Form No. 3359-434 Rev A

4-Wheel Brake Conversion Kit,

For Mid-Duty Workman Vehicle

Model No. 115-2200

Installation Instructions

Installation

Loose Parts

Use the chart below to verify that all parts have been shipped.

Procedure	Description	Qty.	Use
2	Template G007354, dash (attached)	1	Modify the radio/cup holder plug and seat base.
	Template G007353, seat base (attached)	1	
3	Master Cylinder	1	Install the brakes.
	Screw (1/4 x 1-1/2 inch)	2	
	Nuts, whiz (1/4 inch)	2	
	Clevis pin (1 inch)	1	
	Cotter pin (3/4 inch)	1	
	Hydraulic hose assembly (104-7256)	1	
	Hose bracket	2	
	Front left spindle and brake assembly	1	
	Front right spindle and brake assembly	1	
	Self tapping, hex-head screws (5/16 x 5/8 inch)	2	
	Left rear brake assembly	1	
	Right rear brake assembly	1	
	Cap screw (5/16 x 3/4 inch)	8	
	Brake drums	2	
4	Carriage bolt (1/4 x 1-1/4 inch)	1	Install the brake lines.
	Lock nut (1/4 inch)	1	
	Brake line, front (104-6798)	1	
	Tube clamp	2	
	Bolt (1/4 x 1-1/2 inch)	1	
	Locknut (1/4 inch)	1	
	Brake line, rear (104-6793)	1	
	Brake line, center (104-6794)	1	
	Union (87-3570)	1	
	Brake hose bracket	1	
	Screw (1/4 x 1/2 inch)	2	
	Tee connection (87-3560)	1	
	Brake hose (104-6795)	1	
	Right, rear brake line (104-6796)	1	
	Left, rear brake line (110-2604)	1	
	Insulated clip	1	

Procedure	Description	Qty.	Use
5	Equalizer bracket	1	Complete the installation.
	Parking brake cable	2	
	Retaining ring	2	
	Parking brake support	1	
	Parking brake lever	1	
	Clevis pin, long	1	
	Washer	1	
	Cotter pin	1	
	Bolt (3/8 x 2 inches)	1	
	Curved washer	1	
	Lock nut (3/8 inch)	1	
	Plus nut plug (5/16 inch)	4	
	Bolt (5/16 x 1 inch)	4	
	Parking brake cover	1	
	Screw	2	
	Flat washer (1/4 inch)	2	
	Cotter pin	2	
	Insulated clip	2	
	Rubber cup holder	1	

Note: A plus nut installation tool is needed to perform certain steps of this installation.

1

Preparing the Vehicle

No Parts Required

Procedure

1. Park the machine on a level surface, set the parking brake, turn the ignition off, and remove the key.
2. Place vehicle on a hoist or suitable jack stands so all the tires are off the ground. Release the parking brake.
3. Remove rear wheels. Remove rear brake drums, wheel hubs and rear brake assemblies. Retain the flange head nuts securing the brake assemblies to the transaxle. Refer to the appropriate section of the *Service Manual* for more information.
4. Locate the clevis and cotter pin securing the brake cables to the actuator lever in the rear brake assemblies. Remove the clevis and cotter pin to disconnect brake cables. Retain the clevis and cotter pins.
5. Remove the R-clamps securing the brake cables to the box frame. Retain the clamps and hardware. Note the placement for later installation.
6. Move to the front of the vehicle and remove the front wheels. Refer to the appropriate section of the *Service Manual* for more information.
7. Remove the nut and cotter pin retaining the tie rod to the spindle assembly. Disconnect the tie rod from the spindle assembly. Retain this nut and cotter pin.
8. Remove the long bolt and nut securing the spindle assembly to the A-arm. Remove the spindle assembly and discard. Retain the long bolt and nut.
9. Remove both the front spindle assembly and discard. Retain all mounting fasteners.
10. Remove front cowling (Hood) to gain access to the pedal box. Refer to the appropriate section of the *Service Manual* for more information.
11. Let the dash hang loose on the steering column to allow for later installations.
12. Remove the two bolts securing the plastic, center floor cover below the pedal box assembly. Retain all parts
13. Remove the clevis and cotter pin securing the brake cable linkage to the pedal. Remove the clevis and cotter pin securing the brake cable to the linkage. Remove the brake cable linkage and discard.
14. Remove the fasteners securing the parking brake actuator and pawl assembly on the existing brake pedal. Remove the actuator pedal and pawl. Discard all parts and fasteners.

    Note: Make note of the brake cable routing to the rear of the vehicle. It will be necessary to route cables in this manner in later in the installation.

15. Remove brake cables from vehicle and discard.
16. Remove seats and seat base. Refer to the appropriate section of the *Service Manual* for more information.

