



# Harsco Track Technologies

Harsco

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## SERVICE BULLETIN MAINTENANCE OF WAY EQUIPMENT

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**DATE:** 7-15-2003 / Revised 8-6-2003 **BULLETIN NO:** 03-012

**TITLE:** 201407 SPIKE OVER-DRIVING INHIBIT GROUP - w/ SWING FEED  
201414 SPIKE OVER-DRIVING INHIBIT GROUP - w/ WHEEL FEED

**RATING:**  **DIRECTIVE** (Action Is Required)  **ALERT** (Potential Problem)  
 **INFORMATION** (Action Is Optional)  **PRODUCT IMPROVEMENT** (Enhance Product)

**PRODUCT SERIES / MODEL:** W130 Series A and B Spike Drivers

**SERIAL NO:** All W130 Models A1  
All W130 Models B1 up to and including B1-32  
All W130 Models B1-33 are equipped with Spike Over-Driving Inhibit Group

**SUMMARY:** Currently when driving spikes into ties, the operator determines how far each spike is driven into the tie which can result in inconsistent spiking (high spikes or over-driving of spikes). A Group is now available so the operator can drive the spikes into the ties to a consistent pre-determined depth.

**OPERATIONAL IMPACT:** The application of this Group allows the operator to drive the spikes into the ties to a consistent pre-determined depth.

**ACTION:** The installation of this Group involves installing a limit switch on each driver and wiring modifications. To order Group, determine which type of spike feed (Swing or Wheel) is currently installed on the machine. See Group Ordering Instructions in this Service Bulletin.

**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.

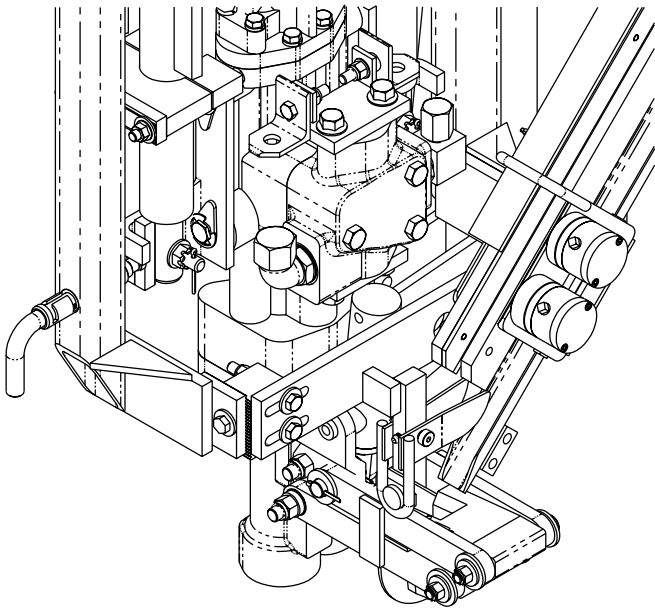
**SAFETY INFORMATION**

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

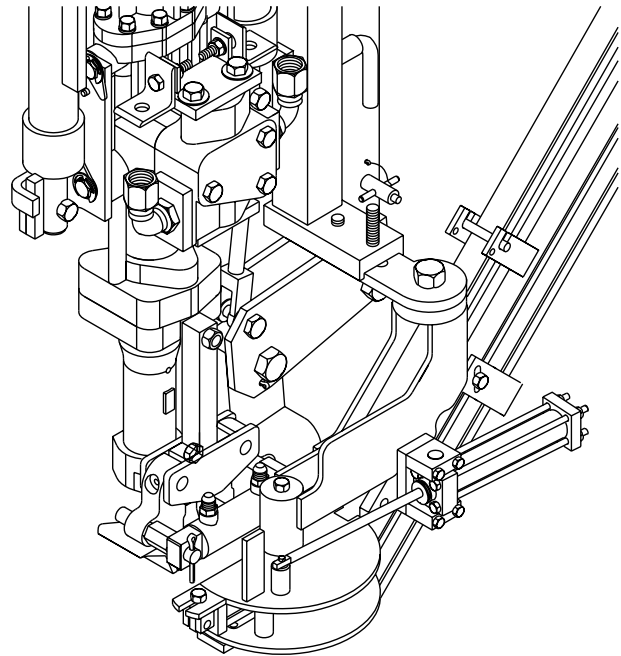
**GROUP ORDERING INSTRUCTIONS**

1. Determine which type of spike feed (Swing or Wheel) is currently installed on machine per following illustrations.
2. Order one Group per machine based on type of spike feed currently installed on machine.

