

42S SERIES

SMALL BUT POWERFUL

**GENERAL SPECIFICATIONS**

Step Angle	7.5° / 3.6°
Step Accuracy	± 0.5° / ± 0.4°
Operating Temperature	100°C Max
Ambient Temperature Range	-20°C ~ +70°C
Insulation Resistance at 500Vdc	100MΩ
Dielectric Withstanding Voltage	650 ± 50 VRMS, 2 sec

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The specifications in this publication are believed to be accurate and reliable. However, it is the responsibility of the product user to determine the suitability of Portescap products for a specific application. While defective products will be replaced without charge if promptly returned, no liability is assumed beyond such replacement.

Portescap Danaher Motion motors will not be CE marked where the Low Voltage Directive, the Electro-Magnetic Compatibility or other appropriate EU directives are not applicable - this is an EU legal requirement.

TECHNICAL SPECIFICATIONS

	UNIPOLAR			
Part Number	42S048D1U	42S048D2U	42S100D1U	42S100D2U
DC Operating Voltage	5	12	5	12
Resistance per Winding (ohms)	12.5	75	12.5	75
Inductance per Winding (mH)	6.4	34.1	6.4	36.7
Holding Torque* (mNm/oz-in)	50.8 / 7.2	50.8 / 7.2	49.4 / 7.0	49.4 / 7.0
Rotor Moment of Inertia (g.m ²)	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴
Detent Torque (mNm/oz-in)	12 / 1.70	12 / 1.70	11.3 / 1.60	11.3 / 1.60
Step Angle	7.5°	7.5°	3.6°	3.6°
Step Angle Tolerance*	± 0.5°	± 0.5°	± 0.4°	± 0.4°
Steps per Revolution*	48	48	100	100
Max. Operating Temperature	100°C	100°C	100°C	100°C
Ambient Temperature Range				
Operating	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
Storage	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Bearing Type	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve
Insulation Resistance at 500Vdc	100 megohms	100 megohms	100 megohms	100 megohms
Dielectric Withstanding Voltage	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec
Weight (g/oz)	88 / 3.1	88 / 3.1	88 / 3.1	88 / 3.1
Leadwires	28 AWG, UL Style 3265	28 AWG, UL Style 3265	28 AWG, UL Style 3265	28 AWG, UL Style 3265

