

# BROUWER

## OWNER/OPERATOR'S MANUAL & ILLUSTRATED PARTS LIST

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### MODEL:

5020499 TURF VACUUM. BV 85 MODEL



*WARNING: If incorrectly used this machine can cause severe injury. Those who use and maintain this machine should be trained in its proper use, warned of its dangers and should read the entire manual before attempting to set up, operate, adjust or service the machine.*



**KESMAC INC.**  
DBA BROUWER KESMAC  
23324 Woodbine Ave.  
Keswick, ON L4P 0N1  
**Phone:** (905) 476-6222  
**Fax:** (905) 476-6744  
**Website:** www.brouwerkesmac.com



## STATEMENT OF LIMITED WARRANTY

**Brouwer Kesmac** warrants its full line of equipment to be free from defects in material and factory workmanship for a period of 12 months. This warranty begins on the date of sale or use of the equipment to the original purchaser. This statement does not extend or limit engine, tractor or component warranties in which the engine, tractor or component manufacturers may carry extended time periods up to 24 months. Engine, tractor or component warranty claims will be subject to the engine, tractor or components manufacturer's approval.

**Replacement Parts** carry a 90 day replacement warranty and are reimbursed to the dealer. All electrical and hydraulic parts are limited by this policy and will only be covered upon approval by the service department after inspection of the part. The installation and removal of a part will automatically place that part under the replacement parts warranty.

This warranty is limited exclusively to equipment or accessories manufactured or supplied by **Brouwer Kesmac** and are subject to the inspection and analysis by the company to conclusively identify the nature and cause of failure.

**PRODUCT REGISTRATION FORM** must be completely filled out, signed by the customer at the original date of installation, and returned to **Brouwer Kesmac** before any claims will be considered.

**Brouwer Kesmac** reserves the right to incorporate improvements in material and design of its products without notice and is not obligated to make the same improvements to equipment previously manufactured.

**Brouwer Kesmac** is not obliged under any warranty policy different from the Kesmac Brouwer Turf warranty policy as published above.

### **BROUWER KESMAC RESPONSIBILITIES**

**Brouwer Kesmac's** obligation under the terms of this warranty is limited to the repair, replacement or credit, at its option, of the equipment, parts or supply items that conform to its warranty.

### **DEALER'S RESPONSIBILITIES**

1. Only factory-trained service or approved personnel will be permitted to perform warranty service on **Brouwer Kesmac** equipment.
2. All major warranty claims exceeding \$650.00 (in total including parts and labour) must be authorized by **Brouwer Kesmac** before work is performed.
3. All replacement parts used in warranty situations must be furnished by **Brouwer Kesmac** or approved by **Brouwer Kesmac** personnel. The use of non-recommended oil could nullify warranty.

### **OWNERS RESPONSIBILITIES**

The owner is obligated to operate and maintain the equipment in accordance with the recommendations published by **Brouwer Kesmac** in the owners/operators manual for the unit. The owner is responsible for the costs associated with such maintenance and operating adjustments that may be required on a regularly scheduled basis. Where applicable the owner is responsible for transportation to and from the dealership or service calls made by the dealer.

### **CONDITIONS THAT VOID WARRANTY**

This warranty shall not apply to equipment which:

- 1. Has had repairs or modifications not authorized by **Brouwer Kesmac**
- 2. Has been subject to abuse, improper maintenance, or improper application.
- 3. Has been modified from original equipment specifications.

### **WARRANTY EXCEPTIONS**

This warranty does not apply to the following items:

- 1. Wear items including blades, cutting edges, cutting arms, spark plugs, belts, filters, bearings, sprockets, chains, tires, light bulbs, lubricants and fluids etc. Cost of normal maintenance including replacement of service items.
- 2. Damages to engine/drive systems caused by lack of or improper lubricants and/or fluids.
- 3. Damages arising from accident, misuse or neglect.
- 4. Damages to engine/drive systems caused by improper operation and/or maintenance.
- 5. **Brouwer Kesmac** will not be liable for any incidental or consequential damage or injuries, including but not limited to loss of profits, loss of crops, rental of substitute equipment, or other commercial loss or for damage to the equipment in which the Company Product is installed.

### **FREIGHT CARRIER DAMAGE**

Claims for equipment damaged in transit should be referred to the freight carrier. Visible damage should be reported immediately and concealed damage as soon as possible, in accordance with freight carrier regulations.







**Kesmac Inc.**

23324 Woodbine Avenue, Keswick Ontario Canada L4P 0N1

Tel (905) 476-6222 Fax (905) 476-6744

Web Site [www.brouwerkesmac.com](http://www.brouwerkesmac.com) Email [info@kesmac.com](mailto:info@kesmac.com)

Date of Purchase: Month\_\_\_\_\_Day\_\_\_\_\_Year\_\_\_\_\_

Dealer Name\_\_\_\_\_Phone\_\_\_\_\_

Serial Number\_\_\_\_\_

Model Number\_\_\_\_\_

ALWAYS GIVE THE SERIAL NUMBER, MODEL NUMBER AND PART COLOR WHEN  
ORDERING SERVICE PARTS.



# BROUWER- VAC

## IMPORTANT MESSAGE

Thank you for purchasing this Brouwer product. You have purchased a world class product, one of the best designed and built anywhere.

This product comes with an Owner/Operator's Manual. The useful life and good service you receive from this product depends to a large extent on how well you read and understand this manual. Treat this product properly and adjust it as instructed, and it will give you many years of reliable service.

See a Brouwer dealer for any service or parts needed. Brouwer service ensures that you continue to receive the best results possible from Brouwer products. You can trust Brouwer replacement parts because they are manufactured with the same high precision and quality as the original parts.

Brouwer designs and builds its equipment to serve many years in a safe and productive manner. For longest life, use this product only as directed in the manual, keep it in good repair and follow safety warnings and instructions. You'll always be glad you did.

Brouwer Turf  
23324 Woodbine Avenue  
Keswick, Ontario, Canada, L4P 3E9

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## NOTICE !!!

Unauthorized modifications may present **extreme** safety hazards to operators and bystanders and could also result in product damage.

Brouwer Turf strongly warns against, rejects and disclaims any modifications, add-on accessories or product alterations that are not designed, developed, tested and approved by Brouwer Engineering Department. Any Brouwer product that is altered, modified or changed in any manner not specifically authorized after original manufacture—including the addition of “after-market” accessories or component parts not specifically approved by Brouwer—will result in the Brouwer Warranty being voided.

Any and all liability for personal injury and/or property damage caused by any unauthorized modifications, add-on accessories or products not approved by Brouwer will be considered the responsibility of the individual(s) or company designing and/or making such changes. Brouwer will vigorously pursue full indemnification and costs from any party responsible for such unauthorized post-manufacture modifications and/or accessories should personal injury and/or property damage result.



This symbol means:  
**ATTENTION!**  
**BECOME ALERT!**

Your safety and the safety of others is involved.

## Signal word definitions:

The signal words below are used to identify levels of hazard seriousness. These words appear in this manual and on the safety labels attached to our machines. For your safety and the safety of others, read and follow the information given with these signal words and/or the symbol shown above.

### **DANGER**

**DANGER** indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

### **WARNING**

**WARNING** indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

### **CAUTION**

**CAUTION** indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices or property damage.

### **CAUTION**

**CAUTION** used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, **MAY** result in property damage.

### GENERAL SAFETY

Read and understand the owner's manual before attempting to operate this machine.

Operate all controls from the operator's seat (if so equipped). **NO RIDERS.**

Keep all shields in place and safety switches adjusted properly.

Do not leave equipment unattended. **STOP** the engine and remove the key (if so equipped).

Do not allow minors or the inexperienced to operate this machine.

Keep people and pets a safe distance away from machines using power driven attachments. Injury could result from flying debris.

### OPERATING SAFETY

**Before operating the BROUWER- -VAC it is important that the operator read and thoroughly understand this manual. ONLY TRAINED PERSONNEL SHOULD OPERATE THIS MACHINE. It is the operator's responsibility to ensure that ALL GUARDS AND SHIELDS ARE CORRECTLY POSITIONED AND UNDAMAGED.**

**Adhering to the recommended service, maintenance and operating procedures will help in the safe and trouble—free operation of the machine.**

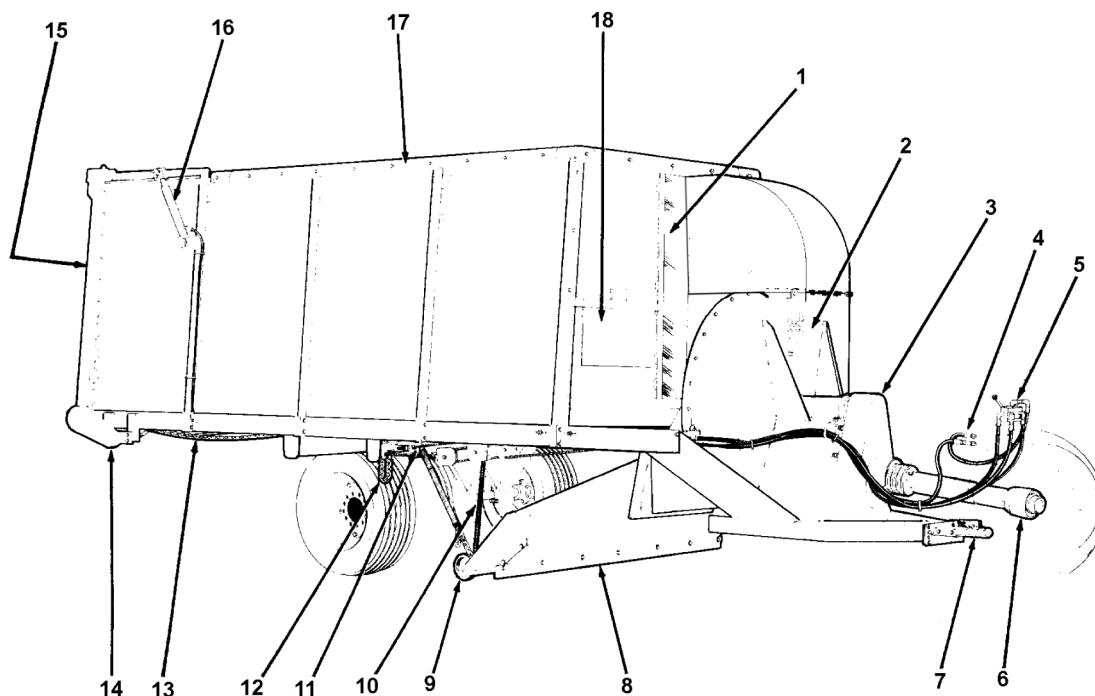
#### **CAUTION**

**THERE IS A STRONG SUCTION AT THE NOZZLE. KEEP ALL BYSTANDERS, PARTICULARLY CHILDREN AND ANIMALS, AWAY FROM NOZZLE.**

**NOTE:  
DO NOT MANEUVER THE MACHINE IN REVERSE WITH THE PICKUP NOZZLES IN THE OPERATING POSITION.**



**A CAREFUL OPERATOR IS A SAFE OPERATOR**



## FEATURES AND CONTROLS

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1. Load Level Sight Window         | 10. Pick-Up Nozzle Lift Cable      |
| 2. Blower Housing                  | 11. Pick-Up Nozzle Lift Cylinder   |
| 3. Blower Drive Belt Cover         | 12. Pick-Up Nozzle Transport Chain |
| 4. Quick-Disconnect Coupler        | 13. Conveyor - Unloading           |
| 5. Divertor (Selector) Valve       | 14. Conveyor Drive                 |
| 6. P.T.O. Shaft                    | 15. Unloading Door                 |
| 7. Ball Hitch (Optional)           | 16. Unloading Door Lift Cylinder   |
| 8. Vac Pick-Up Nozzle              | 17. Load Box Tarp                  |
| 9. Pick-Up Nozzle Adjustment Wheel | 18. Pick-Up Nozzle Closure Plate   |

### NOTE:

**TO PREVENT POSSIBLE DRIVE DAMAGE TO THE DRIVE SYSTEM FROM OVERLOADING DUE TO EXCESSIVE HORSEPOWER, DO NOT USE A TRACTOR THAT MAY DELIVER MORE THAN 55 PTO HORSEPOWER.**

### GENERAL SPECIFICATIONS

CONFIGURATION: .....	Single Axle Trailer -- P.T.O. driven suction blower with lightweight aluminum pick-up discharging into large load box with rear dump.
P.T.O. SHAFT: .....	Constant velocity joint drive shaft with slip clutch and over-running clutch.
TIRES: .....	Two 31x13.5 flo-trac rib high flotation tires. 15psi (103kPa.)  Four 31x13.5 flo-trac rib high flotation tires. Inside Tires 25psi (170kPa) Outside Tires 15psi (105kPa.) Option - Current from Serial No. 1520
VACUUM PICK--UP: .....	Full--Floating with quick adjustable clearance height wheels.
PICK--UP WIDTH: .....	80 inches (203 cm) ..... 120 inches (305 cm) optional with extensions ..... 120 inches (305 cm) Power Brush
WEIGHT (STOCK UNIT): .....	3350 lbs. (1520 Kg)
WEIGHT (BV 85 POWER BRUSH): .....	4350 lbs. (1973 Kg)
LOAD BOX SIZE: .....	Length:156 in. (396 cm) Width: 74 in. (188 cm) (bottom) 64 in. (163 cm) (top) Height: 55in. (140 cm) Volume: 335 cu. feet (9.5 sq. m)
OVERALL HEIGHT: .....	93 in. (236 cm)
OVERALL WIDTH: .....	80 in. (203 cm) (with optional extensions removed)
OVERALL LENGTH: .....	247 in. (627 cm)
HITCH: .....	Clevis Hitch - standard (3/4 in. Dia. Pin) Standard 2 in. (5 cm) ball quick coupler - Optional

## SAFETY PRECAUTIONS

This equipment can cause serious injury or death of you, the operator, or bystanders if improperly used. Your safety and that of others depends on the care and good judgement applied when operating this, or any other equipment.

Read this manual carefully to fully understand the correct operating procedures. An operating demonstration should be performed by your B.T.E. dealer, or qualified B.T.E. personnel BEFORE using this machine. It is the operator's responsibility to familiarize him/herself with all control functions and operating characteristics of the machine. This is accomplished by careful application of the proper operating procedures contained in this manual.

DO NOT modify this unit without authorization from B.T.E. Altering in any way which adversely affects the unit's operation, performance, durability, or use, may cause hazardous conditions.





















### BEFORE USING:

Carefully read and fully understand the operator's manual. If clarification of any section is required, contact your official Brouwer dealer, or the factory representative.

Assure all guards are in place, all decals are clean and legible.

## INTERNATIONAL OPERATING SYMBOLS & DEFINITIONS

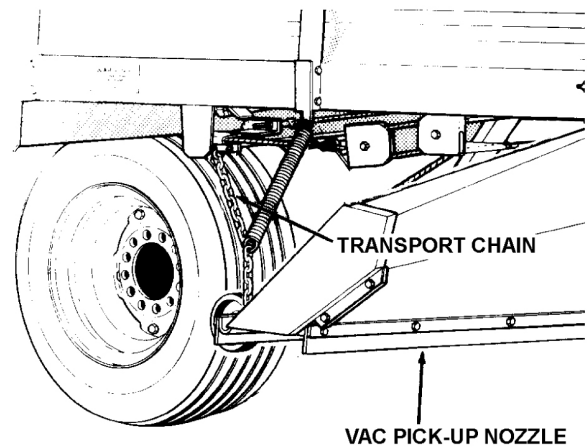
As a guide to the operation of your machine, various international symbols may have been utilized on the instruments and controls. The symbols and their definitions are shown in the next column.

	Engine speed (rev/min x 100)
	Hours recorded
	Engine water temperature
	Fuel level
	Fuel cut-off
	Lights
	Horn
	Alternator Charge
	Heater temperature control
	Air conditioner temperature control
	Fan
	Wipe/Wash control
	Power Take Off (on)
	Power Take Off (off)
	Engine oil pressure
	Air filter
	Transmission oil pressure
	Tortoise, slow or minimum setting
	Hare, fast or maximum setting
	Caution (safety alert)



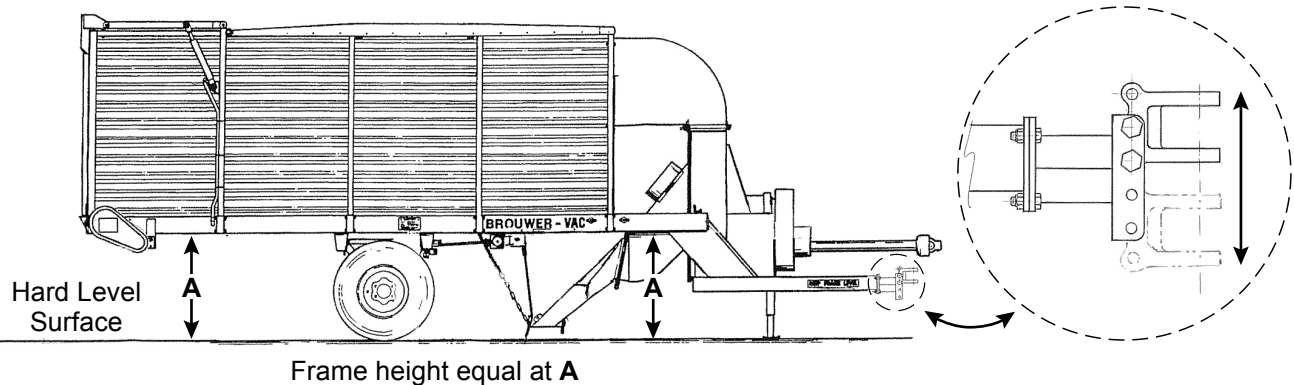
**Drawing 2**

When transporting the Vac in non—operating condition, it is important that the pick-up nozzle support chains be attached as shown. **DO NOT EXCEED 25 mph (40 km/h)** when transporting as this unit is equipped with **LOW SPEED TIRES**. Pressure 15 psi (103 kPa).



**Drawing 2a**

Standard hitch and frame leveling.  
Level frame by adjusting hitch as shown.

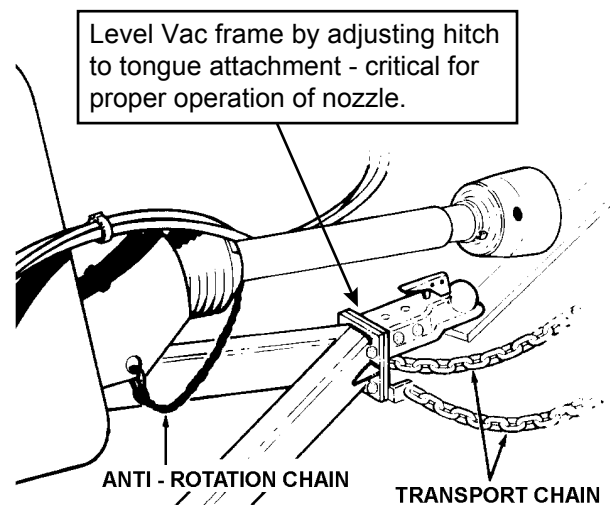


**Drawing 4**

Secure transport chain.

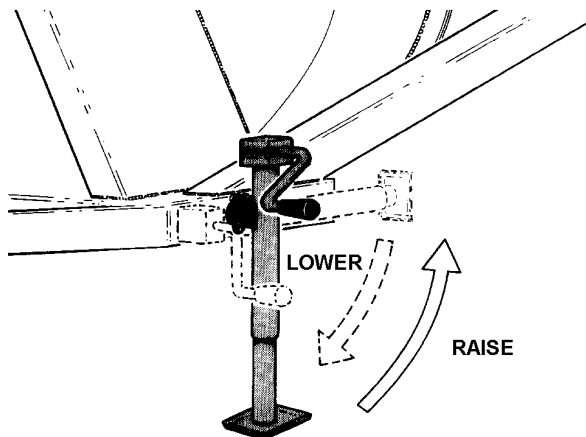
Connect the PTO shaft from the Vac to the tractor. Check that the PTO shaft guards are not damaged, and the anti-rotation chain is attached. Ensure that the PTO shaft is correctly located on the tractor take-off shaft and the locating pins are in position.

**Notice the IMPORTANT PTO and Hitch recommendations on Page 10.**



**Drawing 5**

When the Vac unit has been attached to the tractor, raise the nose jack and stow in the horizontal position, locking in place with hitch pin.



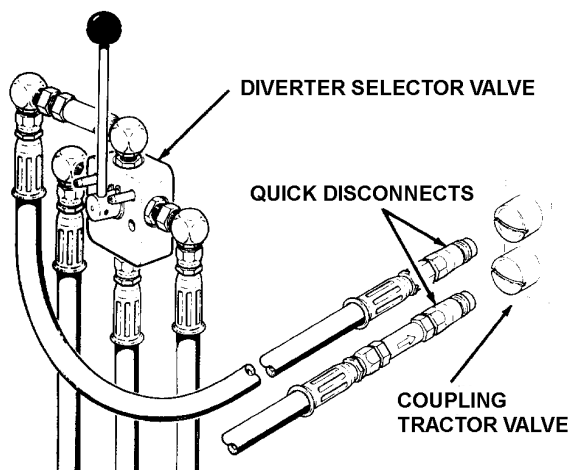
**Drawing 6**

## STANDARD NOZZLE

Attach the hydraulic diverter control valve to the bracket at rear of tractor and plug in the hose quick disconnects.

### CAUTION

**WHEN PLUGGING IN QUICK DISCONNECT COUPLINGS TO THE TRACTOR HYDRAULIC CONTROL VALVE THE COUPLING VALVE MUST BE IN THE POWER "OFF" POSITION. REFER TO THE OPERATOR'S MANUAL OF THE TRACTOR IN USE FOR DETAILS OF HYDRAULIC REMOTE COUPLERS AND THE SAFE PROCEDURE FOR HOOK-UP**

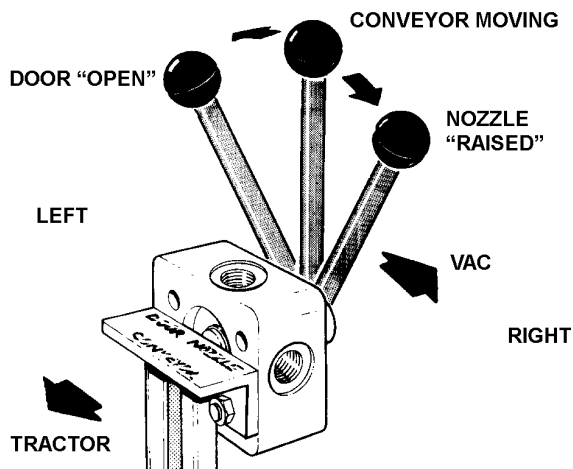


**Drawing 7**

For ease of operation there is a single hydraulic selector valve for all Vac functions. Viewed from the tractor, the vertical position is "Conveyor Moving"; moved to the left is "Door Open". This control is used in conjunction with the tractor hydraulic control valve.

### CAUTION

**THERE IS A STRONG SUCTION AT THE NOZZLE. KEEP ALL BYSTANDERS PARTICULARLY CHILDREN AND ANIMALS AWAY FROM MACHINE.**

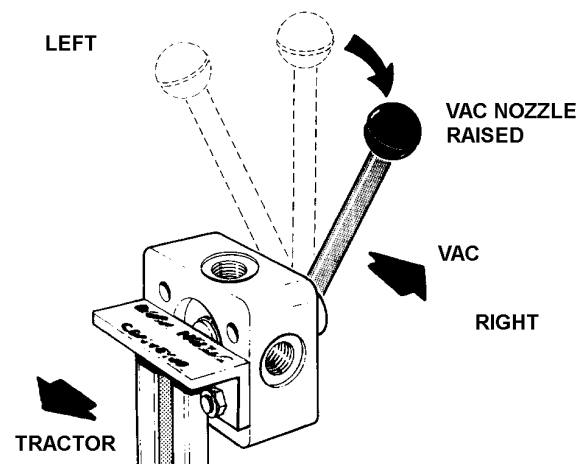


**Drawing 8**

With the tractor engine running and the tractor hydraulic control to the remote couplers in the "NEUTRAL" position, move the diverter valve control handle to the RIGHT. Moving the tractor control to the "LIFT" position will put the Vac pick-up nozzle in the raised position. Moving the tractor control to the "LOWER" position lowers the Vac pick-up nozzle. If the tractor hydraulic controls operate in the wrong direction, reverse the quick disconnects.

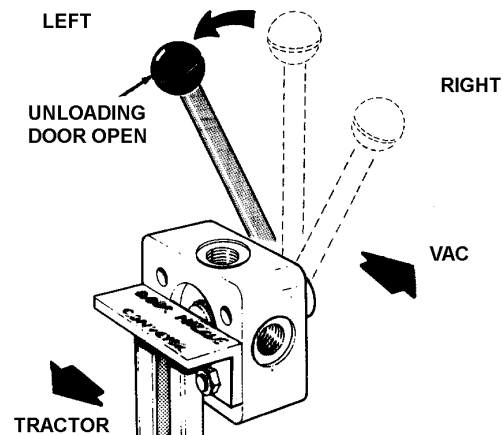
**⚠ CAUTION**

**DO NOT LET ANY ONE STAND NEAR THE REAR UNLOADING DOOR WHEN IT IS BEING OPENED OR CLOSED.**



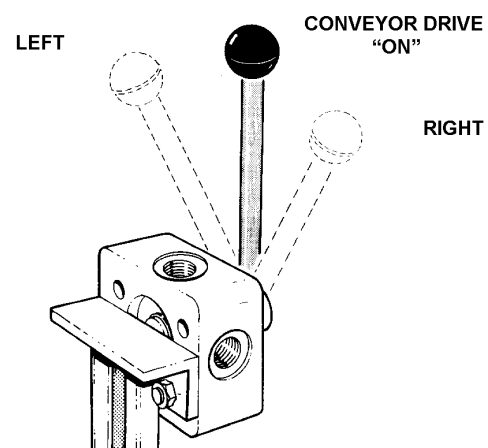
**Drawing 9**

With the tractor engine running and the hydraulic control to the remote coupling in the "OFF" position, move the Vac diverter valve control handle to the LEFT. Moving the tractor control to the "LIFT" position will raise the unloading door. Moving the tractor control handle to the "LOWER" position will lower the unloading door.



**Drawing 10**

With the tractor engine running and the hydraulic control to the remote coupling in the "OFF" position, move the Vac diverter valve control handle to the central (vertical) position. Moving the tractor control handle to the "LIFT" position will put the unloading conveyor drive in motion. Return the tractor control handle to the "OFF" position to stop the conveyor drive. A check valve prevents driving the conveyor in reverse if the "LOWER" position is accidentally engaged.



## IMPORTANT

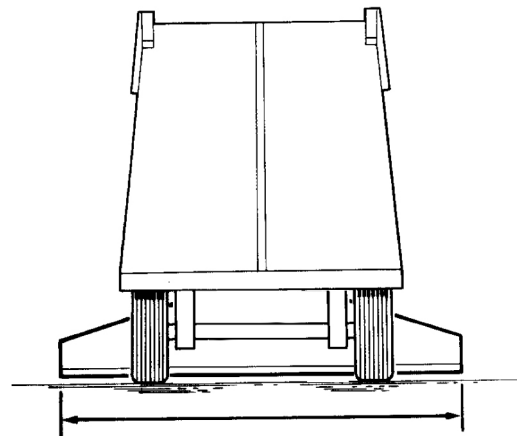
DO NOT OPERATE THE CONVEYOR WHILE THE DOOR IS CLOSED

## NOTE:

1. PLACE THE TRACTOR REMOTE COUPLING VALVE IN THE “OFF” POSITION BEFORE ATTACHING THE VAC QUICK-DISCONNECT COUPLERS.
2. ACTIVATE THE VAC FUNCTIONS WITH THE TRACTOR REMOTE COUPLING VALVE.
3. RETURN THE TRACTOR REMOTE COUPLING VALVE TO “OFF” POSITION BEFORE CHANGING VAC HYDRAULIC FUNCTION.

## Drawing 11

The operator must exercise extra care when maneuvering the unit if it is equipped with pick-up nozzle extensions, as they are wider than the rest of the unit and damage will result if the extensions strike an obstruction.



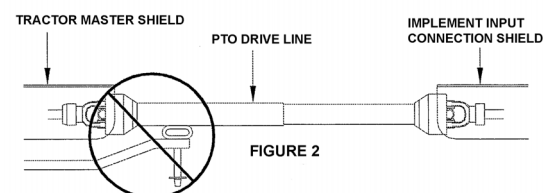
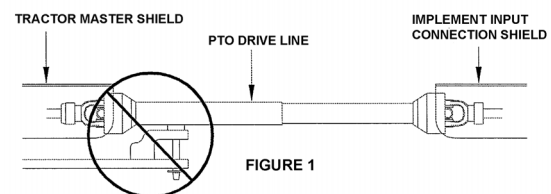
## IMPORTANT!

Tractor Drawbar Clevis on PTO driven implements

A tractor drawbar equipped with a clevis hitch (hammer-strap) can cause interference with the PTO driveline. This interference can cause damage to the guarding and telescoping members. The clevis style hitch must be removed or modified.

