

Parts & Service



Big Vac Engine Drive
73-000-A
SN: 73001

January 2006

Product Support: **Hwy 55 & Poplar Ave; Cameron WI 54822**
1-800-891-9435 productsupport@smithco.com

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Thank you for purchasing a **Smithco** product.

Read this manual and all other manuals pertaining to the Big Vac V72-E carefully as they contain 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 Big Vac is located on the front cross member of the frame.

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 Personal Protective Equipment (PPE) to protect our head, eyes, ears, hands and feet. **Ear and eye protection are required.** 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. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
10. 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. Operate equipment up and down slopes, never across the face.
11. 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.
12. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
13. The rubber fingers, sweeper and vacuum pick up and propel debris and small objects in machines path during operation. Keep the area of operation clear of all bystanders.
14. Never carry passengers.
15. Use parts and materials supplied by _____ only. Do not modify any function or part.
16. Avoid sharp turns. Watch the tires of the tractor while turning to make sure they do not contact the tongue of the Big Vac.
17. Shut down power source before attempting to unclog any part of the machine.
18. If reel deck and/or blower began to vibrate abnormally, immediately shut off power and determine the cause.

These machines are intended for professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.



SPECIFICATIONS FOR BIG VAC ENGINE DRIVE

WEIGHTS AND DIMENSIONS

Length	180" (458 cm)
Width	84" (214 cm)
Height	87" (221 cm)
Weight	2950 lb (1338 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 26.5 - 1400 x 12 NHS (18 psi (1.3 bar)) Fairway Type Turf Tires
Castor: 13 x 5 x 6 (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	3.2 gallon (12.2 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil

OPTIONAL EQUIPMENT

72-002 Rubber Finger Sweeper Head	73-003 Standard Clevis Hitch
72-005 Nylon Brush Head	73-004 5th Wheel Hitch for Turf Truckster w/ Electric brakes
72-006 Replacement Brush Reel	73-005 5th Wheel for Tractor
22-073 Battery	73-006 Vacuum Hose Hand Held
72-004 Over-The-Road Tow Package	

MAINTENANCE



CAUTION

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

NOTE:

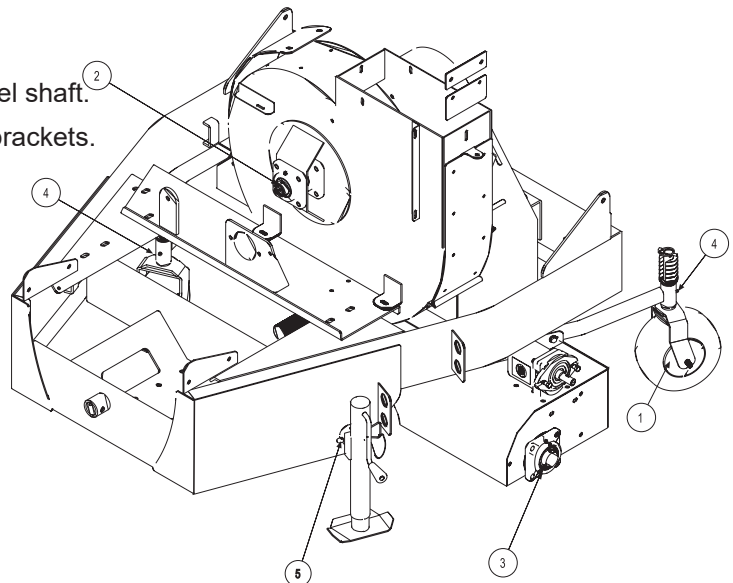
Use all procedures and parts prescribed by the manufacturer's. Read the engine manual before operation.

LUBRICATION

Use No. 2 General Purpose Lithium Base Grease and lubricate **DAILY**. The Big Vac has 13 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 Two on the fan shaft.
- 3 One on each mounted bearing for reel shaft.
- 4 One on all four castor wheel mount brackets.
- 5 One on the jack stand.



STORAGE

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. Store in a clean and dry area.

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.

WHEEL MOUNTING PROCEDURE

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.

