



**TECO ELECTRO DEVICES CO., LTD.**

# STEPPING MOTORS



**TECO**  
GROUP



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## STEPPING MOTORS



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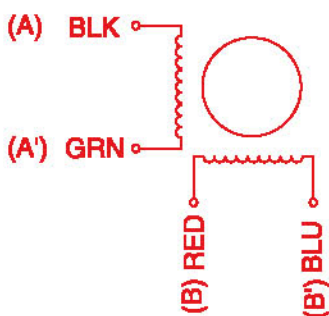
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## GENERAL SPECIFICATION

### General Specification

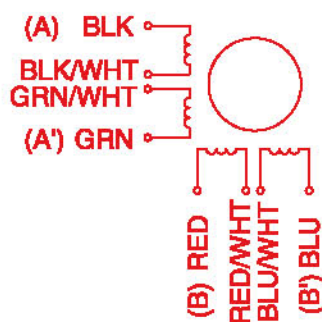
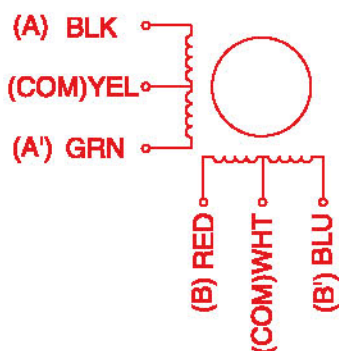
Item	DSH40、DSH56、DST28、DST42、DST56、DST60	DSH86、DST86
Step Angle Accuracy	±5 %	
Redial Play	0.025mm Max. ( 0.5Kg Load )	
End Play	0.075mm Max. ( 1Kg Load )	
Shaft Run-Out	0.05 mm ( T.I.R )	
Concentricity	0.075mm ( T.I.R )	
Perpendicularity	0.12mm ( T.I.R )	
Temperature Rise	80°C (Max.)	
Ambient Temperature	-10°C~50°C	
Insulation Class	B (130°C)	
Insulation Resistance	100M Ω min. (at 500VDC)	
Dielectric Strength	500VAC (for 1min.)	900VAC (for 1min.)

### Wiring Diagram



Bipolar; Two phase driving

STEP	A	B	A'	B'	CCW
1	+	+	-	-	
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	



Unipolar; Two phase driving

STEP	A	B	A'	B'	COM	CCW
1	ON	ON			+DCV	
2		ON	ON			
3			ON	ON		
4	ON			ON		

### Part Number Code

Example:

D S T 4 2 E S 4 1 A





## DST 28 CONNECTOR SERIES

### SPECIFICATION

#### Bipolar -4 leads specification

1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

Model number	Step Angle (degree)	Rated Voltage (VDC)	Rated Current (A/Phase)	Holding Torque (gf·cm)	Winding Resistance ( $\Omega \pm 10\%/Phase$ )	Inductance (mH $\pm 20\%/Phase$ )	Rotor Inertia (g·cm <sup>2</sup> )	Motor Weight (gw)
DST28ES28A	1.8	1.82	1.3	700	1.4	1.3	9	110
DST28ES41A	1.8	3.8	0.67	700	5.6	4.5	9	110
DST28ES43A	1.8	9.8	0.25	600	39	30	9	110
DST28ES4BA	1.8	5	0.5	600	10	7.7	9	110
DST28ES4CA	1.8	2.5	1.0	600	2.5	1.9	9	110
DST28EM41A	1.8	4.6	0.67	970	6.8	7.1	12	150
DST28EG22A	1.8	2.0	1.2	1000	1.7	1.3	14	170
DST28EG41A	1.8	3.75	0.67	1000	5.6	5.2	14	170
DST28EL27A	1.8	3	1.3	1200	2.3	1.7	17	195
DST28EL41A	1.8	6.2	0.67	1100	9.2	7.9	17	195
DST28EL44A	1.8	6.1	0.5	1100	12.1	10	17	195
DST28EL4CA	1.8	4.1	1	1300	4.1	3.2	17	195

#### Unipolar-6 leads specification

1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

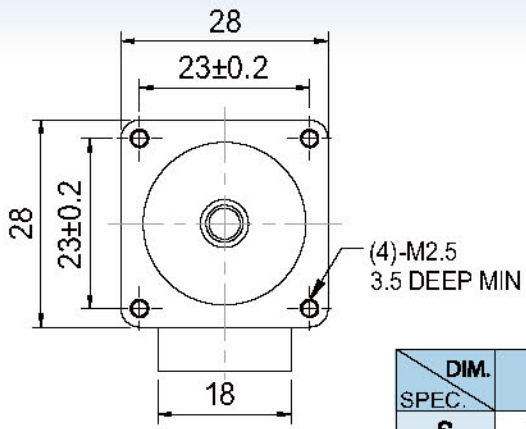
Model number	Step Angle (degree)	Rated Voltage (VDC)	Rated Current (A/Phase)	Holding Torque (gf·cm)	Winding Resistance ( $\Omega \pm 10\%/Phase$ )	Inductance (mH $\pm 20\%/Phase$ )	Rotor Inertia (g·cm <sup>2</sup> )	Motor Weight (gw)
DST28ES61A	1.8	2.66	0.95	500	2.8	1.2	9	110
DST28ES64A	1.8	7	0.25	350	28	10	9	110
DST28ES66A	1.8	3.5	0.5	350	7.1	2.6	9	110
DST28EM61A	1.8	3.4	0.95	760	3.4	1.8	12	150
DST28EG61A	1.8	2.7	0.95	750	2.8	1.3	14	170
DST28EL61A	1.8	4.4	0.95	950	4.6	2	17	195

● To customize motors, please contact with us or our agent.

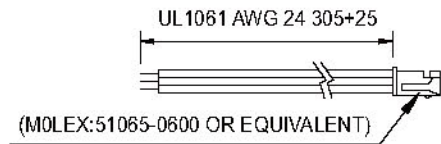
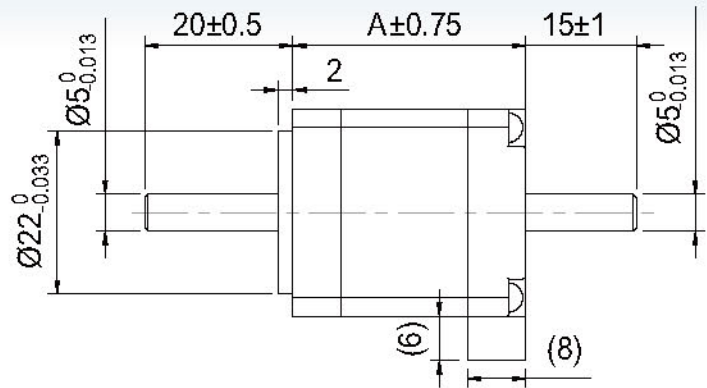


DIMENSION

DIMENSION (UNIT : mm)

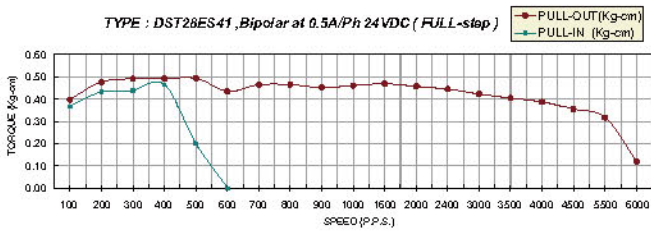


DIM. SPEC.	A
S	31.5
M	39.5
G	44.5
L	50.5

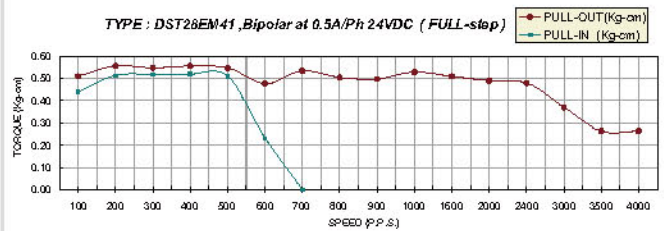


PERFORMANCE CURVE

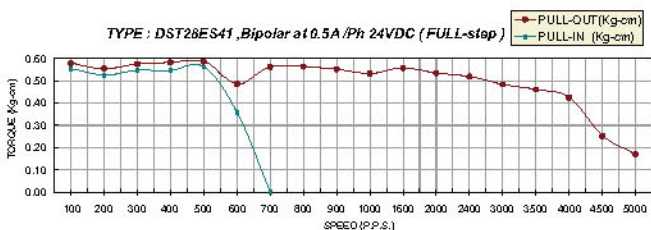
DST28ES41



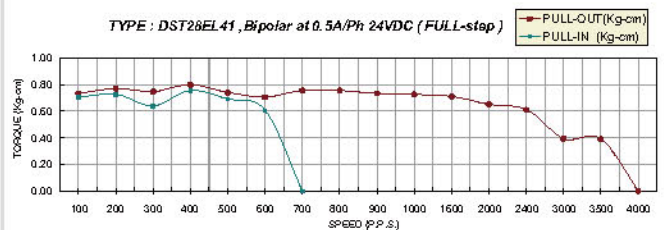
DST28EM41



DST28EG41



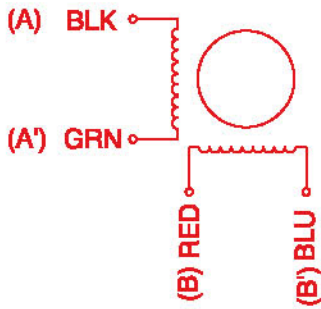
DST28EL41



## WIRING DIAGRAM AND DRIVING

### • Bipolar series connection - 4 leads diagram

#### WIRING DIAGRAM

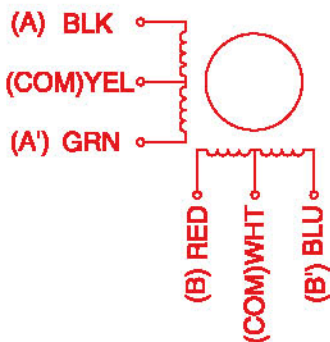


Bipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	CCW ↑ ↓ CW
1	+	+	-	-	↑ ↓
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

