

USER'S GUIDE

Axle maintenance
and warranty



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Monday	8h to 12h - 13h to 17h
Tuesday	8h to 12h - 13h to 17h
Wednesday	8h to 12h - 13h to 17h
Thursday	8h to 12h - 13h to 17h
Friday	8h to 12h - 13h to 16h
Saturday	Closed
Sunday	Closed



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LIMITED WARRANTY

This user's guide for axles is intended to familiarize the owner with good operating. It is therefore imperative to read this document to ensure the longevity of your axles. Moreover, with the winter that we are used to, it is important to carry out rigorous maintenance and assisted inspection. Frameco strongly recommends that all maintenance operations and repairs are performed by qualified and competent professionals.

For any additional questions regarding axles models manufactured by Frameco, contact our experts at 1 888 235.6895.

LIMITED WARRANTY

Frameco offers a limited warranty against defects in manufacturing material, granted exclusively to the person or organization that made the initial purchase:

- **One (1) year** on parts and axles components manufactured by Frameco (spring axle / Flexiride). Exception: parts requiring maintenance within a 12-month period. Refer to the schedule pages 6-7;
- **Five (5) years** on any defects in workmanship and raw material (spring axle / Flexiride).

EXCLUSIONS

Frameco disclaims any and all liability or obligation under the limited warranty or any other warranty relating to:

1. Unreasonable use (**including a lack of regular maintenance as outlined in the schedule pages 6-7**);
2. Wheel alignment after use;
3. Connecting the brakes to the trailer wiring or to the towing vehicle's electrical circuit;
4. The hubs becoming unbalanced or any other damage caused during installation;
5. Parts not supplied by Frameco;
6. Any damage caused or connected to an intervention on the axles, including the welding of special supports;
7. The use of an axle on any other unit than the one on which it was initially installed;
8. Normal wear and tear;
9. To a bad installation;
10. The wrong tightening torque applied to the wheel nuts;
11. To aesthetic finish or corrosion;
12. A reinforced axle beyond the chuck's capacity.

LIMITED WARRANTY

CLAIM PROCEDURES

What you need to do:

1. Within the warranty period, you must notify the Customer service (1 888-235-6895 (option 2)) or via service@frameco.ca for any defects and provide us with all required documents:
 - **Serial number (if available)**
 - **Invoice number**
 - **Picture of the defective part**
2. Following Frameco's approval, you will be issued a Return of Parts Number (RGA). **It is imperative that you receive Frameco's approval in the form of a Return Number (RGA) before starting any work, otherwise no refund will be awarded;**
3. Finally, keep the defective parts for shipping to Frameco.

Depending to its choice, Frameco will replace, to the original owner, the defective parts or refund the listed price of these parts. Only installation costs allocated and explicitly approved by Frameco will be paid for.

WARNING

When installing the axles, it is important to check their alignment on the trailer. No warranty is applicable after use.

Axles must be installed and maintained in accordance with the appropriate industry practices and the explicit recommendations of Frameco, including those outlined in this *User's guide*. Otherwise, the warranty offered by Frameco can not apply.

MAINTENANCE SCHEDULE

Parts	Required action	Every week	3 months 4500km	6 months 9000km	12 months 18 000km
Bearing	Check for rust, clean and lubricate (100g/wheel). Readjust the wheel nuts			X	
Dust cap	If it is lost or damaged, clean the bearing and change the grease	If needed			
Wheel nuts and bolts	Tighten to the required torque		X		
Brake adjustment	Adjust them according to the specifications		X		
Brakes	Make sure they are working properly	Every use			
Brake magnets	Inspect wear and current draw			X	
Brake lining	Inspect wear and contamination			X	
Brake pressure modulator	Verify the intensity of the modulation			X	
Brake cylinders	Check for leaks or jamming				X
Brake line	Check for cracks, leaks or kinks				X
Electrical cabling for trailer brakes	Check for bare or frayed wires				X

