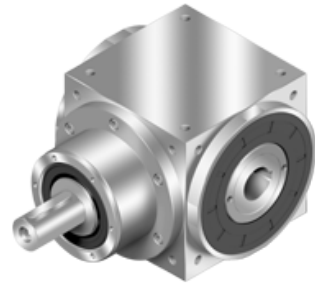


# AT-H series

## Overview



- Spiral bevel gearbox with one input shaft. Output is hollow shaft thru with keyway.
- Stainless steel housing
- Stainless steel input shaft with or without key
- Stainless steel hollow output shaft thru with keyway
- Nominal torques:
  - $T_{2N}$  : 12 Nm – 3.200 Nm
- Ratios
  - 1-stage : 1 / 1,5 / 2 / 3 / 4 / 5
- Low backlash
  - 1-stage :  $\leq 6$  arcmin
- high efficiency
  - 1-stage :  $\geq 98\%$
- Easy mount
- Low Noise
- Compact structure
- Sizes available: AT065H / AT075H / AT090H / AT110H / AT140H / AT170H / AT210H / AT240H / AT280H

# Specifications

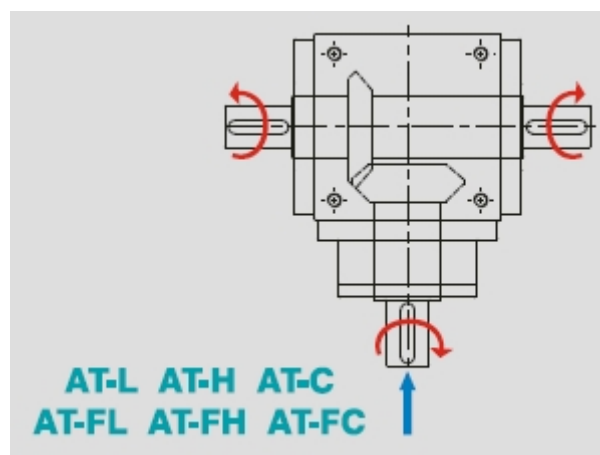
| Model No.                                 |        | Stage Ratio <sup>1</sup> | AT065HAT075HAT090HAT110HAT140HAT170HAT210HAT240HAT280H |  |       |       |       |       |       |        |        |        |  |
|---|--------|--------------------------|--|--|-------|-------|-------|-------|-------|--------|--------|--------|--|
| Nominal Output Torque $T_{2N}$            | Nm     | 1                        | 1  | 25                                       | 45    | 78    | 150   | 360   | 585   | 1,300  | 2,150  | 3,200  |  |
|   |        |                          | 1.5  | 25                                       | 45    | 78    | 150   | 360   | 585   | 1,300  | 2,150  | 3,200  |  |
|   |        |                          | 2  | 24                                       | 42    | 68    | 150   | 330   | 544   | 1,220  | 2,010  | 3,050  |  |
|   |        |                          | 3  | 18                                       | 33    | 54    | 120   | 270   | 450   | 1,020  | 1,650  | 2,850  |  |
|   |        |                          | 4  | 13                                       | 28    | 48    | 100   | 224   | 376   | 860    | 1,410  | 2,300  |  |
|   |        |                          | 5  | 12                                       | 25    | 40    | 85    | 196   | 320   | 740    | 1,210  | 2,000  |  |
| Max Acceleration Torque $T_{2B}$          | Nm     | 1                        | 1~5  | 1.5 times Nominal Output Torque $T_{2N}$ |       |       |       |       |       |        |        |        |  |
| Max. Acceleration Input Speed $n_{1B}$    | rpm    | 1                        | 1~5  | 7,500                                    | 6,500 | 5,500 | 4,500 | 3,500 | 3,000 | 2,200  | 2,000  | 1,700  |  |
