DINGS'

Precision Motion Specialist

# HYBRID ROTARY STEPPER MOTOR

## PRODUCT CATALOG

Jiangsu DINGS' Intelligent Control Technology Co., Ltd.

DINGS'
Precision Motion Specialist

DINGS' provides 8 different sizes of hybrid stepper motors from 14mm to 86mm.
Each size has multiple stack lengths. Single or dual shaft is standard but customized shaft options are also available.
DINGS' can customize all range of hybrid stepper motors as encoder ready for general motion solution providers and also encoder housing, special machining of front and rear shafts, special cables, wire harness assemblies and other solutions are available.

According to customer's requirements, we can adopt certain range of gearboxes, encoders, connectors and cables too. In addition, various ratio of planetary gearboxes, DINGS' standard encoders and power-off brakes, IP Protection is optional.

# Hybrid Rotary Stepper

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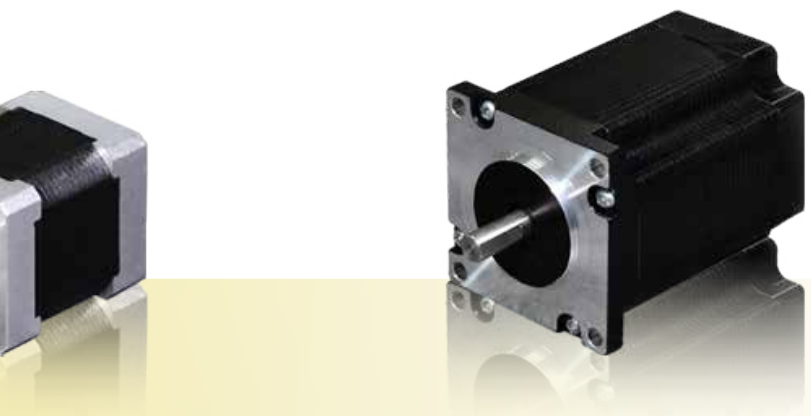
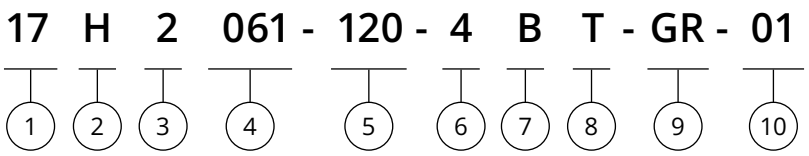


# Motor

# Part Number Construction




① Motor Size

| Motor Size (mm) | 14 | 20 | 28 | 35 | 42 | 57 | 60 | 86 |
|---|---|---|---|---|---|---|---|---|
| Motor Size (NEMA) | 6 | 8 | 11 | 14 | 17 | 23 | 24 | 34 |

② Basic Structure

H = Normal

P = IP54

W = Enhanced

*For IP65, please contact DINGS' for more information

③ Motor Step Angle (°)

1 = 3°

2 = 1.8°

3 = 1.2°

4 = 0.9°

5 = 0.72°

6 = 0.36°

④ Motor Length (mm)

⑤ Rated Current

XXX = Rated current ×100 (A)

⑥ Wiring Number (3,4,5,6,8)

⑦ Shaft Configuration

A = Single shaft

B = Dual shaft

* Shaft dimension and D-Cut customization, please contact DINGS'

⑧ Wiring Method

L = Flying lead wire

T = Integrated connector

C = Cable

* If customer has special requirement for connector and cable, please inform DINGS'

⑨ Option

GR = Planetary gearbox ready

BR = Brake ready

ER = Encoder ready

PG = Planetary gearbox

Refers to the part number of gearbox with ratio

DG = DINGS' gearbox

FB = Power off brake, NB = Power on brake

EKX = Encoder [X = Encoder Resolution]

*DINGS' can customize shafts and covers to be ready to assemble Gearbox, Brake or Encoder by customers, according to customer's requirements by drawing.

*DINGS' has standard planetary gearbox options. Please see product details.

*Power-Off Brake is available for Motor size 28, 35, 42, 57 and 60mm

⑩ Customer Sequence Number

Example

| | |
|---|---|
| Naming code | 17H2061-120-4BT-GR-01 |
| Description | Size 42 mm<br>Normal structure<br>Step angle 1.8°<br>Motor body length 61 mm<br>Rated current 1.2 A<br>4 wiring leads<br>Dual shaft<br>Wiring method integrated connector<br>Gearbox ready<br>Customization sequence code 01 |

# Product Overview

| Part Number | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Motor Length (mm) | Mass (g) |
|---|---|---|---|---|---|---|---|
| 6H2030 | 0.3 | 23 | 4.5 | 0.005 | 1.5 | 32 | 35 |
| 8H2028 | 0.5 | 5.1 | 1.5 | 0.014 | 2.7 | 27 | 60 |
| 8H2038 | 0.5 | 8.8 | 2.7 | 0.02 | 3.3 | 38.2 | 80 |
| 11H2033 | 1 | 2.1 | 1.2 | 0.06 | 9 | 33.5 | 110 |
| 11H2045 | 1 | 4.1 | 3.2 | 0.1 | 13 | 45 | 200 |
| 11H2052 | 1 | 4.7 | 3.9 | 0.14 | 18 | 52 | 280 |
| 14H2027 | 0.5 | 9.2 | 7.4 | 0.1 | 12 | 27 | 150 |
| 14H2037 | 1.5 | 1.65 | 2.1 | 0.2 | 20 | 37 | 210 |
| 14H2052 | 1.5 | 2.65 | 4.1 | 0.4 | 35 | 52 | 250 |
| 17H2031 | 1.2 | 1.7 | 2.3 | 0.16 | 23 | 31 | 200 |
| 17H2034 | 1.2 | 2.1 | 2.7 | 0.25 | 25 | 34 | 230 |
| 17H2041 | 1.2 | 2.4 | 4.7 | 0.4 | 54 | 41 | 300 |
| 17H2049 | 2 | 1.3 | 2 | 0.48 | 77 | 49 | 360 |
| 17H2061 | 2 | 1.7 | 3.6 | 0.72 | 110 | 61 | 500 |
| 23H2042 | 1 | 4.2 | 9 | 0.6 | 140 | 42 | 460 |
| 23H2045 | 1 | 4.5 | 12 | 0.8 | 180 | 45 | 520 |
| 23H2051 | 2 | 1.5 | 4.4 | 1 | 240 | 51 | 640 |
| 23H2055 | 2 | 1.6 | 5.2 | 1.2 | 280 | 55 | 720 |
| 23H2065 | 3 | 0.9 | 2.7 | 1.6 | 350 | 65 | 860 |
| 23H2076 | 4 | 0.6 | 2.4 | 2 | 480 | 76 | 1060 |
| 23H2100 | 5 | 0.46 | 2.3 | 3 | 720 | 100 | 1500 |
| 24H2047 | 2 | 1.5 | 3.4 | 1 | 240 | 47 | 600 |
| 24H2056 | 3 | 0.8 | 2.3 | 1.5 | 340 | 56 | 800 |
| 24H2068 | 4 | 0.6 | 1.9 | 2.1 | 490 | 68 | 1000 |
| 24H2085 | 5 | 0.4 | 1.8 | 3 | 690 | 85 | 1300 |
| 34H2060 | 3 | 1 | 6 | 3 | 1100 | 60.5 | 1600 |
| 34H2075 | 4.5 | 0.6 | 4.2 | 4.5 | 1800 | 75 | 2100 |
| 34H2098 | 6 | 0.5 | 4 | 7 | 2800 | 96.5 | 2900 |

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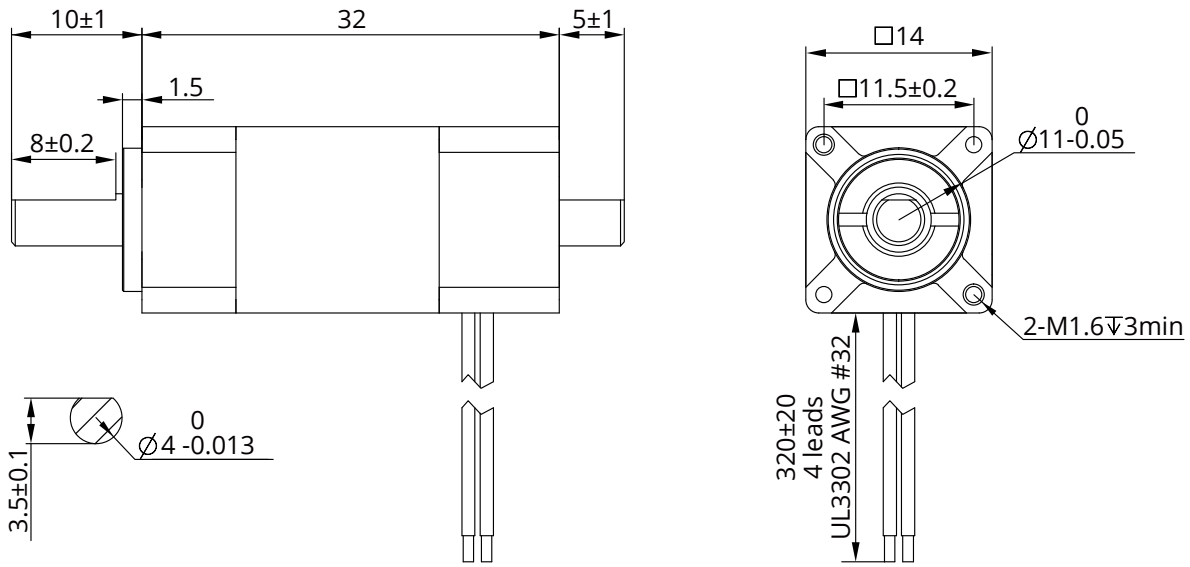
# Size 6 (14mm) Series

The size 6 [14mm] which is smallest hybrid rotary stepper motor from DINGS' has Max. 0.005N·m of holding torque.

## Parameters

| General | | | | | | | |
|---|---|---|---|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | | | | | |
| | Resistance | ±10% / 20 C | | | | | |
| | Inductance | ±20% / 1KHz | | | | | |
| Insulation class | | B | | | | | |
| Duty type | | S1 | | | | | |
| Dielectrical strength | | 250 VAC / 1 KHz / 1 mA / 1 s | | | | | |
| Insulation resistance | | 100 MΩ / 500 VDC | | | | | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) | | | | |
| 15N | 12N | 8N | 6N | | | | |
| Parameter | | | | | | | |
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 6H2030 | 0.3 | 23 | 4.5 | 0.005 | 1.5 | 32 | 35 |
| Material | | | | | | | |
| End bell | | Aluminum alloy | | | | | |
| Bearing | | Deep groove ball bearing | | | | | |
| Magnet | | Sintered NdFeb | | | | | |
| Shaft | | Stainless steel | | | | | |
| Wiring | | UL 3135,30 AWG | | | | | |

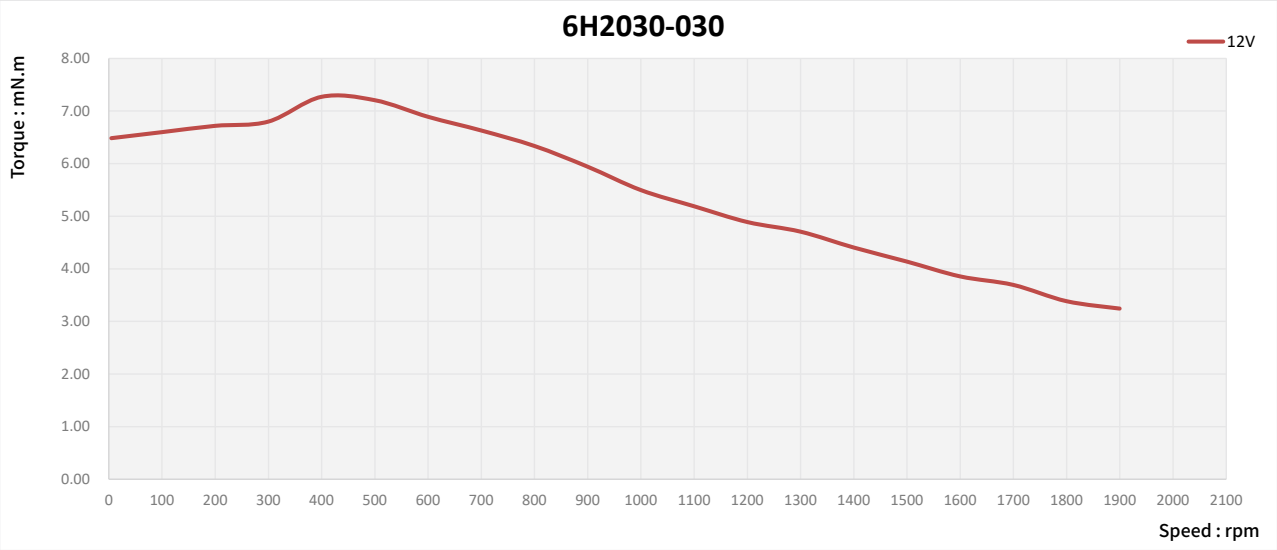
## Dimensional Drawings




Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

# Size 6 (14mm) Series

## Tourque Performance Curves



# Size 8 (20mm) Series

The size 8 [20mm] Hybrid Rotary Stepper Motor has Max. 0.02N·m of holding torque.
Encoders and 22mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