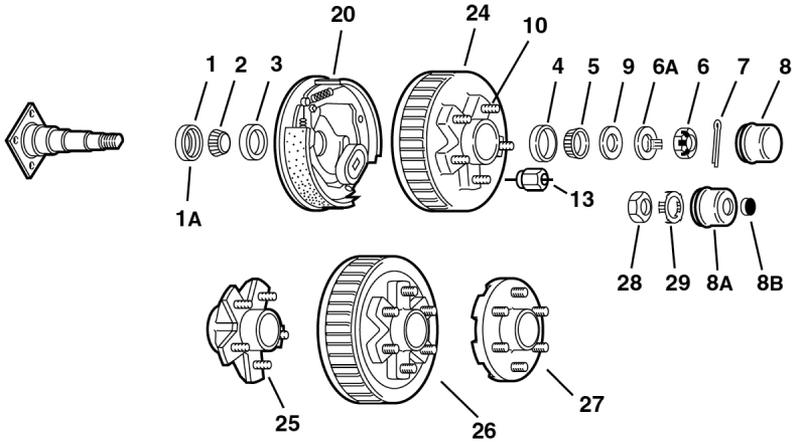
MAINTENANCE SCHEDULE

Parts	Required action	Every week	3 months 4500km	6 months 9000km	12 months 18 000km
Emergency brake	Check the load, the switch	Every use			
Hub / drum	Check for abnormal wear and grooves				X
Seals	Verify and replace when needed			X	
Springs	Inspect the wear and tightness				X
Suspension accessories	Make sure the bolts are not warped, loose or worn			X	
Spring hanger	Check the weld				X
Wheels	Check for cracks, indentations or deformities			X	
Tire pressure	Fill to manufacturer's specifications	X			
Tires	Make sure there are no cuts, wear or bulging		X		
Water immersion	Completely fill the cavity	Every use			

Axles must be installed and maintained in accordance with the appropriate industry practices and the explicit recommendations of Frameco, including those outlined in this *User's guide*. Otherwise, the warranty offered by Frameco can not apply.

MAINTENANCE

HUB COMPONENTS:



Grease lube parts	
Item	Description
1	Grease seal
1A	Grease seal for «E-Z Lube»
2	Inner bearing cone
3	Inner bearing cup
4	Outer bearing cup
5	Outer bearing cone
6	Spindle nut
6A	Washer tang for Flexiride
7	Cotter pin
8	Grease cap
8A	Grease cap for «E-Z Lube»
8B	Rubber plug for «E-Z Lube»
9	Spindle washer
28	Special jam nut
29	Spindle nut retainer

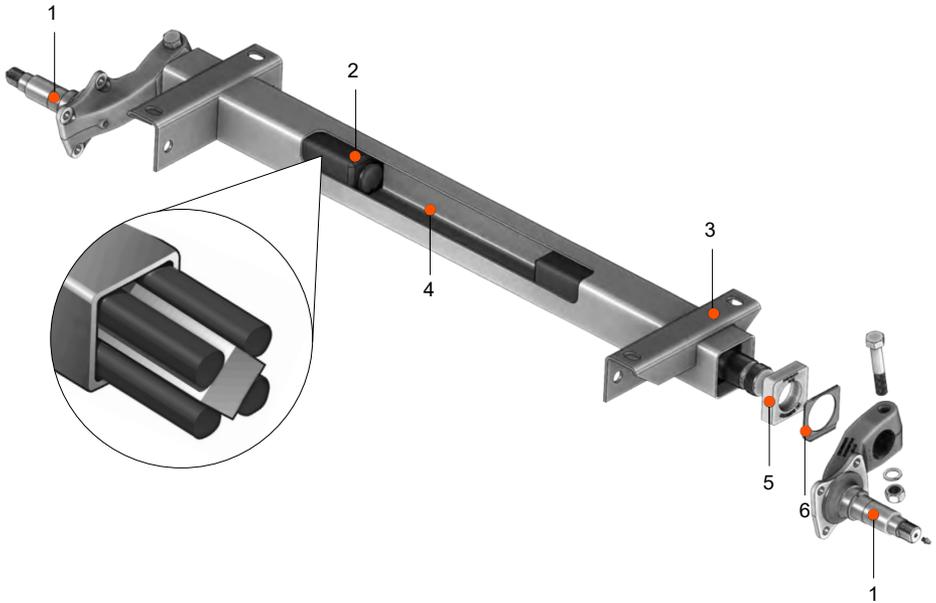
Studs & wheel nuts	
Item	Description
10	Pressed wheel stud
13	Cone nut

Brakes	
Item	Description
-	Electric Nev-R-Adjust
20	Electric
-	Electric (parking brake)
-	Hydraulic simple-acting
-	Hydraulic simple-acting (parking brake)
-	Hydraulic double-acting
-	Hydraulic double-acting (parking brake)
-	Hydraulic free backing
-	Hydraulic free backing corrosion resistant

Hubs	
Item	Description
Hub and drum	
24 - 26	1/2" stud
Plain hub	
25 - 27	1/2" stud

MAINTENANCE

FLEXIRIDE COMPONENTS:



Flexiride parts		
Item	Description	Advantage
1	Spindle arm	Easily adjust trailer height and all spindle arms are lubed.
2	Rubber	High quality proprieties rubber guarantees smoother and longer life. Press fitted cartridge reduces water penetration and corrosion exposure. A superior vibration damping due to rubber's natural absorbing capabilities.
3	Bracket	Quick and easy installation with only four bolts to mount.
4	Tubing	Adding strength and preventing frame twisting.
5	Nylon support bushing	Contributes additional damping control.
6	Retainer plate	Reduces friction.

