

RoHS COMPLIANT
UL AGENCY RECOGNITION
CLASS F INSULATION



> OVERVIEW:

Lightweight, frameless motors delivering low inertia, high efficiency and high torque density in compact sizes.

Frameless brushless DC motors are unique and versatile in a wide range of applications. Frameless BLDC motors fit more easily into small compact machines that require precision and higher torque density. Additionally, they can replace heavier, less efficient hydraulic components by decreasing operating and maintenance costs. These motors are also more environmentally friendly than others.



> FEATURES:

- High torque to inertia ratio for quick response and precision control.
- High torque density in a compact package.
- Large rotor inner diameter for easy cable routing.
- Standard 200 mm lead lengths.
- Low cogging torque for a smooth operation.
- Machine wound reliability with bondable magnet wire for a compact and reliable coil.
- Constructed with corrosion-resistant materials.
- Tested for performance and reliability.

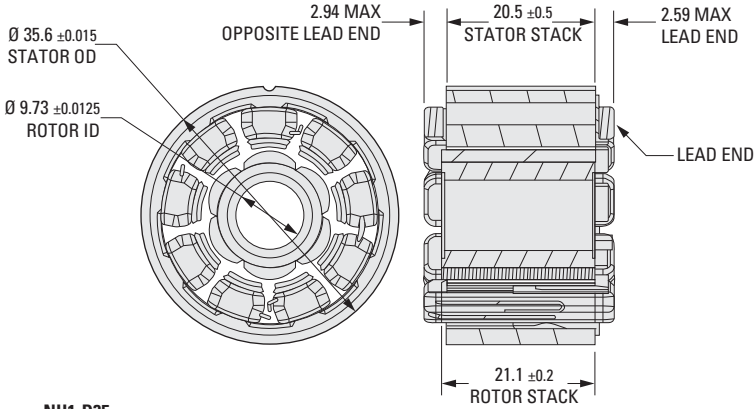
> APPLICATIONS:

- Surgical Robots
- Collaborative Robots
- Packaging Equipment
- Medical Equipment
- Indexing and Positioning
- General Purpose Equipment
- Manufacturing Automation
- AGV and AMR

METRIC COMPONENT					
Catalog Number					
	NH1-D35	NH1-D52	NH1-D64	NH1-D77	NH1-D100
Standard bus voltage (Vdc)	48	48	48	48	48
Standard stack heights (mm)	20.5	18.5	25.5	28	32
Data Below is Based on Standard Stack Height at 48V					
Rated Speed (rpm)	6000	3000	3000	3000	2000
No-load Speed (rpm)	10250	4450	3450	3250	2880
Rated Torque (N • m)	0.15	0.43	1	2.12	4
Peak Torque (N • m)	0.38	1.08	2.5	5.3	10
Rated Power (W)	90	140	310	670	840
Ke (Vrms/krpm)	3.21	7.42	9.55	10.15	11.44
Kt (N • m/Arms)	0.042	0.113	0.145	0.154	0.174
Rated Current (Arms)	3.07	3.81	6.88	13.73	22.98
Peak Current (Arms)	7.68	9.52	17.20	34.32	57.45
Standard Inertia (kgcm ²)	0.013	0.047	0.158	0.45	1.6
Stator Insulation Rating (°C)	155	155	155	155	155
Stator Weight (kg)	0.077	0.172	0.417	0.635	1.193
Rotor Weight (kg)	0.027	0.045	0.099	0.158	0.326
Number of Poles	6	6	8	10	10
R (ph-ph) (Ohms)	2.6	1.55	0.74	0.24	0.1
L (ph-ph) (mH)	1	1.92	1.1	0.6	0.42
Air Gap (mm)	0.50	0.50	0.50	0.50	0.76

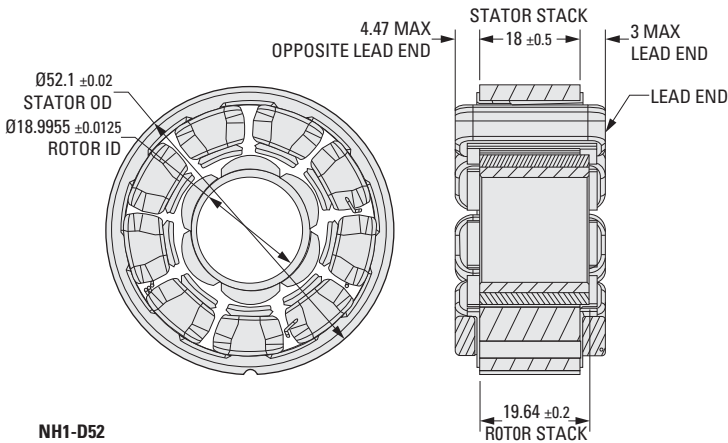
Continued on the next page.