2

Modifying the Radio/Cup Holder Plug and Seat Base

Parts needed for this procedure:

1	Template G007354, dash (attached)
1	Template G007353, seat base (attached)

Procedure

1. Using the dash template provided, cut a hole in top of dash to accept radio/cup holder plug (Figure 1).

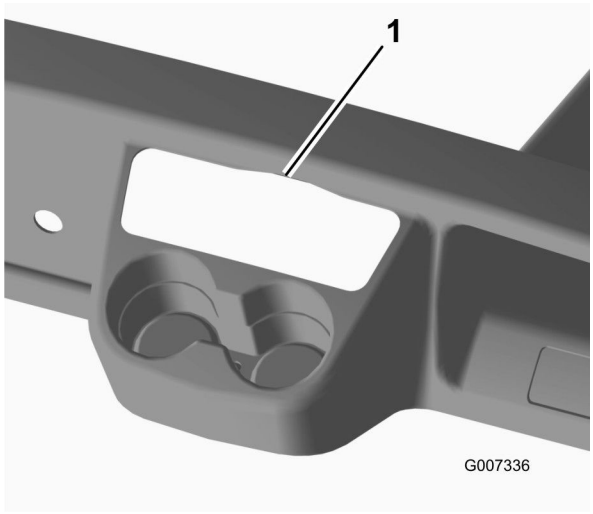


Figure 1

1. Hole in dash, cut out

   A. Cut out the template provided and move to the center dash.
   B. Center the template over the dash panel just above the cup holders (Figure 1.
   C. Secure it in place and mark the outline.
   D. Use the appropriate tool to cut out the marked shape in the dash.
   E. Remove any rough edges left by the cutting tool so that the hole is smooth but not enlarged.
2. Using the seat base template provided, modify seat base to accept the new parking brake assembly:
   A. Locate and remove any panel covering the molded depression between the seats.
   B. Using a hole saw, drill a 2 inch hole in the rear of the depression on approximately 45 degree angle pointing down and to the rear of the machine (Figure 2).

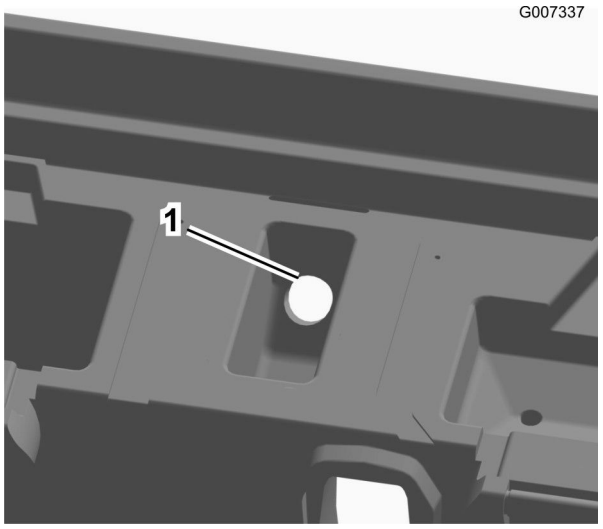


Figure 2

1. Hole, 2 inches in diameter, 45 degree angle down and rearward

   C. Remove any rough edges left by the cutting tool so that the hole is smooth but not enlarged.
   D. Use the seat base template and front edge the depression to mark the 6 holes as shown in Figure 3.
   E. Drill six 0.5 inch holes at the points marked.

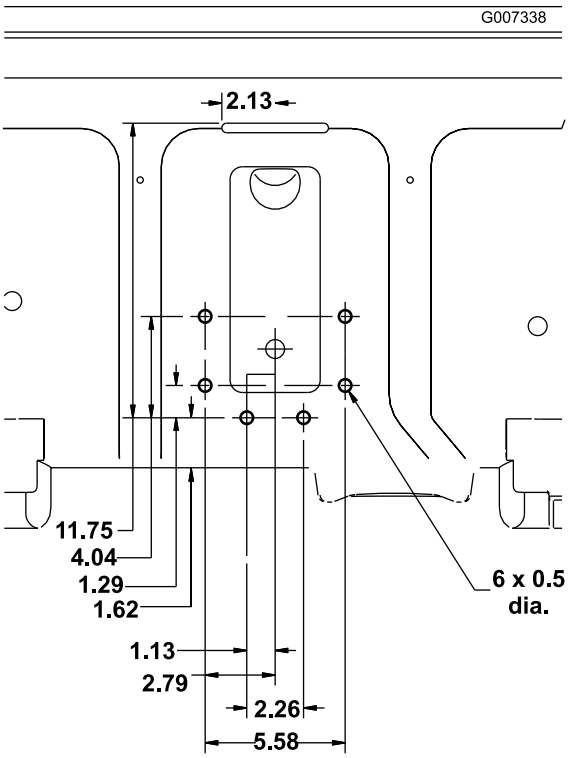


Figure 3

All dimensions in inches

F. Locate the black parking brake cover in loose parts.

G. Over lay the two front holes in the cover to align with the two wide set, forward holes previously drilled (Figure 4).

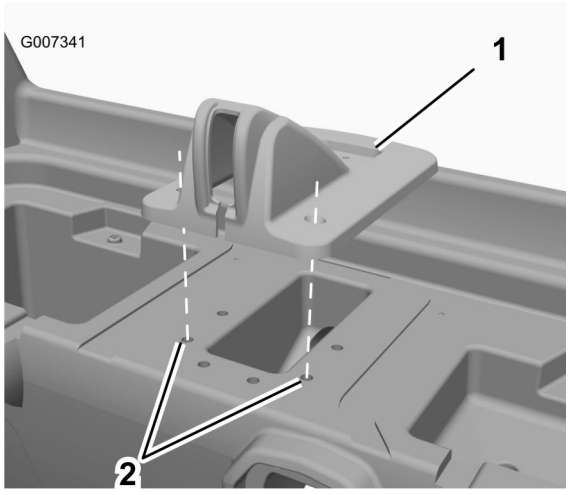


Figure 4

1. Parking brake cover
2. Front, wide set holes in seat base

H. Use the parking brake cover to locate the milled slot to be cut out by marking where the tab in the rear of the cover contacts the seat base (Figure 5).

