
	106	22,2	13 176	1,6	**MR V 161 - 180 M 4**	16
	106	22,5	13 364	2,36	**MR V 200 - 180 M 4**	16
	131	22,5	10 869	1,5	**MR V 160 - 180 M 4**	13
	131	22,5	10 869	1,8	**MR V 161 - 180 M 4**	13
	131	22,6	10 905	2,8	**MR V 200 - 180 M 4**	13
	170	22,7	8 417	1,8	**MR V 160 - 180 M 4**	10
	170	22,7	8 417	2,12	**MR V 161 - 180 M 4**	10
30 17,1	**10,8**	23,3	136 333	0,75	**MR IV 250 - 200 L 6**	2,56 x 40
21,5	**13,3**	23,6	111 598	0,85	**MR IV 250 - 180 L 4**	2,56 x 50
23,2	**16,6**	24	90 947	1	**MR IV 250 - 180 L 4**	2,56 x 40
	17,5	23,6	85 150	0,85	**MR V 250 - 200 L 6**	63
	20,8	25,2	76 425	1,06	**MR IV 250 - 180 L 4**	2,56 x 32
	22	25,5	72 957	1,32	**MR IV 250 - 200 L 6**	2 x 25
	22	24,2	69 408	1,12	**MR V 250 - 200 L 6**	50
19,4	**26,6**	24,5	58 193	0,85	**MR IV 200 - 180 L 4**	2 x 32
20,1	**27,5**	24,2	55 487	0,8	**MR V 200 - 200 L 6**	40
	26,6	25,7	60 839	1,5	**MR IV 250 - 180 L 4**	2,56 x 25
	27,5	25,7	58 930	1,7	**MR IV 250 - 200 L 6**	2 x 20
	27	24,1	56 334	1,06	**MR V 250 - 180 L 4**	63
	27,5	24,6	56 419	1,4	**MR V 250 - 200 L 6**	40
24,6	**34**	25,6	47 418	1	**MR IV 200 - 180 L 4**	2 x 25
	34	24,3	45 058	0,8	**MR V 200 - 180 L 4**	50
22,4	**34,4**	24,8	45 391	1	**MR V 200 - 200 L 6**	32
	33,3	25,9	49 082	1,8	**MR IV 250 - 180 L 4**	2,56 x 20
	34	24,6	45 675	1,4	**MR V 250 - 180 L 4**	50
	34,4	25,7	47 037	1,5	**MR V 250 - 200 L 6**	32
	42,5	25,9	38 406	1,25	**MR IV 200 - 180 L 4**	2 x 20
	42,5	24,7	36 602	0,95	**MR V 200 - 180 L 4**	40
	44	25,8	36 977	1,12	**MR V 200 - 200 L 6**	25
	41,6	26,5	40 100	2,12	**MR IV 250 - 180 L 4**	2,56 x 16
	42,5	24,9	36 944	1,7	**MR V 250 - 180 L 4**	40
	44	26,1	37 365	2	**MR V 250 - 200 L 6**	25
20,5	**53,1**	24,9	29 498	0,8	**MR V 161 - 180 L 4**	32
	53,1	26,4	31 304	1,4	**MR IV 200 - 180 L 4**	2 x 16
	53,1	25,1	29 783	1,18	**MR V 200 - 180 L 4**	32
	55	26,1	29 895	1,4	**MR V 200 - 200 L 6**	20
	53,1	26	30 818	1,8	**MR V 250 - 180 L 4**	32
	55	26,3	30 107	2,5	**MR V 250 - 200 L 6**	20
	68	25,9	24 048	0,75	**MR V 160 - 180 L 4**	25
	68	25,9	24 048	0,9	**MR V 161 - 180 L 4**	25
	68	26,1	24 227	1,4	**MR V 200 - 180 L 4**	25
	68,8	26,6	24 346	1,6	**MR V 200 - 200 L 6**	16
	68	26,3	24 390	2,5	**MR V 250 - 180 L 4**	25
	85	26,2	19 406	0,9	**MR V 160 - 180 L 4**	20
	85	26,2	19 406	1,06	**MR V 161 - 180 L 4**	20
	85	26,3	19 522	1,8	**MR V 200 - 180 L 4**	20
	84,6	26,7	19 911	1,9	**MR V 200 - 200 L 6**	13
	85	26,4	19 610	3	**MR V 250 - 180 L 4**	20
	106	26,4	15 668	1,12	**MR V 160 - 180 L 4**	16
	106	26,4	15 668	1,32	**MR V 161 - 180 L 4**	16
	106	26,8	15 893	2	**MR V 200 - 180 L 4**	16
	131	26,8	12 925	1,32	**MR V 160 - 180 L 4**	13
	131	26,8	12 925	1,5	**MR V 161 - 180 L 4**	13
	131	26,9	12 968	2,36	**MR V 200 - 180 L 4**	13
	170	27	10 009	1,5	**MR V 160 - 180 L 4**	10
	170	27	10 009	1,8	**MR V 161 - 180 L 4**	10
40 23,2	**16,6**	32,7	124 019	0,75	**MR IV 250 - 200 L 4**	2,56 x 40
27,3	**21,3**	33,2	98 348	0,85	**MR IV 250 - 200 L 4**	2 x 40
33,5	**26,6**	35	82 963	1,12	**MR IV 250 - 200 L * 4**	2,56 x 25
	26,6	34,7	82 278	0,95	**MR IV 250 - 200 L 4**	2 x 32

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and *fs* decreases proportionately.
2) For complete designation when ordering see ch. 3.
* Mounting postion **B5R** (see table ch.2b)

9 - Manufacturing programme (gearmotors)



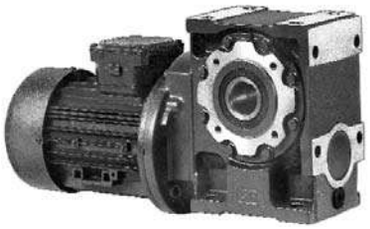
P_1 hp 1)	**n_2** rpm	P_2 hp	M_2 lb ft	fs	**Gear reducer - motor** 2)	i
40	**27**	32,9	76 819	0,75	**MR V 250 - 200 L 4**	63
	33,3	35,3	66 930	1,32	**MR IV 250 - 200 L * 4**	2,56 x 20
	34	35,4	65 551	1,25	**MR IV 250 - 200 L 4**	2 x 25
	34	33,6	62 284	1	**MR V 250 - 200 L 4**	50
26,8	**42,5**	35,3	52 372	0,9	**MR IV 200 - 200 L * 4**	2 x 20
28,6	**42,5**	33,7	49 911	0,71	**MR V 200 - 200 L 4**	40
	42,5	35,6	52 768	1,6	**MR IV 250 - 200 L 4**	2 x 20
	42,5	34	50 378	1,25	**MR V 250 - 200 L 4**	40
31	**53,1**	36	42 687	1	**MR IV 200 - 200 L * 4**	2 x 16
31,3	**53,1**	34,2	40 614	0,9	**MR V 200 - 200 L 4**	32
	53,1	36,3	43 086	1,8	**MR IV 250 - 200 L 4**	2 x 16
	53,1	35,4	42 025	1,32	**MR V 250 - 200 L 4**	32
	68	35,6	33 037	1	**MR V 200 - 200 L 4**	25
	68	35,9	33 259	1,8	**MR V 250 - 200 L 4**	25
	85	35,9	26 621	1,32	**MR V 200 - 200 L 4**	20
	85	36,1	26 741	2,24	**MR V 250 - 200 L 4**	20
	106	36,5	21 672	1,4	**MR V 200 - 200 L 4**	16
	106	36,7	21 767	2,65	**MR V 250 - 200 L 4**	16
	131	36,7	17 684	1,7	**MR V 200 - 200 L 4**	13
50 39,6	**34**	43,6	80 846	1,06	**MR IV 250 - 225 S 4**	2 x 25
41,6	**34**	41,4	76 817	0,8	**MR V 250 - 225 S 4**	50
41,5	**42,5**	43,9	65 081	1,25	**MR IV 250 - 225 S 4**	2 x 20

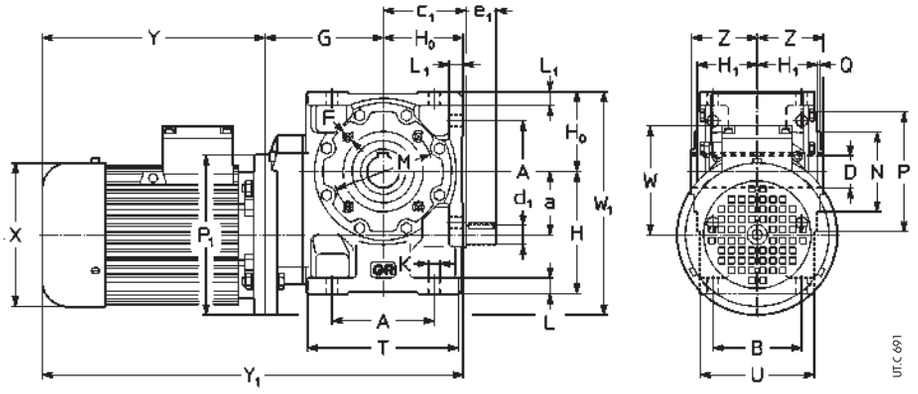
P_1 hp 1)	**n_2** rpm	P_2 hp	M_2 lb ft	fs	**Gear reducer - motor** 2)	i
50	**42,5**	41,9	62 132	1	**MR V 250 - 225 S 4**	40
31,3	**53,1**	42,2	50 090	0,71	**MR V 200 - 200 LG 4**	32
	53,1	44,8	53 139	1,5	**MR IV 250 - 225 S 4**	2 x 16
	53,1	43,7	51 830	1,12	**MR V 250 - 225 S 4**	32
41	**68**	44	40 746	0,8	**MR V 200 - 200 LG 4**	25
	68	44,3	41 020	1,5	**MR V 250 - 225 S 4**	25
	85	44,3	32 833	1,06	**MR V 200 - 200 LG 4**	20
	85	44,5	32 980	1,8	**MR V 250 - 225 S 4**	20
	106	45,1	26 729	1,18	**MR V 200 - 200 LG 4**	16
	106	45,3	26 846	2,12	**MR V 250 - 225 S 4**	16
	131	45,3	21 811	1,4	**MR V 200 - 200 LG 4**	13
60 39,6	**34**	53	98 327	0,85	**MR IV 250 - 225 M 4**	2 x 25
41,5	**42,5**	53,4	79 153	1,06	**MR IV 250 - 225 M 4**	2 x 20
44	**42,5**	51	75 566	0,85	**MR V 250 - 225 M 4**	40
49,3	**53,1**	54,5	64 629	1,18	**MR IV 250 - 225 M 4**	2 x 16
	53,1	53,1	63 037	0,9	**MR V 250 - 225 M 4**	32
	68	53,8	49 889	1,18	**MR V 250 - 225 M 4**	25
	85	54,1	40 111	1,5	**MR V 250 - 225 M 4**	20
	106	55	32 651	1,7	**MR V 250 - 225 M 4**	16
75 57,3	**53,1**	64,9	77 045	0,75	**MR V 250 - 250 M * 4**	32
	68	65,8	60 975	1	**MR V 250 - 250 M * 4**	25
	85	66,1	49 024	1,18	**MR V 250 - 250 M * 4**	20
	106	67,3	39 907	1,4	**MR V 250 - 250 M * 4**	16

1) Powers valid for continuous duty S1; **increase** possible for S2 ... S10 (see ch. 2b) in which case P_2, M_2 increase and fs decreases proportionately.
2) For complete designation when ordering see ch. 3.

10 - Designs, dimensions, mounting positions and oil quantities

MR V 32 ... 81





Design[1)]

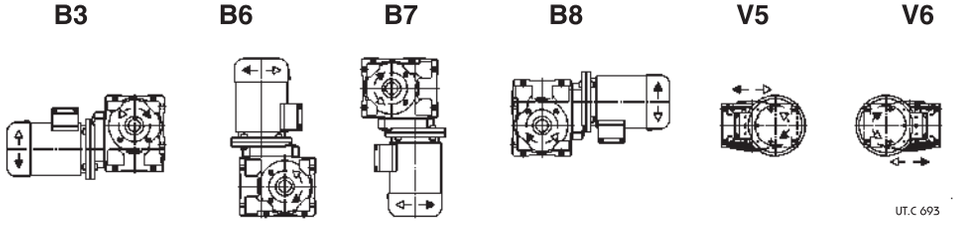
standard
worm extension

UO3A
UO3D

Size red.	Size motor B5	a	A B	c_1	D Ø H7	d_1 Ø e_1	F 2)	G	H h11	H_0 h11	H_1 h12	K Ø	L L_1	M Ø	N Ø h6	P Ø Q	T U	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈ 3)		W ≈	W_1 ≈	Mass lb	
																						3)		3)				3)
32	**63**	1,26	2,4	2,01	0,748	0,433	M 5	2,99	2,8	1,89	1,36	0,28	0,39	2,95	2,165	3,54	3,58	1,54	5,51	4,8	7,28	9,02	12,17	13,9	3,98	6,73	18	22
	71[7)]		2,05			0,79	4)						0,33		5)	0,12	2,6		5,51	5,51	8,86	-	13,74	-	4,41	7,17	24	-
40	**63**	1,57	2,76	2,26	0,945	0,551	M 6	3,43	3,23	2,2	1,63	0,37	0,47	3,35	2,677	4,13	4,17	1,81	5,51	4,8	7,28	9,02	12,91	14,65	3,98	6,73	24	29
	71		2,44			0,98	4)						0,39		5)	0,12	3,15		6,3	5,51	8,31	10,83	13,94	16,46	4,41	7,56	31	37
	80[7)]																		6,3	6,3	9,65	-	15,28	-	4,8	7,95	40	-
50	**63**	1,97	3,39	2,78	1,102	0,63	M6	3,86	3,94	2,64	1,93	0,37	0,51	3,94	3,346	4,72	4,96	2,09	5,51	4,8	7,28	9,02	13,78	15,51	3,98	7,36	31	35
	71		2,95			1,18	4)						0,47		5)	0,12	3,74	6)	6,3	5,51	8,31	10,83	14,8	17,32	4,41	7,76	40	46
	80																		7,87	6,3	9,09	12,09	15,59	18,58	4,8	8,74	49	60
	90[7)]																		7,87	7,09	10,63	-	17,13	-	5,87	9,8	62	-
63	**71**	2,48	4,02	3,27	1,26	0,748	M 8	4,65	4,92	3,15	2,3	0,45	0,63	3,94	3,15	4,72	5,94	2,48	6,3	5,51	8,31	10,83	16,1	18,62	4,41	8,78	51	57
64	**80**		3,54			1,18							0,55			0,12	4,49		7,87	6,3	9,09	12,09	16,89	19,88	4,8	9,57	60	71
	90																		7,87	7,09	10,63	13,98	18,43	21,77	5,87	9,8	73	84
	100[7)]																		7,87	8,15	13,5	-	21,3	-	6,46	10,39	88	-
80	**80**	3,15	5,2	4,06	1,496	0,945	M 10	5,43	5,91	3,94	2,74	0,55	0,79	5,12	4,331	6,3	7,44	2,95	7,87	6,3	9,09	12,09	18,46	21,46	4,8	11,02	82	93
81	**90**		4,17		**(80)**	1,42							0,67			0,14	5,31		7,87	7,09	10,63	13,98	20	23,35	5,87	11,02	95	106
	100[8)]				1,575														9,84	8,15	13,5	16,5	22,87	25,87	6,46	12,01	110	126
	***112**[8)]				**(81)**														9,84	8,15	13,5	16,5	22,87	25,87	6,46	12,01	132	157

1) See ch. 3 for motor design.
2) Working length of thread 2 · F.
3) Values valid for brake motor.
4) Holes turned through 45° with respect to the drawing.
5) Tolerance t8.
6) Option of P_1 = 6,3, with price addition: consult us.
7) On request for 100L 4, 112M 4 excluded size 81 also available mounting position **B5R** (see ch. 2b).
8) Brake motor not possible.
* **IMPORTANT**: in the event of a **brake motor** and shaft mounting or mounting positions V5, V6, **consult us**. Brake motor **F0 112MC not possible**.

