



Parts & Specific Operations Manual



ECT20025 THREE REEL CABLE TRAILER

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Introduction

MGS Inc. was established in 1962 by owner and president Roland Gehman. The company's corporate culture is a direct reflection of Roland's desires, capabilities, and attitudes. These attitudes have developed from his experiences and relationships with his family, education, church, volunteer groups, business associates and MGS employees. We are staffed with an extraordinary group of talented people. The members of MGS consist of : salesmen, welders, sales support personnel, press and shear operators, engineers, tow motor operators, shipping and receiving personnel, purchasing agents, production controllers, administrative personnel, supervisors, painters, mechanics, cad operators, maintenance men, truck drivers, carpenters, and managers. All of which, have an impact on who we are:

INNOVATORS AND MANUFACTURERS OF TRANSPORTATION EQUIPMENT

The MGS Mission :

It is our mission to provide *the best total solution* for our customers, clients and alliance partners. These solutions are built like our products, with TEAMWORK. The combined expertise and efforts of the MGS team is what keeps us **one of a kind - not one of a group!**

About Your Trailer

MGS Model No.	ECF20025
Description	TRIPLE REEL TRAILER
GAWR	10,000#
GVWR	22,000#
Empty Weight	6100 #
Overall Length	24' 4"
Tire Size	235/85R 16 LRE Dual (3000# ea @80PSI.)
Coupler	Eye 3" - 4 bolt
Electrical Connection	7 way plug

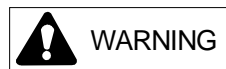
Safety Information

This hazard alert sign appears in this manual. When you see this sign, carefully read what it says.

YOUR SAFETY IS AT STAKE.



Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



Indicates an potentially hazardous situation which, if not avoided, could result in death or serious injury.

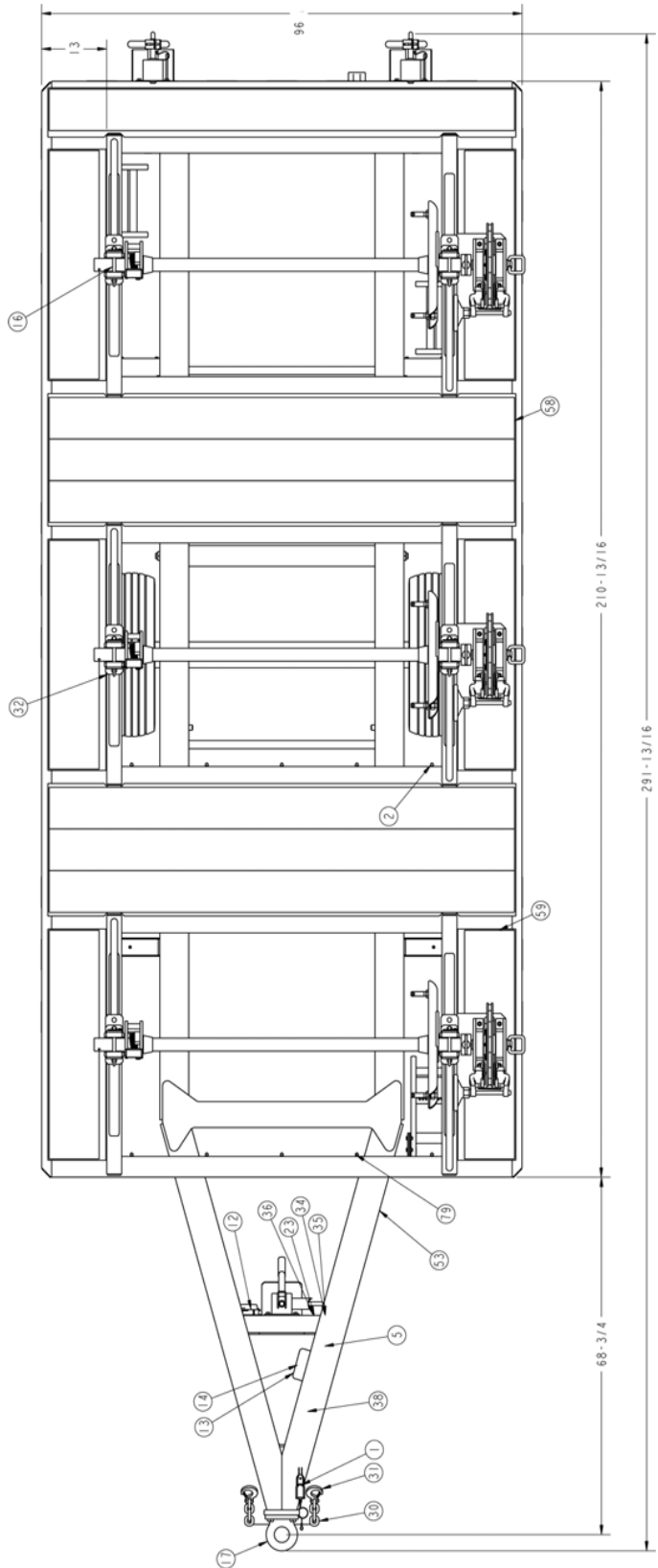
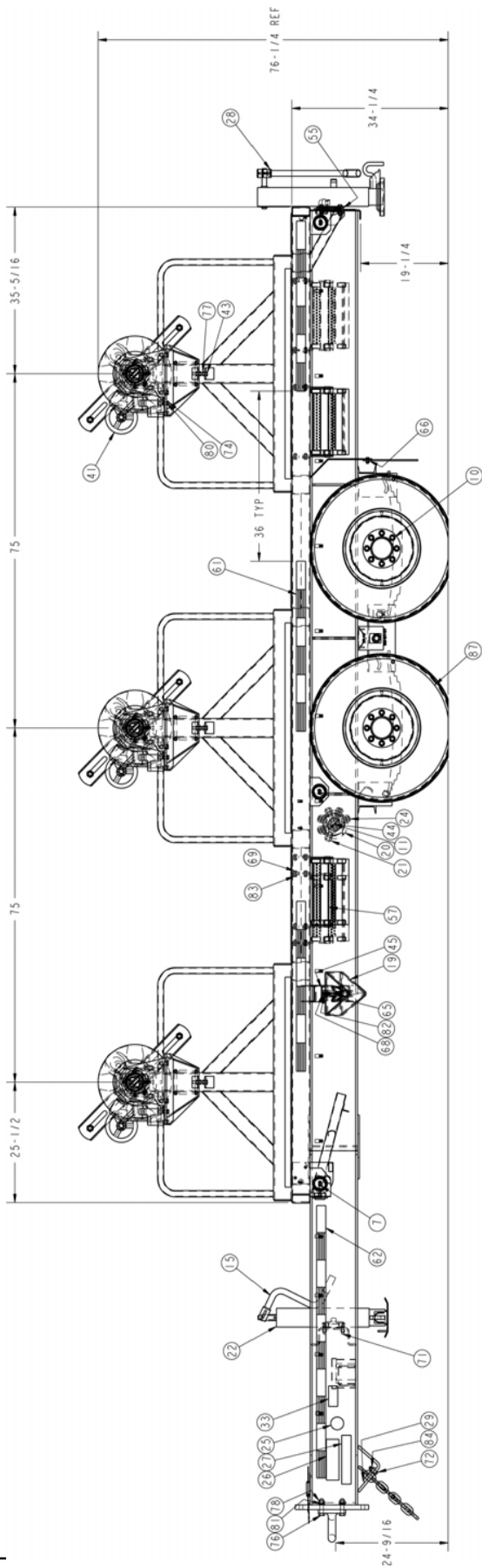


