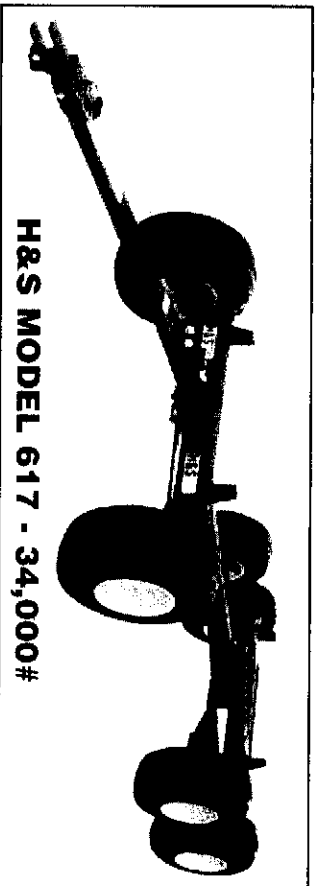


H&S

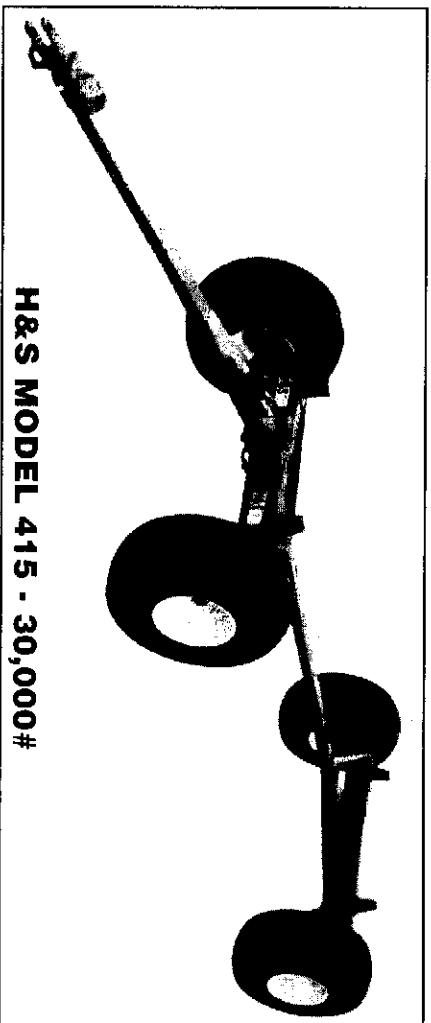
RUNNING GEAR

OPERATOR & PARTS MANUAL



H&S MODEL 617 - 34,000#

12 Models
8 Single Axle
4 Tandems
Rated
Capacities
from 12,000#
to 44,000#



H&S MODEL 415 - 30,000#



WARNING

READ AND UNDERSTAND THIS MANUAL
BEFORE OPERATING THIS EQUIPMENT.

UNSAFE OPERATION OR MAINTENANCE OF THIS EQUIPMENT CAN RESULT IN
SERIOUS INJURY OR DEATH.

7-20-06

Manufactured By

H&S MANUFACTURING CO., INC.

P.O. BOX 768 • (715) 387-3414 FAX (715) 384-5463

MARSHFIELD, WISCONSIN 54449

H&S RUNNING GEAR OPERATOR & PARTS MANUAL

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WARRANTY

Mr. Owner: Before Operating—Read and Understand Operating and Safety Instructions

H&S Manufacturing Co., Inc. truly believes you have made a wise choice and a sound and lasting investment. Many years of development have made available these quality machines to assure you the performance and reliability you need. **We ask you to read the following agreement and warranty as this unit is subject to this warranty and agreement and no other.**

H&S MANUFACTURING CO., INC. WARRANTY

H&S Manufacturing Co., Inc. ("H&S") warrants this product to be free from defect in material and workmanship. Except as noted below, this warranty term is twelve (12) months from the date of delivery of the product to the original purchaser by an authorized H&S dealer. Under this warranty, H&S will repair or replace, at its option, any covered part which is found to be defective in material or workmanship during the applicable warranty term. In no case will the covered repair cost of a part or parts exceed the replacement cost of that part. Warranty service must be performed by H&S or a dealer authorized by H&S to sell and/or service the product involved, which will use only new or remanufactured parts or components furnished by H&S. This warranty includes approved parts and labor to fix the product but does not include, and the purchaser is responsible for, any service call and/or transportation of the product to and from the dealer's place of business, for any premium charged for overtime labor requested by the purchaser, and for any service work not directly related to any defect covered under this warranty. This warranty includes only those components of the product manufactured by H&S. Warranty for any component not manufactured by H&S including, but not limited to, engines, batteries, tires, rims, hydraulic motors, pumps, etc., are covered by the warranty, if any, provided separately by their respective manufacturers.

This warranty in all its parts, is extended solely to the original purchaser of the product, is terminated upon any subsequent transfer or sale from or by the original purchaser and extends no third party benefits or rights whatsoever.

The warranty term for any product used in any commercial, custom for hire or rental application, is limited to six (6) months from the date of delivery of the product to the original purchaser by an authorized H&S dealer.

Polybonded (polyethylene and plywood) panels utilized in H&S Manure Spreaders are warranted, to the original purchaser, to not wear through and the polyethylene overlay to not tear free of the plywood for the functional life to the spreader. This specific warranty on polybonded panels includes only replacement of any defective panel part without any allowance for labor beyond the terms of the general warranty (12 or 6 months), and is further limited to manure spreaders used to spread normal agricultural manure.

This warranty does not include: (1) Any product that has been altered or modified in ways not approved by H&S; (2) Depreciation or damage caused by normal wear, misuse, improper or insufficient maintenance, improper operation, accident or failure to follow the product Operator Manual recommendations and product decal recommendations; (3) Normal maintenance parts and service; (4) Repairs made with parts other than those available from H&S or performed by anyone other than H&S or a dealer authorized by H&S to sell and/or service the product involved.

To secure warranty service the purchaser must report the product defect to a dealer authorized by H&S to sell and/or service the product involved within the applicable warranty term together with evidence of the warranty start date and make the product available to that dealer within a reasonable period of time.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE OF THIS WARRANTY. H&S and the companies affiliated with it makes no warranties, representations, or promises, express or implied, as to the quality or performance or freedom from defect of its products other than those set forth above and **NO IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS OR FITNESS FOR A PARTICULAR PURPOSE IS MADE. IN NO EVENT WILL THE DEALER, H&S OR ANY COMPANY AFFILIATED WITH H&S BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.** The **ONLY REMEDY** the purchaser has in connection with the breach of performance of any warranty on H&S products are those set forth above.

The selling dealer has no authority to make any representation or promise on behalf of H&S, or to modify the terms or limitations of this warranty in any way.

2/7/62004

WARRANTY REGISTRATION

Date of Purchase _____

Purchaser _____ Address _____

City _____ State _____ Zip _____

Product _____ Model # _____ Serial # _____

Dealer _____ Address _____

City _____ State _____ Zip _____

**FILL OUT AND MAIL
IMMEDIATELY TO MAKE
WARRANTY EFFECTIVE**

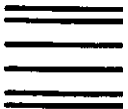


Signature of original buyer

IMPORTANT!

Tear on dotted line, provide the information requested on the card. The H&S Warranty is valid "only" after this card is received and recorded at H&S Mfg. Co. Mail at once. No postage required in the U.S.A.

This Is Your Warranty Card
Please Fill Out
And Mail Immediately



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

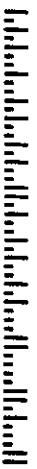
BUSINESS REPLY MAIL

FIRST CLASS MAIL Permit No. 195 Marshfield, WI 54449

POSTAGE WILL BE PAID BY ADDRESSEE



H&S Manufacturing Co., Inc.
PO Box 768
Marshfield WI 54449-9963



AFTER COMPLETION, DEALER SHOULD REMOVE AND RETAIN FOR RECORDS

**H&S
DEALER PRE-DELIVERY CHECK LIST**

After the running gear has been completely set-up, check to be certain it is in correct running order before delivering to the customer. The following is a list of points to inspect. Check off each item as you have made the proper adjustments and found the item operating satisfactorily.

- All decals are in place and legible.
- All grease fittings have been lubricated, and wheel bearings properly packed and adjusted.
See lubrication guide in this manual.
- All mechanisms are operating trouble free.
- Tires are equally inflated to proper pressure.
- All bolts and lug nuts are tight.

(Dealer's Name)

Model Number

Serial Number

(Signature of Pre-Delivery Inspector)

(Inspection Date)

DEALER DELIVERY CHECK LIST

This check list that follows is an important reminder of valuable information that should be passed on to the customer at the time the running gear is delivered.

Check off each item as you explain it to the customer.

This pre-delivery check list, when properly filled out and signed assures the customer that the pre-delivery service was satisfactorily performed.

- Explain to the customer that the pre-delivery inspection was made.
- Explain to the customer all the safety precautions they must exercise when operating this unit.
- Explain different loads for different types of materials.
- Explain to customer that regular lubrication is required for proper operation and long life of machine. Show customer the lubrication section of this Manual.
- Record model and serial number on page 15 of this manual.
- Give the customer Owner's Manual and make sure he reads and understands all operating and service instructions.
- Have customer sign a completed "Warranty Registration," and mail it promptly.

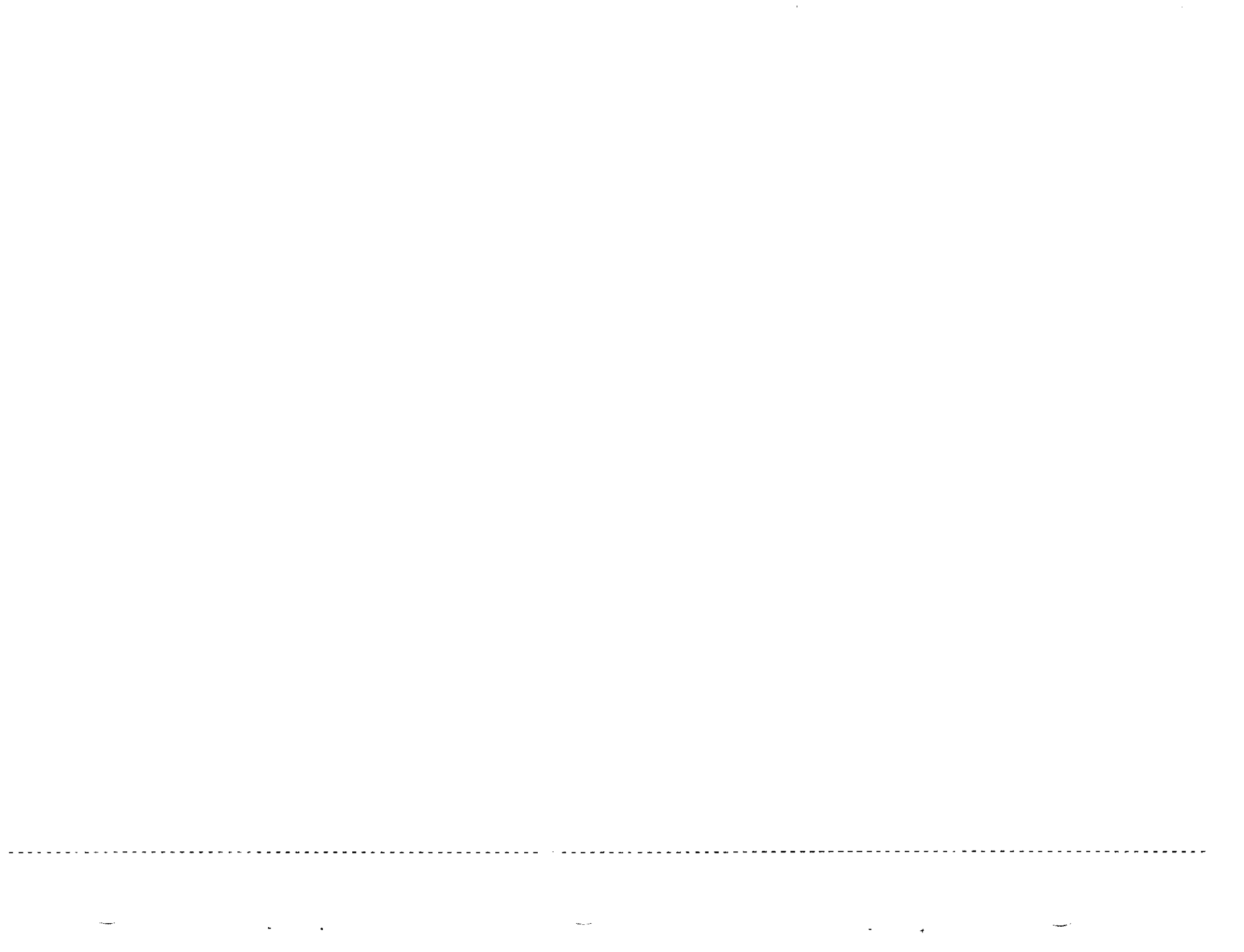
Date Delivered _____

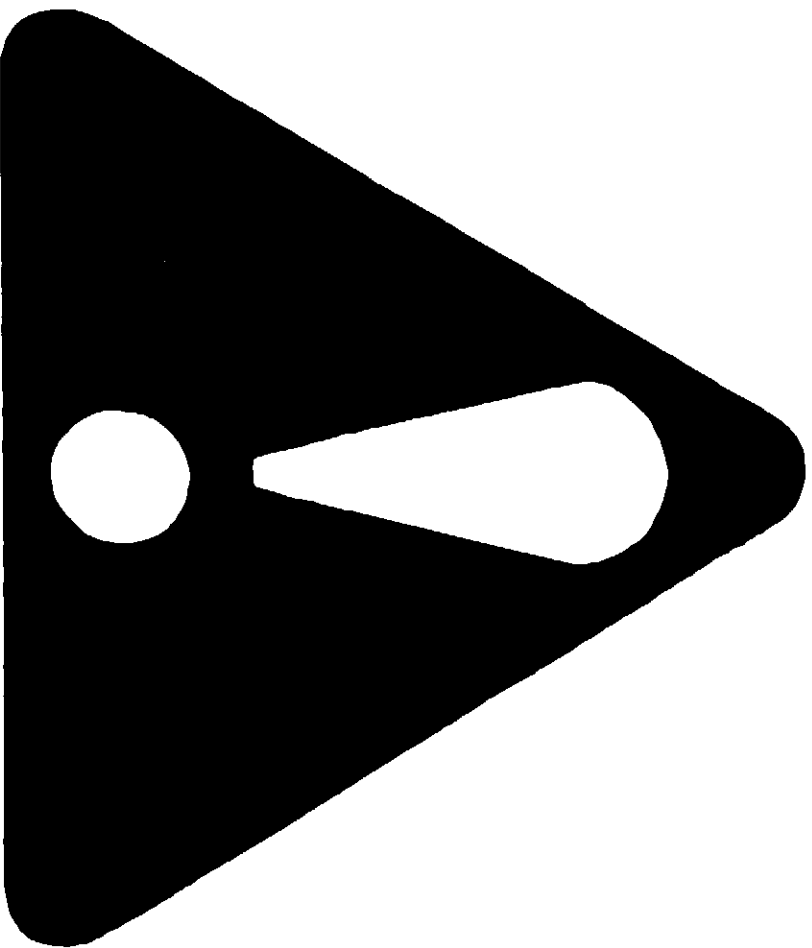
Dealer's Name _____

By _____

Signature of Original Buyer

Note: Warranty is not valid until warranty card is completed and returned to H&S Mfg. Co., Inc.





**BE
ALERT!
YOUR SAFETY
IS INVOLVED.**

THIS SYMBOL IS USED THROUGHOUT THIS BOOK WHENEVER YOUR PERSONAL SAFETY IS INVOLVED. TAKE TIME TO BE CAREFUL. REMEMBER: THE CAREFUL OPERATOR IS THE BEST OPERATOR. MOST ACCIDENTS ARE CAUSED BY HUMAN ERROR. CERTAIN PRECAUTIONS MUST BE OBSERVED TO PREVENT THE POSSIBILITY OF INJURY OR DAMAGE.

TRACTORS

This operator's manual uses the term "Tractor" when identifying the power source.

H&S MANUFACTURING CO. INC.



WARNING

TO AVOID SERIOUS INJURY OR DEATH

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

DO NOT allow riders on machine at any time.

ALWAYS use a safety pin with locking device.

DO NOT step on machine at any time.

NEVER exceed safe travel speeds.

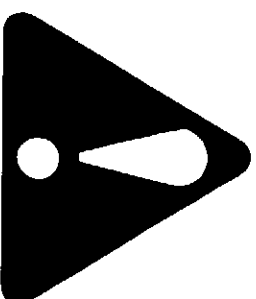
DO NOT drink and drive.

DO NOT ALLOW MINORS OR OTHER PERSONNEL OTHER THAN THE QUALIFIED OPERATOR NEAR THE MACHINE.

Loose or floppy clothing **SHOULD NOT** be worn by the operator. Be sure the machine is clear of people, tools, and other objects before moving it.

RECOGNIZE SAFETY INFORMATION

This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.



Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word—**DANGER**, **WARNING**, or **CAUTION**—is used with the safety-alert symbol. **DANGER** identifies the most serious hazards.



Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.



General precautions are listed on **CAUTION** safety signs.

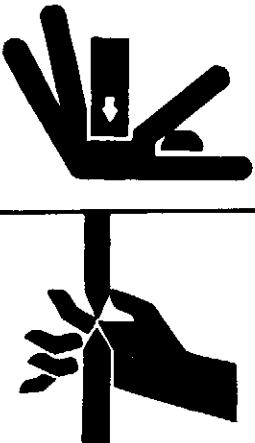


H&S Mfg. Co. always takes the operator and his safety into consideration and guards exposed moving parts for his protection. However, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operator's manual and decals on the machine itself warn you of further danger and should be read and observed closely.

Study The Above Safety Rules

ATTENTION - BE ALERT - YOUR SAFETY IS INVOLVED

WARNING



CRUSHING HAZARD

TO PREVENT SERIOUS INJURY OR DEATH:

KEEP HANDS AND BODY OUT OF HITCH AREA AND TELESCOPING POLE LATCH AREA WHEN ATTACHING* TOWING VEHICLE.

KEEP BODY CLEAR OF CRUSH POINT BETWEEN TOWING VEHICLE AND LOAD.

1495C

WARNING

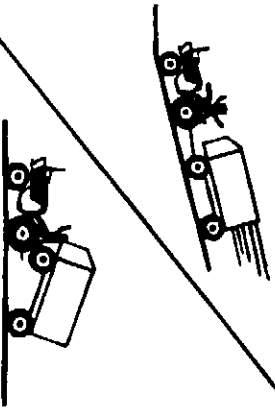
ADJUST SPRING TENSION SO POLE SETTLES TO THE GROUND WHEN DISCONNECTED FROM THE TOWING VEHICLE.

OVERTIGHTENING CAN CAUSE LOSS OF CONTROL OR BREAK-AWAY, RESULTING IN SERIOUS INJURY OR DEATH.

REFER TO OWNER'S MANUAL.

1495D

WARNING



RUN-AWAY/BREAK-AWAY HAZARD

TO PREVENT SERIOUS INJURY OR DEATH:

SHIFT TO LOWER GEAR BEFORE GOING DOWN STEEP GRADES.

KEEP TOWING VEHICLE IN GEAR AT ALL TIMES.

NEVER EXCEED A SAFE TRAVEL SPEED.

ALWAYS USE SAFETY PIN WITH LOCKING DEVICE AND SAFETY CHAIN WHEN ATTACHING TOWING VEHICLE.

1495A

WARNING

TO PREVENT SERIOUS INJURY OR DEATH:

READ AND UNDERSTAND OWNER'S MANUAL BEFORE USING. REVIEW SAFETY PRECAUTIONS ANNUALLY.

DO NOT EXCEED 10 MPH WHEN GROSS TOWED LOAD WEIGHS MORE THAN THE TOWING VEHICLE. IF GROSS TOWED LOAD WEIGHS LESS THAN THE TOWING VEHICLE, MAXIMUM TOWING SPEED IS 20 MPH.

DO NOT TOW WAGONS IN TANDEM ON PUBLIC ROADS.

DO NOT OPERATE ON PUBLIC ROADS UNLESS PROPER LIGHTS AND REFLECTORS ARE INSTALLED AND WORKING.

DO NOT USE THIS RUNNING GEAR TO HAUL ANHYDROUS AMMONIA OR OTHER PRESSURIZED TANKS.

DO NOT ALLOW RIDERS ON MACHINE.

DO NOT OVERLOAD.

DO NOT EXCEED RATED CAPACITY OF WHEEL AND TIRE COMBINATION USED.

MAINTAIN WHEEL BOLTS AT TORQUE RECOMMENDED IN OPERATOR'S MANUAL.

BEFORE MAINTENANCE OR REPAIR STOP TOWING VEHICLE, SET PARKING BRAKE, AND REMOVE IGNITION KEY.

PLACE SAFETY STANDS UNDER FRAME AND CHOCK WHEELS BEFORE WORKING ON TIRES OR RUNNING GEAR.

IF EQUIPPED WITH BRAKES, MAINTAIN PROPER ADJUSTMENT.

91504

FOLLOW SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and all safety signs on the machine. Follow recommended safety precautions and safety operating practices.

Keep safety signs in good condition. Replace missing or damaged safety signs.

RUN-AWAY / BREAK-AWAY



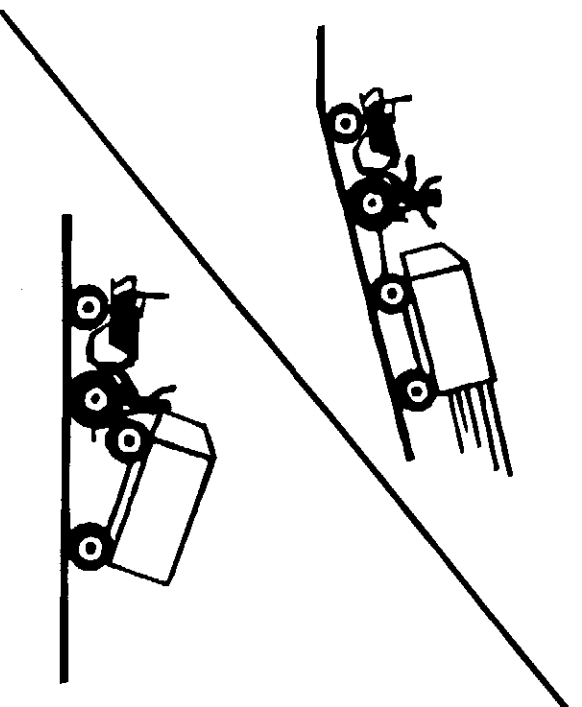
WARNING: TO PREVENT SERIOUS INJURY OR DEATH:

Shift to lower gear before going down steep grades.

Keep towing vehicle in gear at all times.

Never exceed a safe travel speed.

Always use safety pin with locking device and safety chain when attaching towing vehicle.



LOAD WAGON SAFELY



WARNING: Help prevent wagon and tractor rollover due to uneven load distribution.

Distribute load evenly between front and rear, and side to side.

Distribute load evenly. Poor distribution can cause improper trailing of wagon.

MOUNT ATTACHMENTS SAFELY

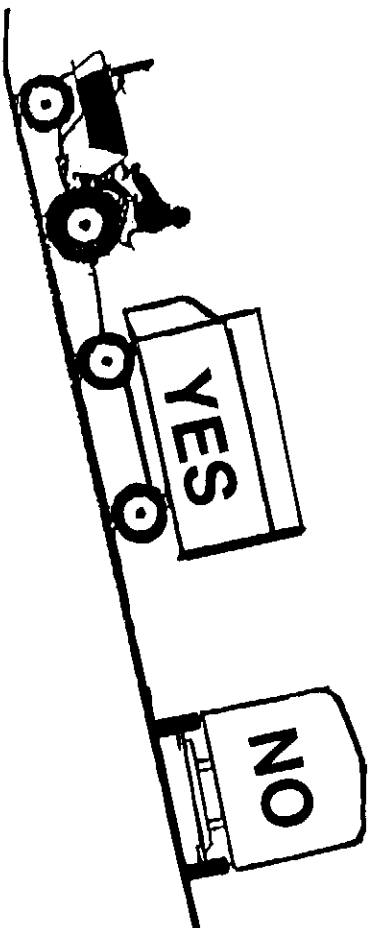


CAUTION: When mounting equipment to the running gear, refer to the manufacturer's mounting recommendations for that particular equipment.

