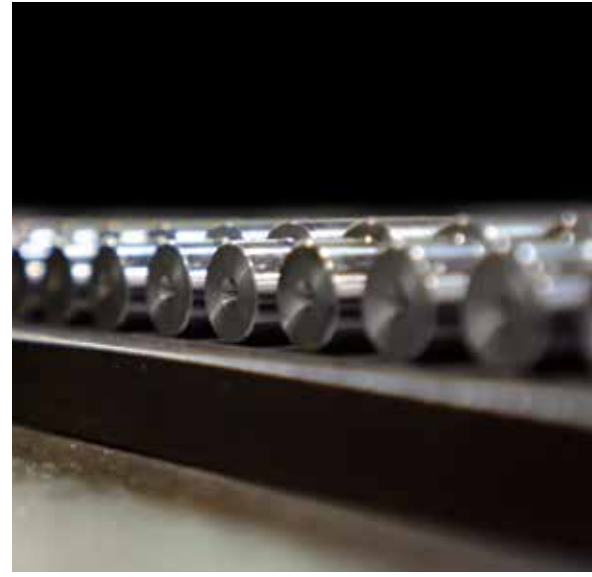
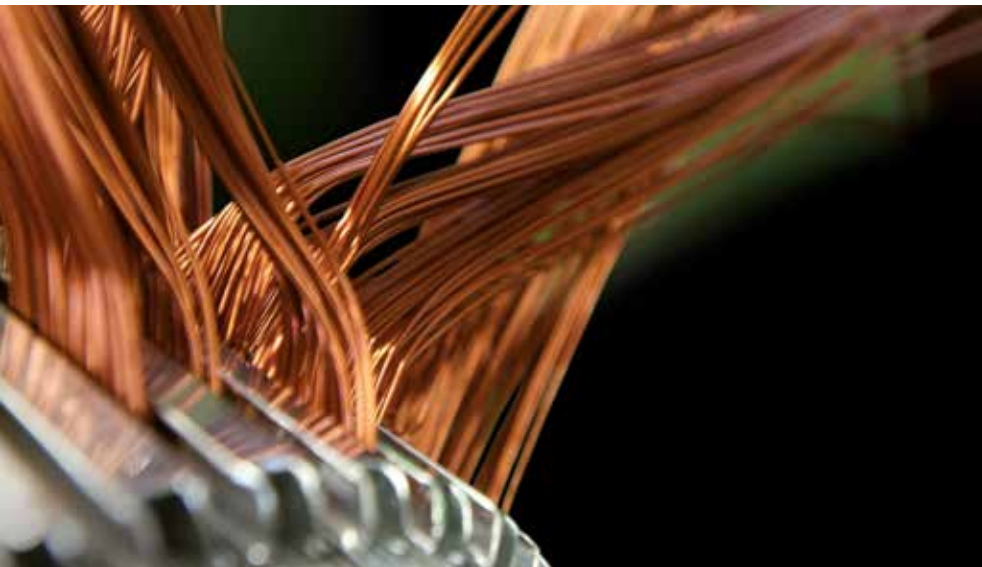

*Compactness Meets
High Power Density*



Angular Geared Motors

for Industrial Applications



Modern and Efficient Drive Technology Angular Geared Motors

Advantages

- High overall efficiency and energy efficient option to worm gearboxes ⇒ energy savings
- Compact design ⇒ small space requirement
- Aluminium housing ⇒ low weight (assembly friendly) and corrosion resistance (painting not required)
- Variable installation options with different flanges ⇒ optimum integration in customer machine and reduced installation effort
- High quality helical gearing ⇒ long life and quiet operation
- Solid and hollow shaft ⇒ variable output side options
- Robust and virtually maintenance free
- Flexibility ⇒ All ABM motors can be delivered with motor-mounted inverters

Maximum Energy Efficiency

Motors and geared motors use approximately two-thirds of the energy consumed in manufacturing. Installing energy-saving geared motors provides companies considerable potentials for cost savings and positively impact their bottom.

