

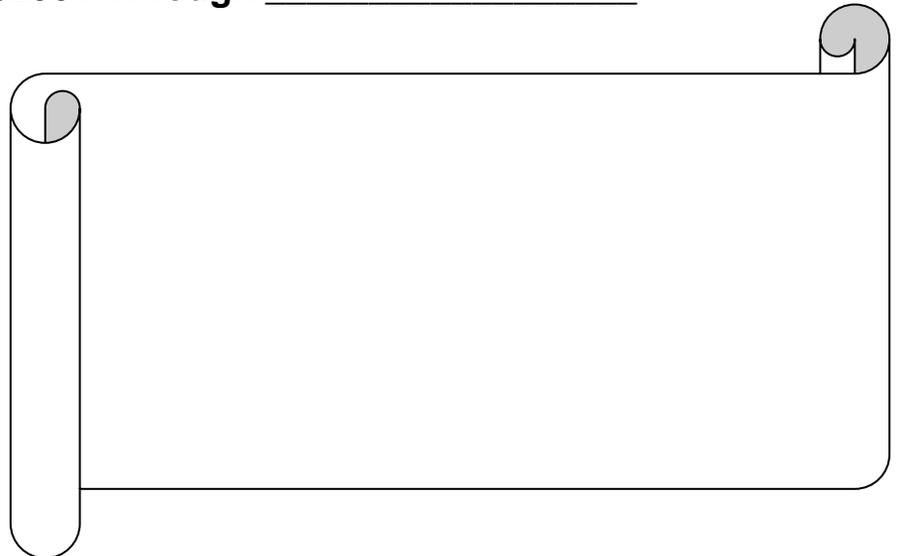


**PARTS MANUAL**  
**MODEL 4700**

Covers Serial Number Range:

904-N-47PGS1YP-02904 Through \_\_\_\_\_

SOLD & SERVICED BY



## TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
Roller Service & Operation Section.....	3
Steering Assembly .....	15
Drive Compartment .....	16
Seat & Tank Assembly .....	17
Battery Assembly .....	17
Engine Assembly - Front.....	18
Engine Assembly - Rear.....	19
Tire Assembly - Front.....	20
Tire Assembly - Rear .....	21

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## **IMPORTANT SAFETY INFORMATION**

Most accidents involving roller maintenance are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs.

Read and understand all safety precautions and warnings, before operating or performing lubrication and maintenance on this roller.

**WARNING:** IMPROPER OPERATION, LUBRICATION OR MAINTENANCE OF THIS ROLLER CAN BE DANGEROUS AND COULD RESULT IN INJURY OR DEATH.

**WARNING:** DO NOT OPERATE THIS ROLLER UNTIL YOU READ AND UNDERSTAND THE INSTRUCTIONS IN THE **OPERATION SECTION** OF THIS MANUAL.

**WARNING:** DO NOT PERFORM ANY LUBRICATION AND MAINTENANCE ON THIS ROLLER UNTIL YOU READ AND UNDERSTAND THE INSTRUCTIONS IN THE **MAINTENANCE SECTION** OF THIS MANUAL.

## **SERVICE WARNING**

Operating personnel must perform service checks regularly to be sure systems are in good operating condition. If abnormal conditions are detected, inform maintenance personnel immediately.

Check all systems for proper operation. Check chassis and all components for physical damage and security of all fasteners and connectors.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## **FLUID CAPACITIES AND RECOMMENDATIONS**

<b>FLUID</b>	<b>CAPACITY</b>	<b>RECOMMENDATION</b>
Engine oil	Varies with engines	High quality CC/CD multi-grade lubricating oil. Above 14 deg. F use 15W40 or 20W40.
Hydraulic	7 U.S gal	High quality anti-wear hydraulic oil (Original equipment, Gulf C-3 torque fluid).
Grease	As required	N.G.L.I. consistency #2, high temperature, anti-friction, bearing lubricating grease.
Engine coolant	Varies with engines	High quality Above 14 deg. F
Gasoline	3 ½ U.S gal	Regular, unleaded, non-alcohol blend.
Diesel	3 ½ U.S. gal	above 40°, (5° C), use No. 2-D. Below 40°, (5° C), use No. 1-D. Power loss up to 4% can be expected due to lower viscosity

## **LUBRICATION AND SERVICE PROCEDURES**

### **Air Filters**

**IMPORTANT:** Service the engine air filters only when the need is indicated by the air cleaner service indicator, (if equipped), or in accordance with the preventative maintenance decal. Excessive service will cause premature wear.

#### 1. Engine Main Element

- a. Unbuckle clips to remove element container end cap.
- b. Pull gently to remove main element.
- c. Use compressed air with an element-cleaning nozzle

**IMPORTANT:** Main element should be replaced after six cleanings or 500 hours use.

**IMPORTANT:** Do not attempt to clean element using a standard air nozzle. Do not strike element on a hard surface. Either action will damage the element.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## 2. Engine Safety Element

**IMPORTANT:** Do not remove safety element under heavy dust or blowing conditions (in the field). Even slight amounts of dust entering the engine can lead to premature wear.

Inspect safety element for contamination and physical damage.

**IMPORTANT:** When safety element is dirty, it should be replaced. Do not attempt to clean.

## **Battery**

**CAUTION:** BATTERY ELECTROLYTE IS A CAUSTIC ACID. KEEP IT AWAY FROM SKIN AND EYES. IF CONTACT OCCURS, FLUSH THE AFFECTED AREA WITH LOTS OF WATER.

