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WATT Drive Geared Motor

WG 20 GEARED MOTORS

WG20 is the first geared motor range to be completely developed in-house at WEG.

It comprises helical, parallel shaft and helical bevel gear units with torques between 50 and 4500 Nm. These two-stage units excel with their large ratio range, as well as being exceptionally efficient thanks to the sophisticated design. The light, yet robust, aluminium housing of the gear units in the WG20 range provide a highly versatile and reliable product, with a wide range of possible applications.

Highly efficient

The gear units are two-stage designs featuring a large ratio range, which in turn makes them highly efficient. Furthermore, the products of the WG20 series demonstrate only extremely low power losses. On the one hand, this is achieved by low circumferential speeds in the input stage and, on the other hand, by reducing splashing losses due to optimised amounts of lubricant. These characteristics also have a positive effect on the gear lifetime. Under normal conditions of use, the geared motors up to 600 Nm are maintenance-free and lubricated for life.

A geared motor for the whole world

- Standard mounting dimensions
- Can be switched to different voltages around the world
- Certifications for international markets

Sophisticated design for more efficiency

- Wide speed range
- High efficiency
- Low noise levels
- Optimised oil fill quantity
- Maintenance-free and lubricated for life up to 600 Nm
- High quality components and equipment
- Motors to efficiency class IE4

Comprehensive equipment for more flexibility

- Can be extended by different motor modules
- Temperature monitoring without added costs
- Protection rating IP55 for the standard design
- Switchover to 100/120 Hz characteristic in frequency inverter operation

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HELICAL GEARED MOTORS C

The helical gear units come in nine housing sizes for nominal torques from 50 to 4500 Nm and are available in both foot and flange designs. While the two smaller gear units (C00 and C01) are able to perform to their full potential with just two stages, the larger C03 to C10 are available in both two and three-stage versions, for those applications in higher torque ranges.

TECHNICAL DATA

		C00	C01	C03	C05	C06	C07	C08	C09	C10
Nominal torque	[Nm]	50	85	200	400	600	820	1550	3000	4500
Number of stages		2-stage	2-stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage
Ratio range		2.44- 47.44	1.09- 66.5	3.34- 286.32	3.83- 328.43	3.73- 375.71	5.30- 351.33	5.12- 368.94	4.22- 306.73	4.19- 246.43
Speed range at 1400 rpm 50Hz	[rpm]	29- 573	21- 453	4- 419	4- 365	3- 375	4- 264	4- 274	5- 332	6- 334
Power range	[kW]	0.12- 0.75	0.12- 1.5	0.12- 3	0.12- 7.5	0.12- 7.5	0.12- 15	0.18- 22	0.55- 30	1.1- 30
Output shaft/Ø hollow shaft	[mm]	20x 40	20x 40	25x 50	30x 60	35x 70	40x 80	50x 100	60x 120	70x 140
Output flange IEC	[mm]	120/ 140/ 160	120/ 140/ 160	140/ 160/ 200	160/ 200/ 250	200/ 250	250/ 300	300/ 350	350/ 450	350/ 450
Housing Material		Aluminium					Cast iron			

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PARALLEL SHAFT GEARED MOTORS F

Thanks to their structural design, parallel shaft gear units are particularly suitable for conveyor technology applications. All eight sizes can be fitted with either a hollow shaft, output shaft, mounting flange or shrink disc. The ratio range of gear unit sizes F04 to F09 can be extended by a third gear stage.

TECHNICAL DATA

		F02	F03	F04	F05	F06	F07	F08	F09
Nominal torque	[Nm]	130	220	400	600	820	1550	3000	4500
Number of stages		2-stage	2-stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage	2-/3 stage
Ratio range		3.93- 97.85	3.85- 70.17	4.42- 422.98	5.17- 487.67	4.41- 412.64	4.29- 305.42	4.09- 358.52	4.16- 288.50
Speed range at 1400 rpm 50Hz	[rpm]	14- 356	20- 363	3- 316	3- 271	3- 315	5- 327	4- 343	5- 337
Power range	[kW]	0.12- 1.5	0.12- 3	0.12- 3	0.12- 5.5	0.12- 15	0.12- 15	0.55- 22	0.55- 30
Output shaft/Ø hollow shaft	[mm]	25x 50/ 25	25x 50/ 30	30x 60/ 35	35x 70/ 40	40x 80/ 40	50x 100/ 50	60x 120/ 60	70x 140/ 70
Output flange IEC	[mm]	160	160	200	250	250	300	300/ 350	350/ 450
Housing Material		Aluminium					Cast iron		

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HELICAL BEVEL GEARED MOTORS K

Helical bevel gear units are suitable for a multitude of applications. The two-stage basic design is extended by a third gear stage upward of 200 Nm. K gear units can also be equipped with a hollow shaft, output shaft, shrink disc, torque arm and mounting flange.