WORKING ON INCLINES



WARNING: Help prevent serious injury or death resulting from tractor or wagon rollover. Travel uphill or downhill when working on inclines or slopes; avoid travelling across grade.



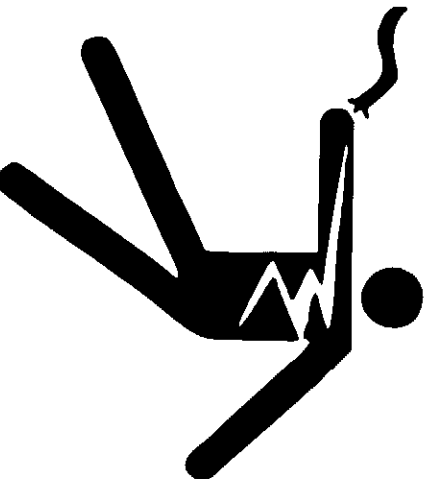
BE AWARE OF LOW WIRES

Be aware of load height and height of electrical wires in the area.



**MAINTAIN SAFE CLEARANCE
FROM ELECTRIC POWER LINES
AND AVOID CONTACT WITH ANY
ELECTRICALLY CHARGED
CONDUCTOR.**

**CONTACT WITH ELECTRIC
POWER SOURCES CAN RESULT
IN ELECTRICAL SHOCK OR
ELECTROCUTION.**



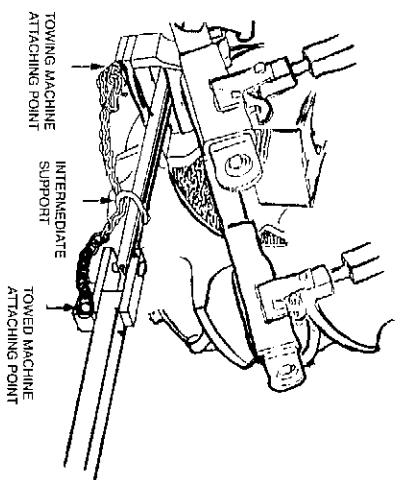
**FAILURE TO HEED THIS
WARNING MAY RESULT IN
SERIOUS INJURY OR DEATH.**

SAFETY CHAIN

To prevent break-away, always use a safety chain when attaching to the towing vehicle.

The safety chain shall have a minimum tensile strength equal to, or greater than, the ultimate gross weight of the towed machine. It must be replaced if one or more links are broken, stretched, or otherwise damaged.

See diagram at right for proper routing of the safety chain.



ADJUSTMENTS AND MAINTENANCE

TELEPOLE SPRING ASSIST

The H&S spring assist is designed to aid the operator in attaching the running gear to the towing vehicle. **ALWAYS USE A SAFETY PIN WITH A LOCKING DEVICE AND APPROPRIATE SIZE CHAIN WHEN ATTACHING TO THE TOWING VEHICLE.**



WARNING! DO NOT OVERTIGHTEN SPRING

Overtightening spring assist can increase the possibility of the E-Z hitch latch becoming unlatched. It can also cause increased wear on the drawbar, hitch pin, safety pin, and the running gear hitch plates. Overtightening increases the possibility of dislodging the safety pin, causing running gear break-away, leading to possible injury or death.

Always use a safety pin with a locking device and appropriate size safety chain when attaching to the towing vehicle.

CHECKING WHEEL BOLTS

Tighten wheel bolts to specifications below after wagon has been in use for a short period of time. **Check periodically thereafter.**

MODEL NO.	TORQUE FT. LBS.	HUB#
406 & 408	70-80	888
410 & 612	70-80	35-6
412 & 614	85-100	45-8
415, 416 & 617	85-100	60-8
417 & 622	85-100	758
420	300	871

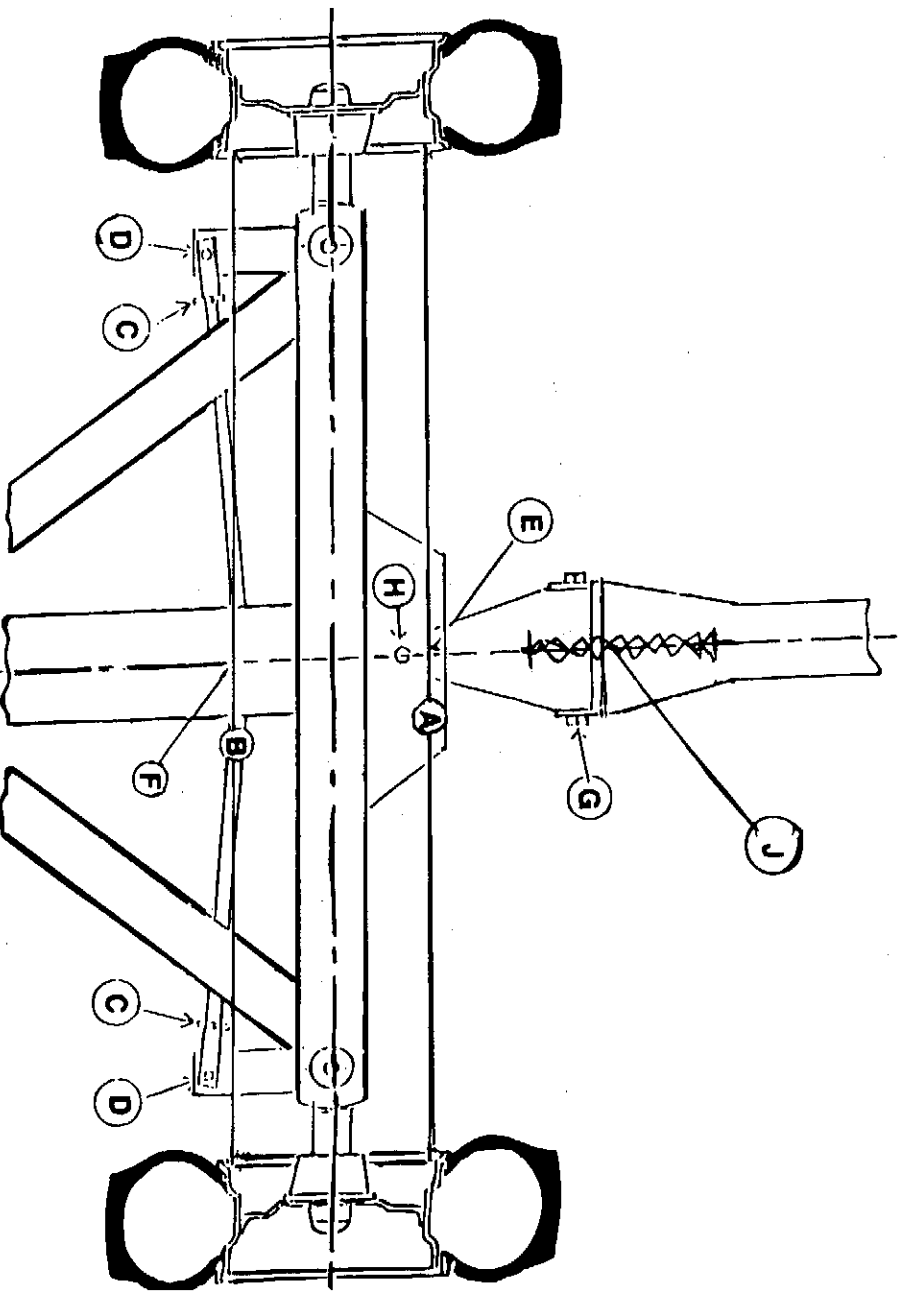
INFLATING TIRES

Inflate tires to manufacturer's recommended pressure, making sure all tires have equal pressure.



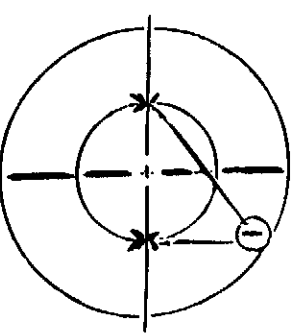
Inadequate or unequal tire pressure can cause improper trailing, and premature tire failure.

ADJUST WHEEL TOE-IN



Front wheel toe-in has been preset at the factory. If adjustments become necessary, use the following procedure:

1. Place hitch pole in exact forward position.
2. Check tightness of pole pin (G), steering pin (H), and center tie rod bolt (not shown), and retighten if necessary.
3. Measure dimension between bead on wheel rims at (A) and B.
4. The dimension at (A) should be 1/4" - 3/8" less than at (B).
5. If adjustment is necessary, loosen jam nuts (C) on the rod.
6. Remove cotter pin and pin (D) from clevis at each end of the rod.
7. Mark center line on the wagon and adjust each clevis so the dimension from the front of the rim to center line (E) one-half the dimension of (A) is 1/8" - 3/16" less than the dimension at the rear of the rim to center line (F) one-half the dimension of (B).
8. Replace pin (D) through clevis and steering arm of spindle.
9. Securely tighten jam nuts (C).
10. Adjust H&S Spring Assist (J) as specified.

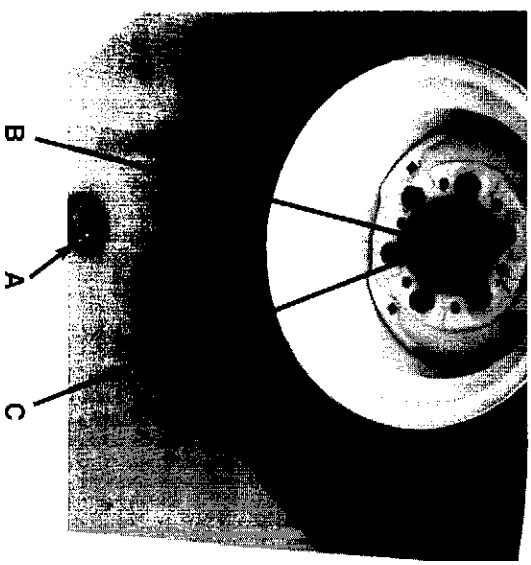


NOTE: Dimensions (A) and (B) should be measured at midpoint of wheel on the same horizontal plane at (l).

ADJUSTING WHEEL BEARINGS

IF WHEEL BEARINGS BECOME LOOSE, ADJUST THEM IMMEDIATELY!

1. Block wheels to prevent rolling, jack up gear until wheel turns freely.
2. Remove hub cap. (A)
3. Remove cotter pin from adjusting nut and spindle (B).
4. Tighten hub nut (C) until there is a slight drag on hub when wheel is turned.
5. Check cotter pin hole location on spindle, back nut off one notch, and re-insert cotter pin.
6. Replace hub cap, and lower to the ground.
7. After proper adjustment, inject a high grade grease into hub, until a small amount of grease seeps past the seal. (Exclude this step on models 406 & 408)



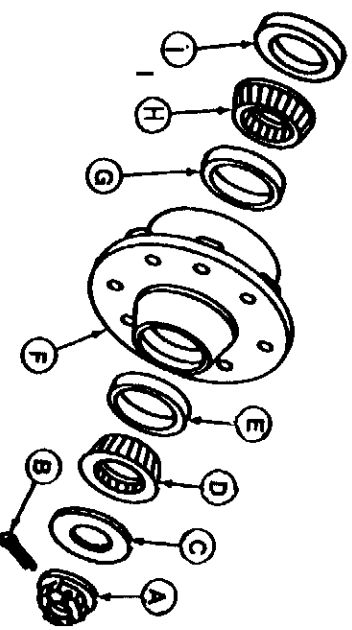
CLEAN AND RE-PACK WHEEL BEARINGS

Annually disassemble and clean parts in a solvent.

Pack bearings (D & H) with a high grade grease.

Reassemble, and tighten nut (A) until a slight drag is felt when wheel is turned. Back off nut to insert cotter pin (B) into first hole.

- | | |
|------------------|------------------|
| A. Slotted Nut | F. Hub |
| B. Cotter Pin | G. Inner Race |
| C. Washer | H. Inner Bearing |
| D. Outer Bearing | I. Seal |
| E. Outer Race | |



BRAKES

Maintain adequate adjustment of brakes if so equipped.

• SERVICE REMINDERS •

Your H&S Running Gear has been designed and manufactured to provide years of trouble-free service. You the operator, can help by performing the following:

FREQUENTLY:

- Check wheel bearings, making sure of proper adjustment. (See instructions above)
- Check lug nuts. Be sure all are tightened to specifications prior to operation.
- Check tire pressure. Make sure all tires are inflated equally to proper pressure.
- Lubricate all points identified in this manual.

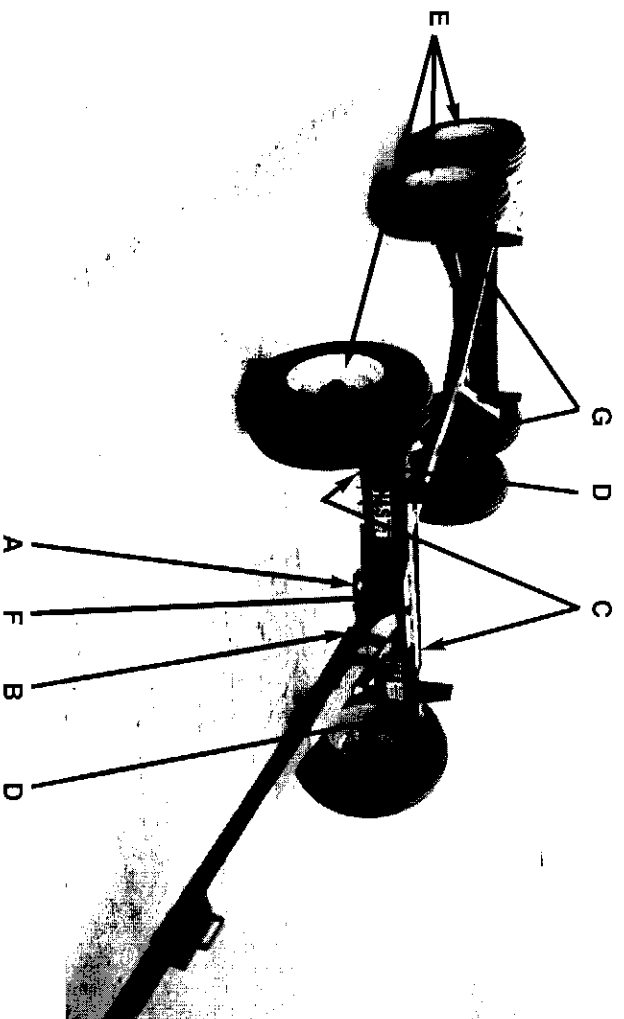
SEASONALLY:

- Check all tires for wear. Also, check front tires for proper toe-in adjustment.
- Check all pivot points and bushings for wear.

ANNUALLY:

- Remove and repack wheel bearings. (See Service Section Above)

For further service information or questions, contact an authorized H&S dealer.



LUBRICATION GUIDE

There are seven (7) lubrication points on Models: 406 & 408

) There are eleven (11) lubrication points on Models: 410, 412, 415, 416, 417 & 420

There are fifteen (15) lubrication points on Models: 612, 614, 617 & 622

LOCATION

- A. (1) Tie rod center bolt
- B. (1) Pole Pin
- C. (2) Tie Rod Clevis Pin
- D. (2) Front Spindle Pivot
- E. Each Hub (Except Models 406 & 408)
- F. (1) Steering Pin
- G. (2) Tandem Pivot Tube (Models 612, 614, 617 & 622 Only)

) If these points are lubricated properly, and often enough, it will prolong the life of your Running Gear. Grease daily during normal use and before and after storage. Use a good grade of high quality grease. Make sure grease comes out around the shaft on the sleeve type bearings. Wipe off excess grease to prevent accumulation of chaff or dirt around bearings.

DECAL LOCATION

Your H&S Running Gear was manufactured with operator safety in mind. Located on the running gear are various decals to aid in operation, and warn of danger or caution areas. Pay close attention to all the decals on your Running Gear.



DO NOT REMOVE ANY OF THESE DECALS. IF DECALS ARE LOST, DAMAGED, OR IF RUNNING GEAR IS RE-PAINTED, REPLACE DECALS. REMEMBER: DECALS ARE FOR YOUR PROTECTION AND SAFETY.

Listed below are the decals on your Running Gear. These decals may be ordered individually by part number or by ordering a complete set.

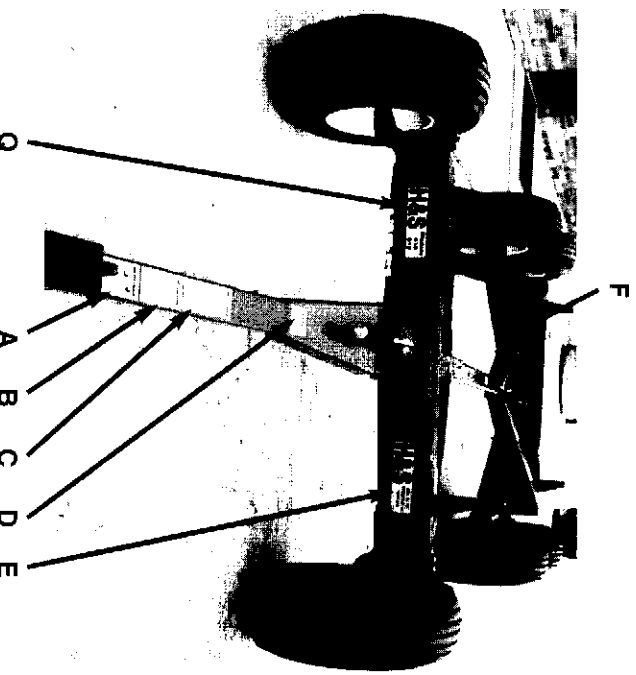
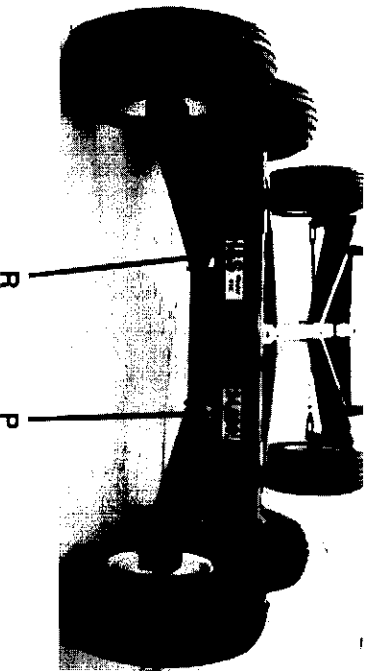
ITEM	PART NO.	DESCRIPTION
A	1495C	WARNING - Crushing Hazard
B	1495A	WARNING - Run-Away / Break-Away
C	91604	WARNING - To Prevent Serious Injury
D	1495D	WARNING - Adjust Spring Tension
E	W3191D	H&S Decal (3X8)
F		Serial Number
G	W3992	12,000#
H	W102491	16,000#
I	W3191E	20,000#
J	W3191F	24,000#
K	W52992	28,000#
L	W52692	30,000#
M	W5697A	32,000#
N	W1193	34,000#
O	W2200A	44,000#
P	W2200B	40,000#
Q		H&S Model No. (Front)
R		H&S Model No. (Rear)

Paint-H&S Red

ZX21
ZX22
ZX23

Gallon
Quart
Pint

406-21699 Complete Set Decals for Model 406
 408-21699 Complete Set Decals for Model 408
 410-21699 Complete Set Decals for Model 410
 412-612-21699 Complete Set Decals for Models 412 & 612
 614-21699 Complete Set Decals for Model 614
 415-21699 Complete Set Decals for Model 415
 416-417-617-21699 Complete Set Decals for
 Models 416, 417 & 617
 420-622-31401 Complete Set Decals for
 Models 420 & 622



INSTRUCTIONS FOR ORDERING PARTS

All service parts should be ordered through your authorized H&S dealer. He will be able to give you faster service if you will provide him with the following.

1. Model of Running Gear.
Serial Number - Serial number is located on the right, rear bolster brace.
2. All reference to left or right apply to the machine as viewed from the rear.
3. Parts should not be ordered from illustration only. Complete parts numbers and descriptions, as shown in the parts listing.
4. If dealer has to order parts - give shipping instructions
VIA truck - large pieces (please specify local truck lines)
VIA United Parcel Service (include full address)

H&S MFG. CO. INC.	
MARSHFIELD, MIS.	
MOD. NO.	<input type="text"/>
SER. NO.	<input type="text"/>
DESCR.	<input type="text"/>

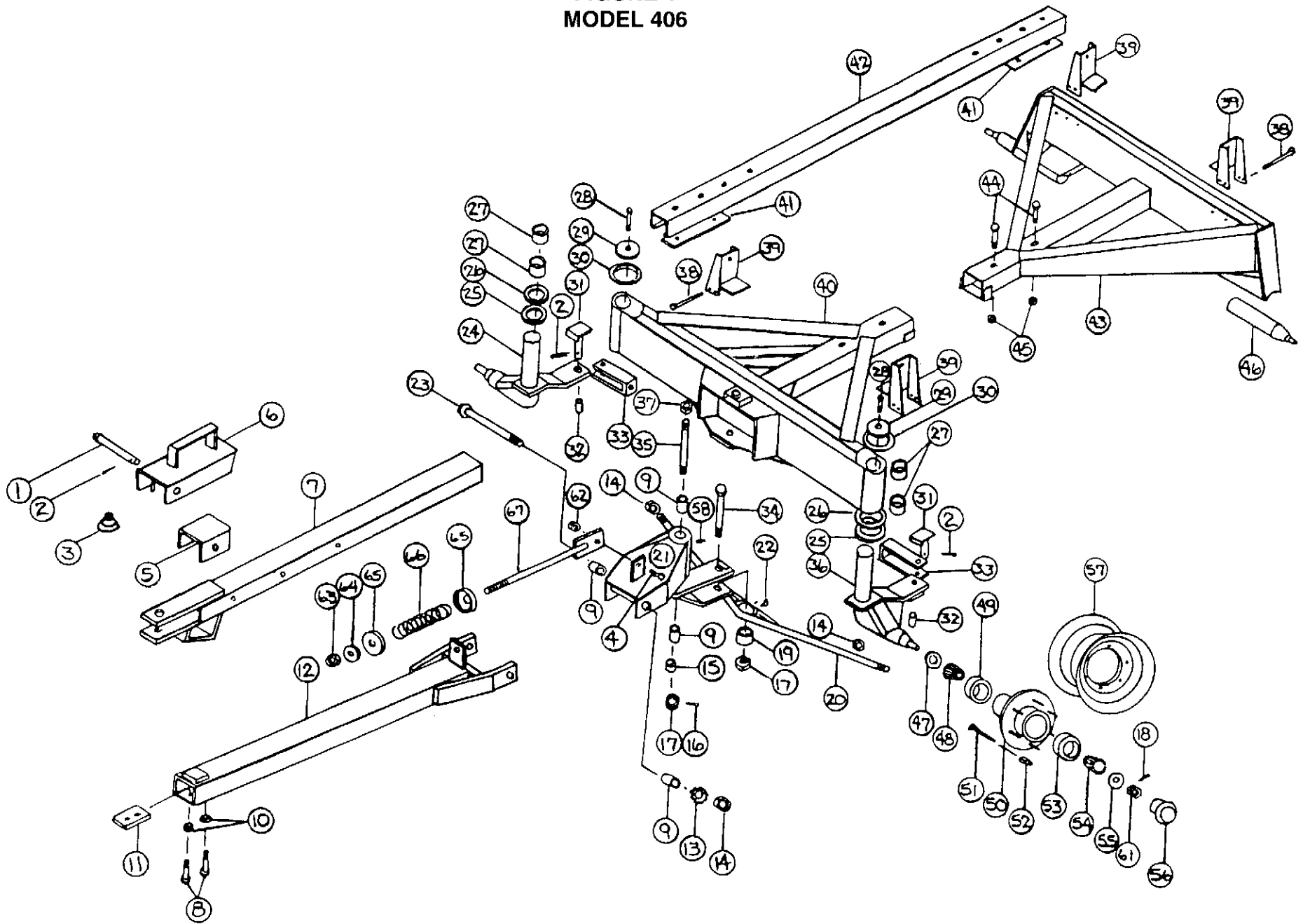
PLEASE RECORD NUMBERS FOR YOUR UNIT FOR QUICK REFERENCE

ABOUT IMPROVEMENTS

H&S is continually striving to improve its' products.

