

Tashida

Low-Voltage
NEMA Motor Instruction Manual

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NEMA Motor Instruction Manual

Installation and Maintenance for Polyphase 50 and 60 Hz AC Motors Frame Size

Tamaño de la Carcasa

- Frames 143T through 5810 Open Drip Proof (ODP)
- Frames 143T through 5811 Totally Enclosed Fan Cooled (TEFC)
- Frames 143T through 5811 Totally Enclosed Blower Cooled (TEBC)

WARNING



- To reduce the risk of fire or explosion, do not install Division 2 motors in areas where the operating temperature code (shown on the motor nameplate or Division 2 label) exceeds the ignition temperature of the hazardous environment.
- Do not attempt to install, operate, maintain, or dispose of this equipment until you have read and understood all the product safety information and directions that are contained in this manual.
- Do not disable or bypass any safety guards or protective devices.
- Avoid touching the hot surfaces of the electric motor without wearing proper protection.
- Keep the terminal box cover in place and secured while the motor circuits are powered.
- Two people are required to lift a 140T and larger frame motor.
- Hearing protection is required around noise levels exceeding 80 dBA.
- Protection for overloads, peak starting currents, short circuit current, and ground fault currents, should be in strict accordance with the National Electrical Code (latest release) Article 430, local electrical codes, and building codes.
- Proper circuit protection is required to prevent automatic reset devices from automatically restarting the motor.
- Only qualified personnel are to perform maintenance in an effort to prevent equipment failure or damage.

Notes

- Each TASHIDA electric motor is thoroughly tested at the factory and carefully packaged for standard shipping. Confirm the overall packaging condition upon receipt.
- The equivalent lead wire markings per NEMA(IEC) are: T1(U1), T2(V1), T3(W1), T4(U2), T5(V2), T6(W2), T7(U5), T8(V5), T9(W5), T10(U6), T11(V6), T12(W6).
- All dimensions are in inches. Multiply the inch value by 25.4 to convert to millimeters (mm).
- Any motor operated using an Adjustable Speed Drive is subject to potential premature bearing failures due to the increased shaft currents caused by common mode voltages inherent with operation on a sinusoidal power source. TASHIDA recommends insulating both bearings on frame sizes 444T and larger.

As an option, insulating the Non Drive End (NDE) bearing and installing a grounding brush on Drive End (DE) is acceptable. Smaller motors are at risk as well and should be considered after reviewing the application and installation. The user is responsible for protecting the couplings and driven equipment from shaft currents from the motor. Insulated couplings are recommended. Shaft grounding devices provide additional protection but cannot be used in hazardous areas because of electrical arcing.

- Match the nameplate rating of the motor, connection diagram, and lead numbers with the appropriate category for the applicable connection requirement. TASHIDA special built or special rated motors may follow different connections. If more information is required, contact TASHIDA with the nameplate Model Number and Serial Number of the motor for connection information.
- TASHIDA motors in frames 143T – 184T and all other TASHIDA motors rated 0.5 HP – 5 HP are Wye-connected motors. All other standard size TASHIDA motors are Delta-connected.
- TASHIDA standard motors are built to F-1 assembly specifications. The motor uses the standard connection configuration and, while facing the non-drive end of the motor, the standard rotation is counter-clockwise (CCW).
- For references to the National Electrical Code (NEC) see the latest release of the NEC.
- All products and company names in this document are trademarks or registered trademarks of the respective owners and are used for identification purposes.

Storage

If the equipment is not put into immediate use, it should be stored indoors in an area that is clean and dry. Care should be taken to keep the equipment covered when moving from a cold location to a warm location, otherwise condensation may occur. If condensation does occur, allow the motor to dry thoroughly before applying power. Using a megohmmeter, test the insulation resistance of the windings before applying power. A minimum of 10 megohms is recommended.

For long-term storage or when indoor storage is not available, the motor must be covered with plastic or weather-proof tarp. Cover the motor completely. To ward off the formation of condensation, do not wrap the motor tightly. This will allow for adequate ventilation. Precautions must also be taken to protect the motor from flooding or being exposed to harmful chemical vapors.

Ensure that any unpainted sections are covered. Retouch any scratched or flaked areas. If condensate plugs or drain plugs are used, ensure that they are functional. Whether indoors or outdoors, the area should be free from vibration. Excessive vibration can cause bearing damage. Any motor which must be stored in an area that is exposed to vibration must have the shaft locked to prevent any movement.

