

OPERATOR'S MANUAL

and Set-Up Instructions for RUNNING GEARS

1484 Running Gear



J. & M. Mfg. Co., Inc.

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JMMAN0101 (Rev. 08/01/05)

TO THE DEALER:

Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Operator's Manual are completed before releasing equipment to the owner.

The dealer must complete the Warranty Registration Card attached to the front inside cover of this manual and return to J. & M. Mfg. Co., Inc. at the address indicated on the card. **Warranty claims will be denied if the Warranty Registration Card has not been completed and returned.**

EXPRESS WARRANTY:

J. & M. Mfg. Co. Inc. warrants against defects in construction or materials for a period of ONE year. We reserve the right to inspect and decide whether material or construction was faulty or whether abuse or accident voids our guarantee.

Warranty service must be performed by a dealer or service center authorized by J. & M. Mfg. Co. Inc. to sell and/or service the type of product involved, which will use only new or remanufactured parts or components furnished by J. & M. Mfg. Co. Inc. Warranty service will be performed without charge to the purchaser for parts or labor based on the Warranty Labor Times schedule. Under no circumstance will allowable labor times extend beyond the maximum hours indicated in the Warranty Labor Times schedule for each warranty procedure. The purchaser will be responsible, however, for any service call and/or transportation of the product to and from the dealer or service center's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service and/or maintenance not directly related to any defect covered under the warranty. Costs associated with equipment rental, product down time, or product disposal are not warrantable and will not be accepted under any circumstance.

Each warranty term begins on the date of product delivery to the purchaser. Under no circumstance will warranty be approved unless (i) the product warranty registration card (attached to the inside of the Operator's Manual) has been properly completed and submitted to the equipment manufacturer, and (ii) a warranty authorization number has been issued by the equipment manufacturer. This Warranty is effective only if the warranty registration card is returned within 30 days of purchase.

This warranty does not cover a component which fails, malfunctions or is damaged as a result of (i) improper modification or repair, (ii) accident, abuse or improper use, (iii) improper or insufficient maintenance, or (iv) normal wear or tear. This warranty does not cover products that are previously owned and extends solely to the original purchaser of the product. Should the original purchaser sell or otherwise transfer this product to a third party, this Warranty does not transfer to the third party purchaser in any way. J. & M. Mfg. Co. Inc. makes no warranty, express or implied, with respect to tires or other parts or accessories not manufactured by J. & M. Mfg. Co. Inc. Warranties for these items, if any, are provided separately by their respective manufacturers.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE.

In no event shall J. & M. Mfg. Co. Inc. be liable for special, direct, incidental or consequential damages of any kind. The exclusive remedy under this Warranty shall be repair or replacement of the defective component at J. & M. Mfg. Co. Inc.'s option. This is the entire agreement between J. & M. Mfg. Co. Inc. and the Owner about warranty and no J. & M. Mfg. Co. Inc. employee or dealer is authorized to make any additional warranty on behalf of J. & M. Mfg. Co. Inc.

The manufacturer reserves the right to make product design and material changes at any time without notice. They shall not incur any obligation or liability to incorporate such changes and improvements in products previously sold to any customer, nor shall they be obligated or liable for the replacement of previously sold products with products or parts incorporating such changes.

SERVICE:

The equipment you have purchased has been carefully manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the unit as specified. Observe all safety information in this manual and safety signs on the equipment.

For service, your authorized J. & M. dealer has trained mechanics, genuine J. & M. service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine J. & M. service parts. Substitute parts may void the warranty and may not meet standards required for safe and satisfactory operation. Record the model number and serial number of your equipment in the spaces provided:

Serial No.: _____ Date of Purchase: _____

Purchased From: _____

Provide this information to your dealer to obtain correct repair parts.

14 TON RUNNING GEAR

SPECIFICATIONS

SPECIFICATIONS

Capacity	14 Ton
Weight (with tires)*	2,050 lb
Width (c/c of tire)	84"
Spindle Size	2 3/4" diameter
Spring Balanced Tongue	Standard
Ground Height (to top of axle)	26"
Rocking Bolster	Optional
Tongue, Adjustable Quick Hitch	Standard
Adjustable Center Pole	Standard
Hydraulic Brake System	Optional Disc Surge or Drum
Wheels - 8 bolt	22.5 x 8.25, 22.5 x 13.5 ot 16.1 x 14

*Weighed with 15-22.5 tires

GENERAL INFORMATION

TO THE OWNER:

The purpose of this manual is to assist you in operating and maintaining your running gear in a safe manner. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance and help maintain safe operating conditions. If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating:

1. Is instructed in safe and proper use.
2. Reviews and understands the manual(s) pertaining to this machine.

Throughout this manual, the term **IMPORTANT** is used to indicate that failure to observe can cause damage to equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol, (a triangle with an exclamation mark), to indicate the degree of hazard for items of personal safety. When you see this symbol, carefully read the message that follows and be alert to the possibility of personal injury or death.



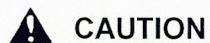
This Safety-Alert symbol indicates a hazard and means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**



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



Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed.



Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury.

IMPORTANT

Indicates that failure to observe can cause damage to equipment.

NOTE

Indicates helpful information.

GENERAL INFORMATION

BOLT TORQUE CHART

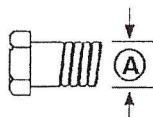
Always tighten hardware to these values unless a different torque or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual parts list.


Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for metric hardware.

Make sure fastener threads are clean and you start thread engagement properly.


All torque values are given to specifications used on hardware defined by SAE J1701 & J1701M JUL 96.