We must therefore, reserve the right to make improvements or changes when it becomes practical to do so, without incurring any obligation to make changes or additions to the equipment sold previously.

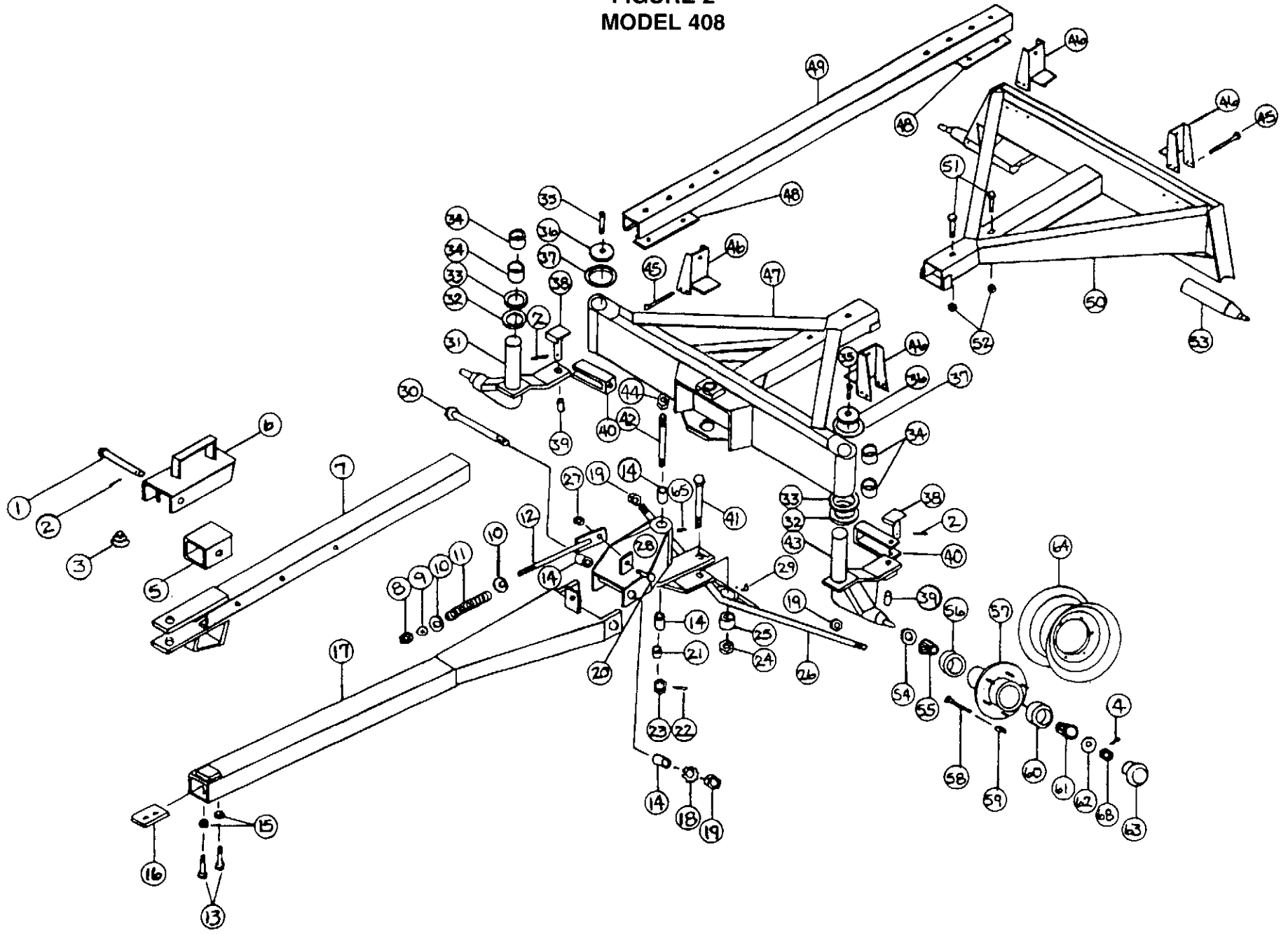
FIGURE 1
MODEL 406



**FIGURE 1 – MODEL 406
6 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG106	Clevis Pin 4"	34.	RG181	Tie Rod Center Bolt
2.	T37	Cotter Pin	35.	RG286	Steering Pin
3.	RG228	Latch Spring	36.	RG93	LH Front Spindle
4.	RG15	Bolt 5/8" x 1-3/4"	37.	RG114	Jam Nut 3/4"
5.	RG229	Telepole Stop	38.	RG36	Bolt 3/8" x 4"
6.	RG231	Latch	39.	RG122	Stake Pocket
7.	RG110	Telepole	40.	RG123	Front Frame
8.	T62	Bolt 5/8" x 1-1/2" GR.5	41.	RG124	Reinforcement Plate
9.	RG111	Bushing 3/4"ID x 1"OD x 2"	42.	RG125	Reach
10.	T69	5/8" Lock Washer	43.	RG126	Back Frame
11.	RG291	Stop Block	44.	12V45	Bolt 1/2" x 1-1/2" GR.5
12.	RG235	Pole	45.	9S17	1/2" Lock Nut
13.	RG113	3/4" Star Washer	46.	RG42	Back Spindle
14.	RG114	3/4" Jam Nut	47.	RG98	Seal
15.	RG115	Bushing 49/64"ID x 1"OD x 1/2"	48.	RG99	Inner Bearing
16.	T56	Cotter Pin 5/32" x 2"	49.	RG100	Inner Race
17.	T35	3/4" Slotted Nut	50.	RG101	Hub
18.	T56	Cotter Pin 5/32" x 2	51.	RG102	Stud Bolt
19.	RG18	Bushing 3/4"ID x 1"OD x 2"	52.	BFR144	Nut
20.	RG116	Tie Rod	53.	RG47	Outer Race
21.	RG117	Pole Pivot	54.	RG48	Outer Bearing
22.	RG21	45 Degree Grease Zerk	55.	RG182	Washer
23.	RG118	Pole Pin	56.	RG103	Hub Cap
24.	RG86	RH Front Spindle	57.	RG127	Wheel 15 x 6
25.	RG87	Bronze Thrust Washer 1/8"	Opt.	12N24	Wheel 15 x 8
26.	RG88	Thrust Washer 1/16"	58.	RG51	90 Degree Grease Zerk
27.	RGT3	Bushing 1-49/64"ID x 2"OD x 2"	61.	RG105	Nut
28.	RG27	Spindle Bolt 3/8" x 1"	OPTIONS: Pole Assist		
29.	RG89	Front Spindle Cap	62.	T60	5/8" Top Lock Nut
30.	RG90	Poly Washer	63.	RG7	5/8" Nylon Lock Nut
31.	RG119	Clevis Pin	64.	RG8	5/8" Flat Washer
32.	RG31	Bushing 5/8"ID x 7/8"OD x 1"	65.	RG9	Spring Retainer
33.	RG120	Clevis	66.	T148	Spring
			67.	RG10	Adjustment Rod

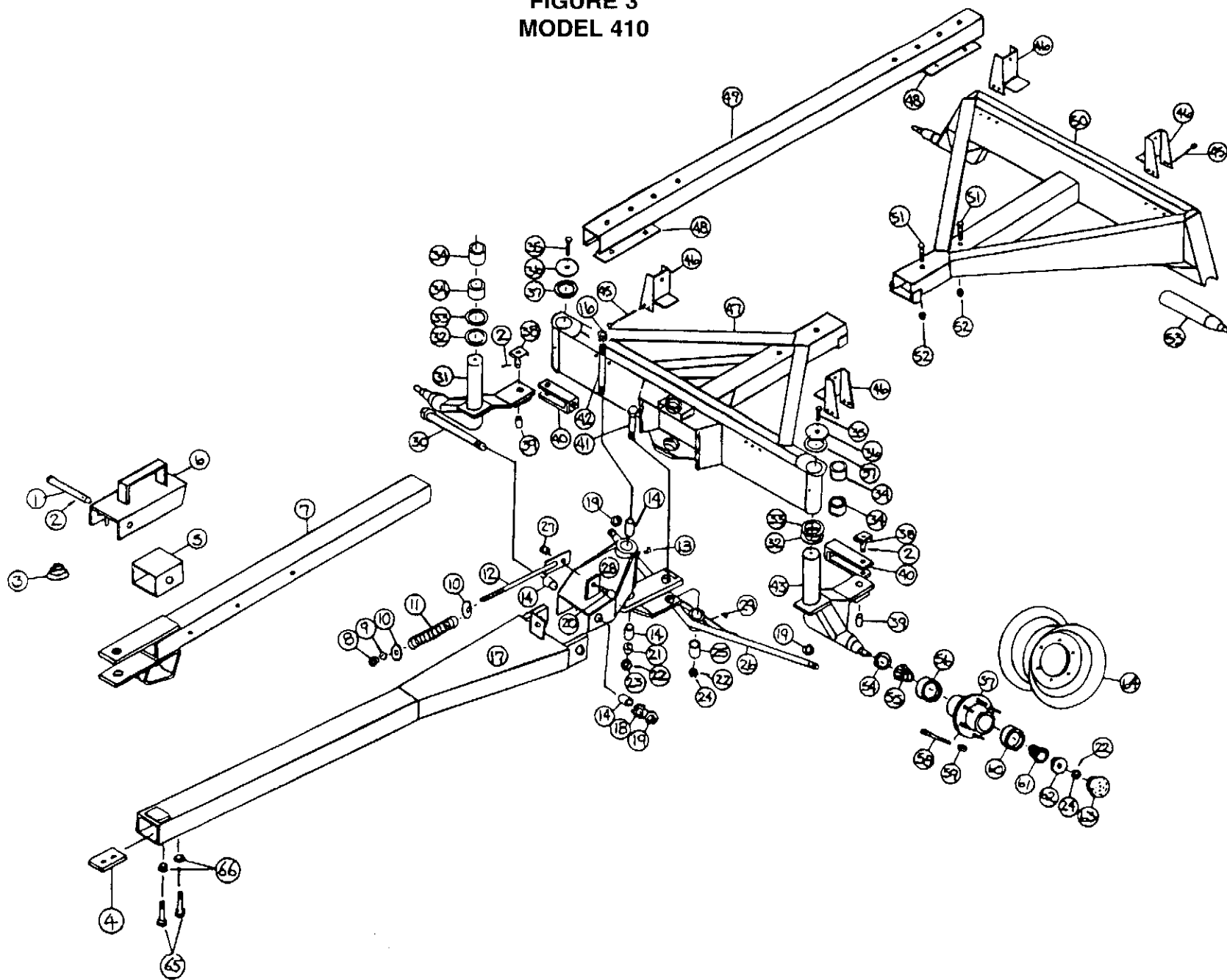
FIGURE 2
MODEL 408



**FIGURE 2 – MODEL 408
8 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG1	Clevis Pin 5"	34.	RG31	Bushing 1-49/64"ID x 2"OD x 2"
2.	T37	Cotter Pin	35.	RG27	3/8" x 1" Spindle Bolt GR.5
3.	RG228	Latch Spring	36.	RG89	Front Spindle Cap
4.	T56	Cotter Pin 5/32" x 2"	37.	RG90	Poly Washer
5.	RG230	Telepole Stop	38.	RG30	Clevis Pin
6.	RG232	Latch	39.	RG31	Bushing 5/8"ID x 7/8"OD x 1"
7.	RG76	Telepole	40.	RG91	Clevis
8.	RG7	5/8" Nylon Lock Nut	41.	RG33	Tie Rod Center Bolt
9.	RG8	5/8" Flat Washer	42.	RG287	Steering Pin
10.	RG9	Spring Retainer	43.	RG93	LH Front Spindle
11.	T148	Spring	44.	RG80	Jam Nut 7/8"
12.	RG10	Adjustment Rod	45.	RG36	Bolt 3/8" x 4"
13.	T62	Bolt 5/8" x 1-1/2" GR.5	46.	RG37	Stake Pocket
14.	RG77	Bushing 57/64"ID x 1-1/8"OD x 2"	47.	RG94	Front Frame
15.	T69	5/8" Lock Washer	48.	RG39	Reinforcement Plate
16.	RG291	Stop Block	49.	RG95	Reach
17.	RG236	Pole	50.	RG96	Back Frame
18.	RG79	7/8" Star Washer	51.	BFR49	Bolt 3/4" x 1-1/2" GR.5
19.	RG80	7/8" Jam Nut	52.	HE7	3/4" Top Lock Nut
20.	RG15	Bolt 5/8" x 1-3/4"	53.	RG42	Back Spindle
21.	RG81	Bushing 57/64"ID x 1-1/8"OD x 5/8"	54.	RG98	Seal
22.	T56	Cotter Pin 5/32" x 2"	55.	RG99	Inner Bearing
23.	RG82	7/8" Slotted Nut	56.	RG100	Inner Race
24.	T35	3/4" Slotted Nut	57.	RG101	Hub
25.	RG18	Bushing 3/4"ID x 1"OD x 2"	58.	RG102	Stud Bolt
26.	RG83	Tie Rod	59.	BFR144	Nut
27.	T60	5/8" Top Lock Nut	60.	RG47	Outer Race
28.	RG84	Pole Pivot	61.	RG48	Outer Bearing
29.	RG21	45 Degree Grease Zerk	62.	RG182	Washer
30.	RG85	Pole Pin	63.	RG103	Hub Cap
31.	RG86	RH Front Spindle	64.	12N24	Wheel 15 x 8
32.	RG87	Bronze Thrust Washer 1/8"	Opt.	RG127	Wheel 15 x 6
33.	RG88	Thrust Washer 1/16"	65.	RG51	90 Degree Grease Zerk
			68.	RG105	Nut

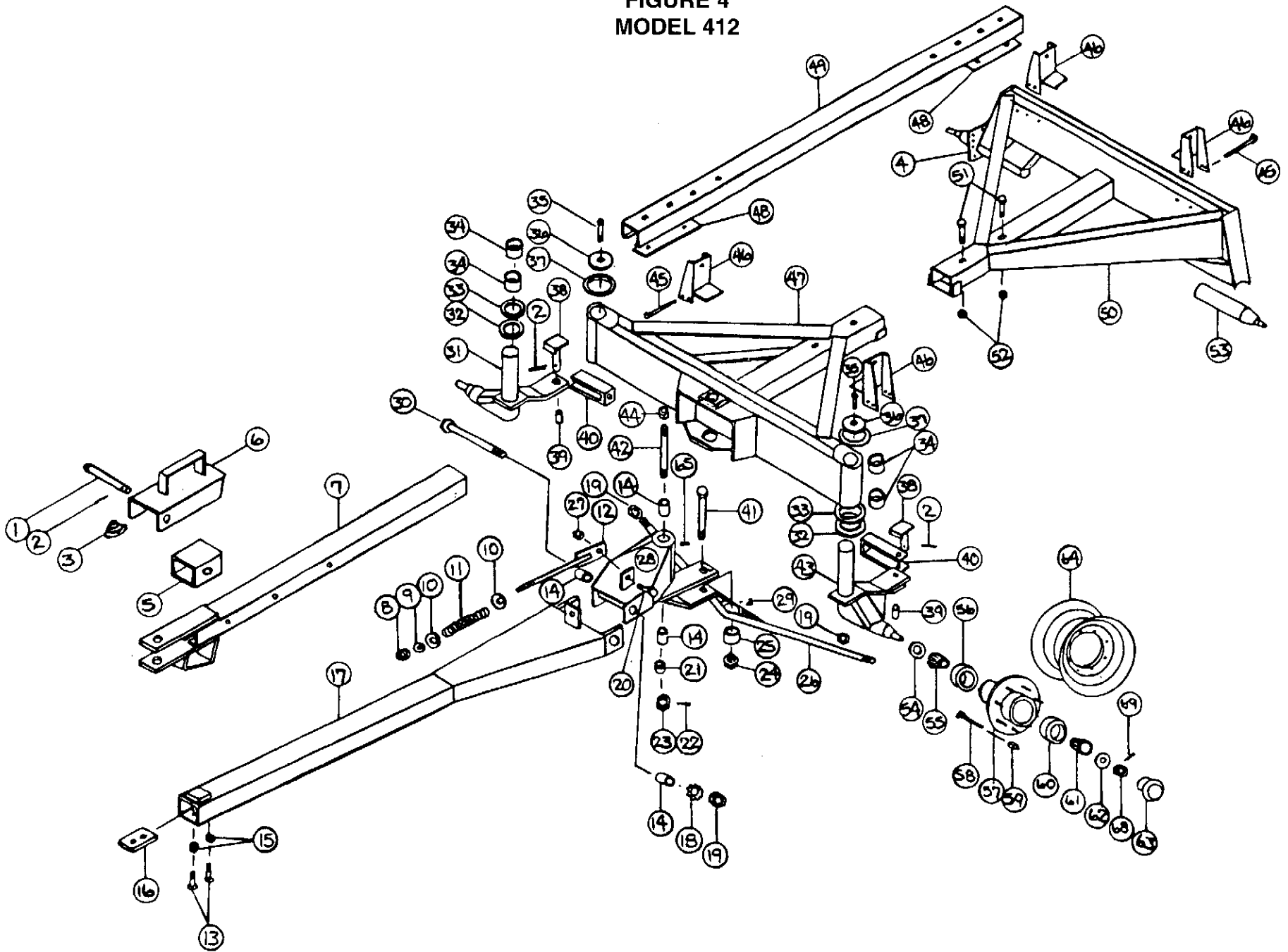
FIGURE 3
MODEL 410



**FIGURE 3 – MODEL 410
10 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG1	Clevis Pin 5"	34.	RG26	Bushing
2.	T37	Cotter Pin	35.	RG27	3/8" x 1" - Spindle Bolt GR.5
3.	RG228	Latch Spring	36.	RG28	Front Spindle Cap
4.	RG291	Stop Block	37.	RG29	Poly Washer
5.	RG230	Telepole Stop	38.	RG30	Clevis Pin
6.	RG232	Latch	39.	RG31	Bushing
7.	RG6	Telepole	40.	RG32	Clevis
8.	RG7	5/8" Nylon Lock Nut	41.	RG33	Tie Rod Center Bolt
9.	RG8	5/8" Flat Washer	42.	RG288	Queen Pin
10.	RG9	Spring Retainer	43.	RG35	LH Front Spindle
11.	T148	Spring	45.	RG36	3/8" x 4" Bolt
12.	RG10	Adjustment Rod	46.	RG221	Stake Pockets
13.	RG51	90 Degree Grease Zerk	47.	RG38	Front Frame
14.	RG11	Bushing	48.	RG39	Reinforcement Plate
16.	RG14	Jam Nut 1"	49.	RG40	Reach
17.	RG237	Pole	50.	RG41	Back Frame
18.	RG13	1" Star Washer	51.	BFR49	3/4"-10 x 1-1/2" Bolt GR.5
19.	RG14	1"-14 Jam Nut (F.T.)	52.	HE7	3/4"-10 Top Lock Nut
20.	RG15	5/8" x 1-3/4" Bolt	53.	RG97	Back Spindle
21.	RG16	Bushing	54.	RG43	Seal
22.	T72	Cotter Pin 5/32" x 1-1/2"	55.	RG44	Inner Bearing
23.	RG17	1"-14 Slotted Nut (F.T.)	56.	RG45	Inner Race
24.	T35	3/4"-16 Slotted Nut (F.T.)	57.	RG46	Hub #L356205-6-31
25.	RG18	Bushing	58.	26G5	Stud Bolt
26.	RG19	Tie Rod	59.	26G6	Nut
27.	T60	5/8" Top Lock Nut	60.	RG47	Outer Race
28.	RG20	Pole Pivot	61.	RG48	Outer Bearing
29.	RG21	45 Degree Grease Zerk	62.	RG49	Washer
30.	RG22	Pole Pin	63.	12N23	Hub Cap
31.	RG23	RH Front Spindle	64.	RG50	Wheel 15 x 10
32.	RG24	Bronze Thrust Washer 1/8"	65.	T62	Bolt 5/8" x 1-1/2" GR.5
33.	RG25	Thrust Washer	66.	T69	5/8" Lock Washer

