

# KH serie

## Overzicht

- Zwart gelakt stalen behuizing, stalen uitgaande flens en aluminium motor adapterplaat
- Stalen uitgaande as, flens ISO 9409
- Hypoïde vertanding
- Nominale koppels:
  - $T_{2N}$  : 18 Nm – 1.600 Nm
- Overbrengverhouding
  - 1-traps : 3 / 4 / 5 / 7 / 10
  - 2-traps : 12 / 16 / 20 / 25 / 28 / 35 / 40 / 50 / 70 / 100
- Spelingarm
  - 1-traps:  $\leq 3$  arcmin
  - 2-traps :  $\leq 3$  arcmin
- Hoog rendement
  - 1-traps:  $\geq 96\%$
  - 2-traps:  $\geq 64\%$
- Eenvoudige montage
- Laag geluidsniveau
- Uitgaande as draait in dezelfde richting als de ingaande servomotor as
- Bouwgrootte: KH 064 / KH 090 / KH 110 / KH 140 / KH 200 / KH 255 / KH 285



# Specificaties

| KH                                      |   | trap | Ratio <sup>(1)</sup> | KH 064 | KH 090                                      | KH 110 | KH 140 | KH 200 | KH 255 | KH 285 |       |
|---|---|------|----------------------|--------|---|--------|--------|--------|--------|--------|-------|
| Nominaal uitgangskoppel T <sub>2N</sub> | Nm                                      | 1    | 3                    | 25     | 50  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 4                    | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 5                    | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 7                    | 23     | 50  | 100    | 200    | 390    | 750    | 1.400  |       |
|   |   |      | 10                   | 18     | 40  | 85     | 170    | 360    | 600    | 1.100  |       |
|   |   | 2    | 12                   | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 16                   | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 20                   | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 25                   | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   |   |      | 28                   | 25     | 60  | 110    | 210    | 420    | 820    | 1.600  |       |
|   | 35                                      |      | 25                   | 60     | 110   | 210    | 420    | 820    | 1.600  |        |       |
|   | 40                                      |      | 25                   | 60     | 110   | 210    | 420    | 820    | 1.600  |        |       |
|   | 50                                      |      | 25                   | 60     | 110   | 210    | 420    | 820    | 1.600  |        |       |
|   |   |      |                      | 70     | 23  | 50     | 100    | 200    | 390    | 750    | 1.400 |
|   |   |      |                      | 100    | 18  | 40     | 85     | 170    | 360    | 600    | 1.100 |
|   | Noodstop koppel T <sub>2N</sub>         | Nm   | 1,2                  | 3~100  | 2 times of nominal torque T <sub>2N</sub>   |        |        |        |        |        |       |
|   | Max. Acceleratie koppel T <sub>2B</sub> | Nm   | 1,2                  | 3~100  | 1,5 times of nominal torque T <sub>2N</sub> |        |        |        |        |        |       |
|   | Nullast koppel <sup>(4)</sup>           | Nm   | 1                    | 3~10   | 0,9   | 1,6    | 3,2    | 4,2    | 9,6    | 16,5   | 26,4  |
| 2                                       |   |      | 12~100               | 0.1    | 0.1   | 0.2    | 0.4    | 1.1    | 1.9    | 3      |       |
| Verdraaispeling <sup>(3)</sup>          | arcmin                                  | 1    | 3~10                 | ≤ 3    | ≤ 3   | ≤ 3    | ≤ 3    | ≤ 3    | ≤ 3    | ≤ 3    |       |
|   |   | 2    | 12~100               | ≤ 3    | ≤ 3   | ≤ 3    | ≤ 3    | ≤ 3    | ≤ 3    | ≤ 3    |       |
| Torsie stijfheid                        | Nm/arcmin                               | 1,2  | 3~100                | 1,1    | 4,5   | 10     | 23     | 54     | 90     | 170    |       |

