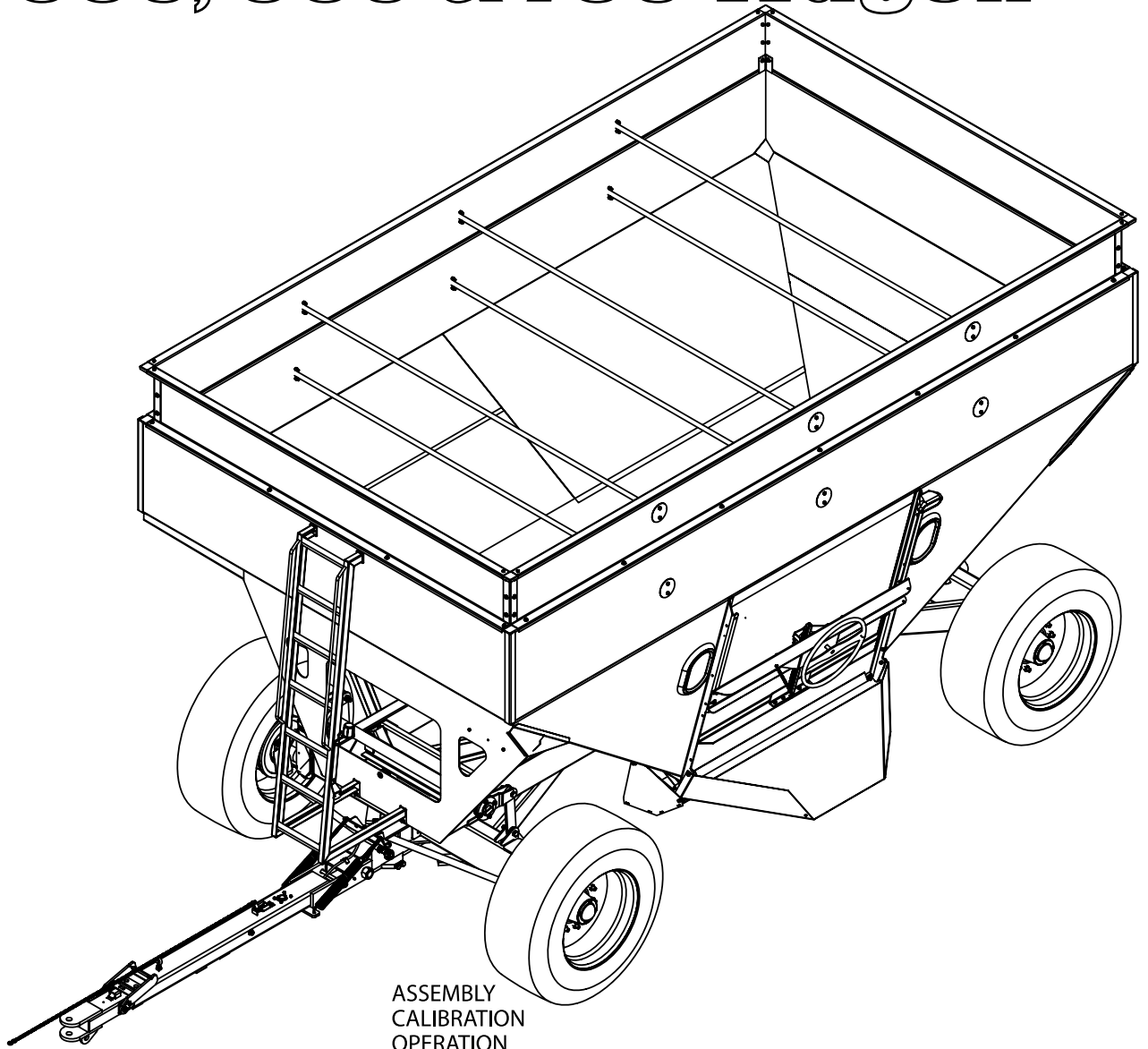




Demco

Gravity Flow

550, 650 & 750 Wagon



ASSEMBLY
CALIBRATION
OPERATION
REPLACEMENT PARTS

READ *complete manual CAREFULLY
BEFORE attempting operation.*

Doing Our Best To Provide You The Best

OPERATORS MANUAL

INTRODUCTION

Thank you for purchasing a Demco Gravity Flow Wagon. We feel you have made a wise choice and hope you are completely satisfied with your new piece of equipment. Proper care and use will result in many years of service.

WARRANTY POLICY, OPERATOR MANUALS & REGISTRATION

Go online to www.demco-products.com to review Demco warranty policies, operator manuals and register your Demco product.



WARNING: TO AVOID PERSONAL INJURY OR DEATH, OBSERVE FOLLOWING INSTRUCTIONS:

Never overload wagon. Do not exceed the rating of the gear or load rating of the tires, whichever is less.

Ensure that anybody present is clear before applying power to any machinery used in conjunction with wagon box or when moving box.

Never allow anyone in, near, or on gravity box during transporting or unloading of grain. Moving grain is dangerous and can cause entrapment, resulting in severe injury or death by suffocation.

Do not exceed 20 miles per hour when towing wagon.

GENERAL INFORMATION

1. Unless otherwise specified, high-strength (grade5) (3 radial-line head markings) hex head bolts are used throughout assembly of this piece of equipment.
2. Whenever terms “LEFT” and “RIGHT” are used in this manual it means from a position behind wagon box and facing forward.
3. When placing a parts order, refer to this manual for proper part numbers and place order by PART NO. and DESCRIPTION.
4. Read assembly instructions carefully. Study assembly procedures and all illustrations before you begin assembly. Note which parts are used in each step. This unit must be assembled in proper sequence or complications will result.

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SAFETY

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH!



THIS SYMBOL MEANS

ATTENTION

BECOME ALERT

YOUR SAFETY IS INVOLVED!

SIGNAL WORDS:

This manual uses the following signal words-- DANGER, WARNING, and CAUTION-- with safety messages. The appropriate signal word has been selected using the following guidelines.

DANGER:

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING:

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. It may also be used to alert against unsafe practices.

CAUTION:

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual, require additional copies, or if your manual is damaged, please contact your dealer or Demco, 4010 320th Street, Boyden, IA 51234
ph: (712) 725-2311 or Toll Free: 1-800-543-3626 Fax: (712) 725-2380
<http://www.demco-products.com>



SAFETY...YOU CAN LIVE WITH IT



EQUIPMENT SAFETY GUIDELINES

Every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or you yourself, follow them.

In order to provide a better view, certain illustrations in your owners manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace shield prior to use.

Replace any caution, warning, danger or instruction safety decal that is not readable or is missing.

Do not attempt to operate this equipment under the influence of alcohol or drugs.

Review safety instructions with all users annually.

Operator should be a responsible adult. **DO NOT ALLOW PERSONS TO OPERATE OR ASSEMBLE THIS UNIT UNTIL THEY HAVE DEVELOPED A THOROUGH UNDERSTANDING OF SAFETY PRECAUTIONS AND HOW IT WORKS.**

To prevent injury or death, use a tractor equipped with a roll over protective system (ROPS). Do not paint over, remove, or deface any safety signs or warning decals on your equipment. Observe all safety signs and practice instructions on them.

Never exceed limits of a piece of machinery. If its ability to do a job, or to do so safely is in question **DON'T TRY IT.**



LIGHTING AND MARKING

It is the responsibility of customer to know lighting and marking requirements of local highway authorities and to install and maintain equipment to provide compliance with regulations. Add extra lights when transporting at night or during periods of limited visibility.

Lighting kits are available from your dealer or from manufacturer.



REMEMBER

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or manufacturer.



SAFETY SIGN CARE

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replacement parts that displayed a safety sign should also display current sign.
- Safety signs are available from your distributor, dealer parts department, or factory.

How to install safety signs:

- Be sure that installation area is clean and dry.
- Decide on exact position before you remove backing paper.
- Remove smallest portion of split backing paper.
- Align decal over specified area and carefully press small portion with exposed sticky backing in place.
- Slowly peel back remaining paper and carefully smooth remaining portion of decal into place.
- Small air pockets can be pierced with a pin and smoothed out using piece of decal backing paper.



TIRE SAFETY

- Failure to follow proper procedures when mounting a tire on a rim can produce an explosion which may result in a serious injury or death.
- Do not attempt to mount a tire unless you have proper equipment and experience to do job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels with appropriate type and load capacity to meet or exceed anticipated weight to be placed on the equipment.
- Refer to “TIRE INFLATION CHART” in your owners manual for maximum tire pressure for a Demco Gravity Flow Wagon.



BEFORE OPERATION:

- Carefully study and understand this manual and the Owner’s Manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and eye protection be worn.
- Operator may come in contact with certain materials which may require specific safety equipment relative to handling of such materials. (Examples: extremely dusty, molds, fungus, bulk fertilizers, etc.)
- Keep wheel and lug nuts tightened to specified torque.
- Assure that agricultural implement tires are inflated evenly.
- Give unit a visual inspection for any loose bolts, worn parts, or cracked welds, and make necessary repairs. Follow maintenance safety instructions included in this manual.
- Be sure there are no tools lying on or in equipment
- Do not use unit until you are sure that area is clear, especially around children and animals.
- Don’t hurry learning process or take unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Make sure that brakes are evenly adjusted (if equipped with brakes)
- Use a tractor equipped with Roll Over Protection System (ROPS) and fasten your seat belt prior to starting the engine.
- Manufacturer does not recommend usage of a tractor with the ROPS removed.
- Move tractor wheels to widest recommended settings to increase stability.
- Do not allow anyone to stand between tongue or hitch and towing vehicle when backing up to equipment.



DURING OPERATION

- Beware of bystanders, PARTICULARLY CHILDREN! Always look around to make sure that it is safe to start engine of towing vehicle or move unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- NO PASSENGERS ALLOWED- Do not carry passengers anywhere on or in tractor or equipment.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate, or adjust your equipment while it is moving.

- When halting operation, even periodically, set tractor or towing vehicles brakes, disengage PTO, shut off engine, and remove ignition key.
- Be especially observant of operating area and terrain. Watch for holes, rocks, or other hidden hazards. Always inspect area prior to operation.
 - DO NOT operate near edge of drop-off or banks.
 - DO NOT operate on steep slopes as overturn may result.
 - Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.
- Pick the most level possible route when transporting across fields. Avoid edges of ditches, gullies, and steep hillsides.
- Be extra careful when working on inclines.
- Maneuver tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose gravel, rocks, and holes; they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Keep all bystanders, pets, and livestock clear of work area.
- Operate towing vehicle from operators seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment unattended.
- As a precaution, always recheck hardware on equipment following every 100 hours of operation. Correct all problems. Follow maintenance safety procedures.



FOLLOWING OPERATION

- Following operation, or when unhitching, stop tractor or towing vehicle, set brakes, shut off engine and remove ignition key.
- Store unit in an area away from human activity.
- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around stored unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.



HIGHWAY AND TRANSPORT OPERATIONS

- SAFETY CHAINS: If equipment is going to be transported on a public highway, always follow state and local regulations regarding safety chains and auxiliary lighting. Be sure to check with local law enforcement agencies for your own particular regulations. Only safety chains (not elastic or nylon/plastic tow straps) should be used to retain connection between towing and towed machines in event of separation of primary attaching system. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chains. Criss cross chains under tongue and secure to draw bar cage, mounting loops, or bumper frame.
- Adopt safe driving practices:
 - Keep brake pedals latched together at all times. NEVER USE INDEPENDENT BRAKING WITH MACHINE IN TOW, LOSS OF CONTROL AND/OR UPSET OF UNIT CAN RESULT.
 - Always drive at a safe speed relative to local conditions, ensure that your speed is low enough for an emergency stop. Keep speed to a minimum.

- Reduce speed prior to turns to avoid risk of overturning.
- Always keep tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting, flags and necessary warning devices to protect operators of other vehicles on highway during transport. Various safety lights and devices are available from your dealer.
- Use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving tractor and equipment on road under 20 m.p.h. (40 kph) at night or during day, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge load ratings. Do not cross bridges rated lower than gross weight at which you are operating.
- Watch for obstructions overhead and side to side while transporting.
- Always operate equipment in a position to provide maximum visibility. Make allowances for increased length and weight of equipment when making turns, stopping unit, etc.