If this implement is attached to a tractor with a clevis hitch (hammer-style) drawbar, the hammer-strap must be removed to prevent damage to the PTO guarding and telescoping members. (Figure 1)

If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the PTO guarding and telescoping members. (Figure 2)



### OPERATING SETTINGS

Note that the operating settings will vary with the range of conditions encountered in particular geographic locations and climates; that is, very dry sandy or loose soil, leaves and/or debris, to very wet, heavy leaves, twigs, clippings and debris.

The following settings may be used as guide lines for various conditions, but some experimentation or adjustment will be necessary to obtain the best performance from the Vac.

#### **IMPORTANT**

**WHEN ENGAGING THE PTO DO SO WITH THE R.P.M. AT LOW SPEED IE. APPROX. 800 ENGINE R.P.M. ENGAGING THE PTO AT HIGHER SPEEDS WILL RESULT IN EXCESSIVE DRIVE BELT SLIPPAGE AND BURNING.**

#### **NOTE:**

**IF CONDITIONS AND/OR THE TYPE OF MATERIAL OR DEBRIS BEING PICKED UP REQUIRE MORE SUCTION AT THE NOZZLE, THE TRACTOR PTO SPEED CAN BE INCREASED FROM 540 R.P.M. TO NO MORE THAN 750 R.P.M.**

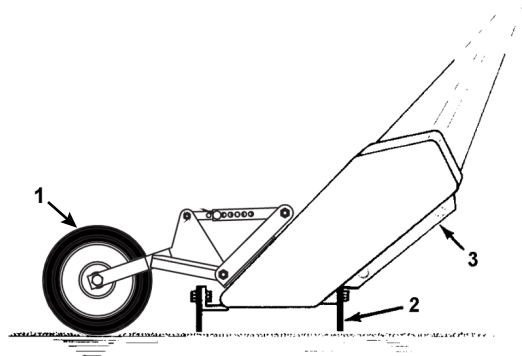
#### **NOTE:**

**DO NOT MANEUVER THE MACHINE IN REVERSE WITH THE PICK-UP NOZZLE IN THE OPERATING POSITION**

**Drawing 12**

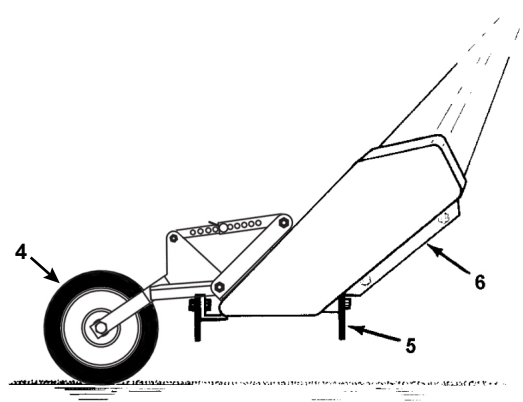
## STANDARD NOZZLE

For picking up grass clippings and small litter, the gauge wheels **1** are adjusted until the rubber flaps **2** (when applicable) on the nozzle front **3** just touch the top of the blades of grass. Travel speed 5 to 8 mph (8 to 13 km/h).



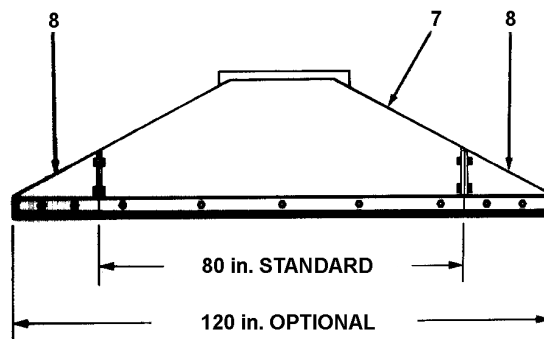
**Drawing 13**

For picking up leaves and bulky litter, the gauge wheels **4** are adjustable so that the rubber flap **5** (when applicable) on the nozzle front **6** is clear (3 - 4 inches) off the ground. The travel speed should not exceed 5 mph (8 km/h).



**Drawing 14**

For picking up loose dry grass clippings, the suction nozzle **7** can be fitted with optional nozzle extensions **8**. Under these conditions the travel speed can be increased to 8 to 12 mph (13 to 19 km/h).



**IMPORTANT:** Prior to operation of the Power Brush ensure that the hydraulic circuit, controlled by the tractor SCV (selective control valve), is suitable for continuous motor operation, otherwise overheating may occur.

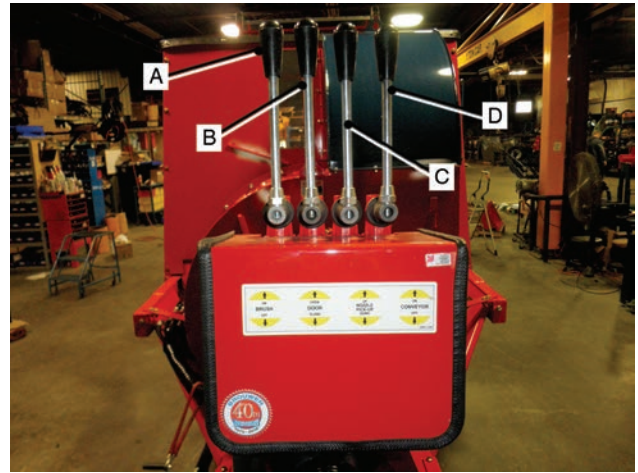
### Drawing 12A.1

To activate the Power Brush Pick-Up Head option 'A' Push the lever away. Pull lever towards you turns the Brush off.

The 'Door' option 'B' opens and closes the rear door. Pull lever towards you closes the door and Push the lever away opens the door.

The 'Nozzle' option 'C' raises and lowers the suction nozzle

The 'Conveyor' option 'D' turns the conveyor drive 'On' and 'Off'.



### Drawing 12A.2

#### Power Brush Pick-Up Head

Before adjusting the Head, level the frame by adjusting the draw hitch.

For picking up grass clippings and small litter the gauge wheels are adjusted 'IN' until the front of the housing is touching the top of the blades of grass.

For picking up leaves and bulky litter the gauge wheels are adjusted 'OUT' until the front of the housing is clear (3 - 4 inches) off the ground.

The travel speed should not exceed 5 mph (8 km/h).

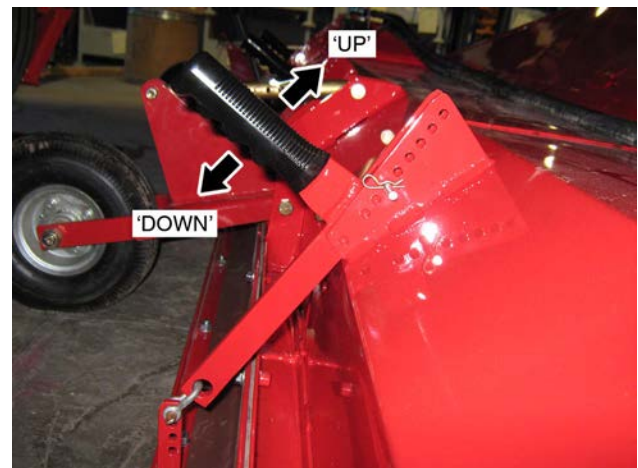


### Drawing 12A.3

#### Power Brush Pick-Up Head

It is recommended that the rear rubber flap touches the top of the blades of grass during operation. Remove the Cotter Pin and raise the Adjuster Handle to the desired hole location. Replace the Cotter pin. Repeat for the other 3 Adjuster Handle locations.

The rear rubber flap may need to be adjusted further depending upon your ground conditions and suction requirements.



## Drawing 12B.1

### Adjusting Support Wheels.

To adjust the support wheel height. Remove Bolt 'A' and move it to another hole location. Moving the bolt down will increase the height of the support wheel.

#### NOTE\*

Make sure all Bolts 'A' on the support wheels are in the same hole location.



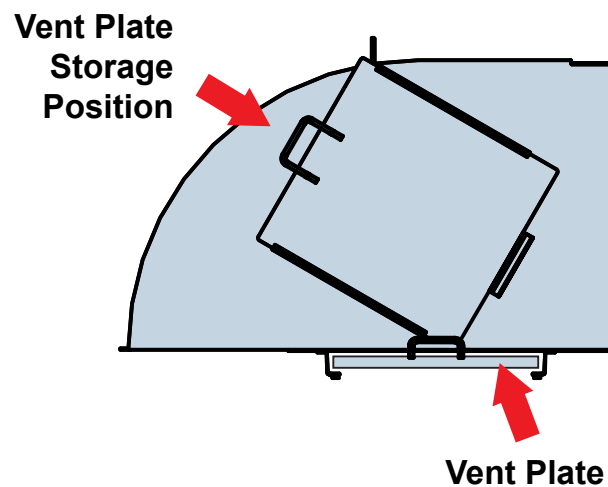
## Drawing 12B.2

### Vent Control Plate.

The Vent Plate is used to vent off excess air reducing the pressure in the Load Box.

In very dusty conditions the Vent Plate should be in storage position.

Vent control is also used to control the distribution of material in the Load Box.

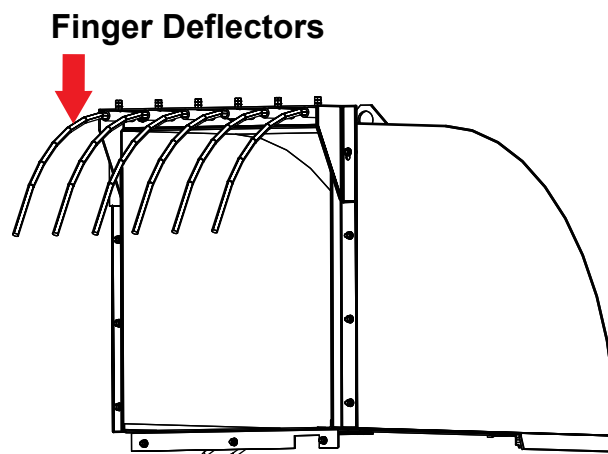


## Drawing 12B.3

### Finger Deflectors.

Finger Deflectors are used to break up the airflow and control the material distribution in the Load Box.

Depending on the type of material being picked up, the Finger Deflectors can be repositioned to best control the material distribution.





# BROUWER- VAC

## OPERATION

### ELECTRONIC CONTROLS – OPTION.

The optional Electronic Controls allow for easy convenient control of Brouwer-Vac operation.

Fig.1. The Controller can be mounted in a convenient location in the cab with mounting clip supplied, or on hook on the Vac. Plug into the accessory receptacle in the cab.

Fig.2



**CAUTION**

When attaching the exterior plug, ensure that the connection is secure.

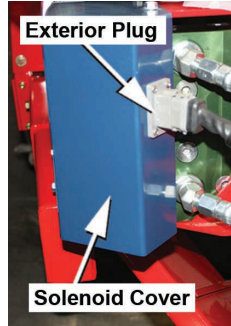


Fig.2

Fig.3

### Control Handle

1. Nozzle 'UP'. 2. Nozzle 'DOWN'.
3. Door 'OPEN'. 4. Door 'CLOSE'.
5. Conveyor 'ON-OFF'
6. Brush 'ON-OFF' (Option).

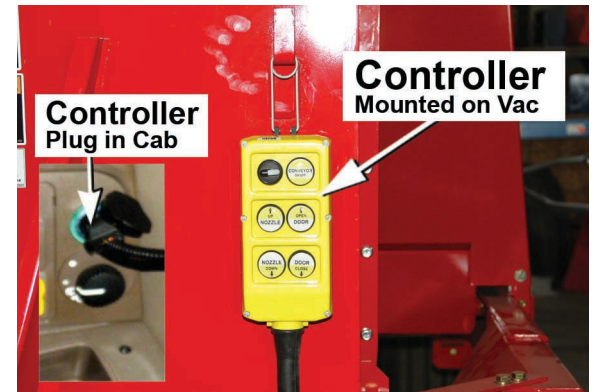


Fig.1

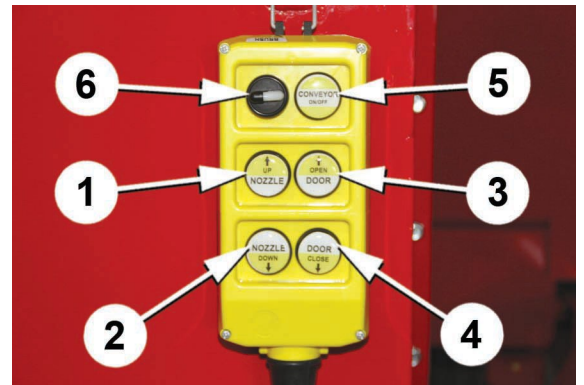


Fig.3

Fig.4

### Manifold Solenoids.

Remove Solenoid Cover (See Fig.2)

1. Brush. (Option).
2. Conveyor. 'ON'.
3. Nozzle. 'UP'.
4. Door. 'UP'.
5. Door. 'DOWN'.
6. Nozzle. 'DOWN'.

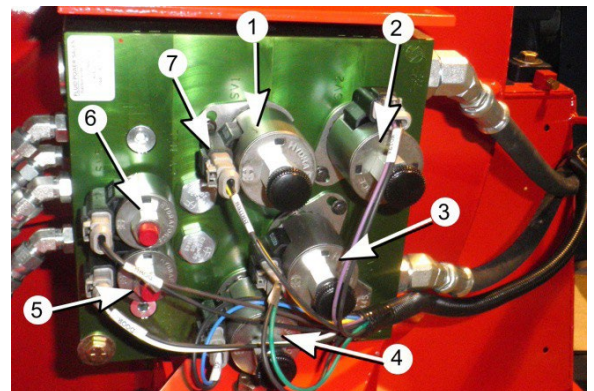


Fig.4

Fig.5

### Solenoids – Manual Over-rides.

The four over-ride buttons 'A' are activated by: Push in and hold the over-ride button.

The two over-ride buttons 'B' are activated by: Push in and Twist 180 deg. CCW and release. The valve will remain open. To return to normal position: Push in and twist 180 deg. CW and release. Over-ride will be detented in this position.

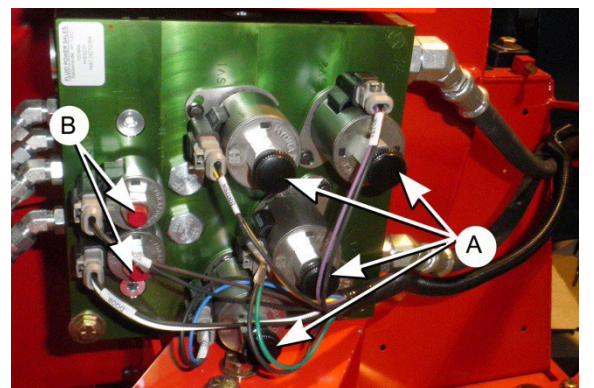


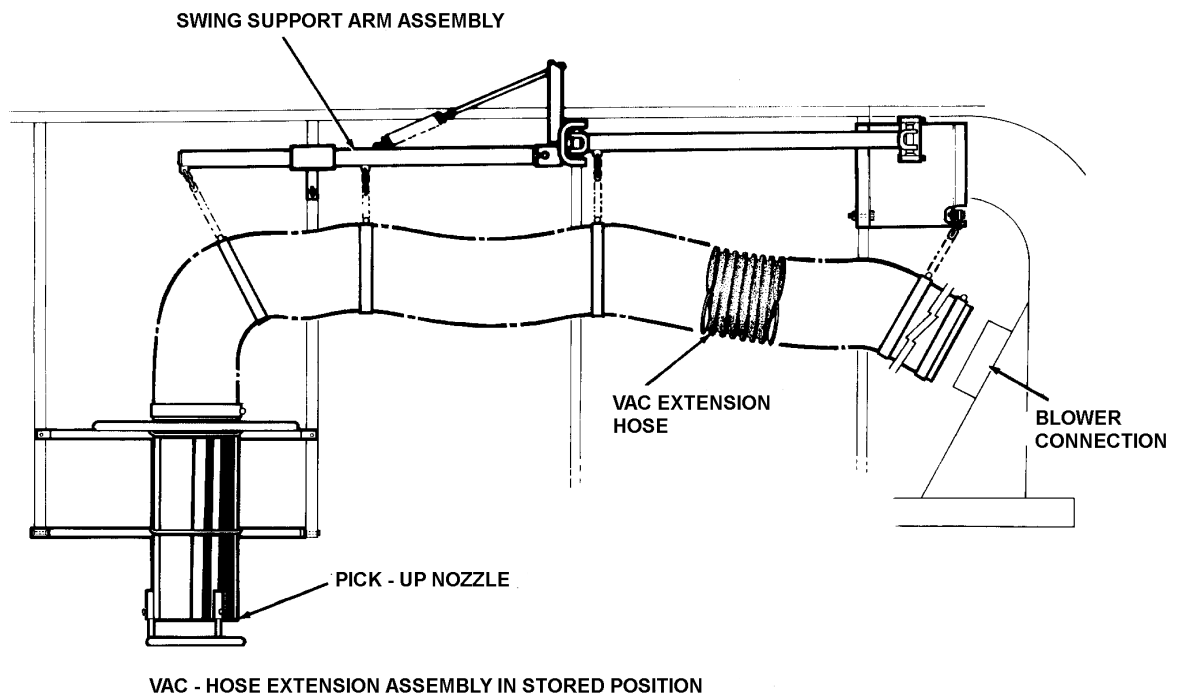
Fig.5



### SPECIAL APPLICATIONS

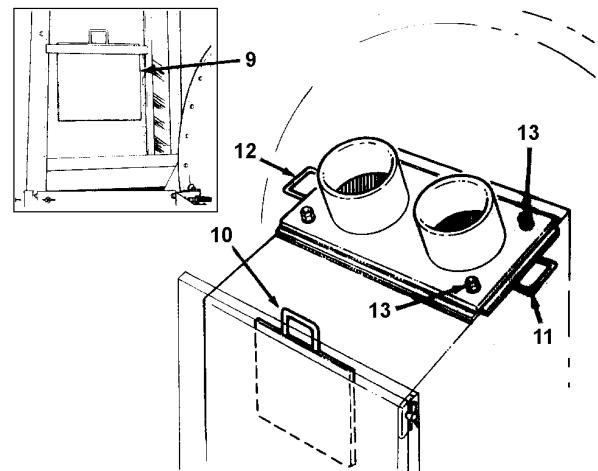
**Drawing 15**

For picking up bulky litter, debris, windrowed leaves or locations with limited access, there is available a Vac-Hose extension option. This option may be factory or field installed. It allows the pick-up of material up to 15 feet from the Vac unit. For installation details, refer to the Vac-Hose installation instructions on Pages 70 thru 73. For parts list, refer to Page 67.



**Drawing 16**

When using the Vac-Hose extension it is necessary to remove the nozzle baffle plate from its stored position **9** and place it in the nozzle as shown **10**. Either the right **11** or left hand **12** baffle plate is then removed by releasing the lock bolts **13** and placing in the storage position **9**. Remember to reverse this procedure when returning to normal operation.



## ROUTINE MAINTENANCE

To help in the safe trouble-free operation of this machine, it is important to follow the lubrication and maintenance recommendations outlined below.

### DAILY:

- » Check the tractor in accordance with the tractor manufacturer's recommendations as shown in the Operator's Manual.
- » Check the Brouwer-Vac tire pressure - 15 p.s.i. (103 kpa). Also check for damage.
- » Check hydraulic lines, hoses and connections for leaks.
- » Make a thorough visual check that all hardware, fittings, nuts, bolts, clamps, hoses, connections, tube fittings and any electrical connections are secured correctly.
- » Check that all guards and shields are correctly and securely in place.
- » Check that all controls are undamaged, clean and ready for use.
- » Clean the machine, steam or pressure spray, regularly. This helps in easier controls operation, adds to the operating life, enables troublesome leaks to be detected and contributes to safety.

Refer to the lubrication guide charts on the following pages for the location of service lubrication points.

## LUBRICATING SYMBOLS



GREASE



COOLANT



HYDRAULIC OIL



FILTERS



OIL



GREASE

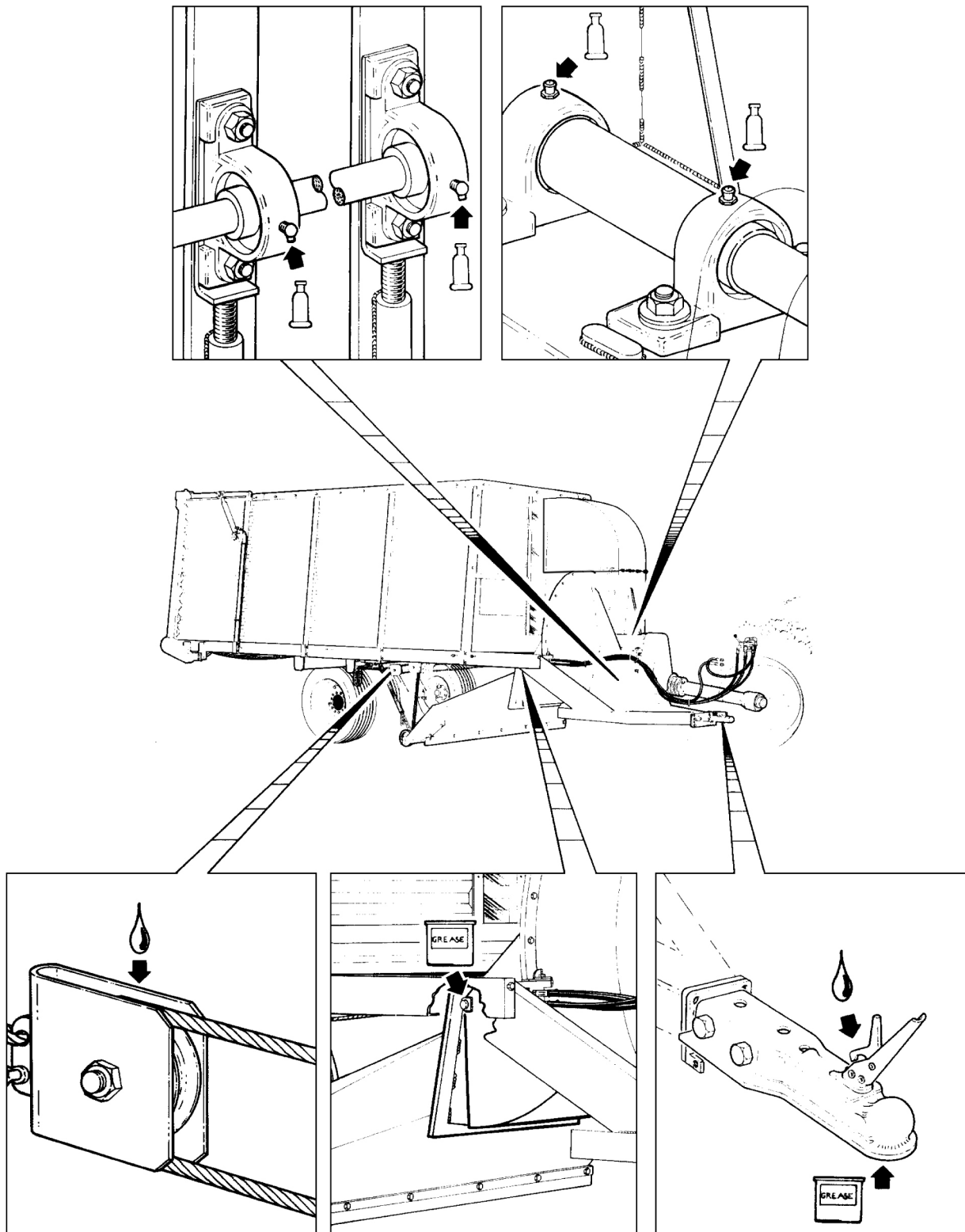


LUBRICATING OIL

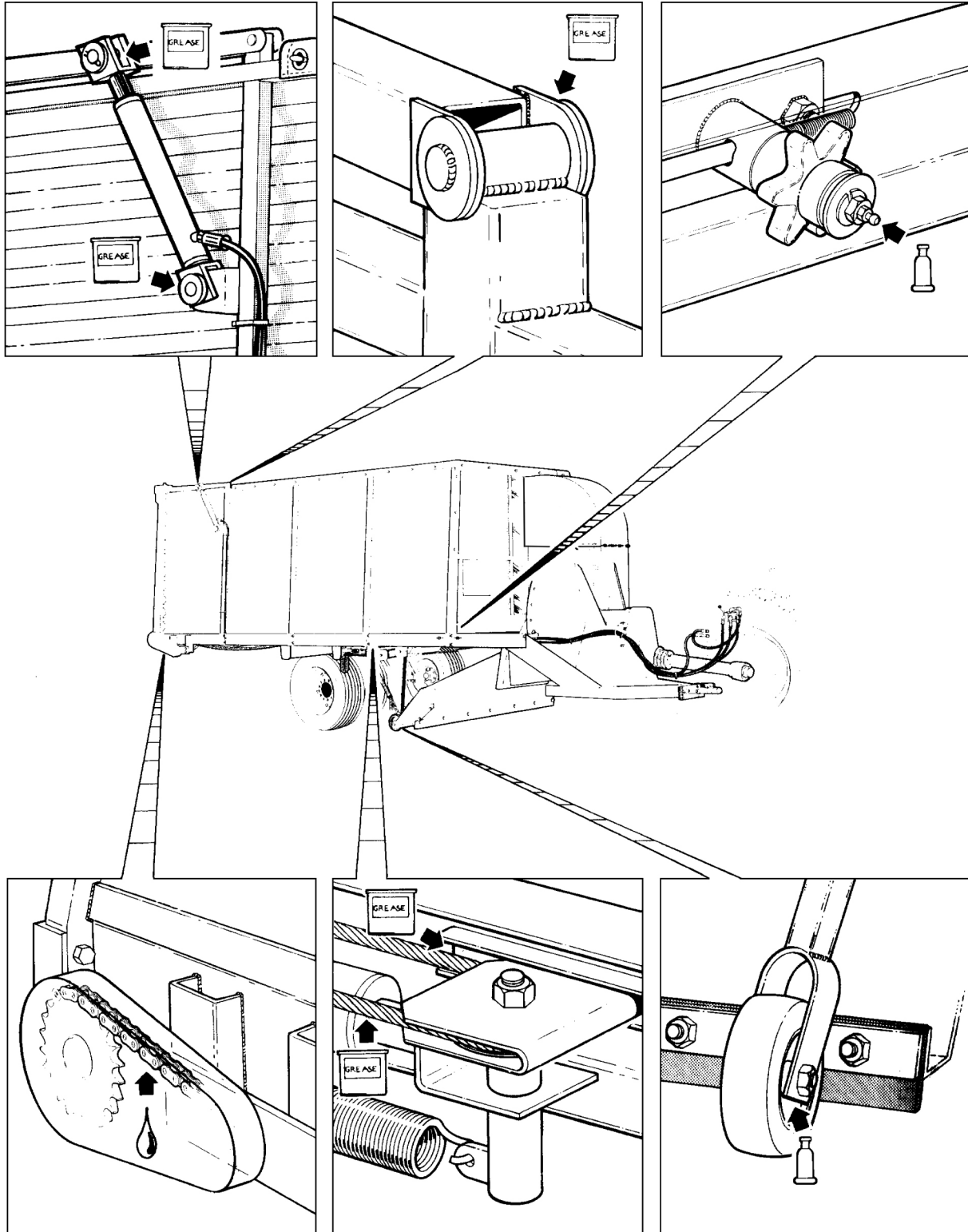


DISTILLED  
WATER

### MONTHLY LUBRICATION CHART



**MONTHLY LUBRICATION CHART**  
(continued)



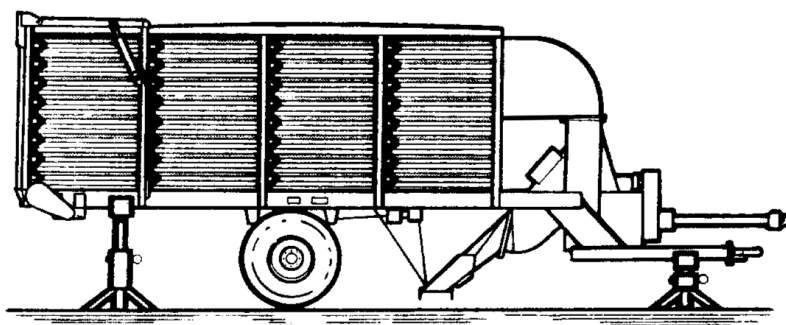
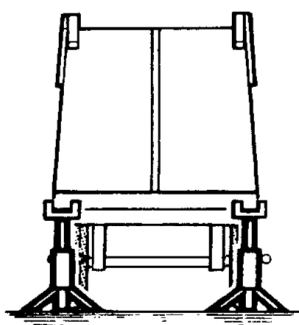
## SERVICE PROCEDURES

After prolonged use or lack of correct maintenance, it may be necessary to service and/or replace some components on this machine. Outlined below are the recommended procedures for the adjustment and/or replacement of:

MAIN DRIVE BELTS .....	PAGE 18
BROUWER FAN SUPPORT SHAFT BEARINGS .....	PAGE 19
PICK-UP NOZZLE LIFT CABLES .....	PAGE 20
CONVEYOR CHAIN .....	PAGE 20
CONVEYOR HYDRAULIC MOTOR & DRIVE CHAIN .....	PAGE 21
CONVEYOR SPROCKET BEARINGS .....	PAGE 22
CONVEYOR SPROCKET BUSHINGS .....	PAGE 22
WHEEL BEARINGS .....	PAGE 23
DIVERTOR VALVE "O" RINGS .....	PAGE 25
HYDRAULIC CYLINDER SEALS .....	PAGE 25

### **⚠ CAUTION**

**DO NOT CARRY OUT ANY SERVICE WORK ON THIS MACHINE, PARTICULARLY REMOVING A ROAD WHEEL(S), UNLESS IT IS ON A FIRM LEVEL SURFACE AND IS PROPERLY AND SECURELY SUPPORTED TO PREVENT TIPPING AND THE WHEELS ARE CHOCKED TO PREVENT ROLLING.**



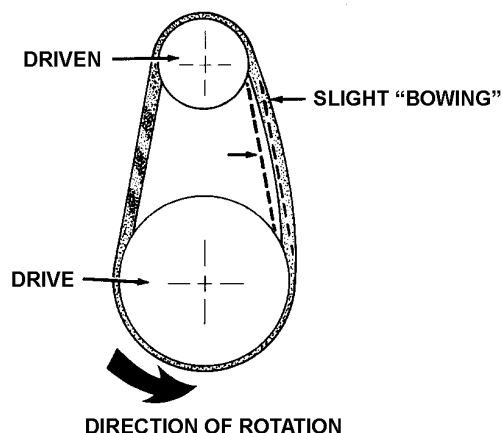


## IMPORTANT

THESE RECOMMENDATIONS AND/OR INSTRUCTIONS ARE CORRECT TO THE SPECIFICATIONS AND PRODUCTION PROCEDURES AT THE TIME OF WRITING. IT IS NOT TO BE CONSTRUED THAT THESE RECOMMENDATIONS NECESSARILY COVER ALL SPECIFICATIONS. THEY ARE FOR GUIDANCE ONLY.

