



Electric Trailer Brakes



Operation and Service Manual

Whether you are a "trailerite" of long standing, or a new member of this happy and growing fraternity, your new travel trailer holds promise of many miles and many years of gracious living and interesting experiences.

The information given on these pages will show you how your Kelsey trailer brake system operates, and enable you to keep your equipment operating on top efficiency, giving you the maximum return in pleasure, safety and dependability.

The electric brakes on your trailer are manufactured by The Kelsey-Hayes Company, world's largest maker of automotive wheels, and a leading name in the field of electric brakes and related products. You will want to complete your trailer brake system by installing a Kelsey Automatic Controller in your car or other towing vehicle, giving you matched equipment, engineered for a completely balanced braking system.

Kelsey manufactures all the parts you need for quiet, dependable "rolling and stopping" of your trailer. These include wheels, hubs and drums, as well as brakes, automatic and manual controllers, and all other necessary components. They are engineered and made in a balanced combination to give you the maximum in quiet, trouble-free, long-term operation with a minimum of service and maintenance requirements. Be sure that your system is a Kelsey system throughout.

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KELSEY-HAYES COMPANY
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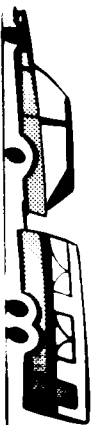
1

HOW TO USE CAR AND TRAILER BRAKES

The best brake system is only as good as the way you use it. Here are three important rules for safe, efficient braking.

1. Always use your car and trailer brakes together.

By following this simple rule, you will get more mileage out of your tires as well as your brakes, and you will have far less fatigue in driving. You will enjoy your trailer more, too, and most important — you will be a safer, more confident driver.



Use automatically synchronized applications of car and trailer brakes and you can drive normally with both hands on the steering wheel. The proper brake adjustment is with a slight "lead" on the trailer brakes. Then, the car brakes stop the car, trailer brakes stop the trailer, and between them you have smooth operation with minimum stopping distance. You enjoy driving and have maximum control at all times.

2. Never use your trailer brakes alone.

Your trailer brakes have ample capacity to handle the trailer alone,

but don't expect them to stop your car as well. If you do, you'll be putting excessive loads on them. This causes



overheating, rapid wear (brakes wear much more rapidly when hot) and fade (loss of braking power). The trailer alone is load enough for trailer brakes.

3. Never use your car brakes alone.

While the brakes on your car give you plenty of margin for car operation, they'll be badly over-loaded if you try to make them stop your trailer too. Adding the weight of the trailer to the weight of the car may more than double their load. This overloading makes car brakes heat up, wear out faster, and makes them "fade"



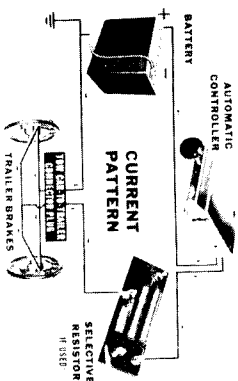
sooner. It makes the trailer push the car, making it hard to control, especially on slippery pavement or loose gravel, where it may jackknife.

BE SURE YOU HAVE BRAKES ON EVERY WHEEL. IF YOUR TRAILER IS HEAVY ENOUGH TO NEED 4 OR 6 WHEELS, IT IS HEAVY ENOUGH TO NEED 4 OR 6 BRAKES, TOO.

2

HOW THE TRAILER BRAKE SYSTEM OPERATES

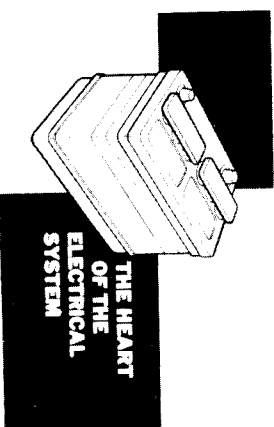
First, let's get a clear idea of the overall trailer brake system. It is basically an electrical circuit. This means that it must be a complete, clean, tight



conductor from beginning to end, and it begins and ends at the battery. Any break or poor connection will prevent or interfere with the flow of electrical energy, which means loss of braking.

1. Battery

We start with the battery in your car. This is the source of electrical



energy which we use to operate the brakes. While we could connect directly to the positive pole on the battery, it is usually more convenient (and just as good) to make the power connection at other points.

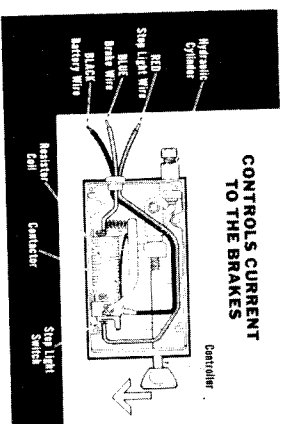
- Vehicles with D.C. generator Make the power connection at (a)

the "BAT" terminal on the voltage regulator or (b) the battery terminal of the starter solenoid.

- Vehicles with alternator Make the power connection at (a) the "BAT" terminal of the starter solenoid, or (b) the positive (+) post at the battery.

2. Controller

From the battery the circuit goes first to the controller. The Kelsey



automatic electric brake controllers are designed to provide best possible automatic or manual trailer brake control. Automatic control is obtained by connecting the controller hydraulically into the vehicle hydraulic system. Manual control is obtained by activating the controller handle. When the controller is activated either automatically by depressing the brake pedal or manually by using the handle only, the contactor bar comes in contact with the resistor coil and allows current to flow through the resistor coil to the brakes. As pressure is applied, the contactor bar rides farther down the resistor coil allowing more current to flow to the trailer brakes.

It is strongly recommended that a fuse not be installed in the wiring of the controller. If the braking circuit is fused and the fuse is blown, the operator would not be aware of the loss of function either automatically or manually.