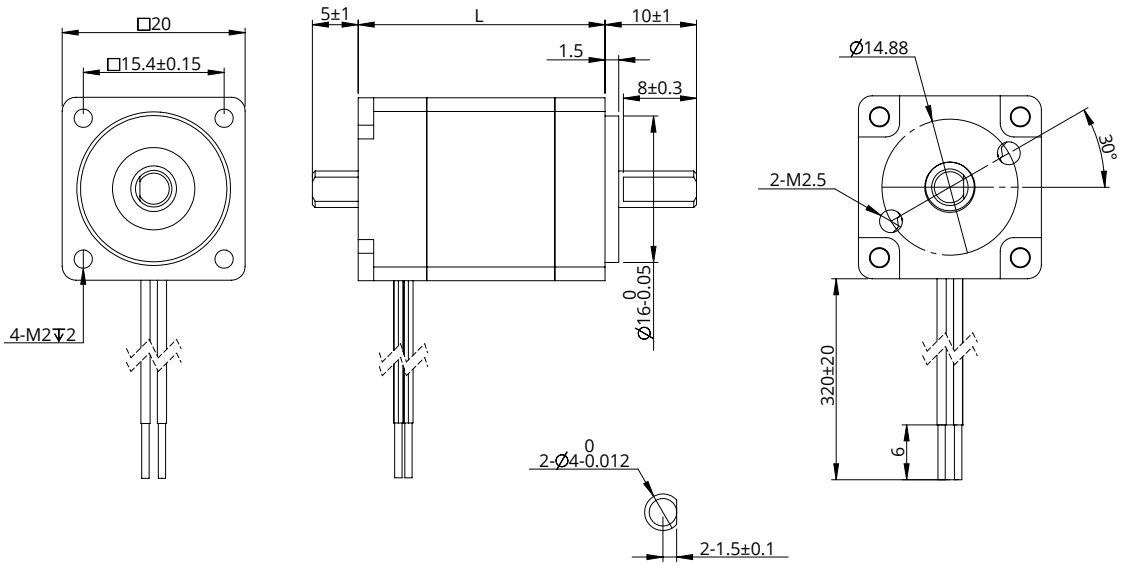
## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 15N | 12N | 8N | 6N |

| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 8H2028 | 0.5 | 5.1 | 1.5 | 0.014 | 2.7 | 27 | 60 |
| 8H2038 | 0.5 | 8.8 | 2.7 | 0.02 | 3.3 | 38.2 | 80 |

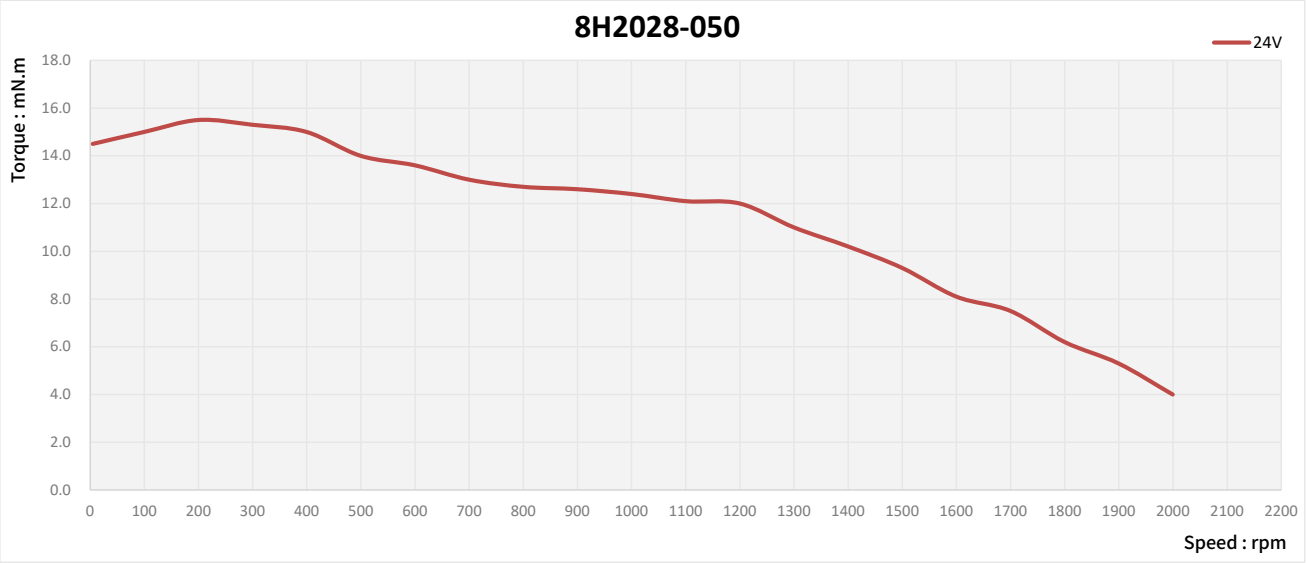
| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 28AWG |

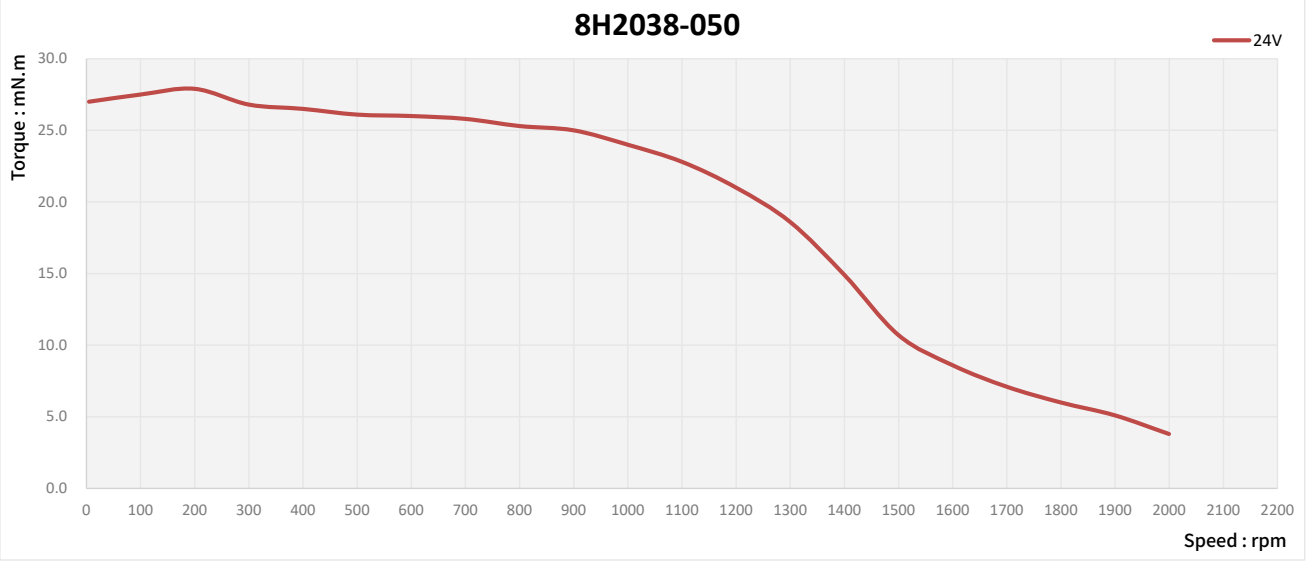
## Dimensional Drawings




Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

## Tourque Performance Curves



# Size 11 (28mm) Series

The size 11 [28mm] Hybrid Rotary Stepper Motor has Max. 0.14N·m of holding torque.
Encoders and 28mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

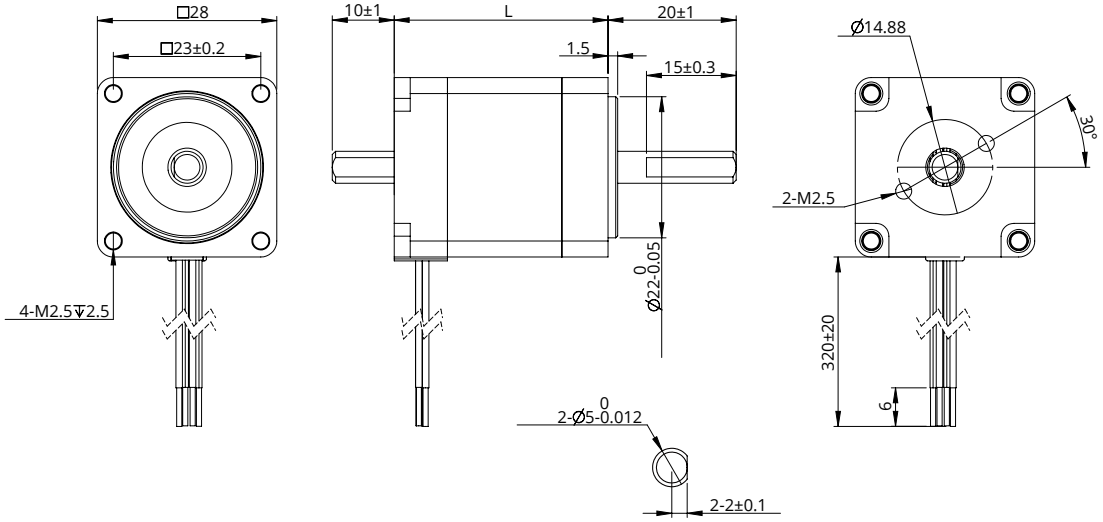
## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 50N | 35N | 25N | 20N |

| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 11H2033 | 1 | 2.1 | 1.2 | 0.06 | 9 | 33.5 | 110 |
| 11H2045 | 1 | 4.1 | 3.2 | 0.1 | 13 | 45 | 200 |
| 11H2052 | 1 | 4.7 | 3.9 | 0.14 | 18 | 52 | 280 |

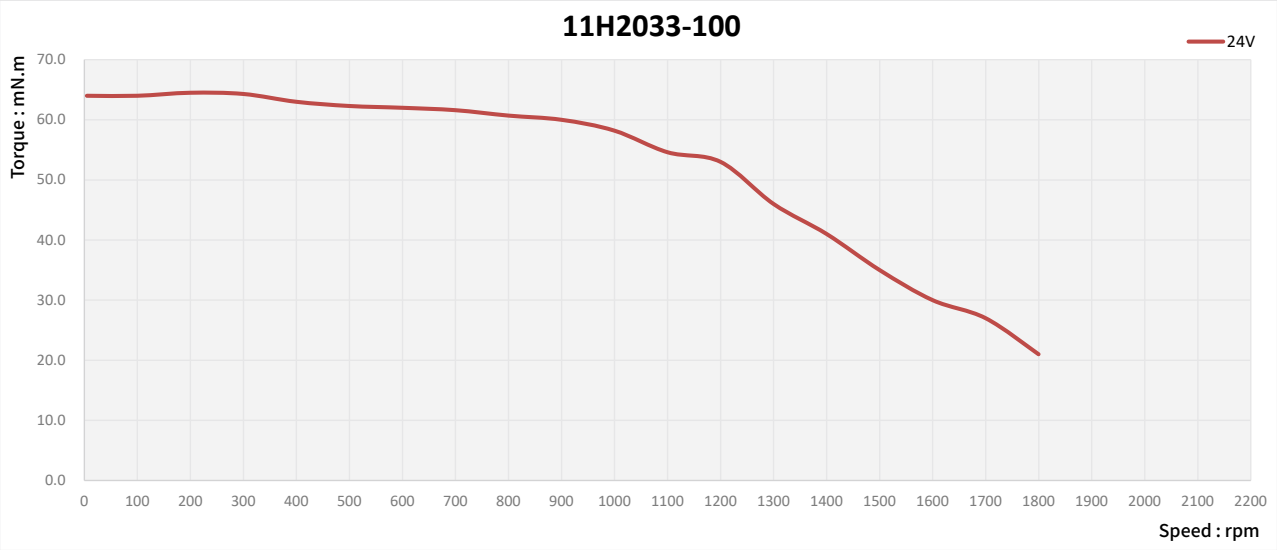
| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 26AWG |

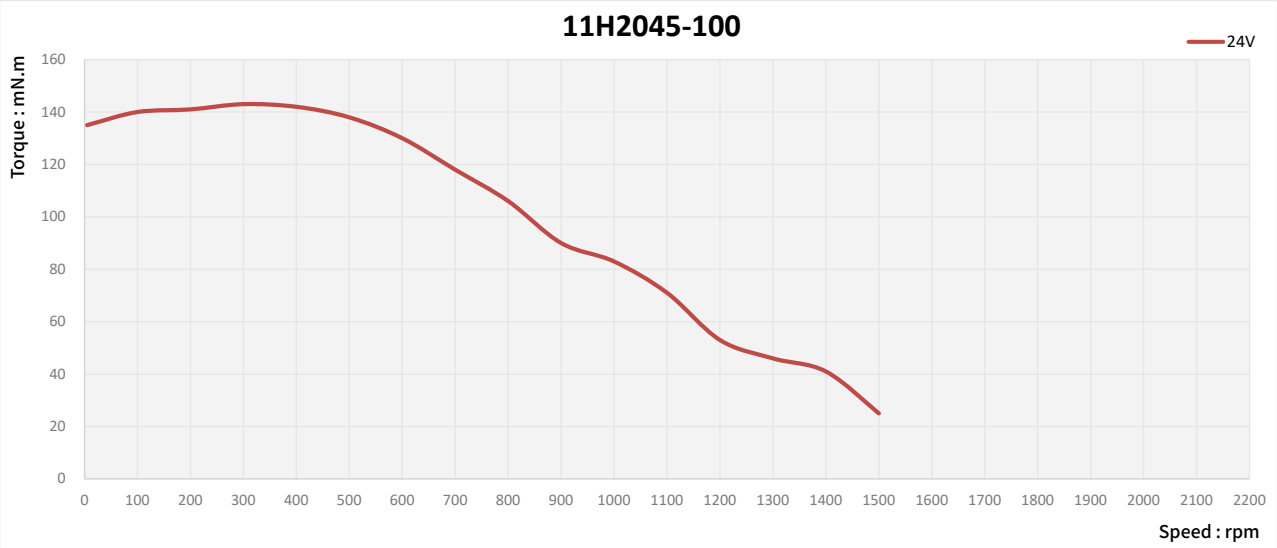
## Dimensional Drawings

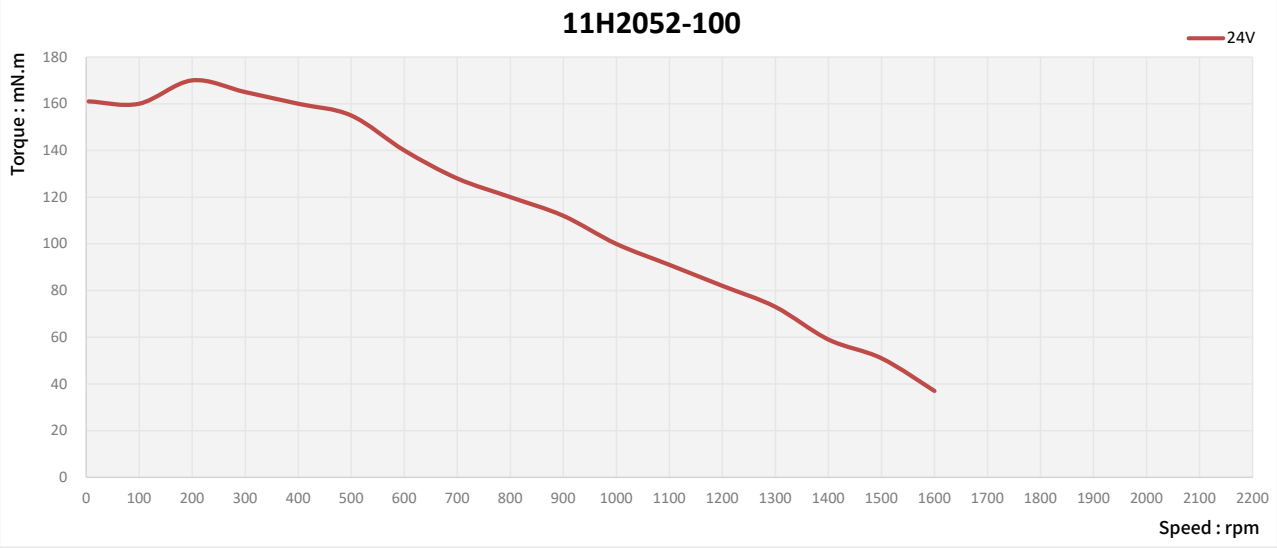



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

## Tourque Performance Curves



# Size 14 (35mm) Series

The size 14 [35mm] Hybrid Rotary Stepper Motor has Max. 0.4N·m of holding torque.
Encoders and 32mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