If the motor is equipped with space heaters, ensure that the space heaters are properly connected and functional. The motor interior temperature should be maintained at approximately 5.6°C (10°F) degrees above ambient.

A systematic inspection and maintenance schedule should be established. If the motor is to be stored for 6 months or longer, it should, in addition to the minor precautions above, have the insulation resistance of the windings tested every 3 to 6 months. A minimum of 10 megohms is recommended. A record of insulation values, temperature, time, humidity, and length of voltage application should be recorded to show winding conditions prior to start up.

If windings are designed for outdoor operation, they will not be affected by extreme or sudden temperature changes, or inclement weather in general. However, a weatherproof cover with provisions for adequate ventilation should be used to guard against intrusion of salt, dust, or other abrasive or corrosive material.

It is recommended that the rotor be turned every month to redistribute the lubricant in the bearings. Oil or grease should be added every 6 months.

— READ THE FOLLOWING CAREFULLY BEFORE INSTALLING OR STARTING MOTOR —

Receiving

1. Ensure that the nameplate data is consistent with the order specifications.
2. Check whether any damage has occurred during transportation, freight claims must be submitted by the consignee to the carrier.
3. Remove the bearing lock plate before start up (if used). Save the plate for reuse if subsequent shipping is required.
4. **Note: If unable to reinstall the bearing lock plate, use wooden wedges to block the shaft to prevent any movement during shipping.**
5. Turn the shaft by hand to ensure that it turns freely.

Location

1. The motor should be installed in an area of unrestricted ventilation. Ensure that there are no limits or obstructions imposed on the operation of the motor.
2. Drip Proof motors are designed for indoor installations in a well-ventilated area where the atmosphere is reasonably free of dirt, moisture, and corrosion. Contact TASHIDA for any required modifications.

3. Totally enclosed motors may be installed where dirt, moisture (not running water), and corrosion are present. Outdoor applications are acceptable, subject to the environment. Contact TASHIDA for any required modifications.

Mounting

1. Mount the motor securely on a firm and flat base. All ball and roller bearing normal thrust motors through frame 447T are mechanically capable of being mounted in any position. Consult with TASHIDA for frames larger than 447T. Special drains, seals, or support construction may be required on all sizes, subject to the environment.
2. Align the motor accurately, using a flexible coupling if possible. For drive recommendations, consult with the drive manufacturer, equipment manufacturer, or TASHIDA Customer Support Center. See additional information in the section titled Alignment Procedure on page 5. Motors with Ball bearings on Drive End [DE] are recommended for direct coupled applications. Motors with roller bearings on Drive End [DE] are designed for belting applications. Rigid couplings require extra allowance for thermal shaft growth toward the coupling. Skidding noise may result from the combination of internal bearing clearances and alignment tolerances.
DO NOT RUN A ROLLER BEARING WITHOUT A LOAD CONNECTED.
3. V-belt Sheave Pitch Diameters should not be less than the values listed in **Table 1 on page 6** [NEMA recommended values].
4. Tighten belts enough to prevent slippage only. Belt speed should not exceed 6500 ft. per minute or consult belt/sheave supplier.
5. Motors must not be subjected to vibration exceeding 0.5 G force. Motors are not to be mounted to shaker screens or vibrating equipment that exceeds 0.5 G force on the motor. Complete isolation is required.

Power Supply & Connections

1. Nameplate voltage and frequency should be consistent with the power supply. The motor will operate satisfactorily on line voltages within 10% of the nameplate value. The frequency shall be within 5% of the nameplate value. The combined variation shall not exceed 10%. A motor that is rated for 230 volts can be operated on 208-volt network systems per the nameplated amps, but with slightly modified performance characteristics.
2. Dual voltage and single voltage motors can be connected for the desired voltage by following the connection diagram shown on the nameplate. Alternate starting connections are shown in the conduit box or see the connection diagrams on pages 8 and 9.
3. Lock out/Tag out and disconnect the motor from the power supply before opening the conduit box or performing any maintenance or repair on the motor.
4. Using a megohmmeter, test the insulation resistance of the motor before energizing. A minimum of 10 megohms is recommended.

Table 1. V-Belt Sheave Pitch Diameters [MG 1-14.42].

