

SMITHCO

Wayne, Pennsylvania 19087

PARTS & SERVICE MANUAL

SWEEP STAR V62 With Electric Clutch

Models 78-200-A

Starting Serial # 78025

January, 2001

SMITHCO PRODUCT SUPPORT
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Thank you for purchasing a **Smithco** product.

Read this manual and all other manuals pertaining to the Sweep Star V62 carefully as they have safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage.

Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

All **Smithco** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Sweep Star V62 is located on the left front frame. Refer to engine manual for placement of engine serial number.

For easy access record your Serial and Model numbers here.

| | | |
|--|----------------------|----------------------|
| SMITHCO | | DATE OF MFG. |
| WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069 | | <input type="text"/> |
| SERIAL NO. | kW/hp | |
| <input type="text"/> | <input type="text"/> | |
| MODEL NO. | kg/lb | |
| <input type="text"/> | <input type="text"/> | |



Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts



SAFE PRACTICES

1. It is your responsibility to read this manual and all publications associated with this machine (engine, accessories and attachments).
2. Never allow anyone to operate or service the machine or its attachments without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands and feet. Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Fuel is highly flammable, handle with care.
10. Keep engine clean. Allow the engine to cool before storing and always remove the ignition key.
11. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
12. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
 - A. Use extra caution in backing up the vehicle. Ensure area is clear.
 - B. Do not stop or start suddenly on any slope.
 - C. Reduce speed on slopes and in sharp turns. Use caution when changing directions on slopes.
 - D. Stay alert for holes in the terrain and other hidden hazards.
 - E. Run up and down slopes, never across the face.
13. Before leaving operator's position for any reason:
 - A. Disengage all drives.
 - B. Lower all attachments to the ground.
 - C. Shut engine off and remove the ignition key.
14. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
15. The rubber fingers, sweeper and vacuum pick up and propel debris and small objects in its path during operation. Keep the area of operation clear of all bystanders.
16. Never carry passengers.
17. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
18. Use parts and materials supplied by SMITHCO only. Do not modify any function or part.
19. Do not remove the radiator cap when the engine is hot. When cooled, loosen cap slightly to the stop to relieve any pressure before removing the cap completely.
20. Avoid sharp turns. Watch the tires of the tractor while turning to make sure they do not contact the tongue of the Sweep Star V62.
21. Shut down power source before attempting to unclog any part of the machine.
22. If reel deck begins to vibrate abnormally, immediately shut off power and determine the cause.
23. Do not tow on public roads.

These machines are intended for professional maintenance on large turf areas such as golf courses, baseball fields, parks, recreation areas, and many other large open areas. Other use is forbidden.



SPECIFICATIONS FOR SWEEP STAR V62

WEIGHTS AND DIMENSIONS

| | |
|--------|------------------|
| Length | 151" (384 cm) |
| Width | 68" (172 cm) |
| Height | 87" (221 cm) |
| Weight | 1500 lb (680 kg) |

SOUND LEVEL

| | |
|-------------------|--------|
| At ear level | 98 dB |
| At 3 ft (0.914 m) | 104 dB |
| At 30 ft (9.14 m) | 86 dB |

ENGINE

| | |
|--------------------|--|
| Make | Kawasaki |
| Model# | FD661D |
| Horsepower | 22 Hp (16 kW) |
| Fuel | Unleaded 87 Octane Gasoline Minimum |
| Cooling System | Liquid Cooled |
| Lubrication System | Full Pressure |
| Alternator | 20 Amp |

TIRES & WHEELS

Two 24 x 13.00 x 12 NHS (18 psi (1.3 bar))
Castor: 9 x 3.5 x 4 (20 psi (1.4 bar))

BATTERY (optional)

| | |
|--------------------------|-----------------------------|
| | Automotive type 45- 12 volt |
| BCI Group | Size 45 |
| Cold Cranking Amps | 480 minimum |
| Ground Terminal Polarity | Negative (-) |
| Maximum Length | 9" (23 cm) |
| Maximum Width | 5.38" (14 cm) |
| Maximum Height | 9" (23 cm) |

FLUID CAPACITY

| | |
|--------------------------|---|
| Crankcase Oil | See Engine Manual |
| Fuel | 5 gallon (19 liters) |
| Hydraulic Fluid | 2.88 gallon (10.9 liters) |
| Cooling | 2.8 quarts (2.7 liters) |
| Grade of Hydraulic Fluid | SAE 10W-40 API Service SJ or higher Motor Oil |

OPTIONAL EQUIPMENT

| | |
|------------------------------------|------------------------------|
| 78-201 Replacement Brush Reel | 78-207 Hydraulic Lift System |
| 78-202 Replacement Finger Reel | 78-208 Filter System |
| 78-203 Hard Surface Sweeper | 78-209 Ball Hitch |
| 78-204 5 th Wheel Hitch | 78-210 Nylon Brush Head |
| 78-205 Remote Vacuum Hose | 78-211 Rubber Finger Head |
| 78-206 Clevis Hitch | 22-073 Battery |



MAINTENANCE



CAUTION Before servicing or making adjustments to machine, stop engine and remove key from ignition.



Use all procedures and parts prescribed by the manufacturer's. Read the engine manual before operation.

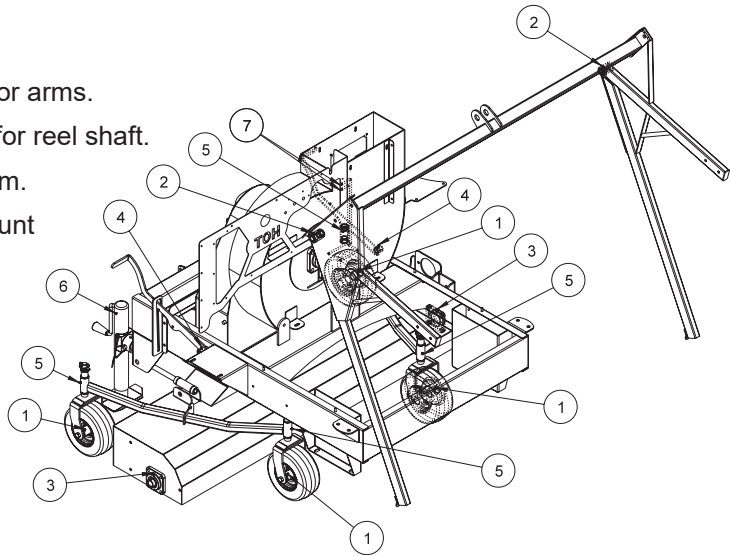
LUBRICATION

Use No. 2 General Purpose Lithium Base Grease and lubricate every 100 hours. The Sweep Star V62 has seventeen grease fittings. All bearings are sealed bearings. When inserting grease, be careful not to ruin the seal, if this happens, replace the bearing at once.

Be sure to wipe grease fitting clean before injecting grease. Give only one or two pumps of grease at each lubrication.

REF# LOCATION

- 1 One on all four castor wheels.
- 2 One on right and left hopper door arms.
- 3 One on each mounted bearing for reel shaft.
- 4 One on right and left deck lift arm.
- 5 one on all four castor wheel mount brackets.
- 6 One on the jack stand.
- 7 Two on machine control panel that go to the blower shaft mounted bearing.



HYDRAULIC OIL

1. Use SAE 10W-40 API Service SJ or higher motor oil.
2. For proper warranty, change oil every 500 hours or annually, whichever is first and change the filter after the first 20 hours, then at 100 hours, then every 250 hours thereafter.
3. The oil level should be 2" to 2 1/2" from top of the tank when fluid is cold. Do not overfill.
4. After changing oil and/or filter, run the machine for a few minutes. Check oil level and for leaks.
5. Always use caution when filling hydraulic oil tank or checking level to keep system free of contaminants. Check and service more frequently when operating in extremely cold, hot or dusty conditions.
6. If natural color of fluid is now black or smells burnt, it is possible that an overheating problem exists.
7. If fluid becomes milky, water contamination may be a problem.
8. If either of the above conditions happen, change oil and filter immediately after fluid is cool and find cause. Take fluid level readings when system is cold.
9. In extreme temperatures you can use straight weight oil. We recommend SAE 30W API Service SJ or higher when hot (above 90°F (33°C)) and SAE 10W API Service SJ or higher when cold (below 32°F (0°C)) ambient temperature. Use either motor oil or hydraulic oil, but do not mix.
10. Oil being added to the system must be the same as what is already in the tank. Mark tank fill area as to which type you put in.

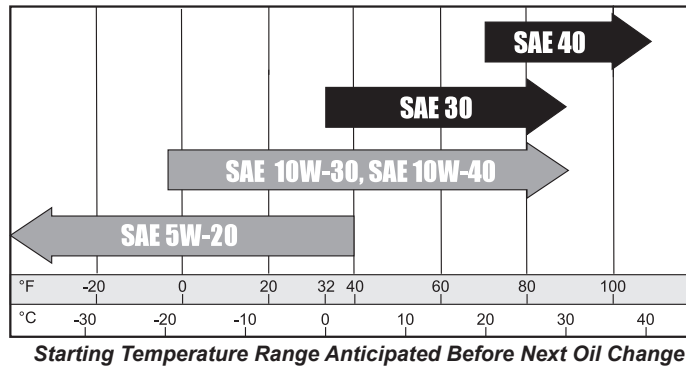
TIRE PRESSURE

Caution must be used when inflating a low tire to recommended pressure. Over inflating can cause tires to explode. Tires on the machine should be 18 psi (1.3 bar), castor wheels should be 20 psi (1.4 bar). Improper inflation will reduce tire life considerably.

ENGINE OIL KAWASAKI

Change and add oil according to chart below. Do not overfill. Use a high quality detergent oil. For Kawasaki engine API Service Classification: SJ or higher. Use no special additives with recommended oils. Do not mix oil with gasoline.

SAE VISCOSITY GRADES



Use of multi-viscosity oils (10W-30, etc) will result in increased oil consumption. Check oil level more frequently if using these types of oils.

WHEEL MOUNTING PROCEDURE

MACHINE WHEELS

1. Turn machine off and remove key.
2. Be sure unit is on a level surface. Unhitch from tow vehicle if possible.
3. Block the opposite wheel then the one you are working on.
4. Loosen nuts slightly on wheel to be removed.
5. Jack up machine being careful not to damage underside of machine.
6. Remove nuts, remove wheel.
7. Place new wheel on hub lining up bolt holes.
8. Torque nuts to 64-74 ft/lb (87-100 Nm) using a cross pattern. Torque again after first 10 hours and every 200 hours thereafter.
9. Lower machine to ground and remove blocks and jack.

FILTER SYSTEM

Filter pack may be cleaned by shaking or spraying off with low pressure water. Filter will disintegrate if high pressure is used on it.

MAINTENANCE (CONTINUED)

BATTERY

Batteries normally produce explosive gases which can cause personal injury. Do not allow flames, sparks or any ignited object to come near the battery. When charging or working near battery, always shield your eyes and always provide proper ventilation.

Battery cable should be disconnected before using "Fast Charge".

Charge battery at 15 amps for 10 minutes or 7 amps for 30 minutes. Do not exceed the recommended charging rate. If electrolyte starts boiling over, decrease charging.

Always remove grounded (-) battery clamp first and replace it last. Avoid hazards by:

1. Filling batteries in well-ventilated areas.
2. Wear eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.
4. Avoid spilling or dripping electrolyte.



WARNING Battery Electrolyte is an acidic solution and should be handled with care. If electrolyte is splashed on any part of your body, flush all contact areas immediately with liberal amounts of water. Get medical attention immediately.

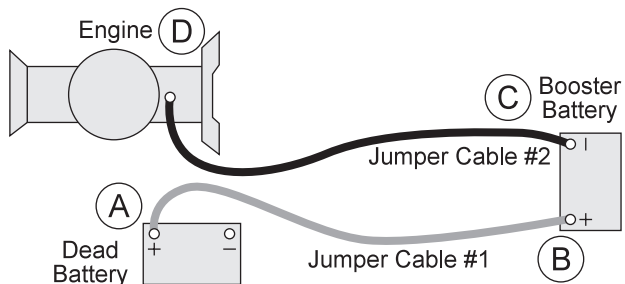
JUMP STARTING



WARNING Use of booster battery and jumper cables. Particular care should be used when connecting a booster battery. Use proper polarity in order to prevent sparks.

To jump start (negative grounded battery):

1. Shield eyes.
2. Connect ends of one cable to positive (+) terminals of each battery, first (A) then (B).
3. Connect one end of other cable to negative (-) terminal of "good" battery (C).
4. Connect other end of cable (D) to engine block on unit being started (NOT to negative (-) terminal of battery)



To prevent damage to other electrical components on unit being started, make certain that engine is at idle speed before disconnecting jumper cables.

SERVICE CHART



CAUTION Before servicing or making adjustments to the machine, stop engine, set park break, block wheels and remove key from ignition.



NOTE: Follow all procedures and **ONLY** use parts prescribed by the manufacturer. Read the engine manual before maintenance.

| | Daily | As Required | 100 Hours | 200 Hours | 250 Hours | 300 Hours | 400 Hours | Every 500 Hours/Yearly |
|---|-------|-------------|-----------|-----------|-----------|-----------|-----------|------------------------|
| Oil Engine Oil | C | R | R | R | | R | R | R |
| Engine Oil Filter | | | | R | | | R | R |
| Engine for Leaks and Loose Parts | C | | C | C | | C | C | C |
| ‡ Air Cleaner (Paper Element) | | R | C | C | | R | C | R |
| ‡ Air Cleaner (Foam Element every 25 hours) | | R | C | C | C | R | C | R |
| Spark Plugs (Clean and Gap/Replace) | | R | C | C | | C | C | R |
| Valve Clearance | | | | | | | | C |
| Idle Speed | | C | | | C | | | C |
| ‡ Cooling System | C | | C | C | | C | C | C |
| Belts and Hoses | C | | | | C | | | C |
| * Tire Pressure | C | | C | C | | C | C | C |
| Visual Inspection of Tires | C | | C | C | | C | C | C |
| Fuel Level | C | C | | | | | | |
| Fuel Filter | | R | | | | | | R |
| Hydraulic Oil | C | | C | C | | C | C | R |
| † Hydraulic Oil Filter | | | | | R | | | R |
| Hydraulic System for Leaks and Loose Parts | C | | C | C | | C | C | C |
| Battery Electrolyte Level | | | C | C | | C | C | C |
| Clean Battery Terminals | | | | | C | | | C |
| § Torque Lug Nuts | | | | C | | | C | C |
| Lubricate Reel and Blower Shaft Bearings | | | | | C | | | C |
| Lubricate Castor Wheels (Every 25 hrs) | C | C | | | | | | |

C=Check or Clean at specified intervals

R=Replace at specified intervals

* Tire pressure: Machine Tires 18 psi (1.3 bar) Castor Wheels 20 psi (1.4 bar)

† Replace hydraulic filter after the first 20, 100, and every 250 there after.

§ Torque tire nuts after the first 10 hours and every 200 hours there after (64 to 74 ft/lb (87-100 Nm))

‡ Kawasaki change oil after first 8 hours.

£ Change oil every 25 hours when operating under heavy load or in high ambient temperatures.

‡ Clean more often under dusty conditions or when airborne debris is present, replace air cleaner parts, if very dirty.

The suggested maintenance checklist is not offered as a replacement for the manufacturer's engine manual but as a supplement. You must adhere to the guidelines established by the manufacturer for warranty coverage. In adverse conditions such as dirt, mud or extreme temperatures, maintenance should be more frequent.



END USER'S SERVICE CHART

| | Daily | As Required | 100 Hours | 200 Hours | 250 Hours | 300 Hours | 400 Hours | Every 500 Hours/Yearly |
|---|-------|-------------|-----------|-----------|-----------|-----------|-----------|------------------------|
| ☑ Engine Oil | | | | | | | | |
| Engine Oil Filter | | | | | | | | |
| Engine for Leaks and Loose Parts | | | | | | | | |
| ‡ Air Cleaner (Paper Element) | | | | | | | | |
| ‡ Air-Cleaner (Foam Element every 25 hours) | | | | | | | | |
| Spark Plugs (Clean and Gap/Replace) | | | | | | | | |
| Valve Clearance | | | | | | | | |
| Idle Speed | | | | | | | | |
| ‡ Cooling System | | | | | | | | |
| Belts and Hoses | | | | | | | | |
| * Tire Pressure | | | | | | | | |
| Visual Inspection of Tires | | | | | | | | |
| Fuel Level | | | | | | | | |
| Fuel Filter | | | | | | | | |
| Hydraulic Oil | | | | | | | | |
| †Hydraulic Oil Filter | | | | | | | | |
| Hydraulic System for Leaks and Loose Parts | | | | | | | | |
| Battery Electrolyte Level | | | | | | | | |
| Clean Battery Terminals | | | | | | | | |
| § Torque Lug Nuts | | | | | | | | |
| Lubricate Reel and Blower Shaft Bearings | | | | | | | | |
| Lubricate Castor Wheels (Every 25 hrs) | | | | | | | | |

C=Check or Clean at specified intervals

R=Replace at specified intervals

* Tire pressure: Machine Tires 18 psi (1.3 bar) Castor Wheels 20 psi (1.4 bar)

† Replace hydraulic filter after the first 20, 100, and every 250 there after.

§ Torque tire nuts after the first 10 hours and every 200 hours there after (64 to 74 ft/lb (87-100 Nm))

☒ Kawasaki change oil after first 8 hours.

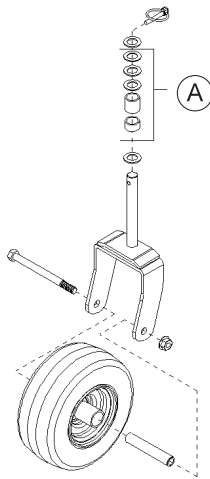
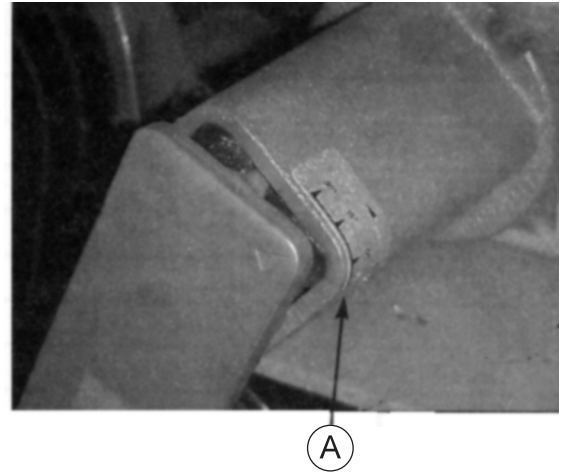
£ Change oil every 25 hours when operating under heavy load or in high ambient temperatures.

‡ Clean more often under dusty conditions or when airborne debris is present , replace air cleaner parts, if very dirty.



ADJUSTMENT OF BELT TENSIONER

There are two belt tensioners on the Sweep Star V62. One controls the tension on the belt from the engine to blower shaft the other controls the belt on the finger or brush reel. The proper tension of the idler should be 12 to 15 as per the gauge (A) on the side of the tightener. Over tightening the belt will shorten the life of the belt and the machine may not perform to the best of its ability. To adjust belt tensioner, loosen bolt holding tensioner. Bring idler pulley tight to belts and turn tensioner into belts to 15°. Tighten holder bolt.



CASTOR WHEELS

Install castor wheels onto the brush/finger head assembly. You may put the machine bushings and spacers (A) on in any combination to get desired height. You should leave one machine bushing on the very bottom and one on the very top next to the lockpin. Check the tire pressure on Castor Wheels they should be 20 psi (1.4 bar).

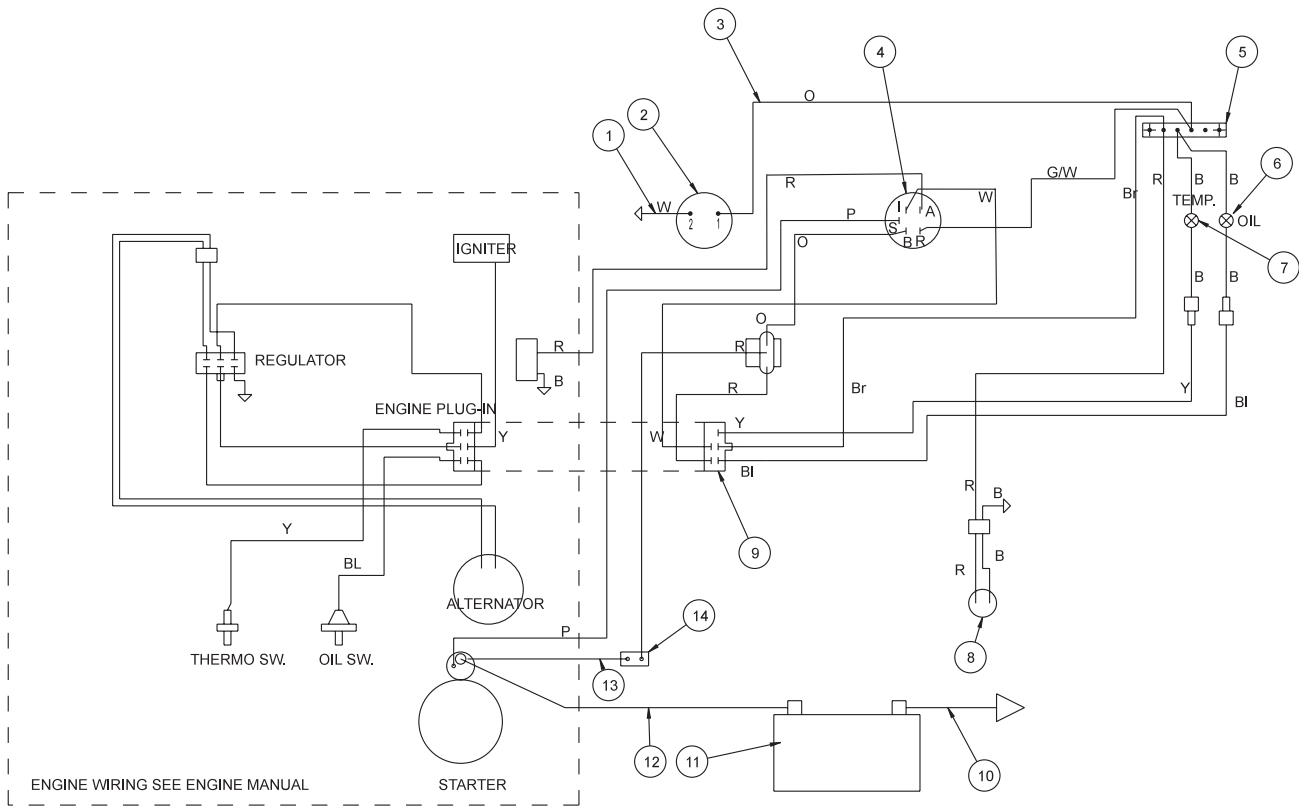
STORAGE

When storing, remove the key from the key switch to avoid unauthorized persons from operating machine.

