

AHKC series

Overview

- Heavy Duty right angel Hypoid gearbox
Black coated steel housing, aluminum output and motor adapter flange
Steel output shaft, flange ISO 9409
Helical gear technology
Nominal Torques:
 - T_{2N} : 30 Nm – 10.750 Nm
- Ratios
 - 2-stage : 4 / 5 / 7 / 10
 - 3-stage : 21 / 31 / 46 / 61 / 91
- Low Backlash
 - 2-stage : ≤ 2 arcmin (size 064 ≤ 3 arcmin)
 - 3-stage : ≤ 2 arcmin (size 064 niet beschikbaar)
- High Efficiency
 - 2-stage : $\geq 95\%$
 - 3-stage : $\geq 93\%$
- Easy mount
Low noise
Compact structure
Sizes available: AHKC064 / AHKC090 / AHKC110 / AHKC140 / AHKC200 / AHKC255 / AHKC285 / AHKC355 / AHKC450



Specifications

| Model | Stage | Ratio ¹ | AHKC064 | AHKC090 | AHKC110 | AHKC140 | AHKC200 | AHKC255 | AHKC285 | AHKC355 | AHKC450 | |
|---|---------------|--------------------|---------|--|---------|---------|---------|---------|---------|---------|---------|---------|
| Nominal output torque T_{2N} | Nm | 2 | 4 | 35 | 80 | 210 | 415 | 1.005 | - | - | - | - |
| | | | 5 | 35 | 80 | 210 | 415 | 1.005 | 2.050 | 3.250 | - | - |
| | | | 7 | 30 | 70 | 180 | 350 | 820 | 1.750 | 2.410 | - | - |
| | | | 8 | 35 | 80 | 210 | 415 | 1.005 | - | - | - | - |
| | | | 10 | 35 | 80 | 210 | 415 | 1.005 | 2.050 | 3.250 | - | - |
| | Nm | 3 | 21 | - | 85 | 220 | 430 | 1.065 | 2.100 | 3.340 | 5.320 | 10.750 |
| | | | 31 | - | 70 | 185 | 365 | 860 | 1.790 | 2.470 | 5.720 | 9.100 |
| | | | 46 | - | 60 | 155 | 305 | 675 | 1.080 | 1.890 | 3.460 | 7.800 |
| | | | 61 | - | 70 | 185 | 365 | 860 | 1.790 | 2.470 | 5.720 | 9.100 |
| | | | 91 | - | 60 | 155 | 305 | 675 | 1.080 | 1.890 | 3.460 | 7.800 |
| Emergency stop torque T_{2NOI}^3 | Nm | 2,3 | 4~91 | 2 times nominal output torque T_{2N} | | | | | | | | |
| Max. Acceleration torque T_{2B} | Nm | 2,3 | 4~91 | 1,5 times nominal output torque T_{2N} | | | | | | | | |
| No load running torque ⁽³⁾ | arcmin | 2 | 4~10 | 2 | 2,5 | 5,8 | 12 | 25 | 48 | 95 | - | - |
| | | 3 | 21~91 | 1 | 1,5 | 2,5 | 4 | 9 | 18,5 | 35 | 75 | 148 |
| Backlash ⁽²⁾ | arcmin | 2 | 4~10 | ≤ 3 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | - | - |
| | | 3 | 21~91 | - | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 | ≤ 2 |
| Torsional rigidity | Nm/ arcmin | 2,3 | 4~91 | 12 | 27 | 56 | 112 | 389 | 642 | 1.275 | .500 | 5.100 |
| | | 2 | 4~10 | 5.000 | 3.600 | 3.000 | 2.300 | 1.800 | 1.500 | 1.100 | - | - |
| Nominal input speed N_{1N} | rpm | 3 | 21~91 | - | 4.600 | 4.000 | 3.000 | 2.300 | 1.800 | 1.500 | 1.500 | 1.100 |
| | | 2 | 4~10 | 7.000 | 6.000 | 5.500 | 4.500 | 3.500 | 3.000 | 2.200 | - | - |
| Max. input speed N_{1B} | rpm | 3 | 21~91 | - | 7.000 | 6.500 | 5.500 | 4.500 | 3.500 | 3.000 | 3.000 | 2.200 |
| | | 2,3 | 4~91 | 1.690 | 2.220 | 4.070 | 8.530 | 17.000 | 26.900 | 39.200 | 101.500 | 143.700 |
| Max. radial load $t F_{2a}$ | N | 2,3 | 4~91 | 1.690 | 2.220 | 4.070 | 8.530 | 17.000 | 26.900 | 39.200 | 101.500 | 143.700 |
| Max. Bending moment M_{2k} | Nm | 2,3 | 4~91 | 120 | 280 | 480 | 1.310 | 3.530 | 5.920 | 9.230 | 29.100 | 63.300 |
| Service Life ⁽⁴⁾ | hr | 2,3 | 4~91 | 20.000 | | | | | | | | |
| Operating temperature | °C | 2,3 | 4~91 | -10°C ~+ 90°C | | | | | | | | |
| Degree of Protection | | 2,3 | 4~91 | IP65 | | | | | | | | |
| Lubrication | | 2,3 | 4~91 | Synthetisch lubrication grease (NYOGEL 792D) | | | | | | | | |
| Mounting position | | 2,3 | 4~91 | All directions | | | | | | | | |
| Running noise ($n_1=3000$ rpm, No Load) | dB(A) | 2 | 4~10 | ≤ 68 | ≤ 68 | ≤ 68 | ≤ 70 | ≤ 70 | ≤ 72 | ≤ 74 | - | - |
| | | 3 | 21~91 | - | ≤ 68 | ≤ 68 | ≤ 70 | ≤ 70 | ≤ 72 | ≤ 74 | ≤ 74 | ≤ 76 |
| Efficiency | % | 2 | 4~10 | ≥ 95 % | | | | | | | | |
| | | 3 | 21~91 | ≥ 93 % | | | | | | | | |