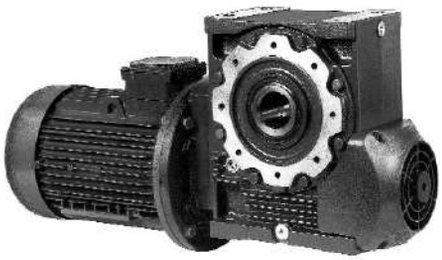
Mounting positions - direction of rotation - and oil quantities [gal]

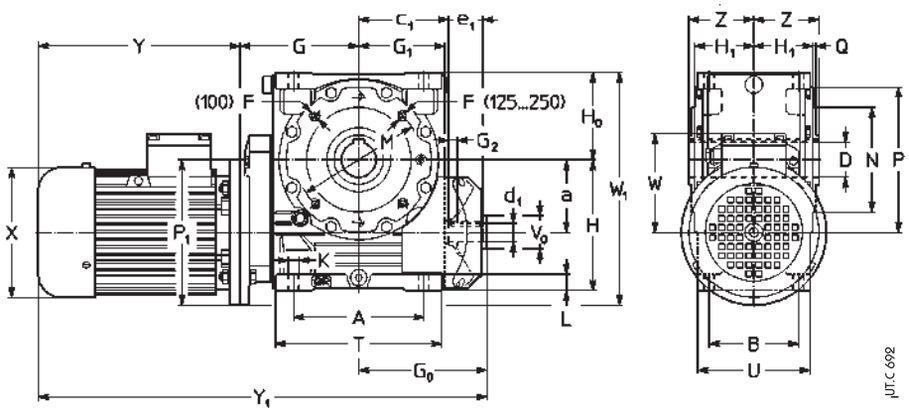


Size.	B3	B6, B7	B8	V5, V6
32	0,04	0,05	0,04	0,04
40	0,07	0,09	0,07	0,07
50	0,11	0,16	0,11	0,11
63, 64	0,21	0,3	0,21	0,21
80, 81	0,34	0,58	0,45	0,34

Unless otherwise stated, gearmotors are supplied in mounting position **B3** (**B3** and **B8** for sizes ≤ 64) which, being standard, is **omitted** from the designation.

MR V 100 ... 250





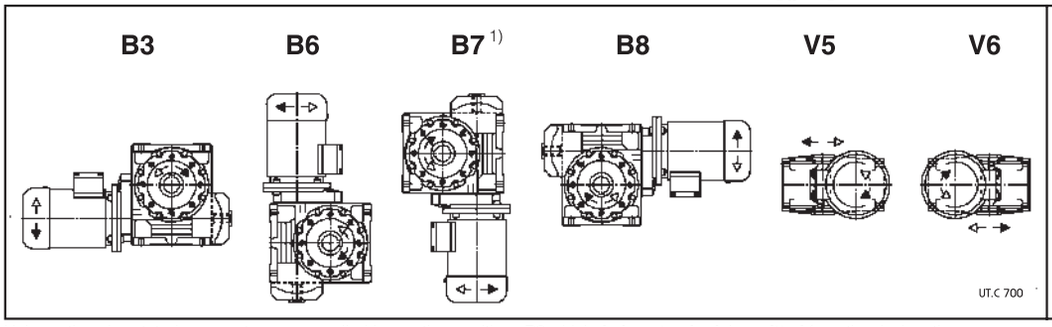
Design[1]
standard

UO2A[5]

Size red.	Size motor B5	a	A B	c_1	D Ø H7	d_1 Ø e_1	F 2)	G	G_0	G_1 G_2	H h11 H_0 h11	H_1 h12	K Ø	L	M Ø	N Ø h6	P Ø Q	T U	V_0 Ø max	Z	P_1 Ø	X Ø ≈	Y ≈ 4)		Y_1 ≈ 4)		W ≈	W_1 ≈	Mass lb 4)	
100	90	3,94	7,09	5,12	1,89	1,102	M 12	6,69	7,09	4,8	7,09	3,33	0,63	0,91	6,5	5,118	7,87	9,29	1,77	3,54	7,87	7,09	10,63	13,98	24,41	27,76	5,87	12,8	137	148
	100		5,16			1,65				0,43	4,92						0,14	6,5			9,84	8,15	13,5	16,5	27,28	30,28	6,46	13,78	152	168
	112																				9,84	8,15	13,5	17,52	27,28	31,3	6,46	13,78	174	198
	*132[7]							7,48													11,81	10,24	15,83	21,14	30,39	35,71	7,72	14,76	229	254
125	100	4,92	8,86	6,1	2,362	1,26	M 12[8]	8,07	8,7	5,83	8,86	3,92	0,71	1,1	8,46	7,087	9,84	11,3	1,97	4,17	9,84	8,15	13,5	16,5	30,28	33,27	6,46	15,75	227	243
126	112		6,1			2,28				0,59	5,91						0,16	7,64			9,84	8,15	13,5	17,52	30,28	34,29	6,46	15,75	249	273
	132																				11,81	10,24	15,83	21,14	32,6	37,91	7,72	16,73	315	351
	160[6]																				11,81	12,4	21,26	-	38,03	-	9,25	16,73	381	-
160	112	6,3	10,71	7,36	2,756	1,496	M 14[8]	9,72	10,04	7,01	11,02	4,67	0,87	1,3	10,43	9,055	11,81	13,58	2,36	4,92	9,84	8,15	13,5	17,52	33,27	37,28	6,46	18,31	379	403
161	132		7,2		(160)	2,28				0,59	7,09						0,16	9,13			11,81	10,24	15,83	21,14	35,59	40,91	7,72	19,29	448	483
	160				2,95			10,24													13,78	12,4	21,26	24,96	41,54	45,24	9,25	20,28	520	573
	180[8]				(161)																13,78	13,94	24,21	24,96	44,49	45,24	10,12	20,28	639	573
200	132	7,87	13,46	9,25	3,543	1,89	M16[8]	11,5	12,76	8,74	13,19	5,41	1,06	1,57	11,81	9,843	13,78	16,97	3,15	5,91	11,81	10,24	15,83	21,14	40,08	45,39	7,72	22,64	675	710
	160		8,43			3,23		12,01		0,79	8,86						0,2	10,63			13,78	12,4	21,26	24,96	46,02	49,72	9,25	23,62	747	800
	180																				13,78	13,94	24,21	28,9	48,98	53,66	10,12	23,62	866	946
	*200																				15,75	13,94	24,21	28,9	48,98	53,66	10,12	24,61	924	1012
250	160	9,84	16,73	11,3	4,331	2,165	M 20[8]	14,17	14,92	10,91	16,14	6,42	1,3	1,97	15,75	13,78	17,72	21,14	3,15	7,09	13,78	12,4	21,26	24,96	50,35	54,06	9,25	27,76	1087	1140
	180		9,84			3,23	3)			0,79	11,02						0,2	12,6			13,78	13,94	24,21	28,9	53,31	57,99	10,12	27,76	1206	1285
	200																				15,75	13,94	24,21	28,9	53,31	57,99	10,12	28,74	1263	1351
	225							14,57													17,72	16,38	27,17	-	56,65	-	11,5	29,72	1396	-
	250[6]																				17,72	16,38	27,17	-	56,65	-	11,5	29,72	1470	-

1) See ch. 3 for motor design.
2) Working length of thread 2 · F.
3) Holes turned through 22° 30' with respect to the drawing.
4) Values valid for brake motor.
5) Prearranged design for worm shaft extension (see ch. 2).
6) Mounting position **B5R** (see ch. 2b), brake motor not possible.
7) On request for 132M 4 also available mouting position **B5R** (see ch. 2b).
8) Brake motor **F0 180L not possible**.
* **IMPORTANT**: in the event of **brake motor** and shaft mounting or mounting positions V5, V6, **consult us.** Brake motor **F0 132MB not possible.** For motor **200LG 4**, X dimension increases by 2,87 in, Y and Y_1 dimensions increase by 4,33 in and mass by 77 lb, brake motor not possible.

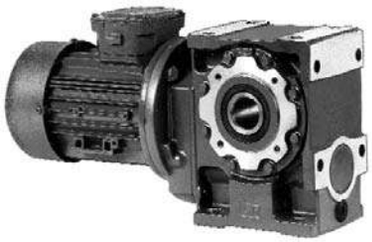
Mounting positions - direction of rotation - and oil quantities [gal]

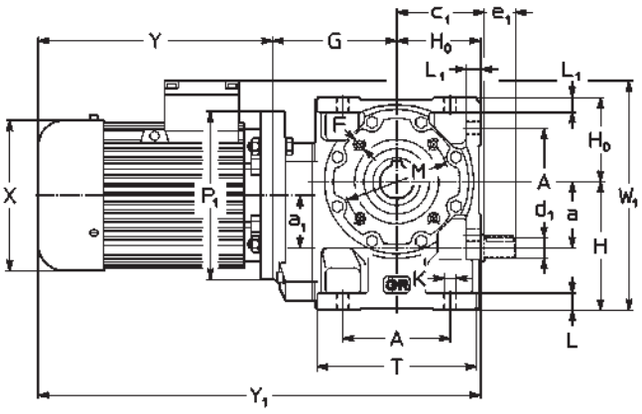


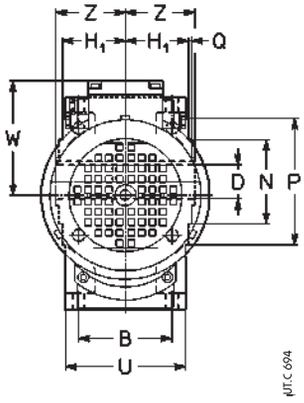
Size	B3	B6, B7	B8	V5, V6
100	0,5	1,4	1,1	0,79
125, 126	0,9	2,6	2,2	1,5
160, 161	1,5	4,8	4	2,6
200	2,5	8,7	7,9	5,3
250	4,5	15,1	13,5	9

Unless otherwise stated, gearmotors are supplied in mouting positions **B3** which, **being standard**, is **omitted** from the designation.
1) Sizes 200 and 250 in **B7**, mounting position with $n_1 > 710$ rpm, carry a price addition.

MR IV 32 ... 81





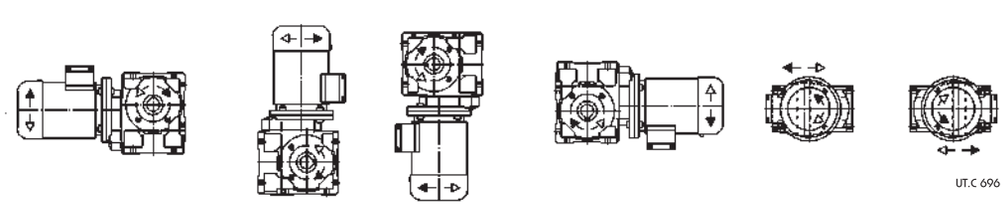


Design[1)]
standard
worm extension

Size red.	Size motor	a / a_1	A / B	c_1	D Ø H7	d_1 Ø / e_1	F / 2)	G	H / h11	H_0 / h11 / G	H_1 / h12	K Ø	L / L_1	M Ø	N Ø h6	P Ø / Q	T / U	Z	P_1 Ø	X Ø ≈	Y ≈ 3)		Y_1 ≈ 3)		W ≈	W_1 ≈	Mass lb 3)	
32	**63**	1,26 1,26	2,4 2,05	2,01	0,748	0,433 0,79	M 5 4)	2,99	2,8	1,89	1,36	0,28	0,39	2,95	2,165 5)	3,54 0,12	3,58 2,6	1,54	5,51	4,8	7,28	9,02	12,17	13,9	3,98	6,77	18	22
40	**63** **71**	1,57 1,57	2,76 2,44	2,26	0,945	0,551 0,98	M 6 4)	3,43	3,23	2,2	1,63	0,37	0,47 0,39	3,35	2,677 5)	4,13 0,12	4,17 3,15	1,81	5,51 6,3	4,8 5,51	7,28 8,31	9,02 10,83	12,91 13,94	14,65 16,46	3,98 4,41	7,2 7,64	24 31	29 37
50	**63** **71** **80**	1,97 1,57	3,39 2,95	2,78	1,102	0,63 1,18	M 6 4)	3,86	3,94	2,64	1,93	0,37	0,51 0,47	3,94	3,346 5)	4,72 0,12	4,96 3,74	2,09 6)	5,51 6,3 7,87	4,8 5,51 6,3	7,28 8,31 9,09	9,02 10,83 12,09	13,78 14,8 15,59	15,51 17,32 18,58	3,98 4,41 4,8	7,52 7,95 8,74	31 40 49	35 46 60
63 **64**	**71** **80** **90**[8)]	2,48 1,97	4,02 3,54	3,27	1,26	0,748 1,18	M 8	4,65	4,92	3,15	2,3	0,45	0,63 0,55	3,94	3,15	4,72 0,12	5,94 4,49	2,48	6,3 7,87 7,87	5,51 6,3 7,09	8,31 9,09 10,63	10,83 12,09 13,98	16,1 16,89 18,43	18,62 19,88 21,77	4,41 4,8 5,87	8,82 9,21 10,28	51 60 73	57 71 84
80 **81**	**71** **80** **90** **100**[7)]	3,15 1,97	5,2 4,17	4,06	1,496 **(80)** 1,575 **(81)**	0,945 1,42	M 10	5,43	5,91	3,94	2,74	0,55	0,79 0,67	5,12	4,331	6,3 0,14	7,44 5,31	2,95	6,3 7,87 7,87 7,87	5,51 6,3 7,09 8,15	8,31 9,09 10,63 13,5	10,83 12,09 13,98 -	17,68 18,46 20 22,87	20,2 21,46 23,35 -	4,41 4,8 5,87 6,46	9,84 9,84 10,59 11,18	73 82 95 110	79 93 106 -

1) See ch. 3 for motor design.
2) Working length of thread 2 · F.
3) Values valid for brake motor.
4) Holes turned through 45° with respect to the drawing.
5) Tolerance t8.
6) Option of P_1 = 6,3, with price addition: consult us.
7) Mounting position **B5R** (see ch. 2b); brake motor not possible.
8) Brake motor **F0 90LB and 90LC not possible**.

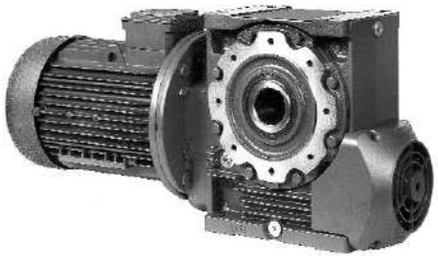
Mounting positions - direction of rotation - and oil quantities [gal]

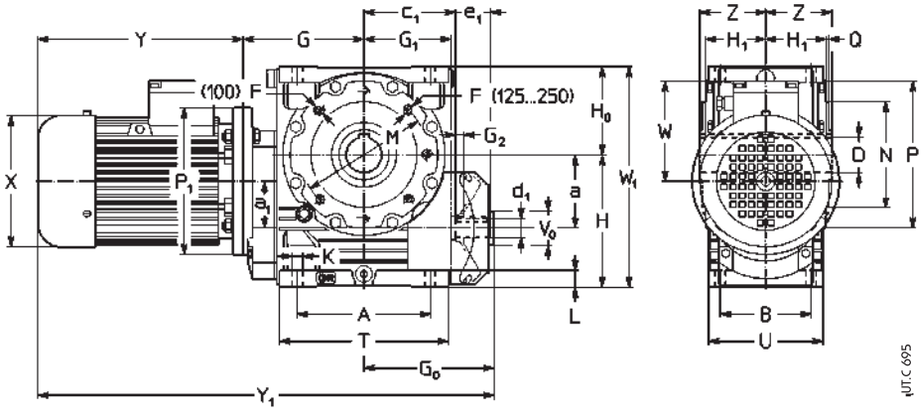


Size	B3	B6, B7	B8	V5, V6
32	0,05	0,07	0,05	0,05
40	0,08	0,11	0,08	0,08
50	0,13	0,18	0,13	0,13
63, 64	0,26	1,34	0,26	0,26
80, 81	0,4	0,66	0,53	0,4

Unless otherwise stated, gearmotors are supplied in mounting position **B3** (**B3** and **B8** for sizes ≤ 64) which, being standard, is **omitted** from the designation.