**CAUTION:** DISCONNECT GROUND CABLE FROM THE NEGATIVE BATTERY POST BEFORE ATTEMPTING TO SERVICE OR REMOVE BATTERY.

### 1. Removal:

- a. Disconnect ground (negative) cable from battery (-) terminal.
- b. Remove battery retaining rod.
- c. Disconnect positive cable from battery (+) terminal.

### 2. Cleaning:

- a. Remove battery, following correct procedures.
- b. Thoroughly clean terminals with a battery-cleaning tool.
- c. Mix a paste solution of baking soda and water and apply to battery and terminals.
- d. Rinse battery and roller area near battery liberally with water.

### 3. Installation:

- a. Clean battery, following correct procedures.
- b. Be certain battery area is clean and clear of debris.
- c. Install battery and retaining rod.
- d. Connect positive (+) cable to terminal.

**CAUTION:** DO NOT CONNECT NEGATIVE (GROUND) TERMINAL FIRST. ARCING CAN OCCUR, POSSIBLY CAUSING SEVERE BURNS AND/OR BATTERY EXPLOSION.

- e. Connect negative (-) terminal

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

#### 4. Charging:

Connect charger leads to proper battery terminals then proceed according to charger manufacturer's instructions.

#### 5. Storage:

- a. Remove and clean battery, following correct procedures.
- b. Bring battery to full charge, following charger manufacturer's instructions.
- c. Store in a cool dry place where there is no possibility of freezing.

**NOTE:** Check battery every 30 days during storage and return to full charge if necessary.

### **Engine and Engine Filters**

#### 1. Initial Break-In:

Proper break-in procedures are a must to realize maximum engine power output and longest engine life. Engine should show noticeable power gain through the first 30 hours service. Power gain will continue until approximately 200 hours if properly broken-in.

**IMPORTANT:** Do not operate engine above 3/4 throttle, for the first 25 hours.

**IMPORTANT:** Use full throttle only for short intervals during the first 25 hours.

**IMPORTANT:** Do not "lug" engine during the break-in period.

**IMPORTANT:** Replace the original oil and oil filters after the first 20 hours of operation.

#### 2. Fuel Filters:

Both fuel filters are disposable.

**CAUTION:** BOTH DIESEL FUEL AND GASOLINE ARE HIGHLY FLAMMABLE AND EXPLOSIVE UNDER CERTAIN CONDITIONS. DO NOT SMOKE OR ALLOW SPARKS OR OPEN FLAME WHEN HANDLING.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

### To Change:

- a) Stop engine. Wait 15 minutes for engine and surrounding parts to cool before proceeding.
- b) Unscrew and discard existing filters.
- c) Fill new filter with clean fuel.
- d) Lightly coat the seal ring with oil, then screw on filter until seal meets flange.
- e) Tighten an additional 1/2 to 3/4 turns by hand.

**IMPORTANT:** Do not over tighten.

### 3. Oil and Oil Filter Changing:

- a) Stop engine. Wait 15 minutes or engine oil to cool before proceeding.
- b) Drain crankcase.
- c) Unscrew and discard existing filters.
- d) Fill new elements with fresh oil.
- e) Lightly coat the seal rings with oil, and then screw on filters until seals meet flanges.
- f) Tighten an additional 1/2 to 3/4 turns by hand.  
**IMPORTANT:** Do not over tighten.
- g) Fill crankcase to correct level.
- h) Start engine and run at low idle. Have an assistant visually check seal areas for leaks.
- i) Stop engine. Wait a few minutes, and then check engine oil level once again.

## **Hydraulic System**

### Hydraulic Fluid Change:

- a) Stop engine. Allow system pressure to drop and remove filler cap.
- b) Remove suction hose and drain into appropriate container for disposal.
- c) Remove hydraulic filter. Replace filter element and reinstall.
- d) Replace fluid to approximately 1" from top of reservoir. Operate roller and recheck level.
- e) Check visually for oil leaks.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

**NOTE:** Each roller should be thoroughly inspected after each use and during maintenance cycle for:

- a) Tightness of mounting bolts and attaching hardware on bearings, couplings, frame, etc.
- b) Leaks, cracks and loose electrical and fluid fittings.
- c) Malfunctioning indicators or controls.
- d) Worn or damaged tires.
- e) Cleanliness.

## **TROUBLESHOOTING**

### 1. General:

- Proper troubleshooting begins with an organized approach to the problem at hand. Begin with investigation of the most probable cause, following the guidelines below.
- Study the problem thoroughly before taking action!
- Did warning signs precede the problem? If so, what were they? What would they indicate?
- Is scheduled maintenance current on all parts and systems involved?
- Has similar trouble occurred before? What action was taken at that time?
- Can engine be operated without further damage?

**CAUTION:** IF RUNNING INSPECTION MUST BE MADE, GET ASSISTANCE. OPERATOR SHOULD REMAIN SEATED ON ROLLER THROUGHOUT INSPECTION. SET PARKING BRAKE. MAKE SURE TRANSMISSION IS IN NEUTRAL POSITION.

- Check the most convenient things first.
- Don't begin major work before checking all other possibilities.
- Reconsider all known facts and clues before proceeding to more in-depth work.
- Correct the basic cause.
- Remember, failure of a certain part may be caused by malfunction of another part or system

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## 2. Troubleshooting chart:

The troubleshooting chart lists problems that might be encountered in the operation of the vehicle. The remedies listed may direct the repairman to a possible faulty component.