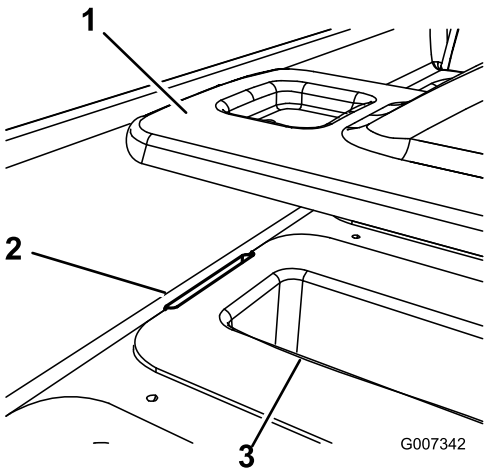


Figure 5

I. Remove the parking brake cover and cut a long (4.26 inches), slotted hole in the location marked to accept the tab (Figure 5).

Important: Use care not the widen the hole rearward. If the hole needs to wider to accept the tab of the parking brake, widen the slot toward the front of the vehicle. The parking brake cover may not stay properly retained otherwise.

3

Installing the Brakes

Parts needed for this procedure:

1	Master Cylinder
2	Screw (1/4 x 1-1/2 inch)
2	Nuts, whiz (1/4 inch)
1	Clevis pin (1 inch)
1	Cotter pin (3/4 inch)
1	Hydraulic hose assembly (104-7256)
2	Hose bracket
1	Front left spindle and brake assembly
1	Front right spindle and brake assembly
2	Self tapping, hex-head screws (5/16 x 5/8 inch)
1	Left rear brake assembly
1	Right rear brake assembly
8	Cap screw (5/16 x 3/4 inch)
2	Brake drums

Procedure

1. Install master cylinder using two screws (1/4 x 1-1/2 inch) and two whiz nuts (1/4 inch) (Figure 6).

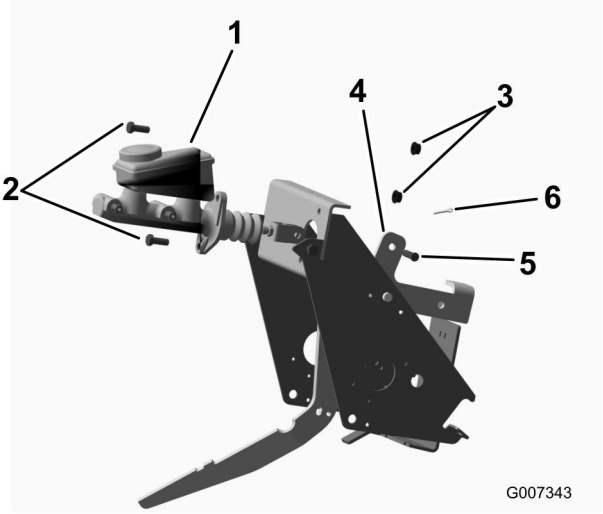


Figure 6

1. Master cylinder
2. Screw
3. Whiz nut
4. Upper brake pedal arm
5. Clevis pin
6. Cotter pin

2. Connect the master cylinder to the upper brake pedal arm with a clevis (1 inch) and cotter pin (3/4 inch) (Figure 6).

3. Locate the front hydraulic hose assembly (104-7256) (Figure 7). Move to the front A-arms.

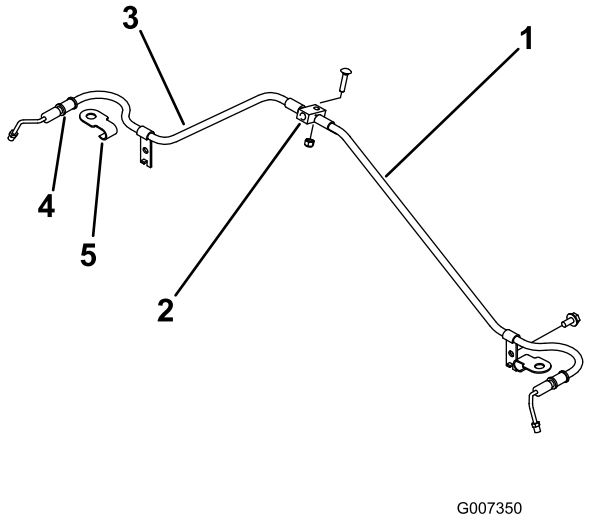


Figure 7

1. Front hydraulic hose assembly (104-7256)
2. Tee connection
3. Right (shorter) side
4. Rubber sleeve
5. Hose bracket

4. Route the flexible line across, and above the A-arms to the both wheels. The line remains behind and above the steering linkage and tie rods (Figure 7).

   Note: The shorter length of hose to the right side the vehicle.

5. Locate the hose brackets. Assemble the bracket to the hose assemble at the location shown before mounting the wheel hub assembly (Figure 7).

6. Install the right and left spindle and brake assembly (Figure 8) to the A-arm. Add the hose bracket and hydraulic line on top of the axle assembly and secure it all with the long bolt and nut removed previously. Torque the fasteners to 75-100 ft-lb (102-136 N-m).