3. Selective Resistor

Next in line in the trailer brake system (if used) is the selective resistor.



SELECTIVE RESISTOR

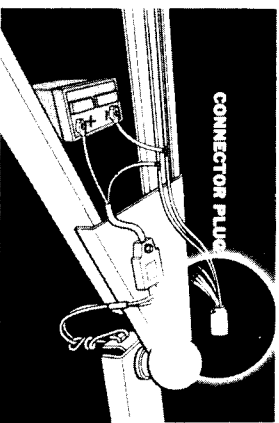
The Kelsey selective resistor is needed whenever brake capacity exceeds the trailer brake requirements. It prevents premature trailer wheel skid by balancing current input to actual trailer load. This is usually mounted on the firewall of the towing vehicle and connected to the blue line from the controller to the brakes.

There are eight (8) different resistance combinations to fine tune the complete brake system. If the setting

is correct, the controller full "on" position should provide firm braking action just short of skidding on dry pavement. Follow the chart and change the setting to achieve greater or less braking, as required.

4. Tow car -to- Trailer Connector Plug

A tow car-to-trailer connector plug is needed so you can easily connect or

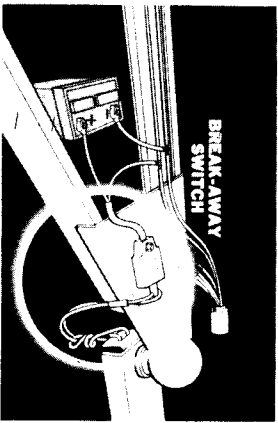


CONNECTOR PLUG

disconnect the trailer from the tow car. Since corrosion or bad connections will interfere with the flow of current when needed, it is important to keep this connection clean, tight, and well protected from the weather.

5. Break-away Switch

The break-away switch is one of the most important parts of your



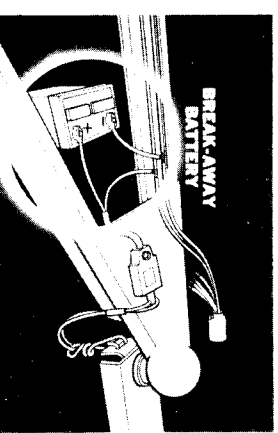
BREAK-AWAY SWITCH

trailer electric brake system. The very instant a break-away occurs, the pull-pin which is linked to the tow car, is pulled from the switch. The two

contacts automatically close to complete the electrical circuit and apply the trailer brakes. Break-away switches are required by law in most states.

6. Standby Battery

A standby battery mounted on the trailer is used to supply the electrical

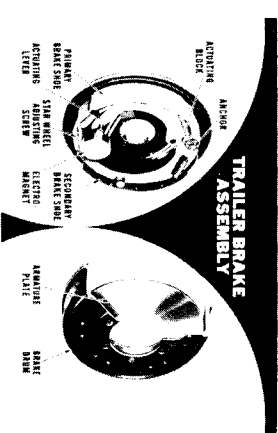


BREAK-AWAY BATTERY

power to apply brakes in the event of break-away. An automotive 12-volt battery is recommended. Check the battery periodically to make certain that sufficient current is always available to apply and hold the trailer brakes in an emergency.

7. Trailer Brakes

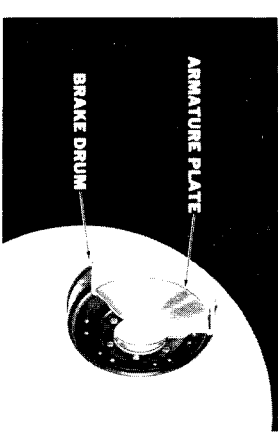
This is where electrical energy is converted into mechanical energy to



TRAILER BRAKE ASSEMBLY

provide braking force for smooth, safe stops. Let's look at the operation of a typical Kelsey electric brake and drum assembly.

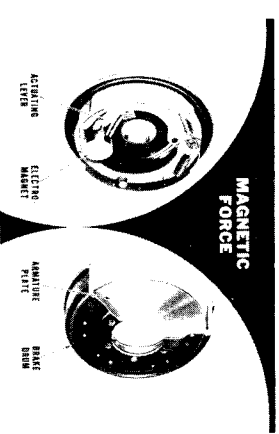
The armature plate is rigidly attached to the drum, or is cast into the drum and turns with drum and wheel.



ARMATURE PLATE

BRAKE DRUM

As current is applied to the electromagnet, the magnetic force draws the magnet against the armature plate, operating the actuating lever in the direction in which the drum is turning.



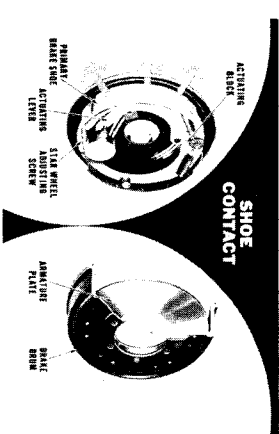
MAGNETIC FORCE

ACTUATING LEVER

ARMATURE PLATE

BRAKE DRUM

The lever turns the actuating block forcing the primary brake shoe out against the inside of the drum and down against the adjuster screw. The force against the adjuster screw pushes the secondary shoe outward against



