



Harsco Track Technologies

Harsco

www.harscotrack.com

SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

DATE: 3-3-2004 **BULLETIN NO:** 04-002

TITLE: 202119 CARRIAGE / BRAKE INTERLOCK GROUP

RATING:

<input type="checkbox"/>	DIRECTIVE (Action Is Required)	<input type="checkbox"/>	ALERT (Potential Problem)
<input type="checkbox"/>	INFORMATION (Action Is Optional)	<input checked="" type="checkbox"/>	PRODUCT IMPROVEMENT (Enhance Product)

PRODUCT SERIES / MODEL: W133 Series A1 Profile Rail Grinders

SERIAL NO: All W133A1 Models

SUMMARY: A Carriage / Brake Interlock Group is available to automatically keep the machine brakes applied whenever the Grinding Carriage is lowered to the Work position to keep the machine from being propelled in either direction and damaging the Grinding Carriage and/or Grinding Head components.

OPERATIONAL IMPACT: To automatically keep the machine brakes applied whenever the grinding carriage is lowered to the Work position to keep the machine from being propelled.

ACTION: The installation of this Group involves installing a relay in the Relay Box and wiring modifications on the machine. Order one Group part # 202119 per machine.

CONTACT: If you have any questions or if we can be of any service, please contact the Service Department at the Columbia, SC. facility, (803) 822-9160.

SAFETY INFORMATION

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

GROUP INSTALLATION

1. See Figure 1. Find a suitable mounting location for the relay socket (12), preferably on the right side of the box as illustrated. Use the mounting holes in the relay socket as a template and drill two mounting holes. Install the relay socket (12) using two #6 x 3/4 inch round head machine screws (5), lock washers (1) and hex nuts (2). Install the relay (11) in the relay socket (12) and secure with the relay bail (10). Label the relay as "K31".
2. See Figure 1 and Figure 2. Locate an unused cable grip hole in the Relay Box. Then install one end of the 16/2 cable (4) and one cable grip (6) in the hole and secure with one lock nut (9).
3. See Figure 2 and Figure 3. Run the other end of the 16/2 cable (4) to the Control Box. Secure the cable to the machine frame using Ty-Raps (7) as required. Be sure to route the cable away from all moving parts on the machine.
4. See Figure 2 and Figure 3. Locate an unused cable grip hole in the Control Box. Install the end of the 16/2 cable (4) and one cable grip (6) in the hole and secure with one lock nut (9). Label both ends of the 16/2 cable (4) as "RJB-2" using the two blank checks (8).
5. See Figure 2 and Figure 3. In the Relay Box connect all wires as shown in illustration. Use the black 16 ga wire (13) for the #4 ground wires and the white 16 ga wire (14) for the #150 and #606 wires. Secure the wires with Ty-Raps (7) as required. Label all wires with their appropriate wire numbers. Be sure to wrap the end of the unconnected black wire of the 16/2 cable (4) with electrical tape.
6. See Figure 2 and Figure 3. In the Control Box connect all wires as shown in illustration. Disconnect the existing wire #150 that runs to the Brake / Neutral Start Solenoid SOL #35 from the Terminal Block TB2-14. Connect this wire to the new wire #152 using the butt splice (3). Re-label this wire as wire #152. Secure the wires with Ty-Raps (7) as required. Label all wires with their appropriate wire numbers. Be sure to wrap the end of the unconnected black wire of the 16/2 cable (4) with electrical tape.
7. See Figure 2 and Figure 3. At the Brake / Neutral Start Solenoid Valve SOL #35, re-label the existing wire #150 as wire #152.