## MAIN DRIVE BELTS ADJUSTMENT

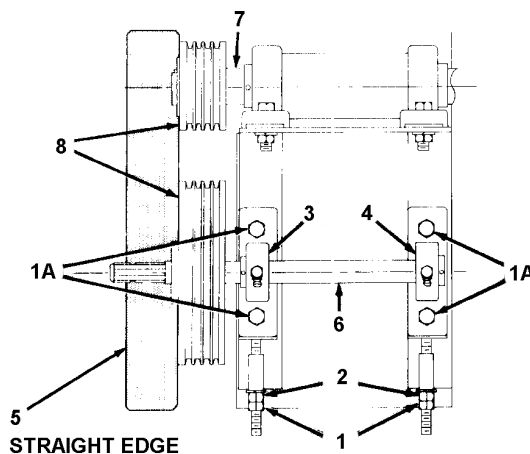
It is important that new drive belts be adjusted after the first ten hours of operation. Failure to do so will result in drive belt damage, due to slippage, as the belts bed into the grooves and lose the correct tension. A reliable visual check for the correct tension setting is to observe, with the drive belt cover removed, the drive belts under high load (starting) condition. There should be a slight "bowing" of the slack side of the drive. If the slack side remains taut during this peak load the drive is too tight. If the belts squeal at any time they are too slack. After a further few days of use the belts will seat into the sheave grooves and it may become necessary to readjust to the correct tension.



## Drawing 20

To adjust the belt tension, first slack off the locknuts **1** and the pillow block mounting bolts **1A**. Tighten the adjusting nut **2** on the front bearing **3** to increase the tension. Place a straight edge **5** across the faces of the sheaves **8** and adjust the rear bearing **4** in the same manner, checking that the sheave faces are level, so ensuring the correct parallel alignment of the sheave shafts **6** & **7**.

When removing and replacing the drive belts, slacken off the adjustment nuts sufficiently to allow the belts to be removed and replaced without having to force them over the sides of the grooves.



## IMPORTANT

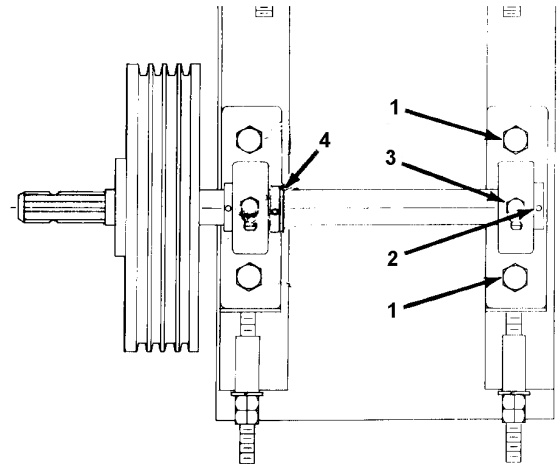
NEVER APPLY BELT DRESSING AS THIS WILL DAMAGE THE BELTS AND CAUSE EARLY FAILURE



### Drawing 21

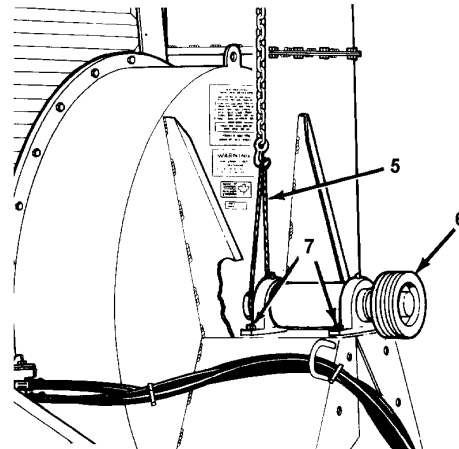
#### PILLOW BLOCK BEARING REPLACEMENT

To replace the driving sheave support shaft (lower) bearings, remove the drive belts as explained on page 18 Drawing 20. Remove the four bolts **1** and lift off the sheave, shaft and bearing assembly. Remove the socket set screws **2** from the bearings and slide the bearing assemblies off the shaft. Fit the grease fittings **3** in the new bearing assemblies and re-assemble in reverse sequence. Adjust the drive belts as shown in Drawing 20. Replace drive belt cover. To prevent the shaft from moving forward under load, a collar **4** is installed on the shaft at the back of the front bearing as shown. Tighten the screws to 9 ft/lbs.



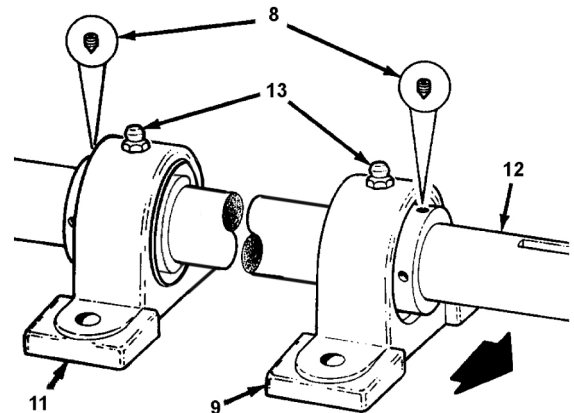
### Drawing 22

To replace the blower (driven) shaft bearings, remove the drive belts as explained in Drawing 20. Using a forklift, overhead hoist or other suitable means, support the blower shaft safely by means of a cable **5**, just sufficient to take the weight off the blower assembly. Remove the drive sheave and key **6** and release the bearing retaining bolts **7**. The shaft will tilt up slightly as the bearing mountings are released.



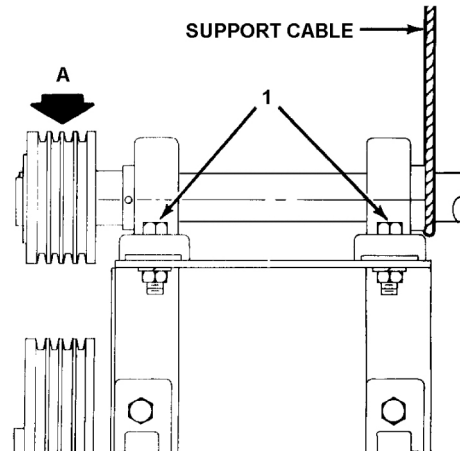
### Drawing 23

Remove socket set screws **8** locking the bearings **9** & **11** to the shaft **12**. Using a suitable soft (brass) drift tap the front bearing **9** off the shaft. Remove the rear bearing **11**. Transfer the grease fittings **13** to the new bearing assemblies and re-assemble in reverse order. Locate the rear bearing **11** on the shaft **12** by noting the position marks of the original bearing. This will help in aligning the locating bolt holes.



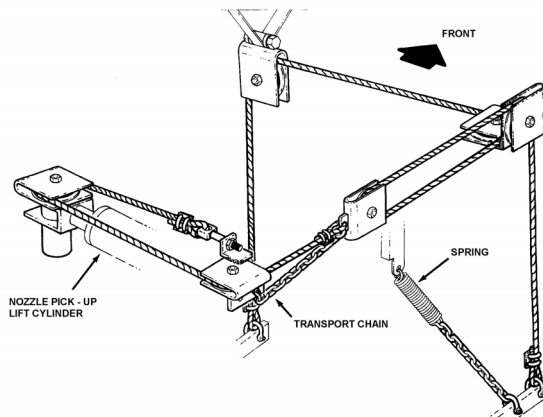
**Drawing 24**

Apply pressure downward on shaft as shown location **A**. This will tilt the shaft and blower assembly on the support cable, allowing the retaining bolts **1** to be located and secured. Replace and adjust the drive belts as explained previously in Drawing 20 and refit the drive belt and drive shaft guards.



**Drawing 25**

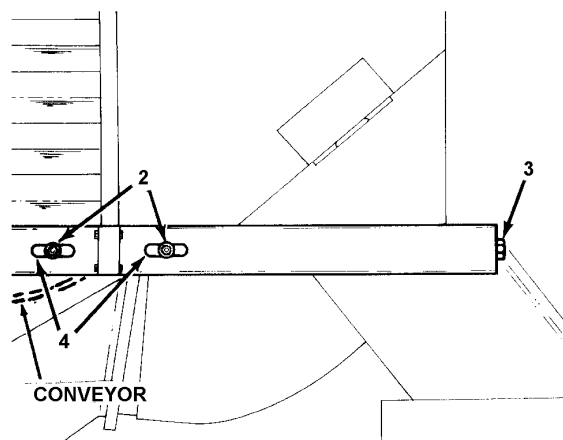
In the event the nozzle pick-up cables require replacement, refer to Drawing 25 for the correct cable run. Thoroughly clean all cable sheaves and install fresh grease on their axles.



**Drawing 26**

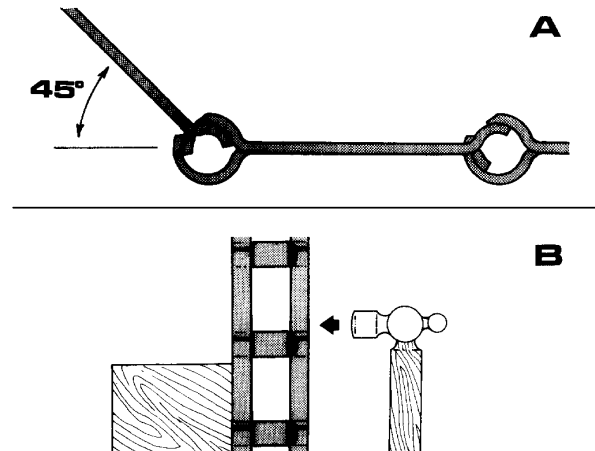
To replace a conveyor cross piece or link(s):

Position the section to be replace so that it is beneath the frame, as shown. Release the nuts **2** and back off the adjusting screw **3** allowing the conveyor idler assembly to slide to the end of the slots **4**. This is done on both sides. The conveyor will now be slack and easily accessible.



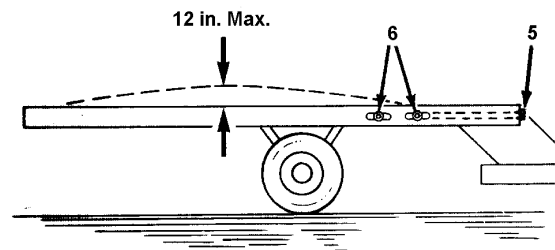
**Drawing 27**

To remove a cross-piece or link, turn the link 45 degrees as shown in Figure A, place a support block in position and tap the link sideways as in Figure B. Install new parts in reverse order to above.



**Drawing 28**

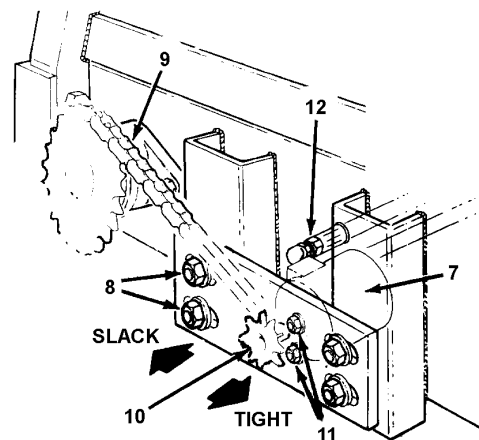
To correctly adjust the conveyor, slacken off nuts **6**. Tighten up the adjusting screw **5** on both sides until there is between ten and twelve inches (MAX) clearance between the conveyor and the load box floor at the center of the conveyor. Tighten nuts **6** on both sides.



**Drawing 29**

## CONVEYOR HYDRAULIC DRIVE

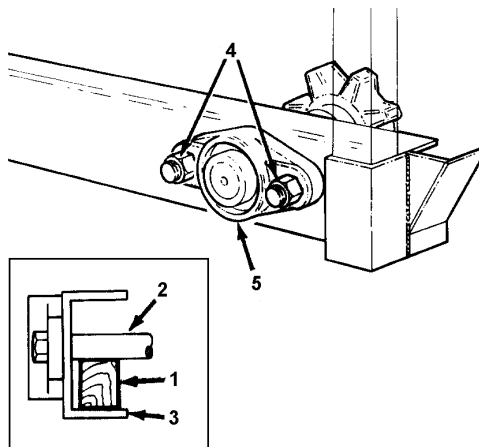
To remove the hydraulic motor **7**, remove the chain cover (not shown). Slacken off the four bolts **8** attaching the mounting plate to frame. Move mounting plate toward rear to slacken chain **9**. Take off the chain by removing split link. Loosen the socket set screws in drive sprocket **10** and remove the sprocket from motor shaft. Remove the pressure and return hoses **12**. Remove the four motor mounting bolts **11**. Re-assemble in reverse order. Adjust drive chain to allow 1/4 to 3/8 inches slack between sprocket centers.



## Drawing 30

### CONVEYOR BEARING L.H.

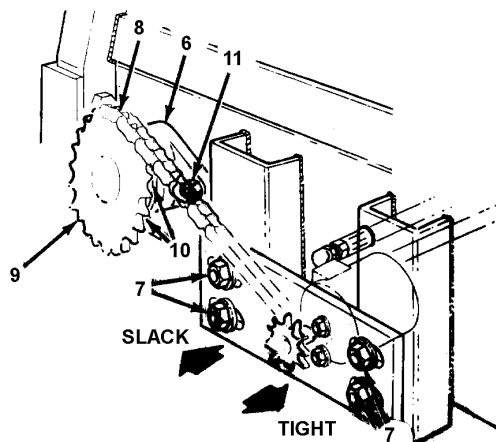
To remove the rear L.H. conveyor bearing, place a suitable support **1** between the conveyor shaft **2** and the frame rail **3**. Remove the two hex bolts **4** and slide bearing **5** off the shaft. If extra slack is required in the conveyor to allow for installation and alignment of bearing, slacken and re-adjust the conveyor as shown in Drawings 26 & 28 on previous page.



## Drawing 31

### CONVEYOR BEARING R.H.

To remove the rear R.H. bearing **6**, remove the chain cover (not shown). Slacken off the four bolts **7** attaching motor adjusting plate to frame. Move motor and plate toward rear to slacken chain **8**. Take off chain by removing split link. Slacken the four hex bolts **10**, retaining sprockets **9** on split taper hub, and remove sprocket **9**. Remove the two hex bolts **11** and lift off bearing assembly **6**. Re-assemble in reverse order. Adjust drive chain to allow 1/4 to 3/8 inches slack between sprocket centers.

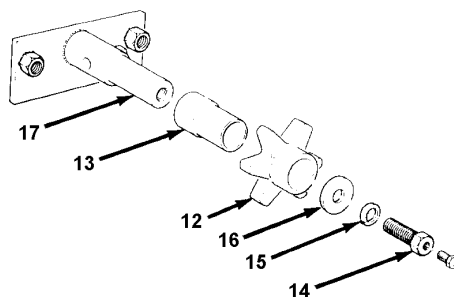


**NOTE:** Position support as shown in Drawing 30 to prevent shaft from dropping.

## Drawing 32

### R.H. & L.H. SPROCKET ASSEMBLIES

Each front conveyor sprocket **12** rotates on a special bushing **13**. To replace this bushing, first slacken off the conveyor as shown in Drawing 26. Remove the hollow bolt **14**, lockwasher **15** and flatwasher **16**. Pull the sprocket and bushing off the shaft **17** and clear of the conveyor. Re-assemble in reverse order. Re-adjust the conveyor as shown in Drawing 28.

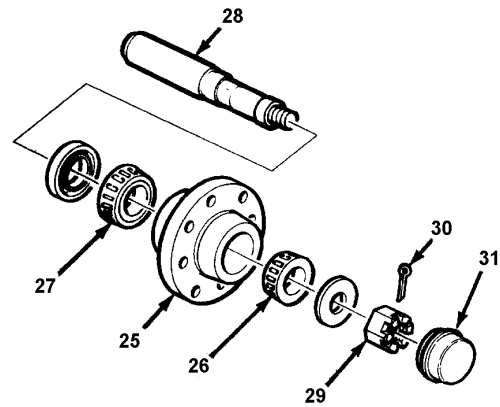


### Drawing 33

#### ROAD WHEEL BEARINGS

Every 12 months or 800 hours.

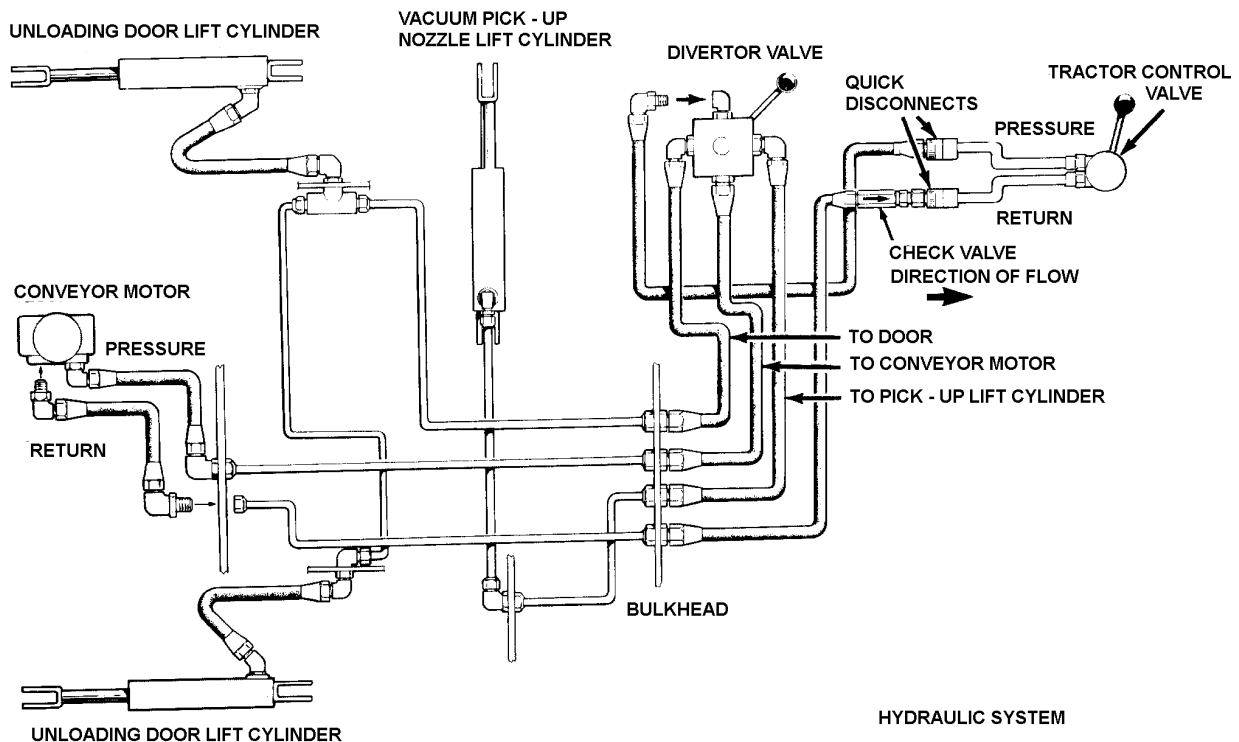
Remove the hub assembly **25**. Remove the bearing cones **26 & 27**. Clean the hub and bearings. Examine for damage or excessive wear, replace if necessary. Repack with bearing grease. Do not overfill hub cavity. Re-assemble on shaft **28**. Rotate the hub while slowly tightening the nut. The wheel should rotate with no drag and no rock (free play). Fit new split pin **30**. Replace dust cover **31**.



## HYDRAULIC SYSTEM STANDARD NOZZLE

**Drawing 35**

The Vac hydraulic system is operated by connecting into the tractor hydraulics via quick disconnect plugs. The hydraulic functions ie. unloading door, conveyor motor, pick-up nozzle cylinder, are selected by operating a divertor/selector valve. Note that this valve is a SELECTOR valve. The tractor Hydraulic Remote Valve controls the operation of these functions.



### IMPORTANT

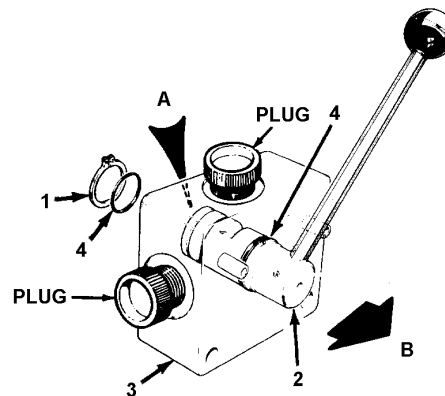
#### WORK CLEAN

**BEFORE SERVICING THE HYDRAULIC SYSTEM, THOROUGHLY CLEAN THE AREA AND COMPONENTS TO BE WORKED ON. IT IS IMPERATIVE THAT ANY FOREIGN SUBSTANCE NOT BE ALLOWED TO COMTAMINATE THE HYDRAULIC SYSTEM. ALWAYS PLUG OPEN PORTS AND CAP OPEN HOSE AND TUBE FITTINGS**

### Drawing 36

#### DIVERTOR/SELECTOR VALVE - STANDARD NOZZLE

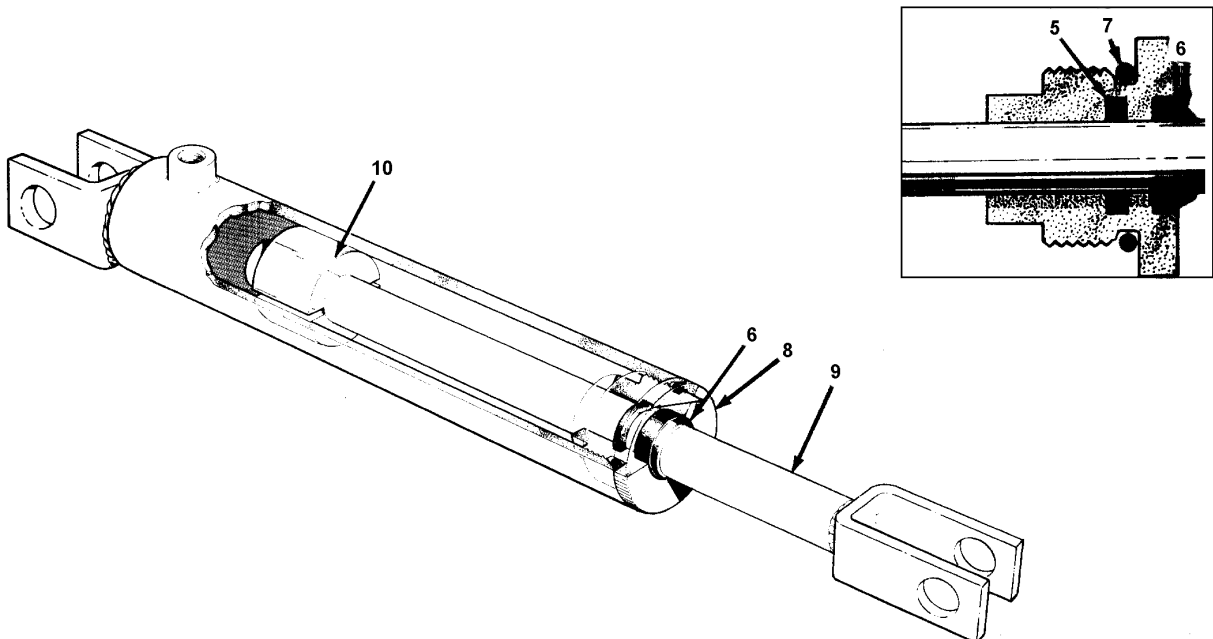
Should the valve leak oil from the spool, replace the "O" rings. Remove all hose fittings. Plug the ports. Remove the mounting bracket (not shown). Thoroughly clean paint and dirt from the area at the back of valve as indicated by arrow "A". Remove external circlip 1 and remove spool 2 in direction of arrow "B". Fit new "O" rings 4. Lubricate the "O" rings with hydraulic oil and carefully insert the spool assembly 2 into the valve body 3. Refit circlip 1 into groove on end of spool.



### Drawing 37

The hydraulic cylinders operating the unloading door and the pick-up nozzle are the same for the standard nozzle.

A seal kit of: gland "O" ring 7, rod wiper 6, and rod seal 5 is available. To service cylinder remove it from the machine. Cap the hose and plug the port. Thoroughly clean the cylinder body. Unscrew the gland nut 8 and remove the rod assembly 9, taking care not to drop the piston assembly 10. Slide the gland assembly off the rod. Replace the "O" ring 7, seal 5 and wiper 6. Lubricate the gland assembly and new seals with hydraulic oil and carefully slide back on to piston rod 9. Position the piston assembly 10 on the rod and carefully insert into cylinder. Tighten gland assembly 8.

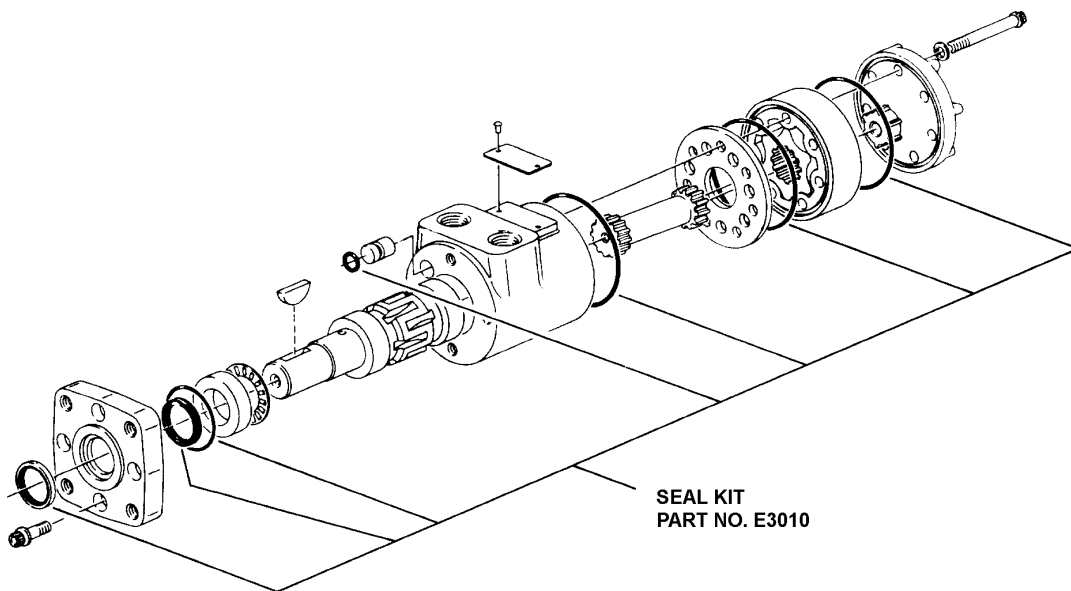


## Drawing 38

Due to the close tolerances involved and the complexity of hydraulic components, and also the special tools and equipment needed to service them, it is important that only qualified personnel with the right tools should work on these items.

The motor should only be serviced to the extent that the seals be replaced as illustrated below. Any motor requiring replacement parts should be serviced by a manufacturer's recognised service agent.

Refer to Drawing 29 for motor removal procedure.