1. Before storing clean machine thoroughly.
2. Check bolts and nuts, tighten as necessary.
3. Make all repairs that are needed and remove any debris.
4. Remove the battery, adjust the electrolyte level and recharge it. Store the battery in a dry, dark place.
5. Store in a clean and dry area, but NOT near a stove, furnace or water heater which uses a pilot light or any device that can create a spark.
6. Engines stored over 30 days need to be protected or drained of fuel to prevent gum from forming in a fuel system or on essential carburetor parts. Check the engine manual and follow the instructions for the storage of the engine.

WIRING DRAWING

Diagrams

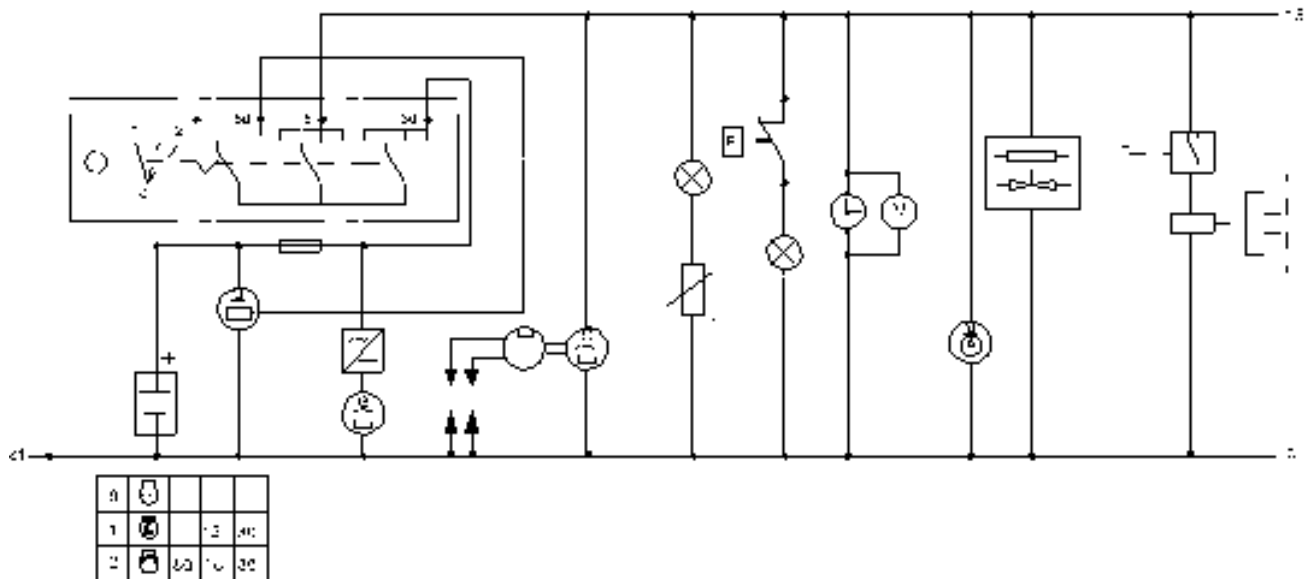


WIRING PARTS LIST

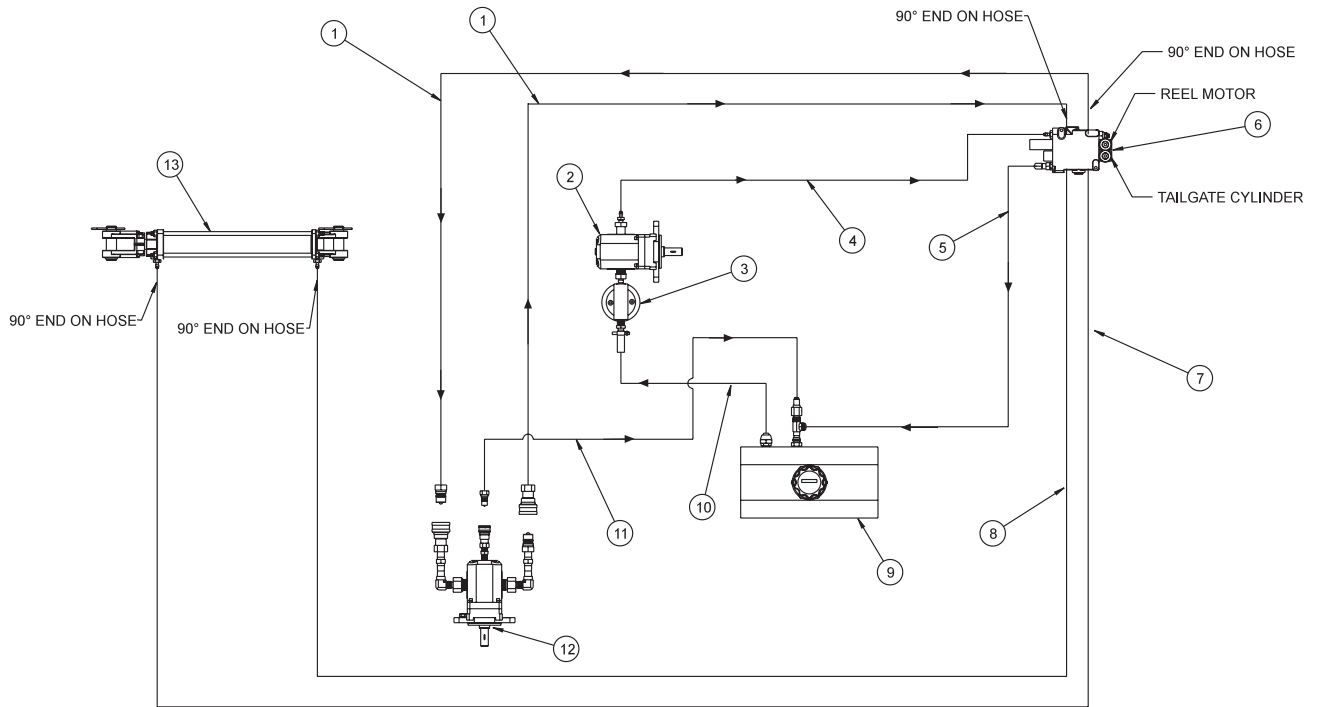
| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|--|----------|
| 1 | 78-342 | Wire, Hour Meter to Ground | 1 |
| 2 | 12-017 | Hour Meter | 1 |
| 3 | 78-343 | Wire, Hour Meter to Buss Bar | 1 |
| 4 | 12-016 | Ignition Switch | 1 |
| | 76-310 | Key Set (comes with 12-016) | 1 |
| 5 | 8935 | Buss Bar | 1 |
| 6 | 78-340 | Oil Light | 1 |
| 7 | 78-341 | Temperature Light | 1 |
| 8 | | Fuel Pump (Part of Engine) | 1 |
| 9 | 78-367 | Wire Harness (includes all wire colors with *) | 1 |
| 10 | 22-054 | Battery Cable Black | 1 |
| 11 | 22-073 | Battery (optional) | 1 |
| 12 | 78-325 | Red Battery Cable with Boot | 1 |
| 13 | 48-144 | Circuit Breaker Wire | 1 |
| 14 | 8975 | 30 Amp Circuit Breaker | 1 |
| | 8977 | Circuit Breaker Boot | 1 |
| 15 | 78-368 | Electric Clutch | 1 |
| 16 | 15-314 | Toggle Switch | 1 |
| | 15-472 | Switch Boot | 1 |

Diagrams

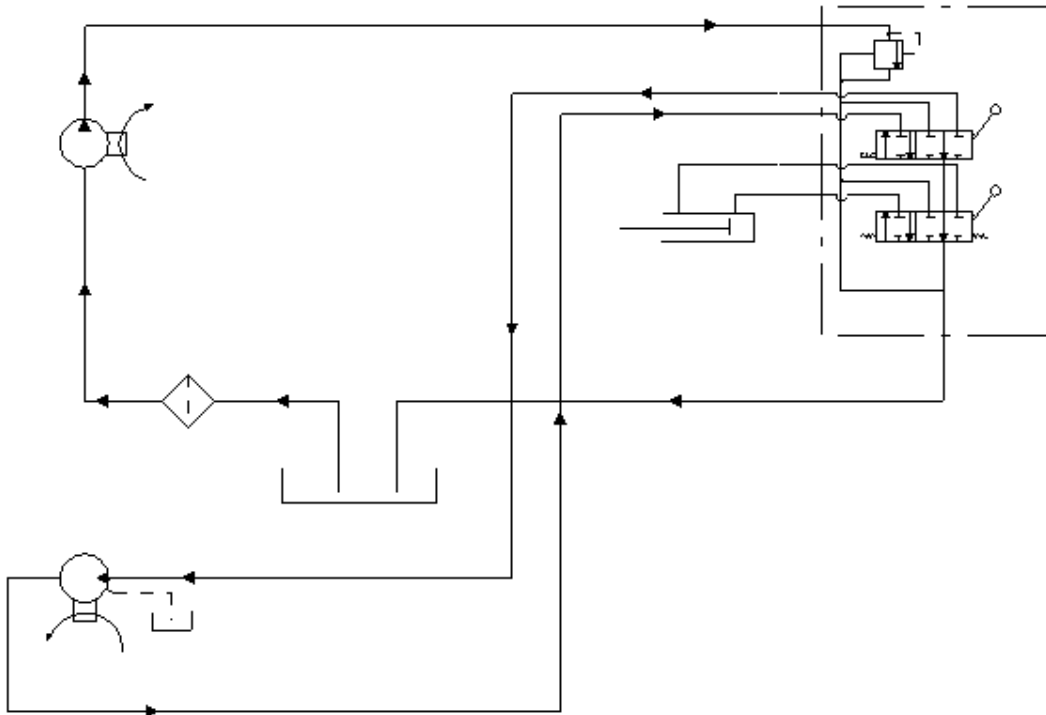
WIRING SCHEMATIC



HYDRAULIC DRAWING



HYDRAULIC SCHEMATIC



HYDRAULIC PARTS LIST

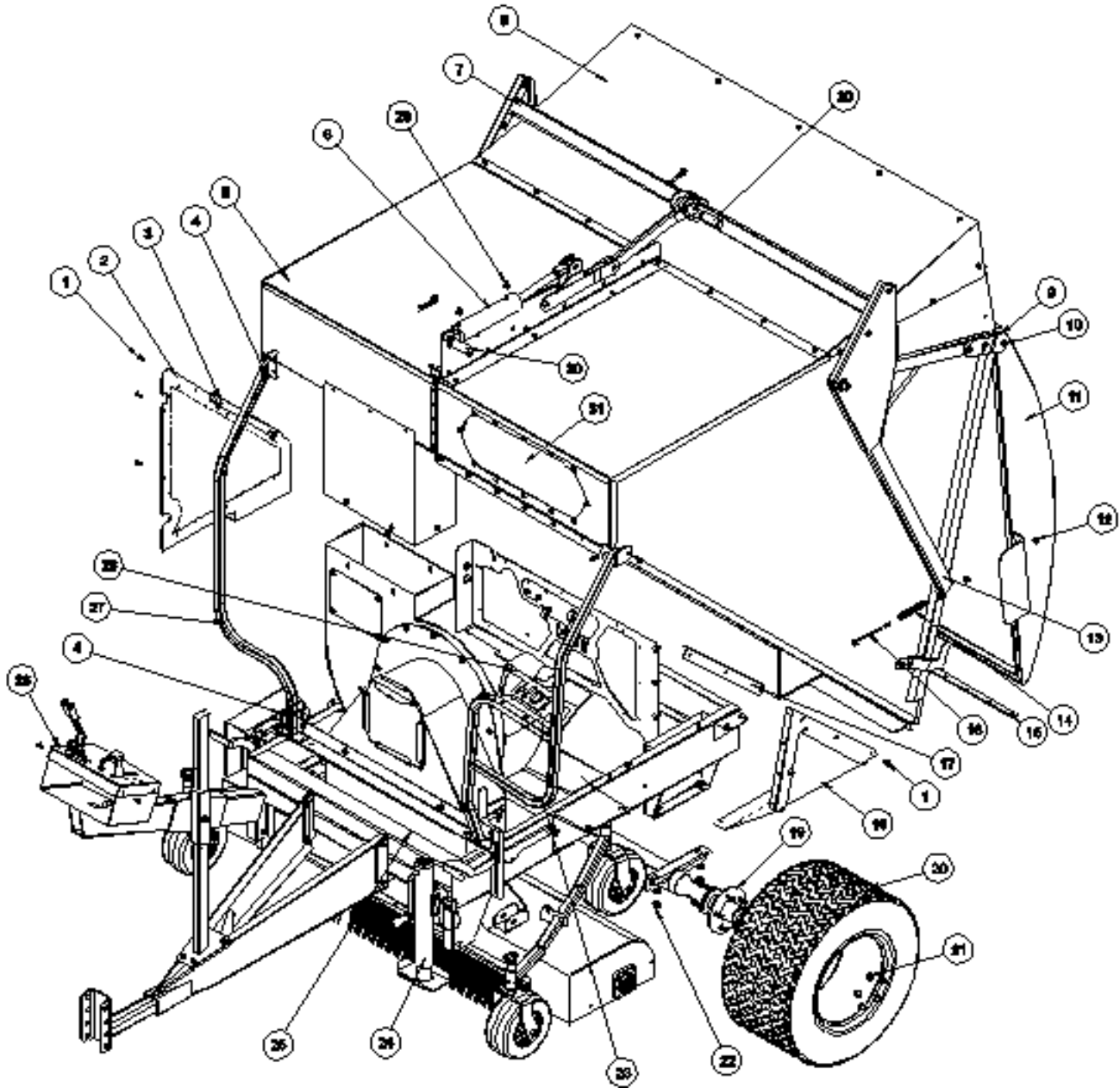
| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------|--|----------|
| 1 | 78-247 | Hydraulic Hose (brush motor to valve) | 2 |
| 2 | 78-220 | Hydraulic Pump | 1 |
| 3 | 23-006 | Oil Filter | 1 |
| | 23-031 | Filter Element (replacement only) | 1 |
| 4 | 78-249 | Hydraulic Hose (pump to valve) | 1 |
| 5 | 78-250 | Hydraulic Hose (return to tank) | 1 |
| 6 | 78-306 | 2-Bank Hydraulic Valve | 1 |
| 7 | 78-246 | Hydraulic Hose (rear hyd. cyl. to front valve) | 1 |
| 8 | 78-248 | Hydraulic Hose (front hyd. cyl. to rear valve) | 1 |
| 9 | 13-584 | Oil Tank | 1 |
| 10 | 8917-14 | Suction Hose $\frac{5}{8}$ ID x 14 | 1 |
| | 18-222 | Hose Clamp | 2 |
| 11 | 78-251 | Hydraulic Hose (case drain hyd. motor to tank) | 1 |
| 12 | 78-219 | Hydraulic Motor | 1 |
| 13 | 78-225 | Hydraulic Cylinder | 1 |

HYDRAULIC PRESSURES

| | |
|---------------------------------|-------------------------|
| Pump Displacement | .4 in ³ /rev |
| Pump Input Speed (up to) | 3600 rpm |
| Max. Operating Pressure | 2500 psi |
| Max. Inlet Vacuum | 10 in. Hg |
| Max. Case Pressure | 80 psi |
| 78-306 Hydraulic Valve (2 bank) | 2500 psi |

BODY AND FRAME DRAWING

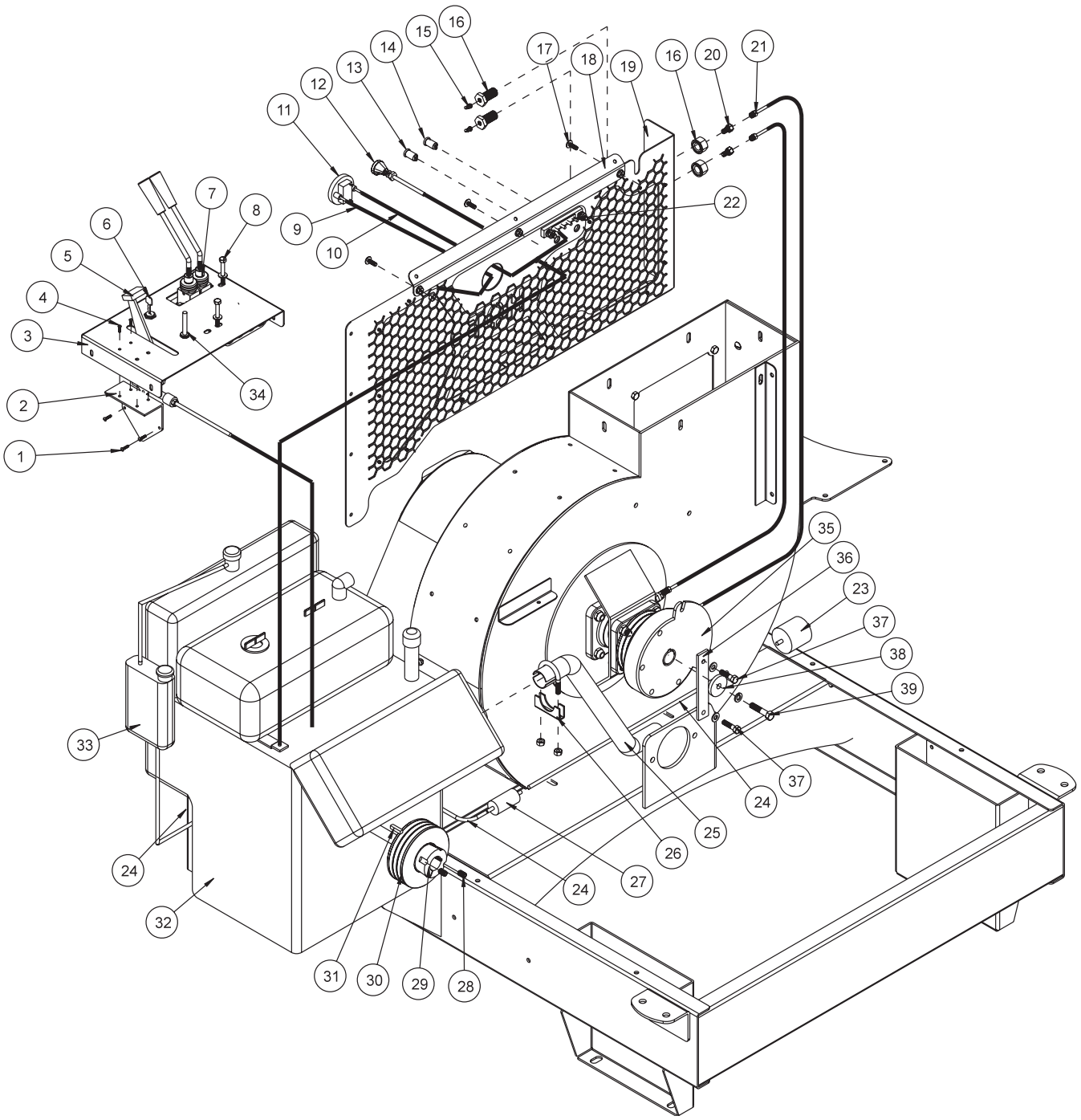
Parts



BODY AND FRAME PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $1/4 - 20 \times 3/4$ | 8 |
| 2 | 78-253 | Right Guard | 1 |
| | 78-274 | Cage Nuts | 2 |
| 3 | 78-315 | Right Guard Mount | 1 |
| | 78-274 | Cage Nuts | 2 |
| | HB-516-18-075 | Bolt $5/16 - 18 \times 3/4$ | 2 |
| | HNFL-516-18 | Flange Whiz Lock Nut $5/16 - 18$ | 2 |
| 4 | HBFL-516-18-075 | Flange Bolt $5/16 - 18 \times 3/4$ | 8 |
| | HNFL-516-18 | Flange Whiz Lock Nut $5/16 - 18$ | 8 |
| 5 | 78-260 | Right Hopper | 1 |
| 6 | 78-225 | Hydraulic Cylinder | 1 |
| | 78-242-01 | Seal Kit | 1 |
| 7 | 78-265 | Cross Bar | 1 |
| 8 | 78-272 | Hopper Cover | 1 |
| 9 | 78-319 | Hopper Door Adjustment | 2 |
| 10 | HNCL-12-13 | Center Lock Nut $1/2 - 13$ | 2 |
| | HN-12-13 | Nut $1/2 - 13$ | 2 |
| | HW-12 | Washer $1/2$ | 4 |
| | HB-12-13-250 | Bolt $1/2 - 13 \times 2 1/2$ | 2 |
| 11 | 78-266 | Hopper Door | 1 |
| 12 | HNFL-38-16 | Flange Whiz Lock Nut $3/8 - 16$ | 4 |
| 13 | 78-264 | Left Door Arm | 1 |
| 14 | 19-205 | Spring | 2 |
| 15 | HB-38-16-575 | Bolt $3/8 - 16 \times 5 3/4$ | 2 |
| 16 | 78-316 | Left Guard Mount | 1 |
| | 78-274 | Cage Nuts | 3 |
| | HB-516-18-075 | Bolt $5/16 - 18 \times 3/4$ | 3 |
| | HNFL-516-18 | Flange Whiz Lock Nut $5/16 - 18$ | 3 |
| 17 | 78-339 | Left Guard | 1 |
| | 78-274 | Cage Nuts | 4 |
| 18 | 78-216 | Rear Axle | 1 |
| 19 | 78-221 | Tire and Wheel | 2 |
| | 78-221-01 | Tire 24 x 13 -12 6 Ply | 2 |
| | 78-221-02 | Wheel | 2 |
| 20 | HNL-12-20 | Lug Nut $1/2 - 20$ (part of 78-216) | 10 |
| 21 | HB-12-13-150 | Bolt $1/2 - 13 \times 1 1/2$ | 4 |
| | HW-12 | Washer $1/2$ | 4 |
| | HNTL-12-13 | Lock Nut $1/2 - 13$ | 4 |
| 22 | 78-270 | Left Brush Guard | 1 |
| 24 | 78-240 | Jack | 1 |
| 25 | 78-255 | Main Frame | 1 |
| | HLC-A-200 | Loom Clamp | 4 |
| | HSDPS-14-075 | Stainless Steel Pan Head Drill Screw $1/4 \times 3/4$ | 4 |
| 26 | 78-281 | Operator Control Panel | 1 |
| 27 | 78-269 | Right Brush Guard | 1 |
| 28 | 78-313 | Radiator Guard | 1 |
| | HSDPS-14-075 | Stainless Steel Pan Head Drill Screw $1/4 \times 3/4$ | 3 |
| 29 | 18-169 | Adapter $3/8$ SAE | 2 |
| 30 | 76-242-02 | Clevis Pin with Clip (part of 78-225) | 2 |
| 31 | 78-345 | Clear Lexan Window | 1 |
| 32 | HSD-8-050 | Drill Screw #8 x $1/2$ | 32 |
| 33 | 78-387 | Weatherstripping Bracket | 2 |
| 34 | 8979-61 | Door Weatherstripping | 2 |