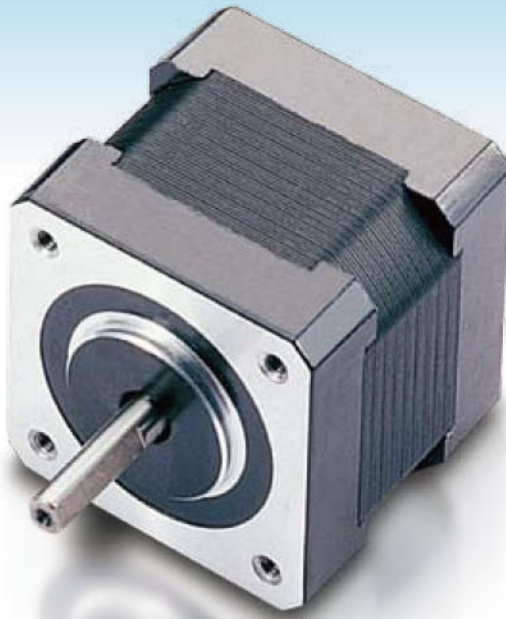
### • Unipolar- 6 leads diagram

#### WIRING DIAGRAM



Unipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	COM	CCW ↑ ↓ CW
1	ON	ON			+DCV	↑ ↓
2		ON	ON			
3			ON	ON		
4	ON			ON		



## DST 42 SERIES

### SPECIFICATION

#### Bipolar series connection – 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST42EF27A	1.8	1.9	1.4	800	1.35	1.3	16	140
DST42EX27A	1.8	2.6	1.4	1400	1.85	2.1	18	150

#### Unipolar – 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

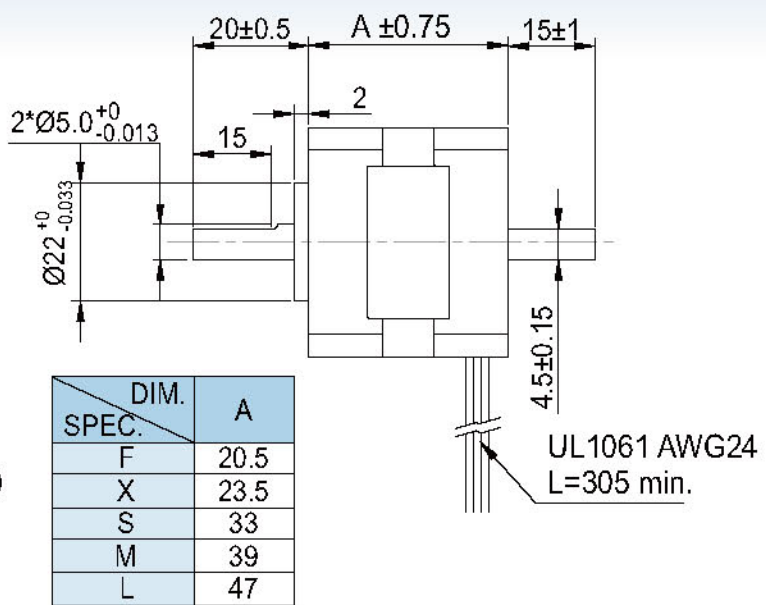
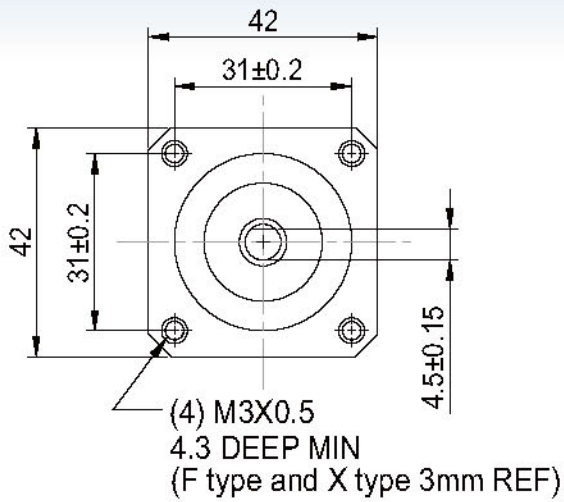
Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST42ES61A	1.8	4.0	0.95	1600	4.2	2.6	35	200
DST42ES62A	1.8	9.6	0.4	1600	24	16	35	200
DST42ES63A	1.8	12	0.31	1600	38.5	25	35	200
DST42EM61A	1.8	4.0	1.2	2600	3.3	3.6	53	250
DST42EM62A	1.8	6.0	0.8	2600	7.5	7.6	53	250
DST42EM63A	1.8	12	0.4	2600	30	29	53	250
DST42EM64A	1.8	24	0.2	2600	120	112	53	250
DST42EL61A	1.8	4.0	1.2	3200	3.3	3.1	68	350
DST42EL62A	1.8	6.0	0.8	3200	7.5	7.6	68	350
DST42EL63A	1.8	12	0.4	3200	30	29	68	350

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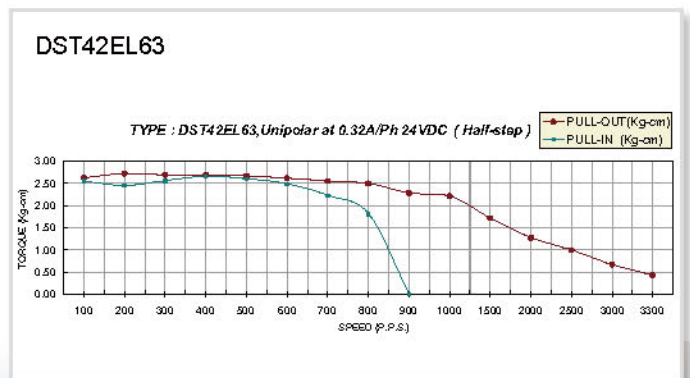
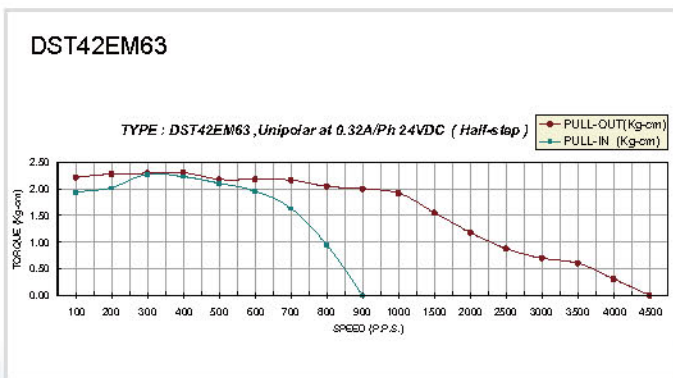
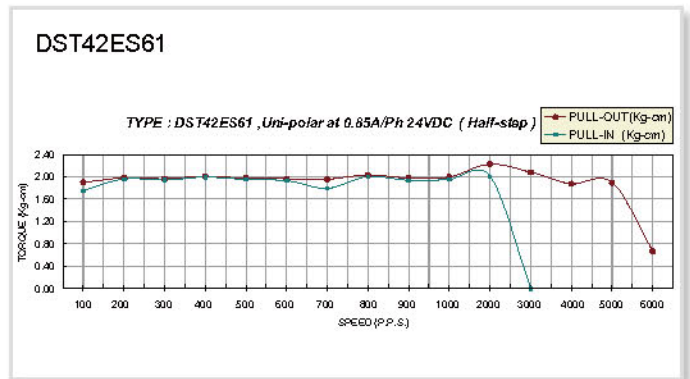
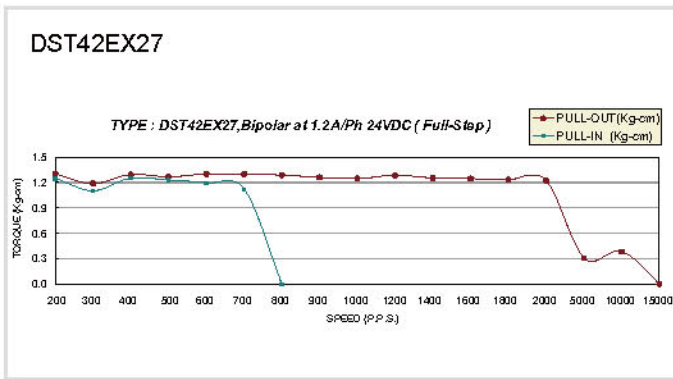


DIMENSION

DIMENSION (UNIT : mm)



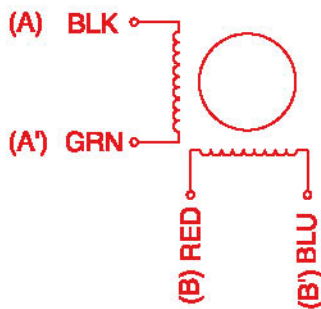
PERFORMANCE CURVE



## WIRING DIAGRAM AND DRIVING

### • Bipolar series connection – 4 leads diagram

#### WIRING DIAGRAM

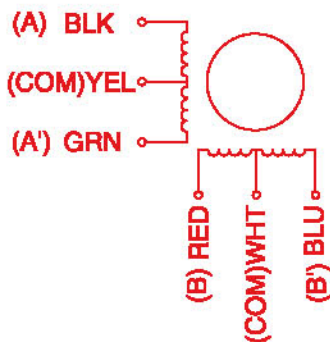


Bipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	CCW ↑ ↓ CW
1	+	+	-	-	↑ ↓
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

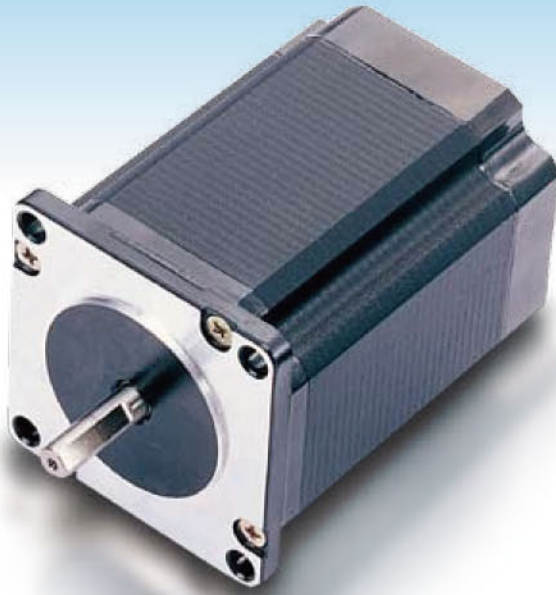
### • Unipolar- 6 leads diagram

#### WIRING DIAGRAM



Unipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	COM	CCW ↑ ↓ CW
1	ON	ON			+DCV	↑ ↓
2		ON	ON			
3			ON	ON		
4	ON			ON		