Indicates a hazardous situation which if not avoided, may result in minor or moderate injury

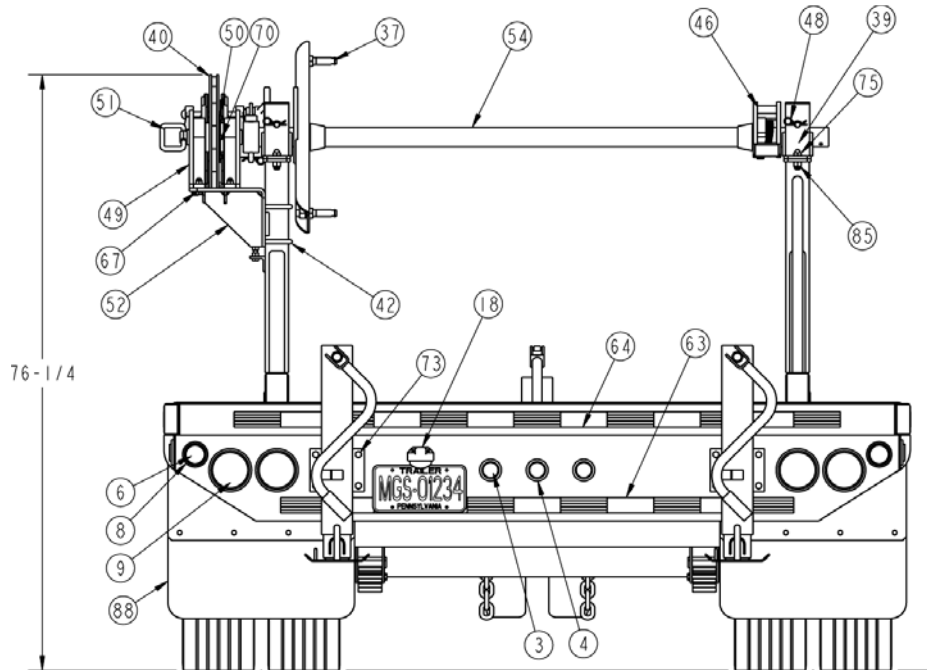
Read and Understand

Do not operate this equipment until you have carefully read, and understand the “Safety” and “Operation” sections of this manual, and of all other equipment manuals that will be used with it. Your safety and the safety of others depends upon care and judgement in the operation of this equipment. Follow all applicable federal, state, local, and industry specific regulations. MGS Inc. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the machine are therefore not all inclusive. You must satisfy yourself that a procedure, tool, work method, or operating technique is safe for you and others. You should also ensure that the machine will not be damaged or made unsafe by the method of operation or maintenance you choose.

