HARSCO RAIL

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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 3-7-2014 **BULLETIN NO:** 14-001

TITLE: JUPITER DIGITAL I/O MODULE FIELD POWER CIRCUIT BREAKER SIZE

RATING:

- [X] **DIRECTIVE** (Action Is Required)
- [ ] **ALERT** (Potential Problem)
- [ ] **INFORMATION** (Action Is Optional)
- [ ] **PRODUCT IMPROVEMENT** (Enhance Product)

PRODUCT SERIES / MODEL: All Mark III / IV / VI Tampers With Jupiter II Upgrade Kits

SERIAL NO: All of the above Models with Jupiter II Upgrade Kits listed below:
Mark III Jupiter II Kits: 5006269 - 5008802
Mark IV Jupiter II Kits: 4030415 - 4023119 - 5014407 - 5032295
Mark VI Jupiter II Kits: 4026841 - 4031859 - 5032326

SUMMARY: A problem has been discovered with the size of some of the circuit breakers used on the Jupiter II Upgrade Kits. Some of the Jupiter digital I/O modules with only one field power cable are being protected with a 15 amp or larger circuit breaker. As a result, the Jupiter field power cable and/or Jupiter module could over-heat and fail under certain operating conditions. A digital I/O module with only one field power cable requires an 8 amp circuit breaker while the same module with two field power cables requires a 15 amp circuit breaker. Harsco Rail recommends that the corrective actions be performed as soon as possible.

OPERATIONAL IMPACT: If you have a machine with a Jupiter II Upgrade Kit listed above, Harsco Rail recommends replacing the 15 amp or larger circuit breaker used on digital I/O modules with only one field power cable as soon as possible with an 8 amp circuit breaker (#5022140).

ACTION: See the instructions in this Service Bulletin applicable to your model of machine to determine how many 8 amp circuit breakers (#5022140) are needed and how to replace the circuit breakers. The 8 amp circuit breakers will be covered under warranty.

CONTACT: If you have any questions or if we can be of any service, please contact:
Harsco Rail Service Department
Columbia, SC Facility
(803) 822-7546

ORDERING CIRCUIT BREAKERS

1. **Important:** See the instructions in this Service Bulletin applicable to your model of machine to determine how many 8 amp circuit breakers must be replaced.

2. Contact the Service Department at Harsco Rail to order the total quantity of 8 amp Circuit Breakers (#5022140) needed. The 8 amp circuit breakers will be covered under warranty.

   Harsco Rail Service Department
   Columbia, SC Facility
   (803) 822-7546

3. Be able to provide the Model Number and Serial Number of the machine that the circuit breakers are being installed on.

PARTS LIST

ITEM	PART NO	DESCRIPTION	QTY
1	5022140	Circuit Breaker, 8 Amp	See Applicable Instructions
2	3407028	Wire, 10 AWG MTW	4 feet

SAFETY INFORMATION

- **FOLLOW APPLICABLE RAILROAD LOCKOUT - TAGOUT PROCEDURE TO REMOVE MACHINE FROM ALL ENERGY SOURCES. FAILURE TO COMPLY COULD RESULT IN SEVERE BODILY INJURY.**

INSTALLING CIRCUIT BREAKERS - ALL MACHINES

1. Follow applicable Railroad Lockout - Tagout Procedure to remove the machine from all energy sources when performing maintenance, or making adjustments or repairs to the machine.

2. **Important:** BE SURE the Jupiter Control System and the master disconnect switch are shut OFF on the machine before replacing the circuit breakers.

3. See the instructions in this Service Bulletin applicable to your model of machine to replace the circuit breakers.

4. Circuit Breaker Removal: Disconnect the source wire from Pin 2 of the existing circuit breaker. Remove the buss bar from the existing circuit breaker if it bussed to another circuit breaker. There is a retaining clip on the bottom side of the circuit breaker that needs to be pulled to remove the circuit breaker from the DIN rail.

INSTALLING CIRCUIT BREAKERS - ALL MACHINES

5. Circuit Breaker Installation: Install the new circuit breaker (#5022140) on the DIN rail where the existing circuit breaker was located. Reconnect the source wire to Pin 2 of the new circuit breaker. If more circuit breakers need to be changed out that was fed by the buss bar, repeat Steps 4 and 5.

6. **Note:** See Figure 1. The new circuit breaker (1) (#5022140) has been changed by the supplier, so you may not be able to use the existing buss bar. If this is the case, connect the feed wire to pin 1 of one of circuit breakers that were bussed together. Then cut a length of the supplied 10 AWG wire (2) and use as a jumper feed wire from pin 1 of that circuit breaker to pin 1 of the other circuit breaker that are to be bussed together. Be sure the toggle switch of the circuit breaker is in ON position.

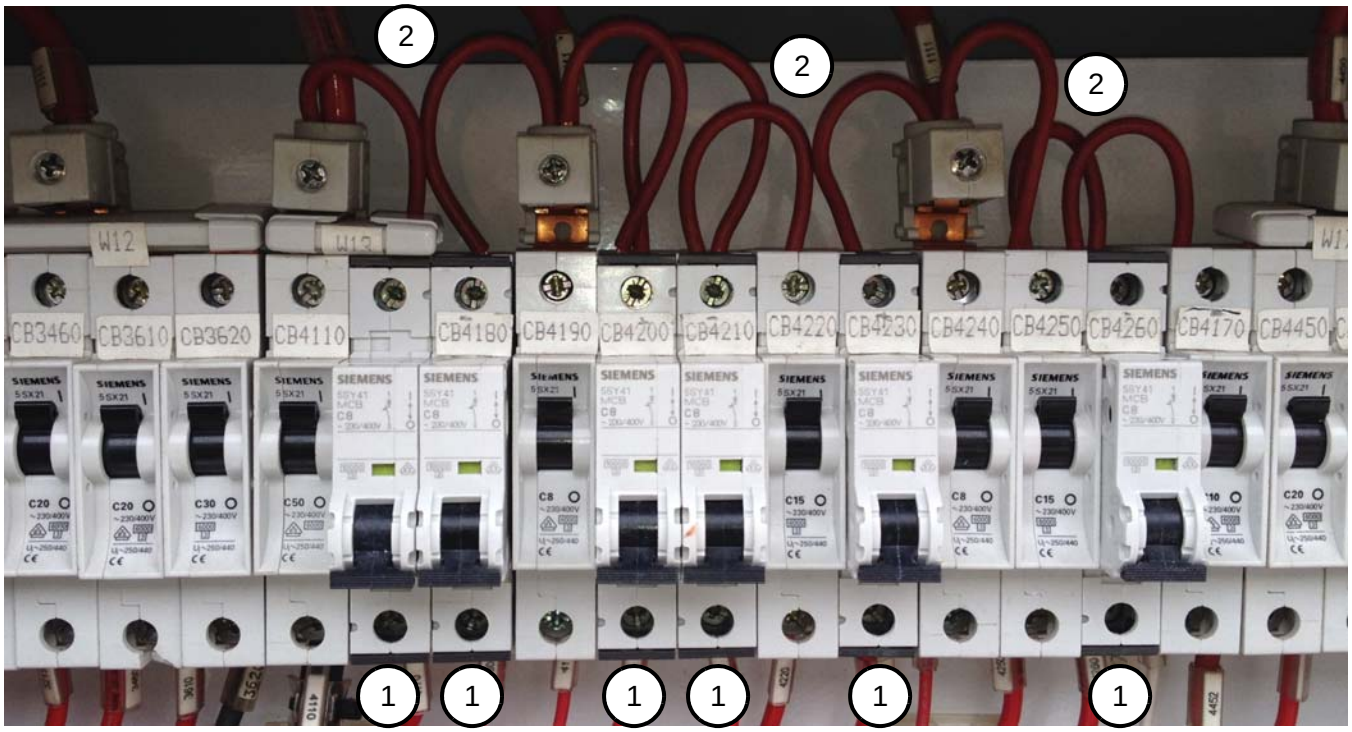
7. Repeat Steps 4 - 6 for each remaining existing circuit breaker that is to be replaced.