## DST 56 SERIES

### SPECIFICATION

#### Bipolar series connection - 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST56EX43A	1.8	2.7	2.12	5400	1.3	2.6	120	470
DST56EM2HA	1.8	2.1	4.2	11000	0.5	1.9	300	700
DST56EL2FA	1.8	2.0	4.0	17000	0.5	2.4	480	1000

#### Unipolar - 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST56DF61A	0.9	5.7	1.0	3900	5.7	6.3	90	400
DST56DX63A	0.9	1.9	3.0	4300	0.63	0.7	120	450
DST56DM62A	0.9	3.6	2.0	8500	1.8	4.2	300	700
DST56DL63A	0.9	3.0	3.0	13500	1.0	2.2	480	1000
DST56DC67A	0.9	5.1	3.0	18000	1.7	5.8	720	1500
DST56EX61A	1.8	5.7	1.0	4300	5.7	6.5	120	470
DST56EX62A	1.8	2.8	2.0	4300	1.4	1.5	120	470
DST56EX63A	1.8	1.9	3.0	4300	0.63	0.64	120	470
DST56EM61A	1.8	7.4	1.0	8500	7.4	14.3	300	700
DST56EM62A	1.8	3.6	2.0	8500	1.8	3.7	300	700
DST56EM63A	1.8	2.3	3.0	9000	0.75	1.75	300	700
DST56EL61A	1.8	8.6	1.0	13500	8.6	19	480	1000
DST56EL62A	1.8	4.5	2.0	13500	2.25	4.7	480	1000
DST56EL63A	1.8	3.0	3.0	13500	1.0	1.9	480	1000
DST56EC67A	1.8	5.1	3.0	18000	1.7	5.4	720	1500

#### 8 leads diagram - series connection for 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

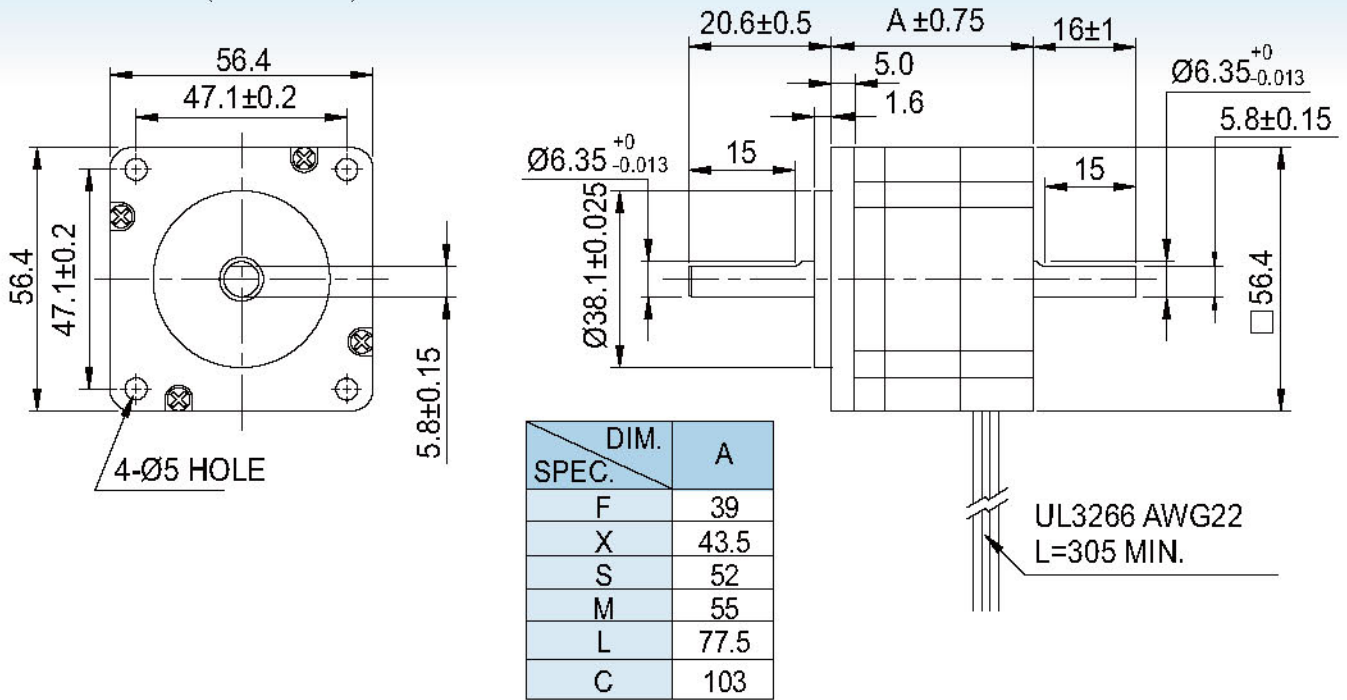
Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST56DS85A	0.9	6.0	1.2	7500	5.0	11.8	275	650
DST56ES85A	1.8	5.0	1.0	7000	5.0	10.5	275	650
DST56EM82A	1.8	3.6	2.0	8500	1.8	3.7	300	700
DST56EC89A	1.8	2.5	5.0	15000	0.5	1.1	720	1500

● To customize motors, please contact with us or our agent.



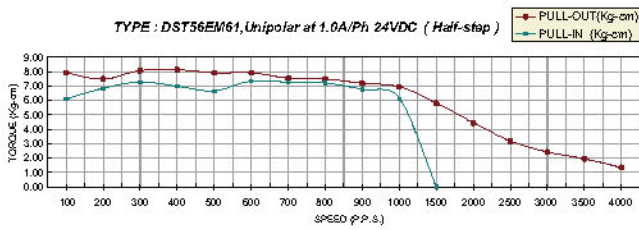
**DIMENSION**

DIMENSION (UNIT : mm)

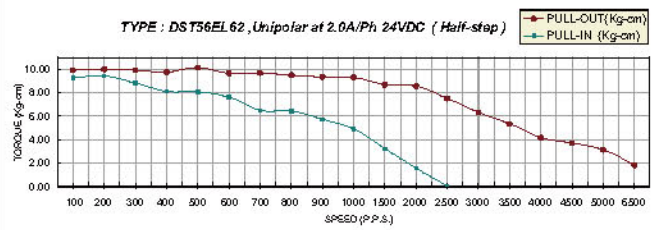


**PERFORMANCE CURVE**

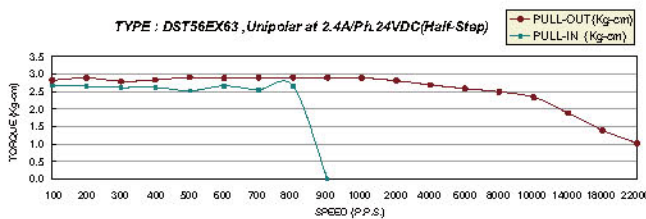
DST56EM61



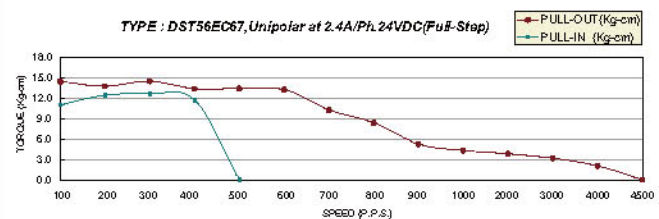
DST56EL62



DST56EX63



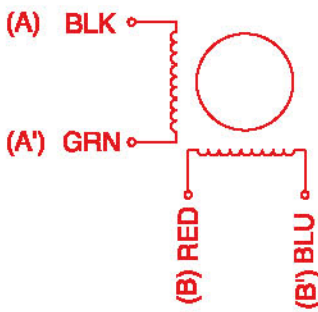
DST56EC67



## WIRING DIAGRAM AND DRIVING

### • Bipolar series connection – 4 leads diagram

#### WIRING DIAGRAM

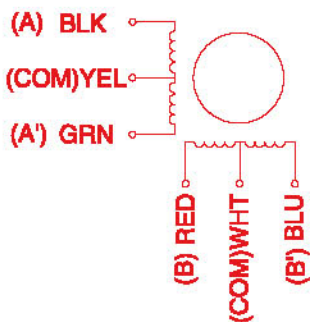


Bipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	CCW ↑ ↓ CW
1	+	+	-	-	↑ ↓
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

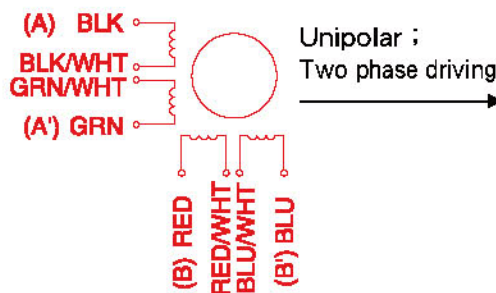
### • Unipolar- 6 leads diagram

#### WIRING DIAGRAM



### • 8 leads diagram – series connection for 6 leads

#### WIRING DIAGRAM



Unipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	COM	CCW ↑ ↓ CW
1	ON	ON			+DCV	↑ ↓
2		ON	ON			
3			ON	ON		
4	ON			ON		



# DST 42 CONNECTOR SERIES

## SPECIFICATION

### Bipolar series connection - 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST42ES41A	1.8	5.6	0.67	2200	8.4	10.4	35	200
DST42EM41A	1.8	5.6	0.85	3400	6.6	14	53	250

