2 Important Information, Tables and Dimension Sheets

2.1 Permitted combinations

Structure of tables

These tables show combinations of gear units and AC (brake) motors that are geometrically possible. The following data are given for each combination and an input speed n_e = 1400 1/min:

- Output speed (n_a)
- Maximum output torque (M_{amax})
- Permitted overhung load (F_{RA}) at maximum output torque, applies to foot-mounted gear units with solid shaft
- Gear ratio (i)

Torsion angle $\varphi_{(/R)}$**:** If no value is indicated, the gear unit is not available with "reduced backlash (/R)" with this option. If a value is stated, this gear unit is available with "reduced backlash (/R).". The numerical value specifies the circumferential backlash of the reduced backlash version in angular minutes ['].

R57, n_e = 1400 1/min **450 Nm**

n_a [rpm]	M_{amax} [Nm]	F_{Ra} [N]	$\varphi_{(/R)}$ [']	i	DR63 DT71	DT80	DT90	DV100	DV112	DV132M DV132S
				2						
53	450	4750	6	26.31						
56	450	4640	6	24.99*						
64	450	4370	7	21.93						
75	450	4050	7	18.60*						

Gear unit reduction ratio

No data (-): The reduced backlash (= /R) option is not possible for this i value.
Numerical value given: The reduced backlash (= /R) option is possible; the numerical value specifies the circumferential backlash of the reduced backlash version in angular minutes ['].

Permitted overhung load at maximum output torque (foot-mounted gear unit with solid shaft)

Maximum output torque

Output speed

* Finite gear unit reduction ratio

	Combination with the motor in the header **is possible**.
	Combination with the motor in the header **is not possible**.

Helical gear units (R), with the exception of the single stage RX gear unit, and parallel shaft helical gear units (F) have two or three stages, depending on the gear unit reduction ratio. The tables indicate whether the subsequent i ranges are two or three stage.
Multi-stage gear units always have a helical gear unit as their primary gear unit; it explains why the number of stages is also given for multi-stage gear units.

 **2** For R and F gear units: Number of stages of the subsequent gear ratios (two or three stage).

 **3**  **3** For multi-stage gear units: Stages of the following ratios (2-2, 3-3, 2-3 or 3-2 stages).
The number of stages of the primary gear unit (= small gear unit) is given on the right; the number of stages of the output gear unit (= large gear unit) is given on the left.

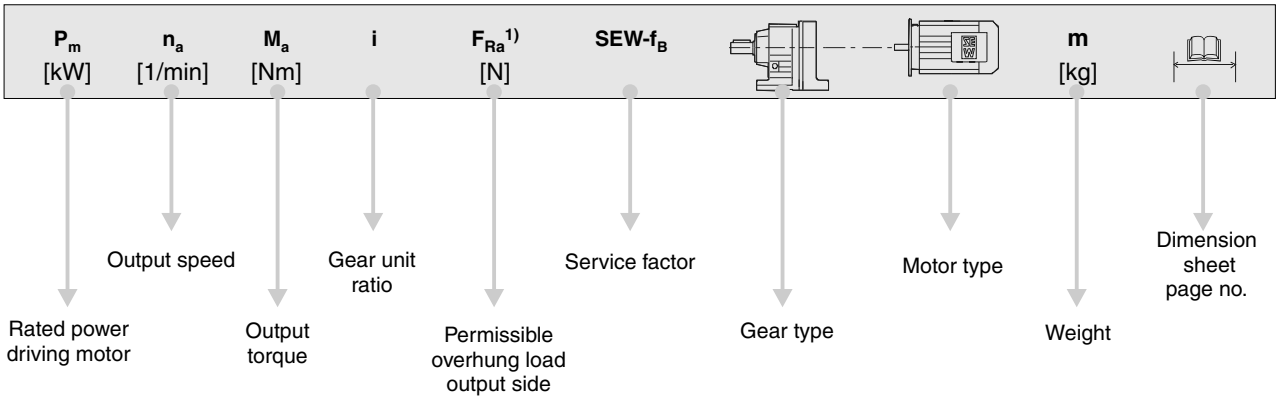
Helical-bevel, Spiroplan® and helical-worm gear units (K, W and S) have a defined number of stages. This means the number of stages does not have to be listed in the tables.
- Helical-bevel gear units (K): Always three-stage
- Spiroplan® gear units (W): Always single-stage
- Helical-worm gear units (S): Always two-stage

2.2 Selection tables for R, F, K and S gearmotors

Structure of the selection tables

The following figure shows the structure of the selection tables for R, F, K and S gearmotors. There are two types of selection tables:

1. For standard output speeds, sorted according to the rated power P_m [kW] of the driving motor.
2. For particularly low output speeds, multi-stage gearmotors are always sorted according to the maximum permitted output torque $M_{a\ max}$ [Nm].