CONVEYOR DRIVE MOTOR

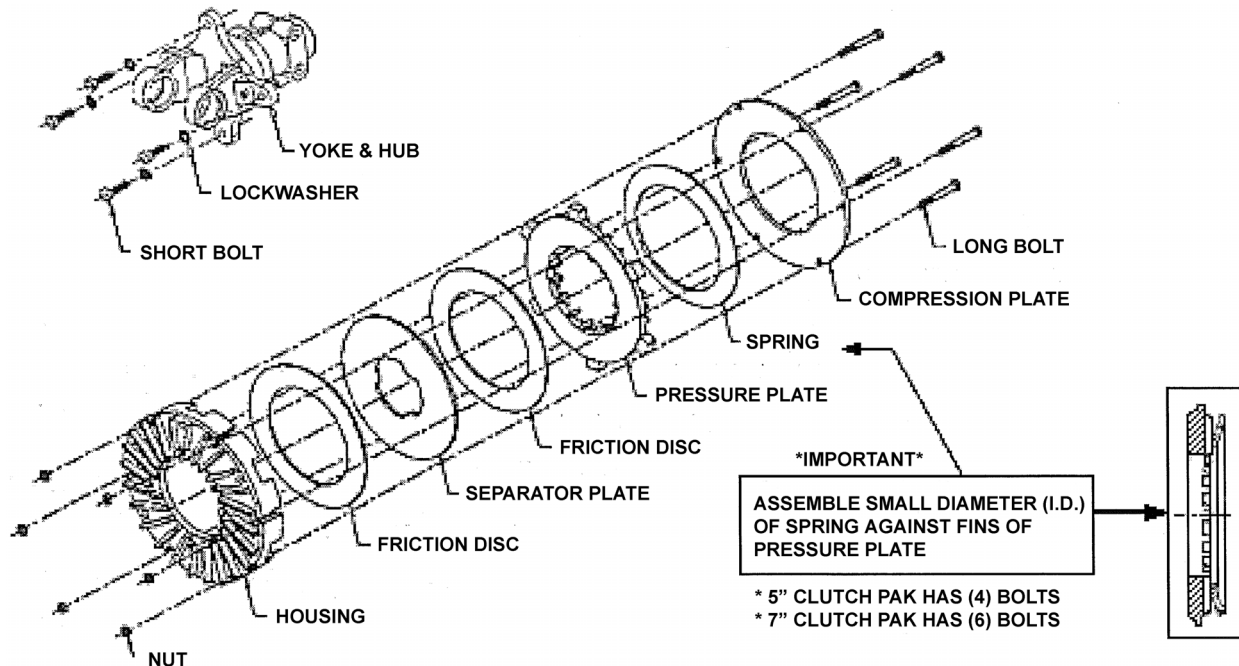
## IMPORTANT

**ANY FOREIGN PARTICLES OR SUBSTANCE ALLOWED TO CONTAMINATE THE HYDRAULIC SYSTEM WILL RESULT IN RAPID WEAR AND PREMATURE FAILURE OF THE SYSTEM COMPONENTS.**

**THIS MAY INVALIDATE ANY WARRANTY CLAIM.**



## RUN-IN INSTRUCTIONS FOR THE WEASLER MODULAR FRICTION CLUTCH (SN 1084 & UP)

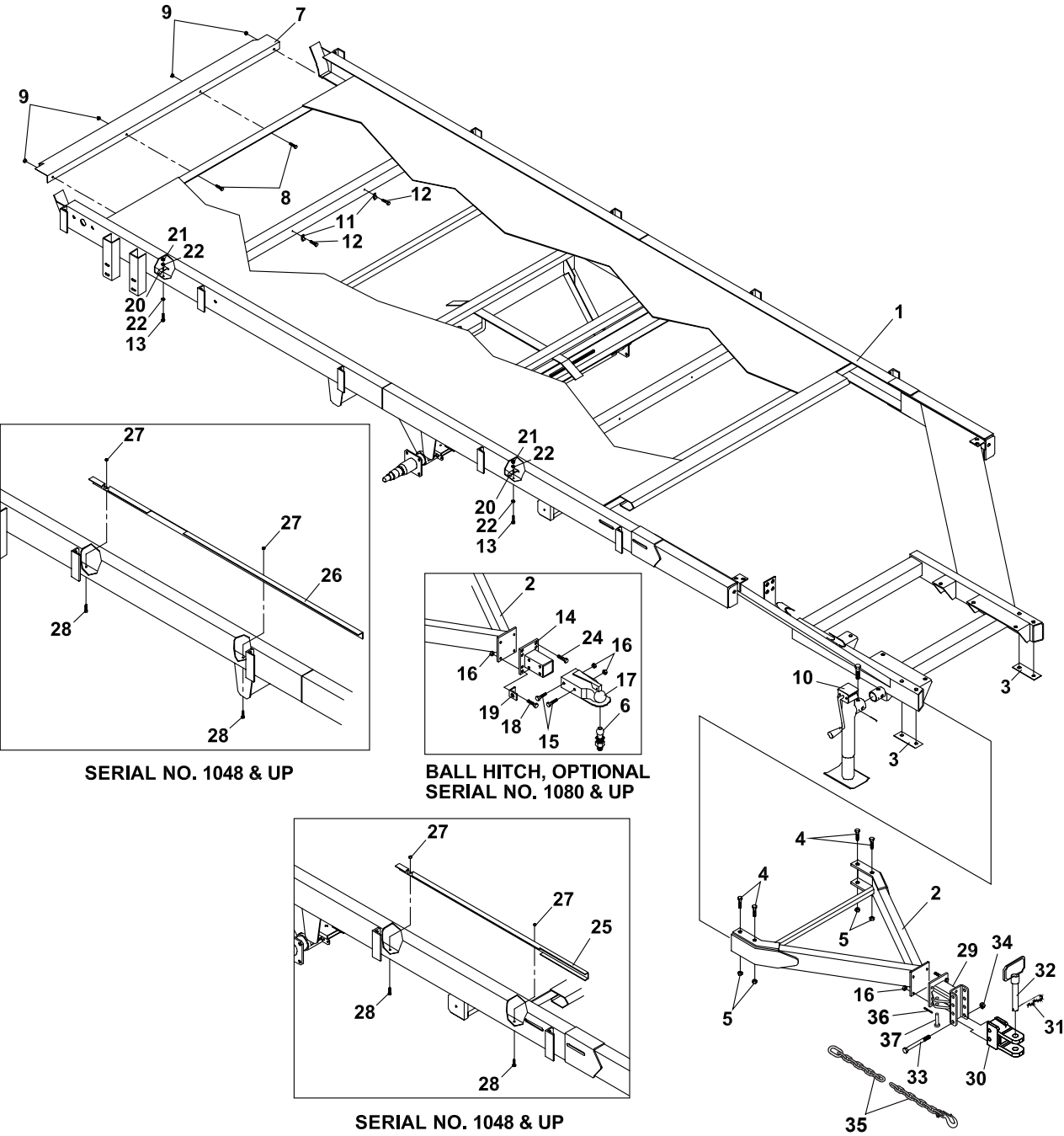


**NOTE:** Run-in is necessary for all new clutches and any clutch which has not been used for approximately 60 days.

**TOOLS REQUIRED:** (1) 1/2" Box wrench or socket

1. Make sure the tractor is off and the PTO is disengaged.
2. Disconnect the driveline from the tractor.
3. Loosen the bolts on the outside diameter of the clutch until all bolts are just loose, then tighten all bolts one half turn.
4. Attach the implement to the tractor and the driveline to the tractor PTO. Stand clear of the machine.
5. Turn the tractor on. Engage the PTO clutch and run for a few seconds, or until the clutch visibly smokes.
6. Disengage the tractor PTO and shut off the tractor.
7. Disconnect the driveline from the tractor.
8. Tighten all the bolts on the outside diameter of the clutch pak. If there are (4) bolts on the O.D. (5" clutch pak), make sure there is a 3/8" gap between the pressure plate tab and the compression plate. If there are (6) bolts on the O.D. (7" clutch pak), tighten the bolts until the compression plate is in full contact with the housing.
9. If there is an integral overrunning clutch, make sure the clutch turns freely in one direction.

FIGURE 1



# BROUWER- VAC

## DRAWBAR & FLOOR

FIGURE 1

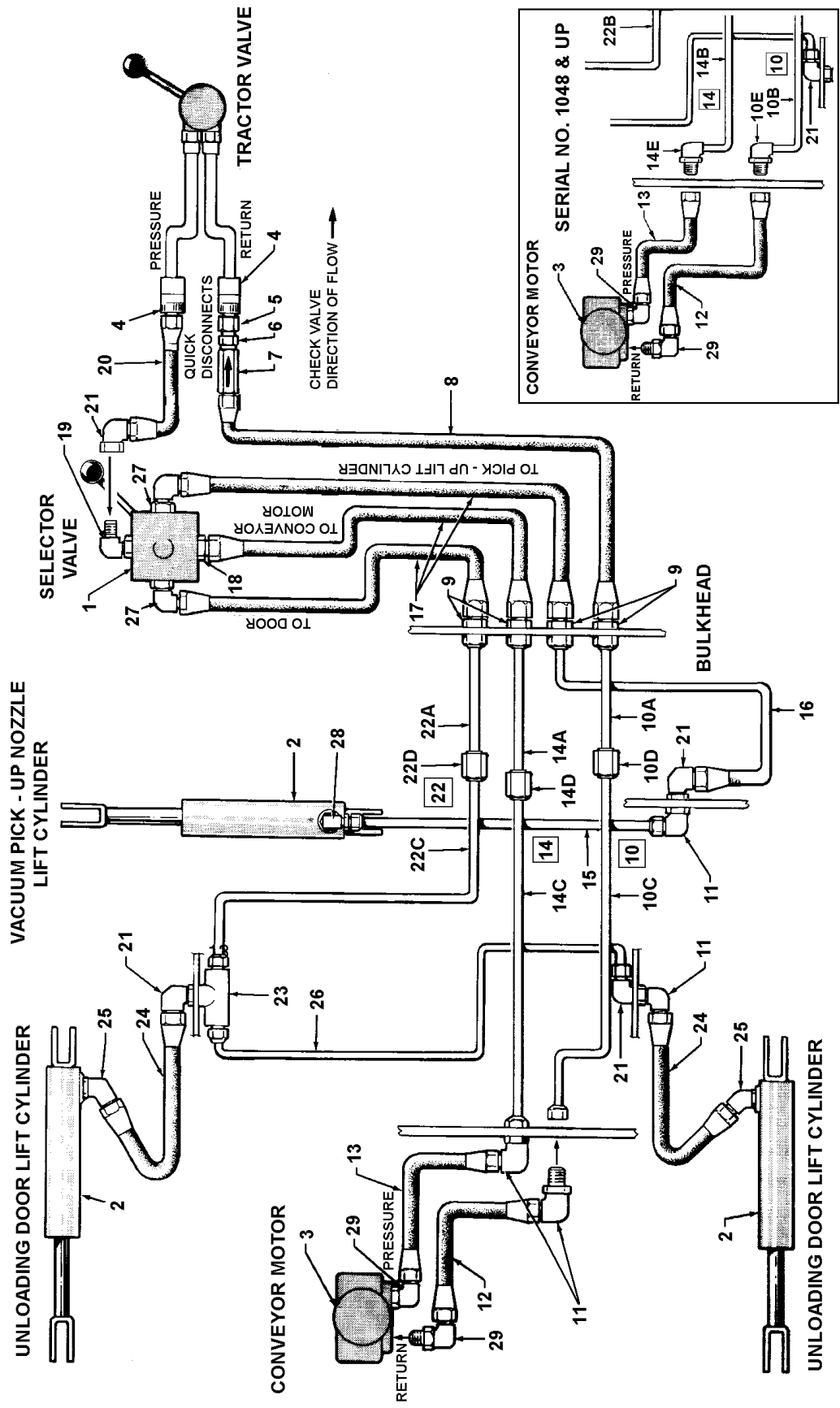
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1-1	502546	DRAWBAR & FLOOR W/A	1	1-30	505412	ADJUSTABLE CLEVIS HITCH (SN 1627 - )W/CHAMFERS - <b>CURRENT</b>	1
1-2	502538	DRAWBAR FRONT W/A	1		KW50012	HITCH ADJUSTABLE CLEVIS 1.00 IN. - <b>NON CURRENT</b>	
1-3	5502545	SHIM	2		5106501	CLEVIS, HITCH (DRILLED) - <b>NON CURRENT</b>	
1-4	90-1048	BOLT-5/8 X 6	4				
1-5	64229-06	LOCKNUT-NYL 5/8-11	4	1-31	02-PP0524	PRESTO PIN (SN 1080 - )	1
1-6	M5189	HITCH-2" BALL (CLASS 3)	1				
1-7	502166	COVER-REAR SHAFT	1	1-32	G2040	PIN-HITCH (SN 1080 - )	1
1-8	64139-21	BLT-WLF 3/8-16X3/4	4				
1-9	64141-4	NUT-WLF 3/8-16	4	1-33	64123-206	BLT-HEX 5/8-11X4-1/2 (SN 1080 - )	2
1-10	M5084	JACK-TUBULAR SD MNT	1				
1-11	G8062	CLAMP-HALF 3/8 INSUL	4	1-34	64229-06	LOCKNUT, NYLON 5/8-11 (SN 1080 - )	2
1-12	99-C0404	SCREW-SLF TAP 1/4X1/2	4				
1-13	64123-61	BLT-5/16-18 X 1-3/4 (SN 1001 - 1047)	2	1-35	502198	TRANSPORT CHAIN	1
				1-36	90-0832	CLEVIS PIN 5/8 X 2 1/4	1
1-14 *	502198	HITCH-VAC	1	1-37	F910208	COTTER PIN 1/8 X 1 LG.	1
1-15 *	90-0832	BOLT, 1/2-13 X 4	2				
1-16	64229-05	LOCKNUT, 1/2-13 NYLON (SN 1080 - )	4				
	* 64229-05	LOCKNUT, 1/2-13 NYLON	6				
1-17 *	M5171	HITCH COUPLER-2" BALL	1				
1-18 *	90-0814	BOLT-1/2 X 1-3/4	2				
1-19 *	101630	ROAD HITCH SAFETY BRKT	2				
1-20	11-036	CLAMP-PR DBL 3/8 TUBE (SN 1001 - 1047)	10				
1-21	64229-02	LOCKNUT-NYLON 5/16-18	6				
1-22	64163-04	25/64X5/8X16GA WASHER	12				
1-23	90-0522	BOLT-5/16-18 X 2-3/4 (SN 1001 - 1047)	4				
1-24 *	90-0812	S/B BOLT, 1/2-13X1 1/2	2				
1-25	503299	SHIELD, HOSE (FRONT) (SN 1048 - )	1				
1-26	503300	SHIELD, HOSE (REAR) (SN 1049 - )	1				
1-27	64141-2	NUT-WLF 1/4-20 (SN 1048 - )	4				
1-28	64139-04	BOLT-WLF 1/4-20X3/4 (SN 1048 - )	4				
1-29	5503309	CLEVIS MNT PLATE W/A (SN 1080 - )	1				

\* **FOR BALL HITCH, SERIAL NO. 1001 - 1079, ORDER PART NO. A52025**

**STARTING SERIAL NO. 1080, CLEVIS HITCH WILL BE STANDARD EQUIPMENT, BALL HITCH OPTIONAL**

FIGURE 2

BROUWER-  
VAC



# BROUWER- VAC

## HYDRAULIC SYSTEM

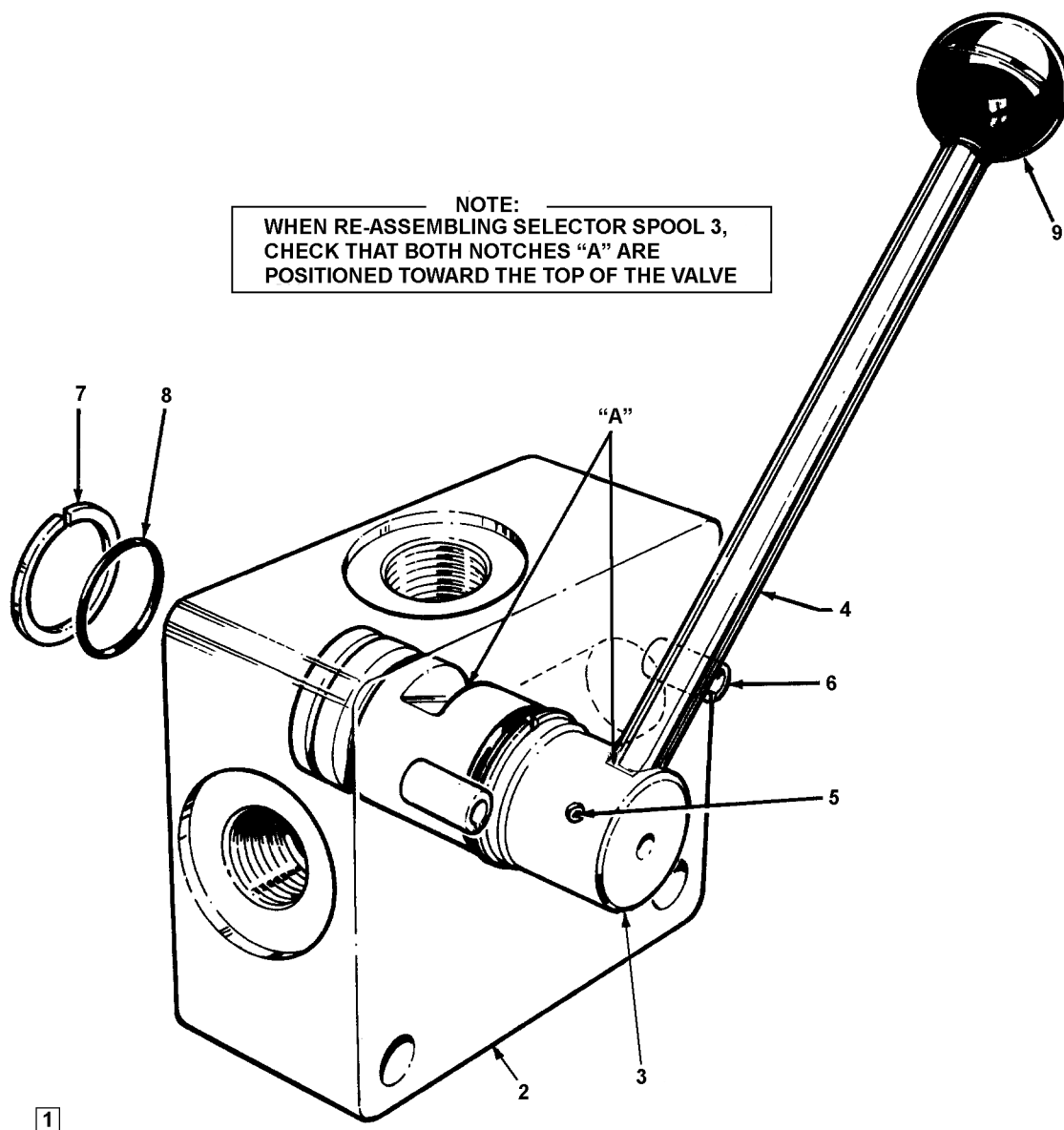
FIGURE 2

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
2-1	A52034	VALVE-SELECTOR	1	2-14D	H6065	UNION-3/8 SM HEX (SN 1001 - 1047)	1
2-2	502262	CYL-HYD. 1-1/2 X 8 S.A.	3				
2-3	H0012	MOTOR-HYD	1	2-14E	25-3903-6-6	FITTING-90 (SN 1048 - )	1
	E3039	SEAL KIT	1				
2-4	H1801	QUICK COUPLER, MALE	2	2-15	502357	TUBE-HYD NZL DWNSTRM	1
2-5	H2002	1/2 NPT 3/8 NPT RED BUSH	1	2-16	502315	TUBE-HYD NZL BV-85 (SN 1001 - 1047)	1
2-6	H1009	CLOSE NIPPLE- 3/8 NPT	1		503301	HSE-HYD NZL BV-85 (SN 1048 - )	1
2-7	H4016	CHECK VALVE, 3/8 FPT	1				
2-8	A52037	BULK HD-DISCONCT HOSE	1	2-17	A52036	HOSE, 3/8 X 114"	3
2-9	H6066	FITTING, STR BULKHEAD	4	2-18	H6029	FITTING-STR	1
2-10	A52109	KIT-HYD MTR-RET HSE (SN 1001 - 1047)	1	2-19	25-2503-8-6	FITTING-90 DEG	1
	A52116	KIT-HYD MTR-RET HSE (SN 1048 - )	1	2-20	A52018	HOSE, 3/8 X 31"	1
2-10A	5503251	TUBE-HYD MTR-RET HSE (SN 1001 - 1047)	1	2-21	25-3903-6-6	FITTING 90 DEG	4
2-10B	5503304	HOSE-HYD MTR-RET (SN 1048 - )	1	2-22	A52018	HOSE, 3/8 X 31" (SN 1001 - 1047)	1
					A52114	KIT-HYD DOOR HOSE (SN 1048 - )	1
2-10C	503253	TUBE-HYD MTR-RET (SN 1001 - 1047)	1	2-22A	5503252	TUBE-HYD DOOR (FRONT) (SN 1001 - 1047)	1
2-10D	H6065	UNION-3/8 SM HEX (SN 1001 - 1047)	1	2-22B	503302	HSE-HYD DOOR BV-85 (SN 1048 - )	1
2-10E	25-3903-6-6	FITTING-90 (SN 1048 - )	1	2-22C	503254	TUBE-HYD DOOR (REAR) (SN 1001 - 1047)	1
2-11	H6063	FITTING, 90 BULKHEAD (SN 1001 - 1047)	4	2-22D	H6065	UNION-3/8 SM HEX (SN 1001 - 1047)	1
	H6063	FITTING, 90 BULKHEAD (SN 1048 - )	2				
2-12	A52030	HOSE, 3/8 X 22"	1	2-23	H6064	FITTING-TEE	1
2-13	A52029	HOSE, 3/8 X 20"	1	2-24	A52022	HOSE, 3/8 X 48"	2
2-14	A52107	KIT-HYD PRESSURE-RET (SN 1001 - 1047)	1	2-25	H1054	FITTING, 45	2
	A52115	KIT-HYD PRESSURE-RET (SN 1048 - )	1	2-26	502313	TUBE-HYD LFT CYL BV-85	1
				2-27	A52028	ASSY, MALE ELBOW	2
2-14A	503250	TUBE-HYD PRESSURE-MTR (SN 1001 - 1047)	1	2-28	25-2103-6-6	FITTING-90 DEG	1
2-14B	503303	HSE-HYD PRESSURE-RET (SN 1048 - )	1	2-29	25-2103-8-6	FITTING-90 DEG	2
2-14C	503253	TUBE-HYD MTR (REAR) (SN 1001 - 1047)	1				

# SELECTOR VALVE

**BROUWER-  
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**FIGURE 3**



# BROUWER- VAC

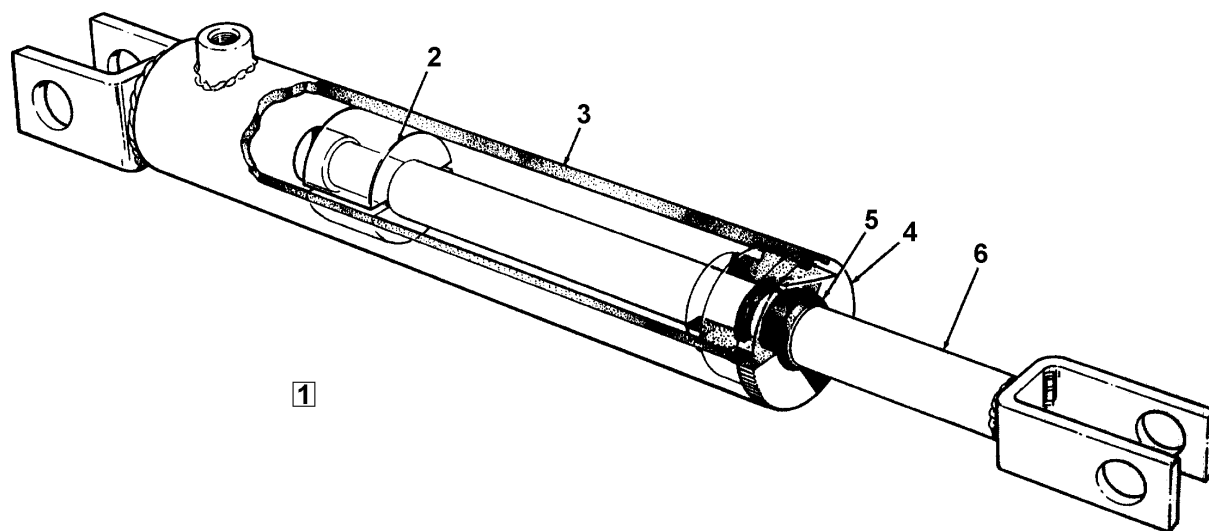
## SELECTOR VALVE

FIGURE 3

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
3-1	A52034	VALVE-SELECTOR	1				
3-2	502427	BODY-SELECTOR VALVE	1				
3-3	502426	SPOOL-SELECTOR	1				
3-4	502428	HANDLE-SELECTOR VALVE	1				
3-5	G2302	PIN-SPRING 1/8" X 3/4"	1				
3-6	G2324	PIN-SPIROL SPRNG: 5/16X1	2				
3-7	G1504	RETAINING RING-7/8 DIA.	2				
3-8	E0050	O-RING-11/16 ID X 7/8 OD	2				
3-9	M5053	KNOB-RND W/ 3/8 UNC HLE	1				

**FIGURE 4**

### FIGURE 4





# BROUWER- VAC

## HYDRAULIC CYLINDER

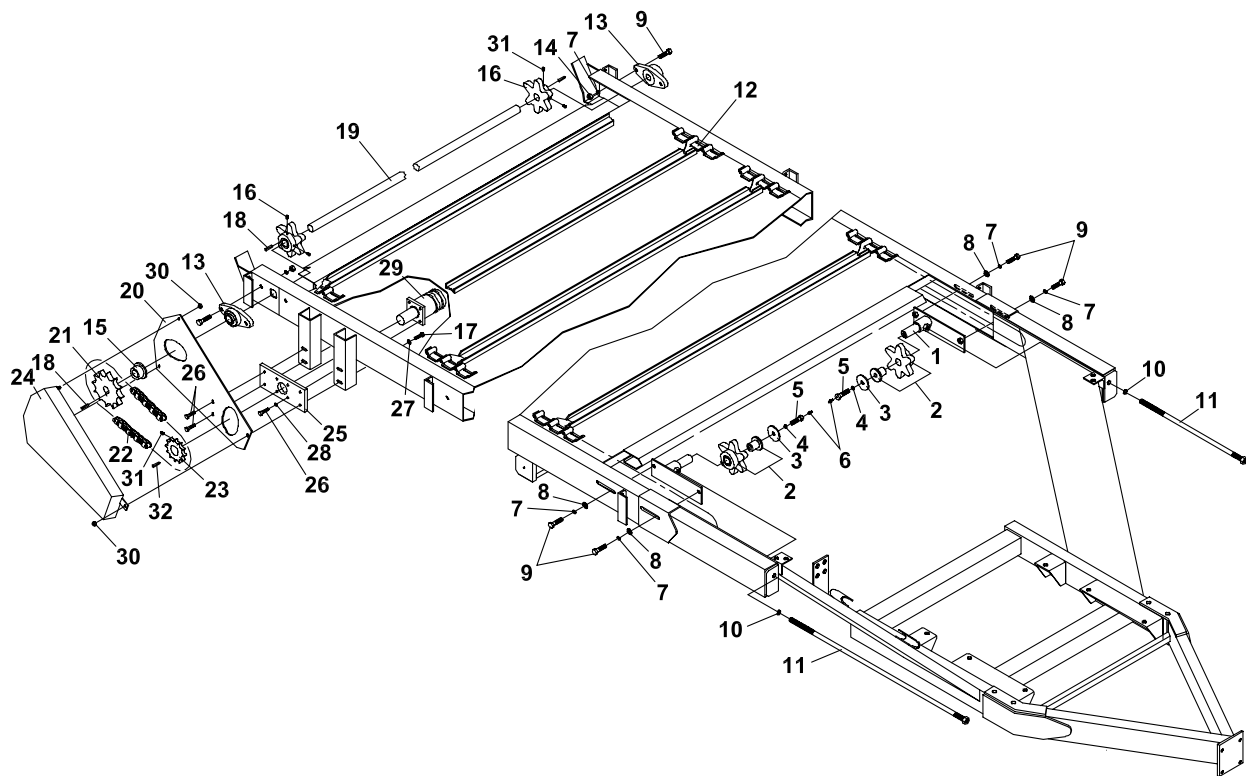
FIGURE 4

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
4-1	502262	CYLINDER, HYD. 1-1/2 X 8	1				
4-2	H9070	PISTON ASSY	1				
4-3	H9071	TUBE ASSY	1				
4-4	H9072	GLAND ASSY	1				
4-5	E3025	SEAL KIT	1				
4-6	H9073	ROD ASSY	1				