### Unipolar - 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

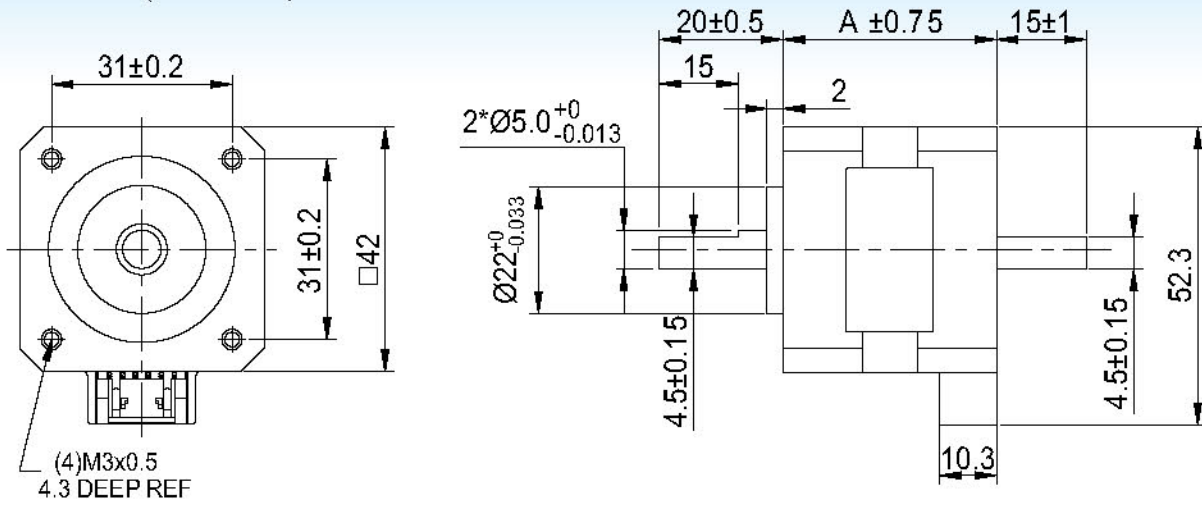
Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST42ES61A	1.8	4.0	0.95	1600	4.2	2.6	35	200
DST42ES62A	1.8	9.6	0.4	1600	24	16	35	200
DST42ES63A	1.8	12	0.31	1600	38.5	25	35	200
DST42EM61A	1.8	4.0	1.2	2600	3.3	3.6	53	250
DST42EM62A	1.8	6.0	0.8	2600	7.5	7.6	53	250
DST42EM63A	1.8	12	0.4	2600	30	29	53	250
DST42EM64A	1.8	24	0.2	2600	120	112	53	250
DST42EL61A	1.8	4.0	1.2	3200	3.3	3.1	68	350
DST42EL62A	1.8	6.0	0.8	3200	7.5	7.6	68	350
DST42EL63A	1.8	12	0.4	3200	30	29	68	350

● To customize motors, please contact with us or our agent.

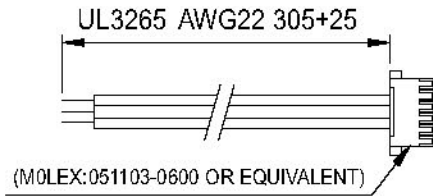


## DIMENSION

DIMENSION (UNIT : mm)



DIM. / SPEC.	A
S	33
M	39
L	47





# DST 56 CONNECTOR SERIES

## SPECIFICATION

### Bipolar series connection - 4 leads specification

1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf·cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g·cm <sup>2</sup> )	Weight (gw)
DST56EF24A	1.8	5	1.4	4600	3.6	6.2	90	400
DST56EX11A	1.8	1.52	4	7000	0.38	1.2	120	470
DST56EM27A	1.8	1	4	8000	0.28	0.9	300	700
DST56EL2FA	1.8	2	4	17000	0.5	2.2	480	1000
DST56EC27A	1.8	3.6	4.2	25000	0.87	5.0	720	1500

### Unipolar - 6 leads specification

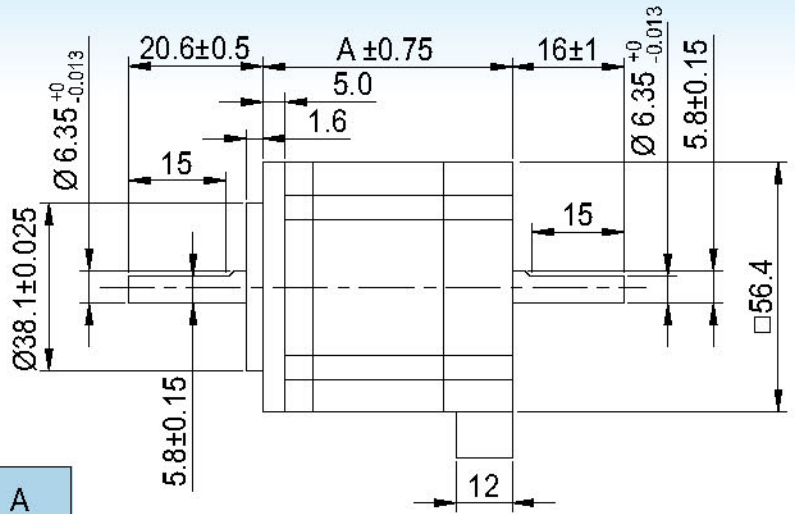
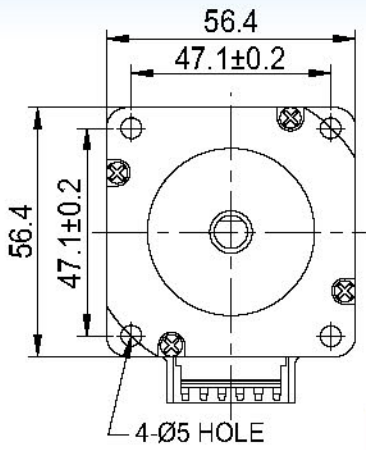
1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf·cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g·cm <sup>2</sup> )	Weight (gw)
DST56EF64A	1.8	7.2	1	3500	7.2	6.2	90	400
DST56EX61A	1.8	5.7	1.0	4300	5.7	5.3	120	470
DST56EX62A	1.8	2.8	2.0	4300	1.4	1.45	120	470
DST56EX63A	1.8	1.9	3.0	4100	0.63	0.56	120	470
DST56EM61A	1.8	7.4	1.0	8500	7.4	14	300	700
DST56EM62A	1.8	3.6	2.0	8500	1.8	3.3	300	700
DST56EM63A	1.8	2.3	3.0	9000	0.75	1.7	300	700
DST56EL61A	1.8	8.6	1.0	13500	8.6	17	480	1000
DST56EL62A	1.8	4.5	2.0	13500	2.25	4.1	480	1000
DST56EL63A	1.8	3.0	3.0	13000	1.0	1.8	480	1000
DST56EC67A	1.8	5.1	3.0	19000	1.7	5.0	720	1500

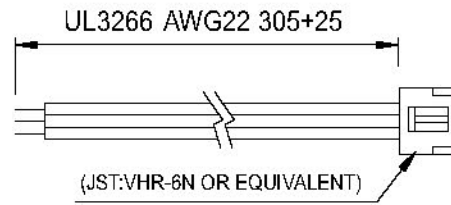
● To customize motors, please contact with us or our agent.

**DIMENSION**

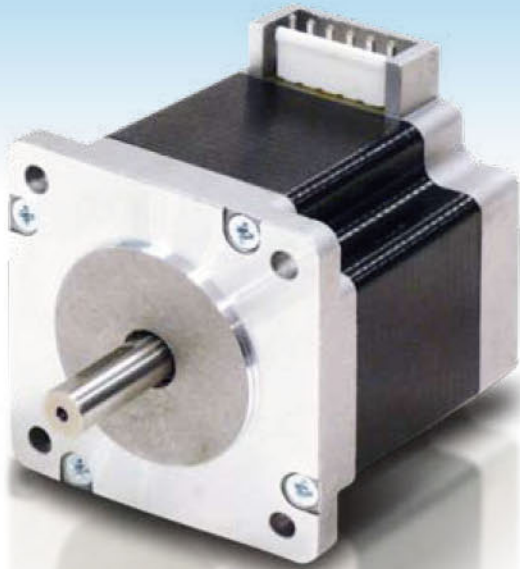
DIMENSION (UNIT : mm)



SPEC.	DIM.	A
F		39
X		43.5
S		52
M		55
L		77.5
C		103







# DST 60 CONNECTOR SERIES

## SPECIFICATION

### Bipolar series connection - 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (kgf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor Inertia (g-cm <sup>2</sup> )	Weight (gw)
DST60EX21B	1.8	2.1	2.8	10.2	0.75	1.9	280	600
DST60EX41B	1.8	4.2	1.4	10.2	3	7.6	280	600
DST60EM21B	1.8	3.4	2.8	17.3	1.2	3.5	450	800
DST60EM41B	1.8	6.7	1.4	17.3	4.8	14	450	800
DST60EG21B	1.8	3.6	2.8	21	1.3	3.8	570	1000
DST60EG41B	1.8	7.3	1.4	21	5.2	15.2	570	1000
DST60EK21B	1.8	4.2	2.8	31	1.5	4.4	900	1400
DST60EK41B	1.8	8.4	1.4	31	6	18	900	1400

### Unipolar - 6 leads specification

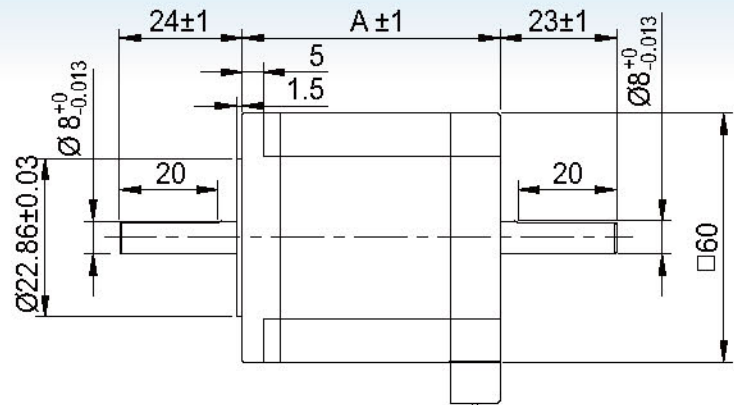
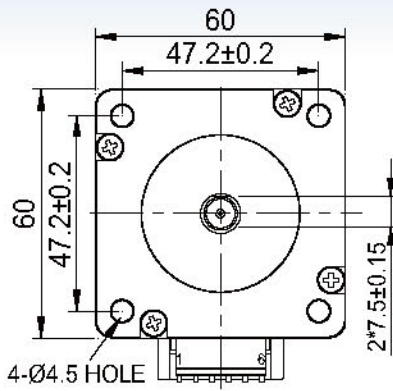
1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (kgf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DST60EX61B	1.8	3	2	7.6	1.5	1.9	280	600
DST60EM61B	1.8	4.8	2	13.5	2.4	3.5	450	800
DST60EG61B	1.8	5.2	2	16	2.6	3.8	570	1000
DST60EK61B	1.8	6	2	23	3	4.4	900	1400

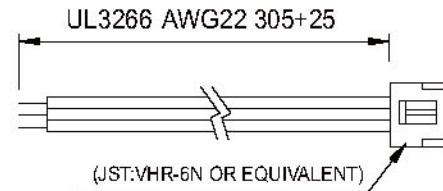
● To customize motors, please contact with us or our agent.