TECHNICAL DATA

		K02	K03	K04	K05	K06	K07	K08	K09
Nominal torque	[Nm]	110	200	400	600	820	1550	3000	4500
Number of stages		2-stage	3-stage	3 stage	3 stage	3 stage	3 stage	3 stage	3 stage
Ratio range		3.82- 68.88	4.17- 217.88	5.05- 277.79	4.27- 245.7	4.94- 198	7.91- 256.14	7.45- 206.12	6.94- 169.25
Speed range at 1400 rpm 50Hz	[rpm]	20- 366	6- 335	5- 277	5- 327	7- 283	6- 177	7- 188	8- 202
Power range	[kW]	0.12- 1.5	0.12- 3	0.12- 4	0.12- 5.5	0.18- 7.5	0.25- 15	0.55- 22	1.1- 30
Output shaft/Ø hollow shaft	[mm]	25x 50/ 25	25x 50/ 30	30x 60/ 35	35x 70/ 40	40x 80/ 40	50x 100/ 50	60x 120/ 60	70x 140/ 70
Output flange IEC	[mm]	160	160	200	250	250	300	300/ 350	350/ 450
Housing Material		Aluminium					Cast iron		

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HELICAL BEVEL GEARED MOTORS K

Gearboxes and Geared motors

Top Quality Geared Motors. Watt Drive gearboxes and geared motors are the electro-mechanical key elements for low backlash, smoothly running and highly dynamic drive systems.

Our high-performance gear units are built to withstand the toughest industrial applications.

The gear housings are machined on all sides and permit diverse mounting positions and applications, making them much sought after in the industry. As a result our geared motors are often to be found as part of our customers own machines.

The smooth running of Watt Drive gear units and the outstanding load capacity of WATT teeth are achieved with 3D design supported by FEM (Finite Element Method). This tooth geometry guarantees optimum rolling contact under load.

The special tooth root design in combination with tooth helix angle, tooth depth, the materials used and surface finish maximizes load capacity. This high gearing capacity enables smaller wheels to be used for the same torque, and smaller gears with exceptional power density also increase reliability. Watt Drive geared motors are consequently incredible space savers.

Gearing manufactured with such micro-geometric precision allows the gearing play required for trouble-free rolling contact to be substantially reduced and therefore the gear backlash to be minimized.

Double chamber shaft seals developed by Watt Drive are used as standard in parallel shaft, shaft mounted and helical worm gears for a high level of tightness.

Watt Drive’s modular gear technology meets the requirements of advanced drive systems:

- Excellent power density
- Minimum backlash
- Smooth running
- Diverse mounting options
- Maximum reliability
- High variability

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HELICAL BEVEL GEARED MOTORS K

Helical geared motors

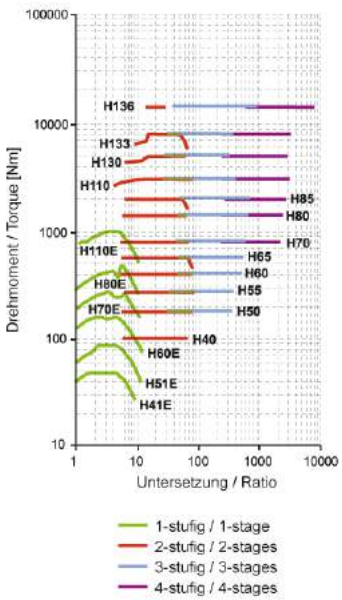
The Uniblock design - foot and flange execution in one case!

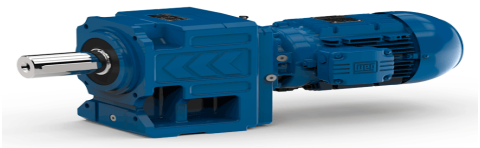
UNIBLOCK® design for foot and flange mounting. Gear housing machined on all sides for universal application.

