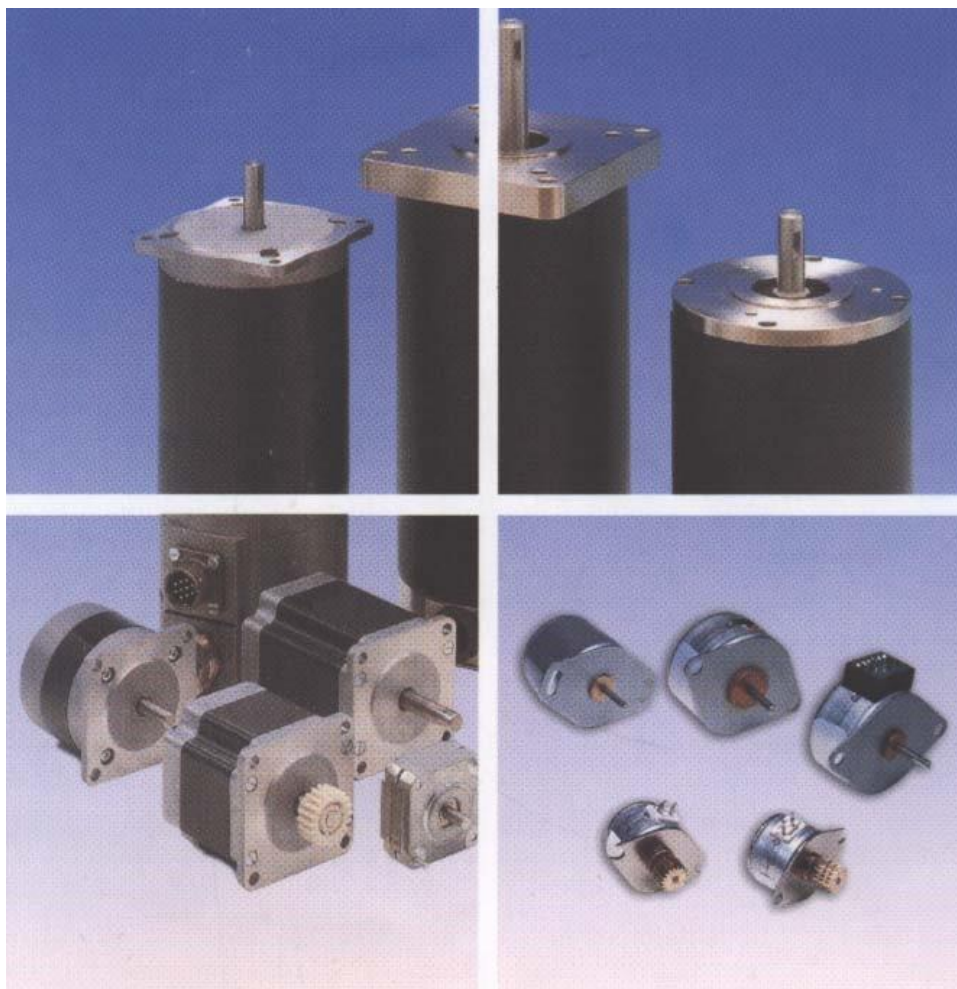


# CATALOGUE

## HYBRID STEPPING MOTOR HYBRID STEPPING GEARMOTOR



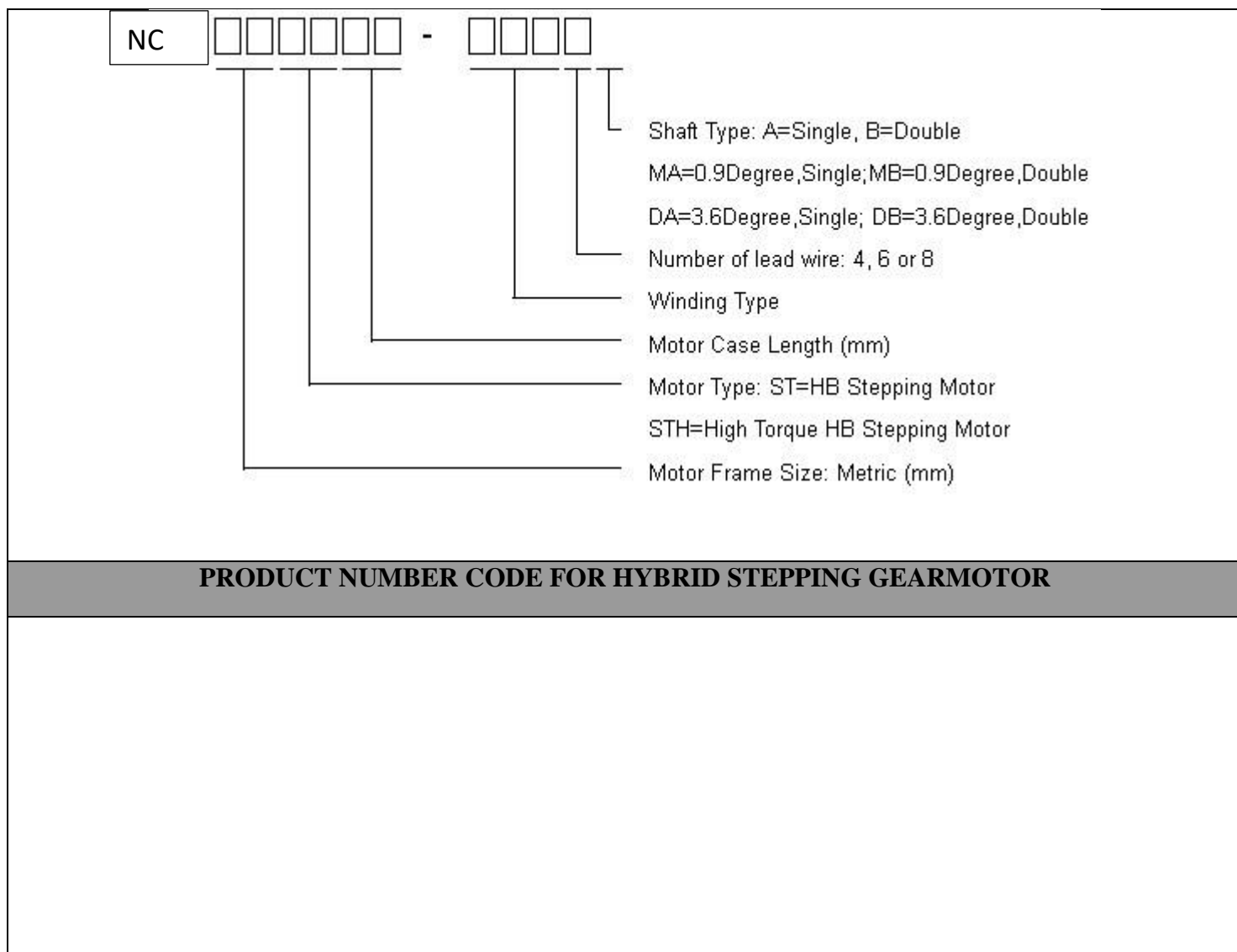
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## **HYBRID STEPPING MOTOR & HYBRID STEPPING GEARMOTOR**