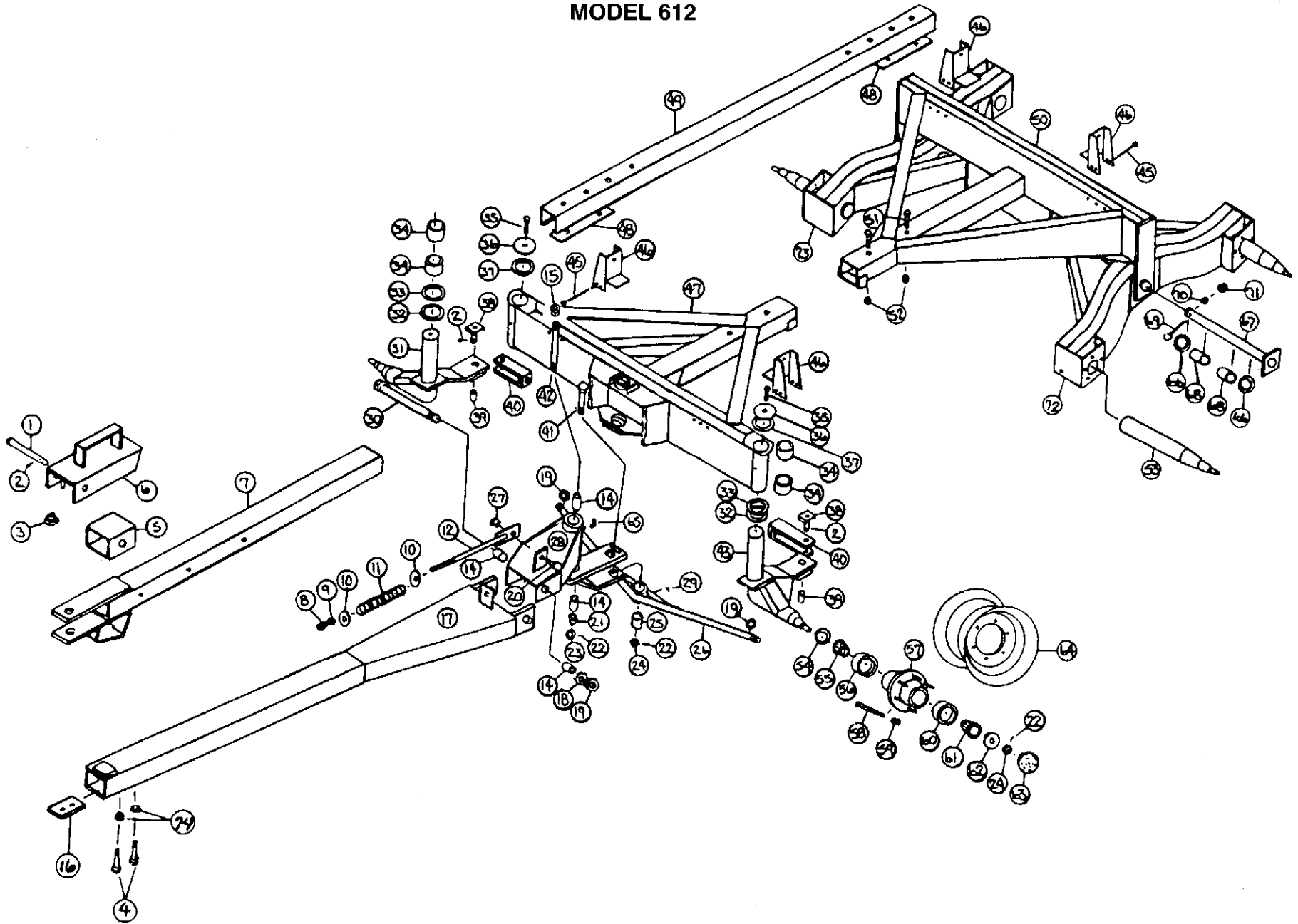
FIGURE 4
MODEL 412



**FIGURE 4 – MODEL 412
12 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG1	Clevis Pin 5"	34.	RG60	Bushing
2.	T37	Cotter Pin	35.	RG27	3/8" x 1" Spindle Bolt GR.5
3.	RG228	Latch Spring	36.	RG61	Front Spindle Cap
4.	RG74	Brake Mount	37.	RG62	Poly Washer
5.	RG230	Telepole Stop	38.	RG30	Clevis Pin
6.	RG232	Latch	39.	RG31	Bushing
7.	RG53	Telepole	40.	RG32	Clevis
8.	RG7	5/8" Nylon Lock Nut	41.	RG33	Tie Rod Center Bolt
9.	RG8	5/8" Flat Washer	42.	RG288	Steering Pin
10.	RG9	Spring Retainer	43.	RG63	LH Front Spindle
11.	T148	Spring	44.	RG14	Jam Nut 1"
12.	RG10	Adjustment Rod	45.	RG36	Bolt 3/8" x 4"
13.	T62	Bolt 5/8" x 1-1/2" GR.5	46.	RG221	Stake Pocket
14.	RG11	Bushing 1"ID x 1-1/4"OD x 2"	47.	RG64	Front Frame
15.	T69	5/8" Lock Washer	48.	RG39	Reinforcement Plate
16.	RG291	Block Stop	49.	RG40	Reach
17.	RG238	Pole	50.	RG65	Back Frame
18.	RG13	1" Star Washer	51.	BFR49	Bolt 3/4" x 1-1/2" GR. 5
19.	RG14	1" Jam Nut	52.	HE7	3/4" Top Lock Nut
20.	RG15	Bolt 5/8" x 1-3/4"	53.	RG66	Back Spindle
21.	RG16	Bushing 1"ID x 1-1/4"OD x 5/8"	54.	RG67	Seal
22.	T72	Cotter Pin 5/32" x 1-1/2"	55.	RG68	Inner Bearing
23.	RG17	1" Slotted Nut	56.	RG69	Inner Race
24.	T35	3/4" Slotted Nut	57.	RG70	Hub
25.	RG18	Bushing 3/4"ID x 1"OD x 2"	58.	RG71	Stud Bolt
26.	RG56	Tie Rod	59.	RG72	Nut
27.	T60	5/8" Top Lock Nut	60.	RG47	Outer Race
28.	RG20	Pole Pivot	61.	RG48	Outer Bearing
29.	RG21	45 Degree Grease Zerk	62.	RG49	Washer
30.	RG22	Pole Pin	63.	12N23	Hub Cap
31.	RG57	RH Front Spindle	64.	RG73	Wheel 15 x 10
32.	RG58	Bronze Thrust Washer 1/8"	Opt.	12V36	Wheel 16.1 X 14
33.	RG59	Thrust Washer 1/16"	65.	RG51	90 Degree Grease Zerk
			68.	T35	Nut
			69.	T72	Cotter Pin 5/32" x 1-1/2"

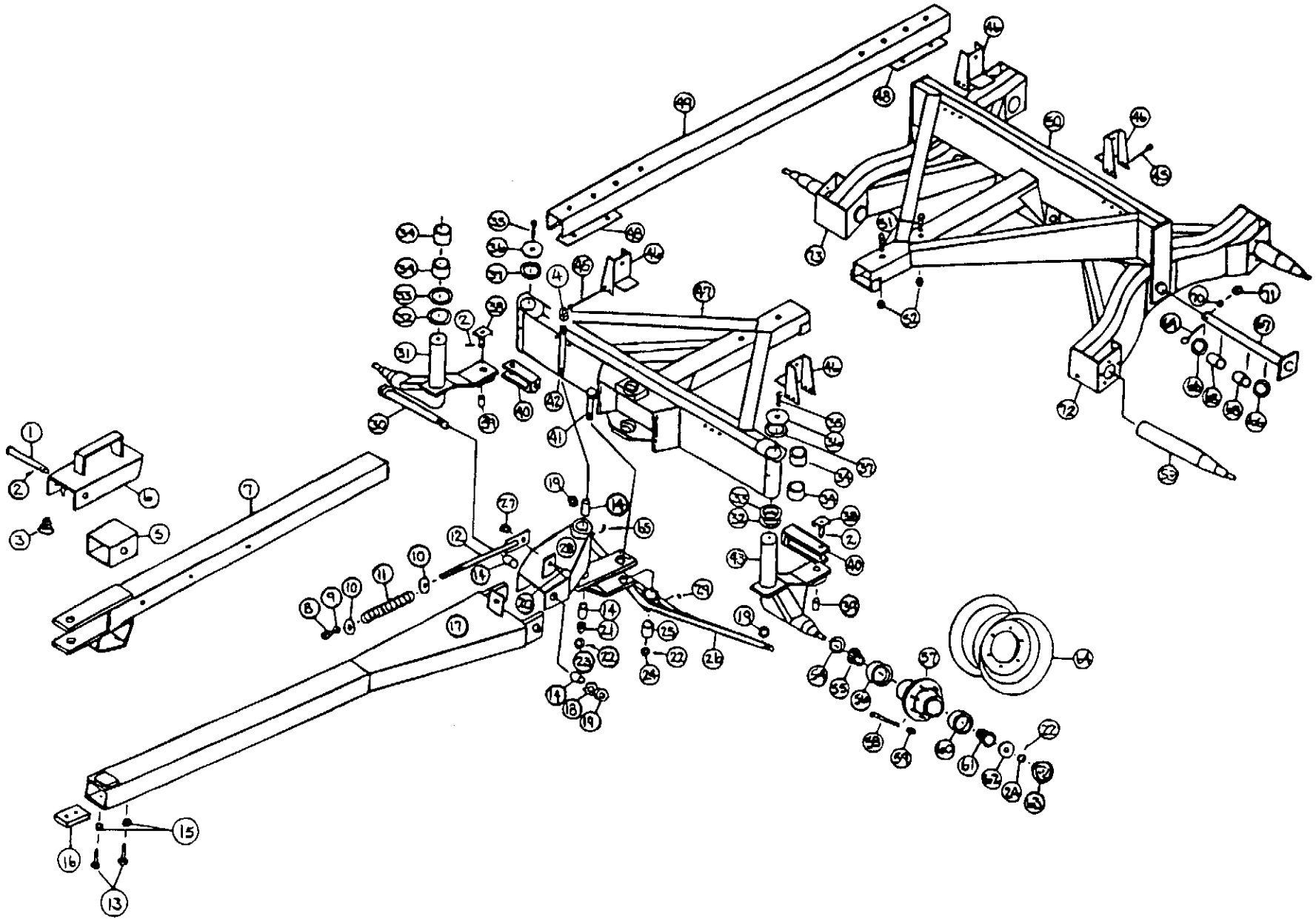
FIGURE 5
MODEL 612



**FIGURE 5 – MODEL 612
12 TON TANDEM RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG1	Clevis Pin 5"	38.	RG30	Clevis Pin
2.	T37	Cotter Pin	39.	RG31	Bushing
3.	RG228	Latch Spring	40.	RG32	Clevis
4.	T62	Bolt 5/8" x 1-1/2" GR.5	41.	RG33	Tie Rod Center Bolt
5.	RG230	Telepole Stop	42.	RG288	Queen Pin
6.	RG232	Latch	43.	RG35	LH Front Spindle
7.	RG6	Telepole	45.	RG36	3/8" x 4" Bolt
8.	RG7	5/8" Nylon Lock Nut	46.	RG221	Stake Pockets
9.	RG8	5/8" Flat Washer	47.	RG38	Front Frame
10.	RG9	Spring Retainer	48.	RG39	Reinforcement Plate
11.	T148	Spring	49.	RG40	Reach
12.	RG10	Adjustment Rod	50.	RG16	Back Frame
14.	RG11	Bushing	51.	BFR49	3/4"-10 x 1-1/2" Bolt GR.5
15.	RG14	Jam Nut 1"	52.	HE7	3/4" -10 Top Lock Nut
16.	RG291	Stop Block	53.	RG97	Back Spindle
17.	RG237	Pole	54.	RG43	Seal
18.	RG13	1" Star Washer	55.	RG44	Inner Bearing
19.	RG14	1"-14 Jam Nut (F.T.)	56.	RG45	Inner Race
20.	RG15	5/8" x 1-3/4" Bolt	57.	RG46	Hub
21.	RG16	Bushing	58.	26G5	Stud Bolt
22.	T72	Cotter Pin 5/32" x 1-1/2"	59.	26G6	Nut
23.	RG17	1"-14 Slotted Nut (F.T.)	60.	RG47	Outer Race
24.	T35	3/4"-16 Slotted Nut (F.T.)	61.	RG48	Outer Bearing
25.	RG18	Bushing	62.	RG49	Washer
26.	RG19	Tie Rod	63.	12N23	Hub Cap
27.	T60	5/8" Top Lock Nut	64.	RG50	Wheel 15 x 10
28.	RG20	Pole Pivot	65.	RG51	90 Degree Grease Zerk
29.	RG21	45 Degree Grease Zerk	66.	RG11	Washer
30.	RG22	Pole Pin	67.	RG12	Tandem Pin
31.	RG23	RH Front Spindle	68.	RG13	Bushing
32.	RG24	Bronze Thrust Washer 1/8"	69.	23N53	1/2"-13 x 4" Bolt GR.5
33.	RG25	Thrust Washer	70.	R35	1/2" Lock Washer
34.	RG26	Bushing	71.	R29	1/2" Nut
35.	RG27	3/8" x 1" Spindle Bolt GR.5	72.	RG14	LH Tandem Axle Assembly
36.	RG28	Front Spindle Cap	73.	RG15	RH Tandem Axle Assembly
37.	RG29	Poly Washer	74.	T69	5/8" Lock Washer

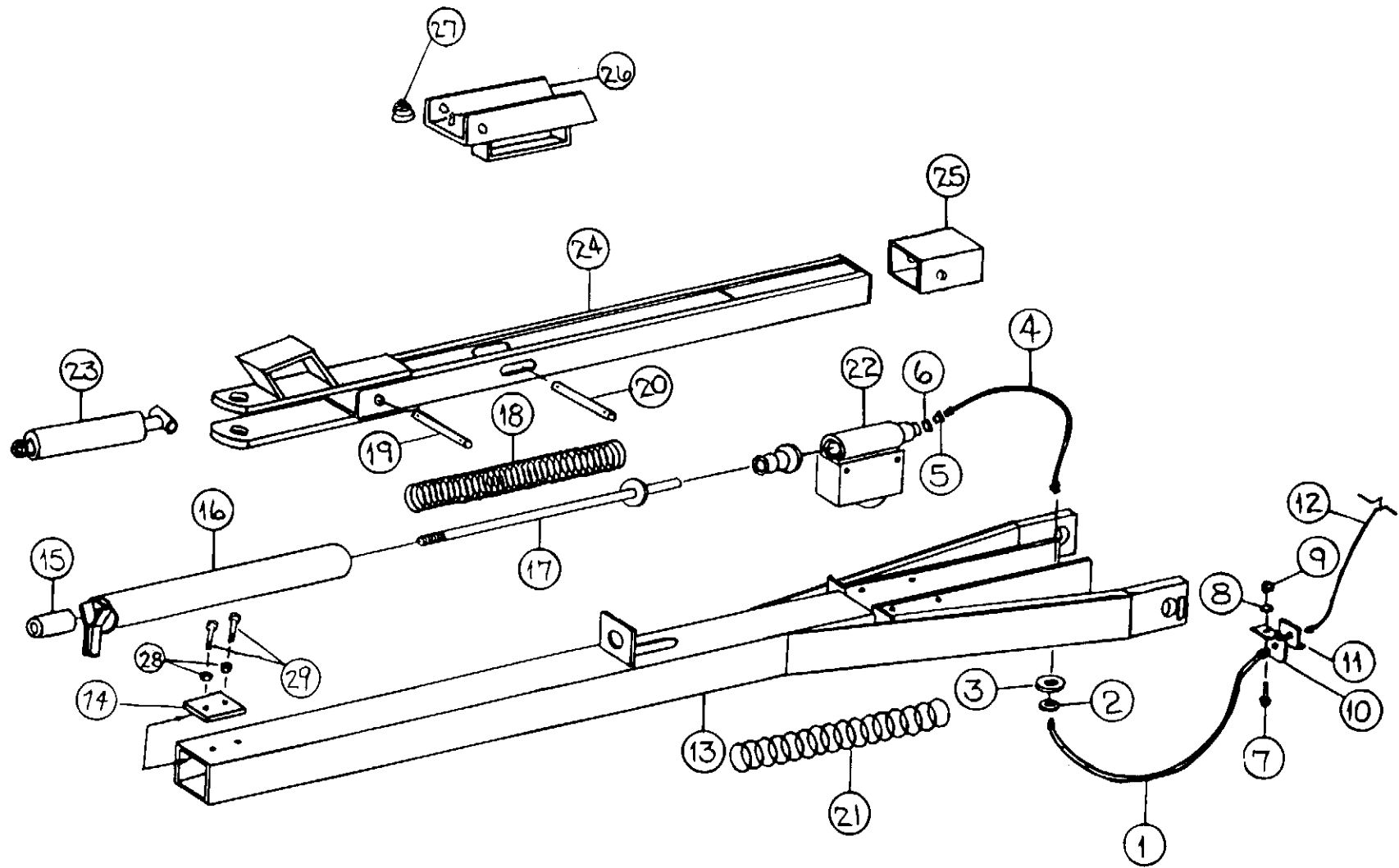
FIGURE 6
MODEL 614



**FIGURE 6 – MODEL 614
14 TON TANDEM RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG1	Clevis Pin 5"	36.	RG61	Front Spindle Cap
2.	T37	Cotter Pin	37.	RG62	Poly Washer
3.	RG228	Latch Spring	38.	RG30	Clevis Pin
4.	RG14	Jam Nut 1"	39.	RG31	Bushing 5/8"ID x 7/8"OD x 1"
5.	RG230	Telepole Stop	40.	RG32	Clevis
6.	RG232	Latch	41.	RG33	Tie Rod Center Bolt
7.	RG53	Telepole	42.	RG288	Queen Pin
8.	RG7	5/8" Nylon Lock Nut	43.	RG63	LH Front Spindle
9.	RG8	5/8" Flat Washer	45.	RG36	3/8" x 4" Bolt
10.	RG9	Spring Retainer	46.	RG221	Stake Pockets
11.	T148	Spring	47.	RG64	Front Frame
12.	RG10	Adjustment Rod	48.	RG39	Reinforcement Plate
13.	T62	5/8" x 1-1/2" Bolt GR.5	49.	RG40	Reach
14.	RG11	Bushing 1"ID x 1-1/4"OD x 2"	50.	RGT7	Back Frame
15.	T69	5/8" Lock Washer	51.	BFR49	3/4"-10 x 1-1/2" Bolt GR.5
16.	RG291	Stop Block	52.	HE7	3/4"-10 Top Lock Nut
17.	RG238	Pole	53.	RG66	Back Spindle
18.	RG13	1" Star Washer	54.	RG67	Seal
19.	RG14	1"-14 Jam Nut	55.	RG68	Inner Bearing
20.	RG15	5/8" x 1-3/4" Bolt	56.	RG69	Inner Race
21.	RG16	Bushing 1"ID x 1-1/4"OD x 5/8"	57.	RG70	Hub
22.	T72	Cotter Pin 5/32" x 1-1/2"	58.	RG71	Stud Bolt
23.	RG17	1"-14 Slotted Nut	59.	RG72	Nut
24.	T35	3/4"-16 Slotted Nut	60.	RG47	Outer Race
25.	RG18	Bushing 3/4"ID x 1"OD x 2"	61.	RG48	Outer Bearing
26.	RG56	Tie Rod	62.	RG49	Washer
27.	T60	5/8" Top Lock Nut	63.	12N23	Hub Cap
28.	RG20	Pole Pivot	64.	RG73	Wheel 15 x 10
29.	RG21	45 Degree Grease Zerk	Opt.	12V36	Wheel 16.1 x 14
30.	RG22	Pole Pin	65.	RG51	90 Degree Grease Zerk
31.	RG57	RH Front Spindle	66.	RGT12	Washer
32.	RG58	Thrust Washer Bronze 1/8"	67.	RGT8	Tandem Pin
33.	RG59	Thrust Washer 1/16"	68.	RG26	Bushing
34.	RG60	Bushing 2-1/4"ID x 2-1/2"OD x 2"	69.	23N53	1/2"-13 x 4" Bolt GR.5
35.	RG27	3/8" x 1" Spindle Bolt GR.5	70.	R35	1/2" Lock Washer
OPTIONS:					
	RGT11	Wheel 16.1 x 11	71.	R29	1/2" Nut
			72.	RGT9	LH Tandem Axle Assembly
			73.	RGT10	RH Tandem Axle Assembly

FIGURE 7
MODELS 412, 612 & 614

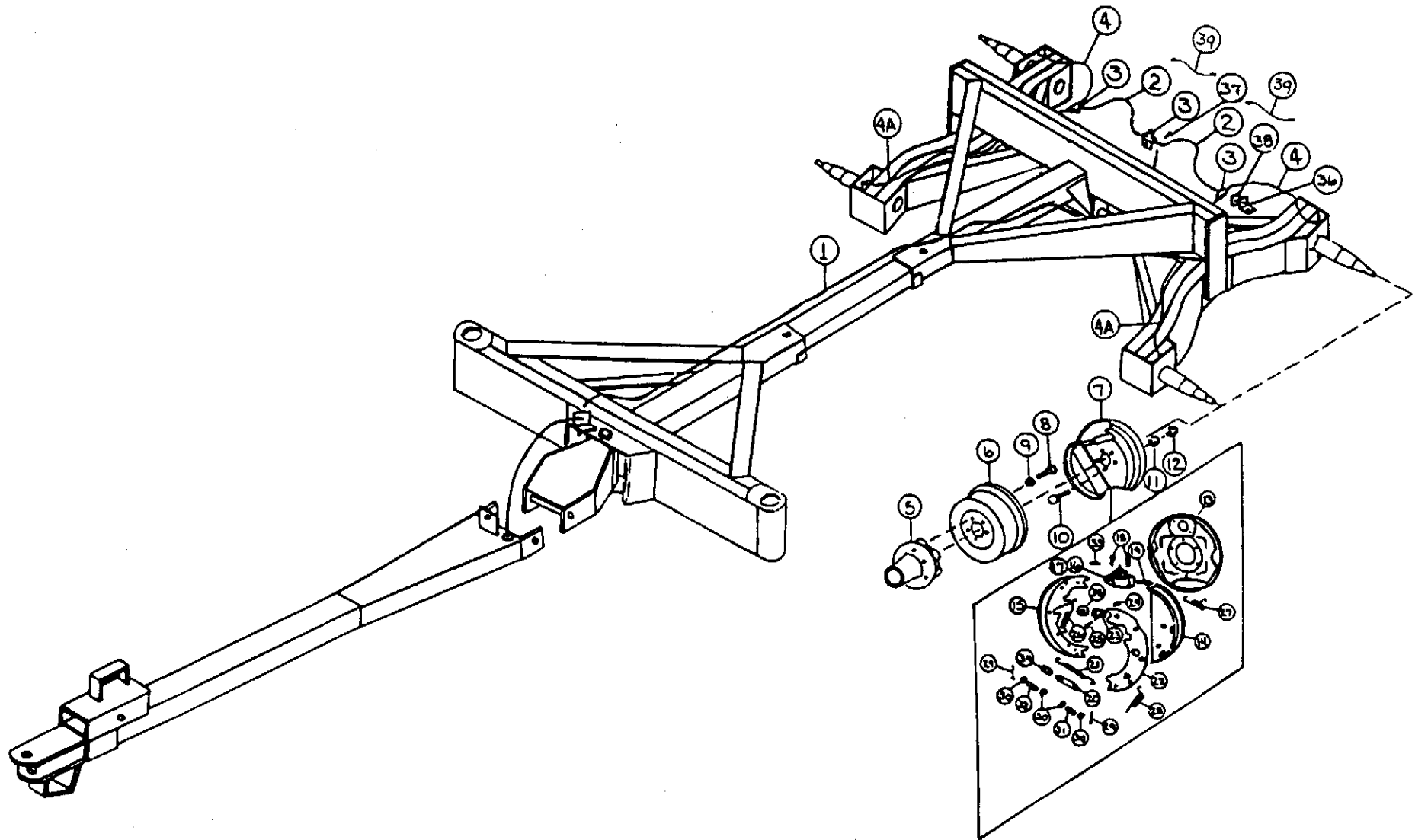


**FIGURE 7 – MODELS 412, 612 & 614
POLE ASSEMBLY
RUNNING GEAR BRAKE KITS**

ITEM#412	612	614	DESCRIPTION
1.	RGB24	"	Brake Hose 18-7/8"
2.	RG8	"	Flat Washer 5/8"
3.	12V96	"	Poly Washer
4.	RGB25	"	Brake Hose
5.	RGB20	"	Brass Connector
6.	RGB21	"	Brass Gasket
7.	RGB38	"	5/16" x 1" Hex Bolt
8.	RGB39	"	5/16" Lock Washer
9.	T116	"	5/16" Nut
10.	RGB122	"	Hose Bracket
11.	RGB28	"	Hose Clip
12.	RGB22	"	Brake Line 1010865-180"
13.	RGB118	"	Pole Assembly
14.	RG54	"	Stop Block
15.	RGB3	"	Push Rod End
16.	RGB4	"	Spring Shield
17.	RGB5	"	Push Rod
18.	RGB29	"	Spring Push Rod
19.	RGB2	"	Damper Pin
20.	RGB10	"	Damper Pin
21.	T148	"	Pole Lift Spring
22.	RGB19	"	Master Cylinder
23.	RGB18	"	Damper
24.	RGB8	"	Telepole Assembly
25.	RGB112	"	Telepole Stop
26.	RGB113	"	Latch
27.	RG228	"	Latch Spring
28.	T69	"	5/8" Lock Washer
29.	T62	"	Bolt 5/8" x 1-1/2" GR.5

NOTE: " (MEANS SAME AS PRECEDING NUMBER)

