

## High Torque Gearbox R22HT



### High Performance Delivered

The new 22mm High Torque planetary gearbox from Portescap features a full metal gearbox design and specially designed gears. The R22HT can provide up to 3.7 Nm of continuous torque and efficiency ranging from 62% to 82% with a max recommended speed of 12,000 rpm. This gearbox can also be operated above the max recommended torque and speed values for a rated power range (with limited duty cycle or time).

Based on comprehensive reliability testing, the R22HT is capable of twice the torque output of previous products. The new gearbox will be available with 2 to 4 stages and ratios ranging from 10.9:1 to 850.3:1. Due to its high power density and high efficiency, it's the ideal motion solution for battery operated tools resulting in better comfort for hand held equipment.

The R22HT is compatible with Portescap's Brush DC and Brushless DC range of 22mm to 25mm diameter motors. These gearboxes are manufactured in an ISO certified facility and are RoHS compliant.

✓ High torque  
up to 3.7Nm

✓ Efficiency  
ranging from  
62-82%

✓ Speeds up to  
12,000 RPM

### Key Features

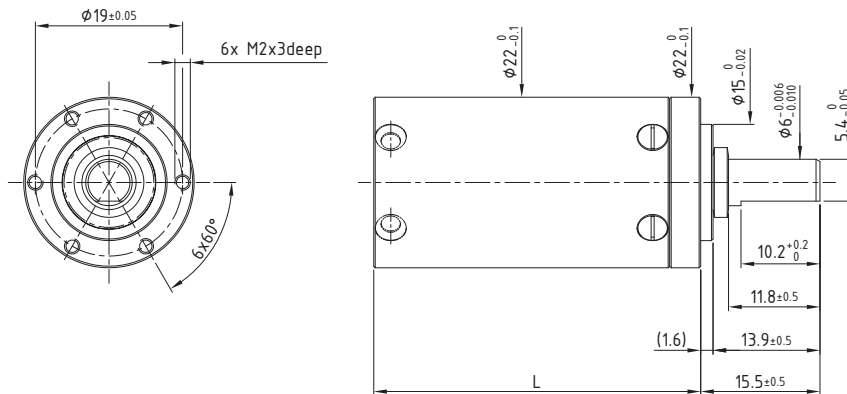
- Compact size
- Torque up to 3.7 Nm
- Max recommended speed 12,000 RPM
- 62-82% efficiency
- Modular design
- Available with 2 to 4 stages
- 65 different gear ratio combinations
- RoHS compliant

### Applications

- Power hand tools
- Lab automation
- Medical analyzers
- Valves
- Pick & place
- Material handling
- Conveyor systems
- Window ventilation actuators
- Electrical grippers
- Physiotherapy tools

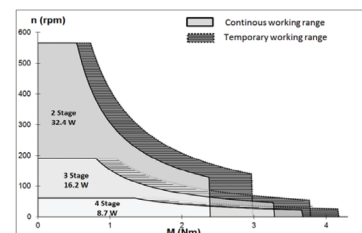
### Compatibility

- 22DCP Athlonix
- 22DCT/24DCT Athlonix
- 22NT
- 22N78/98
- 23GST
- 25GST/25GT
- 22ECP Ultra EC
- 22ECT Ultra EC