CONVEYOR DRIVE MOTOR ASSEMBLY

FIGURE 5

BROUWER-  
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# BROUWER- VAC

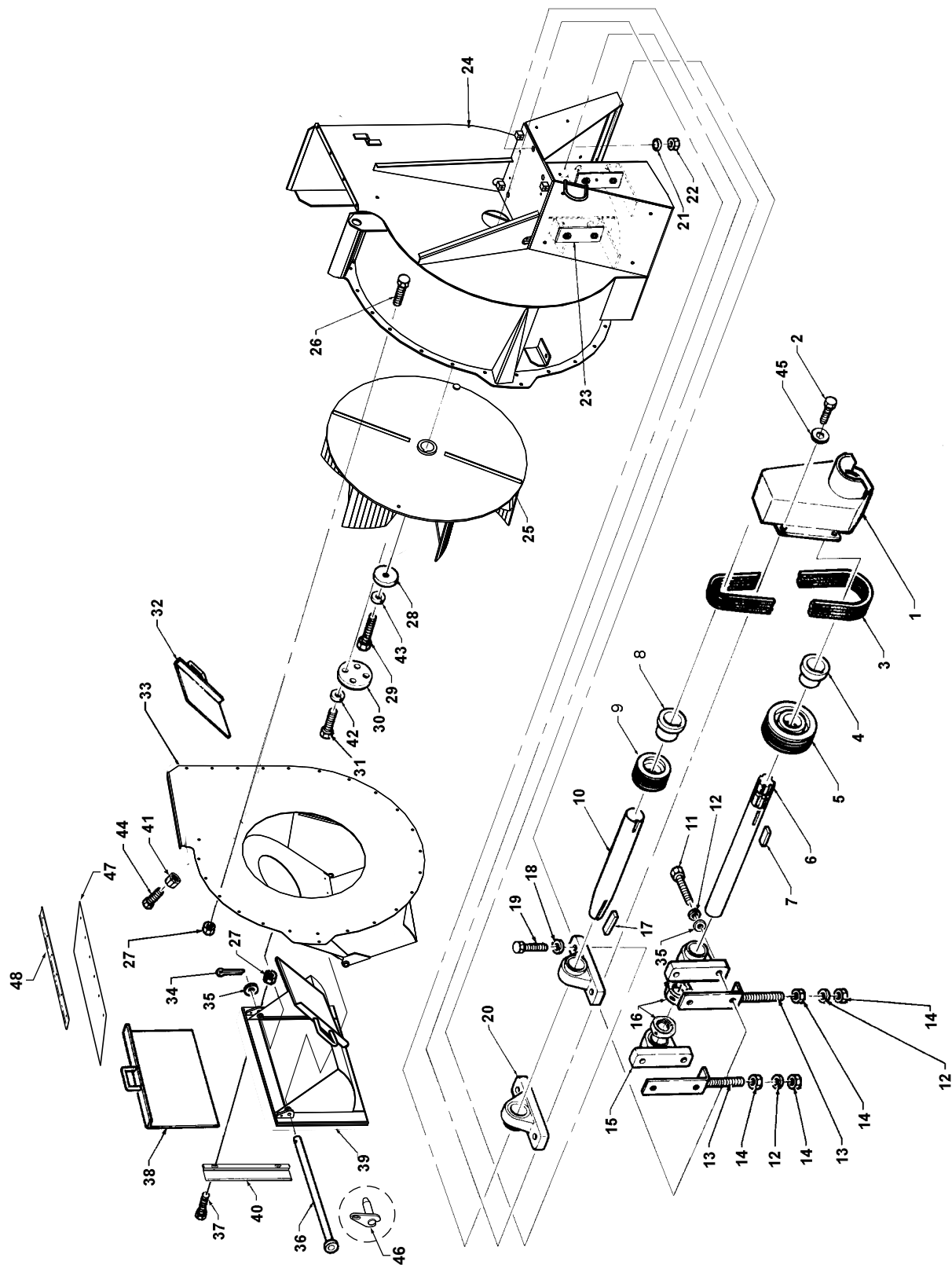
## CONVEYOR DRIVE MOTOR ASSEMBLY

FIGURE 5

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
5-1	502111	SPROCKET-LH FRT ASSY	1				
	502121	SPROCKET-RH FRT ASSY	1				
5-2	A52090	ASSY-SPROCKET & BUSH	2				
	502125	SPROCKET-FRONT	1				
	502123	BUSHING-FRT SPROCKET	1				
5-3	94-10	FLAT WASHER-5/8	2				
5-4	64006-04	LOCKWSHR-HELICAL 5/8	2				
5-5	502128	BOLT, FRONT SPROCKET	2				
5-6	29-010	GREASE FITTING-1/4	2				
5-7	64006-05	LOCKWSHR-HELICAL 1/2	8				
5-8	64163-67	WASHER-.516X1X12GA	4				
5-9	64123-117	BOLT-HEX 1/2-13X1-1/2	8				
5-10	F6076	WASHER-DISC LOCK	2				
5-11	502311	CONVEYOR TIGHTNING RD	2				
5-12	A52007	CONVEYOR CHAIN ASSY	1				
	A52032	CROSS MEMBER ASSY	1				
	D1016	CHAIN-1 PR ATTACH LINKS	1				
	D1015	DETACHABLE CHAIN LINK	1				
5-13	B0117	FLANGE UNIT-1-3/8" 2 BOLT	2				
5-14	64025-09	HEX, NUT 1/2-13	4				
5-15	D3008	BUSHING, SPLIT TPR LCK	1				
5-16	502126	REAR SPROCKET	2				
5-17	64123-70	BOLT-HEX 3/8-16X1-1/2	1				
5-18	125532	KEY, 5/16 X 5/16 X 2"	3				
5-19	502127	REAR SPROCKET SHAFT	1				
5-20	5503259	INNER CHAIN GUARD	1				
5-21	D1709	SPROCKET, TAPER LOCK	1				
5-22	116005	ROLLER CHAIN #60 37-1/4"	1				
5-23	D1304	SPROCKET 60B12H X 1"	1				
5-24	502243	ROLLER CHAIN GUARD	1				
5-25	502162	PLATE, MOTOR MOUNTING	1				
5-26	64123-16	BLT-HEX 3/8-16X1-1/4	7				
5-27	64163-61	WSHR .81X.406X16GA	4				
5-28	64006-03	WASHER, 3/8 HEL LOCK	4				
5-29	H0012	MOTOR-HYD	1				
5-30	64141-4	NUT-WLF 3/8-16	6				
5-31	64044-2	SCREW-SET 5/16-18X3/8	6				
5-32	G8019	KEY, WOODRUFF 1/4 X 1"	1				

FIGURE 6

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# BROUWER- VAC

## BLOWER ASSEMBLY

FIGURE 6

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
6-1	502248	GUARD, BLOWER PULLEY	1	6-40	502157	SWIVEL LATCH W/A	1
6-2	64139-08	BOLT-5/16-18X3/4 WLF	4	6-41	64025-05	NUT-3/8-16 HEX	4
6-3	D2174	BELT, 5VX560 (COGGED)	4	6-42	F5076	WASHER, DISC LOCK	8
6-4	D3040	BUSHING-SPLIT TPR LK	1	6-43	F6076	WASHER, DISC LOCK	2
6-5	D2928	PULLEY, 4 BELT 4R5V125	1	6-44	64123-50	BOLT-HEX 3/8-16X1	4
6-6	502031	LOWER SHAFT	1	6-45	64163-04	25/64X5/8X16GA WASHER	4
6-7	85-K0624	KEY, 3/8 X 3/8 X 3	1	6-46	505196	PIVOT PIN - <b>SEE NOTE 2</b>	2
6-8	D3041	BUSHING, 2-7/16 BORE	1	6-47	505213	GAP FLAP	1
6-9	D2929	SHEAVE, TAPER LOCK	1	6-48	505214	GAP FLAP CLAMP	1
6-10	502001	SHAFT, IMPELLER	1				
6-11	90-1020	BOLT, 5/8-11 X 2-1/2	4				
6-12	64006-04	LOCKWSHR-HELICAL 5/8	6				
6-13	502006	BELT TIGHTENER W/A	2				
6-14	64025-21	NUT-HEX 5/8-11	4				
6-15	*B1112	BRG-1-1/2 PILLOW BLOCK	2				
	(SN 1001 - 1170)						
	*55-111	BRG-1-1/2 PILLOW BLOCK	2				
	(SN 1171 - 1587)						
	KB30019	BRG-1-1/2 (SN 1588 & UP)					
6-16	L8005	SET COLLAR-1-1/2"DIA 2 PC	2				
6-17	12101072	KEY, 5/8 X 5/8 X 4-1/2	1				
6-18	64163-06	WSHR-.768/.756X1.25X14G	4				
6-19	90-1224	BOLT, 3/4-10 X 3 NC	4				
6-20	B1123	BRG-2-7/16" PILLOW BLOCK	2				
6-21	96-12	LOCKWASHER-3/4 ZP	4				
6-22	92-12	NUT, 3/4-10 NC	4				
6-23	502043	BEARING NUT PLATE	2				
6-24	502461	HOUSING W/A, BLOWER	1				
	505320	HOUSING W/A, - <b>SEE NOTE 3</b>	1				
6-25	502011	IMPELLER W/A	1				
	505315	IMPELLER W/A - <b>SEE NOTE 3</b>	1				
6-26	64139-21	BLT-WLF 3/8-16X3/4	23				
6-27	64141-4	NUT-WLF 3/8-16	25				
6-28	502010	HUB WASHER	1				
6-29	90-1014	BOLT, 5/8-11 X 1-3/4 NC	1				
6-30	502008	DUST COVER PLATE	1				
6-31	90-0808	BOLT	4				
6-32	502474	TRUNK SLIDE W/A	2				
6-33	502450	BLOWER INLET	1				
	505197	BLOWER INLET	1				
	505302	BLOWER INLET- <b>SEE NOTE</b>	1				
6-34	02-CP0610	COTTER PIN, 3/16 X 1-1/4	1				
6-35	64163-16	WSHR-41/64X1, 3/8X12 GA	5				
6-36	502278	HINGE WELDMENT	1				
6-37	64139-18	BLT-WLF 3/8-16X1-1/4	2				
6-38	502178	DAMPER WELDMENT	1				
6-39	502168	SWIVEL WELDMENT	1				
	505264	SWIVEL W/A - <b>SEE NOTE</b>	1				
	(ALUMINUM HEAD)						
	505187	SWIVEL W/A	1				
	(POWERBRUSH)						

### NOTE

BLOWER INLET 502450, 505197 AND SWIVEL WELDMENT 502168 BECOMES NON CURRENT AND IS REPLACED BY BLOWER INLET 505302 AND SWIVEL WELDMENT 505264 (ALUMINUM HEAD) OR 505187 (POWER BRUSH) .

### NOTE 2

HINGE PIN 502278 BECOMES NON CURRENT AND IS REPLACED BY PIVOT PIN 505196.

### NOTE 3

IMPELLER 502011 AND BLOWER HOUSING WELDMENT 502461 BECOMES NON CURRENT AND IS REPLACED BY IMPELLER 505315 AND BLOWER HOUSING WELDMENT 505320

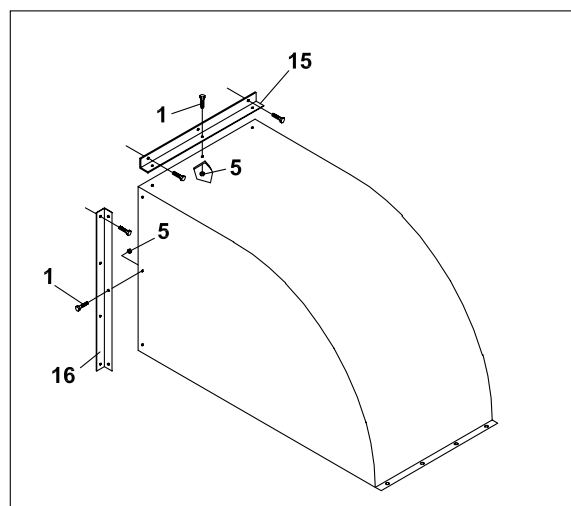
### NOTE 4

KB30019 BEARING CAN REPLACE B1113 AND 55-111 IF INSTALLED WITH 502006 REV E AND 502043 REV E.

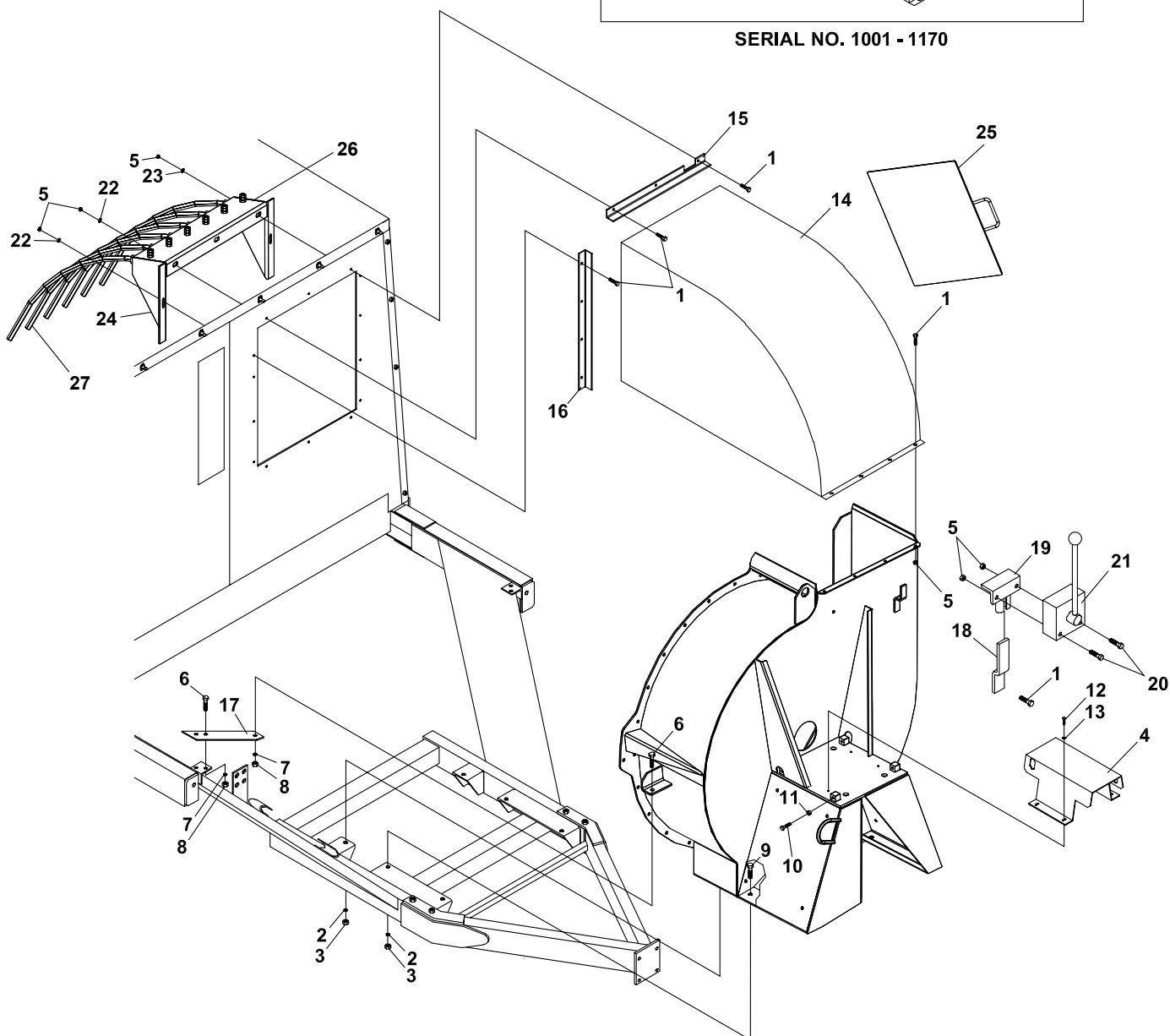
## BLOWER HOOD ASSEMBLY

# BROUWER- VAC

### FIGURE 7



**SERIAL NO. 1001 - 1170**



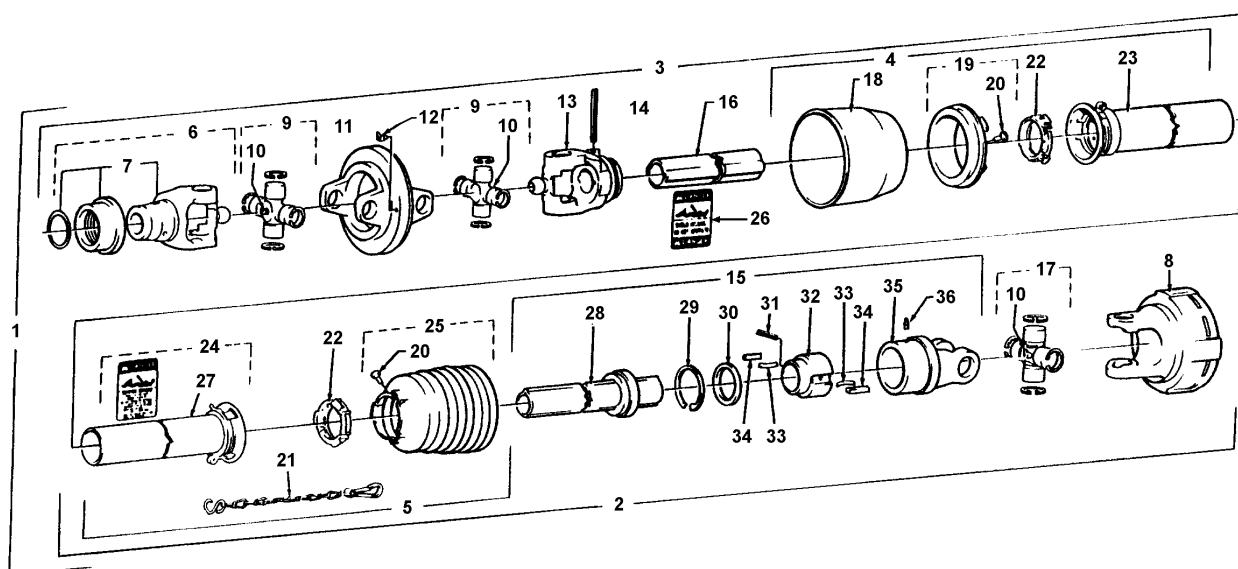
# BROUWER- VAC

## BLOWER HOOD ASSEMBLY

FIGURE 7

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
7-1	64139-08	BOLT-5/16-18X3/4 WLF (SN 1001 - 1170)	36	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;"><b>NOTE</b></p> <p>HOOD W/A 502468 BECOMES NON CURRENT AND IS REPLACED BY VENTED HOOD W/A 505352.</p> </div>			
	64139-08	BOLT-5/16-18X3/4 WLF (SN 1171 - )	24				
7-2	64006-04	LOCKWSHR-HELICAL 5/8	6				
7-3	64025-21	NUT-HEX 5/8-11	6				
7-4	5503284	TOP SHIELD	1				
7-5	64141-6	NUT, 5/16-18 (SN 1001 - 1170)	38				
	64141-6	NUT, 5/16-18 (SN 1171 - )	26				
7-6	64123-39	BOLT-HEX 1/2-13X1-1/4	6				
7-7	64006-05	LOCKWSHR-HELICAL 1/2	6				
7-8	64025-09	HEX, NUT 1/2-13	6				
7-9	64123-109	BLT-HEX 5/8-11X1-1/2	6				
7-10	99-K33	BOLT, 3/8-16 X 2 HEX	4				
7-11	64001-6	NUT-HEX JAM,3/8-16	4				
7-12	64139-04	BOLT-WLF 1/4-20X3/4	4				
7-13	453023	FLATWASHER, 1/4	4				
7-14	502468	HOOD W/A	1				
	505352	HOOD W/A - <b>SEE NOTE</b>	1				
7-15	502516	HORIZONTAL STIFFENER (SN 1001 - 1170)	2				
	6122002	HORIZONTAL STIFFENER (SN 1171 - )	2				
7-16	502515	VERTICAL STIFFENER (SN 1001 - 1170)	2				
	6122001	VERTICAL STIFFENER (SN 1171 - )	2				
7-17	5502502	SIDE BRACE BLOWER	2				
7-18	5503295	HANGER-DIVERTOR VLVE	1				
7-19	502377	VLVE-MNTNG BRKT DIVERT	1				
7-20	64123-56	BLT-HEX 5/16-18X2	2				
7-21	A52039	VALVE-SELECTOR	1				
7-22	64163-02	WSR-.321/.328X.593/.608X11	13				
7-23	64163-04	25/64X5/8X16GA WASHER	1				
7-24	A55052	FINGER DEFLECTOR KIT	1				
7-25	505338	VENT CLOSING PLATE	1				
7-26	505365	HOLDER	1				
7-27	505363	DEFLECTOR BAR	6				

FIGURE 8





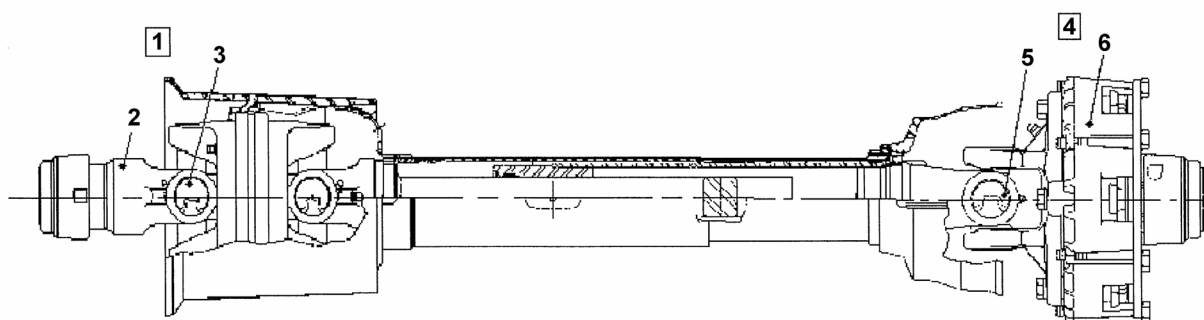
# BROUWER- VAC

## PTO SHAFT (SN 1001 - 1059)

FIGURE 8

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
8-1	D0511	DRIVESHAFT (SN 1001 - 1059)	1				
8-2	D0625	DRIVESHAFT-MALE 1/2 (USED WITH ITEM 1)	1				
8-3	D0626	FEMALE HALF SHAFT	1				
8-4		MALE HALF SHIELD	1				
8-5		FEMALE HALF SHIELD	1				
8-6	D0568	END YOKE	1				
8-7	D0585	QUICK DISCONNECT KIT	1				
8-8	D0575	FRICTION CLUTCH	1				
8-9	D0580	KIT-CROSS & BEARING	2				
8-10	D0616	GREASE ZERK	3				
8-11	D0569	DOUBLE YOLK	1				
8-12	D0525	GREASE FITTING	1				
8-13	D0570	INBOARD YOLK	1				
8-14	D0571	SPRING PIN	1				
8-15	D0573	OVERRUNNING CLUTCH	1				
8-16	D0572	OUTER PROFILE 2AG	1				
8-17	D0574	KIT-CROSS & BEARING	1				
8-18	D0576	SHIELD CONE CV	1				
8-19	D0581	SHIELD COLLAR	1				
8-20	D0582	SCREW	2				
8-21	D0533	SAFETY CHAIN	1				
8-22	D0566	BEARING RING SC24	2				
8-23	D0578	INNER SHIELD TUBE OVL	1				
8-24	D0577	OUTER SHIELD TUBE OVL	1				
8-25	D0579	SHIELD CONE-9 RIB	1				
8-26	D0584	DANGER DECAL-STEEL	1				
8-27	D0583	DANGER DECAL-SHIELD	1				
8-28	D0594	PROFILE/SUPT RING	1				
8-29	D0592	RETAINING RING	1				
8-30	D0591	SUPPORTING RING	1				
8-31	D0595	SPRING PIN	1				
8-32	D0588	HUB	1				
8-33	D0590	LEAF SPRING	2				
8-34	D0589	KEY	2				
8-35	D0587	HOUSING	1				
8-36	D0593	GREASE ZERK	1				

FIGURE 9



# BROUWER- VAC

## PTO SHAFT (SN 1060 - )

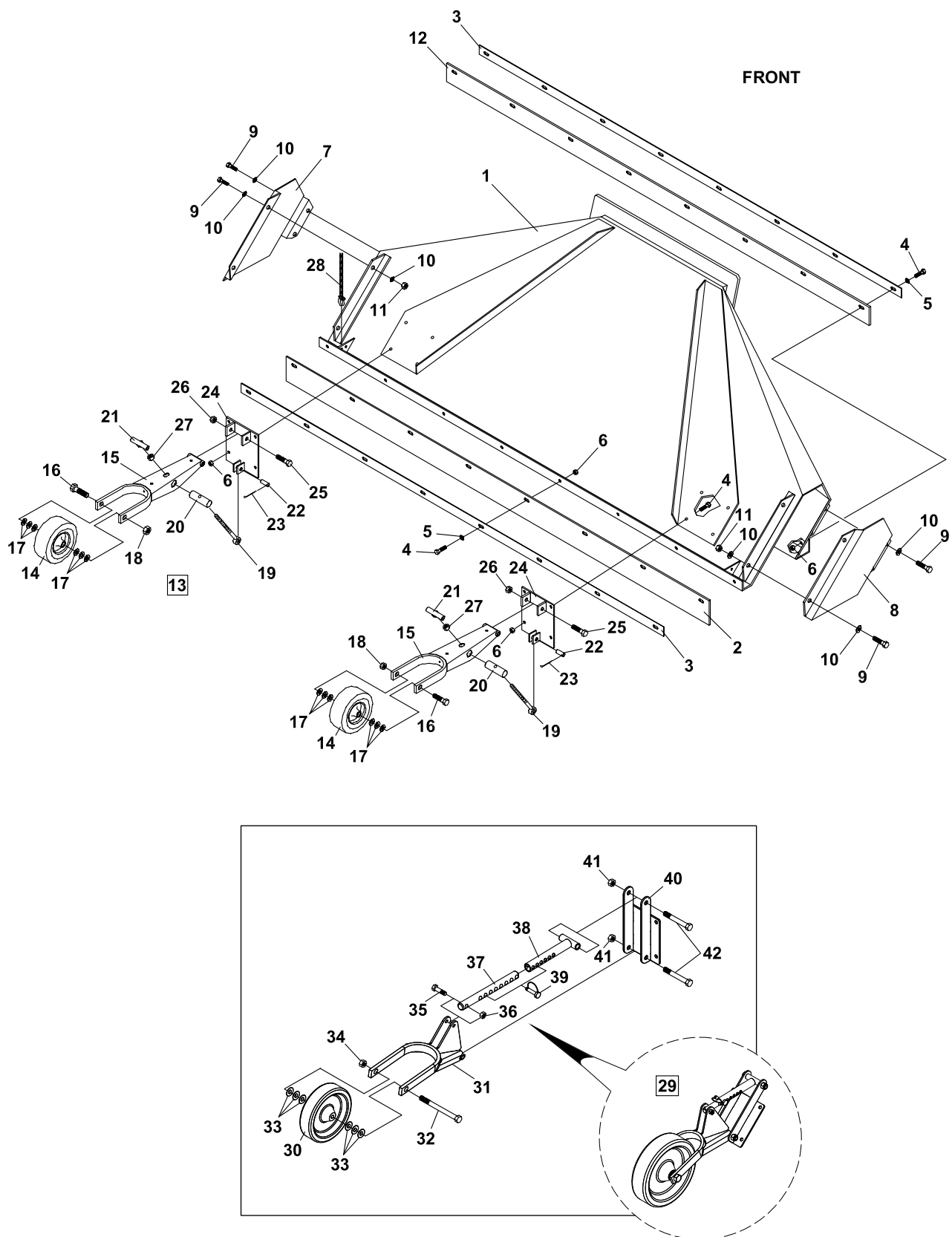
FIGURE 9

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
	87-232	DRIVESHAFT (SN 1060 - )	1				
9-1		JOINT & SHAFT W/GUARD (PART NO. 87-93-18981)	1				
9-2		SAFETY SLIDE YOKE ASSY (PART NO. 87-35181-1895)	1				
9-3		CROSS & BEARING KIT (PART NO. 87-03-14519)	2				
9-4		JOINT & TUBE ASSY W/GRD (PART NO. 87-92-19860)	1				
9-5		CROSS & BEARING KIT (PART NO. 87-03-10045)	1				
9-6		FREE MTN FRICTION ASSY (PART NO. 87-38-11112)	1				
		FRICTION DISC (PART NO. 87-11-11167)	1				
		SEPARATOR PLATE (PART NO. 87-20-15149)	1				