MAINTENANCE

HUB REMOVAL

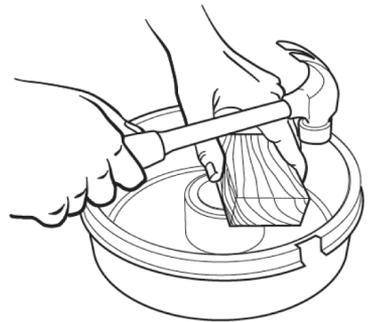
Whenever the hub equipment on your axle must be removed for inspection or maintenance the following procedure should be performed:

1. Elevate and support the trailer unit per manufacturer's instructions;
2. Remove the wheel;
3. Remove the grease cap by carefully prying progressively around the flange of the cap. If the hub is an oil lube type, then cap can be removed by unscrewing it counterclockwise while holding the hub stationary;
4. Remove the cotter pin from the spindle nut or, in the case of «E-Z Lube» versions, bend the locking ang to the free position. **The cotter pin is for single use only.** As soon as it's removed, it must be replaced by a new cotter pin;
5. Unscrew the spindle nut (counterclockwise) and remove the spindle washer;
6. Remove the hub from the spindle, being careful not to allow the outer bearing cone to fall out. The inner bearing cone will be retained by the seal;
7. On 7,2K and 8K a hub puller should be used to assist drum removal.

SEAL INSPECTION AND REPLACEMENT

Whenever the hub is removed, inspect the seal to assure that it is not nicked or torn and is still capable of properly sealing the bearing cavity. If there is any question of condition, replace the seal. Use only the seals specified in the bearing replacement chart page 12. To replace the seal:

1. Pry the seal out of the hub with a screwdriver. Never drive the seal out with the inner bearing as you may damage the bearing;
2. Apply a PERMATEX sealant to the outside of the new seal;
3. Tap the new seal at its place. Using a clean wood block.



MAINTENANCE

BEARING INSPECTION

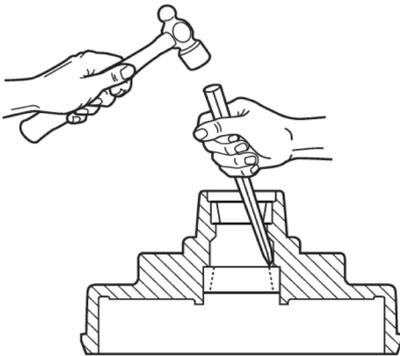
Wash all grease and oil from the bearing cone using a suitable solvent. Dry the bearing with a clean lint-free cloth and inspect each roller completely. If any pitting, spalling or corrosion is present, then the bearing must be replaced. The bearing cup inside the hub must be inspected.

IMPORTANT

Bearings must always be replaced in sets of a cone and a cup. In case of doubt, Frameco strongly recommends that all maintenance and repair work be performed by qualified and competent professionals, such as your trailer manufacturer.

When replacing the bearing cup proceed as follows:

1. Place the hub on a flat work surface with the cup to be replaced on the bottom side;
2. Using a brass drift punch, carefully tap around the small diameter end of the cup to drive out;



*Technic for removal of the bearing cup

3. After cleaning the hub bore area, replace the cup by tapping in with the brass drift punch. Be sure the cup is seated all the way up against the retaining shoulder in the hub.

Replace only with bearings as specified in table page 12.

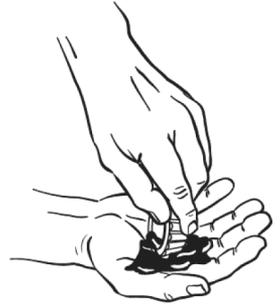
MAINTENANCE

BEARING LUBRICATION

Along with bearing adjustment, proper lubrication is essential to the current function and reliability of your trailer axle. Bearings should be lubricated every 6 months or 9000 km, as indicated in schedule pages 6-7.

METHOD FOR BEARINGS LUBRICATION

1. Place a quantity of grease into the palm of your hand;
2. Press a section of the widest end of the bearing into the outer edge of the grease pile closest to the thumb forcing grease into the interior of the bearing;
3. Repeat while rotating the bearing from roller to roller;
4. Continue this process until you have the entire bearing completely filled with grease;
5. Before reinstalling, apply a light coat of grease on the bearing cup.