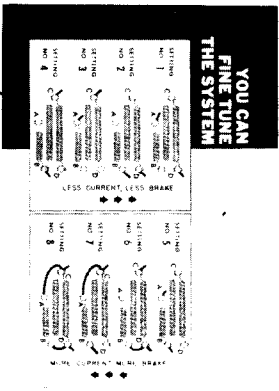
SHOE CONTACT

ACTUATING LEVER

ARMATURE PLATE

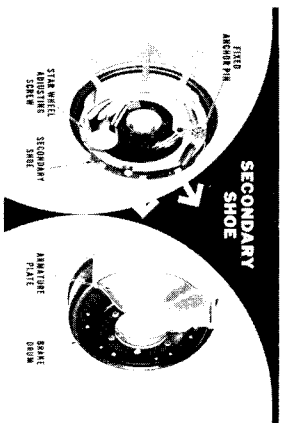
BRAKE DRUM

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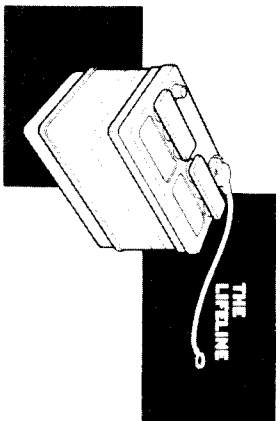
YOU CAN FINE TUNE THE SYSTEM

the drum and up against the fixed anchor pin, thus stopping the drum and wheel.



8. Ground

Many service problems are due to poor or defective grounding. While it may seem that, since we have reached the brakes the rest is secondary, the



fact is that a poor ground circuit back to the battery will interfere with efficient brake operation just as much as a poor circuit to the brakes. Grounding through the trailer frame or at the hitch is very poor practice, and may cause a failure in the circuit just when you need your brakes most.

3

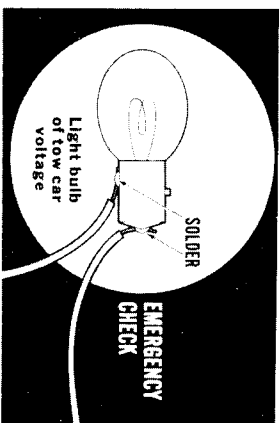
MAINTENANCE PROCEDURES

CHECKING THE ELECTRICAL CIRCUIT

Now that we have a basic understanding of how the electric trailer brake system and its components work, let's venture into checking the electrical circuit and components, checking the mechanical components and trouble shooting the system.

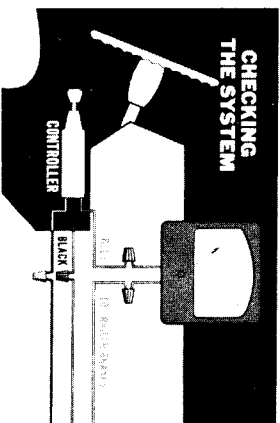
1. Test Instruments

In order to properly check the electrical circuit and components, a D.C. ammeter should be used. (0-15 amps for 2 to 4 brakes, and 0-25 amps for 6 brakes). However, in an emergency, an automotive 12-volt stop light bulb can be used by soldering a 6-inch wire to one of the bulb terminals and another 6-inch wire to the light bulb base.



2. Testing the Circuit

First, check the continuity of the system. To do this, connect the trailer

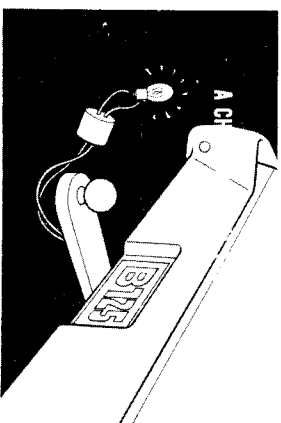


to the towing vehicle, then place the ammeter or test bulb in series to the blue wire leading from the controller to the trailer brakes. NOTE: Whenever connecting the ammeter, you can avoid possible damage to the ammeter by connecting one lead then just touching the other lead quickly. If the needle goes the wrong way, you have reversed the polarity. To correct, simply reverse the leads, then complete the connection. Now, operate

the controller slowly. The cut-in or lowest current should read from 1 to 1-3/4 amps. The reading will vary, depending on the voltage and the number of brakes in the system. Maximum current value on 10" and 12" brakes is 6.0 to 6.5 amps and on the 7-1/4" brakes is 3.8 to 4.4 amps. All readings are for two brakes: multiply by 2 for four brakes. The values given are without selective resistor in the circuit. If a selective resistor is used, put both wires at a common terminal to check these values.

3. Check without Trailer

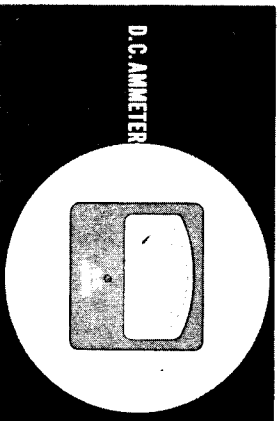
If the trailer is not available, a quick check of the tow car circuit may



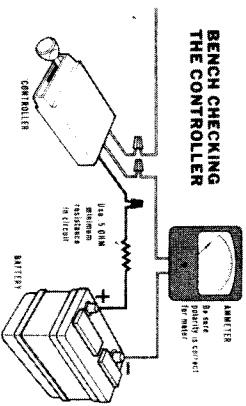
be made by inserting a test bulb at the tow car connector plug. Have someone operate the controller slowly. If, as the controller handle is moved toward "on", the light goes from dim to bright, the tow car circuit is probably all right.

CHECKING THE ELECTRICAL COMPONENTS

When, after checking the circuit, the trouble is located in a specific component (such as the controller or a brake magnet), it is advisable to remove this component and check it on the bench.