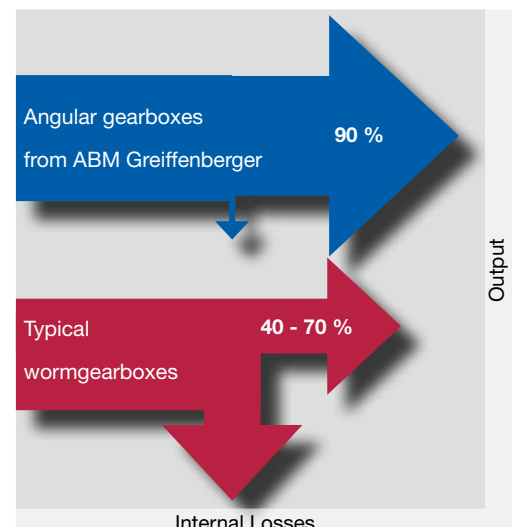
Sample Calculation:

| | Helical wormgearboxes | Angular Gearbox |
|----------------------------|-----------------------|-----------------|
| Efficiency | 65 % | 90 % |
| Torque | | 60 Nm |
| Output Speed | | 40 rpm |
| Power Consumption | 420 Watt | 250 Watt |
| Annual energy cost* | 403 € | 240 € |

* Calculation Base: *16 hours operation per day, 300 days per Year ⇒ 0,2 € / kWh

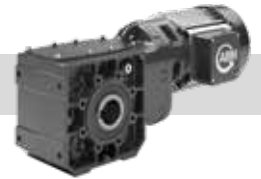
Efficiency Comparison

The energy efficiency of ABM angular gearboxes are – depending on the gear ratio – approximately 90 %. The energy efficiency of typical wormgearboxes especially with high gear ratios ranges from 40 % to 70 %; e.g. the majority of the consumed electricity is converted to heat and not kinetic energy.