Frame Number	Horse Power at Synchronous Speed RPM			V-Belt Sheave (Inches)			
				Conventional		Narrow	
	3600	1800	1200	A, B, C, D, and E		3V, 5V, and 8V	
			Min. Pitch Diameter	*Max. Width	Min. Pitch Diameter	**Max. Width	
143T	1.5	1	0.75	2.2	4.25	2.2	2.25
145T	2 - 3	1.5 - 2	1	2.4	4.25	2.4	2.25
182T	3	3	1.5	2.4	5.25	2.4	2.75
	5	-	-	2.6		2.4	2.75
184T	-	-	2	2.4		2.4	
	5	-	-	2.6	5.25		2.75
	7.5	5	-	3		3	
213T	7.5 - 10	7.5	3	3	6.5	3	3.75
215T	10	-	5	3		3	
	15	10	-	3.8	6.5	3.8	3.75
254T	15	-	7.5	3.8		3.8	
	20	15	-	4.4	7.75	4.4	4
256T	20 - 25	-	10	4.4		4.4	
	-	20	-	4.6	7.75	4.4	4
284T	-	-	15	4.6		4.4	
	-	25	-	5	9	4.4	4.25
286T	-	30	20	5.4	9	5.2	4.25
324T	-	40	25	6	10.25	6	5.25
326T	-	50	30	6.8	10.25	6.8	5.25
364T	-	-	40	6.8		6.8	5.25
	-	60	-	7.4	11.5	7.4	5.25
365T	-	-	50	8.2		8.2	
	-	75	-	9	11.5	8.6	5.5
404T	-	-	60	9		8	
	-	100	-	10	14.25	8.6	7.25
405T	-	-	75	10		10	
	-	100	-	10	14.25	8.6	7.25
	-	125	-	11.5		10.5	
444T	-	-	100	11		10	
	-	125	-	11	16.75	9.5	8.5
	-	150	-	-	-	10.5	
445T	-	-	125	12.5		12	
	-	150	-	-	16.75	10.5	8.5
	-	200	-	-	-	13.2	

*Maximum sheave width = 2(N-W) - ¼". **Maximum sheave width = N-W.

Sheave ratios greater than 8:1, or with a center-to-center distance between sheaves equal or less than the diameter of the larger sheave, should be referred to Tashida. Sheaves must be mounted close to the shaft shoulder.

Alignment Procedure

Motor Leveling & Coupling Alignment

When the base has been adjusted, leveled, and grouted, the correct motor leveling and coupling alignment are obtained with the aid of shims between the motor and the base. To give the motor proper support, it is important that the base and shims combine to create a level and stable platform.

Rigid Coupling Shaft Alignment

Extreme care must be taken to obtain correct shaft alignment when using rigid couplings. Circular concentric peripheral surfaces of the two coupling halves must indicate correct alignment to within 0.0005 inches to 0.001 inches when the two coupling halves are rotated together. The separation between the faces of the two coupling halves must also be maintained within the same tolerance.

The alignment may be checked by utilizing a dial indicator, or with the aid of a straight-edge and thickness gauge or feelers as shown in **Figure 2 on page 9**.

The preferred method of checking alignment is with the dial indicator. Bolt the indicator to one of the coupling halves and indicate the position of the dial button on the opposite coupling half with a chalk mark. Set the indicator dial to zero at the first position and then rotate both halves of the coupling to a new position where a reading is to be made. All readings must be made with the dial button located at the chalk mark. At least six readings are to be taken.

A variation in the dial reading at different positions of coupling rotation will indicate whether the machine has to be raised, lowered, or moved to one side or another to obtain alignment of the circular concentric peripheral surfaces of the two coupling halves within the specified tolerance.

Coupling Faces

In addition to the above check, a check of the separation of the coupling faces must be made to establish correct alignment. The separation between the faces of the coupling may be checked with a dial indicator fastened to one coupling half and a reference surface fastened to the other coupling half. Mark the location of the dial button on the reference surface and make all readings with the indicator in this position.

Set the dial of the indicator to zero for the first reading and use this as the reference. Be sure to rotate both halves of the coupling the same amount, aligning the bottom of the indicator and the mark on the reference surface for each of six readings. A variation of the readings at different positions will indicate how the machine has to be adjusted to obtain correct alignment. After each adjustment of the motor, repeat the above procedure to ensure that the correct alignment and leveling have been obtained.

Flexible Coupling

Units coupled through flexible couplings should be aligned as accurately as possible. The two halves should indicate correct alignment to within 0.002 inches on both the circular concentric peripheral surfaces and the separation between faces. Although most flexible couplings will withstand greater misalignment than rigid couplings, extreme misalignment can cause vibration possibly resulting in failure of motor bearings and/or shaft.