Component Identification



Component Identification

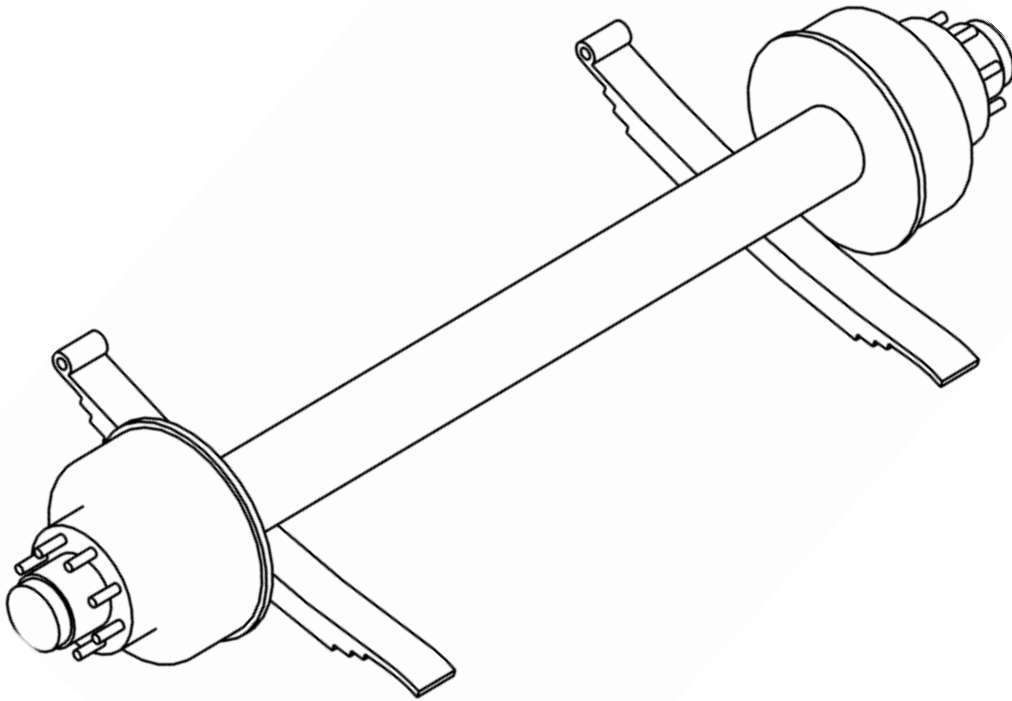


ITEM	QTY.	PART NO.	DESCRIPTION				
1	1	10713	BREAKAWAY SWITCH	46	3	71945	REEL LOCK ASSEMBLY
2	16	11954	CLOSED CLAMP, RUBBERIZED LOOM 1/4"	47	1	73698	6 PRONG PLUG, FACTORY WIRING TAG
3	3	11989	CLEARANCE & MARKER LAMP	48	9	74260	DOUBLE LOOP HITCH PIN CLIP
4	3	12034	GROMMET (FOR CLEARANCE LAMP)	49	6	75318	BEARING STAND w/ BRONZE BEARING
5	22	12164	HALF CLAMP, RUBBERIZED LOOM 3/4"	50	3	75319	HUB
6	6	12709	CLEARANCE LIGHT REFLECTOR, RED	51	3	75320	BRAKE DRIVE PIN
7	4	12710	CLEARANCE LIGHT REFLECTOR, YLW	52	3	75321	BRAKE SHELF W.A.
8	10	12711	CLEARANCE LIGHT GROMMET KIT	53	1	76298	REEL TRAILER FRAME W.A.
9	4	12838	SEALED ASY-STOP, TURN / TAIL LIGHT	54	3	76647	SPINDLE BAR W.A.
10	32	15222	LUG NUT 5/8-18 90°	55	4	76653	SPACER BAR
11	4	15835	BUTT CONNECTOR, 16-14 GA.	56	1	76654	WIRE HARNESS ASSY
12	1	16001	DOCUMENT HOLDER SMOKE COVER	57	5	76656	STEP ASSEMBLY
13	1	17079	BATTERY BOX	58	7	76786	TAPE, ANTI-SLIP, 8" X 93"
14	1	17080	SEALED RECHARGEABLE BATTERY	59	6	76787	TAPE, ANTI-SLIP, 10" X 44"
15	1	18730	JACK HANDLE	60	1	14933_120	14 GA. 2 CONDUCTOR WIRE 120" LONG
16	9	18804	HEAVY DUTY HITCH PIN--5/8 x 4-1/2	61	6	18823-36	CONSPICUITY TAPE, RED/WHITE
17	1	22578	EYE 3", 4 BOLT, 60000 GROSS TRL WT	62	2	18823-60	CONSPICUITY TAPE, RED/WHITE
18	1	24897	LICENSE PLATE LAMP, TRUCK-LITE	63	1	18823-66-R	CONSPICUITY TAPE, RED/WHITE
19	2	27963	WHEEL CHOCK, 8500-NYFO	64	1	18823-78-R	CONSPICUITY TAPE, RED/WHITE
20	1	30072	JUNCTION BOX #50400	65	4	FW01	1/4 FLAT WASHER
21	2	30073	COMPRESSION FITTING, 3/4" I.D	66	8	FW03	3/8 FLAT WASHER
22	1	30205	10,000 LB JACK W.A	67	12	FW05	1/2 FLAT WASHER
23	1	32591	VIN LABEL UV OVERLAY	68	4	HCS01-02	1/4-20 X 1 HEX HEAD CAP SCREW
24	4	39223	COMPRESSION FITTING #50840	69	28	HCS03-02	3/8-16 X 1 HEX HEAD CAP SCREW
25	1	46948	DECAL, NATM COMPLIANCE	70	12	HCS05-01	1/2-13 X 1-1/4 HEX HEAD CAP SCREW
26	1	46949	DECAL, NATM COMBO PINTLE EB	71	4	HCS05-02	1/2-13 X 1-1/2 HEX HEAD CAP SCREW
27	1	46953	DECAL, TRAILER WARNING COMBO	72	15	HCS05-03	1/2-13 X 1-3/4 HEX HEAD CAP SCREW
28	2	53441	10K STABILIZER JACK ASSY	73	8	HCS05-04	1/2-13 X 2 HEX HEAD CAP SCREW
29	1	55717	ANCHOR PLATE	74	9	HCS05-43	1/2-13 X 1 HEX HEAD CAP SCREW
30	2	56137	SAFETY CHAIN 1/2" GRADE 70 49" LONG	75	12	HCS07-01	5/8-11 X 1-3/4 HEX HEAD CAP SCREW
31	2	56138	1/2" GRADE 70 CLEVIS SLIP HOOK W/LATCH	76	4	HCSG808-07	3/4-10 X 3 HEX HEAD CAP SCREW
32	6	61154	SADDLE W.A.	77	9	HN05	1/2-13 NUT
33	1	61191	DECAL, OVERLOAD HAZARD	78	4	HNG8-08	3/4-10 NUT
34	1	61353	TIRE & LOADING INFORMATION LABEL	79	38	KHN03	1/4-20 KEPS NUT
35	1	61354	TIRE LABEL UV OVERLAY	80	9	LW08	1/2 HELICAL SPRING LOCK WASHER
36	1	61357	VIN LABEL	81	4	LWG808	3/4 HELICAL SPRING LOCK WASHER
37	6	61769	LIFT ARM PIN	82	4	NLN01	1/4-20 NYLOC NUT
38	1	63575	CLOSED CLAMP, RUBBERIZED LOOM 5/8" X 3/8"	83	28	NLN03	3/8-16 NYLOC NUT
39	6	65778	SADDLE BUSHING	84	39	NLN05	1/2-13 NYLOC NUT
40	3	65780	VENTILATED DISK, 16"	85	12	NLN07	5/8-11 NYLOC NUT
41	3	65782	BRAKE CALIPER	86	1	RDENGA0025	TRAILER LABEL PLACEMENT, PINTLE EB
42	6	65792	U-BOLT	87	8	X-33190	T&W ASSY LT235_85R16LRE DUAL
43	3	68262	TAP BOLT 1/2-13 X 3" HHCS Z/P	88	2	X-40751	MUD FLAP
44	14	69257	#10 RING TERMINAL 12/10				
45	2	71867	CHOCK HOLDER W.A.				

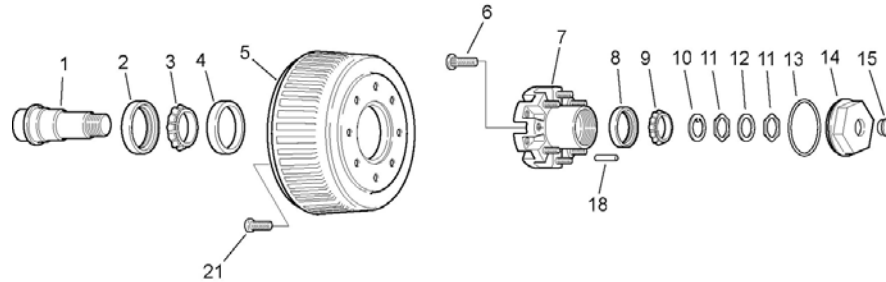
Axle Information

76627

RATED CAPACITY (LBS)	10,000 LB HD
BRAKE STYLE	ELECTRIC
BRAKE #	K23-438-00 LH K23-439-00 RH
PARKING BRAKE	NO
PARKING BRAKE CABLE	NO
SPINDLE TYPE	GREASE
HUB GROUP DESIGNATION	008-214-02 8-6.5 5/8" STUDS
E-Z LUBE HUBS	NO
STUDED HUB	YES
SPRING #	072-043-01 5,000LB 3 X 30 RB
SPRING TYPE	SLIPPER
SPRING CENTER (INCHES)	43
SPRING LOCATION	UNDERSLUNG
HUB FACE (INCHES)	70-3/8