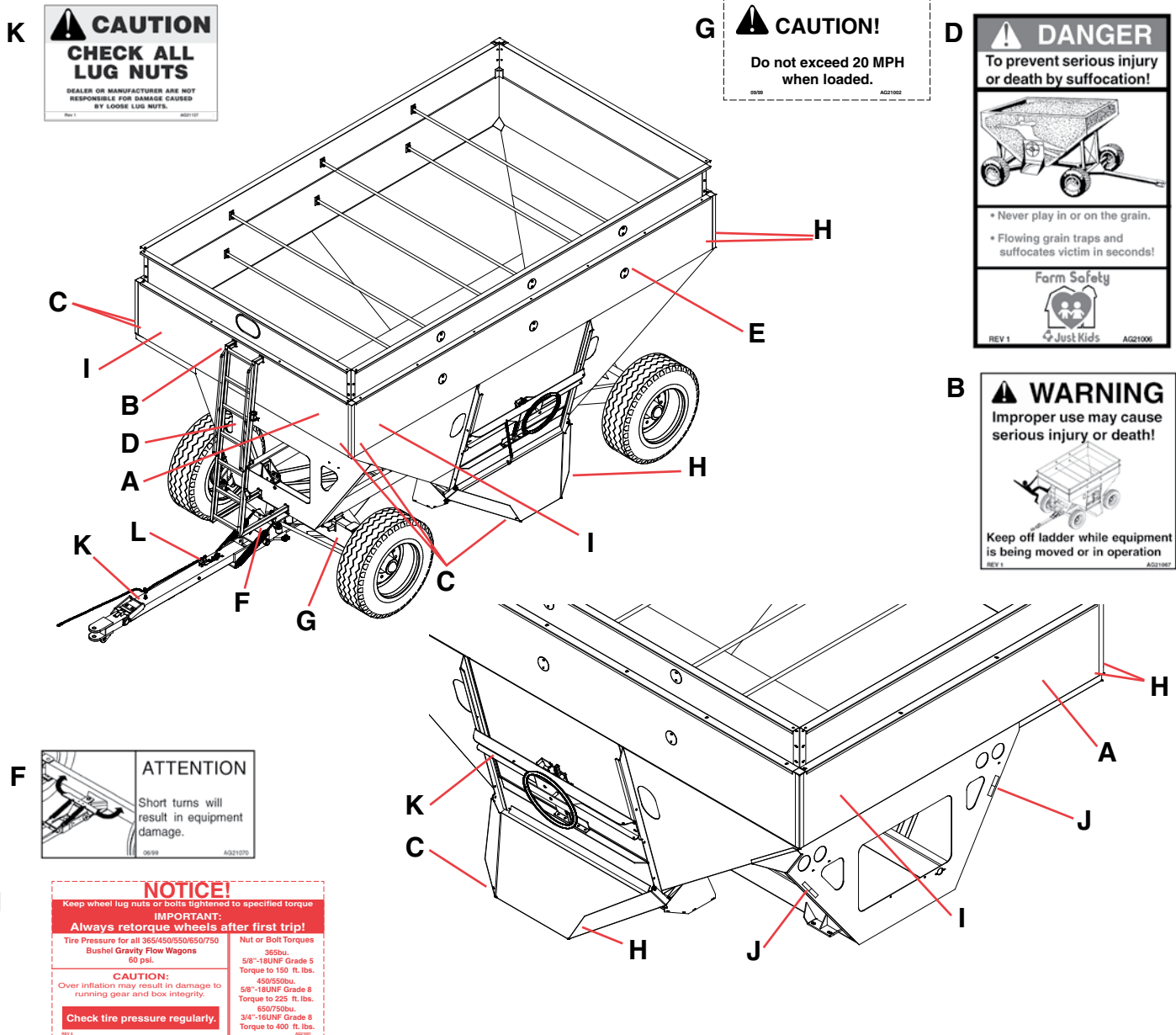
PERFORMING MAINTENANCE

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate engine of towing vehicle in a closed building. Exhaust fumes may cause asphyxiation.
- Before working on this machine, stop towing vehicle, set brakes, shut off engine and remove ignition key.
- Always use safety support and block wheels. Never use a jack to support machine.
- Always use proper tools or equipment for job at hand.
- Use extreme caution when making adjustments.
- Follow torque chart in owners manual when tightening bolts and nuts.
- Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate skin.
- Openings in skin and minor cuts are susceptible to infection from hydraulic fluid. Without immediate medical treatment, serious infection and reactions can occur.
- When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.
- Replace all shields and guards after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on any steps or platform.
- When replacing bolts, refer to owners manual.
- Refer to bolt torque chart in owners manual for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. Manufacturer will not claim responsibility for use of unapproved parts or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, manufacturer does not accept any liability for injury or warranty.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment



SAFETY SIGN LOCATIONS

Types of safety sign and locations on equipment are shown in illustration below. Good safety requires that you familiarize yourself with various safety signs, type of warning, and area or particular function related to that area, that requires your SAFETY AWARENESS.



A	AG21173	550 (Charcoal)
	AG21174	650 (Charcoal)
	AG21175	750 (Charcoal)
B	AG21067	Keep Off Ladder
C	04508	Amber Reflector
D	AG21006	Wagon Safety
	AG21192	Left Stripe (Charcoal)
	AG21193	Right Stripe (Charcoal)
F	AG21070	Attention Do Not Turn Sharply
G	AG21002	Caution 20 M.P.H.

H	04804	Red Reflector
I	AG21163	Large Demco (Charcoal)
J	07278	Conspicuity (w/ White to the Top)
K	AG21127	Check All Wheel Nuts
L	BH21003	Brake Lever Indicator, Red/Green
M	AG21001	Tire Pressure and Torque Rating

Please order replacement parts by PART NO. and DESCRIPTION.

BOLT TORQUE

TORQUE DATA FOR STANDARD NUTS, BOLTS, AND CAPSCREWS.

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with same grade bolt.

NOTE: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.



Torque Specifications

Bolt Torque for Standard bolts *

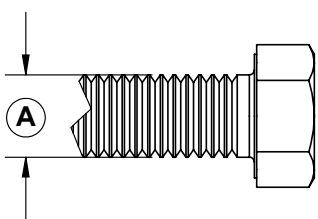
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290	(390)	400	(540)
7/8"	170	(230)	420	(570)	650	(880)
1"	225	(300)	630	(850)	970	(1310)

Bolt Torque for Metric bolts *

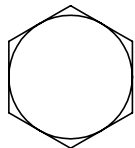
"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
20	378	(513)	--	--	515	(689)
22	516	(699)	--	--	702	(952)
24	654	(886)	--	--	890	(1206)

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

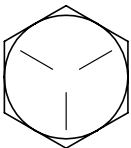
* GRADE or CLASS value for bolts and capscrews are identified by their head markings.



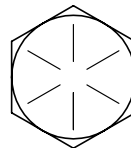
GRADE-2



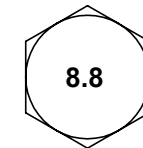
GRADE-5



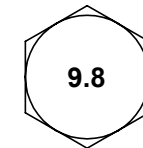
GRADE-8



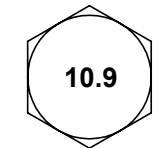
CLASS 8.8



CLASS 9.8



CLASS 10.9

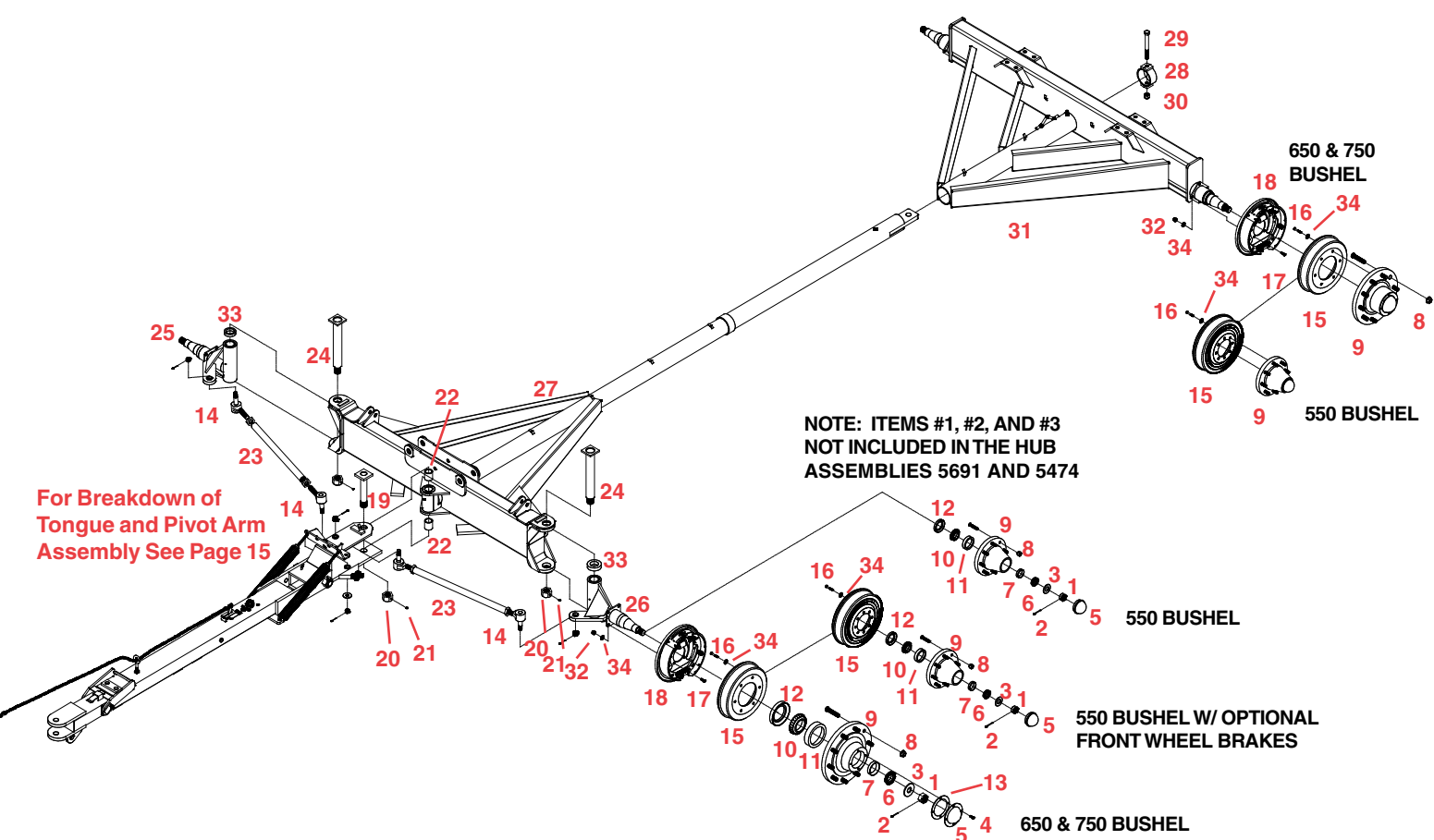
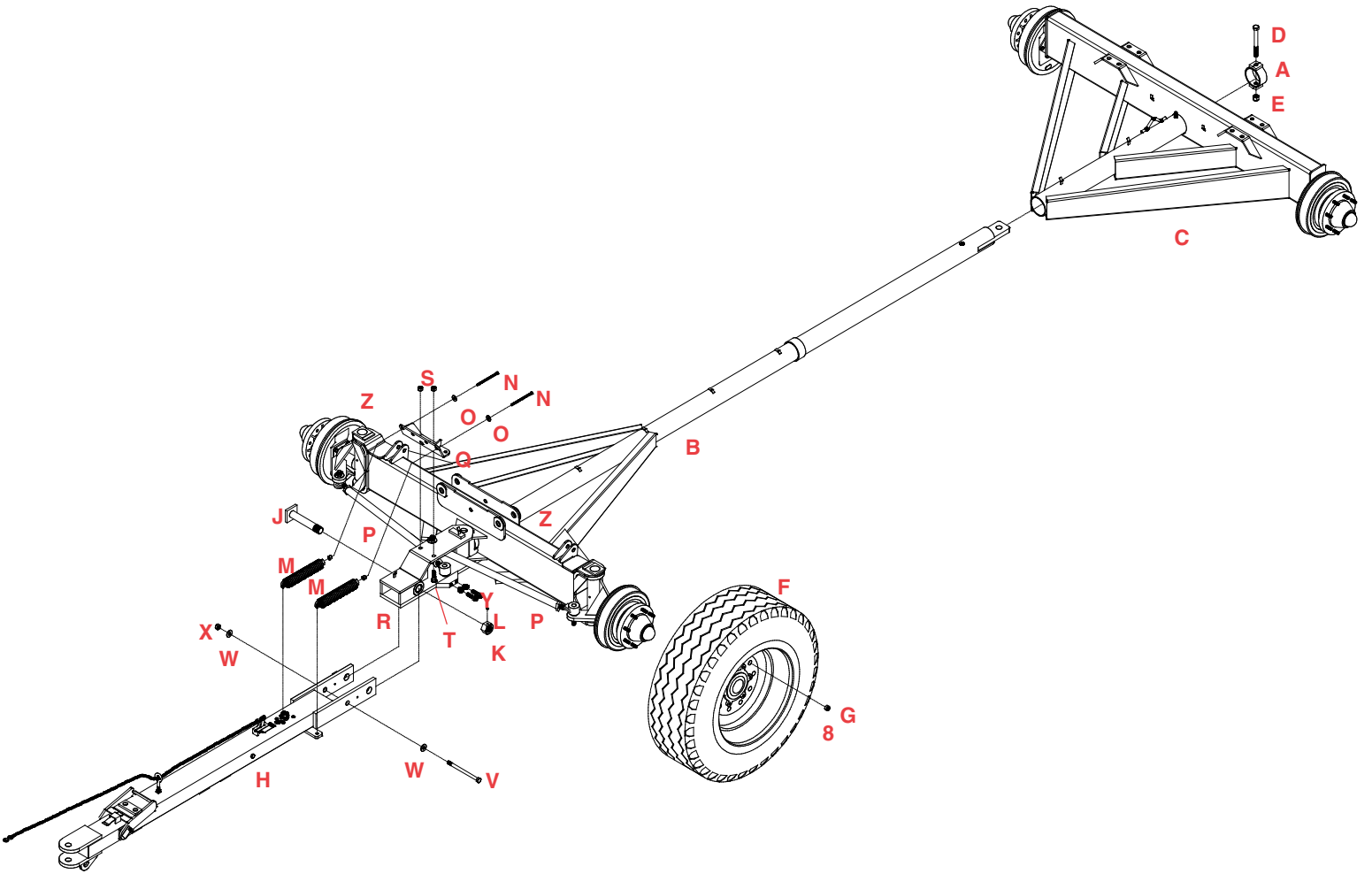


Wheel Bearing Adjustment

1. Tighten castle or slotted hex nut to initial torque indicated on chart while turning hub in both directions to insure all bearing surfaces are in contact.
2. Back nut off and repeat step #1.
3. Back nut off, do not allow hub to turn.
4. Tighten nut to final torque indicated on chart.
5. Install cotter pin, if needed loosen or tighten nut to the next closest locking slot.
6. Check hub for end play.
7. If end play can be felt, start over and readjust bearings. If end play is felt again, try readjusting with a different castle or slotted hex nut.
8. The bearing are set correctly when no end play can be felt after adjustment.