MR IV 100 ... 250





Design[1]

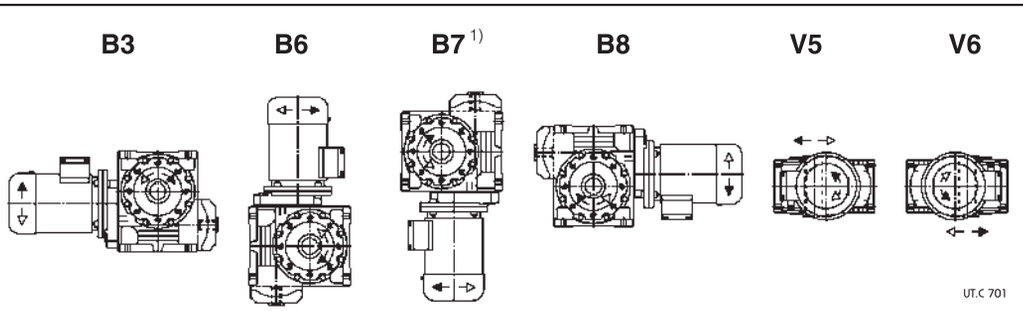
standard

UO2A[5]

Size red.	Size motor B5	a a_1	A B	c_1	D Ø H7	d_1 Ø e_1	G	G_0	G_1 G_2	H h11 H_0 h11	H_1 h12	K Ø	L	M Ø F 2)	N Ø h6	P Ø Q	T U	V_0 Ø max	Z	P_1 Ø	X Ø ≈	Y ≈		Y_1 ≈		W ≈	W_1 ≈	Mass lb	
																							4)		4)				4)
100	80	3,94	7,09	5,12	1,89	1,102	6,69	7,09	4,8	7,09	3,33	0,63	0,91	6,5	5,12	7,87	9,29	1,77	3,54	7,87	6,3	9,09	12,09	22,87	25,87	4,8	12,01	11,7	12,7
	90	2,48	5,16			1,65			0,43	4,92				M 12		0,14	6,5			7,87	7,09	10,63	13,98	24,41	27,76	5,87	12,01	12,9	13,9
	100																			9,84	8,15	13,5	16,5	27,28	30,28	6,46	12,09	14,3	15,8
	112																			9,84	8,15	13,5	17,52	27,28	31,3	6,46	12,09	16,4	18,6
125	90	4,92	8,86	6,1	2,362	1,260	8,07	8,7	5,83	8,86	3,92	0,71	1,1	8,46	7,09	9,84	11,3	1,97	4,17	7,87	7,09	10,63	13,98	27,4	30,75	5,87	14,76	20	21
126	100	3,15	6,1			2,28			0,59	5,91				M 12^{8}		0,16	7,64			9,84	8,15	13,5	16,5	30,28	33,27	6,46	14,76	21	23
	112																			9,84	8,15	13,5	17,52	30,28	34,29	6,46	14,76	24	26
	132[8]																			11,81	10,24	15,83	21,14	32,6	37,91	7,72	14,8	30	33
160	100	6,3	10,71	7,36	2,756	1,496	9,72	10,04	7,01	11,02	4,67	0,87	1,3	10,43	9,06	11,81	13,58	2,36	4,92	9,84	8,15	13,5	16,5	33,27	36,26	6,46	18,11	34	35
161	112	3,94	7,2		(160)	2,28			0,59	7,09				M 14^{8}		0,16	9,13			9,84	8,15	13,5	17,52	33,27	37,28	6,46	18,11	36	38
	132				2,953															11,81	10,24	15,83	21,14	35,59	40,91	7,72	18,11	42	45
	160				(161)		10,24													13,78	12,4	21,26	24,96	41,54	45,24	9,25	18,11	49	54
	180M[7]																			13,78	12,4	21,26	–	41,54	–	10,12	18,78	60	–
200	100	7,87	13,46	9,25	3,543	1,89	11,5	12,76	8,74	13,19	5,41	1,06	1,57	11,81	9,84	13,78	16,97	3,15	5,91	9,84	8,15	13,5	16,5	37,76	40,75	6,46	22,05	56	57
	112	3,94	8,43			3,23			0,79	8,86				M 16^{8}		0,2	10,63			9,84	8,15	13,5	17,52	37,76	41,77	6,46	22,05	58	60
	132																			11,81	10,24	15,83	21,14	40,08	45,39	7,72	22,05	63	67
	160						12,01													13,78	12,4	21,26	24,96	46,02	49,72	9,25	22,05	70	75
	180																			13,78	13,94	24,21	28,9	48,98	53,66	10,12	22,05	81	89
	200[6]																			13,78	13,94	24,21	–	48,98	–	10,12	22,05	87	–
250	132	9,84	16,73	11,3	4,331	2,165	14,17	14,92	10,91	16,14	6,42	1,3	1,97	15,75	13,78	17,72	21,14	3,15	7,09	11,81	10,24	15,83	21,14	44,92	50,24	7,72	27,17	95	99
	160	4,92	9,84			3,23			0,79	11,02				M 20^{8}		0,2	12,6			13,78	12,4	21,26	24,96	50,35	54,06	9,25	27,17	102	107
	180													3)						13,78	13,94	24,21	28,9	53,31	57,99	10,12	27,17	113	121
	200																			15,75	13,94	24,21	28,9	53,31	57,99	10,12	27,17	118	127
	225						14,57													17,72	16,38	27,17	–	56,65	–	11,5	27,17	131	–

1) See ch. 3 for motor design.
2) Working length of thread 2 · F.
3) Holes turned through 22° 30' with respect to the drawing.
4) Values valid for brake motor.
5) Prearranged design for worm shaft extension (see ch. 2).
6) Mounting position **B5R** (see ch. 2b), brake motor not possible.
7) Brake motor not possible.
8) Brake motor **F0 132MC not possible**.

Mounting positions - direction of rotation - and oil quantities [gal]

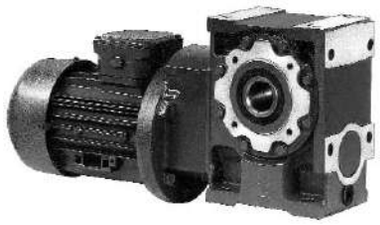


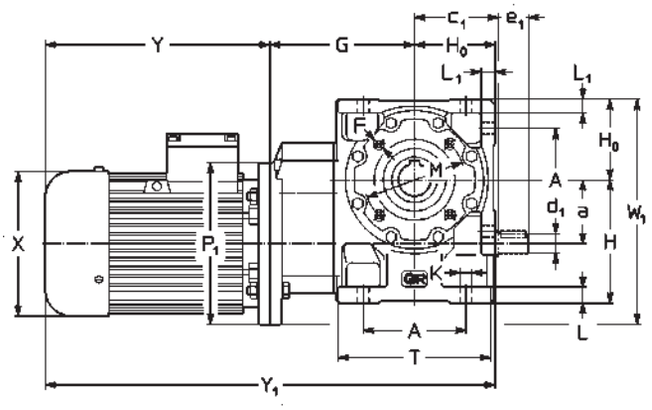
Size	B3	B6, B7	B8	V5, V6
100	0,55	1,66	1,19	0,87
125, 126	1	3,06	2,32	1,66
160, 161	1,72	5,49	4,36	2,96
200	2,75	10,04	8,32	5,6
250	4,83	17,7	14	9,43

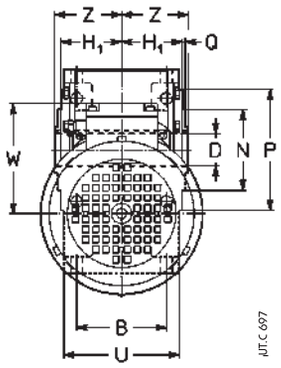
Unless otherwise stated, gearmotors are supplied in mouting positions **B3** which, being standard, is **omitted** from the designation.
1) Sizes 100 ... 250 in mounting position **B6** carry a price addition.

10 - Designs, dimensions, mounting positions and oil quantities

MR 2IV 40 ... 81



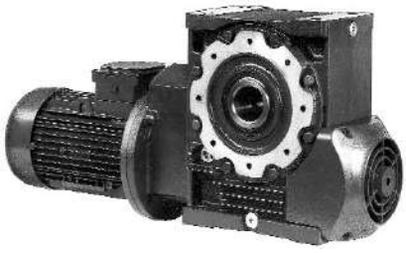


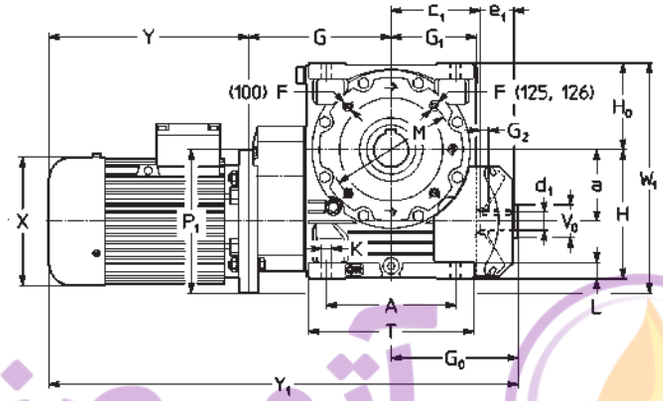


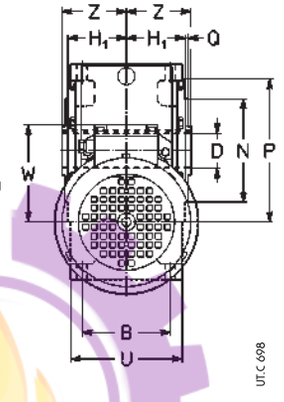
Design[1]
standard
worm extension

UO3A
UO3D

MR 2IV 100 ... 126







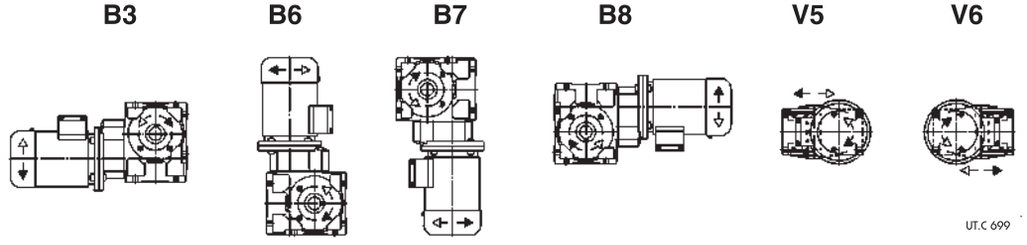
Design[1]
standard

UO2A[4]

Size red.	Size motor B5	a	A B	c_1	D Ø H7	d_1 Ø e_1 2)	F	G_0 G	G_1 G_2	H h11 H_0 h11	H_1 h12	K Ø	L L_1	M Ø	N Ø h6	P Ø Q	T U	V_0 Ø max	Z	P_1 Ø	X Ø ≈	Y ≈ 3)	Y_1 ≈ 3)	W ≈	W_1 ≈	Mass lb 3)
40	**63**	1,57 2,44	2,76	2,26	0,945	0,551 0,98	M 6 5)	– 4,17	– –	3,23 2,2	1,63	0,37	0,47 0,39	3,35	2,677 6)	4,13 0,12	4,17 3,15	–	1,81	5,51	4,8	7,28	9,02	13,66	15,39	3,98	6,73	24,3	28,7
50	**63** **71**	1,97	3,39 2,95	2,78	1,102	0,63 1,18	M 6 5)	– 4,61	– –	3,94 2,64	1,93	0,37	0,51 0,47	3,94	3,346 6)	4,72 0,12	4,96 3,74	–	2,09	5,51 6,3	4,8 5,51	7,28 8,31	9,02 10,83	14,53 15,55	16,26 18,07	3,98 4,41	7,36 7,76	31 40	35 46
63 **64**	**71** **80**	2,48	4,02 3,54	3,27	1,26	0,748 1,18	M 8	– 5,71	– –	4,92 3,15	2,3	0,45	0,63 0,55	3,94	3,15	4,72 0,12	5,94 4,49	–	2,48	6,3 7,87	5,51 6,3	8,31 9,09	10,83 12,09	17,17 17,95	19,69 20,94	4,41 4,8	8,78 9,57	53 62	60 73
80 **81**	**71** **80**	3,15	5,2 4,17	4,06	1,496 **(80)** 1,575 **(81)**	0,945 1,42	M 10	– 6,5	– –	5,91 3,94	2,74	0,55	0,79 0,67	5,12	4,331	6,3 0,14	7,44 5,31	–	2,95	6,3 7,87	5,51 6,3	8,31 9,09	10,83 12,09	18,74 19,53	21,26 22,52	4,41 4,8	10,24 11,02	75 84	82 95
100	**80** **90**	3,94	7,09 5,16	5,12	1,89	1,102 1,65	M 12	7,09 7,99	4,8 0,43	7,09 4,92	3,33	0,63	0,91 –	6,5	5,118	7,87 0,14	9,29 6,5	1,77	3,54	7,87 7,87	6,3 7,09	9,09 10,63	12,09 13,98	24,17 25,71	27,17 29,06	4,8 5,87	12,8 12,8	130 143	141 154
125 **126**	**90** **100** **112 M**	4,92	8,86 6,1	6,1	2,362	1,26 2,28	M 12[8]	8,7 9,8	5,83 0,59	8,86 5,91	3,92	0,71	1,1 –	8,46	7,087	9,84 0,16	11,3 7,64	1,97	4,17	7,87 9,84 9,84	7,09 8,15 8,15	10,63 13,5 13,5	13,98 16,5 16,5	29,13 32,01 32,01	32,48 35 35	5,87 6,46 6,46	14,76 15,75 15,75	223 238 251	234 254 271

1) See ch. 3 for motor design.
2) Working length of thread 2 · F.
3) Values valid for brake motor.
4) Prearranged design for worm shaft extension (see ch. 2).
5) Holes turned through 45° with respect to the drawing.
6) Tolerance t8.

Mounting positions - direction of rotation **- and oil quantities** [gal]



Schemes for sizes 40 ... 81 valid also for sizes 100 ... 126.

Size	B3	B6, B7	B8	V5, V6
40	0,11	0,13	0,11	0,11
50	0,16	0,21	0,16	0,16
63, 64	0,32	0,41	0,32	0,32
80, 81	0,45	0,74	0,61	0,48
100	0,63	1,8	1,3	0,95
125,126	1,1	3,4	2,5	1,8

Unless otherwise stated, gearmotors are supplied in mounting position **B3** (**B3** and **B8** for sizes ≤ 64) which, being standard, is **omitted** from the designation.

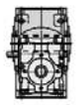
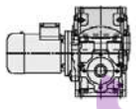
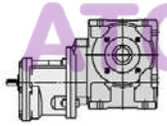
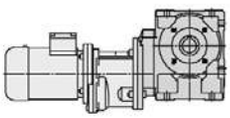
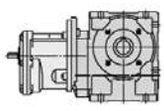
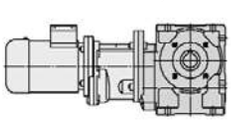
11 - Combined gear reducer and gearmotor units

Table A - Nominal torques for final gear reducer

n_2 rpm	Final gear reducer size / *i* worm gear pair											
	50/20			**63**/25			**80**/25			**81**/25		
	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in
11,2	1 800	0,7	3 000	2 800	0,7	5 000	5 600	0,72	9 500	6 700	0,72	10 600
9	1 800	0,68	3 150	3 000	0,69	5 300	5 600	0,71	10 000	6 700	0,71	10 600
4,5	1 900	0,66	3 350	3 350	0,66	6 000	6 300	0,68	11 200	7 100	0,68	11 800
2,24	2 120	0,64	3 550	3 750	0,64	6 300	7 100	0,65	11 800	7 500	0,65	12 500
1,12	2 240	0,62	3 550	4 250	0,62	6 300	7 100	0,63	11 800	8 000	0,63	12 500
0,56	2 240*	0,6	3 550	4 250	0,6	6 300	7 100*	0,61	11 800	8 000*	0,61	12 500
0,28	2 240**	0,58	3 550	4 250*	0,58	6 300	7 100**	0,59	11 800	8 000**	0,59	12 500
0,14	2 240**	0,57	3 550	4 250*	0,57	6 300	7 100**	0,58	11 800	8 000**	0,58	12 500
⩽ 0,071	2 240**	0,55	3 550	4 250*	0,55	6 300	7 100**	0,56	11 800	8 000**	0,56	12 500
M_2 Size [lb in]	**2 240**			**4 250**			**7 100**			**8 000**		

*, ** In these cases *fs* required, provided that it always results ⩾ 1, can be reduced of **1,12** (*) or **1,18** (**).