## DIMENSION

DIMENSION (UNIT : mm)

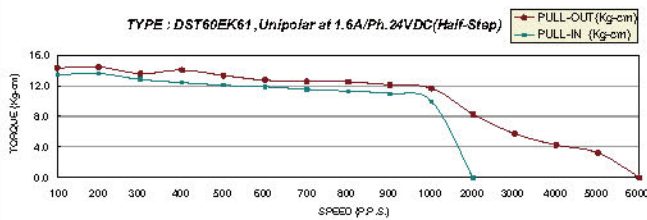


DIM. SPEC.	A
X	43.5
M	54
G	65
K	85

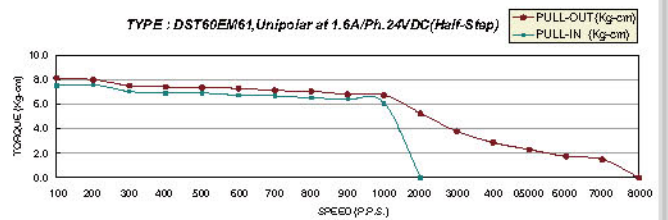


## PERFORMANCE CURVE

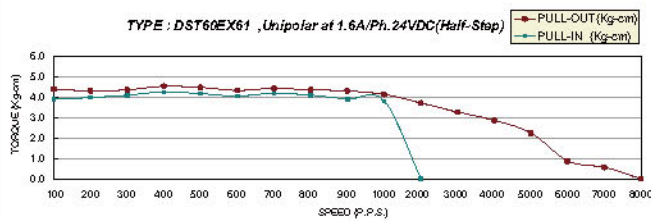
DST60EK61

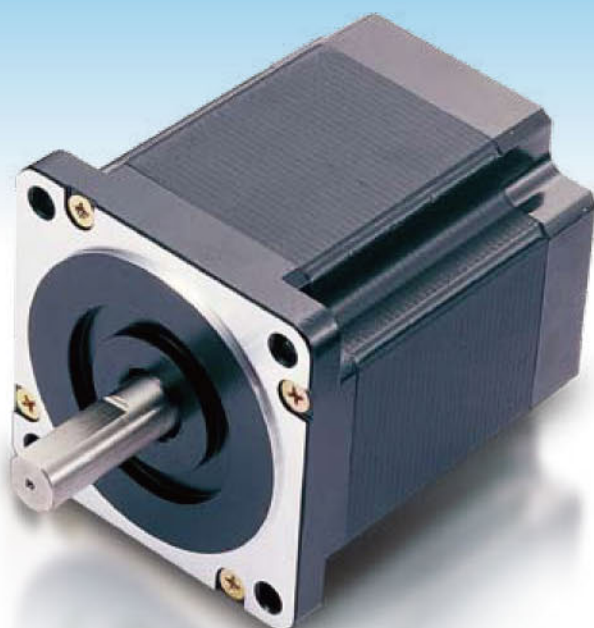


DST60EM61



DST60EX61





## DST 86 SERIES

### SPECIFICATION

#### Unipolar series connection - 6 leads specification

1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf·cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor Inertia (g·cm <sup>2</sup> )	Weight (gw)
DST86ES61A	1.8	4.4	2.0	20000	2.2	9.7	1400	1750
DST86ES62A	1.8	3.0	3.0	22000	1.0	4.8	1400	1750
DST86ES63A	1.8	2.0	4.5	22000	0.45	2.2	1400	1750
DST86EM61A	1.8	6.4	2.0	44000	3.2	21	2700	2800
DST86EM62A	1.8	4.2	3.0	44000	1.4	7.8	2700	2800
DST86EM63A	1.8	2.8	4.5	42000	0.66	3.4	2700	2800
DST86EL61A	1.8	7.6	2.0	66000	3.8	32	4000	3930
DST86EL62A	1.8	3.8	4.0	66000	0.97	6.8	4000	3930
DST86DS61A	0.9	4.4	2.0	20000	2.2	10.6	1400	1750
DST86DS62A	0.9	3.0	3.0	20000	1.0	5.2	1400	1750
DST86DS66A	0.9	3.4	4.0	22000	0.85	4.3	1400	1750
DST86DM61A	0.9	6.4	2.0	40000	3.2	22	2700	2800
DST86DM62A	0.9	4.2	3.0	40000	1.4	8.0	2700	2800
DST86DM69A	0.9	3.2	4.0	40000	0.8	4.9	2700	2800
DST86DL61A	0.9	7.6	2.0	60000	3.8	32	4000	3930
DST86DL62A	0.9	3.8	4.0	60000	0.95	6.8	4000	3930

#### Unipolar - 8 leads specification

1 gf·cm=0.001 kgf·cm 1 gf·cm=0.000098 N·m

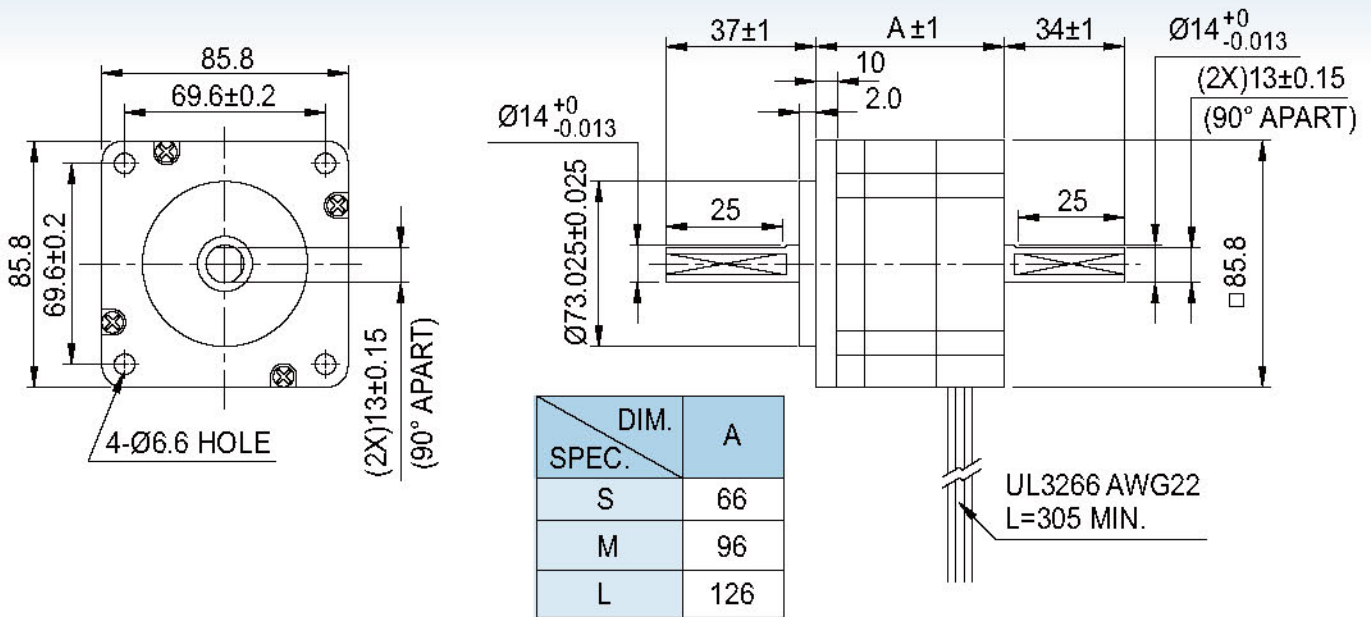
Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf·cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor Inertia (g·cm <sup>2</sup> )	Weight (gw)
DST86ES83A	1.8	2.0	4.5	22000	0.45	2.2	1400	1750
DST86EM82A	1.8	4.2	3.0	44000	1.4	7.8	2700	2800
DST86EM83A	1.8	2.8	4.5	42000	0.66	3.4	2700	2800
DST86EL82A	1.8	3.8	4.0	66000	0.97	6.8	4000	3930
DST86EL87A	1.8	3.0	6.7	66000	0.45	3.0	4000	3840

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## DIMENSION

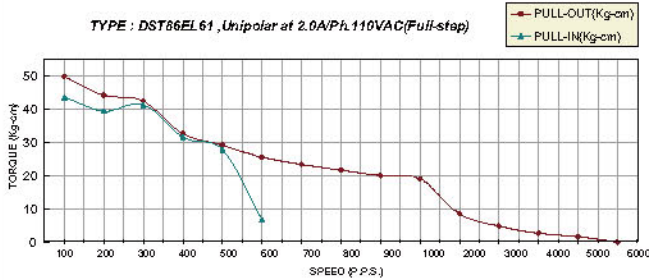
DIMENSION (UNIT : mm)



## PERFORMANCE CURVE

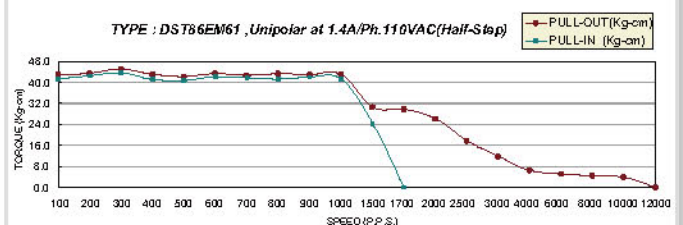
DST86EL61

TYPE : DST86EL61 ,Unipolar at 2.0A/Ph.110VAC(Full-step)