Hub	Initial Toque	Final Torque
8 bolt	75 ft/ lbs	35 ft/lbs
10 bolt	75 ft/lbs	50 ft/lbs

RUNNING GEAR PARTS BREAKDOWN



RUNNING GEAR PARTS LIST

REF #	PART #	QTY	DESCRIPTION
1.	07353	1	1-1/4"-12 UNF Castle Nut (650&750)
-	01934	1	1"-14 UNF Castle Nut (550)
2.	05088	1	1/4" x 2" Lg. Cotter Pin (650&750)
-	00191	1	3/16" x 1-1/2" Lg. Cotter Pin (550)
3.	07354	1	1.32" I.D. x 3.00" OD Flatwasher (650&750)
-	01936	1	1-1/16" I.D. x 2-1/8" O.D. Flatwasher (550)
5474-30			4 Wheel Hub Assembly (650 & 750 Bu.)
4.	04305	4	5/16"-18 UNC x 1/2" Hex Head Bolt Gr. 5
5.	07362	1	Hub Cap
6.	07358	1	Outer Cone Bearing (460)
7.	07360	1	Outer Cup (453A)
8.	07435	10	3/4" Flanged Wheel Nut
9.	-	1	10 Bolt Hub (W871) (NOT SOLD SEPARATELY)
-	07861	-	3/4"-16 UNF Stud Bolt (replacement)
10.	07357	1	Inner Cone Bearing (39585)
11.	07359	1	Inner Cup (39520)
12.	07361	1	Oil Seal (CR30087)
13.	09532	1	Gasket
5691-30			4 Wheel Hub Assembly (550 Bu.)
5.	01933	1	Hub Cap
6.	01937	1	Outer Cone Bearing (LM501349)
7.	01938	1	Outer Cup (LM501310)
8.	10971	8	5/8"-18 UNF Wheel Nut, Flanged
9.	-	1	8 Bolt Hub (NOT SOLD SEPARATELY)
-	10151	-	5/8"-18 UNF Stud Bolt (replacement)
10.	01942	1	Inner Cone Bearing (JLM506849)
11.	01943	1	Inner Cup (JL506810)
12.	01944	1	Oil Seal (CR27362)
14.	6068-30	2	Tie Rod End w/Left Hand Threads
-	6069-30	2	Tie Rod End w/Right Hand Threads
15.	07324	4	13" Brake Drum (650 & 750 Bu.)
-	03532	2-4	13" Brake Drum (550 Bu.) (4 whl. brakes optional)
16.	05031	24	1/2"-20UNFx1-1/4" Bolt Gr.5 (550 Qty.32)
17.	02010	16	1/2"-20UNF x 1" Hex Head Bolt Gr. 5
18.	07910	1	Left Brake Cluster (shown)
-	07911	1	Right Brake Cluster (not shown)
19.	07407-30	1	Pivot Arm Mounting Pin
20.	01922	3	1-1/2"-12UNF Hex Nut w/ Set Screw Hole
21.	01923	3	1/4"-20UNC x 1/4" Socket Set Screw
22.	01951	2	1-1/2" I.D. x 1-7/8" O.D. x 2" Bronze Bushing
23.*	6067-30	2	Tie Rod Assembly
24.	09033-30	2	2" Dia. Spindle Mounting Pin
25.	14687-30	1	Right Front Spindle (550 Bu.)
-	07409-30	1	Right Front Spindle (650&750 Bu.)
26.	14686-30	1	Left Front Spindle (550 Bu.)
-	07408-30	1	Left Front Spindle (650&750 Bu.)
27.	14685-30	1	Front Bolster Frame (550&650 Bu.)
-	14326-30	1	Front Bolster Frame (750 Bu.)
28.	01965-30	1	4-1/2" O.D. Collar
29.	01964	1	3/4"-10UNC x 7" Hex Head Bolt Gr. 5
30.	02961	1	3/4"-10UNC Nylon Insert Locknut
31.	13148-30	1	Rear Bolster Frame (550 Bu.)
-	13124-30	1	Rear Bolster Frame (650 Bu.)
-	14327-30	1	Rear Bolster Frame (750 Bu.)
32.	00152	16	1/2"-20 UNF Hex Nut (550 Qty.8)
33.	07356	2	Thrust Bearing
34.	00084	36	1/2" Lockwasher (550 Qty.24)
35.	03908-60	4	22.5 x 13.5 10 Bolt Rim (650/750 Bu. Charcoal)
	11291-60	4	22.5 x 13.5 8 Bolt Rim (550 Bu. Charcoal)

ASSEMBLY INSTRUCTIONS MOUNTING THE WHEELS, AND ASSEMBLING THE FRONT AND REAR BOLSTER FRAMES

1. Insert the Lock Collar (A) into the opening provided on the Rear Bolster Pipe Frame (C). The end of the Front Bolster Pipe (B) should slide into the Rear Bolster Frame (C). Line up the holes in the Lock Collar and bolt together using one 3/4" x 7" bolt (D) and one 3/4" nylon locknut (E).
2. Mount the Tire and Rim (F) to the front and rear bolster using forty 3/4" Flanged Wheel Nuts (G) (650 Bu.). For 550 Bu. mount use 32 5/8" Flanged Wheel Nuts (G). Torque Wheel Nuts to 400 ft*lb (650 Bu.). For 550 Bu., torque to 225 ft*lb.

TIGHTEN ALL BOLTS (SEE TORQUE CHART ON PAGE 11.)

INSTALLING THE TONGUE AND THE LIFT ASSIST SPRING

1. Mount the Tongue (H) onto the Pivot Arm (R), fasten together using one 1-1/2" Dia. x 9" bolt (J) and one 1-1/2" nut (K). Tighten just enough to take out all slack and hold nut in place using one 1/4" x 1/4" socket set screw (L).
2. Insert 5/8"-11 x 9" bolt through Tongue as shown using two 5/8" Flatwashers (W), and one 5/8" nylon insert locknut (X). Tighten bolt until all slack is removed between the tongue and pivot arm (R). Do not over tighten, the tongue should still move freely. Raise the tongue and support on a stand.
3. Mount the Lift Assist Plate (Q) onto the top of the Pivot Arm (R) using two 5/8"-11 x 1-3/4" bolts (S) and two 5/8" nylon insert locknuts (T).
4. Attach the Lift Assist Springs (M) to the Lift Assist Plate (Q) by threading the two 1/2"-13 x 6" full thread bolts (N) with 1/2" lockwasher (O) into the threaded insert in the springs (M). Tighten the bolts to remove any slack. Remove the stand and adjust the tongue height using the two 1/2" x 6" bolts.
5. Adjustment of the 5/8" x 2 1/2" bolts (Y) on the Pivot Arm (R) should be preset to not overturn. If adjustment is required, do so once box is mounted on running gear. Be careful that tires will not turn into the box frame.

ADJUSTING THE TIE RODS FOR ALIGNMENT

1. Alignment is present at the factory. To check alignment, the Tie Rods (P) should be adjusted to have 1/4" to 3/8" toe in (measured at tire bead edge of rim). When this adjustment is made, the tongue must be aligned with the round pipe on the front bolster. Be sure both wheels toe in equally.

DEMCO BRAKE TONGUE MAINTENANCE AND ADJUSTMENT

WARNING: Review all of the following instructions before installation and use of the hydraulic brake tongue. Dealers or Distributors must review these instructions with the ultimate user. Failure to follow these instructions, or failure to properly maintain the braking system after installation, can result in loss of braking action which could cause severe property damage, personal injury and/or death.

DISASSEMBLY AND ASSEMBLY

1. The brake tongue is assembled and adjusted at the factory:



CAUTION Do Not Disassemble or Attempt to Adjust The Tongue Push-Rod Assembly (#11)

To disassemble the tongue: (refer to illustration on page 15)

- A. Remove 3/4"bolts (#8) , remove stop block (#7), and pull male tongue (#30) out of female tongue (#1).
- B. Remove 1/2"bolt (#4), pin (#25), and spacer (#27)
- C. Remove set screw (#24) from adjustment spud (#23b), unthread and remove adjustment spud (#23b).
- D. Remove push-off assembly (#28), pin (#29), two shocks (#26), and two springs (#10).
- E. To remove tongue push-rod assembly (#11), master cylinder (#2), emergency lever (#14), pin (#15), spring (#16), and guide (#17), refer to section a&b of "Servicing the Emergency Lever" on this page.

To reassemble the tongue: (refer to illustration on page 15)

- A. Replace 2 shocks (#26) into yoke (#28), with pin (29).
- B. Place 2 springs (#10), onto shaft of push-off assembly (#28), and insert shaft into female tongue (#1), through hole in plate (shown in exploded view).
- C. Thread adjustment spud (#23b) onto rear threaded portion of push-rod assembly (#28), until the 2 springs (#10) compress to a length of 6-1/2". Install and tighten set screw (#24), using Locktite, into one of the threaded holes of the spud (23b).
- D. Insert pin (#25) into hole in tongue, through 1 shock (#26), through the spacer (#27), and through the other shock (#26) and tongue. Install and tighten 1/2" bolt, lockwasher, and washer (# 4,5,6).
- E. Install master cylinder (#2), (refer to c-f of "Servicing Emergency Lever" section on this page).
- F. Thread adjust spud (23a) onto front threaded portion of push-rod assembly (#28). Insert male tongue (#30), (with latch installed as shown), into female tongue (#1). Install stop block (#7), using 3/4" bolts and lockwashers (#8, #9). Pull male tongue (#30) forward to latched position and adjust spud (#23a) until there is a 3/16" gap for 650/750 and 7/16" gap for 550 between spud (#23a) and rear stop surface of male tongue (#30) see arrow.
- G. Tighten set screw (#24),using Locktite, into hole in spud (#23a).

2. Connect and tighten all brake lines.

3. Fill the Master Cylinder (#2) with DOT 3 or 4 brake fluid.

4. Bleed the brake system using a pressure-type brake bleeder or manually, as follows:

- a. Remove the two Self-Tapping Screws (#18) and LockWashers (#19) that hold the Lever Guide (#17) and the flat Emergency Lever Spring (#16). Remove the Lever Guide and the Emergency Lever Spring. Using short strokes, pull forward on the Emergency Lever (#14), pumping the Master Cylinder until the brake fluid within the Master Cylinder stops bubbling.
- b. Attach a bleeder hose to the bleeder valve on one of

the wheels (always begin with wheel farthest from the master cylinder and move toward it). Immerse the other end of the hose into a clean, transparent container partially filled with brake fluid. Loosen the bleeder valve one turn and, watching the hose in the transparent container, use the Emergency Lever to pump the Master Cylinder as long as air bubbles continue to leave the hose. When the bubbles stop, close the bleeder valve, move to the next wheel, and repeat the process until all the brakes have been bled. (Note: Check the fluid level in the Master Cylinder frequently while bleeding the brakes (every 4 or 5 strokes). Refill as necessary to keep the level above half full.)

5. Once bleeding is completed, refill the Master Cylinder and attach the Cap (#20) securely. Replace Emergency Lever Spring, Lever Guide, with Lock Washers and Self-Tapping Screws.
6. Test the brakes by pulling the Emergency Lever (#14) forward until it locks into its first detent position. (The lever should be approximately straight up.) Attempt to rotate the wheels in a forward direction. If any of the wheels rotate, the brakes must be adjusted on that wheel. To adjust the brakes, release the Emergency Lever from its locked position and set the wheel brake adjustment up 2 or 3 notches (refer to instructions on page 16). Repeat the test procedure as necessary.