**PRODUCT NUMBER CODE FOR HYBRID STEPPING MOTOR**



## **1.8° SIZE 20mm HIGH TORQUE HYBRID STEPPING MOTOR**

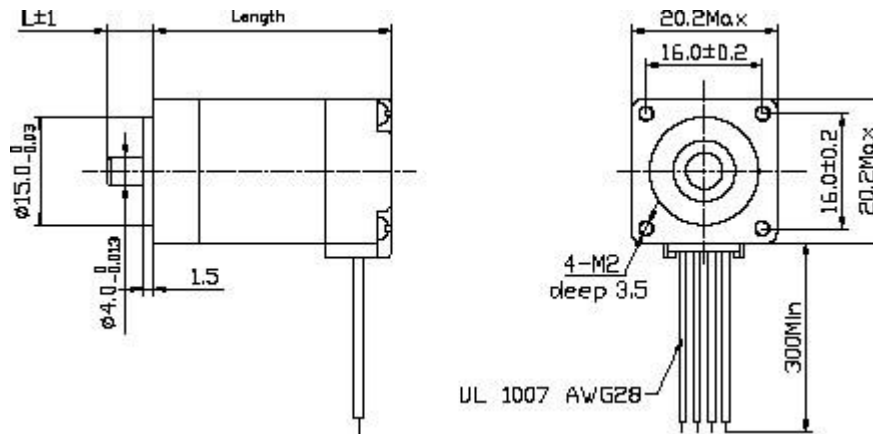
### **GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR**

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Rotation	CW (See from Front Flange)

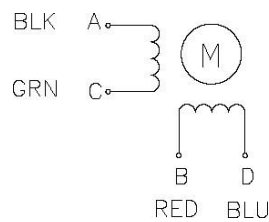
## SIZE 20mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Length
Single Shaft	V	A	$\Omega$	mH	g.cm		kg-cm <sup>2</sup>	kg	mm
NC20STH30-0604A	3.9	0.6	6.5	1.7	180	4	$2.0 \times 10^{-7}$	0.06	30
NC20STH33-0604A	3.9	0.6	6.5	1.7	180	4	$2.0 \times 10^{-7}$	0.06	33
NC20STH42-0604A	4.32	0.8	5.4	1.5	300	4	$3.6 \times 10^{-7}$	0.08	42

### DIMENSIONS



### WIRING DIAGRAM



## 1.8° SIZE 28mm HIGH TORQUE HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

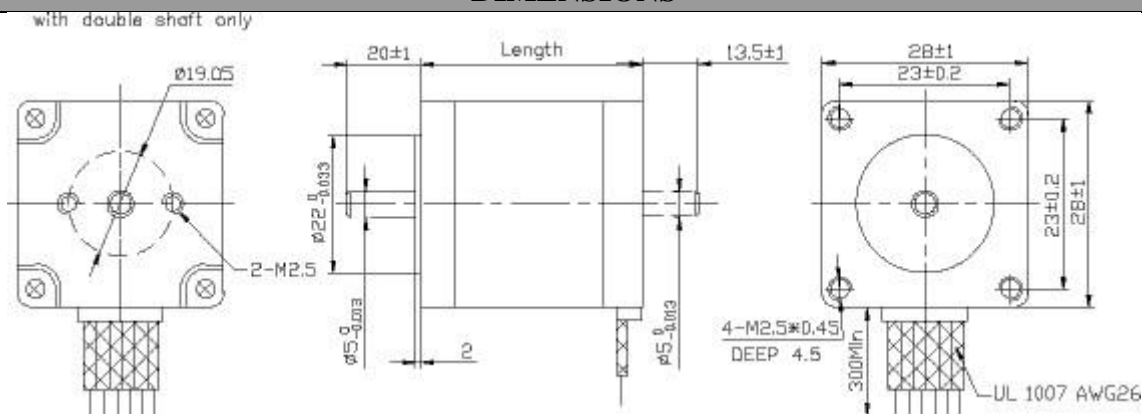
Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100M $\Omega$ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	28N (20mm from the flange)

Max. axial force	10N
Rotation	CW (See from Front Flange)

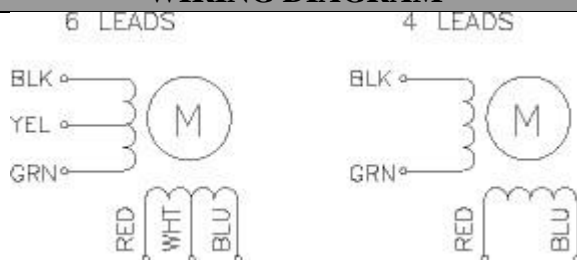
### SIZE 28mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	$\Omega$	mH	g. cm		kg-m <sup>2</sup>	kg	mm
NC28STH32-0956A	NC28STH32-0956B	2.66	2.8	1	430	6	9x10 <sup>-7</sup>	0.11	31.5
NC28STH32-0674A	NC28STH32-0674B	3.8	5.6	4.2	600	4			
NC28STH45-0956A	NC28STH45-0956B	3.4	3.4	1.2	750	6	12x10 <sup>-7</sup>	0.14	44.5
NC28STH45-0674A	NC28STH45-0674B	4.56	6.8	4.9	950	4			
NC28STH51-0956A	NC28STH51-0956B	4.4	4.6	1.8	900	6	18x10 <sup>-7</sup>	0.2	50.5
NC28STH51-0674A	NC28STH51-0674B	6.2	9.2	7.2	1200	4			

### DIMENSIONS



### WIRING DIAGRAM



## 1.8° SIZE 35mm HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC

Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW (See from Front Flange)

### SIZE 35mm HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	$\Omega$	mH	g. cm		g-cm <sup>2</sup>	kg	g-cm	mm
NC35ST22-0804A	NC35ST22-0804B	3.2	0.8	4	2.3	500	4	8	0.10	60	22
NC35ST26-0284A	NC35ST26-0284B	7.4	0.28	26	19.2	650	4	10	0.13	60	26
NC35ST28-0504A	NC35ST28-0504B	10	0.5	20	13.5	1000	4	10	0.14	80	28
NC35ST28-0406A	NC35ST28-0406B	11.2	0.4	28	10	500	6				
NC35ST36-0704A	NC35ST36-0704B	1.4	0.7	2	2.9	920	4	14	0.18	100	36
NC35ST36-1004A	NC35ST36-1004B	2.7	1.0	2.7	4.3	1400	4				