ENGINE AND CONTROLS DRAWING



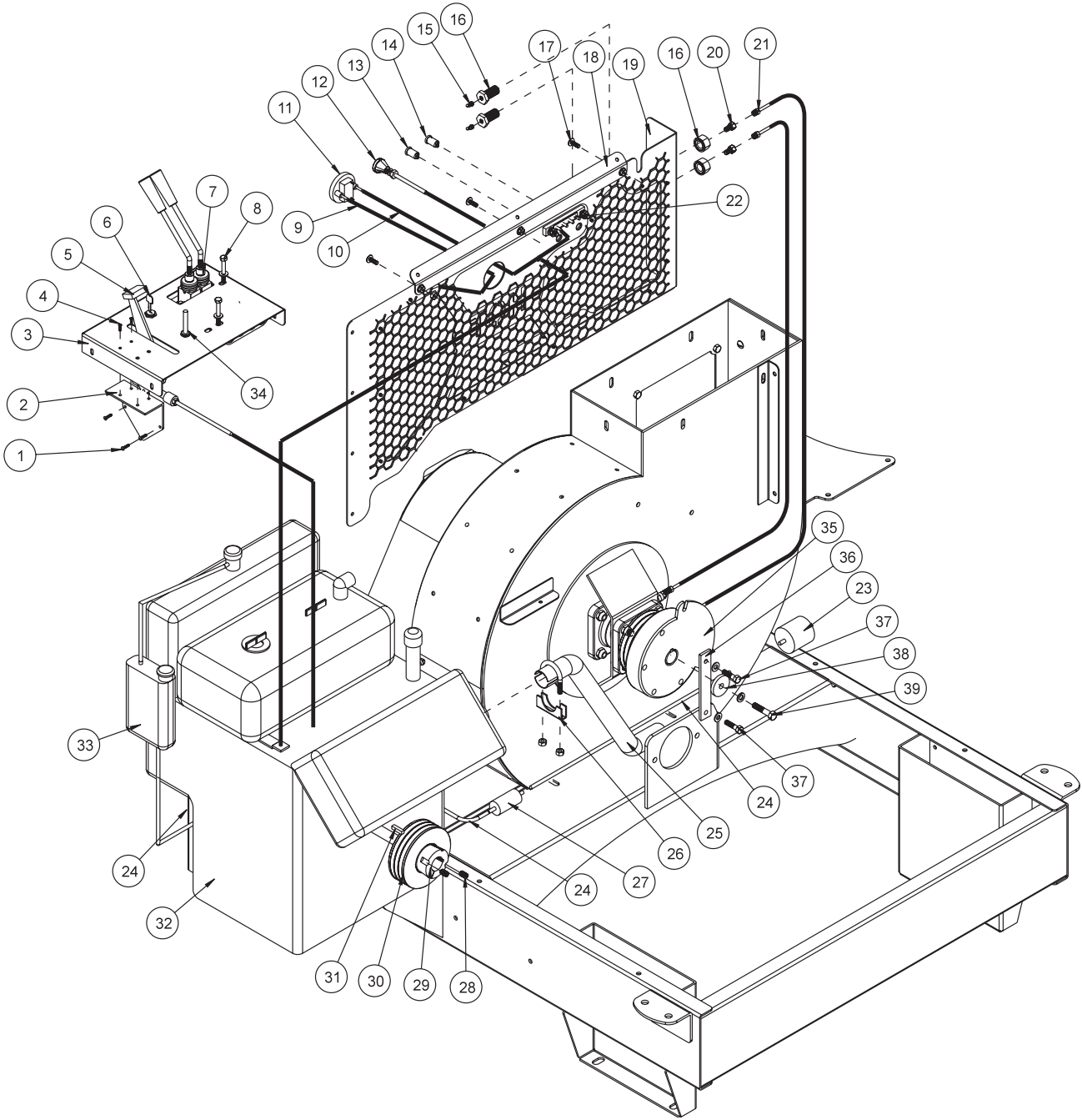
PARTS

ENGINE AND CONTROLS PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|--|----------|
| 1 | HSM-10-32-063 | Machine Screw #10 - 32 x $\frac{5}{8}$ | 4 |
| | HWL-10 | Lockwasher #10 | 4 |
| | HN-10-32 | Nut #10 - 32 | 4 |
| 2 | 34-159 | Throttle Mounting Bracket | 1 |
| 3 | 78-281 | Operator Control Panel V62 | 1 |
| | 78-217 | Decal, Operator Control Panel V62 | 1 |
| 4 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| | HSM-8-32-050 | Machine Screw # 8 - 32 x $\frac{1}{2}$ | 4 |
| 5 | HWL-8 | Lockwasher #8 | 4 |
| | HN-8-32 | Nut # 8 - 32 | 4 |
| | 78-337 | Throttle | 1 |
| 6 | HN-38-24 | Nut $\frac{3}{8}$ - 24 | 2 |
| | 12-016 | Ignition Switch | 1 |
| 7 | 78-306 | 2-Bank Valve | 1 |
| | 42-226 | Bent Handle | 2 |
| 8 | HB-14-20-200 | Bolt $\frac{1}{4}$ - 20 x 2 | 2 |
| | HW-14 | Washer $\frac{1}{4}$ | 2 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 2 |
| 9 | 78-342 | Wire, Hour Meter to Ground | 1 |
| | HN-14-20 | Nut $\frac{1}{4}$ - 20 | 1 |
| 10 | 78-343 | Wire, Hour Meter to Buss Bar | 1 |
| 11 | 12-017 | Hour Meter | 1 |
| 12 | 11-086 | Choke Cable | 1 |
| 13 | 78-341 | Temperature Light | 1 |
| 14 | 78-340 | Oil Light | 1 |
| 15 | HG-18-45 | Grease Fitting $\frac{1}{8}$ Pipe x 45° | 2 |
| 16 | 18-339 | Anchor Coupling | 2 |
| 17 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 8 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 8 |
| 18 | 78-317 | Front Guard Mount | 1 |
| 19 | 78-254 | Front Guard | 1 |
| | 78-307 | Decal, Machine Control Panel V62 | 1 |
| | 18-338 | Male Connector | 2 |
| 21 | 78-324 | $\frac{3}{16}$ Brake Line 20" | 2 |
| 22 | 8935 | Bus Bar | 1 |
| | HSM-8-32-075 | Machine Screw #8 - 32 x $\frac{3}{4}$ | 2 |
| | HWL-8 | Lock Washer #8 | 2 |
| | HN-8-32 | Nut #8 - 32 | 2 |
| 23 | | Electric Fuel Pump (part of engine) | 1 |
| 24 | 8800-56 | Fuel Hose $\frac{1}{4}$ x 56" | 1 |
| | 18-186 | Hose Clamp | 5 |
| | HLC-A-58 | Loom Clamp $\frac{5}{8}$ | 2 |
| | HSDPS-14-075 | Stainless Steel Pan Head Drill Screw $\frac{1}{4}$ x $\frac{3}{4}$ | 2 |

(Continued on next page)

ENGINE AND CONTROLS DRAWING

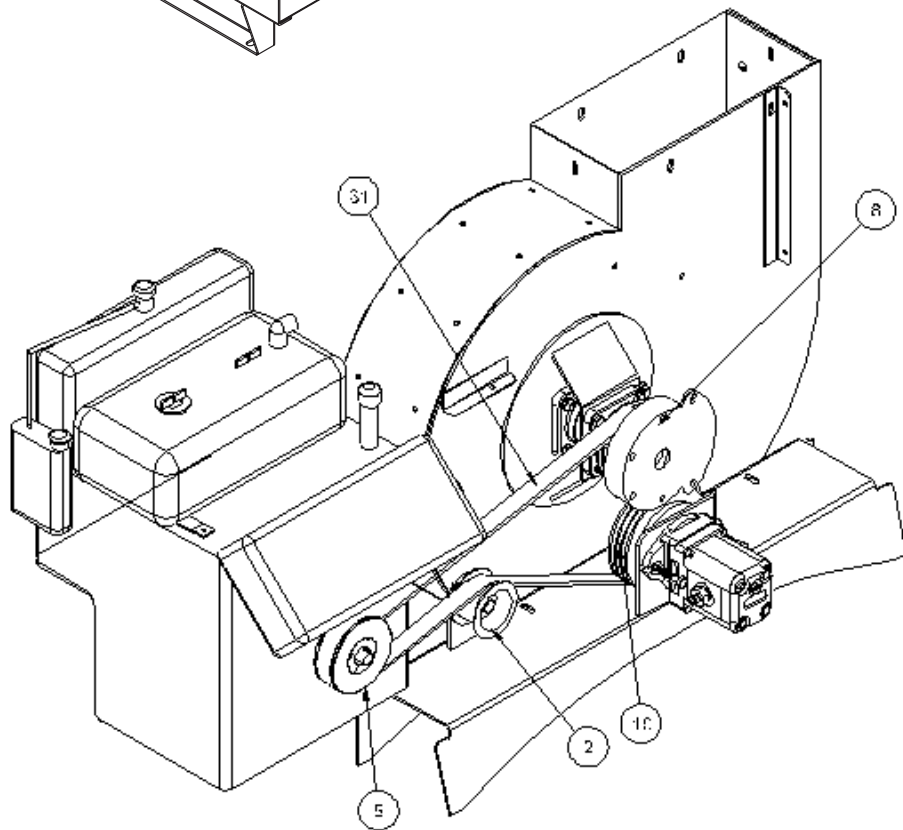
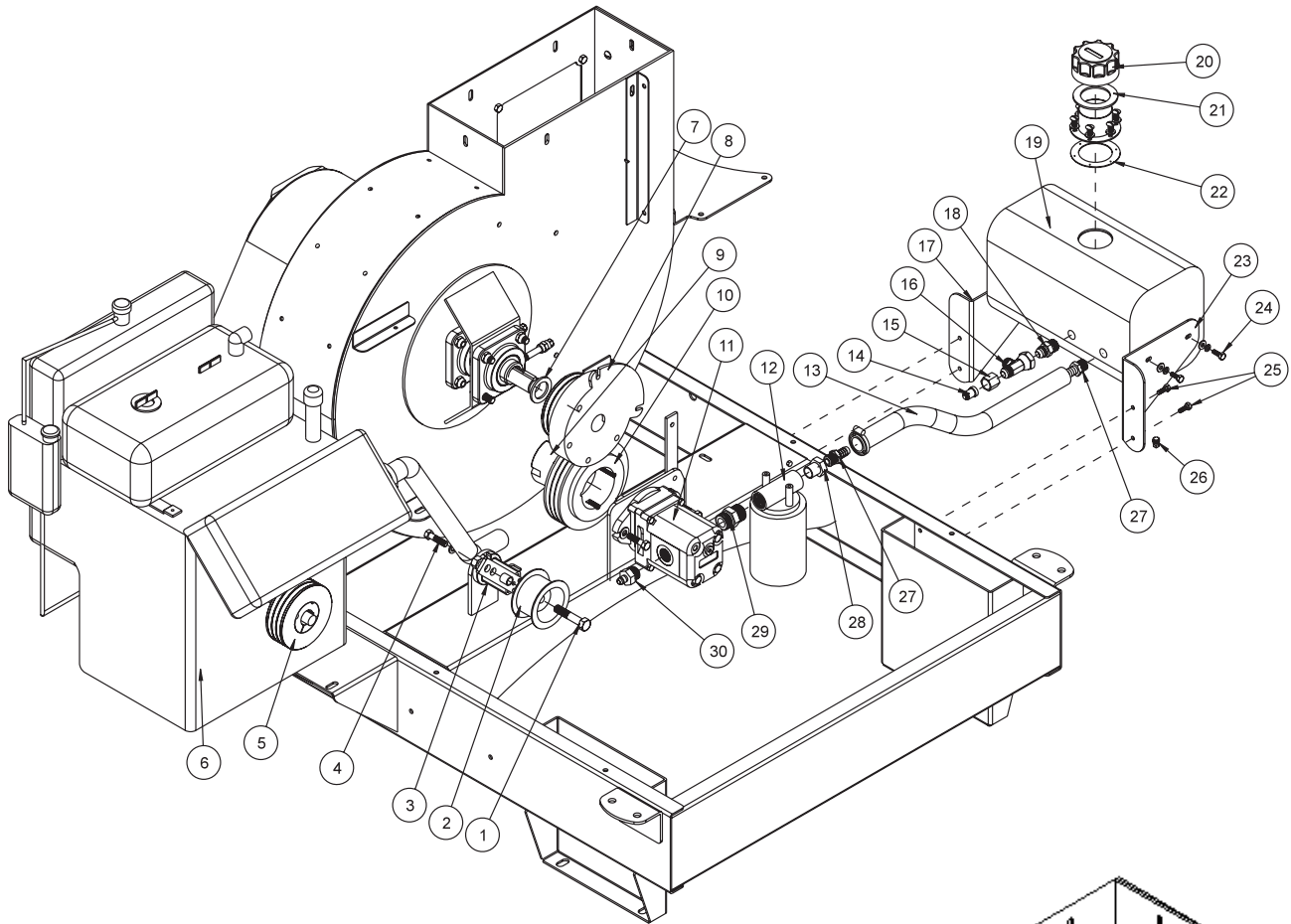


PARTS

ENGINE AND CONTROLS PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 25 | 10-197 | Exhaust Pipe | 1 |
| 26 | 18-220 | Muffler Clamp 1 ¹ / ₄ | 1 |
| 27 | 50-403 | In-line Fuel Filter | 1 |
| 28 | HSSHS-38-16-063 | Set Screw ³ / ₈ - 16 x ⁵ / ₈ (part of 78-235) | 2 |
| 29 | 78-235 | Hub 1 ¹ / ₈ | 1 |
| 30 | 78-232 | Pulley | 1 |
| 31 | HKSQ-14-100 | Machine Key ¹ / ₄ x ¹ / ₄ x 1 | 1 |
| 32 | 78-218 | Engine, 22 HP Kawasaki | 1 |
| 33 | 34-169 | Coolant Tank Kit (part of engine) | 1 |
| 34 | 15-314 | Toggle Switch | 1 |
| | 15-472 | Switch Boot | 1 |
| 35 | 78-368 | Electric Clutch | 1 |
| 36 | 76-340 | Clutch Strap | 1 |
| 37 | HB-516-18-125 | Bolt ⁵ / ₁₆ - 18 x 1 ¹ / ₄ | 2 |
| | HW-516 | Washer ⁵ / ₁₆ | 3 |
| | HNTL-516-18 | Lock Nut ⁵ / ₁₆ - 18 | 2 |
| 38 | 78-370 | Washer | 1 |
| 39 | HB-38-16-175 | Bolt ³ / ₈ - 16 x 1 ³ / ₄ | 1 |
| | HWL-38 | Lockwasher ³ / ₈ | 1 |

PULLEY AND PUMP DRAWING



Parts

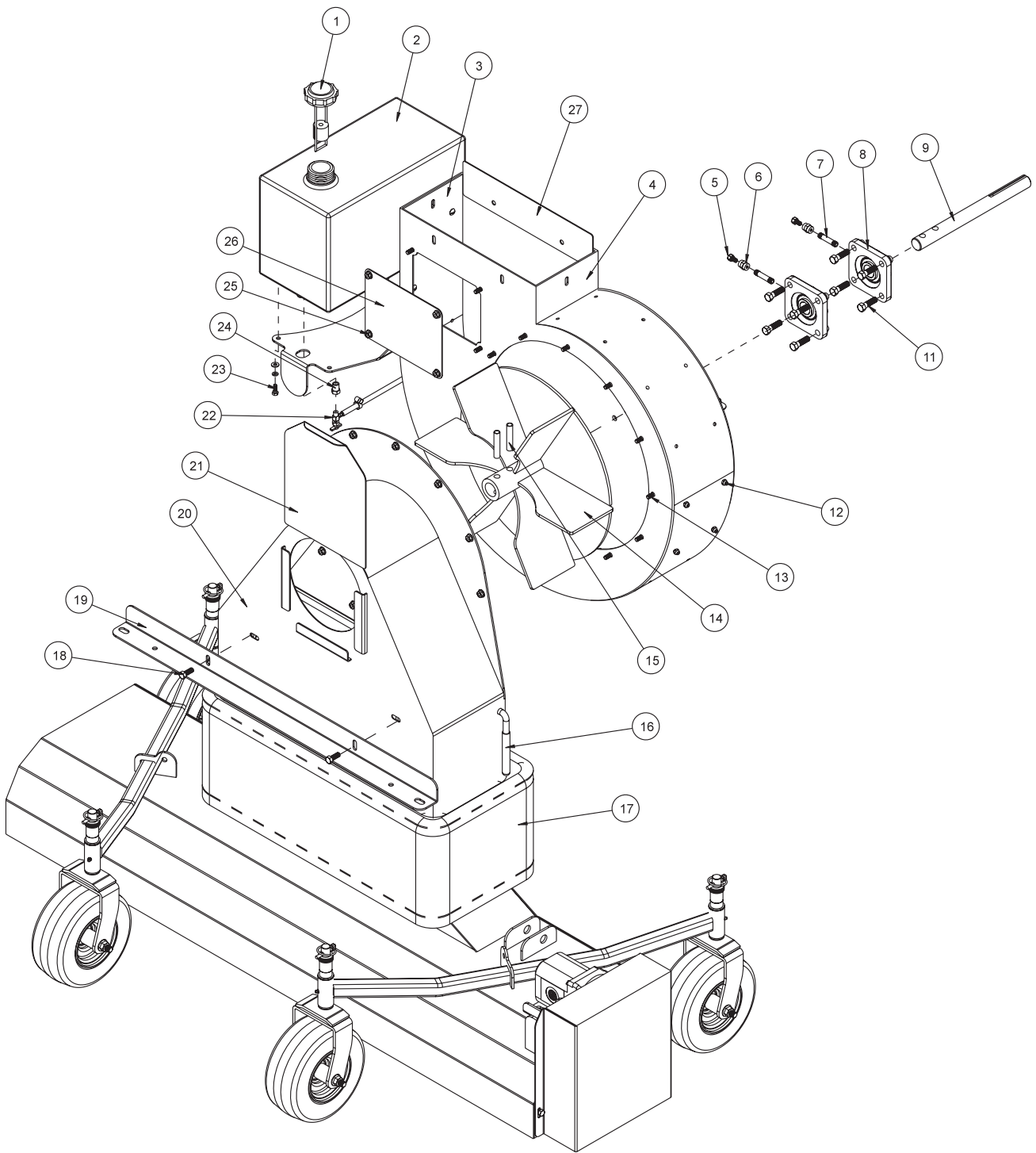
PULLEY AND PUMP PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | HB-12-13-250 | Bolt $1/2$ - 13 x $2 1/2$ (part of 78-224) | 1 |
| | HMB-12-14 | Machine Bushing $1/2$ - 14GA | 2 |
| | 78-275 | Spacer (part of 78-224) | 1 |
| | HNCL-12-13 | Center Lock Nut $1/2$ - 13 (part of 78-224) | 1 |
| 2 | 16-013 | Idler Pulley | 1 |
| 3 | 78-224 | Belt Tensioner | 1 |
| 4 | HBM-10-1.5-30 | Metric Bolt 10-1.5 x 30 (part of 78-224) | 1 |
| | HWLM-10 | Metric Lockwasher #10 (part of 78-224) | 1 |
| 5 | 78-232 | Pulley | 1 |
| | 78-235 | Hub $1 1/8$ | 1 |
| | HSSHS-38-16-063 | Set Screw $3/8$ - 16 x $5/8$ (part of 78-235) | 2 |
| 6 | 78-218 | Engine, 22 HP Kawasaki | 1 |
| 7 | HMB-114-10 | Machine Bushing $1 1/4$ x 10GA | 1 |
| 8 | 78-368 | Electric Clutch | 1 |
| 9 | 78-236 | Hub $3/4$ | 1 |
| | HSSHS-12-13-100 | Set Screw $1/2$ - 13 x 1 (part of 78-236) | 2 |
| 10 | 78-234 | Pulley 3-Groove (pump) | 1 |
| 11* | 78-220 | Hydraulic Pump | 1 |
| | HWK-316-063 | Woodruff Key $3/16$ x $5/8$ | 1 |
| | 78-220-01 | Seal Kit Buna-N Compound (replacement part) | |
| | 78-219-02 | Drive Coupler (replacement Part) | |
| | HB-38-16-150 | Bolt $3/8$ - 16 x $1 1/2$ | 2 |
| | HW-38 | Washer $3/8$ | 4 |
| | HNTL-38-16 | Lock Nut $3/8$ - 16 | 2 |
| 12 | 23-006 | Oil Filter | 1 |
| | 23-031 | Replacement Filter Only | |
| 13 | 8917-14 | Suction Hose $5/8$ ID | 1 |
| | 18-222 | Hose Clamp | 2 |
| 14 | 34-128 | Adapter | 1 |
| 15 | 23-120 | $1/2$ Tube Nut | 1 |
| 16 | 18-337 | Run Tee | 1 |
| 17 | 78-278 | Front Oil Tank Bracket | 1 |
| 18 | 23-121 | Fitting | 1 |
| 19 | 13-584 | Oil Tank | 1 |
| 20 | 13-586 | Filter Breather | 1 |
| | HSM-8-32-050 | Machine Screw #8 - 32 x $1/2$ | 6 |
| | HWS-8 | Star Washer #8 | 6 |
| 21 | 13-586-01 | Cap Gasket (part of 13-586) | 1 |
| 22 | 13-586-02 | Bottom Gasket (part of 13-586) | 2 |
| 23 | 78-277 | Rear Oil Tank Bracket | 1 |
| 24 | HB-14-20-075 | Bolt $1/4$ - 20 x $3/4$ | 4 |
| | HWL-14 | Lockwasher $1/4$ | 4 |
| | HW-14 | Washer $1/4$ | 4 |
| 25 | HB-14-20-075 | Bolt $1/4$ - 20 x $3/4$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $1/4$ - 20 | 4 |
| 26 | 18-118 | Pipe Plug $1/8$ | 1 |
| 27 | 23-139 | Barb Fitting | 2 |
| 28 | 18-008 | Pipe Reducer | 1 |
| 29 | 18-332 | Adapter | 1 |
| 30 | 18-331 | Adapter | 1 |
| 31 | 78-227 | Belt | 1 |

*

NO OTHER PARTS ARE REPLACEABLE FOR HYDRAULIC PUMP.