MAINTENANCE

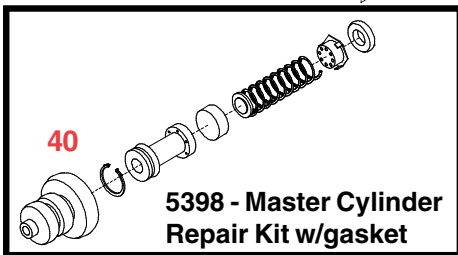
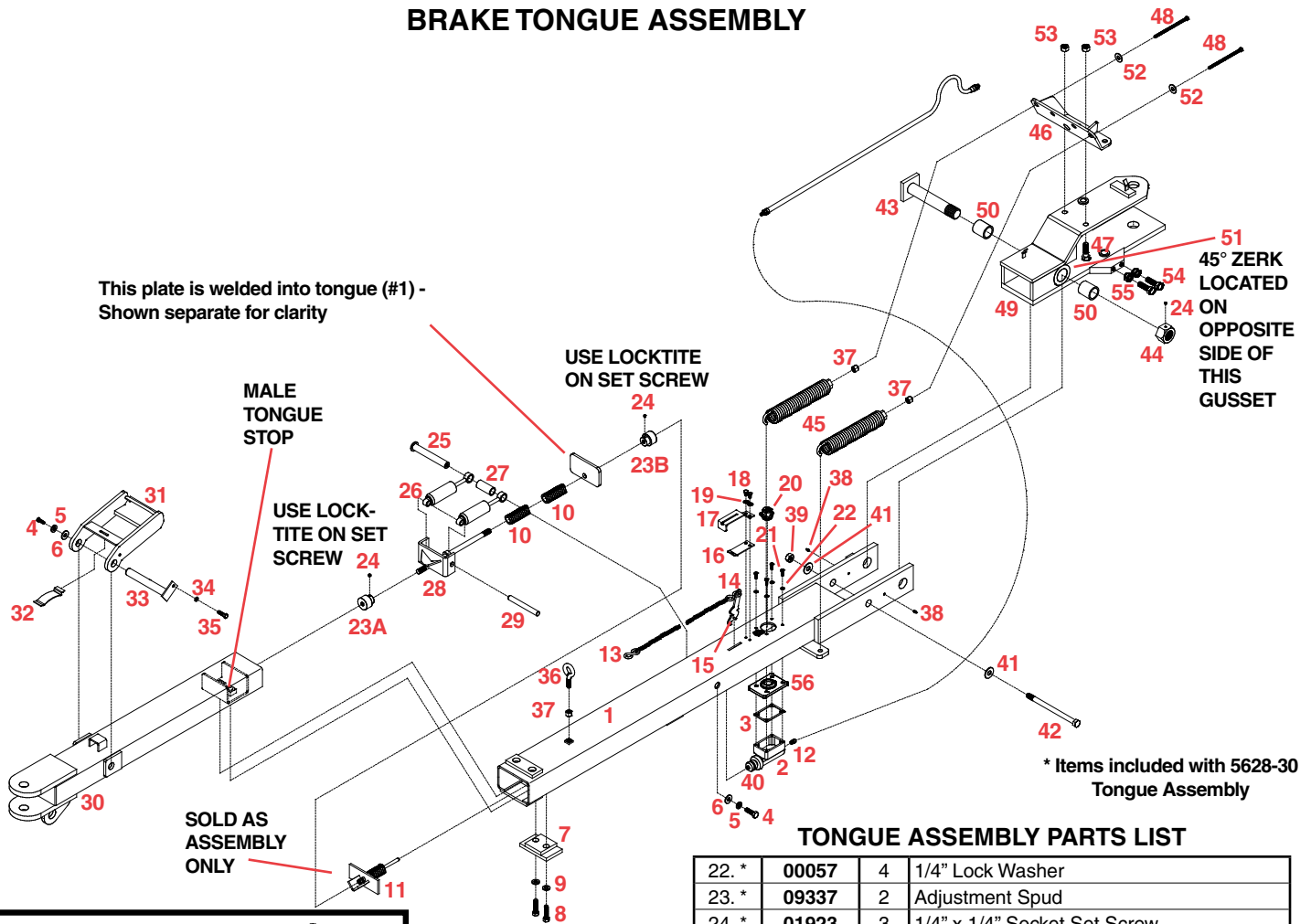
1. Frequently check the brake fluid level. (Fluid must be approved, clean and uncontaminated.)
2. Inspect the brake tongue and brakes and replace bent, worn or damaged parts.
3. Be constantly aware of the system's braking quality and make periodic checks. Consult a certified brake specialist to make the necessary adjustments and/or repairs. Failure to do so could result in loss of braking.

SERVICING THE EMERGENCY LEVER

If the Emergency Lever (#14) of the tongue is applied, it can be disengaged by using a screwdriver to lift upward on the front of the flat Emergency Lever Spring (#16) while pulling the lever forward until it releases. A thorough inspection of the Emergency Lever, Emergency Lever Spring, and the Chain with S-Hooks is required and all damaged parts must be replaced as follows:

- a. Remove the Master Cylinder (#2) and the Push Plate Assembly (#11). Be careful not to get dirt into the Master Cylinder. (A new Master Cylinder Gasket (#3) should be used when reinstalling.)
- b. Remove the Safety Chain from the Emergency Lever (#14), Emergency Lever Guide (#17), and flat Emergency Lever Spring (#16), then pull the lever out of the tongue (#1) from the bottom.
- c. Install the new Emergency Lever from the bottom of, and up through the slot in, the tongue. Attach the new Emergency Lever Spring, and the Emergency Lever Guide.
- d. Install a new Master Cylinder Gasket to the Master Cylinder and put the Push Plate Assembly and Master Cylinder back into the inside of the tongue.
- e. Squeeze shut the S-Hook of the Emergency Chain (#13) onto the Emergency Lever (#14).
- f. Add adequate brake fluid to the Master Cylinder and bleed the brake system per instructions 4-6 in the disassembly and reassembly section.

BRAKE TONGUE ASSEMBLY



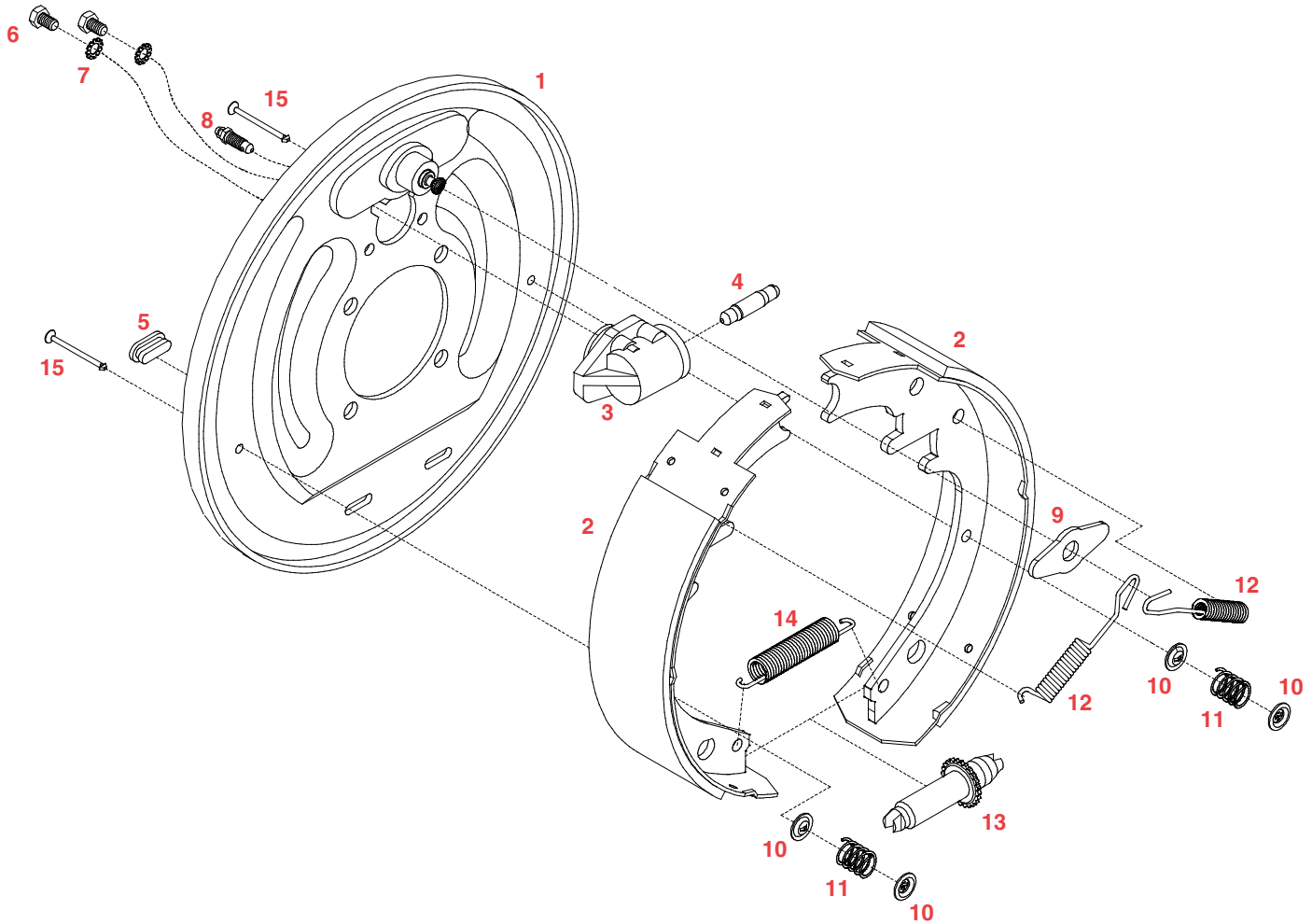
TONGUE ASSEMBLY PARTS LIST

REF #	PART#	QTY	DESCRIPTION
1. *	09292-30	1	Adjustable Tongue-Female Half for Brakes
2. *	5650	1	Master Cylinder w/ 09153 Gasket Inc'd
3. *	09153	-	Master Cylinder Gasket (Inc'd in 5650)
4. *	04795	2	1/2"-13 UNC x 1" Gr.5 Bolt
5. *	00084	2	1/2" Lockwasher
6. *	00085	2	1/2" Flatwasher
7. *	09308-30	1	Male Tongue Stop Block
8. *	05047	2	3/4-10 UNC x 2-1/2" Gr. 5 Bolt
9. *	00254	2	3/4" Lockwasher
10. *	05952	2	Spring
11. *	09307	1	Push Plate Assembly
12.	SB12099	1	Orifice Connector for Master Cyl. (550)
- *	05679	1	Ftg 1/8 MPT x 3/16 Inverted Flare (650&750)
13. *	09309	1	72" Safety Chain
14. *	05951	1	Emergency Lever
15. *	05694	1	Groove Pin
16. *	05693-95	1	Emergency Lever Spring
17. *	03866-95	1	Emergency Lever Guide
18. *	02196	2	5/16" -18 UNC x 3/4" Self Tapping Screw
19. *	05424	2	5/16" External Tooth Lock Washer
20. *	03876	1	Mast. Cyl. Cap w/ diaphragm & O-ring
-	03877	-	Diaphragm Replacement
-	05849	-	O-ring Replacement
21. *	00618	4	1/4"-20 UNC x 2" Gr.5 Bolt

22. *	00057	4	1/4" Lock Washer
23. *	09337	2	Adjustment Spud
24. *	01923	3	1/4" x 1/4" Socket Set Screw
25. *	09325-95	1	Rear Shock Pin
26. *	SB12426	2	Shock Dampener
27. *	09323	1	Rear Shock Pin Spacer
28. *	09305	1	Push-off Assembly
29. *	09324	1	Front Shock Pin
30. *	12122-30	1	Adjustable Tongue-Male Half
31. *	07517-30	1	Tongue Extension Latch
32. *	01158-95	1	Latch Spring
33. *	07521-95	1	Latch Pin
34. *	00036	1	5-16" Lockwasher
35. *	01263	1	5/16"-18 UNC x 3/4" Hex Head Bolt Gr.5
36. *	09317	1	1/2"-13 x 2" Eye Bolt w/ Jam Nut
37.	00640	3	1/2"-13 Jam Nut
38. *	04642	2	1/4"-28 UNF Grease Zerk
39. *	02587	1	5/8"-11 Nylon Insert Locknut
40. *	05687	1	Master Cylinder Protective Boot
41. *	00477	2	5/8" Flatwasher
42. *	04835	1	5/8"-11 UNC x 9" Hex Head Bolt
43. *	01953-30	1	Tongue Mtg. Pin
44. *	01922	1	Special 1-1/2"-12 UNF Hex Nut
45.	00306-30	2	Lift Assist Springs
46.	09326-30	1	Upper Lift Assist Plate
47.	00290	2	5/8" - 11 UNC x 2" Grade 5 Bolt
48.	00545	2	1/2" - 13 UNC x 6" Full Thread Bolt
49.	14328-30	1	Pivot Arm
50.	01951	2	Bronze Bushing
51.	05395	1	45° Grease Zerk
52.	00085	2	1/2" Flatwasher
53.	02587	2	5/8" UNC Nylon Insert Locknut
54.	10910	4	5/8" UNC x 2-1/2" Bolt, Gr. 5 (full thread)
55.	00489	4	5/8" UNC Jam Nut
56. *	12557	1	Master Cylinder Fill Cap

Please order replacement parts by PART NO. and DESCRIPTION.