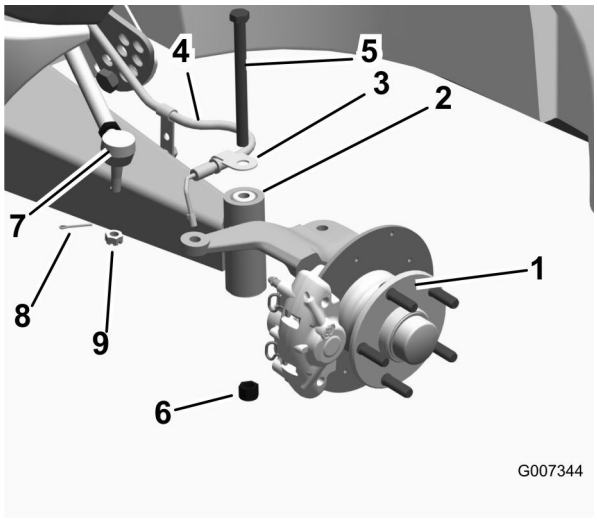


Figure 8

1. Wheel hub and brake assembly
2. A-arm
3. Hose bracket (104–7073)
4. Hydraulic line
5. Long bolt (existing)
6. Nut (existing)
7. Tie rod
8. Cotter pin (existing)
9. Castle nut (existing)

7. Use the self tapping, hex-head screws (5/16 x 5/8 inch) to secure the hydraulic line to the A-arms.
8. Connect and tighten the fittings on the front hydraulic hose assembly to the calipers.
9. Move to the rear of the vehicle. Apply anti-seize lubricant to the location on the transaxle as shown in Figure 9.

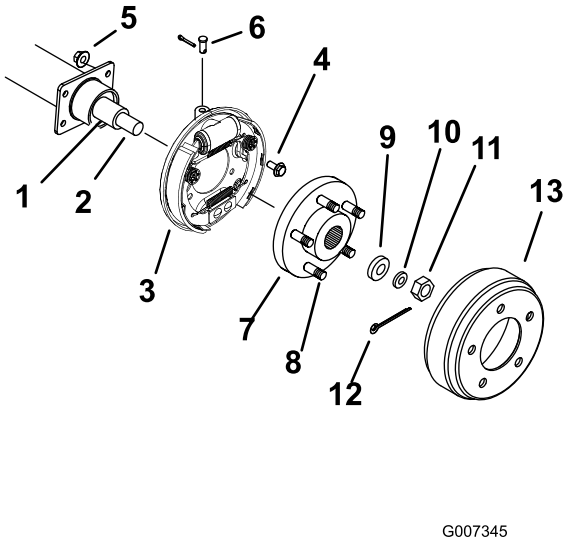


Figure 9
Left side shown

1. Apply anti-seize lubricant here
2. Transaxle shaft
3. Brake assembly (left)
4. Cap screw
5. Flange lock nut (existing)
6. Clevis and cotter pin, parking brake
7. Wheel hub (existing)
8. Wheel stud
9. Spacer (existing)
10. Lock washer (existing)
11. Castle nut (existing)
12. Cotter pin (existing)
13. Brake drum

10. Install new rear brake assemblies (104-6807, 104-6806). Secure the brake assembly to the axel with the four cap screws and flange lock nuts removed previously (Figure 9). Torque the fasteners to 20 ft-lb (27 N-m).
11. Install existing wheel hub over the transaxle shaft. Apply anti-seize lubricant to the splines. Secure it with a spacer, lock washer and castle nut removed previously (Figure 9). Torque the castle nut to 120 ft-lb, then turn the nut to align the cotter pin hole in the transaxle shaft with notch in the nut.

   Important: Do not exceed 200 ft-lb when aligning nut.

   Install a cotter pin to retain the nut.
12. Install the new brake drums over the wheel studs (Figure 9).

4

Installing the Hydraulic Brake Lines

Parts needed for this procedure:

1	Carriage bolt (1/4 x 1-1/4 inch)
1	Lock nut (1/4 inch)
1	Brake line, front (104-6798)
2	Tube clamp
1	Bolt (1/4 x 1-1/2 inch)
1	Locknut (1/4 inch)
1	Brake line, rear (104-6793)
1	Brake line, center (104-6794)
1	Union (87-3570)
1	Brake hose bracket
2	Screw (1/4 x 1/2 inch)
1	Tee connection (87-3560)
1	Brake hose (104-6795)
1	Right, rear brake line (104-6796)
1	Left, rear brake line (110-2604)
1	Insulated clip

Procedure

1. Move the front of the vehicle. Locate the front hydraulic hose assembly and the in-line "Tee" connection (Figure 10). Secure the center "Tee" portion of the brake line to the frame using a carriage bolt (1/4 x 1-1/4 inch) and lock nut (1/4 inch).

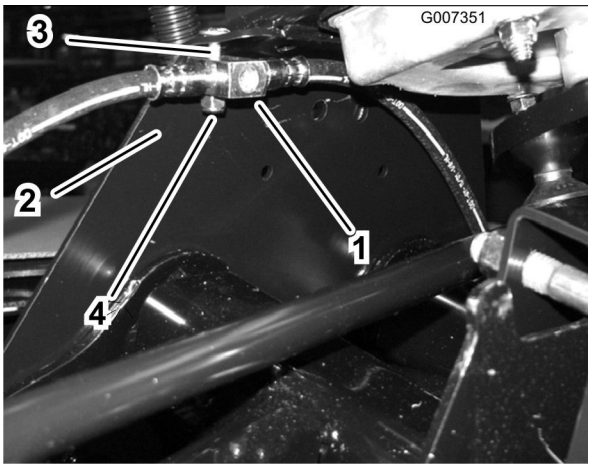


Figure 10

1. Tee connection in front hydraulic hose
2. Frame
3. Carriage bolt (1/4 x 1-1/4 inch)
4. Lock nut (1/4 inch).

2. Install the front brake line (104-6798) from the master cylinder around the front frame tube (Figure 11). Use the tube clamps (one on each side), a bolt (1/4 x 1-1/2 inch) and lock nut(1/4 inch) to secure the line to the pedal box assembly.