* Measured with 2 phases energized

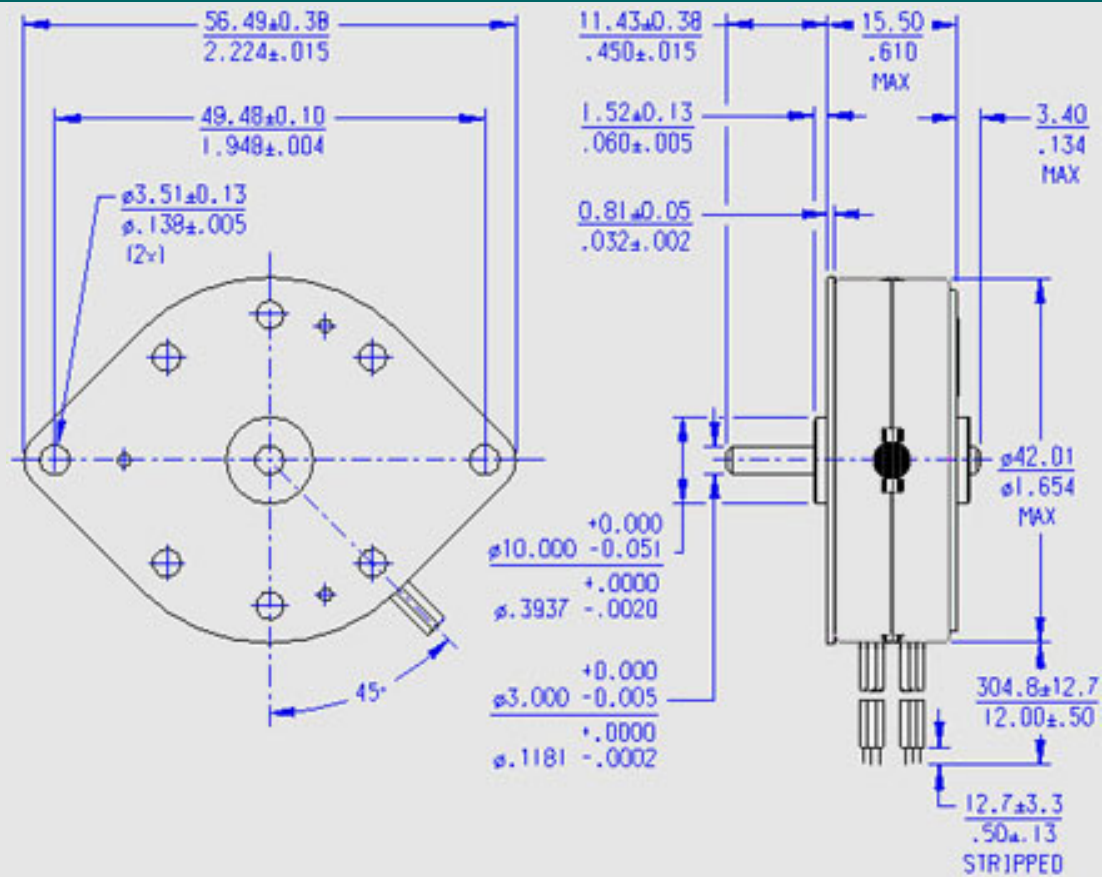
TECHNICAL SPECIFICATIONS

	BIPOLAR			
Part Number	42S048D1B	42S048D2B	42S100D1B	42S100D2B
DC Operating Voltage	5	12	5	12
Resistance per Winding (ohms)	12.5	75	12.5	75
Inductance per Winding (mH)	10.4	58	10.8	60.7
Holding Torque* (mNm/oz-in)	60.0 / 8.5	60.0 / 8.5	53.0 / 7.5	53.0 / 7.5
Rotor Moment of Inertia (g.m ²)	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴	9.5 x 10 ⁻⁴
Detent Torque (mNm/oz-in)	12 / 1.70	12 / 1.70	11.3 / 1.60	11.3 / 1.60
Step Angle	7.5°	7.5°	3.6°	3.6°
Step Angle Tolerance*	± 0.5°	± 0.5°	± 0.4°	± 0.4°
Steps per Revolution*	48	48	100	100
Max. Operating Temperature	100°C	100°C	100°C	100°C
Ambient Temperature Range				
Operating	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C	-20°C to 70°C
Storage	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C
Bearing Type	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve	Sintered bronze sleeve
Insulation Resistance at 500Vdc	100 megohms	100 megohms	100 megohms	100 megohms
Dielectric Withstanding Voltage	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec	650 ± 50 VRMS, 2 sec
Weight (g/oz)	88 / 3.1	88 / 3.1	88 / 3.1	88 / 3.1
Leadwires	28 AWG, UL Style 3265	28 AWG, UL Style 3265	28 AWG, UL Style 3265	28 AWG, UL Style 3265

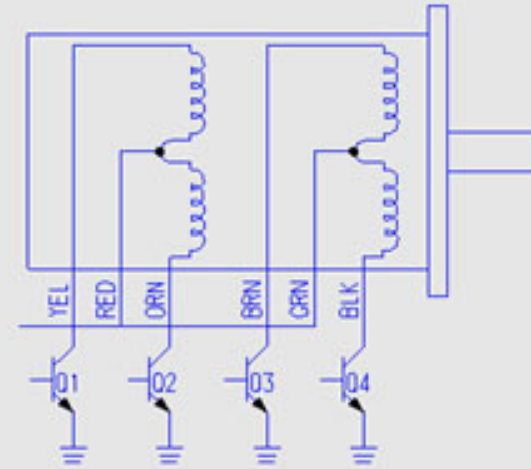
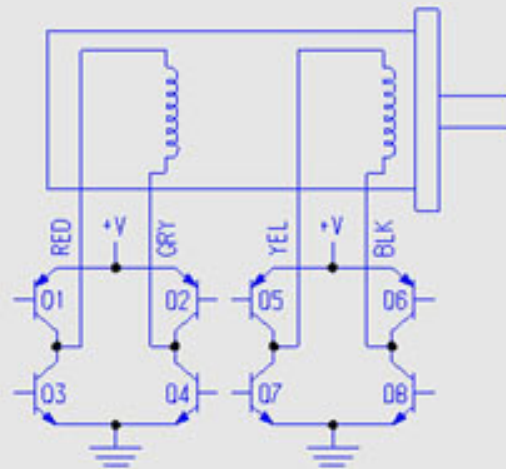
* Measured with 2 phases energized