13" UNI-SERVO BRAKE CLUSTER PARTS BREAKDOWN



BRAKE CLUSTER PARTS LIST

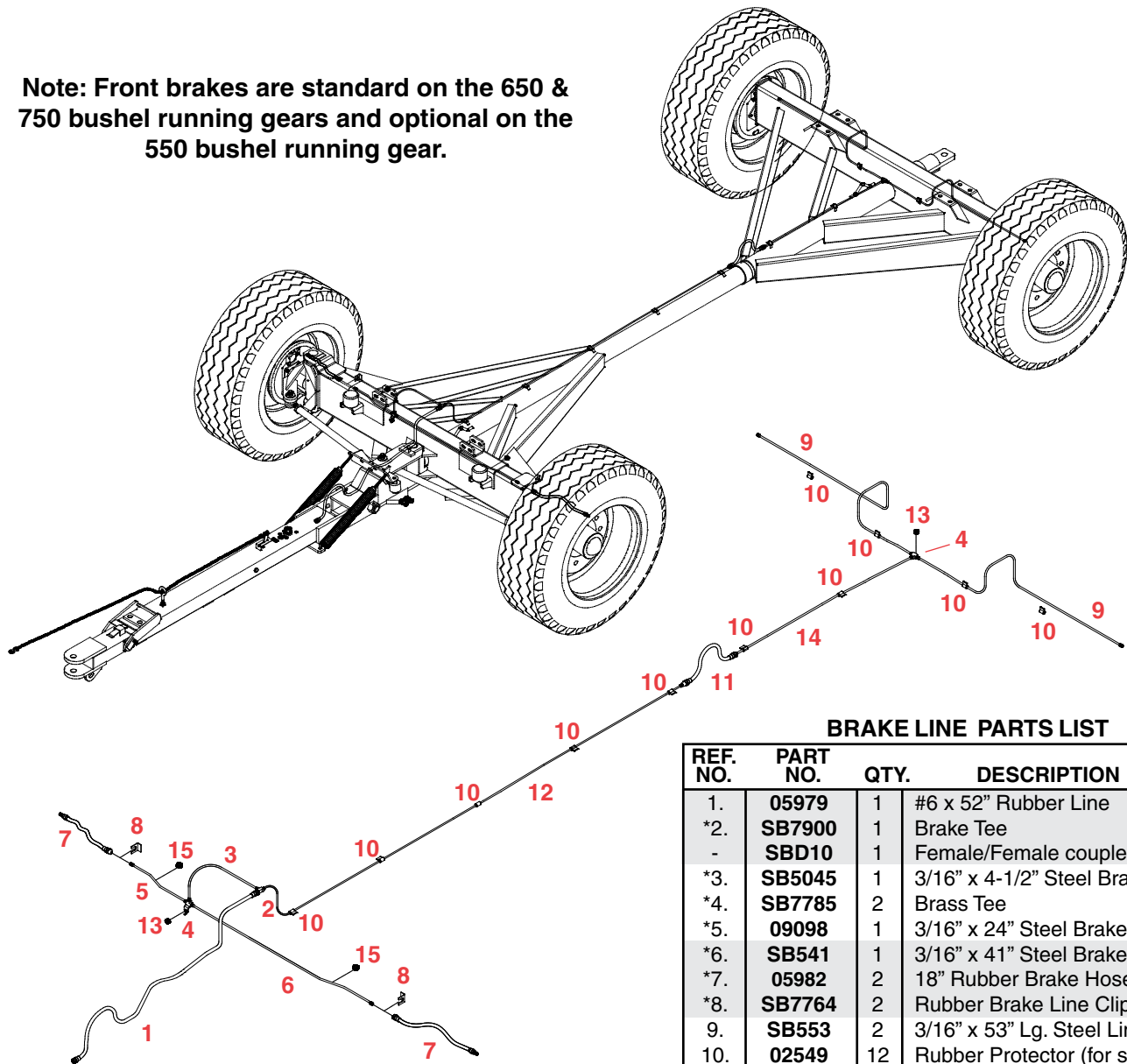
REF. NO.	PART NO.	QTY.	DESCRIPTION
-	07911	-	Right Hand Cluster (shown)
-	07910	-	Left Hand Cluster
1.	-	1	Back Plate (not available)
2.	5509	1	Brake Shoe Kit (2 Front & 2 Rear)
3.	SB9776M	1	Wheel Cylinder Assembly - Right (shown)
-	SB9777M	1	Wheel Cylinder Assembly - Left
4.	SB9783	1	Push Rod
5.	SB9254	2	Cover Plate - Adjusting Hole
6.	05961	2	5/16"-18UNC x 5/8" Hex Head Bolt
7.	05424	2	5/16" External Tooth Washer
8.	05431	1	Bleeder - Replacement

9.	SB10961-95	1	Shoe Guide
10.	SB9789	4	Cup - Shoe Hold Down
11.	05983	2	Spring - Shoe Hold Down
12.	SB9786	2	Spring - Shoe
13.	SB23324	1	Adjusting Screw Assembly
14.	SB24765	1	Spring - Adjusting Screw
15.	SB9788	2	#6 Hold Down Pin
-	SB15845	1	Wheel Cylinder Repair Kit (includes spring, cup and boot)

Please order replacement parts by **PART NO.** and **DESCRIPTION.**

RUNNING GEAR BRAKE LINE PARTS BREAKDOWN

Note: Front brakes are standard on the 650 & 750 bushel running gears and optional on the 550 bushel running gear.



BRAKE LINE PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	05979	1	#6 x 52" Rubber Line
*2.	SB7900	1	Brake Tee
-	SBD10	1	Female/Female coupler, 550 only
*3.	SB5045	1	3/16" x 4-1/2" Steel Brake Line
*4.	SB7785	2	Brass Tee
*5.	09098	1	3/16" x 24" Steel Brake Line
*6.	SB541	1	3/16" x 41" Steel Brake Line
*7.	05982	2	18" Rubber Brake Hose
*8.	SB7764	2	Rubber Brake Line Clip
9.	SB553	2	3/16" x 53" Lg. Steel Line
10.	02549	12	Rubber Protector (for steel lines)
11.	SB13H66	1	Lg. Rubber Line w/ solid F. end (2x)
12.	SB597	1	3/16" x 97" Steel Brake Line
13.	02802	2	5/16"-18 UNC Nylon Insert Locknut
14.	SB537	1	3/16" x 37" Steel Brake Line
*15.	01863	2	5/8" Grommet

Please order replacement parts by **PART NO.** and **DESCRIPTION**

*** Front brakes on 650 bushel wagon only.**

1. Assemble the Running Gear.
2. Mount the Rear Brass Tee (#4) onto the bolt welded to the top of the rear bolster frame using one 5/16" nylon insert locknut (#13).
3. Next attach the 52" Rubber Line (#1) to the orifice fitting on the master cylinder (see page 15).
4. Attach Brake Tee (#2) to the 52" Rubber Brake Hose (#1). Attach the 80" Steel Brake Line (#12) to the Brake Tee (#2), and bend the 80" Steel Line (#12) around the front bolster frame to fit (as shown).

NOTE: When bending steel lines, form around a 3/4" diameter pin, be careful not to make the bend too sharp or line failure will occur.

5. Attach 4 1/2" Steel Brake Line (#3) to Brake Tee (#2), and to Brass Tee (#4). Attach 20" and 41" Steel Brake Lines (#5 & #6) to Brass Tee (#4). Attach 18" Rubber Brake Hose (#7) to lines #5 and #6 and to Front Brake Clusters (Refer To Diagram Above). Now attach the rubber Brake Line Clips (#8).

6. Assemble 53" Rear Steel Lines (#9) to the brake cluster first. Then bend around the top of the rear bolster frame and attach to the Rear Brass Tee (#4) as shown. Now attach 53" Steel Lines (#9) to center of outlet on Brass Tee (#4) along reach pipe.

7. Assemble 12" Rubber Line (#11) between the 80" Steel Line (#12), and the 53" Steel Front Brake Line (#9) allowing some slack. Hold 80" line in place with clamp (#14).

8. Put Rubber Line Protectors (#10) around steel lines at clips and bend clips down.



WARNING: To Prevent Serious Injury or Death

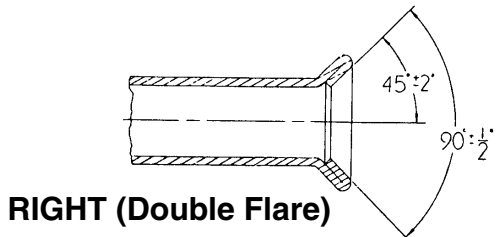
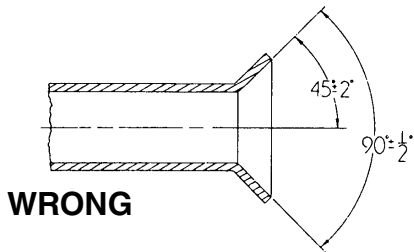
Saltwater, granular fertilizers and other corrosive materials are destructive to metal. To prolong the life of a braking system used under corrosive conditions, we recommend that the actuator be flushed periodically with a high pressure water hose. Be sure to re-grease bearings and oil all moving parts after the unit has dried. At the end of the season, when unit is to be stored, remove the brake drums and clean inside the brakes. Pack wheel bearings before drum is installed.

Backplate Installation

Mount the backplate to the spindle flange. In mounting the brake, be sure the hydraulic wheel cylinder is at the top. Brakes are also marked as "RIGHT" and "LEFT". The brake designated as "LEFT" travels on the driver's side of the road.

Brake Line Installation

Use care in forming tubing to avoid sharp bends or kinks. Use double flare steel tubing to assure tight leakproof connections. This must be done by a certified brake shop. Anchor all hydraulic lines at two foot intervals to prevent chafing and vibration. Use hydraulic rubber hose at points of flexing. Anchor hose ends to avoid stress on tubing.



Brake Adjustment

Before removing the ground stand jacks, adjust the brakes. Uni-servo brakes must be adjusted periodically to assure having brakes when they are applied. Insert a brake adjusting tool or a screwdriver into the slotted hole. With the handle up and the bit down and against the adjusting nut, pull down on the handle. While spinning the wheel adjust the cog wheel up until you cannot rotate the wheel forward. Then back off the adjusting wheel 20 notches.

ALWAYS ROTATE DRUM IN DIRECTION OF FORWARD ROTATION ONLY.

Brake Drum Maintenance

Brake drums must be reground if abnormal wear is found, such as brake shoe hitting brake drum once lining is gone, rivets hitting brake drums and or brake drums out of round. NOTE: Maximum diameter allowed 13.060"

Brake Set-up

1. Attach brake line to master cylinder outlet. Make sure all connections are tight.
2. Fill the master cylinder from a sealed container of DOT 3 or 4 brake fluid. A pressure type brake bleeder may be used. If one is not available, you can bleed the system manually as follows.
3. After the master cylinder has been filled, remove the flat spring behind the emergency lever. Pull forward on the lever to pump the master cylinder. Use short strokes until bubbling stops in the master cylinder.

Bleed the rear axle first. Install bleeder hose on the bleeder valve on the first wheel with other end of the hose in a clear container partially filled with brake fluid.

Hitching The Wagon

- Loosen the bleeder valve one turn and pump the master cylinder until the air bubbles stop coming out of the hose in the glass container, then close the bleeder valve and repeat the process on the other wheels. (Watch the fluid level in the master cylinder and refill so level does not fall below 1/2 full). Refill master cylinder every 4 or 5 strokes. Dispose of contaminated brake fluid according to local regulations.
4. After bleeding is completed, refill the master cylinder and put the filler cap on securely . Replace the flat spring behind the emergency lever.

To test the brakes use a wrench or vise grip and clamp onto the top of the emergency lever to lengthen it. Pull lever forward until lever locks on the second click. The lever should be approximately straight up and down. Now try to rotate each of the four wheels in a forward rotation. You should not be able to rotate the wheels forward. If you can, then release the emergency lever by wedging a screwdriver under the flat spring behind the lever and set each wheel brake adjustment up 2 or 3 notches. Then repeat the test procedure.

5. Be sure Pin and hitch rating is equal to or greater than the wagon GVWR.
6. Connect the emergency chain hook to towing vehicle.
7. If the emergency brake lever is accidentally applied while unhitching, release the lever by pulling it forward and with a screwdriver lift up the front of the flat spring until it releases the lever. Many times these parts are damaged when this happens. An inspection of the lever, flat spring, and chain with S-hooks is required and any damaged parts must be replaced.

Replacing The Emergency Lever

Step one: Remove the lever guide and flat spring. Take the S-hook off the lever, take the lever out from the inside.

Step two: Install the new lever from the inside and up through the slot. Replace the new flat spring and the lever guide. Replace the push rod and master cylinder and new gasket.

Step three: Take the new chain and fasten the S-hook to the lever by squeezing the hook shut with a pliers. Check the master cylinder and fill with DOT 3 or 4 brake fluid.

Step four: Re-bleed brake system.

