

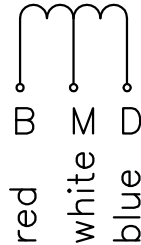
HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

General specifications		Electrical specifications	
Step Angle	1.8Deg±5%	Rated Voltage	4.4V
Number of phase	4	Rate Current	0.95A
Insulation resistance	100Mohm Min.(500V DC)	Resistance per phase	4.6±10%ohm
Insulation class	Class B	Inductance per phase	1.8±20%mH
Rotor inertia	18g.cm ²	Holding torque	900g.cm
Weight	0.2kg	Detent torque	g.cm

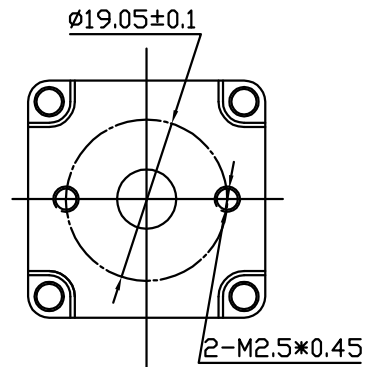
Wiring Diagram

See from rear shaft

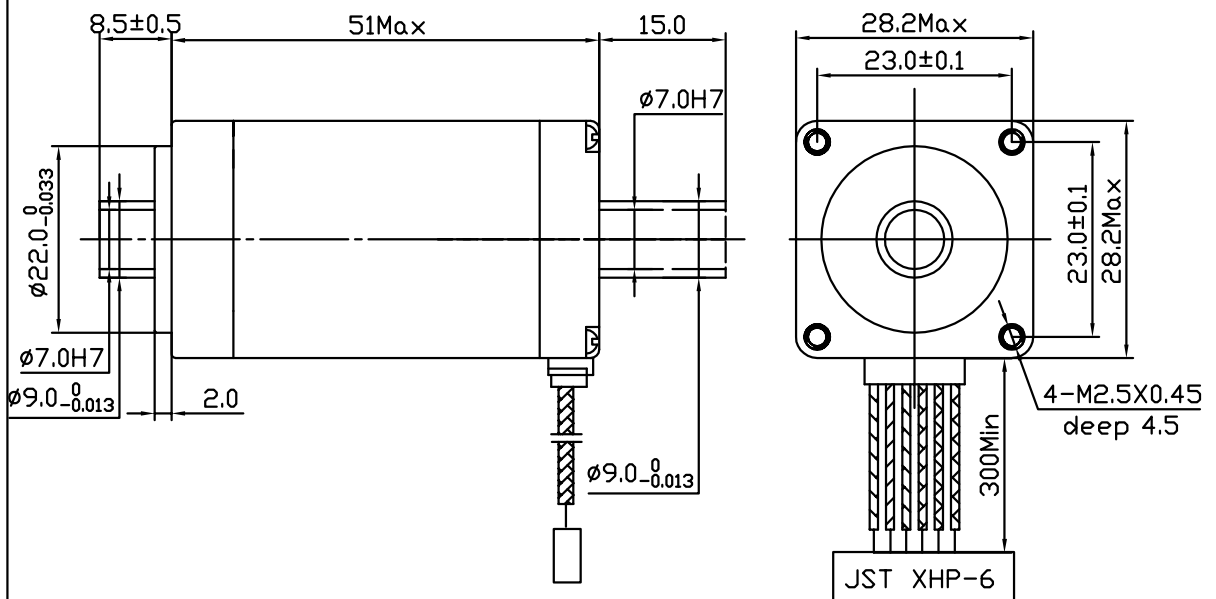
black A
yellow O
green C



PIN#	LEADERS
1	BLACK
2	RED
3	GREEN
4	BLUE
5	YELLOW
6	WHITE



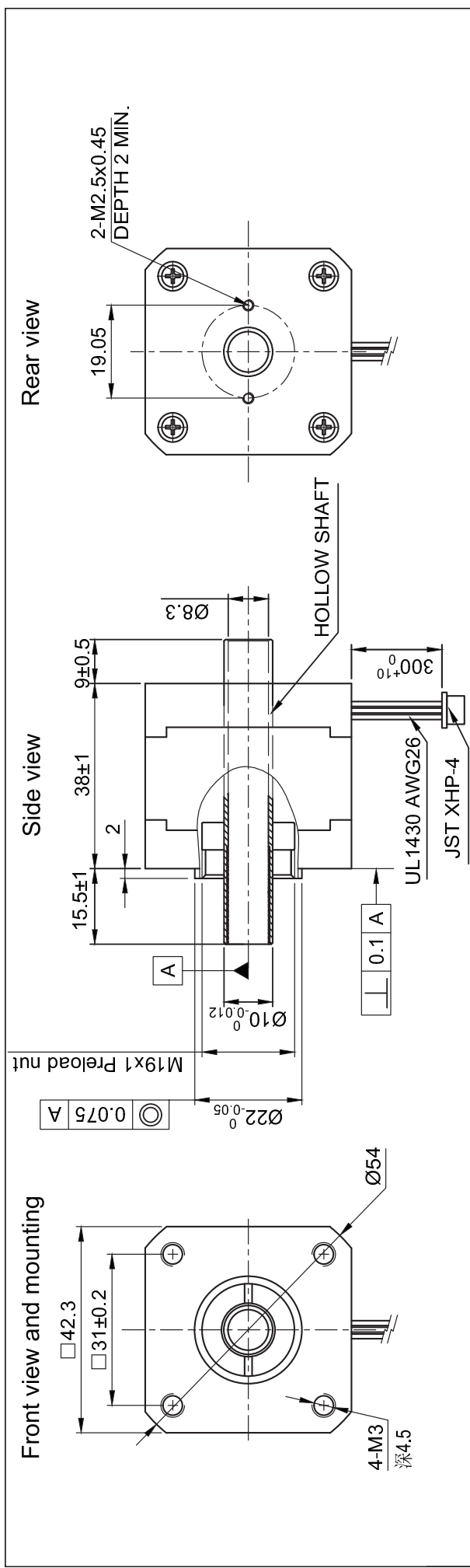
Dimension:



REV	QTY	NO.	SIG.	DT.
DESIGN				
CHECK				
APPROVE				

TITLE:
ST2818L1006-LA
SPECIFICATION

Nanotec

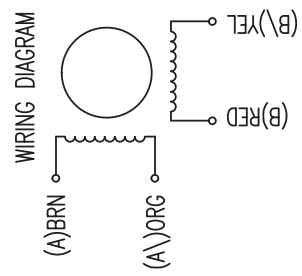


CONNECTION	BIPOLAR
SPECIFICATION	
VOLTAGE (VDC)	1.98