MECHANICAL DIMENSIONS

UNITS = MM / INCHES



WIRING DIAGRAM



BIPOLAR

STEP	01-04	02-03	05-08	06-07
1	ON	OFF	ON	OFF
2	ON	OFF	OFF	ON
3	OFF	ON	OFF	ON
4	OFF	ON	ON	OFF
1	ON	OFF	ON	OFF

CW ROTATION ↓

↑ CCW ROTATION

UNIPOLAR

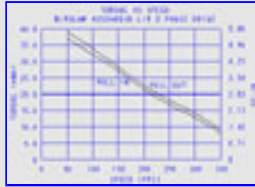
STEP	01	02	03	04
1	ON	OFF	ON	OFF
2	ON	OFF	OFF	ON
3	OFF	ON	OFF	ON
4	OFF	ON	ON	OFF
1	ON	OFF	ON	OFF

CW ROTATION ↓

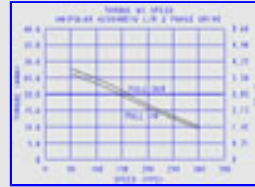
↑ CCW ROTATION

MOTOR DYNAMICS

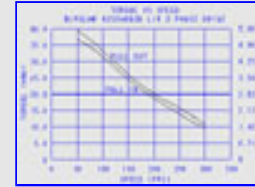
CLICK ON A THUMBNAIL TO MAGNIFY



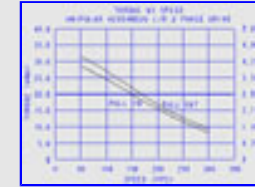
42S048D1B, Bipolar, L/R Drive



42S048D1U, Unipolar, L/R Drive



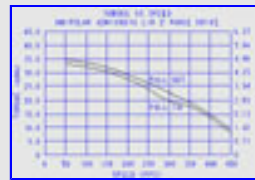
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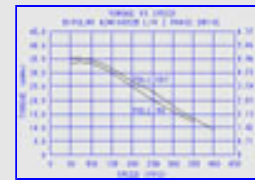
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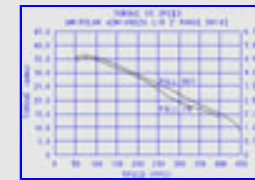
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42S100D1U, Unipolar, L/R Drive