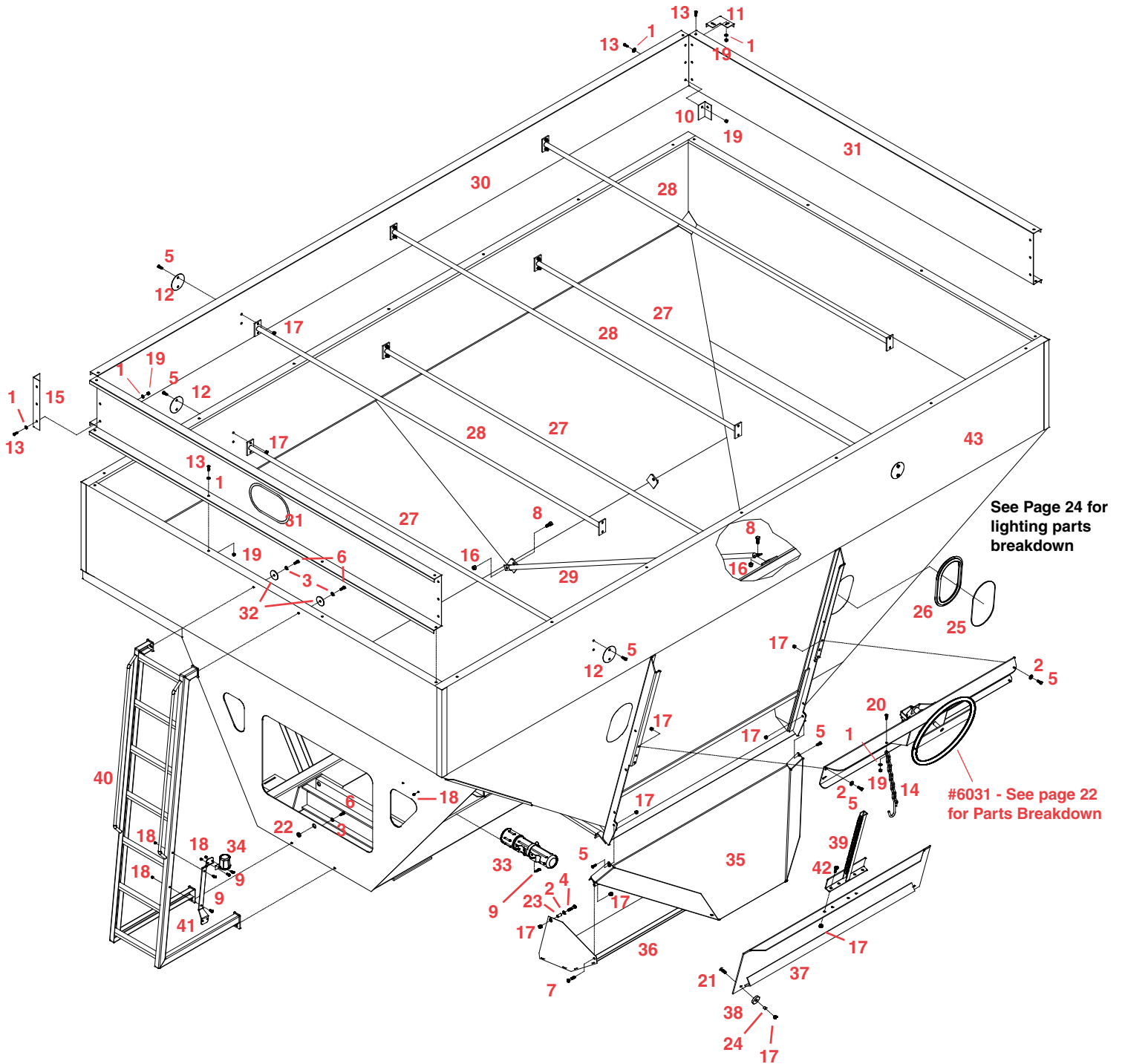
MAINTENANCE

1. Before towing check to be sure master cylinder is full of brake fluid and check lines for leaks. Inspect the actuator for bent or worn parts. Replace parts if necessary. Make sure the actuator mounting bolts are tight.
2. Periodically check braking quality, as described above. Failure to do so can result in loss of braking.
3. If units are used in corrosive conditions the actuator and wheels should be washed out with high pressure water. When actuator parts are dry, oil all moving parts.

550, 650 & 750 BUSHEL WAGON PARTS BREAKDOWN

Wagons are available in 3 colors

?-10 =	Red
?-20 =	Green
?-42 =	Blue



REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00004	69	5/16" Flatwasher
2.	00059	6	3/8" Flatwasher
3.	00060	4	3/8" Lockwasher
4.	00082	2	3/8"-16UNC x 2-1/2" Hex Head Bolt Gr.5
5.	00523	30	3/8"-16UNC x 1-1/4" Hex Head Bolt Gr.5
6.	00907	4	3/8"-16UNC x 1" Hex Head Bolt Gr.5
7.	00908	2	3/8" UNC x 1-3/4" Hex Head Bolt, Gr. 5
8.	00967	6	1/2"-13UNC x 1-1/4" Hex Head Bolt Gr. 5
9.	01076	10	1/4"-20UNC x 3/4" Hex Head Bolt, Gr.5
10.	01104-30	4	Inside Corner
11.	01105-30	4	Corner Filler Cap
12.	01106-30	12	Extension and Box Washer
13.	01263	68	5/16"-18UNC x 3/4" Hex Head Bolt Gr.5
14.	02022	1	Chute Transport Chain
15.	02045-30	4	Outside Corner - 13-1/2" (650 bu.)
-	07741-30	4	Outside Corner - 5-1/2" (550 bu.)
-	07433-30	4	Outside Corner - 23-3/4" (750 bu.)
16.	02178	6	1/2"-13UNC Nylon Insert Locknut
17.	02592	44	3/8"-16UNC Nylon Insert Locknut
18.	02772	10	1/4"-13 UNC Nylon Insert Locknut
19.	02802	69	5/16"-18UNC Nylon Insert Locknut
20.	02990	1	5/16"-18 UNC x 1" Hex Head Bolt Gr. 5
21.	03526	2	3/8"-16UNC x 1 1/2" Socket Head Cap Screw
22.	04396	1	1" Rubber Grommet
23.	04901-95	2	Bushing
24.	05449	2	Bushing
25.	07276	2	Window
26.	07310	2	Rubber Window Seal (33-1/2" long)
27.	07371-30	3	Box Brace Bar - 113-1/2"
28.	07372-30	3	Extension Brace Bar - 108-3/4" (650 & 750 bu.)
29.	07373-30	3	Inside Box Cross Brace - 57-3/4"
30.	07739-30	2	Side Extension - 187" (550 bu.)
-	12121-30	2	Side Extension - 187" (650 bu.)
-	14360-30	2	Side Extension w/ window - 187" (750 bu.)
31.	07740-30	2	Front and Back Extension - 109" (550 bu.)
-	07370-30	1	Back Extension - 109" (650 bu.)
-	12438-30	1	Front Extension w/ window - 109" (650 bu.)
-	07391-30	2	Front and Back Extension - 109" (750 bu.)
32.	10231-95	2	Ladder Washer (plated)
33.	10241	1	Operators Manual Canister
34.	10277	1	Electrical Plug Holder
35.	10455-30	1	Unloading Chute
36.	10456-30	1	Center Dump Chute
37.	11456-?	1	Unloading Door
38.	11457	2	Door Centering Wheel
39.	11748-30	1	Door Lift Channel
40.	12441-30	1	Ladder
-	14353-30	1	Ladder (750 bu.)
41.	12442-30	1	Wire Harness Bracket
42.	12568	4	3/8" x 1/2" Shoulder Bolt Socket
43.	13126-?	1	Gravity Flow Box
-	13485-?	-	Right Hand Dump Gravity Box (not shown)
44.	14361	2	Window, Extension (750 bu.) (not shown)
45.	14362	2	Rubber Window Seal f/ 14361 (750 bu.) (not shown)
-	12126	1	SMV Sign (not shown)

ASSEMBLY INSTRUCTIONS

MOUNTING THE SIDE BRACES, EXTENSIONS

1. Mount the Front, Back, and Side Extensions (#30 & 31) loosely to the box using twenty-two 5/16" x 3/4" bolts (#13), twenty-two 5/16" nylon locknuts (#19), and twenty-two 5/16" flatwashers (#1).
2. Mount the Outside Corner (#15) to the outside of the extensions using six 5/16" x 3/4" bolts (#13), six 5/16" flatwashers (#1), and six 5/16" nylon locknut (#19). The bottom two bolts must also hold the Inside Corner (#10) on the inside of the box as shown.
3. Mount the Corner Filler Cap (#11) under the lip on the outside of the extensions using two 5/16" x 3/4" bolts (#13) two 5/16" flatwashers (#1) and two 5/16" nylon locknuts (#19).
4. Mount the inside Angle Braces (#29) to the inside of the box as shown using six 1/2" x 1-1/4" bolts (#8) and six 1/2" nylon locknuts (#16).
5. Mount the inside Side Braces (#27 & 28) to the box (#43) and side extensions (#30) with Extension Washers (#12) on the outside as shown using twenty-four 3/8" x 1-1/4" bolts (#5) and twenty-four 3/8" nylon locknuts (#17).

NOW TIGHTEN ALL BOLTS.

MOUNTING THE LADDER

1. Mount the ladder (#40) to the gravity flow box using four 3/8" x 1 bolts (#6), four 3/8" washers (#2), two ladder washers (#32), and four 3/8" nylon locknuts (#17).

INSTALLING THE BOX, DOOR LIFT CHANNEL, DOOR LIFT WHEEL ASSEMBLY AND TRANSPORT CHAIN

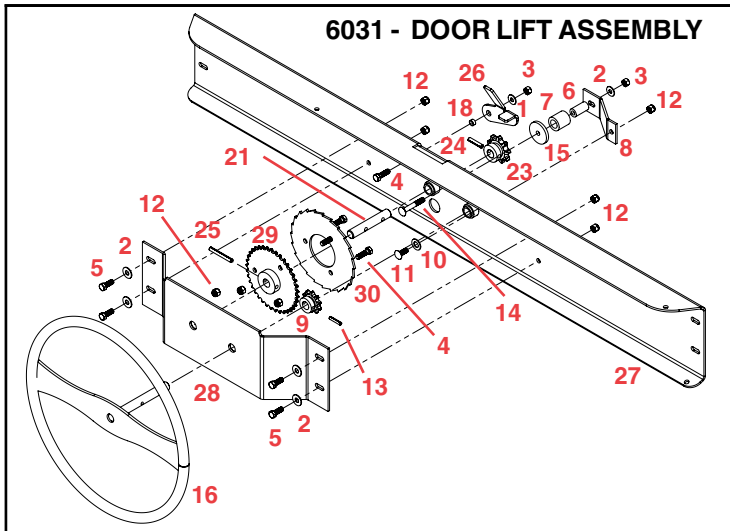
1. Mount the Door Lift Channel (#39), with the roller chain to your left side when you are facing the unloading side of gravity box, to the Door (#37) using four 3/8" x 1/2" shoulder bolts (#42), four 5/16" nylon lock-nuts (#27). Mount the Door Centering Wheels (#38) to the Door using two 3/8" Socket Head Cap Screws (#21), two Bushings (#24), and two 3/8" Locknuts (#17). Place the unloading door into the rails of the box.
2. Slide the door lift wheel mount (Sub. Assembly #5699 or #6031) over the door lift channel (#39) and bolt it to the gravity box using four 3/8" x 1-1/4 bolts (#5), four 3/8" flatwashers (#2), and four 3/8" nylon locknuts (#17).
3. **IMPORTANT** Tighten all mounting bolts just enough to limit movement. Roller Bushing (p.22#7) and Roller Brace Bracket (p.22#8) are adjustable so that slack between the chain on (#39) and the Sprocket (p.22#24) can be kept to a minimum. Then Tighten bolts to prevent the door from binding.
4. Bolt the transport chain (#14) to the door lift wheel mount (#5699 or #6031) using one 5/16" x 1" bolt (#20), one 5/16" flatwasher (#01), and one 5/16" nylon locknut (#19).

INSTALLING THE DELIVERY CHUTE

1. Assembly of the chute should be done after mounting the box on the running gear.
2. Mount the Unloading Chute (#35) to the box using two 3/8" x 1-1/4" bolts (#5) and two 3/8" nylon lock nuts (#17). When tightening be certain the chute moves up and down freely.
3. Slide the Center Dump Chute (#36) under the box. Raise the Center Dump Chute and align holes with holes on the Unloading Chute (#35). Bolt together using 3/8" x 1-3/4" bolts (#7) and 3/8" Nylon Insert Locknuts (#17). Raise the center dump chute so that holes are above the guide rail on the box. Assemble 3/8" x 1-3/4" bolt (#7), 3/8" washer (#2) and bushing (#23) through hole in center dump chute and tighten using 3/8" Nylon Insert Locknut (#17). **Note:** Check all bolts and nuts to ensure proper tension or torque.

