

WAGNER HI-TORK BRAKES

The Wagner Hi-Tork brake is used at the present time on the rear wheels of certain models of trucks, in conjunction with standard Wagner Lockheed hydraulic brakes on the front wheels. The bleeding of the hydraulic system is done in the same manner as with the standard Lockheed system described in the early part of this booklet.

In the Wagner Hi-Tork brake (Figure 23), both shoes operate as Forward Acting Shoes when a stop is made with the vehicle going in the forward direction. During such a stop the front shoe anchors against the anchor pin (A) and the rear shoe is anchored by the anchor pin (B). When a

stop is made in the Wagner Hi-Tork brake is different than the conventional stepped-bore cylinder in that the cylinders are at an angle. It will also be noted that the small wheel cylinder piston does not operate directly against the rear shoe but instead transmits its force to the rear shoe through a system of levers consisting of the lever (L) and the star wheel connector shaft (S). This action can also be more clearly understood by referring to Figure 24.

On a forward stop the force from the small piston operating through (L) and (S) will cause the rear shoe to move into contact with the drum, but it will not cause the front shoe to leave the anchor pin (A) because the large piston has forced the toe of the front shoe into the drum and the front shoe is held tightly against the anchor (A) by the energizing force of the rotating drum. However, when a stop is made in reverse, there is no energization of the front shoe and the small piston is able to force the heel of the front shoe into the drum and the front shoe anchors up against the reverse anchor pin (C). Thus, it can be seen that on a reverse stop, the small piston operates both the front and the rear shoe.

Although there is considerable difference in the size of the large and small pistons used on the Wagner Hi-Tork brake, the leverages used and the diameters of the piston are such that the pressure on the toe of the front shoe is exactly the same as the pressure on the toe of the rear shoe. This results in both shoes doing the same amount of work in forward stops where both shoes operate as Forward Acting Shoes and this tends to keep the lining wear practically equal on both shoes. The

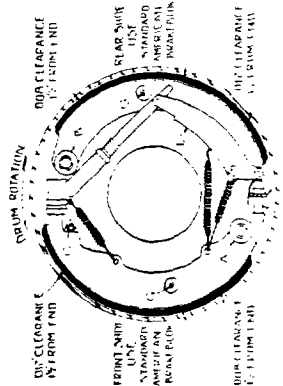


Figure 23
Wagner Hi-Tork Brake

stop is made in reverse, the front shoe operates as a Forward Acting Shoe and anchors up against the reverse anchor pin (C). During a reverse stop, the rear shoe operates as a Reverse Acting Shoe and is anchored in the conventional manner by the anchor pin (B). This action can probably be better understood by referring to the cut-away diagram (Figure 24). It will be noted that the wheel cylinder

Major Adjustment—It is imperative that the following adjustments be carried out in sequence as outlined below:

1. Loosen the rear shoe heel anchor pin nut (B). Loosen the front shoe heel anchor pin nut (A) and reverse anchor nut (C) sufficiently to allow rotation of the anchor pins. With an Allen wrench, turn the anchor pins (B) and (A) to their off positions, which may be determined by ob-

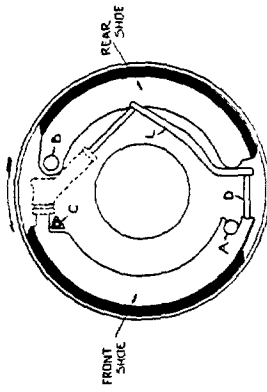


Figure 24

Diagram Showing Action of the Wagner Hi-Tork Brake on a Forward Stop

serving the brake shoe movement. It will be necessary to tap reverse anchor pin (C) to loosen it in the backing plate before it can be rotated. With an adjustable wrench, turn reverse anchor (C) to its off position. Remove adjustment hole cover (F). Insert a heavy screwdriver through the adjustment hole in the backing plate and engage star wheel (E). Move the axle and rotate the star wheel (E) (Fig. 23) to contracted position. This position of anchors and shoes permits the assembly of hub and drum over newly relined shoes.

2. Insert .012 feeler gauge through inspection hole in drum approximately $1\frac{1}{2}$ " from toe end of front shoe lining. Rotate from toe end of front shoe lining. Rotate anchor pin (C) in direction of forward rotation of the drum until feeler gauge is just free between the lining and the drum.

3. Move drum inspection hole to approximately $1\frac{1}{2}$ " from heel end of front shoe lining. Insert .008 feeler gauge be-

brake is also very effective because all of the lining is energized on forward stops, due to the two forward shoe action.

The Wagner Electric Corporation, manufacturers of the Wagner Hi-Tork Brake, have published the following instructions covering the servicing of this brake:

Minor Adjustment—These adjustments should be carried out in sequence as outlined below. First make sure that wheel bearings are in good condition and properly adjusted and that the lining is free from grease.

1. Loosen reverse anchor nut (C) (Fig. 25) sufficiently to allow rotation of anchor pin. It will be necessary to tap anchor pin to loosen it in the backing plate before it can be rotated. With an adjustable wrench, turn anchor pin in direction of forward wheel rotation, as shown by arrow, until a brake drag is felt. Then back off anchor until drag is relieved and a .012 feeler gauge can be inserted through the drum inspection hole $1\frac{1}{2}$ " from the toe end of the lining. Lock anchor nut securely. Rotate drum to check for high spots or drum eccentricity.

2. Remove adjusting hole cover (F) (Fig. 25), insert a screwdriver and rotate the star wheel (E) (Fig. 23), moving the handle of the screwdriver upward in direction of the axle, until a drag is felt. Release rear shoe (Fig. 23) from drag by rotating star wheel (E) in opposite direction from above, moving screwdriver handle downward away from axle, until the drag is relieved and a .012 feeler gauge can be inserted through the drum inspection hole $1\frac{1}{2}$ " from the toe end of the lining adjacent to the star wheel. Rotate drum to check for high spots or drum eccentricity. Replace adjusting hole cover.

Note: Anchor pins (A) and (B) are not to be disturbed unless new lining is installed or other adjustments fail to give results. No adjustments should be made unless drums are at normal temperature.