If the method shown in **Figure 2 on page 9** is used to check alignment of the machines, correct alignment exists when:

- The peripheries of the coupling halves are true circles of the same diameter and if the faces are flat.
- The separation between the faces is held to within the specified tolerance at all points and a straight edge lies squarely across the rims at any point.

Non-parallel faces will be indicated by a variation in separation of the coupling halves as they are rotated, and a difference in height of the coupling halves will be indicated by the straight-edge and feeler gauge test.

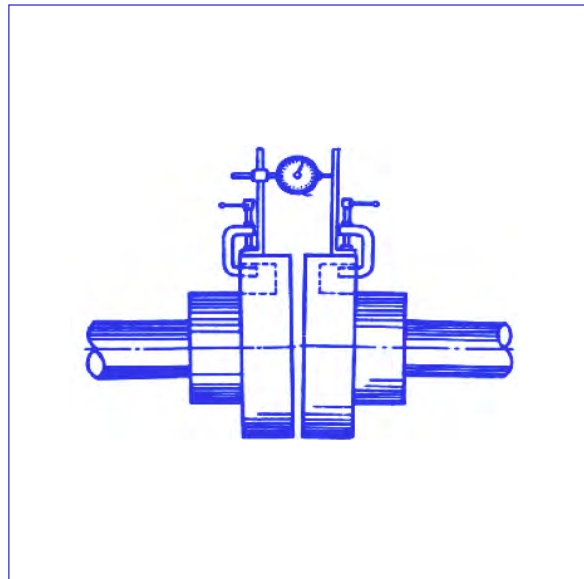
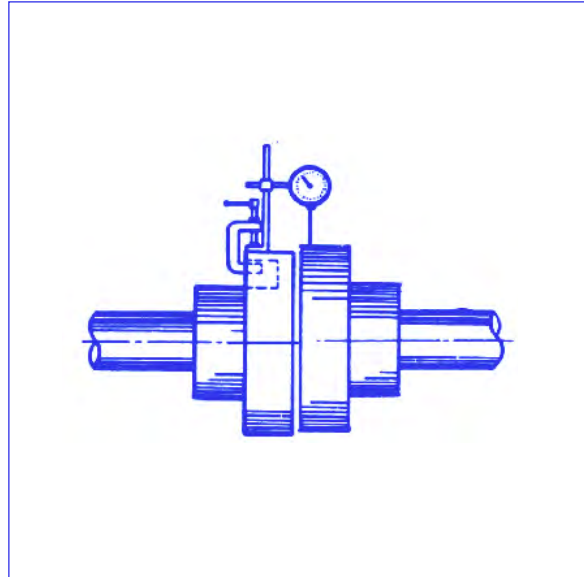
When the coupling halves have been correctly aligned with the motor feet bolted in position, place temporary bolts in two coupling holes for clamping the halves together. Then, ream for a light drive fit through both halves for regular coupling bolts.

The preferred method of measuring coupling alignment is with a dial indicator as shown in **Figure 1**.

Clamp the dial indicator to the coupling as indicated below to measure the circular concentric peripheral surfaces of the coupling halves for parallel alignment.

Also, as shown in **Figure 1**, clamping a reference surface to the opposite coupling half allows the dial indicator to be used for measuring the separation of the coupling halves for axial alignment.

Figure 1



Balance (Direct Coupled Units)

TASHIDA motors are balanced at the factory to standard NEMA commercial tolerances. However, if direct coupling units have been disassembled in the field and are not reassembled with the shafts in the same position as they were originally, an unbalanced condition may occur.