Table B - Types of combined units

Type of combined unit	Final gear reducer size			
	50	**63**	**80**	**81**
R V + R V 	**R V 50/20** + **R V** or **MR V 32**	**R V 63/25** + **R V** or **MR V 32**	**R V 80/25** + **R V** or **MR V 40**[5] 5) *i* = 63 is not admitted.	**R V 81/25** + **R V** or **MR V 40**[5] 5) *i* = 63 is not admitted.
R V + MR V  1)				
$i_N \approx$ 250 ... 1 600	i_{final} = 20	i_{final} = 25	i_{final} = 25	i_{final} = 25
MR V + R 2I, 3I 	**MR V 50-80B 4 ... B5A/70**[3] + **R 2I** or **MR 2I, 3I 40**	**MR V 63-80B 4 ... B5A/56**[3] + **R 2I** or **MR 2I, 3I 40**	**MR V 80-90L 4 ... B5/56** + **R 2I, 3I** or **MR 2I, 3I 50**[4] for $M_{N2} \leqslant$ 60 daN m **MR V 80-80B 4 ... B5A/56**[3] + **R 2I** or **MR 2I, 3I 40**	**MR V 81-90L 4 ... B5/56** + **R 2I, 3I** or **MR 2I, 3I 50**[4]
MR V + MR 2I, 3I 				
$i_N \approx$ 160 ... 4 000	i_{final} = 20	i_{final} = 25	i_{final} = 25	i_{final} = 25
MR IV + R 2I 	**MR IV 50-71B 4 ... B5A/27,6**[2] + **R 2I** or **MR 2I, 3I 32** design: **shaft end Ø 14**	**MR IV 63-80B 4 ... B5A/22,1**[3] + **R 2I** or **MR 2I, 3I 40**	**MR IV 80-80B 4 ... B5A/22,1**[3] + **R 2I** or **MR 2I, 3I 40**	**MR IV 81-80B 4 ... B5A/22,1**[3] + **R 2I** or **MR 2I, 3I 40**
MR IV + MR 2I, 3I 				
$i_N \approx$ 400 ... 10 000	i_{final} = 50,7	i_{final} = 63,5	i_{final} = 63,5	i_{final} = 63,5

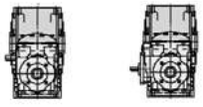
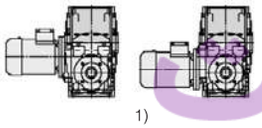
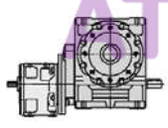
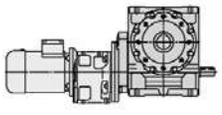
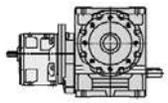
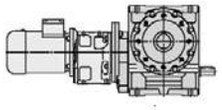
For initial gear reducer performance see: this catalogue ch. 7 or 9 for worm gear reducer, i for coaxial gear reducers see cat. E.
1) An anchor link is fitted between initial and final gear reducer.
2) The gearmotor has 5,51 in motor mounting flange.
3) The gearmotor has 6,30 in motor mounting flange.
4) Gear reducer in «oversized B5 flange».

Table A - Nominal torques for final gear reducer

n_2 rpm	Final gear reducer size / *i* worm gear pair								
	100/25			**125**/32			**160**/32		
	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in
11,2	11 200	0,74	19 000	18 000	0,74	30 000	33 500	0,76	56 000
9	11 800	0,73	20 000	18 000	0,73	31 500	35 500	0,75	60 000
4,5	13 200	0,69	22 400	20 000	0,69	37 500	37 500	0,71	71 000
2,24	14 000	0,67	23 600	22 400	0,66	40 000	45 000	0,68	75 000
1,12	14 000	0,65	23 600	25 000	0,64	42 500	45 000	0,65	75 000
0,56	14 000*	0,63	23 600	26 500	0,61	42 500	45 000*	0,63	75 000
0,28	14 000**	0,61	23 600	26 500*	0,6	42 500	45 000**	0,61	75 000
0,14	14 000**	0,59	23 600	26 500*	0,58	42 500	45 000**	0,59	75 000
⩽ **0,071**	14 000**	0,57	23 600	26 500*	0,56	42 500	45 000**	0,57	75 000
M_2 Size [lb in]	**50 000**			**90 000**			**170 000**		

*, ** In these cases *fs* required, provided that it always results ⩾ 1, can be reduced of **1,12** (*) or **1,18** (**).

Table B - Types of combined units

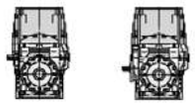
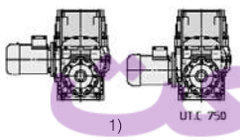
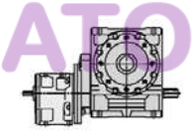
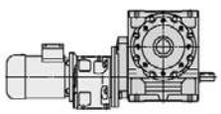
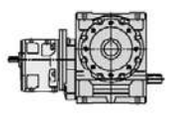
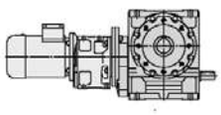
Type of combined unit	Final gear reducer size		
	100	**125**	**160**
R V + R V **R V + R IV**  **R V + MR V** **R V + MR IV**  1)	**R V 100/25** + **R V, IV** or **MR V, IV 50**	**R V 125/32** + **R V, IV** or **MR V, IV 63**	**R V 160/32** + **R V, IV** or **MR V, IV 80**
i_N ≈ 315 ... 8 000	i_{final} = 25	i_{final} = 32	i_{final} = 32
MR V + R 2I, 3I  **MR V + MR 2I, 3I** 	**MR V 100-100LB 4 ... B5/56** + **R 2I, 3I** or **MR 2I, 3I 63**[4] for M_{N2} ⩽ 10 000 lb in **MR V 100-90L 4 ... B5/56** + **R 2I, 3I** or **MR 2I, 3I 50**[4]	**MR V 125-112M 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 63**[4]	**MR V 160-132MB 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 80**[4] for M_{N2} ⩽ 35 500 lb in **MR V 160-132MB 4 ... B5A/43,8**[5] + **R 2I, 3I** or **MR 2I, 3I 64**[4] for M_{N2} ⩽ 315 daN m **MR V 160-112M 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 63**[4]
i_N ≈ 200 ... 5 000	i_{final} = 25	i_{final} = 32	i_{final} = 32
MR IV + R 2I, 3I  **MR IV + MR 2I, 3I** 	**MR IV 100-90L 4 ... B5/22,1** + **R 2I, 3I** or **MR 2I, 3I 50**[4]	**MR IV 125-112M 4 ... B5/17,3** + **R 2I, 3I** or **MR 2I, 3I 63**[4]	**MR IV 160-112M 4 ... B5/13,8** + **R 2I, 3I** or **MR 2I, 3I 63**[4]
i_N ≈ 500 ... 12 500	i_{final} = 63,5	i_{final} = 81,1	i_{final} = 102

For initial gear reducer performance see: this catalogue ch. 7 or 9 for worm gear reducer, i for coaxial gear reducers see cat. E.
1) An anchor link is fitted between initial and final gear reducer.
4) Gear reducer in «oversized B5 flange» (see ch. 17 cat. E); size 63 has a low speed shaft reduced to 1,10 in: «oversized B5 flange - Ø 1,10».
5) The gearmotor has 9,84 in motor mounting flange. 6) The gearmotor has 11,81 in motor mounting flange. 7) The gearmotor has 13,78 in motor mounting flange.

Table A - Nominal torques for final gear reducer

n_2 rpm	Final gear reducer size / *i* worm gear pair								
	161/32			**200**/32			**250**/40		
	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in	M_{N2} lb in	η	M_{2max} lb in
11,2	40 000	0,76	60 000	63 000	0,78	106 000	106 000	0,79	1 800 000
9	42 500	0,75	67 000	67 000	0,77	112 000	112 000	0,78	1 800 000
4,5	45 000	0,71	75 000	75 000	0,73	132 000	125 000	0,73	2 240 000
2,24	50 000	0,68	80 000	80 000	0,69	150 000	140 000	0,69	2 500 000
1,12	50 000	0,65	80 000	90 000	0,67	150 000	150 000	0,66	2 650 000
0,56	50 000*	0,63	80 000	90 000*	0,64	150 000	170 000	0,64	2 800 000
0,28	50 000**	0,61	80 000	90 000**	0,63	150 000	170 000*	0,61	2 800 000
0,14	50 000**	0,59	80 000	90 000**	0,61	150 000	170 000**	0,6	2 800 000
⩽ **0,071**	50 000**	0,57	80 000	90 000**	0,58	150 000	170 000**	0,57	2 800 000
M_2 Size [daN m]	**50 000**			**90 000**			**170 000**		

Table B - Types of combined units

Type of combined unit	Final gear reducer size		
	161	**200**	**250**
R V + R V R V + R IV  **R V + MR V R V + MR IV**  1)	**R V 161/32** + **R V, IV** or **MR V, IV 80**	**R V 200/32** + **R V, IV** or **MR V, IV 100**	**R V 250/40** + **R V, IV** or **MR V, IV 125**
$i_N \approx$ 315 ... 10 000	i_{final} = 32	i_{final} = 32	i_{final} = 40
MR V + R 2I, 3I  **MR V + MR 2I, 3I** 	**MR V 161-132MB 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 80**[4] for M_{N2} ⩽ 35 500 lb in **MR V 161-132MB 4 ... B5A/43,8**[5] + **R 2I, 3I** or **MR 2I, 3I 64**[4]	**MR V 200-180L 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 100**[4] for M_{N2} ⩽ 71 000 lb in **MR V 200-180L 4 ... B5A/43,8**[6] + **R 2I, 3I** or **MR 2I, 3I 81**[4] for M_{N2} ⩽ 60 000 lb in **MR V 200-132MB 4 ... B5/43,8** + **R 2I, 3I** or **MR 2I, 3I 80**[4]	**MR V 250-200L 4 ... B5A/35**[7] + **R 2I, 3I** or **MR 2I, 3I 101**[4] for M_{N2} ⩽ 128 000 lb in **MR V 250-180L 4 ... B5/35** + **R 2I, 3I** or **MR 2I, 3I 100**[4]
$i_N \approx$ 200 ... 6 300	i_{final} = 32	i_{final} = 32	i_{final} = 40
MR IV + R 2I, 3I  **MR IV + MR 2I, 3I** 	**MR IV 161-112M 4 ... B5/13,8** + **R 2I, 3I** or **MR 2I, 3I 63**[4]	**MR IV 200-132MB 4 ... B5/17,1** + **R 2I, 3I** or **MR 2I, 3I 80**[4]	**MR IV 250-180L 4 ... B5/13,7** + **R 2I, 3I** or **MR 2I, 3I 100**[4]
$i_N \approx$ 500 ... 16 000	i_{final} = 102	i_{final} = 81,8	i_{final} = 102

12 - Radial loads[1] F_{r1} [lb] on high speed shaft end OHL

Radial loads generated on the shaft end by a drive connecting gear reducer and motor must be less than or equal to those given in the relevant table.
The radial load F_{r1} given by the following formula refers to most common drives:

$$F_{r1} = \frac{189\,090 \cdot P_1}{d \cdot n_1}$$ [lb] for timing belt drive

$$F_{r1} = \frac{315\,150 \cdot P_1}{d \cdot n_1}$$ [lb] for V-belt drive

where: P_1 [hp] is power required at the input side of the gear reducer, n_1 [rpm] is the speed, d [in] is the pitch diameter.

Radial loads given in the table are valid for overhung loads on centre line of high speed shaft end, i.e. operating at a distance of 0,5 · e (e = shaft end length) from the shoulder. If they operate at 0,315 · e multiply by 1,25; if they operate at 0,8 · e multiply by 0,8.

n_1 RPM	Gear reducer size																			
	32		40		50		63, 64		80, 81		100		125, 126		160, 161		200		250	
	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV	R V	R IV
1 800	30	23,6	45	35,5	67	35,5	100	56	150	56	224	90	335	160	500	355	560	355	800	530
1 120	34	27	50	40	75	40	112	63	170	63	250	101	375	180	560	400	630	400	900	600
710	40	32	60	48	90	48	132	75	200	75	300	119	450	212	670	475	750	475	1060	710
355	50	40	75	60	112	60	170	95	250	95	375	151	560	265	850	600	950	600	1320	900

1) An axial load of up to 0,2 times the value in the table is permissible, simultaneously with the radial load. If exceeded consult us.

13 - Radial loads F_{r2} [lb] on low speed shaft end OHL

Axial loads F_{a2}

Permissible F_{a2} is shown in the column where direction of rotation of low speed shaft (black or white arrow) and direction of the axial force (solid or broken arrow) correspond to those of the gear reducer in question. Direction of rotation and direction of force may be established viewing the gear reducer from any point, providing the same point adopted for both.
Wherever possible, choose the load conditions corresponding the column on the **right**.

Radial loads F_{r2}

Radial loads generated on the shaft end by a drive connecting gear reducer and machine must be less than or equal to those given in the relevant table.

Normally, radial loads on low speed shaft ends are considerable: in fact there is a tendency to connect the gear reducer to the machine by means of a transmission with high transmission ratio (economizing on the gear reducer) and with small diameters (economizing on the drive, and for requirements dictated by overall dimensions).
Bearing life and wear (which also affect gears unfavourably) and low speed shaft strength, clearly impose limits on permissible radial load.

The high value which radial load may take on, and the importance of not exceeding permissible values, make it necessary to take full advantage of the gear reducer's possibilities.
Permissible radial loads given in the table are therefore based on: the product of speed n_2 [x 1 000 rpm] multiplied by bearing life L_h [h] required, the direction of rotation, the angular position φ [°] of the load and torque M_2 [lb] required.

Radial loads given in the table are valid for overhung loads on centre line of low speed shaft end, i.e. operating at a distance of 0,5 · E (E = shaft end length) from the shoulder. If operating at 0,315 · E multiply by 1,25; if operating at 0,8 · E multiply by 0,8.

IMPORTANT: An axial/radial load of up to 0,2 times the value in table is permissible simultaneously with radial load.
If exceeded consult us.

$$F_{r2} = \frac{126\,060 \cdot P_2}{d \cdot n_2}$$ [lb] for chain drive (lifting in general); for timing belt drive replace 126 060 with 189 090

$$F_{r2} = \frac{315\,150 \cdot P_2}{d \cdot n_2}$$ [lb] for V-belt drive

$$F_{r2} = \frac{134\,112 \cdot P_2}{d \cdot n_2}$$ [lb] for spur gear pair drive

$$F_{r2} = \frac{447\,546 \cdot P_2}{d \cdot n_2}$$ [lb] for friction wheel drive (rubber-on-metal)

where: P_2 [hp] is power required at the output side of the gear reducer, n_2 [rpm] is the speed, d [in] is the pitch diameter.

13 - Radial loads F_{r2} [lb] on low speed shaft end OHL

For radial loads acting simultaneously on both sides consult us.

Train of gears	i_n	Gear reducer size F_{r2} [1] [lb]										
		32	**40**	**50**	**63, 64**	**80, 81**	**100**	**125, 126**	**160**	**161**	**200**	**250**
V	10	300	335	355	450	600	800	950	1 400	5 600	-	-
	13	315	400	450	530	750	900	1 060	1 400	6 700	9 000	-
	16	315	450	500	600	850	1 000	1 250	1 600	6 700	9 500	11 200
	20	315	450	500	600	850	1 000	1 250	1 600	6 700	9 500	11 200
	25	400	450	560	670	950	1 120	1 400	1 800	6 700	10 000	12 500
	32	400	450	630	750	1 060	1 320	1 600	2 120	6 700	10 000	13 200
	40	400	560	750	900	1 320	1 600	2 000	2 650	6 700	10 000	12 500
	50	400	560	750	900	1 320	1 600	2 000	2 650	6 700	10 000	14 000
	63	-	560	800	1 000	1 500	1 800	2 240	3 150	6 700	10 000	14 000
IV	50	400	560	670	800	1 000	1 320	1 600	2 000	6 700	10 000	14 000
	63	400	560	800	900	1 180	1 600	1 900	2 500	6 700	10 000	14 000
	80	400	560	800	1 180	1 320	1 800	2 120	2 800	6 700	10 000	14 000
	100	400	560	800	1 180	1 320	2 800	4 000	6 000	6 700	10 000	14 000
	125	400	560	800	1 180	1 320	2 800	4 000	6 000	6 700	10 000	14 000
	160	-	560	800	1 180	1 320	2 800	4 000	6 000	6 700	10 000	14 000
	200	-	560	800	1 180	1 320	2 800	4 000	6 000	6 700	10 000	14 000
	250	-	-	-	-	-	2 800	4 000	6 000	6 700	10 000	14 000
	315	-	-	-	-	-	2 800	4 000	6 000	6 700	10 000	14 000
2 IV	80	-	-	800	-	-	1 800	2 120	-	-	-	-
	100	-	-	-	-	1 800	2 800	-	-	-	-	-
	106	-	-	800	-	-	-	-	-	-	-	-
	112	-	560	-	-	-	-	-	-	-	-	-
	125	-	-	-	1 180	1 800	2 800	-	-	-	-	-
	132	-	-	800	-	-	-	-	-	-	-	-
	140	-	560	800	-	-	-	-	-	-	-	-
	160	-	-	800	1 180	1 800	2 800	4 000	-	-	-	-
	170	-	-	-	-	-	-	4 000	-	-	-	-
	180	-	560	800	-	-	-	-	-	-	-	-
	200	-	-	800	1 180	1 800	2 800	4 000	-	-	-	-
	212	-	-	-	-	-	-	4 000	-	-	-	-
	224	-	560	800	-	-	-	-	-	-	-	-
	250	-	-	-	1 180	1 800	2 800	4 000	-	-	-	-
	265	-	-	-	-	1 800	2 800	-	-	-	-	-
	280	-	560	800	-	-	-	-	-	-	-	-
	300	-	-	-	1 180	1 800	2 800	-	-	-	-	-
	315	-	-	-	-	1 800	-	4 000	-	-	-	-
	355	-	-	800	-	-	-	-	-	-	-	-
	375	-	-	-	-	-	-	4 000	-	-	-	-
	400	-	-	-	1 180	1 800	2 800	-	-	-	-	-
	450	-	-	800	-	-	-	-	-	-	-	-
	475	-	-	-	-	1 800	2 800	4 000	-	-	-	-
	600	-	-	-	-	1 800	2 800	4 000	-	-	-	-

1) An axial/radial load of up to 0,2 times the value in table is permissible simultaneously with radial load. I exceeded consult us.