| Backlash*                                 | arcmin | 1                        | 1~5  | ≤ 6                                      | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6    | ≤ 6    | ≤ 6    |  |
| Max. Radial Load $F_{1rB}$ 2<br>Inputg d1 | N      | 1                        | 1~5  | 700                                      | 950   | 1,450 | 2,100 | 2,700 | 3,800 | 7,800  | 9,600  | 10,500 |  |
| Max. Radial Load $F_{2rB}$ 3<br>Output d2 | N      | 1                        | 1~5  | 900                                      | 1,100 | 1,700 | 2,700 | 4,800 | 6,600 | 11,500 | 16,000 | 18,000 |  |
| Max. Axial Load $F_{1aB}$ 2<br>Input d1   | N      | 1                        | 1~5  | 350                                      | 425   | 725   | 1,050 | 1,350 | 1,900 | 3,900  | 4,800  | 5,250  |  |
| Max. Axial Load $F_{2aB}$ 3<br>Output d2  | N      | 1                        | 1~5  | 450                                      | 550   | 850   | 1,350 | 2,400 | 3,300 | 5,750  | 8,500  | 9,000  |  |
| Service Life                              | hr     | 1                        | 1~5  | 20,000*                                  |       |       |       |       |       |        |        |        |  |
| Efficiency                                | %      | 1                        | 1~5  | ≥ 98 %                                   |       |       |       |       |       |        |        |        |  |
| Weight                                    | kg     | 1                        | 1~5  | 2.5                                      | 3.9   | 6.4   | 11.0  | 18.1  | 31.6  | 60.0   | 89.4   | 143.4  |  |
| Operating Temp                            | °C     | 1                        | 1~5  | -10°C~+90°C                              |       |       |       |       |       |        |        |        |  |
| Lubrication                               |        | 1                        | 1~5  | Synthetic lubrication oils, ISO VG 150   |       |       |       |       |       |        |        |        |  |
| Noise Level<br>( $n_1=1500$ rpm, No Load) | dB(A)  | 1                        | 1~5  | ≤68                                      | ≤70   | ≤74   | ≤76   | ≤77   | ≤78   | ≤80    | ≤82    | ≤83    |  |