CARRIAGE / BRAKE INTERLOCK THEORY OF OPERATION

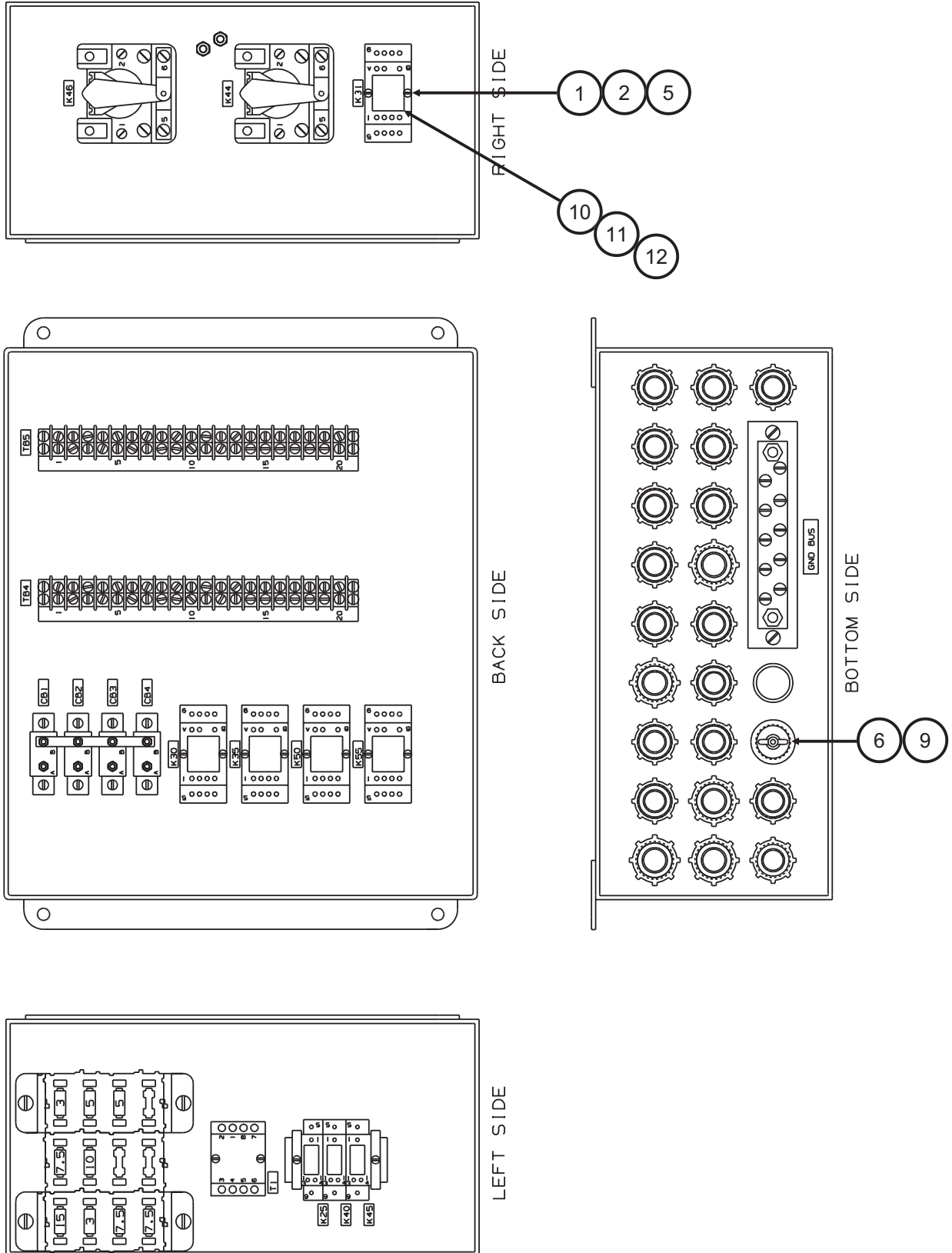
8. See Figure 3. When the Carriage Down switch S33 is depressed and released to lower the carriage to the Work position, the Carriage Down relay K25 is energized and the Carriage / Brake Interlock relay K31 is energized.
 - 8.1 The Carriage Down relay K25 is a latch relay. It normally open contacts 5 - 9 close and latch to keep the carriage lowered.
 - 8.2 When the Carriage / Brake Interlock relay K31 is energized, its normally closed contacts 9 - 5 open and the Brake / Neutral Start solenoid valve SOL 35 is de-energized.
 - 8.3 When the Brake / Neutral Start solenoid valve SOL 35 is de-energized, the brakes apply to keep the machine from being propelled in either direction. The brakes will remain applied until the carriage is raised.