FIGURE 8
MODELS 612 & 614

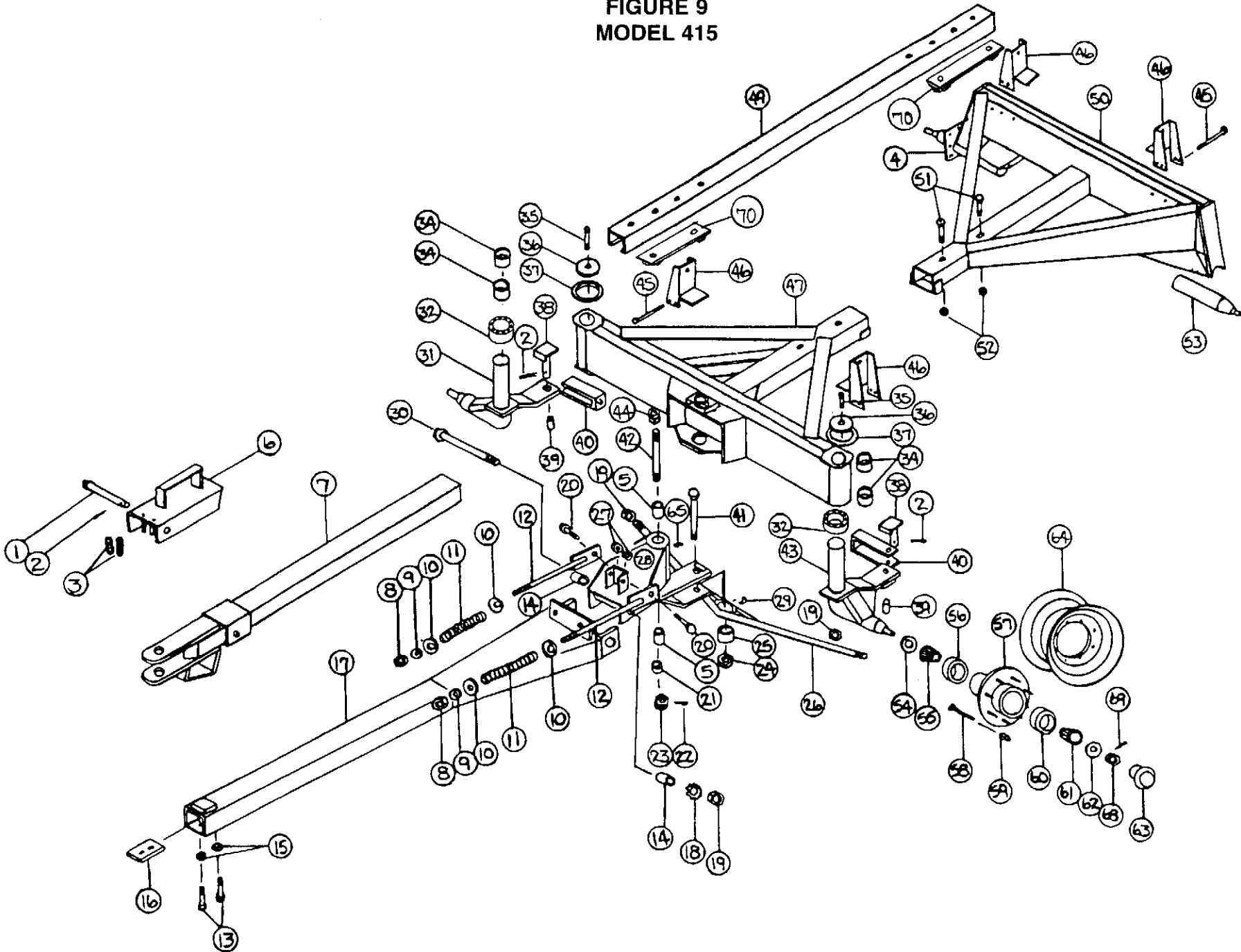


**FIGURE 8 – MODELS 612 & 614
612 & 614 TANDEM 2 AND 4 WHEEL BRAKE KITS
BRAKE ASSEMBLY**

ITEM	(2 WHEEL BRAKE KITS)		(4 WHEEL BRAKE KITS)		DESCRIPTION
	612	614	612	614	
1.	RGB22	"	"	"	180" Brake Line
2.	RGB24	"	"	"	Brake Hose
3.	RGB26	"	"	"	Tee
4.	RGB23	-	"	-	30" Brake Line
4.	-	RGB36	-	RGB36	36" Brake Line
4A.	-	-	RGB36	"	36" Brake Line
5.	RGB17	RGB33	RGB17	RGB33	Hub (Complete Brake Hub Assembly)
6.	RGB79	RGB32	RGB16	RGB32	Brake Drum
7.	RGB78	RGB31	RGB15	RGB31	Brake Cluster LH
*	RGB77	RGB30	RGB14	RGB30	Brake Cluster RH
8.	RGB64	"	"	"	Cap Screw
9.	RGB65	"	"	"	Lock Washer
10.	RGB66	"	"	"	Cap Screw
11.	RGB67	"	"	"	Lock Washer
12.	RGB68	"	"	"	Nut
13.	RGB42	"	"	"	Back Plate Assembly
14.	RGB80	RGB43	RGB80	RGB43	Front Shoe Assembly
15.	RGB81	RGB44	RGB81	RGB44	Rear Shoe Assembly
16.	RGB45	"	"	"	Wheel Cylinder Assembly RH
17.	RGB46	"	"	"	Wheel Cylinder Assembly LH
18.	RGB47	"	"	"	Screw and Lock Washer
19.	RGB48	"	"	"	Push Rod
20.	RGB82	RGB49	RGB82	RGB49	Adjusting Screw Assembly
21.	RGB50	"	"	"	Spring Adjusting Screw
22.	RGB83	RGB51	RGB83	RGB51	Shoe Lever
23.	RGB84	RGB52	RGB84	RGB52	Travel Link
24.	RGB53	"	"	"	Lock Nut
25.	RGB54	"	"	"	Hex Cap - Screw
26.	RGB55	"	"	"	Spring - Shoe
27.	RGB75	"	"	"	Spring - Lever
28.	RGB76	"	"	"	Spring - Shoe
29.	RGB85	RGB56	RGB85	RGB56	Pin - Shoe Hold down
30.	RGB57	"	"	"	Cup - Shoe Hold down
31.	RGB58	"	"	"	Spring - Hold down (Yellow)
32.	RGB59	"	"	"	Spring - Hold down (Black)
33.	RGB60	"	"	"	Cover Plate
34.	RGB86	RGB61	RGB86	RGB61	Socket
35.	RGB62	"	"	"	Washer
36.	RGB27	"	"	"	Hose Bracket
37.	RGB63	"	"	"	5/16 x 1" Self Tapping Bolt
38.	RGB28	"	"	"	Clip
*	RGB71	-	RGB74	-	Complete Brake Kit for 612
*	-	RGB72	-	RGB73	Complete Brake Kit for 614
39.	-	-	RGB105	RGB105	Brake Line 4-1/2"

NOTE: * (MEANS NOT SHOWN)
- (MEANS NOT USED ON THIS MODEL)
" (MEANS SAME AS PRECEDING NUMBER)

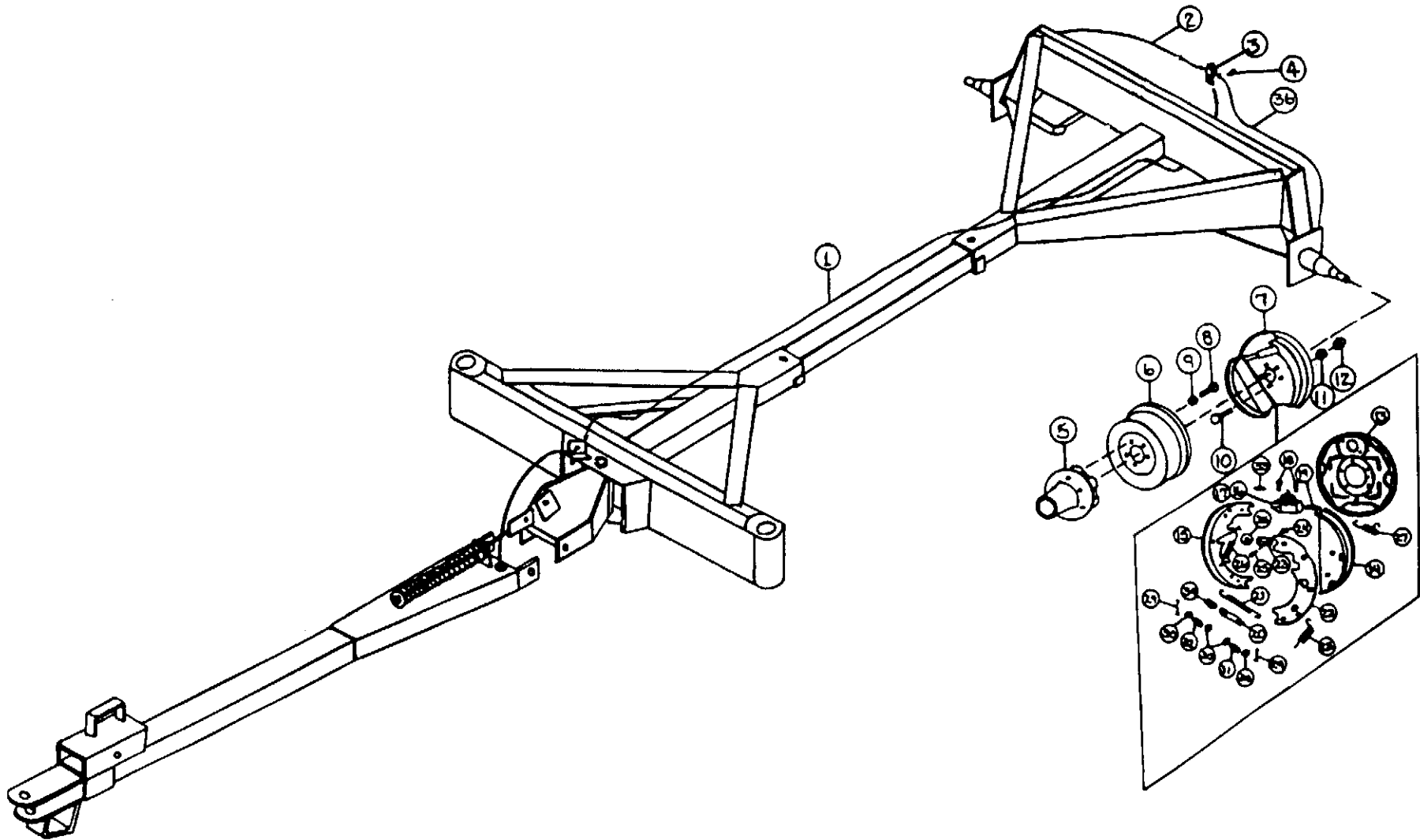
FIGURE 9
MODEL 415



**FIGURE 9 – MODEL 415
15 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG130	Clevis Pin	34.	RG147	Bushing 2-3/4"ID x 3"OD x 3"
2.	T72	Cotter Pin	35.	RG27	3/8" x 1" Spindle Bolt GR.5
3.	RG228	Latch Spring	36.	RG148	Front Spindle Cap
4.	RG172	Brake Mount	37.	RG149	Poly Washer
5.	RG132	Bushing	38.	RG150	Clevis Pin
6.	RG233	Latch	39.	RG151	Bushing 1"ID x 1-1/4"OD x 1-1/4"
7.	RG241	Telepole	40.	RG152	Clevis
8.	RG7	5/8" Nylon Lock Nut	41.	RG153	Tie Rod Center Bolt
9.	RG8	5/8" Flat Washer	42.	RG289	Steering Pin
10.	RG9	Spring Retainer	43.	RG155	LH Front Spindle
11.	T148	Spring	44.	RG139	Jam Nut 1-1/4"
12.	RG10	Adjustment Rod	45.	RG156	Bolt 1/2" x 5-1/2" GR.5
13.	T62	Bolt 5/8" x 1-1/2" GR.5	46.	RG227	Stake Pocket
14.	RG132	Bushing 1-1/4"ID x 1-1/2"OD x 2"	47.	RG281	Front Frame
15.	T69	5/8" Lock Washer	49.	RG226	Reach
16.	RG291	Stop Block	50.	RG161	Back Frame
17.	RG239	Pole	51.	RG162	Bolt 1" x 3-1/2" GR.5
18.	RG138	1-1/4" Star Washer	52.	RG163	1" Top Lock Nut
19.	RG139	1-1/4" Jam Nut	53.	RG164	Back Spindle
20.	RG15	Bolt 5/8" x 1-3/4"	54.	RG165	Seal
21.	RG140	Bushing 1-1/4"ID x 1-1/2"OD x 1-1/8"	55.	RG166	Inner Bearing
22.	T56	Cotter Pin 5/32" x 2"	56.	RG167	Inner Race
23.	BFR228	1-1/4" Slotted Nut	57.	RG168	Hub
24.	RG17	1" Slotted Nut	58.	RG71	Stud Bolt
25.	RG173	Bushing 1"ID x 1-1/4"OD x 2"	59.	RG72	Nut
26.	RG141	Tie Rod	60.	RG169	Outer Race
27.	T60	5/8" Top Lock Nut	61.	RG170	Outer Bearing
28.	RG142	Pole Pivot	62.	RG183	Washer
29.	RG21	45 Degree Grease Zerk	63.	RG171	Hub Cap
30.	RG143	Pole Pin	64.	12V36	Wheel 16.1 x 14
31.	RG144	RH Front Spindle	Opt.	16SV89	Wheel 22.5 x 13.5
32.	RG280	Bearing	65.	RG51	90 Degree Grease Zerk
			68.	RG184	Nut
			69.	RG185	Cotter Pin 7/32" x 2"
			70.	RG159	Reinforcement Plate

FIGURE 10
MODEL 412

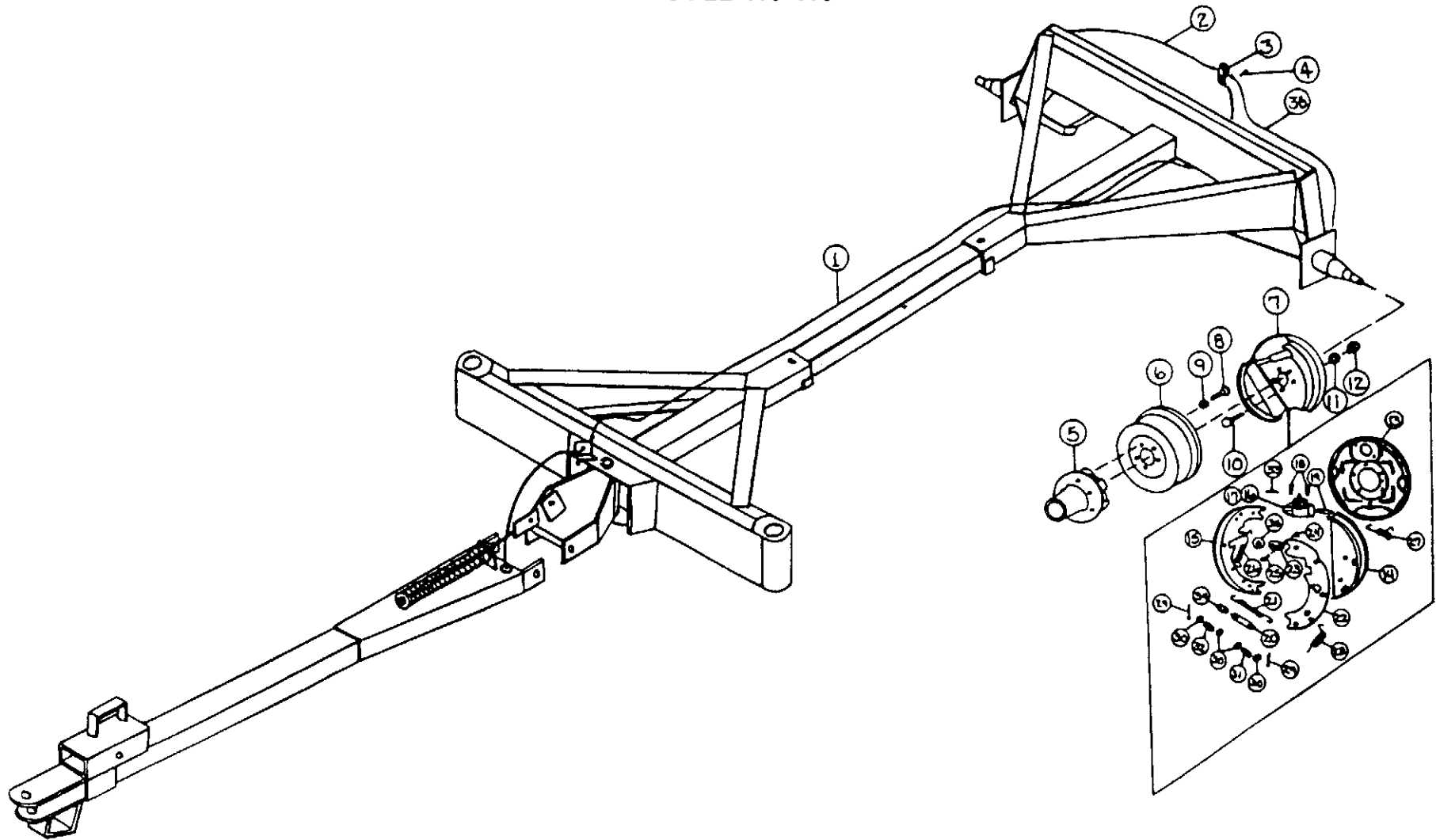


**FIGURE 10 – MODEL 412
BRAKE ASSEMBLY
RUNNING GEAR BRAKE KITS**

ITEM	412	DESCRIPTION
1.	RGB22	Brake Line 180"
2.	RGB36	Brake Line 36"
3.	RGB26	Tee
4.	RGB63	5/16 x 1" Self-Tapping Bolt
5.	RGB33	Hub (Complete Brake Hub Assembly)
6.	RGB32	Brake Drum
7.	RGB30	Brake Cluster Left
*	RGB31	Brake Cluster Right
8.	RGB64	Cap Screw
9.	RGB65	Lock Washer
10.	RGB66	Cap Screw
11.	RGB67	Lock Washer
12.	RGB68	Nut
13.	RGB42	Back Plate Assembly
14.	RGB43	Front Shoe Assembly
15.	RGB44	Rear Shoe Assembly
16.	RGB45	Wheel Cylinder Assembly RH
17.	RGB46	Wheel Cylinder Assembly LH
18.	RGB47	Screw & Lock Washer
19.	RGB48	Push Rod
20.	RGB49	Adjusting Screw Assembly
21.	RGB50	Spring Adjusting Screw
22.	RGB51	Shoe Lever
23.	RGB52	Travel Link
24.	RGB53	Lock Nut
25.	RGB54	Hex Cap Screw
26.	RGB55	Spring - Shoe
27.	RGB56	Spring - Lever
28.	RGB57	Spring - Shoe
29.	RGB56	Pin - Shoe Hold down
30.	RGB57	Cup - Shoe Hold down
31.	RGB58	Spring - Hold down (Yellow)
32.	RGB59	Spring - Hold down (Black)
33.	RGB60	Cover Plate
34.	RGB61	Socket
35.	RGB62	Washer
36.	RGB91	Brake Line 43"
*	RGB40	Complete Brake Kit Assembly

NOTE: * (MEANS NOT SHOWN)

FIGURE 11
MODEL 415-416

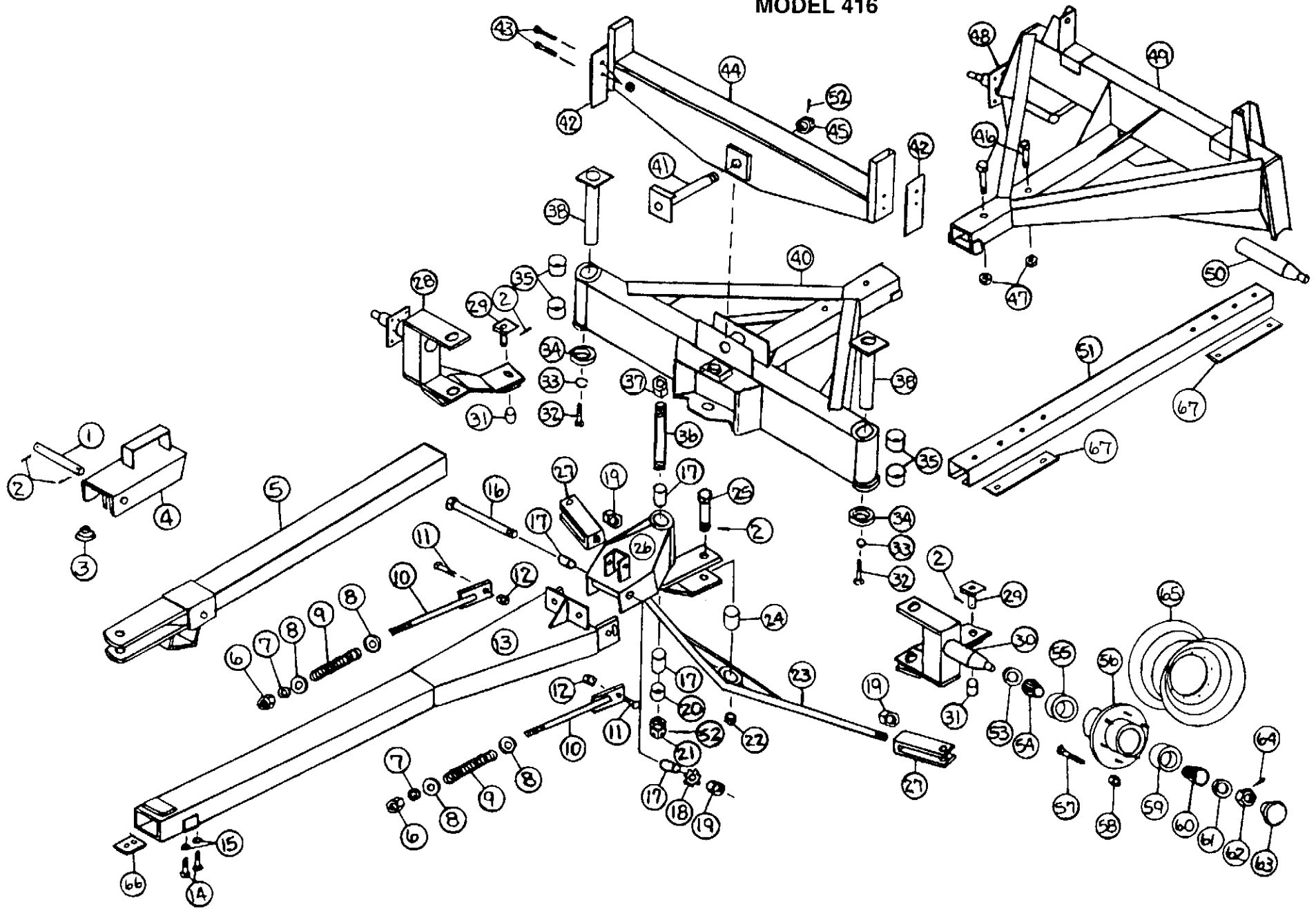


**FIGURE 11 – MODEL 415-416
BRAKE ASSEMBLY
RUNNING GEAR BRAKE KITS**

ITEM	415	DESCRIPTION
1.	RGB22	Brake Line 180"
2.	RGB36	Brake Line 36"
3.	RGB26	Tee
4.	RGB63	5/16 x 1" Self-Tapping Bolt
5.	RGB35	Hub (Complete Brake Hub Assembly)
6.	RGB34	Brake Drum
7.	RGB30	Brake Cluster Left
*	RGB31	Brake Cluster Right
8.	RGB64	Cap Screw
9.	RGB65	Lock Washer
10.	RGB66	Cap Screw
11.	RGB67	Lock Washer
12.	RGB68	Nut
13.	RGB42	Back Plate Assembly
14.	RGB43	Front Shoe Assembly
15.	RGB44	Rear Shoe Assembly
16.	RGB45	Wheel Cylinder Assembly RH
17.	RGB46	Wheel Cylinder Assembly LH
18.	RGB47	Screw & Lock Washer
19.	RGB48	Push Rod
20.	RGB49	Adjusting Screw Assembly
21.	RGB50	Spring Adjusting Screw
22.	RGB51	Shoe Lever
23.	RGB52	Travel Link
24.	RGB53	Lock Nut
25.	RGB54	Hex Cap Screw
26.	RGB55	Spring - Shoe
27.	RGB75	Spring - Lever
28.	RGB76	Spring - Shoe
29.	RGB56	Pin - Shoe Hold down
30.	RGB57	Cup - Shoe Hold down
31.	RGB58	Spring - Hold down (Yellow)
32.	RGB59	Spring - Hold down (Black)
33.	RGB60	Cover Plate
34.	RGB61	Socket
35.	RGB62	Washer
36.	RGB91	Brake Line 43"
*	RGB41	Complete Brake Kit Assembly