1. Automatic Controller Bench Check
To bench check the controller, connect to ammeter or test light as shown.

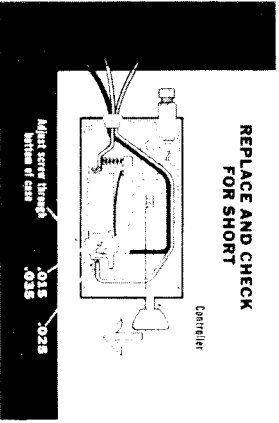


If ammeter is used, be sure to use 5-ohm resistance in line. The ammeter or test light should vary smoothly from "off" to "on". If it does not vary smoothly or shows no current when the controller is at full "on", remove the controller cover and inspect the resistor coil. If the resistor coil is burned out, it must be replaced. A burned out coil can be detected by visual inspection.

CAUTION: The resistor coil should last indefinitely under normal operating conditions. If the coil is burned out, carefully check the entire electrical system for a short. A short circuit can damage any electrical brake controller.

After replacing the coil, be sure there is at least .015" to .035" clearance between the contactor strip and the coil when the controller handle is unapplied. Check to see if there is at least .025" clearance between the contactor points on the stop light circuit when the controller handle is unapplied. This gap can be adjusted by loosening one screw through an access

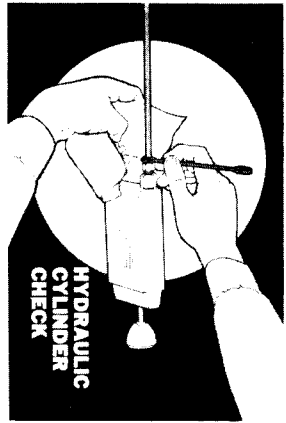
hole in the bottom of the controller case.



NOTE: Modulator II controllers are a non-serviceable item — replace with new controller.

2. Hydraulic Cylinder Leakage

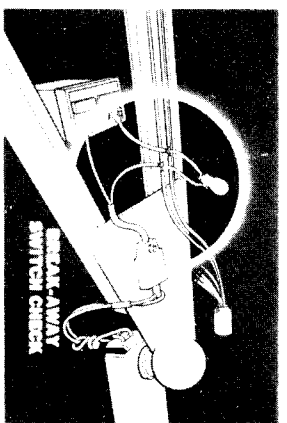
When checking the electrical circuit of the controller, it is advisable to



check its hydraulic cylinder at the same time to be sure it is tight and free of leakage. However, if leakage does occur, it is recommended that the complete hydraulic cylinder assembly be replaced. When reconnecting the controller into the hydraulic system of the tow car, be sure to bleed and check connections for leakage. Check tubing for kinks, dings, or worn spots. Replace with correct steel tubing. **No copper permitted.**

3. Break-away Switch

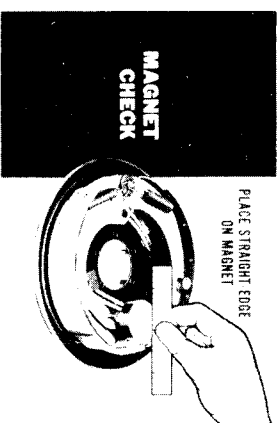
The break-away switch can be



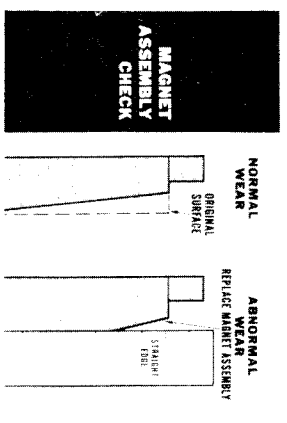
checked simply by placing an ammeter or test light in the circuit between the break-away switch and the brakes, then pulling out the break-away pin. If no current flows to the brakes, check to be sure the break-away switch contacts are clean. Check the battery for full charge. Replace battery if necessary.

4. Magnet Assembly

Without removing the magnet assembly from the brake, inspect the

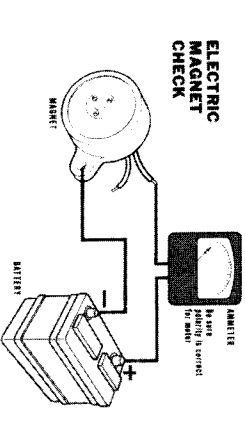


magnet for wear and flatness. If the magnet rubbing surface is flat, it need not be replaced until the friction element shows signs of wearing through. To check the wearing surface for flatness, lay a scale or straight-edge on the magnet. If the magnet wears unevenly, check for worn pivot bushing. If this condition exists, the lever assembly should be replaced.



5. Magnet Bench Check

To check electrically, remove the magnet for bench test. To check for

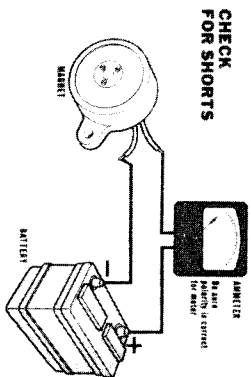


possible coil-to-case short, connect in series with ammeter or test light. Make sure battery has full charge. Connect one of the ammeter or test light lead wires to one of the magnet wires, and the other ammeter or test light lead wire to the battery positive post. (For this test, one of the magnet wires is not connected.) Connect a separate piece of 16-gauge wire from the battery negative post to the magnet case. Move leads and tap magnet in checking, since the short may be intermittent. If ammeter shows current or test bulb lights, a short is indicated and the magnet must be replaced. Switch the wires leading from the magnet to the ammeter or test light and repeat the test.

Next, check for shorts within the magnet coil. Connect one magnet lead

wire to ammeter and the other to the battery negative post. Connect other ammeter lead to positive post. Amperage reading should be between 3.0 and 3.5 amps on the 10" and 12" brake and between 1.7 and 2.2 amps on the 7-1/4" brake. If current reading is greater than amperage values, magnet should be replaced. If reading is lower, check battery charge. Lower

readings indicate inadequate power source.