AFTER INSTALLING CIRCUIT BREAKERS - ALL MACHINES

1. After replacing all of the circuit breakers on the machine that were to be replaced, turn ON the master disconnect switch.

2. Turn ON the Jupiter Control System and verify that field power is available on all of the Jupiter CAN modules.

FIGURE 1
CIRCUIT BREAKERS WIRING



MARK III TAMPERS WITH JUPITER II KITS 5006269 - 5008802

1. These instructions are for a Mark III Tamper with the following Jupiter II Upgrade Kits:

   a. 5006269 (8 circuit breakers), CAN: 2, 4, 5, 6, 7, 8, 10 & 12
      5006265 PDB (Power Distribution Box)
      5006266 MCB (Main Control Box)

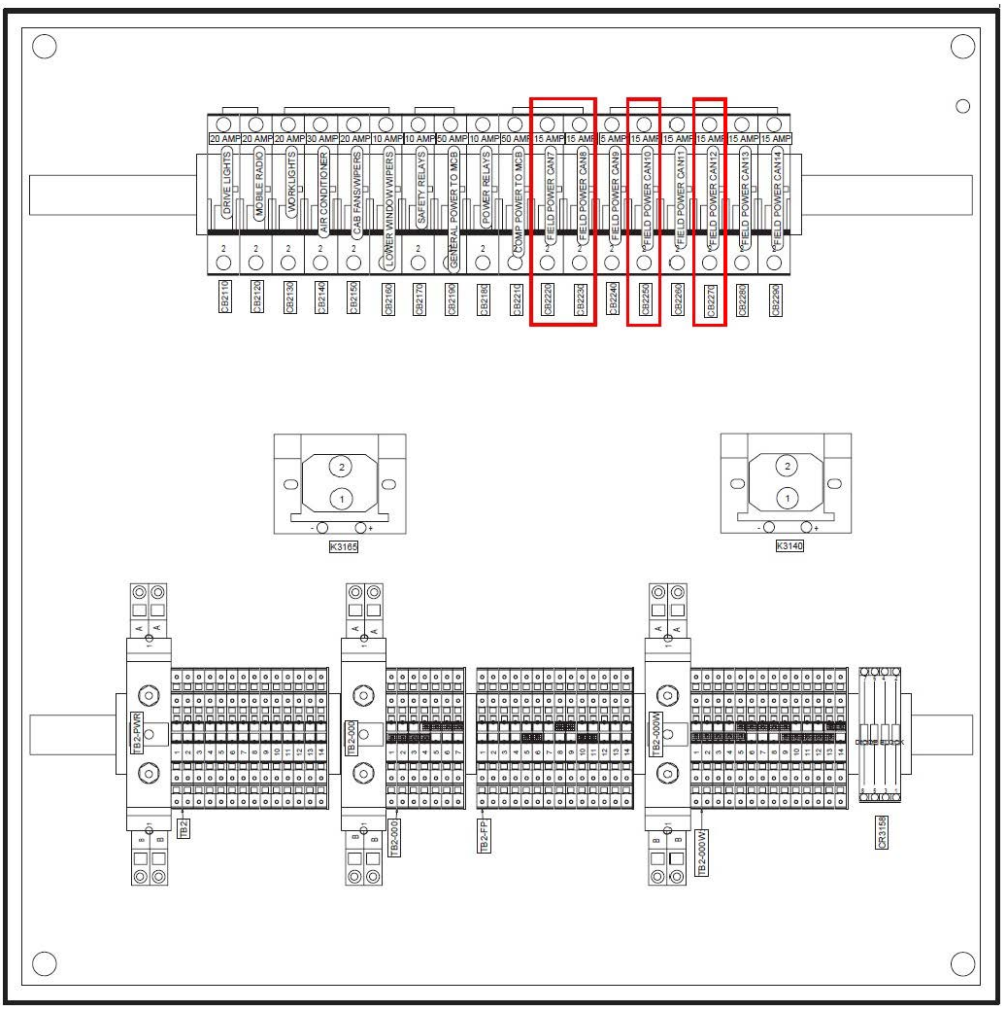
   b. 5008802 (8 circuit breakers), CAN: 2, 4, 5, 6, 7, 8, 10 & 12
      5006265 PDB (Power Distribution Box)
      5006266 MCB (Main Control Box)

2. In the PDB, find and replace existing circuit breakers: CB2220, CB2230, CB2250 & CB2270. See Installing Circuit Breakers - All Machines.

3. In the MCB, find and replace existing circuit breakers: CB2530, CB2550, CB2560 & CB2570. See Installing Circuit Breakers - All Machines.