DIMENSIONS	WIRING DIAGRAM

### 1.8° SIZE 39mm HYBRID STEPPING MOTOR

#### GENERAL SPECIFICATION FOR HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°





# **0.9° SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR**

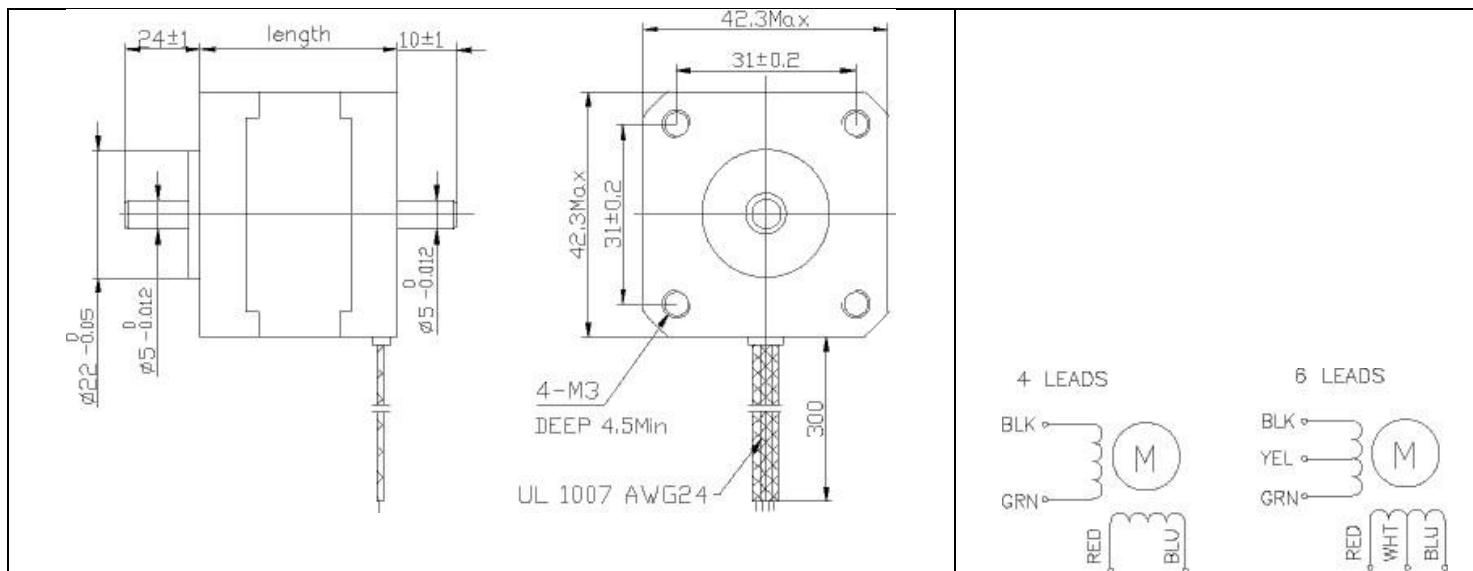
## **GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR**

Item	Specifications
Step Angle	0.9°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW (See from Front Flange)

## **SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS**

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	g. cm		g-cm <sup>2</sup>	kg	g-cm	mm
NC42STH33-0956MA	NC42STH33-0956MB	4	0.95	4.2	4	1.58	6	35	0.22	200	33
NC42STH33-0606MA	NC42STH33-0606MB	6	0.6	10	9.5						
NC42STH33-0316MA	NC42STH33-0316MB	12	0.31	38.5	33						
NC42STH33-1334MA	NC42STH33-1334MB	2.8	1.33	2.1	4.2	2.2	4	54	0.28	220	38
NC42STH38-1206MA	NC42STH38-1206MB	4	1.2	3.3	3.2	2.59	6				
NC42STH38-0806MA	NC42STH38-0806MB	6	0.8	7.5	6.7						
NC42STH38-0404MA	NC42STH38-0404MB	12	0.4	30	30						
NC42STH38-1684MA	NC42STH38-1684MB	2.8	1.68	1.65	3.2	3.6	4	68	0.35	250	47
NC42STH47-1206MA	NC42STH47-1206MB	4	1.2	3.3	4	3.17	6				
NC42STH47-0806MA	NC42STH47-0806MB	6	0.8	7.5	6.3						
NC42STH47-0406MA	NC42STH47-0406MB	12	0.4	30	38						
NC42STH47-1684MA	NC42STH47-1684MB	2.8	1.68	1.65	4.1	4.4	4				

DIMENSIONS	WIRING DIAGRAM
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## 1.8° SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW (See from Front Flange)

### SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg. cm		g-cm <sup>2</sup>	kg	g-cm	mm
NC42STH25-0404A	NC42STH25-0404B	9.6	0.4	24	36	1.7	4	20	0.15	200	25
NC42STH33-0404A	NC42STH34-0404B	12	0.4	30	37	2.5	4	38	0.2	120	34
NC42STH33-0956A	NC42STH34-0956B	3.99	0.95	4.2	2.8	1.6	6				
NC42STH33-0476A	NC42STH34-0476B	6.392	0.47	13.6	9.8						
NC42STH38-0406A	NC42STH38-0406B	12	0.4	30	24	2.5	6	57	0.24	150	40
NC42STH38-0804A	NC42STH38-0804B	8	0.8	10	17	3.2	4				
NC42STH38-1206A	NC42STH38-1206B	3.96	1.2	3.3	2.4	2.4	6				
NC42STH38-0806A	NC42STH38-0806B	6.0	0.8	7.5	7.0	2.8					
NC42STH47-1006A	NC42STH48-1006B	4.6	1.0	4.6	4.0	3.4	6	82	0.34	200	48
NC42STH47-0406A	NC42STH48-0406B	12	0.4	30	28	3.8					
NC42STH47-1204A	NC42STH48-1204B	3.84	1.2	3.2	6.0	4.5	4				
NC42STH47-0854A	NC42STH48-0854B	5.61	0.85	6.6	11						

DIMENSIONS	WIRING DIAGRAM

## **1.8° SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR WITH THREAD SHAFT**

### **GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR WITH THREAD**

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW (See from Front Flange)

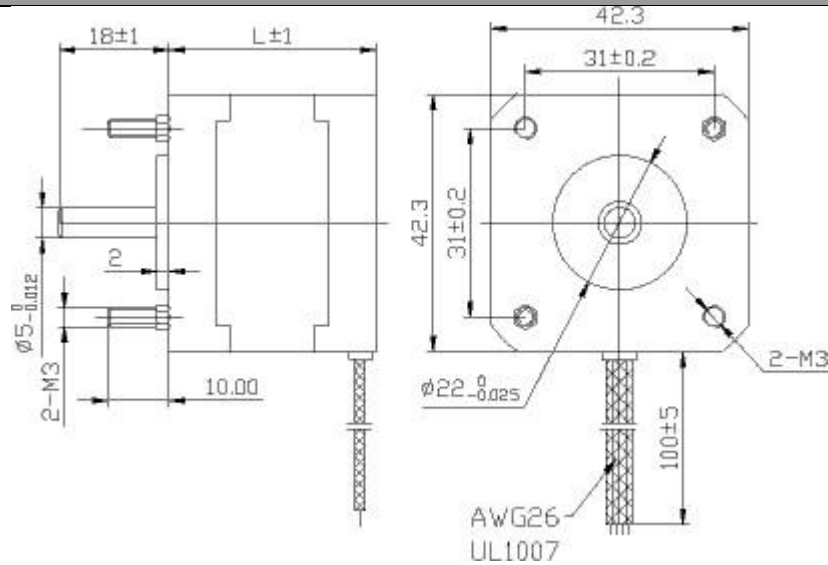
### **SIZE 42mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS WITH THREAD**

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	V	A	Ω	mH	g. cm		g-cm <sup>2</sup>	kg	g-cm	mm
NC42STH33T-0554A	1.8	0.55	3.2	4.5	900	4	35	0.2	120	34
NC42STH33S-0956A	4.0	0.95	4.2	2.5	1580	6	35	0.2	120	34

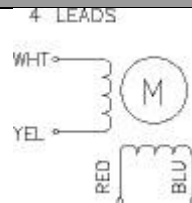
DIMENSIONS	WIRING DIAGRAM
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## DIMENSIONS



## WIRING DIAGRAM



## 0.9° SIZE 57mm HIGH TORQUE HYBRID STEPPING MOTORS

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	0.9°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW (See from Front Flange)

### SIZE 57mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
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Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
NC57STH39-1006MA	NC57STH39-1006MB	5.7	1	5.7	5.4	3.9	6	120	0.45	0.21	39
NC57STH39-2006MA	NC57STH39-2006MB	2.8	2	1.4	1.4						
NC57STH39-3006MA	NC57STH39-3006MB	1.9	3	0.63	0.6						
NC57STH39-2804MA	NC57STH39-2804MB	2	2.8	0.7	1.4	5.5	4	300	0.7	0.4	56
NC57STH56-1006MA	NC57STH56-1006MB	7.4	1	7.4	10	9.0	6				
NC57STH56-2006MA	NC57STH56-2006MB	3.6	2	1.8	2.5						
NC57STH56-3006MA	NC57STH56-3006MB	2.3	3	0.75	1.1						
NC57STH56-2804MA	NC57STH56-2804MB	2.5	2.8	0.9	2.5	12.6	4	480	1	0.68	76
NC57STH76-1006MA	NC57STH76-1006MB	8.6	1	8.6	14	13.5	6				
NC57STH76-2006MA	NC57STH76-2006MB	4.5	2	2.25	3.6						
NC57STH76-3006MA	NC57STH76-3006MB	3	3	1	1.6						
NC57STH76-2804MA	NC57STH76-2804MB	3.2	2.8	1.13	3.6	18.9	4				