**WARNING:** THE TROUBLESHOOTING CHART AND PROCEDURES OUTLINED IN THIS SECTION SHOULD NOT BE ATTEMPTED BY OTHER THAN EXPERIENCED MECHANICS OR PERSONNEL UNDER THE DIRECT SUPERVISION OF AN EXPERIENCED MECHANIC. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO EQUIPMENT AND/OR INJURY OR DEATH TO PERSONNEL.

### A. Engine

For engine troubleshooting see charts indicating faults and recommended repair procedures. Refer to engine Manufacturer's Operation and Maintenance Manual.

If your particular problem is not covered or you are unsure of what steps to take, contact your dealer for assistance.

### B. Transmission

#### 1. Vehicle fails to move under power:

- a) Inadequate oil level in hydraulic reservoir.
- b) Control cable broken or loose.
- c) Driveline mechanical failure.
- d) Inadequate oil flow through transmission suction filter.

#### 2. Vehicle moves in neutral:

- a) Stroke control needs adjustment.
- b) Control cable damage.

For detailed troubleshooting information on hydrostatic transmission, refer to Trouble Shooting Manual, Sundstrand Hydrostatic Transmissions, available from a Sundstrand representative or dealer.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

**C. Electrical System**

<b>Engine Status</b>	<b>Voltmeter Reading</b>	<b>Indicates</b>	<b>To Correct</b>
Running	13.5 - 14 Volts	Normal Condition	
Running	Less than 13.5 or more than 14 Volts	Alternator or Regulator Malfunction	Contact Dealer
Won't Start	12-12.5 Volts	Weak battery	Charge
Won't Start	Less than 12 Volts	Weak battery or Defective Cell	Charge or Replace
Stopped	Excessive current Draw	Short Circuit	Inspect System

**D. Hydraulic System**

- Thoroughly review description of hydraulic system.
- Use logical steps to determine cause of malfunction.
- Identify the function or functions that require troubleshooting.
- If possible, trace malfunction to source: pump, control, drive motor or cylinder.
- Determine pressure operating the function as specified:

**HYDRAULIC SYSTEM PRESSURES**

Priority circuit, Sundstrand pump: 900psi  
 Main circuit Sundstrand pump: 2500psi

**HYDRAULIC SYSTEM FLOWS**

Priority circuit, Sundstrand pump: 2gpm  
 Main circuit, Sundstrand pump: 8gpm  
 (Actual flow determined by engine rpm's)

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

<b>Problem</b>	<b>Possible Cause</b>	<b>To Correct</b>
No Power or Inadequate Power	Worn or Malfunctioning pump or drive motor.	Repair/replace pump or drive motor.
	Stuck relief valve cartridge.	Repair or replace.
	Low system pressure caused by worn pump.	Repair or replace pump.
Surging of hydraulic items	Air in system due to low level of oil, cavitating pump, leaky fittings, pinched hose, etc.	Add oil, tighten fittings, reroute hose(s).

## **Removal and Installation of Equipment**

### 1. Preparation

**WARNING:** BEFORE PERFORMING INSTALLATION OR REMOVAL PROCEDURES, THE FOLLOWING PRECAUTIONS MUST BE ADHERED TO IN ORDER TO PREVENT POSSIBLE DAMAGE TO EQUIPMENT OR INJURY OR DEATH TO PERSONNEL.

**WARNING:** TURN THE ENGINE OFF BY TURNING THE IGNITION SWITCH TO OFF. DISCONNECT THE BATTERY CABLES BEFORE SERVICING THE ENGINE START OR STOP CIRCUITS. DISCONNECTING BATTERY NEGATIVE GROUND BEFORE REMOVING OR CONNECTING THE POSITIVE BATTERY CABLE CAN PREVENT SHORT CIRCUITING OF THE BATTERY BY TOOLS.

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

**Recommended Preventive Maintenance Intervals**

<b>INTERVAL</b>	<b>ITEM</b>	<b>PROCEDURE</b>
Initial Break-In (After 1 <sup>st</sup> 50 hours)	Hydraulic Filter Engine Oil & Filter Hydraulic Leaks Loose Nuts & Bolts	Change Change Inspect & Tighten as required Inspect & Tighten as required
Daily or 10 hours	Hydraulic oil level Engine oil level Engine air cleaner system Engine coolant level system Radiator Fuel system	Inspect & add as necessary Inspect & add as necessary Check service indicator and/or inspect Inspect & add as necessary Clean and inspect Drain water from separator
100 hours	All 10 hour Items Steering rod ends Bearings Tires (optional tow package)	As above Grease Grease Check pressure
250 hours	All 100 hour items Engine air cleaner Engine crankcase Engine oil filter Fuel tank Hydraulic filter	As above Replace element Drain and refill* Replace* Drain water and sediment Replace*
500 hours	All 250 hour items Fuel filters Engine	As above Replace Have serviced by authorized Dealer
1000 hours	All 500 hour items Hydraulic system	As above Drain and refill

\*Change after first 50 hours service, every 250 thereafter.



**CALDER BROTHERS CORPORATION**  
**(LIMITED) PRODUCT WARRANTY**

Calder Brothers Corporation warrants that the Paver, Roller, Tank or Grader under this program will be free from defects in material and workmanship for a period of (12) twelve months from the date of installation. Written notice of any claimed defect must be given to Calder Brothers Corporation within the warranty period and within (30) thirty days after such defect is discovered. Liability under this warranty is limited to replacing or repairing at Calder Brothers Corporation election, any part or parts deemed defective after examination by Calder Brothers Corporation or an Authorized Service Representative via prepaid transportation for which is found to be defective, will be repaired or replaced and returned to the customer via prepaid surface transportation within the United States. Should any part be found not defective, inspection and handling may be charged to the customer by Mauldin or an Authorized Service Representative.