SWING SPIKE FEED  
ORDER GROUP #201407



WHEEL SPIKE FEED  
ORDER GROUP #201414

**GROUP INSTALLATION**

- See Application Drawing #024402 Sheet #1, Sheet #2, Sheet #3, Sheet #4, Sheet #5 and Sheet #6

1. Remove existing limit switches from existing vertical bars. Remove existing vertical bars and upper bars from carriage.
2. Install new brackets (10 & 11) to carriage using existing hardware as shown on Sheet #5 or Sheet #6 per Model of machine.
3. Install existing driver feed, driver release and optional driver partial down limit switches to new brackets (10 & 11) re-using existing hardware.  
*Note: Be sure to install driver feed and driver release limit switches on inside of drivers.  
Be sure to install optional driver partial down limit switches on outside of drivers.*
4. Install new components (1, 2, 3, 4, 5, 6, 7, 8 & 9) to carriage as shown on Sheet #1.  
*Note: Be sure to install new spike over-driving limit switches on outside of drivers.*

**GROUP INSTALLATION**

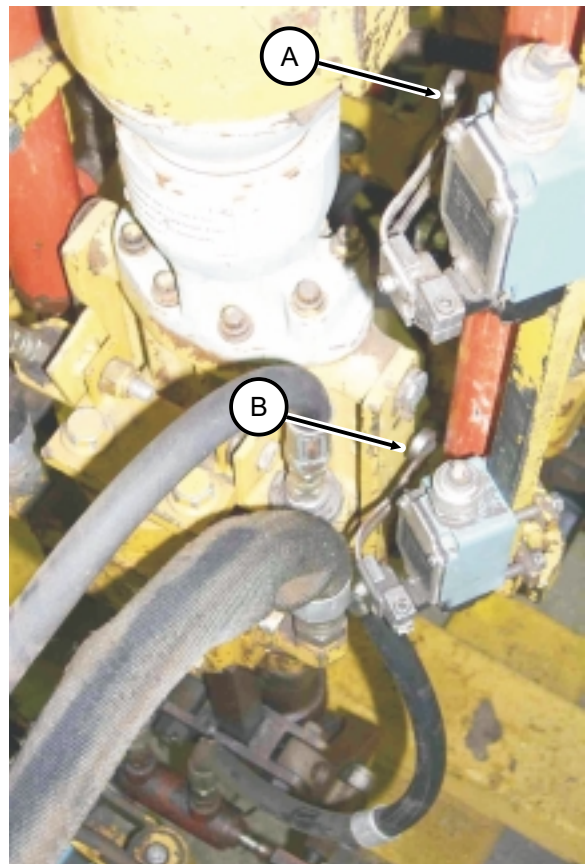
- See Application Drawing #024402 Sheet #1, Sheet #2, Sheet #3, Sheet #4, Sheet #5 and Sheet #6

5. On machines with Wheel Feed only, it is necessary to bend the roller arms of both the optional driver partial down (A) and new spike over-driving inhibit (B) limit switches as shown in photo below to eliminate any interference.
6. Disconnect existing wires in Relay Box listed on Sheet #2 per Model of machine.
7. Run new cables (1) from new spike over-driving inhibit limit switch (6) to Relay Box and connect as listed on Sheet #2 per Model of machine.
8. Be sure to route cables (1) away from all moving parts of machine and secure with provided ty-raps (3).
9. Be sure to mark all new electrical components and wire numbers using provided wire markers (8) and check blanks (4).

**SPIKE OVER-DRIVING INHIBIT LIMIT SWITCH ADJUSTMENT**

1. Position machine so carriage is located directly over a tie plate with spikes already driven into tie to desired depth.
2. Make sure there are no spikes in spike jaws of both drivers.
3. Align and lower both drivers over the properly driven spikes. Allow ram of drivers to sit directly on head of spikes.
4. Adjust new Spike Over-Driving Inhibit limit switch on each driver so limit switch arm is actuated.
5. Raise both drivers.
6. Propel machine to a different tie plate without spikes already driven into tie and stop so carriage is located directly over tie plate.
7. Feed spikes into spike jaws of both drivers.
8. Align spikes in both drivers with open holes of tie plate and cycle drivers to drive spikes into tie.
9. Continue to drive spikes into tie until both drivers automatically stop cycling and driving spikes into tie.
10. Raise both drivers.
11. Check spikes that were just driven into tie.
  - 11.1 If spikes are driven into tie to desired depth, limit switches are set correctly.
  - 11.2 If spikes are not driven into tie to desired depth or are over-driven into tie, go to Step 12.
12. Loosen four 1/4 inch cap screws that secure limit switch. Slide limit switch up to stop driver from over-driving spike into tie or down to allow driver to drive spike further into tie.
13. Repeat Steps 6 thru 11 until both drivers drive spikes into tie to desired depth.

