

# 16-1/2" x 5" Shoe Brake #1305-2 Brake, Complete Pair

P-1384  
819-0116

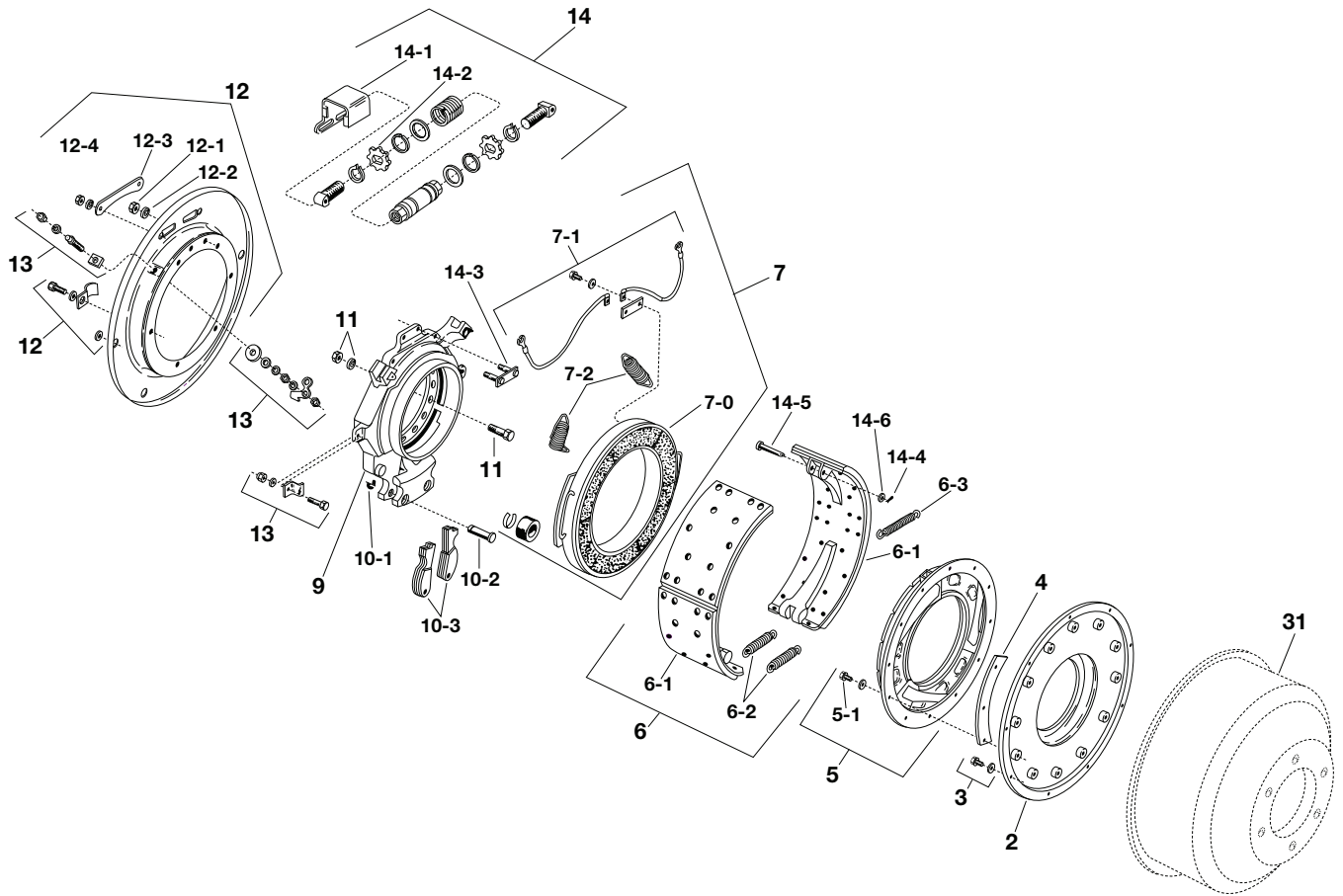
Installation Instructions



 **Warner**<sup>®</sup>  
Electric

An Altra Industrial Motion Company

# Service Parts and Kits



## Kit No. 1305-2 Complete Axle Kit

### Kit consists of:

- 1 - R.H. Brake Assembly
- 1 - L.H. Brake Assembly
- 1 - Armature R.H.
- 1 - Armature L.H.
- 2 - Armature Adapter Assemblies with Grease Guard
- 1 - Brake Mounting Accessory
- 1 - Adapter Mounting Accessory
- 1 - Armature Mounting Accessory

**⚠ WARNING** Failure to follow these instructions may result in product damage, equipment damage, and serious or fatal injury to personnel.