NOTE: * (MEANS NOT SHOWN)

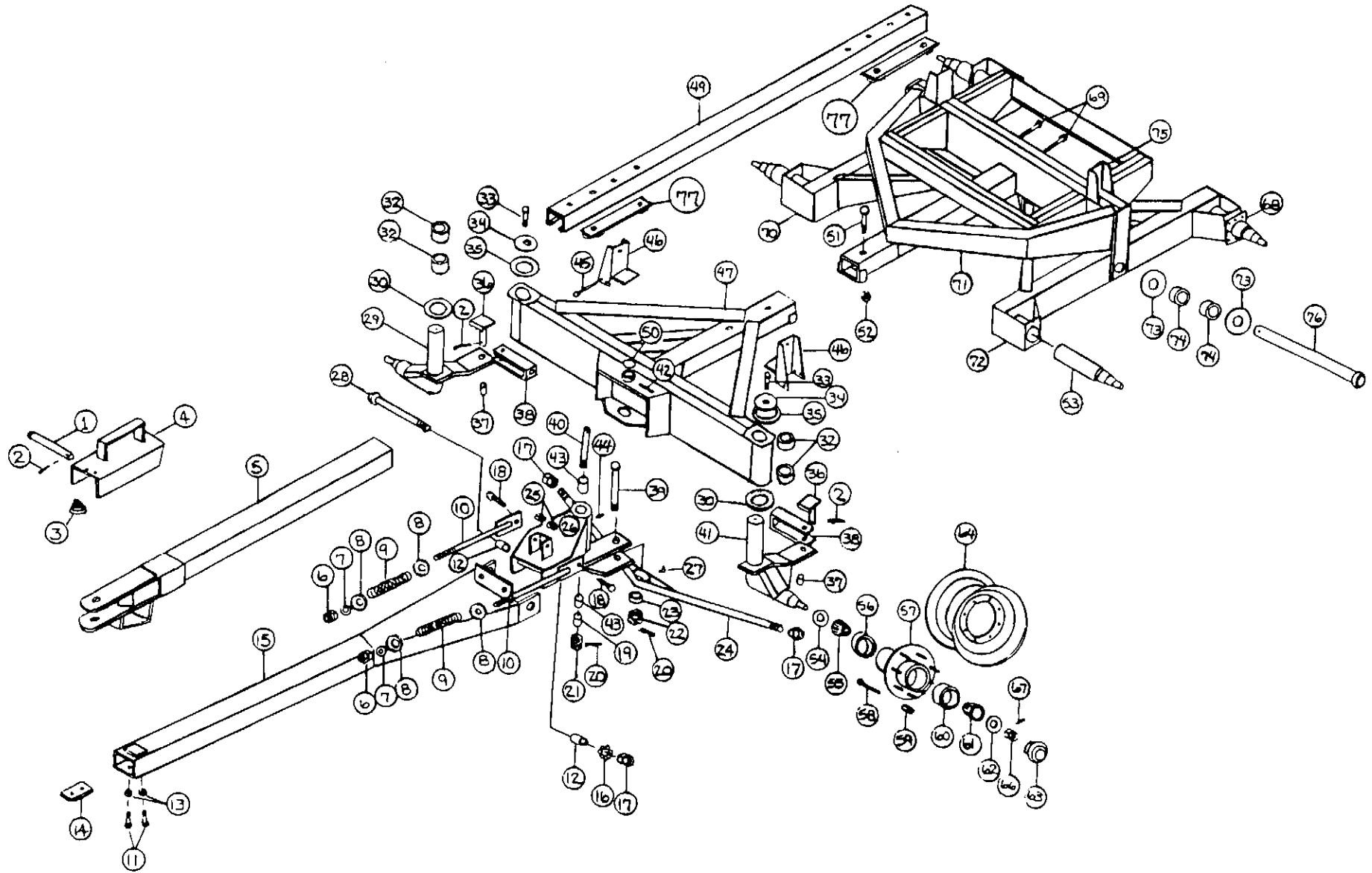
FIGURE 12
MODEL 416



**FIGURE 12 – MODEL 416
16 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG222	Latch Clevis Pin	34.	RG248	Bearing
2.	T72	Cotter Pin 5/32" x 1-1/2"	35.	RG T3	Bushing 1-49/64"ID x 2"OD x 2"
3.	RG228	Latch Spring	36.	RG289	Steering Pin
4.	RG233	Latch	37.	RG139	Jam Nut 1-1/4"
5.	RG241	Telepole	38.	RG249	King Pins
6.	RG7	5/8" Nylon Lock Nut	40.	RG250	Front Frame
7.	RG8	5/8" Flat Washer	41.	RG204	Bolster Pivot Pin
8.	RG9	Spring Retainer	42.	RG251	Bolster Anti-Rock Plate
9.	T148	Spring	43.	R10	1/2" x 1-1/4" Bolt GR.5
10.	RG10	Adjustment Rod	44.	RG206	Bolster
11.	RG15	5/8" x 1-3/4" Bolt	45.	BFR481	1-1/2" Slotted Nut
12.	T60	5/8" Top Lock Nut	46.	RG162	1" x 3-1/2" Bolt GR.5
13.	RG239	Pole	47.	RG163	1" Top Lock Nut
14.	T62	5/8" x 1-1/2" Bolt GR.5	48.	RG172	Brake Mount
15.	T69	5/8" Lock Washer	49.	RG252	Back Frame
16.	RG143	Pole Bolt	50.	RG164	Back Spindle
17.	RG132	Bushing 1-17/64"ID x 1-1/2"OD x 2"	51.	RG226	Reach
18.	RG138	1-1/4" Star Washer	52.	RG219	Cotter Pin 5/32" x 2-1/2"
19.	RG139	1-1/4" Jam Nut	53.	RG165	Seal
20.	RG140	Bushing 1-17/64"ID x 1-1/2"OD x 1-1/8"	54.	RG166	Inner Bearing
21.	BFR228	1-1/4" Slotted Nut	55.	RG167	Inner Race
22.	RG17	1" Slotted Nut	56.	RG168	Hub
23.	RG245	Tie Rod	57.	RG71	Stud Bolt
24.	RG173	Bushing 1-1/64"ID x 1-1/4"OD x 2"	58.	RG72	Nut
25.	RG153	Tie Rod Center Bolt	59.	RG169	Outer Race
26.	RG142	Pole Pivot	60.	RG170	Outer Bearing
27.	RG152	Clevis	61.	RG183	Washer
28.	RG246	RH Front Spindle	62.	RG184	Nut
29.	RG150	Clevis Pin	63.	RG171	Hub Cap
30.	RG247	LH Front Spindle	64.	RG185	Cotter Pin
31.	RG151	Bushing 1"ID x 1-1/4"OD x 1-1/4"	65.	RG253	Wheel 14 x 16.1
32.	T62	Bolt 5/8" X 1-1/2" Bolt GR.5	Opt.	16SV89	Wheel 22.5 x 13.5
33.	T69	5/8" Lock Washer	66.	RG291	Stop Block
			67.	RG159	Reinforcement Plate

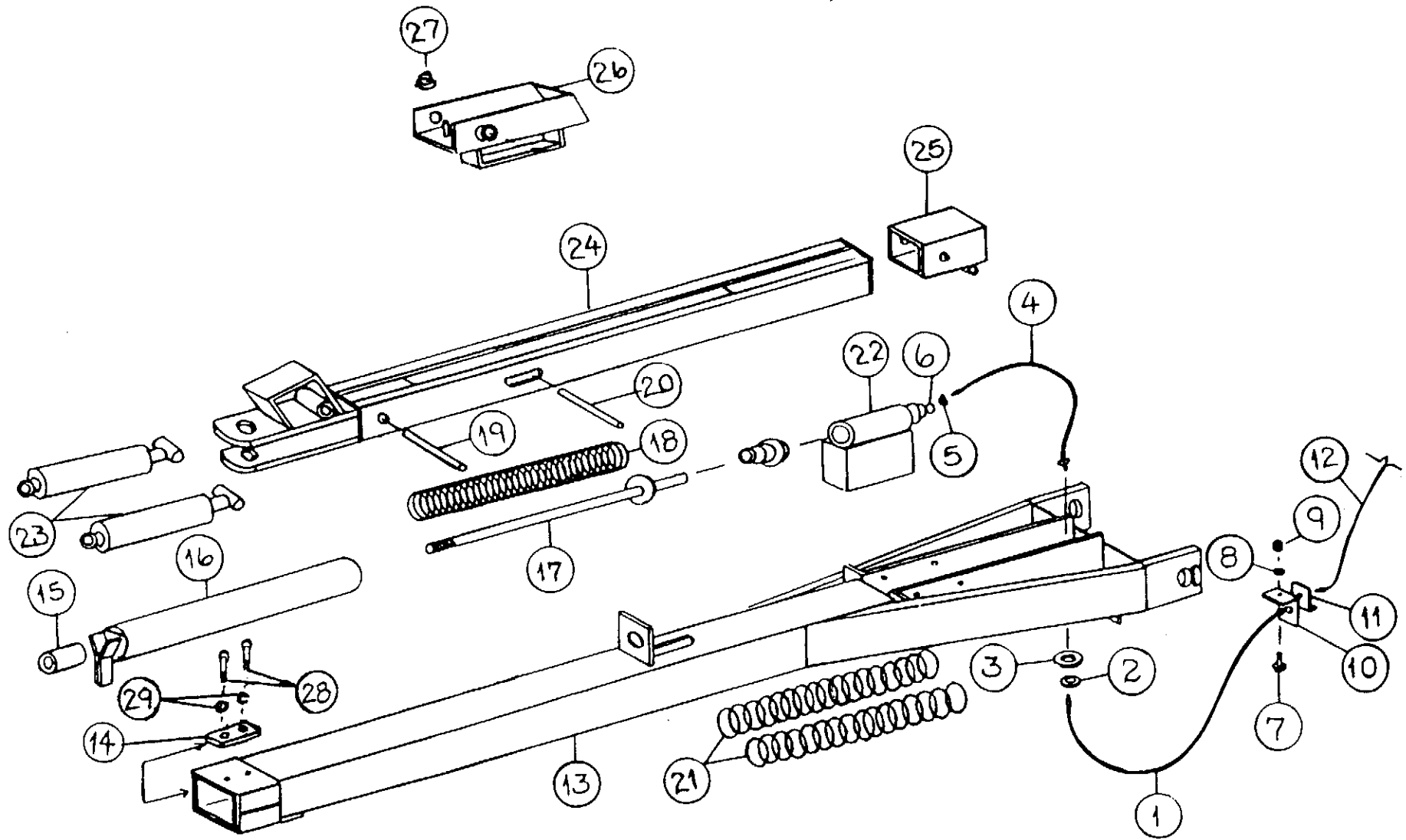
FIGURE 13
MODEL 617



**FIGURE 13 – MODEL 617
17 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG222	Clevis Pin	38.	RG152	Clevis
2.	T72	Cotter Pin 5/32" x 1-1/2"	39.	RG153	Tie Rod Center Bolt
3.	RG228	Latch Spring	40.	RG289	Steering Pin
4.	RG233	Latch	41.	RG155	LH Front Spindle
5.	RG241	Telepole	42.	RG139	Jam Nut 1-1/4"
6.	RG7	5/8" Nylon Lock Nut	43.	RG132	Bushing
7.	RG8	5/8" Flat Washer	44.	RG51	90 Degree Grease Zerk
8.	RG9	Spring Retainer	45.	RG156	Bolt 1/2 x 5-1/2" GR.5
9.	T148	Spring	46.	RG227	Stake Pocket
10.	RG10	Adjustment Rod	47.	RG281	Front Frame
11.	T62	Bolt 5/8" x 1-1/2" GR.5	49.	RG226	Reach
12.	RG132	Bushing 1-1/4"OD x 1-1/2"ID x 2"	51.	RG162	Bolt 1" x 3-1/2" GR.5
13.	T69	5/8" Lock Washer	52.	RG163	1" Top Lock Nut
14.	RG291	Stop Block	53.	RG243	Back Spindle
15.	RG239	Pole	54.	RG165	Seal
16.	RG138	1-1/4" Star Washer	55.	RG166	Inner Bearing
17.	RG139	1-1/4" Jam Nut	56.	RG167	Inner Race
18.	RG15	Bolt 5/8" x 1-3/4"	57.	RG168	Hub
19.	RG140	Bushing 1-1/4"ID x 1-1/2"OD x 1-1/8"	58.	RG71	Stud Bolt
20.	T56	Cotter Pin 5/32" x 2"	59.	RG72	Nut
21.	BFR228	1-1/4" Slotted Nut	60.	RG169	Outer Race
22.	RG17	1" Slotted Nut	61.	RG170	Outer Bearing
23.	RG173	Bushing 1"ID x 1-1/4"OD x 2"	62.	RG183	Washer
24.	RG141	Tie Rod	63.	RG171	Hub Cap
25.	T60	5/8" Top Lock Nut	64.	12V36	Wheel 16.1 x 14
26.	RG142	Pole Pivot	Opt.	16SV89	Wheel 22.5 x 13.5
27.	RG21	45 Degree Grease Zerk	66.	RG184	Nut
28.	RG143	Pole Pin	67.	RG185	Cotter Pin 7/32" x 2"
29.	RG144	RH Front Spindle	68.	RG172	Brake Mount
30.	RG280	Bearing	69.	RG174	Bolt 5/8" x 5" GR.5
32.	RG147	Bushing 2-3/4"ID x 3"OD x 3"	70.	RG175	RH Tandem Axle Assembly
33.	RG27	Spindle Bolt 3/8" x 1" GR.5	71.	RG176	Back Frame
34.	RG148	Front Spindle Cap	72.	RG177	LH Tandem Axle Assembly
35.	RG149	Poly Washer	73.	RG178	Tandem Pin Washer
36.	RG150	Clevis Pin	74.	RG60	Tandem Pin Bushing
37.	RG151	Bushing 1"ID x 1-1/4"OD x 1-1/4"	75.	RG180	Stake Pocket
			76.	RG179	Tandem Pin
			77.	RG159	Reinforcement Plate

FIGURE 14
MODELS 415, 416 & 617

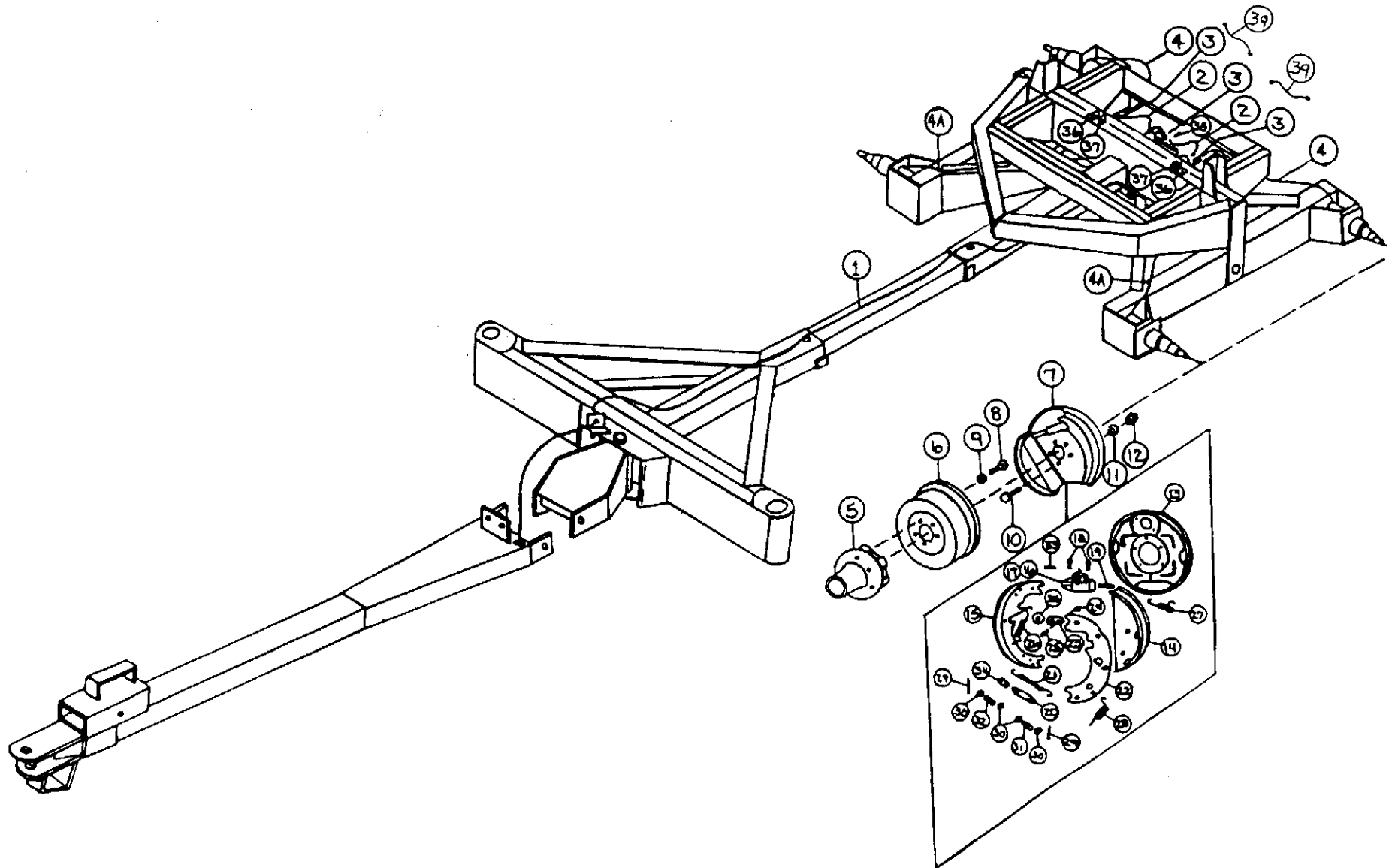


**FIGURE 14 – MODELS 415, 416 & 617
POLE ASSEMBLY
RUNNING GEAR BRAKE KITS**

ITEM	415	416	617	DESCRIPTION
1.	RGB24	"	"	Brake Hose 18-7/8"
2	RG8	"	"	Flat Washer 5/8"
3.	12V96	"	"	Poly Washer
4.	RGB25	"	"	Brake Hose
5.	RGB20	"	"	Brass Connector
6.	RGB21	"	"	Brass Gasket
7.	RGB38	"	"	5/16" x 1" Hex Bolt
8.	RGB39	"	"	5/16" Lock Washer
9.	T116	"	"	5/16" Nut
10.	RGB122	"	"	Hose Bracket
11.	RGB28	"	"	Hose Clip
12.	RGB22	"	"	Brake Line 1010865-180"
13.	RGB119	"	"	Pole Assembly
14.	RG291	"	"	Stop Block
15.	RGB3	"	"	Push Rod End
16.	RGB4	"	"	Spring Shield
17.	RGB5	"	"	Push Rod
18.	RGB29	"	"	Spring Push Rod
19.	RGB10	"	"	Damper Pin
20.	RGB121	"	"	Damper Pin
21.	T148	"	"	Pole Lift Spring
22.	RGB19	"	"	Master Cylinder
23.	RGB18	"	"	Damper
24.	RGB11	"	"	Telepole Assembly
25.	RGB115	"	"	Telepole Stop
26.	RGB116	"	"	Latch
27.	RG228	"	"	Latch Spring.
28.	T62	"	"	Bolt 5/8-11 x 1-1/2" GR.5
29.	T69	"	"	5/8" Lock Washer

NOTE: " (MEANS SAME AS PRECEDING NUMBER)

FIGURE 15
MODEL 617



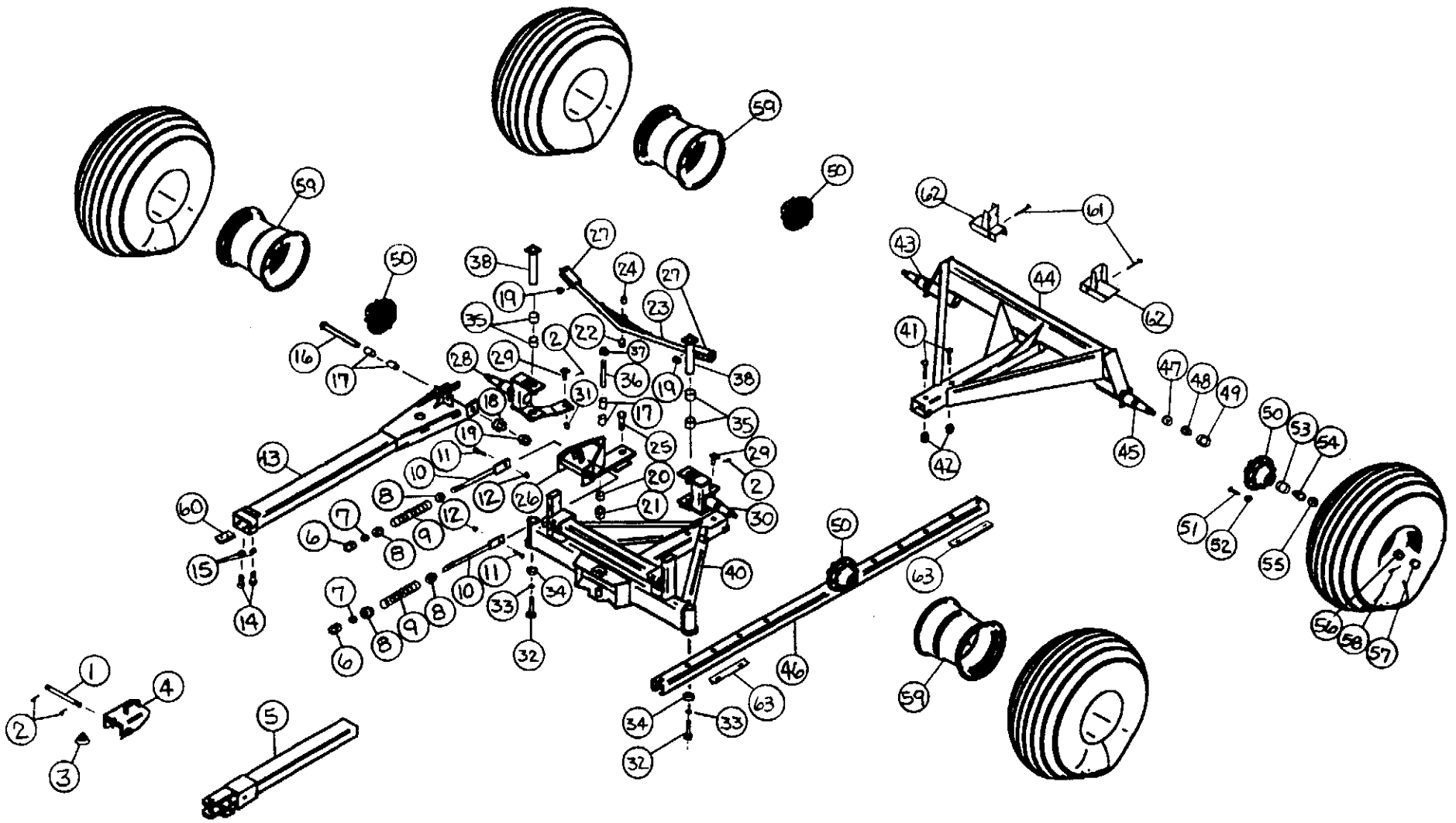
**FIGURE 15 – MODEL 617
617 TANDEM 2 & 4 WHEEL BRAKE KITS
BRAKE ASSEMBLY**

ITEM	(2 WHEEL BRAKE KIT)	(4 WHEEL BRAKE KIT)	DESCRIPTION
1.	RGB22	"	180" Brake Line
2.	RGB24	"	Brake Hose 18-7/8"
3.	RGB26	"	Tee
4.	RGB36	"	36" Brake Line
4A.	-	RGB91	43" Brake Line
5.	RGB35	"	Hub (Complete Brake Hub Assembly)
6.	RGB34	"	Brake Drum
7.	RGB31	"	Brake Cluster LH
*	RGB30	"	Brake Cluster RH
8.	RGB64	"	Cap Screw
9.	RGB65	"	Lock Washer
10.	RGB66	"	Cap Screw
11.	RGB67	"	Lock Washer
12.	RGB68	"	Nut
13.	RGB42	"	Back Plate Assembly
14.	RGB43	"	Front Shoe Assembly
15.	RGB44	"	Rear Shoe Assembly
16.	RGB45	"	Wheel Cylinder Assembly RH
17.	RGB46	"	Wheel Cylinder Assembly LH
18.	RGB47	"	Screw and Lock Washer
19.	RGB48	"	Push Rod
20.	RGB49	"	Adjusting Screw Assembly
21.	RGB50	"	Spring Adjusting Screw
22.	RGB51	"	Shoe Lever
23.	RGB52	"	Travel Link
24.	RGB53	"	Lock Nut
25.	RGB54	"	Hex Cap - Screw
26.	RGB55	"	Spring - Shoe
27.	RGB75	"	Spring - Lever
28.	RGB76	"	Spring - Shoe
29.	RGB56	"	Pin - Shoe Hold down
30.	RGB57	"	Cup - Shoe Hold down
31.	RGB58	"	Spring - Hold down (Yellow)
32.	RGB59	"	Spring - Hold down (Black)
33.	RGB60	"	Cover Plate
34.	RGB61	"	Socket
35.	RGB62	"	Washer
36.	RGB27	"	Hose Bracket
37.	RGB28	"	Clip
38.	RGB63	"	5/16" x 1" Self-Tapping Bolt
*	RGB89	RGB90	Complete Brake Kit for 617
39.	-	RGB105	Brake Line - 4-1/2"