BLOWER AND VACUUM HOUSING DRAWING

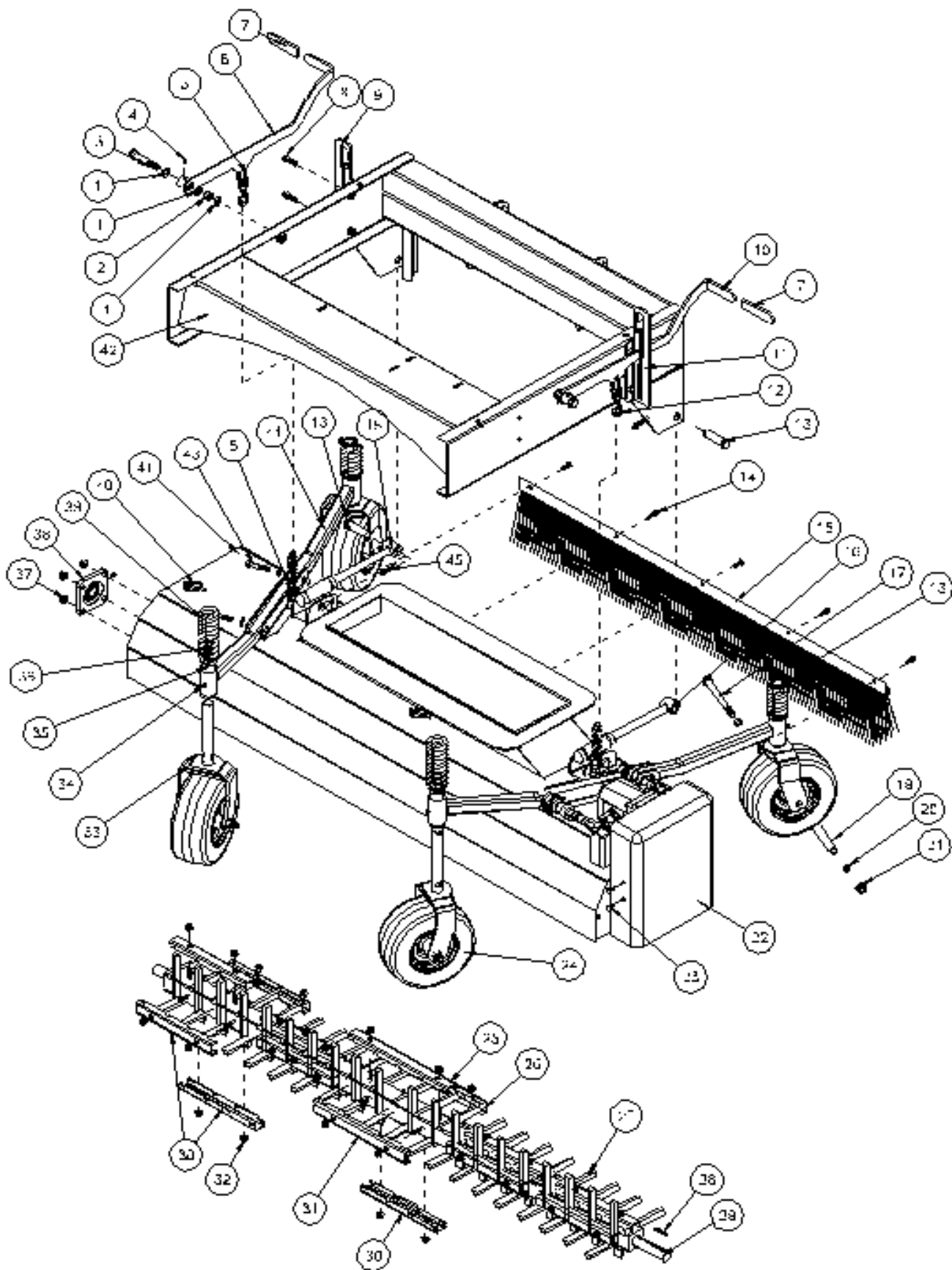


PARTS

BLOWER AND VACUUM HOUSING PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|--|----------|
| 1 | 15-492 | Cap w/ Gauge | 1 |
| 2 | 15-491 | Gas Tank, 5 Gallon w/ Insert | 1 |
| 3 | 78-379 | Trap Door | 1 |
| | 78-381 | Trap Door Lining | 1 |
| 4 | 78-375 | Blower Housing | 1 |
| | 78-380 | Blower Lining | 1 |
| 5 | 18-338 | Male Connector | 2 |
| 6 | 18-269 | Coupling $\frac{1}{8}$ | 2 |
| 7 | 18-027 | Nipple $\frac{1}{8} \times 2$ | 2 |
| 8 | 78-223 | Mounted Bearing ($1\frac{1}{8}$ " Bore) | 2 |
| 9 | 78-336 | Vacuum Housing Shaft | 1 |
| 10 | HKSQ-14-100 | Machine Key $\frac{1}{4} \times \frac{1}{4} \times 1$ | 1 |
| 11 | HB-716-14-150 | Bolt $\frac{7}{16}$ - 14 x $1\frac{1}{2}$ | 8 |
| | HNTL-716-14 | Lock Nut $\frac{7}{16}$ - 14 | 8 |
| 12 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 30 |
| | HWF-14-150 | Fender Washer, $\frac{1}{4} \times 1\frac{1}{2}$ | 30 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 30 |
| 13 | HBF-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 12 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 12 |
| 14 | 78-301 | Balanced Fan | 1 |
| 15 | 78-347 | Spiral Spring Pin | 2 |
| 16 | 25-120 | Handle Grip | 1 |
| 17 | 78-243 | Sweeper Boot | 1 |
| 18 | HB-38-16-100 | Bolt $\frac{3}{8}$ - 16 x 1 | 2 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 19 | 78-276 | Vacuum Housing Support | 1 |
| 20 | 78-257 | Vacuum Housing | 1 |
| | 8803-80 | Trim Black | 1 |
| 21 | 78-293 | Cover Plate | 1 |
| 22 | 15-039 | Fuel Valve | 1 |
| | 8800-30 | Fuel Hose $\frac{1}{4} \times 30$ " | 1 |
| | 18-186 | Hose Clamp | 1 |
| 23 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HWL-14 | Lockwasher $\frac{1}{4}$ | 4 |
| | HW-14 | Washer $\frac{1}{4}$ | 4 |
| 24 | 18-042 | Reducer Bushing | 1 |
| 25 | 78-378 | Gas Tank Mount | 1 |
| | HB-516-18-100 | Bolt $\frac{5}{16}$ - 18 x 1 | 2 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 2 |
| 26 | 78-355 | Splice | 1 |
| 27 | HLC-58 | Loom Clamp $\frac{5}{8}$ | 1 |

FINGER REEL DRAWING

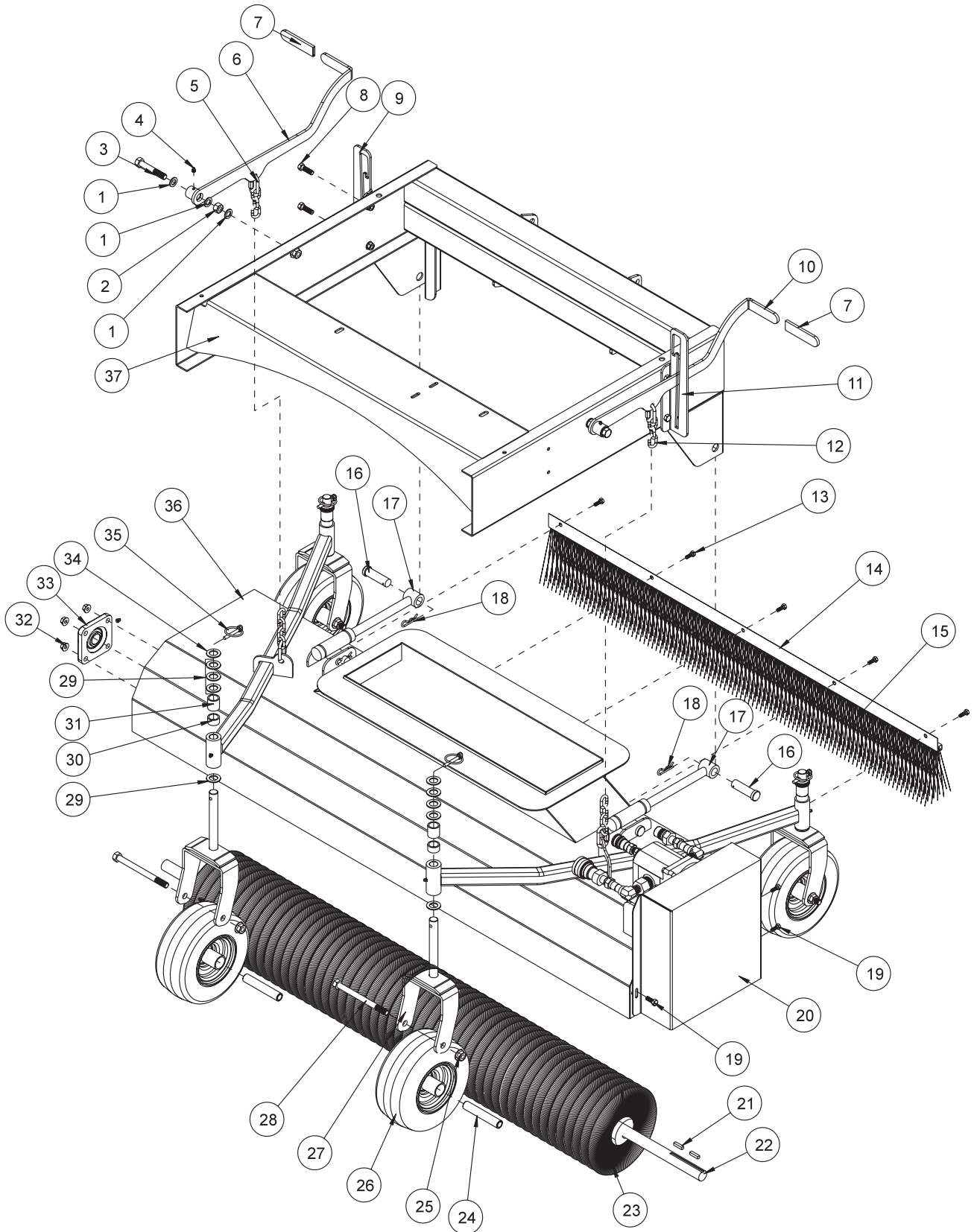


Parts

FINGER REEL PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|---|----------|
| 1 | HMB-58-14 | Machine Bushing $\frac{5}{8}$ x 14GA | 6 |
| 2 | HN-58-11 | Nut $\frac{5}{8}$ - 11 | 2 |
| 3 | HB-58-11-300 | Bolt $\frac{5}{8}$ - 11 x 3 | 2 |
| | HNTL-58-11 | Lock Nut $\frac{5}{8}$ - 11 | 2 |
| 4 | HG-14-28-45 | Grease Fitting $\frac{1}{4}$ - 28 x 45° | 2 |
| 5 | 78-241 | Chain Connector | 4 |
| 6 | 78-284 | Left Hand Deck Lift | 1 |
| | 20-018 | Bushing (part of 78-284) | 1 |
| 7 | 15-020 | Hand Grip | 2 |
| 8 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x 1 $\frac{1}{4}$ | 4 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 4 |
| 9 | 78-286 | Left Hand Lift Arm Latch | 1 |
| 10 | 78-283 | Right hand Deck Lift | 1 |
| | 20-018 | Bushing (part of 78-283) | 1 |
| 11 | 78-285 | Right Hand Lift arm Latch | 1 |
| 12 | 8820-8 | Machine Chain Straight Link | 2 |
| 13 | HCP-34-250 | Clevis Pin $\frac{3}{4}$ x 2 $\frac{1}{2}$ | 4 |
| 14 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 5 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 5 |
| 15 | 78-344 | Strip Brush Holder (drilled) | 1 |
| 16 | 78-271 | Reel Lift Rod | 2 |
| 17 | HB-12-13-600 | Bolt $\frac{1}{2}$ -13 x 6 | 4 |
| 18 | 78-322 | Strip Brush | 1 |
| 19 | 42-213 | Axle Bearing | 4 |
| 20 | 42-212 | Castor Wheel Bearing | 8 |
| | HMB-34-10 | Machine Bushing $\frac{3}{4}$ x 10GA | 8 |
| 21 | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 22 | 72-056 | Plastic Belt Guard | 1 |
| 23 | HST-14-20-075 | Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| 24 | 42-202 | Tire & Wheel | 4 |
| | 42-202-01 | Tire 9 x 3.5 x 4 Ply | 4 |
| | 42-202-02 | Wheel | 4 |
| 25 | 78-287 | Finger Clamp 13" | 1 |
| 26 | 78-327 | Finger Clamp 10.5" | 1 |
| 27 | 78-242 | Sweeper Finger | 81 |
| 28 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 1 |
| 29 | 78-303 | Finger Reel Bar | 1 |
| 30 | 78-297 | Finger Clamp 10" | 17 |
| 31 | 78-326 | Finger Clamp 12" | 1 |
| 32 | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 40 |
| 33 | 42-204 | Castor Fork | 4 |
| 34 | HG-14-28-180 | Grease Fitting $\frac{1}{4}$ - 28 x 180° (part of 78-393) | 2 |
| 35 | 18-223 | Flange Bushing (part of 78-393) | 4 |
| 36 | 72-136 | Quick Spacer 10GA | 12 |
| 37 | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x 1 $\frac{1}{4}$ | 8 |
| 38 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 39 | 72-083 | Quick Spacer | 24 |
| 40 | 42-539 | Lynch Pin $\frac{5}{16}$ | 4 |
| 41 | 78-401 | Reel Housing | 1 |
| | 8803-80 | Trim Black | 1 |
| 42 | 78-255 | Main Frame | 1 |
| 43 | HB-38-16-200 | Bolt $\frac{3}{8}$ - 16 x 2 | 4 |
| 44 | 78-393 | Castor Arm | 2 |
| 45 | HHP-18 | Bridge Pin $\frac{1}{8}$ | 4 |
| | HW-38 | Washer $\frac{3}{8}$ | 4 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 4 |

BRUSH REEL DRAWING

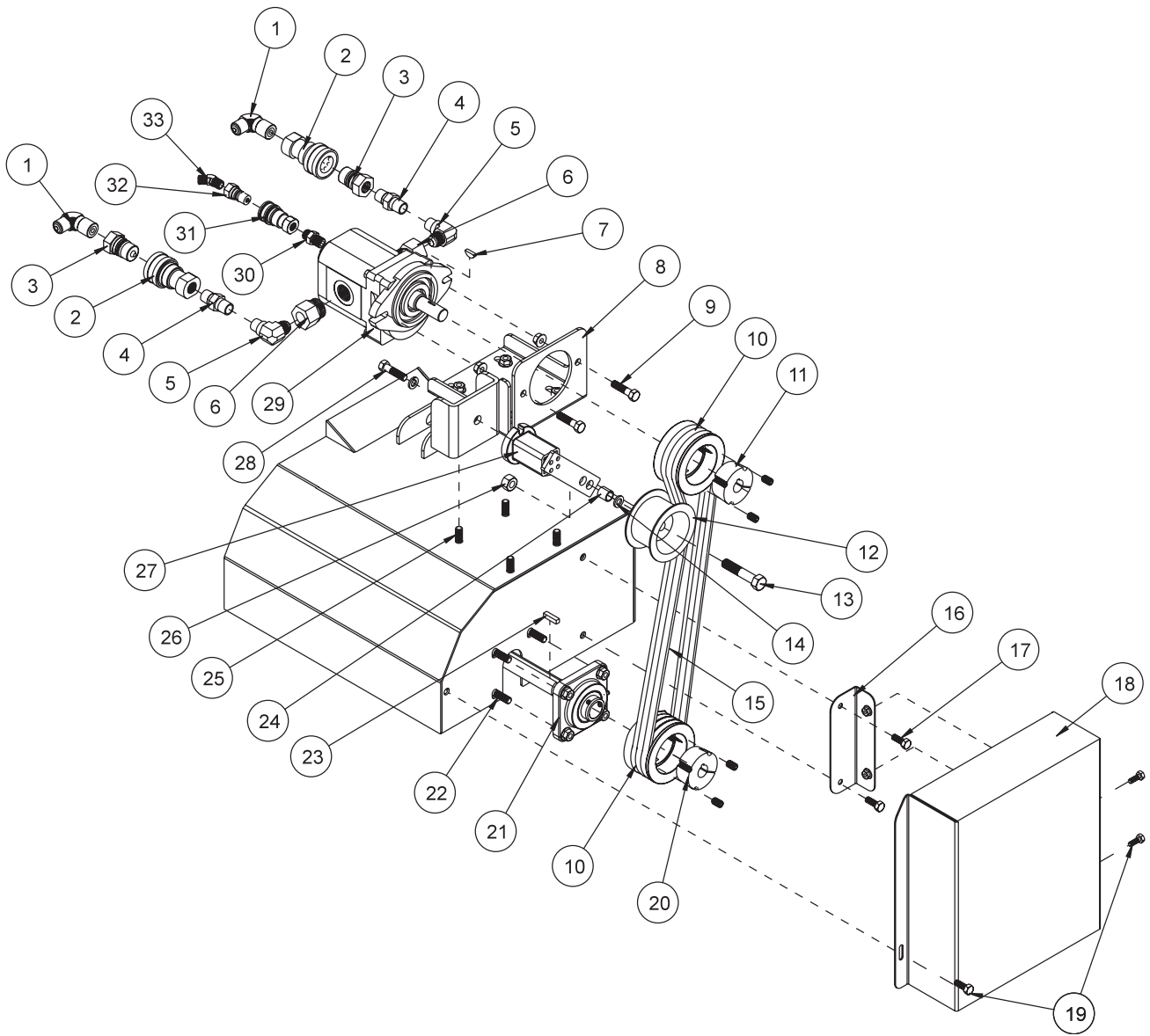


PARTS

BRUSH REEL PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|---|----------|
| 1 | HMB-58-14 | Machine Bushing $\frac{5}{8}$ x 14GA | 6 |
| 2 | HN-58-11 | Nut $\frac{5}{8}$ - 11 | 2 |
| 3 | HB-58-11-300 | Bolt $\frac{5}{8}$ - 11 x 3 | 2 |
| | HNTL-58-11 | Lock Nut $\frac{5}{8}$ - 11 | 2 |
| 4 | HG-14-28-45 | Grease Fitting $\frac{1}{4}$ - 28 x 45° | 2 |
| 5 | 78-241 | Chain Connector | 4 |
| 6 | 78-284 | Left Hand Deck Lift | 1 |
| | 20-018 | Bushing (part of 78-284) | 1 |
| 7 | 15-020 | Hand Grip | 2 |
| 8 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x 1 $\frac{1}{4}$ | 4 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 4 |
| 9 | 78-286 | Left Hand Lift Arm Latch | 1 |
| 10 | 78-283 | Right hand Deck Lift | 1 |
| | 20-018 | Bushing (part of 78-234) | 1 |
| 11 | 78-285 | Right Hand Lift arm Latch | 1 |
| 12 | 8820-8 | Machine Chain Straight Link | 2 |
| 13 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 5 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 5 |
| 14 | 78-344 | Strip Brush Holder (drilled) | 1 |
| 15 | 78-322 | Strip Brush | 1 |
| 16 | HCP-34-250 | Clevis Pin $\frac{3}{4}$ x 2 $\frac{1}{2}$ | 4 |
| 17 | 78-271 | Reel Lift Rod | 2 |
| 18 | HHP-18 | Bridge Pin $\frac{1}{8}$ | 4 |
| 19 | HST-14-20-075 | Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| 20 | 72-056 | Plastic Belt Guard | 1 |
| 21 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 2 |
| 22 | 78-348 | Shaft Spiral Brush | 1 |
| 23 | 78-321 | Spiral Brush | 1 |
| 24 | 42-213 | Axle Bearing | 4 |
| 25 | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 26 | 42-202 | Tire and Wheel | 4 |
| | 42-202-01 | Tire 9 x 3.5 x 4 Ply | 4 |
| | 42-202-02 | Wheel | 4 |
| 27 | 42-204 | Castor Fork | 4 |
| 28 | HB-12-13-600 | Bolt $\frac{1}{2}$ - 13 x 6 | 4 |
| 29 | HMB-34-10 | Machine Bushing $\frac{3}{4}$ x 10GA | 16 |
| 30 | 42-214 | Short Spacer | 4 |
| 31 | 42-215 | Long Spacer | 4 |
| 32 | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x 1 $\frac{1}{4}$ | 8 |
| 33 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 34 | HMB-34-14 | Machine Bushing $\frac{3}{4}$ x 14GA | 4 |
| 35 | 42-539 | Lynch Pin $\frac{5}{16}$ | 4 |
| 36 | 78-258 | Reel Housing | 1 |
| | 8803-80 | Trim Black | 1 |
| | 10-025 | Flange Bushing (part of 78-258) | 8 |
| 37 | 78-255 | Main Frame | 1 |

