



2-phase stepping motor

# 50mm sq. (1.97inch sq.)

103H670 □  
1.8° /step

Unipolar winding • Lead wire type

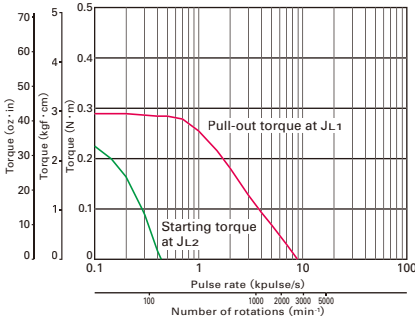
| Model                |               | Holding torque at 2-phase energization<br>[N · m (oz · in) MIN.] | Rated current<br>A/phase | Wiring resistance<br>Ω /phase | Winding inductance<br>mH/phase | Rotor inertia<br>[×10 <sup>-4</sup> kg · m <sup>2</sup> (oz · in <sup>2</sup> )] | Mass (Weight)<br>[kg (lbs) ] |
|----------------------|---------------|--|--------------------------|-------------------------------|--------------------------------|--|------------------------------|
| Single shaft         | Double shafts |  |                          |                               |                                |  |                              |
| <b>103H6701-0140</b> | <b>-0110</b>  | 0.28 (39.6)  | 1                        | 4.3                           | 6.8                            | 0.057 (0.31)   | 0.35 (0.77)                  |
| <b>103H6701-0440</b> | <b>-0410</b>  | 0.28 (39.6)  | 2                        | 1.1                           | 1.6                            | 0.057 (0.31)   | 0.35 (0.77)                  |
| <b>103H6701-0740</b> | <b>-0710</b>  | 0.28 (39.6)  | 3                        | 0.6                           | 0.7                            | 0.057 (0.31)   | 0.35 (0.77)                  |
| <b>103H6703-0140</b> | <b>-0110</b>  | 0.49 (69.4)  | 1                        | 6                             | 13                             | 0.118 (0.65)   | 0.5 (1.10)                   |
| <b>103H6703-0440</b> | <b>-0410</b>  | 0.49 (69.4)  | 2                        | 1.6                           | 3.2                            | 0.118 (0.65)   | 0.5 (1.10)                   |
| <b>103H6703-0740</b> | <b>-0710</b>  | 0.49 (69.4)  | 3                        | 0.83                          | 1.4                            | 0.118 (0.65)   | 0.5 (1.10)                   |
| <b>103H6704-0140</b> | <b>-0110</b>  | 0.53 (75.1)  | 1                        | 6.5                           | 16.5                           | 0.14 (0.77)  | 0.55 (1.21)                  |
| <b>103H6704-0440</b> | <b>-0410</b>  | 0.52 (73.6)  | 2                        | 1.7                           | 3.8                            | 0.14 (0.77)  | 0.55 (1.21)                  |
| <b>103H6704-0740</b> | <b>-0710</b>  | 0.53 (75.1)  | 3                        | 0.9                           | 1.7                            | 0.14 (0.77)  | 0.55 (1.21)                  |

Bipolar winding

| Model                |               | Holding torque at 2-phase energization<br>[N · m (oz · in) MIN.] | Rated current<br>A/phase | Wiring resistance<br>Ω /phase | Winding inductance<br>mH/phase | Rotor inertia<br>[×10 <sup>-4</sup> kg · m <sup>2</sup> (oz · in <sup>2</sup> )] | Mass (Weight)<br>[kg (lbs) ] |
|----------------------|---------------|--|--------------------------|-------------------------------|--------------------------------|--|------------------------------|
| Single shaft         | Double shafts |  |                          |                               |                                |  |                              |
| <b>103H6701-5040</b> | <b>-5010</b>  | 0.28 (39.6)  | 2                        | 0.6                           | 1.6                            | 0.57 (0.31)  | 0.35 (0.77)                  |
| <b>103H6703-5040</b> | <b>-5010</b>  | 0.09 (12.7)  | 2                        | 0.8                           | 3.2                            | 0.118 (0.65)   | 0.5 (1.10)                   |
| <b>103H6704-5040</b> | <b>-5010</b>  | 0.52 (73.6)  | 2                        | 0.9                           | 3.8                            | 0.14 (0.77)  | 0.55 (1.21)                  |

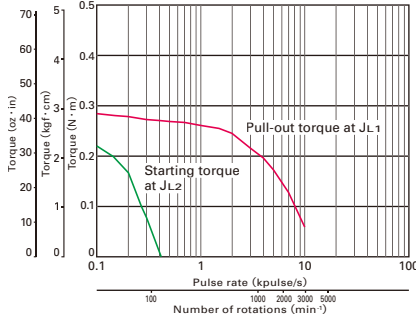
# Pulse rate-torque characteristics

## 103H6701-01



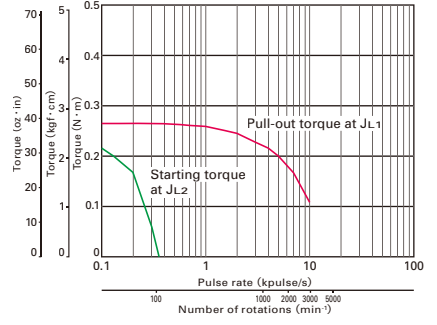
Constant current circuit  
 Source voltage : DC24V · operating current : 1A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6701-04