**Please order replacement parts by PART NO. ,
DESCRIPTION and COLOR.**

DOOR LIFT ASSEMBLY BREAKDOWN



REF.NO.	PART NO.	QTY.	DESCRIPTION
1.	00004	2	5/16" Flatwasher
2.	00059	5/4	3/8" Flatwasher
3.	00179	1/2	3/8"-16UNC Center-punch Locknut
4.	00523	1/4	3/8"-16UNC x 1 1/4" Hex Head Bolt, Gr. 5
5.	00907	4	3/8"-16UNC x 1" Hex Head Bolt Gr.5
6.	01114	1	3/4" OD x 3/8" ID Bushing
7.	01115-95	1	1 1/4" OD x 3/4" ID Bushing (plated)
8.	01243-30	1	Roller Brace Bracket
9.	02028	1	10 Tooth Sprocket (#40)
10.	02384	1	1/2" NR Machine Washer, 14 Ga
11.	02467	1	3/8"-16UNC x 1" Carriage Bolt, Gr. 5
12.	02592	6/8	3/8"-16UNC Nylon Insert Locknut
13.	03096	1	1/4" x 1 1/4" Roll Pin
14.	06926	1	3/8"-16 UNC x 2 1/2" Carriage Bolt, Gr. 5
15.	09552-95	1	2" OD x .25 Thick Washer (plated)
16.	10629-30	1	Door Opener Wheel (black)
17.	11412-30	1	Latch (black)
18.	11414	1	Bushing
19.	11459-30	1	Backplate (black)
20.	11460-30	1	Channel (black)
21.	11461	1	Opener Shaft
22.	11462	1	28 Tooth Sprocket (#40)
-	11463	1	Chain, #40 x 38 Links
23.	11749	1	9 Tooth Sprocket (#60)
24.	11750	1	5/16" x 1 1/2" Roll Pin
25.	11751	1	5/16" x 2 1/2" Roll Pin
26.	14402-30	1	Latch (black) (750 bu.)
27.	14403-30	1	Channel (black)
28.	14404-30	1	Backplate (black)
29.	14405-30	1	37 Tooth Sprocket
-	14406	1	Chain, #40 x 44 Links
30.	14407-30	1	Ratchet Plate

MAINTENANCE AND GENERAL OPERATIONS OF GRAVITY WAGON



To prevent personal injury or property damage, all users of this equipment should read, understand, and follow these instructions.

* Never overload wagon. The rating of the GF550 gear is 36,000 lbs. or the rating of the tires, whichever is less. The GF650 gear rating is 44000 lbs. or the rating of the tires, whichever is less. Overloading wagon is dangerous and can cause extensive damage to both the box and running gear.

* Never add more sideboards or extensions to the gravity box, beyond the standard factory manufactured parts, as the box is not designed to handle the added weight.

* Check box periodically for cracks in welds and other structural damage. Have cracked welds fixed immediately. Failure to do so could result in extensive damage to the gravity box and thus greatly reduce life of box.

* When pulling gravity box and running gear, be sure that it is fastened securely to tractor. Also connect the emergency brake chain to towing vehicle and be sure lighting is connected and working properly.

* Be sure to read all warnings, caution, and important labels on equipment, they are designed for your safety and for longer life of equipment.

* Periodically check all bolts and nuts to ensure proper tension or torque. Torque lug nuts daily.

* Grease all zerks before each use using a good quality lubricant .

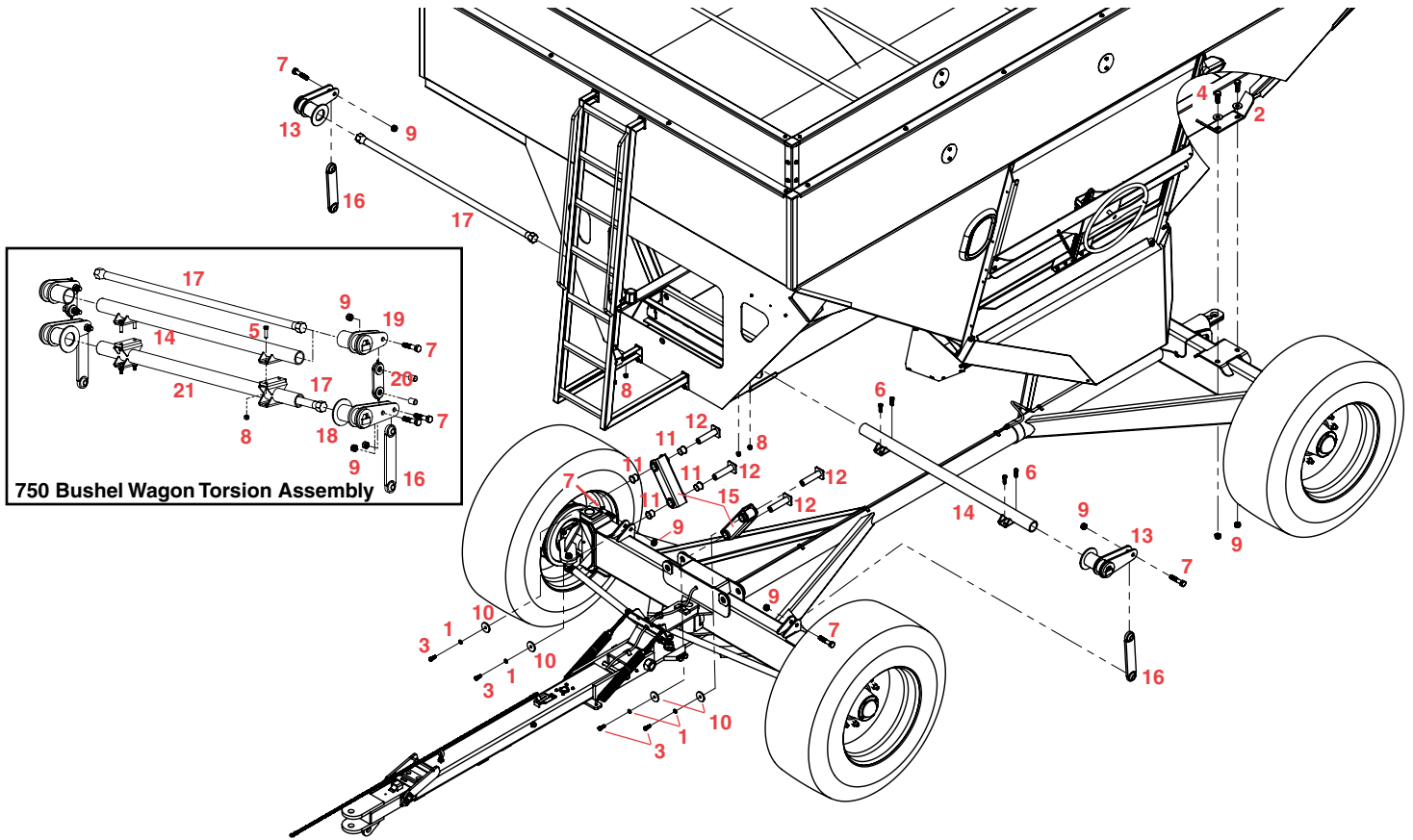
* Before towing be sure master cylinder is full of brake fluid and check lines for leaks. Inspect the actuator for bent or worn parts. Replace parts if necessary. Make sure the actuator mounting bolts are tight.

* Periodically check braking quality. If you think they are a little soft, check the movement on the actuator. If it moves more than 7/8", the brake shoes need to be adjusted. Failure to do so can result in loss of braking.

* If units are used in corrosive conditions the actuator and wheels should be washed out with high pressure water. When actuator parts are dry, oil all moving parts and repack wheel bearing.

Periodic servicing of this unit will greatly prolong its usable life.

MOUNTING THE WAGON TO THE RUNNING GEAR ASSEMBLY

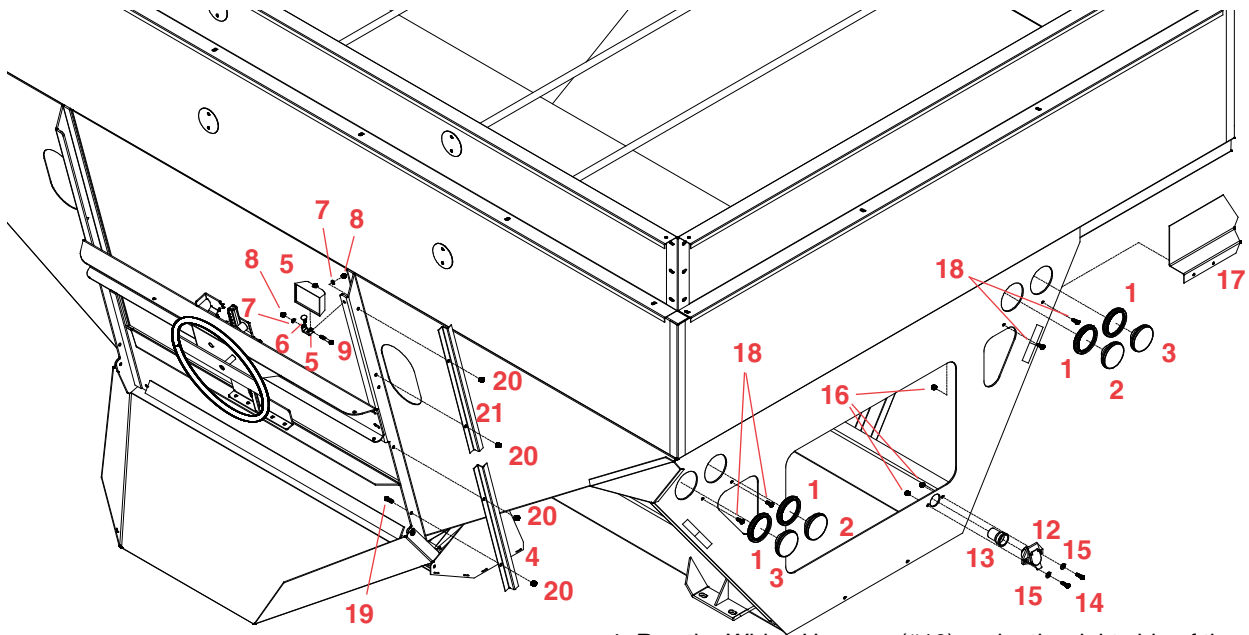


REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00084	4	1/2" Lockwasher
2.	00492	4	3/4" Flatwasher
3.	00967	4	1/2" - 13 UNC x 1-1/4" Hex Head Bolt
4.	05047	4	3/4" - 10 UNC x 2 1/2" Hex Head Bolt
5.	01253	4	1/2" - 13 UNC x 2" Hex Head Bolt
6.	01254	4	1/2" - 13 UNC x 1-1/2" Hex Head Bolt
7.	01335	4	3/4" - 10 UNC x 3-1/2" Hex Head Bolt
-	01335	8	3/4" - 10 UNC x 3-1/2" Hex Head Bolt (750 bu.)
8.	02178	4	1/2" - 13 UNC Nylon Insert Locknut
9.	02961	8	3/4" - 10 UNC Nylon Insert Locknut
-	02961	12	3/4" - 10 UNC Nylon Insert Locknut (750 bu.)
10.	14972-95	4	Bolster Washer (plated)

REF. NO.	PART NO.	QTY.	DESCRIPTION
11.	12293	8	Plastic Bushing
12.	13103-30	4	Bolster Bolt
13.	13105-30	2	Torsion End Link
14.	13107-30	1	Torsion Housing
15.	13108-30	2	Bolster Link
16.	13109-30	2	Ball Joint Link
17.	13253	1	Torsion Bar (Qty:2 750 bu.)
18.	14345-30	2	Torsion End Link (750 bu.)
19.	14346-30	2	Torsion End Link, Top (750 bu.)
20.	14347-30	2	Connection Link (750 bu.)
21.	14349-30	2	Torsion Housing (750 bu.)

Please order replacement parts by PART NO., DESCRIPTION and COLOR.

LIGHT KIT PARTS BREAKDOWN AND LIST



INSTALLING THE DOOR LIGHTING

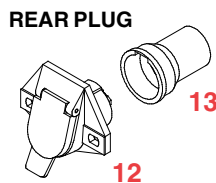
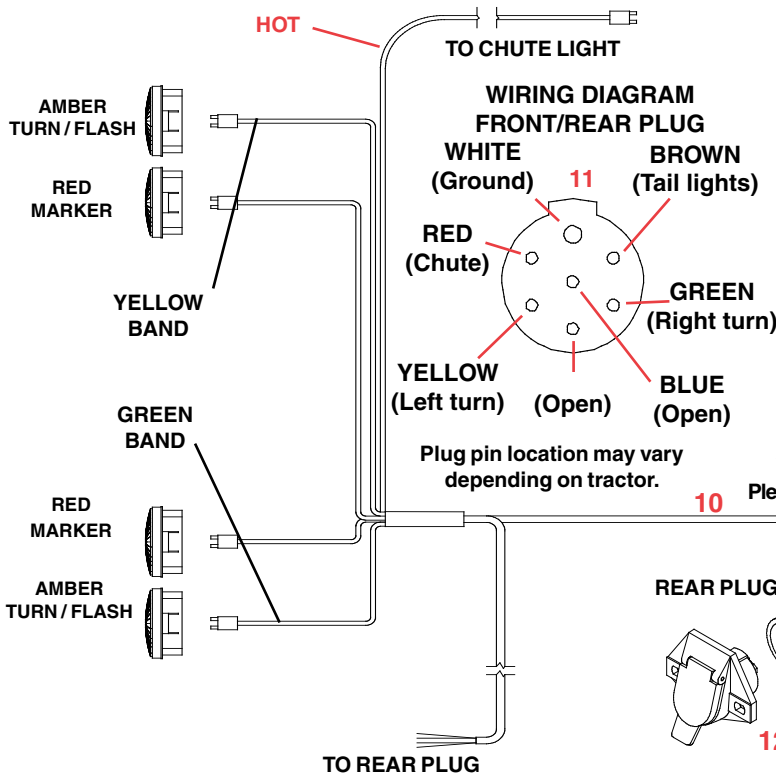
1. Mount the Door Light Mounting Bracket (#5) to the gravity box using 5/16" x 1" Carriage bolt (#6), 5/16" Lock Washer (#7), and 5/16" Hex nut (#8). Mount the Door Light (#5) to the Mounting Bracket (#5) using a 5/16" x 2" bolt (#9), 5/16" Lockwasher (#7), and 5/16" Hex Nut (#8). Items #5-#9 are included with Door Light #07436.
2. Insert a Light Mounting Grommet (#1) into each mounting hole. Press in Red Lights (#2) and Amber Lights (#3) until they are securely mounted in the grommets. Mount Inside Light Covers (#17) using two 5/16" x 3/4" Bolts (#18) and two 5/16" Nylon Insert Locknuts. (#16)
3. Secure the Light wire Cover (#4) using two 3/8" x 1" Bolts (#19) and two 3/8" Nylon Insert Locknuts (#20) as shown.