Optimized gearing geometry here and in all the other models results in exceptional running smoothness. For special environmental conditions the gear unit can be fitted with two shaft seals.

Technical Data

- Number of sizes:18
- Power Range:0,12 - 55kW
- Output torque range:23 - 14,000Nm
- Ratio:0.8 - 13,500
- Output option: output shaft
- Assembly/mounting: uniblock, flange, foot





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HELICAL BEVEL GEARED MOTORS K

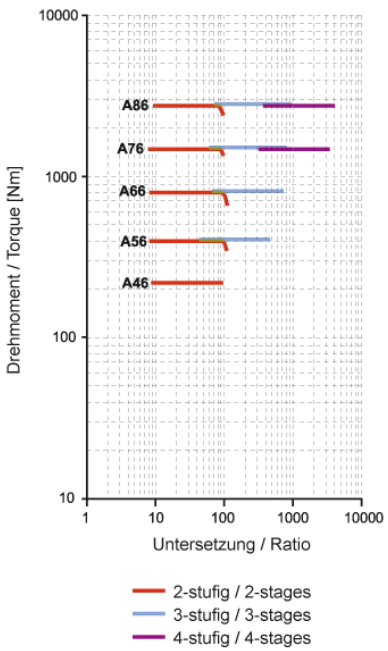
Shaft mounted geared motors

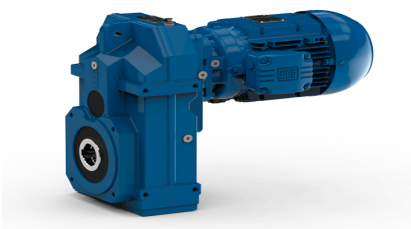
The drive for conveyor technology!

In addition to the benefits of the parallel shaft geared motor, this is an extremely economical model, especially for shaft and flange mounting.

Special double chamber shaft seals developed by Watt Drive are used as standard, as in the parallel shaft geared motor.

Technical Data
Number of sizes:5
Power Range:0,12 - 30kW
Output torque range:56 - 2,800Nm
Ratio:2.9 - 4,000
Output option: output shaft, output shaft on both sides, hollow shaft, hollow shaft with shrink disc, agitator drive execution
Assembly/mounting: support, flange





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HELICAL BEVEL GEARED MOTORS K

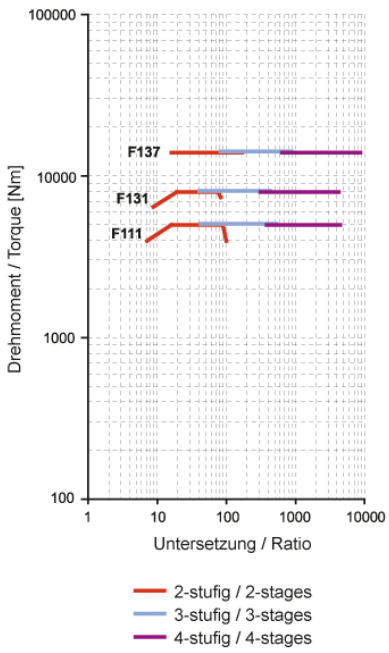
Parallel shaft geared motors

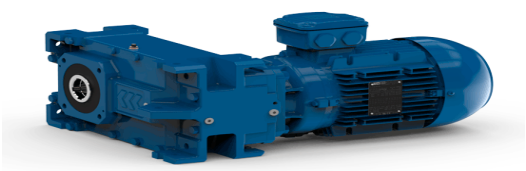
Various mounting and possible applications by Uniblock - gear case!

The UNIBLOCK® gear housing machined on all sides, the particularly stable housing and minimum outside dimensions enable diverse mounting options and applications. As a result, these motors often form an integral part of our customers machine designs.

High precision manufacturing and top gearing quality guarantee minimum backlash in Watt Drive gear units.

