

Title: **19EB/EF/FA HIGH VOLTAGE MOTOR TERMINALS**Number: **C8803**Date: **2/16/88**Supersedes: **NEW**

Date:

Models Affected: **19EB/EF/FA**

Purpose: This bulletin is provided to inform the field of a product improvement regarding high voltage motor terminals.

Background: An improved motor terminal board and insulator assembly has been developed which has some distinct differences over previous models. Where the previous model consisted of an insulator and terminal board with tapered light bulb threads screwed together with epoxy sealant, the new model utilizes straight threads to pull the mating parts together, compressing an O-ring into a groove in the terminal board. Terminal boards lacking flatness on the surface that mates with the motor shell will now be lapped to within .006" flatness to minimize cracking when the bolts are tightened. A bolt tightening sequence and torque spec. has also been established. The terminal board O-ring will be replaced by a quad ring on the smaller 19EF402-1013 board. An O-ring is still used on the large 19EF502-1013 board.

Further Information: High voltage terminal boards, part numbers 19EA53-1183 and 19FA512-1023, with light bulb threads have been obsoleted and replaced by 19EF402-1013 and 19EF502-1013 respectively. Insulator part number 19FA502-1504 with light bulb thread will still be available for use on high voltage 19CB/DK, and DM's. On these models a terminal board is not used, the insulator is screwed directly into the motor shell.

The new terminal boards are only compatible with new insulators, part numbers 19EF402-1023 and 19EF502-1023. If they are being installed on a unit for the first time, they must be installed as a set. However, unlike the previous model, future repair or replacement can be confined to only the faulty component; i.e., terminal board, insulator, or O-ring.

In that there are some unique differences in this design over the previous, be sure to carefully read and understand the following installation instructions before attempting terminal board and insulator replacement. Refer to Tables 1 and 2 for proper kit or terminal component selection.

MAIL KEYS: 2.33D, 2.40B, 2.45, 2.53

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Installation Instructions:

Note: To ensure a leaktight seal, the motor end terminal board mating surfaces must be clean and smoothly coated with epoxy paint which has had sufficient time to cure dry.

Procedure

1. Lightly grease quad ring (for terminal board 19EF402-1013) or O-ring (for terminal board 19EF502-1013) and install in terminal board groove. Slide assembly over motor lead.
2. Install terminal board to motor shell bolts and washers and evenly tighten bolts to approximately 5 ft/lbs. Then torque bolts to 12-15 ft/lbs in a sequence as shown in Fig. 1.