WHEEL FEED ONLY - BENDING  
LIMIT SWITCH ROLLER ARMS



**PARTS LIST**

*Note: The quantities listed are for one machine.*

*See Application Drawing #024402 Sheet #1, Sheet #2 and Sheet #5 or Sheet #6.*

ITEM	PART NO	DESCRIPTION	QTY
	201407	SPIKE OVER-DRIVING INHIBIT GROUP - w/ Swing Feed . . . . .	1
1	F012388	Two Conductor Cable. . . . .	672"
2	F014874	Cable Grip . . . . .	4
3	F018229	Ty-Rap . . . . .	10
4	F018297	Check Blank. . . . .	4
5	F019878	Lock Nut. . . . .	2
6	F022900	Limit Switch . . . . .	2
7	F023403	Hex Flange Screw, 1/4"-20 x 1-1/4" GR 5 . . . . .	8
8	F040133	Wire Marker . . . . .	8
9	139501	Bar . . . . .	4
10	3000278	Bracket - Left . . . . .	1
11	3000279	Bracket - Right . . . . .	1

ITEM	PART NO	DESCRIPTION	QTY
	201414	SPIKE OVER-DRIVING INHIBIT GROUP - w/ Wheel Feed . . . . .	1
1	F012388	Two Conductor Cable. . . . .	672"
2	F014874	Cable Grip . . . . .	4
3	F018229	Ty-Rap . . . . .	10
4	F018297	Check Blank. . . . .	4
5	F019878	Lock Nut. . . . .	2
6	F022900	Limit Switch . . . . .	2
7	F023403	Hex Flange Screw, 1/4"-20 x 1-1/4" GR 5 . . . . .	8
8	F040133	Wire Marker . . . . .	8
9	139501	Bar . . . . .	4
10	3000273	Bracket - Left . . . . .	1
11	3000277	Bracket - Right . . . . .	1

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200 South Jackson Road  
 Ludington, MI  
 49431  
 Tel: (231) 843-3431  
 Fax: (231) 843-4830

SWING FEED

PRODUCT STRUCTURE OF 201407 SERVICE GROUP				
ITEM	QTY	PART #	PART DESCRIPTION	
1	672	F012388	CABLE	: 16AWG/2 CONDUCTOR, .405" O.D., 13A/COND.
2	4	F014874	CABLE GRIP	: CABLE FROM: .375-.438 1/2"NPT
3	10	F018229	TY-RAP	: SMALL TY-RAP 3 1/2"
4	4	F018297	BLANK CHECK	: CABLE MARKER
5	2	F019878	LOCK NUT	: 1/2" LOCK NUT
6	2	F022900	SWITCH-LIMIT SW	: NO/NC DUAL ADJUSTMENT ROLLERS
7	8	F023403	DC-SCREW	: HEX FLNG SCREW, 1/4"-20 x 1 1/4",GR5 ZP
8	2	F040133	DC-DECAL	: WIRE MARKER LABEL
9	4	139501	BAR	: FOR MOUNTING LIMIT SWITCHES, 2 x .28 HOLE
10	1	3000278	BRACKET	: MOUNTING BRACKET ASSEMBLY (LEFT)
11	1	3000279	BRACKET	: MOUNTING BRACKET ASSEMBLY (RIGHT)

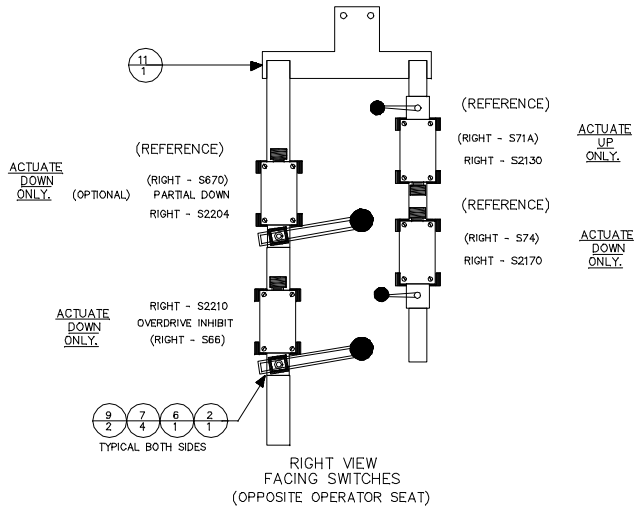
WHEEL TURN FEED

PRODUCT STRUCTURE OF 201414 SERVICE GROUP				
ITEM	QTY	PART #	PART DESCRIPTION	
1	672	F012388	CABLE	: 16AWG/2 CONDUCTOR, .405" O.D., 13A/COND.
2	4	F014874	CABLE GRIP	: CABLE FROM: .375-.438 1/2"NPT
3	10	F018229	TY-RAP	: SMALL TY-RAP 3 1/2"
4	4	F018297	BLANK CHECK	: CABLE MARKER
5	2	F019878	LOCK NUT	: 1/2" LOCK NUT
6	2	F022900	SWITCH-LIMIT SW	: NO/NC DUAL ADJUSTMENT ROLLERS
7	8	F023403	DC-SCREW	: HEX FLNG SCREW, 1/4"-20 x 1 1/4",GR5 ZP
8	2	F040133	DC-DECAL	: WIRE MARKER LABEL
9	4	139501	BAR	: FOR MOUNTING LIMIT SWITCHES, 2 x .28 HOLE
10	1	3000273	BRACKET	: MOUNTING BRACKET ASSEMBLY (LEFT)
11	1	3000277	BRACKET	: MOUNTING BRACKET ASSEMBLY (RIGHT)