(1) Ratio ($i = N_{in} / N_{out}$)

(2) Backlash is measured at 2% of Nominal output torque T_{2N} .

(3) These values are measured by gearbox with ratio = 10 (2-stage) or ratio = 91 (3-stage) at 3.000 rpm without load.

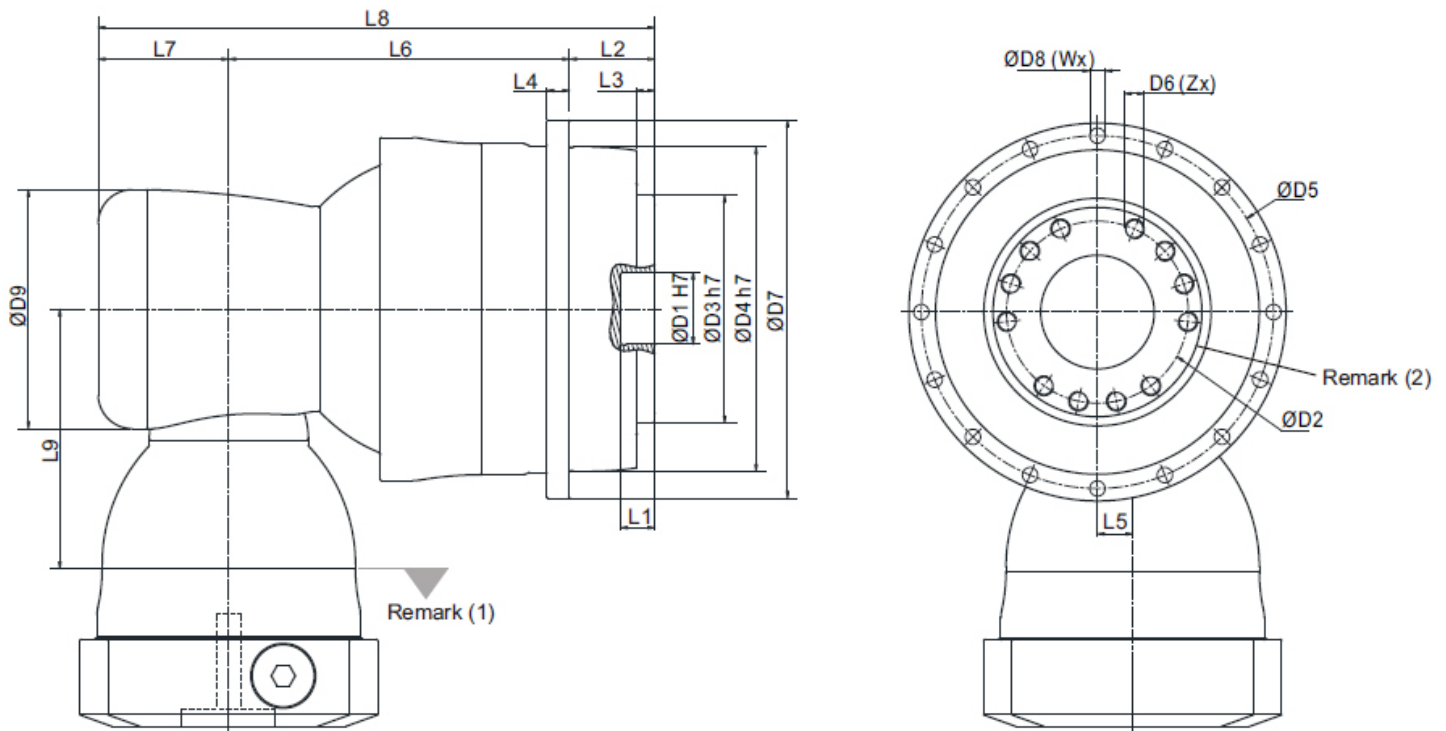
(4) Continuous operation (S1) is not recommended.