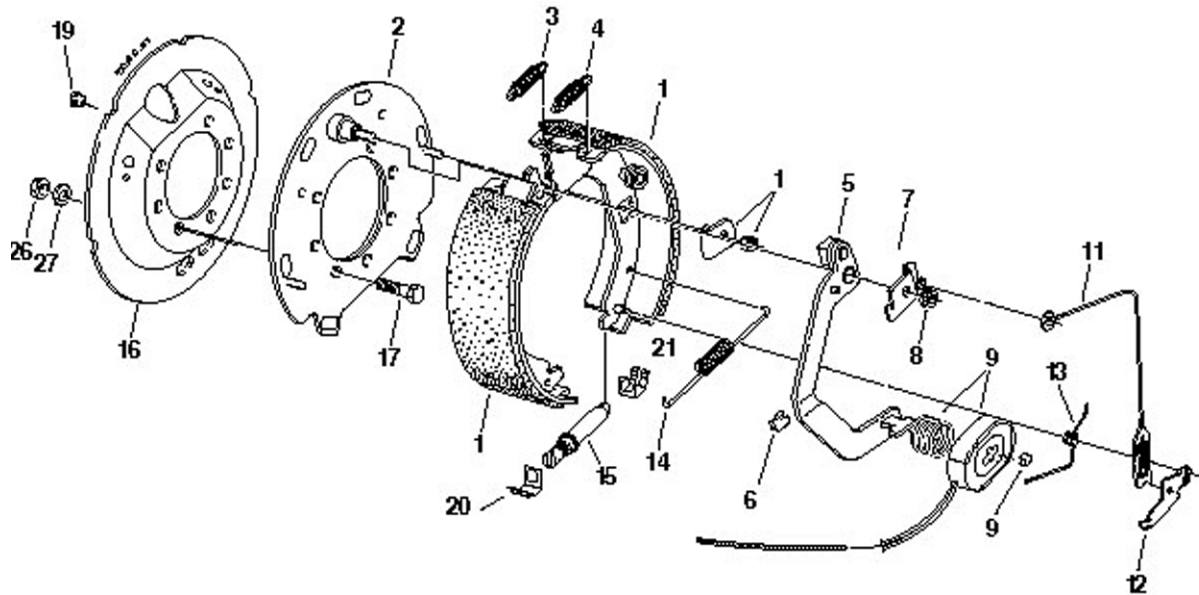


Hub Components



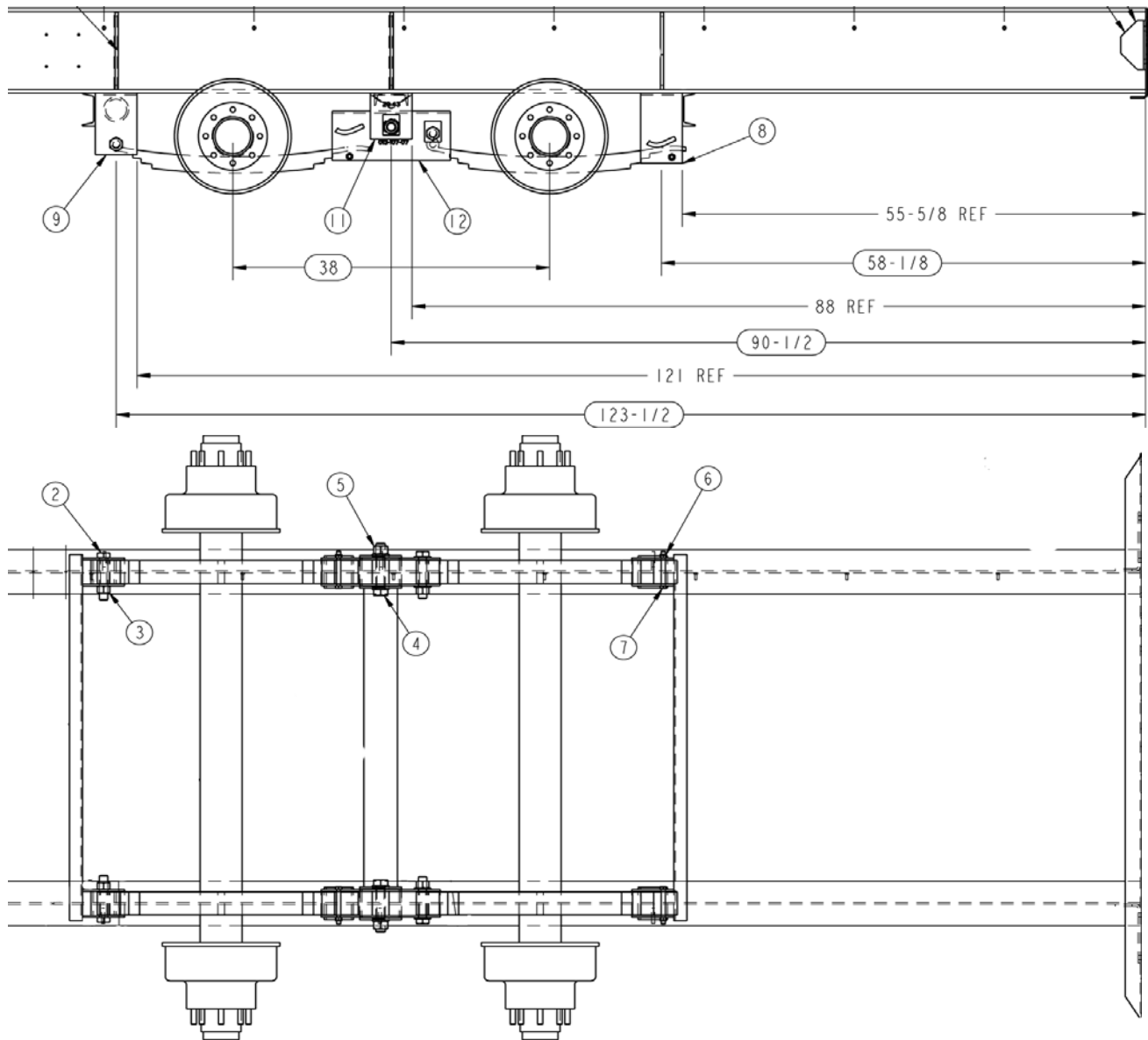
Item	Description	10K 8 on 6.50
2	Unitized Oil Seal	010-056-00
3	Inner Bearing Cone	031-022-02 (395S)
4	Inner Bearing Cup	031-022-01 (394A)
5	Brake Drum	009-027-01
6	Wheel Mtg. Stud RH	007-115-00
7	Hubs w/Cups & StudsRH	008-214-05
8	Outer Bearing Cup	031-019-01 (382A)
9	Outer Bearing Cone	031-019-02 (387A)
10	Spindle Washer	005-060-00
11	Spindle Nut	006-084-00
12	Tang Washer	005-059-00
13	Oil Cap "O" ring	010-050-00
14	Oil Cap	021-036-00
15	Oil Cap Plug	046-032-00
16	Wheel Clamp Ring	033-052-01
17	Wheel nut RH	006-109-00
	Wheel Nut LH	
17A	Inner Nut RH	
	Inner Nut LH	
17B	Outer Nut RH	
	Outer Nut LH	
18	Locating Pin	056-008-00