**SAE SERIES
TORQUE
CHART**




SAE Bolt Head
Identification

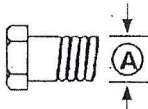


SAE Grade 5
(3 Radial Dashes)



SAE Grade 8
(6 Radial Dashes)

 Diameter (Inches)	Wrench Size	MARKING ON HEAD					
		SAE 2		SAE 5		SAE 8	
		Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m
1/4	7/16"	6	8	10	13	14	18
5/16	1/2"	12	17	19	26	27	37
3/8	9/16"	23	31	35	47	49	67
7/16	5/8"	36	48	55	75	78	106
1/2	3/4"	55	75	85	115	120	163
9/16	13/16"	78	106	121	164	171	232
5/8	15/16"	110	149	170	230	240	325
3/4	1-1/8"	192	261	297	403	420	569
7/8	1-5/16"	306	416	474	642	669	907
1	1-1/2"	467	634	722	979	1020	1383



METRIC SERIES
TORQUE
CHART

8.8

Metric Bolt Head
Identification

10.9

Metric
Grade 10.9

Diameter & Thread Pitch (Millimeters)	Wrench Size	COARSE THREAD				FINE THREAD				Diameter & Thread Pitch (Millimeters)
		MARKING ON HEAD				MARKING ON HEAD				
		Metric 8.8		Metric 10.9		Metric 8.8		Metric 10.9		
		N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	N-m	Lbs.-Ft.	
6 x 1.0	10 mm	8	6	11	8	8	6	11	8	6 x 1.0
8 x 1.25	13 mm	20	15	27	20	21	16	29	22	8 x 1.0
10 x 1.5	16 mm	39	29	54	40	41	30	57	42	10 x 1.25
12 x 1.75	18 mm	68	50	94	70	75	55	103	76	12 x 1.25
14 x 2.0	21 mm	109	80	151	111	118	87	163	120	14 x 1.5
16 x 2.0	24 mm	169	125	234	173	181	133	250	184	16 x 1.5
18 x 2.5	27 mm	234	172	323	239	263	194	363	268	18 x 1.5
20 x 2.5	30 mm	330	244	457	337	367	270	507	374	20 x 1.5
22 x 2.5	34 mm	451	332	623	460	495	365	684	505	22 x 1.5
24 x 3.0	36 mm	571	421	790	583	623	459	861	635	24 x 2.0
30 x 3.0	46 mm	1175	867	1626	1199	1258	928	1740	1283	30 x 2.0

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SAFETY RULES **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by an operator's single careless act. In addition, hazard control and accident prevention are dependent upon the awareness, concern, judgement, and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Make certain that the operator(s), prior to operating is instructed in safe and proper use and reviews and understands the manual(s) pertaining to this machine.

Read this manual before you operate this machine. If you do not understand any part of this manual, or need more information, contact the manufacturer or your authorized dealer.

SAFETY

Understand that your safety and the safety of other persons is measured by how you service, and operate this machine. Know the positions and functions of all controls before you try to operate them. Make sure to check all controls in a safe area before starting your work.

The safety information given in this manual does not replace safety codes, federal, state or local laws. Make certain your machine has the proper equipment as designated by local laws and regulations.

A frequent cause of personal injury or death is from persons falling off equipment and being run over. Do not permit persons to ride on this machine.

Travel speeds should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments and holes. Reduce speed when turning, crossing slopes and rough, slick or muddy surfaces.

Collision of high speed road traffic and slow moving machines can cause personal injury or death. On roads, use flasher lights according to local laws. Keep slow-moving-vehicle emblem visible. Pull over to let faster traffic pass.

Never adjust, service, clean, or lubricate running gear until all power is shut off.

Keep all safety shields in place.

Keep hands, feet, hair and clothing away from moving parts while unit is in operation.

Make sure that everyone is clear of equipment before applying power or moving the machine.

Make sure that the running gear is fastened securely to the tractor by using the proper hitch pin, clip and safety chains.

Never overload the running gear. Overloading the running gear is dangerous and can cause extensive damage.

Do NOT exceed load limit or speeds in excess of 20 MPH. Rims, hubs and bearings are designed for heavy loads at slow speeds. Also be sure slow moving vehicle emblem is attached to rear of wagon.

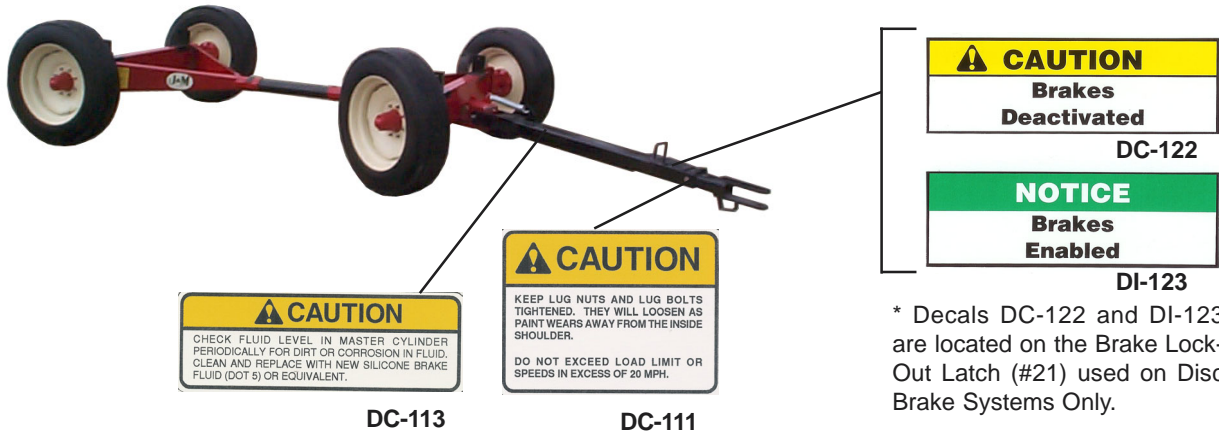
Before unhooking the running gear from the towing unit, be sure to properly block the wheels to prevent the cart from moving.

SAFETY SIGNS

⚠ ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! ⚠
Replace Immediately If Damaged or Missing!