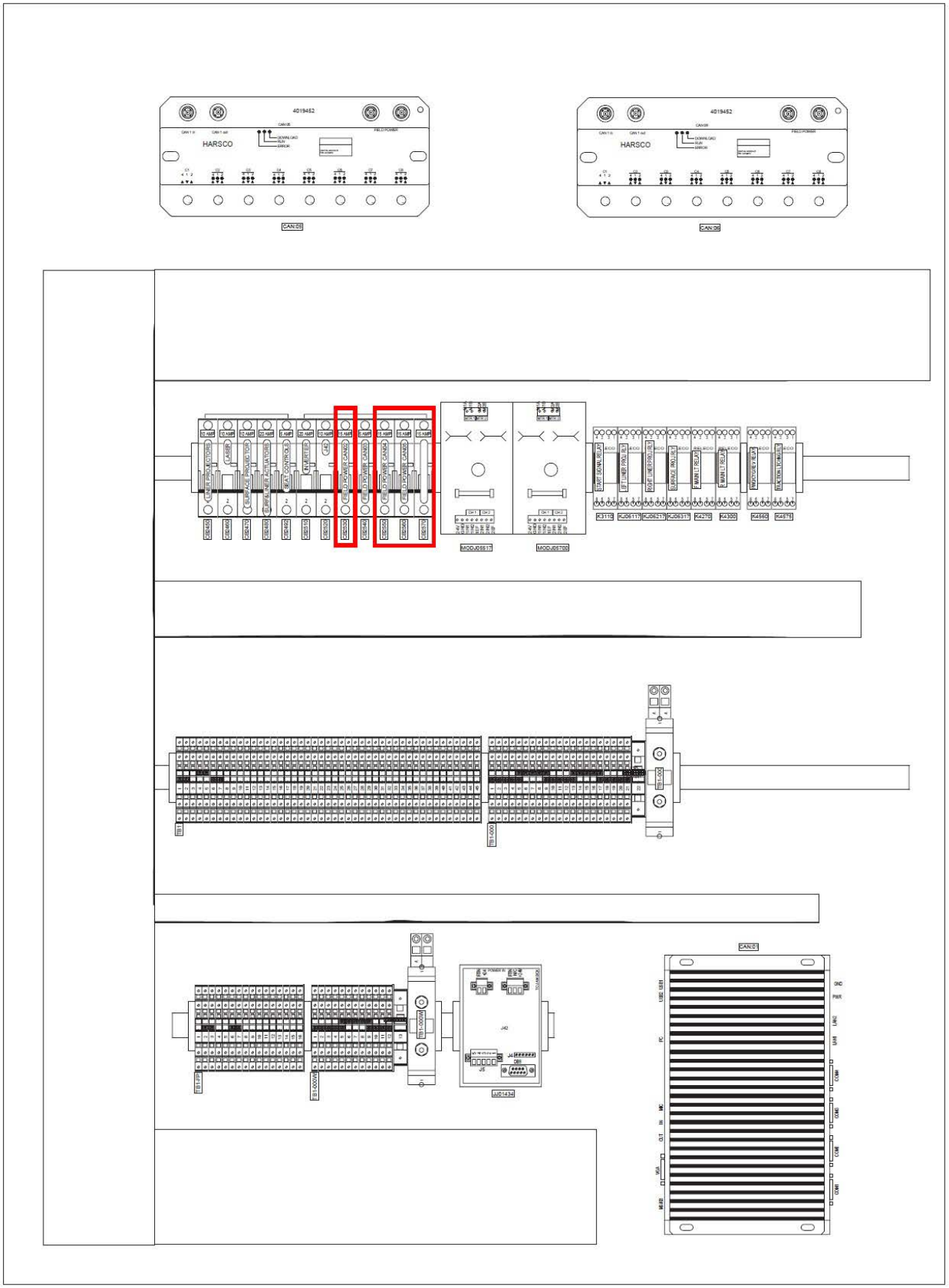
4. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

5006265 POWER DISTRIBUTION BOX



MARK III TAMPERS WITH JUPITER II KITS 5006269 - 5008802

5006266 MAIN CONTROL BOX



MARK IV TAMPERS WITH JUPITER II KITS 4030415 - 5014407

1. These instructions are for a Mark IV Tamper with the following Jupiter II Upgrade Kits:

   a. 4030415 (7 circuit breakers), CAN: 7, 8, 9, 11, 12, 14 & 17
      4030418 PDB (Power Distribution Box)
      4030417 MCB (Main Control Box)

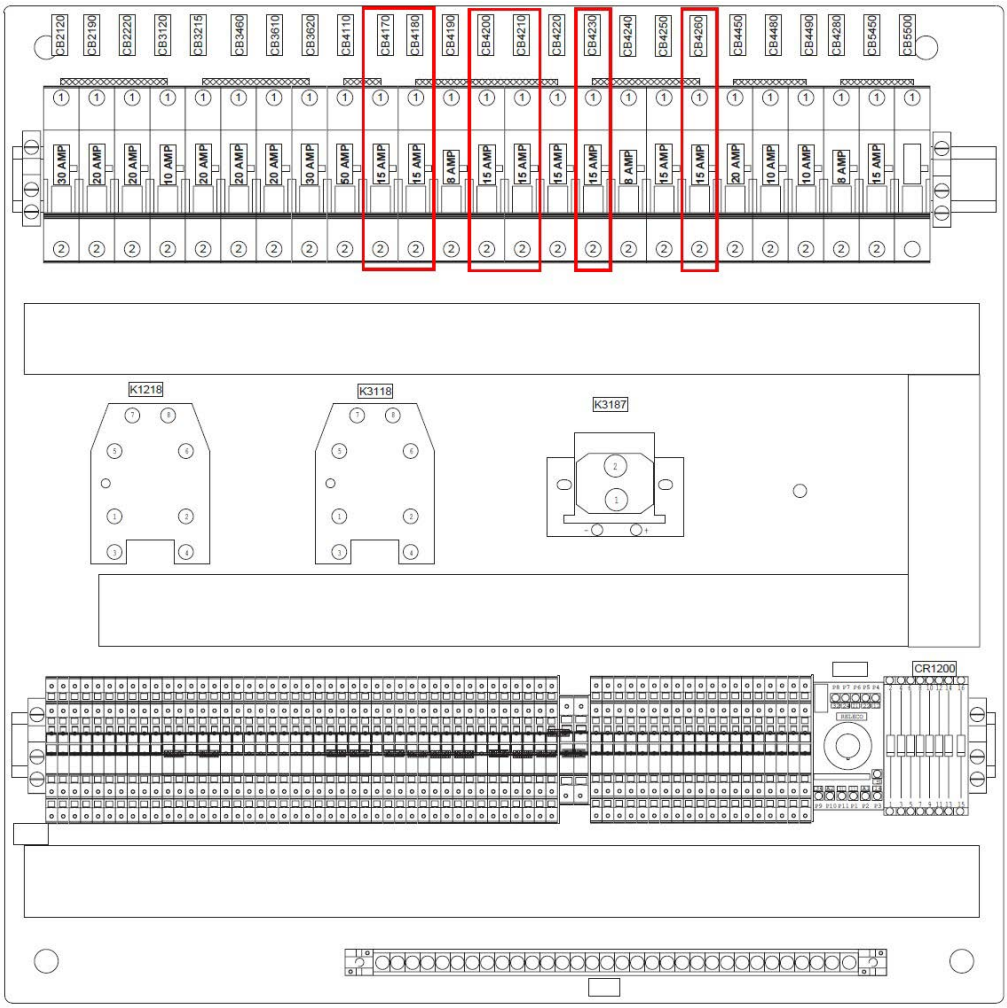
   b. 5014407 (7 circuit breakers), CAN: 7, 8, 9, 11, 12, 14 & 17
      5014411 PDB (Power Distribution Box)
      5014402 MCB (Main Control Box)

2. In the PDB, find and replace existing circuit breakers: CB4170, CB4180, CB4200, CB4210, CB4230 & CB4260. See Installing Circuit Breakers - All Machines.