9. See Figure 3. When the Carriage Up Switch S34 is depressed and released to raise the carriage to the Travel position, the Carriage Down relay K25 is de-energized and the Carriage / Brake Interlock relay K31 is de-energized.
 - 9.1 When the Carriage / Brake Interlock relay K31 is de-energized, its normally closed contacts 9 - 5 close again and the Brake / Neutral Start solenoid valve SOL 35 is energized through the Neutral Start switch closed contacts 1 - 2.
 - 9.2 When the Brake / Neutral Start solenoid valve SOL 35 is energized, the brakes release to allow the machine to be propelled in either direction.

GROUP INSTALLATION

Relay Box

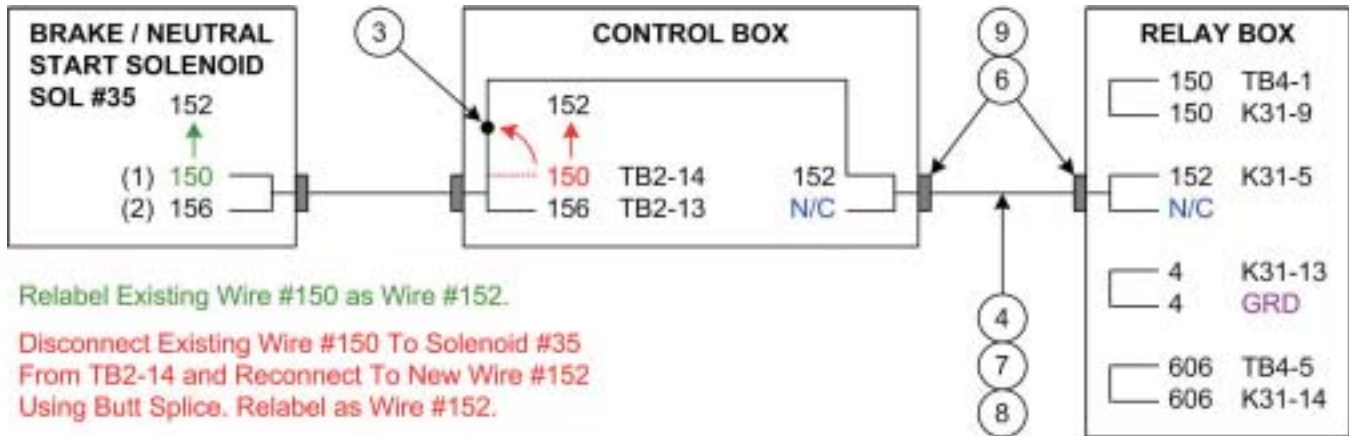
FIGURE 1
RELAY BOX



GROUP INSTALLATION

Interconnect

FIGURE 2
INTERCONNECT WIRING



Relabel Existing Wire #150 as Wire #152.

Disconnect Existing Wire #150 To Solenoid #35 From TB2-14 and Reconnect To New Wire #152 Using Butt Splice. Relabel as Wire #152.