14 - Structural and operational details

Worm gear pair

Number of teeth – wormwheel z_2 and worm z_1, axial module m_x, reference lead angle γ_m, static efficiency η_s and worm gear pair moment of inertia J_1 for gear reducers and gearmotors **R V**, **R IV**, **MR V**, **MR IV**, **MR 2IV**.

In the case of **R IV**, **MR IV** and **MR 2IV** gear reducers and gearmotors, the moment of inertia on the high speed shaft (disregarding motor) is that of the worm divided by the cylindrical gear pair total ratio squared.

i		Gear reducer size									
		32	**40**	**50**	**63, 64**	**80, 81**	**100**	**125, 126**	**160, 161**	**200**	**250**
7	z_2/z_1	21/3	21/3	21/3	28/4	28/4					
	m_x	2,2	2,8	3,4	3,5	4,5					
	γ_m	22° 28’	22° 28’	22° 35’	28° 35’	28° 30’	—	—	—	—	—
	η_s	0,71	0,71	0,71	0,74	0,74					
10	z_2/z_1	20/2	20/2	20/2	30/3	30/3	30/3	30/3	30/3		
	m_x	2,3	2,8	3,5	3,3	4,2	5,3	6,6	8,6		
	γ_m	15° 10’	15° 10’	15° 7’	19° 52’	20° 28’	21° 20’	21° 53’	23° 1’	—	—
	η_s	0,65	0,65	0,65	0,69	0,7	0,7	0,7	0,72		
13	z_2/z_1	26/2	26/2	26/2	26/2	26/2	26/2	39/3	39/3	39/3	
	m_x	1,8	2,3	2,9	3,7	4,7	5,9	5,2	6,8	8,5	
	γ_m	13° 28’	13° 14’	13° 36’	14° 23’	14° 48’	15° 24’	18° 48’	19° 52’	20° 38’	—
	η_s	0,62	0,62	0,63	0,64	0,64	0,65	0,68	0,69	0,7	
16	z_2/z_1	32/2	32/2	32/2	32/2	32/2	32/2	32/2	32/2	48/3	48/3
	m_x	1,5	1,9	2,4	3,1	3,9	4,9	6,2	8	7,1	9
	γ_m	11° 52’	11° 53’	12° 4’	12° 47’	13° 14’	13° 47’	14° 7’	14° 52’	19° 4’	20° 21’
	η_s	0,6	0,6	0,6	0,61	0,62	0,63	0,63	0,64	0,68	0,69
20	z_2/z_1	20/1	20/1	20/1	40/2	40/2	40/2	40/2	40/2	40/2	40/2
	m_x	2,3	2,8	3,5	2,5	3,2	4,1	5,1	6,6	8,3	10,4
	γ_m	7° 41’	7° 40’	7° 46’	11° 46’	12° 1’	12° 29’	12° 24’	13° 6’	13° 36’	14° 3’
	η_s	0,5	0,5	0,5	0,6	0,6	0,61	0,61	0,62	0,63	0,63
25	z_2/z_1	25/1	25/1	25/1	25/1	25/1	25/1	50/2	50/2	50/2	50/2
	m_x	1,9	2,4	3	3,8	4,8	6,1	4,2	5,4	6,8	8,6
	γ_m	6° 55’	6° 52’	6° 58’	7° 21’	7° 34’	7° 53’	11° 33’	11° 49’	12° 28’	13° 18’
	η_s	0,48	0,48	0,48	0,5	0,5	0,51	0,59	0,6	0,61	0,62
32	z_2/z_1	32/1	32/1	32/1	32/1	32/1	32/1	32/1	32/1	32/1	64/2
	m_x	1,5	1,9	2,4	3,1	3,9	4,9	6,2	8	10,1	6,8
	γ_m	6°	6°	6° 3’	6° 25’	6° 38’	6° 55’	7° 5’	7° 27’	7° 43’	11° 22’
	η_s	0,45	0,45	0,45	0,46	0,47	0,48	0,49	0,5	0,51	0,59
40	z_2/z_1	40/1	40/1	40/1	40/1	40/1	40/1	40/1	40/1	40/1	40/1
	m_x	1,3	1,6	2	2,5	3,2	4,1	5,1	6,6	8,3	10,4
	γ_m	5° 12’	5° 10’	5° 16’	5° 54’	6° 2’	6° 16’	6° 13’	6° 34’	6° 50’	7° 3’
	η_s	0,42	0,42	0,42	0,44	0,45	0,46	0,46	0,47	0,48	0,49
50	z_2/z_1	50/1	50/1	50/1	50/1	50/1	50/1	50/1	50/1	50/1	50/1
	m_x	1	1,3	1,6	2,1	2,7	3,3	4,2	5,4	6,8	8,6
	γ_m	4° 29’	4° 25’	4° 32’	5° 7’	5° 15’	5° 27’	5° 48’	5° 56’	6° 15’	6° 41’
	η_s	0,38	0,38	0,38	0,41	0,42	0,43	0,44	0,45	0,46	0,47
63	z_2/z_1		63/1	63/1	63/1	63/1	63/1	63/1	63/1	63/1	63/1
	m_x		1	1,3	1,7	2,1	2,7	3,4	4,4	5,5	6,9
	γ_m	—	3° 43’	3° 50’	4° 21’	4° 27’	4° 39’	4° 57’	5° 5’	5° 22’	5° 46’
	η_s		0,34	0,35	0,38	0,38	0,39	0,4	0,41	0,42	0,44
Moment of inertia (of mass) J_1 [lb ft^2] on the worm ≈		—	—	—	—	—	0,0332	0,0878	0,1851	0,4556	0,8923

Low speed shaft angular backlash

A rough guide for low speed shaft angular backlash is given in the table (the worm being held stationary). Values vary according to design and temperature.
Gear reducers with **controlled** or **reduced backlash** can be supplied on request (see ch. 16), subject to longer delivery times and price addition; choose a **higher** service factor.

Gear reducer size	Angular backlash [rad][1]	
	min	max
32	0,0030	0,0118
40	0,0025	0,0100
50	0,0020	0,0080
63, 64	0,0018	0,0071
80, 81	0,0016	0,0063
100	0,0013	0,0050
125, 126	0,0011	0,0045
160, 161	0,0010	0,0040
200	0,0008	0,0032
250	0,0007	0,0028

1) At a distance of 3,28 ft from the low speed shaft centre, angular backlash in inches is obtained multiplying the table value by 1 000 (1 rad = 3438’).

Efficiency η

Efficiency η is derived from the P_{N2} / P_{N1} ratio in the case of gear reducers (ch. 7) and P_2 / P_1 in the case of gearmotors (ch. 9). The values obtained will be valid assuming normal working conditions, worm operating as driving member, proper lubrication, adequate running-in (ch. 15), and a load near to the nominal value.

During the **initial working period** (about 50 hours) and generally at every cold start, efficiency will be lower (by about 12% for worms with $z_1 = 1$; 6% for worms with $z_1 = 2$ and 3% for worms with $z_1 = 3$).

«Static» efficiency η_s on starting (see table in the preceding section) is much lower than η («starting friction») must be overcome at speed 0); as speed picks up gradually, efficiency will rise correspondingly until the catalogue value is reached.

Inverse efficiency η_{inv}, – produced by the wormwheel as driver – is always less than η. It can be calculated approximately as follows:

$$\eta_{inv} \approx 2 - 1 / \eta; \qquad \text{likewise:} \qquad \eta_{s\,inv} \approx 2 - 1 / \eta_s$$

Irreversibility

A worm gear reducer or gearmotor is **dynamically irreversible** (that is, it ceases to turn the instant the wormshaft receives no further stimulus that would keep the worm itself in rotation e.g. motor torque, inertia from the worm and related fan, motor flywheels, couplings, etc.) when $\eta < 0{,}5$ as η_{inv} then drops below 0.

This state becomes necessary wherever there is a **need for stopping and holding** the load, even without the aid of a brake. Where continuous vibration occurs, dynamic irreversibility may not be obtainable.

A gear reducer or gearmotor is **statically irreversible** (that is, rotation cannot be imparted by way of the low speed shaft) when $\eta_s < 0{,}5$.

This is a state **necessary to keep the load at standstill**; taking into account, however, that efficiency can increase with time spent in operation, it would be advisable to assume $\eta_s \leqslant 0{,}4$ ($\gamma_m < 5°$).

Where continuous vibration occurs, static irreversibility may not be obtainable.

A gear reducer or gearmotor has **low static reversibility** (i.e. rotation may be imparted by way of the low speed shaft with high torque and/or vibration) when $0{,}5 < \eta_s \leqslant 0{,}6$ ($7° 30' < \gamma_m \leqslant 12°$).

A gear reducer or gearmotor has **complete static reversibility** (i.e. rotation may be imparted by way of the low speed shaft) when $\eta_s > 0{,}6$ ($\gamma_m > 12°$).

This state is advisable where there is a **need for easy start-up of the gear reducer by way of the low speed shaft**.

Overloads

Since worm gear pairs are often subject to high static and dynamic overloads by dint of the fact that they are especially suited to bear them, the nedd arises – more so than with other gear pairs – for verifying that such overloads will always remain lower than $\mathbf{M}_{2\,max}$ (ch. 7).

Overloads are normally generated when one has:

— starting on full load (especially for high inertias and low transmission ratios), braking, shocks;
— irreversible gear reducers, or gear reducers with low reversibility in which the wormwheel becomes driver due to driven machine inertia;
— applied power higher than that required; other static or dynamic causes.

The following general observations on overloads are accompanied by some formulae for carrying out evaluations in certain typical instances.

Where no evaluation is possible, install safety devices which will keep values within $\mathbf{2 \cdot M}_{N2}$.

Starting torque

When starting on full load (especially for high inertias and low transmission ratios) verify that $\mathbf{M}_{2\,max}$ is equal to or greater than starting torque, by using the following formula:

$$M_2\,\text{start} = \left(\frac{M\,\text{start}}{M_N} \cdot M_2\,\text{available} - M_2\,\text{required}\right)\frac{J}{J + J_0 \cdot \eta} + M_2\,\text{required}$$

where:
M_2 required is torque absorbed by the machine through work and friction;
M_2 available is output torque derived from the motor's nominal power rating;
J_0 is the moment of inertia (of mass) of the motor;
J is the external moment of inertia (of mass) in lb ft² (gear reducers, couplings, driven machine) referred to the motor shaft;

NOTE: When seeking to verify that starting torque is sufficiently high for starting, take into account efficiency η_s when evaluating M_2 available, and starting friction, if any, in evaluating M_2 required.

Stopping machines with high kinetic energy (high moments of inertia combined with high speeds) with or without braking (braking applied to wormshaft, or use of brake motor)

Select a gear reducer with static reversibility ($\eta_s > 0{,}5$); if using a brake motor, verify braking stress with the following formula:

$$\left(\frac{Mf}{\eta_{s\,inv}} \cdot i + M_2\,\text{required}\right)\frac{J}{J + J_0/\eta_{s\,inv}} - M_2\,\text{required} \leqslant M_{2\,max}$$

where:
Mf is the braking torque setting.
$\eta_{s\,inv}$ is static inverse efficiency (see previous heading);
for other symbols see above and ch.1.

Where selection of a statically reversible gear reducer is not possible (i.e. $\eta_s \leqslant 0{,}5$) slowing-down should be sufficiently gradual (avoiding application of excessive stress to the unit itself) as to ensure that:

$$\frac{J_2 \cdot \alpha_2}{10} - M_2 \leqslant M_{2\,max}$$

where:
J_2 [lb ft²] is the moment of inertia (of mass) of the driven machine referred to the gear reducer's low speed shaft;
M_2 [lb in] is torque absorbed by the machine through work and friction;
α_2 [rad/s²] is the low speed shaft's angular deceleration; this may be reduced by flywheel fitted to the wormshaft, electric deceleration ramps, lowering of braking torque when braking systems are in use, etc.

α_2 may be arrived at theorically (within broadly safe limits) or experimentally (by testing against stopping time and distance etc.).
If a brake motor is in use, the following formula may be used for a safe evaluation of α_2:

$$\alpha_2 = \frac{10 \cdot Mf}{J_0 \cdot i}$$

in which the motor is presumed without load and subject to its braking torque setting Mf [lb in].

Operation with brake motor

Stating time ta **and revolutions of motor** φa_1

$$ta = \frac{(J_0 + J/\eta) \cdot n_1}{25{,}605\left(M\,\text{start} - \dfrac{M_2\,\text{required}}{i \cdot \eta}\right)}\ [\text{s}]; \qquad \varphi a_1 = \frac{ta \cdot n_1}{19{,}1}\ [\text{rad}]$$

Braking time tf **and revolutions of motor** φf_1

$$tf = \frac{(J_0 + J/\eta_{inv}) \cdot n_1}{25{,}605\left(Mf + \dfrac{M_2\,\text{required} \cdot \eta_{inv}}{i}\right)}\ [\text{s}]; \qquad \varphi f_1 = \frac{tf \cdot n_1}{19{,}1}\ [\text{rad}]$$

where:
M start [lb in] is motor starting torque $\left(\dfrac{63\,025 \cdot P_1}{n_1} \cdot \dfrac{M\,\text{start}}{M_N}\right)$;
Mf [lb in] is the braking torque setting of the motor;
for other symbols see above and ch. 1.

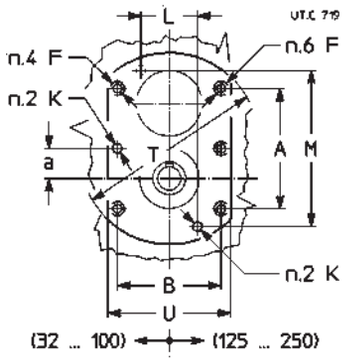
With the gear reducer run in and operating at normal running temperature — assuming a regular air-gap and ambient humidity and utilizing suitable electrical equipment — repetition of the braking action, as affected by variation in temperature of the brake and by the state of wear of friction surface, is approx $\pm\ 0{,}1 \cdot \varphi f_1$.
During warm-up (1 ÷ 3 h, small through to large sizes), braking times and distances tend to increase to the point of stabilizing at or around values corresponding to rated catalogue efficiency.

Gear reducers input face

The **R V** gear reducer input face has a machined surface with tapped holes for fitting motor mounting etc.

Gear reducer size	a	A	B	F 1)	K Ø H8 2)	L	M	T Ø	U
32	0,63	2,83	2,13	M 5	0,197	—	—	4,06	2,6
40, 50	0,79	3,21	2,62	M 5	0,197	—	—	4,69	3,15
63 ... 81	0,98	4,17	3,15	M 6	0,236	—	—	5,87	3,78
100	1,23	4,92	4,25	M 8	0,315	—	—	7,36	5,08
125, 126	1,57	6,54	5,35	M 8	0,315	3,07	8,50	9,92	6,18
160 ... 200	1,97	8,43	6,61	M 10	0,394	3,86	10,55	12,28	7,64
250	2,46	10,79	8,27	M 12	0,472	5,04	13,07	15,24	9,49

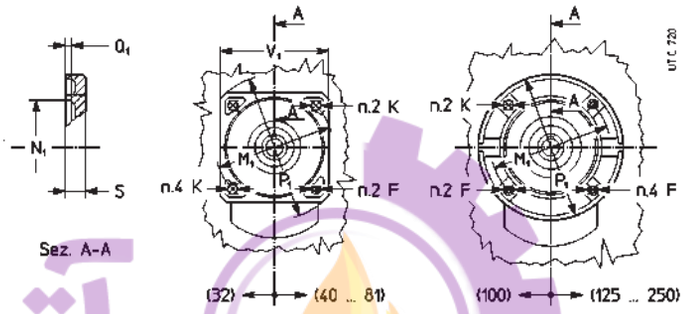
1) Working length of thread 2 · F.
2) Working length of hole 1,6 · K.