42S100D2B, Bipolar, L/R Drive



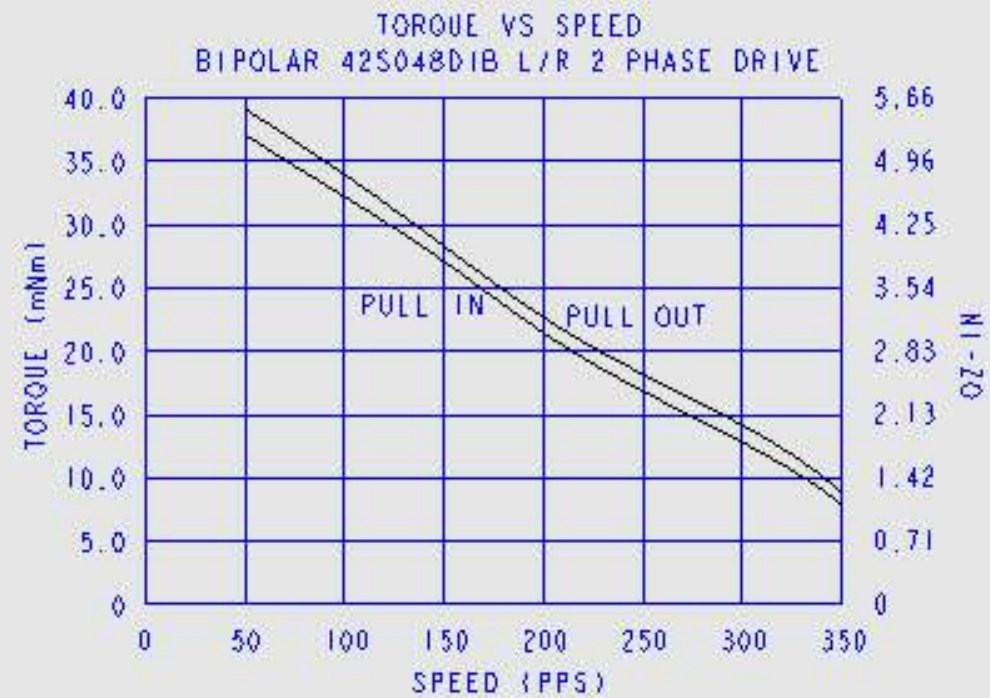
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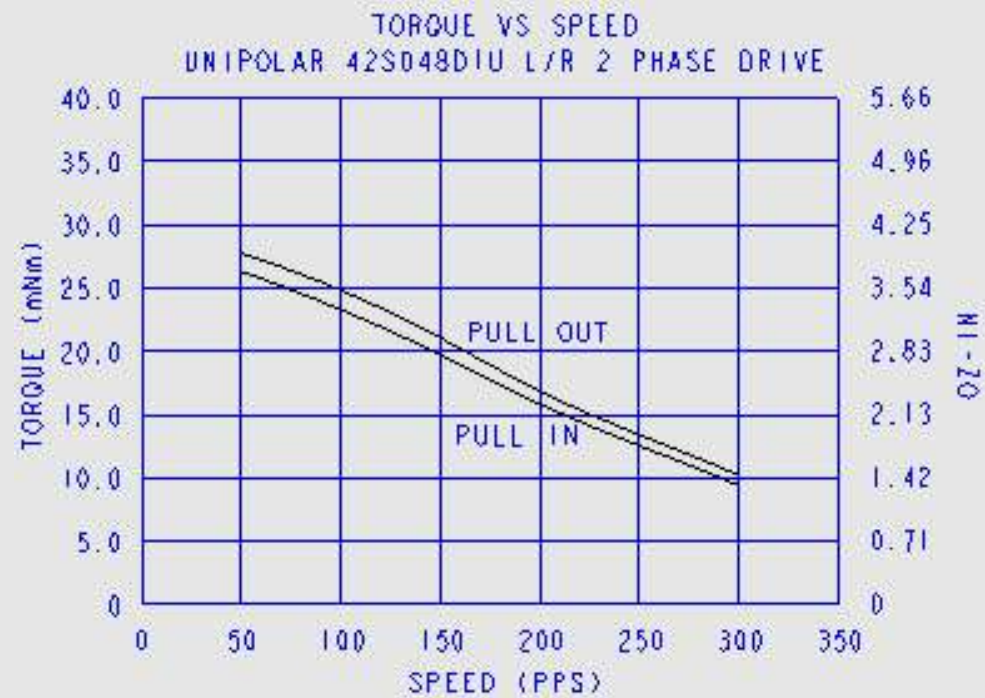