For particularly low output speeds:

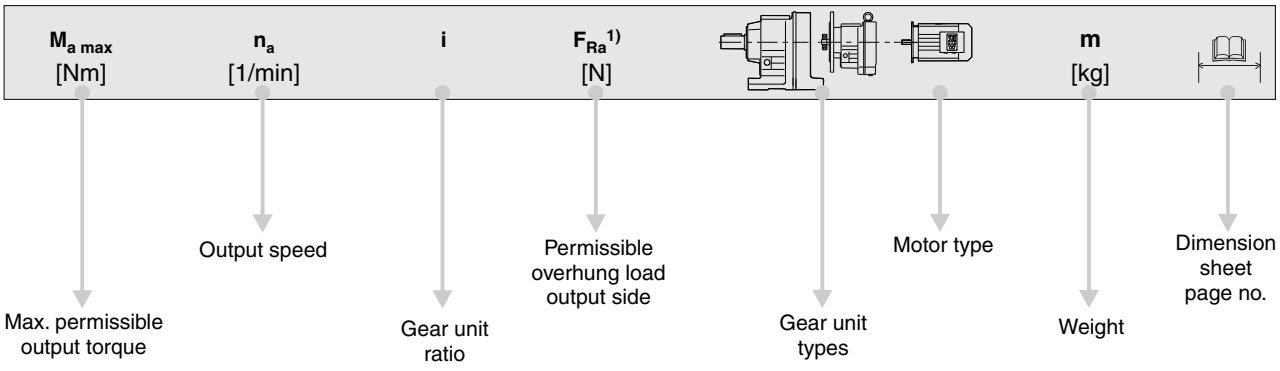


Figure 1: Structure of the selection tables for R, F, K and S gearmotors

Key

* Finite gear unit reduction ratio

1) Overhung load for foot-mounted gear units with solid shaft; overhung loads for other gear unit types upon request

In drives for particularly low output speeds (multi-stage gearmotors), the motor power must be limited to the maximum permitted output torque of the gear unit.

2.3 Selection table for W gearmotors

Structure of the selection tables

The following figure shows the structure of the selection table for W (Spiroplan®) gearmotors.

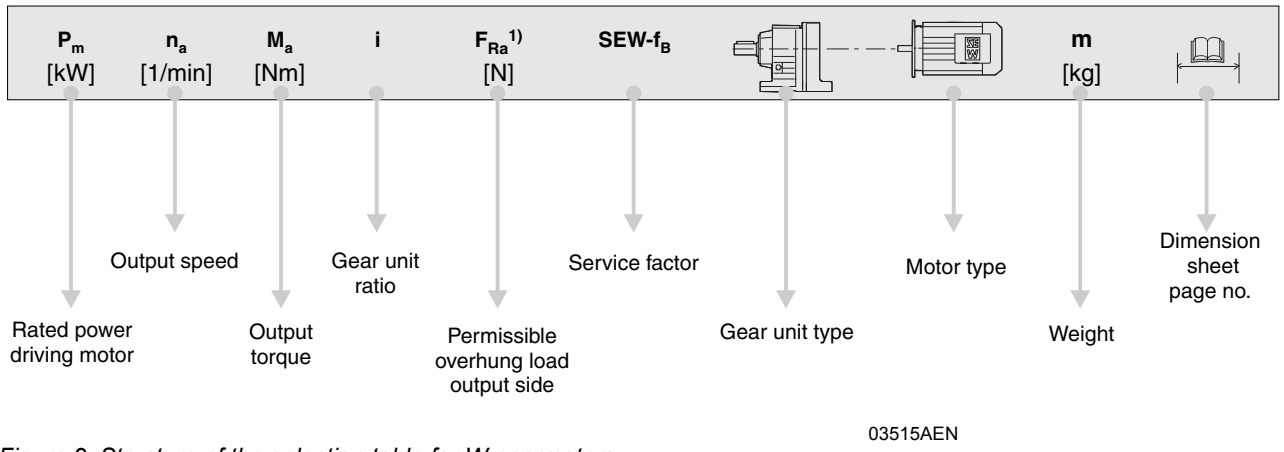


Figure 2: Structure of the selection table for W gearmotors

Key

* Finite gear unit reduction ratio

1) Overhung load for foot-mounted gear units with solid shaft; overhung loads for other gear unit types upon request

2) If a lubricant is used for the food industry (food grade), → SEW-$f_B \geq 1.2$ required

2.4 Notes on dimension sheets

Scope of delivery



= Standard parts supplied by SEW-EURODRIVE.



= Standard parts not supplied by SEW-EURODRIVE.

Tolerances

Shaft heights

The following tolerances apply to the indicated dimensions:

h	≤ 250 mm	→ -0.5 mm
h	> 250 mm	→ -1 mm

Foot-mounted gear units: Check the mounted motor because it may project below the mounting surface.

Shaft ends

Diameter tolerance:

∅	≤ 50 mm	→ ISO k6
∅	> 50 mm	→ ISO m6

Center bores according to DIN 332, shape DR:

∅	= 7...10 mm	→ M3
∅	> 10...13 mm	→ M4
∅	> 13...16 mm	→ M5
∅	> 16...21 mm	→ M6
∅	> 21...24 mm	→ M8
∅	> 24...30 mm	→ M10
∅	> 30...38 mm	→ M12
∅	> 38...50 mm	→ M16
∅	> 50...85 mm	→ M20
∅	> 85...130 mm	→ M24
∅	> 130 mm	→ M30

Keys: according to DIN 6885 (domed type).