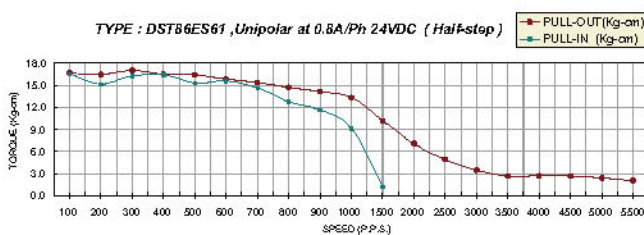
DST86EM61

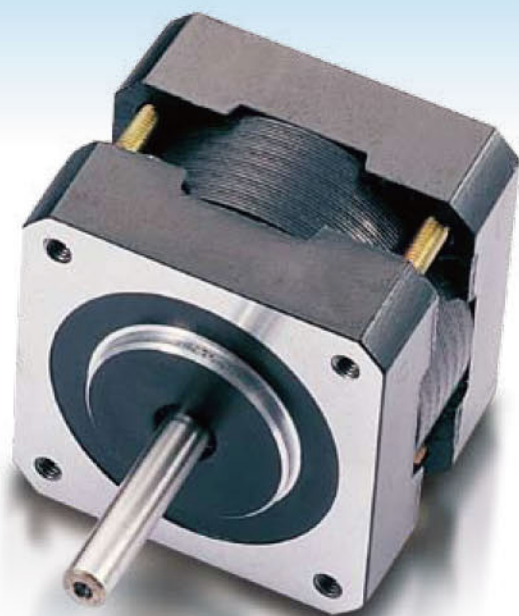
TYPE : DST86EM61 ,Unipolar at 1.4A/Ph.110VAC(Half-Step)



DST86ES61

TYPE : DST86ES61 ,Unipolar at 0.8A/Ph 24VDC (Half-Step)





## DSH 40 SERIES

### SPECIFICATION

#### Bipolar series connection - 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH40EF28A	1.8	3.3	1.0	780	3.3	3.2	12	140
DSH40EX24A	1.8	5.0	1.0	1200	5.0	6.2	13	145

#### Unipolar - 6 leads specification

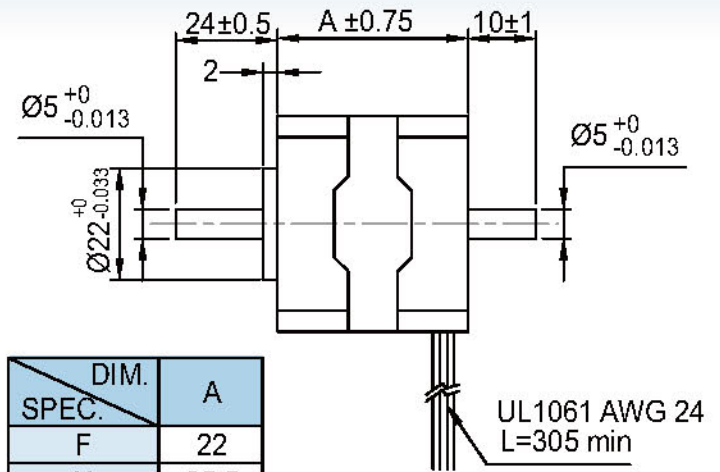
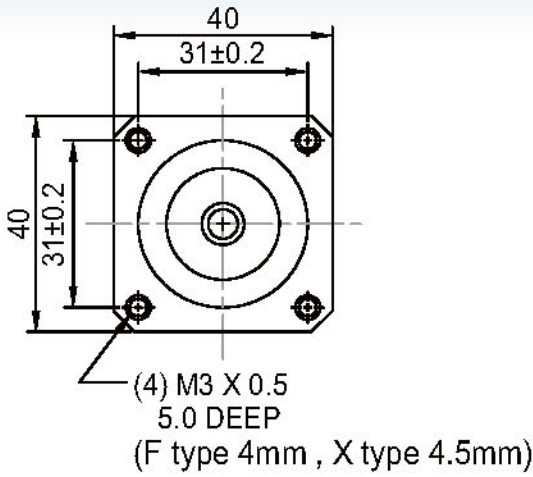
1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH40ES61A	1.8	4.0	0.95	1000	4.2	3.4	19	200
DSH40ES62A	1.8	9.6	0.4	1000	24	22	19	200
DSH40ES63A	1.8	12	0.32	1000	37.5	25	19	200
DSH40EM61A	1.8	6.0	0.8	1600	7.5	9.0	25	220
DSH40EM62A	1.8	12	0.4	1600	30	34	25	220
DSH40EL61A	1.8	4.0	1.2	2160	3.3	3.6	35	260
DSH40EL62A	1.8	6.0	0.8	2200	7.5	7.5	35	260
DSH40EL63A	1.8	12	0.4	2160	30	33	35	260

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## DIMENSION

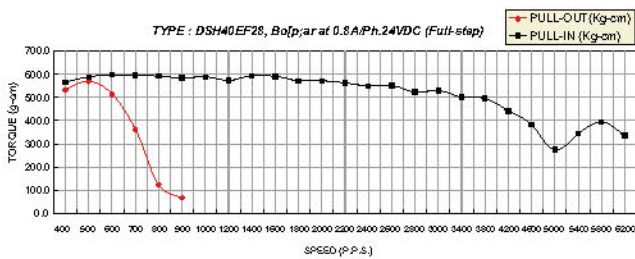
DIMENSION (UNIT : mm)



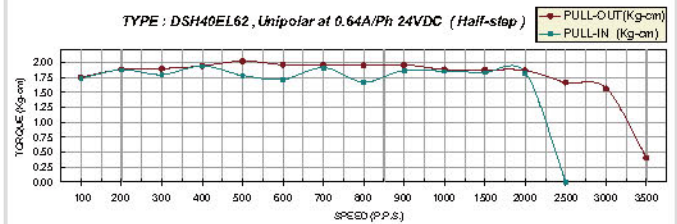
DIM. SPEC.	A
F	22
X	25.5
S	33
M	39
L	47

## PERFORMANCE CURVE

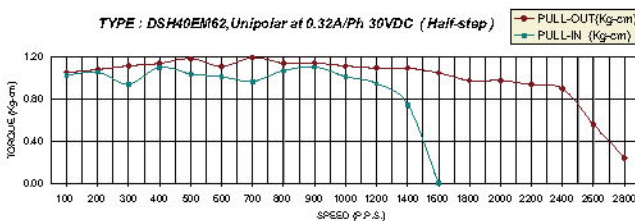
DSH40EF28



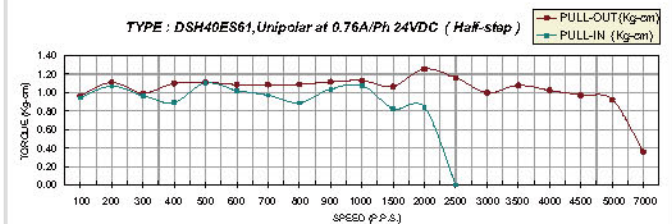
DSH40EL62



DSH40EM62



DSH40ES61

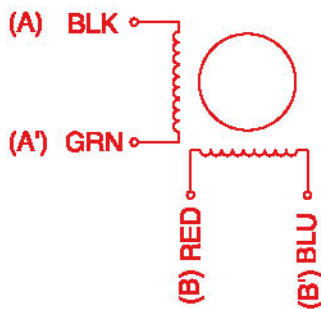




WIRING DIAGRAM AND DRIVING

• Bipolar series connection – 4 leads diagram

WIRING DIAGRAM

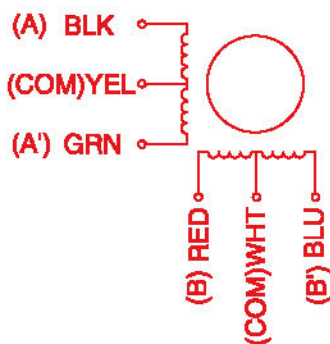


Bipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	CCW ↑ ↓ CW
1	+	+	-	-	↑ ↓
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

• Unipolar- 6 leads diagram

WIRING DIAGRAM



Unipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	COM	CCW ↑ ↓ CW
1	ON	ON			+DCV	↑ ↓
2		ON	ON			
3			ON	ON		
4	ON			ON		



## DSH 56 SERIES

### SPECIFICATION

#### Bipolar series connection - 4 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor Inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH56EL2JA	1.8	3.8	2.0	12700	1.9	8.5	220	850

#### Unipolar - 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor Inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH56DX62A	0.9	12	0.4	2300	30	40	60	350
DSH56DS61A	0.9	6.0	0.85	4200	7.1	16	110	500
DSH56DM62A	0.9	12	0.6	5800	20	48	130	550
DSH56EX62A	1.8	12	0.4	2500	30	37	60	340
DSH56EX63A	1.8	24	0.2	2400	120	126	60	340
DSH56ES61A	1.8	6.0	0.85	5000	7.1	13	110	500
DSH56ES62A	1.8	12	0.42	5000	29	45	110	500
DSH56ES63A	1.8	24	0.21	5000	112	187	110	500
DSH56ES64A	1.8	5.0	1.0	5000	5.0	10.5	110	500
DSH56ES65A	1.8	1.4	3.8	5000	0.37	0.56	110	500
DSH56EM61A	1.8	6.0	1.2	6000	5.0	11.5	125	550
DSH56EM62A	1.8	12	0.6	6000	20	40	125	550
DSH56EM63A	1.8	24	0.3	6000	80	158	125	550
DSH56EL61A	1.8	5.4	1.5	9000	3.6	7.3	220	850
DSH56EL62A	1.8	12	0.68	9000	17	36	220	850
DSH56EL63A	1.8	24	0.34	9700	70.6	145	220	850
DSH56EC61A	1.8	6.0	1.8	12500	3.2	8.0	350	1400
DSH56EC62A	1.8	12	0.94	12000	12.8	31	350	1400

#### 8 leads diagram - series connection for 6 leads specification

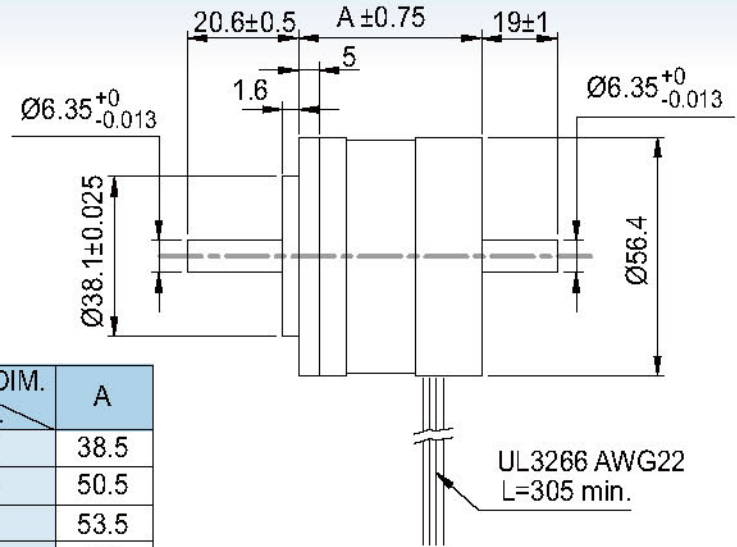
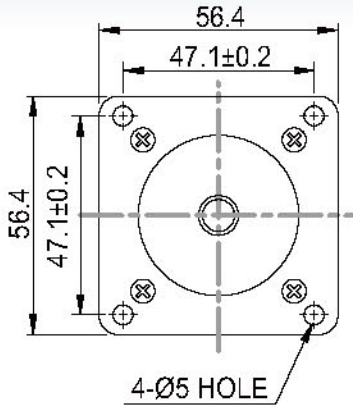
1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ± 10%/φ)	Inductance (mH ± 20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH56DL81A	0.9	5.4	1.5	8500	3.6	9.3	230	950
DSH56EX84A	1.8	2.3	1.5	2850	1.5	1.5	60	340
DSH56EC84A	1.8	3.4	2.9	12000	1.2	2.5	350	1400