IMPORTANT: Install new safety signs if the old signs are destroyed, lost, painted over or cannot be read. When parts are replaced that have safety signs, make sure you install a new sign with each new part. New signs are available from the manufacturer or your authorized dealer.

Ref. #	Description	Part #	Req'd
1	Sign, Caution	DC-111	1
2	Sign, Fluid (Brakes)	DC-113	1
3*	Sign, Brakes Deactivated	DC-122	1
4*	Sign, Brakes Activated	DI-123	1



* Decals DC-122 and DI-123 are located on the Brake Lock-Out Latch (#21) used on Disc Brake Systems Only.

SET-UP INSTRUCTIONS FOR RUNNING GEAR

IMPORTANT: Set-up work to be performed by qualified servicemen only.

- 1) Mount tires on the wheels and inflate per the tire manufacturer's recommendations and instructions. **IMPORTANT:** Use short valve stem (HAL TECH #6008BS or JD Planter Stems) when using 22.5x13.5 wheels with disc brakes (valve stems are to the inside of the wheel). Standard valve stems will not clear the brake caliper and support.
- 2) Mount the wheels to the hubs and tighten the tapered hub nuts to either 100 ft. lb torque or the flat hub nuts to 135 Torque (see pg 8). Check the hub nuts after the first hour of operation, then every 10 hours of operation for the first 40 hours of use. These nuts must be kept tight at all times. Wheels that are improperly installed on the running gear, resulting in product failure, will nullify the warranty and shift the burden of liability to the owner/operator of the equipment.
- 3) Slide the coupling pole into the front and back assemblies, slipping the collar in the back assembly. When mounting to a 440SD gravity box, spacing of the coupling pole (approximate distance between holes on the coupling pole) should be 44". Distance from center of axle to center of axle is approximately 124". If mounting to a 385SD gravity box, spacing of the coupling pole (approximate distance between holes on the coupling pole) should be 24". Distance from center of axle to center of axle is approximately 104"
- 4) Attach either the rocking bolster or the standards (box attachment brackets) to the running gear.
- 5) Fasten the tongue to the front assembly using the tongue bolt (remove paint from the bolt before attaching) and jam nut. Attach the tongue spring to the bracket on the tongue and hitch assembly. For running gears without hydraulic brakes, check underneath the tongue and make sure that the safety catch (7/8" x 2 1/4" bolt w/spacer) is secure.
- 6) Mounting Brake Lines to Running Gear with Hydraulic Disc Brakes. **IMPORTANT:** Running Gears with Hydraulic Disc Brakes should be set up immediately after delivery from factory to prevent dirt and moisture from entering brake system. Attach the brake lines and hoses per drawing for Optional Hydraulic Disc Brake System. Be careful not to over tighten the fittings and strip the threads. Always use DOT 5 Silicone Brake Fluid or equivalent. **On Optional Disc Brake Systems, be sure to remove paint from disc brake rotors before bleeding brake lines. Failure to remove paint will cause brakes to not work properly. If running gear is stored for an extended period of time, the brake discs will need to be cleaned with steel wool (be sure the brake pads are not rusted fast to the brake disc). Also, check Caliper Retainer Area for free movement. Free retainer and caliper from any seized paint or dirt by tapping retainer and spring with rubber or wood mallet.**

SET-UP INSTRUCTIONS FOR RUNNING GEAR (Continued)

IMPORTANT: Set-up work to be performed by qualified servicemen only.

- 7) Adding Brake Fluid to Master Cylinder (for optional brake system).

IMPORTANT: Do NOT shake the brake fluid container. AVOID agitating the system when bleeding. Do NOT “pump” the brake plunger. Instead, depress and release slowly.

Fill the master cylinder carefully, pouring the fluid down the side of the reservoir to minimize air entrainment.

METHOD ONE (requires two people)

Close all bleed screws.

Start with the wheel furthest from the master cylinder. Slip a transparent bleed hose on the bleeder stem and place the other end of the hose in a clean container which is partially filled with fluid at all times.

The first person depresses the brake plunger SLOWLY (take 3-5 seconds). THEN the second person opens the bleed screw. He then closes the bleed screw BEFORE the first person SLOWLY releases the plunger (3-5 seconds). Continue until there is no evidence of air in the bleed hose. Continue with remaining wheel working from the longest to the shortest distance from the master cylinder. Top off master cylinder as needed to prevent reintroducing air into the lines.

REMEMBER:

- 1) Depress plunger slowly
- 2) Open bleed screw
- 3) Close bleed screw
- 4) Release plunger slowly

METHOD TWO (one person)

Attach bleed hose to rear wheel as in method one. Open bleed screw. SLOWLY depress plunger (3-5 seconds) Let plunger return SLOWLY (3-5 seconds). Repeat until line is air free. Close bleed screw. Top off master cylinder as needed to prevent reintroducing air into lines.

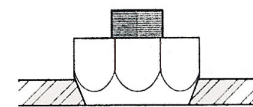
Repeat with remaining wheel.

Contamination with dirt, water, petroleum products or other materials may result in brake failure or costly repairs.

- 8) **IMPORTANT:** Make sure to properly attach the gravity box (or other equipment) to the running gear. Bolt all four corners of the gravity box runners to the running gear. (If the box is used in rough terrain and it is not equipped with a rocking bolster, bolt a minimum of two corners and chain (or cable) the remaining corners to allow more box flexibility).

MOUNTING WHEELS

Figure One shows the proper way to mount wheels with tapered holes. (16.1 x 14 or 22.5 x 8.25 wheels)

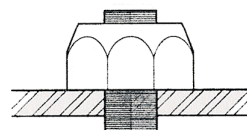


WHEELS WITH CHAMFERED HOLES

FIGURE ONE

Figure Two shows the proper way to mount wheels with straight holes. (22.5 x 13.5 wheels)

Place the FLAT side of the wheel nut against the wheel disc and tighten (valve stem is on the inward side of the tire).