BEARING REPLACEMENT CHART

Brakes size	Hub size	Bearings	Industry part (cup and cone)	Seal	Dust cap
7" x 1 1/4"	5 studs	Inside Outside	L44610 / L44649 L44610 / L44649	1789 (1") 2267E (1 1/16")	1445 1446 (STANDARD)
10" x 2 1/4"	5 studs	Inside Outside	L68111 / L68149 L44610 / L44649	2546F	1445 1446 (STANDARD)
12" x 2"	6 studs	Inside Outside	25520 / 25580 15245 / 15123	0014E (2 1/8") 0015E (2 1/4")	6045 6046 (STANDARD)
12" x 2"	8 studs	Inside Outside	25520 / 25580 14276 / 14125A	0014E (2 1/8") 0015E (2 1/4")	4045 4046 (STANDARD)
12 1/4" x 3 3/8"	8 studs	Inside Outside	25520 / 25580 02420 / 02475	1063	4045 4046 (STANDARD GREASE) 2135 (STANDARD OIL)

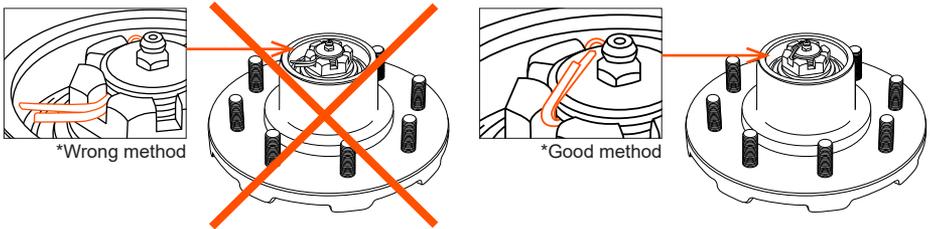
* If the dust cap is damaged or lost, it is important to clean the bearing and completely change the grease.

MAINTENANCE

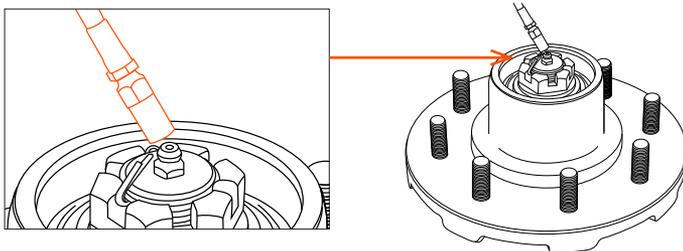
BEARING ADJUSTMENT AND HUB REPLACEMENT

If the hub has been removed or bearing adjustment is required, the following adjustment procedure must be followed:

1. After placing the hub (1), bearings (2), washers (3) and spindle nut (4) back on the axle spindle in reverse order as detailed in the previous section on hub removal the hub assembly slowly while tightening the spindle nut to approximately 50 lbs/ft (12" wrench or pliers with full hand force);
2. Then loosen the spindle nut to remove the torque (do not rotate the hub);
3. Back the spindle nut out slightly until the first castellation lines up with the cotter key hole and insert the cotter pin. **Note that you should never reuse the old cotter pin;**
4. Bend over the cotterpin legs to secure the nut (or locking tang in the case of «E-Z Lube»);



5. Nut should be free to move with only restraint being the cotterpin (or locking tang);
6. Lubricate the gauge with 100g (1/4 of tube) of lubricant (GADUS 220 (#XHP222) or equivalent), as presented in this image;



7. Install the dust cap.

* For the use of a boat trailer, it is important to put grease until it passes through the bearing.

TIRES AND WHEELS

TIRE INSTALLATION

Before mounting tires onto wheels make and contour is approved for the tire as shown in the Tire and Rim Association Yearbook or the tire manufacturers catalog. Also make sure the tire will carry the rated load. If the load is not equal on all tires due to trailer weight distribution, use the tire rated for the heaviest wheel position.

IMPORTANT

The capacity rating molded into the side wall of the tire is not always the proper rating for the tire if used in a trailer application.

Use the following guideline:

1. LT and ST tires: Use the capacity rating molded into the tire;
2. Passenger car tires: Use the capacity rating molded into the tire sidewall **divided by 1.10**.

TIRE AIR PRESSURE

Use tire mounting procedures as outlined by the rubber manufacturers association or the tire manufacturers.

Tire air pressure is the most important factor in tire life. Inflation pressure should be as recommended by the manufacturer for the load. The diagnostics table on page 15 you will help to detect the possible causes of wear and to remedy.

IMPORTANT

Tire wear should be checked frequently because once a wear pattern becomes firmly established in a tire it is difficult to stop, even if the underlying cause is corrected. If in doubt, Frameco strongly recommends that all maintenance and repair work be performed by qualified and competent professionals, such as your trailer manufacturer.