Technical Data
Number of sizes:3
Power Range:0,12 - 55kW
Output torque range:1,781 - 14,000Nm
Ratio:4 - 18,800
Output option: output shaft, output shaft on both sides, hollow shaft, hollow shaft with shrink disc, agitator drive execution
Assembly/mounting: uniblock, flange





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HELICAL BEVEL GEARED MOTORS K

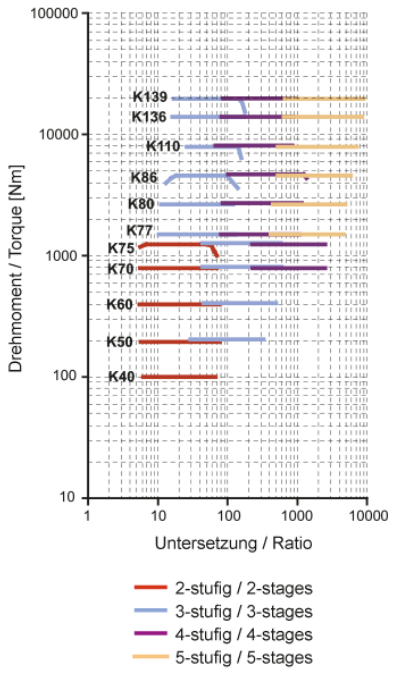
Helical bevel geared motors

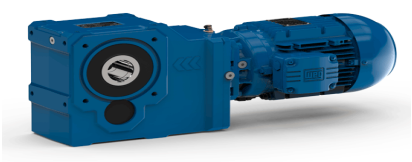
Compact, eye-catching, unique for limited space issue!

The compact and structure optimized gear housing of the helical bevel gears distinguish themselves by being machined on all sides and are therefore, ready for a variety of mounting options and applications. The unique motor position provides an almost flat and easy to mount on ”machine interface”. Various standard shaft executions and the double chamber shaft seals, developed by Watt Drive, are ready for use. Shaft and flange dimensions are equal to our helical worm gears.

In the basic executions the gear boxes are designed as 2 stage gears up to the size K. 75 (1.250Nm). The bigger gear boxes, beginning with the K. 77 (1.500Nm) are designed as 3 stage gears.

Technical Data
Number of sizes:11
Power Range:0.12 - 90kW
Output torque range:53 - 20,000Nm
Ratio:5.5 - 8,900
Output option: output shaft, output shaft on both sides, hollow shaft, hollow shaft with shrink disc, agitator drive execution
Assembly/mounting: uniblock, flange, torque arm





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HELICAL BEVEL GEARED MOTORS K

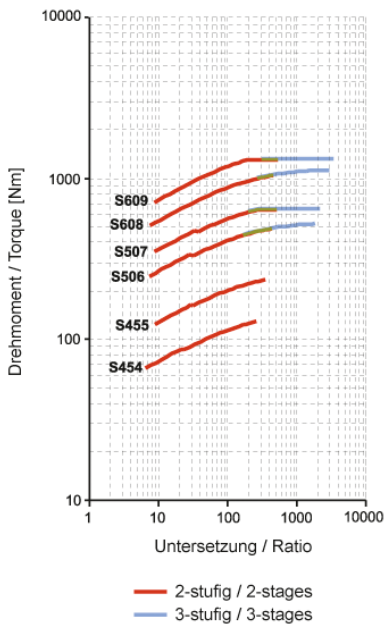
Helical worm geared motors

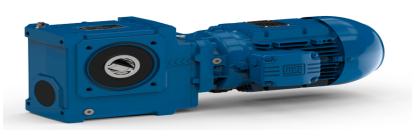
Tough, compact, eye-catching!

Due to the unique combination of optimized worm wheel material with special lubricants, optimized shape, this powerful motor achieves high levels of efficiency and torque. The housing machined on all sides enables diverse mounting options. Double chamber shaft seals are used as standard.

The low contour design makes it suitable for implementing applications e.g. in the food industry. The housing has no recesses, which simplifies cleaning - a particularly essential feature for areas with stringent hygiene requirements.

Technical Data
Number of sizes:6
Power Range:0.12 - 7.5kW
Output torque range:50 - 1,300Nm
Ratio:3 - 3,400
Output option: output shaft, output shaft on both sides, hollow shaft, hollow shaft with shrink disc
Assembly/mounting: uniblock, flange, torque arm, foot





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HELICAL BEVEL GEARED MOTORS K

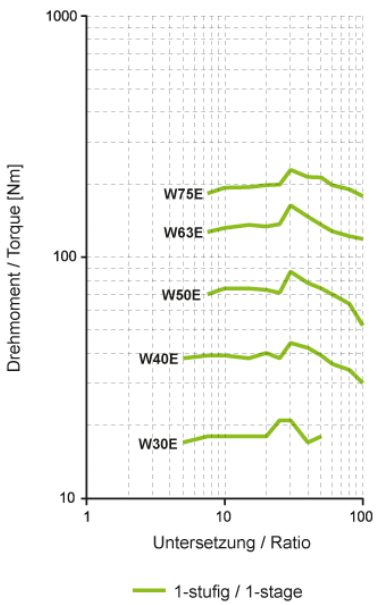
Worm geared motors

Worm geared motors for small power range.