**EXCLUSIONS:**

This warranty does not apply to routine wearable parts of the Mauldin machine such as seals, points, plugs, hoses or similar items. This warranty does not extend to any machine or part replaced or repaired under this warranty. This warranty does not cover any repair or replacement labor or any part of parts found defective after examination by Mauldin or an Authorized Service Representative. This warranty does not apply to defects caused by casualty or unreasonable use, including faulty repairs by others and failure to provide reasonable and necessary maintenance.

THIS WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND CUSTOMER WAIVES ANY OBLIGATION OF LIABILITY OF MAULDIN ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO MAULDIN MACHINE AND/OR PARTS FOR ANY LIABILITY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

**I have read and fully understand the warranty policy above.**

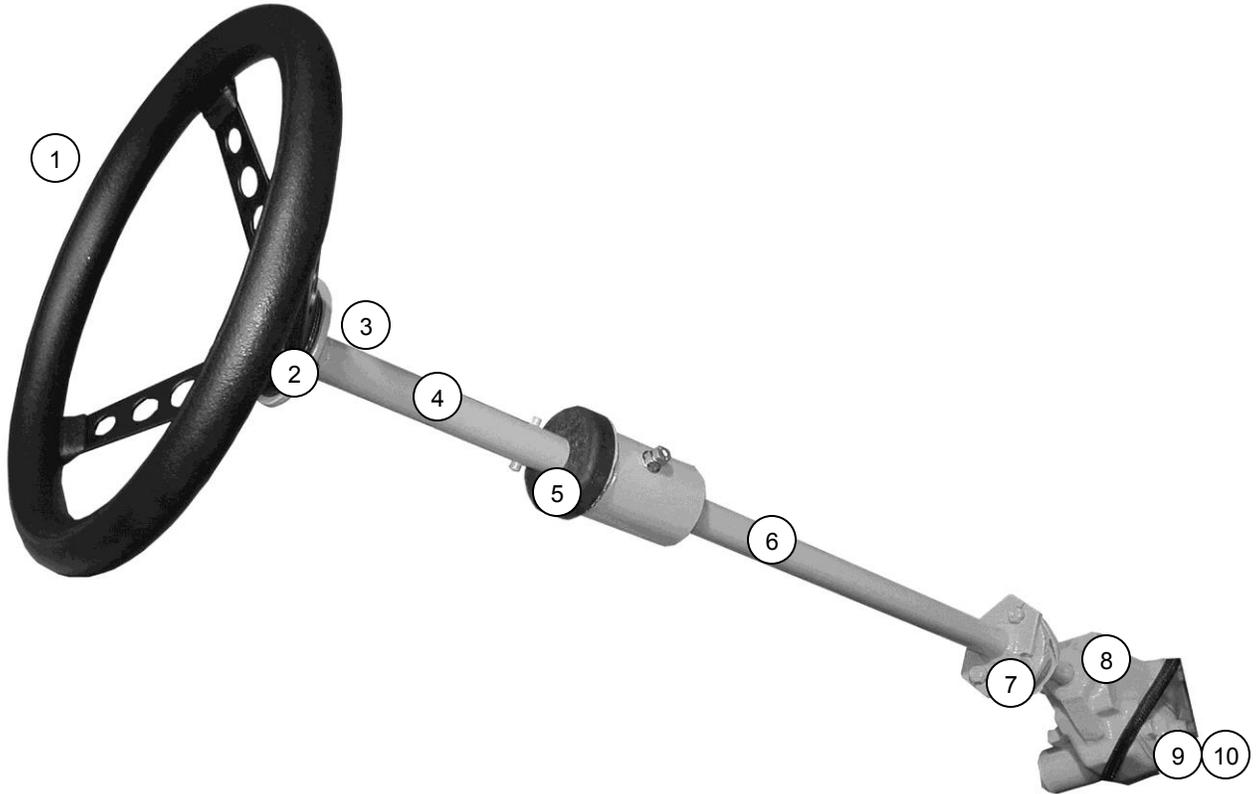
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Customer  
*CALDER BROTHERS CORPORATION*

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Witness

# **NOTES**

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

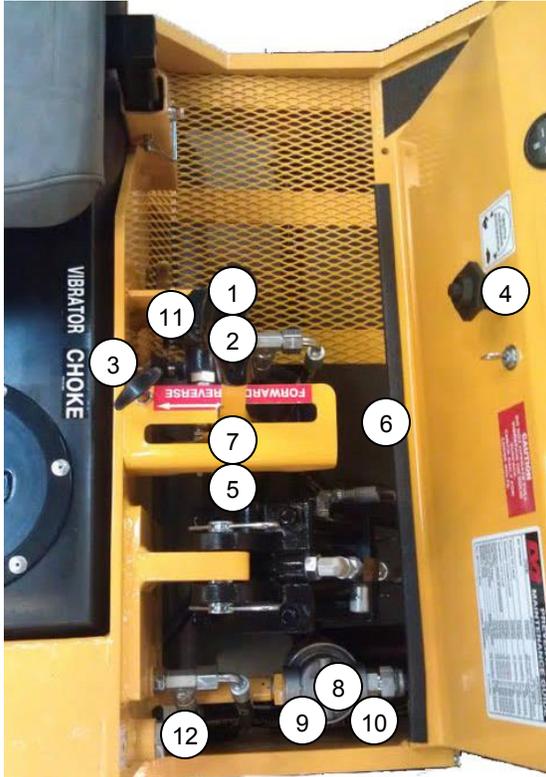
## STEERING ASSEMBLY



1. Steering Wheel.....	050-0030
2. Steering Wheel Mounting Disk (Rubber).....	015-0074
3. Steering Shaft Assembly.....	082-0013
4. Steering Shaft.....	082-0013A
5. Steering Shaft Bushing.....	050-0004
6. Steering Column.....	082-0008
7. Control Box Mounting Bushing.....	050-0068
8. Steering Control Box.....	050-0031
9. Steering Box Control Arm (from steering box to linkage assy) (not shown)...	050-0032
10. Steering Linkage Assembly (not shown).....	See Drum-Front