AMPS/PHASE	1.8
RESISTANCE/PHASE (Ohms)@25°C	1.1±15%
INDUCTANCE/PHASE (mH) @1KHz	1.85±20%
HOLDING TORQUE (Nm) [lb-in]	0.28 [2.47]
DETENT TORQUE (Nm) [lb-in]	9.8x10 ⁻³ [8.673x10 ⁻²]
STEP ANGLE (°)	1.8
STEP ACCURACY (NON-ACCUM)	±5%
ROTOR INERTIA (Kg-m ²) [lb-in ²]	5.7x10 ⁻⁶ [1.95x10 ⁻²]
WEIGHT (kg) [lb]	0.24 [0.529]
TEMPERATURE RISE: MAX.80°C (MOTOR STANDSTILL; FOR 2 PHASE ENERGIZED)	
AMBIENT TEMPERATURE -10~50°C [14°F ~ 122°F]	
INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)	
INSULATION CLASS B 130° [266°F]	
DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE)	
AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)	

Please regard the application notes at www.nanotec.com for further informations.

Shaft play is adjustable at the motor.

TYPE OF CONNECTION (EXTERN)	MOTOR	
	BIPOLAR	LEADS
1	A —	BRN
2	A \ —	ORG
3	B —	RED
4	B \ —	YEL



FULL STEP 2 PHASE-Ex., WHEN FACING MOUNTING END (X)