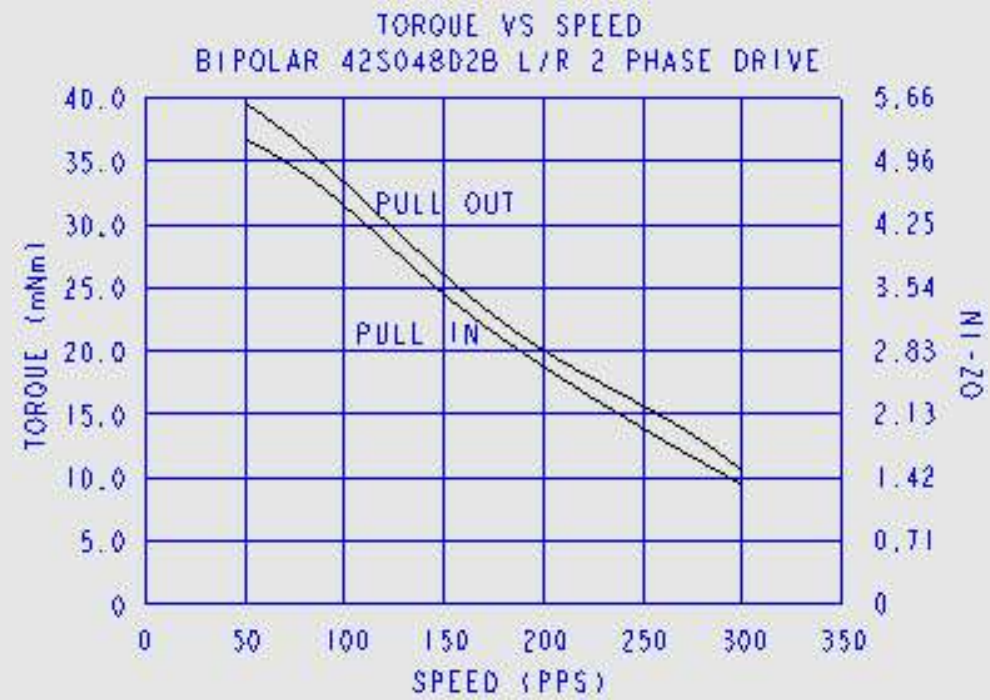
42S048D1B, Bipolar, Chopper Drive

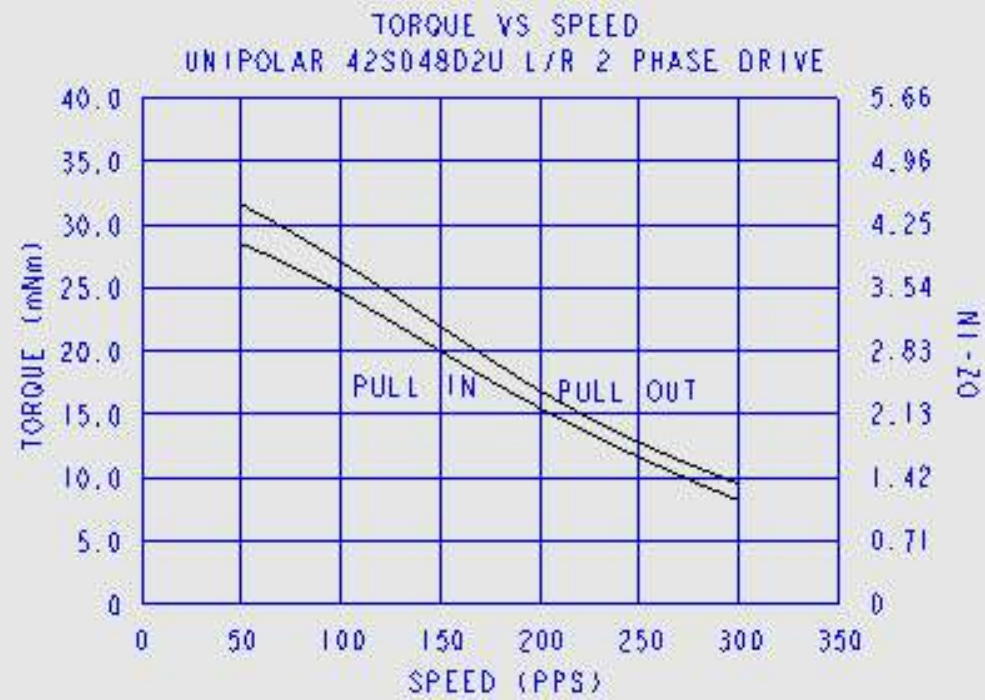