TIRES AND WHEELS

TIRE WEAR DIAGNOSTICS CHART

Wear pattern		Cause	Action
	Center wear	Over inflation	Ajust pressure to particular load per tire catalog
	Edge wear	Under inflation	Ajust pressure to particular load par tire catalog
	Side wear	Loss of camber or overloading	Make sure load doesn't exceed axle rating
	Toe wear	Incorrect toe-in	Correct toe-in
	Cupping	Out-of-balance	Check bearing adjustment and balance tires
	Flat spots	Wheel lockup & tire skidding	Avoid sudden stops when possible and adjust brakes

TORQUE REQUIREMENTS

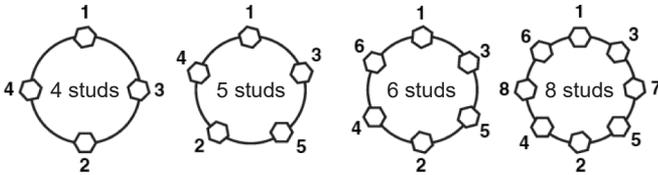
It is extremely important to apply and maintain proper wheel mounting torque on your trailer axle. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. For example, a force of 90 pounds applied at the end of wrench one foot long will yield 90 lbs.-ft. of torque. Torque wrenches are the best method to assure the proper amount of torque is being applied to a fastener.

IMPORTANT

Wheel nut or bolts must be applied and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle. Be sure to use only the fasteners matched to the cone angle of your wheel (usually 60° or 90°.) Follow the steps on page 16 to tighten the wheels.

TIRES AND WHEELS

1. Start all bolts or nuts by hand to prevent cross threading;
2. Tighten bolts or nuts in the following sequence;



3. The tightening of the fasteners should be done in stages. Following the recommended sequence, tighten fasteners per wheel torque chart below;
4. Wheel nuts/bolts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 10 miles, 25 miles and again at 50 miles. Check periodically thereafter.

WHEEL TORQUE REQUIREMENTS

Wheel size	Torque sequence		
	1 st stage	2 nd stage	3 rd stage
12"	20 - 25	35 - 40	50 - 75
13"	20 - 25	35 - 40	50 - 75
14"	20 - 25	50 - 60	90 - 120
15"	20 - 25	50 - 60	90 - 120
16"	20 - 25	50 - 60	90 - 120

PARAMETERS OF U-BOLTS TIGHTENING TORQUE, SPRINGS AND STABILIZERS

Diameter & thread / in	Grade	Sequence tightening pounce-ft
1/4" - 20	5	8
5/16" - 18	5	17
3/8" - 24	5	30
1/2" - 20	5	92
9/16" - 18	5	131
5/8" - 18	5	181
3/4" - 16	5	316
7/8" - 14	5	502
1" - 14	5	748
1 1/8" - 12	5	949
1 1/4" - 12	5	1313

ELECTRIC BRAKES

FEATURES

Electrically actuated brakes have several advantages over other brake actuation systems:

1. They can be manually adjusted to provide the correct braking capability for varying road and load conditions;
2. They can be modulated to provide more or less braking force, this easing the brake load on the towing vehicle;
3. They have very little lag time from the moment the towing vehicle's brakes are actuated until the trailer brakes are actuated;
4. In an emergency situation, they can provide some braking independently of the towing vehicle.

BRAKE ADJUSTMENT (NOT SELF-ADJUSTING)

Brakes should be adjusted (1) after the first 200 miles of operation when the brake shoes and drums have «seated», (2) at 3000 miles intervals, (3) or as use and performance require. The brakes should be adjusted in the following manner:

1. Jack up trailer and secure on adequate capacity jack stands. Follow trailer manufacturers recommendations for lifting and supporting the unit. Check that the wheel and drum rotate freely;
2. Remove the adjusting hole cover from the adjusting slot on the bottom of the brake backing plate;
3. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn;

IMPORTANT

With drop spindle axles, a modified adjusting tool with about an 80° angle should be used.

4. Then rotate the starwheel in the opposite direction until the wheel turns freely with a slight lining drag;
5. Replace the adjusting hole cover and lower the wheel to the ground;
6. Repeat the above procedure on all brakes.

ELECTRIC BRAKES

BRAKE CLEANING AND INSPECTION

Your trailer brakes must be inspected and serviced every 6 months intervals or more often as use and performance requires. Magnets and shoes must be changed when they become worn or scored thereby preventing adequate vehicle braking.

BRAKE DRUM INSPECTION

There are two areas of the brake drum that are subject to wear and require periodic inspection. These two areas are the drum surface where the brake shoes make contact during stopping and the armature surface where the magnet contacts (only in electric brakes.) The drum surface should be inspected for excessive wear or heavy scoring. If worn more than .020" oversized, or the drum has worn out of round by more than .015", then the drum surface should be turned. If scoring or other wear is greater than .090" on the diameter, the drum must be replaced. When turning the drum surface, the maximum rebore diameter is as follows:

- 7" brake drum - 7,09"
- 10" brake drum - 10,09"
- 12" brake drum - 12,09"
- 12¹/₄" brake drum - 12,34"

The machined inner surface of the brake drum that contacts the brake magnet is called the armature surface. If the armature surface is scored or worn unevenly, it should be refaced to a 120 micro-inch finish by removing not more than .030" of material. To insure proper contact between the armature face and the magnet face, the magnets should be replaced whenever the armature surface is refaced and the armature surface should be refaced whenever the magnets are replaced.

