



2-phase Stepping Motor

42mm sq. 103H52 □□
(1.65inch sq.) 1.8°/step

Recommendable Driver
 Refer to the page 7,17,27 and 45.

Specifications

Unipolar winding

Model		Holding torque at 2-phase energization N·m (oz·in)/MIN.	Rated current A/phase	Resistance Ω/phase	Inductance mH/phase	Rotor inertia x10 ⁻⁴ kg·m ² (oz·in ²)	Mass(Weight) kg(lbs)
Single shaft	Double shaft						
103H5205-0440	-0410	0.2(28.32)	1.2	2.4	2.3	0.036(0.20)	0.23(0.51)
103H5208-0440	-0410	0.3(42.48)	1.2	2.9	3.4	0.056(0.31)	0.29(0.64)
103H5209-0440	-0410	0.32(45.31)	1.2	3	3.9	0.062(0.34)	0.31(0.68)
103H5210-0440	-0410	0.37(52.39)	1.2	3.3	3.4	0.074(0.40)	0.37(0.82)

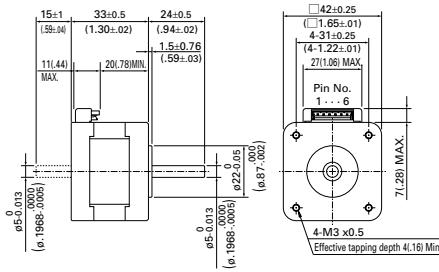
Bipolar winding

Model		Holding torque at 2-phase energization N·m (oz·in)/MIN.	Rated current A/phase	Resistance Ω/phase	Inductance mH/phase	Rotor inertia x10 ⁻⁴ kg·m ² (oz·in ²)	Mass(Weight) kg(lbs)
Single shaft	Double shaft						
103H5205-4240	-4210	0.265(37.53)	1	3.4	6.5	0.036(0.20)	0.23(0.51)
103H5205-5040	-5010	0.23(32.57)	0.25	54	78	0.036(0.20)	0.23(0.51)
103H5205-5140	-5110	0.25(35.40)	0.5	13.4	23.4	0.036(0.20)	0.23(0.51)
103H5205-5240	-5210	0.265(37.53)	1	3.4	6.5	0.036(0.20)	0.23(0.51)
103H5208-4240	-4210	0.39(55.23)	1	4.1	9.5	0.056(0.31)	0.3(0.66)
103H5208-5040	-5010	0.35(49.56)	0.25	66	116	0.056(0.31)	0.3(0.66)
103H5208-5140	-5110	0.38(53.81)	0.5	16.5	34	0.056(0.31)	0.3(0.66)
103H5208-5240	-5210	0.39(55.23)	1	4.1	9.5	0.056(0.31)	0.3(0.66)
103H5209-4240	-4210	0.425(60.18)	1	4.4	11	0.062(0.34)	0.31(0.68)
103H5209-5040	-5010	0.38(53.81)	0.25	71.4	132	0.062(0.34)	0.31(0.68)
103H5209-5140	-5110	0.41(58.06)	0.5	18.2	39	0.062(0.34)	0.31(0.68)
103H5209-5240	-5210	0.425(60.18)	1	4.4	11	0.062(0.34)	0.31(0.68)
103H5210-4240	-4210	0.51(72.22)	1	4.8	9.5	0.074(0.40)	0.37(0.82)
103H5210-5040	-5010	0.465(65.85)	0.25	80	123.3	0.074(0.40)	0.37(0.82)
103H5210-5140	-5110	0.49(69.39)	0.5	20	35	0.074(0.40)	0.37(0.82)
103H5210-5240	-5210	0.51(72.22)	1	4.8	9.5	0.074(0.40)	0.37(0.82)

Dimensions [Unit:mm(inch)]

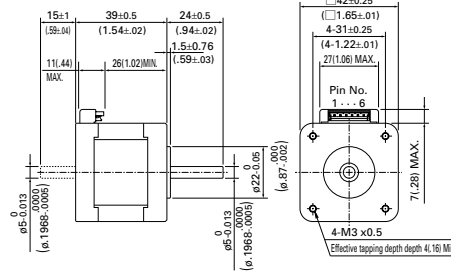
103H5205-0440 (Single shaft)
103H5205-0410 (Double shaft)