1. Ratio ( $i=N$  in /  $N$  out )
2. Apply to the input shaft center @ 100 rpm
3. Apply to the output shaft center @ 100 rpm

\* S1 service life 10,000 hrs.

\* Backlash is measured at 2% Nominal Output Torque  $T_{2N}$

## Rotation Direction

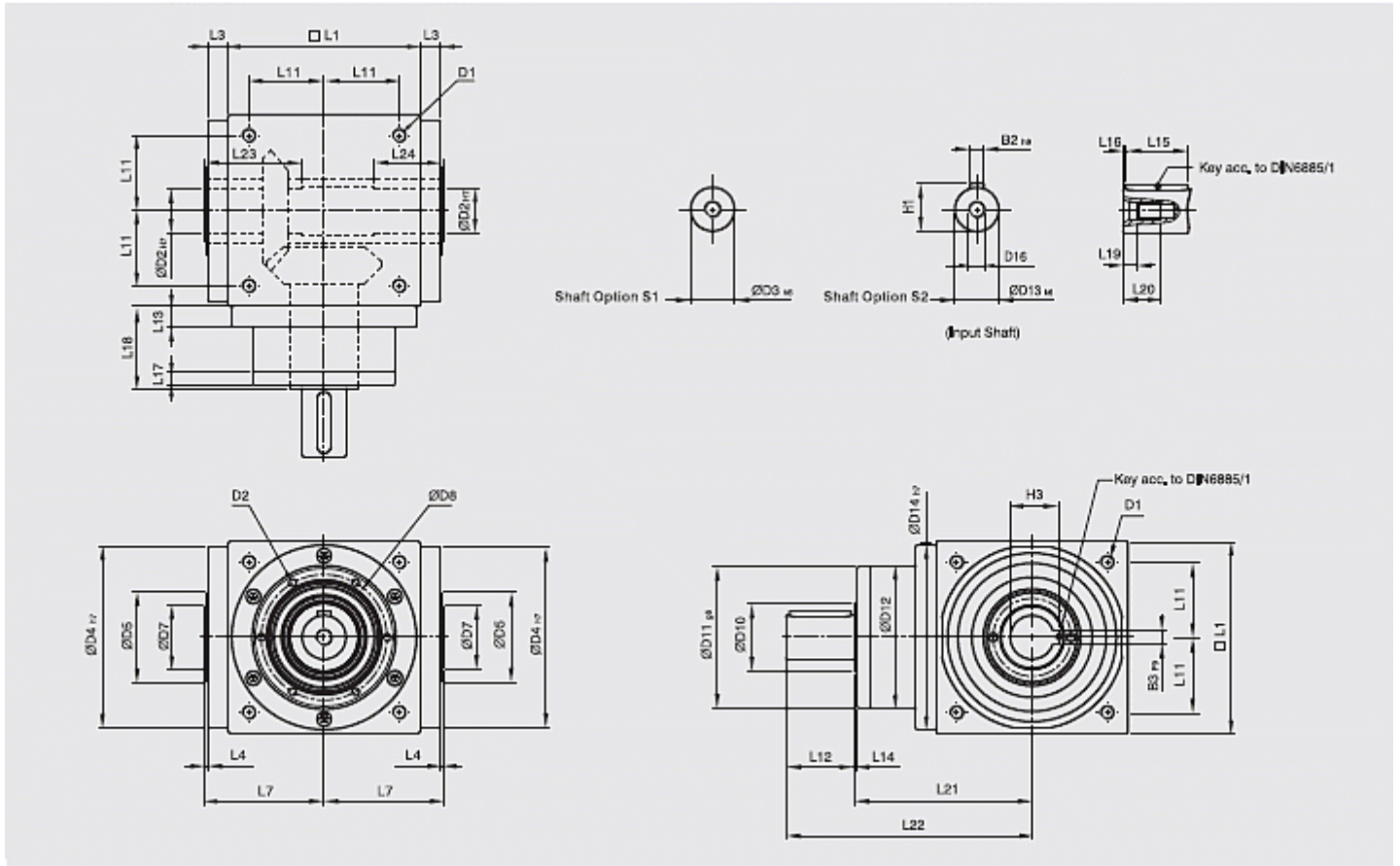


# Inertia

| Model No.                                  | Stage | Ratio <sup>1</sup> | AT065H | AT075H | AT090H | AT110H | AT140H | AT170H | AT210H | AT240H | AT280H |        |
|--|-------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Massa Moments<br>of inertia J <sub>i</sub> | 1     | kg*cm <sup>2</sup> | 1      | 0.51   | 1.30   | 3.16   | 7.70   | 23.57  | 58.99  | 195.40 | 369.34 | 799.12 |
|  |       |                    | 1.5    | 0.64   | 1.16   | 2.82   | 6.74   | 19.37  | 49.28  | 155.45 | 283.58 | 595.78 |
|  |       |                    | 2      | 0.44   | 1.11   | 2.70   | 6.31   | 17.75  | 45.35  | 140.24 | 249.74 | 511.76 |
|  |       |                    | 3      | 0.43   | 1.09   | 2.66   | 6.17   | 17.18  | 44.01  | 134.95 | 237.71 | 483.06 |
|  |       |                    | 4      | 0.43   | 1.09   | 2.65   | 6.13   | 17.06  | 43.70  | 133.58 | 234.72 | 476.26 |
|  |       |                    | 5      | 0.43   | 1.09   | 2.65   | 6.12   | 17.02  | 43.60  | 133.14 | 233.67 | 473.58 |