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

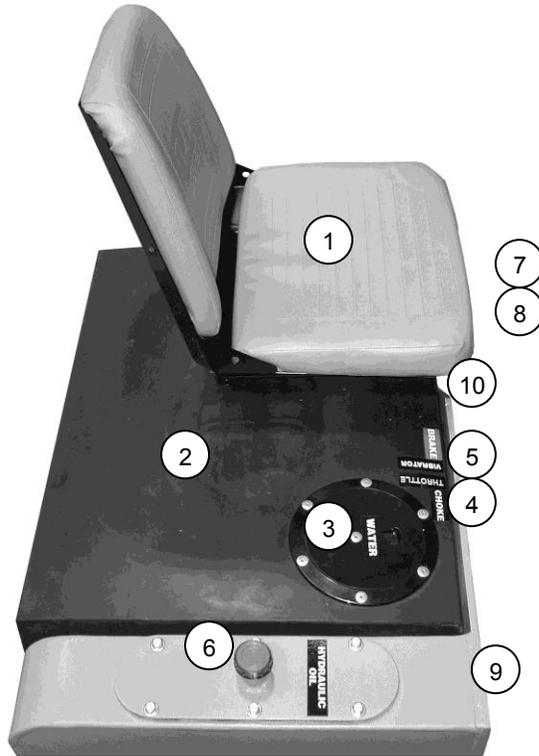
## DRIVE COMPARTMENT



1. Drive Handle.....083-0024
2. Drive Handle Grip .....050-0334
3. Choke Cable.....050-0025
4. Throttle Cable.....050-0024
5. Drive Cable.....050-0008
6. Drive Cable Ball Joint .....030-0237
7. Neutral Safety Switch .....020-0002
8. Hydraulic Filter Assembly .....021-0001
9. Hydraulic Filter Head .....021-0087B
10. Hydraulic Filter Element.....021-0002
11. Vibrator Valve.....017-0005
12. Hydraulic Tank Sight Guide ..... *See Tank Assy*

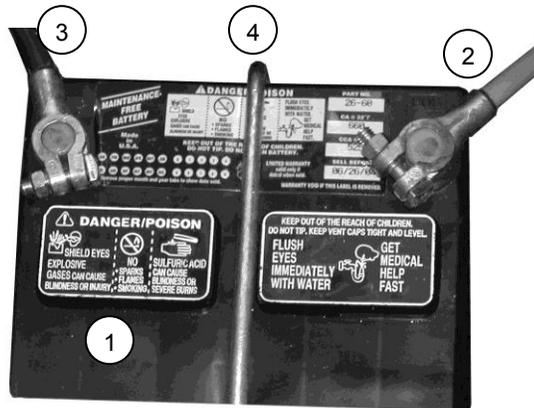
Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## SEAT & TANK ASSEMBLY



- 1. Seat Assembly ..... 050-0017
- 2. Water Tank Assembly ..... 081-0029
- 3. Inspection Cap ..... 050-0026
- 4. Ball Valve ..... 017-0043
- 5. Water Tank Filter ..... 021-0059
- 6. Hydraulic Tank Breather Cap .... 050-0016
- 7. Fuel Tank (not shown) ..... 050-0027
- 8. Fuel Tank Cap (not shown) ..... 050-0188
- 9. Hydraulic Tank Sight Guide ..... 060-0068
- 10. Seat Stand ..... 082-0079

