

BRAKE SYSTEM TROUBLESHOOTING



Brake Caliper

| CONDITION | CAUSE | CORRECTION |
|---|---|---|
| No pressure to brake. | <ol style="list-style-type: none"> 1. Empty fluid reservoir. 2. Damaged hydraulic system. | <ol style="list-style-type: none"> 1. Fill reservoir to correct level with specified fluid. 2. Repair hydraulic system. |
| Piston does not move. | <ol style="list-style-type: none"> 1. No pressure to brake. 2. Piston cocked in bore. | <ol style="list-style-type: none"> 1. Fill reservoir to correct level with specified fluid, 2. Piston diameter worn less than 2.621 inches (66.57 mm): <ul style="list-style-type: none"> • Replace piston <p>Caliper bore diameter worn greater than max wear allotted in OE specifications:</p> <ul style="list-style-type: none"> • Replace caliper housing |
| Brake leaking. | <ol style="list-style-type: none"> 1. Loose bleeder screw. 2. Loose inlet fitting. 3. Damaged inlet fitting. 4. Worn or damaged O-rings and/or backup rings. 5. Loose adjuster pin nut. | <ol style="list-style-type: none"> 1. Tighten bleeder screw to OE specifications. 2. Tighten inlet fitting. 3. Replace inlet fitting. 4. Replace O-rings and/or backup rings. Inspect piston for wear and damage. Service as necessary. 5. Tighten adjuster pin hex nut to OE specifications. |
| Vehicle does not move. | <ol style="list-style-type: none"> 1. Parking brake applied. 2. Damaged hydraulic system. | <ol style="list-style-type: none"> 1. Release parking brake. 2. Repair hydraulic system. |
| Brakes dragging on disc and running too hot. | <ol style="list-style-type: none"> 1. Pressure (above OE specifications) applied when brakes are released. 2. Vehicle or equipment not operated correctly. 3. Piston cocked in bore. 4. Incorrect adjuster assembly. | <ol style="list-style-type: none"> 1. Repair hydraulic system so that pressure is set to the OE specifications when brakes are released. 2. Advise operator on correct vehicle or equipment operation. 3. Piston diameter worn below OE specifications: <ul style="list-style-type: none"> • Replace piston <p>Caliper bore diameter worn below OE specifications:</p> <ul style="list-style-type: none"> • Replace caliper housing <p>Tapered lining wear:</p> <ul style="list-style-type: none"> • Replace linings. <ol style="list-style-type: none"> 4. Check and adjust. |
| Brakes do not apply or not enough braking force. | <ul style="list-style-type: none"> • Wedge assembly installed wrong. • Power unit installed wrong. • Leak or restriction in brake lines or valves. • Hydraulic cylinder seal or air chamber diaphragm damaged. • Air in hydraulic system. • Brakes not adjusted correctly. • Grease or other contamination on brake linings. • Linings worn, damaged or missing. • Low fluid level in master cylinder or reservoir. • Low operating pressure at hydraulic cylinder. | <ul style="list-style-type: none"> • Install correctly. • Install correctly. • Repair brake lines or valves. • Repair or replace hydraulic cylinder or air chamber. • Remove air from hydraulic system. • Adjust brakes. • Clean or replace brake linings. • Repair or replace linings. • Fill to correct level. • Inspect hydraulic system and correct cause of low pressure. |
| Brake does not hold vehicle on a grade. | <ol style="list-style-type: none"> 1. Brake pressure is not released. 2. Brake not adjusted properly. 3. Worn or damaged spring washers. 4. Vehicle parked on a grade over 15%. 5. Brakes not burnished. | <ol style="list-style-type: none"> 1. Repair brake system as required. 2. Adjust brakes. 3. Remove and replace spring washers. 4. Park vehicle on less than a 15% grade. 5. Burnish brakes. |

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| <p>Spring brake not holding.</p> | <ul style="list-style-type: none"> • Power spring(s) not fully released (spring is caged). • Air or hydraulic pressure that holds spring(s) in compressed position is not fully released. • Brakes not adjusted correctly. • Power spring(s) weak or broken. • Grease or other contamination on brake linings. | <ul style="list-style-type: none"> • Release (uncage) power spring(s). • Repair air or hydraulic system. • Adjust brakes correctly. • Replace spring(s). • Clean or replace brake linings. |
| <p>Brakes dragging.</p> | <ul style="list-style-type: none"> • Not enough air or hydraulic pressure to hold spring brake in compressed (off) position. • Brake lines connected to wrong ports. • Leaks in brake lines or seals of spring brake. • Wheel bearings not adjusted correctly. • Drum has runout surpassing OE specifications. • Shoe return springs are weak, damaged or missing. • Restriction in brake line or valve does not permit complete release of system pressure when brake pedal is released. • Plungers corroded or cannot retract completely. • Plunger seal damaged or installed wrong. • Air in hydraulic system. • Residual system pressure. | <ul style="list-style-type: none"> • Repair air or hydraulic system. • Connect lines to correct ports. • Repair or replace brake lines or seals. • Adjust wheel bearings. • Repair or replace drum. • Replace shoe return springs. • Repair or replace brake lines or valves. • Repair or replace plungers. • Replace seal. Install correctly. • Remove air from hydraulic system. • Reduce or remove residual pressure. |
| <p>Brakes dragging.</p> | <ul style="list-style-type: none"> • Not enough air or hydraulic pressure to hold spring brake in compressed (off) position. • Brake lines connected to wrong ports. • Leaks in brake lines or seals of spring brake. • Wheel bearings not adjusted correctly. • Drum has runout surpassing OE specifications. • Shoe return springs are weak, damaged or missing. • Restriction in brake line or valve does not permit complete release of system pressure when brake pedal is released. • Plungers corroded or cannot retract completely. • Plunger seal damaged or installed wrong. • Air in hydraulic system. • Residual system pressure. | <ul style="list-style-type: none"> • Repair air or hydraulic system. • Connect lines to correct ports. • Repair or replace brake lines or seals. • Adjust wheel bearings. • Repair or replace drum. • Replace shoe return springs. • Repair or replace brake lines or valves. • Repair or replace plungers. • Replace seal. Install correctly. • Remove air from hydraulic system. • Reduce or remove residual pressure. |

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| <p>Brake does not release.</p> | <ol style="list-style-type: none"> 1. Damaged hydraulic system. 2. Piston cocked in bore. 3. Hydraulic pressure below OE specifications. 4. Worn or damaged seals and/or back-up rings. 5. Piston does not move. 6. Worn or damaged spring washers. | <ol style="list-style-type: none"> 1. Repair hydraulic system. 2. Replace housing if large end, or small end of bore exceeds OE specifications. Replace piston if large end, or small end diameter is worn below OE specifications. 3. Increase hydraulic pressure to OE specifications. 4. Replace seals and/or back-up rings. 5. Replace housing if large end of bore, or small end of bore exceeds OE specifications. Replace piston if large end diameter, or small end diameter is worn below the OE specifications. 6. Remove and replace spring washers. |