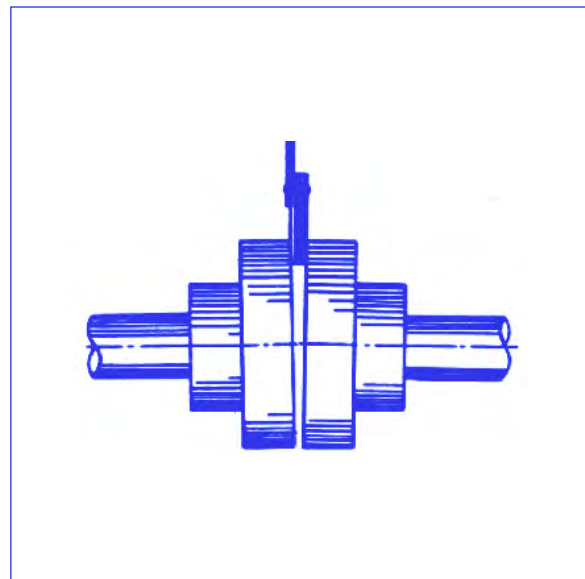
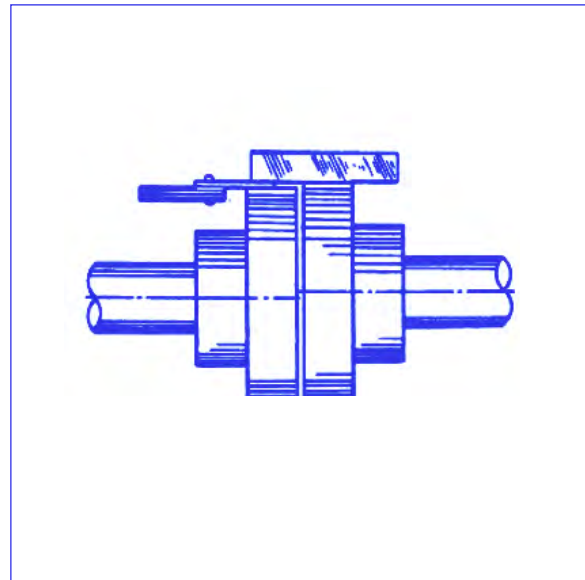
To correct this condition, disconnect the coupling halves and rotate one shaft 90° with respect to the other shaft. Re-connect the coupling and run the motor. If not corrected, repeat the procedure until normal operation resumes.

The straight-edge or thickness gauge or feeler gauge is an alternative method of measuring coupling adjustment as shown in **Figure 2**.

Use a straight-edge and thickness gauge or feeler gauge to check the alignment of the circular concentric peripheral surfaces of the coupling halves as shown below. The separation between the faces of the coupling halves can be measured as shown.

Rigid Coupling Tolerances 0.0005 inch to 0.001 inch. Flexible Coupling Tolerance: 0.002 inch.

Figure 2



Warnings

WARNING



BEFORE STARTING THE MOTOR, REMOVE ALL UNUSED SHAFT KEYS AND LOOSE ROTATING PARTS TO PREVENT THEM FROM FLYING OFF. CAUTION: CHECK DIRECTION OF MOTOR ROTATION BEFORE COUPLING MOTOR TO LOAD. TO REVERSE THE MOTOR ROTATION, REVERSE ANY TWO OF THE THREE LEADS TO THE POWER PHASES. IF THE MOTOR IS NOT BI-DIRECTIONAL, CONFIRM THE CONNECTION DIAGRAM AND ROTATION ARROW, OR CONTACT TASHIDA.

WARNING



ROTATING PARTS, SUCH AS COUPLINGS, PULLEYS, EXTERNAL FANS, AND UNUSED SHAFT EXTENSIONS, SHOULD BE PERMANENTLY GUARDED AGAINST ACCIDENTAL CONTACT WITH HANDS OR CLOTHING. THIS IS PARTICULARLY IMPORTANT WHERE THE PARTS HAVE SURFACE IRREGULARITIES SUCH AS KEYS, KEYWAYS OR SET SCREWS.

WARNING



WHEN A LIFTING MEANS IS PROVIDED FOR HANDLING THE MOTOR, IT SHOULD NOT BE USED TO LIFT THE MOTOR PLUS ADDITIONAL EQUIPMENT SUCH AS GEARS, PUMPS, COMPRESSORS, OR OTHER DRIVEN EQUIPMENT.

WARNING



THE FRAMES AND OTHER METAL EXTERIORS OF MOTORS (EXCEPT FOR INSULATED PEDESTAL BEARINGS) USUALLY SHOULD BE GROUNDED TO LIMIT THEIR POTENTIAL TO GROUND IN THE EVENT OF ACCIDENTAL CONNECTION OR CONTACT BETWEEN LIVE ELECTRICAL PARTS AND THE METAL EXTERIORS.