# 80" PICK - UP ASSEMBLY (A)

**BROUWER-  
VAC**

**FIGURE 10**



# BROUWER- VAC

## 80" PICK - UP ASSEMBLY (A)

FIGURE 10

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
10-1	502190	NOZZLE CTR SECTION	1	10-29	A55027	GAUGE WHL ASSY (INCLUDES ITEMS 30 - 42) <b>SEE NOTE</b>	2
10-2	502398	CENTER NOZZLE SKIRT	1				
10-3	502230	CLAMP-NOZZLE RUBBER	2				
10-4	64139-24	BLT-WLF 3/8-16 X 1	24	10-30	R0009	GAUGE WHEEL	2
10-5	64163-61	WSHR .81X.406X16GA	16	10-31	505065	GAUGE WHL CSTR WLDMT	1
10-6	64141-4	NUT-WLF 3/8-16	16	10-32	F041054	BOLT, 5/8 UNC X 5 1/2 GR8	1
10-7	502224	CAP-END LH	1	10-33	F331000	FLAT WASHER-SAE 5/8	6
10-8	502225	CAP-END RH	1	10-34	F211000	NUT, 5/8 UNC NYLOC	1
10-9	F040712	BOLT-HEX 7/16 x 1 1/4	8	10-35	F040616	BOLT, 3/8 UNC X 1 3/4 GR8	1
10-10	F330700	FLATWASHER - 7/16 SAE	16	10-36	F210600	HEX LOCKNUT, 3/8-16 UNC	1
10-11	F210700	LOCKNUT - 7/16 UNC	8	10-37	505070	ROD - GAUGE WHL ADJ	1
10-12	502181	NOZZLE REAR SKIRT	1	10-38	505068	GAUGE WHL ADJUSTER	1
10-13	A52110	GAUGE WHL ASSY (INCLUDES ITEMS 14 - 27)	2	10-39	KX30616	PIN - LYNCH, 3/8 IN. X 1 3/8	1
				10-40	505247	GAUGE WHL PLATE WLDMT	1
10-14	53-104	WHL-10.25 3.25 CSTR WHT (SN 1001 - 1170)	1	10-41	F210800	NUT, 1/2 UNC NYLOC	2
	53-186	WHL-10.25 3.25 CSTR WHT (SN 1171 - )	1	10-42	F040836	BOLT, 1/2 UNC X 3 3/4 GR8	2
	55-112	BRG-ROLLER 5/8 ID X 1-3/8	1				
	53-187	RETAINER-FLANGED (USED WITH 53-186)	2				
10-15	5503273	GAUGE WHL CSTR WLDMT	1				
10-16	90-1044	BOLT, 5/8-11 X 5-1/2 NC	1				
10-17	64163-16	WASHER-41/64X1, 3/8X12	6				
10-18	64229-06	LOCKNUT, NYLON 5/8-11	1				
10-19	5503271	ADJUSTER SCREW	1				
10-20	503270	ADJUSTER NUT	1				
10-21	5503272	ADJUSTER HANDLE	1				
10-22	03-0810	CLEVIS PIN, 1/2 X 1-1/4	1				
10-23	02-PP0313	PIN, 3/16 x 1.5/8	1				
10-24	5503275	MNTNG PLATE WLDMT	1				
10-25	90-0832	BOLT, 1/2-13 X 4	2				
10-26	64229-05	LOCKNUT, 1/2-13 NYLON	2				
10-27	64001-8	NUT-HEX JAM, 1/2-13	2				
10-28	502199	LIFT CHAIN	2				

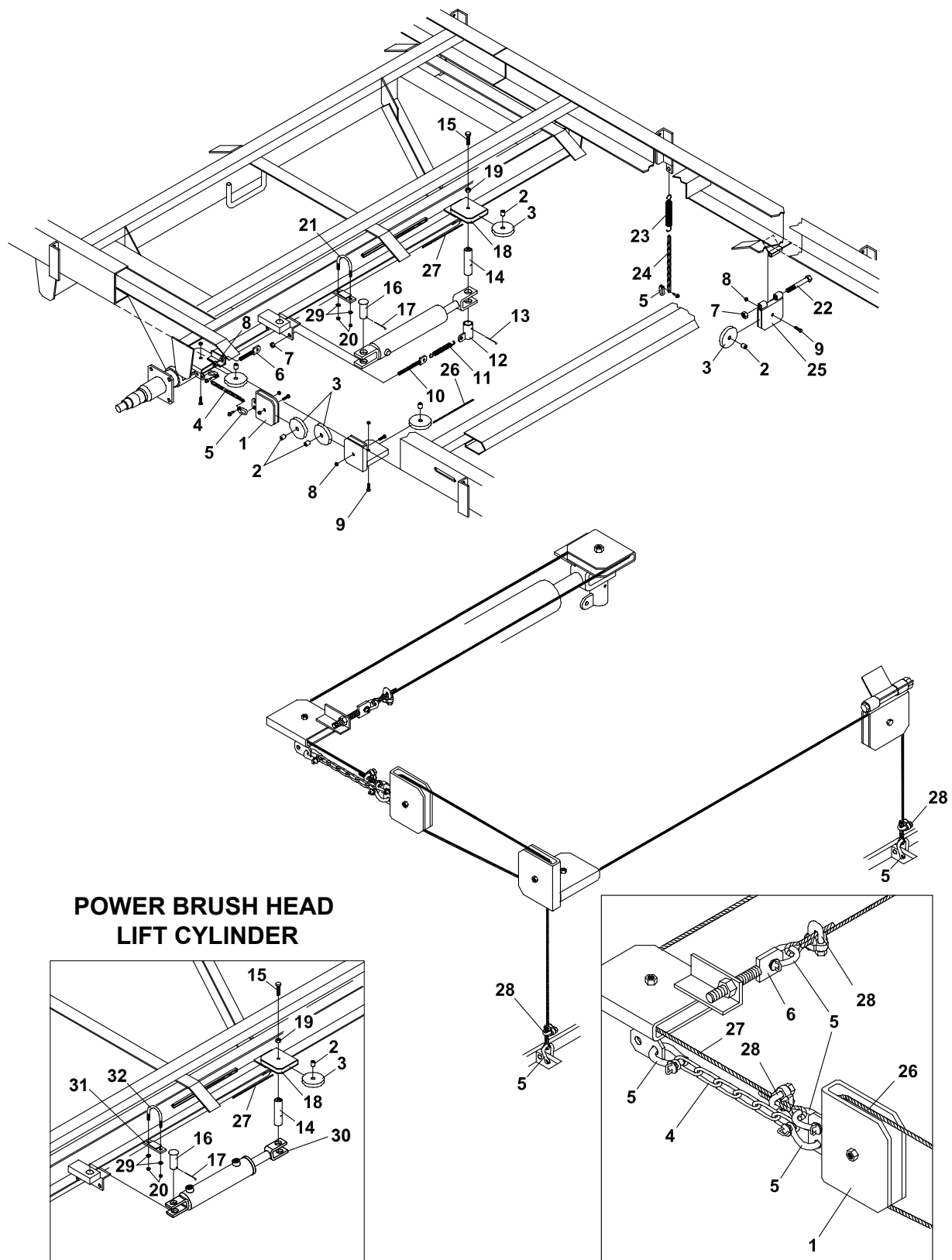
### NOTE

GAUGE WHEEL ASSEMBLY A52110  
BECOMES NON CURRENT AND IS  
REPLACED BY GAUGE WHEEL  
ASSEMBLY A55027

## 80" PICK - UP ASSEMBLY (B)

**BROUWER-  
VAC**

**FIGURE 11**



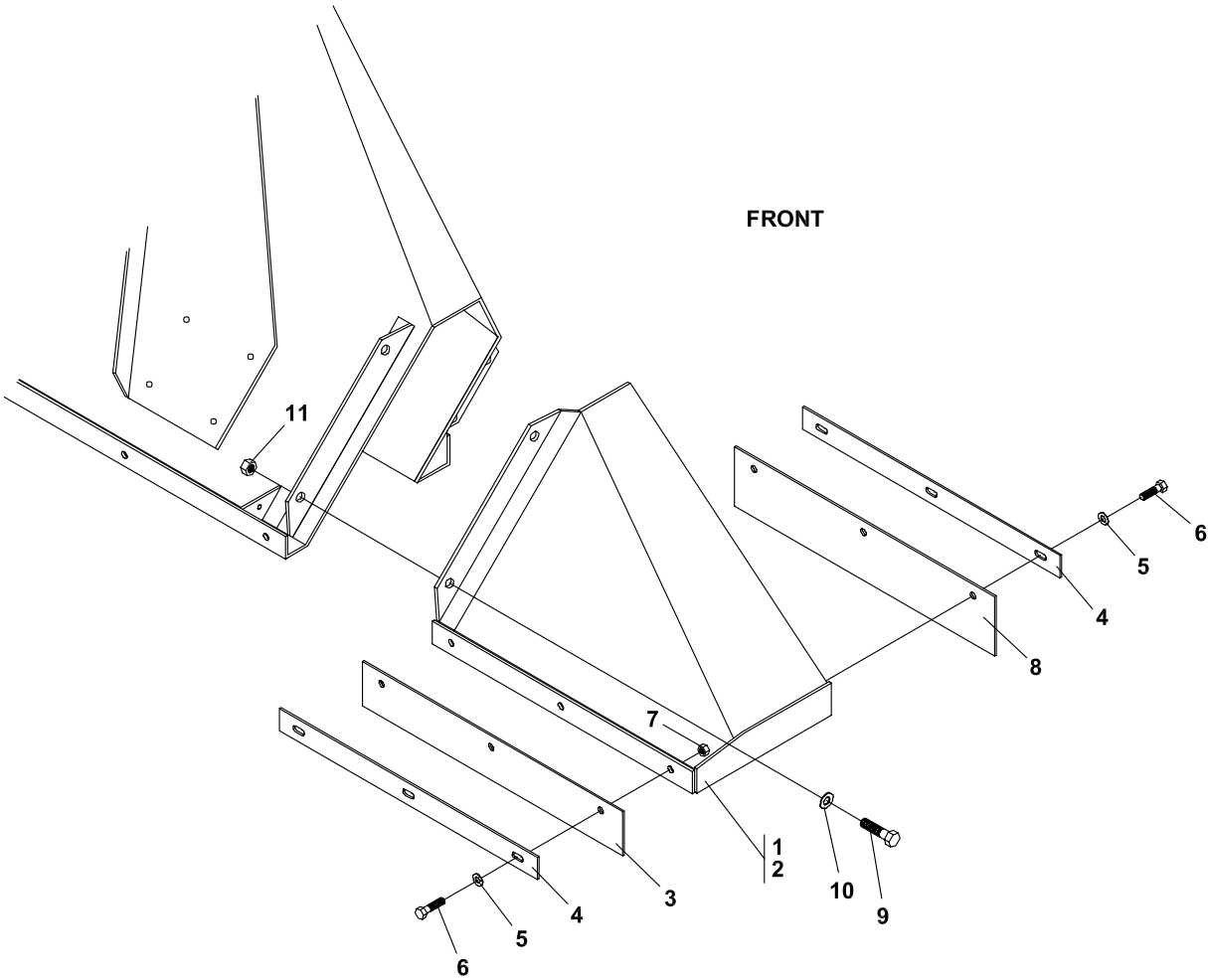
# BROUWER- VAC

## 80" PICK - UP ASSEMBLY (B)

FIGURE 11

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
11-1	502241	HOUSING-PULLEY	1				
11-2	L1012	BRONZE 3/8IDX9/16ODX9/16	6				
11-3	502258	SHEAVE-3/16 CABLE	6				
11-4	502255	LIFT CHAIN	1				
11-5	G8048	SHACKLE, ANCHOR 3/16"	8				
11-6	502186	ADJUSTMENT ROD W/A	1				
11-7	64229-05	LOCKNUT, 1/2-13 NYLON	2				
11-8	64229-03	LOCKNUT-NYLON 3/8-16	6				
11-9	64123-70	BOLT-HEX 3/8-16X1-1/2	5				
11-10	502270	SPRING ADJUSTER W/A	1				
11-11	S2030	SPRING, 2"OD X .250 X 15"	1				
11-12	502260	MOUNT W/A-SPRING	1				
11-13	G2308	SPRG TENSIN PIN-3/16X1-1/2	1				
11-14	502261	CLEVIS PIN	1				
11-15	99-K33	BOLT, 3/8-16 X 2 HEX	1				
11-16	03-1620	CLEVIS PIN, 1" X 2-1/2"	1				
11-17	02-CP0612	COTTER PIN, 3/16 X 1-1/2	1				
11-18	502263	PULLEY-CYLINDER W/A	1				
11-19	64001-6	NUT-HEX JAM,3/8-16	1				
11-20	64229-02	LOCKNUT-NYLON 5/16-18	2				
11-21	G8065	CLAMP, MUFFLER 1-7/8"	1				
11-22	64123-135	BLT-HEX 1/2-13X5	1				
11-23	S2029	SPRG-EXT: 1"ODX105X12"	2				
11-24	502199	LIFT CHAIN	2				
11-25	502238	BRKT-HINGED PULLEY MNT	1				
11-26	502281	CABLE	1				
11-27	502288	CABLE	1				
11-28	G8047	CLIP, 3/16 WIRE ROPE	4				
11-29	64163-04	25/64X5/8X16GA WASHER	2				
11-30	505332	HEAD LIFT CYLINDER (POWER BRUSH)	1				
11-31	505399	CLAMP BAR-POWER BRUSH	1				
11-32	KM60043	2 3/4 MUFFLER CLAMP	1				

FIGURE 12



RIGHT SIDE SHOWN,  
LEFT SIDE OPPOSITE



# BROUWER- VAC

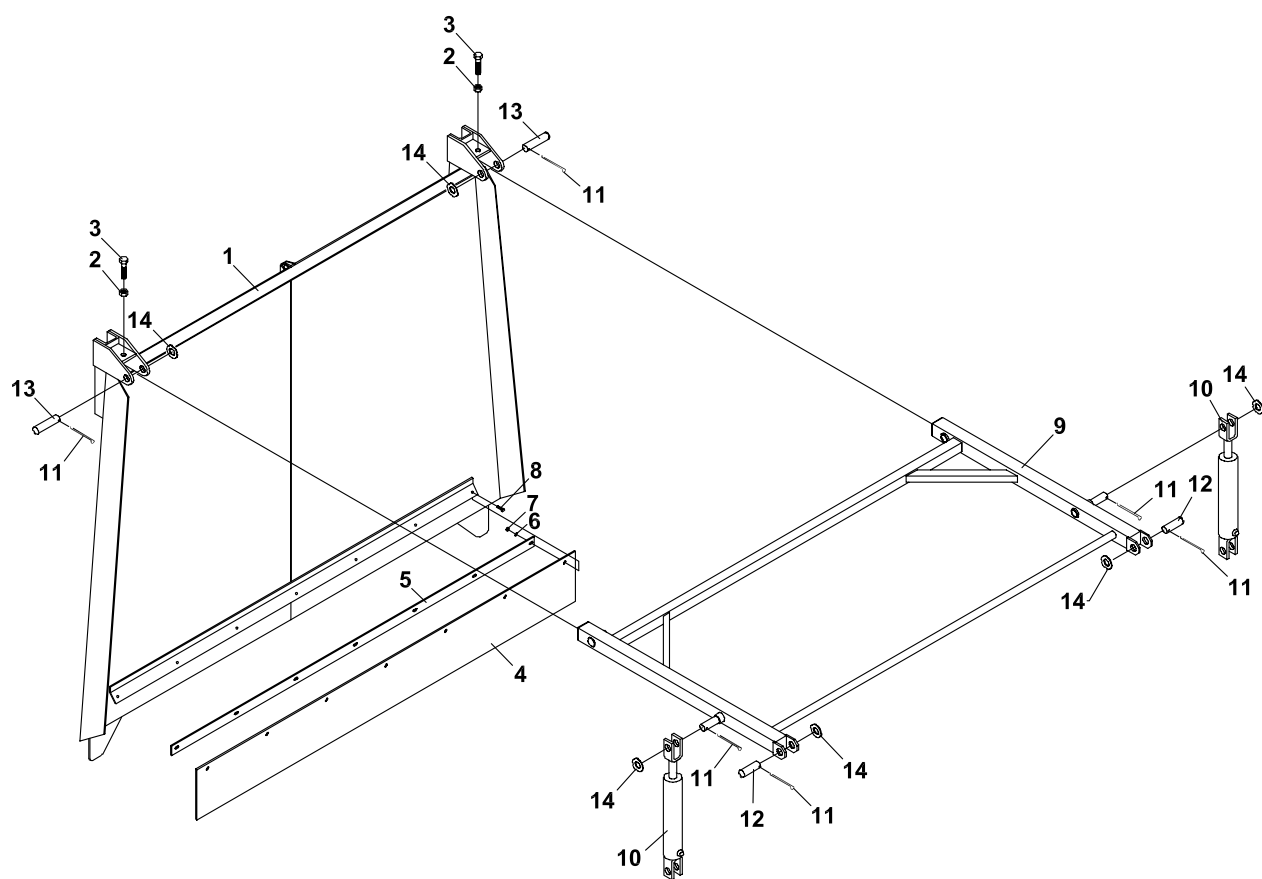
## OPT. NOZZLE EXTENSION ASSEMBLY

FIGURE 12

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
12-1	502207	EXTENSION WLDMT-RH	1				
12-2	502206	EXTENSION WLDMT-LH	1				
12-3	502180	SKIRT-REAR (4 X 20)	2				
12-4	502231	EXTENSION-RUBBER CLMP	4				
12-5	64163-61	WSHR .81X.406X16GA	12				
12-6	64139-24	BLT-WLF 3/8-16 X 1	12				
12-7	64141-4	NUT-WLF 3/8-16	6				
12-8	502397	SKIRT-FRT NOZZLE EXT	2				
12-9	F040712	BOLT-HEX 7/16 UNC X 1 1/4	8				
12-10	F330700	FLATWASHER 7/16 SAE	8				
12-11	F210700	LOCKNUT - 7/16 UNC	8				

FIGURE 13

BROUWER-  
VAC



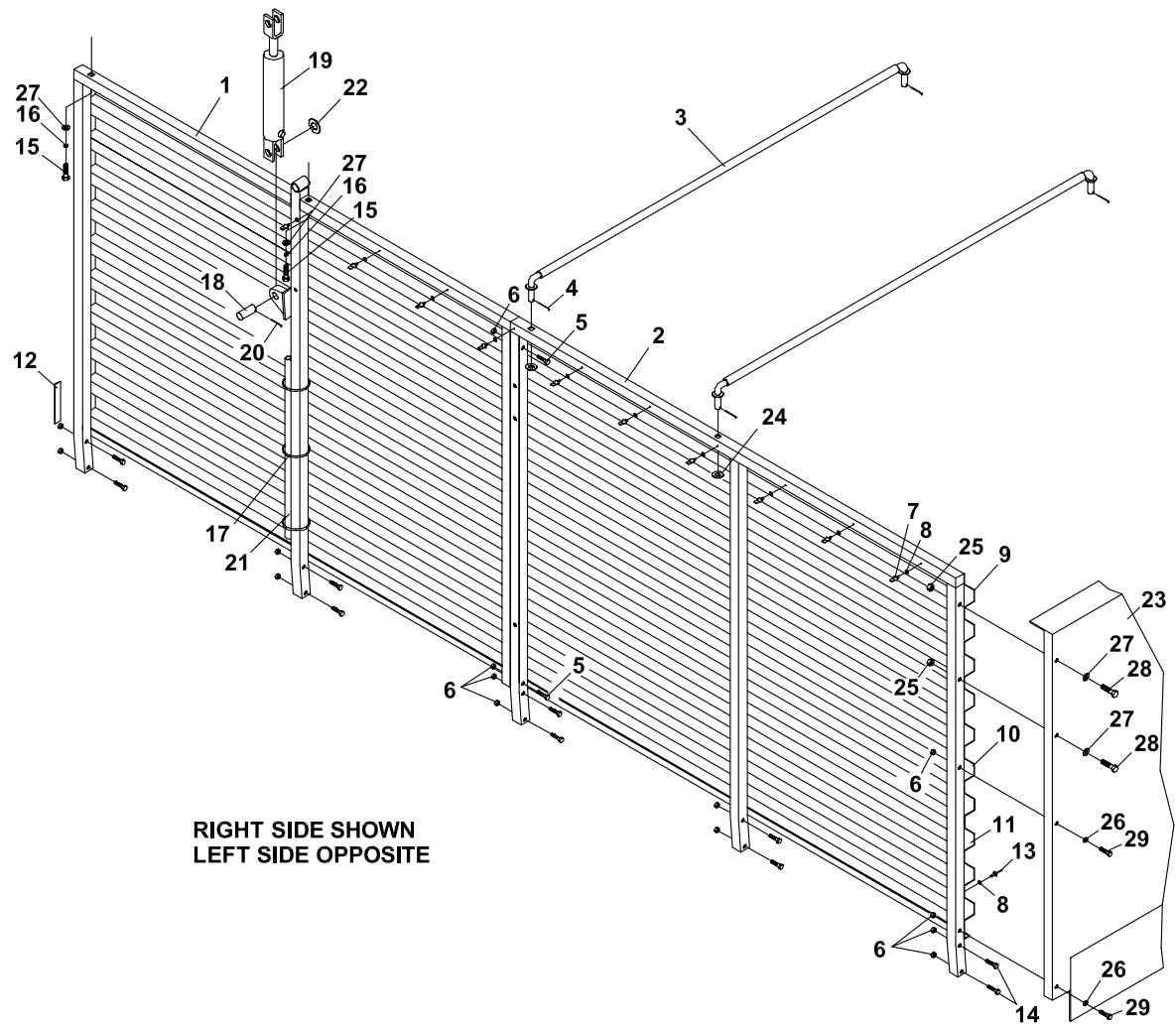
# BROUWER- VAC

## BACK DOOR ASSEMBLY

FIGURE 13

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
13-1	502163	BACK DOOR W/A	1				
13-2	99-E27	JAM NUT, 3/4-16	2				
13-3	91-1212	BOLT, 3/4-16 X 1-1/2	2				
13-4	502183	BCK DR RUBBER SKIRT	1				
13-5	502173	RUBBER CVR PLATE	1				
13-6	64163-02	WSR-.321/.328X.593/.608X11	7				
13-7	64141-6	NUT, 5/16-18	7				
13-8	99-K02	BOLT, FLANGE 5/16-18 X 1	7				
13-9	502069	DOOR HINGE W/A	1				
13-10	502262	CYL-HYD 1-1/2 X 8 S.A.	2				
13-11	02-CP0612	COTTER PIN, 3/16 X 1-1/2	6				
13-12	03-1624	CLEVIS PIN, 1" X 3"	2				
13-13	03-1632	CLEVIS PIN, 1" X 4"	2				
13-14	64163-84	WASHER-1.015 X 1.75 X.125	6				

FIGURE 14



RIGHT SIDE SHOWN  
LEFT SIDE OPPOSITE

# BROUWER- VAC

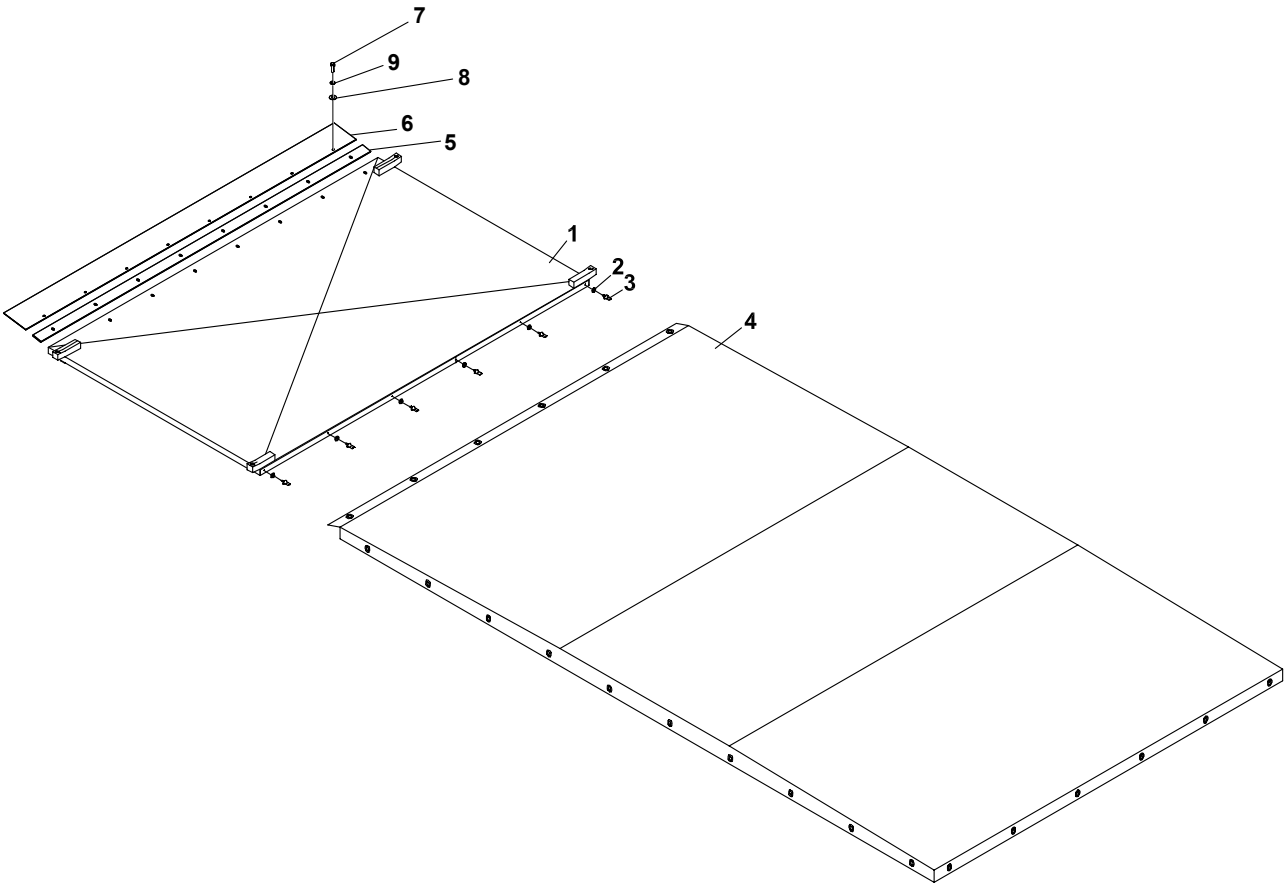
## SIDE PANEL ASSEMBLY

FIGURE 14

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
14-1	502573	SIDE PANEL - REAR W/A	1				
	5502572	SIDE PANEL - REAR W/A	1				
14-2	502571	SIDE PANEL - FRONT W/A	1				
	5502570	SIDE PANEL - FRONT W/A	1				
14-3	502053	ROOF CROSS PIECE W/A	2				
14-4	02-CP0610	COTTER PIN, 3/16 X 1-1/4	4				
14-5	64123-138	BLT-HEX 3/8-16X3-3/4	4				
14-6	64229-03	LOCKNUT-NYLON 3/8-16	28				
14-7	G8063	COMMON SENSE FSTNR	20				
14-8	F1718	WSHR-1/4" NEO-BONDED	162				
14-9	502296	UPPER SIDE PANEL	2				
14-10	502289	LOWER SIDE PANEL	2				
14-11	E8021	SEAL STRIP, V-RIB 36"	5				
14-12	5502531	RUBBER STRIP	2				
14-13	F9065	POP RIVET, 3/16 X 3/8	142				
14-14	64123-82	BOLT-HEX 3/8-16X2-1/2	20				
14-15	90-0818	BOLT, 1/2-13 X 2-1/4	4				
14-16	64006-05	LOCKWSHR-HELICAL 1/2	4				
14-17	G8002	WIRE TIE-15-1/4 LONG	6				
14-18	03-1620	CLEVIS PIN, 1" X 2-1/2"	2				
14-19	502262	CYLINDER, HYD. 1-1/2 X 8	2				
14-20	02-CP0612	COTTER PIN, 3/16 X 1-1/2	2				
14-21	A52022	DOOR LIFT HOSE	2				
14-22	64163-84	WASHER-1.015 X 1.75 X.125	2				
14-23	502435	WALL, FRONT - RH W/A	1				
14-24	64163-06	WSHR, .768/.756X1.25X14G	4				
14-25	64229-05	LOCKNUT, 1/2-13 NYL	4				
14-26	64163-61	WSHR .81X.406X16GA	4				
14-27	64163-67	WASHER-.516X1X12GA	8				
14-28	64123-72	BLT-HEX 1/2-13X2-1/2	4				
14-29	64123-100	BOLT-3/8-16X2-1/4 HEX	4				



FIGURE 15



# BROUWER- VAC

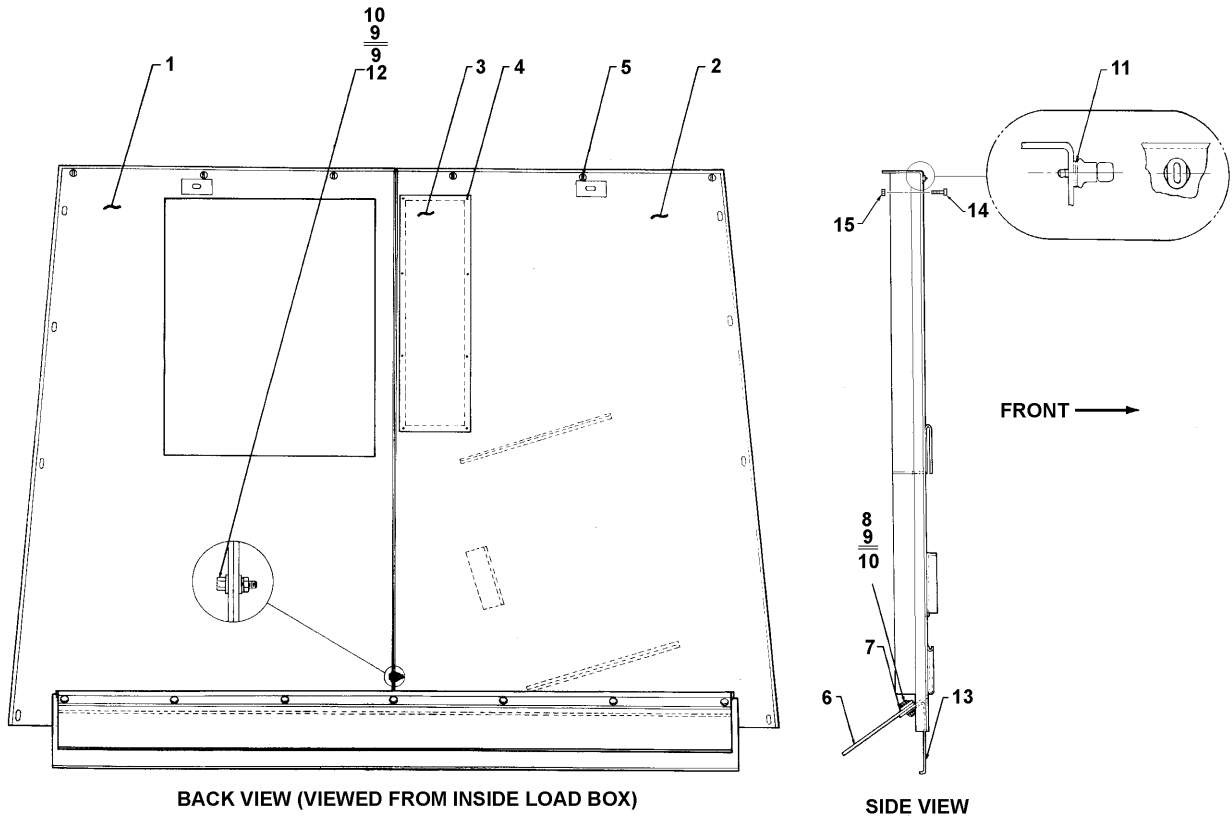
## DEFLECTOR PLATE ASSEMBLY

FIGURE 15

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
15-1	502055	DEFLECTOR PLATE W/A	1				
15-2	F1718	WASHER, 1/4"	6				
15-3	G8063	COMMON SENSE FSTNR	6				
15-4	A52021	TARP	1				
15-5	505360	FLAP RETAINING BAR	1				
15-6	505361	DOOR TOP FLAP	1				
15-7	F040410	BOLT 1/4 NC x 1 LG	8				
15-8	F320400	1/4 FLATWASHER	8				
15-9	F310400	1/4 LOCKWASHER	8				