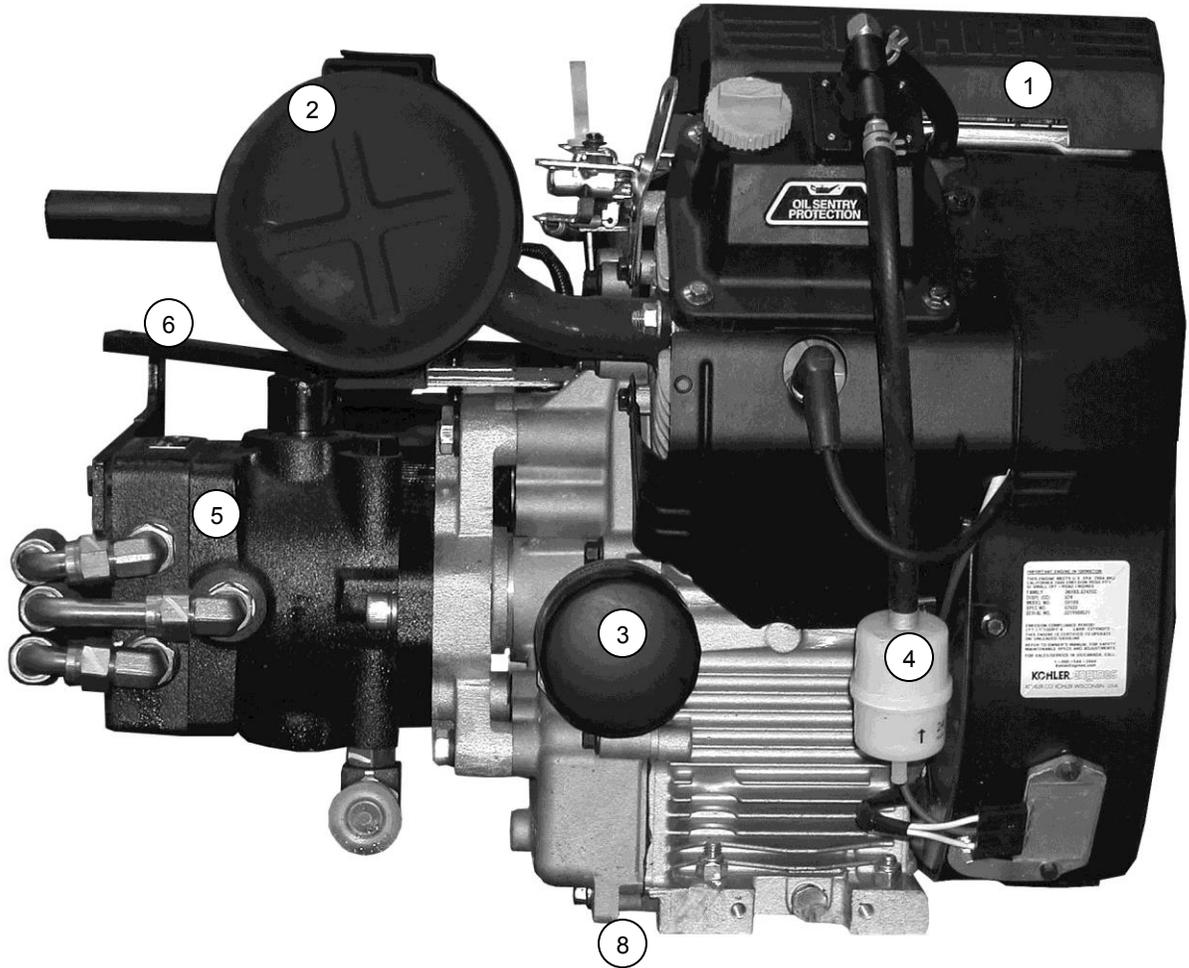
## BATTERY ASSEMBLY



- 1. Battery ..... 020-0019
- 2. Battery Cable (Positive) ..... 020-0361
- 3. Battery Cable (Negative) ..... 020-0318
- 4. Battery Retaining Rod ..... 093-0046