NOTES:

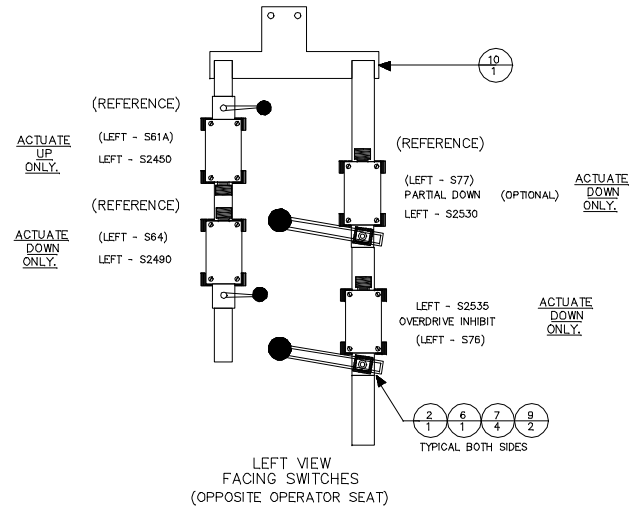
1. APPLY TERMINALS USING RATCHET TYPE CRIMP TOOL.
2. USE ITEM 3 (TY-RAP) AS REQUIRED TO BUNDLE WIRES AND CABLES NEATLY.
3. MARK CABLE WIRES USING ITEM 8 (DC-DECAL) AND BALL POINT PEN.
4. CABLE LENGTHS ARE TOTAL CUT LENGTH OF CABLE, INCLUDING STRIP LENGTHS INSIDE OF BOX.
5. STAMP ITEM 4 (BLANK CHECK) WITH .25 INCH LETTERS. ATTACH TO CABLES 2" FROM THE ENCLOSURE AND FROM THE SWITCH, USING ITEM 3 (TY-RAP).
6. APPLICATION DRAWING COVERS ALL MACHINE MODELS, W130A1 THROUGH W130B1-32. SERVICE GROUPS ARE PART OF W130B1-33.
7. INSTALL CABLE GRIPS (ITEM 2) AND LOCK NUTS (ITEM 5) FOR (2) NEW CABLES IN EXISTING HOLES, (REMOVE HOLE SEALS) OR DRILL .875" O.D. HOLES WHERE CONVENIENT.

CARRIAGE - RIGHT SIDE



SWING FEED SHOWN

CARRIAGE - LEFT SIDE



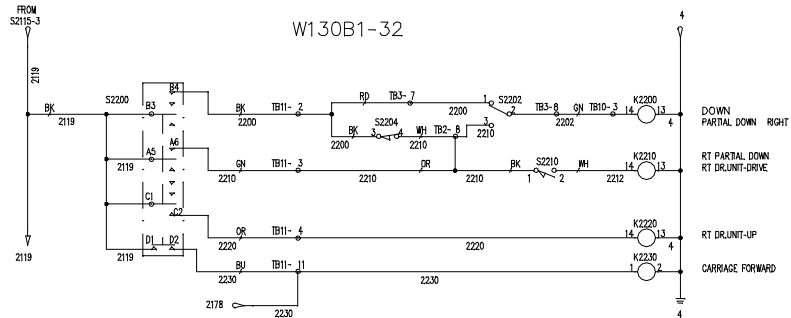
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CHANGE #	R/L	REVISION	DR	CK	APP	DATE
65858	A	CHANGED DRAWING				7/03 TDW

DRAWN: JAK	DATE: 07/01/03	SYSTEM POOL:	DRAWING FILE: 024402	SHEET NUMBER: 1
APP-ENG: WGL	DATE:	H.L.A. - INSTALLATION	NUMBER OF JUPITER SHEETS:	
CHIEF-ENG: TDW	DATE:	LOCATION:	TOTAL NUMBER OF SHEETS: 6	
CHECKED:	DATE:	SCALE: D	SIZE: D	

**Harsco Track Technologies**  
  
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 PARSONS, OH 44663-1837  
 (607) 256-3361

DRAWING TITLE: SPIKE OVERDRIVING INHIBIT APPLICATION	ENG. DWG NO.: 024402
MACHINE TYPE-MODEL: W130A1	

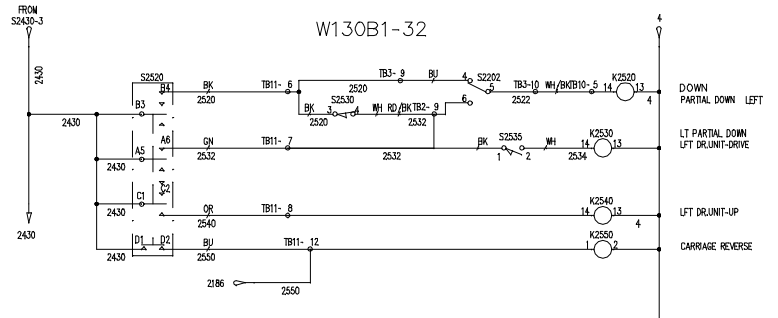


INSTALL SEE NOTE 7.