DIMENSIONS	WIRING DIAGRAM

## **1.8° SIZE 57mm HYBRID STEPPING MOTOR**

### **GENERAL SPECIFICATION FOR HYBRID STEPPING MOTOR**

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100M $\Omega$ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW (See from Front Flange)

## SIZE 57mm HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	$\Omega$	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
NC57ST41-1106A	NC57ST41-1106B	4	1.1	3.6	3.6	2.88	6	57	0.54	0.18	41
NC57ST41-0406A	NC57ST41-0406B	12	0.4	30	30						
NC57ST41-1564A	NC57ST41-1564B	2.8	1.56	1.8	3.6						
NC57ST51-0856A	NC57ST51-0856B	6	0.85	7.1	9	4.97	6	110	0.60	0.35	51
NC57ST51-0426A	NC57ST51-0426B	12	0.42	29	36						
NC57ST51-2804A	NC57ST51-2804B	1.8	2.8	0.65	1.6						
NC57ST56-1206A	NC57ST56-1206B	6	1.2	5	8	6.05	6	135	0.65	0.42	56
NC57ST56-0606A	NC57ST56-0606B	12	0.6	20	32						
NC57ST56-2554A	NC57ST56-2554B	2.8	2.55	1.1	3.6						
NC57ST76-1506A	NC57ST76-1506B	5.4	1.5	3.6	6	9	6	200	0.95	0.72	76
NC57ST76-0686A	NC57ST76-0686B	12	0.68	17.7	30						
NC57ST76-3304A	NC57ST76-3304B	2.7	3.3	0.85	3						

DIMENSIONS	WIRING DIAGRAM

## 1.8° SIZE 57mm HIGH TORQUE HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100M $\Omega$ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)

Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW (See from Front Flange)

### SIZE 57mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
NC57STH41-1006A	NC57STH41-1006B	5.7	1	5.7	5.4	3.9	6	120	0.45	0.21	41
NC57STH41-2006A	NC57STH41-2006B	2.8	2	1.4	1.4						
NC57STH41-3006A	NC57STH41-3006B	1.9	3	0.63	0.6						
NC57STH41-2804A	NC57STH41-2804B	2	2.8	0.7	1.4	5.5	4	275	0.65	0.36	51
NC57STH51-1006A	NC57STH51-1006B	6.6	1	6.6	8.2	7.2	6				
NC57STH51-2006A	NC57STH51-2006B	3.3	2	1.65	2.2						
NC57STH51-3006A	NC57STH51-3006B	2.2	3	0.74	0.9						
NC57STH51-2804A	NC57STH51-2804B	2.3	2.8	0.83	2.2	10.1	4	300	0.7	0.4	56
NC57STH56-1006A	NC57STH56-1006B	7.4	1	7.4	10	9.0	6				
NC57STH56-2006A	NC57STH56-2006B	3.6	2	1.8	2.5						
NC57STH56-3006A	NC57STH56-3006B	2.3	3	0.75	1.1						
NC57STH56-2804A	NC57STH56-2804B	2.5	2.8	0.9	2.5	12.6	4	480	1	0.68	76
NC57STH76-1006A	NC57STH76-1006B	8.6	1	8.6	14	13.5	6				
NC57STH76-2006A	NC57STH76-2006B	4.5	2	2.25	3.6						
NC57STH76-3006A	NC57STH76-3006B	3	3	1	1.6						
NC57STH76-2804A	NC57STH76-2804B	3.2	2.8	1.13	3.6	18.9	4				

DIMENSIONS	WIRING DIAGRAM

## 1.8° SIZE 60mm HIGH TORQUE HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

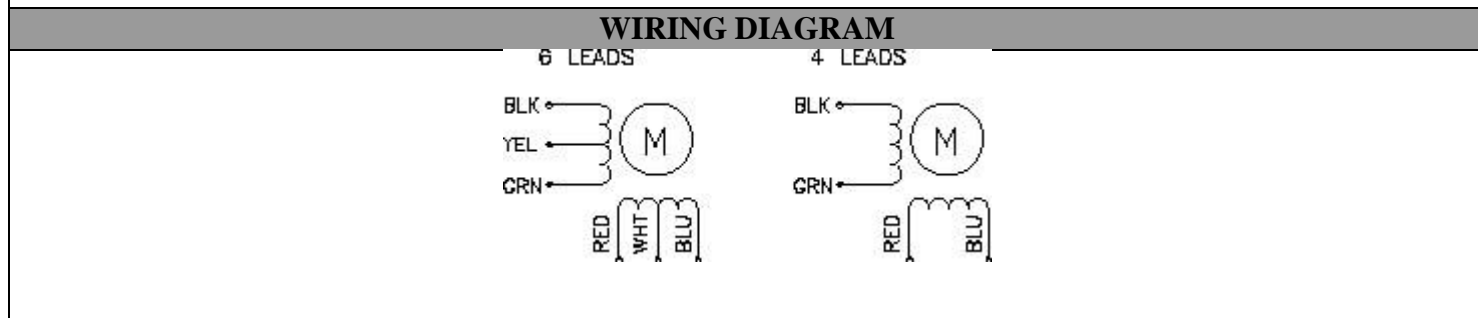
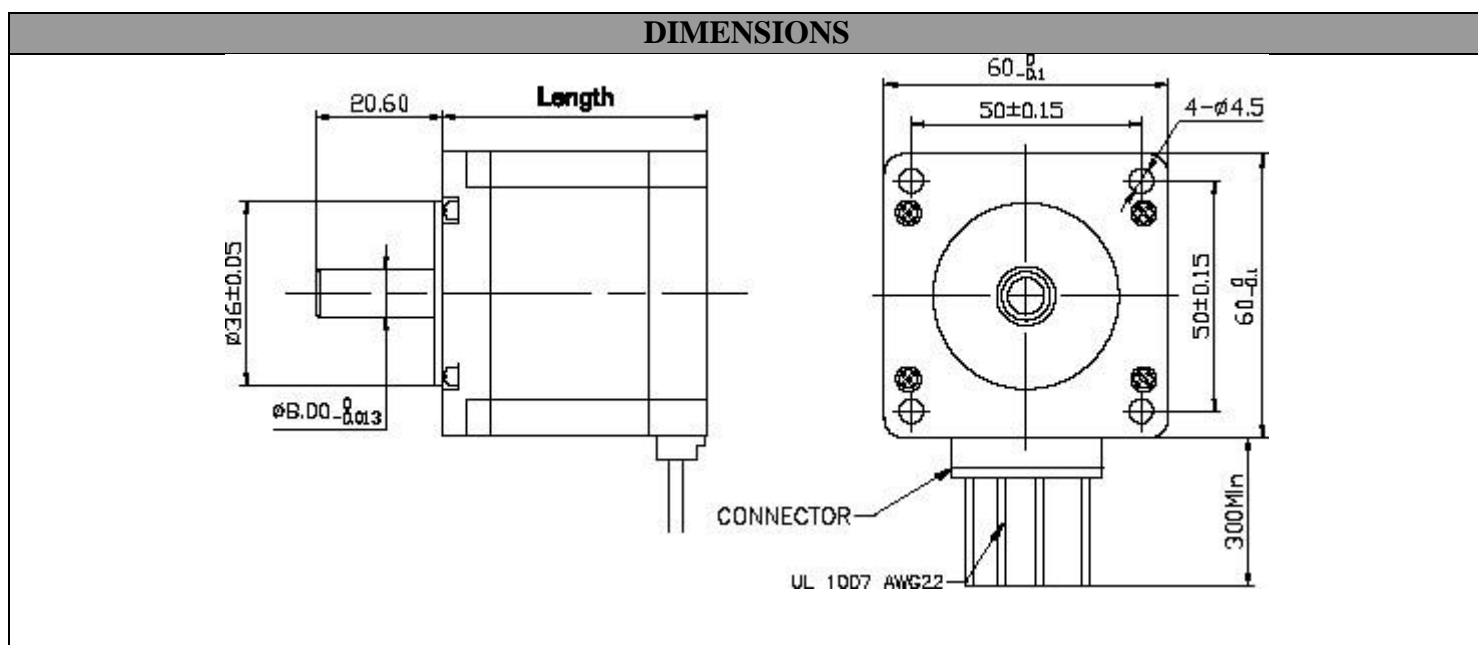
Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)



Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	75N
Rotation	CW (See from Front Flange)

### SIZE 60mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	V	A	Ω	mH	g.cm		g-cm <sup>2</sup>	kg	g-cm	mm
NC60STH87-2006A	5.6	2	2.8	6	12.5	6	570	1.34	0.4	87
NC60STH87-2504A	5	2.5	2	9.5	19.5	4				



## 1.8° SIZE 86mm HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%

Inductance Accuracy	±20%
Temperature Rise	80°C Max rated current, phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW (See from Front Flange)

### SIZE 86mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
NC86ST62-4506A	NC86ST62-4506B	1.8	4.5	0.4	1.4	13	6	560	1.5	0.8	62
NC86ST62-1256A	NC86ST62-1256B	5.5	1.25	4.4	14	13	6				
NC86ST62-1406A	NC86ST62-1406B	0.7	14	20	60	13	6				
NC86ST62-5904A	NC86ST62-5904B	1.33	5.9	0.23	1.5	18	4				
NC86ST94-4006A	NC86ST94-4006B	3.0	4.0	0.75	4.5	26	6	1100	2.6	2.4	94
NC86ST94-2006A	NC86ST94-2006B	6.0	2.0	3.0	18	26	6				
NC86ST94-1006A	NC86ST94-1006B	12	1	12	72	26	6				
NC86ST94-5606A	NC86ST94-5606B	2.1	5.6	0.38	3.9	35	4				
NC86ST134-6706A	NC86ST134-6706B	3.0	6.7	0.45	2	36	6	1800	3.6	3.6	134
NC86ST134-4006A	NC86ST134-4006B	5.0	4.0	1.25	6.6	36	6				
NC86ST134-1806A	NC86ST134-1806B	12	1.8	6.5	41	36	6				
NC86ST134-5606A	NC86ST134-5606B	3.5	5.6	0.63	6.6	50	4				

DIMENSIONS	WIRING DIAGRAM

## 1.8° SIZE 86mm HIGH TORQUE HYBRID STEPPING MOTOR

### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

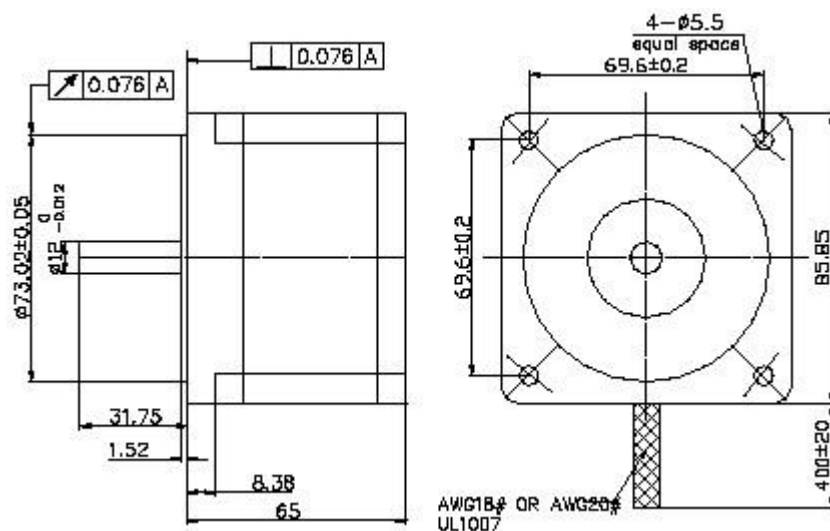
Item	Specifications
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Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW (See from Front Flange)

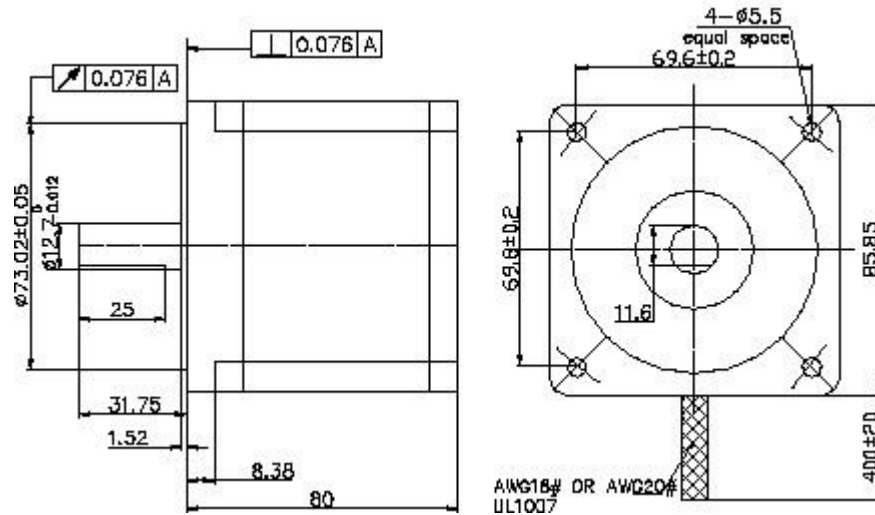
### SIZE 86mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.		Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	A	Ω	mH	kg-cm		g-cm <sup>2</sup>	kg	kg-cm	mm
NC86STH65-5904A	NC86STH65-5904B	5.9	0.28	1.7	34	4	1000	1.7	0.8	65
NC86STH65-2808A	NC86STH65-2808B	2.8	1.4	3.9	34	8				
NC86STH80-5504A	NC86STH80-5504B	5.5	0.46	4	46	4	1400	2.3	1.2	80
NC86STH80-4208A	NC86STH80-4208B	4.24	0.75	3.4	46	8				
NC86STH118-6004A	NC86STH118-6004B	6	0.6	6.5	87	4	2700	3.8	2.4	118
NC86STH118-4208A	NC86STH118-4208B	4.2	0.9	6	87	8				
NC86STH156-6204A	NC86STH156-6204B	6.2	0.75	9	122	4	4000	5.4	3.6	156
NC86STH156-4208A	NC86STH156-4208B	4.2	1.25	8	122	8				