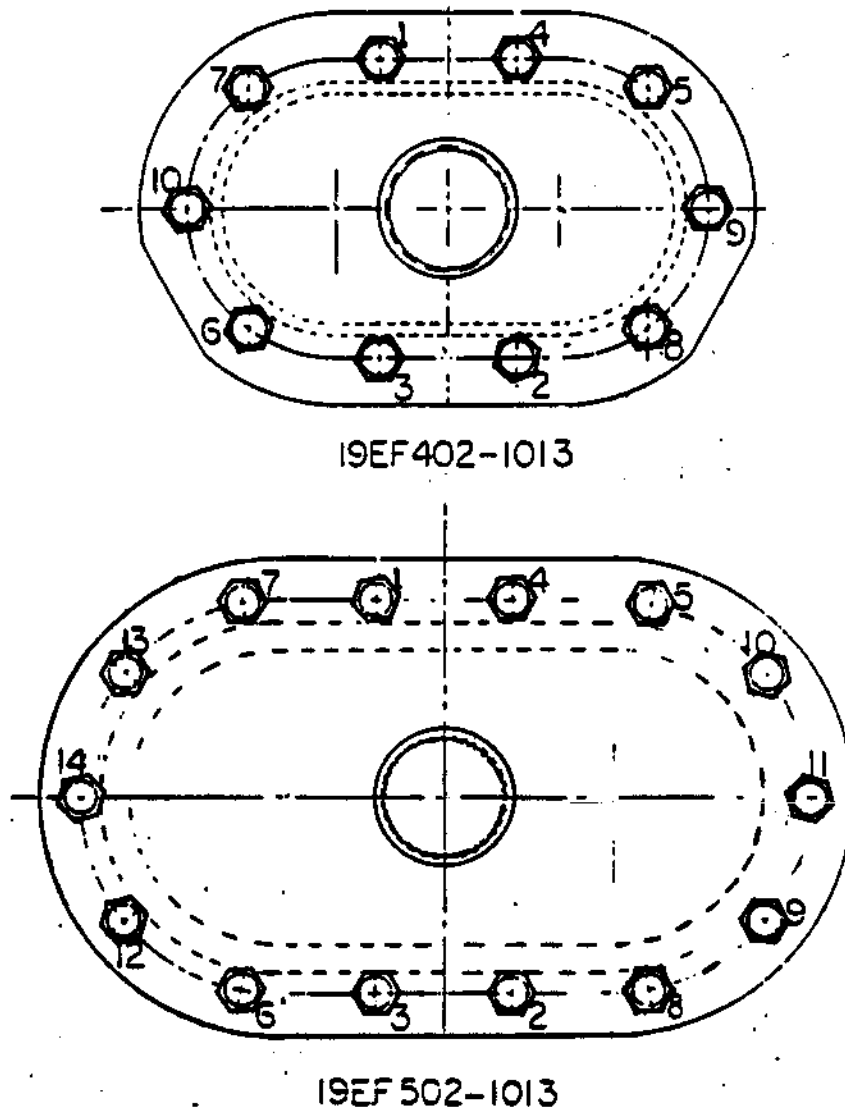


Fig. 1 - Torque Sequence

3. Lightly grease insulator O-ring and install on insulator. Lubricate insulator threads and install hand tight in terminal board.
4. Look in end of insulator and check to see if terminal adapter shoulder is flush with step in insulator bore or slightly recessed toward motor (see Fig. 2).

NOTE: Be sure terminal adapter (item 9, "copper") shoulder is flush with shoulder in insulator or slightly back toward motor or packing items 4 and 5 will not seat. Packing nut item 6 will not force the stiff lead wire back toward the motor. If adapter shoulder is out beyond insulator shoulder, the adapter will have to be removed, the wire lead slightly shortened, and the adapter resoldered.