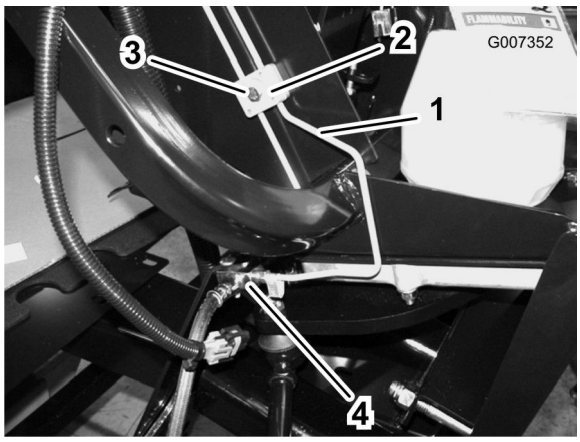


Figure 11

1. Front brake line
2. Stand off
3. Bolt
4. Tee connection

3. Connect the front brake line to the "Tee" connection in the front hydraulic hose assembly installed previously (Figure 11).
4. Install the rear brake line (104-6793) to the master cylinder in the position shown in Figure 12.

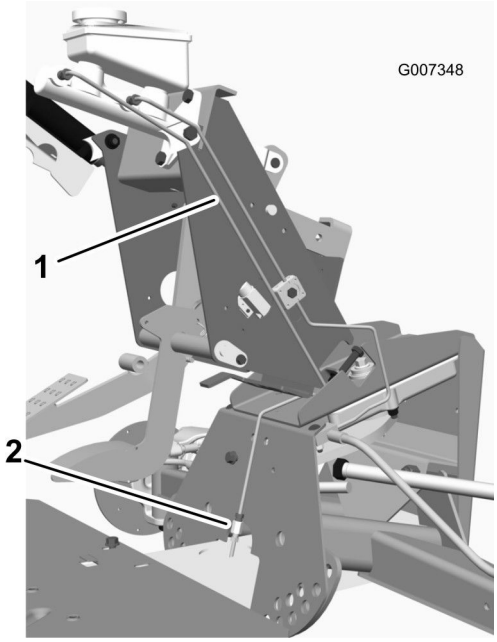


Figure 12

1. Rear brake line
2. Floor connection, union (87-3570)

5. Install the center brake line (104-6794) by inserting the end into the channel above the front hitch (Figure 13). Keep the tubing to the left side (when looking at the front of machine) as it is slid in.

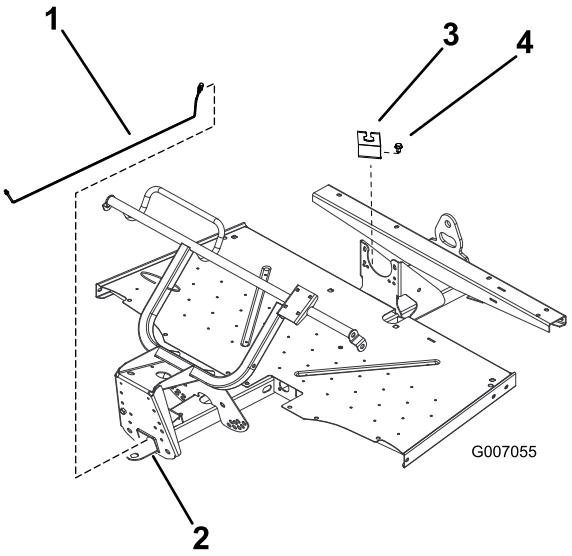


Figure 13

1. Center brake line (104-6794)
2. Tongue, opening
3. Bracket, brake hose
4. Screw (1/4 x 1/2 inch)

6. With the help of a another person, guide the tubing rearward. Guide the tubing out of the center channel at mid point of vehicle. The front end of the center line should appear below the pedal box.

7. Use a union (87-3570) to attach the front end of the center brake line to the rear brake line coming down from the master cylinder (Figure 12).
8. In the center channel at the mid point of the vehicle, install a brake hose bracket (104-6799) with a screw (1/4 x 1/2 inch) to support the tubing (Figure 13).
9. Lift and secure the cargo box. At the front, right of the box frame remove the air cleaner inlet hose to gain access to the frame.
10. Install the "Tee" (87-3560) connection to the front right corner of the rear frame with a screw (1/4 x 1/2 inch) (Figure 14).

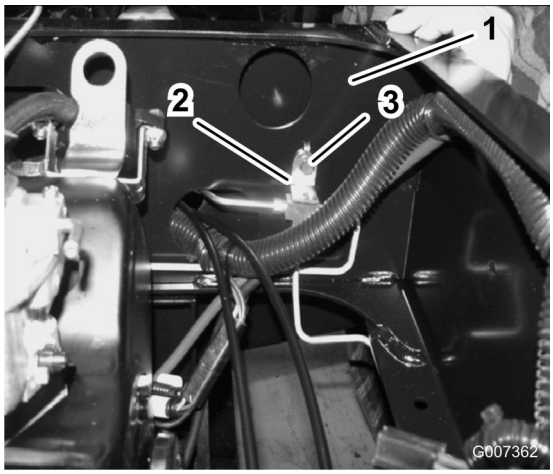


Figure 14

1. Front, right box frame
2. Tee connection (87-3560)
3. Screw (1/4 x 1/2 inch)

11. Install the joining brake hose (104-6795) to the (87-3560) "Tee", and then connect the hose end to the (104-6794) center brake tube (Figure 15). Insert the hose end into the hose bracket and retain with the clip (104-7092).