Modern and Efficient Drive Technology

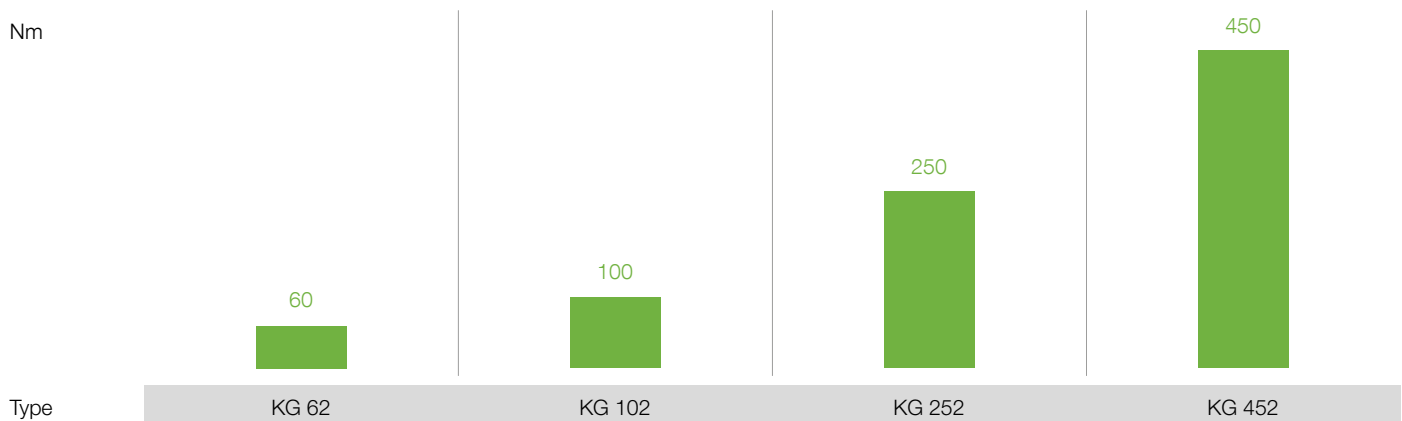
Angular Geared Motors



General Technical Data

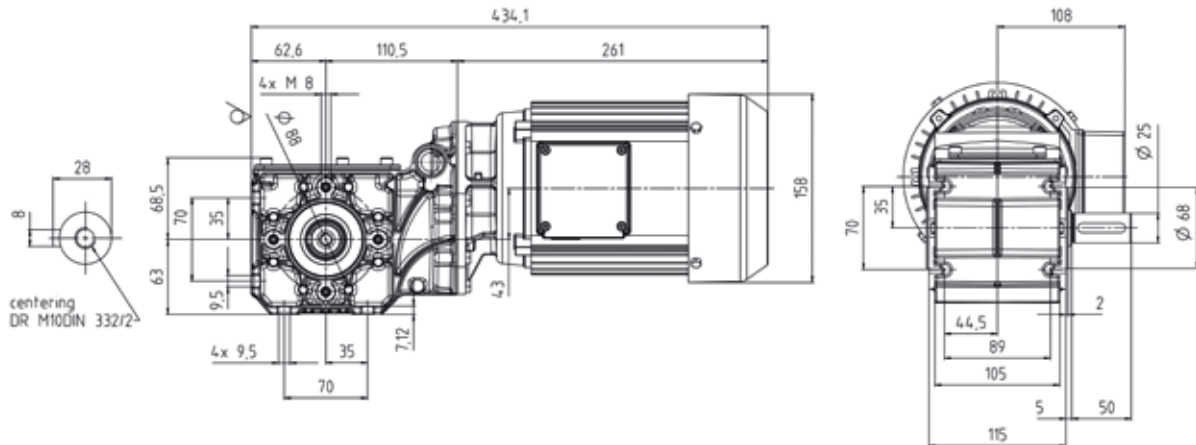
| | | |
|---|--|-----------------------|
| Motor Type | AC Induction Motors | ✓ |
| | Single Phase Motors | ✓ |
| | SINCHRON® Motors | ✓ |
| | Two speed motors | ✓ |
| | Number of Poles | 2-, 4-, 6- and 8-pole |
| Motor Housing | Extruded Aluminium Profile | |
| Output Range | 0.18 up to 7.5 kW | |
| Torque Range | 60 up to 450 Nm | |
| Cooling | Self-ventilated | ✓ |
| | Forced Ventilation | ✓ |
| | Non-ventilated | ✓ |
| Efficiency Class | Up to IE4 | |
| Brake (Holding or Operating Brake) | ✓ | |
| Mains Operation | ✓ | |
| Inverter Operation | ✓ | |
| Inverter | Integrated (motor mounted) | ✓ |
| | Stand alone (electrical panel mounted) | ✓ |
| Protection Class | Up to IP66 | |
| Options | Encoder | ✓ |
| | X-class category 3 G+D | ✓ |
| | CCC, UL/CSA | ✓ |

Output Torque Angular Gearbox



Output Torque up to 100 Nm Angular Gearbox KG 102

Dimensions: KG102 / 4D80



| | |
|-------------------------|---|
| Motor Frame Size | 63 - 90 |
| Power | 0.18 - 2.2 kW |
| Output Torque | T_{max} 100 Nm |
| Output Speed | Asynchronous: 15 – 300 rpm; VFD: variable up to 300 rpm |
| Available Shafts | Solid shaft \varnothing 25 x 50 mm; Hollow shaft \varnothing 25 mm; Special shaft design upon request |
| Mounting Options | Flange mounting (Standard B5 \varnothing 120), Foot mounting and Slip on mechanism |