3. In the MCB, find and replace existing circuit breaker: CB4160. See Installing Circuit Breakers - All Machines.

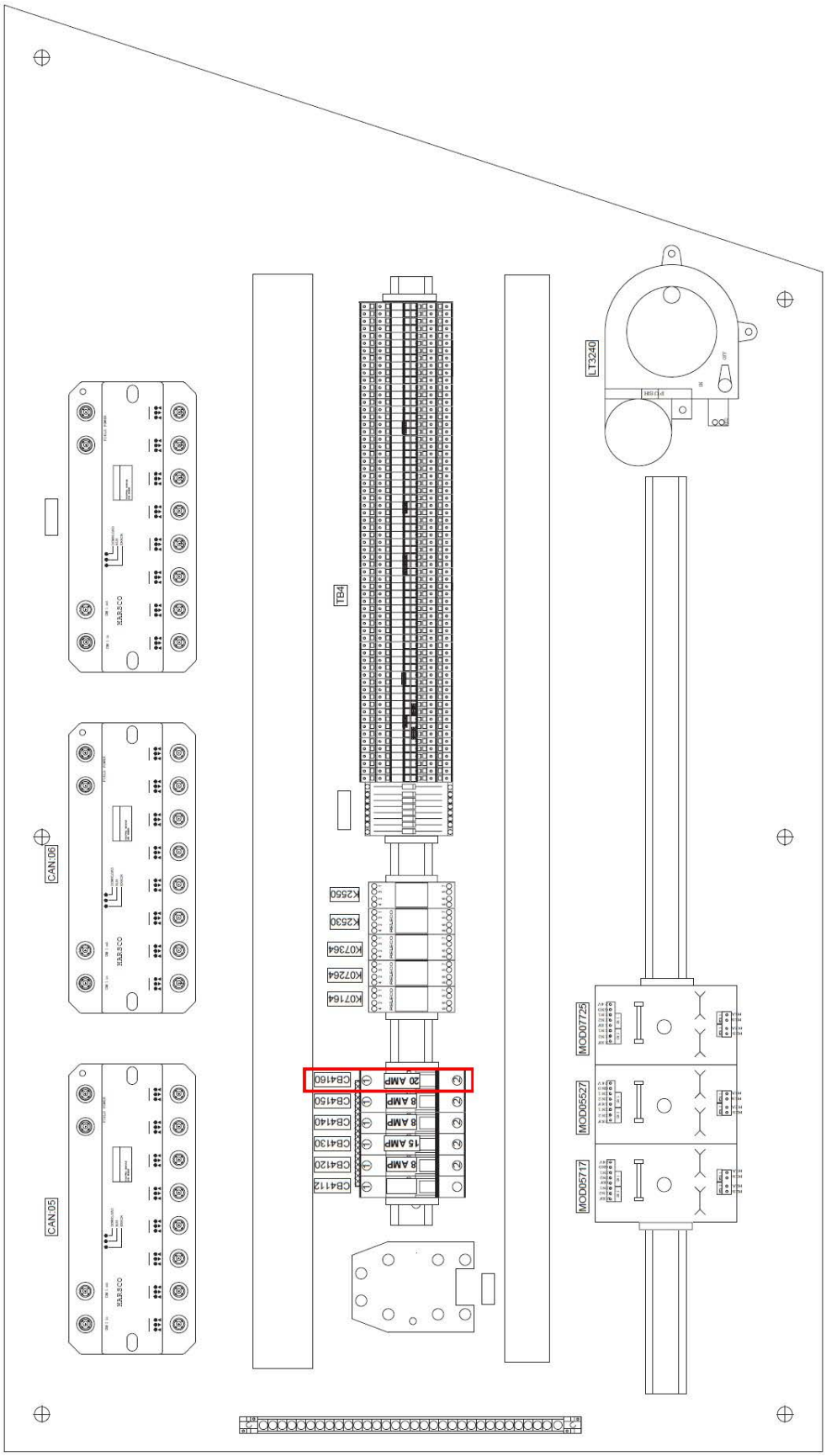
4. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

4030418 & 5014411 POWER DISTRIBUTION BOX



MARK IV TAMPERS WITH JUPITER II KITS 4030415 - 5014407

4030417 & 5014402 MAIN CONTROL BOX



MARK IV TAMPERS WITH JUPITER II KITS 4023119

1. These instructions are for a Mark IV Tamper with the following Jupiter II Upgrade Kits:

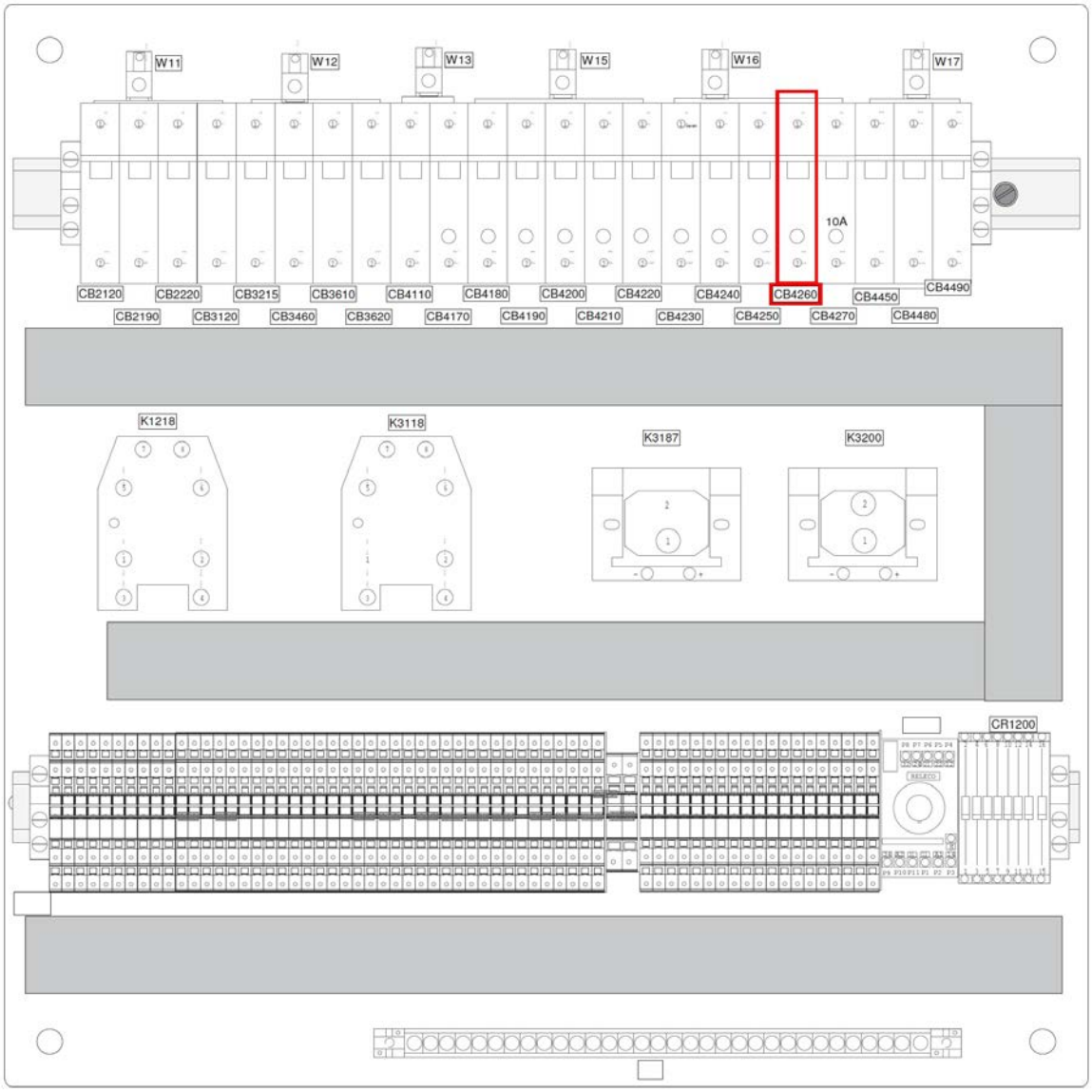
   a. 4023119 (2 circuit breakers), CAN: 7 & 17
      4022381 PDB (Power Distribution Box)
      4022382 MCB (Main Control Box)