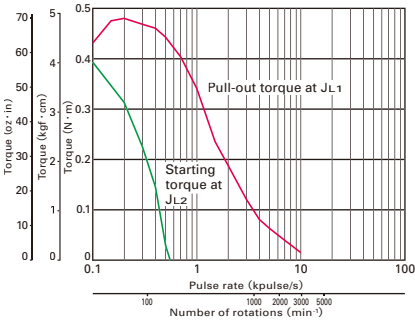
Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6701-07



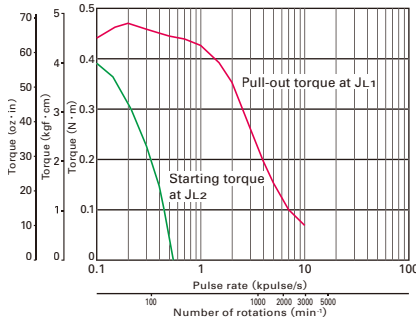
Constant current circuit  
 Source voltage : DC24V · operating current : 3A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6703-01



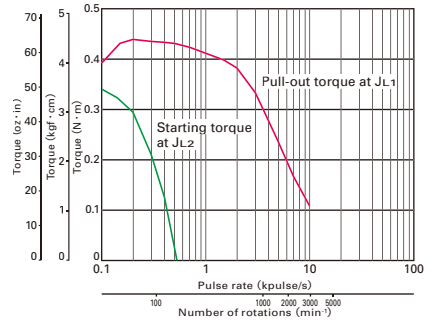
Constant current circuit  
 Source voltage : DC24V · operating current : 1A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6703-04



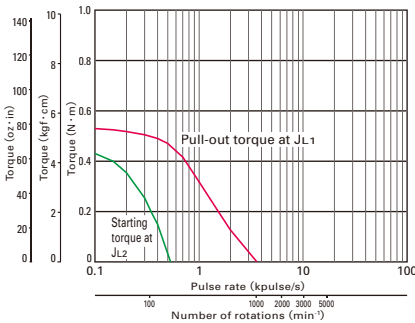
Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6703-07



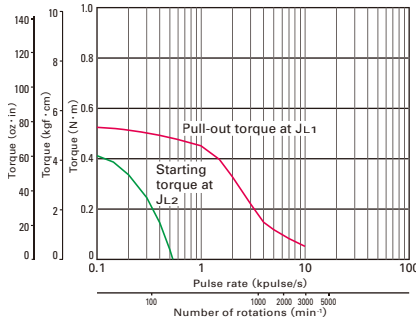
Constant current circuit  
 Source voltage : DC24V · operating current : 3A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6704-01



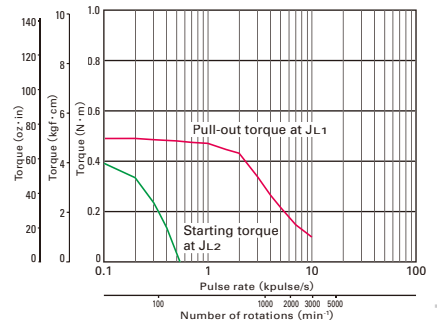
Constant current circuit  
 Source voltage : DC24V · operating current : 1A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6704-04



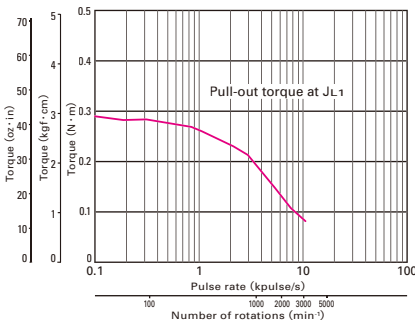
Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6704-07



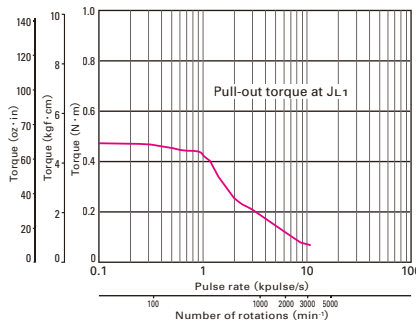
Constant current circuit  
 Source voltage : DC24V · operating current : 3A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.8 \times 10^{-4} \text{kg} \cdot \text{m}^2 (4.37 \text{oz} \cdot \text{in}^2)]$  use the direct coupling

## 103H6701-50



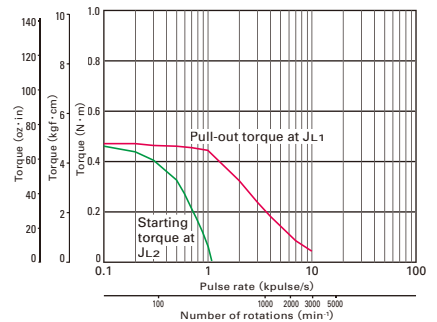
Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling

## 103H6703-50



Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling

## 103H6704-50



Constant current circuit  
 Source voltage : DC24V · operating current : 2A/phase,  
 2-phase energization (full-step)  
 $J_{L1} = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$  use the rubber coupling  
 $J_{L2} = [0.14 \times 10^{-4} \text{kg} \cdot \text{m}^2 (0.77 \text{oz} \cdot \text{in}^2)]$  pulley balancer method