4. Run the Wiring Harness (#10) under the right side of the gravity box, inside wire cover. Secure the Light Harness to the frame using the nylon hose ties. Attach Female Plug (#12) using two 5/16" x 1" bolts (#14), two 5/16" washers (#15), and two 5/16" Nylon Insert locknuts (#16) as shown. Proceed wiring the lights as shown in the drawing and wiring schematic. Front of wagon has 1" O.D. hole which the wiring harness passes through. Use 1" rubber grommet Part # 04396 (not shown) to protect wires.

LIGHTING PARTS LIST

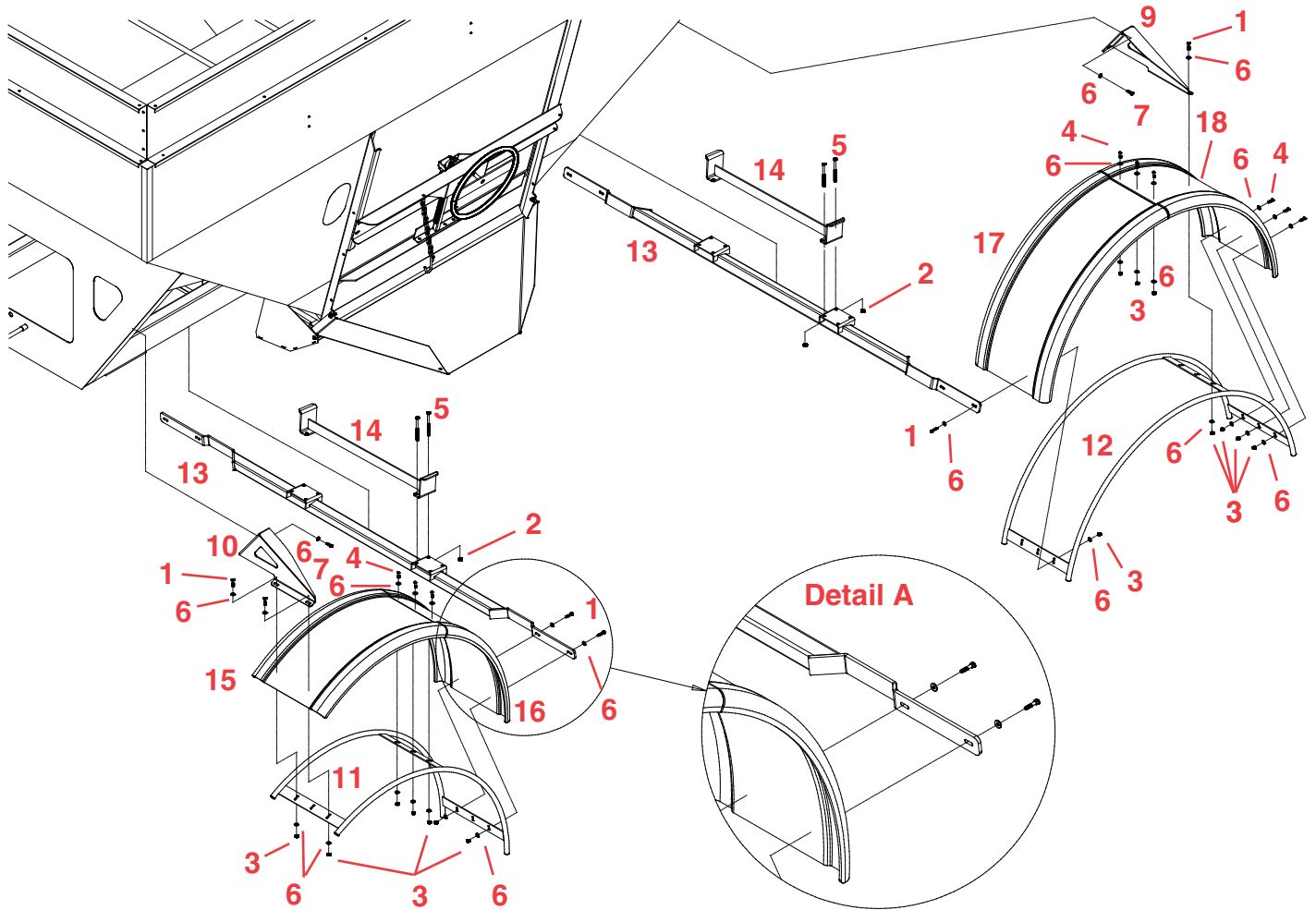
REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	05447	4	Light Mounting Grommet
2.	15540	2	4" Red Light
3.	15541	2	4" Amber Light
4.	11024-30	1	Light Wire Cover (chute light)
*5.	07436	1	Door Light and Mount (use H3 bulb)
*6.	06925	1	5/16"-18 UNC x 1" Carriage Bolt
*7.	00036	2	5/16" Lockwasher
*8.	00007	2	5/16"-18 UNC Hex Nut
*9.	04887	1	5/16"-18 UNC x 2" Hex Head Bolt, Gr.5
10.	03910	1	Wire Harness (see lower diagram)
-	NHT21	4	Nylon Hose Tie
11.	07416	1	7 Pin Male Plug (front)
12.	07417	1	7 Pin Female Plug (rear)
13.	07418	1	Female Plug/Wire Rubber Boot
14.	02990	2	5/16" - 18 UNC x 1" Hex Head Bolt
15.	00004	2	5/16" Flatwasher
16.	02802	6	5/16" - 18 UNC Nylon Insert Locknut
17.	07388-30	1	Inside Right Light/Wire Cover
-	07387-30	1	Inside Left Light/Wire Cover (not shown)
18.	01263	4	5/16"-18 UNC x 3/4" Gr. 5
19.	00907	2	3/8"-16 UNC x 1" Gr. 5
20.	02592	2	3/8"-16 UNC Nylon Insert Locknut
21.	12443-30	1	Light Wire Cover

* Included with Chute Light # 07436
Please order replacement parts by PART NO., DESCRIPTION and COLOR.



NOTE : Connect the wires to the tractor plug in, make sure all lights are in correct working order. When working correctly behind a tractor the amber lights are the flashing warning lights, and the turn signals.

Fender Assembly on 550-750 Gravity Flow Wagons



Mount Inner Fender Supports (11 & 12) to the inside of the plastic fenders. On the Front, the overlap of the plastic fender mounts to the cross strap of the inner fender support. On the Rear, the overlap of the plastic fender does not mount to the cross strap of the inner fender support.

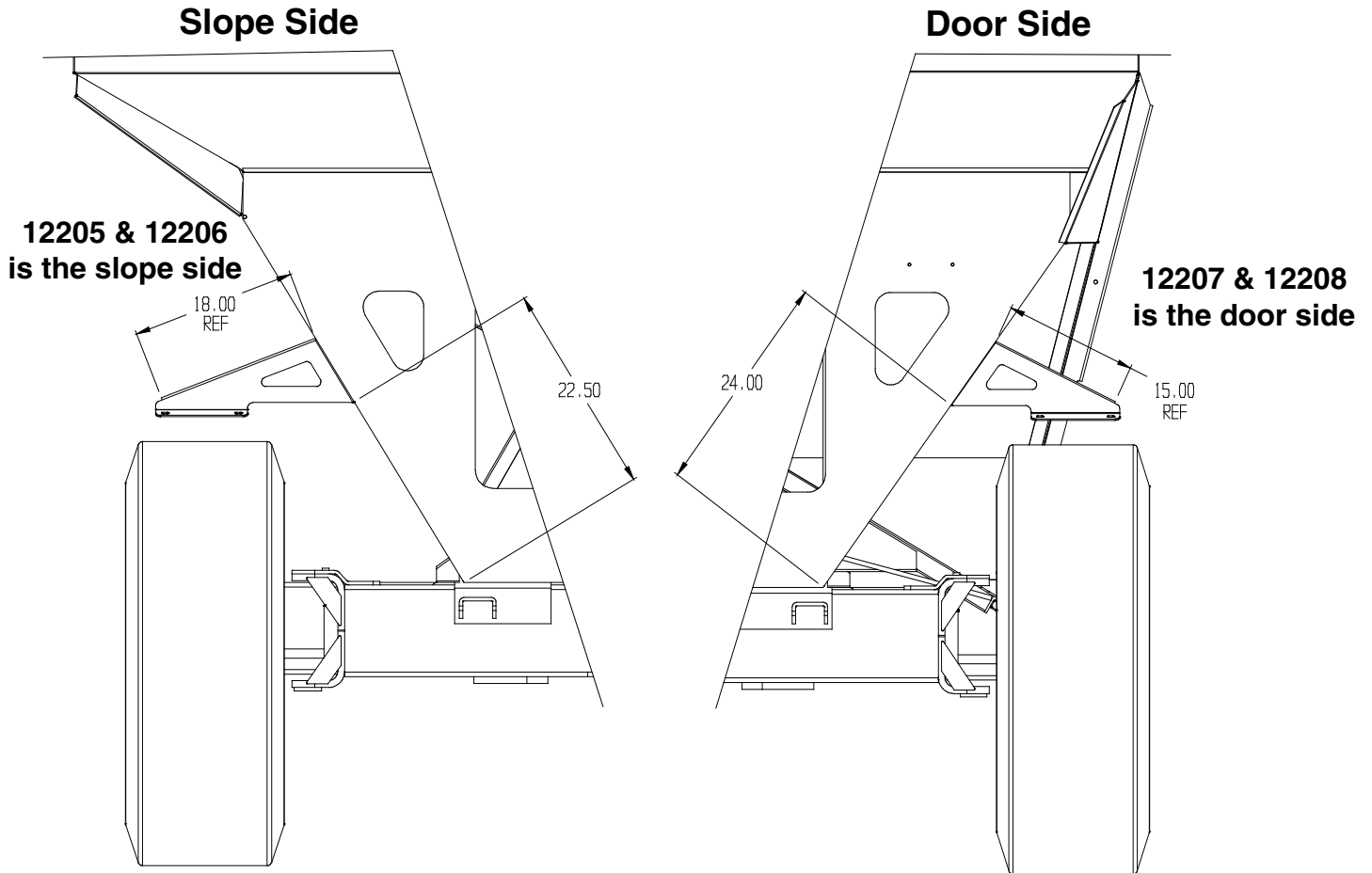
Mount the Fender Mounts (9 & 10) to the corner posts. (Follow directions on following page)

Mount Cross tube (13) to bottom of sill tubes of wagon using the clamp bar (14) and 4 3/8"X5" bolts (5). Clamp bar mounts between the sill tubes. Do not tighten bolts yet. Be sure cross tube is assembled in the right direction. Refer to detail A above.

Attach Fenders with inner supports to mounting brackets and cross tube. Adjust cross tube (13) front to back so fender misses tire when turning. Tighten mounting bolts.

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00372	16	5/16"-18UNC x 1 1/2" Hex Head Bolt Gr. 5
2.	02592	8	3/8"-16UNC Nylon Locknut
3.	02802	44	5/16-18UNC Nylon Locknut
4.	03169	18	5/16"-18UNC x 1 1/4" Slotted Bolt
5.	00675	8	3/8"-16UNC x 5" Hex Head Bolt Gr. 5
6.	00004	58	5/16" Flat washer
7.	02990	8	5/16"-18 UNC x 1" Hex Head Bolt Gr. 5
-	12205-30	1	Fender Mount, Slope Side Front (long)
-	12206-30	1	Fender Mount, Slope Side Rear (long)
9.	12207-30	1	Fender Mount, Door Side Rear (short)
10.	12208-30	1	Fender Mount, Door Side Front (short)
11.	12209-30	2	Inner Fender Support, Front
12.	12210-30	2	Inner Fender Support, Rear
13.	12211-30	2	Cross Tube
14.	12212-30	2	Clamp Bar
15.	12213	2	Front Fender Half with offset
16.	12214	2	Front Fender Half without offset
17.	12215	2	Rear Fender Half with offset
18.	12216	2	Rear Fender Half without offset

Fenders on 550-750 Gravity Flow



Clamp fender mounts to wagon corner posts at dimensions shown above.

Note: Be Careful NOT to Drill through light wire

Using the fender mounts as a guide, drill 11/32" dia holes through corner posts of wagon. The wiring harness is located on the slope side corner posts. Be careful NOT to drill through the wiring harness.



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Demco

4010 320th St., BOYDEN, IA. 51234

PH: (712) 725-2311

FAX: (712) 725-2380

TOLL FREE: 1-800-54DEMCO (1-800-543-3626)

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