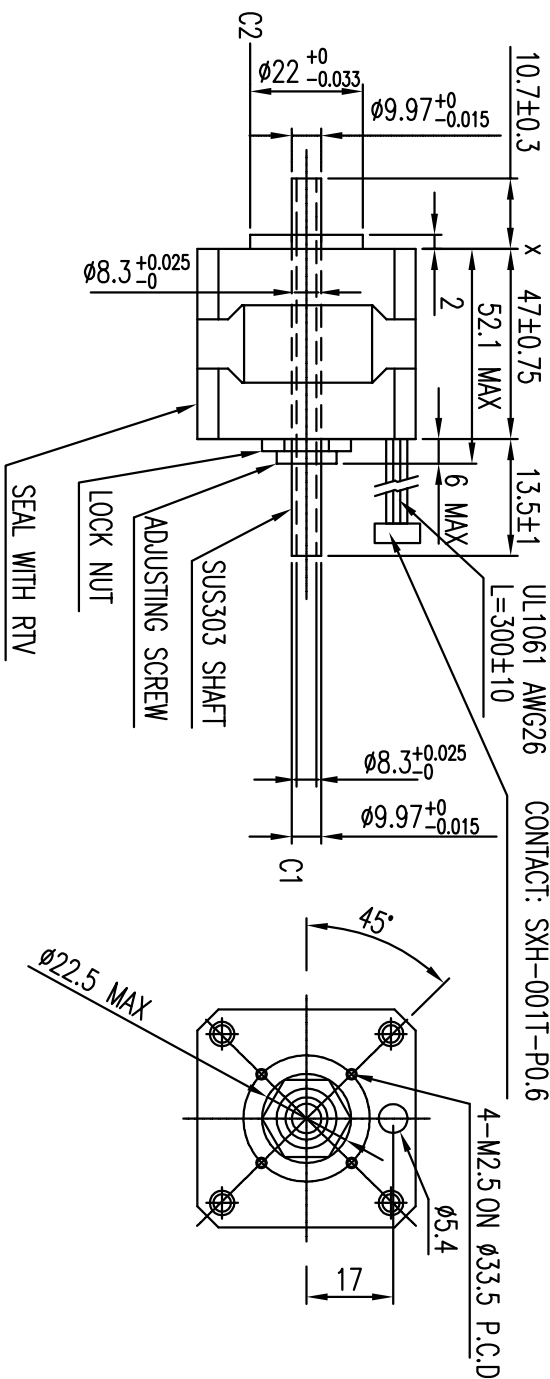
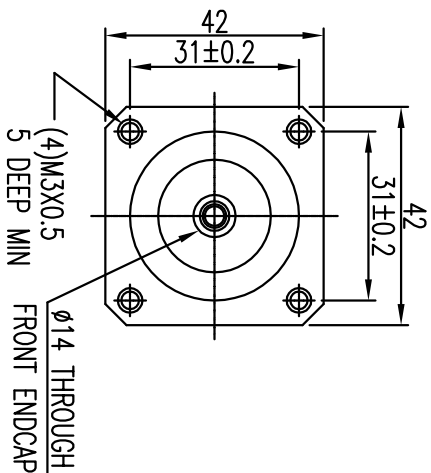
STEP	A	B	A \	B \	CCW	CW
1	+	+	-	-	←	→
2	-	-	+	+	→	←
3	-	+	-	+	←	→
4	+	-	+	-	→	←

SCALE FREE		APVD	SIGNATURE	
X	±0.5	CHKD	GYQ	18.10.12
1PL	±0.2	DRN	L B	18.10.12
2PL	±0.1			
ANGLE	±30'			DATE

Nanotec PLUG & DRIVE		ST4118M1804-L	
		DESCRIPTION	DATE
REV	DESCRIPTION	DATE	APVD

STEPPING MOTOR	
DWG.NO	ST4118M1804-L

DIMENSION (UNIT : mm)



JST XHP-6
UL1061 AWG26 CONTACT: SXH-001T-P0.6

SPECIFICATION

RATED VOLTAGE (VM)DC	3.4
AMPS/PHASE	1.8
RESISTANCE /PHASE Rm (Ohms) @25°C	1.9 ±10%
INDUCTANCE/PHASE.mH @1KHz	1.65 ±20%
STEP ANGLE (DEG)	1.8
STEP ACCURACY (NON-ACCUM)	±5%
HOLDING TORQUE (g-cm) @1.8A/Ø2.0-Ex.	3000
ROTOR INERTIA (g-cm ²)	68
WEIGHT (g)	280
INSULATION CLASS	B
INSULATION RESISTANCE	100M ohm @500VDC
DIELECTRIC STRENGTH	500VAC FOR ONE MINUTE
AMBIENTTEMPERATURE	-10°C ~ +50°C

NOTES:

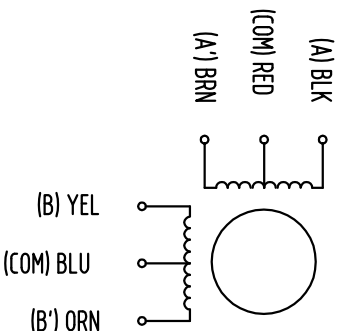
1. C1 DIAMETER RUNOUT TO BE 0.05 mm MAX.
2. C2 CONCENTRIC TO C1 W/IN 0.05 mm TIR.
3. X SURFACE PERPENDICULAR TO C1 W/IN 0.127 mm.
4. END CAPS TO BE BLACK PAINTED.
5. END PLAY : 0.1 MAX. WITH 9.0kg LOAD.
6. TORQUE ADJUSTING SCREW TO 1.44 kg-cm (REF) TO MEET NOTE 5.
7. TORQUE LOCKNUT TO 10.8~14.4 kg-cm.

FULL STEP 2 PHASE-Ex.,

WHEN FACING MOUNTING END (X)

STEP	A	B	A'	B'	COM	CCW
1	+	+	-	-		↺
2	-	+	+	-	+DCV	↻
3	-	-	+	+		
4	+	-	-	+		

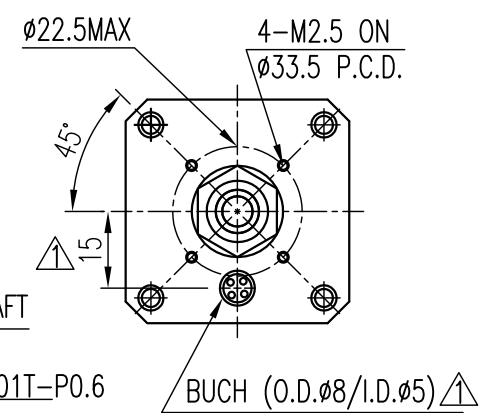
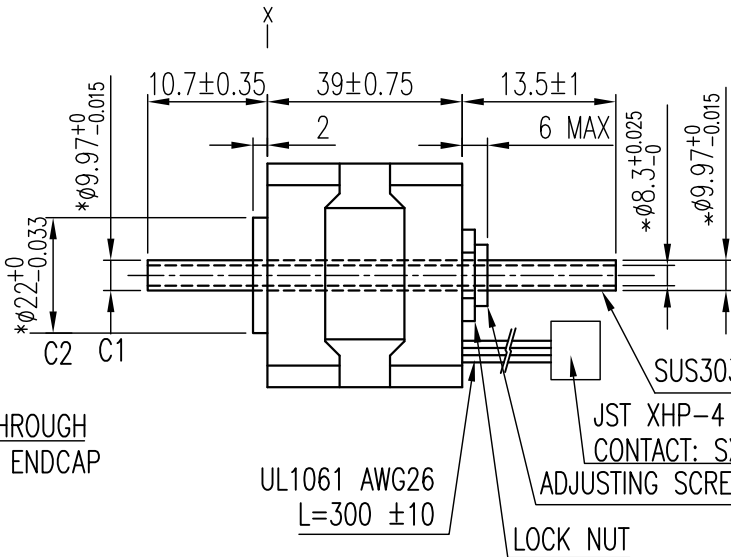
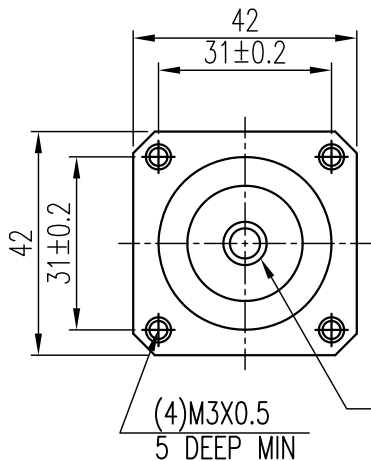
WIRING DIAGRAM



STEPPING MOTOR

NANOTEC : ST4218L1806-LC-NEU		SCALE FREE	APVD	DMG.NO	
		X	±0.5	ST4218L1806-LC-NEU_Z01	
		1PL	±0.2		
		2PL	±0.1		
		ANGLE	±30°		
REV	DESCRIPTION	mm-dd-yy	APVD	DATE	