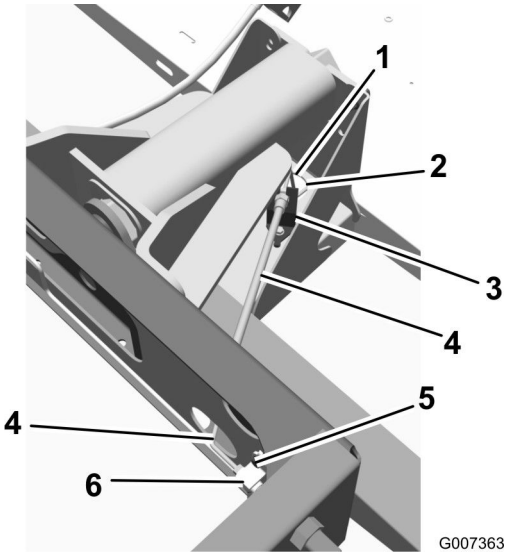


Figure 15

1. Center brake line (104-6794)
2. Center channel at the mid point of the vehicle
3. Bracket, brake hose
4. Joining brake hose (104-6795)
5. Screw (1/4 x 1/2 inch)
6. Tee connection (87-3560)

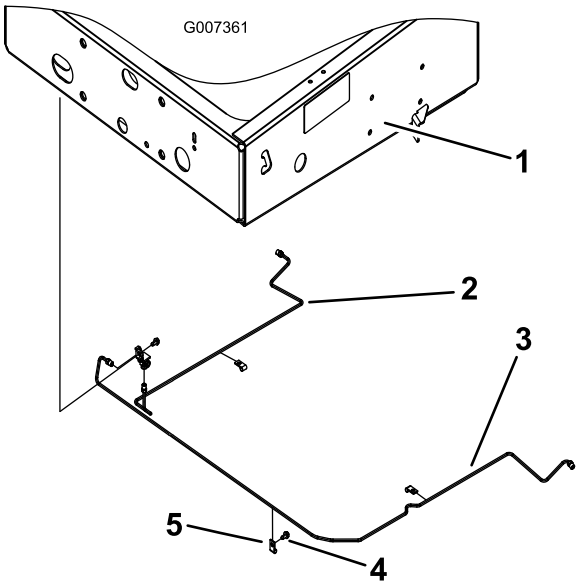


Figure 16

1. Box frame
2. Right hand rear brake tube (104-6796)
3. Left hand rear brake tube (110-2604)
4. Screw (1/4 x 1/2 inch)
5. Clip

Note: For steps 12 and 13, do not attach the rear most R-clamps. This will be completed later in the installation.

12. Install right hand rear brake tube (104-6796) from "Tee" to right hand brake assembly. Use brackets provided to secure the line to the box frame (Figure 16).
13. Install left hand rear brake tube (110-2604) from "Tee" to left hand brake assembly. Use brackets provided to secure the line to the box frame (Figure 16).
14. Install air cleaner inlet hose removed previously.

5

Completing the Installation

Parts needed for this procedure:

1	Equalizer bracket
2	Parking brake cable
2	Retaining ring
1	Parking brake support
1	Parking brake lever
1	Clevis pin, long
1	Washer
1	Cotter pin
1	Bolt (3/8 x 2 inches)
1	Curved washer
1	Lock nut (3/8 inch)
4	Plus nut plug (5/16 inch)
4	Bolt (5/16 x 1 inch)
1	Parking brake cover
2	Screw
2	Flat washer (1/4 inch)
2	Cotter pin
2	Insulated clip
1	Rubber cup holder

Procedure

A plus nut installation tool is needed to perform certain steps of this installation.

1. Assembly the parking brake (Figure 17) and cables.

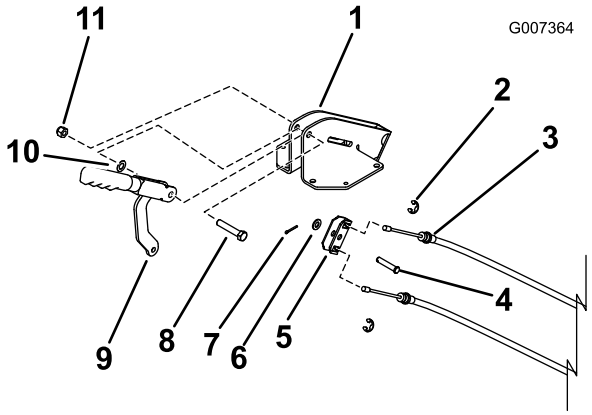


Figure 17

1. Parking brake support
2. Retaining ring
3. Parking brake cable
4. Clevis pin
5. Equalizer bracket
6. Flat washer
7. Cotter pin
8. Bolt (3/8 x 2 inches)
9. Parking brake lever
10. Curved washer
11. Lock nut (3/8 inch)

A. Install the parking brake cables to the equalizer plate and secure using a retaining ring.

B. Move the equalizer plate assembly into the parking brake support. Align the center through hole with the slot milled in the support.