NOTE: * (MEANS NOT SHOWN)

- (MEANS NOT USED ON THIS MODEL)

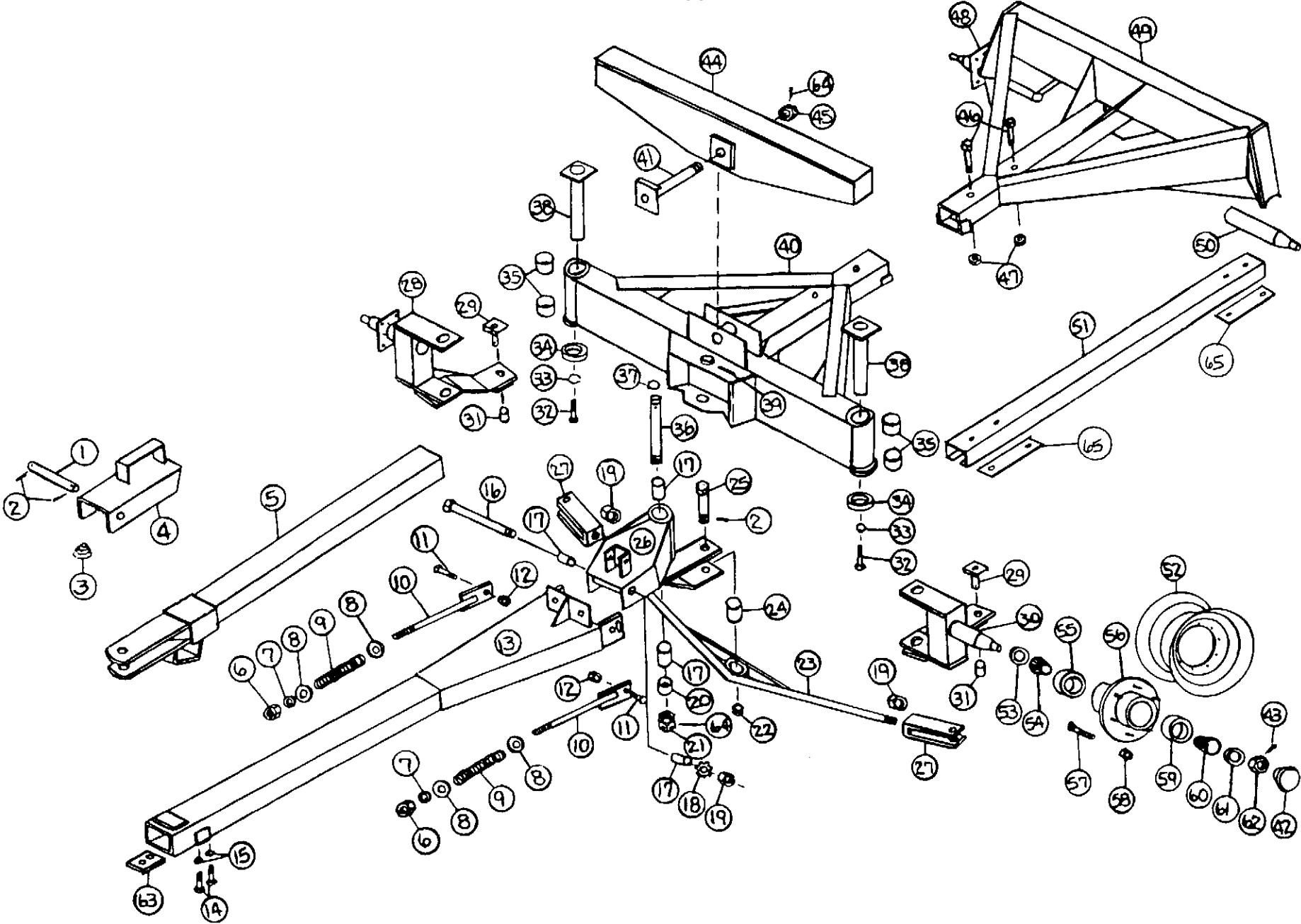
FIGURE 16
MODEL 417



**FIGURE 16 – MODEL 417
17 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG186	Latch Clevis Pin	33.	RG199	3/4" Lock Washer
2.	T56	Cotter Pin 5/32" x 2"	34.	RG200	Bearing
3.	RG228	Latch Spring	35.	RG26	Bushing 2-1/64"ID x 2-1/4"OD x 2"
4.	RG234	Latch	36.	RG290	Steering Pin
5.	RG242	Telepole	37.	RG139	Jam Nut 1-1/4"
6.	RG7	5/8" Nylon Lock Nut	38.	RG202	King Pins
7.	RG8	5/8" Flat Washer	40.	RG284	Front Frame
8.	RG9	Spring Retainer	41.	RG162	Bolt 1" x 3-1/2" GR.5
9.	T148	Spring	42.	RG163	1" Top Lock Nut
10.	RG10	Adjustment Rod	43.	RG207	Brake Mount
11.	RG15	5/8" x 1-3/4" Bolt	44.	RG285	Back Frame
12.	T60	5/8" Top Lock Nut	45.	RG209	Back Spindle
13.	RG240	Pole	46.	RG226	Reach
14.	T62	5/8" x 1-1/2" Bolt GR.5	47.	33SV42	Seal
15.	T69	5/8" Lock Washer	48.	33SV43	Inner Bearing
16.	RG190	Pole Bolt	49.	33SV44	Inner Face
17.	RG132	Bushing 1-17/64"ID x 1-1/2"OD x 2"	50.	33SV45	Hub
18.	RG138	1-1/4" Star Washer	51.	33SV41	Stud Bolt
19.	RG139	1-1/4" Jam Nut	52.	RG72	Nut
20.	RG191	Bushing 1-17/64"ID x 1-1/2"OD x 1"	53.	RG169	Outer Race
21.	BFR228	1-1/4" Slotted Nut	54.	RG170	Outer Bearing
22.	RG17	1" Slotted Nut	55.	33SV95	Washer
23.	RG192	Tie Rod	56.	T35	Nut
24.	RG11	Bushing 1-1/64"ID x 1-1/4"OD x 2"	57.	RG171	Hub Cap
25.	RG193	Tie Rod Center Bolt	58.	33SV46	Cotter Pin
26.	RG194	Pole Pivot	59.	RG212	Wheel 16.1 x 16
27.	RG195	Clevis	Opt.	50N6	Wheel 18 x 16.1
28.	RG282	RH Front Spindle	Opt.	16SV89	Wheel 22.5 x 13.5
29.	RG197	Clevis Pin	60.	RG291	Stop Block
30.	RG283	LH Front Spindle	61.	RG156	Bolt 1/2" x 5-1/2" GR.5
31.	RG151	Bushing 1"ID x 1-1/4"OD x 1-1/4"	62.	RG227	Stake Pocket
32.	RG218	Bolt 3/4" x 1-1/2" GR.5	63.	RG159	Reinforcement Plate

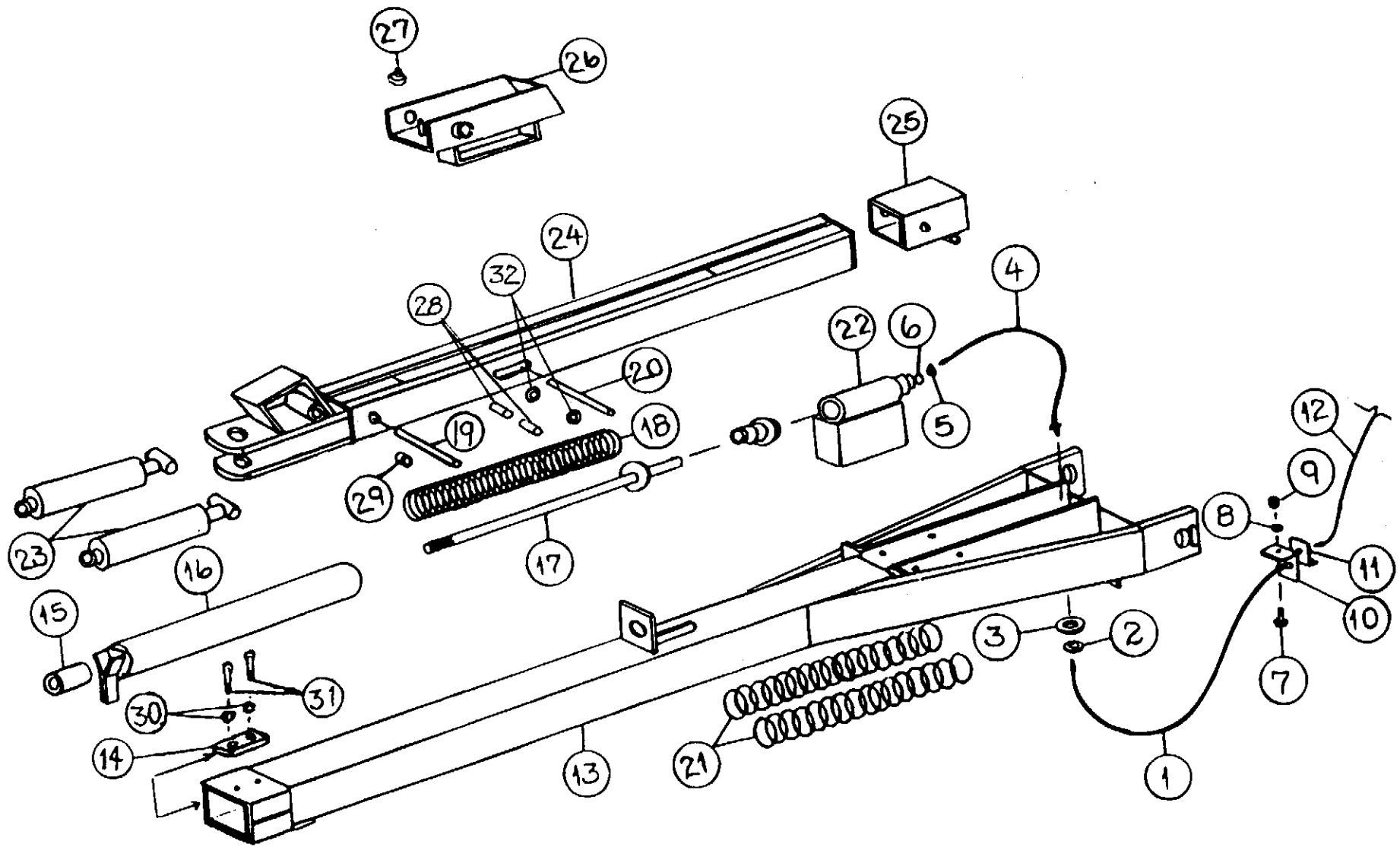
FIGURE 17
MODEL 417 - 100" TREAD WIDTH



**FIGURE 17 – MODEL 417
17 TON RUNNING GEAR – 100" TREAD WIDTH**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG186	Latch Clevis Pin	34.	RG200	Bearing
2.	T56	Cotter Pin 5/32" x 2"	35.	RG26	Bushing 2-1/64"ID x 2-1/4"OD x 2"
3.	RG228	Latch Spring	36.	RG290	Steering Pin
4.	RG234	Latch	37.	RG139	Jam Nut 1-1/4"
5.	RG242	Telepole	38.	RG202	King Pins
6.	RG7	5/8" Nylon Lock Nut	40.	RG214	Front Frame
7.	RG8	5/8" Flat Washer	41.	RG220	Bolster Pivot Pin
8.	RG9	Spring Retainer	42.	RG171	Hub Cap
9.	T148	Spring	43.	33SV46	Cotter Pin
10.	RG10	Adjustment Rod	44.	RG215	Bolster
11.	RG15	5/8" x 1-3/4" Bolt	45.	BFR481	1-1/2" Slotted Nut
12.	T60	5/8" Top Lock Nut	46.	RG162	1" x 3-1/2" Bolt GR.5
13.	RG240	Pole	47.	RG163	1" Top Lock Nut
14.	T62	5/8" x 1-1/2" Bolt GR.5	48.	RG207	Brake Mount
15.	T69	5/8" Lock Washer	49.	RG216	Back Frame
16.	RG190	Pole Bolt	50.	RG209	Back Spindle
17.	RG132	Bushing 1-17/64"ID x 1-1/2"OD x 2"	51.	RG226	Reach.
18.	RG138	1-1/4" Star Washer	52.	RG212	Wheel 16.1 x 16
19.	RG139	1-1/4" Jam Nut	Opt.	50N6	Wheel 18. x 16.1
20.	RG191	Bushing 1-17/64"ID x 1-1/2"OD x 1"	Opt.	16SV89	Wheel 22.5 x 13.5
21.	BFR228	1-1/4" Slotted Nut	53.	33SV42	Seal
22.	RG17	1" Slotted Nut	54.	33SV43	Inner Bearing
23.	RG213	Tie Rod	55.	33SV44	Inner Race
24.	RG11	Bushing 1-1/64"ID x 1-1/4"OD x 2"	56.	33SV45	Hub
25.	RG193	Tie Rod Center Bolt	57.	33SV41	Stud Bolt
26.	RG194	Pole Pivot	58.	RG72	Nut
27.	RG195	Clevis	59.	RG169	Outer Race
28.	RG196	RH Front Spindle	60.	RG170	Outer Bearing
29.	RG197	Clevis Pin	61.	33SV95	Washer
30.	RG198	LH Front Spindle	62.	T35	Nut
31.	RG151	Bushing 1"ID x 1-1/4"OD x 1-1/4"	63.	RG291	Stop Block
32.	RG218	Bolt 3/4" x 1-1/2" GR.5	64.	RG219	Cotter Pin 5/32" x 2-1/2"
33.	RG199	3/4" Lock Washer	65.	RG159	Reinforcement Plate

FIGURE 18
MODELS 417 & 417-100" POLE

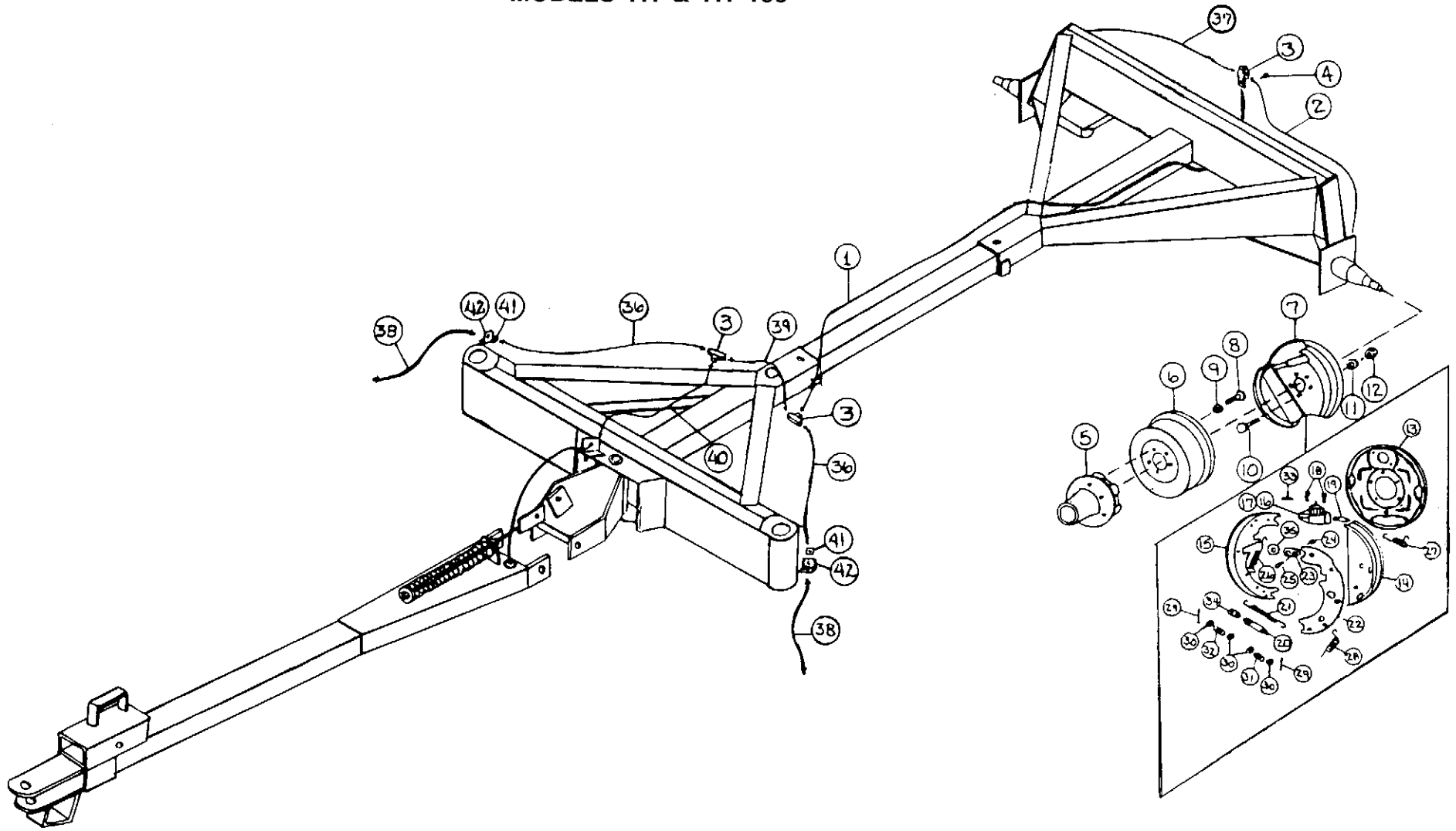


**FIGURE 18 – MODELS 417 & 417-100”
POLE ASSEMBLY RUNNING GEAR BRAKE KITS**

ITEM	417	417-100”	DESCRIPTION
1.	RGB24	”	Brake Hose 18-7/8”
2.	RG8	”	Flat Washer 5/8”
3.	12V96	”	Poly Washer
4.	RGB25	”	Brake Hose 13”
5.	RGB20	”	Brass Connector
6.	RGB21	”	Brass Gasket
7.	RGB38	”	5/16” x 1” Hex. Bolt
8.	RGB39	”	5/16” Lock Washer
9.	T116	”	5/16” Nut
10.	RGB122	”	Hose Bracket
11.	RGB28	”	Hose Clip
12.	RGB93	”	Brake Line 48”
13.	RGB120	”	Pole Assembly
14.	RG291	”	Stop Block
15.	RGB3	”	Push Rod End
16.	RGB4	”	Spring Shield
17.	RGB5	”	Push Rod
18.	RGB29	”	Spring - Push Rod
19.	RGB95	”	Damper Pin 6-1/2”
20.	RGB96	”	Damper Pin
21.	T148	”	Pole Lift Spring
22.	RGB19	”	Master Cylinder
23.	RGB18	”	Damper
24.	RGB97	”	Telepole Assembly
25.	RGB114	”	Telepole Stop
26.	RGB117	”	Latch
27.	RG228	”	Latch Spring
28.	RGB100	”	Damper Holder
29.	RGB101	”	Damper Spacer
30.	T69	”	5/8” Lock Washer
31.	T62	”	Bolt 5/8” x 1-1/2” GR.5
32.	RGB123	”	Washer

NOTE: ” (MEANS SAME AS PRECEDING NUMBER)

FIGURE 19
MODELS 417 & 417-100"