12 1/4 x 4" 10K Electric Brake



Item	Description	Qty. Per Brake	12 1/4 x 3 3/8 9K & 10K GD Part No.	12 1/4 x 4 10K Part No.	12 1/4 x 5 12K Part No.	12 1/4 x 5 15K Part No.
1	LH Shoe & Lining Kit containing:	1	K71-499-00	K71-501-00	K71-503-00	K71-503-00
	LH Primary	1	040-351-01	040-352-01	040-354-01	040-354-01
	LH Secondary	1	040-350-02	040-353-02	040-355-02	040-355-02
1	RH Shoe & Lining Kit containing:	1	K71-498-00	K71-500-00	K71-502-00	K71-502-00
	RH Primary	1	040-350-01	040-353-01	040-355-01	040-355-01
	RH Secondary	1	040-351-02	040-352-02	040-354-02	040-354-02
2	Backing Plate Assembly	1	036-120-02	036-120-02	036-120-02	036-120-02
5	LH Actuator Arm Assembly	1	047-123-38	047-123-38	047-123-36	047-123-36
	RH Actuator Arm Assembly	1	047-123-37	047-123-37	047-123-35	047-123-35
6	Wire Clip	3	027-039-00	027-039-00	027-039-00	027-039-00
7	LH Arm/Shoe Retainer	1	071-455-01	071-455-01	071-455-01	071-455-01
	RH Arm/Shoe Retainer	1	071-455-02	071-455-02	071-455-02	071-455-02
8	Flange Nut	1	006-182-00	006-182-00	006-182-00	006-182-00
9	Magnet Kit containing:	1	K71-376-00	K71-376-00	K71-377-00	K71-378-00
	Magnet Retainer Clip	1	027-050-00	027-050-00	027-050-00	027-050-00
	Magnet Assembly	1	042-129-00	042-129-00	042-130-00	042-131-00
	Magnet Mtg. Spring	1	046-117-00	046-117-00	046-117-00	046-117-00
10	Centering Spring	2	046-136-00	046-136-00	046-136-00	046-136-00
11	Adjuster Cable	1	071-462-00	071-462-00	071-462-00	071-462-00
12	LH Adjuster Lever	1	071-464-00	071-464-00	071-464-00	071-464-00
	RH Adjuster Lever	1	071-463-00	071-463-00	071-463-00	071-463-00
14	Return Spring	1	046-119-00	046-119-00	046-119-00	046-119-00
15	LH Adjuster Assembly	1	048-019-00	048-019-00	048-019-00	048-019-00
	RH Adjuster Assembly	1	048-020-00	048-020-00	048-020-00	048-020-00
16	Dust Shield	1	036-115-21	036-115-22	036-115-23	036-115-23
17	Brake Mounting Screw	7	007-116-00	007-116-00	007-116-00	007-116-00
19	Wire Grommet	1	046-016-00	046-016-00	046-016-00	046-016-00
20	Adjuster Clip (Thread End)	1	046-132-00	046-132-00	046-132-00	046-132-00
21	Adjuster Clip (Barrel End)	1	046-133-00	046-133-00	046-133-00	046-133-00
26	Brake Mounting Nut	7	006-017-00	006-017-00	006-017-00	006-017-00
27	Brake Mounting Lockwasher	7	005-008-00	005-008-00	005-008-00	005-008-00

10,000 #Suspension Components



ITEM	QTY.	PART NO.	DESCRIPTION
2	4	68487	SPRING EYE BOLT 1-8 X 5.5 007-169-00
3	4	68488	EYE BOLT LOCK NUT 006-112-00
4	2	68932	EQUALIZER BOLT 1 1/8-7 X 6 007-170-00
5	2	68933	EQUALIZER LOCK NUT 1 1/8-7 006-072-00
6	4	68934	KEEPER NUT SLIPPER 1/2-20 006-046-00
7	4	68935	KEEPER BOLT SLIPPER 1/2-20 X 4.5 007-095-00
8	2	68936	SPRING HANGER, REAR 10-15K (030-066-01)
9	2	68937	SPRING HANGER, FRONT 10-15K (028-067-04)
10	1	71336	BRACKET (BATTERY BOX)
11	2	73621	SPRING HANGER, CENTER (029-043-02)
12	2	73883	EQUALIZER 10-15K 38" (013-107-07)

Electric Brakes *Operation*

The electric brakes on your trailer are similar to the drum brakes on your automobile. The basic difference is that your automotive brakes are actuated by hydraulic pressure while your electric trailer brakes are actuated by an electromagnet. With all of the brake components connected into the system, the brake should operate as follows:

When the electrical current is fed into the system by the controller, it flows through the electromagnets in the brakes.

The high capacity electromagnets are energized and are attracted to the rotating armature surface of the drums which moves the actuating levers in the direction that the drums are turning.

The resulting force causes the actuating cam block at the shoe end of the lever to push the primary shoe out against the inside surface of the brake drum. The force generated by the primary shoe acting through the adjuster link then moves the secondary shoe out into contact with the brake drum.

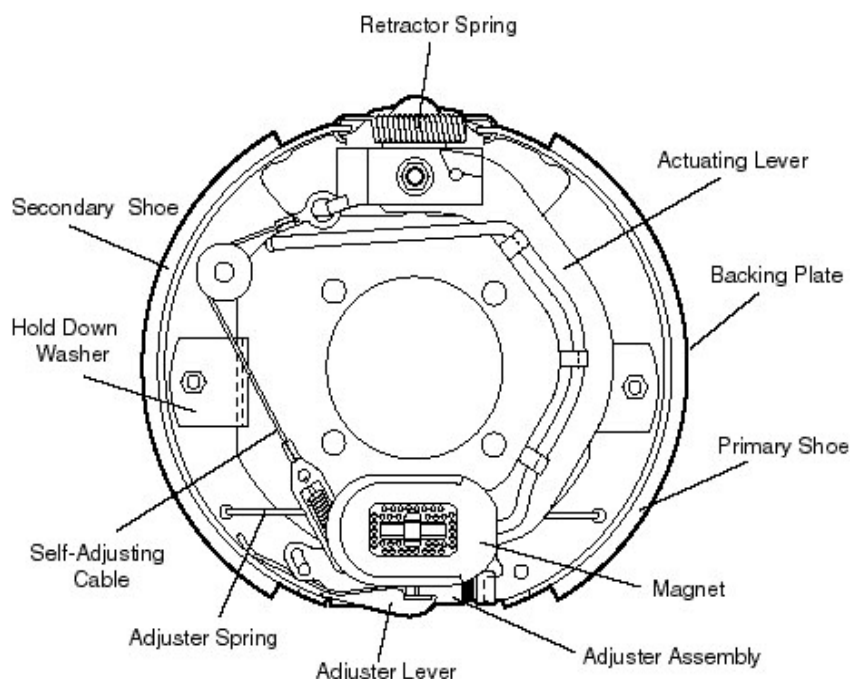
Increasing the current flow to the electromagnet causes the magnet to grip the armature surface of the brake drum more firmly. This results in increasing the pressure against the shoes and brake drums until the desired stop is accomplished.

