

DVD FIELD UPGRADE

P5 TO P7 INVERTER

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Revision History

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CONTENTS

Revision History i

SCOPE iii

1. Introduction 1

2. Required Components 1

3. Upgrade Procedure DVD 1

4. DVD Programming 3

SCOPE

This document describes the procedure to be followed to replace a Drum Vacuum Drive system with a P5 Inverter (10-4141) with a Drum Vacuum Drive system (DVD) with a P7 Inverter (500-02022A). The document can also be used to replace an 11-0658A or 11-0659A with P7 Inverter DVD (11-0658B or 11-0659B).

1. INTRODUCTION

This procedure is to be used whenever the P5 Inverter in the field fails. It is no longer possible to obtain new P5 Inverters or repair those that fail. **It is also not possible to replace the P5 Inverter with the P7 Inverter in the same DVD. If this is attempted, the P7 Inverter can overheat during operation.** Therefore it is necessary to replace the complete DVD unit. The new (P7) chassis contains improved cooling (forced air) for cooling the P7 Inverter.

The old (P5) DVD can be returned to the factory. It will be upgraded to accommodate the P7 Inverter. This upgrade is too extensive to be performed in the field.

2. REQUIRED COMPONENTS

To perform this upgrade, the field service engineer should have a complete Field Upgrade Kit (512-00277A). This kit consists of the following:

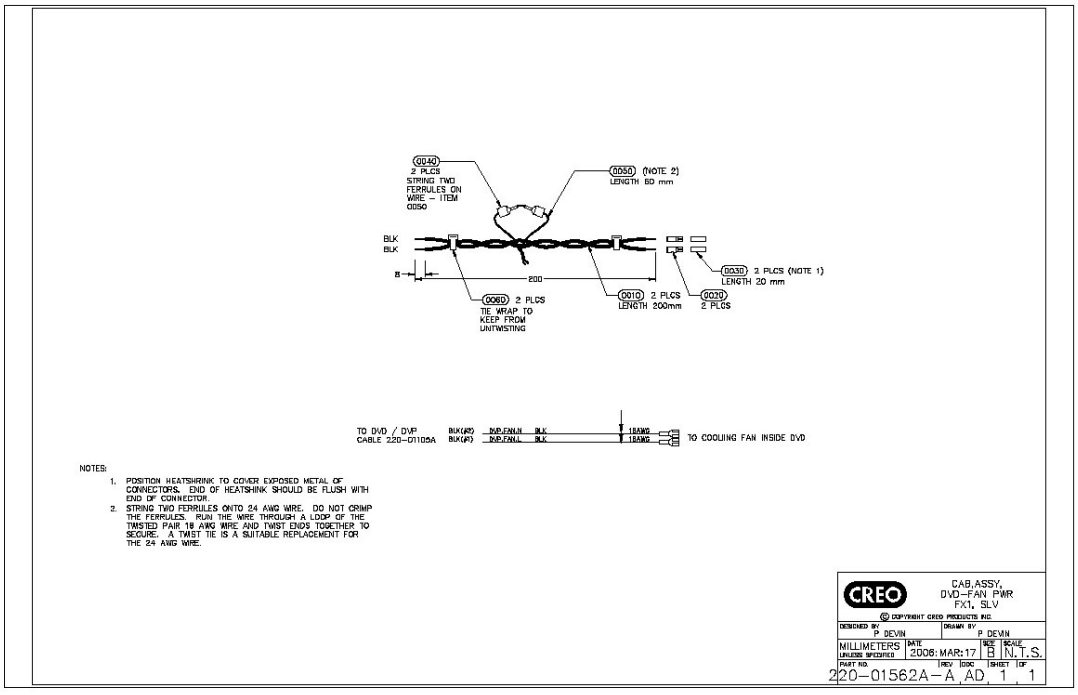
- Assembly, Drum Vacuum Drive, No Filter, P7 (500-02022A): Qty 1
- Cable Assembly, Fan Power, Drum Vacuum Drive (220-01562A): Qty 1
- Upgrade Procedure, DVD Field Upgrade, P5 to P7 Inverter (719-00963A-?-PR01: Qty 1
- Programming Procedure, P7 DVD (709-00268A-?-PR01): Qty 1

3. UPGRADE PROCEDURE DVD

Note: Depending upon region jurisdiction and local ordnances, some of the follow steps may have to be performed by a regionally qualified electrician.