Applicable connector (J.S.T. MFG., CO.)
Connector: EHR-6
Terminal: SEH-001T-P0.6



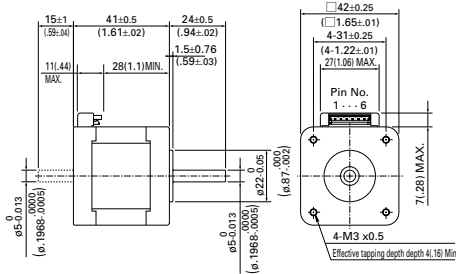
103H5208-0440 (Single shaft)
103H5208-0410 (Double shaft)

Applicable connector (J.S.T. MFG., CO.)
Connector: EHR-6
Terminal: SEH-001T-P0.6



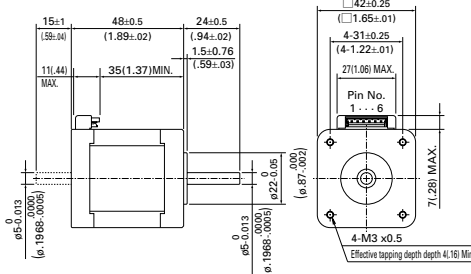
103H5209-0440 (Single shaft)
103H5209-0410 (Double shaft)

Applicable connector (J.S.T. MFG., CO.)
Connector: EHR-6
Terminal: SEH-001T-P0.6



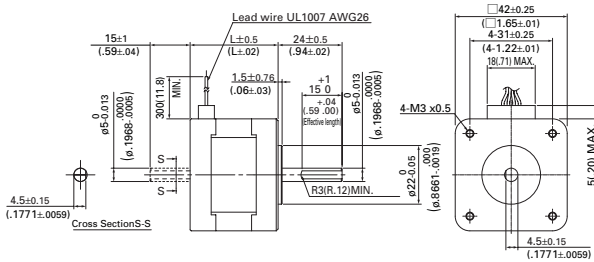
103H5210-0440 (Single shaft)
103H5210-0410 (Double shaft)

Applicable connector (J.S.T. MFG., CO.)
Connector: EHR-6
Terminal: SEH-001T-P0.6



Bipolar winding

103H520 □-□□ 40 (Single shaft)
103H520 □-□□ 10 (Double shaft)

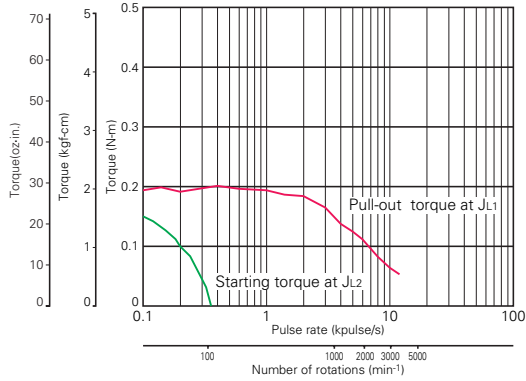


Model	L
103H5205-□□□□	33 (1.30)
103H5208-□□□□	39 (1.54)
103H5209-□□□□	41 (1.61)
103H5210-□□□□	48 (1.89)

35mm(1.38)/1.8"
38mm(1.54)/0.9"
42mm(1.65)/0.9"
28mm(1.10)/1.8"
42mm(1.65)/1.8"
50mm(1.97)/1.8"
56mm(2.20)/1.8"
60mm(2.36)/1.8"
86mm(3.39)/1.8"
106mm(4.17)/1.8"
106mm(4.17)/1.8"
86mm(3.39)/1.8"
106mm(4.17)/1.8"
Specifications of 2-phase stepping motor
In-vacuum stepping motor
2-phase synchronous motor