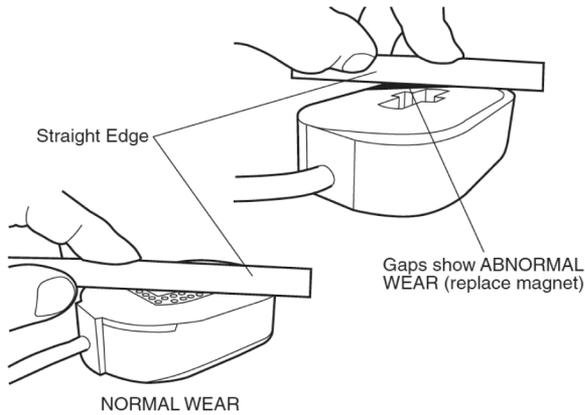
WARNING

It's important to protect the wheel bearing bores from metallic chips and contamination which result from drum turning or armature refacing operations. Make certain that the wheel bearing cavities are clean and free of contamination before reinstalling bearing and seals. The presence of these contaminants will cause premature wheel bearing failure

ELECTRIC BRAKES

MAGNETS

Your electric brakes are equipped with high quality electromagnets that are designed to provide the proper input force and friction characteristics. Your magnets should be inspected and replaced if worn unevenly or abnormally. As indicated below a straightedge should be used to check wear.



MAGNET AMPERES CHART

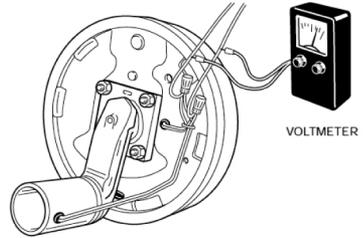
Brake size	Ampere / magnet	Tow brakes	Four brakes	Six brakes	Magnet Ohms
7" x 1 ¹ / ₄ "	2.5	5.0	10.0	15.0	3.9
10" x 1 ¹ / ₂ "	3.0	6.0	12.0	18.0	3.2
10" x 2 ¹ / ₄ "	3.0	6.0	12.0	18.0	3.2
12" x 2"	3.0	6.0	12.0	18.0	3.2
12 ¹ / ₄ " x 2 ¹ / ₂ "	3.0	6.0	12.0	18.0	3.2
12 ¹ / ₄ " x 3 ³ / ₈ "	3.0	6.0	12.0	18.0	3.2

TROUBLESHOOTING

HOW TO MEASURE VOLTAGE?

System voltage is measured from the magnets by connecting the voltmeter to the two magnet lead wires at any brake. This may be accomplished by using a pin probe inserted through the insulation of the wires dropping down from the chassis or by cutting the wires. The engine of the towing vehicle should be running when checking the voltage so that a low battery will not affect the readings.

Voltage in the system should begin at 0 volt and, as the controller bar is slowly actuated, should gradually increase to about 12 volts. This is referred to as modulation. No modulation means that when the controller begins to apply voltage to the brakes it applies an immediate high voltage, which causes the brakes to apply instantaneous maximum power.



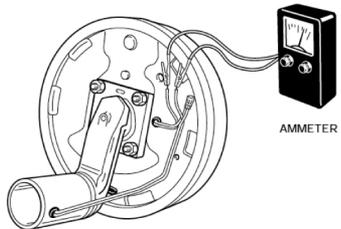
The threshold voltage of a controller is the voltage applied to the brakes when the controller first turns on. The lower the threshold voltage the smoother the brakes will operate. Too high of a threshold voltage (in excess of 2 volts as quite often found in heavy duty controllers) can cause grabby, harsh brakes.

HOW TO MEASURE AMPERAGE ?

System amperage is the amperage being drawn by all brakes on the trailer. The engine of the towing vehicle should be running when checking amperage.

One place to measure system amperage is at the **blue** wire of the controller which is the output to the brakes. The **blue** wire must be disconnected and the ammeter put in series into the line. System amperage draw should be as noted in the following table. Make sure your ammeter has sufficient capacity and note polarity to prevent damaging your ammeter.

If a resistor is used in the brake system, it must be set at zero or bypassed completely to obtain the maximum amperage reading. Individual amperage draw can be measured by inserting the ammeter in the line to the magnet you want to check. Disconnect one of the magnet lead wire connectors and attach the ammeter between the two wires. Make sure that the wires are properly reconnected and sealed after testing is completed.