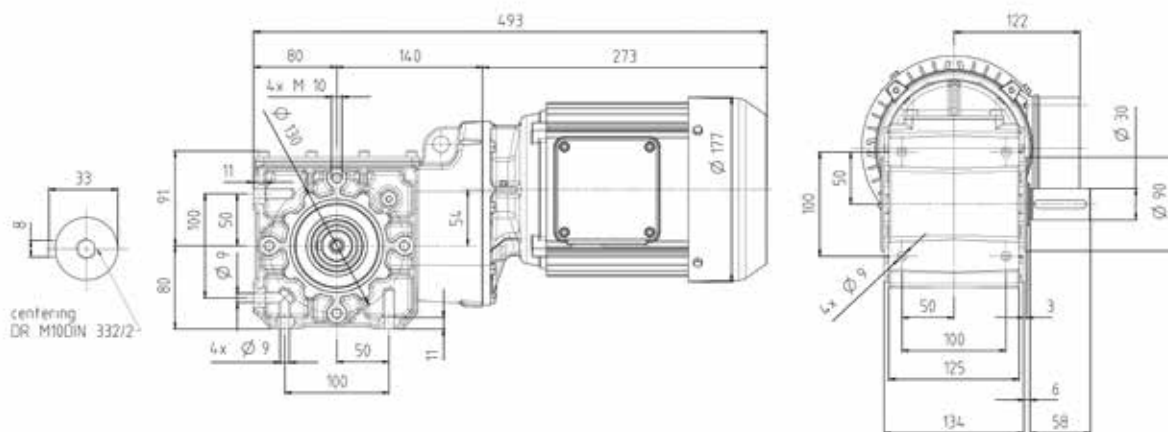
| i^* | n_2 [rpm] | n_1 [rpm] | P_{max} [rpm] |
|--------|-------------|-------------|-----------------|
| 47.780 | 29.0 | 1400 | 0.25 |
| 38.180 | 37.0 | 1400 | 0.37 |
| 29.090 | 48.0 | 1400 | 0.55 |
| 26.250 | 53.0 | 1400 | 0.55 |
| 23.850 | 59.0 | 1400 | 0.55 |
| 21.790 | 64.0 | 1400 | 0.55 |
| 18.460 | 76.0 | 1400 | 0.75 |
| 14.740 | 95.0 | 1400 | 0.75 |
| 12.860 | 109.0 | 1400 | 1.10 |
| 11.670 | 120.0 | 1400 | 1.10 |
| 10.250 | 137.0 | 1400 | 1.50 |
| 8.890 | 157.0 | 1400 | 1.50 |
| 8.160 | 172.0 | 1400 | 1.50 |
| 4.840 | 289.0 | 1400 | 2.20 |

* More gear ratios available upon request

Output Torque up to 250 Nm

Angular Gearbox KG 252

Dimensions: KG252 / 4D90S



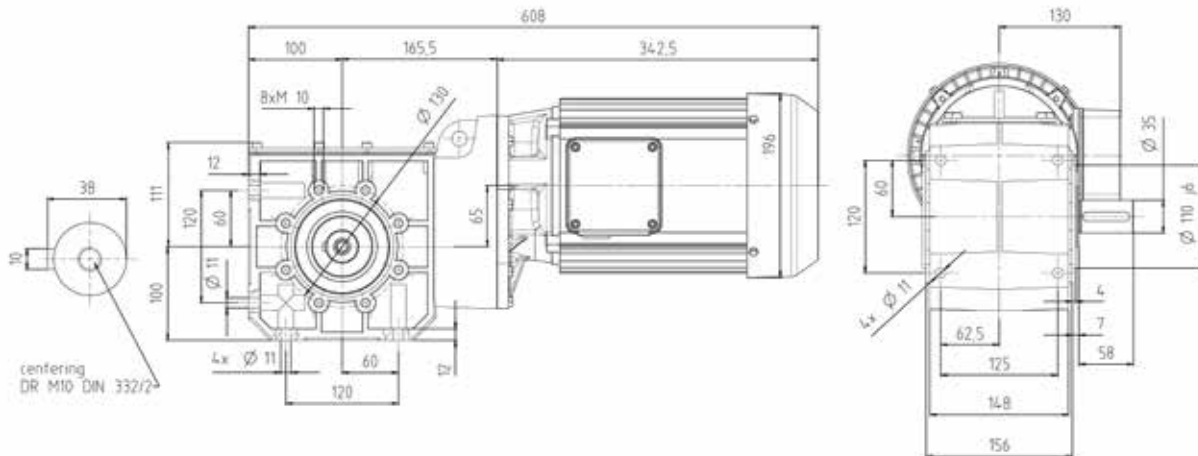
| | |
|-------------------------|---|
| Motor Frame Size | 71 - 112 |
| Power | 0.55 - 4.0 kW |
| Output Torque | T_{max} 250 Nm |
| Output Speed | Asynchronous: 15 – 300 rpm; VFD: variable up to 300 rpm |
| Available Shafts | Solid shaft \varnothing 30 x 58 mm; Hollow shaft \varnothing 35 mm; Special shaft design upon request |
| Mounting Options | Flange mounting (Standard B5 \varnothing 160), Foot mounting and Slip on mechanism |