1. Power off the DVD turning off the switch on its front panel.
2. Shut off the circuit breaker which supplies 3 phase AC power to the DVD. Use a procedure acceptable to the customer, to lock out the circuit breaker so that it cannot be accidentally turned on.
3. Remove the front cover from the DVD. Use a multi-meter set to measure AC voltage to check and ensure that 3 phase AC power is no longer applied to the DVD. Check the voltage between the 3 phases, each with each other (ie. X to Y, X to Z, Y to Z). Check the voltage between each of the 3 phases and chassis ground (ie. X to gnd, Y to gnd, Z to gnd). No voltage should be above 1.0 VAC.
4. Disconnect the 3 phase AC power input to the DVD from the inside of the DVD and remove the cable from the top of the DVD.

5. Disconnect the armored cable (runs between the DVD and the Drum Vacuum Pump, DVP) wiring from the inside of the DVD and remove it from the bottom of the DVD.
6. Remove the old DVD from its mounting place
7. Remove the front cover from the replacement DVD.
8. Disconnect the line filter wiring inside the old DVD. Remove the line filter from the old DVD.
9. Install the line filter removed from the old DVD into the new DVD. (If the line filter has failed it will be necessary to order a new line filter separately.)
10. Wire the line filter into the new DVD using the wiring diagram attached to the inside of the front cover for the new DVD.
11. Mount the new DVD in position where the old DVD was removed.
12. Install the 3 phase AC power input cabling into the top of the new DVD. Wire the power input cabling as shown on the new wiring diagram inside the front cover for the new DVD.
13. Attach the Fan Power, Drum Vacuum Drive cable assembly (220-01562A) to the existing armored cable. This cable may be inside the new DVD chassis, attached to the cooling fan. The new wiring diagram shows the connection to the armored cable (10-4142A). The two wires of the fan power cable are attached to the black #1 and black #2 wires of the cable which powers the cooling fan (blower) inside the DVP. (The cooling fan inside the new DVD chassis and the blower inside the DVP are wired in parallel.) The cooling fan inside the DVD will function correctly regardless of which wire of the fan power cable is connected to black #1 or black #2.



Two dual wire ferrules are attached to the fan power cable. These ferrules can be used to attach the fan power cable to the armored cable. Strip and insert the two wires (black #1 or black #2 and one of the fan power cable wires) into the ferrule. You can use a 16 AWG wire stripper (1.3 mm or 13 Metric gage) to crimp the barrel of the ferrule onto the wires. You should produce at least four pinch points along the length of the ferrule's barrel.

Note: By attaching the fan power cable to the armored cable you are effectively upgrading the armored cable from 10-4142A to 220-01105A

14. Install the armored cable into the bottom of the new DVD chassis. Note that the fan power cable is completely contained within the DVD. Connect the wires of the armored cable inside the DVD as per the new wiring diagram.

15. Connect the fan power cable to the cooling fan inside the new DVD chassis.

4. DVD PROGRAMMING

Programming instructions for the new P7 Inverter have been included in this upgrade kit. The programming parameters are different depending upon the version of Drum Vacuum Pump installed at the site. (Old or new vacuum pump). The programming instructions cover both types. Be sure to use the correct set of parameters. **(The new vacuum pump will draw higher than usual current, may over-heat and may not run at full commanded speed if the incorrect parameters are used.)** Most new DVP units are externally labeled as being new.