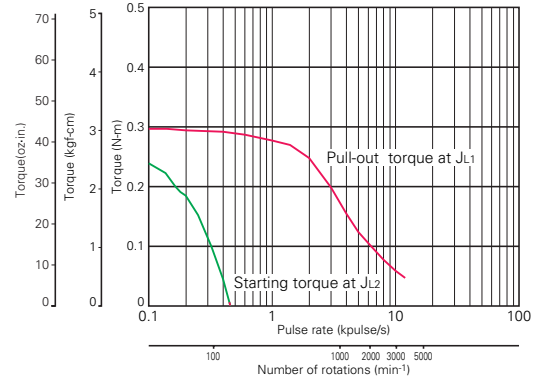
Pulse Rate - Torque Characteristics

103H5205-0440



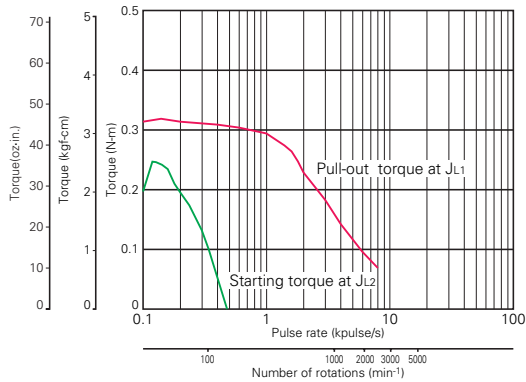
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1.2A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling]
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling]

103H5208-0440



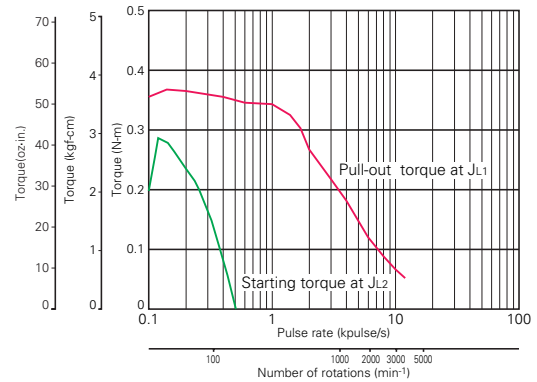
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1.2A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling]
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling]

103H5209-0440



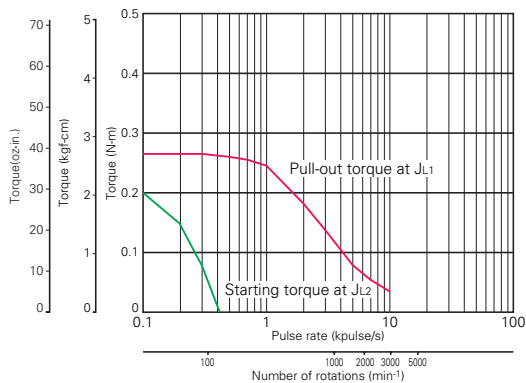
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1.2A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling]
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling]

103H5210-0440



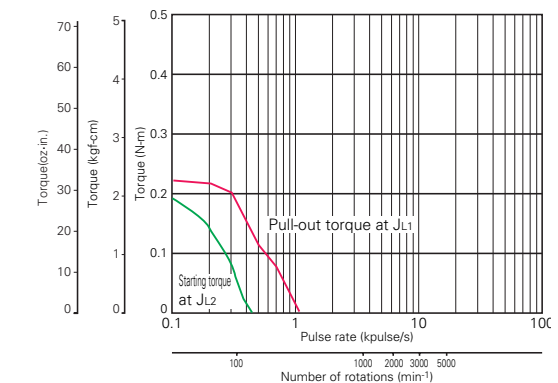
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1.2A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling]
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling]

103H5205-4240



Sanyo 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]

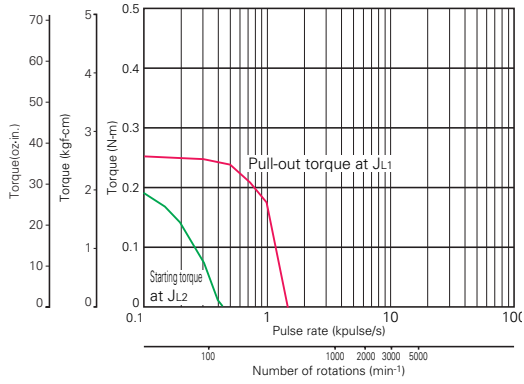
103H5205-5040



Sanyo constant current circuit
 Source voltage: DC24V Operating current : 25A/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]