| i^* | n_2 [rpm] | n_1 [rpm] | P_{max} [kW] |
|--------|-------------|-------------|----------------|
| 48.825 | 30.0 | 1400 | 0.55 |
| 39.813 | 36.0 | 1400 | 0.75 |
| 30.545 | 47.0 | 1400 | 1.10 |
| 25.038 | 58.0 | 1400 | 1.50 |
| 20.192 | 72.0 | 1400 | 1.50 |
| 16.800 | 86.0 | 1400 | 2.20 |
| 14.206 | 102.0 | 1400 | 2.20 |
| 12.141 | 119.0 | 1400 | 3.00 |
| 9.784 | 148.0 | 1400 | 3.00 |
| 8.000 | 181.0 | 1400 | 4.00 |
| 6.938 | 212.0 | 1400 | 4.00 |

* More gear ratios available upon request

Output Torque up to 450 Nm Angular Gearbox KG 452

Dimensions: KG452 / 4D100L



| | |
|-------------------------|---|
| Motor Frame Size | 80 - 132 |
| Power | 0.75 - 7.5 kW |
| Output Torque | T_{max} 450 Nm |
| Output Speed | Asynchronous: 15 – 300 rpm; VFD: variable up to 300 rpm |
| Available Shafts | Solid shaft \varnothing 35 x 58 mm; Hollow shaft \varnothing 45 mm; Special shaft design upon request |
| Mounting Options | Flange mounting (Standard B5 \varnothing 200), Foot mounting and Slip on mechanism |

| i^* | n_2 [rpm] | n_1 [rpm] | P_{max} [kW] |
|--------|-------------|-------------|----------------|
| 70.440 | 20.0 | 1400 | 0.75 |
| 58.290 | 24.0 | 1400 | 1.10 |
| 45.260 | 31.0 | 1400 | 1.50 |
| 40.520 | 35.0 | 1400 | 1.50 |
| 33.230 | 42.0 | 1400 | 1.50 |
| 28.680 | 49.0 | 1400 | 2.20 |
| 23.800 | 59.0 | 1400 | 2.20 |
| 20.570 | 68.0 | 1400 | 3.00 |
| 16.240 | 86.0 | 1400 | 4.00 |
| 14.040 | 100.0 | 1400 | 4.00 |
| 11.430 | 122.0 | 1400 | 5.50 |
| 10.640 | 132.0 | 1400 | 5.50 |
| 9.200 | 152.0 | 1400 | 7.50 |
| 7.260 | 192 | 1400 | 7.50 |
| 6.280 | 223 | 1400 | 7.50 |
| 5.110 | 274 | 1400 | 7.50 |
| 4.200 | 333 | 1400 | 7.50 |

* More gear ratios available upon request



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