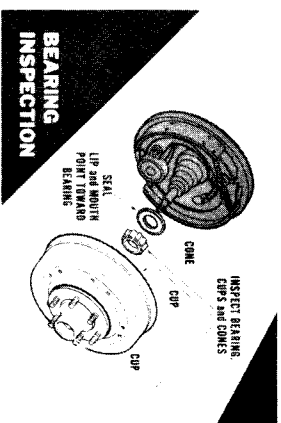


CHECKING THE MECHANICAL COMPONENTS

Proper maintenance of mechanical components is one of the most important steps in maintaining a sound trailer brake system. The trailer brake assemblies and related parts provide stopping force for smooth, safe stops.

1. Bearings and Seals

Remove the hub, drum and armature plate assembly. Inspect the

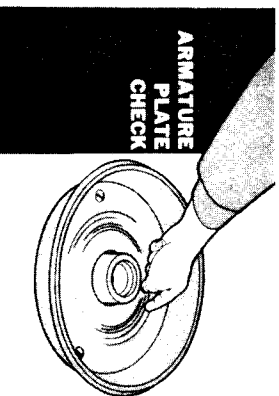


bearing cups and cones for wear or damage. If damaged, replace with new bearings, cups and cones. Always replace cups and cones in sets. Inspect seals for damage; replace if necessary.

2. Armature Plates

Inspect the armature plates. Under normal conditions — the armature

plate should last indefinitely. However, if an armature plate shows excessive galling due to severe contamination (mud, small stones, etc.) it can easily be replaced. In the case of unicast hub and drum, the entire unit must be replaced.

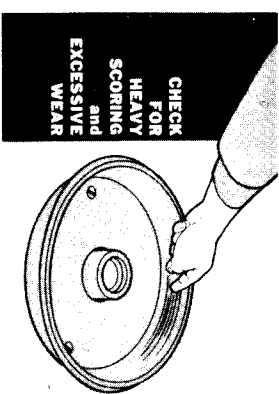


NOTE: Always inspect the magnet assembly when replacing an armature plate since the same condition which caused damage to it may also have caused magnet damage. If the magnet

is wearing flat it need not be replaced with the armature plate unless it is badly worn.

3. Brake Drums

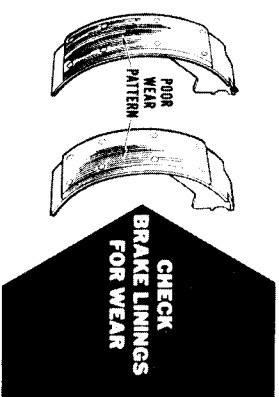
Inspect the brake drum rubbing surface. This surface should have a dull



gray appearance free from heavy scoring and/or excessive wear. One or two light score marks are not cause for reboring the drum. If the drum has heavy scoring, is worn more than .020" oversized, or has more than .015" runout, the drums should be rebored. A standard drum lathe may be used, taking care not to remove more than .060" from the original drum diameter. The drum should be discarded if it must be bored more than .060" over its original diameter to clean up the surface.

4. Brake Lining

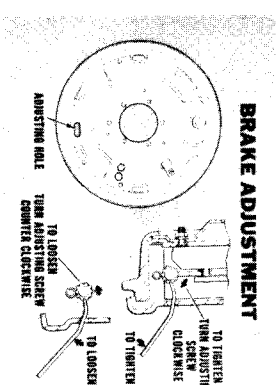
First, inspect the brake lining for



wear. If a lining is worn within 1/32 of an inch to the rivets it should be replaced. Inspect for uneven lining wear patterns and replace if this condition exists. If lining is badly contaminated with grease, oil, etc., it must be replaced, since contamination of this type cannot be sanded or dissolved out. Always replace brake linings in sets — on both brakes on the same axle.

5. Brake Adjustment

Kelsey's two-shoe electric brakes are an automotive-type brake, and the



method of adjustment is the same as on most automobile brakes. The brake adjusting screw is at the bottom of the brake, and is accessible through an opening in the backing plate, which is sealed with a plug. After removing the plug, the adjusting screw may be turned in either direction with the blade of a screwdriver or with a standard brake adjusting tool. While spinning the wheel, turn the adjusting screw until the wheel has a heavy drag, then back off only until the wheel turns freely. Replace the plug to keep out dirt and moisture. However, if the brake adjusting screw is not accessible due to drop axle, the brake drum must be removed to make brake adjustment.

6. Boat Trailer Brakes

Special attention should be given to boat trailer brakes which are subject to immersion during boat launchings. When the boating season is over and before the trailer is stored, remove the brake drums and inspect the brake assembly. Be sure all parts are dry and free from corrosion, if necessary, disassemble the brake, clean the shoes, backing plate, etc. Then lightly lubricate the anchor, magnet pivot, shoe contact points on the backing plates, and the adjuster assembly. Inspect bearings and bearing seals; replace if necessary. Repack bearings and reassemble drum and wheel assembly.

7. Wheel Mounting.

After demounting the old wheel, remove all dirt, rust, grease and oil from stud threads. Do not lubricate threads. Position wheel on trailer. Inspect to insure full contact between the mounting surface (seat pads) of wheel and mounting surface of hub or brake drum. Start wheel nuts on studs. Finger tighten nuts. Tighten nuts in a (criss-cross) order to a torque of 85 to 90 ft.-lbs. (re-torque nuts after 50 miles of driving and periodically thereafter). After wheels (with tires) have been mounted, visually inspect to insure no interference with body or other component parts.