WARNING

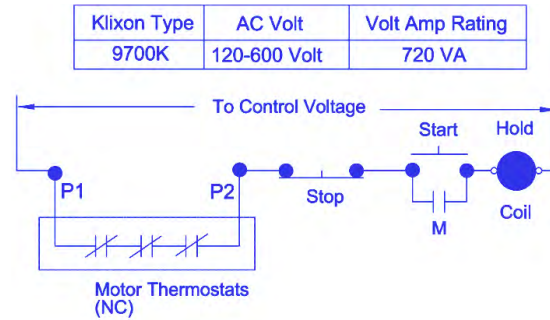


WHEN CAREFUL CONSIDERATION OF THE HAZARDS INVOLVED IN A PARTICULAR APPLICATION INDICATE THE MACHINE FRAMES SHOULD NOT BE GROUNDED OR WHEN UNUSUAL OPERATING CONDITIONS DICTATE THAT A GROUNDED FRAME CANNOT BE USED, THE INSTALLER SHOULD MAKE SURE THAT THE MACHINE IS PERMANENTLY AND EFFECTIVELY INSULATED FROM GROUND. IN THOSE INSTALLATIONS WHERE THE MACHINE FRAME IS INSULATED FROM GROUND, IT IS RECOMMENDED THAT APPROPRIATE WARNING LABELS OR SIGNS BE PLACED ON THE EQUIPMENT OR IN THE AREA OF THE EQUIPMENT BY THE INSTALLER.

WARNING



DISCONNECT POWER BEFORE WORKING ON MOTOR-DRIVEN EQUIPMENT. IF MOTOR IS EQUIPPED WITH AN AUTOMATIC TEMPERATURE-LIMITING DEVICE, CONNECT LEADS P1 AND P2 INTO THE CONTROL CIRCUIT OF A STARTER PER THE FOLLOWING DIAGRAM.



Note: Frames 256T and smaller have two thermostats.

Figure 3. Typical Connection Diagrams.