HYDRAULIC OIL

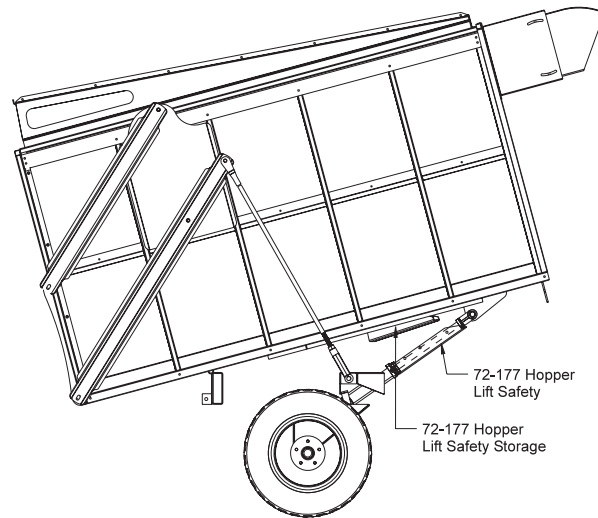
1. Use SAE 10W-40 API Service SJ or higher motor oil.
2. For proper warranty, change oil every 500 hours or annually, whichever ever is first and change the filter after the first 20 hours, then at 100 hours, then every 250 hours thereafter.
3. Inspect hydraulic lines for damage or leaks. Never use hands to inspect leaks.
4. Check hydraulic fluid level in tank. Look at the sight gauge on the front left side of the tank. The oil level should be at 90°C (194°F). If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
5. After changing oil and/or filter, operate the machine for a few minutes. Check oil level and for leaks.
6. 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.
7. If natural color of fluid is now black or smells burnt, it is possible that an overheating problem exists.
8. If fluid becomes milky, water contamination may be a problem.
9. 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.
10. 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.
11. 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.



MAINTENANCE (CONTINUED)

HOPPER LIFT SAFETY

The Hopper Lift Safety is used to support the ram on the hopper bottom in the extended position so you may service or repair the machine under the hopper. When not in use the Hopper Lift Safety can be stored on the hopper bed frame.



OVERLOADING DEBRIS HOPPER AND VACUUM HOUSING WEAR

SMITHCO SWEEPER-VACS ARE DESIGNED TO CARRY THE FOLLOWING MAXIMUM LOADS:

Model 73-000 Big Vac

1500 lbs. (608 kg)

PLEASE NOTE THE FOLLOWING:

1. Loads heavier than that will damage the unit.
2. Such damage is not covered by warranty.
3. Overloading is particularly easy when collecting aerifier cores.
4. The hoppers on the Big Vac and V62 are large in order to hold 7 and 4 cubic yards respectively, of thatch, grass clippings, leaves and trash.
5. They will not hold 7 or 4 cubic yards of aerifier cores.
6. The maximum depth (in the debris hopper) of aerifier cores is:

Model 32-000 Big Vac

12 in. (30 cm)

VACUUM HOUSING WEAR

The Big Vac & V62 are fitted with a wear resistant liner in the vacuum housing. This will provide additional housing life. Be sure the following points are explained to the user:

1. The vacuum housing and impeller must be cleaned each time the unit is used so the housing liner is inspected daily. Only Smithco Sweeper-Vacs provide a clean out/inspection port for easy inspection and cleaning.
2. When bare steel is visible at any point in the housing lining, the lining must be replaced. It is expected the liner will wear and be replaced. It is a vast improvement over competitive units with no liners.
3. Replacement of the liner or the vacuum housing due to wear is normal and is not covered by warranty.
4. Collection of aerifier cores causes extreme wear on the liner (and if unchecked, on the housing).
5. Caution users that, while Smithco Sweeper-Vacs do an excellent job collecting cores, the lining (and the housing) will wear quickly in such use.

RUBBERIZED BOOT

The rubberized boot between main unit and sweeper head is subject to wear and damage from debris. Unless defective, replacement of this boot is not covered by warranty.

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
☐ 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	C		C	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)								

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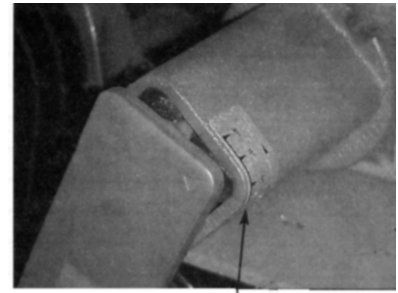
£ Change oil every 25 hours when operating under heavy load or in high ambient temperatures.