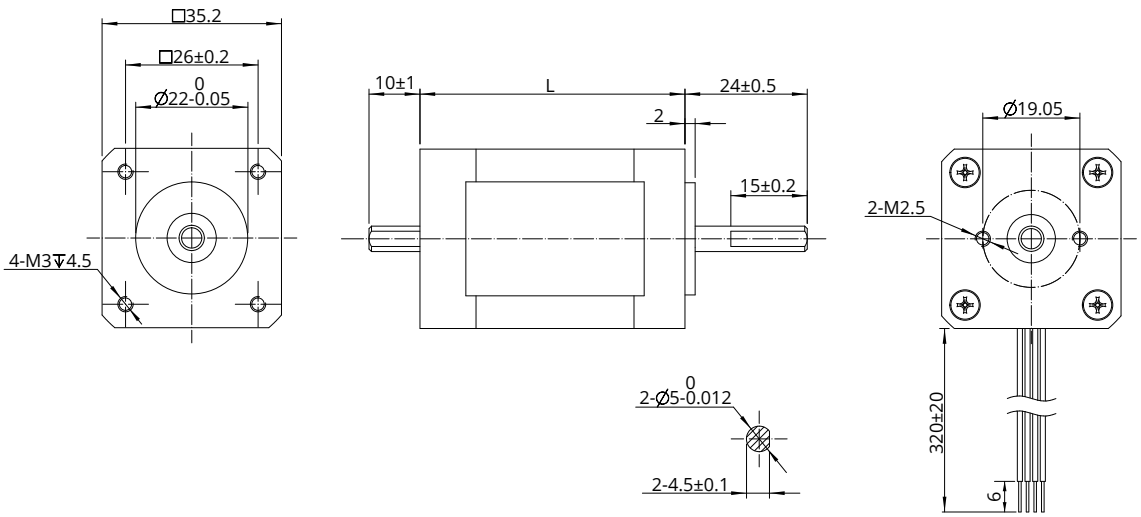
## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 50N | 40N | 25N | 20N |

| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 14H2027 | 0.5 | 9.2 | 7.4 | 0.1 | 12 | 27 | 150 |
| 14H2037 | 1.5 | 1.65 | 2.1 | 0.2 | 20 | 37 | 210 |
| 14H2052 | 1.5 | 2.65 | 4.1 | 0.4 | 35 | 52 | 250 |

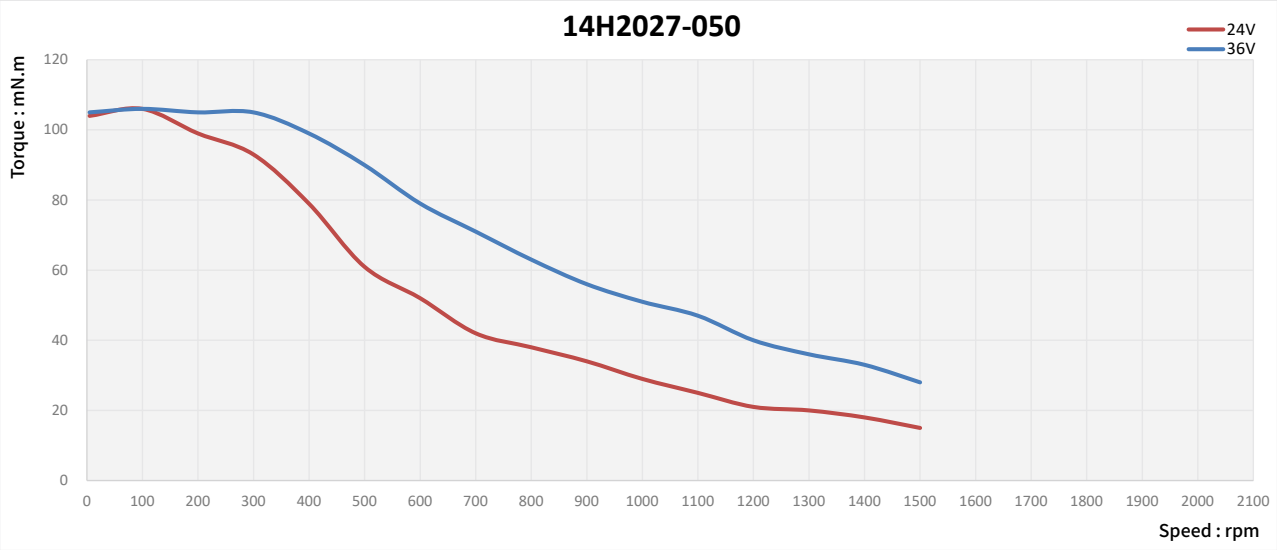
| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 26AWG |

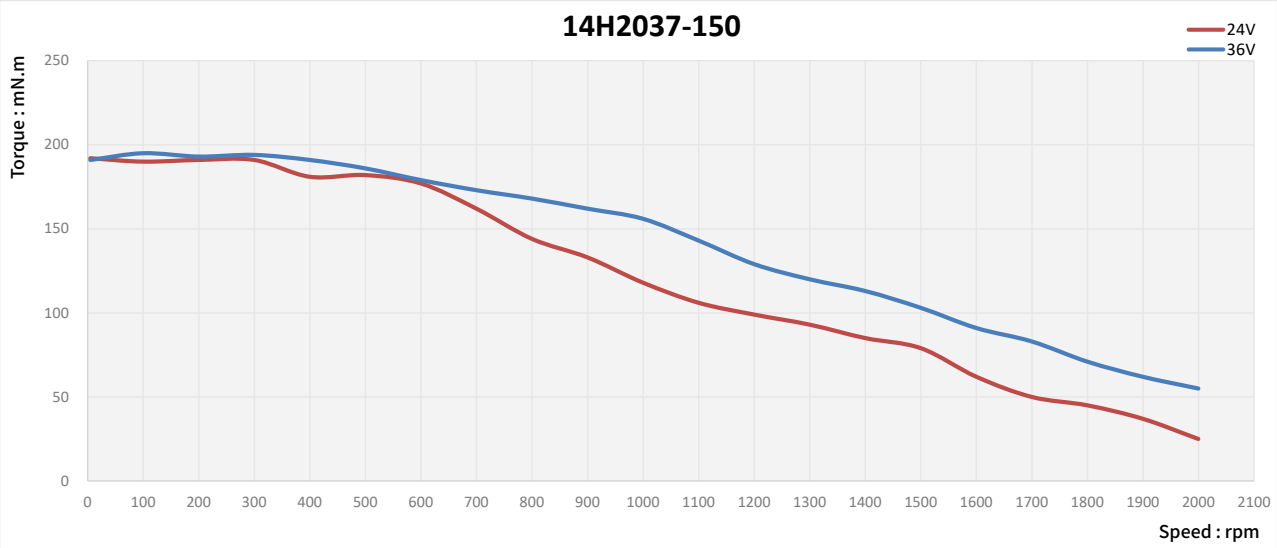
## Dimensional Drawings

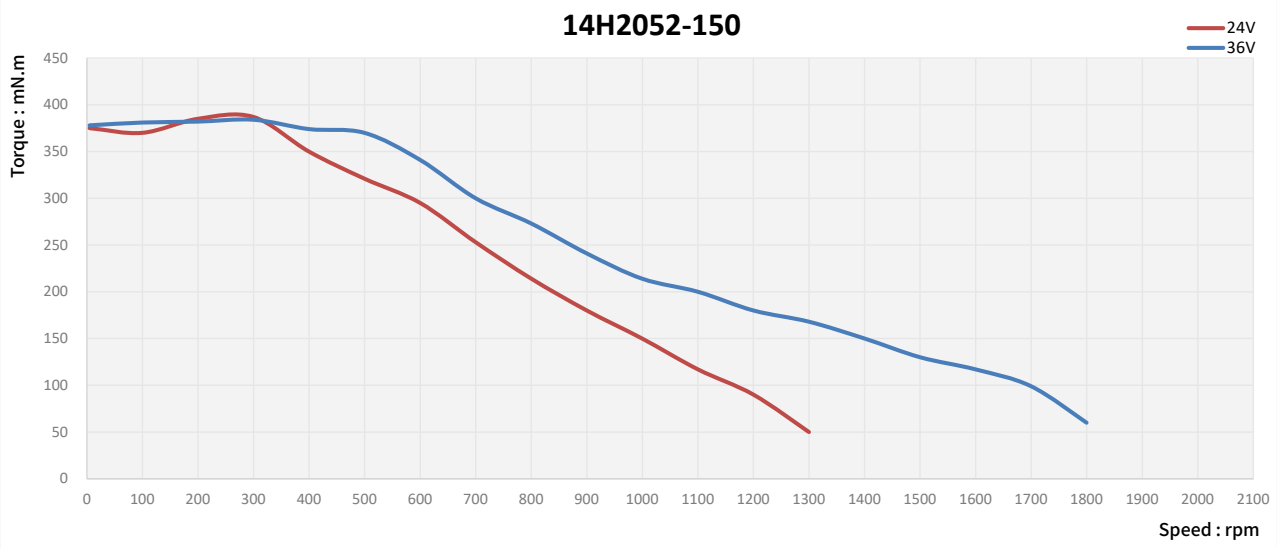



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

## Tourque Performance Curves



# Size 17 (42mm) Series

The size 17 [42mm] Hybrid Rotary Stepper Motor has Max. 0.72N·m of holding torque.
Encoders and 42mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

## Parameters

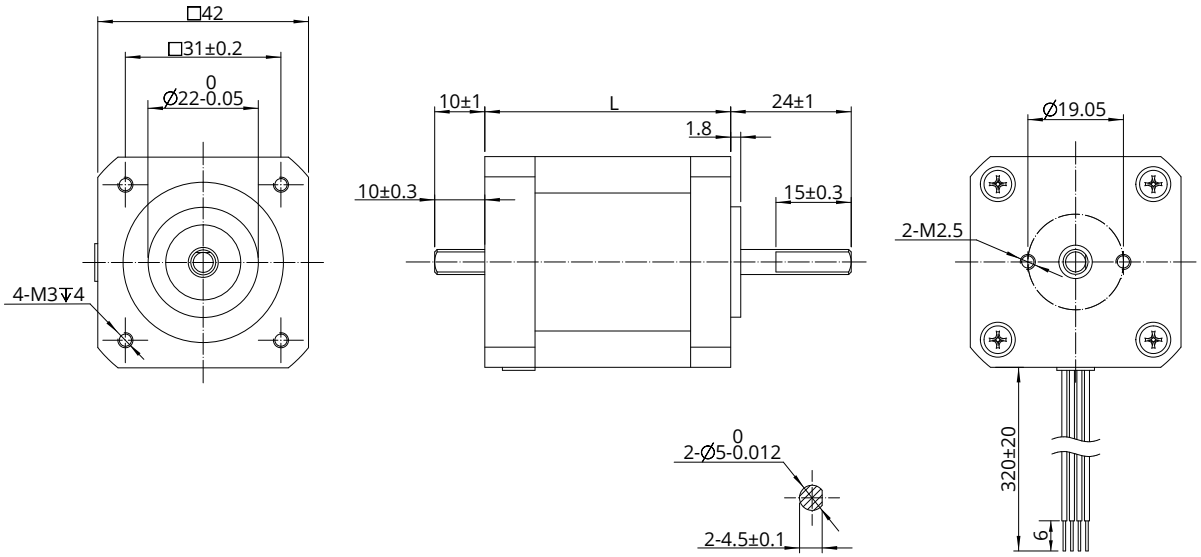
| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 50N | 40N | 25N | 20N |

| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia ($g·cm^2$) | Length (mm) | Mass (g) |
| 17H2031 | 1.2 | 1.7 | 2.3 | 0.16 | 23 | 31 | 200 |
| 17H2034 | 1.2 | 2.1 | 2.7 | 0.25 | 25 | 34 | 230 |
| 17H2041 | 1.2 | 2.4 | 4.7 | 0.4 | 54 | 41 | 300 |
| 17H2049 | 2 | 1.3 | 2 | 0.48 | 77 | 49 | 360 |
| 17H2061 | 2 | 1.7 | 3.6 | 0.72 | 110 | 61 | 500 |