### General Note

It is suggested that, because of the size and weight of the components of this brake, the complete assembly be removed from the vehicle to facilitate handling while replacing parts.

## **Section A – Replacement of Shoe and Lining Assembly/Kit #1305-100-024 - Item 6**

**NOTE:** Two different types of friction material (brake lining) are used in each half of the shoe and lining assembly of this size brake. It is important to install the assembly with the arrow on the trailing shoe and lining pointing in the direction of forward drum rotation.

1. Remove drum (31).
2. Remove magnet (7-0).
3. Remove shoe return springs (6-2).
4. Loosen and remove centralizer place nuts (12-1).
5. Lift off old shoe and lining assembly (6-1).
6. Remove bracket (14-1) from adjuster assembly (14) and remove adjuster spring (6-3), adjusting nut and screw assembly (14) from shoe assembly.
7. Clean all brake parts.
8. Reinstall adjuster spring (6-3), adjuster assembly (14), and attaching parts to new shoes and linings (6-1) with new cotter pins and washers.
9. Place adjuster bracket (14-1) over adjuster (14).
10. Install complete assembly back on brake by installing centralizer plate (14-3). Do not tighten centralizer nuts completely yet...allow centralizer to float.
11. Reinstall magnet (7-0).
12. Reinstall shoe return springs (6-2).
13. Reinstall brake and drum on axle per running gear manufacturer's specifications.
14. Remove adjusting cover (12-3) and turn either adjusting nut (14-2) until brake shoes (6-1) are expanded tight against drum (31).
15. Tighten centralizer plate nuts (12-1) against lockwashers (12-2). Torque to 18 to 20 ft. lbs.
16. Back off adjuster (14-2) until drum turns freely (approximately 5 or 6 notches).
17. Replace adjusting opening cover (12-3). Torque nuts 68 to 76 in. lbs.

## **Section B – Replacement of Magnet/ Magnet Kit #1305-100-010 (12V) - Item 7**

1. Remove drum (31).
2. Remove centralizer plate bolt assembly (14-3).
3. Remove shoe return springs (6-2). See Section C.
4. Loosen magnet return springs (7-2) from Magnet Only.
5. Remove magnet lead wires (7-1) from terminal blocks (13).
6. Loosen and remove magnet hold down brackets (8) and lift magnet (7-0) off the assembly.
7. Remove magnet lead wires (7-1) from magnet by opening lead wire hold down clips carefully to free wires.
8. Clean inside of magnet mounting surfaces.
9. Install new magnet (7-0) on pilot ring and replace hold down brackets (8). Torque nuts to 10 to 12 ft. lbs.
10. Reconnect magnet leads (7-1) to magnet and terminal blocks (13). Torque nuts (8) to 59 to 65 in. lbs. Torque screws (13) to 15 to 17 in. lbs.
11. Connect magnet return springs (7-2) to new magnet.
12. Reconnect shoe return springs (6-2) per instructions in Section C.
13. Reinstall centralizer plate (14-3) and adjust per instructions in Section A.
14. Replace drum (31) and reassemble running gear per manufacturer's specifications.

### **Replacement of Magnet Lead Wires only: Kit #1305-100-012 - Item 7-1**

1. Remove magnet (7-0) from brake.
2. Spread lead wire hold down clips on magnets carefully to free wires.
3. Loosen terminal screws (13) and remove lead wires (7-1) from terminal.
4. Install new lead wires (7-1) on terminal. Torque screws (13) to 15 to 17 in. lbs.
5. Close magnet lead wire hold down clips securely over the new leads (7-1).
6. Replace magnet (7-0) on brake.

## Section C – Replacement of Springs

Shoe Return Spring Kit #1305-100-018 - Item 6-2

- 1 – Adjuster Spring
- 2 – Shoe Return Springs

Magnet Return Spring Kit #1302-100-009 - Item 7-2

- 1 – Magnet Return Spring R.H.
- 1 – Magnet Return Spring L.H.

### Replacement of Shoe Return Springs

1. Remove drum (31).
2. Grasp one end of return spring (6-2) loop using commercial spring pliers. Anchor other jaw of the pliers in nearest brake lining rivet hole. By squeezing pliers closed, the loop end can be released from the brake shoe hole.
3. After one end of spring has been released the other loop can be easily removed.

### To Install New Shoe Return Springs

1. Insert one loop of return spring (6-2) in a shoe hole with hook pointing toward center of brake.
2. Grasp other loop with spring pliers. Place other jaw of spring pliers in nearest brake lining rivet hole.
3. Squeeze pliers to close, extending spring loop to the other shoe end hole for anchoring.
4. Replace drum and readjust brake per steps 13, 14, 15, 16 and 17 of Section A.