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

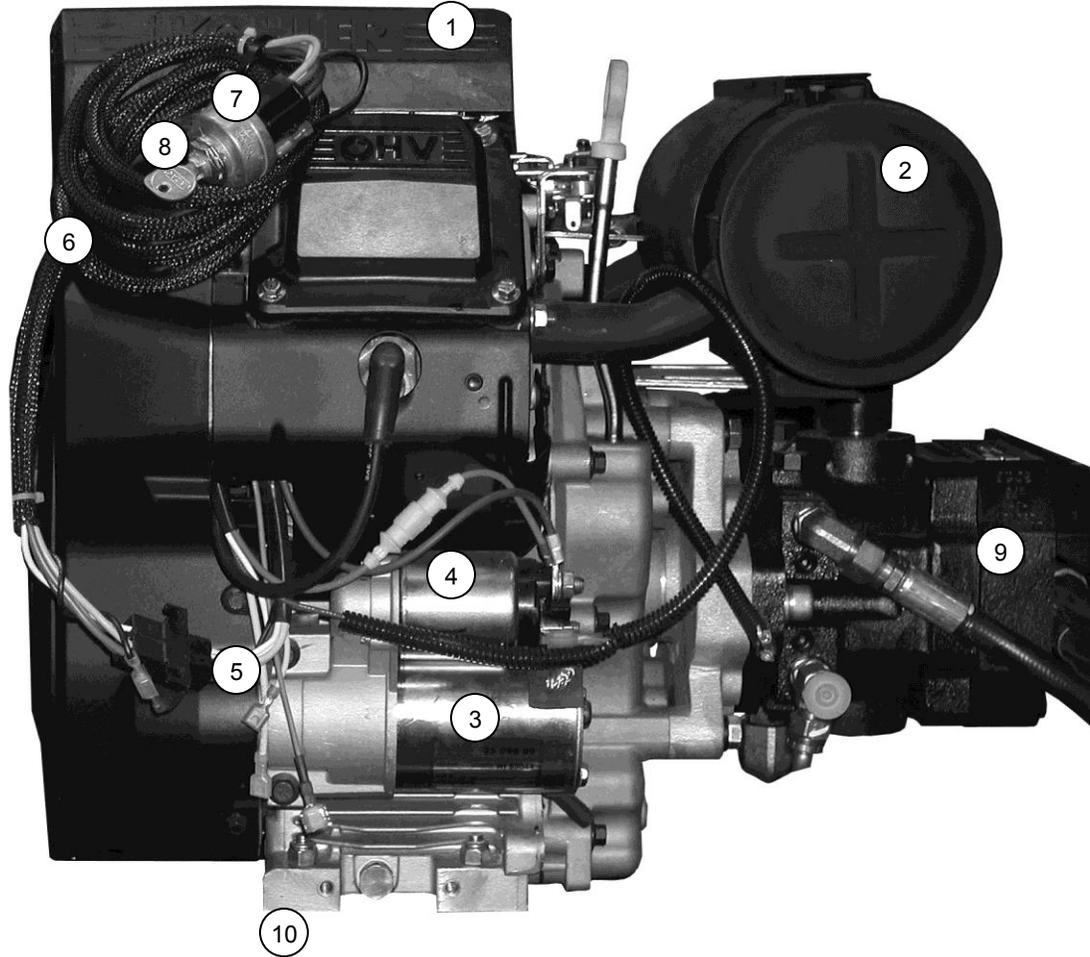
## ENGINE ASSEMBLY – FRONT



1. Kohler CH18S Engine .....	010-0275
2. Muffler .....	010-0302
3. Engine Oil Filter .....	021-0026
4. Fuel Filter .....	021-0027
5. Main Drive Pump.....	011-0138
6. Drive Pump Control Arm .....	082-0021
7. Drive Pump Control Arm Ball Joint (not shown) .....	030-0237
8. Rubber Engine Mount (x4) (not shown).....	See Engine-Rear

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

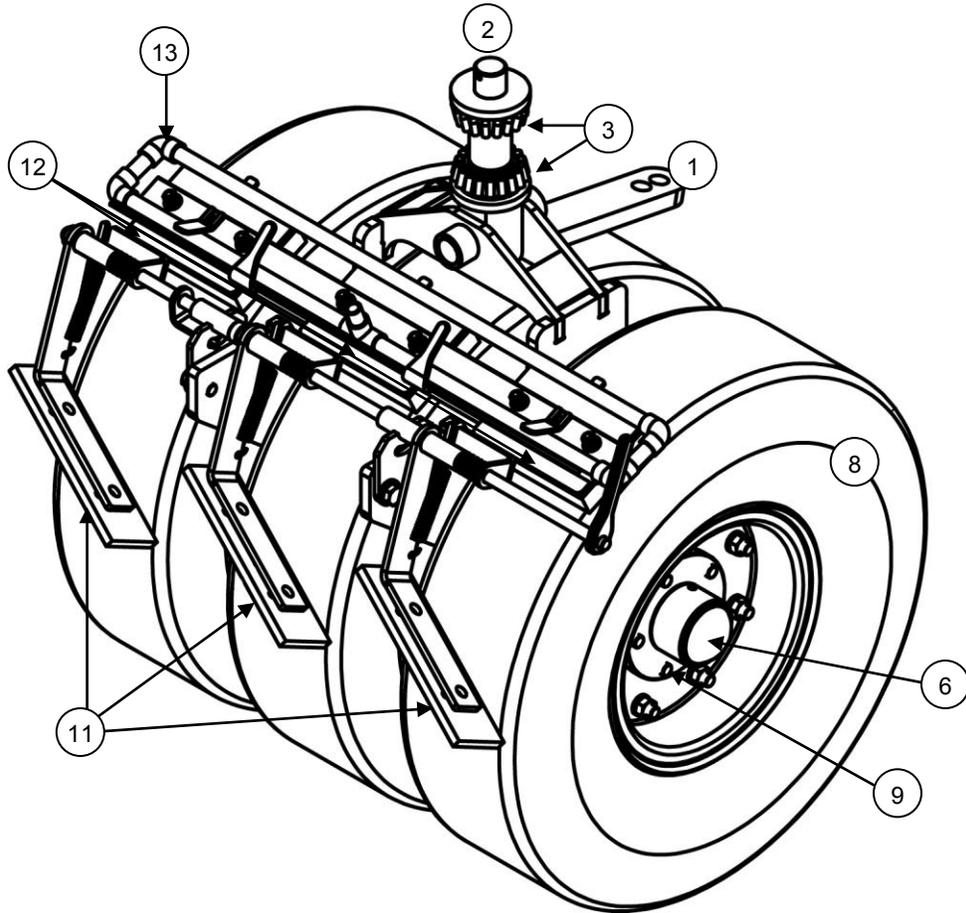
## ENGINE ASSEMBLY – REAR



1. Kohler CH18S Engine .....	See Engine-Front
2. Muffler .....	See Engine-Front
3. Starter.....	010-0375
4. Starter Solenoid.....	020-0085
5. Engine Wiring Harness (Engine Side) .....	010-0312A
6. Engine Wiring Harness (Ignition Switch Side) .....	010-0312
7. Ignition Switch .....	020-0088
8. Ignition Keys (Set) .....	010-0209
9. Main Drive Pump.....	See Engine-Front
10. Rubber Engine Mount (x4) (not shown).....	050-0260