RF	OD	INHIBIT	RELAY	F012388	336	MISC	TERM. NO.
1	BK	2210	TB11-3	NONE	S2210-1	NONE	
2	W	2212	K2210-14	NONE	S2210-2	NONE	

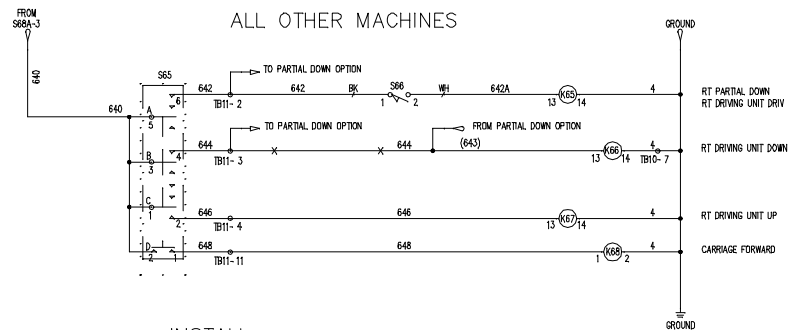
W130B1-32  
DISCONNECT WIRES

RUN	WIRE #	FROM	TO
1	2532	TB11-7	K2530-14
2	2210	TB11-3	K2210-14



INSTALL SEE NOTE 7.

LF	OD	INHIBIT	RELAY	F012388	336	MISC	TERM. NO.
1	BK	2532	TB11-7	NONE	S2535-1	NONE	
2	W	2534	K2530-14	NONE	S2535-2	NONE	

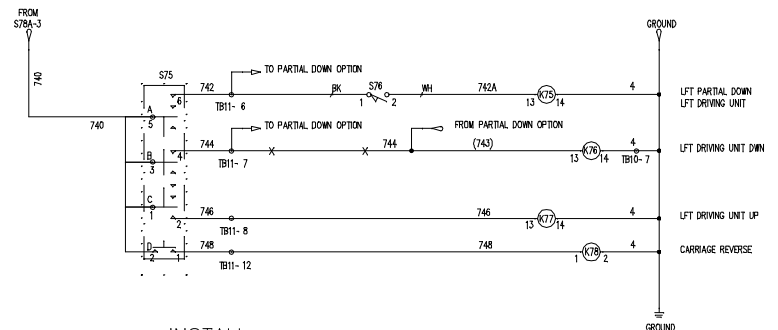


INSTALL SEE NOTE 7.

RF	OD	INHIBIT	RELAY	F012388	336	MISC	TERM. NO.
1	BK	642	TB11-2	NONE	S66-1	NONE	
2	W	642A	K65-13	NONE	S66-2	NONE	

ALL OTHER MACHINES  
DISCONNECT WIRES

RUN	WIRE #	FROM	TO
1	642	TB11-2	K65-13
2	742	TB11-6	K75-13



INSTALL SEE NOTE 7.