2. In the PDB, find and replace existing circuit breaker: CB4260. See Installing Circuit Breakers - All Machines.

3. In the MCB, find and replace existing circuit breaker: CB4160. See Installing Circuit Breakers - All Machines.

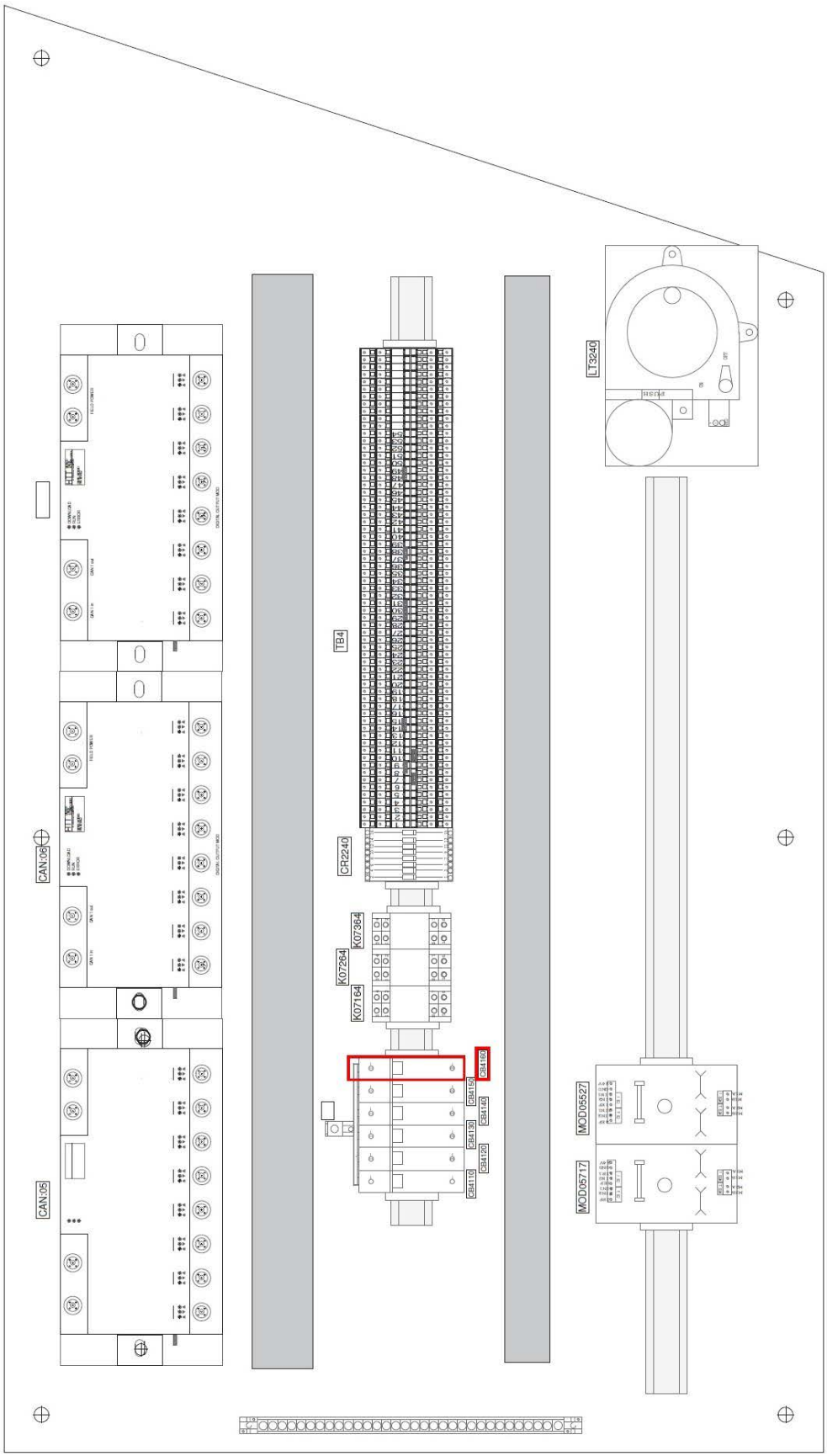
4. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