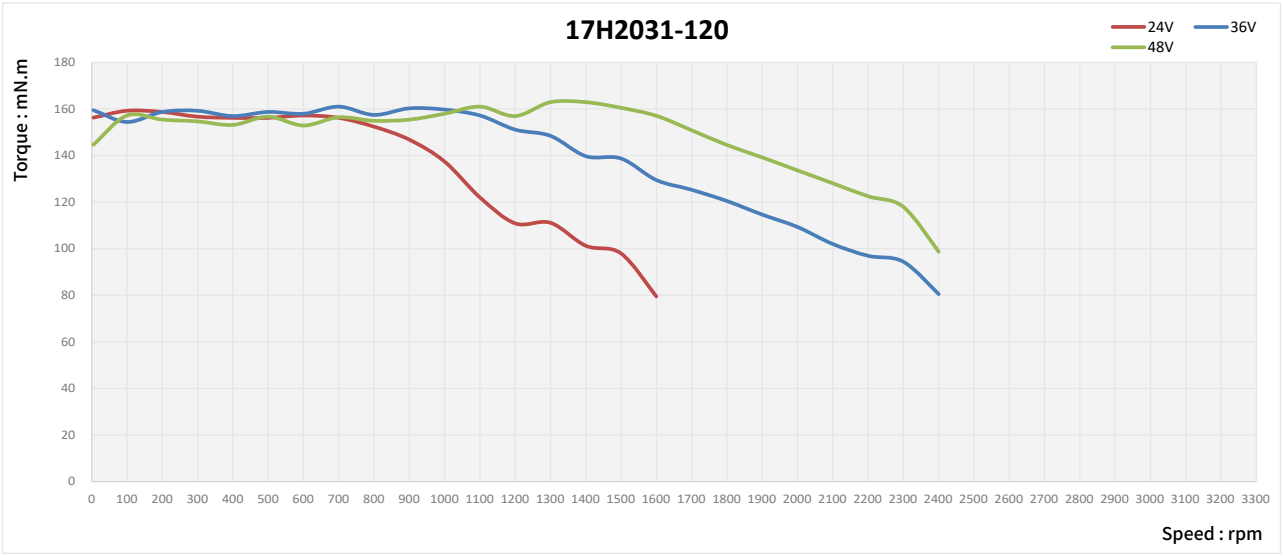
| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 26 / 24AWG |

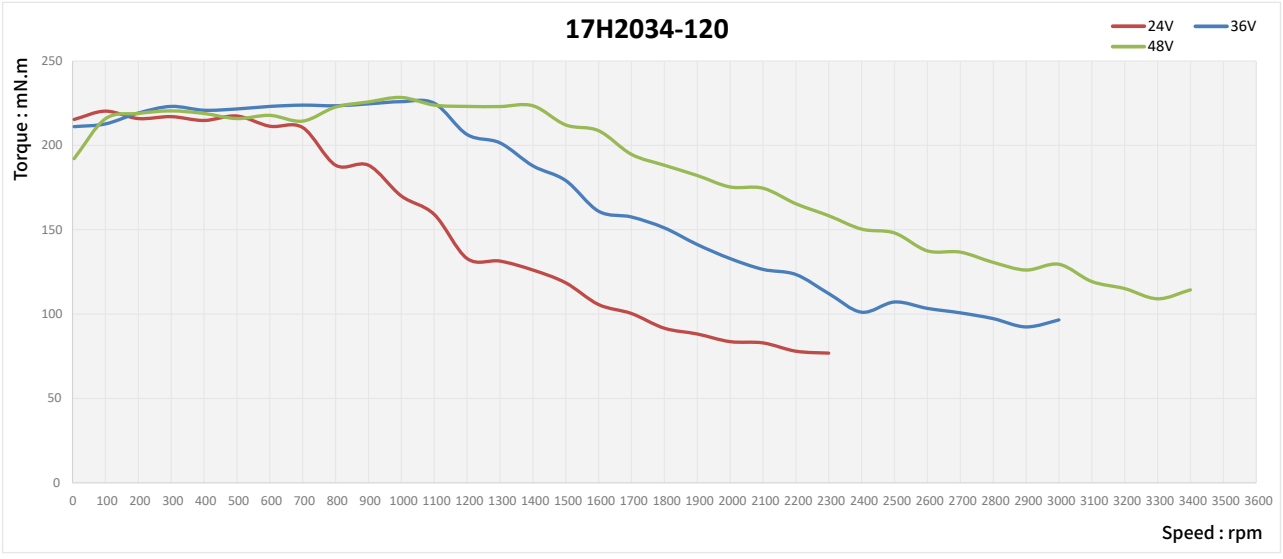
For stroke customization, please contact DINGS' or local representative.

## Dimensional Drawings



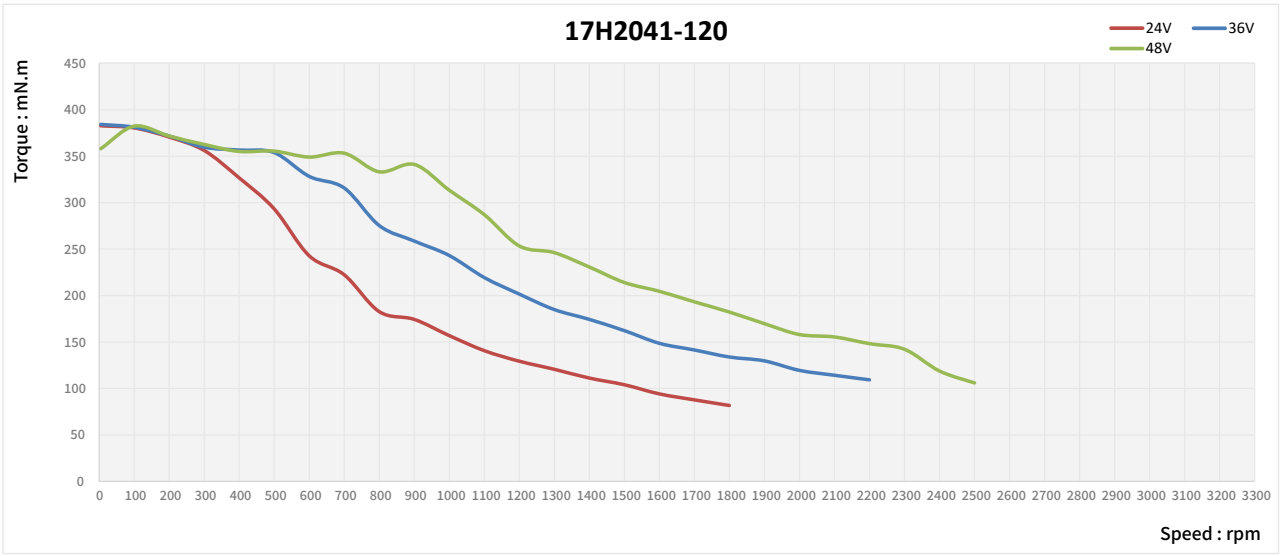

## Tourque Performance Curves

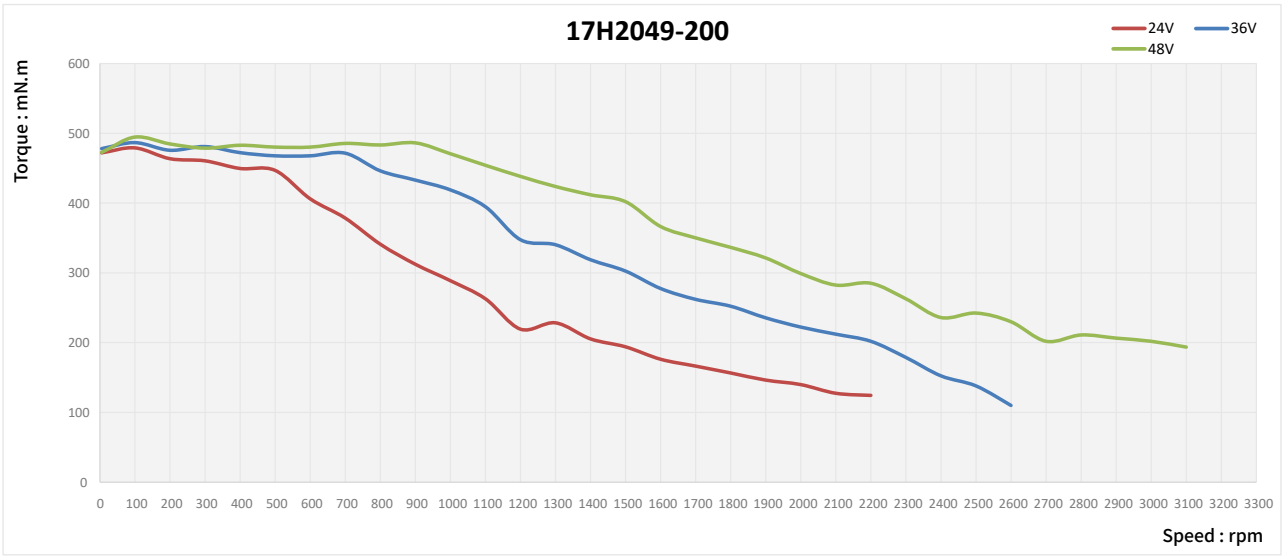



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

# Size 17 (42mm) Series




# Size 23 (57mm) Series

The size 23 [57mm] Hybrid Rotary Stepper Motor has Max. 3.0N·m of holding torque.
Encoders and 57mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 180N | 130N | 100N | 90N |

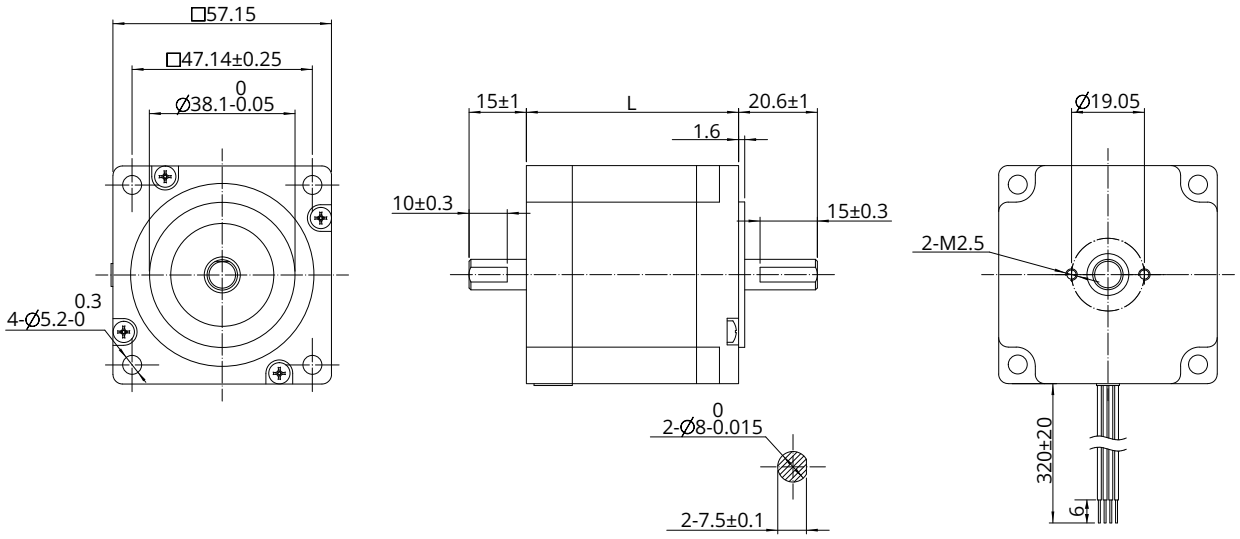
| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 23H2042 | 1 | 4.2 | 9 | 0.6 | 140 | 42 | 460 |
| 23H2045 | 1 | 4.5 | 12 | 0.8 | 180 | 45 | 520 |
| 23H2051 | 2 | 1.5 | 4.4 | 1 | 240 | 51 | 640 |
| 23H2055 | 2 | 1.6 | 5.2 | 1.2 | 280 | 55 | 720 |
| 23H2065 | 3 | 0.9 | 2.7 | 1.6 | 350 | 65 | 860 |
| 23H2076 | 4 | 0.6 | 2.4 | 2 | 480 | 76 | 1060 |
| 23H2100 | 5 | 0.46 | 2.3 | 3 | 720 | 100 | 1500 |

| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 22 / 20AWG |

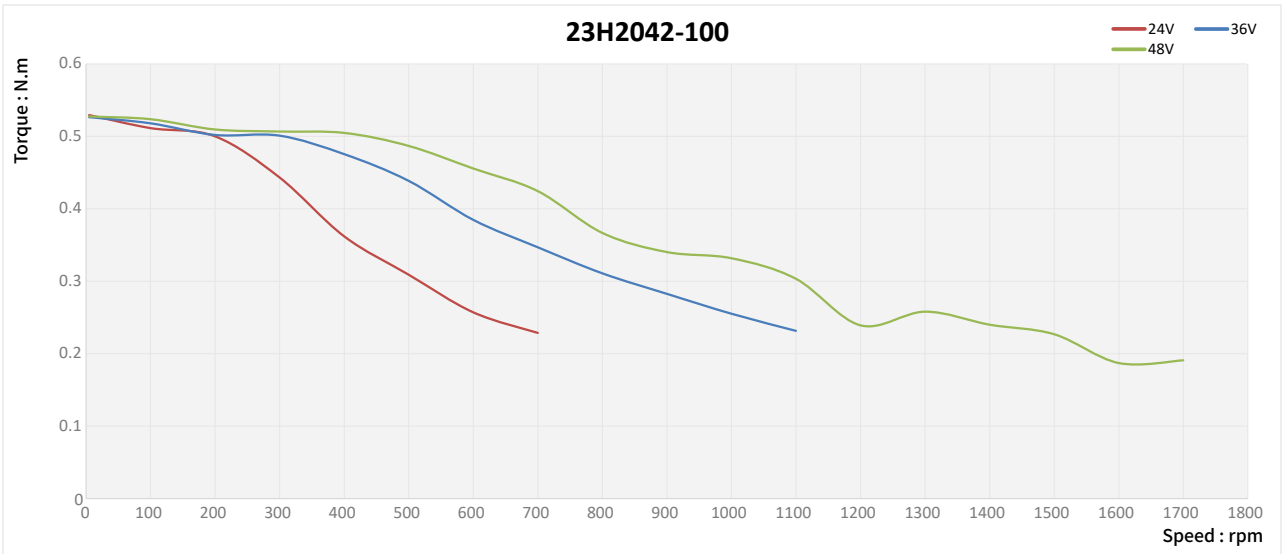
For stroke customization, please contact DINGS' or local representative.