4

TROUBLE SHOOTING ELECTRICAL CIRCUITS

ELECTRICAL CIRCUITS

1. No current flow apparent (will result in no brakes)
 - a. Check for proper wiring of the electrical circuit
 - b. Be sure all connections are clean, dry and tight — especially at tow car-to-trailer connector plug.
 - c. Check the controller resistor coil.
2. Minimum and maximum readings too high (will result in excessive and grabby brakes — possible controller burnout).
 - a. Short in wiring. Carefully check circuit for frayed insulation, etc.
 - b. Short in brakes. Remove the magnet terminal components from the brake backing plates and inspect for evidence of shorting. Remove magnet assemblies and check for worn leads. Bench check for internal shorts. Replace if necessary.
 - c. Stop lights connected in brake circuit.
3. Minimum and maximum readings too low (will result in insufficient brakes)
 - a. Poor circuit connections or inadequate ground.
 - b. Open circuit in at least one magnet. Check the current flow in each brake. If there is no current flow through either of the magnets, check the magnet leads and bench check magnet.
 - c. Brakes wired in series. Re-check tow car circuit.
4. No modulation — only maximum current available (will result in grabby brakes)
 - a. Check for burned out controller resistor coil.
 - b. Intermittent current flow (will cause intermittent or possible surging brakes)

Intermittent current flow is usually caused by attempts to ground through the trailer hitch. It may also be caused by a magnet lead which is partially severed causing intermittent contact with every wheel revolution. Another cause may be a broken or frayed wire at any point in the system. To locate the cause of this intermittent current flow you may have to install your ammeter or test light at the controller and have an assistant observe under actual driving conditions.
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PROBLEM: NO BRAKES

Probable Cause	Remedy
Open Circuit	Check for broken wires, loose connections, improper grounding, faulty connector plug between car and trailer, etc.
Improperly Wired or Inoperative Controller	Rewire controller. Check controller operation.
Poor Brake Adjustment	Adjust brakes.
Selective Resistor Defective	Check resistor for loose connections.
Worn or Defective Magnet	Replace magnets.
Short Circuit	Check electrical circuit.

PROBLEM: WEAK BRAKES

Probable Cause	Remedy
Poor Connections	Check that all connections are clean and tight.
Poor Ground	Do not depend upon grounding through the trailer hitch.
Short Circuit	Check electrical circuit.
Selective Resistor Setting Incorrect	Check for proper setting to avoid too much resistance.
Worn or Defective Magnets	Replace magnets.
Poor Brake Adjustment	Adjust brakes.
Backing Plate Bent	Check backing plate and flange. Correct if necessary.
Greasy Lining	Check for worn or damaged grease seals. Replace if necessary. Make sure bearings are packed with high-grade bearing grease, not cup grease or chassis lubricant.
Excessive Load on Trailer	Check to be sure your trailer is not underbraked. Too much weight will result in lack of torque, fade, poor performance. Also, be sure to have brakes on every axle — one set of brakes cannot be expected to handle the weight on two axles.
Using Trailer Brakes Only	Use of trailer brakes only, can cause early fade or loss of friction due to excessive heat.
Inadequate Gauge of Wire	See wiring recommendations.

PROBLEM: INTERMITTENT OR SURGING BRAKES

Probable Cause	Remedy
Out of Round Drums	Rebore drums if more than .015" out of round
Inadequate Trailer Ground	Check for proper grounding. (Note: A ground through trailer hitch is inadequate.)
Broken Magnet Lead Wires	Bench check magnets. Replace if necessary.
Loose Wheel Bearings	Check and adjust bearings.

5

TROUBLE SHOOTING MECHANICAL COMPONENTS

PROBLEM: GRABBY OR LOCKING BRAKES

Probable Cause	Remedy
Flanges Improperly Installed	Check flange location. Refer to axle manufacturer.
Grease on Lining	Check for contamination. Replace seals and lining.
Controller Not Modulating	Disconnect red wire on controller. Road test for braking modulation. If modulation is o.k., check red wire. Bench check controller—replace if necessary.
Improper Lining	Be sure replacement lining is genuine K-H lining. Replace, if necessary.
No Selective Resistor	A selective resistor is required when brakes have greater power than is necessary for the weight on the axle. Install selective resistor when necessary.
Loose Parts in Brakes	Check for loose rivets, broken springs, etc., jammed in brakes.
Rust in Armature Plate and/or Brake Drums	Caused by non-use. Usually corrected by normal continued use.

PROBLEM: DRAGGING BRAKES

Probable Cause	Remedy
Brakes Adjusted Incorrectly	Check brake adjustment.
Electrical Defect in Controller	Insufficient gap between controller contactor strip and coil may cause brakes to be on continuously. Correct condition.
Hydraulic Defect in Controller	Too high a residual pressure in the tow car hydraulic system or a "gummed up" controller cylinder may cause the controller to be held "on" slightly. Check and repair.
Flanges Improperly Installed	Refer to axle manufacturer.
Badly Corroded Brake Assemblies	Check brake assemblies for severe corrosion. Check to be sure magnet levers operate freely. Clean and lubricate brake assemblies.
Weak or Broken Shoe Return Springs	Check and replace if necessary.

PROBLEM: NOISY BRAKES

Probable Cause	Remedy
Lining Worn to Rivets	Check and replace shoe and lining.
Loose Parts — Rivets, Broken Springs, etc.	Check and repair
Flange Improperly Located, Bent Backing Plate	Check and repair if necessary.
Grease on Lining	Check and replace if necessary.
Improper Bearing Adjustment	Check and adjust bearings. Check for worn or damaged bearings. Replace if necessary.
Poor Adjustment	A certain amount of noise is normal when the brake releases. Proper adjustment will minimize this noise.