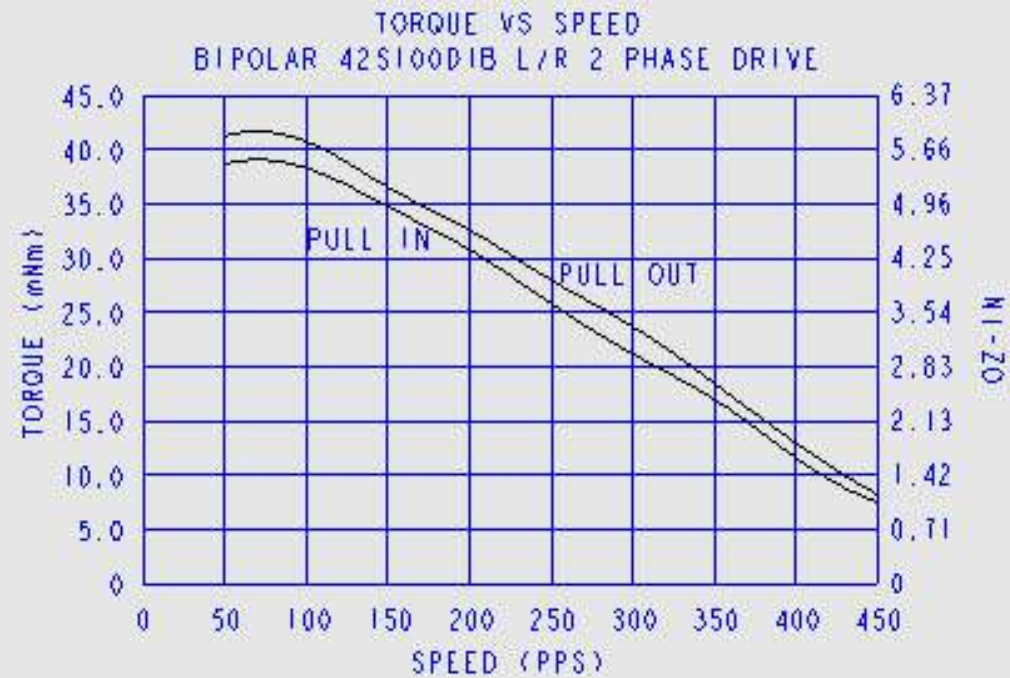
42S100D1B, Bipolar, Chopper Drive

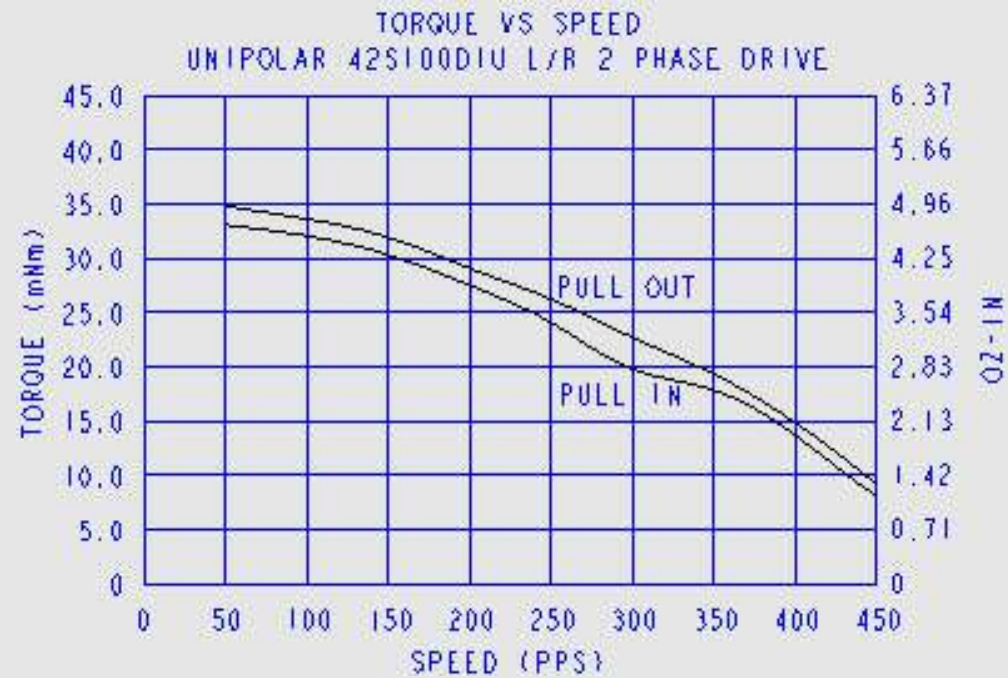


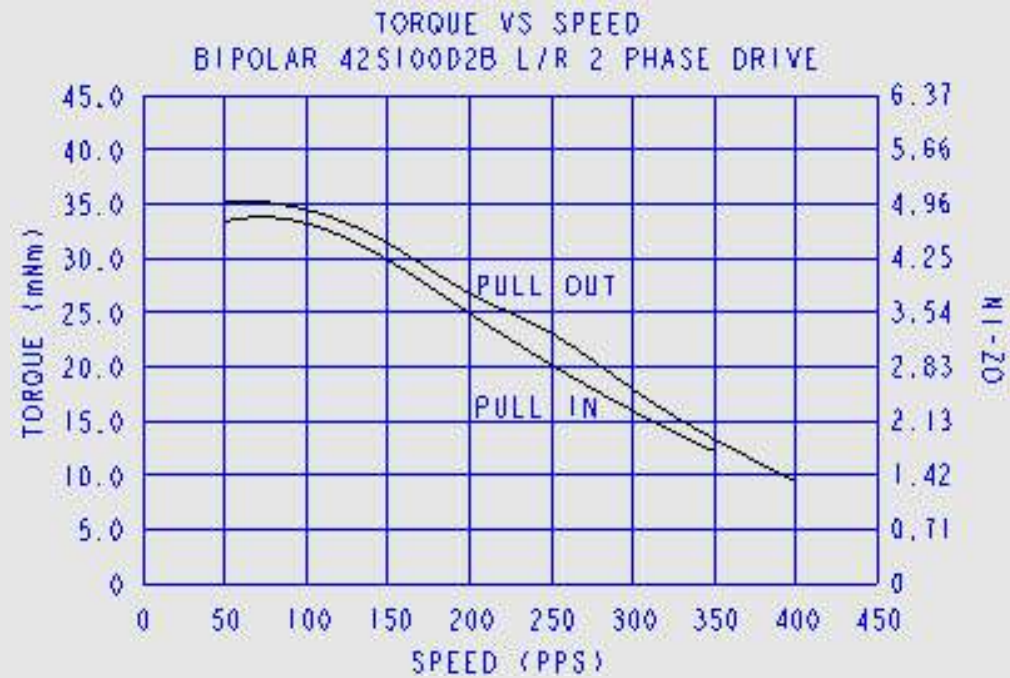