How To Use Your Electric Brakes Properly

Your trailer brakes are designed to work in synchronization with your tow vehicle brakes. Never use your tow vehicle or trailer brakes alone to stop the combined load.

Your trailer and tow vehicle will seldom have the correct amperage flow to the brake magnets to give you comfortable, safe braking unless you make proper brake system adjustments. Changing trailer load and driving conditions as well as uneven alternator and battery output can mean unstable current flow to your brake magnets. It is therefore imperative that you maintain and adjust your brakes as set forth in this manual, use a properly modulated brake controller, and perform the synchronization procedure noted on next page.

In addition to the synchronization adjustment detailed below, electric brake controllers provide a modulation function that varies the current to the electric brakes with the pressure on the brake pedal or amount of deceleration of the tow vehicle. It is important that your brake controller provide approximately 2 volts to the braking system when the



brake pedal is first depressed and gradually increases the voltage to 12 volts as brake pedal pressure is increased. If the controller “jumps” immediately to a high voltage output, even during a gradual stop, then the electric

brakes will always be fully energized and will result in harsh brakes and potential wheel lockup.

Proper synchronization of tow vehicle to trailer braking can only be accomplished by road testing. Brake lockup, grabbiness, or harshness is quite often due to the lack of synchronization between the tow vehicle and the trailer being towed, too high of a threshold voltage (over 2 volts), or under adjusted brakes.

Before any synchronization adjustments are made, your trailer brakes should be burnished-in by making 20-30 full stops from approximately 20 m.p.h. This allows the brake shoes and magnets to slightly “wear-in” to the drum surfaces.

To Synchronize

To insure safe brake performance and synchronization, read the brake controller manufacturer’s instructions completely before attempting any synchronization procedure.

CAUTION!

Before making road tests, make sure the area is clear of vehicular and pedestrian traffic.

Make several hard stops from 20 m.p.h. on a dry paved road free of sand and gravel. If the trailer brakes lock and slide, decrease the gain setting on the controller. If they do not slide, slightly increase the gain setting. Adjust the controller just to the point of impending brake lockup and wheel skid.

Note: Minimum vehicle stopping distances are achieved when wheels approach lock up. Brake lock up should be avoided as it results in poor vehicle stability and control. Depending on load, brake type, wheels and tires, not all trailer brakes are capable of wheel lockup.

If the controller is applying the trailer brakes before the tow vehicle brakes, then the controller level adjustment should be adjusted so the trailer brakes come on in synchro-

nization with the tow vehicle brakes. For proper braking performance, it is recommended that the controller be adjusted to allow the trailer brakes to come on just slightly ahead of the tow vehicle brakes. When proper synchronization is achieved there will be no sensation of the trailer “jerking” or “pushing” the tow vehicle during braking.

 **CAUTION!**

Do not adjust this control outside the parameters outlined by the manufacturers instructions.

Controllers

Start by making sure the trailer brakes are properly adjusted. Some controllers have a gain control to vary the amount of current to the brakes, and a level control which sets the controller’s inertia sensor to sense deceleration. The level adjustment also can be used to vary when the trailer braking is felt. The gain or output control adjustment usually controls the maximum amount of amperage available to the brakes. This control can be adjusted for varying trailer loads.

Self-Adjusting Mechanism for 12¼" Electric Brakes

Designs prior to 10/96 only adjusts the brake shoes outward during a reverse stop. The mechanism consisted of an adjuster screw, an adjuster lever, an adjuster lever, pivot pin, an adjuster return spring (blue or white), a cable, and a cable anchor (also known as shoe guide plate). On one end, the adjuster lever pivots on the pivot pin that is pressed into the shoe web. The other end of the adjusting lever engages the teeth of the star wheel cable guide that is staked into the secondary shoe web. When a reverse stop is made and there is need for shoe adjustment, the secondary shoe moves away from the anchor post pulling on the cable. Since the cable is anchored on the top end and hooked on the lever on the other end, the lever is pulled upward turning the star wheel and thus making increasing the diameter of the shoes. When the brake is released and the secondary shoe returns to the anchor post, the adjuster return spring returns the lever and cable to their starting position.

Forward self adjust brakes released after 10/96 adjusts the brakes on both forward and reverse stops. The reverse stop adjustment is the same as the previous design. Forward brake adjustment occurs when the modified shoe guide plate (cable anchor) rotates when engaged by the pin that is staked in the rotating magnet lever arm. A modification to the anchor post prevents the shoe guide plate from being clamped tight as in the previous design. The rotating shoe guide plate (cable anchor) pulls the cable that lifts the adjuster lever to turn the adjuster star wheel. After the brake shoes obtain proper adjustment, there is insufficient movement of the magnet lever arm to cause enough rotation of the shoe guide to pull the cable to engage the next tooth on the adjuster star wheel. When the linings have worn sufficiently, the increased rotation of the lever arm and shoe guide plate will cause the adjuster lever to engage the next tooth on the adjuster and adjust the brake continuing to maintain a superior level of adjustment.

Manual Brake Adjustment

If your brakes do not have automatic adjustment, the following procedure must be followed:

Brakes should be adjusted (1) after the first 200 miles of operation when the brake shoes and drums have “seated,” (2) at 3000 mile intervals, (3) or as use and performance requires. 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.

Note: With drop spindle axles, a modified adjusting tool

with about an 80° angle should be used. Sears Craftsman #4736 or K-D #295 are recommended.

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.

 **CAUTION!**

Never crawl under your trailer unless it is resting on properly placed jackstands

Follow the trailer manufacturers recommendations for lifting and supporting the unit. Do not lift or place supports on any part of the suspension system.

General Maintenance

Brake Cleaning and Inspection

Your trailer brakes must be inspected and serviced at yearly 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.

Clean the backing plate, magnet arm, magnet, and brake shoes. Make certain that all the parts removed are replaced in the same brake and drum assembly. Inspect the magnet arm for any loose or worn parts. Check shoe return springs, hold down springs, and adjuster springs for stretch or deformation and replace if required. Check freedom of shoes. An acutated lever arm should snap back with shoes when released.