REEL & HYDRAULIC PUMP DRAWING



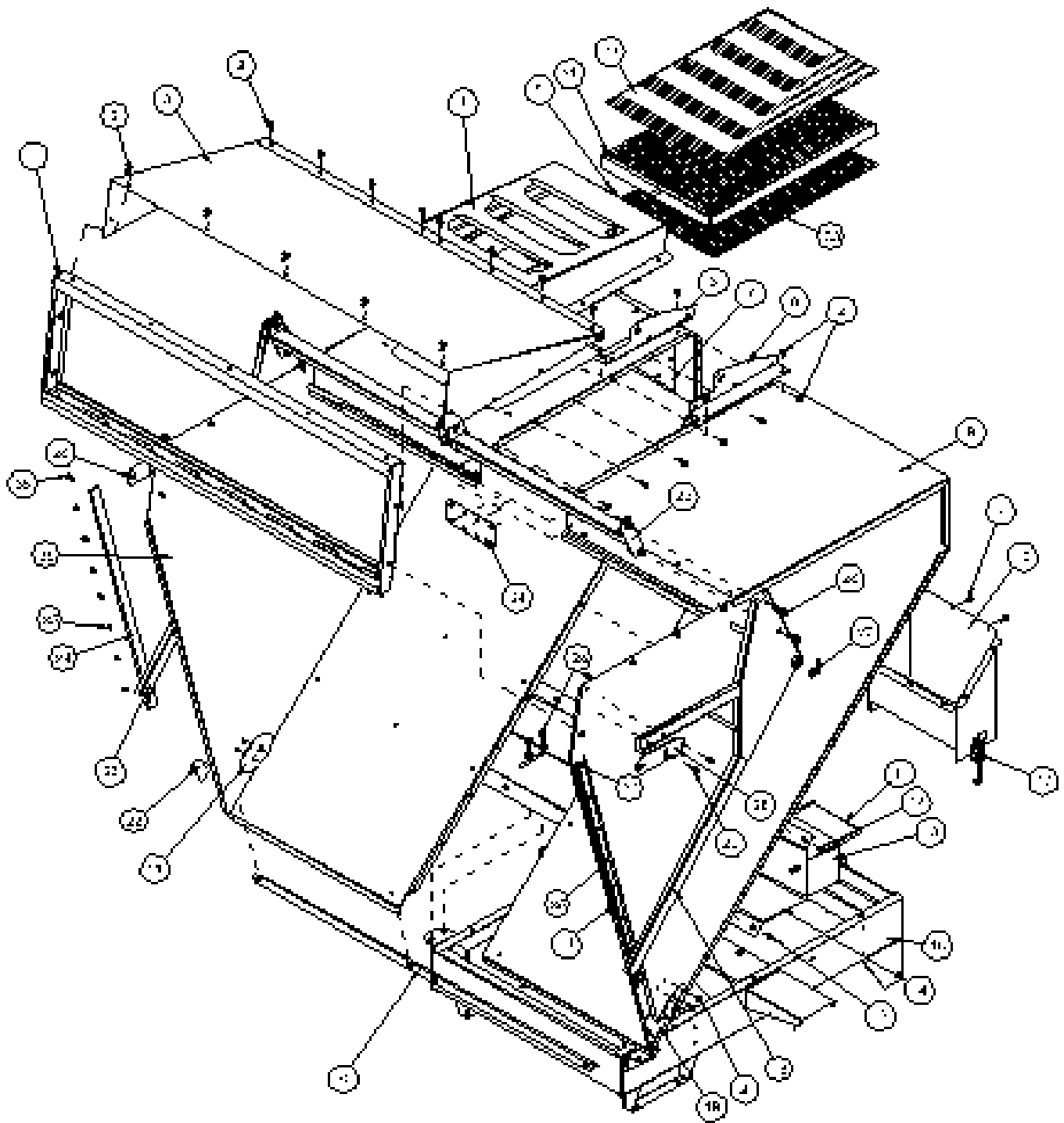
PARTS

REEL & HYDRAULIC PUMP PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 18-246 | Male Elbow | 2 |
| 2 | 78-228 | Coupler 1/2" | 2 |
| 3 | 78-229 | Nipple 1/2" | 2 |
| 4 | 18-334 | Nipple | 2 |
| 5 | 18-009 | Elbow | 2 |
| 6 | 18-333 | Adapter | 2 |
| 7 | HWK-316-063 | Woodruff key 3/16 x 5/8 | 1 |
| 8 | 78-259 | Hydraulic Motor Mount | 1 |
| 9 | HB-38-16-150 | Bolt 3/8 - 16 x 1 1/2 | 2 |
| | HNFL-38-16 | Flange Whiz Lock Nut 3/8 - 16 | 2 |
| 10 | 78-232 | Pulley | 2 |
| 11 | 78-237 | Hub 3/4 | 1 |
| | HSSHS-38-16-063 | Set Screw 3/8 - 16 x 5/8 (part of 78-237) | 2 |
| 12 | 16-013 | Idler Pulley | 1 |
| 13 | HB-12-13-250 | Bolt 1/2 - 13 x 2 1/2 (part of 78-224) | 1 |
| 14 | HMB-12-14 | Machine Bushing 1/2 x 14GA | 2 |
| 15 | 78-226 | Belt, Single | 3 |
| 16 | 72-058 | Belt Guard Mount Bracket | 1 |
| 17 | HBFL-516-18-075 | Flange Bolt 5/16 - 18 x 3/4 | 2 |
| | HNFL-516-18 | Flange Whiz Lock Nut 5/16 - 18 | 2 |
| 18 | 72-056 | Plastic Belt Guard | 1 |
| 19 | HST-14-20-075 | Truss Head Machine Screw 1/4 - 20 x 3/4 | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut 1/4 - 20 | 4 |
| 20 | 78-351 | Hub 1" | 1 |
| | HSSHS-38-16-063 | Set Screw 3/8 - 16 x 5/8 (part of 78-351) | 2 |
| 21 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 22 | HB-38-16-125 | Bolt 3/8 - 16 x 1 1/4 | 8 |
| | HNFL-38-16 | Flange Whiz Lock Nut 3/8 - 16 | 8 |
| 23 | HKSQ-14-100 | Machine Key 1/4 x 1/4 x 1 | 1 |
| 24 | 76-275 | Spacer (part of 78-224) | 1 |
| 25 | HB-38-16-100 | Bolt 3/8 - 16 x 1 | 4 |
| | HNFL-38-16 | Flange Whiz Lock Nut 3/8 - 16 | 4 |
| 26 | HNCL-12-13 | Center Lock Nut 1/2 - 13 (part of 78-224) | 1 |
| 27 | 78-224 | Belt Tensioner | 1 |
| 28 | HBM-10-1.5-30 | Metric Bolt 10-1.5 x 30 (part of 78-224) | 1 |
| | HWLM-10 | Metric Lockwasher #10 (part of 78-224) | 1 |
| 29* | 78-219 | Hydraulic Motor | 1 |
| | 78-219-01 | Seal Kit Buna-N Compound | |
| | 78-219-02 | Drive Coupler | |
| 30 | 18-335 | Nipple | 1 |
| 31 | 78-230 | Coupler 1/4 | 1 |
| 32 | 78-231 | Nipple 1/4 | 1 |
| 33 | 17-054 | Elbow 45° | 1 |

* NO OTHER PARTS ARE REPLACEABLE FOR HYDRAULIC MOTOR.

HOPPER DRAWING

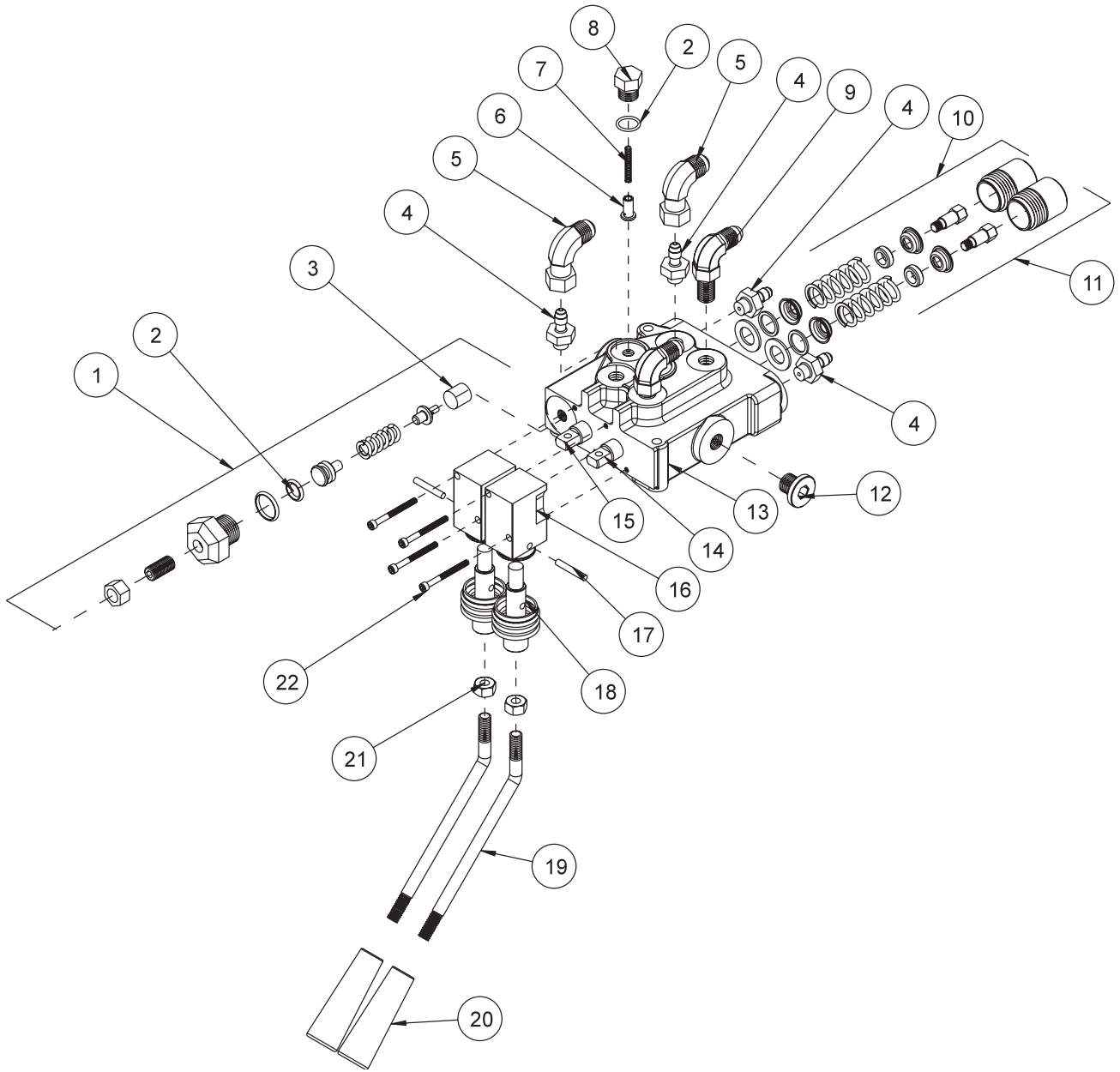


Parts

HOPPER PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|--|----------|
| 1 | 78-305 | Filter Insert | 1 |
| 2 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 72 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 72 |
| 3 | 78-272 | Hopper Cover | 1 |
| 4 | 78-377 | Filter Hood | 1 |
| | HB-14-20-125 | Bolt $\frac{1}{4}$ - 20 x $1\frac{1}{4}$ | 6 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 6 |
| 5 | 78-384 | Flex Draw Latch | 1 |
| | HSM-8-32-150 | Machine Screw #8 - 32 x $1\frac{1}{2}$ | 3 |
| 6 | 78-280 | Left Cylinder Plate | 1 |
| 7 | 78-345 | Clear Lexan Window | 1 |
| | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 12 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 12 |
| 8 | 78-279 | Right Cylinder Plate | 1 |
| 9 | 78-260 | Right Hopper | 1 |
| 10 | 78-262 | Chute | 1 |
| 11 | 78-304 | Battery Hold Down | 1 |
| | HWL-14 | Lockwasher $\frac{1}{4}$ | 2 |
| | HN-14-20 | Nut $\frac{1}{4}$ - 20 | 2 |
| 12 | HB-38-16-100 | Bolt $\frac{3}{8}$ - 16 x 1 | 12 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 12 |
| 13 | 22-073 | Battery (optional) | 1 |
| 14 | 78-273 | Hopper Mount | 1 |
| 16 | 78-255 | Main Frame | 1 |
| 17 | 48-115 | Adjustable Draw Latch | 1 |
| | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 2 |
| 18 | 78-263 | Right Door Arm | 1 |
| 19 | 78-389 | Right Hopper Door Latch | 1 |
| 20 | 78-282 | Hopper Strap | 1 |
| 21 | 78-292 | Door :Latch Support | 2 |
| 22 | 78-388 | Left Hopper Door Latch | 1 |
| 23 | 78-264 | Left Door Arm | 1 |
| 24 | 78-291 | Connecting Plate | 1 |
| 25 | 78-265 | Cross Bar | 1 |
| 26 | HB-12-13-150 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ | 8 |
| | HW-12 | Washer $\frac{1}{2}$ | 8 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 8 |
| 27 | HMB-34-10 | Machine Bushing $\frac{3}{4}$ x 10GA | 4 |
| | HP-18-150 | Cotter Pin $\frac{1}{8}$ x $1\frac{1}{2}$ | 2 |
| 28 | 78-319 | Tailgate Adjustment | 2 |
| 29 | HB-38-16-175 | Bolt $\frac{3}{8}$ - 16 x $1\frac{3}{4}$ | 4 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ -16 | 4 |
| 30 | 78-383 | Left Hopper | 1 |
| 31 | 78-376 | Filter Case | 1 |
| 32 | 78-386 | Hopper Filter | 1 |
| 33 | 78-382 | Screen | 1 |
| 34 | 78-385 | Wear Strip Bracket | 2 |
| | 8946-42 | Wear Strip 42" | 2 |
| 35 | HSD-8-050 | Pan Head Drill Screw #8 x $\frac{1}{2}$ | 14 |
| 36 | HSM-10-32-125 | Machine Screw #10 -32 x $1\frac{1}{4}$ | 2 |
| | HWL-10 | Lockwasher #10 | 2 |
| | HN-10-32 | Nut #10 - 32 | 2 |

78-306 2-BANK VALVE DRAWING

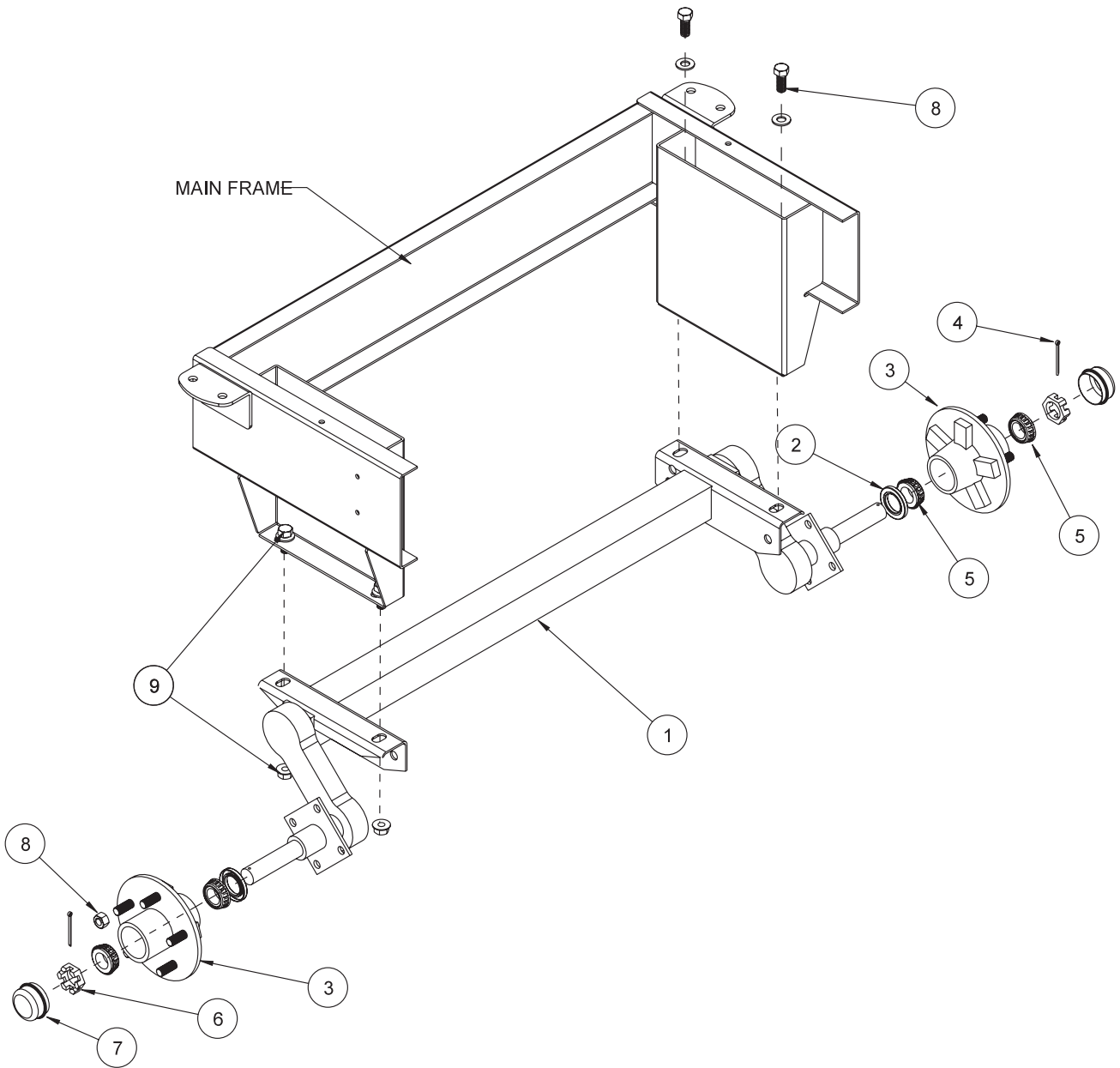


Parts

78-306 2-BANK VALVE PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|------------|---|------------|
| 1* | 14-106 | Relief Assembly Kit | 1 |
| 2* | 78-306-01 | Seal Kit | 1 |
| 3* | 13-261-03 | N.R. Plug | 1 |
| 4 | 18-169 | Adapter ³ / ₈ SAE | 4 |
| 5 | 18-202 | Elbow | 2 |
| 6* | 13-261-07 | Plunger | 2 |
| 7* | 13-261-06 | Spring | 2 |
| 8* | 13-261-05 | Plug | 2 |
| 9 | 18-168 | Elbow ³ / ₈ Straight Thread | 2 |
| 10* | 78-306-02 | Two Position Detent Kit | 1 |
| 11* | 14-203 | Spring Centered Kit (tailgate bank) | 1 |
| 12* | 13-261-02 | Plug | 1 |
| 13* | 42-220-01 | 2-Bank Housing | 1 |
| 14* | 14-088 | Spool (tailgate bank) | 1 |
| 15* | 78-306-03 | Spool Stem (reel bank) | 1 |
| 16*† | 42-220-04 | Actuator Housing | 2 |
| 17*† | 42-220-05 | Dowel Pin | 2 |
| 18*† | 42-220-03 | Actuator Link | 2 |
| | 42-220-07 | Actuator Boot | 2 |
| 19 | 42-226 | Bent Handle (includes Ref# 20 and 21) | 2 |
| 20 | 42-220-08 | Tapered Knob | 2 |
| 21 | HNJ-516-18 | Jam Nut ⁵ / ₁₆ -18 | 2 |
| 22* | 42-220-06 | Socket Head Cap Screw | 4 |
| * | 78-306 | 2-Bank Hydraulic Valve (includes all * items) | |
| † | 42-220-09 | Actuator Housing Assembly (includes all † items) | 1 Per Bank |