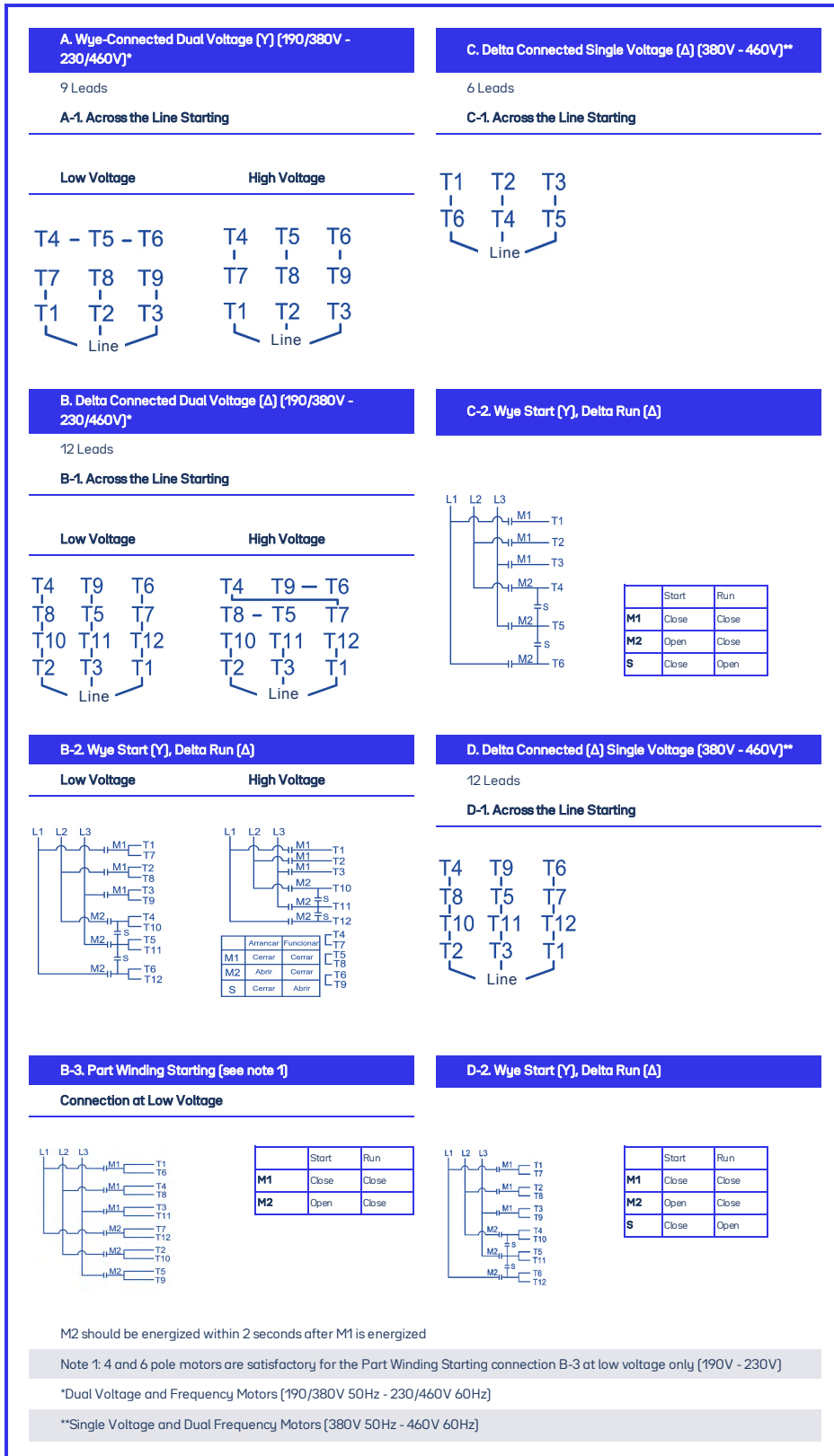


Figure 4. Typical Connection Diagrams (Cont.)

D-3. Part Winding Starting (4 and 6 Pole Motors)

	Start	Run
M1	Close	Close
M2	Open	Close

M2 should be energized within 2 seconds

E Wye Connected (Y) [380V - 460V]**

3 Leads

E-1. Across the Line Starting

F. Delta Connected (Δ) [380V - 460V]**

3 Leads

F-1. Across the Line Starting

Note: Motor with frames 449T up to 5811 will have 3 leads with multiple cables in each lead, numbered the same in each respective lead cable

Maintenance

Inspection

Inspect motor at regular intervals. Keep the motor clean and the vent openings unobstructed.

Lubrication

Motors with frame size 143T up to 256T are furnished with double sealed or shielded ball bearings (rolling elements) which are not required to be regreased. Grease fittings are not supplied, and bearings are designed for an average of 100,000 hours operation under Standard Conditions [see Table 2].

Motors with frame size 284T up to 5811 are furnished with double shielded, open ball, or roller bearings. Depending on HP size and/or the operating speed, it is necessary to relubricate anti-friction bearings periodically [see Table 2].

These motors are supplied with provisions for greasing and have been lubricated prior to shipping. However, before start up, it is recommended that approximately 30 grams (1 oz.) of grease be applied because of possible settling of grease during storage.

Any oil leakage around bearing caps indicates overpacking – excess grease should be purged by operating motor temporarily with relief open.

Instructions for Lubricating

TASHIDA motors with frame size 284T up to 5811 are furnished with grease fittings. Before greasing, be sure fittings are clean and free of dirt.

Remove the grease relief plug or plate and, using a low-pressure grease gun, pump in the required grease amount. Do not over grease. Relubrication intervals are specified in Table 2. After relubricating, allow the motor to run for 10 minutes before replacing relief hardware. See the Motor Relubrication

document for details on both standard horizontal and vertical motor bearings.

Table 2. Relubrication Frequency.

Sync. RPM Range	Frame Range	Type Of Service	
		Standard Duty	Severe Duty
3600 / 3000	143T - 256T	8 Months	4 Months
	284TS - 286TS	8 Months	4 Months
	324TS - 5811	8 Months	4 Months
1800 / 1500	143T - 256T	30 Months	12 Months
	284T - 326T	24 Months	12 Months
	364T - 365T	24 Months	12 Months
	404T - 447T	18 Months	8 Months
	449T - 5811	18 Months	8 Months
1200 / 1000 and Slower	143T - 256T	30 Months	12 Months
	284T - 326T	24 Months	12 Months
	364T - 447T	24 Months	12 Months
	449T - 5811	18 Months	8 Months

Note: Typical re-lubrication schedule for horizontal mounting. See motor nameplate for actual schedule and type of grease, if applicable.

Service Conditions	
Standard Duty	Eight hours per day, light to normal loading, clean condition free of dust.
Severe Duty	Twenty-four hours per day, light to normal shock loading vibration, exposure to dirt or dusty conditions.
Very Severe Duty	Twenty-four hours per day, very severe conditions where the motor is subject to high vibration, high ambient temperature, exposure to dirt or dusty conditions Reduce Severe Duty interval by 1/3

Recommended Greases for Standard Applications

Unless otherwise specified by the grease nameplate of the motor, use the following greases for the listed temperature range. The TASHIDA standard motors are greased at the factory with the polyurea base Mobil Polyrex® EM grease.