TORQUE RANGE (CONTINUOUS): 0.15 N•m - 4 N•m
TORQUE RANGE (PEAK): 10 N•m - 0.38 N•m
RATED VOLTAGES: 12 Vdc - 60 Vdc
POWER: 75 W TO 670 W



NH1-D35

Lead Gauge	Lead UL Style	Phase A Color	Phase B Color	Phase C Color	Lead Length (mm)	Termination
26 AWG	UL 1180	Blue	Brown	Violet	200	None



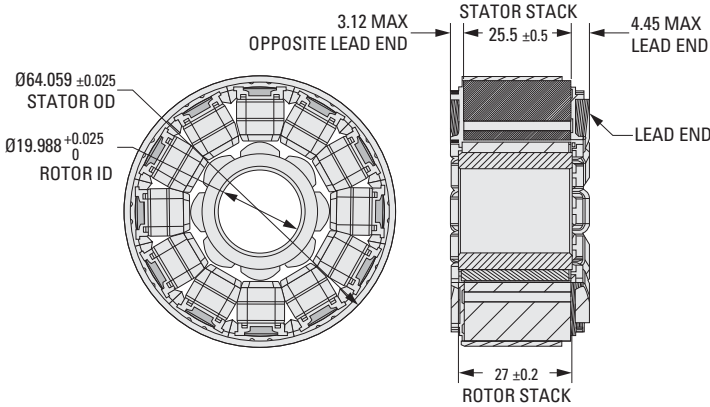
NH1-D52

Lead Gauge	Lead UL Style	Phase A Color	Phase B Color	Phase C Color	Lead Length (mm)	Termination
22 AWG	UL 1199	Blue	Brown	Violet	200	None

Continued on the next page.
 Continued from the previous page.

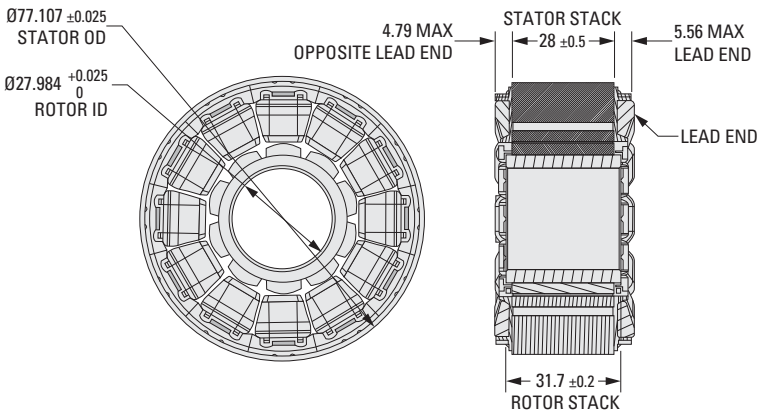


TORQUE RANGE (CONTINUOUS): 0.15 N • m - 4 N • m
TORQUE RANGE (PEAK): 10 N • m - 0.38 N • m
RATED VOLTAGES: 12 Vdc - 60 Vdc
POWER: 75 W TO 670 W



NH1-D64

Lead Gauge	Lead UL Style	Phase A Color	Phase B Color	Phase C Color	Lead Length (mm)	Termination
18 AWG	UL 1199	Blue	Brown	Violet	200	None



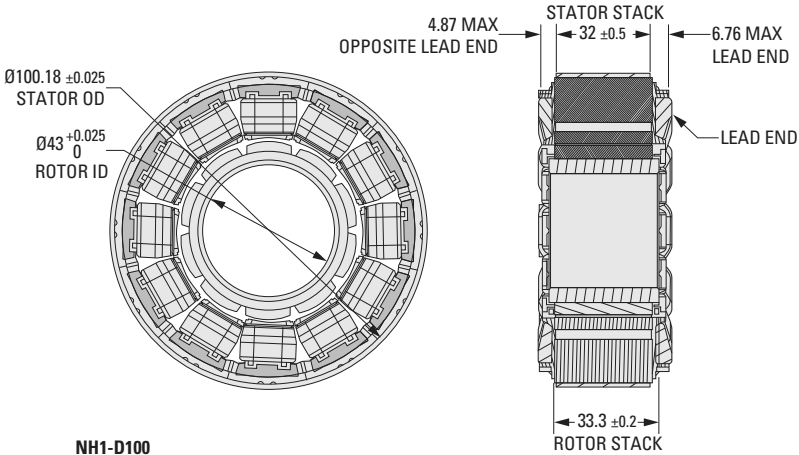
NH1-D77

Lead Gauge	Lead UL Style	Phase A Color	Phase B Color	Phase C Color	Lead Length (mm)	Termination
18 AWG	UL 1199	Blue	Brown	Violet	200	None

Continued on the next page.
 Continued from the previous page.