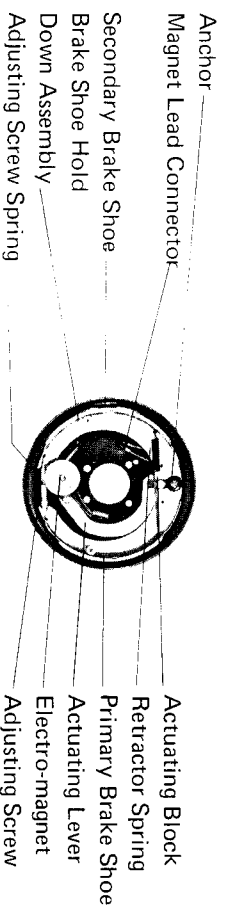
NOTE: Kelsey brakes are noted for quietness of operation. When properly installed, brake noise should not be evident. Consequently, it is wise to have your brakes checked if a noise does develop.

PROBLEM: STOP LIGHTS OR TURN SIGNALS INOPERATIVE

Probable Cause	Remedy
Incorrectly Wired	See instructions. Rewire if necessary.
Controller Stop Light Switch Improperly Adjusted	Adjust controller stop light switch.

6

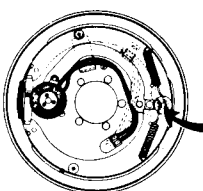
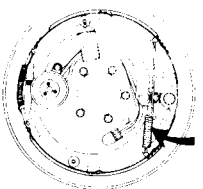
ELECTRIC BRAKE PARTS IDENTIFICATION



BRAKE IDENTIFICATION

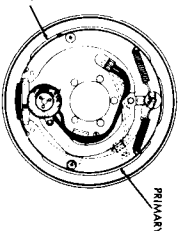
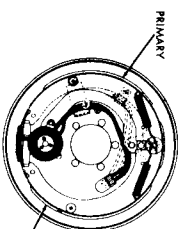
High Anchor
Single Retractor Spring

High Anchor
Dual Retractor Spring



SHOE AND LINING IDENTIFICATION

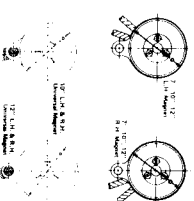
Note: 7 1/4" x 1 1/4" brakes use same size primary & secondary shoes.



L.H. Brake

R.H. Brake

MAGNET IDENTIFICATION



MAGNET DIAMETERS	
Brake Size	Diameter of Magnet Face "D"
7 1/2" Electric	2"
10" Electric	2-3/8"
12" Electric	2-1/4"

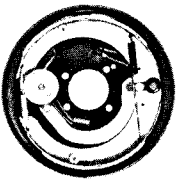
KELSEY ELECTRIC BRAKES

The electric brake in the Kelsey trailer products package has been proven by over a billion miles of trouble-free performance. Its two-shoe design allows uniform and controlled wear on each individual shoe. The Kelsey brake shoe lining is fix-ture-ground to fit the contour of the

brake drum and the electromagnet and armature surface are machined for proper mating. This allows maximum braking efficiency with a minimum of break-in time. And every electric brake is specifically designed to be easily installed using standard machining and welding equipment.

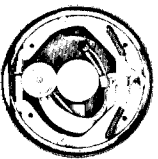
KELSEY ELECTRIC BRAKE 12 x 2"

Voltage 12 Volt
Maximum Capacity:
5200 Lbs. Per Axle



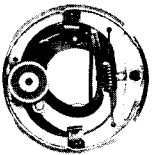
KELSEY ELECTRIC BRAKE 10 x 2 1/4"

Voltage 12 Volt
Maximum Capacity:
3500 Lbs. Per Axle



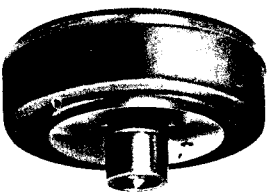
KELSEY ELECTRIC BRAKE 7 1/4 x 1 1/4"

Voltage 12 Volt
Maximum Capacity:
2000 Lbs. Per Axle



HUB AND DRUMS

The Hub & Drum assembly in the Kelsey Trailer package is manufactured to be a matched set with your Kelsey Trailer brakes. This allows you a balanced combination of maximum quiet, trouble-free, long-term operation with a minimum of service and maintenance requirement. All Kelsey Hub & Drums have a rib-type construction to eliminate bell mouthing and a thicker drum wall to offer better heat dissipation plus less brake fade.



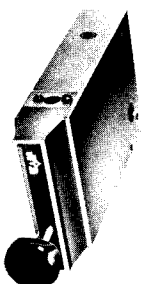
7

ELECTRIC BRAKE ACCESSORIES

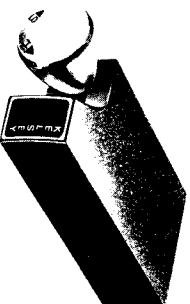
AUTOMATIC BRAKE CONTROLLERS

Kelsey Brake Controllers give you automatic or manual trailer brake control. These two electric brake controllers provide positive braking with fine synchronization between towing and trailer brakes. The Kelsey controllers are the only brake controllers to meet current automobile manufacturers brake fluid displacement requirements.

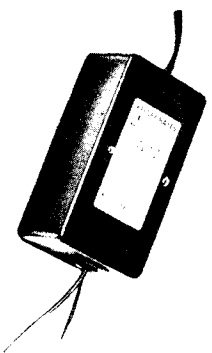
Maximum
6 Brakes



Maximum
4 Brakes



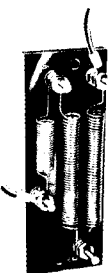
SELF-ACTUATING BRAKE CONTROLLER



Used for 7 1/4 x 1 1/4 Electric Brakes
 Used for 10 x 2 1/4 Electric Brakes

The Kelsey Self-Actuating (S/A) Brake Controller is mounted on the trailer tongue to smoothly and automatically operate the electric brakes (two or four). The controller is engineered to provide four stages of braking (light, medium, heavy or emergency braking). It senses the amount of tow car braking and instantly applies the electric trailer brakes proportionately. To compensate for varying trailer loads, four load control adjustments are built into the controller.