Operating Ambient Temperature -30°C ~ 50°C.

Chevron® SRI	Chevron Corp.
Mobil Unirex® N 2	Exxon Mobil Corp.
Mobil Polyrex® EM	Exxon Mobil Corp.
Shell Dolium® R	Shell Oil Co.
Mobilith SHC® 100	Exxon Mobil Corp.

WARNING: In general, it is not recommended to mix greases of different brands. The mixing of different types of thickeners may destroy the composition and physical properties of the grease. In the event that a different grease is required by the end user, the following steps can be taken. Using the instructions for lubrication, open grease outlet and purge the system as much as possible of the old or unwanted grease. Repeat this same operation after 1 week of service. Consult TASHIDA Customer Support Center for further recommendations on grease compatibility.

Recommended Greases for Special Applications

The following greases are recommended for special applications only and should be used only for motors specifically built for such conditions.

Minimum Ambient Temperature -60°C

Beacon™ 325	Exxon Mobil Corp.
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Maximum Ambient Temperature 90° C

Dow Corning® 44	Dow Corning Corp.
Mobil Unirex® S2	Exxon Mobil Corp.
Triton® 460	Conoco Phillips Corp.
Mobilith SHC® 460	Exxon Mobil Corp.

Warranty

TASHIDA warrants that the received Equipment will be free of defects in materials and workmanship.

This warranty expires eighteen (18) months after the date that the Equipment are received by the Purchaser or twelve (12) months after the Equipment are placed into operation, whichever occurs first. Neither shall exceed 18 months from the date of receipt of the Equipment.

Equipment that are received in an unacceptable condition shall, at the sole discretion of TASHIDA, be repaired, replaced, updated, or have the purchase price refunded.

To file a claim, the Purchaser must (1) promptly notify TASHIDA in writing of the nonconformity, (2) furnish TASHIDA satisfactory proof of the nonconformance, and (3) if requested by TASHIDA, return the nonconforming equipment or part to TASHIDA, and pay all expenses incurred in connection with such return.

The repaired/replaced item or parts shall be delivered, free of charge, to the Purchaser, FCA TASHIDA designated facility or at TASHIDA's option, FCA TASHIDA authorized service shop [INCOTERMS 2010]. Purchaser shall pay all costs following such delivery, including, without limitation, all handling, transportation, assembly, installation, insurance, testing, and inspection charges.

The warranty excludes (1) normal wear and tear; (2) Equipment that have not been properly stored, assembled, installed, serviced, maintained, operated, or used within the limits of rated capacity and normal usage; (3) Equipment not used in accordance with current operating and maintenance instructions furnished by TASHIDA, and (4) Equipment that have been altered or modified in any manner without the written consent of TASHIDA.

THE FOREGOING OBLIGATION TO REPAIR, REPLACE, OR REFUND THE PURCHASE PRICE PAID FOR THE EQUIPMENT SHALL BE THE SOLE AND EXCLUSIVE REMEDY OF THE PURCHASER, ITS CUSTOMERS AND USERS OF THE EQUIPMENT FOR THE NONCONFORMANCE OF THE RECEIVED EQUIPMENT.

TASHIDA SHALL HAVE NO OBLIGATION TO DISASSEMBLE ANY NONCONFORMING EQUIPMENT OR TO INSTALL ANY REPAIRED OR REPLACEMENT PART, EQUIPMENT OR TO PAY ANY COSTS INCURRED IN CONNECTION WITH SUCH DISASSEMBLY OR INSTALLATION.

THERE ARE NO OTHER WARRANTIES AND TASHIDA HEREBY EXPRESSLY DISCLAIMS ALL OTHER EXPRESS, STATUTORY, AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Renewal parts

1. Use only genuine TASHIDA renewal parts.
2. When ordering, specify complete motor information. Model Number and Serial Number are a minimum requirement. Specify quantity and describe part.
3. For information and service contact the TASHIDA Customer Support Center.

Customer Support

The TASHIDA Customer Support Center is open from 8 a.m. to 5 p.m. (CST), Monday through Friday. Our phone number is US +1 305 698 2220.

You may also contact TASHIDA by writing to: info@tashida.com

For further information on TASHIDA's products and services, please visit our website at www.tashida.com



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