WHEELS WITH STRAIGHT HOLES

FIGURE TWO

Wheels that are improperly installed on running gears, resulting in product failure, will nullify warranty and shift the burden of liability to the owner/operator of the equipment.

OPERATING INSTRUCTION / MAINTENANCE

WARNING

BE CERTAIN THAT ALL POWER IS SHUT OFF BEFORE SERVICING EQUIPMENT.

Before equipment is put into service:

Has this manual and the operator's manual on the gravity box been read and clearly understood by the operator(s) of this machine?

Have all braces, bolts, nuts, lug bolts, and lug nuts been checked to ensure that they are properly fastened?

Is the running gear properly fastened to the tractor? Use a good quality hitch pin with clip and safety chain.

SAFETY CHAIN USER INSTRUCTIONS

a) Secure the safety chain by looping it around the tongue support located on the underside of the outer tongue. Extend the chain through the support located on the underside of the inner tongue and connect to the towing machine's attaching bar.

b) Be sure to run the safety chain through the support on the underside of the inner tongue. This will provide an intermediate support for the safety chain.

c) Do Not allow more slack than necessary for articulation (max. 9 inches)

d) Do Not use any intermediate support as the attaching point.

e) Store the safety chain by securing it around the tongue supports.

f) Replace the safety chain if one or more links or end fittings are broken, stretched or otherwise damaged or deformed.

Have all danger, warning, caution and important signs on the equipment been read and clearly understood? If employees or others use or are near this equipment, make sure that they also have read and understood all danger, warning caution and important signs on the equipment and have also read the operator's manual.

Have the wheel bearings been inspected? Repack with grease if needed. Grease both the tongue bolt and the hitch bolt.

Do not exceed the load limit of the unit.

BRAKING SYSTEM REQUIREMENTS:

WARNING

Tow Loads Safely

Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its load.

Observe these recommended maximum road speeds, or local speed limits which may be lower:

- If towed equipment does not have brakes, do not travel more than 32 km/h (20 mph) and do not tow loads more than 1.5 times the tractor weight.
- If towed equipment does have brakes, do not travel more than 40 km/h (25 mph) and do not tow loads more than 4.5 times the tractor weight.

Ensure the load does not exceed the recommended weight ratio. Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.

IMPORTANT:

Keep the tires properly inflated. Both under inflation and over inflation can greatly reduce tire life.

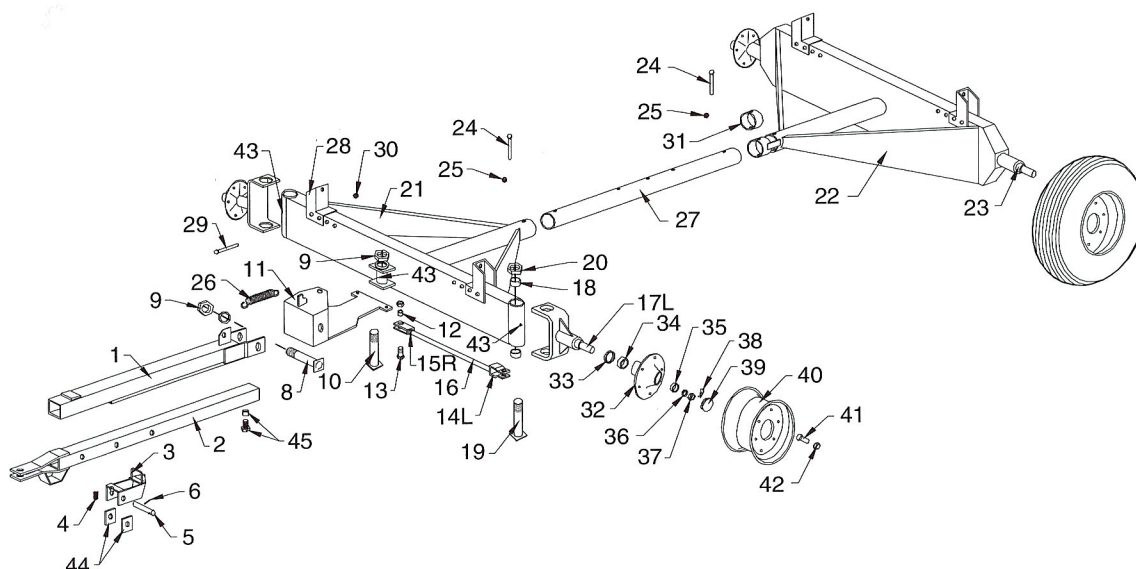
Inspect bracing and welds and repair if needed. Failure to repair could cause extensive damage and greatly reduce the life of the unit.

Inspect tie rods and replace the bronze bushings in the steering assembly when needed.

Repack the bearings in the hub assemblies once a year or as needed. Use a good quality bearing lubricant such as Bearing Gard MK1 or equivalent. NOTE: Grease zerks on hub caps are for between scheduled service lubrication.

If equipped with disc brakes, inspect the brake pads periodically for wear and for brake line damage. Check fluid in the master cylinder and inspect for dirt or corrosion on the inside wall of the master cylinder. Clean and replace with new Silicone Brake Fluid (DOT 5) if needed. Wagons with brakes should be stored in a clean dry place when not in use.