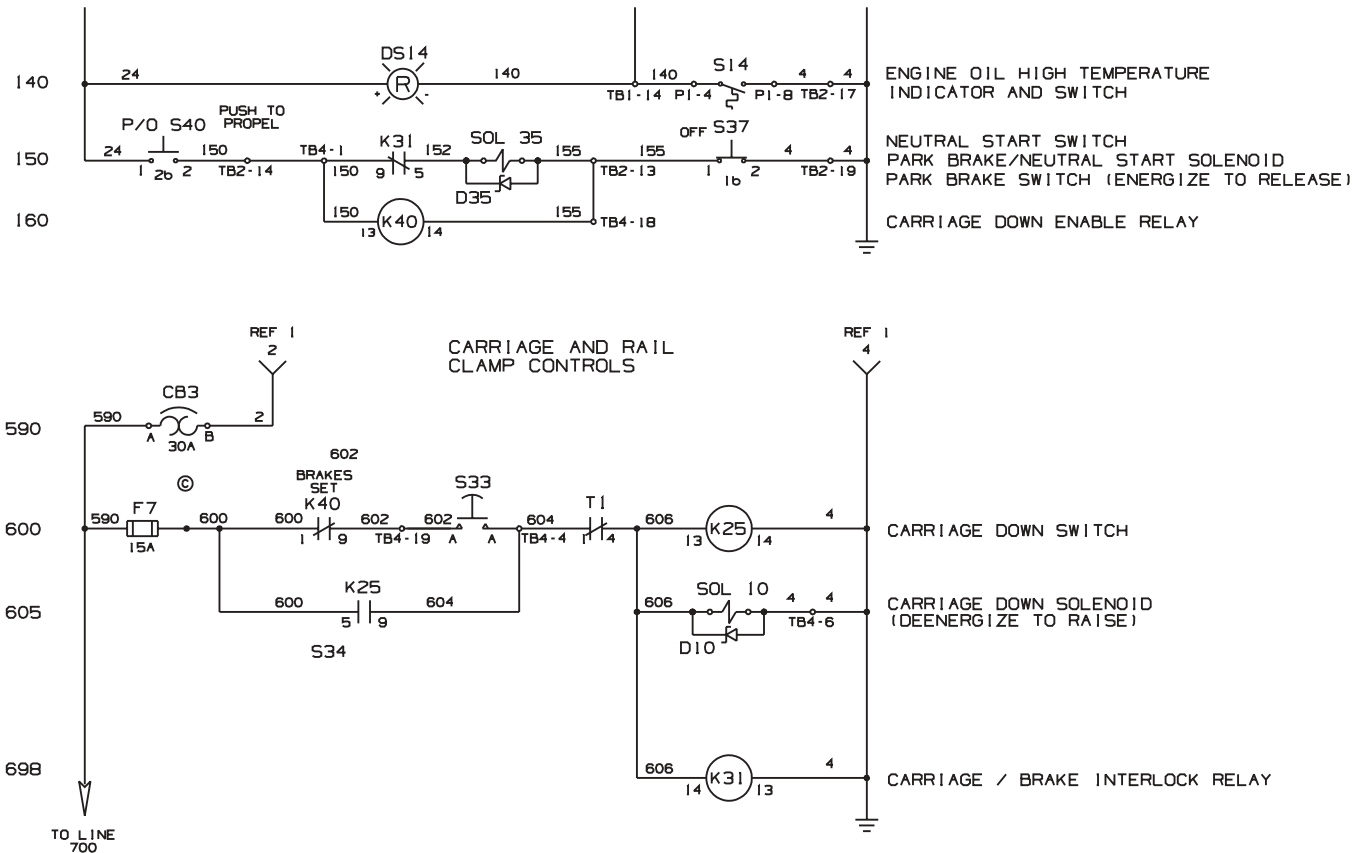
N/C: Not Connected. Black Wire Of Cable Is Not Used. Wrap Ends Of Wires With Electrical Tape.

GRD: Ground. Connect To Any Open Terminal Block Screw With A Wire #4 Already Connected.

- 7 Use As Required To Secure Wires / Cable
- 13 Use Black Wire For Wire #4
- 14 Use White Wire For Wires #150 & #606

SE021126A-4

FIGURE 3
ELECTRICAL SCHEMATIC



GROUP PARTS LIST

Note: See Figure 1 and Figure 2 for Item Numbers.

ITEM	PART NO	DESCRIPTION	QTY
	202119	CARRIAGE / BRAKE INTERLOCK GROUP	1
1	F007413	Lock Washer, #6	2
2	F009719	Machine Nut, #6-32 Hex	2
3	F009863	Butt Connector	1
4	F012388	Cable, 16/2	20 ft
5	F012914	Machine Screw, #6-32 x 3/4" Round Head	2
6	F014874	Cable Grip	2
7	F018229	Ty-Rap	10
8	F018297	Blank Check	2
9	F019878	Lock Nut	2
10	F023443	Relay Bail	1
11	F023444	Relay	1
12	F023445	Relay Socket	1
13	F040160	Wire, 16 ga Black	2 ft
14	F040161	Wire, 16 ga White	4 ft

© 2004 HARSCO TRACK TECHNOLOGIES, HARSCO CORPORATION

415 North Main Street
Fairmont, MN
56031-1837
Tel: (507) 235-3361
Fax: (507) 235-7370

2401 Edmund Road, Box 20
Cayce-West Columbia, SC
29171-0020
Tel: (803) 822-9160
Fax: (803) 822-7471

200 South Jackson Road
Ludington, MI
49431
Tel: (231) 843-3431
Fax: (231) 843-1644