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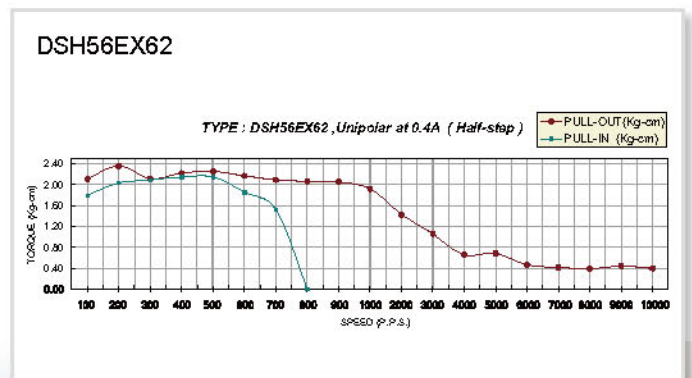
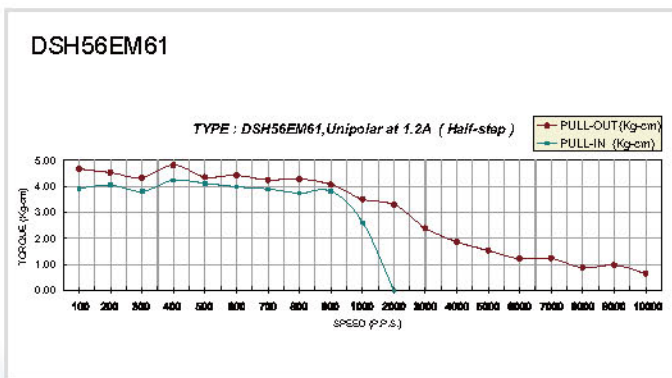
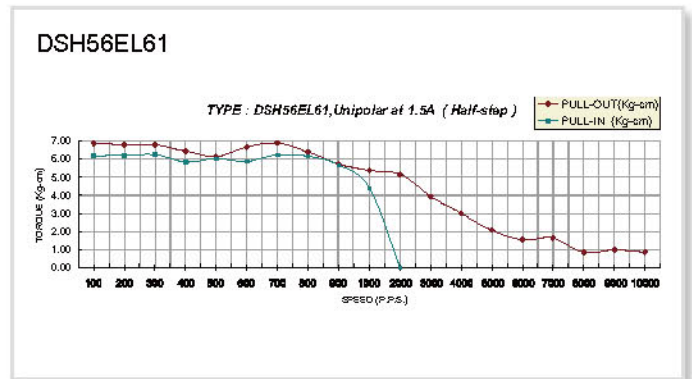
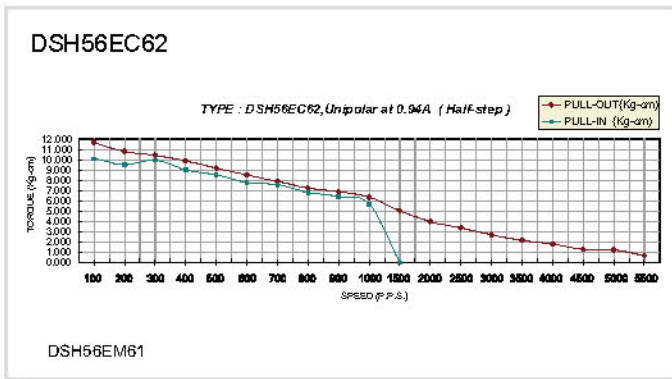
DIMENSION

DIMENSION (UNIT : mm)



DIM. SPEC.	A
X	38.5
S	50.5
M	53.5
L	76
C	99

PERFORMANCE CURVE

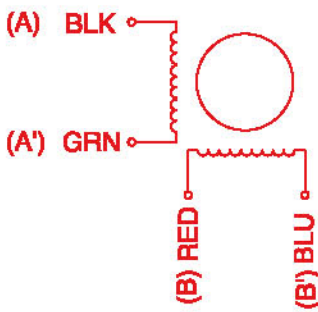




## WIRING DIAGRAM AND DRIVING

### • Bipolar series connection – 4 leads diagram

#### WIRING DIAGRAM

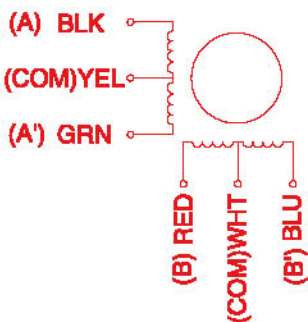


Bipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	CCW ↑ ↓ CW
1	+	+	-	-	↑ ↓
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

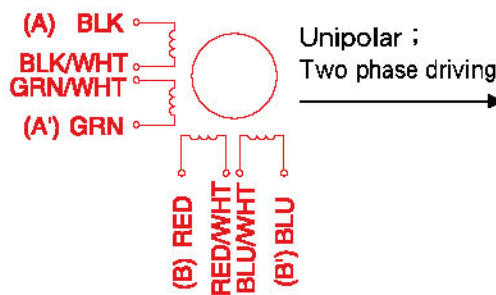
### • Unipolar- 6 leads diagram

#### WIRING DIAGRAM



### • 8 leads diagram – series connection for 6 leads

#### WIRING DIAGRAM



Unipolar ;  
Two phase driving

STEP	Black A	RED B	Green A	Blue B	COM	CCW ↑ ↓ CW
1	ON	ON			+DCV	↑ ↓
2		ON	ON			
3			ON	ON		
4	ON			ON		



## DSH 86 SERIES

### SPECIFICATION

#### Unipolar – 6 leads specification

1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH86DS6TA	0.9	3.2	2.85	13000	1.1	3.7	560	1400
DSH86DM61A	0.9	3.0	4.0	26000	0.75	4.0	1100	2650
DSH86DL61A	0.9	12	1.8	40000	6.5	43	1800	3600
DSH86ES61A	1.8	1.8	4.5	13000	0.4	1.35	560	1400
DSH86ES62A	1.8	5.5	1.25	14000	4.4	15	560	1400
DSH86EM61A	1.8	3.0	4.0	26000	0.75	4.4	1100	2650
DSH86EM62A	1.8	6.0	2.0	28000	3.0	16	1100	2650
DSH86EM63A	1.8	12	1.0	28000	12	64	1100	2650
DSH86EL61A	1.8	12	1.8	35000	6.6	40	1800	3700
DSH86EL62A	1.8	5.0	4.0	40000	1.25	7.2	1800	3700

#### 8 leads diagram – series connection for 6 leads specification

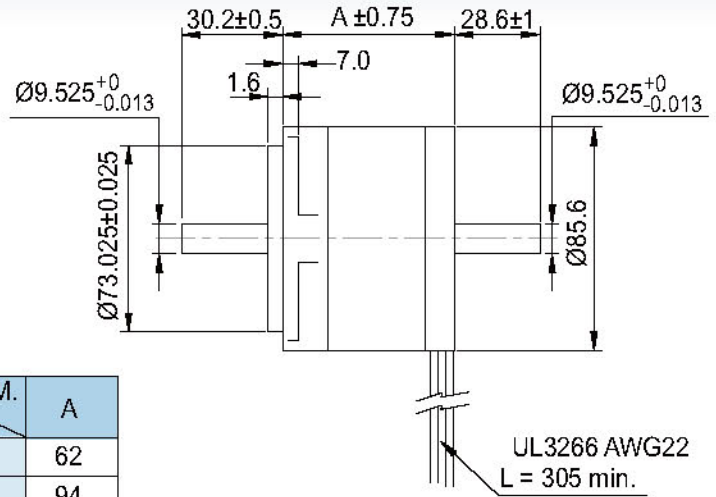
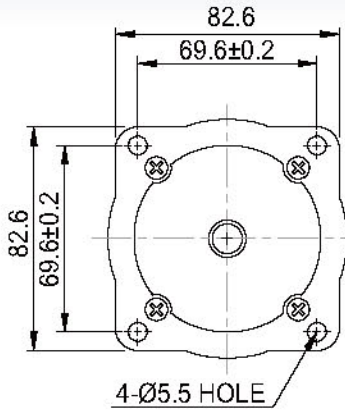
1 gf-cm=0.001 kgf-cm 1 gf-cm=0.000098 N-m

Model number	Step angle (degrees)	Rated voltage (VDC)	Rated current (A/φ)	Holding torque (gf-cm)	Winding resistance (Ω ±10%/φ)	Inductance (mH ±20%/φ)	Rotor inertia (g-cm <sup>2</sup> )	Weight (gw)
DSH86DX81A	0.9	3.3	2.0	9500	1.65	2.1	360	1000
DSH86EX82A	1.8	2.3	3.0	8500	0.75	1.1	360	1000
DSH86ES84A	1.8	1.9	4.2	13000	0.45	1.1	560	1400

● To customize motors, please contact with us or our agent.