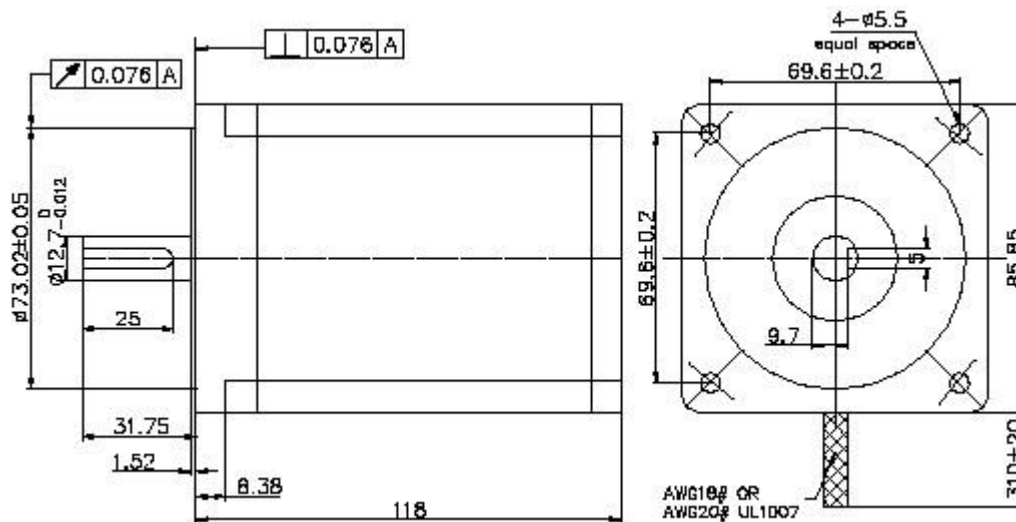
### DIMENSIONS NC86STH65-XXXX



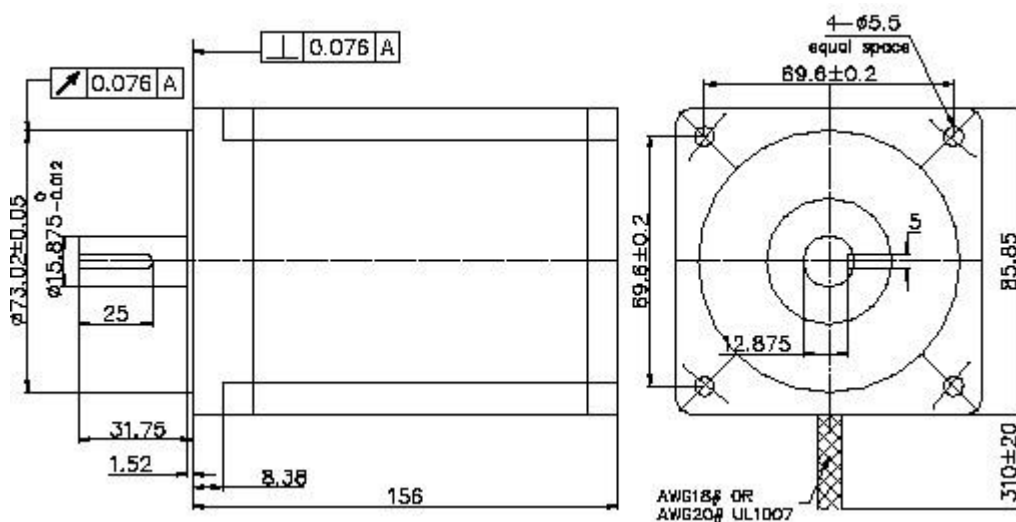
## DIMENSIONS NC86STH80-XXXX



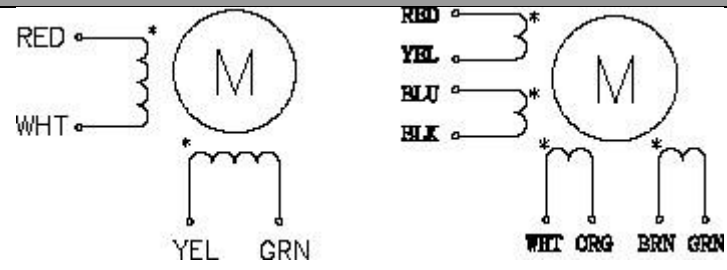
## DIMENSIONS NC86STH118-XXXX



## DIMENSIONS NC86STH156-XXXX



## WIRING DIAGRAM



# 1.8° SIZE 110mm HIGH TORQUE HYBRID STEPPING MOTOR

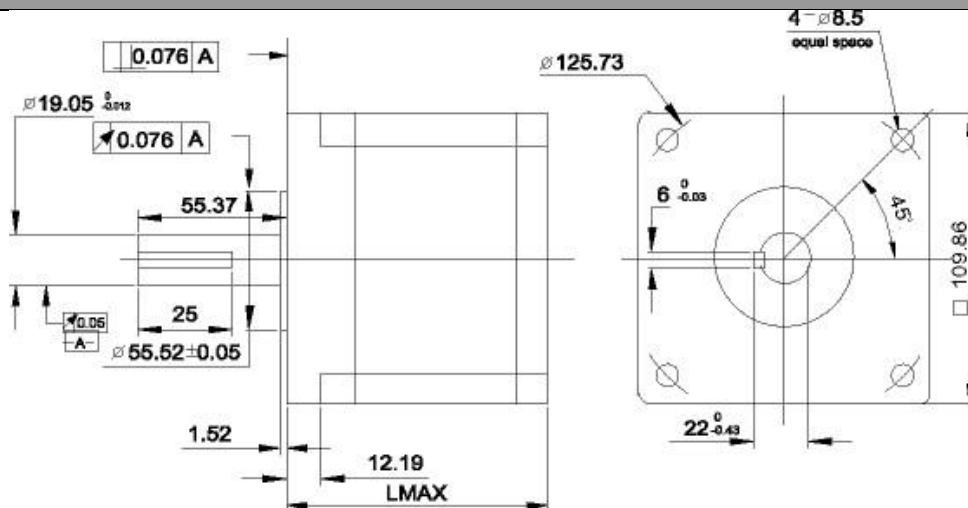
## GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW (See from Front Flange)

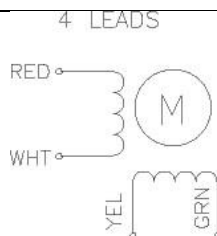
## SIZE 110mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	A	Ω	mH	N.m		g-cm <sup>2</sup>	kg	kg-cm	mm
NC110STH99-5504A	5.5	0.9	12	112	4	5500	5	3	99
NC110STH150-6504A	6.5	0.8	15	21	4	10900	8.4	5.9	150
NC110STH201-8004A	8	0.67	12	28	4	16200	11.7	7.5	201

## DIMENSIONS



## WIRING DIAGRAM



## **1.8° AND 0.9° OR 0.72° AND 0.36° SIZE 110mm HYBRID STEPPING MOTOR**

### **GENERAL SPECIFICATION FOR HYBRID STEPPING MOTOR**

Item	Specifications
Step Angle	1.8° or 0.9°, 0.72° or 0.36°
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW (See from Front Flange)