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

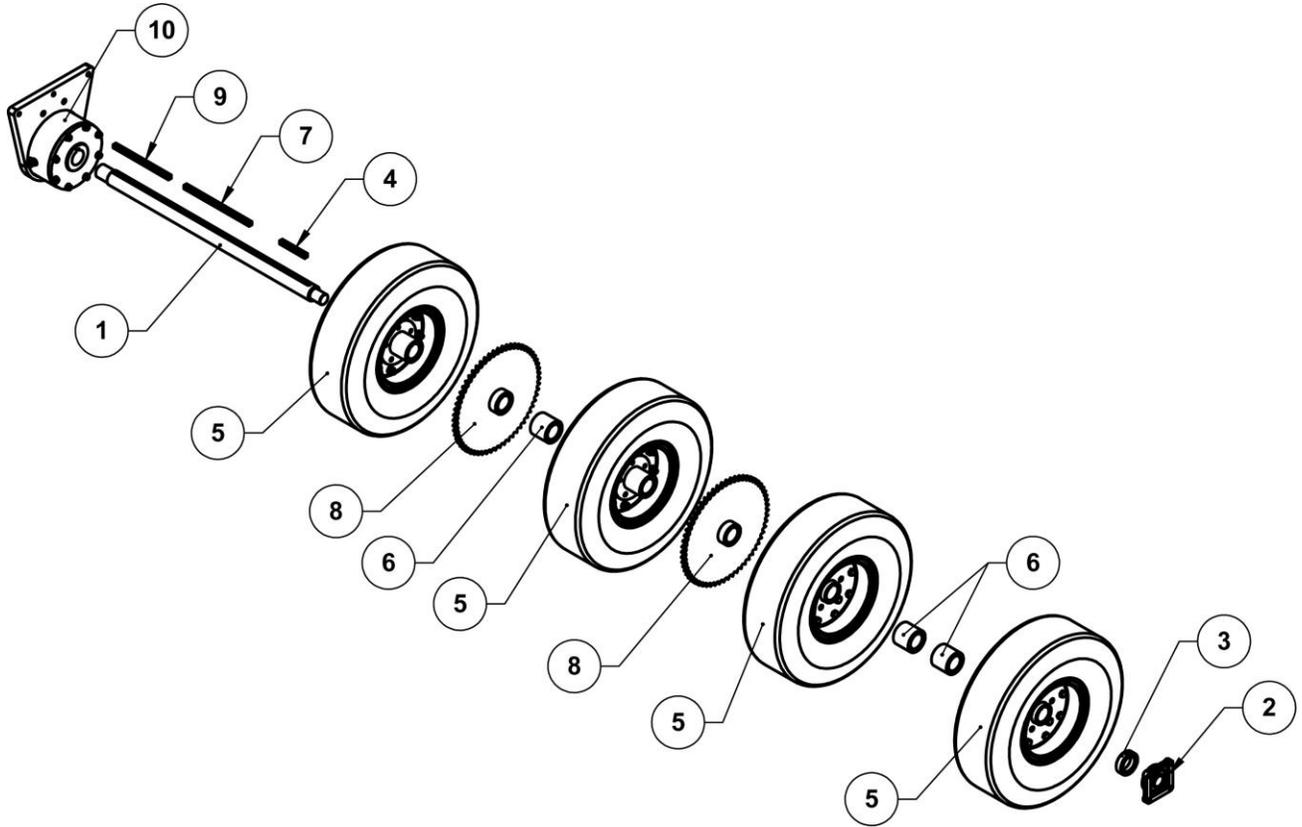
## FRONT TIRE ASSEMBLY - FRONT



1. Weldment, Front Tire Frame.....	082-502100
2. Kingpin Shaft .....	083-0003
3. Kingpin bearing.....	018-0030
4. Axle Mount (not shown)(x2).....	082-502150
5. Axle Shaft (not shown).....	083-502110
6. Wheel hub dust cap(x2).....	050-0013
7. Axle Castle Nut (not shown)(x2).....	083-0005
8. Tire/wheel assembly .....	023-0046
9. Lug bolt(x15 front).....	030-0242
10. Axle Hub (Not shown)(x3).....	081-0005
11. Plastic Scraper(x3) .....	083-502220
12. Cocoa mat brush(x3) .....	083-502248
13. Front water manifold .....	082-502250

Serial Number Range: 904-N-47PGS1YP-02904 thru \_\_\_\_\_

## REAR TIRE ASSEMBLY - FRONT



1. Rear Axle.....	083-502310
2. Rear axle bearing .....	018-0001
3. Rear shaft collar, w/ set screw.....	030-0530
4. Key stock.....	083-502312
5. Wheel and tire assembly w/ hub (x4).....	081-502320
6. Spacer(x3).....	083-502324
7. Key stock.....	083-502316
8. Rear axle drive sprocket.....	082-502326
9. Key stock.....	083-502314
10. Rear axle brake .....	050-0482

# **NOTES**



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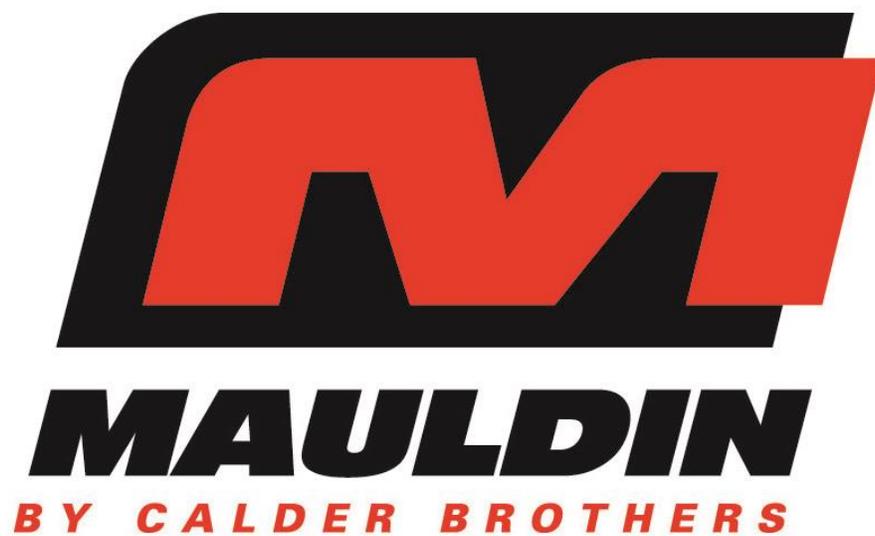
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**I have read and fully understand the warranty policy above.**

\_\_\_\_\_  
Customer  
*CALDER BROTHERS CORPORATION*

\_\_\_\_\_  
Witness



**MODEL 4700**