The **R IV** gear reducer input face has a machined flange with holes for fitting motor mountings etc.

Gear reducer size	F 1)	K Ø	M_1 Ø	N_1 Ø	P_1 Ø H7	V_1 □	Q_1	S
32	—	0,37	4,53	3,74	5,51	4,13	0,16	0,39
40, 50	M 8	0,37	4,53	3,74	5,51	4,13	0,16	0,43
63 ... 81	M 8	0,37	5,12	4,331	6,3	4,72	0,18	0,47
100	M 10	0,45	6,5	5,118	7,87	—	0,18	0,55
125, 126	M 10	—	6,5	5,118	7,87	—	0,18	0,63
160 ... 200	M 12	—	8,46	7,087	9,84	—	0,2	0,71
250	M 12	—	10,43	9,055	11,81	—	0,2	0,79

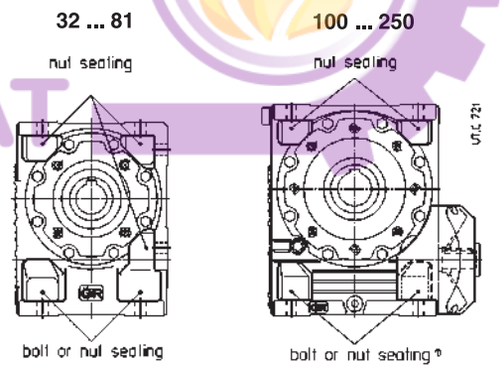
1) Working length of thread 1,25 · F.



Fixing bolt dimensions for gear reducer feet

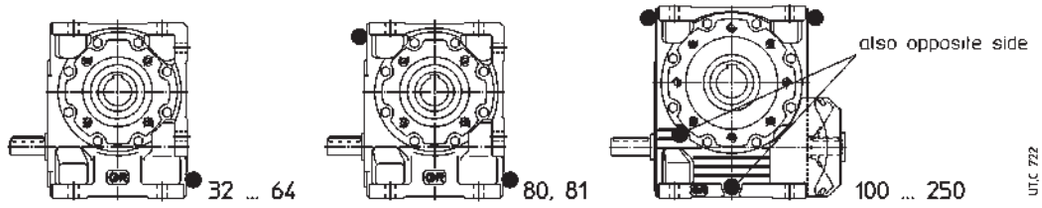
Gear reducer size	Bolt UNI 5737-88 1) (l max)
32	M 6 × 25
40	M 8 × 35
50	M 8 × 40
63, 64	M 10 × 50
80, 81	M 12 × 60
100	M 14 × 55
125, 126	M 16 × 65
160, 161	M 20 × 80
200	M 24 × 90
250	M 30 × 120

1) Length of thread definites in mm



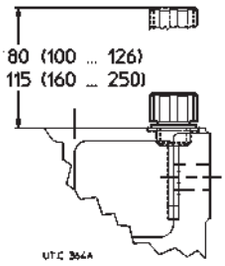
1) When tightening bolts at the fan side (sizes 100 ... 250) the fan cowl (which must enclose the fan assembly in order to enhance air-flow) needs to be removed for the purpose. When installing, ensure the cowl clears any surrounding walls by at least half the gear reducer's centre distance.

Plug position



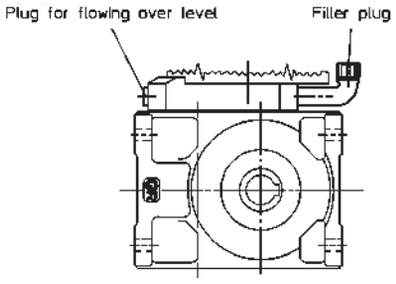
Mounting position **B7**

V, IV, 2IV (100 ... 250)

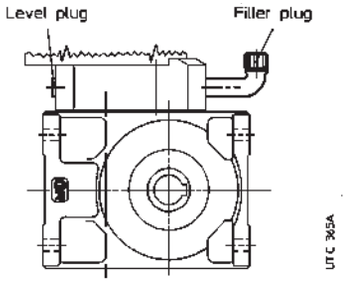


Mounting position **B6**[1)]

IV (100 ... 250)

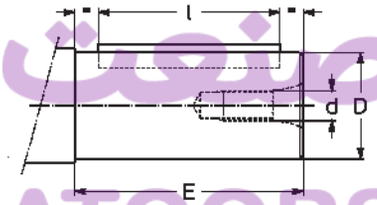


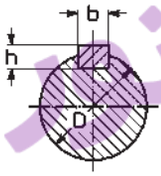
2IV (40 ... 126) (100 ... 126)

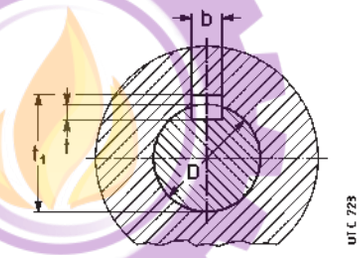


1) For continuous duty and high input speed an expansion tank is envisaged: consult us.

Shaft end







Shaft end

Shaft end					Parallel key	Keyway		
D[1)] Ø		**E**[2)]		**d** Ø	**b** × **h** × **l**[2)]	**b**	**t**	t_1
0,433	j 6	0,91	(0,79)	M 5	0,157 x 0,157 x 0,709 (0,472)	0,157	0,098	0,5
0,551	j 6	1,18	(0,98)	M 6	0,197 x 0,197 x 0,984 (0,63)	0,197	0,118	0,638
0,63	j 6	1,18		M 6	0,197 x 0,197 x 0,984	0,197	0,118	0,717
0,748	j 6	1,57	(1,18)	M 6	0,236 x 0,236 x 1,417 (0,984)	0,236	0,138	0,854
0,945	j 6	1,97	(1,42)	M 8	0,315 x 0,276 x 1,772 (0,984)	0,315	0,157	1,071
1,102	j 6	2,36	(1,65)	M 8	0,315 x 0,276 x 1,772 (1,417)	0,315	0,157	1,228
1,26	k 6	3,15	(2,28)	M 10	0,394 x 0,315 x 2,756 (1,969)	0,394	0,197	1,39
1,496	k 6	3,15	(2,28)	M 10	0,394 x 0,315 x 2,756 (1,969)	0,394	0,197	1,626
1,575	h 7	2,28		M 10	0,472 x 0,315 x 1,969	0,472	0,197	1,705
1,89	k 6	4,33	(3,23)	M 12	0,551 x 0,354 x 3,543 (2,756)	0,551	0,217	2,039
2,165	m 6	4,33	(3,23)	M 12	0,630 x 0,394 x 3,543 (2,756)	0,63	0,236	2,354
2,362	m 6	4,13		M 16	0,709 x 0,433 x 3,543	0,709	0,276	2,535
2,756	j 6	4,13		M 16	0,787 x 0,472 x 3,543	0,787	0,295	2,949
2,953	j 6	4,13		M 16	0,787 x 0,472 x 3,543	0,787	0,295	3,146
3,543	j 6	5,12		M 20	0,984 x 0,551 x 4,331	0,984	0,354	3,756
4,331	j 6	6,5		M 24	1,102 x 0,63 x 5,512	1,102	0,394	4,583

1) Tolerance valid only for high speed shaft end. Diameter D tolerance for low speed shaft end (ch. 16) is **h7** for D ⩽ 2,362, **j6** for D ⩾ 2,756.
2) Values in brackets are for short shaft end.

Hollow low speed shaft

Hole	Parallel key	Keyway		
D Ø H7	**b** × **h** × **l***	**b**	**t**	t_1
0,748	0,236x 0,236 x 1,417	0,236	0,138	0,854
0,945	0,315x 0,276 x 1,772	0,315	0,157	1,071
1,102	0,315x 0,276 x 2,48	0,315	0,157	1,228
1,26	0,394x 0,315 x 2,756	0,394	0,197	1,39
1,496	0,394x 0,315 x 3,543	0,394	0,197	1,626
1,575	0,472x 0,315 x 3,543	0,472	0,197	1,705
1,89	0,551x 0,354 x 4,331	0,551	0,217	2,039
2,362	0,709x 0,433 x 5,512	0,709	0,276	2,535
2,756	0,787x 0,472 x 7,087	0,787	0,295	2,949
2,953	0,787x 0,472 x 7,087	0,787	0,295	3,146
3,543	0,984x 0,551 x 7,874	0,984	0,354	3,756
4,331	1,102x 0,63 x 9,843	1,102	0,394	4,583

***** Recommended length.

Shaft end of driven machine

Dimensions of shaft end to which the gear reducer's hollow shaft is to be keyed are those recommended in the table on following page and shown in the figures below.

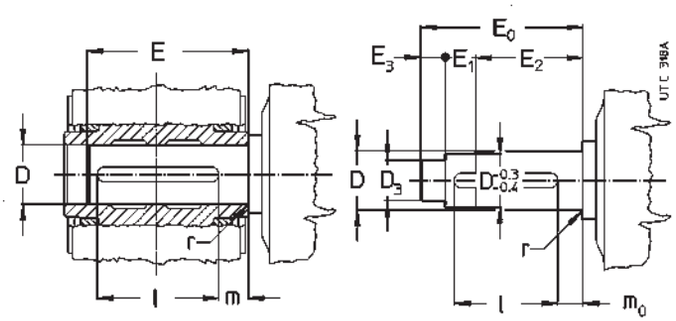
Sizes 32 ... 50: fitting with key (fig. a) or fitting with key and locking rings (fig. b).

Sizes 63 ... 250: fitting with key (fig. c) or fitting with key and locking bush (fig. d); see also ch.15 and 16.

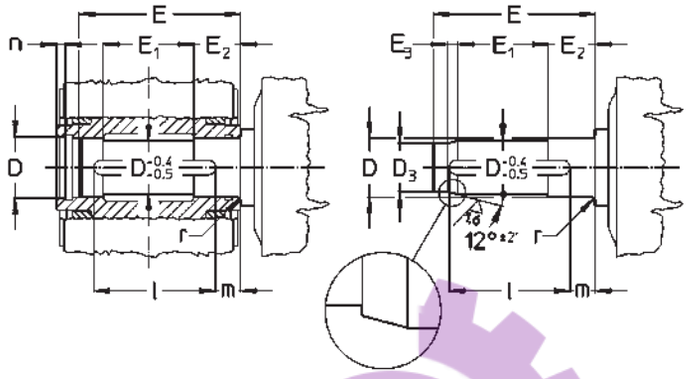
In the case of cylindrical shaft end with only diameter D (fig. a, c), for the seat D on input side, we recommend tolerance h6 or j6 instead of j6 or k6 to facilitate mounting.

Important: the shoulder diameter of the shaft end of the driven machine abutting with the gear reducer must be at least (1,18 ÷ 1,25) · D.

32 ... 50



63 ... 250



Gear reducer size	D Ø H7/j6, k6	D_3 Ø H7/h6	E	E_0	E_1	E_2	E_3	l	m	m_0	n	r
32	0,748	0,591	2,46	2,64	0	2,32	0,31	1,42	0,83	0,77	–	0,06
40	0,945	0,748	3,01	3,19	0,51	2,13	0,55	1,77	0,93	0,73	–	0,06
50	1,102	0,945	3,43	3,6	0,65	2,4	0,55	2,48	0,85	0,43	–	0,06
63, 64	1,26	1,063	4,33	–	2,24	1,34	0,39	2,76	1,1	–	0,24	0,06
80	1,496	1,26	5,28	–	2,8	1,56	0,47	3,54	1,18	–	0,24	0,06
81	1,575	1,339	5,28	–	2,8	1,56	0,47	3,54	1,18	–	0,24	0,06
100	1,89	1,614	6,38	–	3,43	1,83	0,55	4,33	1,38	–	0,28	0,08
125, 126	2,362	2,047	7,6	–	4,02	2,17	0,63	5,51	1,26	–	0,28	0,08
160	2,756	2,441	8,98	–	4,88	2,48	0,63	7,09	1,38	–	0,31	0,08
161	2,953	2,598	8,98	–	4,88	2,48	0,71	7,09	1,38	–	0,31	0,08
200	3,543	3,15	10,79	–	5,91	2,95	0,83	7,87	1,97	–	0,35	0,12
250	4,331	3,858	13,03	–	7,09	3,54	0,98	9,84	2,17	–	0,39	0,12

15 - Installation and maintencance

General

Be sure that the structure on which gear reducer or gearmotor is fitted is plane, levelled and sufficiently dimensioned in order to assure fitting stability and vibration absence, keeping in mind all transmitted forces due to the masses, to the torque, to the radial and axial loads.

Position the gear reducer or gearmotor so as to allow a free passage of air for cooling both gear reducer and motor (especially at gear reducer and motor fan sides).

Avoid: any obstruction to the air-flow; heat sources near the gear reducer that might affect the temperature of cooling-air and of gear reducer for radiation; insufficient air recycle or any other factor hindering the steady dissipation of heat.

Mount the gear reducer so as not to receive vibrations.

When external loads are present use pins or locking blocks, if necessary.

When fitting gear reducer and machine and/or gear reducer and eventual flange **B5** it is recommended to use **locking adhesives** such as LOCTITE on the fastening screws (also on flange mating surfaces).

For outdoor installation or in a hostile environment protect the gear reducer or gearmotor with anticorrosion paint. Added protection may be afforded by water-repellent grease (especially around the rotary seating of seal rings and the accessible zones of shaft end).

Gear reducers and gearmotors should be protected wherever possible, and by whatever appropriate means, from solar radiation and extremes of weather; weather protection **becomes essential** when high or low speed shafts are vertically disposed, or where the motor is installed vertical with fan uppermost.
For ambient temperatures greater than 104 °F (40 °C) or less than 32 °F (0 °C), consult us.

Before wiring-up the gearmotor, make sure that motor voltage corresponds to input voltage. If the direction of rotation is not as desired, invert two phases at the terminals.

Star-delta starting should be adopted for starting on no load (or with a very small load) and/or when the necessity is for smooth starts, low starting current and limited stresses.

If overloads are imposed for long periods of time, or if shocks or danger of jamming are envisaged, then motor-protections, electronic torque limiters, fluid couplings, safety couplings, control units or other suitable devices should be fitted.

Where duty cycles involve a high number of starts on-load, it is advisable to utilize **thermal probes** (fitted on the wiring) for motor protection; a thermal overload relay is unsuitable since its threshold must be set higher than the motor's nominal current rating.

Use varistors to limit voltage peaks due to contactors.

Caution! Bearing life, good shaft and coupling running depend on alignment precision between the shafts. Carefully align the gear reducer with the motor and the driven machine (with the aid of shims if need be), interposing flexible couplings whenever possible.

Whenever a leakage of lubricant could cause heavy damages, increase the frequency of inspections and/or envisage appropriate control devices (e.g.: remote oil level gauge, lubricant for food industry, etc.).

In polluting surroundings, take suitable precautions against lubricant contamination through seal rings or other.

Gear reducer or gearmotor should not be put into service before it has been incorporated on a machine which is conform to 98/37/EC directive.

For brake or special motors, consult us for specific information.

Fitting of components to shaft ends

It is recommended that the bore of parts keyed to shaft ends is machined to H7 tolerance; G7 is permissible for high speed shaft ends D ⩾ 2,17 in, provided that load is uniform and light; for low speed shaft ends, tolerance must be **K7** when load is not uniform and light. Other details are given in the «Shaft end» table (ch. 14).
Before mounting, clean mating surfaces thoroughly and lubricate against seizure and fretting corrosion.
Installing and removal operations should be carried out with **pullers** and **jacking screws** using the tapped hole at the shaft butt-end; for H7/m6 and K7/j6 fits it is advisable that the part to be keyed is preheated to a temperature of 176 ÷ 212 °F (80 °C ÷100 °C).

Hollow low speed shaft

For the shaft end of machines where the hollow shaft of the gear reducer is to be keyed, j6 or k6 tolerances are recommended (according to requirements). Other details are given under «Shaft end» and «Shaft end of driven machine» (ch. 14).

In order to have an easier installing and removing of gear reducer sizes 63 ... 250 (with circlip groove) proceed as per the drawings a, b, respectively.

The system illustrated in the fig. c, d is good for axial fastening.
For sizes 63 ... 250, when shaft end of driven machine has no shoulder a spacer may be located between the circlip and the shaft end itself (as in the lower half of the fig. d).

The use of **locking rings** (sizes 32 ...50, fig. e), or of **locking bush** (sizes 63 ... 250, fig. f) will permit easier and more accurate installing and removing and to eliminate backlash between key and keyway.