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



ADJUSTMENT OF BELT TENSIONER

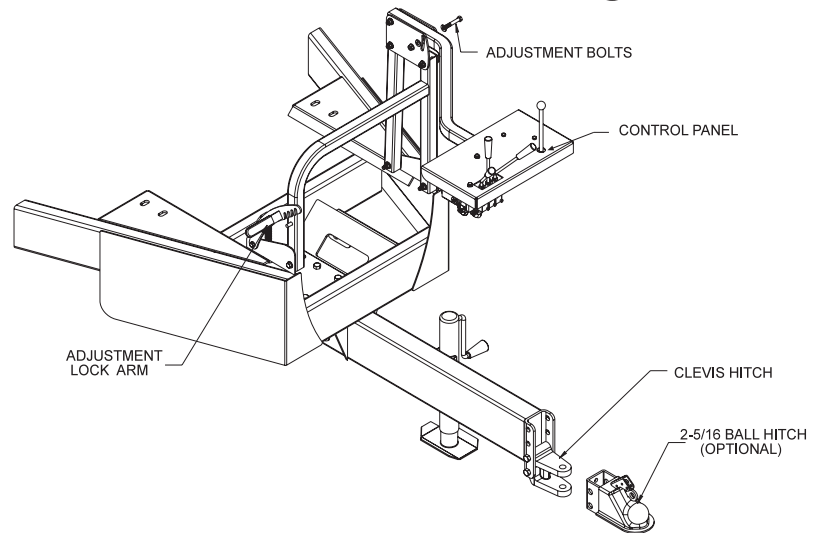
There are four maximum belt tensioners on the Big Vac. Two control the tension on the belts on the blower housing, one each on the finger reel and the thatcher reel. The proper tension of the idler should be 12 to 15 as per the gauge (A) on the side of the tightener. Over tightening the belt will shorten 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.



(A)

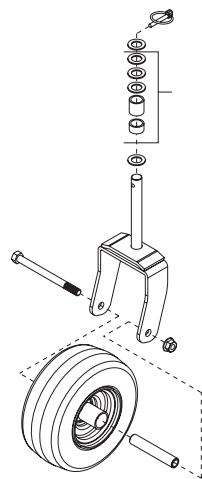
CONTROL PANEL ADJUSTMENT ARM

On the right hand side of machine is the adjustment lock arm, by lifting up you can adjust the control panel by moving it forward or rearward. Make certain that the lock arm is locked back in place after adjustment. For up and down adjustment loosen the four adjustment bolts place the control panel to where you want it and tighten the four bolts.



HITCH OPTIONS

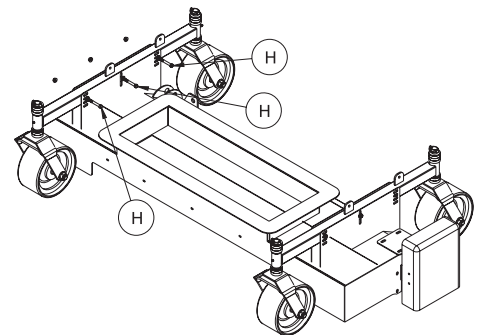
You may use the clevis hitch that is shipped with your machine or a 2⁵/₁₆ ball hitch that is an optional accessory. Both mount in the same location with three different bolt hole options.



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).

(A)