|                                      |        |     |        |       |       |       |                                |        |        |        |
|--------------------------------------|--------|-----|--------|-------|-------|-------|--------------------------------|--------|--------|--------|
| Nominaal Ingangssnelheid<br>$N_{1N}$ | rpm    | 1   | 3~10   | 3,000 | 2,800 | 2,700 | 2,000                          | 2,000  | 2,000  | 1,500  |
|                                      |        | 2   | 12~100 | 5,500 | 4,600 | 4,600 | 4,000                          | 3,700  | 3,400  | 3,100  |
| Max. Ingangssnelheid $N_{1B}$        | rpm    | 1   | 3~10   | 6,000 | 6,000 | 4,500 | 4,500                          | 4,000  | 3,000  | 2,500  |
|                                      |        | 2   | 12~100 | 7,000 | 7,000 | 7,000 | 6,000                          | 5,500  | 5,000  | 4,500  |
| Max. radiale last $F_{2rB}^{(2)}$    | N      | 1,2 | 3~100  | 2,400 | 4,500 | 5,100 | 13,000                         | 28,700 | 36,200 | 58,300 |
| Max. axiale last $F_{2a1B}^{(2)}$    | N      | 1,2 | 3~100  | 1,200 | 2,250 | 2,550 | 6,500                          | 14,350 | 18,100 | 29,150 |
| Service Life <sup>(5)</sup>          | hr     | 1,2 | 3~100  |       |       |       | 20.000                         |        |        |        |
| Bedrijfstemperatuur                  | °C     | 1,2 | 3~100  |       |       |       | 0° C ~ +90°C                   |        |        |        |
| Beschermingsklasse                   |        | 1,2 | 3~100  |       |       |       | IP65                           |        |        |        |
| Smeermiddel                          |        | 1,2 | 3~100  |       |       |       | Synthetisch lubrication grease |        |        |        |
| Montage positie                      |        | 1,2 | 3~100  |       |       |       | All directions                 |        |        |        |
| Geluidsniveau <sup>(6)</sup>         | dB (A) | 1,2 | 3~100  | ≤ 64  | ≤ 66  | ≤ 66  | ≤ 68                           | ≤ 68   | ≤ 70   | ≤ 72   |
| Rendement                            | %      | 1   | 3~10   |       |       |       | ≥ 96%                          |        |        |        |
|                                      |        | 2   | 12~100 |       |       |       | ≥94%                           |        |        |        |

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

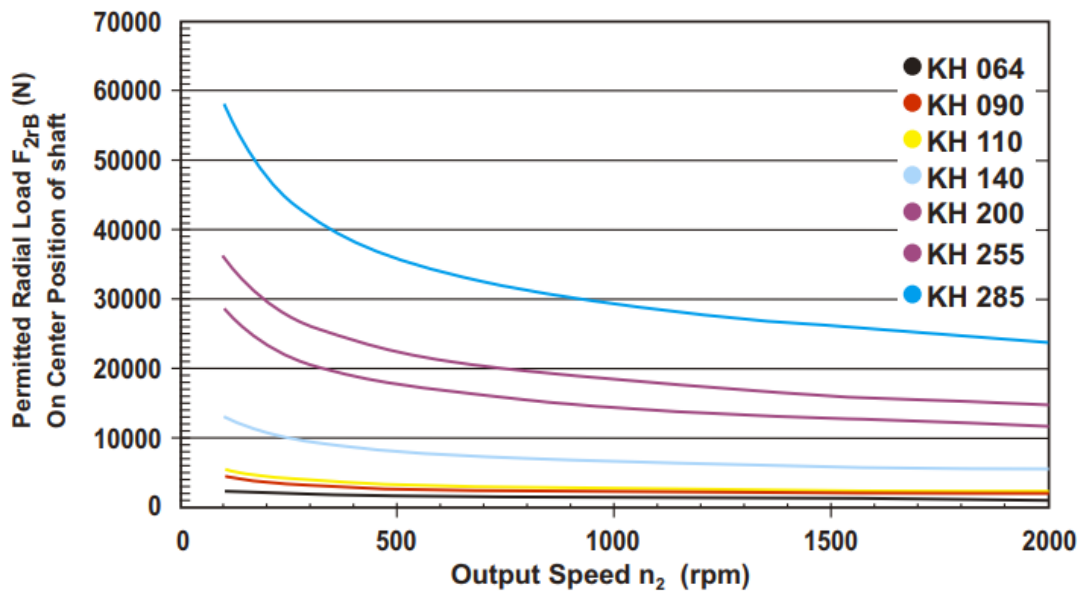
(2) Verdraaispeling is gemeten bij 2% van het Nominaal uitgangskoppel  $T_{2N}$

(3) Uitgeoefend op het midden van de as @ 100 rpm

(4) Deze waarden zijn gemeten bij een reductor met ratio=10 (1-traps) of ratio=100 (2-traps) bij 3.000 rpm zonder last

(5) Voor continue bedrijf (S1), service life is ? 10.000 uur

## Toegestane Radiale en Axiale kracht op de uitgaande as



De toegestane radiale kracht  $F_{2r}$  op het midden van de uitgaande flens bij diverse uitgaande snelheden. Deze waarden zijn voor een service life van 20.000 uur.