# Size 23 (57mm) Series

## Dimensional Drawings

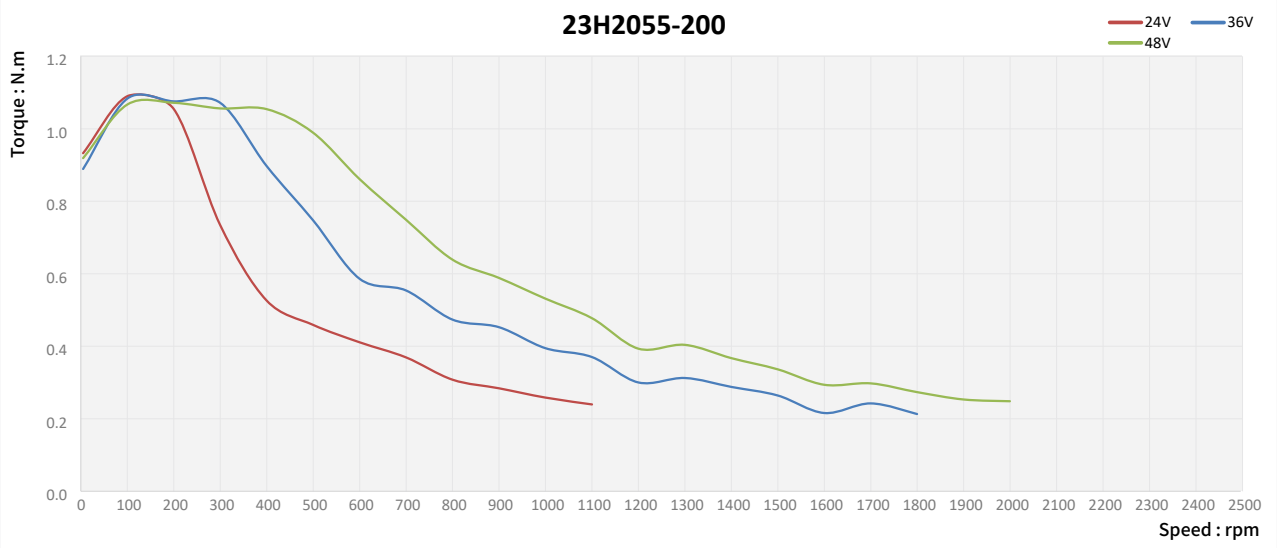


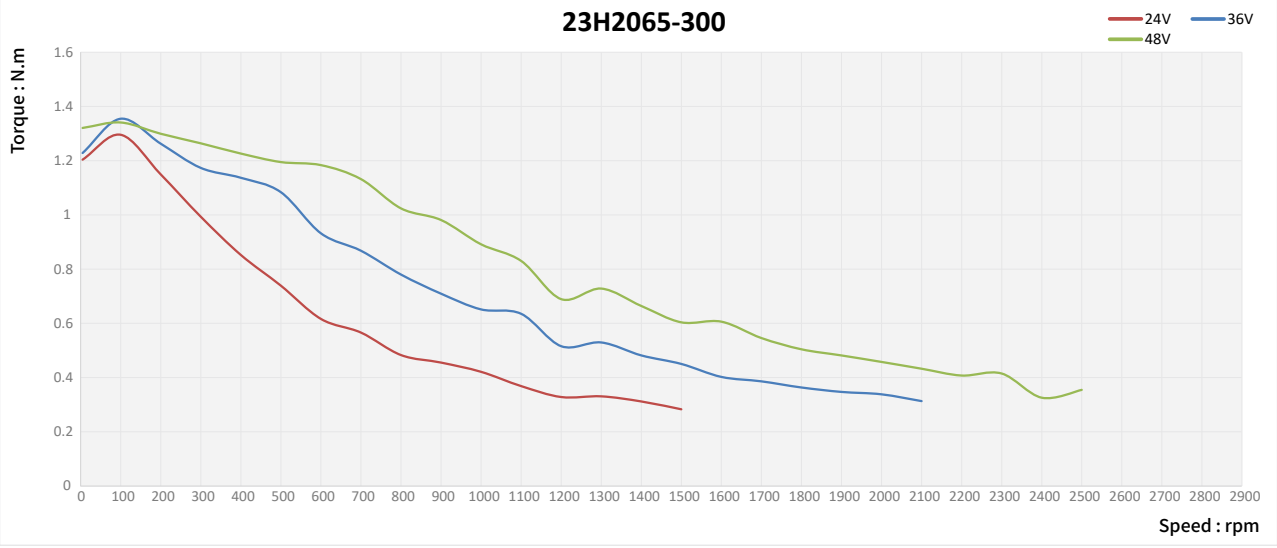

## Tourque Performance Curves



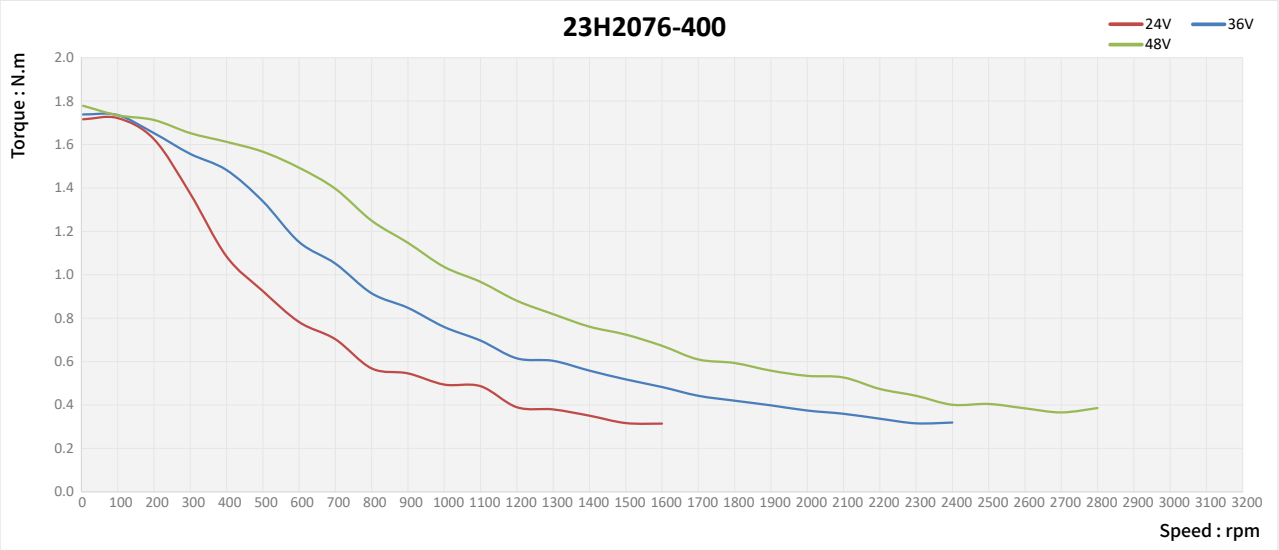


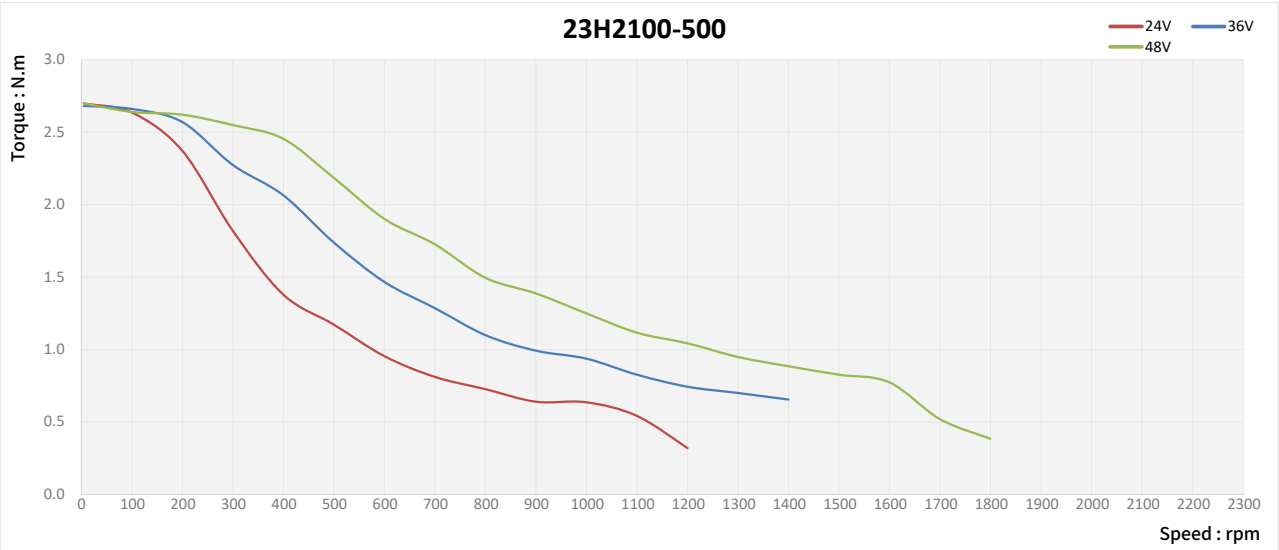
23H2051-200
24V
36V
48V
Torque : N.m
1.2
1
0.8
0.6
0.4
0.2
0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800
Speed : rpm


23H2055-200
24V
36V
48V
Torque : N.m
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
Speed : rpm


23H2065-300
24V
36V
48V
Torque : N.m
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600 2700 2800 2900
Speed : rpm

# Size 23 (57mm) Series




Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

# Size 24 (60mm) Series

The size 24 [60mm] Hybrid Rotary Stepper Motor has Max. 3.0N·m of holding torque.
Encoders and 60mm frame planetary gearbox solutions are available.
For special windings or customization, Please contact DINGS' for further information.

## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 210N | 170N | 140N | 120N |

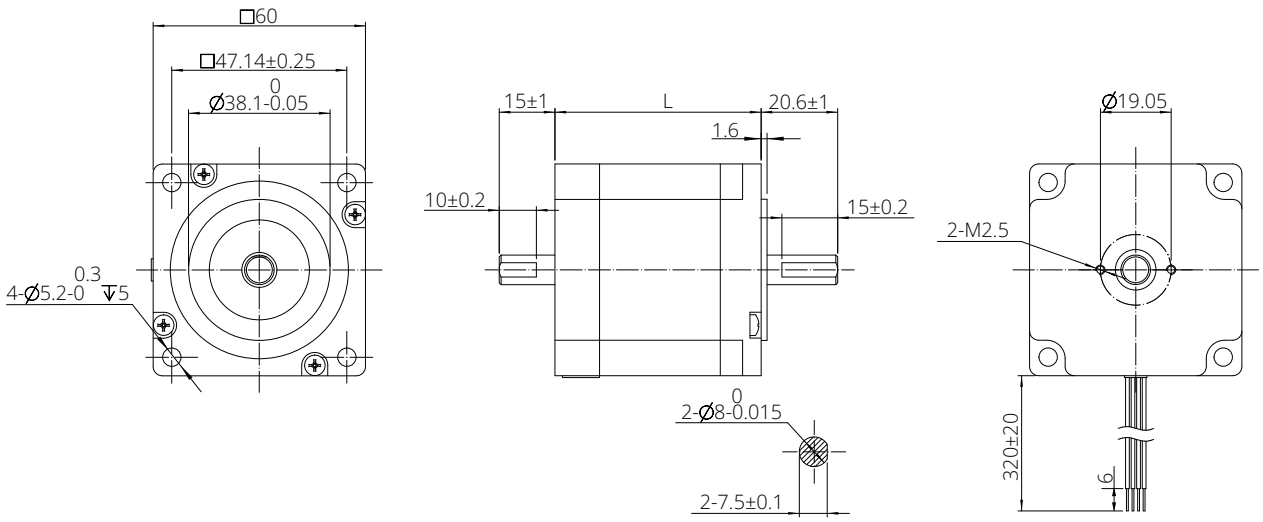
| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 24H2047 | 2 | 1.5 | 3.4 | 1 | 240 | 47 | 600 |
| 24H2056 | 3 | 0.8 | 2.3 | 1.5 | 340 | 56 | 800 |
| 24H2068 | 4 | 0.6 | 1.9 | 2.1 | 490 | 68 | 1000 |
| 24H2085 | 5 | 0.4 | 1.8 | 3 | 690 | 85 | 1300 |

| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 20 / 22AWG |

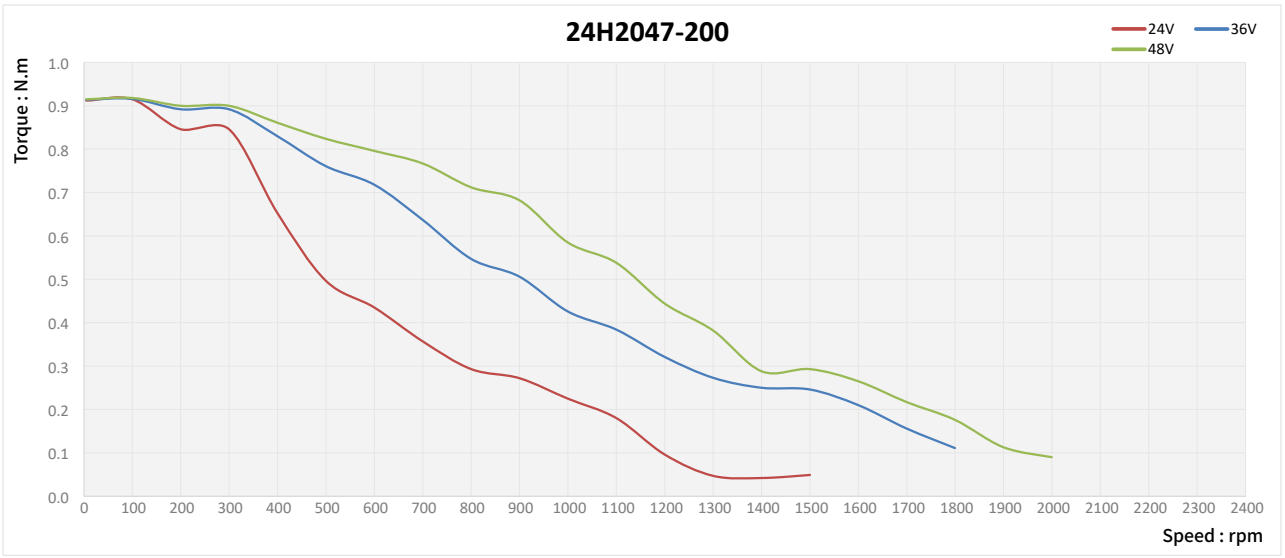
For stroke customization, please contact DINGS' or local representative.