FIGURE 16

BROUWER-  
VAC





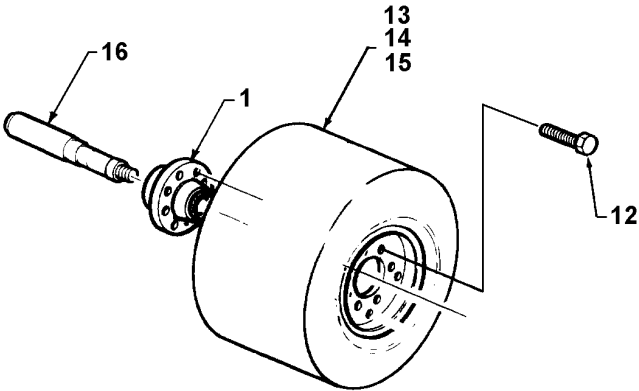
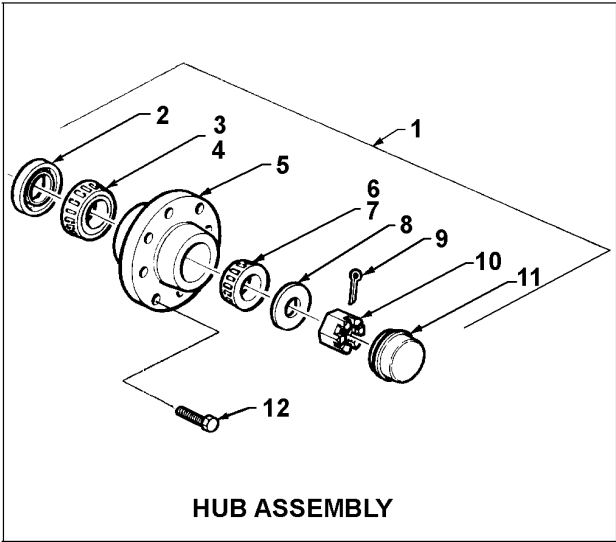
# BROUWER- VAC

## FRONT WALL ASSEMBLY

FIGURE 16

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
16-1	502432	WALL, FRONT - LH W/A	1				
	502433	WALL, FRONT - LH W/A <b>NC</b>	1				
16-2	502435	WALL, FRONT - RH W/A	1				
16-3	502436	WINDOW	1				
16-4	F9065	POP RIVET, 3/16 X 3/8	8				
16-5	G8063	COMMON SENSE FSTNR	6				
16-6	502182	SKIRT, FRONT WALL RBR	1				
16-7	502173	RUBBER COVER PLATE	1				
16-8	99-K02	BOLT, FLANGE 5/16-18 X 1	7				
16-9	64163-02	WSR-.321/.328X.593/.608X11	21				
16-10	64141-6	NUT, 5/16-18	14				
16-11	F1718	WASHER, 1/4"	14				
16-12	64139-08	BOLT-5/16-18X3/4	7				
16-13	502532	CONVEYOR GUARD	1				
16-14	64123-39	BOLT-HEX 1/2-13X1-1/4	2				
16-15	64229-05	LOCKNUT, 1/2-13 NYL	2				

FIGURE 17



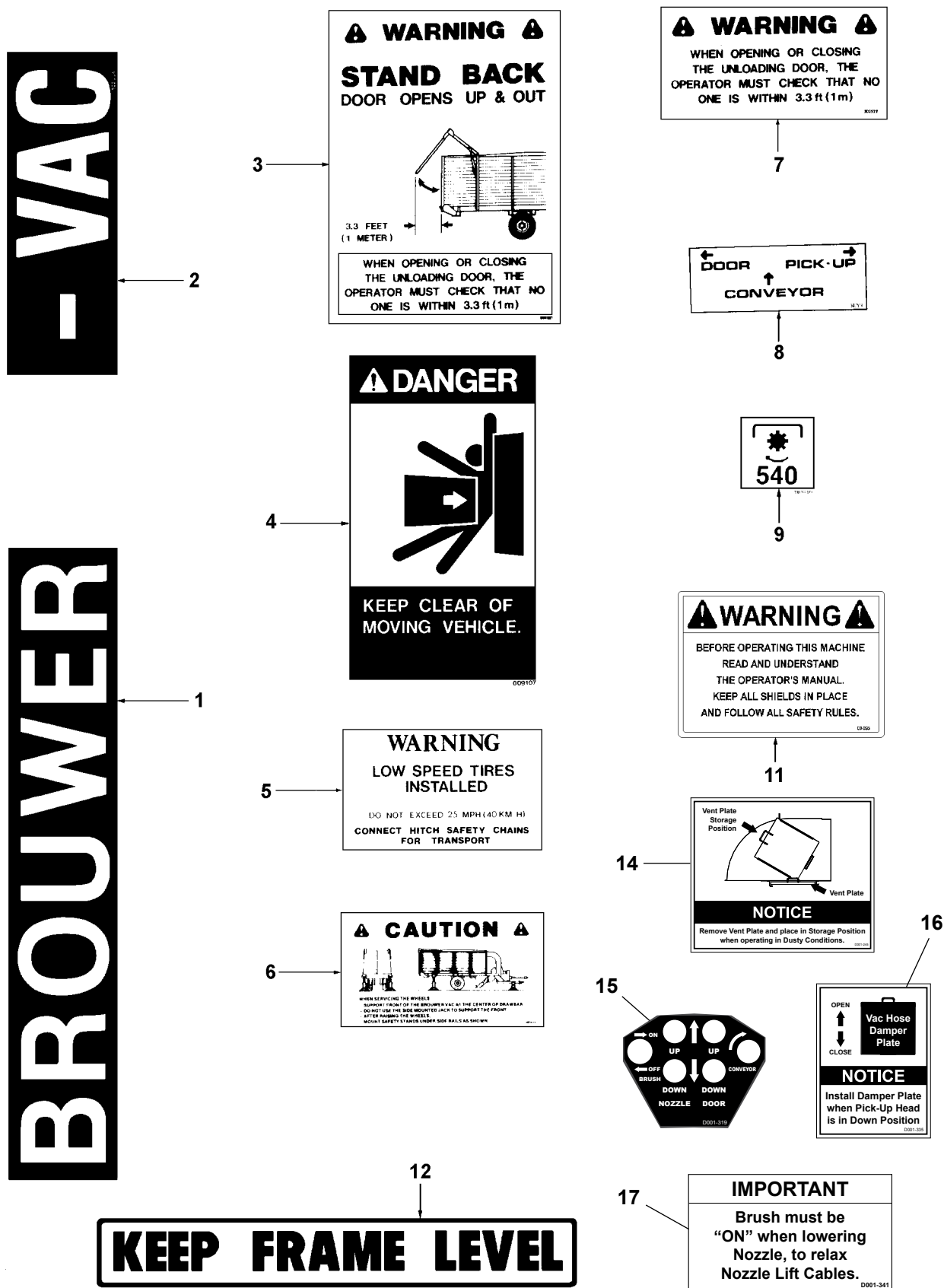
# BROUWER- VAC

## WHEEL & HUB ASSEMBLY

FIGURE 17

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
17-1	R1047	HUB ASSY	1				
17-2	E1033	SEAL	1				
17-3	B4514	BEARING-CONE	1				
17-4	B4015	BEARING-CUP	1				
17-5	R1074	HUB	2				
17-6	B4515	BEARING-CONE	1				
17-7	B4020	BEARING-CUP	1				
17-8	F8051	WASHER-FLAT 1"	1				
17-9	02-CP0612	COTTER PIN, 3/16 X 1-1/2	1				
17-10	92-16	NUT, 1-08	1				
17-11	R1053	CAP-HUB	1				
17-12	F9050	WHL BOLT-9/16 X 1	12				
17-13	R1065	WHEEL, W/31 X 13.5 X 15	2				
17-14	R1060	RIM	1				
17-15	R1063	TIRE-31.0X13.5 TERRARIB	1				
17-16	502460	SPINDLE	2				

FIGURE 18



# BROUWER- VAC

## DECALS

FIGURE 18

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
18-1	401257	DECAL, "BROUWER" 2-1/2 X 2	2				
18-2	502204	DECAL, VAC	2				
18-3	502521	DECAL, WARN UNLOADING	1				
18-4	009107	DECAL, DGR MVG VEHICAL	1				
18-5	502205	DECAL, WARN LOW SPEED	1				
18-6	502425	DECAL, CTN WHL SERVICE	2				
18-7	5502522	DECAL, WARN CHK AREA	1				
18-8	5502514	DECAL, VALVE CONTROL	1				
18-9	101919	DECAL, PTO 540	1				
18-10*	4116761	LABEL-MADE IN USA	1				
18-11	00-093	DECAL	2				
18-12	701134	DECAL, KEEP FRAME LEVEL	2				
18-13*	00-327	DECAL, TEXTRON LOGO	2				
18-14	D001-245	DECAL, VENT PLATE	1				
18-15	D001-319	DECAL, JOYSTICK - <b>NOTE</b>	1				
18-16	D001-335	DECAL, DAMPER PLATE	1				
		- <b>NOTE</b>					
18-17	D001-341	DECAL, BRUSH ON - <b>NOTE</b>	1				

### NOTE

ITEMS: 15 & 17 ARE USED ONLY ON AN ELECTRONIC JOYSTICK VAC.

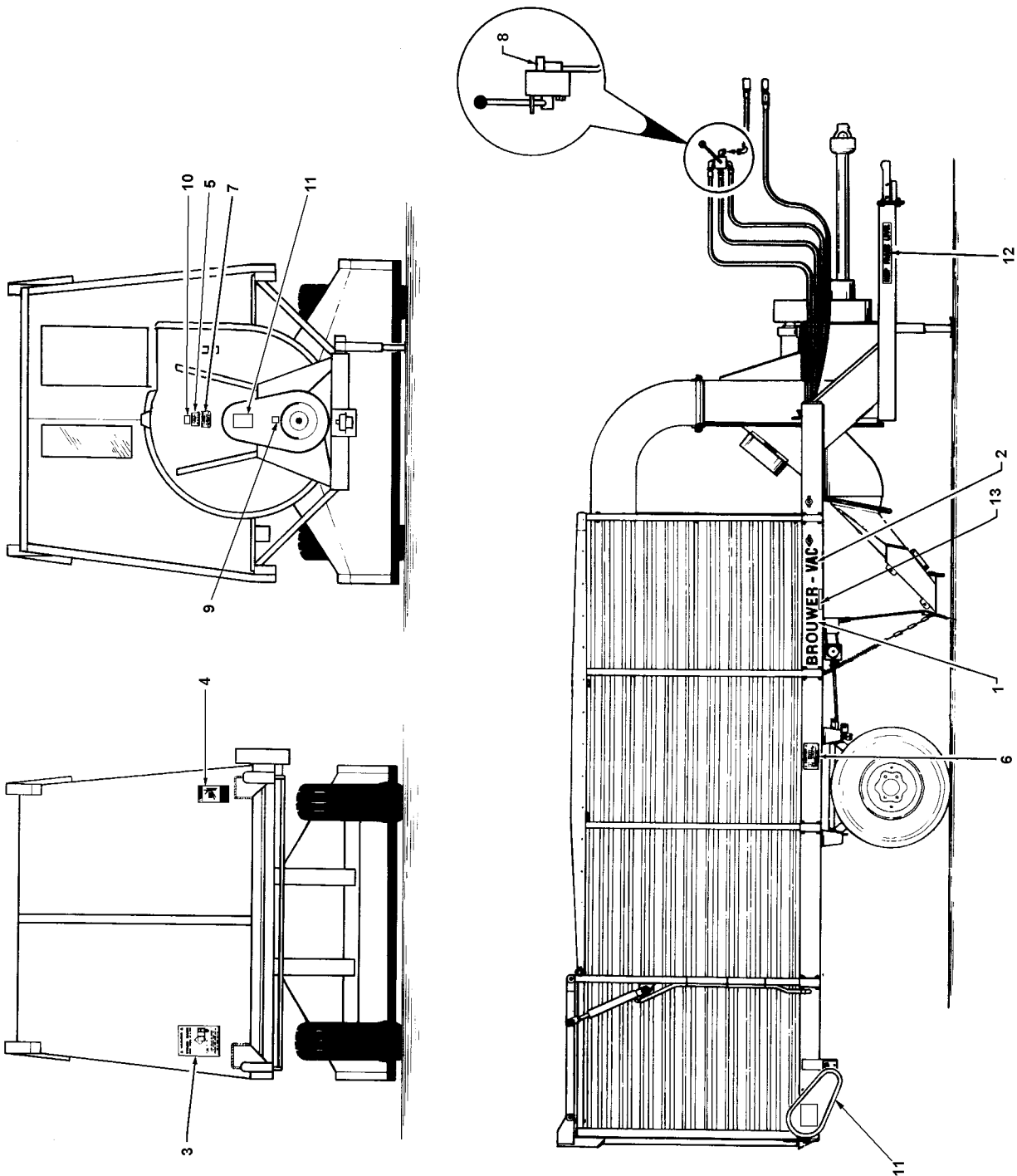
ITEM: 16 IS USED ONLY ON AN ALUMINUM HEAD VAC WITH HOSE KIT.

\* NOT ILLUSTRATED

DECAL LOCATIONS

FIGURE 19

BROUWER-  
VAC



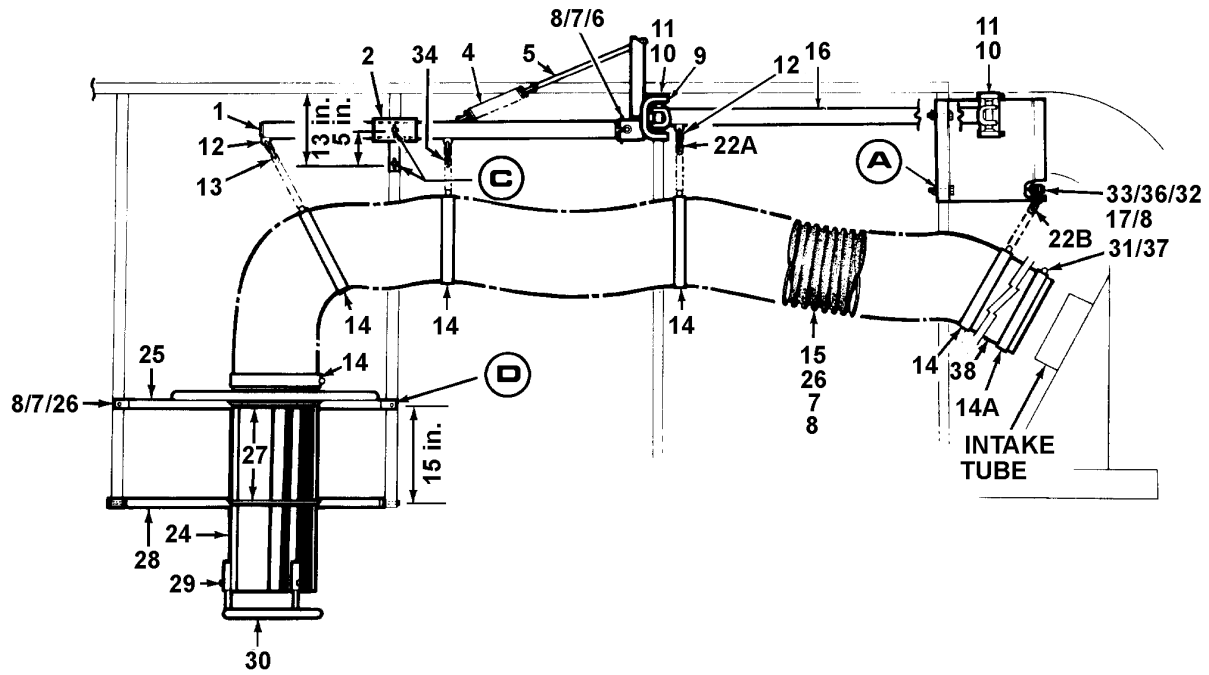
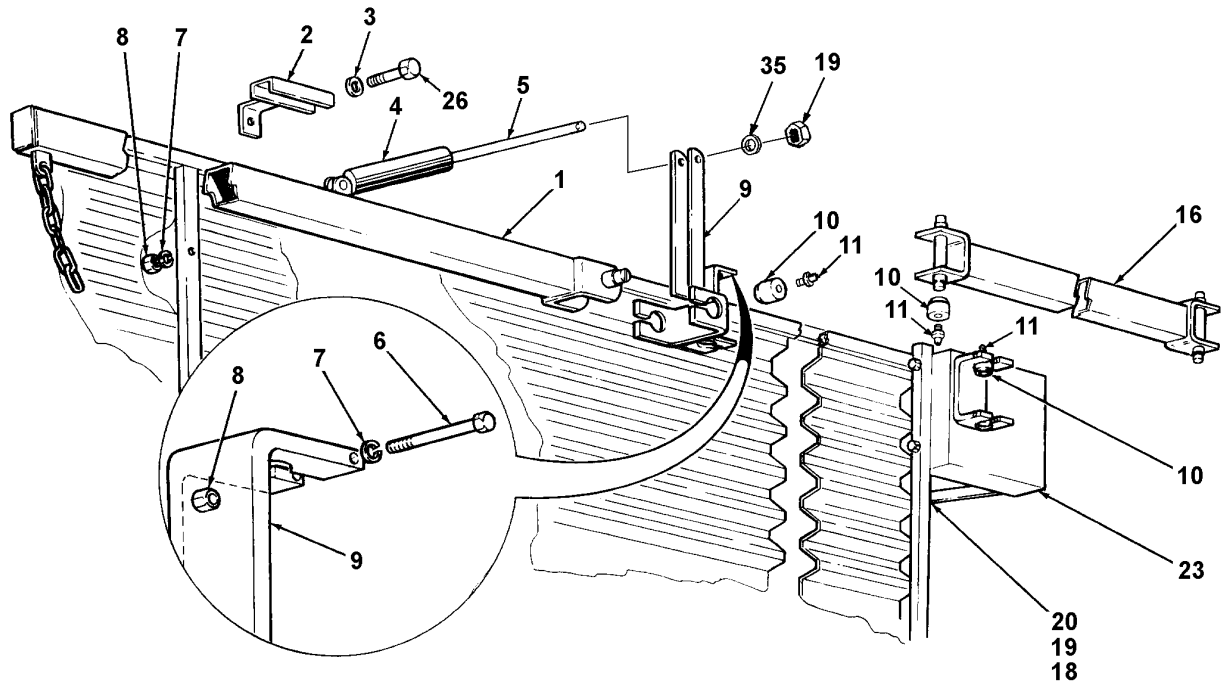
# BROUWER- VAC

## DECAL LOCATIONS

FIGURE 19

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
19-1	401257	DECAL, "BROUWER" 2-1/2 X 2	2				
19-2	502204	DECAL, VAC	2				
19-3	502521	DECAL, WARN UNLOADING	1				
19-4	009107	DECAL, DGR MVG VEHICAL	1				
19-5	502205	DECAL, WARN LOW SPEED	1				
19-6	502425	DECAL, CTN WHL SERVICE	2				
19-7	5502522	DECAL, WARN CHK AREA	1				
19-8	5502514	DECAL, VALVE CONTROL	1				
19-9	101919	DECAL, PTO 540	1				
19-10	4116761	LABEL-MADE IN USA	1				
19-11	00-093	DECAL	2				
19-12	701134	DECAL, KEEP FRAME LEVEL	2				
19-13	00-327	DECAL, TEXTRON LOGO	2				

FIGURE 20





# BROUWER- VAC

## VAC-HOSE ASSEMBLY

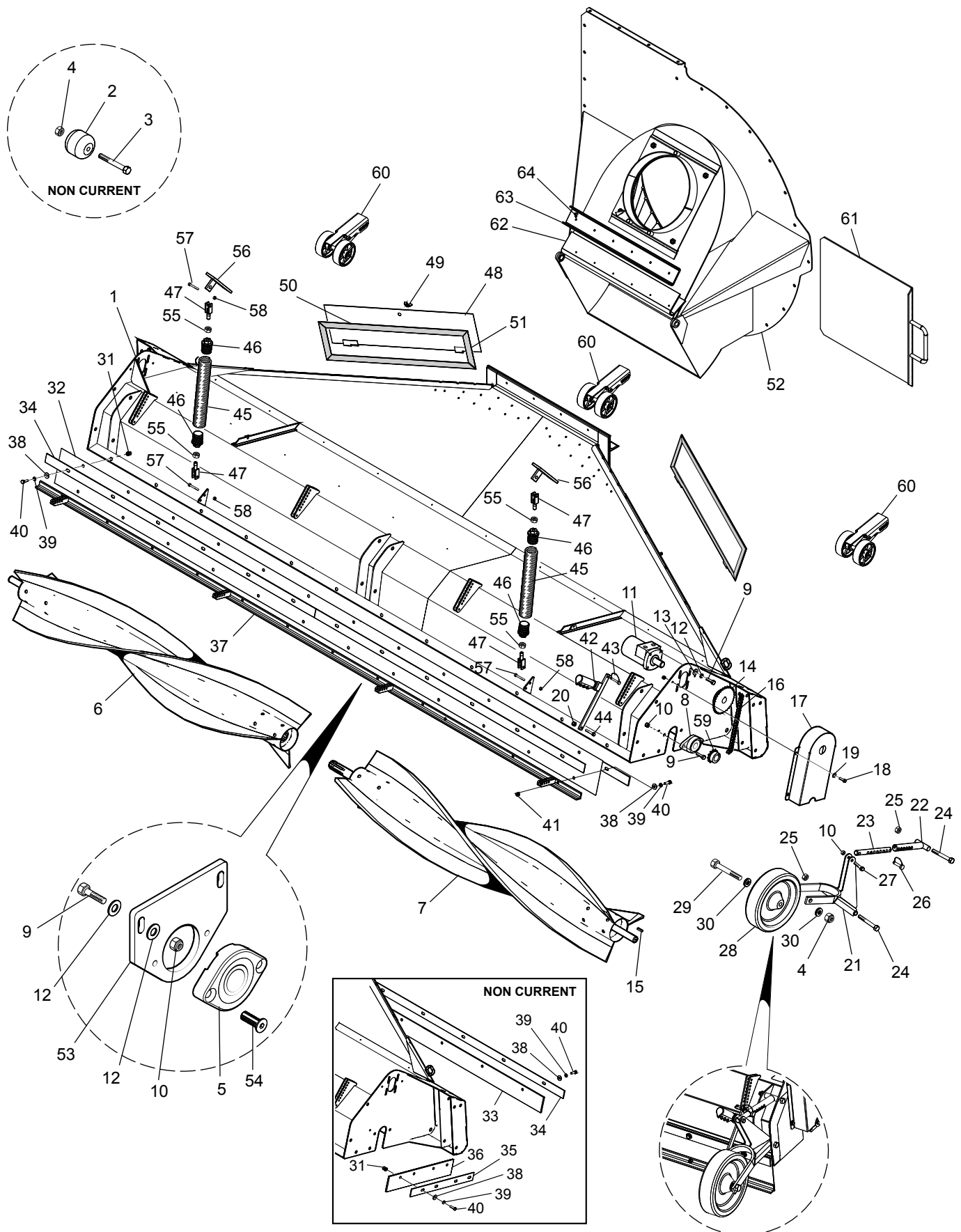
FIGURE 20

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
20-1	502335	ARM-SECONDARY	1				
20-2	502331	BRACKET W/A-ARM REST	1				
20-3	64163-61	WSHR .81X.406X16GA	4				
20-4	S2006	SPRNG-EXT1-13/16ODX.250	1				
20-5	502328	ROD W/A-SPRING ADJ	1				
20-6	64123-75	BOLT, 3/8-16X3 HEX	6				
20-7	F3076	WASHER, DISC LOCK-3/8"	15				
20-8	64025-05	NUT-3/8-16 HEX	15				
20-9	502322	KNUCKLE-PIVOT	1				
20-10	A19871	BEARING CUP ASSY	6				
	5102260	CUP-BEARING	1				
20-11	29-010	S/B GREASE FITTING	6				
20-12	G8048	SHACKLE, ANCHOR 3/16"	1				
20-13	502418	CHAIN-REAR HOSE	1				
20-14	502337	CLAMP-HOSE	6				
20-15	502344	HOSE-12" X 15' FLEX	1				
20-16	502334	ARM-PRIMARY	1				
20-17	64123-72	BLT-HEX 1/2-13X2-1/2	2				
20-18	F5076	WASHER, DISC LOCK	4				
20-19	64025-09	HEX, NUT 1/2-13	5				
20-20	64123-39	BOLT-HEX 1/2-13X1-1/4	2				
20-21	502403	STRUT	1				
20-22	502419	CHAIN-FRONT HOSE	2				
20-23	502343	BRACKET W/A- MNTNG	1				
20-24	502321	NOZZLE ASSY	1				
20-25	A52033	TRNSPRT MNT ASSY-UPR	1				
20-26	64123-100	BOLT-3/8-16X2-1/4 HEX	6				
20-27	S8003	STRAP, TIE DOWN	2				
20-28	A52027	TRNSPRT MNT ASSY-LWR	1				
20-29	F3603	SET SCREW, 3/8-16 X 3/4	3				
20-30	502340	ADJUSTER-HOSE HEIGHT	1				
20-31	502336	THREAD-HOSE CLAMP	6				
20-32	64163-61	WSHR .81X.406X16GA	7				
20-33	64123-70	BOLT-HEX 3/8-16X1-1/2	1				
20-34	502420	CHAIN-INTERM HOSE	1				
20-35	64163-67	WASHER-.516X1X12GA	1				
20-36	F3053	WASHER-FLAT 3/8	1				
20-37	64229-03	LOCKNUT-NYLON 3/8-16	12				
20-38	502506	TUBE ASSY-MITER	1				

# POWER BRUSH PICK-UP HEAD OPTION

## BROUWER-VAC

FIGURE 21



# BROUWER- VAC

## POWER BRUSH PICK-UP HEAD OPTION

FIGURE 21

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
21-1	505123	NOZZLE	1	21-50	505244	COVER SEAL - A	4
21-2	502699	SUPPORT ROLLER	3	21-51	505246	COVER SEAL - B	4
21-3	F042050	BOLT 5/8 UNC X 5 GR.8	3	21-52	A55029	BLOWER INLET ASSEMBLY	REF.
21-4	F211000	LOCKNUT 5/8 UNC	5		505302	SMOOTH BLOWER INLET	1
21-5	505089	MODIFIED BEARING	1	21-53	505090	BEARING FLAG PLATE	1
21-6	505161	BRUSH SHAFT L.H.	1	21-54	F120712	SCREW 7/16 X 1 1/4	2
21-7	505162	BRUSH SHAFT R.H.	1	21-55	F220800	JAMNUT 1/2 UNC	4
21-8	505400	FLANGED BEARING	2	21-56	505267	SPRING ANCHOR BRACKET	2
21-9	F040612	BOLT 3/8 UNC X 1 1/4 GR.8	14	21-57	F040414	BOLT 1/4 UNC X 1 1/2 GR.8	4
21-10	F210608	LOCKNUT 3/8 UNC GR.8	8	21-58	F210400	LOCKNUT 1/4 UNC	4
21-11	H0026	BRUSH MOTOR	2	21-59	KD71210	#40 SPROCKET - 12 TOOTH	1
21-12	F320600	FLATWASHER 3/8	12	21-60	A55048	FRONT WHEEL KIT*	3
21-13	F310600	LOCKWASHER 3/8	8	21-61	505367	TRUNK SLIDE	1
21-14	KD73010	#40 SPROCKET - 30 TOOTH	4	21-62	505213	GAP FLAP	1
21-15	F924410	KEY 1/4 X 1/4 X 1 LG.	2	21-63	505214	GAP FLAP CLAMP	1
21-16	505271	BRUSH DRIVE CHAIN	2	21-64	F930610	RIVET 3/16 x 5/8	6
21-17	505274	CHAIN GUARD	2				
21-18	F040410	BOLT 1/4 UNC X 1 GR.8	8				
21-19	F320400	FLATWASHER 1/4	8				
21-20	F210400	LOCKNUT 1/4 UNC	12				
21-21	505358	GAUGE WHEEL ARM	3				
21-22	505068	GAUGE WHEEL ADJUSTER	3				
21-23	505070	ROD	3				
21-24	F040840	BOLT 1/2 UNC X 4 GR.8	6				
21-25	F210808	LOCKNUT 1/2 UNC	9				
21-26	KX30616	LYNCH PIN 3/8 IN.	3				
21-27	F040616	BOLT 3/8 UNC 1 3/4 GR.8	3				
21-28	R0009	GAUGE WHEEL	3				
21-29	F041054	BOLT 5/8 UNC X 5 1/2 GR.8	3				
21-30	F331000	FLATWASHER 5/8	12				
	F330808	FLATWASHER 3/8 SAE GR.8	18				
21-31	F850500	RIVET NUT 5/16 UNC	32				
21-32	505150	REAR SKIRT - 6 IN.	1				
21-33	505144	FRONT SKIRT - 3 IN. - <b>N/C</b>	1				
21-34	505143	RUBBER CLAMP	4				
21-35	505241	END SKIRT - 3 IN.	2				
21-36	505242	END SKIRT CLAMP	2				
21-37	505158	NOZZLE ANGLE	1				
21-38	F320508	FLATWASHER 5/16 GR.8	24				
21-39	F310508	LOCKWASHER 5/16 GR.8	12				
21-40	F040510	BOLT 5/16 X 1 GR.8	24				
21-41	F210500	LOCKNUT 5/16 UNC	12				
21-42	505191	HEIGHT ADJUSTER	4				
21-43	KX30416	LYNCH PIN 1/4 X 1 3/8 LG.	4				
21-44	F040412	BOLT 1/4 UNC X 1 1/4 GR.8	4				
21-45	KS20016	CUT-OFF SPRING	2				
21-46	A100927	THREADED INSERT	4				
21-47	505217	MALE CLEVIS	4				
21-48	505062	SIDE COVER	2				
21-49	F420502	WINGNUT 5/16 UNC	2				

### NOTE

ITEMS 45, 46, 47, 55, 56, 57 & 58 ARE AVAILABLE AS HEAD LIFT SPRING ASSEMBLY - A55035.