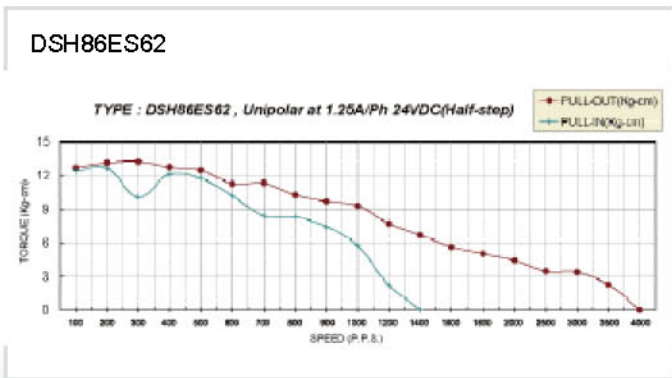
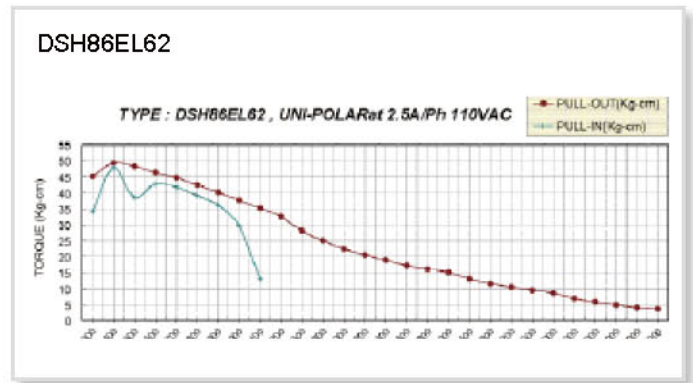
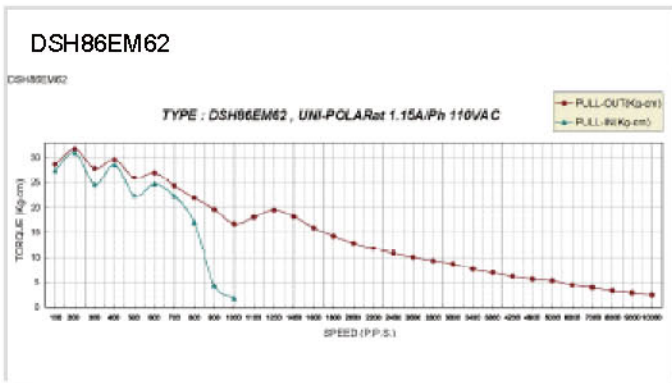
## DIMENSION

DIMENSION (UNIT : mm)



DIM. SPEC.	A
S	62
M	94
L	128

## PERFORMANCE CURVE





# OGH 17

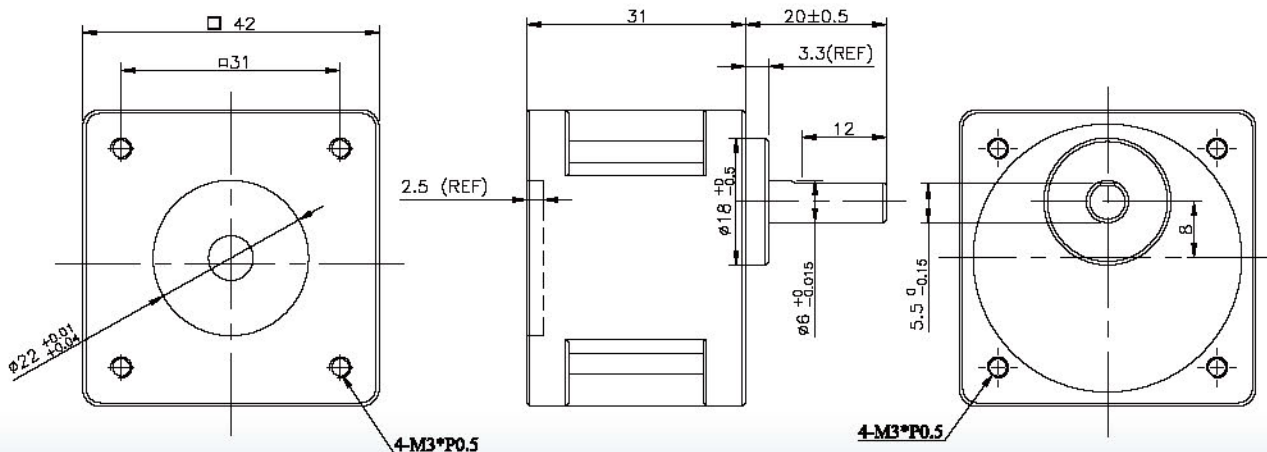
For DST42 Series Stepping Motors

## SPECIFICATION

OGH SERIES						
Gear Ratio	1 : 3.6	1 : 7.2	1 : 10	1 : 18	1 : 20	1 : 30
Permissible Torque N.m (kgfcm)	0.35 (3.5)	0.7 (7)	1.0 (10)	1.5 (15)		
Permissible Thrust Force N (kg)	15 (1.5)					
Permissible Loading Weight N (kg)	20 (2.0)					
Backlash min	35 (0.58°)	25 (0.42°)	20 (0.33°)			
Output Shaft Speed r/min	0~500	0~250	0~180	0~100	0~90	0~60

- To customize motors, please contact with us or our agent.
- Motor with pinion shaft.

## DIMENSION







## 2GH 23

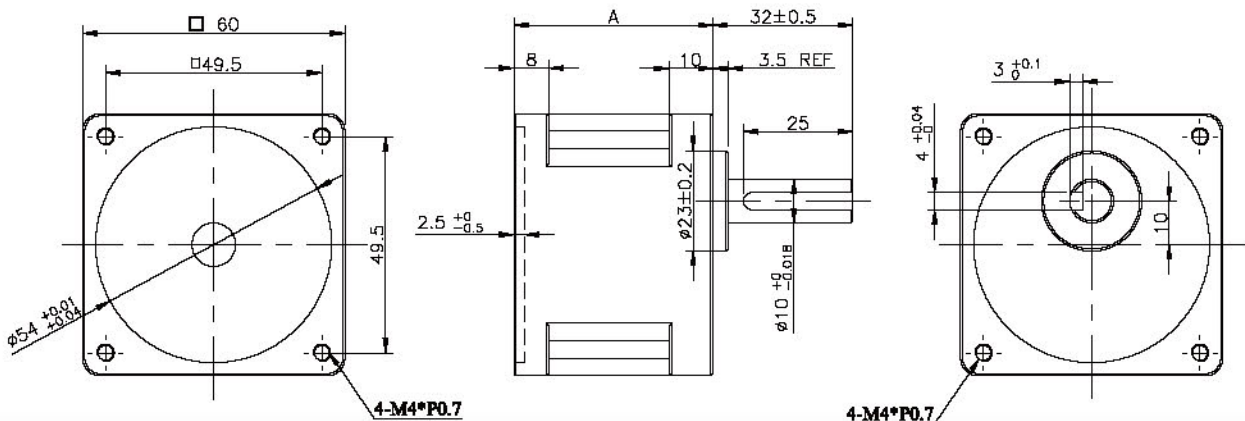
For DST56 Series Stepping Motors  
or DSH56 Series Stepping Motors

### SPECIFICATION

2GH SERIES						
Gear Ratio	1 : 3.6	1 : 7.2	1 : 10	1 : 20	1 : 30	1 : 50
Permissible Torque N.m (kgfcm)	1.25 (12.5)	2.5 (25)	3 (30)	3.5 (35)	4 (40)	5 (50)
Permissible Thrust Force N (kg)	40 (4)					
Permissible Loading Weight N (kg)	100 (10)					
Backlash min	35 (0.564°)	15 (0.25°)		10 (0.167°)		
Output Shaft Speed r/min	0~500	0~250	0~180	0~90	0~60	0~36
A Dimension (mm)	38			45.5		52.5

- To customize motors, please contact with us or our agent.
- Motor with pinion shaft.

### DIMENSION





## 5GH 34

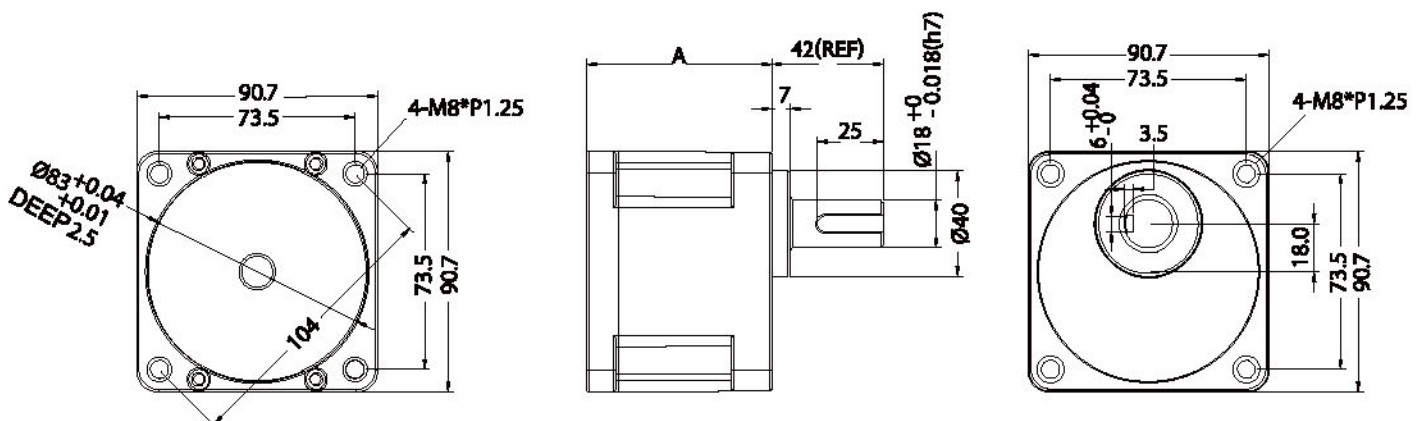
For DST86 Series Stepping Motors  
or DSH86 Series Stepping Motors

### SPECIFICATION

5GH SERIES						
Gear Ratio	1 : 3.6	1 : 7.2	1 : 10	1 : 20	1 : 30	1 : 50
Permissible Torque N.m (kgfcm)	4.5 (45)	9 (90)		12 (120)		15 (150)
Permissible Thrust Force N (kg)	100 (10)					
Permissible Loading Weight N (kg)	300 (30)					
Backlash min	25 (0.417°)	15 (0.25°)		10 (0.167°)		
Output Shaft Speed r/min	0~500	0~250	0~180	0~90	0~60	0~36
A Dimension (mm)	57			69.5		80

- To customize motors, please contact with us or our agent.
- Motor with pinion shaft.

### DIMENSION



# STEPPING MOTORS



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