4022381 POWER DISTRIBUTION BOX



MARK IV TAMPERS WITH JUPITER II KITS 4023119

4022382 MAIN CONTROL BOX



MARK IV TAMPERS WITH JUPITER II KITS 5032295

1. These instructions are for a Mark IV Tamper with the following Jupiter II Upgrade Kits:

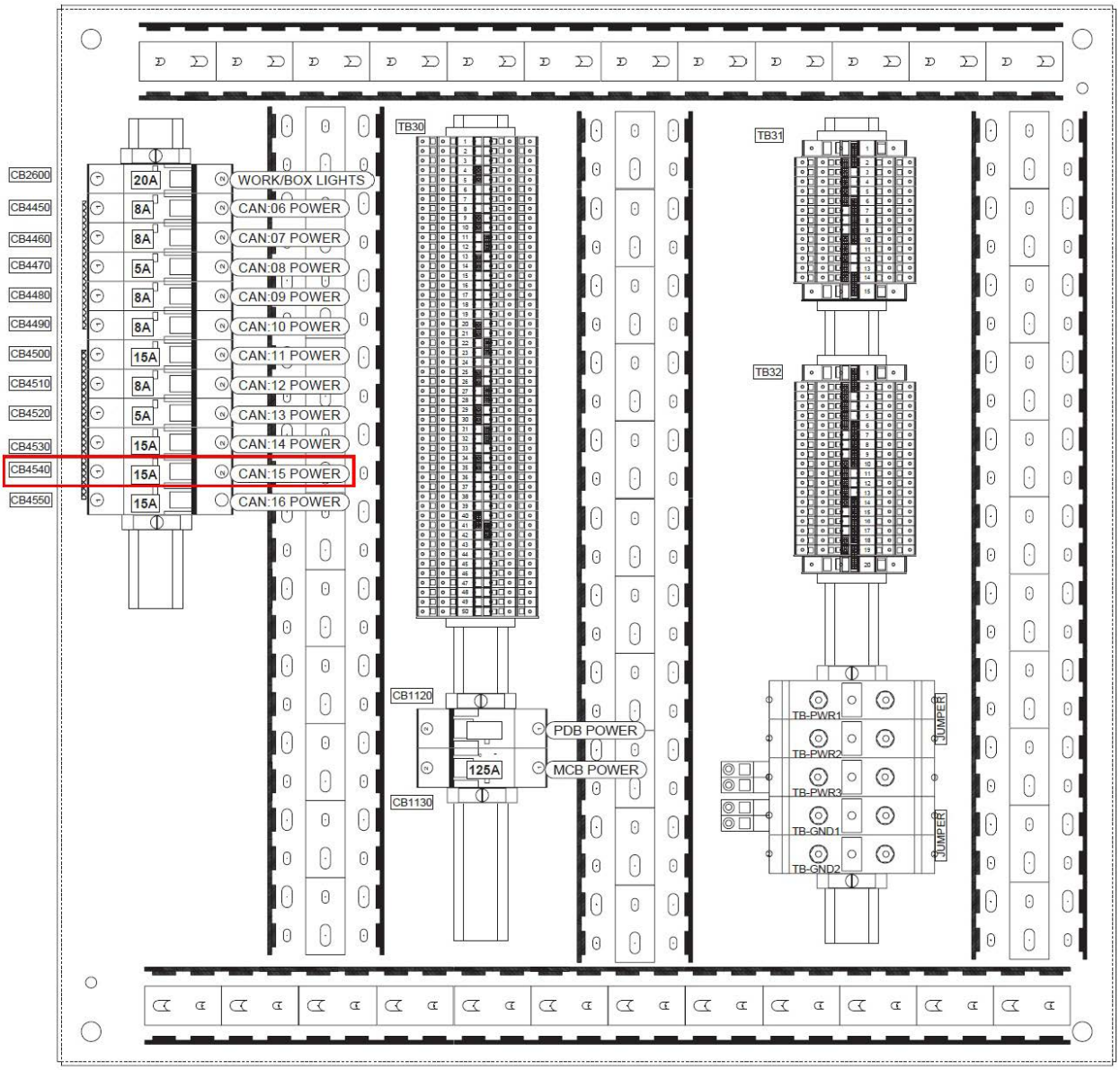
   a. 5032295 (1 circuit breaker), CAN: 15
      5037025 PDB (Power Distribution Box)

2. In the PDB, find and replace existing circuit breaker: CB4540. See Installing Circuit Breakers - All Machines.

3. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

MARK IV TAMPERS WITH JUPITER II KITS 5032295

5037025 POWER DISTRIBUTION BOX



MARK VI TAMPERS WITH JUPITER II KITS 4026841 - 4031859

1. These instructions are for a Mark VI Tamper with the following Jupiter II Upgrade Kits:

   a. 4026841 (8 circuit breakers), CAN: 2, 4, 5, 6, 10, 14, 16 & 18
      3426648 PDB (Power Distribution Box)
      3426649 MCB (Main Control Box)

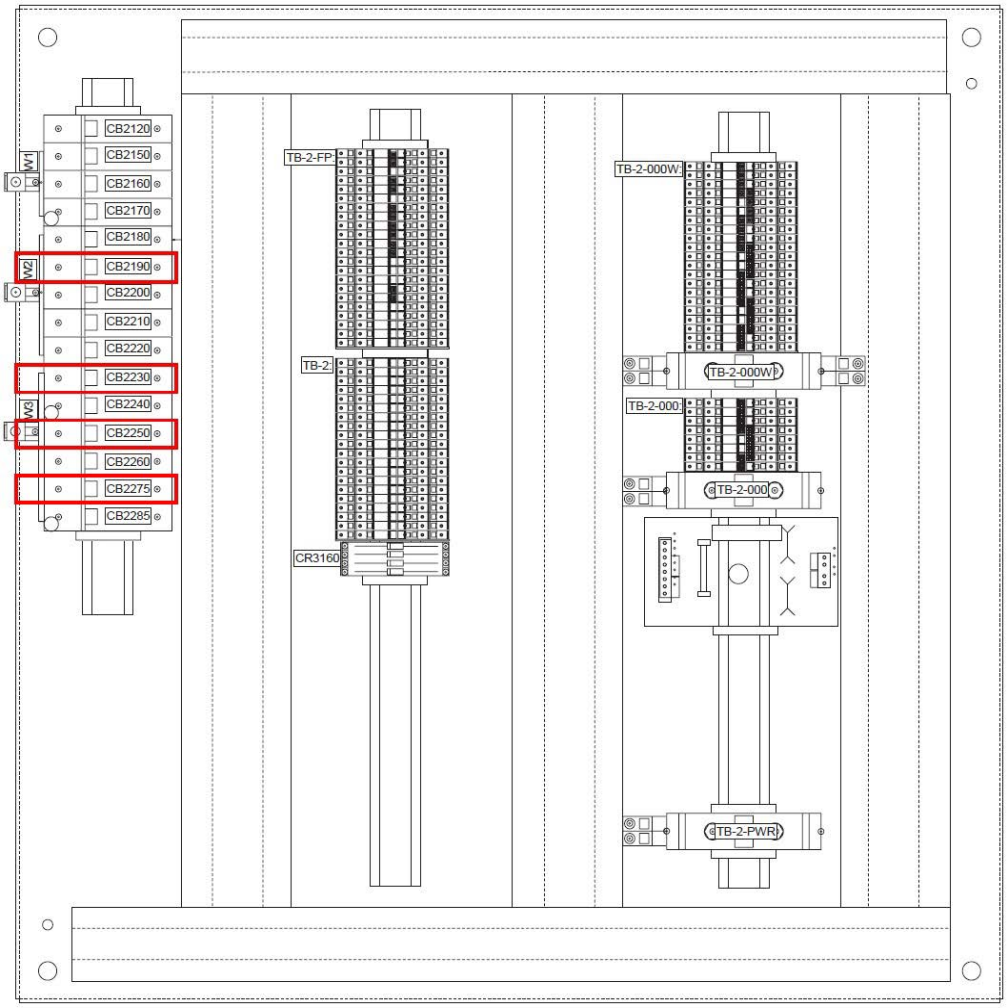
   b. 4031859 (8 circuit breakers), CAN: 2, 4, 5, 6, 10, 14, 16, & 18
      4031854 PDB (Power Distribution Box)
      4031851 MCB (Main Control Box)

2. In the PDB, find and replace existing circuit breakers: CB2190, CB2230, CB2250 & CB2275. See Installing Circuit Breakers - All Machines.