LF	OD	INHIBIT	RELAY	F012388	336	MISC	TERM. NO.
1	BK	742	TB11-6	NONE	S76-1	NONE	
2	W	742A	K75-13	NONE	S76-2	NONE	

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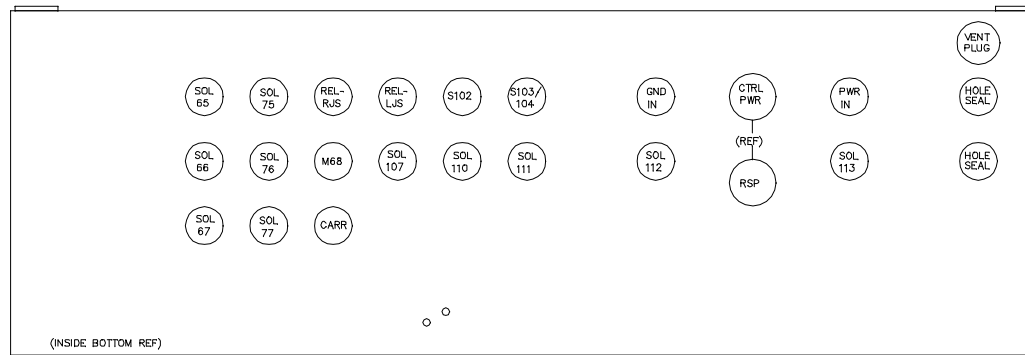
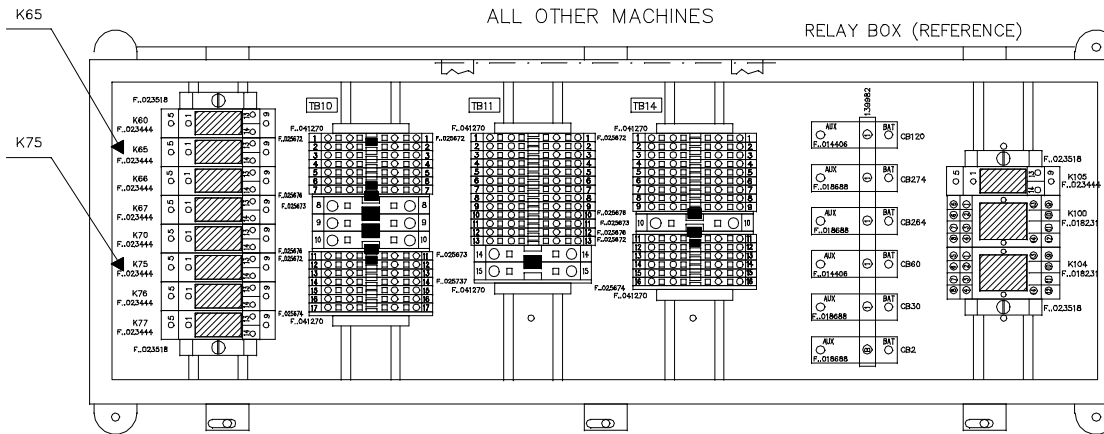
CHANGE #	R/L	REVISION	DR	CK	APP	DATE
65858	A	CHANGED DRAWING				7/03 TDW

DRAWN:	DATE:	SYSTEM POOL:	DRAWING FILE:	SHEET NUMBER
JAKo	07/01/03	024402	024402	2

**HTT**  
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410 North Main St.  
Farmington, NH 06031-1837  
(603) 235-3361

DRAWING TITLE:	MACHINE TYPE-MODEL:	ENG. DWG. NO.:
SPIKE OVERDRIVING INHIBIT APPLICATION	W130A1	024402





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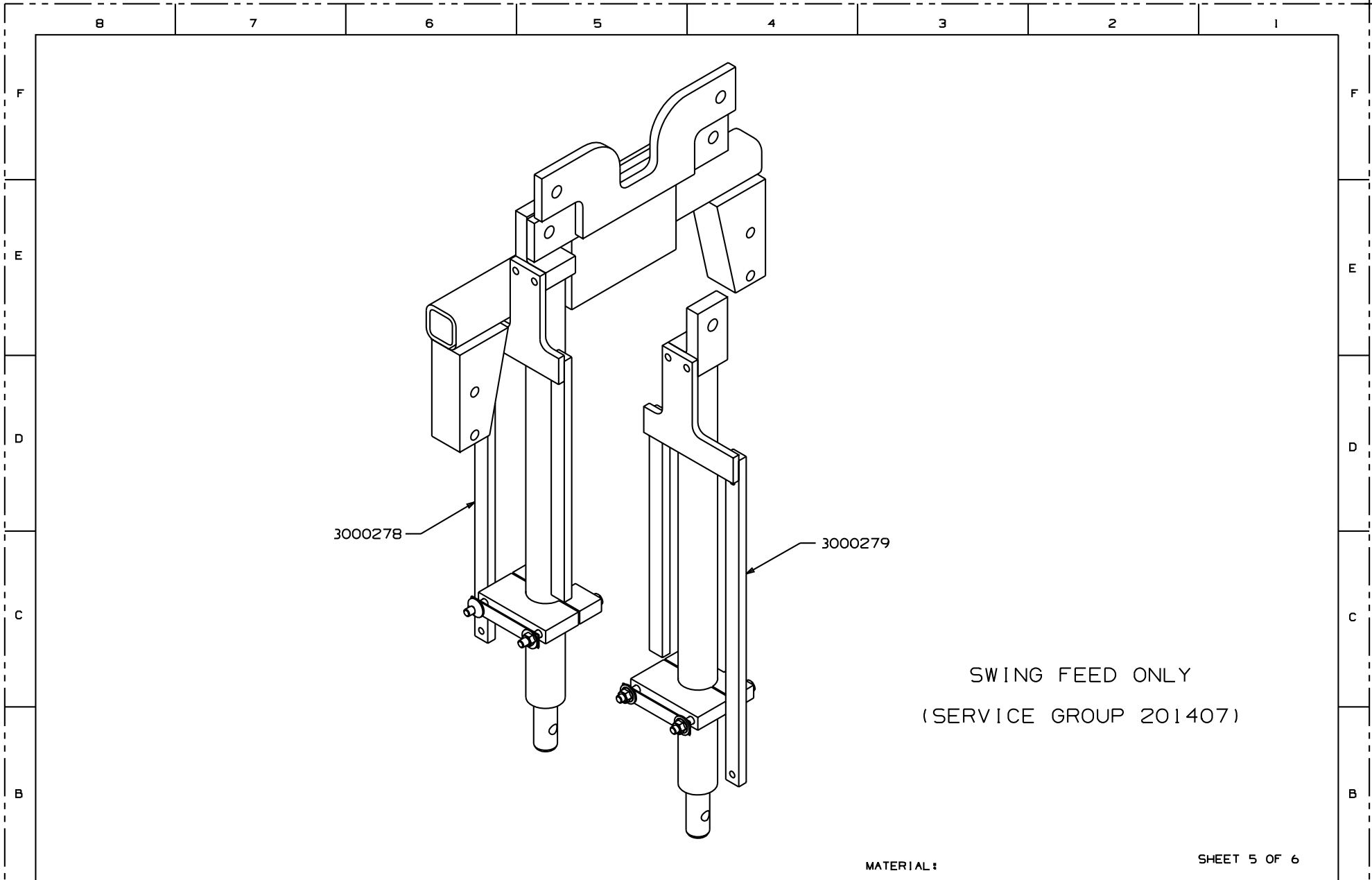
CHANGE #	R/L	REVISION	DR	CK	APP	DATE
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DRAWN: JAKo	DATE: 07/01/03	SYSTEM POOL: 024402	DRAWING FILE: 024402	SHEET NUMBER: 4
APP-ENG: WCL	DATE:	H.L.A. - INSTALLATION	LOCATION:	NUMBER OF JUPITER SHEETS:
CHIEF-ENG:	DATE:	SCALE:	SIZE: D	TOTAL NUMBER OF SHEETS: 6
CHECKED:	DATE:	XXXPLOTTINFORMATIONXXX		