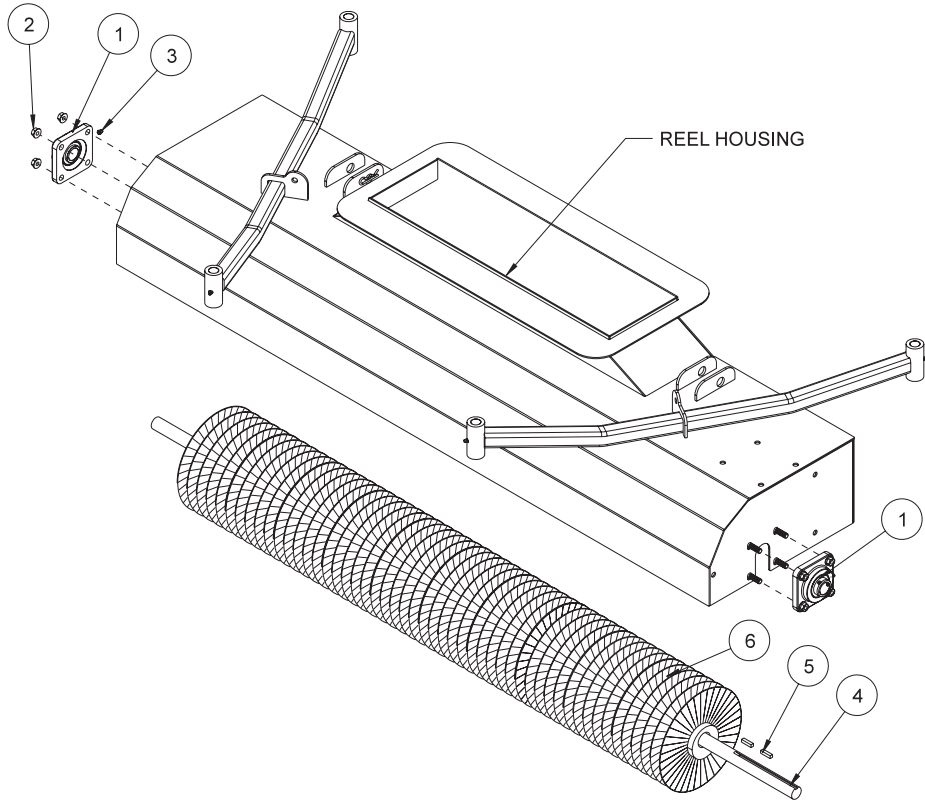
78-216 REAR AXLE DRAWING



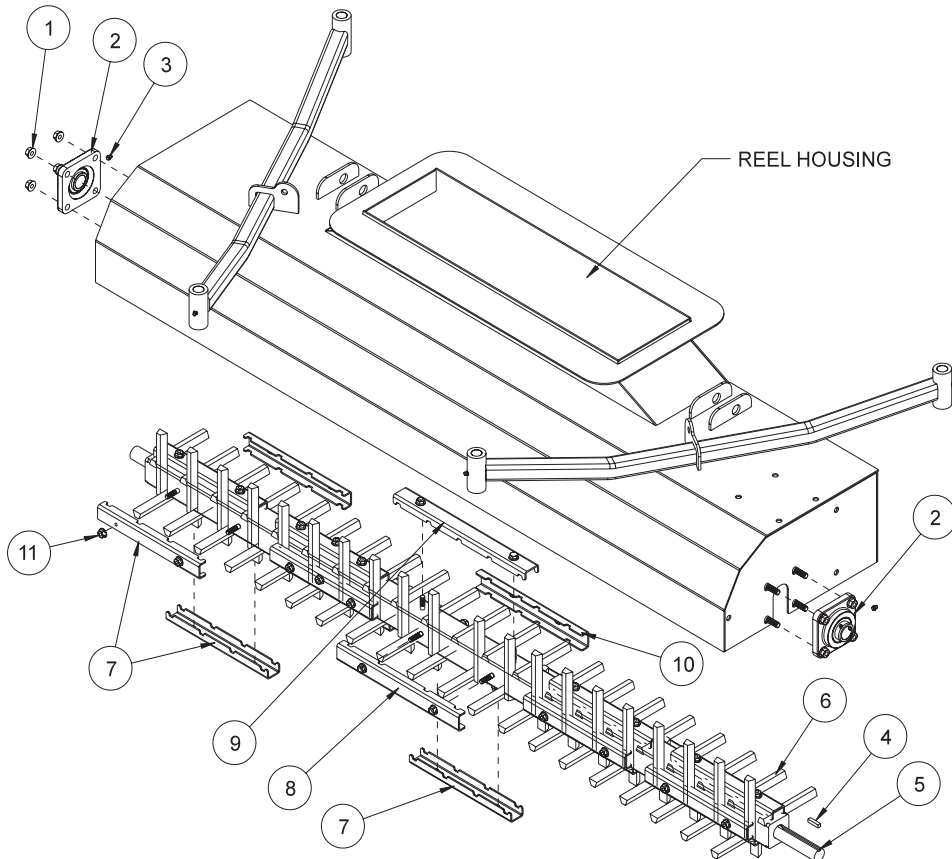
78-216 REAR AXLE PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|----------|
| 1 | 78-216 | Axle Complete (includes all items listed below except Ref #9) | 1 |
| 2* | 78-216-02 | Grease Seal | 2 |
| 3 | 78-216-01 | Hub Assembly (includes all * items listed below) | 2 |
| 4 | HP-18-200 | Cotter Pin $\frac{1}{8}$ x 2 | 2 |
| 5* | 78-119 | Bearing Cup and Cone | 4 |
| 6 | HNAR-100-14 | Slotted Jam Nut 1-14 | 2 |
| 7* | 80-167 | Grease Cap | 2 |
| 8* | HNL-12-20 | Lug Nut $\frac{1}{2}$ - 20 | 10 |
| 9 | HB-12-13-150 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$ | 4 |
| | HW-12 | Washer $\frac{1}{2}$ | 4 |
| | HNTL-12-13 | Locknut $\frac{1}{2}$ - 13 | 4 |

78-201 REPLACEMENT BRUSH REEL DRAWING



78-202 REPLACEMENT FINGER REEL DRAWING



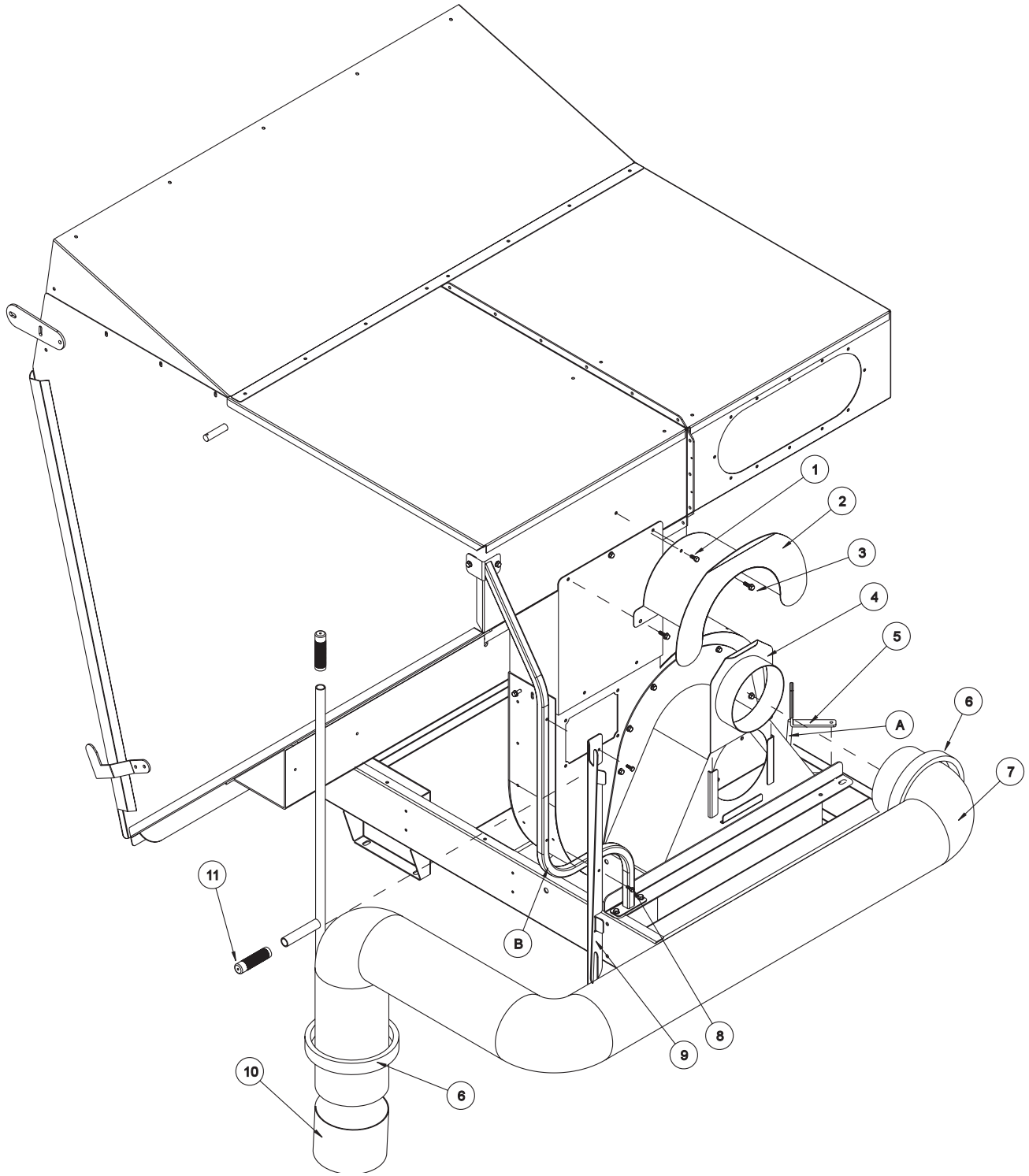
78-201 REPLACEMENT BRUSH REEL PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|----------|
| 1 | 78-222 | Mounted Bearing | 2 |
| 2 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ | 8 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| 3 | HG-14-28-180 | Grease Fitting $\frac{1}{4}$ -20 x 180° (comes with 78-222) | 2 |
| 4 | 78-348 | Spiral Brush Shaft | 1 |
| 5 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 2 |
| 6 | 78-321 | Spiral Brush | 1 |

78-202 REPLACEMENT FINGER REEL PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------------|---|----------|
| 1 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ | 8 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| 2 | 78-222 | Mounted Bearing | 2 |
| 3 | HG-14-28-180 | Grease Fitting $\frac{1}{4}$ -20 x 180° (comes with 78-222) | 2 |
| 4 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 1 |
| 5 | 78-303 | Finger Reel Bar | 1 |
| 6 | 78-242 | Sweeper Finger | 81 |
| 7 | 78-297 | Finger Clamp 10" | 17 |
| 8 | 78-326 | Finger Clamp 12" | 1 |
| 9 | 78-287 | Finger Clamp 13" | 1 |
| 10 | 78-327 | Finger Clamp 10.5" | 1 |
| 11 | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 40 |

78-205 REMOTE VACUUM HOSE DRAWING



Accessories

78-205 REMOTE VACUUM HOSE PARTS LIST

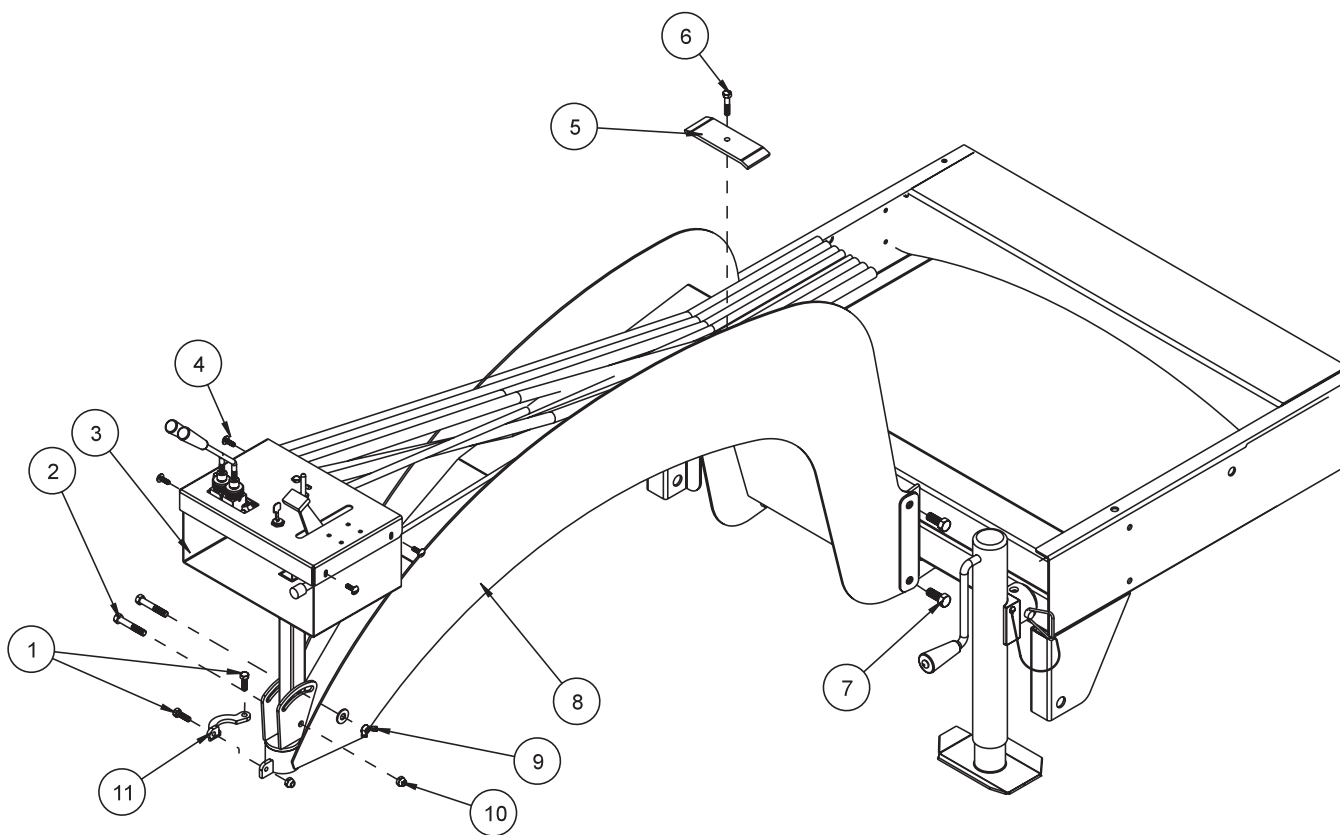
| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | HB-516-18-075 | Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 1 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 1 |
| 2 | 78-318 | Hose Rack | 1 |
| 3 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ (part of machine) | 2 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 (part of machine) | 2 |
| 4 | 78-314 | Remote Hose Connector | 1 |
| 5 | 78-311 | Handle Stop (part of machine) | 1 |
| 6 | 18-340 | Hose Clamp | 2 |
| 7 | 8970-150 | Vacuum Hose 8" x 150" | 1 |
| 8 | HB-14-20-150 | Bolt $\frac{1}{4}$ - 20 x $1\frac{1}{2}$ | 2 |
| | HNTL-14-20 | Lock Nut $\frac{1}{4}$ - 20 | 2 |
| 9 | 78-350 | Handle Holder | 1 |
| | 8803-17 | Trim | 1 |
| 10 | 78-354 | Hose Handle | 1 |
| 11 | 15-019 | Round Grip | 2 |

INSTALLATION INSTRUCTIONS

You will need two people and the tailgate open with an empty hopper. One person will have to be inside hopper. Be sure engine is off. You will need an $\frac{11}{32}$ and $\frac{9}{32}$ drill.

1. Remove the two bolts (Ref 3) from the chute. Bolt the hose rack (Ref 2) in place using the two bolts you removed from the chute. Using an $\frac{11}{32}$ drill, drill through the hopper using the hose rack as a guide. Use the $\frac{5}{16}$ - 18 x $\frac{3}{4}$ bolt and lock nut (Ref 1). The nut should be on the inside of the hopper. The person in the hopper can get out now.
2. Center the handle holder (Ref 9) between the bends on the brush guard (Ref B) with the handle holder flush on the inside of the brush guard. Mark the two holes and drill through the brush guard with a $\frac{9}{32}$ drill. Use the two $\frac{1}{4}$ - 20 x $1\frac{1}{2}$ bolts and lock nuts (Ref 8) to bolt handle holder to the brush guard. Cut and put trim into the two notches that hold the hose handle.
3. Connect the hose to the hose handle (Ref 10) with the hose on the same side as the long handle. Then put other end of hose to remote hose connector (Ref 4). Use the two hose clamps (Ref 6) to hold hose in place.
4. Remove cover plate from in front of the vacuum housing and place in pocket on chute. Place the remote hose connector into the pocket that the cover plate came out of. The cover plate and the remote hose connector must be switched depending which operation you are doing.
5. For storage, loop the vacuum hose over the hose rack (Ref 2) and place the hose handle (Ref 10) into the handle holder (Ref 9).
6. When you are going to operate the vacuum, pull handle stop (Ref 5) towards the front of machine and lift up handle (Ref A). While holding handle (Ref A) up, push handle stop (Ref 5) back so that it holds the handle (Ref A) up.
7. You may want to remove the hose handle, hose and remote hose connector if you are not going to use the vacuum for an extended amount of time.

78-204 5TH WHEEL HITCH DRAWING



Accessories

78-204 5TH WHEEL HITCH PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|---------------|---|----------|
| 1 | HB-516-18-100 | Bolt $\frac{5}{16}$ - 18 x 1 | 2 |
| | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 2 |
| 2 | HB-38-16-225 | Bolt $\frac{3}{8}$ - 16 x 2 $\frac{1}{4}$ | 2 |
| 3 | 78-352 | Control Panel Mount | 1 |
| 4 | HST-14-20-075 | Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (part of machine) | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 (part of machine) | 4 |
| 5 | 78-353 | Hose Hold Down | 1 |
| 6 | HB-516-18-150 | Bolt $\frac{5}{16}$ - 18 x 1 $\frac{1}{2}$ | 1 |
| | HNTL-516-18 | Lock Nut $\frac{5}{16}$ - 18 | 1 |
| 7 | HB-12-13-125 | Bolt $\frac{1}{2}$ - 13 x 1 $\frac{1}{4}$ | 4 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 8 | 78-391 | Gooseneck | 1 |
| 9 | HNW-38-16 | Wing Nut $\frac{3}{8}$ - 16 | 1 |
| | HW-38 | Washer $\frac{3}{8}$ | 1 |
| 10 | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 1 |
| 11 | 78-390 | Ball Lock Arm | 1 |

INSTALLATION INSTRUCTIONS

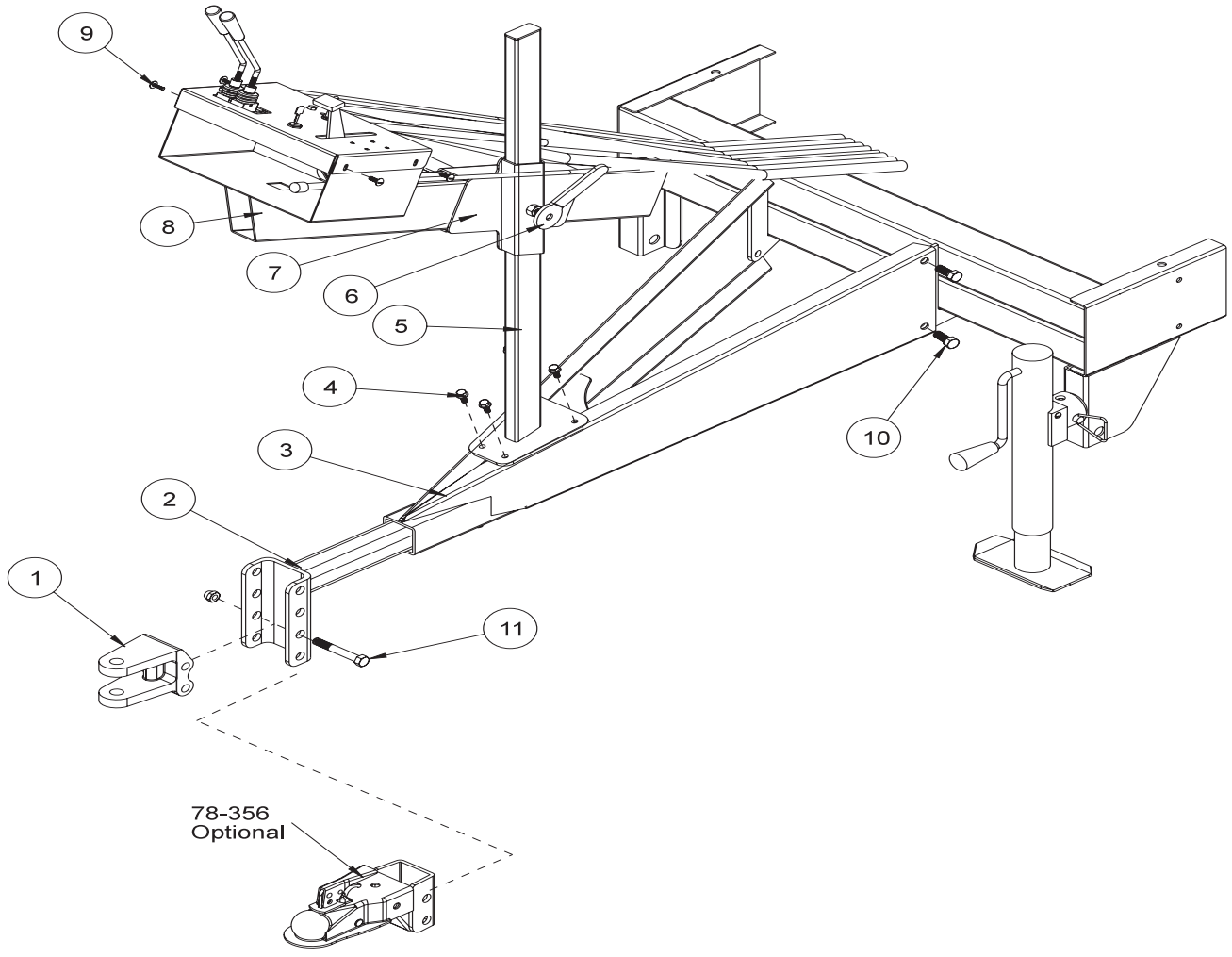
Use two people to install hitches.

1. Block both wheels so machine does not roll.
2. Use the jack that is part of the sweeper to raise or lower sweeper to comfortable working height.
3. Slide the gooseneck (Ref 8) over the tabs on the front of the sweeper frame. Hitch must be on the outside. Use the four $\frac{1}{2}$ - 13 x 1 $\frac{1}{4}$ bolts (Ref 7) on the outside and four lock nuts on the inside. Tighten all four bolts.
4. Install the control panel mount (Ref 3) on the front of the gooseneck (Ref 8) as shown, using two $\frac{3}{8}$ - 16 x 2 $\frac{1}{4}$ bolts (Ref 2). On the bottom bolt use lock nut (Ref 9) and just tighten snug. On the top bolt use the $\frac{3}{8}$ washer and wing nut (Ref 10). Tighten both after adjusting for the proper position.
5. The control panel has all hose, wiring and throttle cable connected to it and the sweeper. The control panel is wrapped and fastened to the front of the sweeper.
6. Remove the control panel from the sweeper, bring it forward with the hoses to the rear and the throttle on the left hand side.
7. Fasten the control panel to the control panel mount with the four truss head machine screws $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (Ref 4) and four flange whiz lock nuts $\frac{1}{4}$ - 20.
8. Put the two handles onto the valve and tighten the lock nuts with the handles pointing forward.
9. Lay the hoses, wiring and throttle cable on top of the gooseneck and place the hose hold-down (Ref 5) over the top. At the rear most hole on top of the gooseneck fasten the hose hold-down with $\frac{5}{16}$ - 18 x 1 $\frac{1}{2}$ bolt and lock nut (Ref 6).