3. In the MCB, find and replace existing circuit breakers: CB2465, CB2485, CB2495 & CB2505. See Installing Circuit Breakers - All Machines.

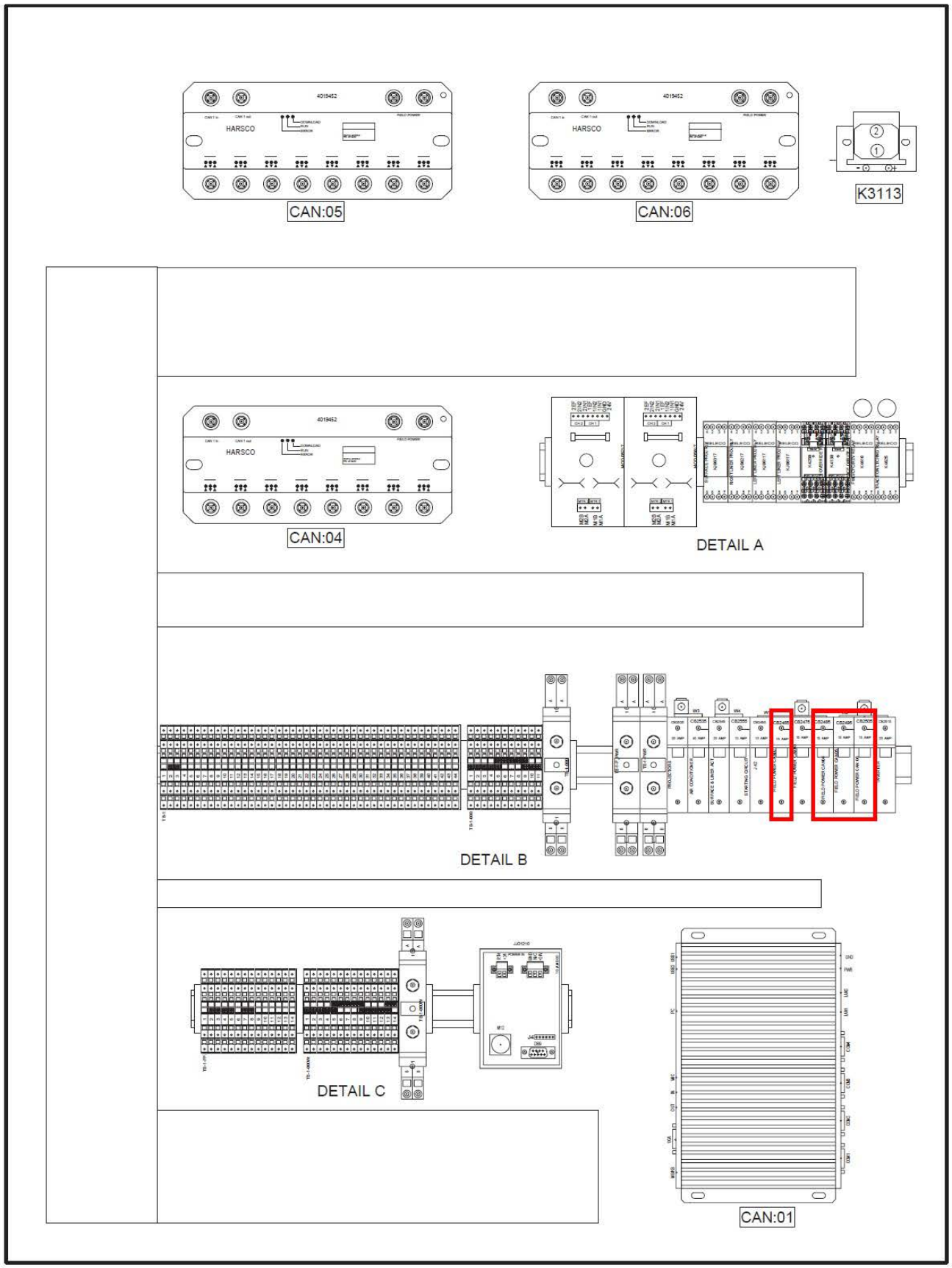
4. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