**HTT**  
**Harsco Track Technologies**  
**Harsco**  
 410 North Main St.  
 Farmington, NH 05431-1837  
 (603) 235-3361

DRAWING TITLE: SPIKE OVERDRIVING INHIBIT APPLICATION	ENG. DWG NO.: 024402
MACHINE TYPE-MODEL: W130A1	





SWING FEED ONLY  
(SERVICE GROUP 201407)

MATERIAL:

SHEET 5 OF 6

QTY IS REF FOR ALL DC (DECONTROLLED) PARTS LIST ITEMS

CHANGE	R/L	REVISION	DATE
65858	A	UPDATE DRAWING	07-03

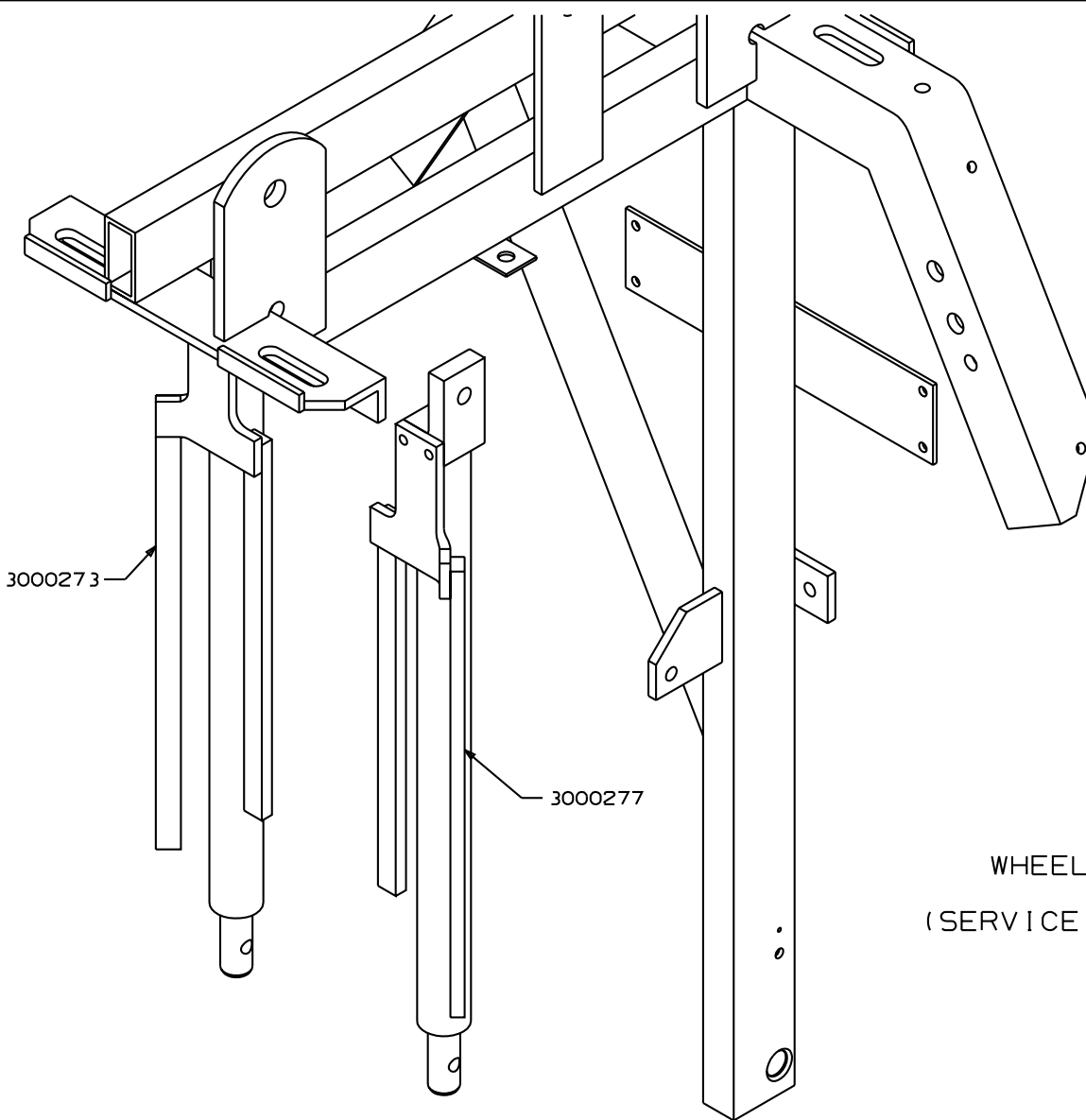
**MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED**  
 1. 2 PLACE DECIMAL DIM. ±.02 FOR EACH 12 (MAX ±.09)  
 2. 3 PLACE DECIMAL DIMENSIONS ±.005 UP TO .36  
    ±.010 OVER .36  
 3. CONCENTRICITY OF CYLINDRICAL SURFACES ±.010  
 TOTAL INDICATOR READING  
 4. PARALLELISM, SQUARENESS OR ANGULARITY BETWEEN  
 SURFACES AND/OR HOLE CENTERLINES ±0°7'1.002 INCH/INCH  
 5. FINISH 125/√