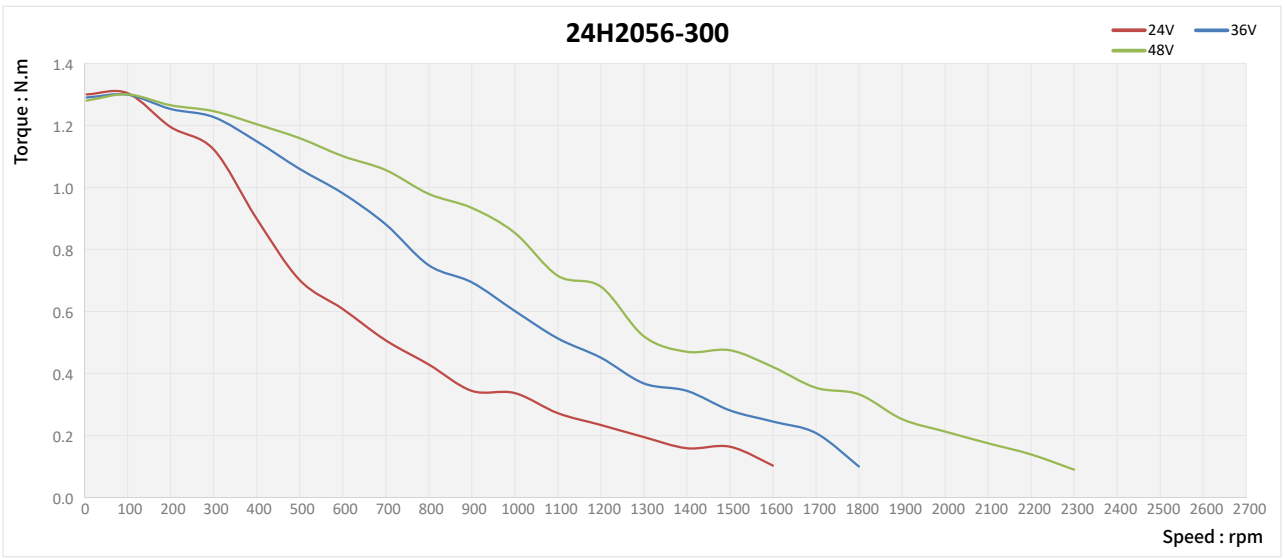
# Size 24 (60mm) Series

## Dimensional Drawings



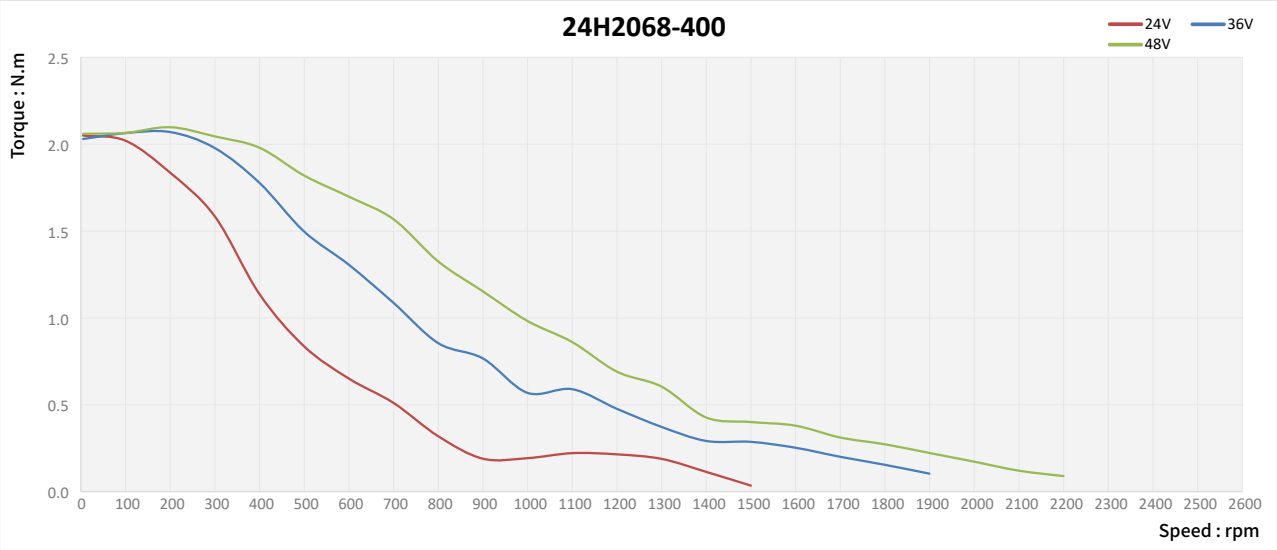

## Tourque Performance Curves

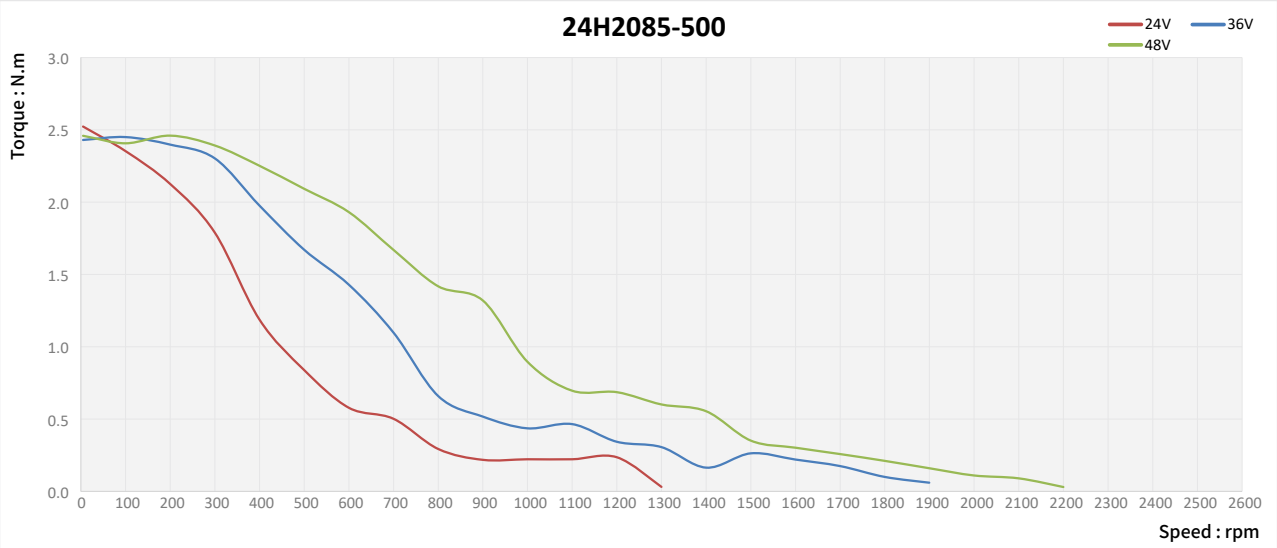



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

# Size 24 (60mm) Series



# Size 34 (86mm) Series

The size 34 [86mm] Hybrid Rotary Stepper Motor has Max. 7.0N·m of holding torque. Encoders solutions are available.
For special windings or customization,
Please contact DINGS' for further information.

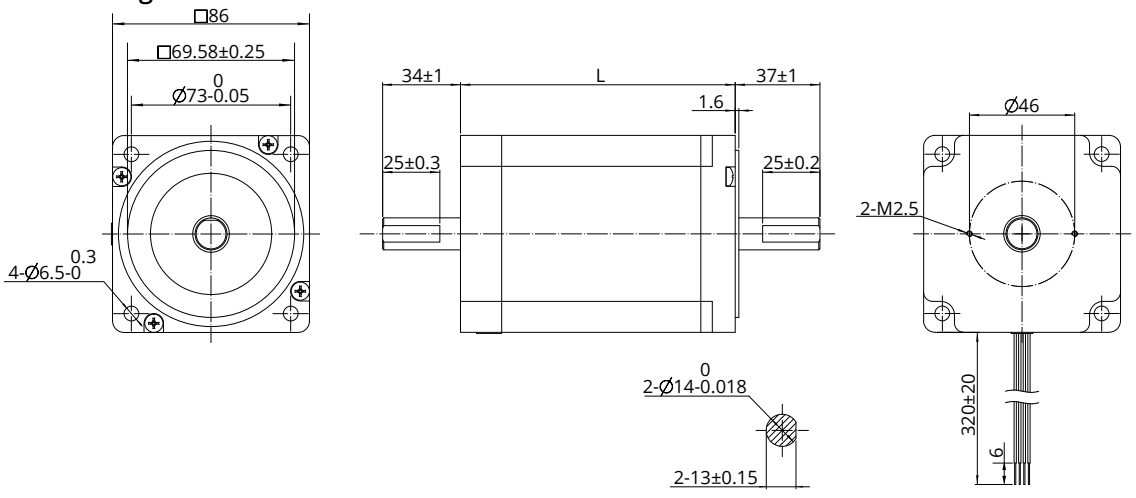
## Parameters

| General | | | |
|---|---|---|---|
| Accuracy | Step angle | 1.8°±5% | |
| | Resistance | ±10% / 20 C | |
| | Inductance | ±20% / 1KHz | |
| Insulation class | | B | |
| Duty type | | S1 | |
| Dielectrical strength | | 500 VAC / 1 KHz / 1 mA / 1 s | |
| Insulation resistance | | 100 MΩ / 500 VDC | |
| Permissible radial load (5mm distance from mounting surface) | Permissible radial load (10mm distance from mounting surface) | Permissible radial load (15mm distance from mounting surface) | Permissible radial load (20mm distance from mounting surface) |
| 600N | 550N | 480N | 390N |

| Parameter | | | | | | | |
|---|---|---|---|---|---|---|---|
| Type | Current (A [RMS]) | Resistance (Ω) | Inductance (mH) | Holding Torque (N·m) | Rotor Inertia (g·cm²) | Length (mm) | Mass (g) |
| 34H2060 | 3 | 1 | 6 | 3 | 1100 | 60.5 | 1600 |
| 34H2075 | 4.5 | 0.6 | 4.2 | 4.5 | 1800 | 75 | 2100 |
| 34H2098 | 6 | 0.5 | 4 | 7 | 2800 | 96.5 | 2900 |

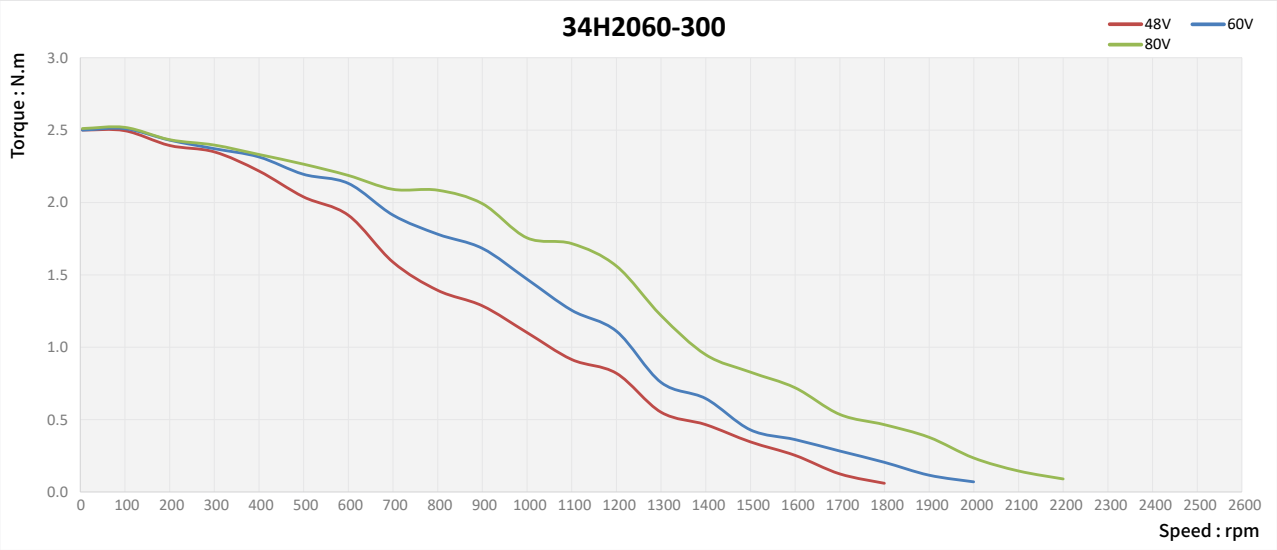
| Material | |
|---|---|
| End bell | Aluminum alloy |
| Bearing | Deep groove ball bearing |
| Magnet | Sintered NdFeb |
| Shaft | Stainless steel |
| Wiring | UL 3265, 18AWG |