The locking rings or the locking bush are fitted after mounting, the shaft end of the driven machine must be as prescribed at ch. 14. Do not use molybdenum bisulphide or equivalent lubricant for the lubrication of the parts in contact. We recommend the use of a **locking adhesive** such as LOCTITE 601. For vertical ceiling-type mounting, contact us.

A **washer** for installing, removing (excluding sizes 32 ... 50) and axial fastening of gear reducer (ch. 15) with or without **locking rings** or **locking bush** (dimensions shown in the table) and a **protection cap** for the hollow low speed shaft can be supplied on request. Parts in contact with the circlip must have sharp edges.

Lubrication

Gear pairs and bearings on worm are oil-bath lubricated; sizes 200 and 250 mounting position B7 with worm speed > 710 rpm have upper bearings on worm lubricated by a pump inside the casing. Other bearings are likewise lubricated by oil-bath, or splashed, with the exception of upper-bearings on wormwheel in mounting position V5 and V6, where life-grease lubrication is employed (NILOS ring in sizes 161 ... 250).

All sizes are envisaged with **synthetic oil** lubrication.
Synthetic oil can withstand temperature up to **203 ÷ 230 °F (95 ÷ 110 °C)**.

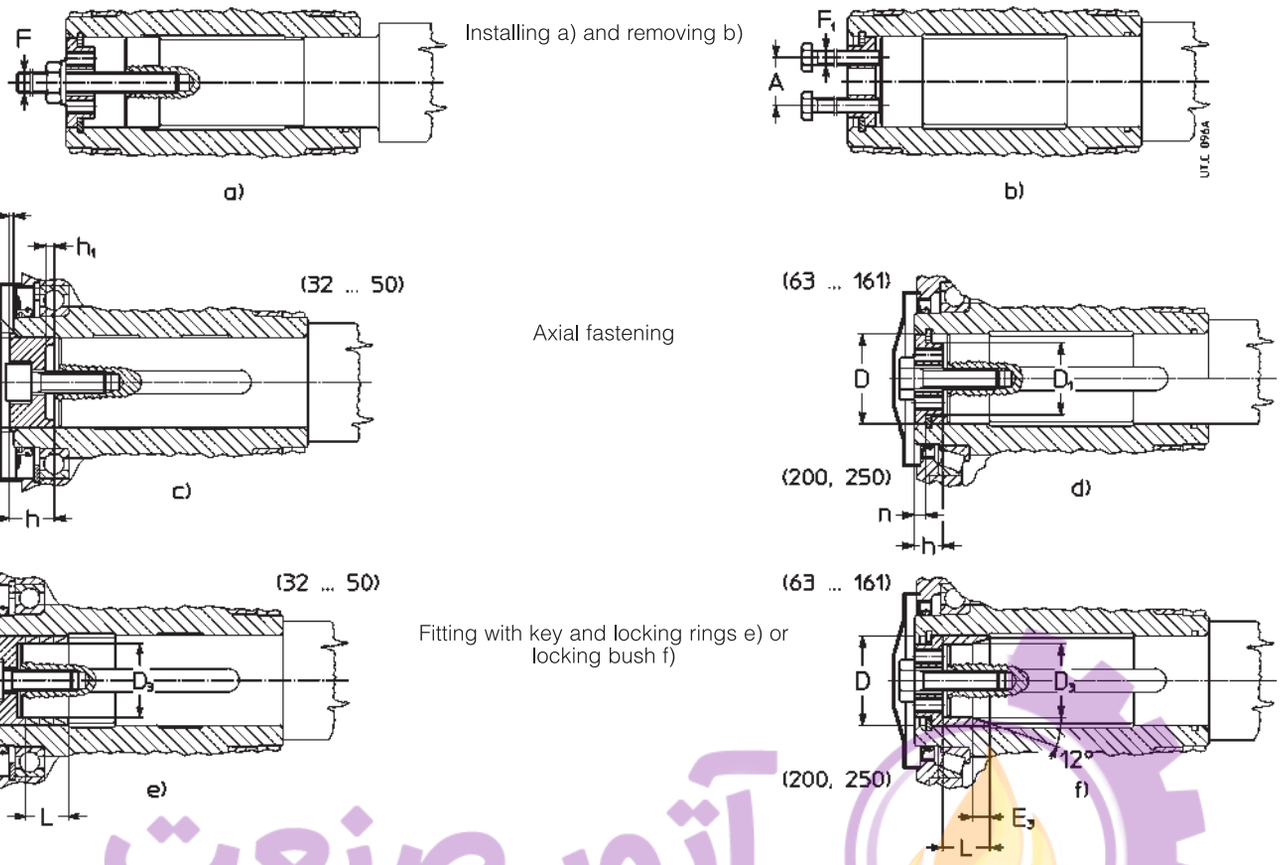
Sizes 32 ... 81: gear reducers are supplied **filled with synthetic oil** (AGIP Blasia S 320, KLÜBER Klübersynth GH 6-320, MOBIL Glygoyle HE 320, SHELL Tivela WB/SD; when worm speed ⩽ 280 rpm KLÜBER Klübersynth GH 6-680), providing «**long life**» lubrication, assuming pollution-free surroundings; quantities as indicated in ch. 8 and 10, and on the lubrication plate. Ambient temperature 32 ÷ 104 °F (0 ÷ 40 °C) with peaks of - 4 °F (-20 °C) and +122 °F (+50 °C).
Sizes 100 ... 250: gear reducers are supplied **without oil**; before putting into service, fill to the specified level with **synthetic oil** (AGIP Blasia S, ARAL Degol GS, BP-Energol SG-XP, MOBIL Glygoyle HE, SHELL Tivela Oil, KLÜBER Klübersynth GH ...) having the ISO viscosity-grade given in the table. Under normal conditions, the first speed range is for train of gears **V**, the second **IV** and **V**, (low speed), and the third **combined units** and **V**, **IV**, **2IV** (low speed).
Once the running-in period has been completed (see below) an oil change accompanied by a through clean-out is advisable for worm speed > 180 rpm).

Combined gear reducer and gearmotor units: lubrication remains independent, thus data relative to each single gear reducer hold good.

An overall guide to **oil-change interval**, is given in the table, and assumes pollution-free surroundings. Where heavy overloads are present, halve the value.

Oil temperature [°F (°C)]	Oil-change interaval [h] - Synthetic oil
⩽ **149 (65)**	18 000
149 ÷ 176 (65 ÷ 80)	12 500
176 ÷ 203 (80 ÷ 95)	9 000
203 ÷ 230 (95 ÷ 110)	6 300

Never mix different makes of synthetic oil; if oil-change involves switching to a type different from that used hitherto, then give the gear reducer a thorough clean-out.



Gear reducer size	A	D Ø	D_1 Ø	D_3 Ø	E_3 ≈	F	F_1	h	h_1	L	n	Bolt for axial fastening UNI 5737-88[4]		*M* [lb in][3]
32	–	0,748	0,886	0,591	–	–	–	0,58	0,11	0,25	0,04	M 8 x	25[1]	257
40	–	0,945	1,083	0,748	–	–	–	0,58	0,11	0,5	0,05	M 8 x	25[1]	283
50	–	1,102	1,26	0,945	–	–	–	0,73	0,13	0,5	0,05	M 10 x	30[1]	381
63, 64	0,71	1,26	0,906	1,063	0,35	M 10	M 6	0,39	–	0,75	0,24	M 10 x	35	381
80	0,71	1,496	1,063	1,26	0,43	M 10	M 6	0,47	–	0,91	0,24	M 10 x	35	469
81	0,71	1,575	1,102	1,339	0,43	M 10	M 6	0,47	–	0,91	0,24	M 10 x	35	469
100	0,91	1,89	1,378	1,614	0,51	M 12	M 8	0,55	–	1,1	0,28	M 12 x	45	814
125, 126	1,18	2,362	1,772	2,047	0,59	M 14	M 10	0,63	–	1,38	0,28	M 14 x	45	1505
160	1,42	2,756	2,126	2,441	0,59	M 16	M 12	0,75	–	1,57	0,31	M 16 x	50	1859
161	1,42	2,953	2,323	2,598	0,67	M 16	M 12	0,75	–	1,57	0,31	M 16 x	50	1859
200	1,93	3,543	2,835	3,15	0,79	M 20	M 16	0,91	–	1,93	0,35	M 20 x	60[2]	3806
250	2,52	4,331	3,504	3,543	0,94	M 24	M 16	0,94	–	2,36	0,39	M 24 x	70[2]	7346

1) UNI 5931-84.
2) For locking bush: M 20 × 65 and M 24 × 80 UNI 5737-88 class 10.9.
3) Tightening torque for locking rings or bush.
4) Length of thread definites in mm.

ISO viscosity grade

Mean kinematic viscosity [cSt] at 104 °F (40 °C).

Worm speed rpm	Ambient temperature 32 ÷ 104 °F[2] (0 ÷ 40 °C)[2] – Synthetic oil Gear reducer size					
	100	**125 ... 161**		**200, 250**		
		B3[1], V5, V6	**B6, B7, B8**	**B3[1], V5, V6**	**B6, B7, B8**
2 800 ÷ 1 400 [3]	320	320	220	220	
1 400 ÷ 710 [3]	320	320		320	220
710 ÷ 355 [3]	460	460		460	320
355 ÷ 180 [3]	680	680	460	460	
< 180	680	680		680	

1) Not stated in name plate.
2) Peaks of 50 °F (10 °C) above and 50 °F (10 °C) (68 °F (20 °C) for ≤ 460 cSt) below the ambient temperature range are acceptable.
3) For these speeds we advise to replace oil after running-in.

Running-in: a period of about 400 ÷ 1 600 h is advisable, by which time the gear pair will have reached maximum efficiency (ch. 14); oil temperature during this period is likely to reach higher levels than would normally be the case.

Seal rings: duration depends on several factors such as dragging speed, temperature, ambient conditions, etc.; as a rough guide; it can vary from 3 150 to 25 000 h.

Warning: for gear reducers sizes 100 ... 250, before unscrewing the filler plug with valve (symbol ⊸) wait until the unit has cooled and then open with caution.

Motor replacement

As all gearmotors are fitted with **standard** motors, motor replacement in case of breakdown is extremely easy. Simply observe the following instructions:

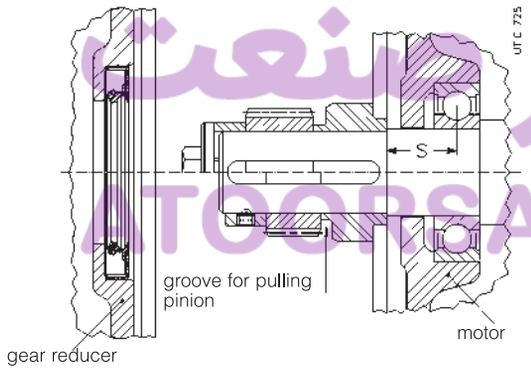
— be sure that the mating surfaces are machined under accuracy rating (UNEL 13501-69; DIN 42955);
— clean surfaces to be fitted, thoroughly;
— check and, if necessary, lower the parallel key so as to leave a clearance of 0,00394 ÷ 0,0079 in between its tip and the bottom of the keyway; if shaft keyway is without end, lock the key with a pin;

for MR V:

— check that the fit-tolerance (push-fit) between holes hole-shaft end is G7/j6 for D ⩽ 1,102 in, F7/k6 for D ⩾ 1,5 in;
— lubricate surfaces to be fitted against fretting corrosion;

for MR IV, 2IV:

— check that the fit-tolerance (standard locking) between holes and shaft end is K6/j6 for D ⩽ 1,102 in, and J6/k6 for D ⩾ 1,5 in; key length should be at least 0,9 pinion width;
— ensure that motor bearings and overhangs (dimension S) are as shown in the table;

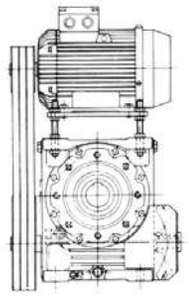


Motor size	Min. dynamic load capacity [daN]		Max dimension 'S'
	Front	Rear	inch.
63	1 012	753	0,6
71	1 416	1 068	0,7
80	2 023	1 506	0,8
90	2 967	2 248	0,9
100	4 496	3 372	1
112	5 620	4 271	1,1
132	7 981	5 957	1,3
160	10 678	7 531	1,5
180	14 163	10 116	1,6
200	17 985	12 589	1,8
225	22 482	15 962	1,9

— mount the spacer (with rubber cement check that there is a grounded cylindrical part of at least 0,06 in) between keyway and motor shaft shoulder and the pinion (the latter to be preheated to a temperature of 176 ÷ 212 °F (80 ÷ 100 °C)) on the motor, locking the assembly with either a bolt to the shaft butt-end, or a stop collar;
— lubricate the pinion toothing, and the seal ring and its rotary seating with grease, assembling with extreme care.

Shaft-mounting arrangements

The strength and shape of the casing offer: **advantageous** possibilities for shaft mounting even – for instance – in the case of gearmotor with belt drive.
A few shaft mounting arrangements are shown here with the relative details as to selection, and installation.



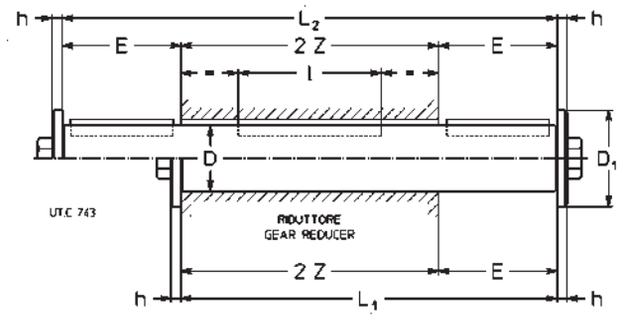
In ch. 16 the shaft-mounting arrangements which **can be supplied** are shown.

IMPORTANT. When shaft mounted, the gearmotor must be supported both axially and radially by the shaft end of the driven machine, as well as anchored against rotation only, by means of a reaction having **freedom of axial movement** and sufficient **clearance in its couplings** to permit minor oscillations – always in evidence – without provoking dangerous overloads on the actual gearmotor. Pivots and components subjected to sliding have to be properly lubricated; we recommend the use of a locking adhesive such as LOCTITE 601 when fitting the bolts.

16 - Accessories and non-standard designs

Low speed shafts

Supplementary description when ordering by **designation: standard**, or **double extension low speed shaft**.



Gear reducer size	D Ø	E	D1 Ø	h	L1	L2	l	2 Z	Bolt UNI 5737-88	Mass lb Standard	Mass lb Double ext.
32	0,748 h 7	1,18	1,102	0,16	4,25	5,43	1,42	3,07	M 6 x 20	0,7	0,9
40	0,945 h 7	1,42	1,378	0,2	5,04	6,46	1,77	3,62	M 8 x 25	1,3	1,5
50	1,102 h 7	1,65	1,378	0,2	5,83	7,48	2,48	4,17	M 8 x 25	1,8	2,2
63, 64	1,26 h 7	2,28	1,85	0,2	7,24	9,53	2,76	4,96	M 10 x 30	2,6	3,3
80	1,496 h 7	2,28	1,85	0,2	8,19	10,47	3,54	5,91	M 10 x 30	4,2	5,3
81	1,575 h 7	2,28	1,85	0,2	8,19	10,47	3,54	5,91	M 10 x 30	4,6	6
100	1,89 h 7	3,23	2,244	0,24	10,31	13,54	4,33	7,09	M 12 x 40	8,2	10,8
125, 126	2,362 h 7	4,13	3,228	0,31	12,48	16,61	5,51	8,35	M 16 x 45	15,4	20,7
160	2,756 j 6	4,13	3,228	0,31	13,98	18,11	7,09	9,84	M 16 x 45	24	31
161	2,953 j 6	4,13	3,228	0,31	13,98	18,11	7,09	9,84	M 16 x 45	28	35
200	3,543 j 6	5,12	4,016	0,39	16,93	22,05	7,87	11,81	M 20 x 60	46	62
250	4,331 j 6	6,50	5,315	0,47	20,67	27,17	9,84	14,17	M 24 x 60	86	112

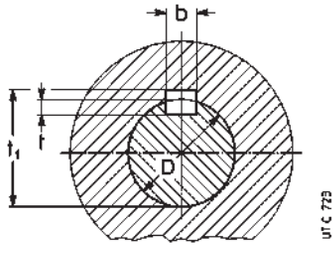
The shoulder outer diameter of the part, or of spacer abutting with the gear reducer must be (1,25 ÷ 1,4) · D.
1) Length of thread definites in mm.

Oversized hollow low speed shaft

The gear reducers and gearmotors sizes 32 ... 64 and 100 can be supplied with oversized hollow low speed shaft; dimensions are according to table on the left.