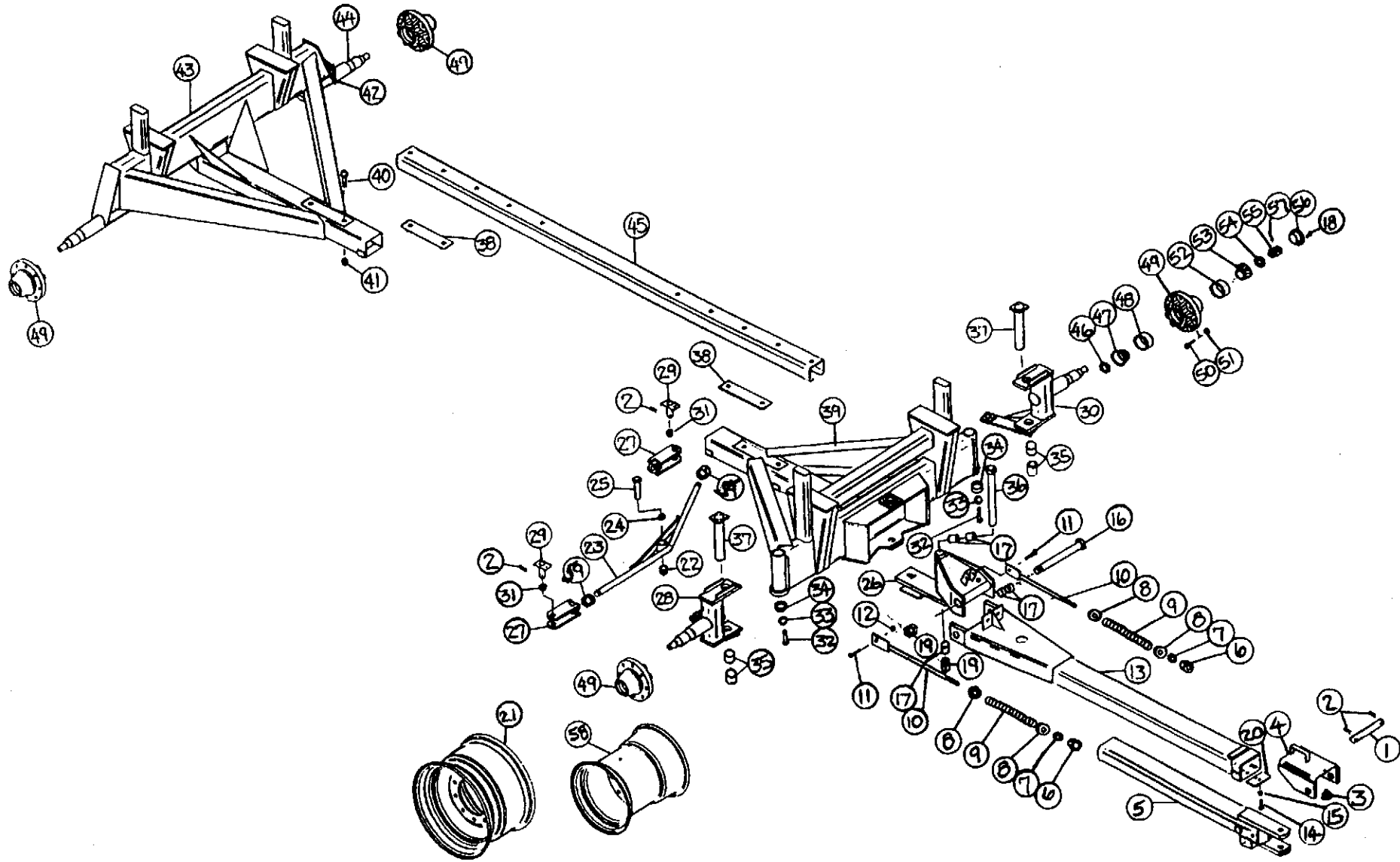


**FIGURE 19 - MODELS 417 & 417-100"
BRAKE KITS - 2 OR 4 WHEEL
LINES, HOSES AND DRUM ASSEMBLY**

ITEM	PART NO.	DESCRIPTION	
	417-100"		
1.	RGB22	Brake Line 180"	
2.	RGB91	LH Brake Line 43"	
*	RGB93	LH Brake Line 48"	
3.	RGB26	Tea	
4.	RGB63	5/16" x 1" Self-Tapping Bolt	
5.	33SV45	Hub (Complete Brake Hub Assembly)	
6.	RGB106	Brake Drum	
7.	RGB30	Brake Cluster LH	
*	RGB31	Brake Cluster RH	
8.	RGB64	Cap Screw	
9.	RGB65	Lock Washer	
10.	RGB66	Cap Screw	
11.	RGB67	Lock Washer	
12.	RGB68	Nut	
13.	RGB42	Back Plate Assembly	
14.	RGB43	Front Shoe Assembly	
15.	RGB44	Rear Shoe Assembly	
16.	RGB45	Wheel Cylinder Assembly RH	
17.	RGB46	Wheel Cylinder Assembly LH	
18.	RGB47	Screw and Lock Washer	
19.	RGB48	Push Rod	
20.	RGB49	Adjusting Screw Assembly	
21.	RGB50	Spring Adjusting Screw	
22.	RGB51	Shoe Lever	
23.	RGB52	Travel Link	
24.	RGB53	Lock Nut	
25.	RGB54	Hex Cap Screw	
26.	RGB55	Spring - Shoe	
27.	RGB75	Spring - Lever	
28.	RGB76	Spring - Shoe	
29.	RGB56	Pin - Shoe Hold down	
30.	RGB57	Cup - Shoe Hold down	
31.	RGB58	Spring - Hold down (Yellow)	
32.	RGB59	Spring - Hold down (Black)	
33.	RGB60	Cover Plate	
34.	RGB61	Socket	
35.	RGB62	Washer	
36.	RGB36	Brake Line 36"	
*	RGB91	Brake Line 43"	
37.	RGB91	Brake Line RH 43"	
*	RGB93	Brake Line RH 48"	
38.	RGB24	Hose 18-7/8"	
39.	RGB105	Brake Line 4-1/2"	
40.	RGB93	Brake Line 48"	
41.	RGB28	Hose Clip	
42.	RGB27	Hose Bracket	
NOT SHOWN	RGB107	RGB108	Complete Brake Kit Assembly

NOTE: * (MEANS NOT SHOWN)
 - (MEANS NOT USED ON THIS MODEL)
 " (MEANS SAME AS PRECEDING NUMBER)

FIGURE 20

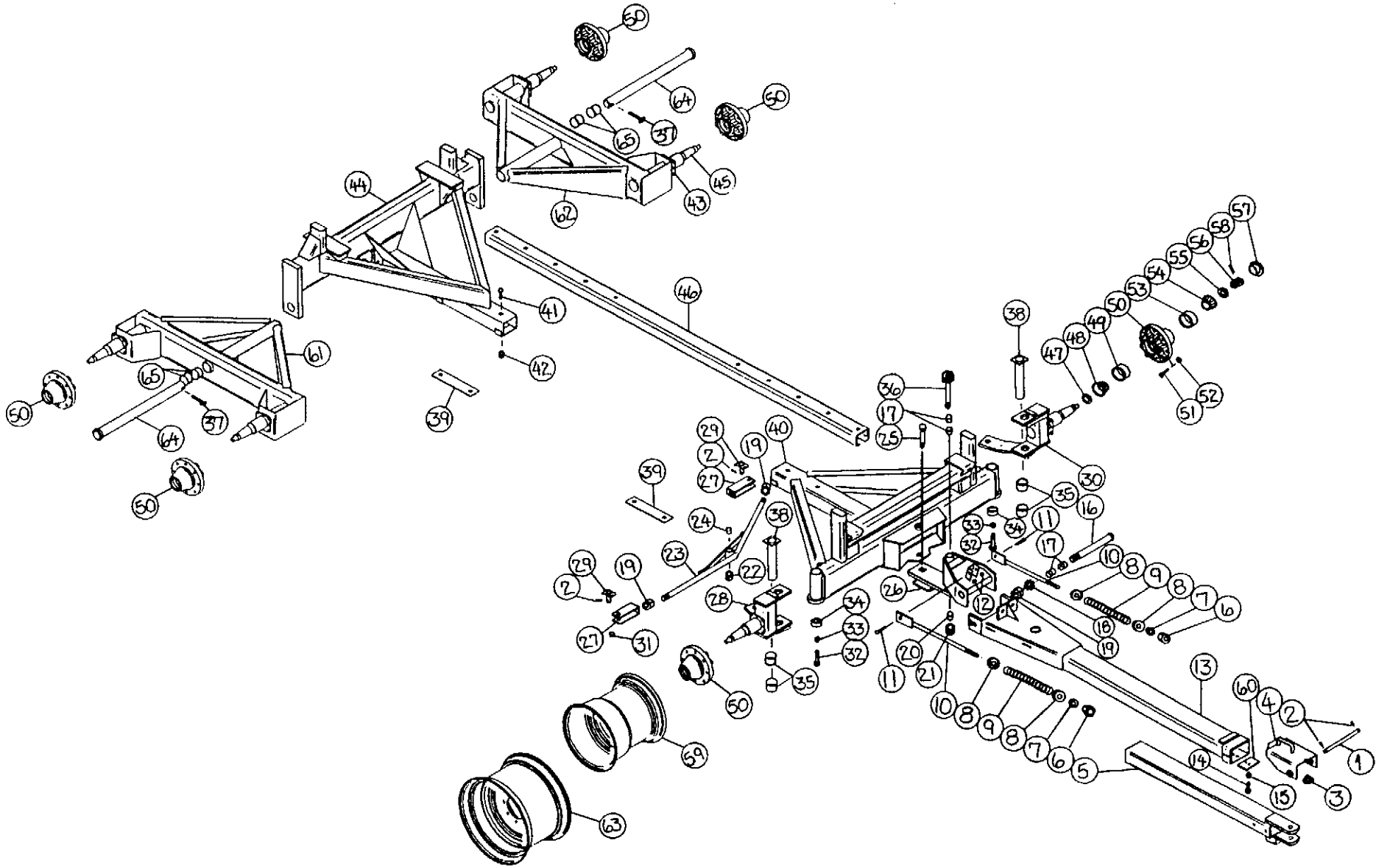


**FIGURE 20 – MODEL 420
20 TON RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG293	Latch Clevis Pin	31.	RG306	Bushing 1-1/2" ODX1-17/64" IDx 1-7/8"
2.	T56	Cotter Pin 5/32"x2"	32.	RG218	3/4"x1-1/2" Bolt GR.5
3.	RG228	Latch Spring	33.	RG199	3/4" Lock Washer
4.	RG294	Latch	34.	RG200	Bearing
5.	RG295	Telepole	35.	RG26	Bushing 2-1/64" IDx2-1/4" ODX2"
6.	RG7	5/8" Nylon Lock Nut	36.	RG307	Steering Pin
7.	RG8	5/8" Flat Washer	37.	RG308	King Pins
8.	RG9	Spring Retainer	38.	RG159	Re-enforcement Plate
9.	T148	Spring	39.	RG309	Front Frame
10.	RG10	Adjustment Rod	40.	RG162	1" x 3-1/2" Bolt GR.5
11.	RG15	5/8"x1-3/4" Bolt	41.	RG163	1" Top Lock Nut
12.	T60	5/8" Top Lock Nut	42.	RG310	Brake Mount - Disk
13.	RG296	Pole	*	RG207	Brake Mount - Drum
14.	T62	5/8" x1-1/2" Bolt GR5.	43.	RG311	Back Frame
15.	T69	5/8" Lock Washer	44.	RG312	Back Spindle
16.	RG297	Pole Bolt	45.	RG299	Reach
17.	R298	Bushing 1-1/2" IDx1-3/4" ODX1"	46.	60N5	Seal
18.	60N12	Hub Cap Bolt	47.	60N7	Inner Bearing
19.	BFR481	1-1/2" Slotted Nut	48.	60N6	Inner Race
20.	RG291	Stop Block	49.	60N8	Hub
21.	60N15	Wheel 22.5x13.5 (Truck Tire) (Opt.)	50.	60N13	Stud Bolt
22.	BFR228	1-1/4" Slotted Nut	51.	60N14	Nut
23.	RG192	Tie Rod	52.	60N10	Outer Race
24.	RG132	Bushing 1-17/64" IDx1-1/2" ODX2"	53.	60N9	Outer Bearing
25.	RG300	Tie Rod Center Bolt	54.	60N2	Washer
26.	RG301	Pole Pivot	55.	60N3	Nut
27.	RG302	Clevis	56.	60N11	Hub Cap
28.	RG303	RH Front Spindle	57.	60N4	Cotter Pin
29.	RG304	Clevis Pin	58.	60N16	Wheel 16.1 x 18 (Flotation)
30.	RG305	LH Front Spindle	59.	RG139	1-1/4" Jam Nut

NOTE: * (MEANS NOT SHOWN)

FIGURE 21

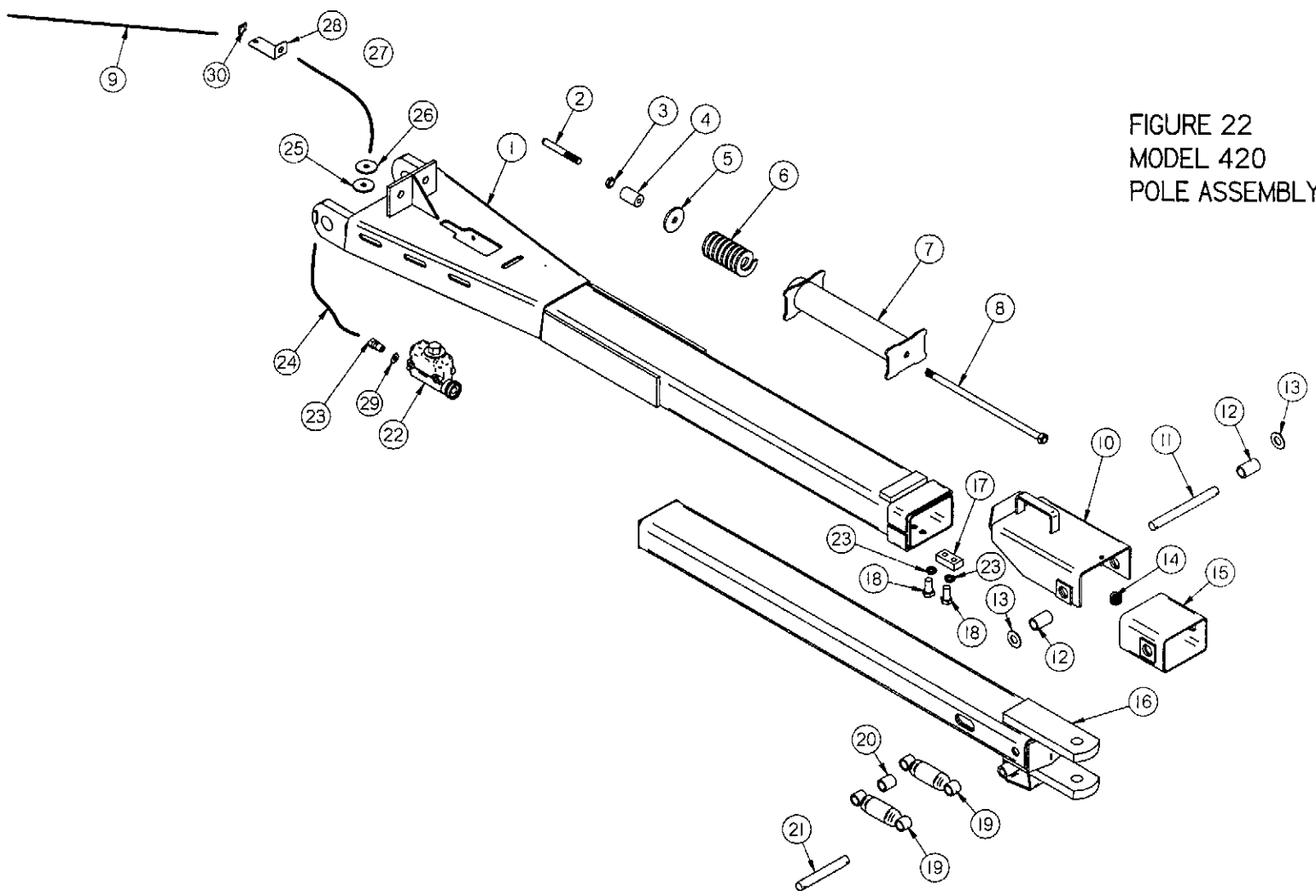


**FIGURE 21 – MODELS 622
22 TON TANDEM RUNNING GEAR**

ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1.	RG186	Latch Clevis Pin	34.	RG200	Bearing
2.	T56	Cotter Pin 5/32"x2"	35.	RG26	Bushing 2-1/64" ID x 2-1/4" OD x2"
3.	RG228	Latch Spring	36.	RG290	Steering Pin
4.	RG234	Latch	37.	RG174	5/8"x5" Bolt GR.5
5.	RG242	Telepole	38.	RG202	King Pins
6.	RG7	5/8" Nylon Lock Nut	39.	RG159	Re-enforcement Plate
7.	RG8	5/8" Flat Washer	40.	RG284	Front Frame
8.	RG9	Spring Retainer	41.	RG162	1" x 3-1/2" Bolt GR.5
9.	T148	Spring	42.	RG163	1" Top Lock Nut
10.	RG10	Adjustment Rod	43.	RG207	Brake Mount
11.	RG15	5/8"x1-3/4" Bolt	44.	RGT13	Back Frame
12.	T60	5/8" Top Lock Nut	45.	RGT14	Back Spindle
13.	RG240	Pole	46.	RG226	Reach
14.	T62	5/8" x1-1/2" Bolt GR5.	47.	33SV42	Seal
15.	T69	5/8" Lock Washer	48.	33SV43	Inner Bearing
16.	RG190	Pole Bolt	49.	33SV44	Inner Race
17.	RG132	Bushing 1-17/64" IDx1-1/2" ODX2"	50.	33SV45	Hub
18.	RG138	1-1/4" Star Washer	51.	33SV41	Stud Bolt
19.	RG139	1-1/4" Jam Nut	52.	RG72	Nut
20.	RG191	Bushing 1-17/64" IDx1-1/2" ODX1"	53.	RG169	Outer Race
21.	BFR228	1-1/4" Slotted Nut	54.	RG170	Outer Bearing
22.	RG17	1" Slotted Nut	55.	33SV95	Washer
23.	RG192	Tie Rod	56.	T35	Nut
24.	RG11	Bushing 1-1/64" ID x 1-1/4" OD x 2"	57.	RG171	Hub Cap
25.	RG193	Tie Rod Center Bolt	58.	33SV46	Cotter Pin
26.	RG194	Pole Pivot	59.	50N6	Wheel 16.1x18 (Flotation)
27.	RG195	Clevis	60.	RG291	Stop Block
28.	RG282	RH Front Spindle	61.	RG115	RH Tandem Axle Assembly
29.	RG197	Clevis Pin	62.	RGT16	LH Tandem Axle Assembly
30.	RG283	LH Front Spindle	63.	16SV89	Wheel 22.5x13.5 (Truck Tires) (Opt.)
31.	RG151	Bushing 1"IDx1-1/4"ODx1-1/4"	64.	RG179	Tandem Pin
32.	RG218	3/4' x1-1/2" Bolt GR.5	65.	RG60	Tandem Pin Bushing
33.	RG199	3/4" Lock Washer			2-1/2" OD x 2-17/64" ID x 2"

FIGURE 22

FIGURE 22
MODEL 420
POLE ASSEMBLY BRAKE KIT



**FIGURE 22 – MODEL 420
POLE ASSEMBLY BRAKE KIT**

ITEM	PART NO.	DESCRIPTION
1.	RGE7	Pole Assembly
2.	RGE1	Push Rod Short
3.	RGE6	Jam Nut 5/8"
4.	RGE2	Spring Rod End
5.	RGE3	Spring Washer
6.	RGE5	Spring
7.	RGE8	Spring Shield
8.	RGE4	Spring Rod
9.	RGB22	Brake Line 180"
10.	RGB17	Latch
11.	RGB96	Damper Back Shaft
12.	RGB100	Damper Holder
13.	RGB123	Pin Holder Washer
14.	RG228	Latch Spring
15.	RGB114	Tele-Pole Stop
16.	RGE9	Tele-Pole
17.	RG291	Stop Block
18.	T62	Bolt 5/8" x 1-1/2" GR5
19.	RGB18	Damper
20.	RGB101	Damper Spacer
21.	RGB95	Damper Pin
22.	RGB19	Master Cylinder
23.	RGB20	Brass Connector
24.	RGB25	Brake Hose 13"
25.	12V96	Poly Washer
26.	RG8	Flat Washer 5/8"
27.	RGB24	Brake Hose 18-7/8"
28.	RGB122	Brake Hose Holder
29.	RGB21	Brass Gasket
30.	RGB28	Hose Clip

FIGURE 23
BRAKE KITS - 2 OR 4 WHEEL
LINES, HOSES AND DRUM ASSEMBLY

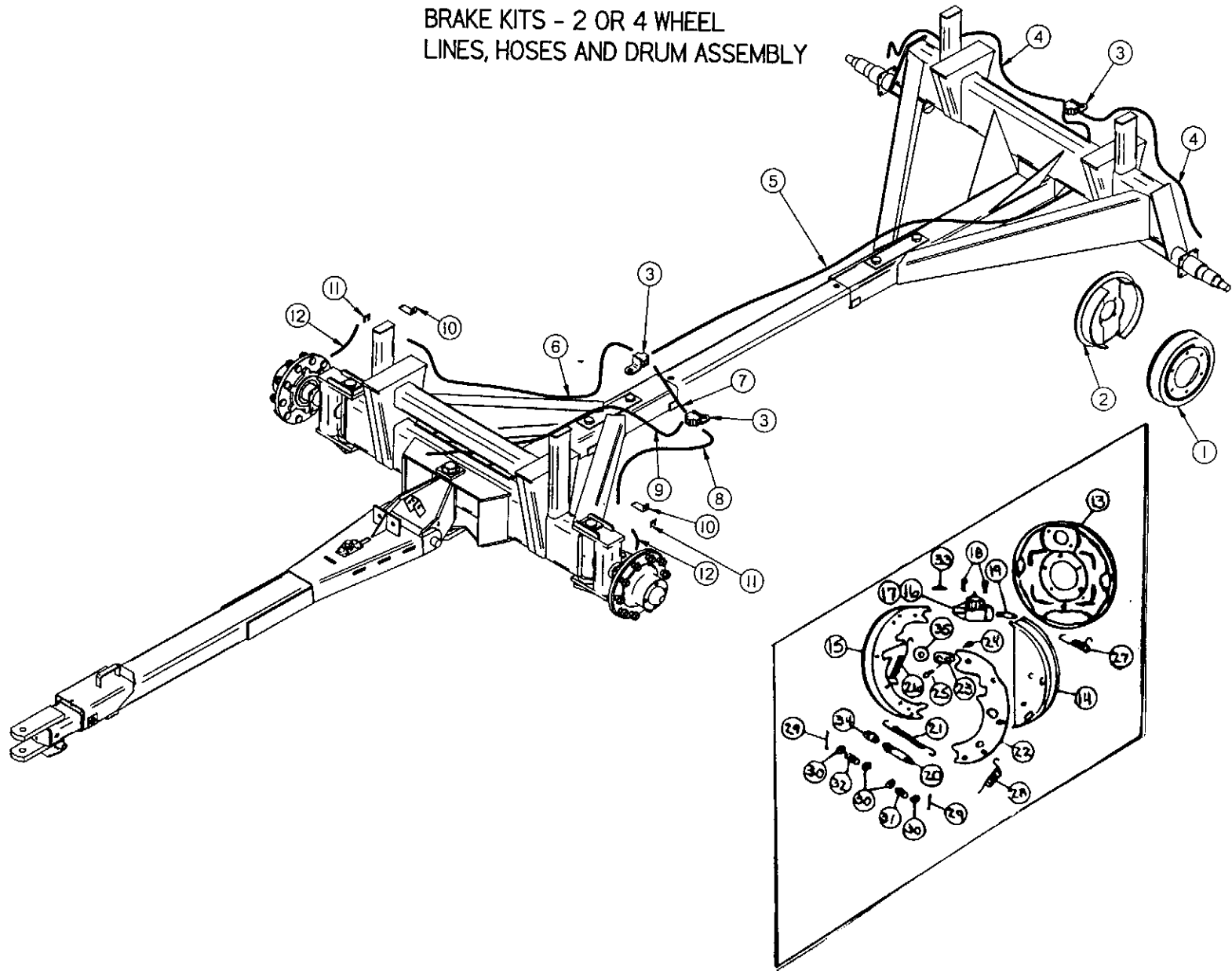


FIGURE 23

**FIGURE 23 – MODEL 420
LINE, HOSES AND DRUM ASSEMBLY**

ITEM	PART NO.	DESCRIPTION
1.	RGB10	Brake Drum
2.	RGB30	Brake Cluster LH
*	RGB31	Brake Cluster RH
3.	RGB26	Tee
4.	RGB91	LH Brake Line 43"
5.	RGB22	Brake Line 180"
6.	RGB36	Brake Line 36"
7.	RGB105	Brake Line 4-1/2"
8.	RGB36	Brake Line 36"
9.	RGB93	Brake Line 48"
10.	RGB27	Hose Bracket
11.	RGB28	Hose Clip
12.	RGB24	Hose 18-7/8"
13.	RGB42	Back Plate Assembly
14.	RGB43	Front Shoe Assembly
15.	RGB44	Rear Shoe Assembly
16.	RGB45	Wheel Cylinder Assembly RH
17.	RGB46	Wheel Cylinder Assembly LH
18.	RGB47	Screw and Lock Washer
19.	RGB48	Push Rod
20.	RGB49	Adjusting Screw Assembly
21.	RGB50	Spring Adjusting Screw
22.	RGB51	Shoe Lever
23.	RGB52	Travel Link
24.	RGB53	Lock Nut
25.	RGB54	Hex Cap Screw
26.	RGB55	Spring - Shoe
27.	RGB75	Spring - Lever
28.	RGB76	Spring - Shoe
29.	RGB56	Pin - Shoe Hold Down
30.	RGB57	Cup - Shoe Hold Down
31.	RGB58	Spring - Hold Down (Yellow)
32.	RGB59	Spring - Hold Down (Black)
33.	RGB60	Cover Plate
34.	RGB61	Socket
35.	RGB62	Washer

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