 **CAUTION!**

ASBESTOS DUST HAZARD! Since some brake shoe friction materials contain asbestos, certain precautions need to be taken when servicing brakes:

1. Avoid creating or breathing dust.
2. Avoid machining, filing or grinding the brake linings.
3. Do not use compressed air or dry brushing for cleaning. (Dust can be removed with a damp brush.)

Brake Lubrication

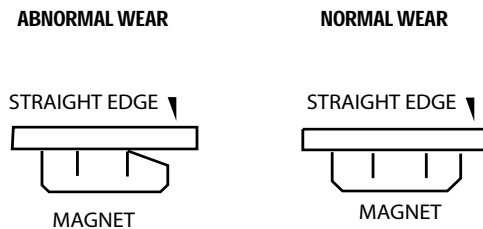
Before reassembling, apply a light film of Lubriplate or similar grease, or anti-seize compound on the brake anchor pin, the actuating arm bushing and pin, and the areas on the backing plate that are in contact with the brake shoes and magnet lever arm. Apply a light film of oil on the actuating block mounted on the actuating arm.



Do not get grease or oil on the brake linings, drums or magnets.

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. A straightedge should be used to check wear.



Even if wear is normal as indicated by your straight-edge, the magnets should be replaced if any part of the magnet coil has become visible through the friction material facing of the magnet. It is also recommended that the drum armature surface be re-faced when replacing magnets. Magnets should also be replaced in pairs - both sides of an

axle. Use only genuine Dexter replacement parts when replacing your magnets.

Shoes and Linings

A simple visual inspection of your brake linings will tell if they are usable. Replacement is necessary if the lining is worn (to within $\frac{1}{16}$ " or less), contaminated with grease or oil, or abnormally scored or gouged. It is important to replace both shoes on each brake and both brakes of the

Troubleshooting

Most electric brake malfunctions that cannot be corrected by either brake adjustments or synchronization adjustments can generally be traced to electrical system failure. Mechanical causes are ordinarily obvious, i.e. bent or broken parts, worn out linings or magnets, seized lever arms or shoes, scored drums, loose parts, etc. Voltmeter and ammeter are essential tools for proper troubleshooting of electric brakes.

How to Measure Voltage

System voltage is measured at 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 volts 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 at 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.

By far, the most common electrical problem is low or no voltage and amperage at the brakes. Common causes of this condition are:

1. Poor electrical connections; bad ground
2. Open circuits
3. Insufficient wire size
4. Broken wires
5. Blown fuses (Fusing of brakes is not recommended.)

6. Improperly functioning controllers or resistors

Another common electrical problem is shorted or partially shorted circuits (indicated by abnormally high system amperage). These are occasionally the most difficult to find. Possible causes are:

1. Shorted magnet coils
2. Defective controllers
3. 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 cold magnets, system resistor at zero and controller at maximum gain should be as detailed in the following chart:

Magnet Amperes Chart

Brake Size	Amps/Magnet	Two Brakes	Four Brakes	Six Brakes
12 ¹ / ₄ x 3 ³ / ₈	3.0	6.0	12.0	18.0
12 ¹ / ₄ x 4	3.0	6.0	12.0	18.0
12 ¹ / ₄ x 5	3.0	6.0	12.0	18.0

Tensioning Brake

4.2.2 Tensioning Brake

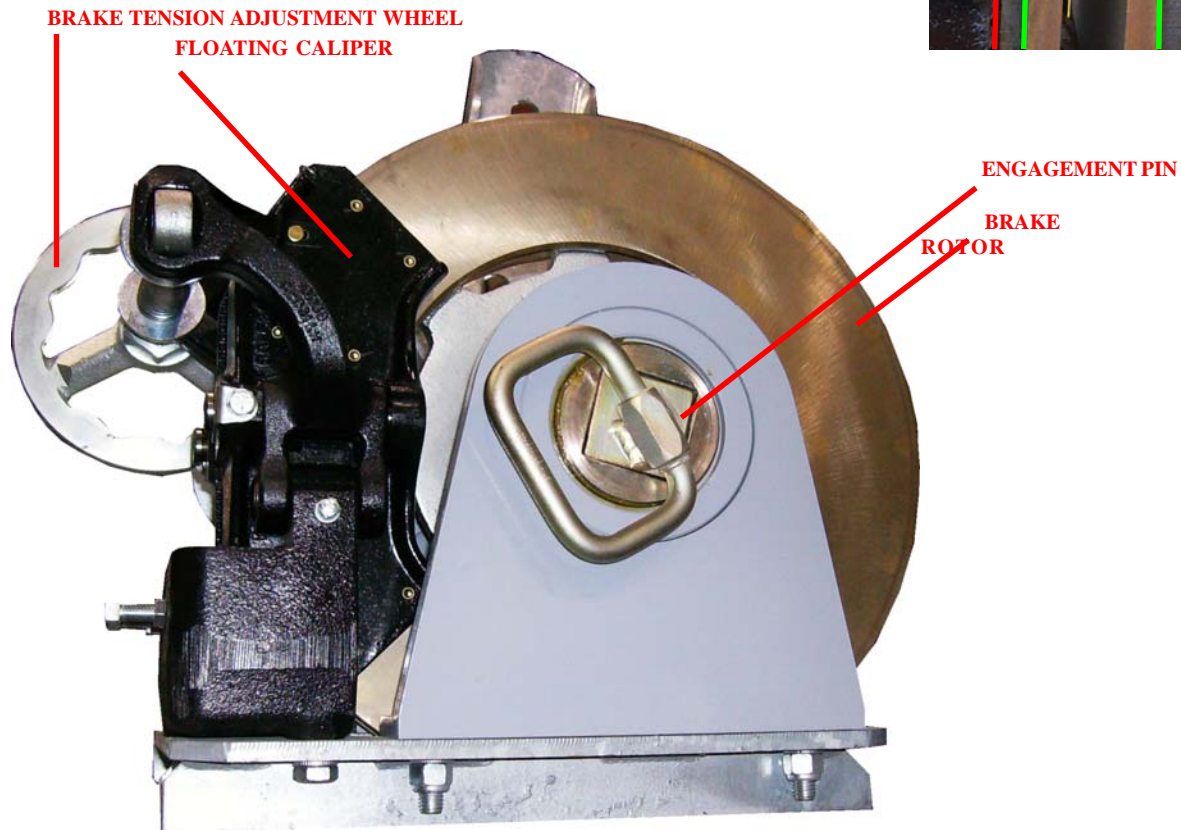
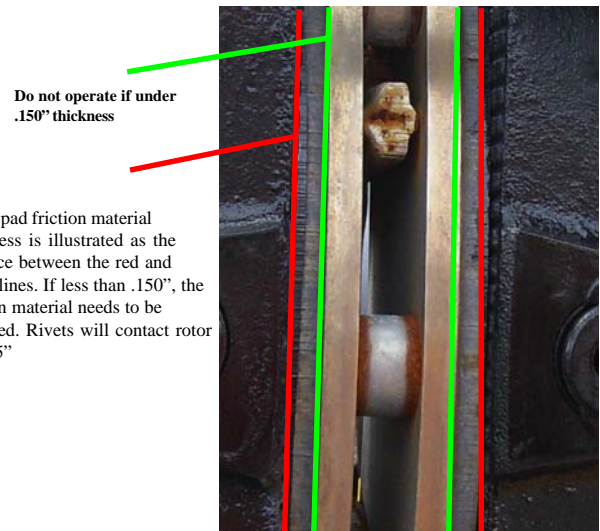
Your trailer is supplied with one or more tensioning brakes. Please refer to the image below for description of functional parts.