|                                                      |            |                          |               |               |               |               |               |               |               |               |
|------------------------------------------------------|------------|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Ratio                                                | ****       | 10.9                     | 16.4          | 36.5          | 61.7          | 88.8          | 120.9         | 211.4         | 294.4         | 423.9         |
|                                                      |            | 12.4                     | 17.9          | 41.2          | 63.7          | 96.7          | 136.7         | 222.6         | 316.1         | 455.2         |
|                                                      |            | 14.1                     | 19.2          | 46.6          | 67.1          | 103.8         | 154.6         | 231.2         | 320.6         | 479.5         |
|                                                      |            | 14.5                     | 20.2          | 48.2          | 72.1          | 109.4         | 159.8         | 239.0         | 333.0         | 522.1         |
|                                                      |            |                          | 23.7          | 52.7          | 75.9          | 127.9         | 174.8         | 251.8         | 344.2         | 560.6         |
|                                                      |            |                          | 29.2          | 54.5          | 78.5          | 157.5         | 180.8         | 260.3         | 362.6         | 590.5         |
|                                                      |            |                          |               | 59.4          | 84.3          |               | 196.8         | 270.3         | 369.6         | 690.4         |
|                                                      |            |                          |               |               |               |               | 197.8         | 279.5         | 389.3         | 850.3         |
|                                                      |            |                          |               |               |               |               | 204.4         | 284.8         | 410.1         |               |
| 1 Number of Gear Stages                              |            | 2                        | 2             | 3             | 3             | 3             | 4             | 4             | 4             | 4             |
| 2 Direction of Rotation                              |            | =                        | =             | =             | =             | =             | =             | =             | =             | =             |
| 3 Efficiency                                         |            | 0.82                     | 0.82          | 0.72          | 0.72          | 0.72          | 0.62          | 0.62          | 0.62          | 0.62          |
| 4 Length(L)                                          | mm         | 28.3                     | 28.3          | 35.1          | 35.1          | 35.1          | 41.9          | 41.9          | 41.9          | 41.9          |
| 5 Weight                                             | g (oz)     | 52<br>(1.834)            | 52<br>(1.834) | 66<br>(2.328) | 66<br>(2.328) | 66<br>(2.328) | 81<br>(2.857) | 81<br>(2.857) | 81<br>(2.857) | 81<br>(2.857) |
| 6 Available with Motor - L2 = Length with motor (mm) |            |                          |               |               |               |               |               |               |               |               |
| 22DCP / 22DCT / 22N78 / 24DCT                        |            | 62.7                     | 62.7          | 69.5          | 69.5          | 69.5          | 76.3          | 76.3          | 76.3          | 76.3          |
| 22NT82                                               |            | 62.5                     | 62.5          | 69.3          | 69.3          | 69.3          | 76.1          | 76.1          | 76.1          | 76.1          |
| 22N98                                                |            | 64.6                     | 64.6          | 71.4          | 71.4          | 71.4          | 78.2          | 78.2          | 78.2          | 78.2          |
| 23GST2R                                              |            | 68.7                     | 68.7          | 75.5          | 75.5          | 75.5          | 82.3          | 82.3          | 82.3          | 82.3          |
| 25GT2R                                               |            | 84.2                     | 84.2          | 91            | 91            | 91            | 97.8          | 97.8          | 97.8          | 97.8          |
| 25GST2R                                              |            | 74.2                     | 74.2          | 81            | 81            | 81            | 87.8          | 87.8          | 87.8          | 87.8          |
| 22ECP45                                              |            | 73.3                     | 73.3          | 80.1          | 80.1          | 80.1          | 86.9          | 86.9          | 86.9          | 86.9          |
| 22ECP60 / 22ECT60                                    |            | 88.3                     | 88.3          | 95.1          | 95.1          | 95.1          | 101.9         | 101.9         | 101.9         | 101.9         |
| 22ECT82                                              |            | 110.3                    | 110.3         | 117.1         | 117.1         | 117.1         | 123.9         | 123.9         | 123.9         | 123.9         |
| Characteristics                                      |            | R22HT 2R . 0 .           |               |               |               |               |               |               |               |               |
| 7 Shaft Bearings                                     |            | Ball Bearing             |               |               |               |               |               |               |               |               |
| 8 Max. Continuous Torque                             | Nm (oz-in) | 2.4<br>(340)             | 2.4<br>(340)  | 3.3<br>(467)  | 3.3<br>(467)  | 3.3<br>(467)  | 3.7<br>(524)  | 3.7<br>(524)  | 3.7<br>(524)  | 3.7<br>(524)  |
| 9 Max. Continuous Power                              | W          | 32.4                     | 32.4          | 16.2          | 16.2          | 16.2          | 8.7           | 8.7           | 8.7           | 8.7           |
| 10 Maximum Static Torque                             | Nm (oz-in) | 3<br>(425)               | 3<br>(425)    | 3.8<br>(538)  | 3.8<br>(538)  | 3.8<br>(538)  | 4.2<br>(595)  | 4.2<br>(595)  | 4.2<br>(595)  | 4.2<br>(595)  |
| 11 Maximum Radial Force                              |            |                          |               |               |               |               |               |               |               |               |
| @ 10mm from mounting face                            | N (lb)     | 150 (33.7)               |               |               |               |               |               |               |               |               |
| 12 Maximum Axial Force                               | N (lb)     | 100 (22.4)               |               |               |               |               |               |               |               |               |
| 13 Maximum Press Fit Force                           | N (lb)     | 120 (26.9)               |               |               |               |               |               |               |               |               |
| 14 Average Backlash @ no-load                        | (deg)      | 1.2°                     | 1.2°          | 1.6°          | 1.6°          | 1.6°          | 1.9°          | 1.9°          | 1.9°          | 1.9°          |
| 15 Shaft Play:                                       |            |                          |               |               |               |               |               |               |               |               |
| -Radial (@ 10mm from flange)                         | µm         | ≤ 200                    |               |               |               |               |               |               |               |               |
| -Axial                                               | µm         | <30                      |               |               |               |               |               |               |               |               |
| 16 Maximum Recommended Input Speed                   | rpm        | 12000                    |               |               |               |               |               |               |               |               |
| 17 Operating Temperature Range:                      | °C (°F)    | -30 to +85 (-22 to +185) |               |               |               |               |               |               |               |               |

## Motor + gearbox = L2



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