RUNNING GEAR PARTS LIST

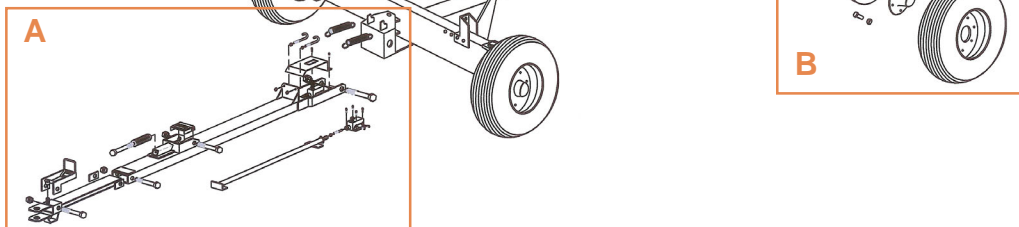


#	Part #	Description	Qty	#	Part #	Description	Qty
1	OT-1215NS	Adj. Tongue Outer Weldment	1	25	LN-34	3/4" Lock Nut	2
2	IT-1215NS	Adj. Tongue Inner Weldment	1	26	TS-615	Large Tongue Spring	1
3	TL-1215NS	Tongue Latch Weldment	1	27	CP-4	Coupling Pole	1
4	SS-615NS	Small Spring in Latch	1	28	ST-1215	Standards (optional)	4
5	LS-1215	Latch Pivot Shaft, 1" Dia.	1	29	MB-126	1/2" x 5 1/2" Bolt	8
6	CP-112	Cotter Pin	2	30	HN-12	1/2" Lock Nut	8
7	TT-13	Telescoping Tongue Complete	1	31	CL-412	Collar to Coupling Pole	1
8	TB-1215	Tongue Pivot Bolt	1	32	H-812-1	Hub Incl. Lug Bolt & Nuts	4
9	HN-114	Regular Hex Nut	4	33	SE-17-25091	Grease Seal	4
10	KP-1215	King Pin Bolt	1	34	3780	Inner Bearing (Large)	4
11	HW-1215	Hitch Weldment	1	35	2790	Outer Bearing (Small)	4
12	BB-34	Bronze Bushing, 3/4"	4	36	SW-1314-78	Spindle Washer	4
13	SB-34	Special Step Bolt, 3/4"	4	37	SN-1-78	Slotted Spindle Nut	4
14L	TRE-1L	Tie Rod End, Left	2	38	CP-316	Cotter Pin	4
14R	TRE-1R	Tie Rod End, Right	2	39	DC-17	Dust Cap	4
15L	HN-1L	1"-14 Hex Nut, Left	2	40	WR-16114	Wheel Rim, 8 Hole, 16.1x14	4
15R	HN-1R	1"-14 Hex Nut, Right	2	40	WR-22.5-8.25	Wheel Rim, 8 Hole, 22.5x8.25	4
16	TR-20	Tie Rod, 1" Dia.	2	40	WR-22.5-13.5	Wheel Rim, 8 hole, 22.5x13.5	4
17L	SA-14L	Spindle & "U" Assy w/Arm, Left	1	41	WB-41	Wheel Stud	32
17R	SA-14R	Spindle & "U" Assy w/Arm, Right	1	42	WB-40	Wheel Nut	32
18	EB-134	End Spindle Bronze Bushing	4	43	1633	Grease Fitting	4
19	SPB-134	Spindle Bolt x 13 1/2"	2	44	SB-212	Spacer Blocks	2
20	HN-134	1 3/4" Hex Nut	2	45	78214-BS	7/8" x 2 1/4" Bolt with spacer	1
21	FA-1215	Front Axle Weldment	1	46	3720	Inner Cup, Large	4
22	RA-14	Rear Axle Assembly	1	47	2720	Outer Cup, Small	4
23	RS-14	Rear Spindle	1				
24	MB-346	3/4" x 6" Bolt	2				

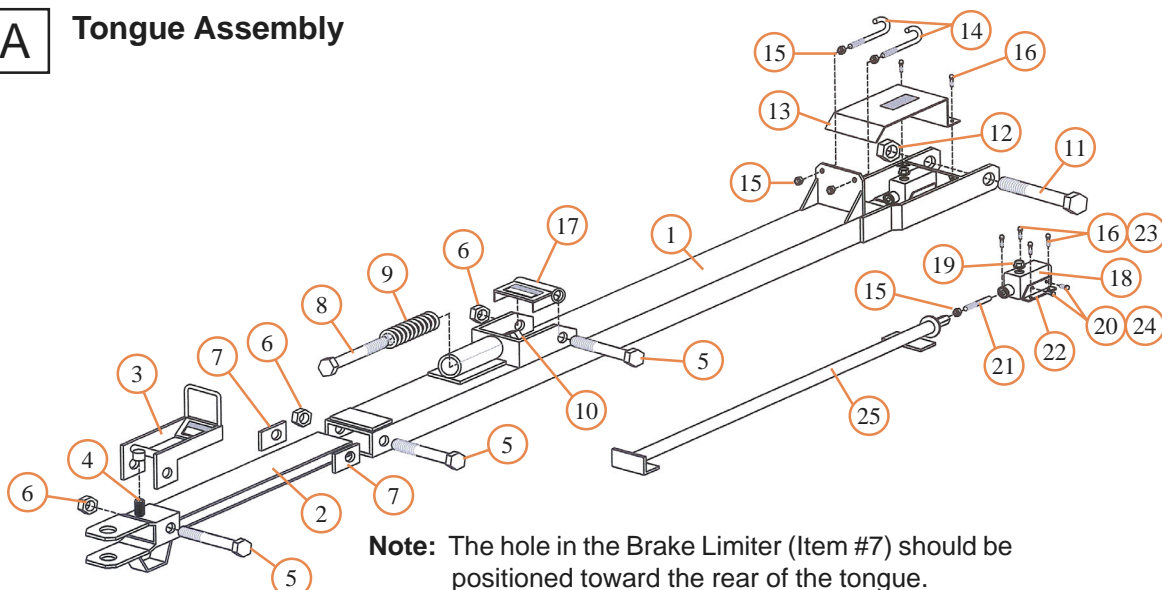
Parts List for New Style Hydraulic DISC Brakes

For 2004 Running Gears and newer, beginning with the corresponding serial number...