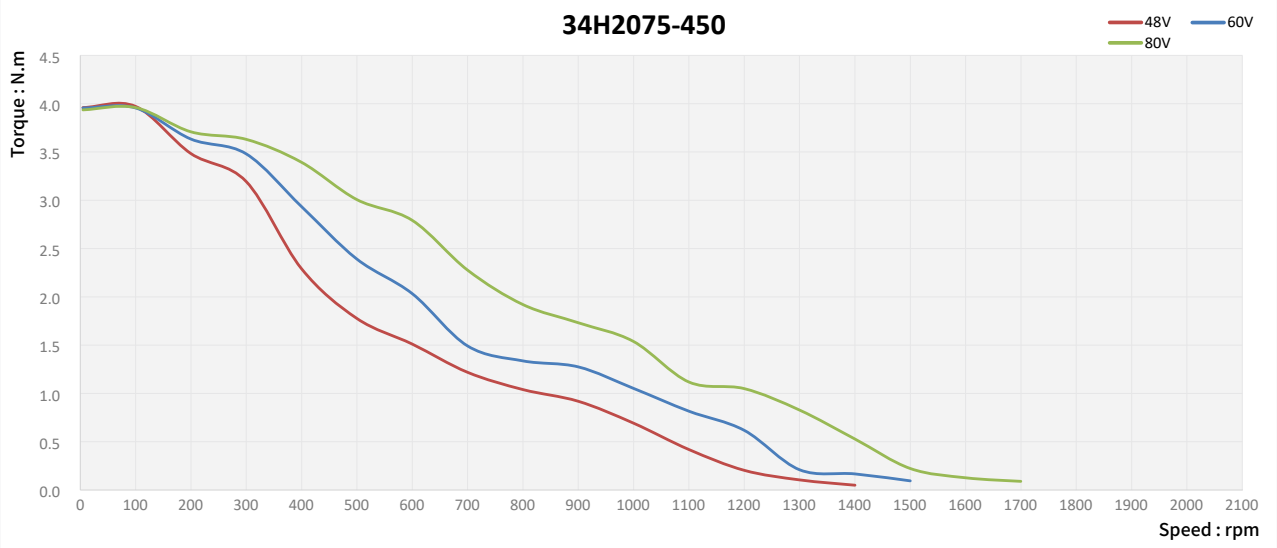
## Dimensional Drawings

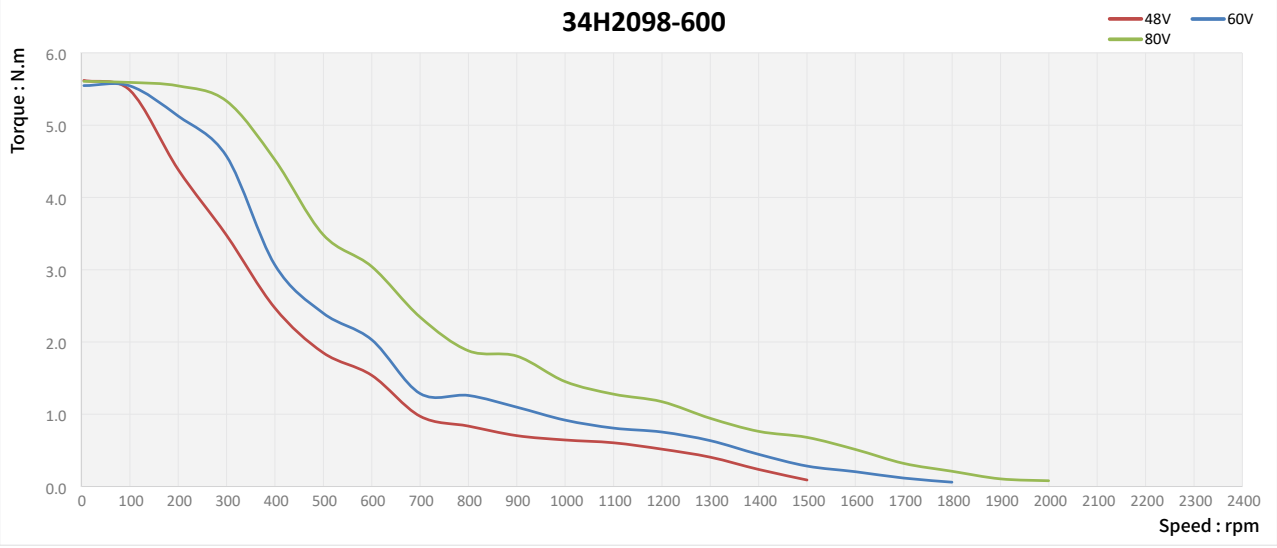



Note : All drawings are 1st Angle Projection - ISO Compliant (3D models available)

## Tourque Performance Curves



# Accessories and Options

## Planetary Gearbox

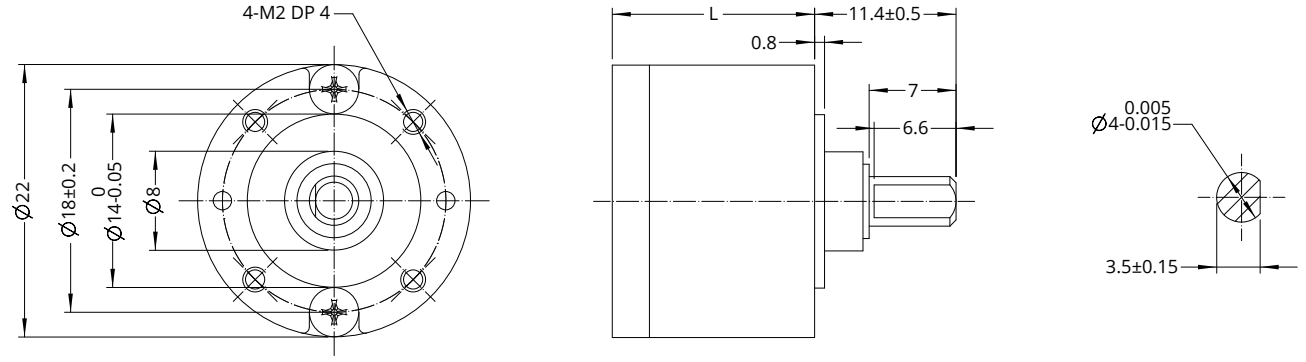
### Overview

| Frame size | Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) | Corresponding motor |
|---|---|---|---|---|---|---|---|---|
| 22 mm | 4 | 0.03 | 0.09 | 1 | 81 | 16.3 | 29.1 | 20 mm |
| | 15 | 0.05 | 0.15 | 2 | 66 | 16.3 | 30.1 | |
| | 20 | | | | | | | |
| | 107 | 0.1 | 0.3 | 3 | 53 | 19.5 | 36 | |
| 28 mm | 3.3 | 0.5 | 1.5 | 1 | 90 | 21.2 | 87 | 28 mm |
| | 4.6 | | | | | | | |
| | 11.2 | 1 | 3 | 2 | 81 | 26.9 | 91 | |
| | 15.5 | | | | | | | |
| | 21.5 | | | | | | | |
| | 37.7 | 2.5 | 7.5 | 3 | 73 | 32.7 | 100 | |
| | 72 | | | | | | | |
| 32 mm | 3.3 | 0.5 | 1.5 | 1 | 90 | 16.2 | 90 | 35 mm |
| | 4.6 | | | | | | | |
| | 11.2 | 1 | 3 | 2 | 81 | 21.9 | 115 | |
| | 15.5 | | | | | | | |
| | 21.5 | | | | | | | |
| | 37.7 | 2.5 | 7.5 | 3 | 73 | 27.7 | 140 | |
| | 72 | | | | | | | |
| 42 mm | 3.7 | 1 | 3 | 1 | 90 | 30.6 | 260 | 42 mm |
| | 5.2 | | | | | | | |
| | 13.7 | 2 | 6 | 2 | 81 | 41.9 | 350 | |
| | 19.2 | | | | | | | |
| | 26.9 | | | | | | | |
| | 50.9 | 5 | 15 | 3 | 73 | 53.2 | 440 | |
| | 71.2 | | | | | | | |
| | 99.5 | | | | | | | |
| 57 mm | 5 | 6 | 12 | 1 | 95 | 53 | 800 | 57 mm |
| | 10 | | | | | | | |
| | 15 | 25 | 40 | 2 | 90 | 70 | 1100 | |
| | 20 | | | | | | | |
| | 25 | | | | | | | |
| 60 mm | 5 | 6 | 12 | 1 | 95 | 53 | 900 | 60 mm |
| | 10 | | | | | | | |
| | 15 | 25 | 40 | 2 | 90 | 70 | 1200 | |
| | 20 | | | | | | | |
| | 25 | | | | | | | |
| 86 mm | 3 | 50 | 100 | 1 | 95 | 89 | 2080 | 86 mm |
| | 4 | | | | | | | |
| | 5 | | | | | | | |
| | 7 | | | | | | | |
| | 16 | 80 | 160 | 2 | 90 | 112 | 2830 | |
| | 20 | | | | | | | |
| | 25 | | | | | | | |
| | 28 | | | | | | | |
| | 35 | | | | | | | |
| | 40 | | | | | | | |
| | 50 | | | | | | | |

For stroke customization, please contact DINGS' or local representative.

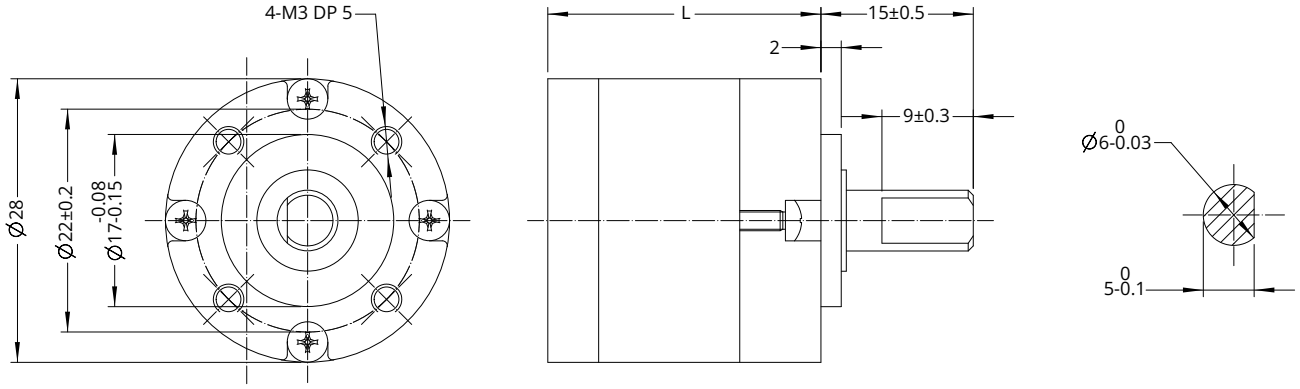
# Accessories and Options

## 22mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | 1° | | | |
| Bearing | | | Sleeve bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 4 | 0.03 | 0.09 | 1 | 81 | 16.3 | 29.1 |
| 15<br>20 | 0.05 | 0.15 | 2 | 66 | 16.3 | 30.1 |
| 107 | 0.1 | 0.3 | 3 | 53 | 19.5 | 36 |

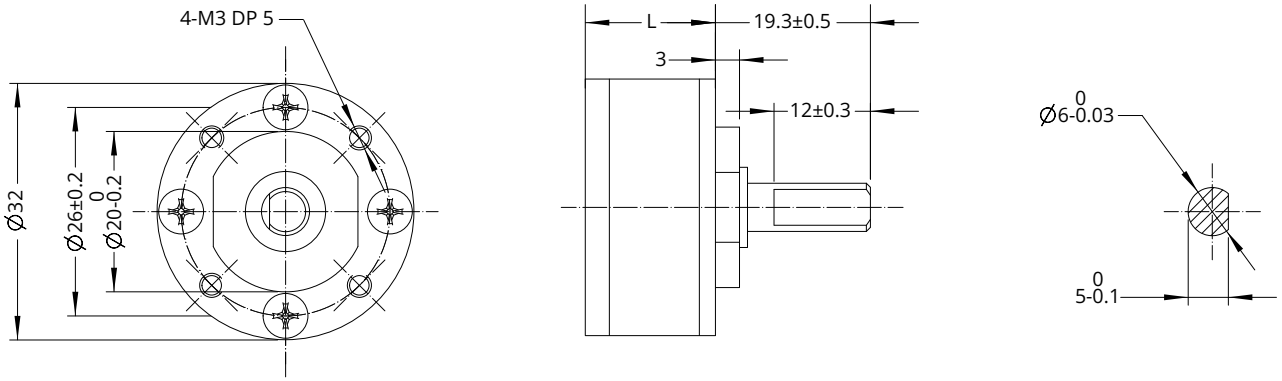
## 28mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | 1° | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 3.3<br>4.6 | 0.5 | 1.5 | 1 | 90 | 21.2 | 87 |
| 11.2<br>15.5<br>21.5 | 1 | 3 | 2 | 81 | 26.9 | 91 |
| 37.7<br>72 | 2.5 | 7.5 | 3 | 73 | 32.7 | 100 |