Do not tow on public roads.

78-206 CLEVIS HITCH DRAWING



Accessories

78-206 CLEVIS HITCH PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 78-244 | $\frac{3}{4}$ " Clevis | 1 |
| 2 | 78-268 | Hitch Insert | 1 |
| 3 | 78-267 | Tongue | 1 |
| 4 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ -18 | 4 |
| 5 | 78-299 | Adjustment Slide | 1 |
| 6 | 78-295 | Adjustment Lock | 2 |
| | 15-020 | Hand Grip | 2 |
| 7 | 78-298 | Control Panel Adjustment | 1 |
| 8 | 78-312 | Control Panel Mount | 1 |
| 9 | HSTP-14-20-075 | Phillips Truss Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (part of machine) | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ -20 (part of machine) | 4 |
| 10 | HB-12-13-125 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ | 4 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 11 | HB-12-13-350 | Bolt $\frac{1}{2}$ - 13 x $3\frac{1}{2}$ (part of 78-244) | 2 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 (part of 78-244) | 2 |

INSTALLATION INSTRUCTIONS

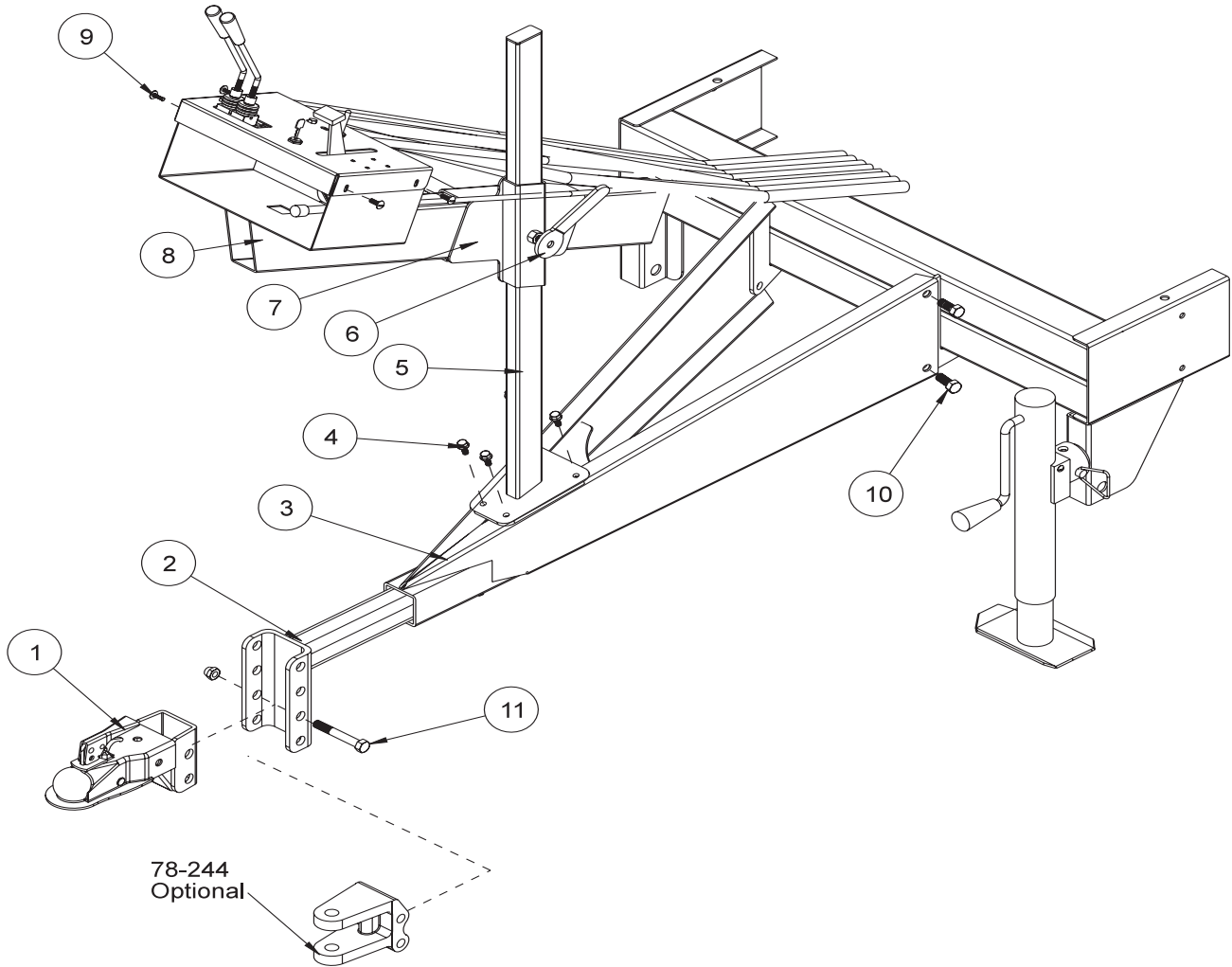
Use two people to install hitches.

1. Block both wheels so machine does not roll.
2. Use the jack that is part of the sweeper to raise or lower sweeper to comfortable working height.
3. Slide the tongue (Ref 3) over the tabs on the front of the sweeper frame. Hitch must be on the outside. Use the four $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ bolts (Ref 10) on the outside and four lock nuts on the inside. Tighten all four bolts.
4. Install adjustment slide (Ref 5) to tongue (Ref 3) using the four flange bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$ and four flange whiz lock nuts $\frac{1}{4}$ - 20 (Ref 4).
5. Loosen adjustment locks (Ref 6) on control panel adjustment (Ref 7) and put control panel adjustment onto the adjustment slide.
6. Tighten one adjustment lock (Ref 6).
7. Slide the control panel mount (Ref 8) through the control panel adjustment (Ref 7) and tighten the other adjustment lock (Ref 6).
8. The control panel has all the hoses, wiring and throttle cable connected to it and to the sweeper. The control panel is wrapped and fastened to the front of the sweeper.
9. Remove the control panel from the sweeper, bring it forward with the hoses to the rear and the throttle on the left hand side.
10. Fasten the control panel to the control panel mount with the four truss head machine screws $\frac{1}{4}$ - 20 x $\frac{3}{4}$ and four flange whiz lock nuts $\frac{1}{4}$ - 20 (Ref 9).
11. Put the two handles onto the valve and tighten the lock nuts with the handles pointing forward.
12. Place three hoses and the throttle cable on the left hand side of the adjustment slide.



Do not tow on public roads.

78-209 BALL HITCH DRAWING



78-209 BALL HITCH PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 78-356 | 2" Ball Coupler | 1 |
| 2 | 78-268 | Hitch Insert | 1 |
| 3 | 78-267 | Tongue | 1 |
| 4 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ -18 x $\frac{3}{4}$ | 4 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ -18 | 4 |
| 5 | 78-299 | Adjustment Slide | 1 |
| 6 | 78-295 | Adjustment Lock | 2 |
| | 15-020 | Hand Grip | 2 |
| 7 | 78-298 | Control Panel Adjustment | 1 |
| 8 | 78-312 | Control Panel Mount | 1 |
| 9 | HST-14-20-075 | Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (part of machine) | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ -20 (part of machine) | 4 |
| 10 | HB-12-13-125 | Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ | 4 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 11 | HB-12-13-350 | Bolt $\frac{1}{2}$ - 13 x $3\frac{1}{2}$ | 2 |
| | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 2 |

INSTALLATION INSTRUCTIONS

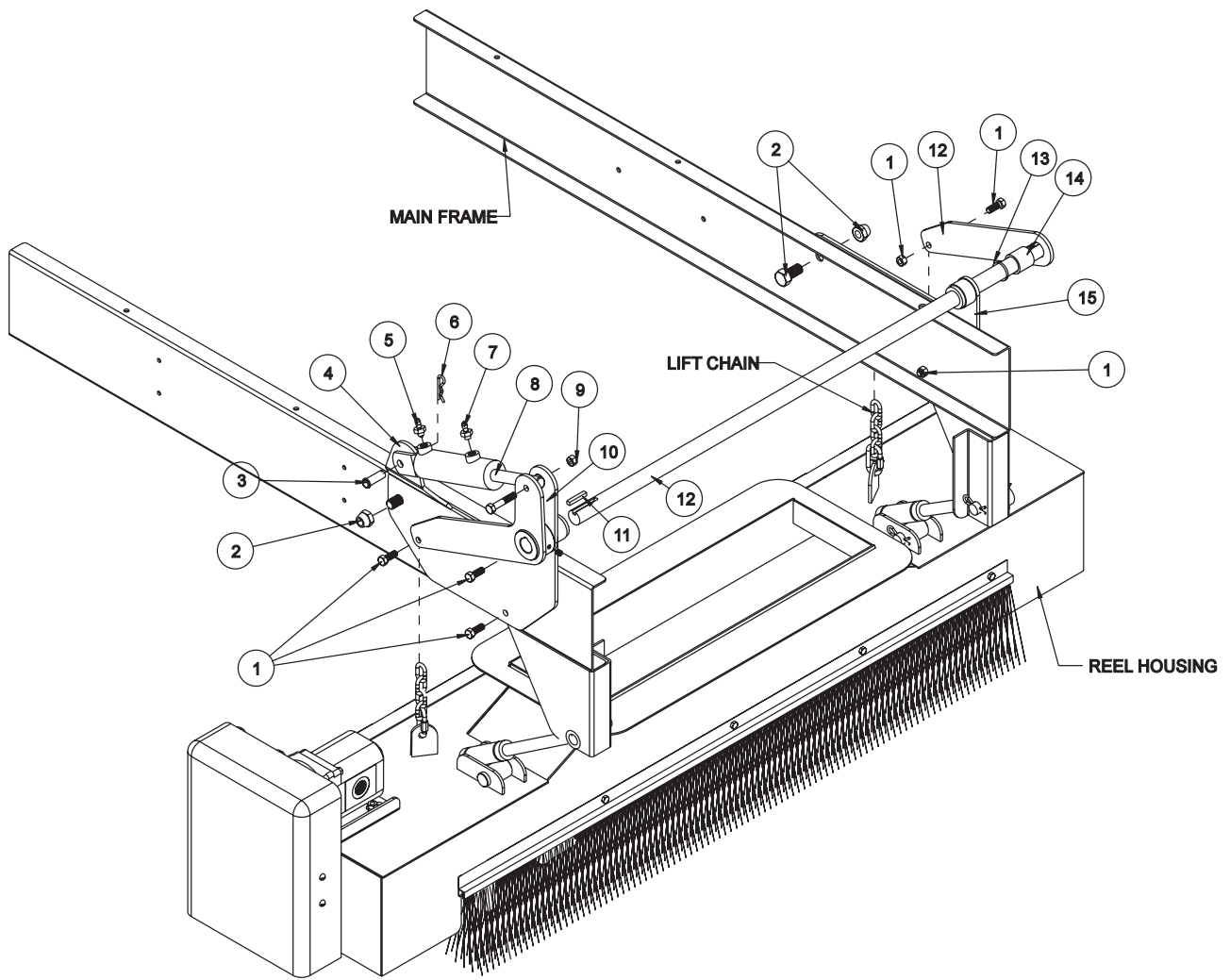
Use two people to install hitches.

1. Block both wheels so machine does not roll.
2. Use the jack that is part of the sweeper to raise or lower sweeper to comfortable working height.
3. Slide the tongue (Ref 3) over the tabs on the front of the sweeper frame. Hitch must be on the outside. Use the four $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ bolts (Ref 10) on the outside and four lock nuts on the inside. Tighten all four bolts.
4. Install adjustment slide (Ref 5) to tongue (Ref 3) using the four flange bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$ and four flange whiz lock nuts $\frac{1}{4}$ - 20 (Ref 4).
5. Loosen adjustment locks (Ref 6) on control panel adjustment (Ref 7) and put control panel adjustment onto the adjustment slide.
6. Tighten one adjustment lock (Ref 6).
7. Slide the control panel mount (Ref 8) through the control panel adjustment (Ref 7) and tighten the other adjustment lock (Ref 6).
8. The control panel has all the hoses, wiring and throttle cable connected to it and to the sweeper. The control panel is wrapped and fastened to the front of the sweeper.
9. Remove the control panel from the sweeper, bring it forward with the hoses to the rear and the throttle on the left hand side.
10. Fasten the control panel to the control panel mount with the four truss head machine screws $\frac{1}{4}$ - 20 x $\frac{3}{4}$ and four flange whiz lock nuts $\frac{1}{4}$ - 20 (Ref 9).
11. Put the two handles onto the valve and tighten the lock nuts with the handles pointing forward.
12. Place three hoses and the throttle cable on the left hand side of the adjustment slide.



Do not tow on public roads.

78-207 HYDRAULIC LIFT KIT DRAWING

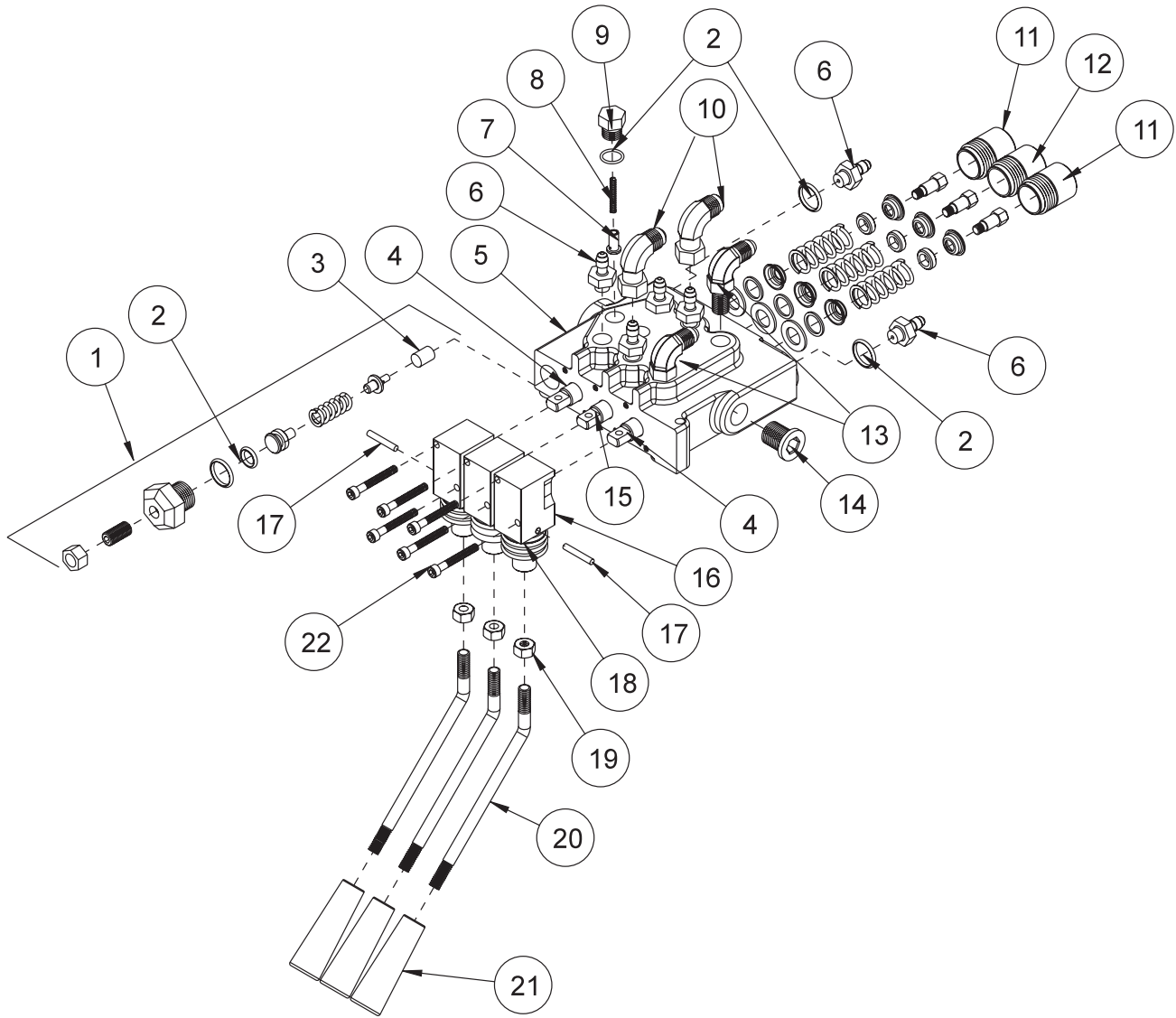


Accessories

78-207 HYDRAULIC LIFT KIT PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | HB-38-16-100 | Bolt $\frac{3}{8}$ - 16 x 1 | 6 |
| | HNFL-38-16 | Whiz Lock Nut $\frac{3}{8}$ - 16 | 6 |
| 2 | HB-58-18-125 | Bolt $\frac{5}{8}$ - 18 x $1\frac{1}{4}$ | 2 |
| | HNTL-58-18 | Lock Nut $\frac{5}{8}$ - 18 | 2 |
| 3 | HCP-12-150 | Clevis Pin $\frac{1}{2}$ x $1\frac{1}{2}$ | 1 |
| 4 | 78-357 | Right Hydraulic Lift Mount | 1 |
| | 18-223 | Flange Bushing (part of 78-357) | 1 |
| | HMB-100-10 | Machine Bushing 1 x 10GA | 1 |
| 5 | 78-365 | Adapter with Orifice | 1 |
| | 78-364 | Hydraulic Hose | 1 |
| 6 | HHP-18 | Bridge Pin $\frac{1}{8}$ | 1 |
| 7 | 18-169 | Adapter $\frac{3}{8}$ | 1 |
| | 78-364 | Hydraulic Hose | 1 |
| 8* | 13-292 | Hydraulic Cylinder | 1 |
| 9 | HB-38-16-200 | Bolt $\frac{3}{8}$ - 16 x 2 | 1 |
| | HW-38 | Washer $\frac{3}{8}$ | 2 |
| | HNTL-38-16 | Lock Nut $\frac{3}{8}$ - 16 | 1 |
| 10 | 78-258 | Chain Lift | 1 |
| | HSSHS-38-16-063 | Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (comes with 78-358) | 2 |
| 11 | HKSQ-14-150 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x $1\frac{1}{2}$ | 2 |
| 12 | 78-360 | Lift Pivot | 1 |
| 13 | HMB-100-10 | Machine Bushing 1 x 10GA | 1 |
| 14 | 78-366 | Spacer | 1 |
| 15 | 78-361 | Left Hydraulic Lift Mount | 1 |
| | 18-223 | Flange Bushing (part of 78-361) | 1 |
| * | 14-253 | Seal Kit for cylinders with part number stamped on cylinder and a retaining ring on rod end. | |
| * | 14-267 | Seal Kit for cylinders with part number stamped on cylinder and a spanner nut on the rod end. | |