SINGLE REEL HOUSING

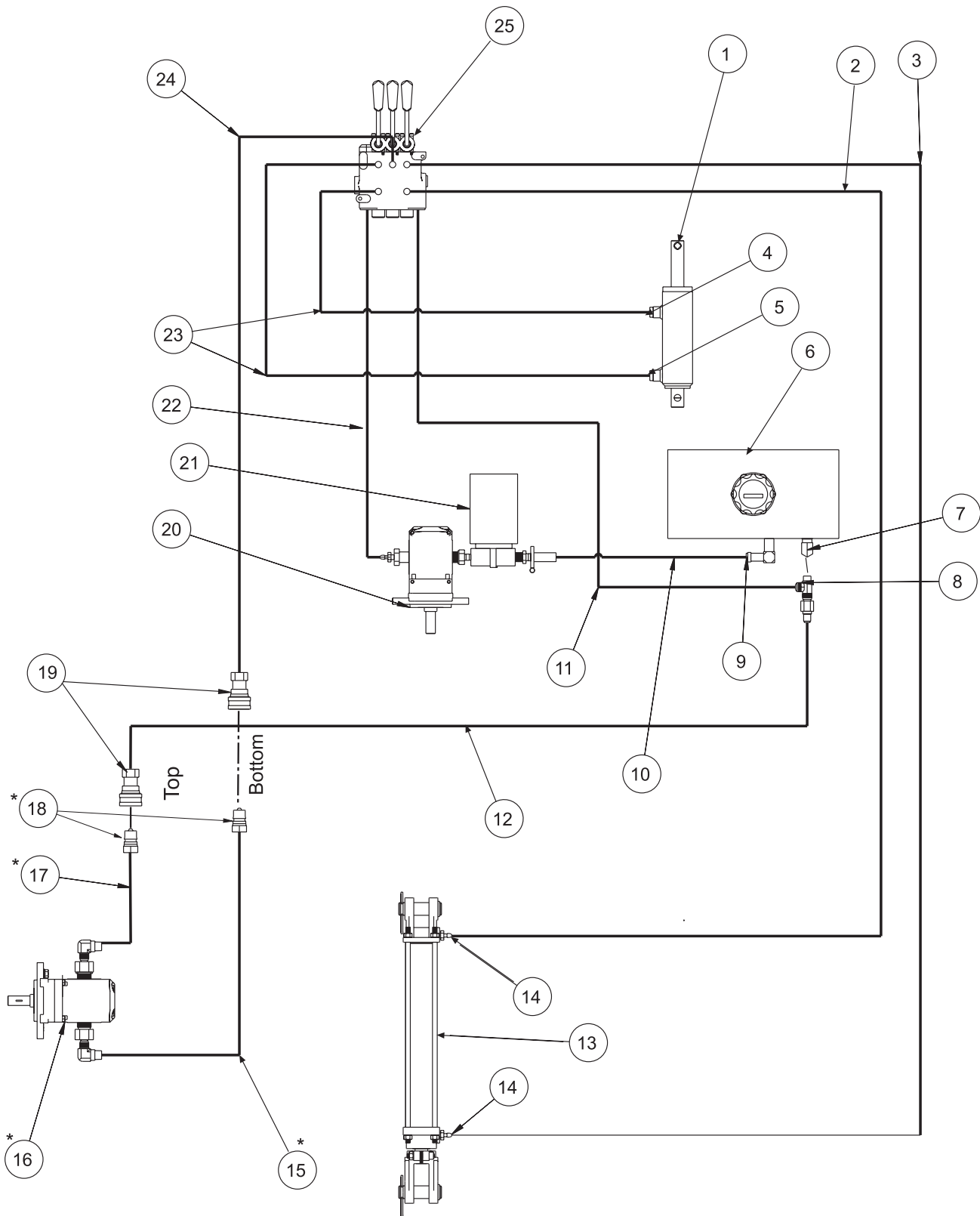
Normal setting is two slots down (H) both front and rear (both sides).

WIRING PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	76-259	Wire, Hour Meter to Ground	1
2	12-017	Hour Meter	1
3	15-314	Toggle Switch	1
	15-472	Switch Boot	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	48-147	Battery Cable Black	1
11	22-073	Battery (optional)	1
12	75-518	Red Battery Cable with Boot	1
13	8919-5	Red Circuit Breaker Wire	1
	8912	Ring Terminal	1
	8928	⁵ / ₁₆ Ring Terminal	1
14	8975	30 Amp Circuit Breaker	1
	8977	Circuit Breaker Boot	1
15	78-368	Electric Clutch	1
16	73-048	Wire Extension	1