Gear reducer size	D Ø H7	Parallel key b x h x l*	Keyway b	Keyway t	Keyway t_1
32	20	6 × 6 × 36	6	4[1]	22,2[1]
40	25	8 × 7 × 45	8	4,5[1]	27,7[1]
50	30	8 × 7 × 63	8	5[1]	32,2[1]
63[2], **64**[2] **100**	35 50	10 × 8 × 90 14 × 9 × 110	10 14	6[1] 5,5[1]	37,3[1] 53,8

* Recommended length.
1) **Not** unified values.
2) Without circlip groove.

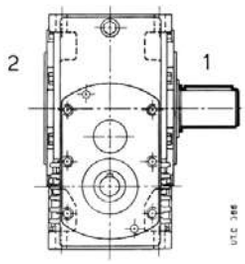


Supplementary description when ordering by **designation**: **oversized hollow low speed shaft**.

Solid low speed shaft (size **250**)

In order to permit the high radial loads given in the catalogue (250 bis), the gear reducer size 250 can be supplied with solid low speed shaft and strengthened bearings. Dimensions remain unchanged (missing the washer on shaft end).

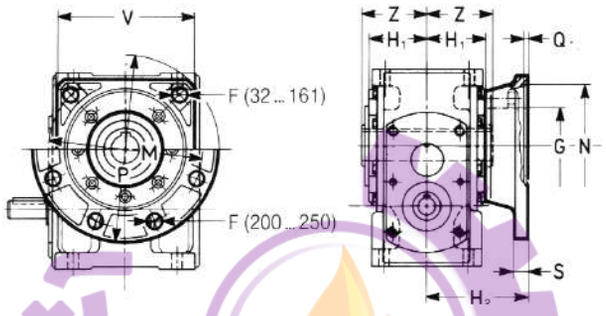
Supplementary description when ordering by **designation: solid low speed shaft pos. 1** or **2** or **double extension**.



Flange

All gear reducers and gearmotors can be supplied with **B5** flange having clearance holes and spigot «recess».
Locking adhesives such as LOCTITE are recommended both around threads and on mating surfaces.

Supplementary description when ordering by **designation: flange B5**.



Gear reducer size	F Ø	G Ø	H_1 h12	H_2 Ø h12	M Ø	N Ø H7	P	Q	S	V □	Z	Mass kg
32	0,28	2,17	1,358	2,795	3,94	3,15	4,72	0,16	0,39	3,74	1,54	1,1
40	0,37	2,68	1,634	3,15	4,53	3,74	5,51	0,16	0,43	4,33	1,81	1,8
50	0,37	3,35	1,929	3,15	5,12	4,331	6,3	0,18	0,47	4,92	2,09	2,2
63, 64	0,45	3,15	2,303	3,937	6,5	5,118	7,87	0,18	0,55	5,98	2,48	4,4
80, 81	0,55	4,33	2,736	4,409	8,46	7,087	9,84	0,2	0,63	7,72	2,95	7,1
100	0,55	5,12	3,327	5,197	10,43	9,055	11,81	0,2	0,71	9,76	3,54	12,1
125, 126	0,71	7,09	3,917	5,906	11,81	9,843	13,78	0,24	0,79	11,42	4,17	18,7
160, 161	0,71	9,06	4,665	7,087	13,78	11,811	15,75	0,24	0,87	13,78	4,92	28,7
200	0,71[8]	9,84	5,413	7,874	15,75	13,78	17,72	0,24	0,87	–	5,91	44
250	0,87[8]	13,78	6,417	9,291	19,69	17,717	21,65	0,24	0,98	–	7,09	68

Strengthened low speed shaft bearings

Gear reducers and gearmotors sizes 63 ... 126 can be supplied with taper roller bearings supporting the low speed shaft, allowing increased radial and/or axial loads. Values for sizes 100 ... 126 are given in ch. 13, other values, consult us.

Supplementary description when ordering by **designation: strengthened low speed shaft bearings**.

Strengthened high speed shaft bearings

Gear reducers R IV sizes 80 ... 126 with $i_N \leq 160$ can be supplied with cylindrical roller bearings supporting the high speed shaft allowing increased radial loads, values **x 1,6** for sizes 80 ... 100, **x 1,4** for sizes 125 and 126 (ch. 12); this design is standard for sizes 160 ... 250.

Supplementary description when ordering by **designation**: **strengthened high speed shaft bearing**.

Controlled or reduced backlash

Gear reducers and gearmotors with worm gear pair **controlled or reduced backlash**.
Values are 1/2 (controlled backlash) or 1/4 (reduced backlash) those stated on ch. 14; reduced backlash designed not possible for R V and MR V with input speed $n_1 > 1\,400$ rpm.
Supplementary description when ordering by designation: **controlled backlash** or **reduced backlash**.

Square flange for servomotors

MR V and MR IV 32 ... 81 gearmotors can be supplied with motor mounting flange when coupling with servomotors and, only for MR V, with hub clamp for fitting with key between gear reducer worm shaft and motor shaft; for MR IV first reduction pinion keyed directly onto motor shaft end permits to avoid backlash and consequently shock on the same keying.

Considering that servomotors do not have any standardised dimension, when selecting verify all coupling dimensions stated in the table; **d** dimension determines IEC stardardised motor size in catalogue gearmotor designation (see ch. 3 and 9).

For other gearmotor dimensions see ch. 10.

In case of motor removing, first loosen the hub clamp.

For the **verifications** of keying, motor mounting flange and motor bearing resistance according to motor performances, speed, mass and length, **consult us**.

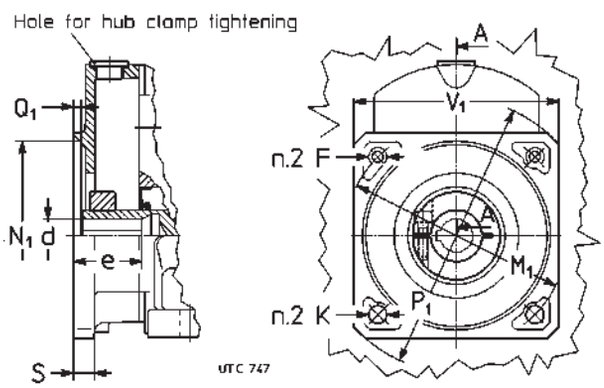
Controlled or reduced backlash design can be supplied (see ch.14 and page 61).

Servogearmotors complete with synchronous «brushless» and asynchronous «vector» motors designed for automation: see cat. SR.

Supplementary description when ordering by **designation**: **square flange ... — ...** (state V_1 — d dimension; e.g.: 5,71 - 0,94).

Gear reducer size	V_1 □	F 1)	K Ø	M_1 Ø	N_1 Ø H7	P_1 Ø	Q_1	S	d Ø	e
32	3,54	M6	0,27	3,94	3,15	4,72	0,16	0,37	0,43	0,91
40, 50 2)	3,54	M6	-	3,94	3,15	4,72	0,16	0,35	0,43 0,55 0,75	0,91 1,18 1,18
	4,13	M8	0,37	4,52	3,74	5,51	0,16	0,43	0,55 0,75	1,18 1,57
	4,72	-	0,37[4]	5,12	4,33	6,3	0,18	0,43	0,75	1,57
63 ... 81 3)	4,13	M8[4]	-	4,53	3,74	5,51	0,16	0,39	0,55 0,75	1,18 1,57
	4,72	M8	0,37	5,12	4,33	6,3	0,18	0,47	0,75 0,94	1,57 1,97
	5,71	-	0,45[4]	6,5	5,12	7,68	0,18	0,47	0,94 1,1	1,97 2,36

1) Working length of thread 1,5 · F.
2) For size 40, d = 0,43 and 0,55 only.
3) For size 63 and 64 with V_1 = 5,71 d = 0,94 only.



Examples of worm servogearmotors with synchronous «brushless» and asynchronous «vector» servomotor of cat. SR

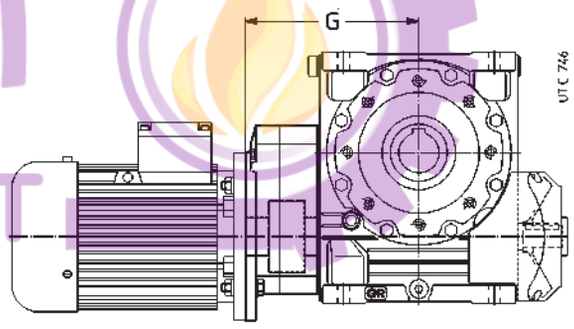
Gearmotor with interposed coupling

Gearmotors **MR V** 160 ... 250 can be supplied with a coupling al ready fitted between gear reducer and motor. This may be a steel/plastic serrated coupling or a flexible coupling.

This kind of gearmotor utilizes **UO2B** gear reducer design (with reduced wormshaft end) to which a flange, a spacer and then the coupling are added, in addition to the motor itself.

Supplementary description when ordering by **designation** (the same as for gearmotors in ch. 9): **gearmotor with coupling** or **with flexible coupling**.

Size		G
gear reducer	motor	
160, 161	**180**	12,99
200	**180, 200**	14,76
250	**180, 200** **225, 250 B5R**	17,32 18,50



Hollow low speed shaft washer with locking rings or bush

All gear reducers and gearmotors can be supplied with washer, circlip (excluding sizes 32 ... 50), locking rings (sizes 32 ... 50) or locking bush (sizes 63 ... 250), bolt for axial fastening and protection cap (ch. 15).

Supplementary description when ordering by **designation**: **hollow low speed shaft washer with locking rings** or **bush**.

Hollow low speed shaft protection

Gear reducers and gearmotors, sizes 32 ... 161, can be supplied with only the protection cap for the area not utilized by the hollow low speed shaft (ch. 15).

Supplementary description when ordering by **designation**: **hollow low speed shaft protection**.

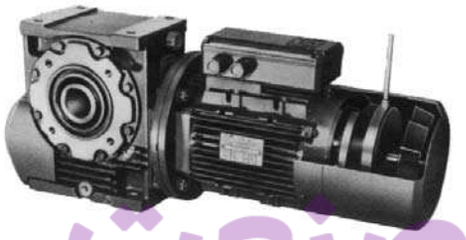
Miscellaneous

— Expansion tank for continuous duty and high speed running of gear reducers and gearmotors **IV 100 ... 250** and **2IV 100 ... 126** mounting position **B6**.

— Gear reducers and gearmotors sizes **100 ... 250** supplied **filled with synthetic oil**.

— Gearmotors with:

— **HFV** (also single-phase) **brake motor** with d.c. **safety and/or parking brake** (sizes 63 ... 132) having overall dimensions nearly the same of a standard motor and braking torque $M_f \geq M_N$, maximum economy;



— motor featuring: d.c. supply; single-phase; explosion-proof; with second shaft end; with non-standard protection, voltage and frequency; provided with devices against overloads and overheating;

— **motor without fan** cooled **by natural convection** (size 63 ... 112); design for textile industry.

— Gear reducers and gearmotors with **mechanical torque limiter** on **output** shaft (see fig.1 on following page), gear reducer sizes **32 ... 160** (excluding size 81).

Gear reducer design with mechanical **friction** type torque limiter (friction surfaces without asbestos), compact and with high transmissible torque — up to **26 250** lb in — and top quality standards.

It protects the drive from accidental overloads by excluding the effect of intertia loads transmitted from up-line masses and, also if the gear reducer is irreversible (the torque limiter being mounted on the output shaft), inertia loads transmitted from down-line masses.

When the transmitted torque tends to exceed the setting value the drive «slips» although it **remains** engaged with torque equal to the limiter setting value; slipping stops as soon as the load returns to normal; in the case of very brief overloads the driven machine will continue normal operation (after decelating or stopping) without requiring reset procedures.

The system, as the unit is mounted externally to the gear pair, will not after if the direction of rotation changes and it does not affect the rigidity and meshing precision between worm and worm wheel (this is important to ensure the correct transmission of torque and the limitation of undue backlash between teeth through time). The system also permits **shaft mounting** with the limiter mounted **externally** (easily accessible) or in the **intermediate** position (better safety protection). It can be interposed, in the **combined units**, between initial worm gear reducer and final worm gear reducer, sizes **100 ... 250**.

On request slide detector. For more details see **specific literature**.

— **MLA and MLS unit, mechanical torque limiter on input shaft** (see fig.2 on following page), motor sizes **80 ... 200** (180 for MLS).

Mechanical torque limiter unit to be interposed between gear reducer and B5 mounting position motor standardized to IEC or (wide belt or planetary motor-variator) or, in **combined units**, between the initial gear reducer and the final worm gear reducer, sizes **50 ... 250**.

Axially ultra-compact design: excellent load bearing with life lubricated double row angular contact ball bearings (motor size ⩽ 112) or «O» disposed taper roller bearings.

The unit protects the drive from accidental overloads by excluding inertia loads trasmitted from up-line masses and if the gear reducer is reversible (the torque limiter being on the input shaft), inertia loads transmitted from down-line masses.

LA unit is friction type (friction surfaces without asbestos). When the transmitted torque tends to exceed the setting, the drive «slips», although **it remains** engaged and transmits torque equal to the limiter setting value; slipping stops as soon as the load returns to normal; in the case of very brief overloads the driven machine will continue normal operation (after decelerating or stopping) without requiring reset procedures.

LS unit is ball type. When the transmitted torque tends to exceed the setting, the drive is «disengaged» so **it does not remain** connected. The driven machine will therefore stop.

LA and LS units are mechanically interchangeable. On request slide detector. For more details see **specific literature**.

— Hollow low speed shaft with acme-type thread.

— Gearmotors with interposed compact clutch-brake or fluid coupling/brake unit.

— Semi-flexible and hydrodynamic couplings.

— Special paint options:

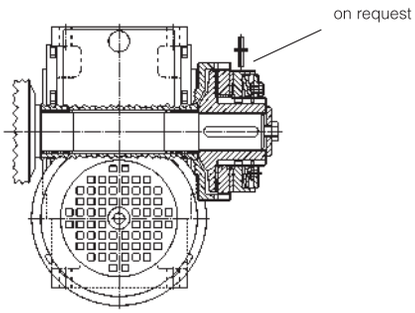
— **external, single-compound**: antirust zinc primer plus blue RAL 5010 DIN 1843 synthetic paint (excluding sizes 32 ... 81);

— **external, dual-compound**: dual-compound epoxy-polyamidic antirust primer plus dual-compound blue RAL 5010 DIN 1843 polyurethane enamel (excluding sizes 32 ... 81).

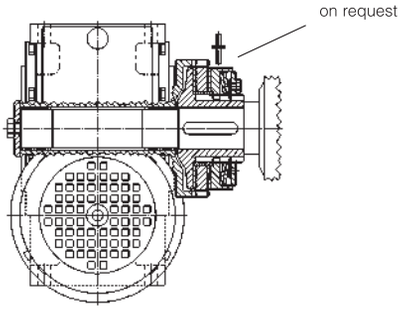
— Special seal rings; **double seal** (excluding sizes 32 ... 50).

— For high transmission ratios combined units can be also obtained with initial gearmotor **MR IV** with final gear reducer size ⩽ 81 and with initial gearmotor **MR 2IV** for final gear reducer size ⩾ 100.

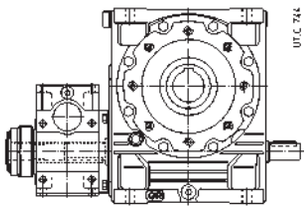
16 - Accessories and non-standard design



External limiter mounting

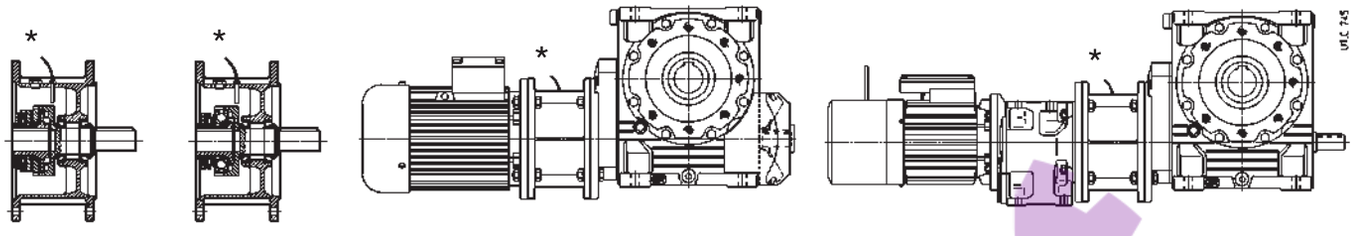


Intermediate limiter mounting



Limiter mounting onto combined units

Fig.1



MLA
friction

MLS
balls

MLS / MLA
mounted between gear reducer
and motor or motor-variator

MLS / MLA
mounted onto combined units

* on request

Fig.2

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