To change the pressure exerted against the rotor by the brake pads, rotate the brake tension adjustment wheel until the appropriate tension is achieved. On the unit below, rotate the adjustment wheel clockwise to increase tension and counterclockwise to decrease tension.

⚠ WARNING
WARNING - Fold out steps should always be returned to the stored position prior to moving the trailer. Injury to personnel, damage to property or equipment is possible if this warning is not followed

⚠ CAUTION
CAUTION - Components of the braking assembly can reach temperatures approaching 500 degrees fahrenheit which could result in minor or moderate injury. Be sure that all surfaces of the brake assembly have cooled prior to contact. Failure to comply with this practice could result in minor or moderate injury if this warning is ignored

The engagement pin must be in the position shown below with the locking pin in place prior to any tensioning operation. Always be sure that the brake mechanism is working properly before use. Caliper, pin and hub should be adequately lubricated to operate properly. Pads should be inspected for wear prior to operation. Beginning pad thickness (measured from cast backer) is .25". Rivet heads will begin to contact rotor at .125" (measured from cast backer). Do not operate tensioning brake if pad wear exceeds .150".





INNOVATORS AND MANUFACTURERS OF TRANSPORTATION EQUIPMENT

Folding Steps

Your trailer is equipped with a total of five fold out steps shown in figures 1-3. The front step is located on the road side of the trailer as shown in figure 1. The location of the rear step is shown in figure two. There are two of these steps on the trailer. The center step is shown in figure 3. There are two of these steps on the trailer.



Figure 1



Figure 2



Figure 3



Figure 4

Deploying and storing the foldaway step

Grasp the step from below and lift up to release the locking mechanism as shown in figure 4.

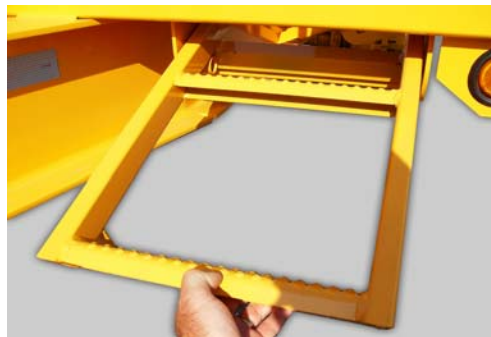


Figure 5

Once the locking tabs are clear of the locking bar, slide the step towards you as shown in figure 5.



Figure 6

Allow the step to swing downward into the lowered position as shown in figure 6. Reverse these steps to store



WARNING

WARNING - Fold out steps should always be returned to the stored position prior to moving the trailer. Injury to personnel, damage to property or equipment is possible if this warning is not followed



Towing Guidelines

- **Available payload is the GVW minus the weight of the trailer**
- **Towing capacity of the towing vehicle should be greater than or equal to the GVW of the trailer**
- **Load should be distributed with 60% of the weight in the front of the centerline of the axles**



Trailer Safety Checklist

Before using trailer, be sure that :

- **The hitch is securely fastened**
- **Safety chain(s) are fastened and crossed**
- **The service and emergency brake system work properly**
- **All lights are functioning properly**
- **Tires are properly inflated**
- **All gates and doors are secured before towing**
- **Load is properly secured**
- **All D.O.T. inspections are performed**



MGS LIMITED WARRANTY - ONE YEAR

MGS Incorporated (Seller) hereby warrants, for a period of **ONE** year from the date of purchase, to the first buyer- purchaser (Purchaser) of a **MGS Trailer** manufactured by Seller (Product) that the Product shall be free from defects in material or workmanship, provided timely notice of any claim on this warranty is given to Seller by Purchaser. Notice of any warranty claim shall be untimely if written notice of such claim is not given to Seller in writing within fifteen (15) days from the date Buyer has discovered or, with the exercise of reasonable diligence, would have discovered any such defect in material or workmanship giving rise to such warranty claim. Any claim for breach of warranty which is not timely made shall be deemed waived by purchaser.

Provided that a timely notice of a warranty claim is made for a defect in material or workmanship rising during the warranty period. Seller shall repair or replace any defective Product or portion thereof, or, at its option, may refund the purchase price for the Product. All decisions concerning whether a Product or any portion thereof is defective and whether said defects should be repaired or the Product replaced, and the manner, method and extent of such repairs, shall be within the sole discretion of Seller. Any alteration or repair to a Product or any portion thereof made by Purchaser without the prior written approval of Seller shall be done at Buyer's own risk and expense and shall invalidate this warranty.

Seller makes no warranty in connection with any components provided with the Product subject to a separate manufacturer's warranty and any claim relating to such goods shall lie exclusively against the manufacturer of such goods.

This warranty is made in lieu of all other warranties, express, implied or statutory. **Seller expressly disclaims any warranty or merchantability or warranty of fitness for a particular purpose or use.**

The express warranty provided herein shall be Purchaser's sole and exclusive remedy for any defects in material or workmanship relating to Product. Under no circumstance shall Seller be liable to Purchaser or any other person for lost profits, additional expenses incurred in repairing or replacing the Product or any other special, incidental, indirect or consequential losses of damages of any kind. Purchaser shall have no claim under this warranty for ordinary wear and tear or for abuse, misuse, improper installation or maintenance or alteration of or repairs to the Product unless such repairs have been authorized in writing by Seller prior to said repair.

Notice of any claim under this warranty must be made in writing and sent to Seller by certified mail, return receipt requested addressed to: MGS Incorporated, Sales Department, 178 Muddy Creek Church Road, Denver, PA 17517.



If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying MGS Inc.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or MGS Inc.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 202-366-0123) or write to: NHTSA, U.S. Department of Transportation, 400 7th street, SW, NSA-11, Washington, DC 20590. You can also obtain other information about motor vehicle safety from the Hotline.