# Sizes

## AT-H series 1-stage



|                   | AT065H  | AT075H  | AT090H  | AT110H   | AT140H   | AT170H     | AT210H     | AT240H     | AT280H    |
|-------------------|---------|---------|---------|----------|----------|------------|------------|------------|-----------|
| D1                | M4      | M6      | M6      | M8       | M10      | M12        | M16        | M16        | M16       |
| D2 <sub>H7</sub>  | 13      | 14      | 18      | 22       | 32       | 40         | 50         | 55         | 60        |
| D4 <sub>H7</sub>  | 63      | 73      | 88      | 108      | 135      | 165        | 205        | 235        | 275       |
| D5                | 31      | 35      | 43      | 53       | 68       | 83         | 104        | 124        | 144       |
| D7                | 21      | 22      | 28      | 33       | 47       | 55         | 75         | 85         | 110       |
| D8                | 53      | 62      | 76      | 95       | 92       | 114        | 142        | 160        | 176       |
| D9                | 4xM4xL7 | 4xM5xL8 | 4xM5xL8 | 6xM6xL10 | 6xM6xL10 | 6xM8xL12.5 | 6xM8xL12.5 | 6xM8xL12.5 | 6xM10xL15 |
| D10               | 15.4    | 20.4    | 25.8    | 35.8     | 49.8     | 59.3       | 79.3       | 92.3       | 102.3     |
| D11 <sub>g6</sub> | 62.9    | 72.9    | 87      | 107      | 103      | 127        | 158        | 178        | 198       |
| D12               | 62      | 72      | 86      | 106      | 104      | 128        | 160        | 180        | 200       |
| D13 <sub>k6</sub> | 13      | 16      | 18      | 22       | 32       | 40         | 50         | 55         | 60        |
| D14 <sub>H7</sub> | 63      | 73      | 88      | 108      | 135      | 165        | 205        | 235        | 275       |
| D16               | M4      | M5      | M5      | M8       | M12      | M16        | M16        | M16        | M20       |
| L1                | 65      | 75      | 90      | 110      | 140      | 170        | 210        | 240        | 280       |
| L3                | 13      | 14.5    | 15      | 15       | 15       | 15         | 20         | 25         | 25        |
| L4                | 2       | 2       | 2       | 2        | 2        | 2          | 2          | 2          | 2         |
| L7                | 47.5    | 54      | 62      | 72       | 87       | 102        | 127        | 147        | 167       |
| L11               | 27      | 30      | 36      | 44       | 55       | 67         | 85         | 95         | 110       |

|                  |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|
| L12              | 19.5 | 30   | 35   | 40   | 50   | 60   | 75   | 85   | 110  |
| L13              | 13   | 15   | 15   | 15   | 15   | 15   | 20   | 25   | 25   |
| L14              | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| L15              | 16   | 25   | 28   | 32   | 45   | 50   | 70   | 80   | 100  |
| L16              | 2    | 2.5  | 3.5  | 4    | 2.5  | 5    | 2.5  | 2.5  | 5    |
| L17              | 6    | 8    | 8    | 8    | 10   | 10   | 10   | 10   | 10   |
| L18              | 43   | 52.5 | 55   | 60   | 60   | 70   | 90   | 105  | 120  |
| L19              | 4.5  | 4.8  | 4.8  | 7.2  | 10   | 12   | 12   | 12   | 15   |
| L20              | 10   | 12.5 | 12.5 | 19   | 28   | 36   | 36   | 36   | 42   |
| L21              | 75.5 | 90   | 100  | 115  | 130  | 155  | 195  | 225  | 260  |
| L22              | 95   | 120  | 135  | 155  | 180  | 215  | 270  | 310  | 370  |
| L23              | 40   | 47   | 55   | 60   | 70   | 80   | 95   | 115  | 130  |
| L24              | 30   | 32   | 35   | 40   | 50   | 55   | 65   | 80   | 80   |
| B2 <sub>hg</sub> | 5    | 5    | 6    | 6    | 10   | 12   | 14   | 16   | 18   |
| B3 <sub>pg</sub> | 5    | 5    | 6    | 6    | 10   | 12   | 14   | 16   | 18   |
| H2               | 15   | 18   | 20.5 | 24.5 | 35   | 43   | 53.5 | 59   | 64   |
| H3               | 15.3 | 16.3 | 20.8 | 24.8 | 35.3 | 43.3 | 53.8 | 59.3 | 64.4 |