Model	Serial #
1384L	13227
1384S	01666
1484	02256
1592	03669
2492	01650

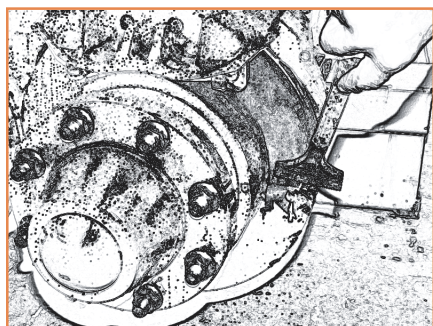
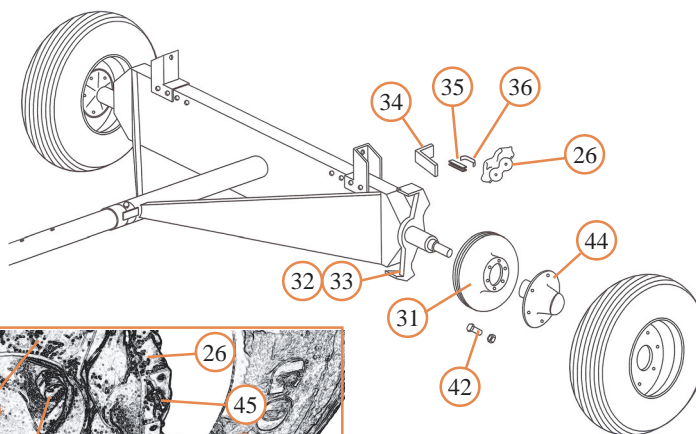


A Tongue Assembly

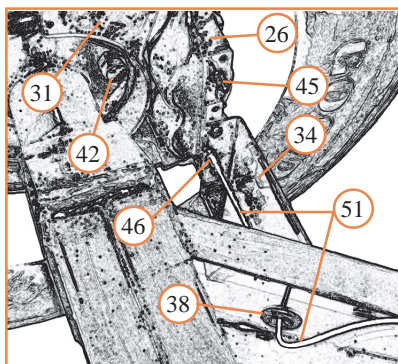


Note: The hole in the Brake Limiter (Item #7) should be positioned toward the rear of the tongue.

B Rear Brake Assembly



IMPORTANT: Remove paint from both sides of brake rotor **BEFORE** use. Failure to remove paint and debris may cause brakes to not work properly.



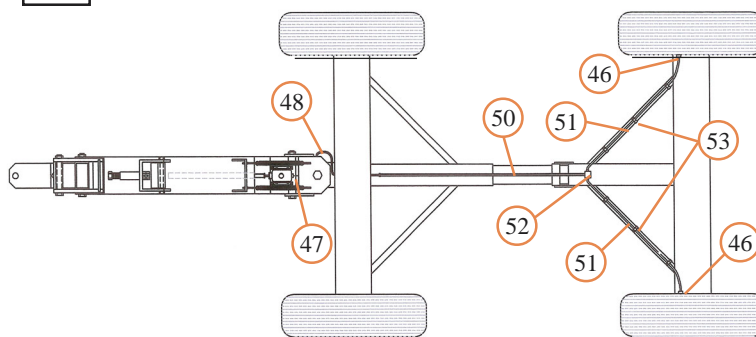
Rear Axle Brake System

Parts List for New Style Hydraulic DISC Brakes

For 2004 Running Gears and newer, beginning with the corresponding serial number...

Model	Serial #
1384L	13227
1384S	01666
1484	02256
1592	03669
2492	01650

C Brake Line Assembly



D Parts List

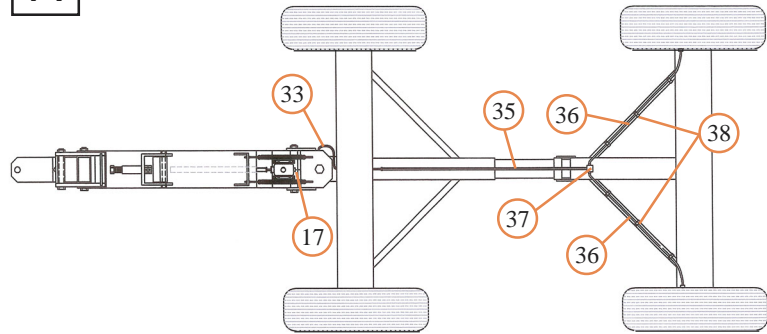
#	Part #	Description	Qty	#	Part #	Description	Qty
1	OTW-1324	Outer Tongue Weldment	1	31	BD-1314	Brake Disc (13-14 Ton)	2
2	ITW-1324	Inner Tongue Weldment	1	31	BD-15	Brake Disc (15 Ton)	2
3	TL-1324	Tongue Latch	1	31	BD-24	Brake Disc (24 Ton)	2
4	SS-615NS	Small Spring In Latch	1	32	SP-1324L	Brake Support Arm (Left)	1
5	17G2B	1" x 7" Bolt (Grade 2)	3	33	SP-1324R	Brake Support Arm (Right)	1
6	1LN	1" Lock Nut	3	34	BG-1	Brake Guard (13-15 Ton)	2
7	BL-58	Brake Limiter	2	34	G-24	Brake Guard (24 Ton)	2
8	19G8B	1" x 9" Bolt (Grade 8)	1	35	RT-1415	Retainer with Bolt	2
9	CS-178714	Compression Spring	1	36	TS-1415	Tension Spring	2
10	1RN	1" Regular Nut	2	37	RB-1415	Rubber Boot on Master Cylinder	1
11	TB-1215	Tongue Bolt	1	38	GR-1415	Rubber Grommet	2
12	HN-114	1 1/4" Hex Nut	1	39	SKMC-1324	Seal Kit for Master Cylinder	1
13	SMC-1	Shield for Master Cylinder	1	40	WS-24	Wire Spring (anti-rattle)	2
14	124-JB	1/2" x 4" J-Bolt	2	41	DOT5-BF	Container DOT 5 Brake Fluid	2
15	12-N	1/2" Regular Nut	4	42	12114-G5	1/2" x 1 1/4" Bolt w/Lock Wash.	12
16	381-FB	3/8" x 1" Flange Bolt	6	43	WB-41L	Wheel Stud (Long Knurl)(13-14T)	16
17	BLOL-1	Brake Lock Out Latch	1	44	H-812-1B	Hub, Faced for Brakes (13-14T)	2
18	MCA-DC1	Master Cylinder Assembly	1	44	107751-B	Hub, Faced for Brakes (15T)	2
19	RCMC-1324	Replacement Cap for M/Cyl.	1	44	W-871B	Hub, Faced for Brakes (24T)	2
20	383G8B	3/8" x 3" Bolt (Grade 8)	2	45	BS-24	Bleeder Stem	2
21	PRE-1	Plunger Rod End	1	46	CF-1324	Fitting for Caliper	2
22	MBMC-DC2	Mounting Bracket (2 pcs) for Master Cylinder	1	47	FMC-1324	Fitting for Master Cylinder	1
23	38-FN	3/8" Flange Nut	4	48	HH-1424	1/4" x 24" Hydraulic Hose	1
24	38-LN	3/8" Lock Nut	2	50	ST-96	3/16" Brake Line x 96" (13-15T)	1
25	PP-1D	Plunger Pole	1	50	ST-120	3/16" Brake Line x 120" (24T)	1
26	CA-1424	Brake Caliper Assembly	2	51	ST-53	3/16" Brake Line x 53"	2
27	BP-1424	Brake Pad	4	52	10606	Tee	1
28	SCA-1415	Seal for Caliper Assembly	4	53	SC-1324	Spring Clips	6
29	BCA-1415	Boot for Caliper Assembly	4				
30	CCA-1415N	Cup for Caliper Assembly	4				