DIMENSION (UNIT : mm)



NOTES:

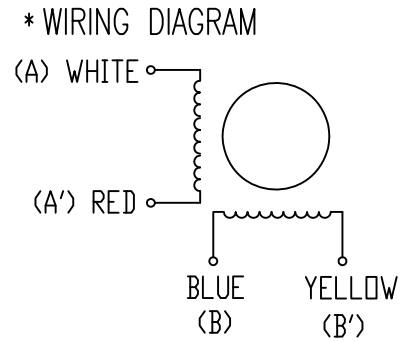
1. C1 DIAMETER RUNOUT TO BE 0.05 mm MAX.
2. C2 CONCENTRIC TO C1 W/IN 0.05 mm TIR.
3. X SURFACE PERPENDICULAR TO C1 W/IN 0.127 mm.
4. END CAPS TO BE BLACK PAINTED.
5. END PLAY : 0.1 MAX. WITH 9.0kg LOAD.
6. TORQUE ADJUSTING SCREW TO 1.44 kg-cm (REF) TO MEET NOTE 5.
7. TORQUE LOCKNUT TO 10.8~14.4 kg-cm.
8. * MEANS IMPORTANT ITEM.

PIN NO.	LEADS
1	WHT
2	RED
3	BLU
4	YEL

SPECIFICATION	
RATED VOLTAGE (VM)DC	1.7
AMPS/PHASE	1.4
RESISTANCE /PHASE Rm (Ohms) @25°C	1.21 ±10% *
INDUCTANCE/PHASE.mH @1KHz	2.1 ±20% *
STEP ANGLE (DEG)	1.8
STEP ACCURACY (NON-ACCUM)	±5%
HOLDING TORQUE (Kg-cm) @1.4A/Ø,2Ø-Ex.	2.1 \triangle *
ROTOR INERTIA (g-cm ²)	54
WEIGHT (g)	250
INSULATION CLASS	B
INSULATION RESISTANCE	100M ohm @500VDC
DIELECTRIC STRENGTH	500VAC FOR ONE MINUTE
AMBIENT TEMPERATURE	-10°C ~ +50°C

FULL STEP 2 PHASE-Ex.,
WHEN FACING MOUNTING END (X)

STEP	A	B	A'	B'	CCW
1	+	+	-	-	↑ ↓ CW
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	

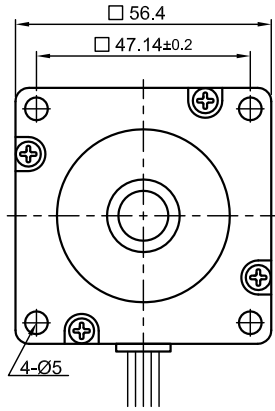


3	UNIT OF HOLDING TORQUE	23.08.10	J.W.
2	PIN-ASSIGNMENT ADD.	16.05.08	J.W.
1	NEW BUCH	28.11.07	J.W.
REV	DESCRIPTION	Datum	APVD

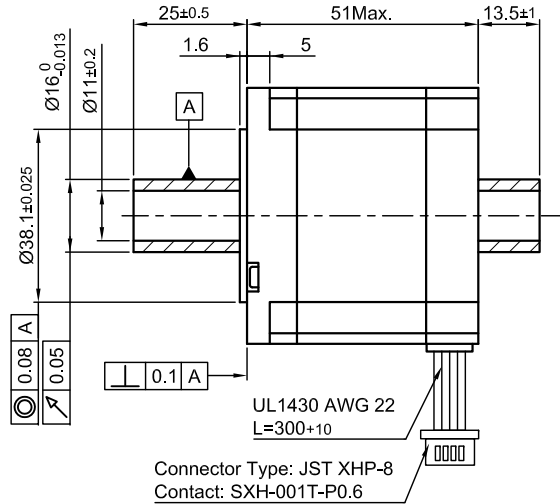
NANOTEC : ST4218M1404-LC-NEU		SCALE FREE	APVD		
X	±0.5	CHKD			
1PL	±0.2	DRN		14.12.04	
2PL	±0.1	SIGNATURE		DATE	
ANGLE	±30'				