### NOTE

POWER BRUSH STANDARD HOSE KIT: A55019

POWER BRUSH DELUXE HYDRAULIC KIT: A55036

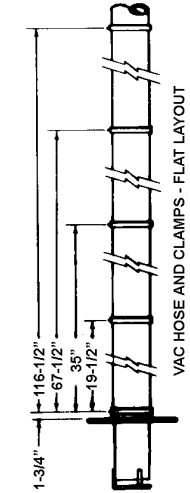
POWER BRUSH RETRO KIT: A55037

POWER BRUSH RETRO KIT WITH DELUXE HYDRAULICS: A55038

### NOTE

ITEMS 2, 3, 4, 21 (505212), 30 (F331000), 33, 34 (Qty:2x), 35, 36 & 52 (A55029) ARE NON-CURRENT.

\*SEE PAGES 78 & 79 FOR DETAIL PARTS

### VAC—HOSE INSTALLATION

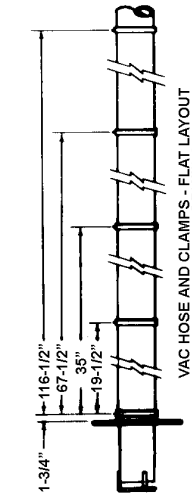
#### CAUTION

**Before using this machine the operator must ensure that ALL SAFETY GUARDS AND SHIELDS ARE POSITIONED CORRECTLY AND ARE NOT DAMAGED.**

It is important that these instructions be read and understood before starting the Vac—Hose installation. Lay out and identify all components. Observe all safety procedures. This installation is a two—man operation and requires a safe stable working platform alongside the machine to enable the top of the machine to be reached.

1. Remove existing bolts from location “A”. Lift the mounting bracket **23** into position and attach with 1/2 X 2-1/2" bolts, 1/2" lockwashers and hex nuts.
2. Attach strut **21** to mounting bracket **23** with 1/2 X 1-1/4" bolt, 1/2" lockwasher and hex nut. At location “B”, fit hardware as above.
3. At location “C”, attach the arm rest bracket **2** with 3/8 X 2-1/4" bolts, 3/8" flat washers **3**, lockwashers **7** and hex nuts **8**.
4. At location “D”, attach the upper transport mount **25** using 3/8 X 2-1/2" bolts, 3/8" lockwashers **7** and hex nuts **8**.
5. Using existing hardware, attach the lower transport mount **28**.
6. Assemble the secondary arm **1** to the pivot knuckle **9**. (See detail “E”) To insert the needle bearings **10**, it may be necessary to open up the yoke with a chisel point. Liberally grease the needle bearings and make sure that no dirt enters the bearings. Tighten the clamp bolt. Check that the grease fittings are in place.
7. Assemble the primary arm assembly **16** to the pivot knuckle using the same procedure as above.
8. Lift the assembled secondary arm and primary arms into position. Resting the secondary arm on the support **2**, fit the primary arm cross piece to the mounting bracket **23** as in Step 6 above.
9. Assemble the clamps **14** and the nozzle **24** onto the hose **15**. Fit the hose height adjuster **30** to the nozzle **24**. It is retained by three square-headed set screws **29**. Attach the rear hose chains **13** 21 links, intermediate hose chain **34** 9 links, and the two front hose chains **22** 5 links to the hose clamps **14**, using the hose clamp thread **31**, lockwashers **7** and hex nuts **8**.

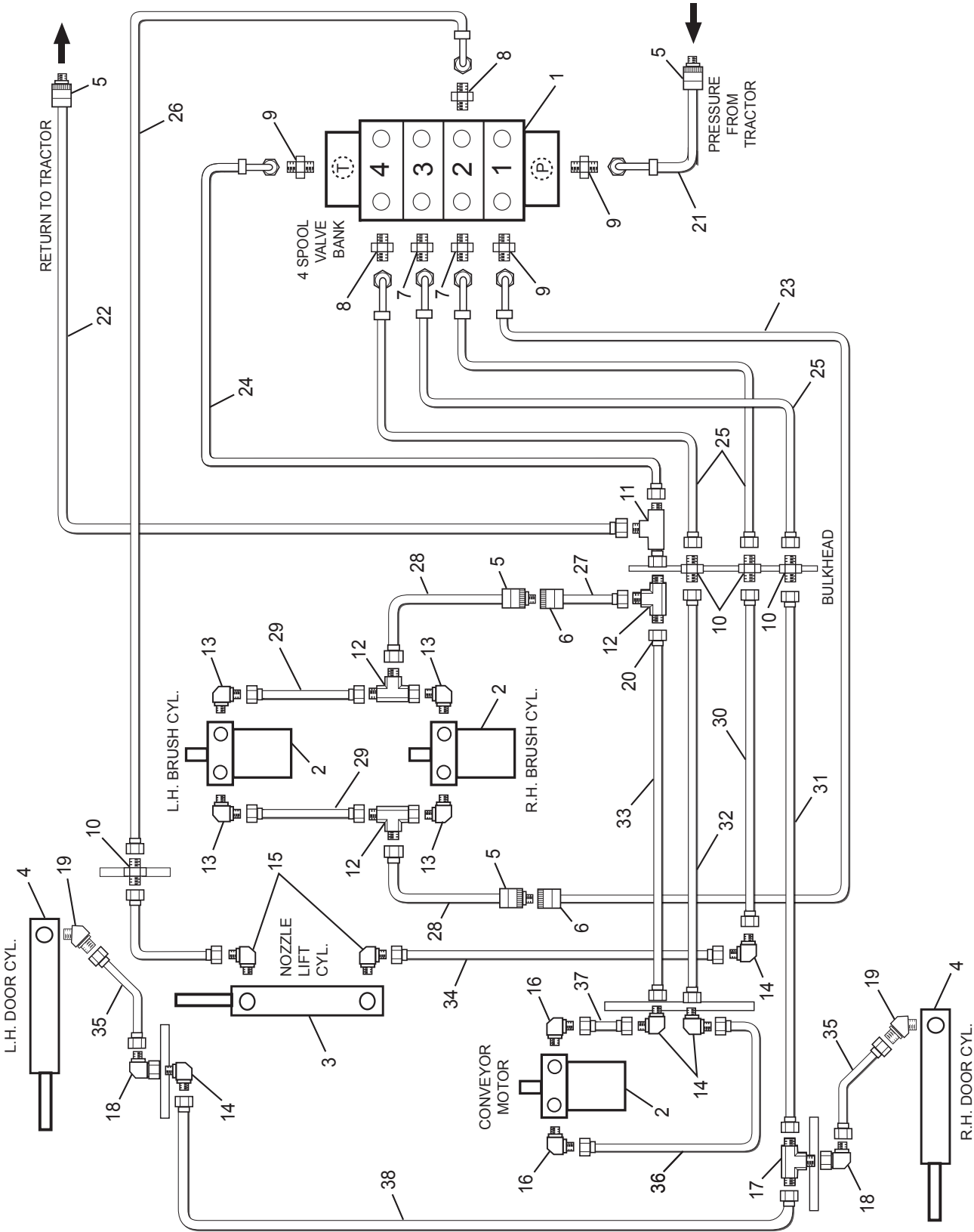
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10. Attach the assembled hose to the machine in the following order:

- » Place the inboard end of the hose onto the intake tube, tighten the clamp **14A**, and attach the chain **22B** to the mounting bracket **23** using a 3/8 X 1-1/2" bolt **33** with a 3/8" flat washer directly under the head, and five 3/8" flat washers **33** between the chain and the mounting bracket. Secure with 3/8" lockwasher **7** and hex nut **8**.
- » Attach the chain **22A** to the primary arm **16** using anchor shackle **12**. Place the nozzle **24** into position on the transport supports **25 & 28** and secure with rubber springs **27**.
- » Attach the chain **34** 9 links to the secondary arm **1**. Attach the chain **13** 21 links to the secondary arm **1**. Fit the spring adjusting rod **5** to the pivot knuckle **9**, retaining with 1/2" flat washers **35** and hex nuts **19**. Hook the spring **4** to the secondary arm **1** and the adjusting rod **5**. Adjust the spring tension to allow the hose assembly to be just lifted off the support bracket **2** without undue effort.

FIGURE 22





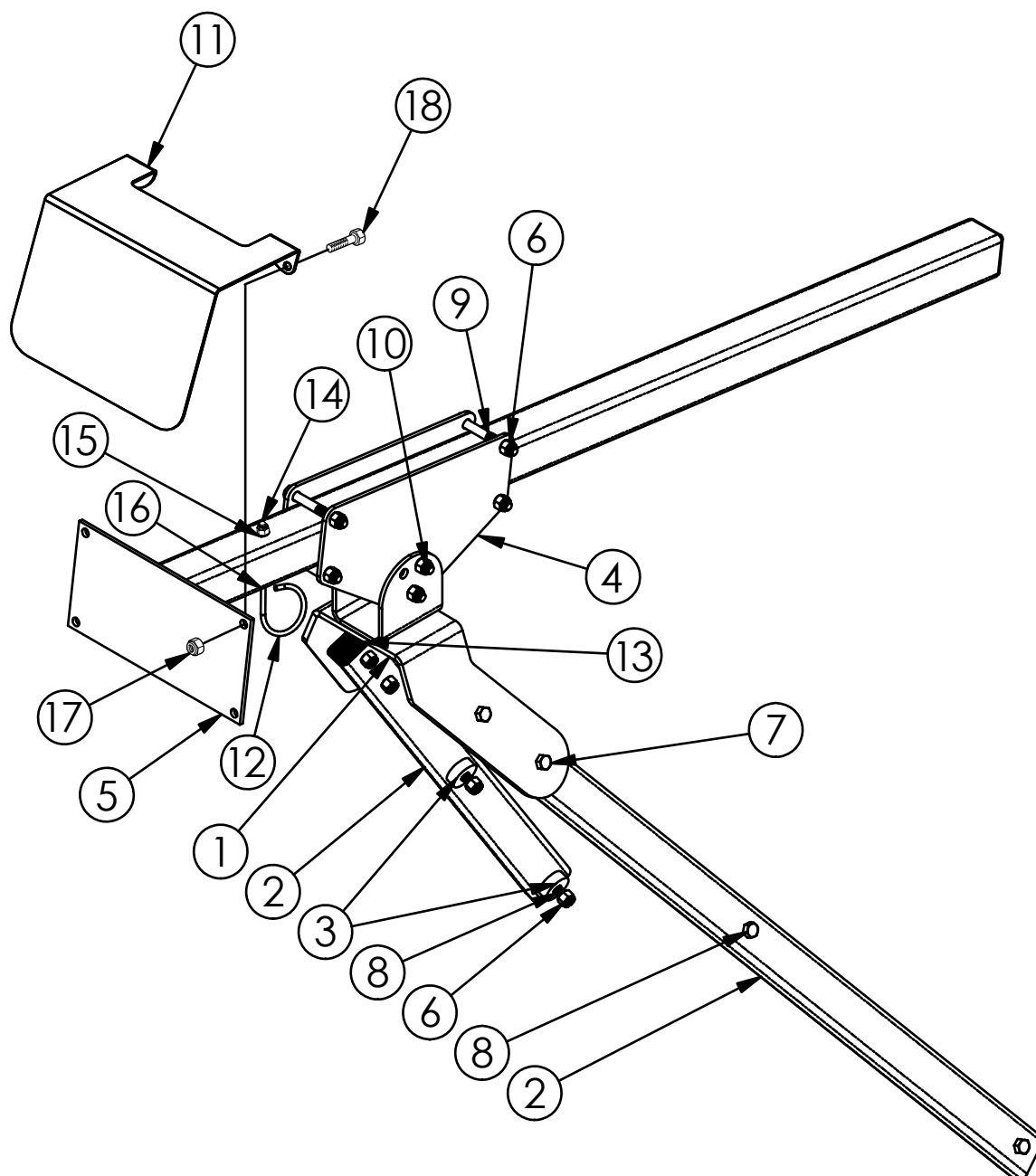
# BROUWER- VAC

## BV-85 WITH POWER BRUSH - HYDRAULICS

FIGURE 22

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
22-1	KH20212	4 SPOOL VALVE BANK	1				
22-2	KH30007	HYDRAULIC MOTOR	3				
22-3	505332	NOZZLE LIFT CYLINDER	1				
22-4	502262	DOOR CYLINDER	2				
22-5	MH1004	MALE QUICK DISCONNECT	4				
22-6	23-085	FEMALE QUICK DIS.	2				
22-7	A55062	FITTING. ORIFICED	2				
22-8	6-10-070120	FITTING. ST. THD. O RING	2				
22-9	8-10-070120	FITTING. ST. THD. O RING	3				
22-10	6-6-070601	FITTING. STRAIGHT BLKHD.	4				
22-11	8-8-8-070958	FITTING. TEE BLKHD.	1				
22-12	8-8-8-070432	FITTING. SWIVEL RUN TEE	3				
22-13	8-10-070220	FITTING. 90 DEG.	4				
22-14	6-6-070701	FITTING. 90 DEG. BLKHD.	4				
22-15	6-6-070220	FITTING. 90 DEG.	2				
22-16	6-10-070220	FITTING. 90 DEG.	2				
22-17	6-6-6-070959	FITTING. BLKHD. TEE	1				
22-18	6-6-070221	FITTING. SWIVEL ELBOW	2				
22-19	6-6-140239	FITTING. 45 DEG. ELBOW	2				
22-20	8-6-070123	FITTING. TUBE REDUCER	1				
22-21	A55024	HOSE ASSEMBLY	1				
22-22	A55055	HOSE ASSEMBLY	1				
22-23	A55056	HOSE ASSEMBLY	1				
22-24	A55057	HOSE ASSEMBLY	1				
22-25	A55023	HOSE ASSEMBLY	3				
22-26	A55058	HOSE ASSEMBLY	1				
22-27	A55059	HOSE ASSEMBLY	1				
22-28	A55060	HOSE ASSEMBLY	2				
22-29	A55014	HOSE ASSEMBLY	2				
22-30	503301	HOSE ASSEMBLY	1				
22-31	503302	HOSE ASSEMBLY	1				
22-32	503303	HOSE ASSEMBLY	1				
22-33	503304	HOSE ASSEMBLY	1				
22-34	A55061	HOSE ASSEMBLY	1				
22-35	A52022	HOSE ASSEMBLY	2				
22-36	A52029	HOSE ASSEMBLY	1				
22-37	A52030	HOSE ASSEMBLY	1				
22-38	502313	HOSE ASSEMBLY	1				

**FIGURE 23**



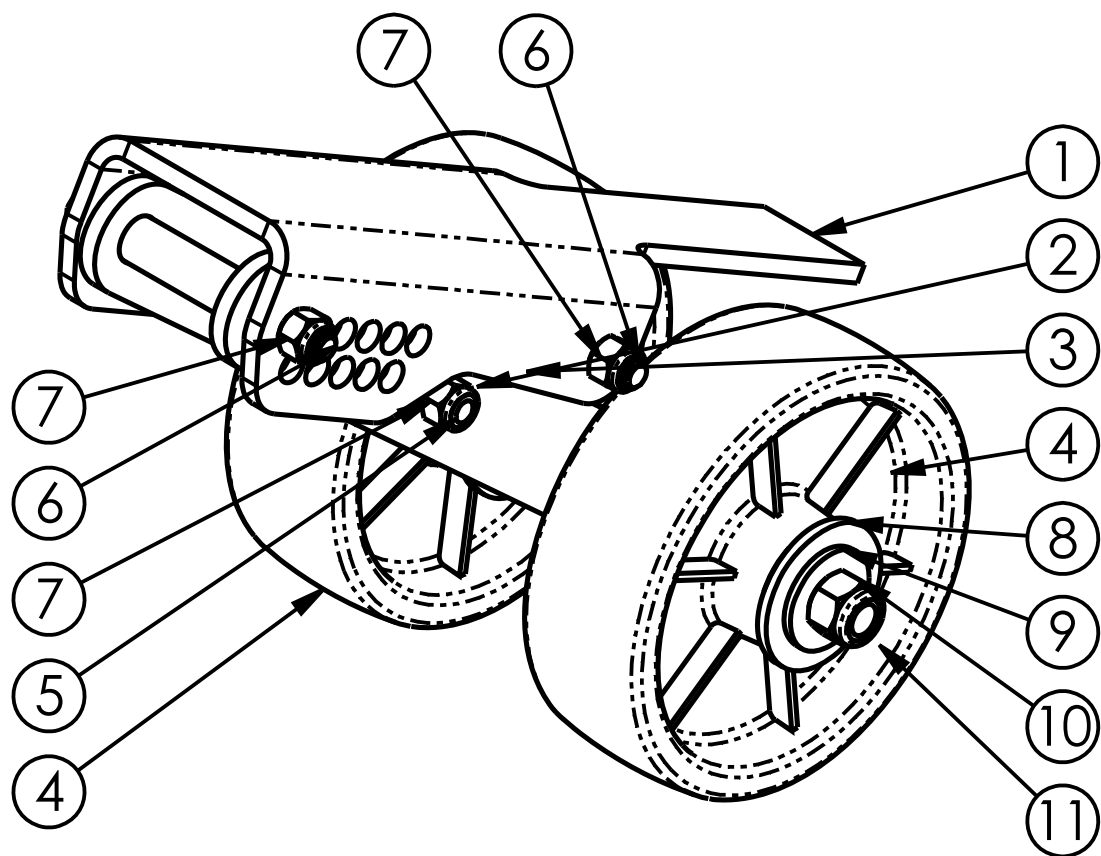
# BROUWER- VAC

## BV-85 WITH POWER BRUSH - VALVE HOLDER

FIGURE 23

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
23-1	505083	SADDLE - VALVE HOLDER	1				
23-2	505085	SUPPORT STRUT	2				
23-3	505086	STRUT SPACER	4				
23-4	GR30488	SPRAY VALVE SUPPORT	1				
23-5	505220	4 SPOOL VALVE HOLDER	4				
23-6	F210608	LOCKNUT - 3/8 UNC GR.8	14				
23-7	F040606	BOLT - 3/8 UNC x 1 3/4 GR.8	4				
23-8	F040622	BOLT - 3/8 UNC x 2 1/4 GR.8	4				
23-9	F040630	BOLT - 3/8 UNC x 3 GR.8	4				
23-10	F040634	BOLT - 3/8 UNC x 3 1/2 GR.8	2				
23-11	502222	4 SPOOL VALVE SHIELD	1				
23-12	4160130	WIRE FORM - 4 IN. DIA.	1				
23-13	4134551	PLASTIC CAP 1 IN. x 2 IN.	2				
23-14	F210708	LOCKNUT 7/16 UNC GR.8	1				
23-15	F330708	WASHER 7/16	2				
23-16	F230708	NUT 7/16 UNC GR.8	1				
23-17	F210508	LOCKNUT 5/16 UNC GR.8	3				
23-18	4040526	BOLT 5/16 x 2 3/4 UNC GR.8	3				

**FIGURE 24**



# BROUWER- VAC

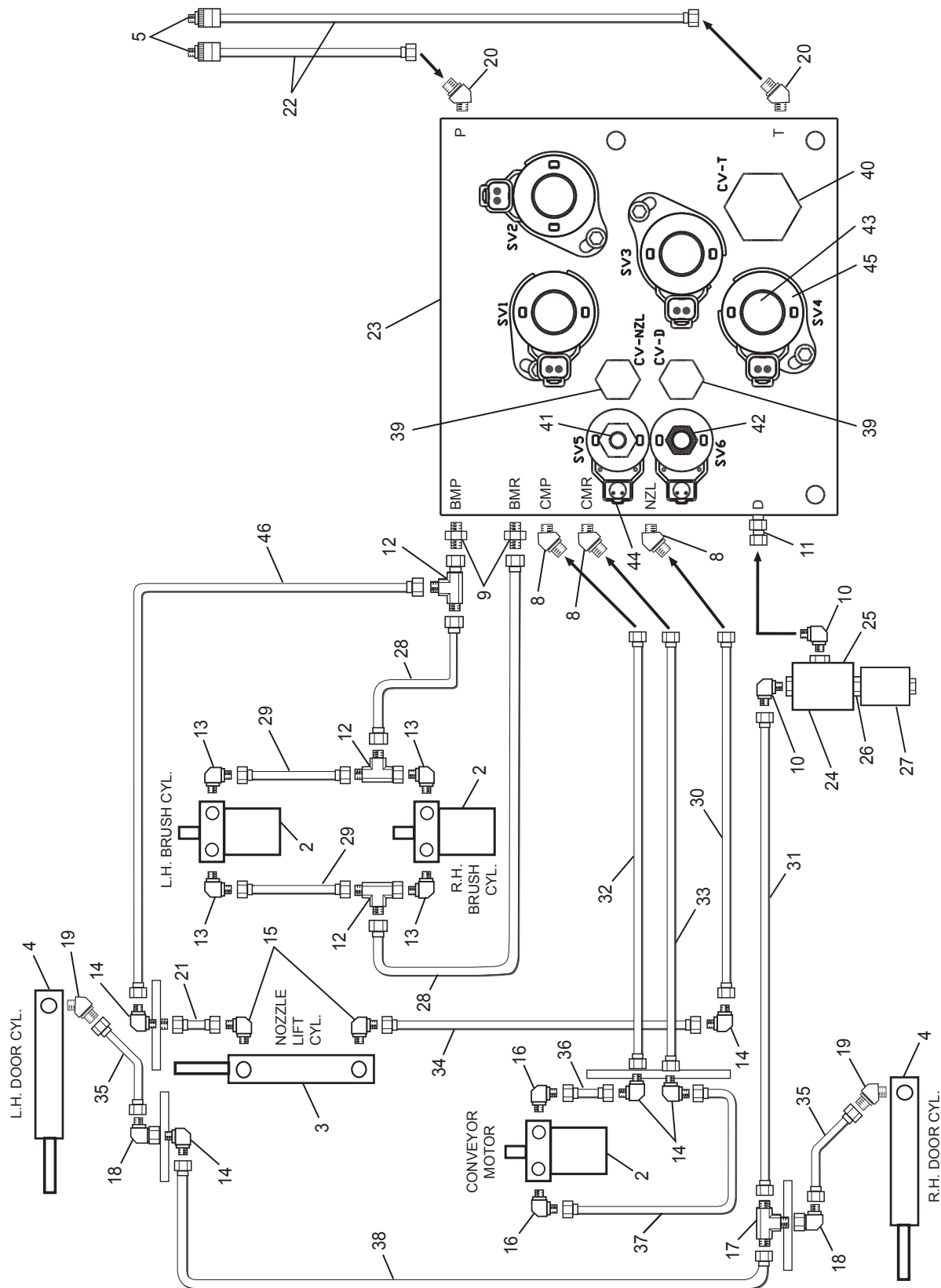
## BV-85 WITH POWER BRUSH - FRONT WHEEL KIT

FIGURE 24

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
24-1	505346	WHEEL MOUNT CHANNEL	1				
24-2	505343	CONTROL LINK	1				
24-3	505339	WHEEL LINK	1				
24-4	KW88201	6 IN. x 2 IN. WHEEL	2				
24-5	F040630	BOLT - 3/8 UNC x 3 GR.8	1				
24-6	F040640	BOLT - 3/8 UNC x 4 GR.8	2				
24-7	F210608	LOCKNUT 3/8 UNC GR.8	3				
24-8	F321208	WASHER 3/4 UNC GR.8	4				
24-9	F320808	WASHER 1/2 UNC GR.8	4				
24-10	F040634	BOLT - 3/8 UNC x 3 1/2 GR.8	2				
24-11	502222	4 SPOOL VALVE SHIELD	1				

FIGURE 25

BROUWER-  
VAC



# BROUWER- VAC

## SOLENOID POWER BRUSH - HYDRAULICS

FIGURE 25

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
22-1	KH20212	4 SPOOL VALVE BANK	1				
22-2	KH30007	HYDRAULIC MOTOR	3				
22-3	505332	NOZZLE LIFT CYLINDER	1				
22-4	502262	DOOR CYLINDER	2				
22-5	MH1004	MALE QUICK DISCONNECT	2				
22-6	23-085	FEMALE QUICK DIS.	2				
22-7	A55062	FITTING. ORIFICED	2				
22-8	6-6-070320	FITTING. 45 DEG. ELBOW	3				
22-9	8-12-070120	FITTING. ST. THD. O RING	2				
22-10	6-8-070220	FITTING. 90 DEG. ELBOW	2				
22-11	6-6-070181	FITTING. SWIVEL TO ORB	1				
22-12	8-8-8-070432	FITTING. SWIVEL RUN TEE	3				
22-13	8-10-070220	FITTING. 90 DEG.	4				
22-14	6-6-070701	FITTING. 90 DEG. BLKHD.	4				
22-15	6-6-070220	FITTING. 90 DEG.	2				
22-16	6-10-070220	FITTING. 90 DEG.	2				
22-17	6-6-6-070959	FITTING. BLKHD. TEE	1				
22-18	6-6-070221	FITTING. SWIVEL ELBOW	2				
22-19	6-6-140239	FITTING. 45 DEG. ELBOW	2				
22-20	8-12-070320	FITTING. 45 DEG. ELBOW	2				
22-21	A55072	HOSE ASSEMBLY	1				
22-22	A55045	HOSE ASSEMBLY	2				
22-23	KH20231	SOLENOID MANIFOLD	1				
	KH70132	SEAL KIT	1				
22-24	KH20123	SOLENOID VALVE ASSY.	1				
22-25	KH20129	LINE BODY	1				
22-26	KH20128	SOLENOID	1				
22-27	KH20131	COIL	1				
22-28	A55046	HOSE ASSEMBLY	2				
22-29	A55014	HOSE ASSEMBLY	2				
22-30	503301	HOSE ASSEMBLY	1				
22-31	503302	HOSE ASSEMBLY	1				
22-32	503303	HOSE ASSEMBLY	1				
22-33	503304	HOSE ASSEMBLY	1				
22-34	A55061	HOSE ASSEMBLY	1				
22-35	A52022	HOSE ASSEMBLY	2				
22-36	A52029	HOSE ASSEMBLY	1				
22-37	A52030	HOSE ASSEMBLY	1				
22-38	502313	TUBE ASSEMBLY	1				
22-39	KH20302	CHECK VALVE SPRING 200 PSI	2				
22-40	KH20303	CHECK VALVE SPRING 5 PSI	1				
22-41	KH20304	SOLENOID POPPET	1				
22-42	KH20288	SOLENOID POPPET	1				
22-43	KH20305	SOLENOID POPPET	1				
22-44	KH20306	COIL	1				
22-45	KH20307	COIL	1				
22-46	A55058	HOSE ASSEMBLY	1				



**Kesmac Inc.**

23324 Woodbine Avenue, Keswick Ontario Canada L4P 0N1

Tel (905) 476-6222 Fax (905) 476-6744

Web Site [www.brouwerkesmac.com](http://www.brouwerkesmac.com) Email [info@kesmac.com](mailto:info@kesmac.com)