TROUBLESHOOTING

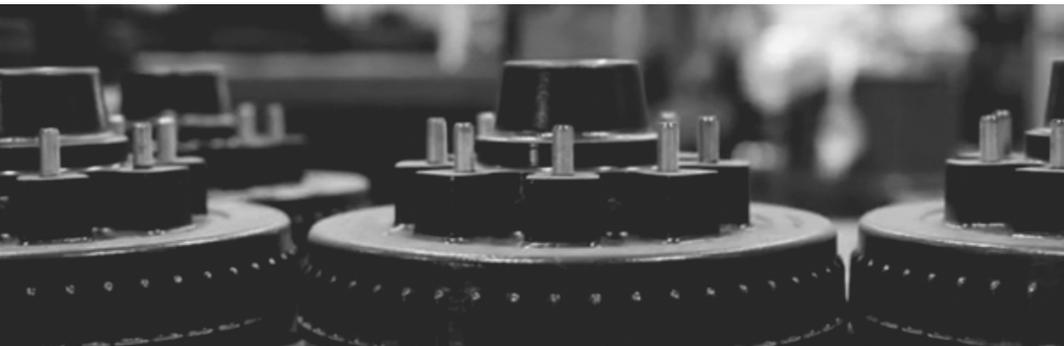
THE MOST COMMON ELECTRICAL PROBLEMS

PROBLEMS	COMMON CAUSES
Low or no voltage and amperage at the brakes	<ul style="list-style-type: none">• Poor electrical connections;• Open circuits;• Insufficient wire size;• Broken wires;• Blown fuses (fusing of brakes is not recommended);• Improperly functioning controllers or resistors.
Shorted or partially shorted circuits	<ul style="list-style-type: none">• Shorted magnet coils;• Defective controllers;• Bare wires contacting a grounded object.

Finding the system short is a matter of isolation. If the high amperage reading drops to zero by unplugging the trailer, then the short is in the trailer. If the amperage reading remains high with all the brake magnets disconnected, the short is in the trailer wiring

All electrical troubleshooting procedures should start at the controller. Most complaints regarding brake harshness or malfunction are traceable to improperly adjusted or non-functioning controllers. See your controller manufacturer's data for proper adjustment and testing procedures. If the voltage and amperage is not satisfactory, proceed on to the connector and then to the individual magnets to isolate the problem source. 12 volts output at the controller should equate to 10.5 volts minimum at each magnet. Nominal system amperage at 12 volts with magnets at normal operating temperatures, i.e. not cold, system resistor at zero and controller at maximum gain should be as detailed in the following chart.

If in doubt, Frameco strongly recommends that all maintenance and repair work be performed by qualified and competent professionals, such as your trailer manufacturer.



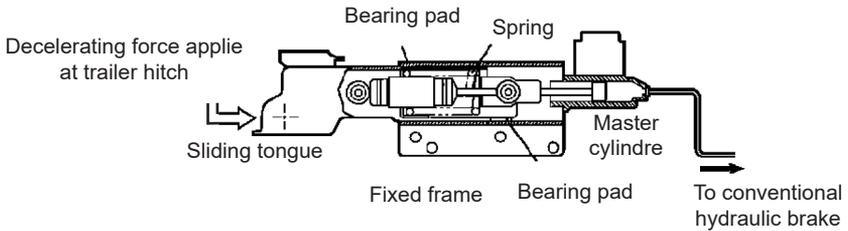
HYDRAULIC BRAKES

HYDRAULIC BRAKES

The hydraulic brakes on your trailer are much like those on your car. The hydraulic fluid from a master cylinder is used to actuate the wheel cylinder which, in turn, applies force against the brake shoes and drum. The main differences between automotive hydraulic brakes and hydraulic trailer brakes are the actuation systems which transfer the braking signal from the tow vehicle to the brakes.

SURGE BRAKING SYSTEM

The surge braking system uses a specially designed trailer hitch coupler which has a hydraulic cylinder built in. When the tow vehicle decelerates causing the trailer to apply a pushing force against the hitch. This force actuates the surge hitch hydraulic cylinder, transferring high pressure brake fluid to the wheel cylinder. The trailer brakes are now applied.