STEPPING MOTOR	
DWG.NO	
ST4218M1404-LC-NEU	

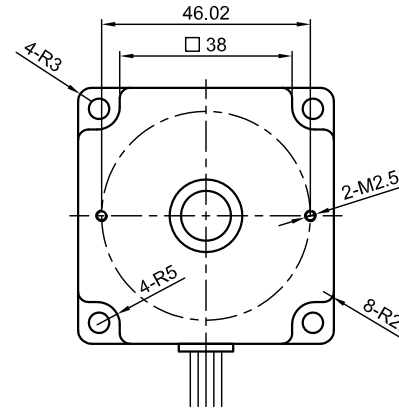
Front view and mounting



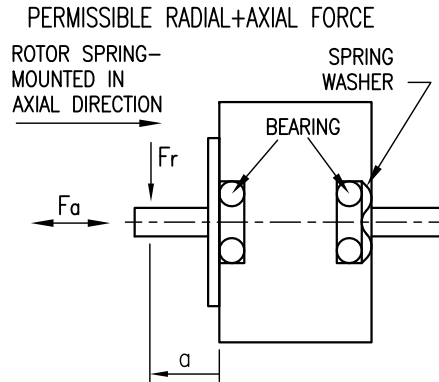
Side view



Rear view



SPECIFICATION	CONNECTION	UNIPOLAR OR BIPOLAR-1 WINDING	BIPOLAR	
			SERIAL	PARALLEL
VOLTAGE (VDC)		2.16		
AMPS/PHASE		3.0	2.12	4.24
RESISTANCE/PHASE (Ohms)@25°C		0.72±10%	1.44±10%	0.36±10%
INDUCTANCE/PHASE (mH) @1KHz		1.1±20%	4.4±20%	1.1±20%
HOLDING TORQUE (Nm) [lb-in]		0.65 [5.75]	0.92 [8.14]	0.92 [8.14]
DETENT TORQUE (Nm) [lb-in]		0.03 [0.266]		
STEP ANGLE (°) ± ACCURACY		1.8±5% (NON-ACCUM)		
BACK-EMF (V) (300 U/min)			9.59 min.	
ROTOR INERTIA (Kg-m ²) [lb-in ²]		2.75x10 ⁻⁵ [0.094]		
WEIGHT (Kg) [lb]		0.65 [1.43]		
TEMPERATURE RISE: MAX.80°C (MOTOR STANDSTILL; FOR 2 PHASE ENERGIZED)				
AMBIENT TEMPERATURE -10~ 50°C [14°F ~ 122°F]				
INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)				
INSULATION CLASS B 130° [266°F]				
DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE)				
AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)				

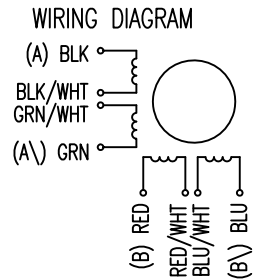


	AXIAL-FORCE Fa (N)				RADIAL-FORCE Fr (N)			
	Fa=15							
DISTANCE a (mm)	5	10	15	20	130	90	70	52
SHAFT PLAY (mm)	AXIAL				RADIAL			
AT LOAD MAX: (N)	4.5				4.5			

TYPE OF CONNECTION (EXTERN)				MOTOR		
UNIPOLAR	BIPOLAR 1WINDING	BIPOLAR SERIAL	BIPOLAR PARALLEL	CONNECTOR PIN NO. (A)	LEADS	WINDING
A	A	A	A	1	BLK	A
COM	A			3	BLK/WHT	
A\		A\	A\	2	GRN/WHT	A\
B	B	B	B	4	GRN	B
COM	B			5	RED	
B\		B\	B\	7	RED/WHT	B\
				6	BLU/WHT	
				8	BLU	

FULL STEP 2 PHASE-Ex., WHEN FACING MOUNTING END (X)

STEP	A	B	A\	B\	CCW	CW
1	+	+	-	-	↓	↑
2	-	+	+	-	↓	↑
3	-	-	+	+	↓	↑
4	+	-	-	+	↓	↑



					SCALE FREE	APVD	S.H.	17.12.10	<h3>STEPPING MOTOR</h3>
					X ±0.5	CHKD			
					1PL ±0.2	DRN	J.W.	17.12.10	DWG.NO
					2PL ±0.1	SIGNATURE		DATE	ST5918S3008-L2
REV	DESCRIPTION	DATE	APVD	ST5918S3008-L2	ANGLE ±30'				