### **SIZE 110mm HYBRID STEPPING MOTOR SPECIFICATIONS**

Model No.	No. of phase	Step angle	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft		degree	V	A	Ω	mH	N.m	kg-cm <sup>2</sup>	kg	N.m	mm
NC110ST130-6008A	4	1.8	80-200	6	0.18	2	4.5	3.8	3.8	0.3	130
NC110ST130-6008MA	4	0.9	80-200	6	0.18	2	4.5	3.8	3.8	0.3	130
NC110ST192-6008A	4	1.8	80-200	6	0.22	2.1	7.1	7.5	7.5	0.6	192
NC110ST192-6008MA	4	0.9	80-200	6	0.22	2.1	7.1	7.5	7.5	0.6	192
NC110ST192-50010A	5	0.72	130	5	0.3	1.9	6.8	7.5	7.5	0.6	192
NC110ST192-50010MA	5	0.36	130	5	0.3	1.9	6.8	7.5	7.5	0.6	192
NC110ST192-30010A	5	0.72	130	3	0.5	5.3	6.8	7.5	7.5	0.6	192
NC110ST192-30010MA	5	0.36	130	3	0.5	5.3	6.8	7.5	7.5	0.6	192
NC110ST240-6008A	4	1.8	80-200	6	0.3	3.2	10.3	11.5	11.5	0.9	240
NC110ST240-6008MA	4	0.9	80-200	6	0.3	3.2	10.3	11.5	11.5	0.9	240
NC110ST240-50010A	5	0.72	130	5	0.37	3.4	10.3	11.5	11.5	0.9	240
NC110ST240-50010MA	5	0.36	130	5	0.37	3.4	10.3	11.5	11.5	0.9	240
NC110ST240-30010A	5	0.72	130	3	0.62	9.5	10.3	11.5	11.5	0.9	240
NC110ST240-30010MA	5	0.36	130	3	0.62	9.5	10.3	11.5	11.5	0.9	240

DIMENSIONS	WIRING DIAGRAM
<p>Technical drawing of a 57mm 3-phase hybrid stepping motor. The side view shows a total length of 120mm, a shaft diameter of <math>\phi 16</math>, and a mounting flange diameter of <math>\phi 132</math>. The front view shows a square mounting flange with a width of <math>112 \pm 0.3</math>mm and four mounting holes of <math>\phi 9</math>. The shaft has a keyway with a width of 4mm and a depth of 5mm. The mounting flange has a central hole of <math>\phi 10</math> and four mounting holes of <math>\phi 9</math>. The shaft has a total length of 120mm, with a mounting flange at one end and a shaft extension of 10mm at the other. The shaft has a diameter of <math>\phi 16</math> and a keyway with a width of 4mm and a depth of 5mm. The mounting flange has a diameter of <math>\phi 132</math> and a central hole of <math>\phi 10</math>. The mounting flange has four mounting holes of <math>\phi 9</math>. The shaft has a total length of 120mm, with a mounting flange at one end and a shaft extension of 10mm at the other. The shaft has a diameter of <math>\phi 16</math> and a keyway with a width of 4mm and a depth of 5mm. The mounting flange has a diameter of <math>\phi 132</math> and a central hole of <math>\phi 10</math>. The mounting flange has four mounting holes of <math>\phi 9</math>.</p>	<p>Wiring diagram showing a motor symbol (M) connected to 6 terminals. The terminals are labeled 1, 2, 5, 6, 3, 4, 7, 8. The connections are: 1 to 2, 2 to 5, 5 to 6, 6 to 3, 3 to 4, 4 to 7, 7 to 8, and 8 to 1.</p>

## **SIZE 57mm 3-PHASE HYBRID STEPPING MOTOR**

### **GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR**

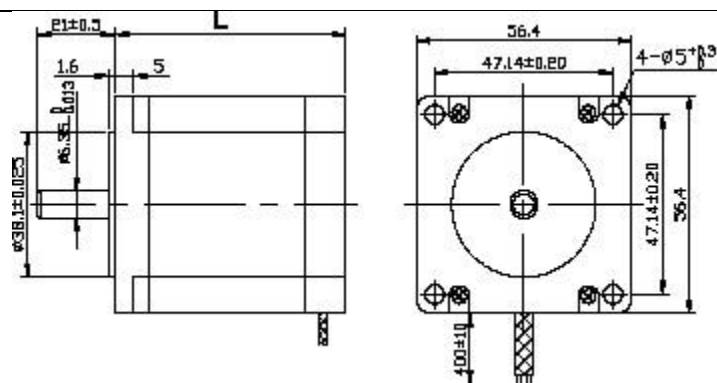
Item	Specifications
Step number per rev	200,400,500,1000,2000,4000,5000,10000
Step Angle Accuracy	$\pm 5\%$ (full step, no load)
Resistance Accuracy	$\pm 10\%$
Inductance Accuracy	$\pm 20\%$
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100M $\Omega$ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Insulation class	H

### **SIZE 57mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS**

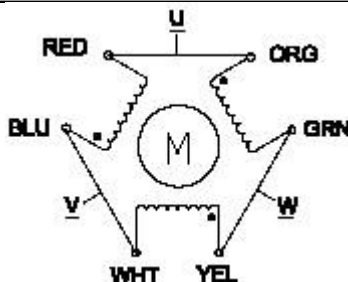
Model No.	Rated Voltage	Inductance /Phase	Resistance /Phase	Current /Phase	Holding Torque	Detent Torque	Rotor Inertia	Weight	Length
Unit	V	mH	$\Omega$	A	N.m	kg-cm	g-cm <sup>2</sup>	kg	mm
NC573P42-5206A	6.76	1.4	1.3	5.2	0.45	2.1	110	0.45	42
NC573P56-5606A	4	1.7	0.7	5.6	0.90	4	300	0.75	56
NC573P79-5806A	6	2.4	1.05	5.8	1.5	6.8	480	1.10	79

DIMENSIONS
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## WIRING DIAGRAM



## SIZE 86mm 3-PHASE HYBRID STEPPING MOTOR

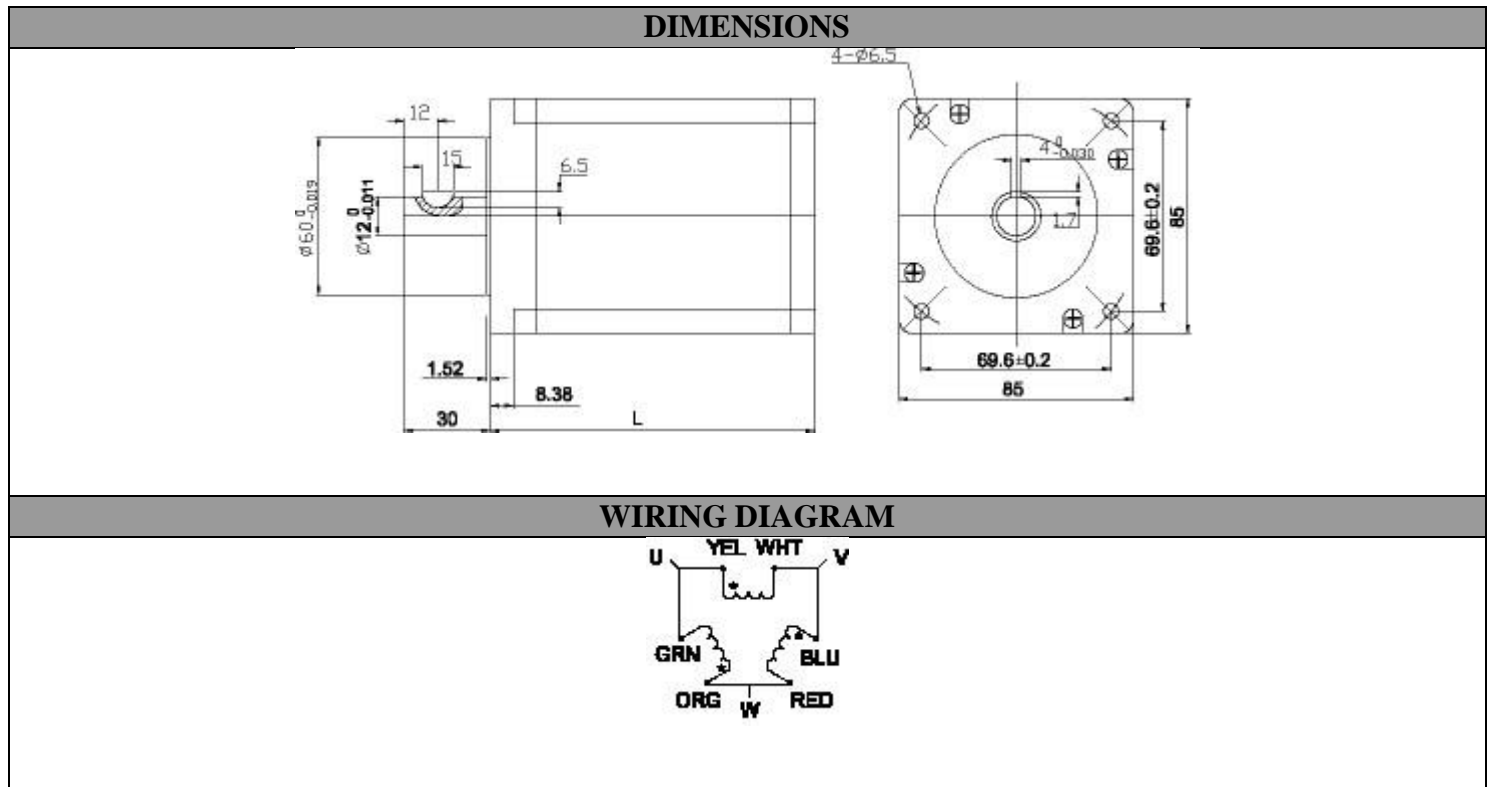
### GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR

Item	Specifications
Step number per rev	200,400,500,1000,2000,4000,5000,10000
Step Angle Accuracy	$\pm 5\%$ (full step, no load)
Resistance Accuracy	$\pm 10\%$
Inductance Accuracy	$\pm 20\%$
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100M $\Omega$ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Insulation class	H

### SIZE 86mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

Model No.	Voltage /Phase	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Ratedng Torque	Rotor Inertia	Weight	Length
Unit	VAC	A	$\Omega$	mH	N.m	N.m	g-cm <sup>2</sup>	kg	mm
NC863P67-01	325	1.75	4.25	12.3	2.26	2	1100	1.65	67
NC863P97-01	325	2	5.4	23	4.52	4	2320	2.7	97
NC863P97-02	40	5.8	0.9	3.2	4.52	4			

NC863P97-03	40	5.2	1.1	6.8	4.52	4			
NC863P127-01	325	2.25	9	41	6.78	6	3300	3.8	127
NC863P127-02	40	5.2	2.75	13.7	6.78	6			



## **SIZE 110mm 3-PHASE HYBRID STEPPING MOTOR**

### **GENERAL SPECIFICATION FOR HIGH TORQUE HYBRID STEPPING MOTOR**

Item	Specifications
Step number per rev	200,400,500,1000,2000,4000,5000,10000
Step Angle Accuracy	±5% (full step, no load)
Resistance Accuracy	±10%
Inductance Accuracy	±20%
Temperature Rise	80°C Max (rated current, 2 phase on)
Ambient Temperature	-20°C ~ +50°C
Insulation Resistance	100MΩ Min, 500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max (450 g-load)
Shaft Axial Play	0.08Max (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Insulation class	H

### **SIZE 110mm HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS**

Model No.	Max starting speed	Voltage /Phase	Current /Phase	Holding Torque	Ratedng Torque	Rotor Inertia	Weight	Length
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Unit	Rpm/s	VAC	A	N.m	N.m	g-cm <sup>2</sup>	kg	mm
NC1103P170-01	4.7	325	4.1	13.92	12	10500	8	173

DIMENSIONS

Technical drawing of the NC1103P170-01 motor showing front and side views with dimensions.

Front View Dimensions:

- Top flange width: 0.076 A
- Top flange thickness: 0.076 A
- Shaft diameter:  $\phi 19_{-0.012}^0$
- Shaft length: 40
- Shaft diameter:  $\phi 56_{-0.03}^0$
- Shaft length: 30
- Bottom flange width: 0.05 A
- Bottom flange thickness: 3
- Bottom flange diameter: 12.19
- Bottom flange length: 173

Side View Dimensions:

- Top flange width: 22
- Top flange thickness: 22
- Shaft diameter:  $\phi 19_{-0.012}^0$
- Shaft length: 89 ± 0.2
- Shaft diameter:  $\phi 56_{-0.03}^0$
- Shaft length: 15.5 ± 0.1
- Bottom flange width: 89 ± 0.2
- Bottom flange length: 109.86
- Bottom flange diameter: 15.5 ± 0.1

WIRING DIAGRAM

Wiring diagram showing the motor's internal connections and terminal colors.

Terminal Colors and Connections:

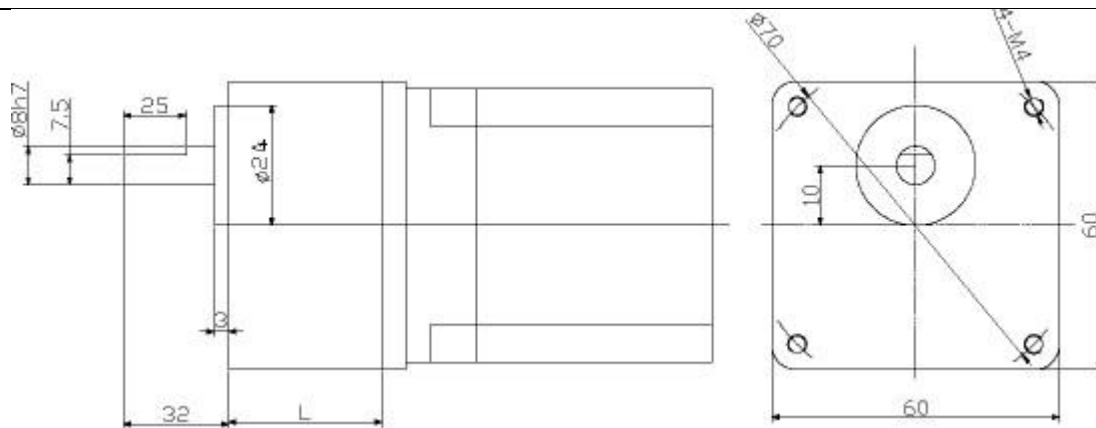
- U: YEL (Yellow)
- V: WHT (White)
- W: GRN (Green)
- X: BLU (Blue)
- Y: ORG (Orange)
- Z: RED (Red)

## NC57STHJB GEARBOX STEPPING MOTOR

### GEARBOX SPECIFICATION

Ratio	3	12.5	15	25	30	50	75	90	100	120	150
Number of gear trains	2	2	3	3	3	4	4	5	5	5	5
Length (L) mm	32	32	32	32	32	42	42	42	42	42	42
Peak torque kg.cm	15	15	15	15	15	25	25	50	50	50	50

DIMENSIONS



## **NC86STHJB GEARBOX STEPPING MOTOR**

### **GEARBOX SPECIFICATION**

Ratio	3	5	7.5	12.5	15	25	30	50	75	100	120	150
Number of gear trains	2	2	2	2	2	3	3	4	4	4	4	4
Length (L) mm	45	45	45	45	60	60	60	60	60	60	60	60
Peak torque kg.cm	45	65	65	65	90	90	90	250	250	250	250	250

### **DIMENSIONS**