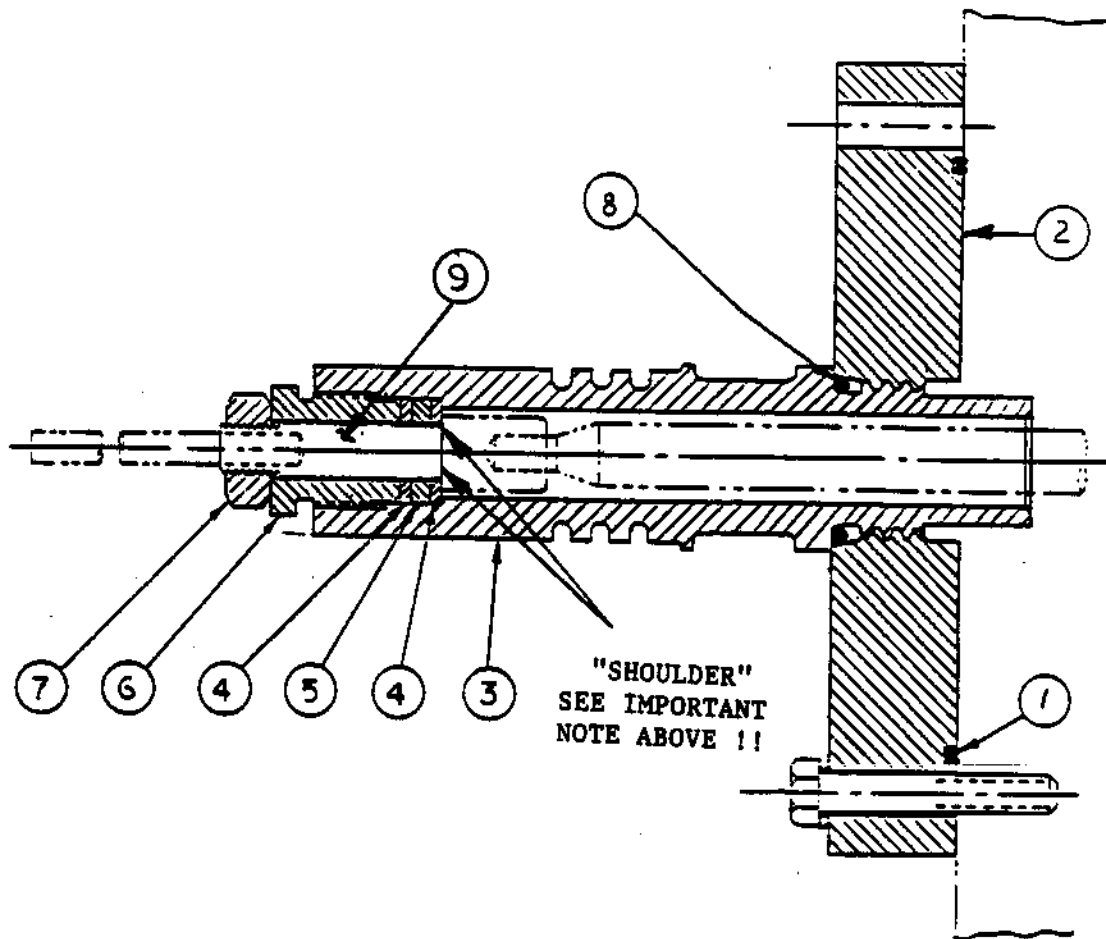


Fig. 2 Typical Terminal Arrangements
 19EF402-173 & 19EF502-173
 2400 - 4160 Volts

5. Sufficient torque to seal O-ring and pre-load threads to prevent loosening can be attained by seating insulator to terminal board hand-tight, then with wrench on insulator flats, tighten additional 1/8" (not 1/8 turn).
6. With insulator hand-tight, scribe mark on terminal board at flash line seam of insulator. Measure 1/8" in a clockwise direction from first scribe mark and scribe second mark. Tighten insulator with a wrench on the flats until the second scribe mark lines up with the insulator flash line. This will establish 12 - 15 ft/lbs of torque. Caution: Overtightening beyond this point will not improve sealing effect of insulator O-ring and will fracture the threads.
7. Assemble retainers, packing ring, and packing nut. Tighten packing nut 12 - 15 ft/lbs.
8. Install brass jam nut and tighten to 1 ft/lb.

NOTE: Be sure terminal adapter (item 9, "copper") shoulder is flush with terminal retainer 4A or slightly back toward motor or packing items 4, 4A, 5, and 5A will not seat properly. Packing nut item 6 will not force the stiff lead wire back toward the motor. If adapter shoulder is out beyond terminal retainer 4A, the adapter will have to be removed, the wire lead slightly shortened, and the adapter resoldered.