- I
- R
- T
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11**
- 12
- 13
- 14
- 15
- A

TORQUE RANGE (CONTINUOUS): 0.15 N • m - 4 N • m
TORQUE RANGE (PEAK): 10 N • m - 0.38 N • m
RATED VOLTAGES: 12 Vdc - 60 Vdc
POWER: 75 W TO 670 W

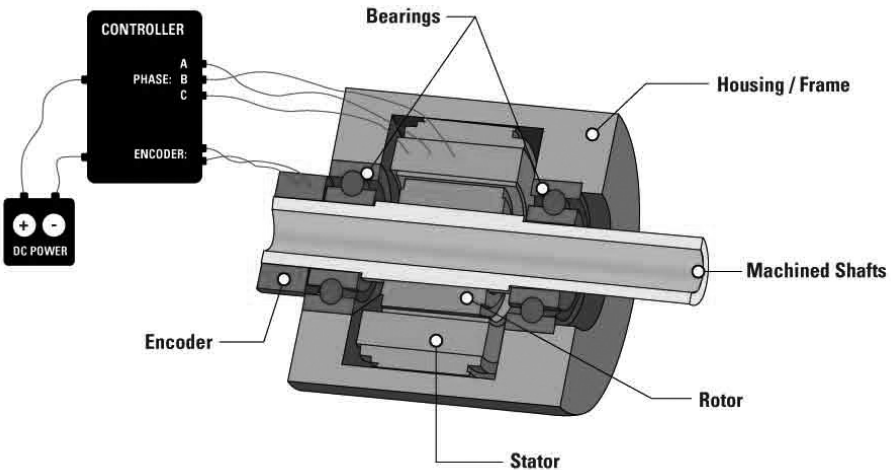


NH1-D100

Lead Gauge	Lead UL Style	Phase A Color	Phase B Color	Phase C Color	Lead Length (mm)	Termination
14AWG	UL 1199	Blue	Brown	Violet	200	None

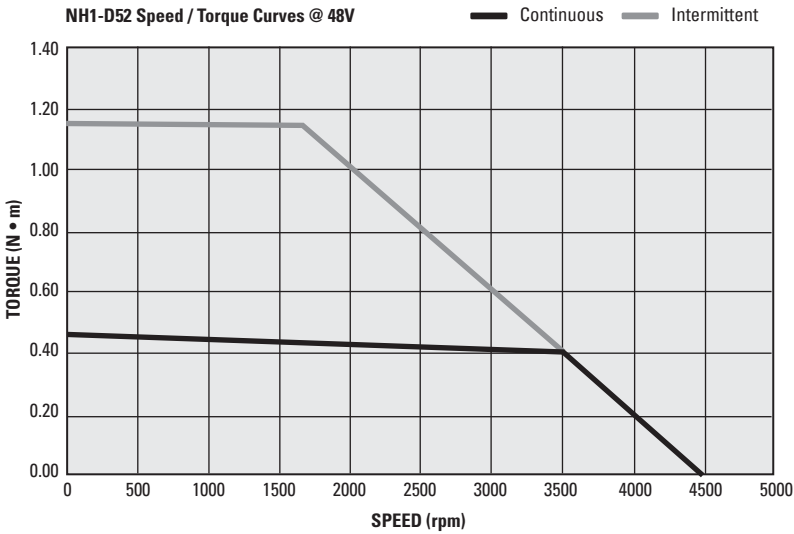
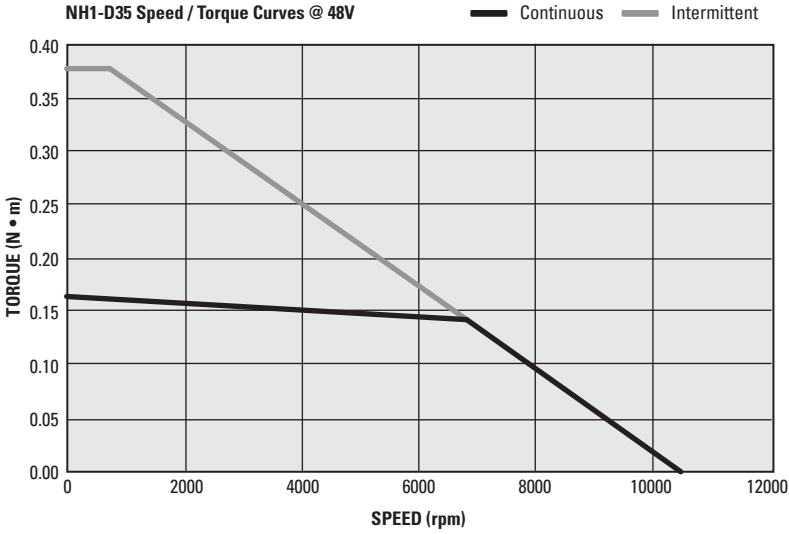
Continued from the previous page.