Inertia

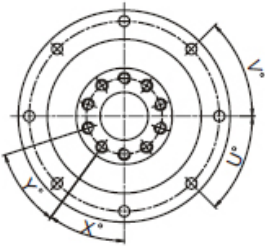
| Model No. | AHKC064 | AHKC090 | | AHKC110 | | AHKC140 | | AHKC200 | | AHKC255 | | AHKC285 | | AHKC355 | AHKC450 |
|------------------------|--------------------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|---------|
| $\emptyset^{(A)}$ (C3) | 2-tr. | 2-tr. | 3-tr. | 2-tr. | 3-tr. | 2-tr. | 3-tr. | 2-tr. | 3-tr. | 2-tr. | 3-tr. | 2-tr. | 3-tr. | 2-tr. | 2-tr. |
| 8 | 0,10 | - | 0,10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | 0,17 | 0,52 | 0,17 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | 0,21 | 0,52 | 0,21 | - | 0,52 | - | - | - | - | - | - | - | - | - | - |
| 19 | 0,62 | 1,69 | 0,62 | 1,71 | 1,69 | - | 1,71 | - | - | - | - | - | - | - | - |
| 24 | - | 4,89 | - | 5,05 | 4,89 | 6,92 | 5,05 | - | 6,92 | - | - | - | - | - | - |
| 28 | - | - | - | 6,55 | - | 6,98 | 6,55 | - | 6,98 | - | - | - | - | - | - |
| 32 | kg*cm ² | - | - | 9,47 | - | 10,18 | 9,47 | 10,18 | 10,18 | - | 10,18 | - | - | - | - |
| 35 | - | - | - | 14,91 | - | 15,21 | 14,91 | 15,21 | 15,21 | 15,68 | 15,21 | 23,46 | 15,68 | - | - |
| 38 | - | - | - | 20,69 | - | 20,70 | 20,69 | 20,70 | 20,70 | 21,69 | 20,70 | 23,46 | 21,69 | 21,69 | -- |
| 42 | - | - | - | - | - | 22,83 | - | 22,83 | 22,83 | 23,59 | 22,83 | 25,28 | 23,59 | 23,59 | 25,28 |
| 48 | - | - | - | - | - | 58,45 | - | 58,45 | 58,95 | 59,30 | 58,45 | 61,61 | 59,30 | 59,30 | 61,61 |
| 55 | - | - | - | - | - | - | - | - | - | 86,95 | - | 89,67 | - | 86,95 | 89,67 |
| 60 | - | - | - | - | - | - | - | - | - | - | - | 112,49 | - | - | 112,49 |