Hollow shafts

Diameter tolerance:

∅	→ ISO H7 measured with plug gauge

Multiple-spline shafts

Dm	= Measuring roller diameter
Me	= Check size

Flanges

Centering shoulder tolerance:

∅	≤ 230 mm (flange sizes A120...A300)	→ ISO j6
∅	> 230 mm (flange sizes A350...A660)	→ ISO h6

Up to three different flange dimensions are available for each size of helical gear unit, Spiroplan® gear unit, AC (brake) motor and explosion-proof AC (brake) motor. The respective dimension drawings will show the flanges approved for each size.

Eyebolts, lifting eyes

R07...R27 helical gear units, motors up to DV100 and Spiroplan® gearmotors are delivered without special transportation fixtures. All other gear units and motors are equipped with cast-on suspension eye lugs, screw-on suspension eye lugs or screw-on lifting eyebolts.

Gear unit/motor type	Screw-on,		Cast-on suspension eye lugs
	lifting eyebolts	eyebolts	
R..37-R..57	-	•	-
R..67-R..107	•	-	-
RX57-RX67	-	•	-
RX77-RX107	•	-	-
F..27-F..157	-	-	•
K..37-K..157	-	-	•
K..167-K..187	•	-	-
S..37-S..47	-	•	-
S..57-S..97	-	-	•
≥ **DV112**	•	-	-

Breather valves

The gear unit dimension drawings are shown with screw plugs. The corresponding screw plug is replaced by an activated breather valve at the factory depending on the ordered mounting position M1...M6. The result may be slightly altered contour dimensions.

Shrink disk connection

Hollow shaft gear unit with shrink disk connection: If required, please request a detailed data sheet on shrink disks, data sheet no. 33 753 ..95.

Splined hollow shaft

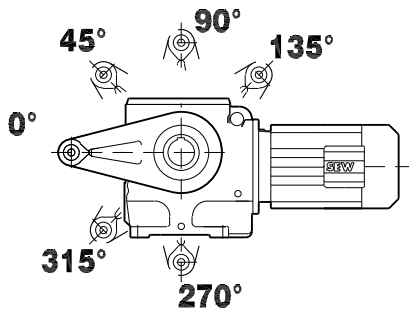
FV.. hollow shaft gear units in sizes 27 ... 107 and KV.. in sizes 37 ... 107 are delivered with a splined hollow shaft according to DIN 5480.

Rubber buffer for FA/FH/FV/FT

Preload rubber buffer by the indicated value ΔL. The characteristic curve of spring for the rubber buffer is available upon request from SEW-EURODRIVE.

Torque arm position

The following illustration shows the possible torque arm positions for helical-worm gear units and Spiroplan® gear units as well as the respective angles:



59253AXX

Figure 3: Torque arm position

Motor dimensions

SDT, SDV

SDT and SDV motors are the same size as the corresponding DT and DV motors.

>280

Some motors of size > 280 may have different dimensions. Have your dimensions confirmed when placing your order or request a binding dimension drawing.

Motor options

The motor dimensions may change when installing motor options. Refer to the dimension drawings of the motor options.

Special designs

The dimensions of the terminal box on special designs such as KS, CSA, VIK, low voltage or voltage changeover may deviate from the standard dimensions.

EN 50347

European standard EN 50347 became effective in August 2001. This standard adopts the dimension designations for three-phase AC motors for sizes 56 to 315M and flange sizes 65 to 740 from the IEC 72-1 standard.

The new dimension designations given in EN 50347 / IEC 72-1 are used for the dimensions in question in the dimension tables of the dimensions sheets.

Dimension designations of motors

The following is an overview of the motor dimension designations:

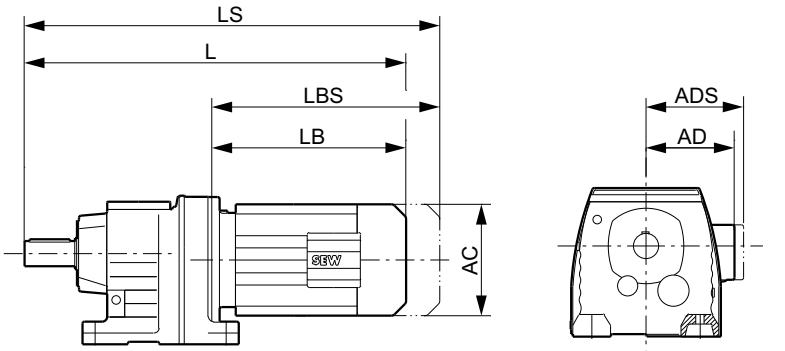


Figure 4: Dimension designation of motors

L	= Total length of gearmotor
LS	= Total length of gearmotor including brake
LB	= Length of motor
LBS	= Length of brakemotor
AC	= Diameter of motor
AD	= Center of motor shaft to top part of terminal box
ADS	= Center of brakemotor shaft to top part of terminal box