Bij continue bedrijf (S1) heeft de reductor een service life van 50%

# Massatraagheid

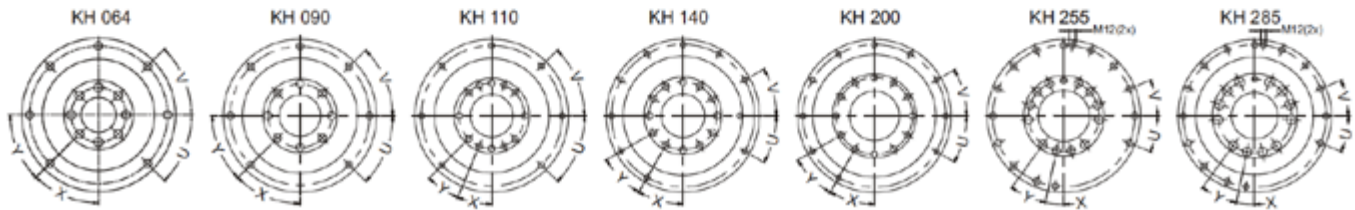
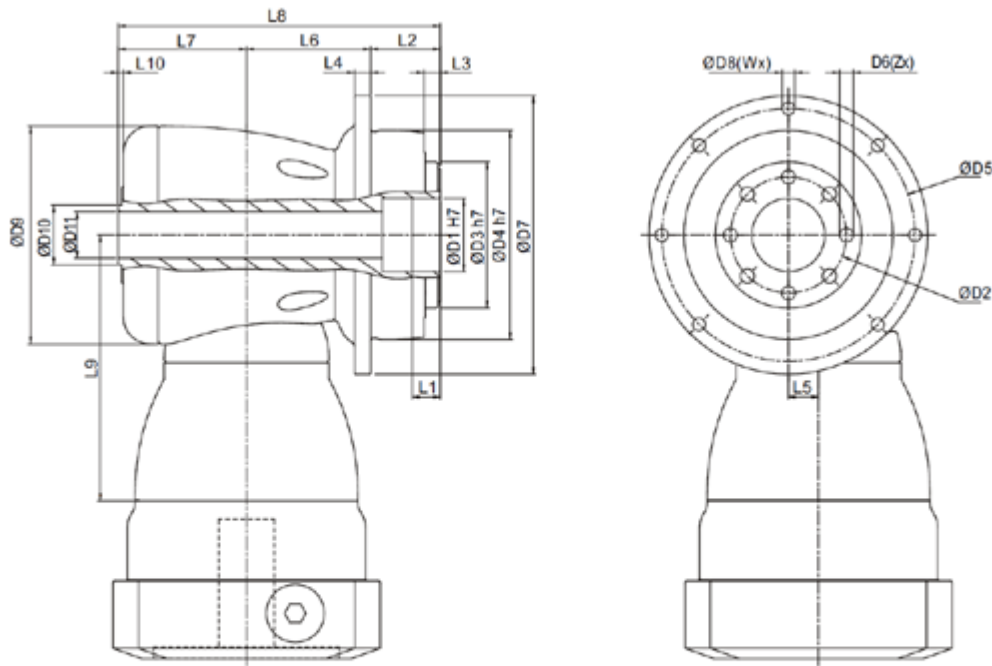
| Bouwgrootte           | KH 064  |         | KH 090  |         | KH 110  |         | KH 140  |         | KH 200  |         | KH 255  |         | KH 285  |         |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                       | 1-traps | 2-traps | 1-traps | 2-traps | 1-traps | 2-traps | 1-traps | 2-traps | 1-traps | 2-traps | 1-traps | 2-traps | 1-traps | 2-traps |
| Ø <sup>(A)</sup> (C3) |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| 8                     | 0.10    | 0.10    | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 11                    | 0.17    | 0.16    | 0.18    | 0.17    | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 14                    | 0.21    | 0.20    | 0.50    | 0.21    | -       | 0.53    | -       | -       | -       | -       | -       | -       | -       | -       |
| 19                    | 0.62    | -       | 0.65    | 0.63    | 1.69    | 0.68    | -       | 1.83    | -       | -       | -       | -       | -       | -       |
| 24                    | -       | -       | 4.49    | -       | 4.89    | 4.52    | 5.05    | 5.04    | -       | 5.63    | -       | -       | -       | -       |
| 28                    | -       | -       | -       | -       | 6.14    | -       | 6.55    | 6.33    | -       | 7.18    | -       | -       | -       | -       |
| 32                    | -       | -       | -       | -       | 8.54    | -       | 9.47    | 8.73    | 10.18   | 10.10   | -       | 12.63   | -       | -       |
| 35                    | -       | -       | -       | -       | 13.86   | -       | 14.91   | 14.04   | 15.21   | 15.54   | 15.68   | 17.75   | 23.46   | 20.80   |
| 38                    | -       | -       | -       | -       | 18.87   | -       | 20.69   | 19.05   | 20.70   | 21.32   | 21.69   | 23.26   | 23.46   | 27.05   |
| 42                    | -       | -       | -       | -       | -       | -       | 22.58   | -       | 22.83   | 23.20   | 23.59   | 25.40   | 25.28   | 28.95   |
| 48                    | -       | -       | -       | -       | -       | -       | 55.45   | -       | 58.45   | 56.07   | 59.30   | 61.02   | 61.61   | 64.66   |
| 55                    | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | 86.95   | -       | 89.67   | -       |
| 60                    | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | 112.49  | -       |