78-363 3 - BANK HYDRAULIC VALVE DRAWING

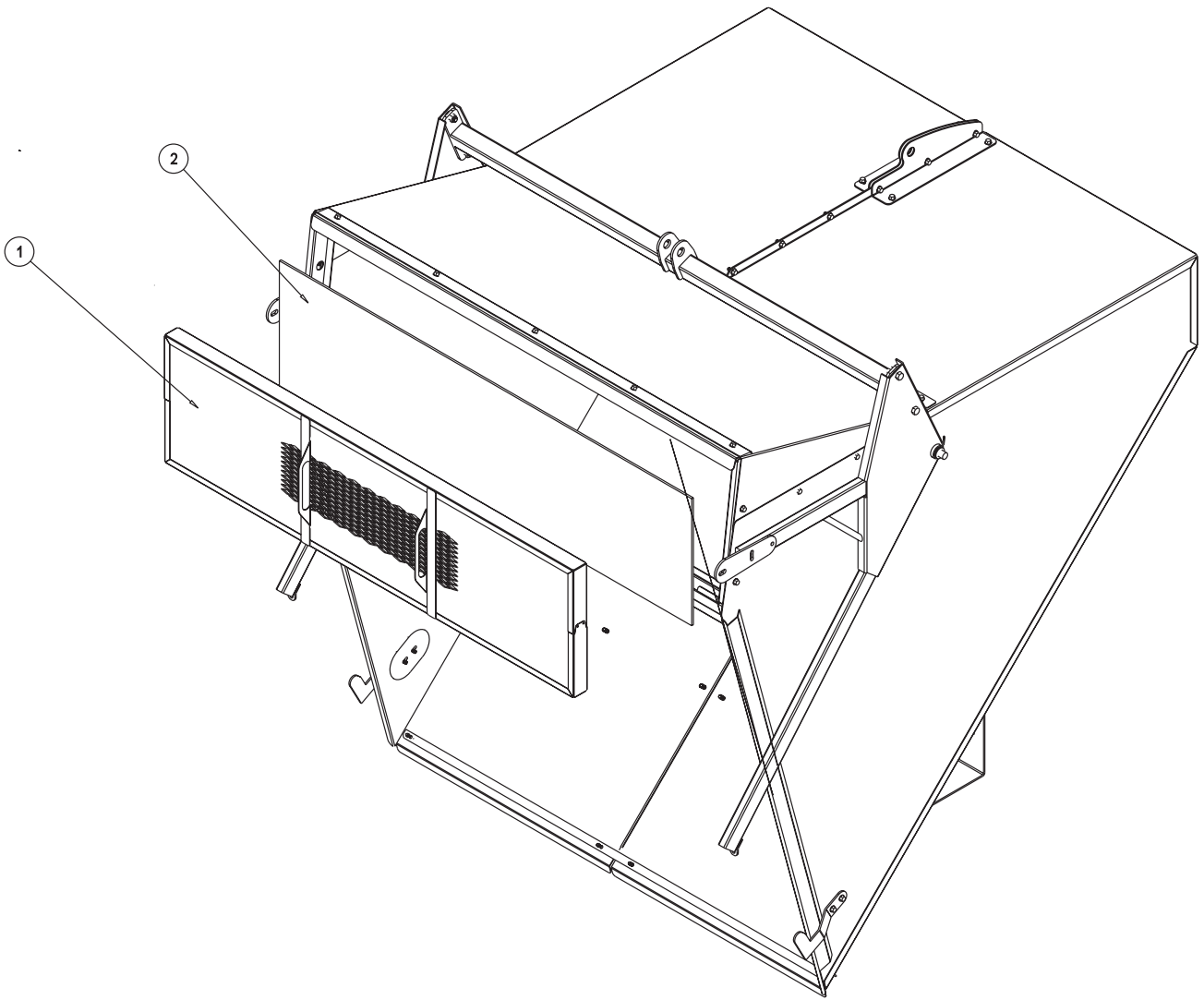


Accessories

78-363 3 - BANK HYDRAULIC VALVE PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|------------|--|----------|
| 1* | 14-106 | Relief Assembly Kit | 1 |
| 2* | 14-205 | Seal Kit | 1 |
| 3* | 13-261-03 | N.R. Plug | 1 |
| 4 | 14-088 | Spool | 2 |
| 5 | 42-227-01 | 3-Bank Housing | 1 |
| 6 | 18-169 | Adapter $\frac{3}{8}$ SAE (4 come from 2-bank valve) | 6 |
| 7* | 13-261-07 | Plunger | 3 |
| 8* | 13-261-06 | Spring | 3 |
| 9* | 13-261-05 | Plug | 3 |
| 10 | 18-202 | Elbow (2 come from 2 bank valve) | 4 |
| 11* | 14-203 | Spring Centered Kit | 2 |
| 12* | 78-306-02 | Two Spring Detent Kit | 1 |
| 13 | 18-168 | Elbow $\frac{3}{8}$ Straight Thread (part of 2-bank valve) | 2 |
| 14* | 13-261-02 | Plug | 1 |
| 15* | 78-306-03 | Spool Stem (reel bank) | 1 |
| 16* | 42-220-04 | Actuator Housing | 3 |
| 17* | 42-220-05 | Dowel Pin | 3 |
| 18* | 42-220-03 | Actuator Link | 3 |
| 19 | HNJ-516-18 | Jam Nut $\frac{5}{16}$ - 18 (part of 42-226) | 3 |
| 20 | 42-226 | Bent Handle (includes Ref 19 and 21; 2 come with 2 bank valve) | 3 |
| 21 | 42-220-08 | Tapered Knob (part of 42-226) | 3 |
| 22* | 42-220-06 | Socket Head Cap Screw 10 - 32 x $1\frac{1}{2}$ | 6 |
| * | 78-363 | 3-Bank Hydraulic Valve (includes all * items) | |

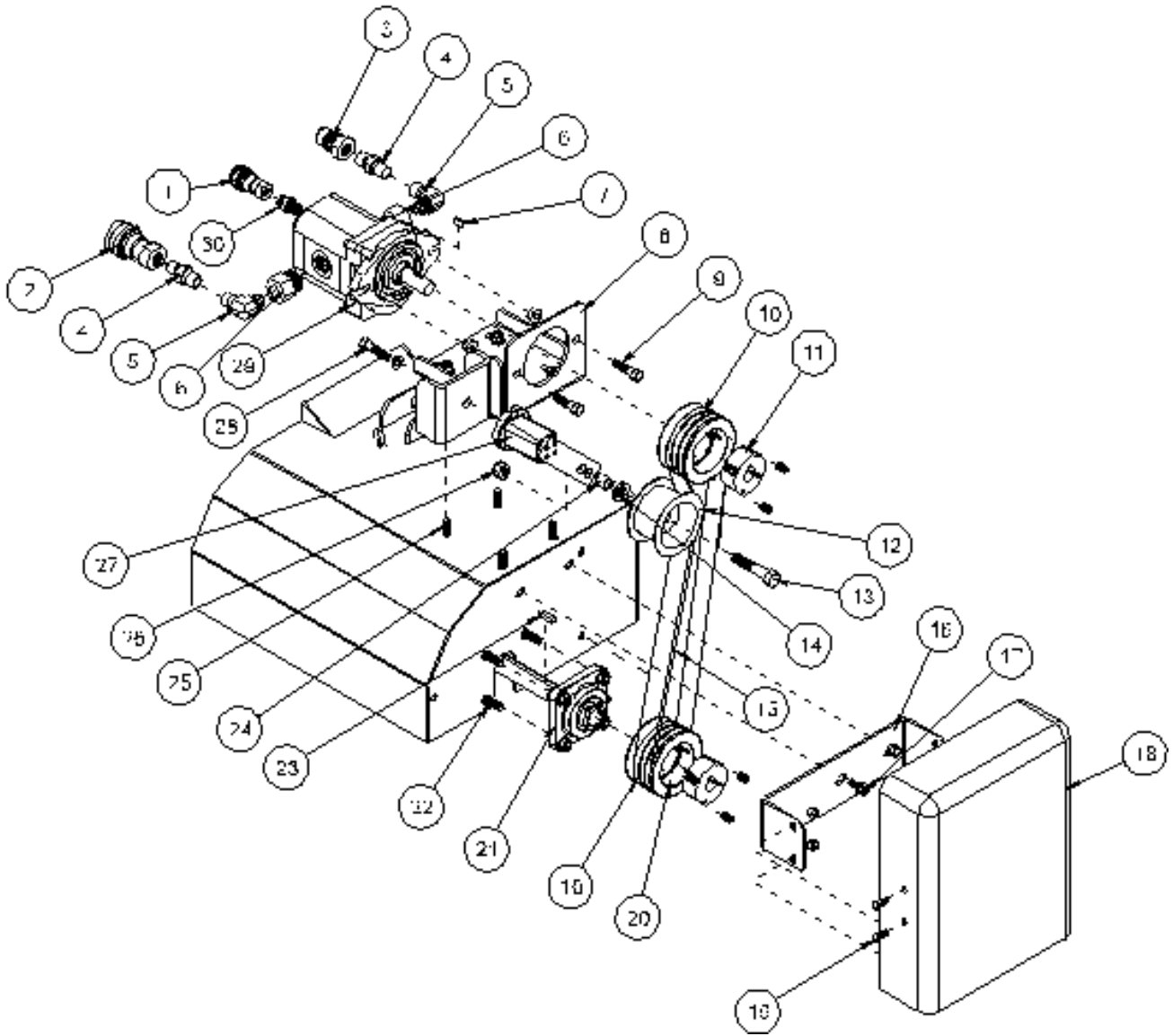
78-208 FILTER SYSTEM DRAWING



78-208 FILTER SYSTEM PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|--------|-------------|----------|
| 1 | 78-288 | Filter Case | 1 |
| 2 | 78-328 | Filter | 1 |

78-210 & 78-211 REEL AND HYDRAULIC PUMP DRAWING



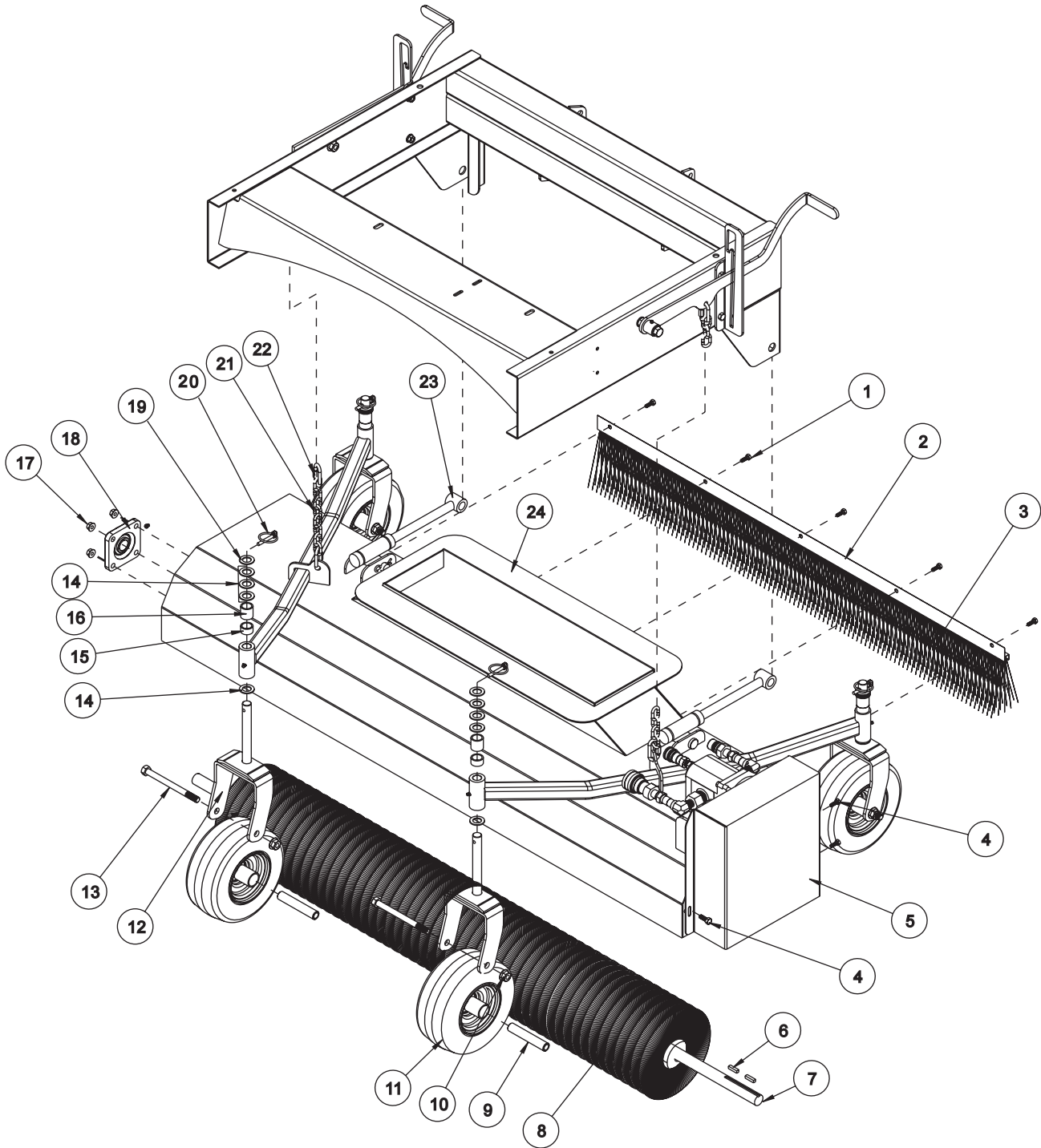
Accessories

78-210 & 78-211 REEL AND HYDRAULIC PUMP DRAWING

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|-----------------|---|----------|
| 1 | 78-230 | Coupler $\frac{1}{4}$ | 1 |
| 2 | 78-228 | Coupler $\frac{1}{2}$ " | 1 |
| 3 | 78-229 | Nipple $\frac{1}{2}$ " | 1 |
| 4 | 18-334 | Nipple | 2 |
| 5 | 18-009 | Elbow | 2 |
| 6 | 18-333 | Adapter | 2 |
| 7 | HWK-316-063 | Woodruff key $\frac{3}{16} \times \frac{5}{8}$ | 1 |
| 8 | 78-259 | Hydraulic Motor Mount | 1 |
| 9 | HB-38-16-150 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{2}$ | 2 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 2 |
| 10 | 78-232 | Pulley | 2 |
| 11 | 78-237 | Hub $\frac{3}{4}$ | 1 |
| | HSSHS-38-16-063 | Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 78-237) | 2 |
| 12 | 16-013 | Idler Pulley | 1 |
| 13 | HB-12-13-250 | Bolt $\frac{1}{2}$ - 13 x $2\frac{1}{2}$ (part of 78-224) | 1 |
| 14 | HMB-12-14 | Machine Bushing $\frac{1}{2}$ x 14GA | 2 |
| 15 | 78-226 | Belt, Single | 3 |
| 16 | 72-058 | Belt Guard Mount Bracket | 1 |
| 17 | HBFL-516-18-075 | Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$ | 2 |
| | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 2 |
| 18 | 72-056 | Plastic Belt Guard | 1 |
| 19 | HST-14-20-075 | Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| 20 | 78-351 | Hub 1" | 1 |
| | HSSHS-38-16-063 | Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 78-351) | 2 |
| 21 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 22 | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ | 8 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| 23 | HKSQ-14-100 | Machine Key $\frac{1}{4} \times \frac{1}{4} \times 1$ | 1 |
| 24 | 76-275 | Spacer (part of 78-224) | 1 |
| 25 | HB-38-16-100 | Bolt $\frac{3}{8}$ - 16 x 1 | 4 |
| | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 4 |
| 26 | HNCL-12-13 | Center Lock Nut $\frac{1}{2}$ - 13 (part of 78-224) | 1 |
| 27 | 78-224 | Belt Tensioner | 1 |
| 28 | HBM-10-1.5-30 | Metric Bolt 10 - 1.5 x 30 (part of 78-224) | 1 |
| | HWLM-10 | Metric Lockwasher 10 (part of 78-224) | 1 |
| 29* | 78-219 | Hydraulic Motor | 1 |
| | 78-219-01 | Seal Kit Buna-N Compound | |
| | 78-219-02 | Drive Coupler | |
| 30 | 18-335 | Nipple | 1 |

* NO OTHER PARTS ARE REPLACEABLE FOR HYDRAULIC PUMP.

78-210 NYLON BRUSH HEAD DRAWING



Accessories

78-210 NYLON BRUSH HEAD PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|--|----------|
| 1 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 5 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 5 |
| 2 | 78-344 | Strip Brush Holder (drilled) | 1 |
| 3 | 78-322 | Strip Brush | 1 |
| 4 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| 5 | 72-056 | Plastic Belt Guard | 1 |
| 6 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 2 |
| 7 | 78-348 | Shaft Spiral Brush | 1 |
| 8 | 78-321 | Spiral Brush | 1 |
| 9 | 42-213 | Axle Bearing | 4 |
| 10 | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 11 | 42-202 | Tire and Wheel | 4 |
| | 42-202-01 | Tire 9 x 3.5 x 4 Ply | 4 |
| | 42-202-02 | Wheel | 4 |
| 12 | 42-204 | Castor Fork | 4 |
| 13 | HB-12-13-600 | Bolt $\frac{1}{2}$ - 13 x 6 | 4 |
| 14 | HMB-34-10 | Machine Bushing $\frac{3}{4}$ x 10GA | 16 |
| 15 | 42-214 | Short Spacer | 4 |
| 16 | 42-215 | Long Spacer | 4 |
| 17 | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{8}$ - 16 | 8 |
| | HB-38-16-125 | Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$ | 8 |
| 18 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 19 | HMB-34-14 | Machine Bushing $\frac{3}{4}$ x 14GA | 4 |
| 20 | 42-539 | Lynch Pin $\frac{5}{16}$ | 4 |
| 21 | 8820-8 | Machine Chain Straight Link | 2 |
| 22 | 78-241 | Chain Connector | 4 |
| 23 | 78-271 | Reel Lift Rod | 2 |
| | HCP-34-250 | Clevis Pin $\frac{3}{4}$ x $2\frac{1}{2}$ | 2 |
| | HHP-18 | Bridge Pin $\frac{1}{8}$ | 2 |
| 24 | 78-258 | Reel Housing | 1 |
| | 8803-80 | Trim Black | 1 |
| 25 | 42-212 | Castor Wheel Spacer | 8 |

78-211 RUBBER FINGER HEAD PARTS LIST

| REF# | PART# | DESCRIPTION | QUANTITY |
|------|----------------|--|----------|
| 1 | HB-14-20-075 | Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 5 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 5 |
| 2 | 78-344 | Strip Brush Holder (drilled) | 1 |
| 3 | 78-322 | Strip Brush | 1 |
| 4 | HSTP-14-20-075 | Phillips Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$ | 4 |
| | HNFL-14-20 | Flange Whiz Lock Nut $\frac{1}{4}$ - 20 | 4 |
| 5 | 72-056 | Plastic Belt Guard | 1 |
| 6 | HNTL-12-13 | Lock Nut $\frac{1}{2}$ - 13 | 4 |
| 7 | 42-202 | Tire & Wheel | 4 |
| | 42-202-01 | Tire 9 x 3.5 x 4 Ply | 4 |
| | 42-202-02 | Wheel | 4 |
| 8 | 42-213 | Axle Bearing | 4 |
| 9 | 78-287 | Finger Clamp 13" | 1 |
| 10 | 78-327 | Finger Clamp 10.5" | 1 |
| 11 | 78-242 | Sweeper Finger | 81 |
| 12 | HKSQ-14-100 | Machine Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1 | 1 |
| 13 | 78-303 | Finger Reel Bar | 1 |
| 14 | 78-297 | Finger Clamp 10" | 17 |
| 15 | 78-326 | Finger Clamp 12" | 1 |
| 16 | HNFL-516-18 | Flange Whiz Lock Nut $\frac{5}{16}$ - 18 | 40 |
| 17 | 42-204 | Castor Fork | 4 |
| 18 | HB-12-13-600 | Bolt $\frac{1}{2}$ -13 x 6 | 4 |
| 19 | HMB-34-10 | Machine Bushing $\frac{3}{4}$ x 10GA | 16 |
| 20 | 42-215 | Short Spacer | 4 |
| 21 | 42-214 | Long Spacer | 4 |
| 22 | HNFL-38-16 | Flange Whiz Lock Nut $\frac{3}{4}$ - 16 | 8 |
| | HB-38-16-125 | Bolt $\frac{3}{4}$ - 16 x $1\frac{1}{4}$ | 8 |
| 23 | 78-222 | Mounted Bearing (1" bore) | 2 |
| 24 | HMB-34-14 | Machine Bushing $\frac{3}{4}$ x 14GA | 4 |
| 25 | 42-539 | Lynch Pin $\frac{5}{16}$ | 4 |
| 26 | 8820-8 | Machine Chain Straight Link | 2 |
| 27 | 78-241 | Chain Connector | 4 |
| 28 | 78-271 | Reel Lift Rod | 2 |
| | HCP-34-250 | Clevis Pin $\frac{3}{4}$ x $2\frac{1}{2}$ | 2 |
| | HHP-18 | Bridge Pin $\frac{1}{8}$ | 2 |
| 29 | 78-258 | Reel Housing | 1 |
| | 8803-80 | Trim Black | 1 |
| 30 | 42-212 | Castor Wheel Spacer | 8 |

NOTES

DECAL LIST

This is a list of decals on the Sweep Star V62. Part numbers, description, and location will help in reordering decals.

| | | |
|--------|--------------------------------|---------------------------------------|
| 16-088 | Decal, Moving Parts/Hot | Top Reel Belt Guard & Left Side Frame |
| 17-128 | Decal, Radiator Coolant | Radiator Shield |
| 25-004 | Decal, Serial # | Left Front Main Frame |
| 25-277 | Decal, Battery Warning | Above Battery |
| 25-286 | Decal, Pinch Point | 2 Ea. Side Tailgate |
| 25-307 | Decal, Refueling w/ Gasoline | Above Gas Tank |
| 25-344 | Decal, 3" Star | Right Side Belt Guard |
| 25-355 | Decal, Tire Pressure (18 psi) | Rear Wheels |
| 25-356 | Decal, Tire Pressure (20 psi) | Castor Forks |
| 25-359 | Decal, Smithco (3.25 x 17.312) | Front Chute & Rear Tailgate |
| 27-093 | Decal, Hydraulic Oil | Front Oil Tank Bracket |
| 76-305 | Decal, Rotating Parts | 2 Blower Housing |
| 78-217 | Decal, Operator Control Panel | Operator Control Panel |
| 78-369 | Decal, Sweep Star V62 | 2 Hopper Sides |
| 78-307 | Decal, Machine Control Panel | Machine Control Panel |

QUICK REFERENCE

REPLACEMENT FILTERS

| | | |
|-----------|------------------------------|----------------------|
| 23-031 | Hydraulic Oil Filter Element | |
| 50-403 | In-Line Fuel Filter | |
| 34-112-01 | Engine Oil Filter Element | Kawasaki# 49065-2071 |
| 34-112-02 | Air Filter Element Assembly | Kawasaki# 11029-2005 |

REPLACEMENT BELTS

| | | |
|-----------|--|----------------------|
| 34-112-03 | Fan Belt (Engine) | Kawasaki# 59011-2056 |
| 78-227 | Belt, 3-Band (Engine To Blower & Pump) | |
| 78-226 | Belt, Single (3 Req'd) (Hydraulic Motor To Reel) | |

SEAL KITS

| | |
|-----------|--------------------------|
| 78-219 | Hydraulic Motor |
| 78-219-01 | Seal Kit Buna N Compound |
| 78-219-02 | Drive Coupler |
| 78-220 | Hydraulic Pump |
| 78-220-01 | Seal Kit Buna N Compound |
| 78-219-02 | Drive Coupler |
| 78-225 | Tailgate Cylinder |
| 76-242-01 | Seal Kit |
| 78-306 | 2-Bank Hydraulic Valve |
| 78-306-01 | Seal Kit |

OTHER PARTS

| | |
|-------------------------------------|--|
| Spark Plug NGK BMR 6A or equivalent | Gap .024-.028 in. (.6-.7 mm) Torque 12 Ft. Lbs. (17 Nm) |
|-------------------------------------|--|

FLUIDS

| | |
|-----------------|---|
| Engine Oil | SAE 10W-40 API Service SJ or higher Motor Oil |
| Hydraulic Fluid | SAE 10W-40 API Service SJ or higher Motor Oil |
| Coolant | Permanent Type Antifreeze for Aluminum Engine and Radiator Green. 50% Solution of Ethylene Glyco. |