**FABRICATION TOLERANCES UNLESS OTHERWISE SPECIFIED**  
 1. MATERIAL THICKNESS DIMENSIONS ±TOLERANCE  
 a. LESS THAN .12 0 TO .36 ±.03  
    OVER .36 ±.06  
 b. .12 TO .50 0 TO .36 ±.12  
    0 TO .36 ±.06  
 c. OVER .50 TO 1.00 0 TO .36 ±.19  
    OVER .36 ±.09  
 d. OVER 1.00 0 TO .36 ±.25  
    OVER .36 ±.12  
 2. BENT ANGLE ±1° 1.017 INCH/INCH FOR EACH .36 OF  
 MATERIAL THICKNESS (MAX. ±3°)

**Harsco Track Technologies**  
 a harsco company

SPIKE OVERDRIVING INHIBIT APPLI

DR DAM	APVD WGL	APVD TDW	CHKD
07-24-03			
SCALE -		CLASS W130A1	
DATE		X	
EST WT	SIZE	FILE/PART NUMBER	
-	C	024402	



WHEEL FEED ONLY  
(SERVICE GROUP 201414)

MATERIAL: -

SHEET 6 OF 6

QTY IS REF FOR ALL DC (DECONTROLLED) PARTS LIST ITEMS

CHANGE	R/L	REVISION	DATE
65858	A	UPDATE DRAWING	07-03

**MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED**  
 1. 2 PLACE DECIMAL DIM. ±.02 FOR EACH 12 (MAX ±.09)  
 2. 3 PLACE DECIMAL DIMENSIONS ±.005 UP TO .36  
    ±.010 OVER .36  
 3. CONCENTRICITY OF CYLINDRICAL SURFACES ±.010  
 TOTAL INDICATOR READING  
 4. PARALLELISM, SQUARENESS OR ANGULARITY BETWEEN  
 SURFACES AND/OR HOLE CENTERLINES ±0°7'1.002 INCH/INCH  
 5. FINISH 125/

**FABRICATION TOLERANCES UNLESS OTHERWISE SPECIFIED**

1. MATERIAL THICKNESS	DIMENSIONS	±TOLERANCE
a. LESS THAN .12	0 TO .36	+.03
	OVER .36	+.06
b. .12 TO .50	0 TO .36	+.06
	OVER .36	+.12
c. OVER .50 TO 1.00	0 TO .36	+.09
	OVER .36	+.19
d. OVER 1.00	0 TO .36	+.29
	OVER .36	+.39

2. BENT ANGLE ±1° 1.017 INCH/INCH FOR EACH .36 OF MATERIAL THICKNESS (MAX. 83°)

**Harsco Track Technologies**  
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SPIKE OVERDRIVING INHIBIT APPLI

DR DAM	APVD WGL	APVD TDW	CHKD
07-24-03			
SCALE -		CLASS W130A1	
DATE	X		
EST WT	SIZE	FILE/PART NUMBER	
-	C	024402	