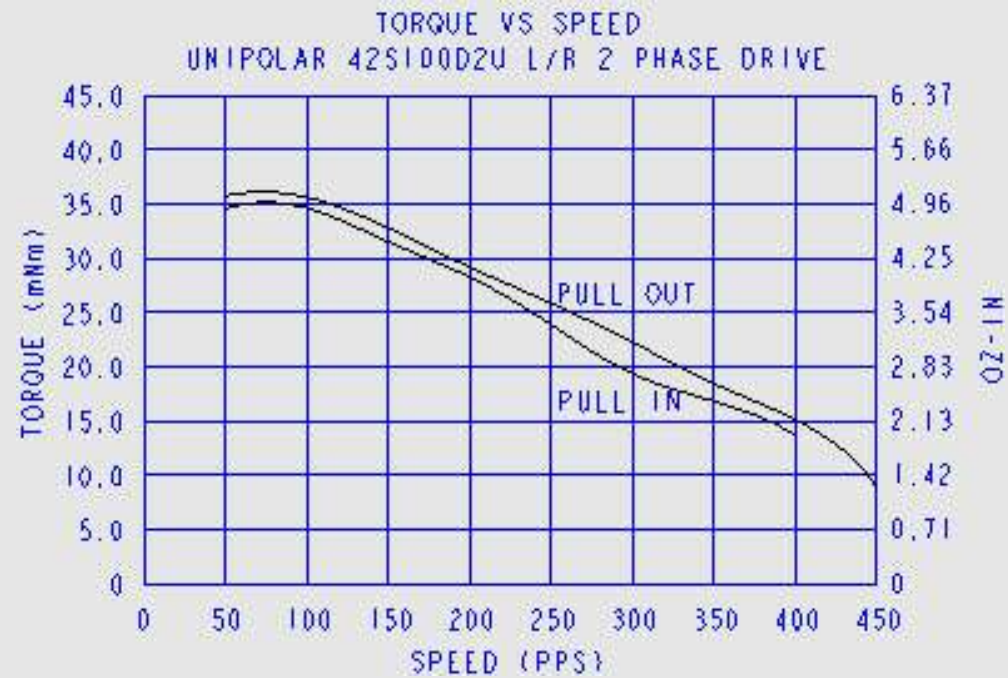










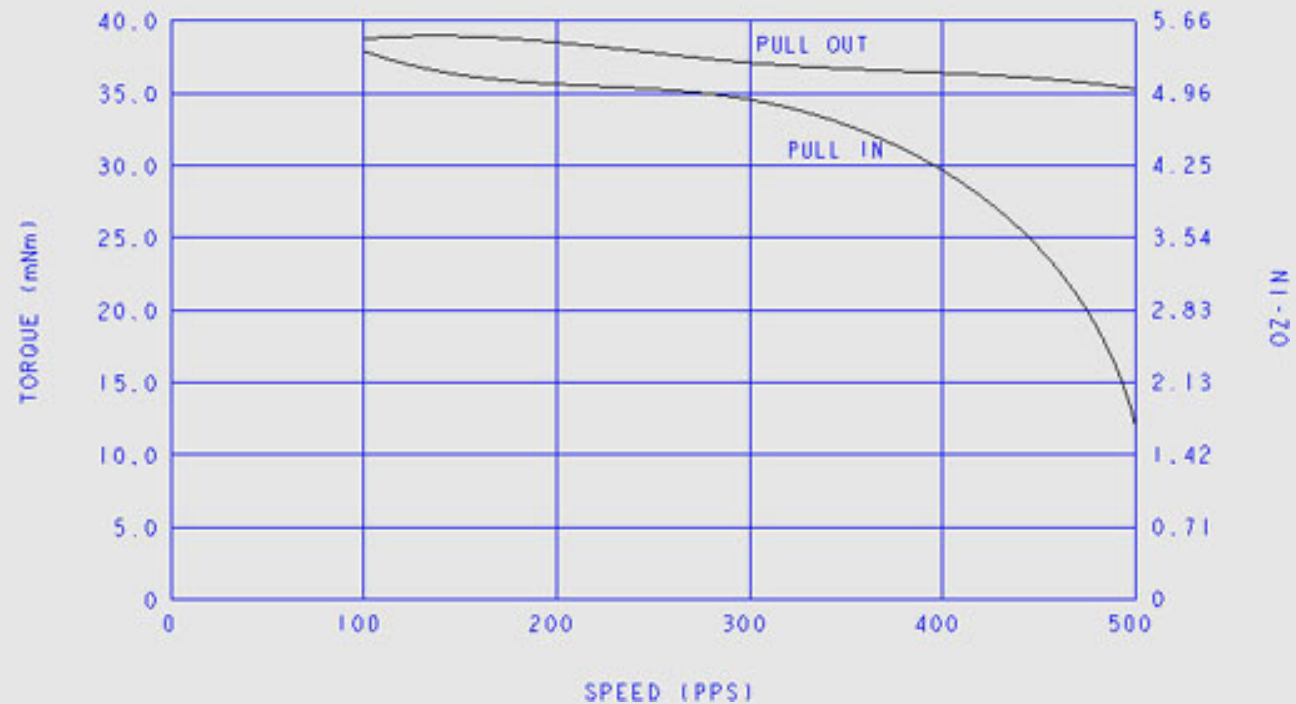




TORQUE VS SPEED

BIPOLAR 42S048D1B CHOPPER DRIVE

@ 36V, 400mA/Ø, 2Ø





TORQUE VS SPEED

BIPOLAR 42S100D1B CHOPPER DRIVE
@ 36V, 400mA/Ø, 2Ø