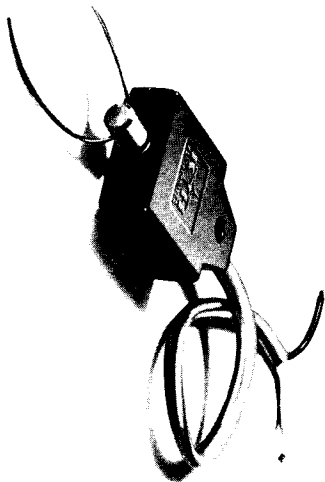
SELECTIVE RESISTOR



The Kelsey Resistor is necessary whenever brake capacity exceeds the trailer braking requirements.

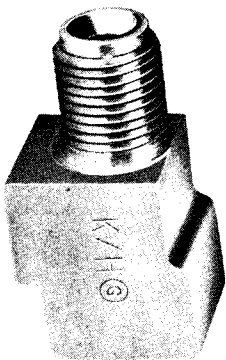
The Resistor has 8 graduated resistances to handle all trailers from the lightest to the heaviest. It is connected in the brake circuit between the controller and the brakes so that running lights, tail lights, stop lights and turn signals operate on the standard car circuit.

BREAK-AWAY SWITCH



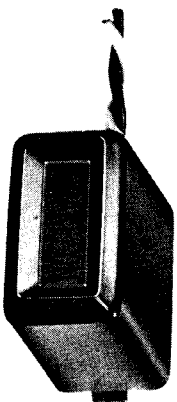
The Kelsey Electric Break-away Switch assures that if your car and trailer should ever "part company" on the highway, the trailer brakes are automatically applied to prevent its running wild.

TEE FITTINGS



Kelsey Tee Fittings are inserted into the vehicle's master cylinder. This is the connection for the hydraulic line from your Kelsey Brake Controller. Kelsey offers a complete line of domestic auto and pick-up tee fittings.

DASH LIGHT



Kelsey's dash light indicator illuminates when the trailer brakes are applied. The intensity of the light increases as the braking effort is increased. You can easily install it yourself in a matter of minutes.

TRU TRACK™

SWAY CONTROL

FOR TRAILERS WITH ELECTRIC BRAKES

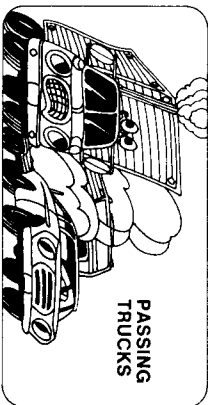
BY **Kelsey**

- 1. AUTOMATIC
- 2. EASY INSTALLATION
- 3. SOLID STATE
- 4. RUGGED DESIGN
- 5. DASH LIGHT INDICATOR

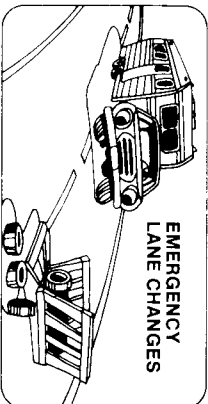
HELPS PROTECT YOUR TRAILER FROM DAMAGE DUE TO THESE HAZARDOUS ROAD CONDITIONS



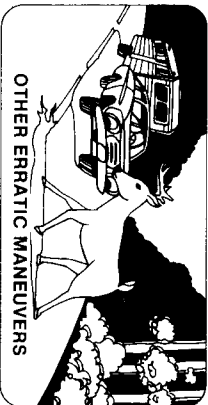
SUDDEN WIND GUSTS



PASSING TRUCKS

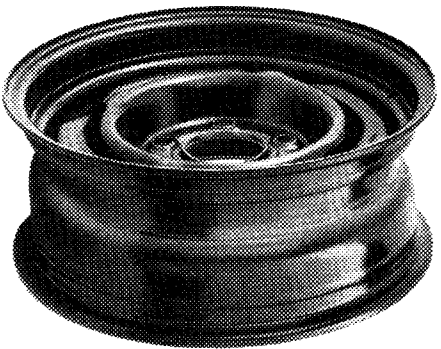


EMERGENCY LANE CHANGES



OTHER ERRATIC MANEUVERS

**THE WORLD'S
LARGEST
MANUFACTURER OF
WHEELS**



The wheels in the Kelsey Trailer package are manufactured to the same high standards we have used for the automotive industry over the last 60 years. Kelsey manufactures the largest variety of wheel sizes and bolt mountings for the Trailer market, more than any other supplier in the Trailer industry. Each of our wheels is rated for the maximum load capacity (pounds per wheel) and maximum P.S.I. inflation pressure. This assures you of receiving the proper wheels for your particular Trailer requirements.

**AND IF YOU TOW
WITH EITHER A
1/2-TON, 3/4-TON
OR 1-TON PICKUP
... WIDE
RIM
WHEELS**

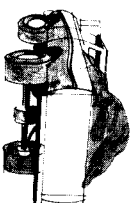


THEY GIVE YOU

- greater stability
- more traction
- improved flotation
- smoother ride
- increased load capacity
- longer tire life
- better braking
- lower loading height
- reduced hazards

LOAD CAPACITY

Wide Rim Wheels and Wide Base Tires generally have a higher load-carrying capacity than the conventional wheels and tires which they replace. However, do not exceed the vehicle manufacturer's maximum allowable load rating of the axle and springs.



STABILITY

KELSEY WIDE RIM WHEELS provide a broader, more stable base for all vehicles, on or off the road — on curves or straightaway — at low or high speeds.