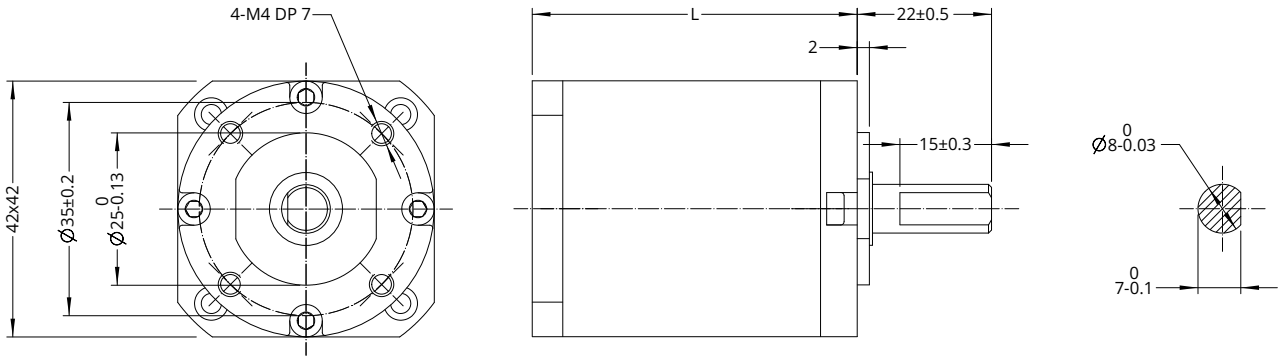
# Accessories and Options

## 32mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | 1° | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 3.3<br>4.6 | 0.5 | 1.5 | 1 | 90 | 16.2 | 90 |
| 11.2<br>15.5<br>21.5 | 1 | 3 | 2 | 81 | 21.9 | 115 |
| 37.7<br>72 | 2.5 | 7.5 | 3 | 73 | 27.7 | 140 |

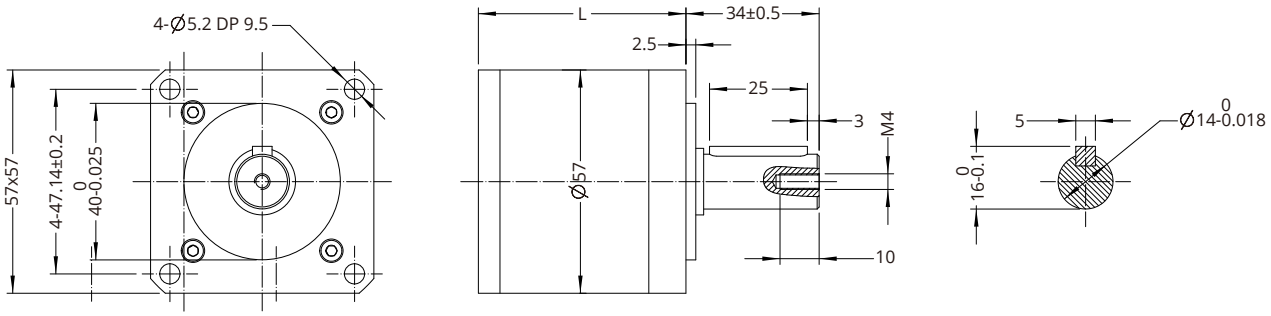
## 42mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | 1.2° | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 3.7<br>5.2 | 1 | 3 | 1 | 90 | 30.6 | 260 |
| 13.7<br>19.2<br>26.9 | 2 | 6 | 2 | 81 | 41.9 | 350 |
| 50.9<br>71.2<br>99.5 | 5 | 15 | 3 | 73 | 53.2 | 440 |

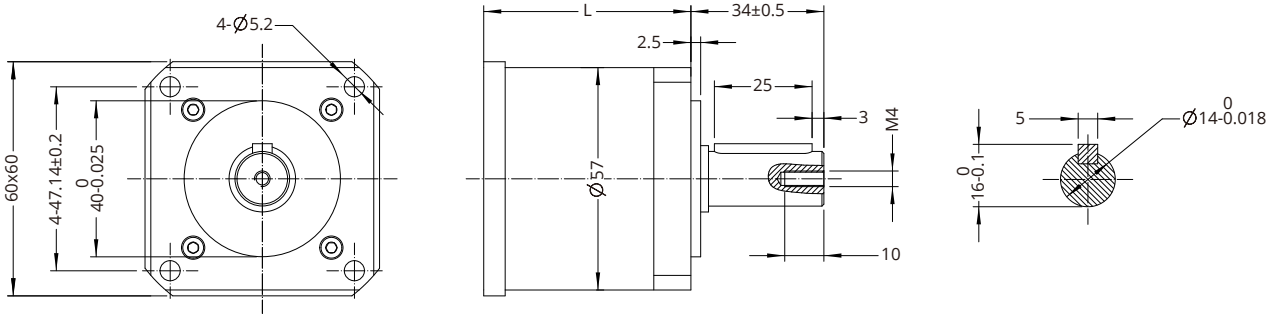
# Accessories and Options

## 57mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | First stage 15 arcmin, second stage 25 arcmin | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 5<br>10 | 6 | 12 | 1 | 95 | 53 | 800 |
| 15<br>20<br>25 | 25 | 40 | 2 | 90 | 70 | 1100 |

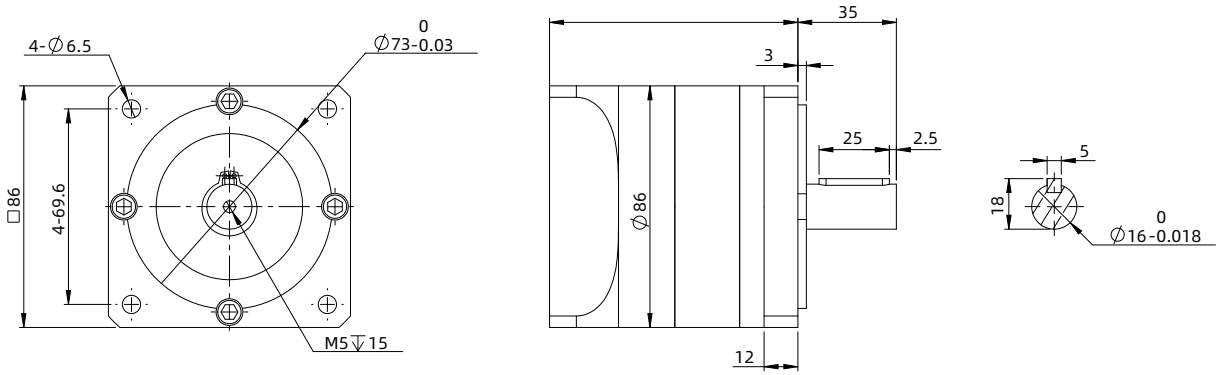
## 60mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | First stage 15 arcmin, second stage 25 arcmin | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Limit torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 5<br>10 | 6 | 12 | 1 | 95 | 53 | 900 |
| 15<br>20<br>25 | 25 | 40 | 2 | 90 | 70 | 1200 |

# Accessories and Options

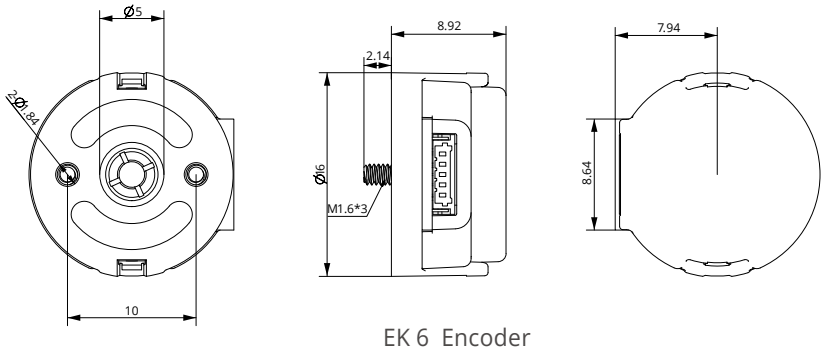
- 86mm Frame Planetary Gearbox




| Housing material | | | Metal | | | |
|---|---|---|---|---|---|---|
| No load backlash | | | First stage 15 arcmin, second stage 25 arcmin | | | |
| Bearing | | | Ball bearing | | | |
| Ratio | Rated torque (N·m) | Peak torque (N·m) | Stages | Efficiency (%) | Length (mm) | Mass (g) |
| 3<br>4<br>5<br>7 | 50 | 100 | 1 | 95 | 89 | 2080 |
| 16<br>20<br>25<br>28<br>35<br>40<br>50 | 80 | 160 | 2 | 90 | 112 | 2830 |

# Accessories and Options

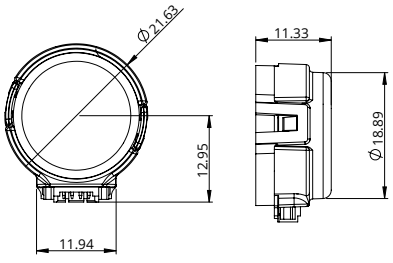
## Encoder



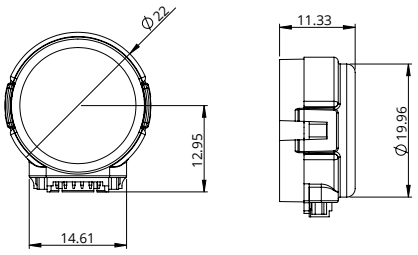

EK 6 Encoder

- EK 6 Encoder (Used for size 6 motors) * No Index

| Resolution (CPR) | 250 | 256 | 500 | 512 | 1000 | 1024 | 2000 | 2048 | 4000 | 4096 |
|---|---|---|---|---|---|---|---|---|---|---|
| Single ended output | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |



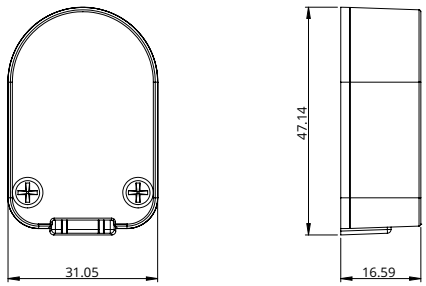

EK 1 Encoder - single ended output



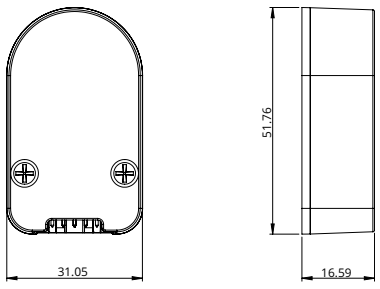

EK 1 Encoder - differential output

- EK 1 Encoder (Used for size 8, 11, 14, 17 motors) * No Index

| Resolution (CPR) | 100 | 108 | 120 | 125 | 128 | 200 | 250 | 256 | 300 | 360 | 400 | 500 | 1000 | 512 | 720 | 800 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single ended output | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| Differential output | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |




EK 2 Encoder - single ended output

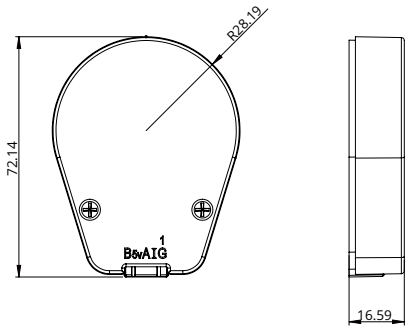



EK 2 Encoder - differential output

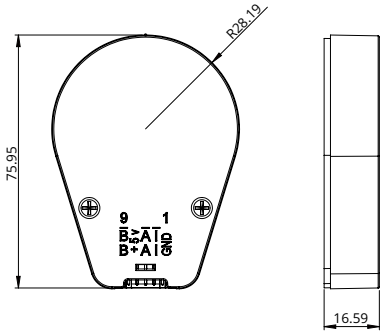
- EK 2 Encoder (Used for size 14, 17, 23, 24 motors)

| Resolution (CPR) | 50 | 100 | 192 | 200 | 250 | 256 | 360 | 400 | 500 | 720 | 900 | 1000 | 1250 | 2000 | 2500 | 4000 | 5000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single ended output | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | |
| Differential output | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |

# Accessories and Options



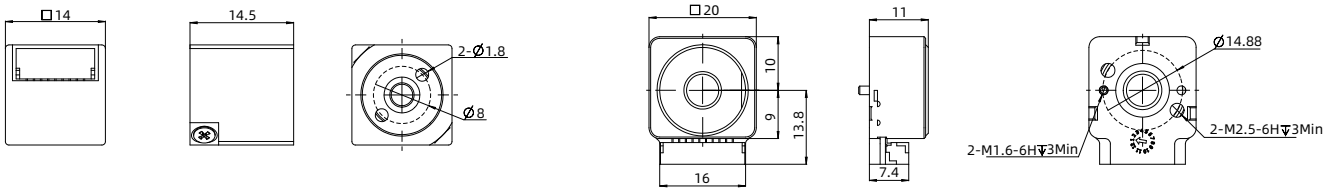

EK 3 Encoder - single ended output

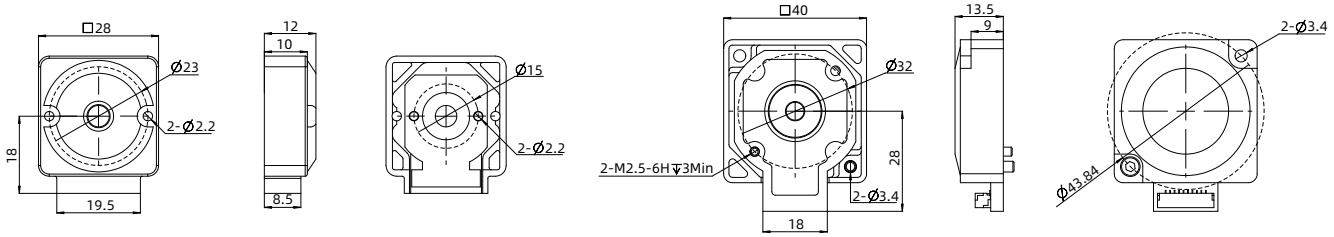



EK 3 Encoder - differential output

- EK 3 Encoder (Used for size 23, 24, 34 motors)

| Resolution (CPR) | 64 | 100 | 200 | 500 | 1000 | 1800 | 2000 | 2500 | 3600 | 4000 | 5000 | 7200 | 8000 | 10000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single ended output | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |
| Differential output | | A | B | C | D | E | F | G | H | I | J | K | L | M |




- EK 7 Encoder (Used for size 6, 8, 11, 14, 17, 23, 24 External, Non-Captive motors)

| Resolution (CPR) | - | - | - | 1000 | - | - | 2000 | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|
| Single ended output | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Differential output | A | B | C | D | E | F | G | H | I | J |

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