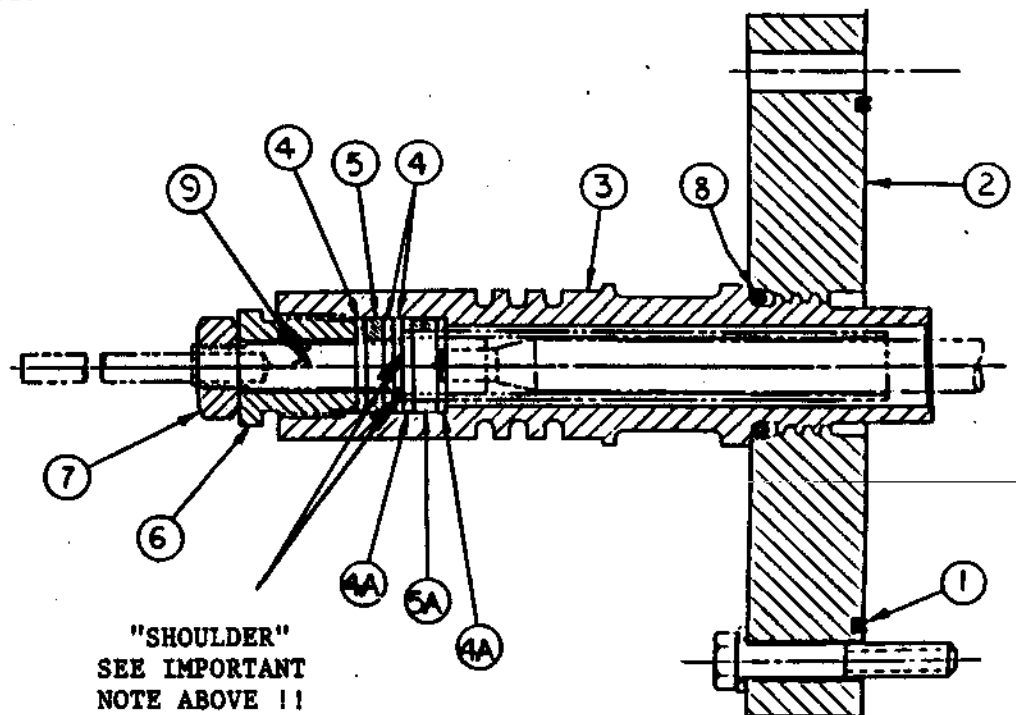


Fig. 3 Typical Terminal Arrangements
19EF402-163 and 19EF502-163
6300 - 690 olts

TABLE - 1 HI VOLTAGE MOTOR TERMINAL SELECTION GUIDE

MOTOR 50/60 HZ

1/82

MODEL	SIZE	CODE	VOLTAGE	TERMINAL ARRGT	KIT P/N
19EB	HD2/25	DB	2400-4160	19EF402-173	19EFG60-001
	HD3/35	DC			
	HD4/45	DD			
	HD5/55	DE			
	HD6/65	DF			
	HD7/75	DG			
	HD8/85	DH			
	HD9/95	DJ			
19EF/FA	HD7/75	DG			
	HD8/85	DH			
	HD9/95	DJ			
	HD10/105	DK			
	HD12/125	DM			
	HD14/145	DP			
19 FA	HE1/15	EA		19EF502-173	19EFG60-002
	HE2/25	EB			
	HE3/35	EC			
	HE4/45	ED			
19EB	HD4/45	DD	6300-6900	19EF402-163	19EFG60-003
	HD5/55	DE			
	HD6/65	DF			
	HD7/75	DG			
	HD8/85	DH			
	HD9/95	DJ			
19 FA	HD6/65	DF			
	HD7/75	DG			
	HD8 —	DH			
	HD— 85	DH			
	HD9/95	DJ			
	HD10/105	DK			
	HD12/125	DM			
	HD14/145	DP			
	HE1/15	EA			
	HE2/25	EB			
	HE3/35	EC			
	HE4/45	ED			
				19EF502-163	19EFG60-004

TABLE 2

SERVICE PARTS KIT NUMBER (KIT INCLUDES 3 TERMINAL ASSEMBLIES FOR ONE MOTOR)

Kit P/N's		19EF660-001		19EF660-002		19EF660-003		19EF660-004	
Item No.	Description	Kit Contains		Kit Contains		Kit Contains		Kit Contains	
		Part No.	Qty	Part No.	Qty	Part No.	Qty	Part No.	Qty
1	Quad Ring O-Ring	KK74ZW487	3	KK71GW073	3	KK74ZW487	3	KK71GW073	
2	Terminal Board	19EF402-1013	3	19EF502-1013	3	19EF402-1013	3	19EF502-1013	
3	Terminal Insulator	19EF502-1023	3	19EF502-1023	3	19EF402-1023	3	19EF402-1023	
4	Terminal Retainer	19FA502-1242	6	19FA502-1242	6	19EA402-1042	6	19EA402-1042	
4A	Terminal Retainer					19FA502-1242	9	19FA502-1242	
5	Packing Ring	19FA502-1232	3	19FA502-1232	3	19EA402-1052	3	19EA402-1052	
5A	Packing Ring					19FA502-1232	3	19FA502-1232	
6	Packing Nut	19FA502-1222	3	19FA502-1222	3	19FA502-1222	3	19FA502-1222	
7	Jam Nut	AT14QA311	3	AT14QA311	3	AT14QA311	3	AT14QA311	
8	O-Ring	KK71GX015	3	KK71GX015	3	KK71GX015	3	KK71GX015	
9	Instruction Sheet	99TA550107	1	99TA550107	1	99TA550107	1	99TA550107	
Terminal Arrangement Number		19EF402-173		19EF502-173		19EF402-163		19EF502-163	

2400 - 4160 volt

6300 - 6900 volt

(Reference Fig. 2)

(Reference Fig. 3)