HYDRAULIC DRAWING

Diagrams



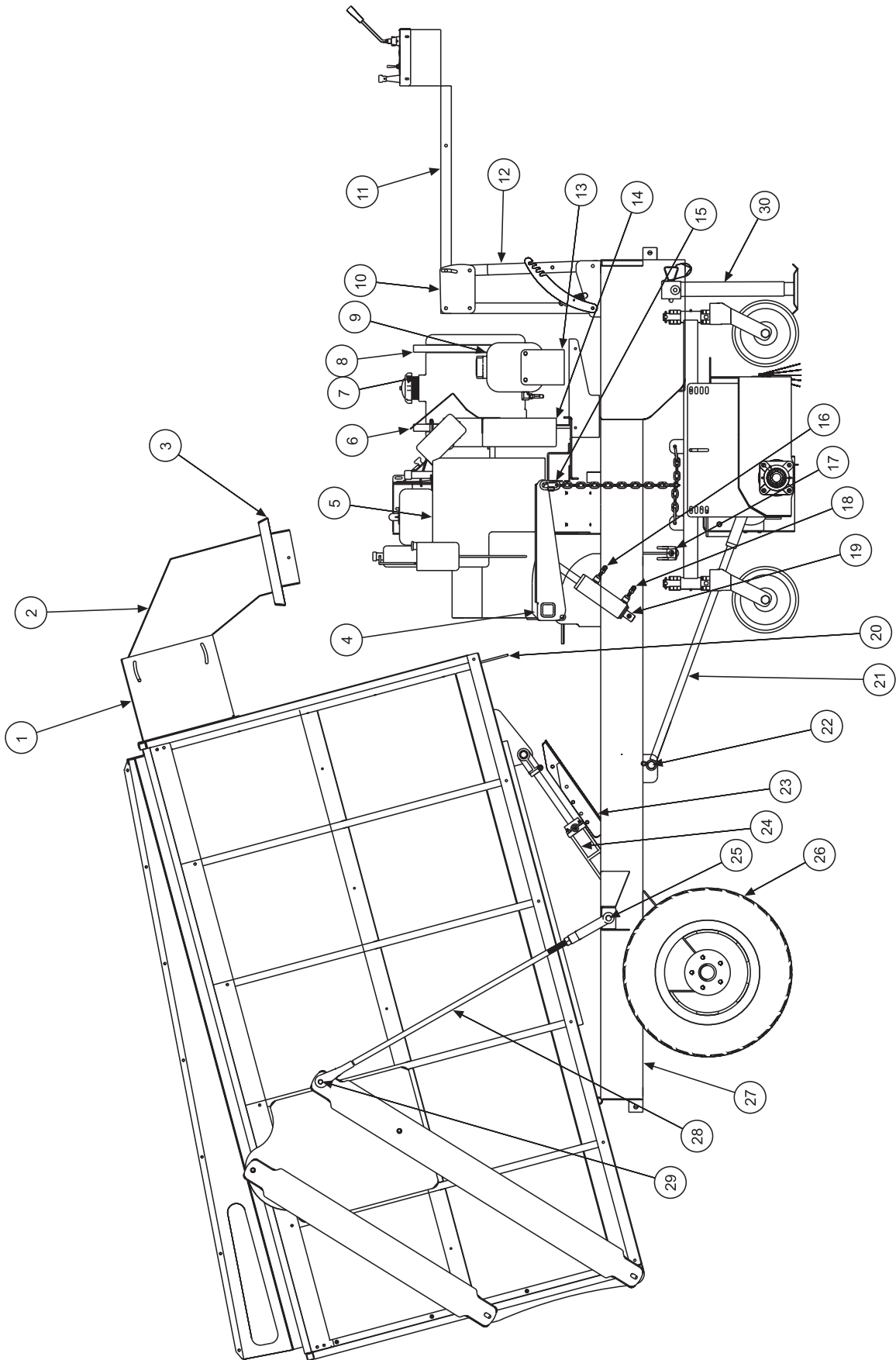
HYDRAULIC PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	10-187	Hydraulic Cylinder	1
	14-273	Seal Kit	
	HCP-12-200	Clevis Pin 1/2 x 2	2
	HP-18-100	Cotter Pin 1/8 x 1	2
2	73-012	Hydraulic Hose 186"	1
3	73-011	Hydraulic Hose 206"	1
4	18-169	Adapter 3/8 SAE	1
5	78-365	Adapter with Orifice	1
6	13-584	Oil Tank	1
	13-586	Filler Breather	1
7	17-019	Male Elbow	1
8	18-190	Tee	1
9	23-142	Connector	1
10	8917-9	5/8 Suction Hose 9"	1
	18-040	Hose Clamp	2
11	73-015	Hydraulic Hose 90"	1
12	73-017	Hydraulic Hose 53"	1
13	72-040	Hydraulic Cylinder	1
	72-040-01	Seal Kit	
14	23-184	Male Connector	2
15	72-075	Hydraulic Hose	1
16*	72-199	Hydraulic Motor	1
17	72-074	Hydraulic Hose	1
18	72-043	Quick Coupler 1/2" Male End	2
19	72-046	Quick Coupler 1/2" Female End	2
20*	78-413	Hydraulic Pump	1
21	23-006	Oil Filter	1
	23-031	Replacement Filter	
22	73-016	Hydraulic Hose 90"	1
23	73-013	Hydraulic Hose 118"	2
24	73-014	Hydraulic Hose 94"	1
25	78-416	Hydraulic 3-Bank Bank Valve	1