3426648 & 4031854 POWER DISTRIBUTION BOX



MARK VI TAMPERS WITH JUPITER II KITS 4026841 - 4031859

3426649 & 4031851 MAIN CONTROL BOX



MARK VI TAMPERS WITH JUPITER II KITS 5032326

1. These instructions are for a Mark VI Tamper with the following Jupiter II Upgrade Kits:

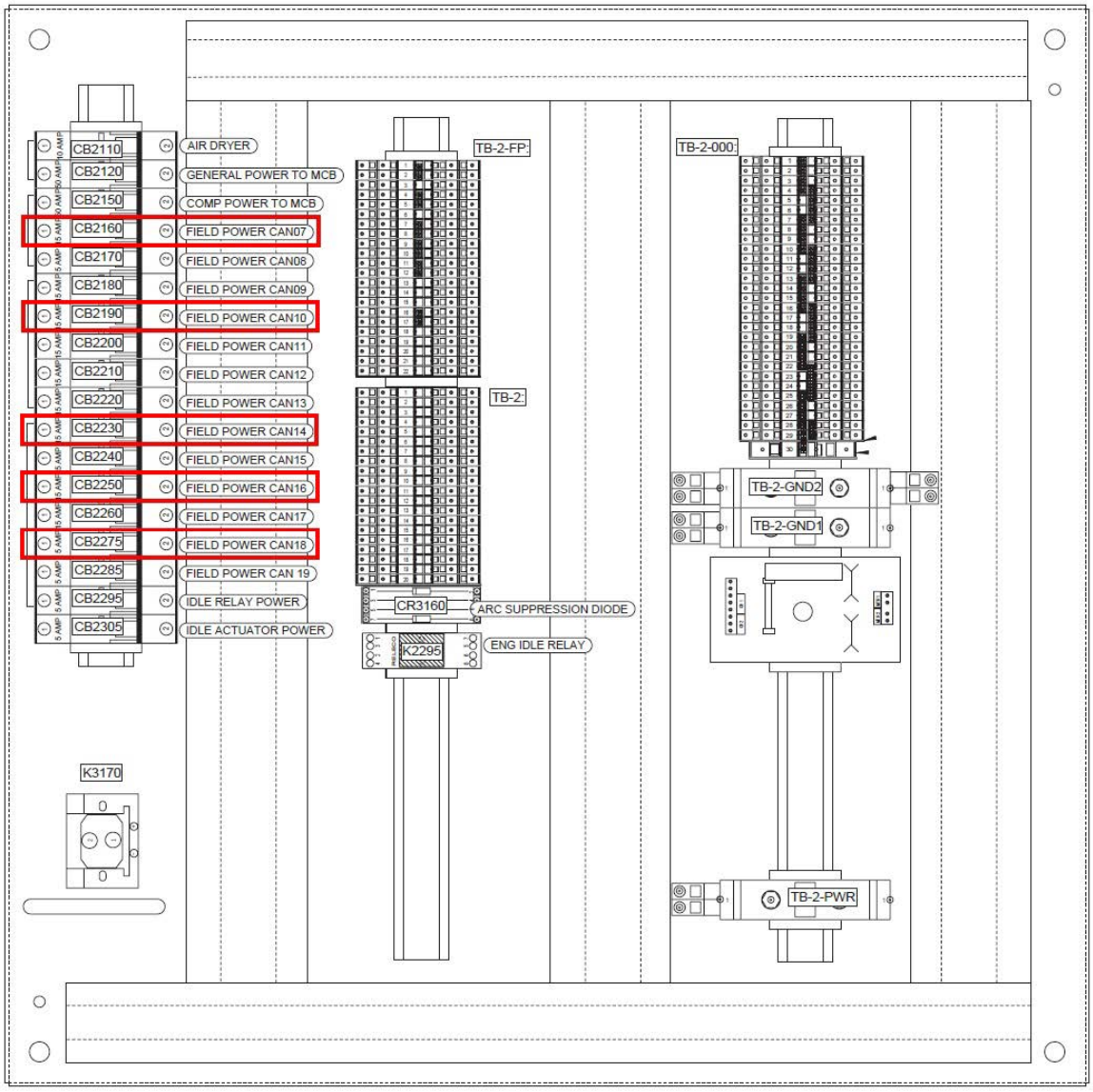
   a. 5032326 (7 circuit breakers), CAN: 2, 4, 7, 10, 14, 16 & 18
      5032147 PDB (Power Distribution Box)
      5032148 MCB (Main Control Box)

2. In the PDB, find and replace existing circuit breakers: CB2160, CB2190, CB2230, CB2250 & CB2275. See Installing Circuit Breakers - All Machines.

3. In the MCB, find and replace existing circuit breakers: CB2465 & CB2485. See Installing Circuit Breakers - All Machines.

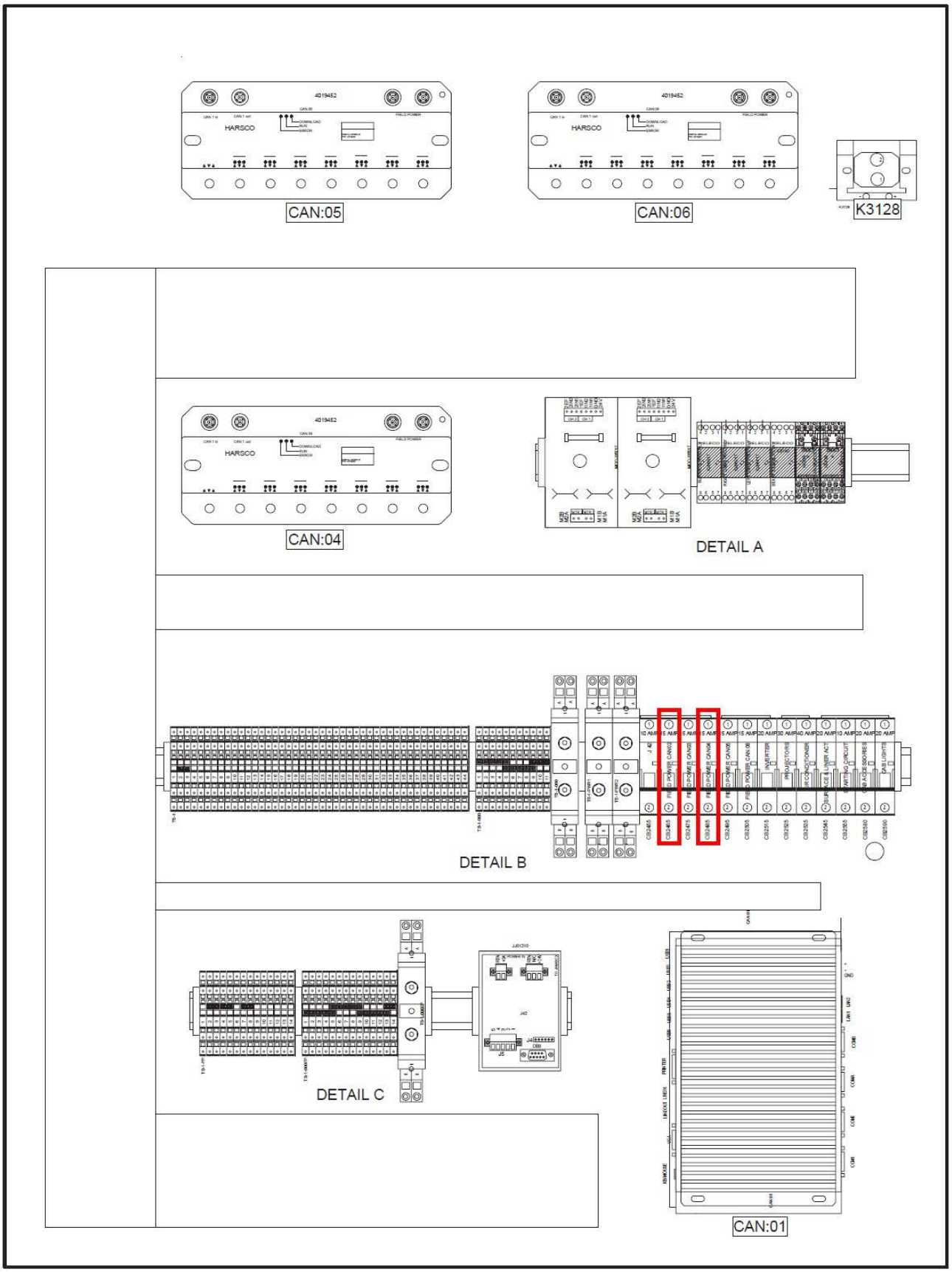
4. After replacing all of the circuit breakers that are to be replaced, see After Installing Circuit Breakers- All Machines.

5032147 POWER DISTRIBUTION BOX



MARK VI TAMPERS WITH JUPITER II KITS 5032326

5032148 MAIN CONTROL BOX



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