E Instructions for Adjusting the Plunger Rod

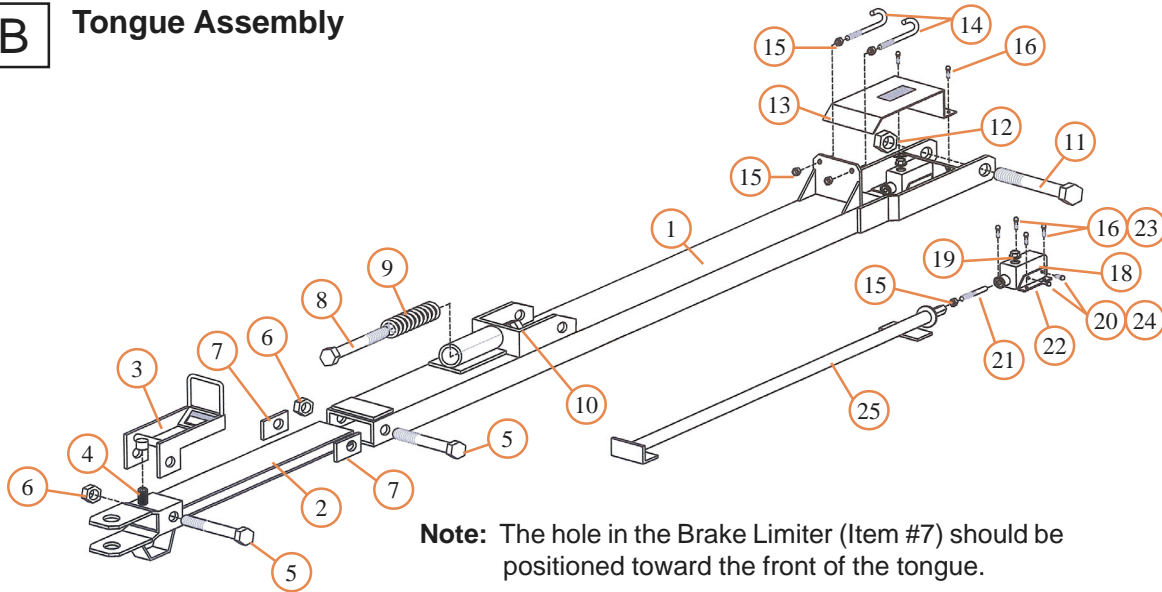
1. Pull on the tongue so the latch is tight against the stop.
2. Loosen the Hex Nut between the Plunger Rod and Plunger Pole. Adjust the Plunger Rod so there is 1/8" to 3/16" play between the plunger rod and master cylinder. IMPORTANT: If there is NO Free Travel between the activator and the master cylinder, the brakes will always be on, allowing the brakes to get hot and fail.
3. Add Brake Fluid (DOT 5) to the master cylinder and bleed air from the lines.