The WATT small worm gear unit adapt themselves concerning UNIBLOCK® design optimally in the MAS® geared motor program. The units have on all sides different fixing possibilities and enable an easy assembling for the customer.

Other drive configuration scan be designed by use of built-on accessories (e.g. torque arm and output flanges). The housings are made in light weight construction out of aluminium die cast. Motor attachment is realised in general by means of IEC adapter B5 or B14A.

Technical Data
Number of sizes:5
Power Range:0.12 - 2.2kW
Output torque range:17 - 230Nm
Ratio:5 - 100
Output option: output shaft, output shaft on both sides, hollow shaft, hollow shaft with shrink disc
Assembly/mounting: uniblock, flange, torque arm



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HELICAL BEVEL GEARED MOTORS K

Industrial gears

The type series F.. RX 8.. (parallel shaft gears) and K.. RX 8.. (bevel gears) are available with torques of up to 120kNM.
The drives can be implemented in many branches of modern engineering, like e.g. the conveying or environmental technology.
With such vigorous packages, serial products, as well as customer optimised drive solutions, can be realised quickly and market-conform. Watt Drive is planning the optimal, machinery oriented drive selection together with the customer. A successful realisation of the project targets is the most important feature of our philosophy.

Parallel shaft gear units

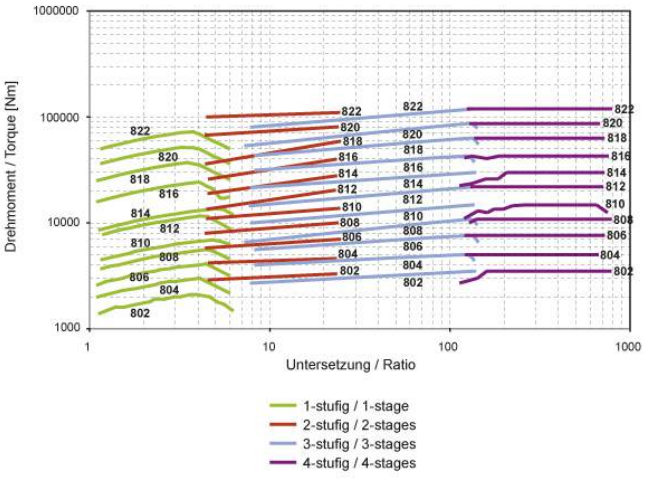
Innovative total solutions up to 120 kNm.

The parallel shaft gear units F.. RX 8.. have a 1 - 4 stage design and therefore cover a large reduction range. The thermal power limit of the gear units are between 5.5 kW and max. 445 kW.

The motor mounting is established with an IEC adapter with coupling. The housings are worked on all sides so that they can be used for every mounting position. They are standardly manufactured of grey cast iron EN-GJL-250. The gears can be implemented either as shaft mounted gears with hollow shaft as well as parallel shaft gears with output shafts. Precisely manufactured gearwheels with involute profile guarantee high efficiencies and a low-noise running.

Technical Data

- Number of sizes:11
- Power Range:5,5 - 355kW
- Output torque range:1,4 - 119kNm
- Ratio:1,1 - 793
- Output option: output shaft, hollow shaft, hollow shaft with shrink disc
- Assembly/mounting: uniblock, flange



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HELICAL BEVEL GEARED MOTORS K

Bevel gear units

Innovative total solutions up to 120 kNm.

The bevel gears K.. RX 8.. are designed 2 to 4-staged by which thermal power limits from 14 - 304kW are covered.
With bevel gear motors, an IEC adapter with coupling establishes the motor mounting. The input level of those drives built the bevel level so that a swivelling of the input shaft is possible. Thus more mounting positions can be established, which is of a great advantage in case of a small mounting space.

The housings are worked on every side like the parallel shaft gears and have the same mounting dimensions at the same size.

Technical Data
Number of sizes:11
Power Range:5.5 - 355kW
Output torque range:2.2 - 119kNm
Ratio:4.4 - 700
Output option: output shaft, hollow shaft, hollow shaft with shrink disc
Assembly/mounting: uniblock, swing base