C. Move the lower swing arm of the parking brake lever into the parking brake support as shown inFigure 17. Align the hole in the swing arm with hole in the equalizer plate and milled slot of the support.

D. Retain the assembly by threading the long clevis pin through the aligned holes. Secure it with a washer and cotter pin on the other side of the support.

E. Align the remaining hole in the parking brake lever with the forward hole in the parking brake support.

F. Secure it with the bolt (3/8 x 2 inches), curved washer and lock nut (3/8 inch). Tighten snug. Do not over tighten.

Note: The lever should be free to move when bolt is tightened.

2. Install the plus nut to the seat base at the locations shown using a plus nut installation tool (Figure 18).

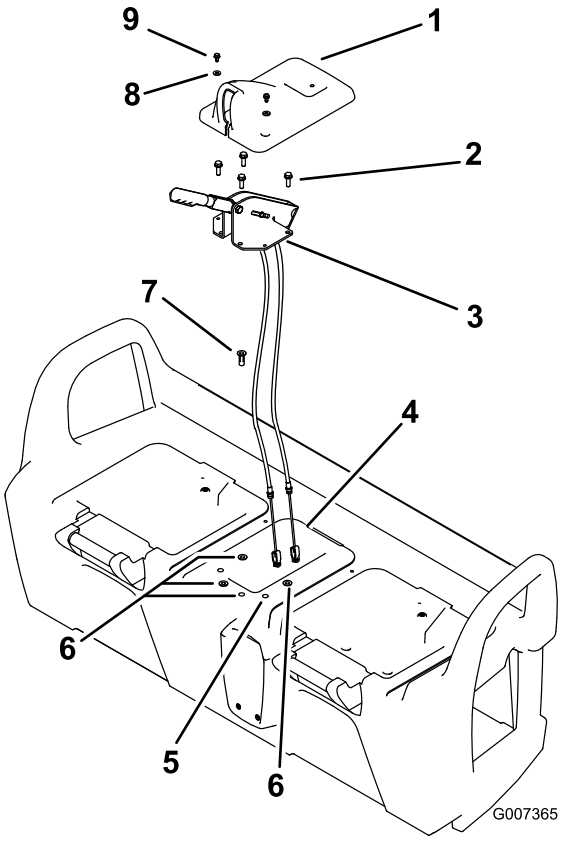


Figure 18

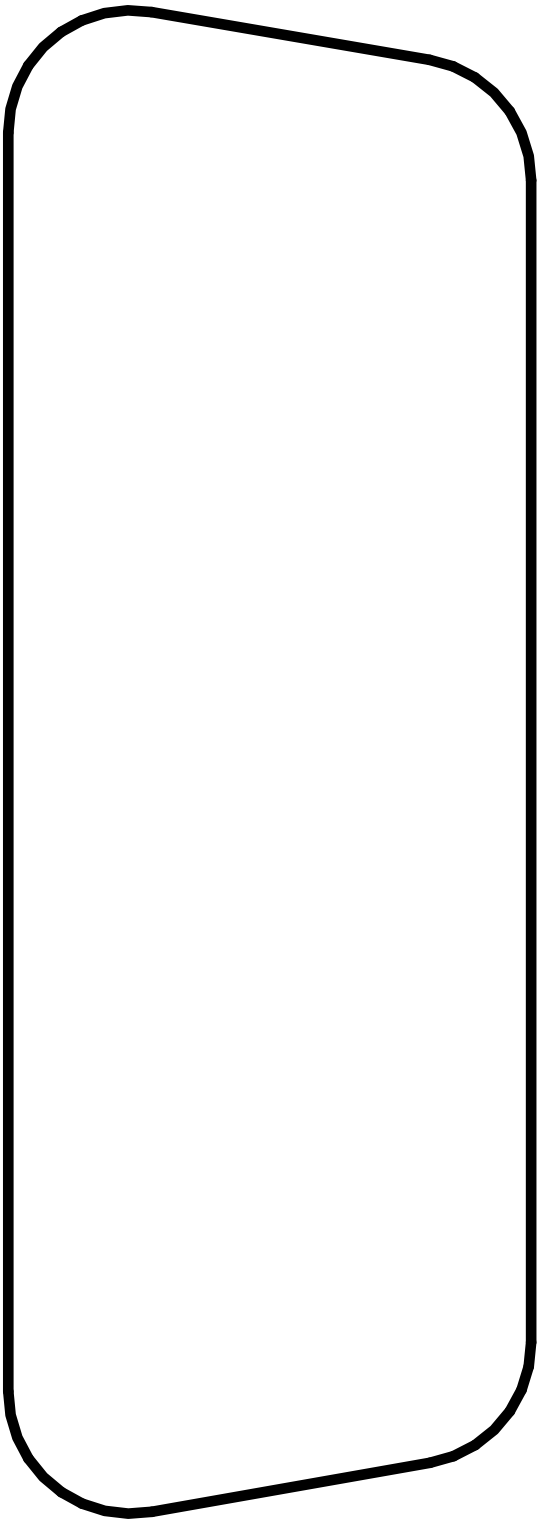
1. Parking brake cover
2. Bolt (5/16 x 1 inch)
3. Parking brake assembly
4. Brake cables, route through 2 inch drilled hole in seat base
5. Front holes for cover screws
6. Plus nut install locations
7. Plus nut plug (5/16 inch)
8. Flat washer (1/4 inch)
9. Screw