kg\*cm<sup>2</sup>

(A) Ø Ingaande as diameter

# Afmetingen

KH-series:



|             | KH 064    | KH 090    | KH 110    | KH 140      | KH 200      | KH 255    | KH 285      |
|-------------|-----------|-----------|-----------|-------------|-------------|-----------|-------------|
|             | 1~2-traps | 1~2-traps | 1~2-traps | 1~2-traps   | 1~2-traps   | 1~2-traps | 1~2-traps   |
| D1 H7       | 20        | 31,5      | 40        | 50          | 80          | 100       | 100         |
| D2          | 31,5      | 50        | 63        | 80          | 125         | 140       | 160         |
| D3 h7       | 40        | 63        | 80        | 100         | 160         | 180       | 200         |
| D4 h7       | 64        | 90        | 110       | 140         | 200         | 255       | 285         |
| D5          | 79        | 109       | 135       | 168         | 233         | 280       | 310         |
| D6          | M5x0,8Px8 | M6x1Px10  | M6x1Px12  | M8x1,25Px15 | M10x1,5Px20 | M16x2Px25 | M20x2,5Px31 |
| D7          | 88        | 120       | 147       | 180         | 249,5       | 302       | 332         |
| D8          | 4,5       | 5,5       | 5,5       | 6,6         | 9           | 13,5      | 13,5        |
| D9          | 73        | 94        | 116       | 163         | 210         | 255       | 300         |
| D10         | 18,5      | 25,8      | 36,8      | 55,2        | 69,2        | 82,2      | 92,2        |
| D11         | 10        | 20        | 28        | 40          | 55          | 62        | 70          |
| L1          | 8         | 12        | 12        | 12          | 16          | 20        | 20          |
| L2          | 19,5      | 30        | 29        | 38          | 50          | 66        | 75          |
| L3          | 4         | 7         | 7         | 7,5         | 8,5         | 13,5      | 16,5        |
| L4          | 5         | 7         | 8         | 10          | 12          | 18        | 20          |
| L5          | 10        | 13        | 17        | 25          | 31          | 36        | 43          |
| L6          | 43        | 53,5      | 67        | 81          | 117         | 132       | 160,5       |
| L7          | 46        | 55,3      | 71,3      | 91,8        | 118         | 134       | 168         |
| L8          | 108,5     | 138,8     | 167,3     | 210,8       | 285         | 332       | 403,5       |
| L9          | 94        | 114,5     | 129       | 173,5       | 228         | 265,5     | 294,5       |
| L10         | 1,5       | 2,3       | 3         | 2,8         | 3           | 3         | 3           |
| X in graden | 45°       | 45°       | 22,5°     | 30°         | 30°         | 12°       | 12°         |
| Y in graden | 45°       | 45°       | 22,5°     | 30°         | 30°         | 24°       | 24°         |
| Z           | 8         | 8         | 12        | 12          | 12          | 12        | 12          |

|             |     |     |     |     |     |       |       |
|-------------|-----|-----|-----|-----|-----|-------|-------|
| U in graden | 45° | 45° | 45° | 30° | 30° | 22,5° | 22,5° |
| V in graden | 45° | 45° | 45° | 30° | 30° | 22,5° | 22,5° |
| W           | 7   | 7   | 7   | 10  | 10  | 13    | 13    |

(1) Afmetingen zijn motor afhankelijk, neem contact op met Apex Dynamics voor details.