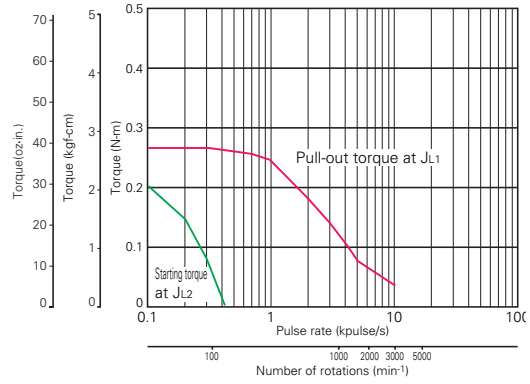
Pulse Rate - Torque Characteristics

● 103H5205-5140



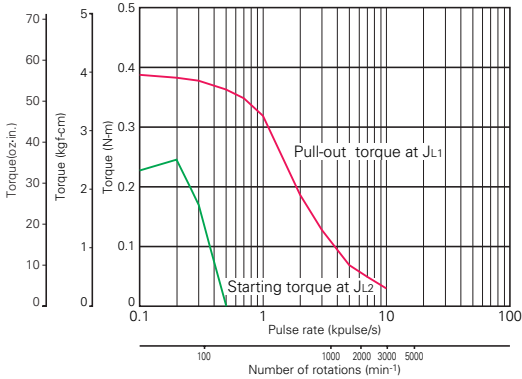
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.5A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

● 103H5205-5240



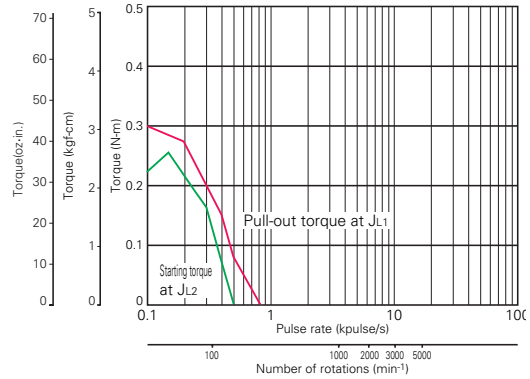
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

● 103H5208-4240



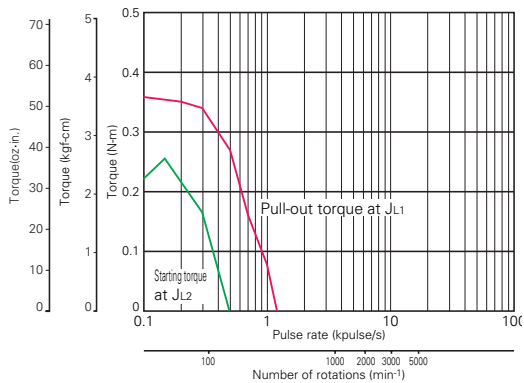
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

● 103H5208-5040



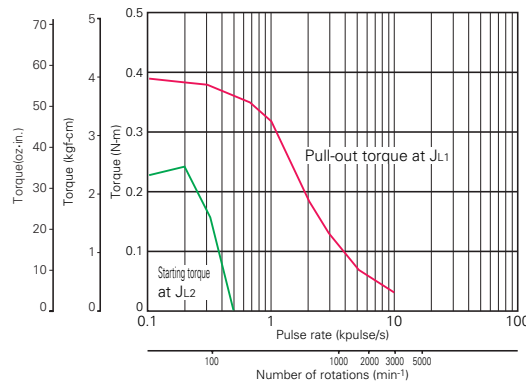
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.25A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

● 103H5208-5140



Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.5A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

● 103H5208-5240

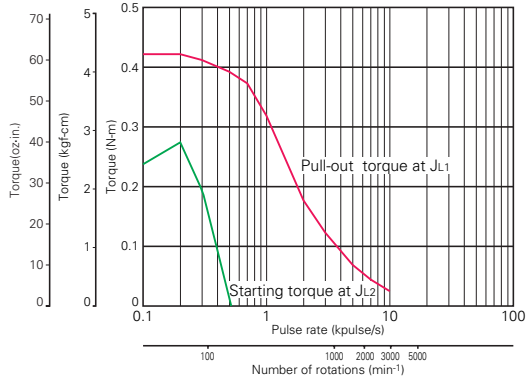


Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 $JL_1=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{ oz}\cdot\text{in}^2)]$ Use the rubber coupling)
 $JL_2=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{ oz}\cdot\text{in}^2)]$ Use the direct coupling)