* No other parts are replaceable for hydraulic motor or pump.

HYDRAULIC PRESSURES	Front	Rear
Pump Displacement	.90 in ³ /rev	.40 in ³ /rev
Pump Input Speed (up to)	4000 rpm	4000 rpm
Max. Operating Pressure	3600 psi	3600 psi
Max. Inlet Vacuum	10 in. Hg	10 in. Hg
Max. Case Pressure	80 psi	80 psi

BIG VAC MAIN DRAWING

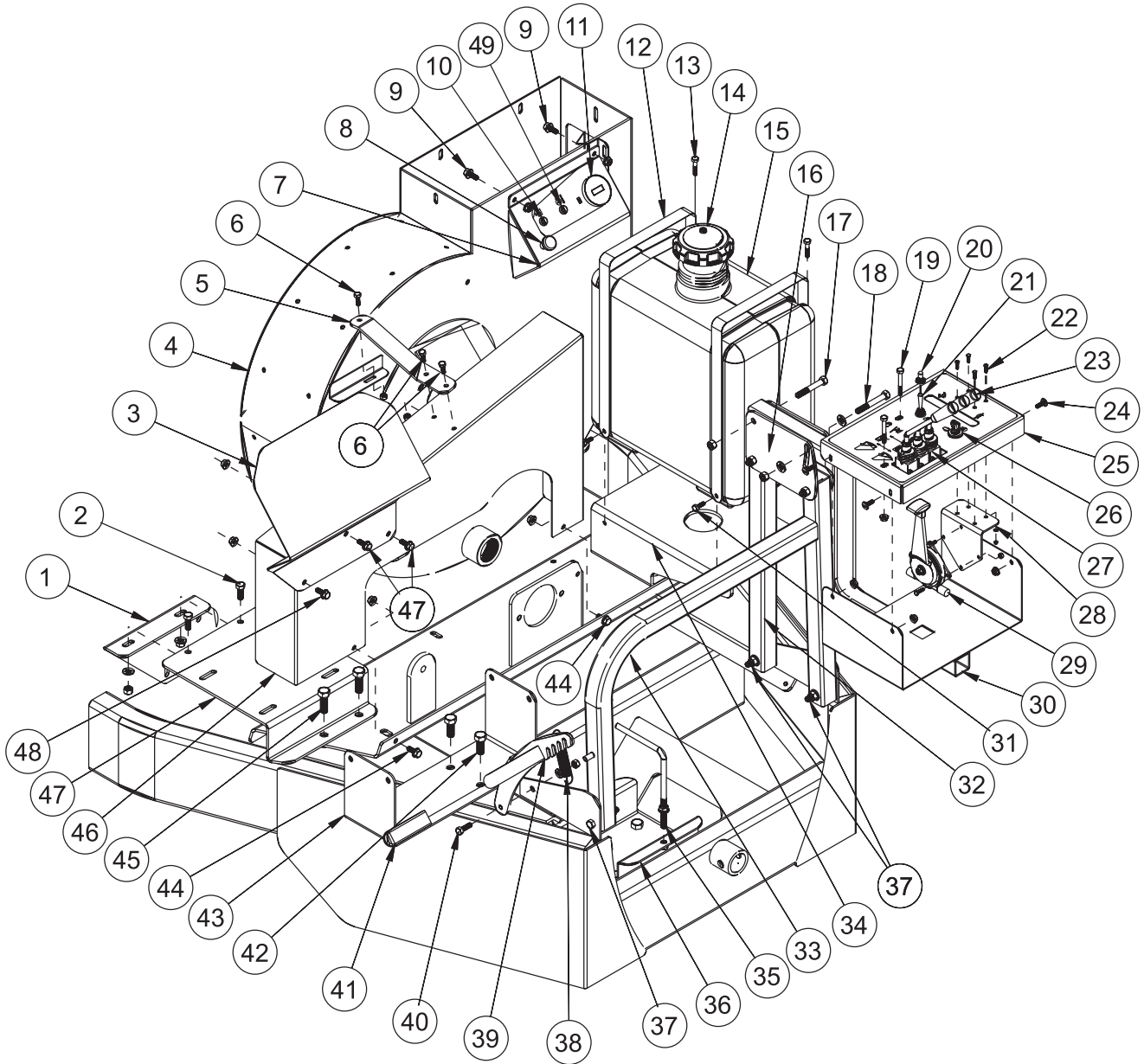


PARTS

BIG VAC MAIN PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	72-110	Hopper Chute	1
2	73-026	Debris Chute	1
	8980-60	Trim Seal 60"	1
3	73-024	Chute Flange	1
4	72-108	Reel Lift Cross Bar	1
	HB-12-13-125	Bolt 1/2 - 13 x 1 1/4	2
	HNTL-12-13	Lock Nut 1/2 - 13	2
5	78-218	22HP Kawasaki Engine	1
6	73-037	Heat Shield	1
7	73-049	Fuel Tank	1
	73-050	Fuel Tank Cap	1
8	73-051	Gas Tank Strap	2
9	13-584	Oil Tank	1
	13-586	Filler Breather	1
10	72-119	Control Panel Adjustment	2
11	73-040	Control Panel Mount	1
12	72-121	Control Panel Leg	1
13	73-022	Oil Tank Bracket	1
14	73-028	Belt Guard	1
15	HCP-12-200	Clevis Pin 1/2 x 2	2
	HP-18-100	Cotter Pin 1/8 x 1	2