Parts List for Hydraulic DRUM Brakes

A Brake Line Assembly



B Tongue Assembly

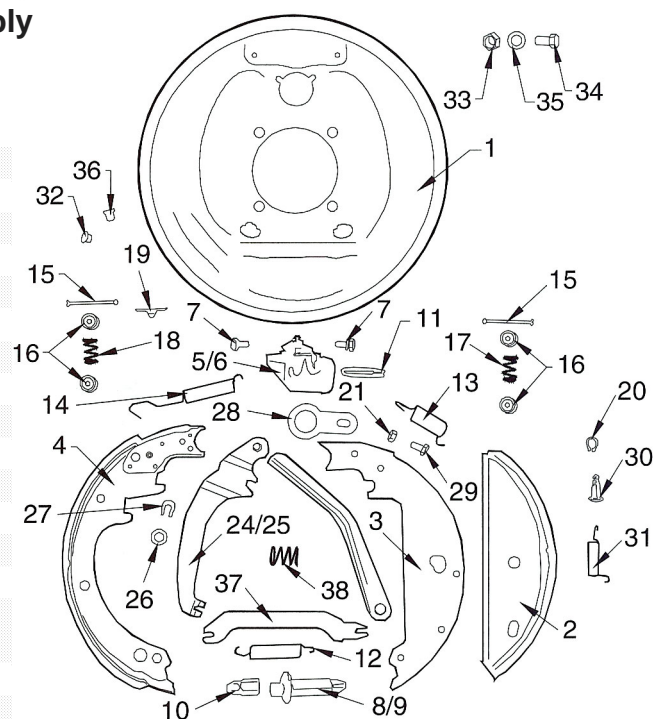


C Parts List

#	Part #	Description	Qty	#	Part #	Description	Qty
1	OTW-1324	Outer Tongue Weldment	1	22	MBMC-DR2	Mounting Bracket (2 pcs) for Master Cylinder	1
2	ITW-1324	Inner Tongue Weldment	1	23	38-FN	3/8" Flange Nut	4
3	TL-1324	Tongue Latch	1	24	38-LN	3/8" Lock Nut	2
4	SS-615NS	Small Spring In Latch	1	25	PP-1D	Plunger Pole	1
5	17G2B	1" x 7" Bolt (Grade 2)	2	26	RB-1415	Rubber Boot on Master Cylinder	1
6	1LN	1" Lock Nut	2	27	GR-1415	Rubber Grommet	2
7	BL-58	Brake Limiter	2	28	SKMC-1324	Seal Kit for Master Cylinder	1
8	19G8B	1" x 9" Bolt (Grade 8)	1	29	DOT5-BF	Container DOT 5 Brake Fluid	2
9	CS-178714	Compression Spring	1	30	WB-41L	Wheel Stud (Long Knurl)(13-15T)	16
10	1RN	1" Regular Nut	2	31	H-812-1B	Hub, Faced for Brakes (13-14T)	2
11	TB-1215	Tongue Bolt	1	31	107751-B	Hub, Faced for Brakes (15T)	2
12	HN-114	1 1/4" Hex Nut	1	31	W-871B	Hub, Faced for Brakes (24T)	2
13	SMC-1	Shield for Master Cylinder	1	32	BS-24	Bleeder Stem	2
14	124-JB	1/2" x 4" J-Bolt	2	33	HH-1424	1/4" x 24" Hydraulic Hose	1
15	12-N	1/2" Regular Nut	4	35	ST-96	3/16" Brake Line x 96" (13-15T)	1
16	381-FB	3/8" x 1" Flange Bolt	6	35	ST-120	3/16" Brake Line x 120" (24T)	1
17	FMC-1324	Fitting for Master Cylinder	1	36	ST-53	3/16" Brake Line x 53"	2
18	MCA-DR1	Master Cylinder Assembly	1	37	10606	Tee	1
19	RCMC-1324	Replacement Cap for M/Cyl.	1	38	SC-1324	Spring Clip	6
20	383G8B	3/8" x 3" Bolt (Grade 8)	2				
21	PRE-1	Plunger Rod End	1				

D Parts List for Drum Brake Assembly

#	Part #	Description	Qty
1	24737	Back Plate Assembly	1
2	9739	Front Brake Shoe Assembly	1
3	9745	Front Shoe Lever	1
4	9775	Rear Shoe Lever	1
5	9776	Wheel Cylinder Assembly - Right	1
6	9777	Wheel Cylinder Assembly - Left	1
7	23457	Screw & Lockwasher	2
8 & 9	23324	Adjusting Screw & Pivot Nut	1
10	9782	Socket - Adjusting Screw	1
11	9783	Push Rod - Wheel Cylinder	1
12	9784	Spring Adjusting Screw (Yellow)	1
13	9785	Spring - Front Lever (Red)	1
14	9786	Spring - Rear Shoe (Orange)	1
15	9788	Pin - Shoe Hold Down	2
16	9789	Cup - Shoe Hold Down	4
17	9790	Spring - Front Hold Down (Yellow)	1
18	9791	Spring - Rear Hold Down (Black)	1
19	9254	Cover Plate - Adjusting Hole	1
20	7778	Retaining Ring	1
21	17406	Hex - Locknut 5/16" NC	1
22*	9731	Toggle Link, Right	1
23*	9732	Toggle Link, Left	1
24*	9792	Parking Lever, Right	1
25*	9793	Parking Lever, Left	1
26*	9794	Spring Washer	1
27*	9795	Retainer	1
28	9743	Travel Link	1
29	7949	Travel Link Bolt - Hex Cap Screw 5/16" NC x 5/8"	1
30	9796	Pin-Front Shoe - with Park Linkage	1
30	12560	Pin-Front Shoe - without Park Linkage	1
31	6814	Spring - Front Shoe	1
32	9797	Plug - Plastic	1
33	7972	Hex Nut 1/2" NF	4
34	7955	Cap Screw 1/2" NF x 1"	4
35	7937	Lockwasher 1/2"	4
36	9404	Plug - Plastic	1
37*	17194	Parking Strut	
38*	16090	Spring - Parking Strut	
	15845	Wheel Cylinder Repair Kit - 1 1/8"	1/2



E Adjusting the Drum Brakes

It is necessary to rotate the wheels in the direction of forward rotation only when making adjustments.

The brake adjustment nut is located behind a slot at the bottom of the backing plate. Tighten the nut until you cannot rotate the wheel by hand, then back off the adjustment 18 to 20 notches.

ROTATE THE DRUM IN THE DIRECTION OF FORWARD ROTATION ONLY

F Hydraulic Lines

Use care in shaping brake lines to avoid sharp bends or kinks. Be sure and use a "Double Flaring" type of tool on steel tubing to assure tight leakproof connections. Be sure and use hydraulic rubber hoses at points of flexing. Anchor hose ends to avoid stress on tubing.

SERVICE / MAINTENANCE RECORD

DATE	DESCRIPTION	NOTES