HOW TO USE THIS MOTOR:

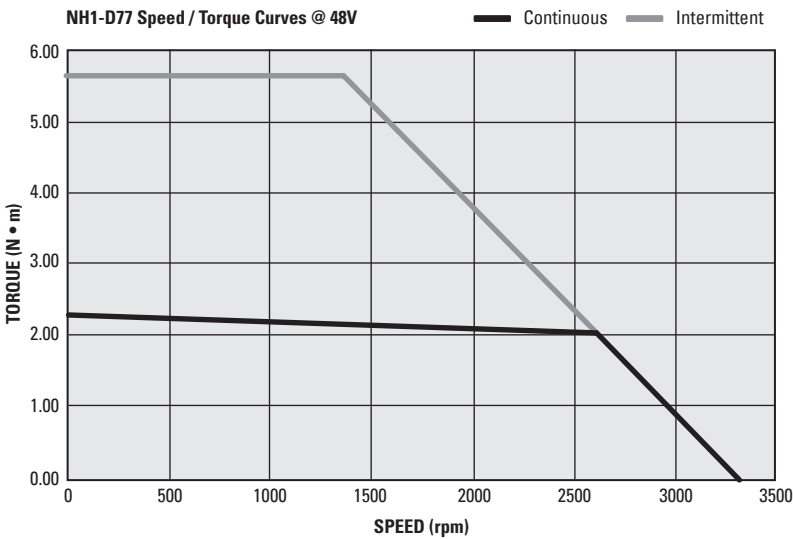
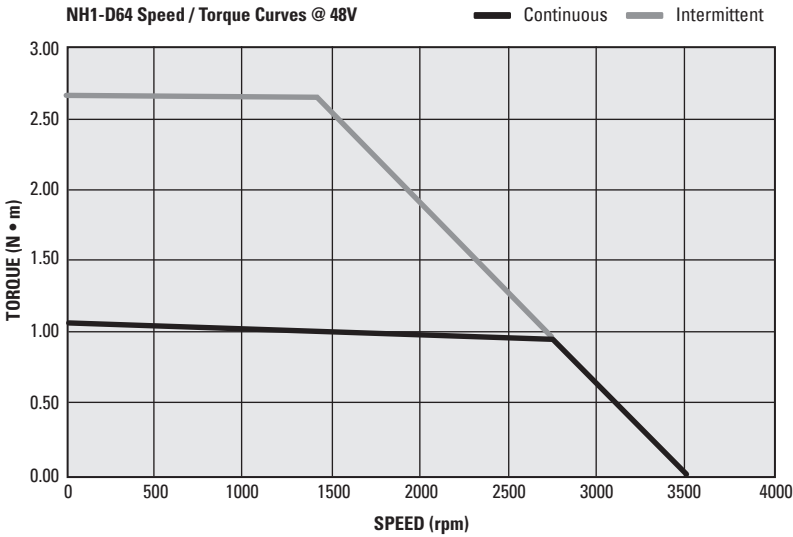


- I
- R
- T
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- A

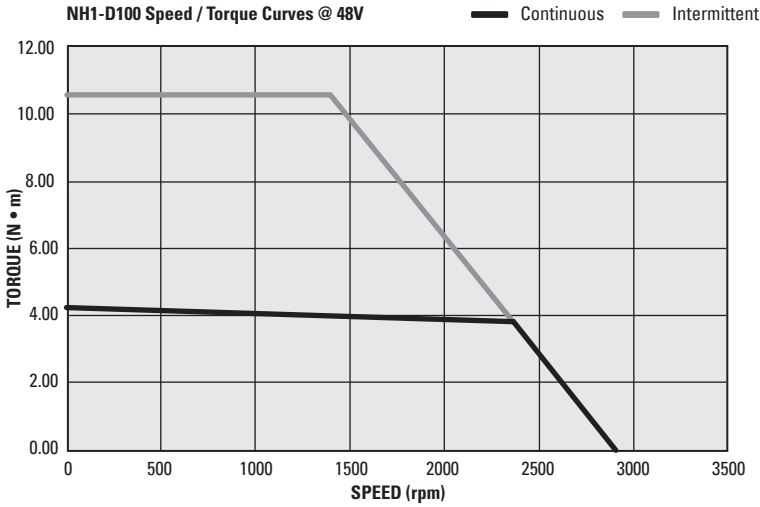
SPEED / TORQUE CHARACTERISTIC: for NH1-D35 and NH1-D52 @ 48V



SPEED / TORQUE CHARACTERISTIC: for NH1-D64 and NH1-D77 @ 48V



SPEED / TORQUE CHARACTERISTIC: for NH1-D100 @ 48V



- I
- R
- T
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11**
- 12
- 13
- 14
- 15
- A