3. With the parking brake assembled, route the parking brake cables through seat base using the 2 inch diameter hole created previously (Figure 18).
4. Mount park brake assembly with four bolt (5/16 x 1 inch) (Figure 18).
5. Install brake lever cover with two screws and flat washers (1/4 inch)(Figure 18).
6. Route the brake cables from the parking brake through holes the original cables where the removed.
7. Install the altered seat base. Refer to the appropriate section of the *Service Manual* for more information.
8. As the seat base is being lowered to the vehicle, route the cables to the rear brakes. Connect parking brake cables to the rear brake assembly actuator arm using an existing clevis and new cotter pin.
9. Tighten rear brake lines to rear brake assemblies.
10. Secure the rear brake line tubes and the brake cables to the box frame with insulated clips and existing r-clamps. Use the existing bolts to mount the hardware.
11. Adjust the master cylinder clevis pin. Refer to the appropriate section of the *Service Manual* for more information.
12. Install front and rear wheels. Torque the fasteners to 45-65 ft-lb. Refer to the appropriate section of the *Service Manual* for more information.
13. Fill Master cylinder and bleed brake system. Refer to the appropriate section of the *Service Manual* for more information.
14. Install Dash and front cowling. Refer to the appropriate section of the *Service Manual* for more information.
15. Install the rubber cup holder (Figure 19).

Figure 19

1. Rubber cup holder

16. Adjust the parking brake cables if necessary. Refer to the appropriate section of the *Service Manual* for more information.



This side to cup holders.

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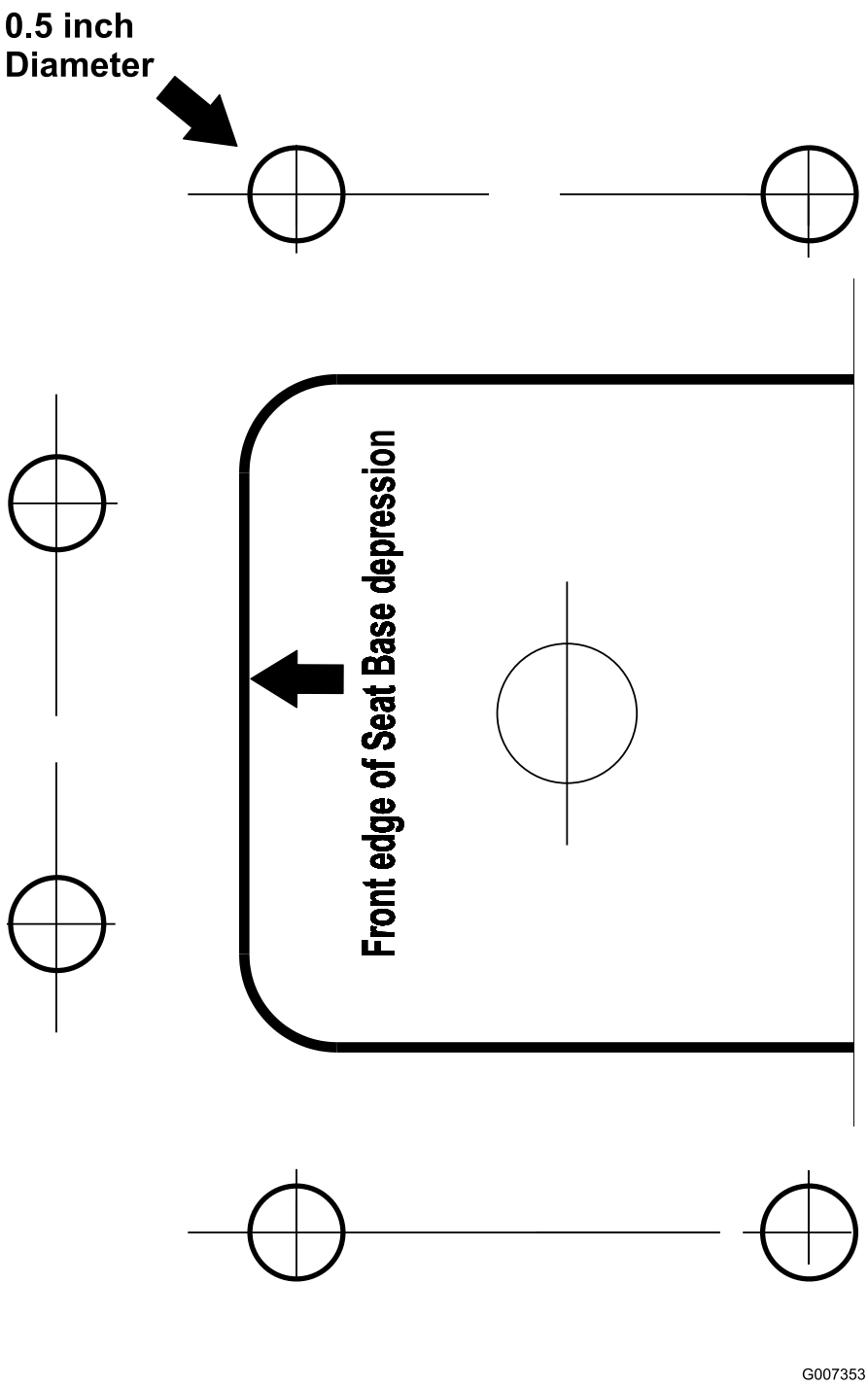

G007353

Count on it.