Specifications of 2-phase stepping motor
 In-vacuum stepping motor
 2-phase synchronous motor
 ø106mm(4.17)/CE
 ø86mm(3.39)/CE
 ø106mm(4.17)/1.8
 ø86mm(3.39)/1.8
 ø60mm(2.36)/1.8
 ø56mm(2.20)/1.8
 ø50mm(1.97)/1.8
 ø42mm(1.65)/1.8
 ø28mm(1.10)/1.8
 ø22mm(1.55)/0.9
 ø35mm(1.38)/1.8

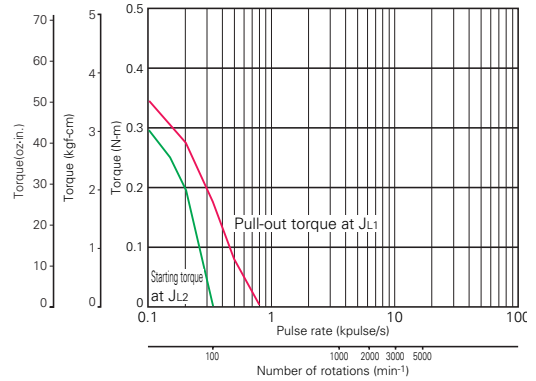
Pulse Rate - Torque Characteristics

● 103H5209-4240



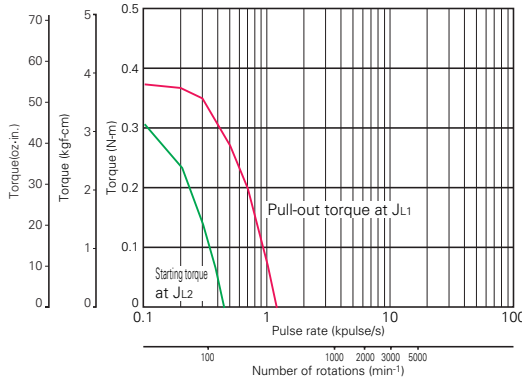
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{oz}\cdot\text{in}^2)]$ Use the rubber coupling
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{oz}\cdot\text{in}^2)]$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

● 103H5209-5040



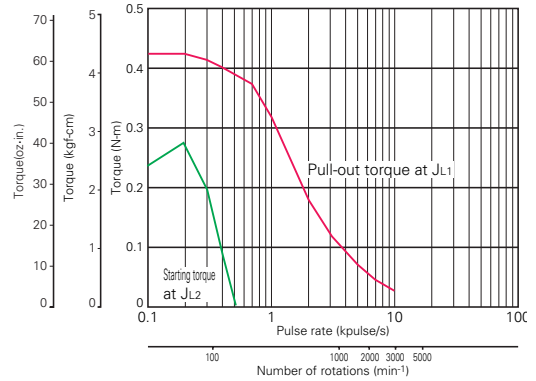
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.25A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{oz}\cdot\text{in}^2)]$ Use the rubber coupling
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{oz}\cdot\text{in}^2)]$ Use the direct coupling

● 103H5209-5140



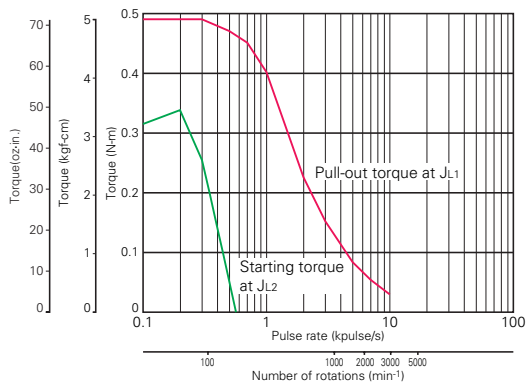
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.5A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{oz}\cdot\text{in}^2)]$ Use the rubber coupling
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{oz}\cdot\text{in}^2)]$ Use the direct coupling