(A) \emptyset = Input shaft diameter

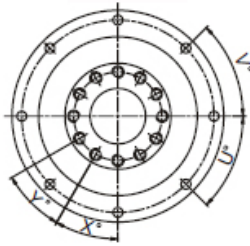
Sizes



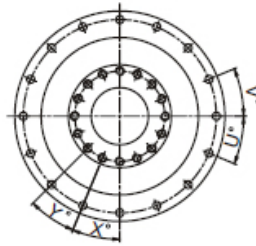
AHKC064



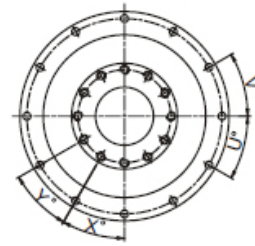
AHKC090



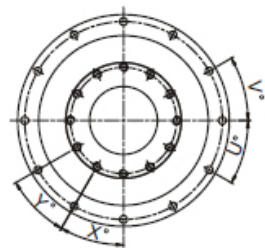
AHKC110



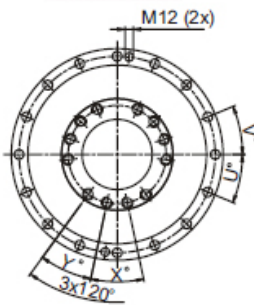
AHKC140



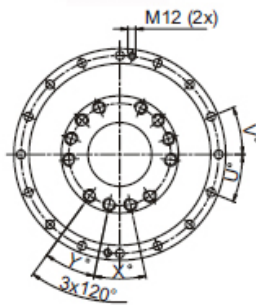
AHKC200



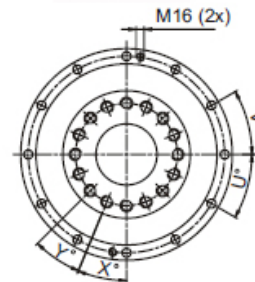
AHKC255



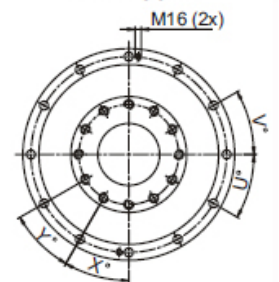
AHKC285



AHKC355



AHKC450



| Dimensions | AHKC064 | AHKC090 | AHKC110 | AHKC140 | AHKC200 | AHKC255 | AHKC285 | AHKC355 | AHKC450 |
|--------------------|---------------|--------------|--------------|-----------------|-----------------|---------------|-----------------|---------------|-----------------|
| | 2-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. 3-tr. | 2-tr. |
| D1 H7 | 20 | 31,5 | 40 | 50 | 80 | 100 | 100 | 120 | 155 |
| D2 | 30,5 | 50 | 63 | 80 | 125 | 140 | 160 | 200 | 250 |
| D3 h7 | 40 | 63 | 80 | 100 | 160 | 180 | 200 | 250 | 315 |
| D4 h7 | 64 | 90 | 110 | 140 | 200 | 255 | 285 | 355 | 450 |
| D5 | 79 | 109 | 135 | 168 | 233 | 280 | 310 | 385 | 490 |
| D6 x pitch x depth | M5 x 0,8P x 8 | M6 x 1P x 10 | M6 x 1P x 11 | M8 x 1,25P x 15 | M10 x 1,5P x 20 | M16 x 2P x 25 | M20 x 2,5P x 31 | M24 x 3P x 32 | M30 x 3,5P x 40 |
| D7 | 88 | 120 | 147 | 180 | 249,5 | 302 | 332 | 415 | 530 |
| D8 | 4,5 | 5,5 | 5,5 | 6,6 | 9 | 13,5 | 13,5 | 17,5 | 22 |
| D9 | 64 | 92 64 | 116 92 | 156 116 | 156 156 | 195 156 | 240 195 | 195 195 | 240 |

| | | | | | | | | | | | | | | | |
|--------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | 8 | 15 | 15 | 15 | 15 | 16 | 16 | 16 | 35 | 24 | | | | | |
| L2 | 19,5 | 30 | 29 | 38 | 50 | 66 | 75 | 80 | 85 | | | | | | |
| L3 | 4 | 7 | 7 | 7,5 | 8,5 | 13,5 | 16,5 | 20 | 20 | | | | | | |
| L4 | 5 | 7 | 8 | 10 | 12 | 18 | 20 | 45 | 60 | | | | | | |
| L6 | 92 | 100,5 | 121,5 | 124,5 | 142 | 175,5 | 174,5 | 185 | 244,5 | 199 | 264,5 | 265,5 | 307,5 | 339,5 | 463,5 |
| L7 | 46,5 | 61,5 | 46,5 | 76 | 61,5 | 97,5 | 76 | 97,5 | 97,5 | 105,5 | 97,5 | 141 | 105,5 | 105,5 | 141 |
| L8 | 158 | 192 | 198 | 229,5 | 232,5 | 311 | 288,5 | 332,5 | 392 | 370,5 | 428 | 481,5 | 488 | 525 | 689,5 |
| L9 | 81,5 | 113,5 | 81,5 | 147,5 | 113,5 | 196,5 | 147,5 | 196,5 | 196,5 | 229 | 196,5 | 260 | 229 | 229 | 260 |
| X in degrees | 36 | 30 | 22,5 | 30 | 30 | 24 | 24 | 22,5 | 30 | | | | | | |
| Y in degrees | 36 | 30 | 22,5 | 30 | 30 | 24 | 24 | 22,5 | 30 | | | | | | |
| Z | 10 | 12 | 16 | 12 | 12 | 12 | 12 | 16 | 12 | | | | | | |
| U in degrees | 45 | 45 | 22,5 | 30 | 30 | 22,5 | 22,5 | 30 | 30 | | | | | | |
| V in degrees | 45 | 45 | 22,5 | 30 | 30 | 22,5 | 22,5 | 30 | 30 | | | | | | |
| W | 8 | 8 | 16 | 12 | 12 | 16 | 16 | 12 | 12 | | | | | | |

(1) Input dimensions vary according to motor flange. Please contact Apex Dynamics for details.