### Replacement of Magnet Return Springs - Item 7-2

**NOTE:** These springs must be installed on the proper side of the magnet; i.e., either right or left when facing the magnet. Before removing old springs, look closely at the location of the larger hook end of the spring. Install new springs in the same manner.

1. Remove drum (31).
  - 1a. Locate magnet (7-0).
2. Using pliers, remove return spring (7-2) from magnet clips.
3. Disengage other hook from brackets on spider (9).
4. Install new spring in proper location; i.e., right or left side of magnet.
5. Replace drum (31) and reassemble running gear per manufacturer's specifications.

### Replacement of Adjuster Spring - Item 6-2

1. Remove cotter pins (14-4) and washers (14-6).
2. Grasp one end of spring (6-3) with pliers and remove from shoe pin (14-5).
3. Remove spring from other shoe pin.
4. Place hook of new adjuster spring (6-3) on one pin (14-5), extend spring, and connect to other shoe pin.
5. Replace washer (14-6) and cotter pins (14-4).

### Section D – Replacement of Terminal Block and Studs, Dust Covers, Cams - Items 12 and 13

#### Replacement of Terminal Block and Studs/ Kit #1305-100-013 - Item 13

1. Remove drum (31).
2. Remove shoe return springs (6-2) and expand shoes (6-1) by hand.
3. Loosen and remove all nuts (13) from terminals (13). Push terminals out of brake
4. Install new terminal blocks (13) and studs (13) and replace the nuts (13) in order shown in exploded view. Torque nuts to 59 to 65 in. lbs.
5. Reinstall shoe return springs (6-2) and drum (31) per procedure in Section C.

#### Replacement of Dust Cover/ Kit #1305-100-022 - Item 12

1. Remove brake assembly from axle flange.
2. Remove shoe return springs (6-2) and open shoes (6-1) by hand.
3. Remove terminal blocks and studs per above procedure.
4. Invert brake and remove (6)-5/16" cap screws (12-4), holding dust cover.
5. Install new dust cover and replace cap screws (12-4). Torque to 125 to 139 in. lbs.
6. Reinstall terminal blocks and studs per above procedure.
7. Reposition shoes (6-1) and reinstall shoe return springs (6-2) per procedure in Section C.

## Replacement of Cams/Kit #1305-100-020 - Item 10

1. Remove drum (31).
2. Remove shoe return springs (6-2) and spread shoes (6-1) by hand.
3. Remove retaining rings (10-1) from cam pins (10-2) on spider (9).
4. Push out pins (10-2) and remove cams (10-3).
5. Install new pins (10-2) and cams (10-3) in order shown on exploded view. Lock assembly with retaining rings (10-1).
6. Reposition shoes (6-1) and shoe return springs (6-2).
7. Replace drum (31) and reinstall running gear per manufacturer's specifications.

## Section E – Replacement of Armature/ Armature Kits #1305-100-015 R.H.; #1305-100-016 L.H. - Item 5

**NOTE:** Warner Electric armatures for this size brake are designed for use on either the right-hand side or left-hand side of the trailer when looking toward the towing vehicle. The armatures are **not interchangeable** and must be installed on the correct side of the trailer. The armatures have a designating "R" or "L" on the mounting ring.

1. Remove hub, wheel, and drum (31) from trailer.
2. Remove twelve armature mounting screws (5-1) from grease guard/adaptor (2).
3. Lift out old armature (5) and any shims (4) that may be installed. Clean armature mounting surface on grease guard (2).
4. Remove and clean grease guard/adaptor (2) by loosening nine screws (3) holding guard on drum.
5. Reinstall grease guard/adaptor (2) in drum. Torque screws to 69-75 in. lbs. Install new armature (5) on grease guard using twelve armature mounting screws. Torque screws to 69 to 75 in. lbs.
6. Check armature depression by following these steps:
  - A. Place a 1/4" ball of modeling clay between each armature tab, and the mounting plate.

- B. Being careful not to compress the clay, bolt the armature into the drum.
- C. Install the drum on the axle, so there is no free play.
- D. Remove the drum from the axle.
- E. Remove the armature from the drum.
- F. Measure the thickness of the clay. It should be about 1/8". If it is greater than 1/8", add shims between the armature and the drum, and repeat steps A through E.

...this should be between 1/8" and 3/16".  
Correct, if necessary, using shims (4) or hardened spacer rings between armature and grease guard.

7. Inspect magnet (7-0) to determine if it should be refaced or replaced.
8. Reassemble running gear per manufacturer's specifications.

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