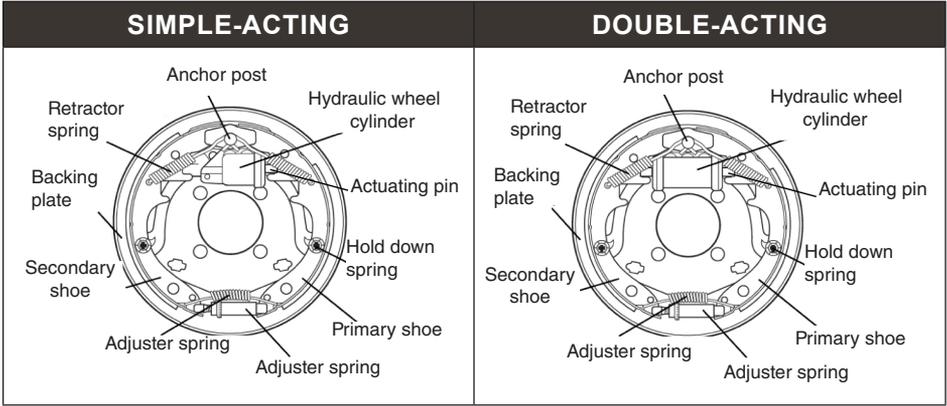


SIMPLE-ACTING

This type of hydraulic brake utilizes a single acting cylinder. Upon actuation, the primary shoe is pressed against the brake drum, which causes the shoe to move in the direction of rotation. This movement in turn actuates the secondary shoe through the adjuster link assembly.

Another variation is called a «free backing» brake which is commonly used on trailers with a surge hitch system. When backing with a surge brake hitch, the brakes are applied through the surge mechanism, and if there is more brake force on the trailer than the tow vehicle can override, no backing is possible. The free backing brake was developed to allow backing in this application. This brake has a primary shoe on a pivot which allows normal application in the forward direction, but allows the primary shoe to rotate away from the drum surface when backing.

HYDRAULIC BRAKES



DOUBLE-ACTING

The duo-servo brake uses a dual piston wheel cylinder to apply the brakes. This type of brake is typically used in a vacuum/hydraulic, electric/hydraulic or air/hydraulic system. A description of operation of this brake is as follows.

When the brakes are applied, the double-acting wheel cylinder moves the primary and secondary shoes towards the drum. The frictional force between the brake drum and lining attempts to turn the primary shoe into the secondary shoe. The secondary shoe is forced onto the anchor pin and from this point, the secondary and primary shoes attempt to «wrap around». In essence, the brake has utilized frictional force to help the applying force on both shoes.

If the brakes are applied while the vehicle is backing, the shoes rotate in the direction of the drum rotation. This causes the secondary shoe to leave the anchor and causes the primary shoe to move against the anchor. Action of the brake is therefore the same in reverse as forward.



STORAGE

TRAILER STORAGE PREPARATION

If your trailer must be stored for a period of 90 days or more, it's important to adequately prepare it in advance:

1. Lift the trailer and place supports under the frame to ease the weight off the tires. Follow manufacturer's recommendations for lifting and supporting the unit. Never place the jack or the supports under the axle tube or the stabilizers;

WARNING

Do not lift or support the trailer on any part of the axle or suspension system. Never go under a trailer unless held up by supports of an adequate capacity. A vehicle that is incorrectly supported can fall without warning and cause serious injury or death.

2. Lubricate moveable mechanical parts, such as the hitch and the parts of the suspension that are exposed to the elements;
3. The axles of boat trailers are subject to frequent immersions under water. Before storing them, remove the rake drums and clean them; dry and lubricate the brakes' moveable parts a second time; inspect, clean and lubricate the bearings a second time;
4. Given the possibility that the upper part of the ball bearings is not covered in oil, it is more subject to corrosion. It is strongly recommended to turn the wheels periodically (every 2 weeks) when in storage for a prolonged period of time;
5. Remove the battery from the hydraulic unit.



INSPECTION PROCEDURES AFTER EXTENDED STORAGE

Before removing the supports:

1. Remove all the wheels, as well as the wheel drums and hubs. Be sure to note which spindles and which brakes come from the drums so that they can be reinstalled at the same place;
2. Check for wear on the suspension parts;
3. Make sure that the bolts of the spring hanger and the nuts of the U-bolts are tightened to the torque recommended by the manufacturer. Refer to the procedure provided on page 16;
4. Inspect the brake lining, the sides of the brakes and the drum walls to ensure that there has not been excessive wear and that the parts are not scratched;
5. Check the electromagnetic coils with an ohmmeter. A normal reading is 3.2 ohms. If the reading is lower, the spires are short-circuited, or if the mechanics are too used, the electromagnets must be replaced;
6. Lubricate every brake moveable parts with a high-temperature brake lubricant (GADUS 220 (#XHP222) or comparable product);
7. Using an Emery or crocus cloth, remove all rust from the surfaces of the brake system and the outside of the drums. Protect the ball bearings from contamination during this step;
8. Inspect the seals (grease or oil-proof) for any wear or cracking. Replace them as needed;
9. Lubricate the bearings. Refer to the procedure provided on page 12;
10. Reinstall the hubs and adjust the ball bearings according to the instructions provided on 13;
11. Mount and tighten the wheels as indicated on page 16.

Axles must be installed and maintained in accordance with the appropriate industry practices and the explicit recommendations of Frameco, including those outlined in this *User's guide*. Otherwise, the warranty offered by Frameco can not apply.