● 103H5209-5240



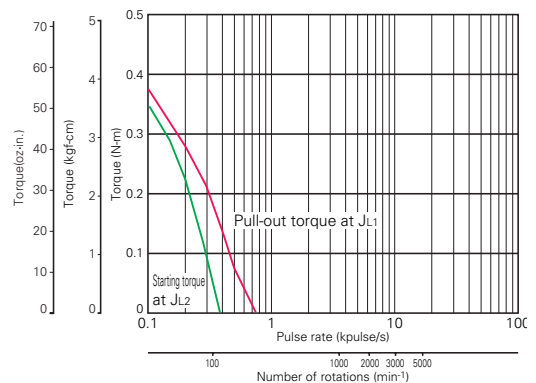
Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 $J_{L1}=[0.94 \times 10^{-4} \text{kg}\cdot\text{m}^2 (5.14 \text{oz}\cdot\text{in}^2)]$ Use the rubber coupling
 $J_{L2}=[0.8 \times 10^{-4} \text{kg}\cdot\text{m}^2 (4.37 \text{oz}\cdot\text{in}^2)]$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

● 103H5210-4240



Sanyo 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

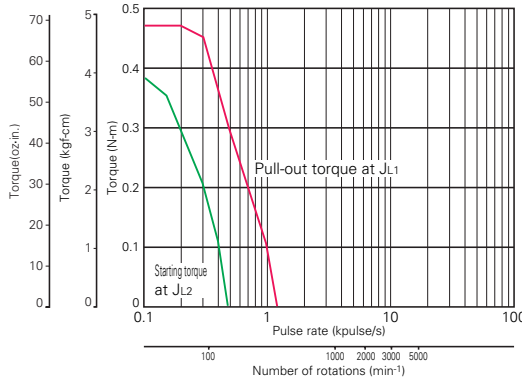
● 103H5210-5040



Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.25A/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

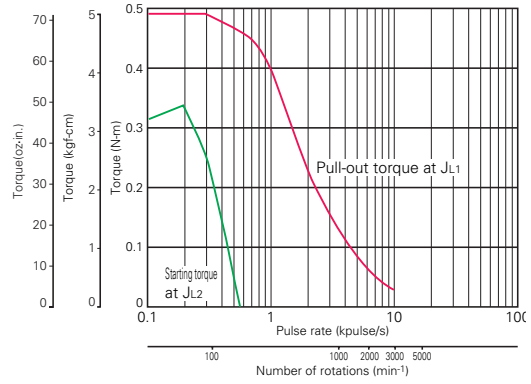
Pulse Rate - Torque Characteristics

● 103H5210-5140



Sanyo constant current circuit
 Source voltage: DC24V Operating current : 0.5A/phase, 2-phase energization (full-step)
 J_{L1}=[0.94x10⁻⁴kg·m² (5.14 oz·in²) Use the rubber coupling]
 J_{L2}=[0.8x10⁻⁴kg·m² (4.37 oz·in²) Use the direct coupling]

● 103H5210-5240



Sanyo constant current circuit
 Source voltage: DC24V Operating current : 1A/phase, 2-phase energization (full-step)
 J_{L1}=[0.94x10⁻⁴kg·m² (5.14 oz·in²) Use the rubber coupling]
 J_{L2}=[0.8x10⁻⁴kg·m² (4.37 oz·in²) Use the direct coupling]

- 35mm(1.38)/1.8°
- 38mm(1.54)/0.9°
- 42mm(1.65)/0.9°
- 42mm(1.65)/1.8°
- 42mm(1.65)/1.8°
- 50mm(1.97)/1.8°
- 56mm(2.20)/1.8°
- 60mm(2.36)/1.8°
- 86mm(3.39)/1.8°
- 106mm(4.17)/1.8°
- 56mm(2.20)/CE
- 86mm(3.39)/CE
- 106mm(4.17)/CE
- Specifications of 2-phase stepping motor
- In-vacuum stepping motor
- 2-phase synchronous motor

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[9WF0924S201](#)