16	18-169	Adapter	1
17	42-040	Yoke End	4
	72-148	Sway Bar	2
	HNJ-34-16	Jam Nut 3/4 - 16	4
	HCP-34-200	Clevis Pin 3/4 x 2	2
	HP-18-100	Cotter Pin 1/8 x 1	2
18	78-365	Adapter with Orifice	1
19	10-187	Hydraulic Cylinder	1
	14-273	Seal Kit	1
	HCP-12-200	Clevis Pin 1/2 x 2	2
	HP-18-100	Cotter Pin 1/8 x 1	2
20	72-183	Guide Bumpers	2
21	72-103	Reel Lift Rod	2
22	HCP-100-200	Clevis Pin 1 x 2	4
	HHP-18-100	Bridge Pin 1/8 x 1	4
23	72-177	Hopper Lift Safety	1
	HB-38-16-250	Bolt 3/8 - 16 x 2 1/2	2
	HNW-38-16	Wing Nut 3/8 - 16	2
24	72-040	Hydraulic Cylinder	1
	72-040-02	Pin with Clips (part of 72-040)	2
	72-040-01	Seal Kit	1
	23-184	Male Connector	2
25	HMB-34-10	Machine Bushing 3/4 x 10GA	6
	HP-18-100	Cotter Pin 1/8 x 1	2
26	72-042	Tire and Wheel	2
	33-072-01	Tire W26.5 x 14.00 - 12 4 Ply	2
	72-042-02	Wheel	2
27	72-080	Main Frame	1
28	72-099	Tailgate Lift Rod	2
29	HCP-12-175	Clevis Pin 1/2 x 1 3/4	2
	HP-18-100	Cotter Pin 1/8 x 1	2
30	78-240	Trailer Jack	1
NS	72-140	Boot (Connects vacuum hosing to reel deck)	1

CONTROL PANEL DRAWING



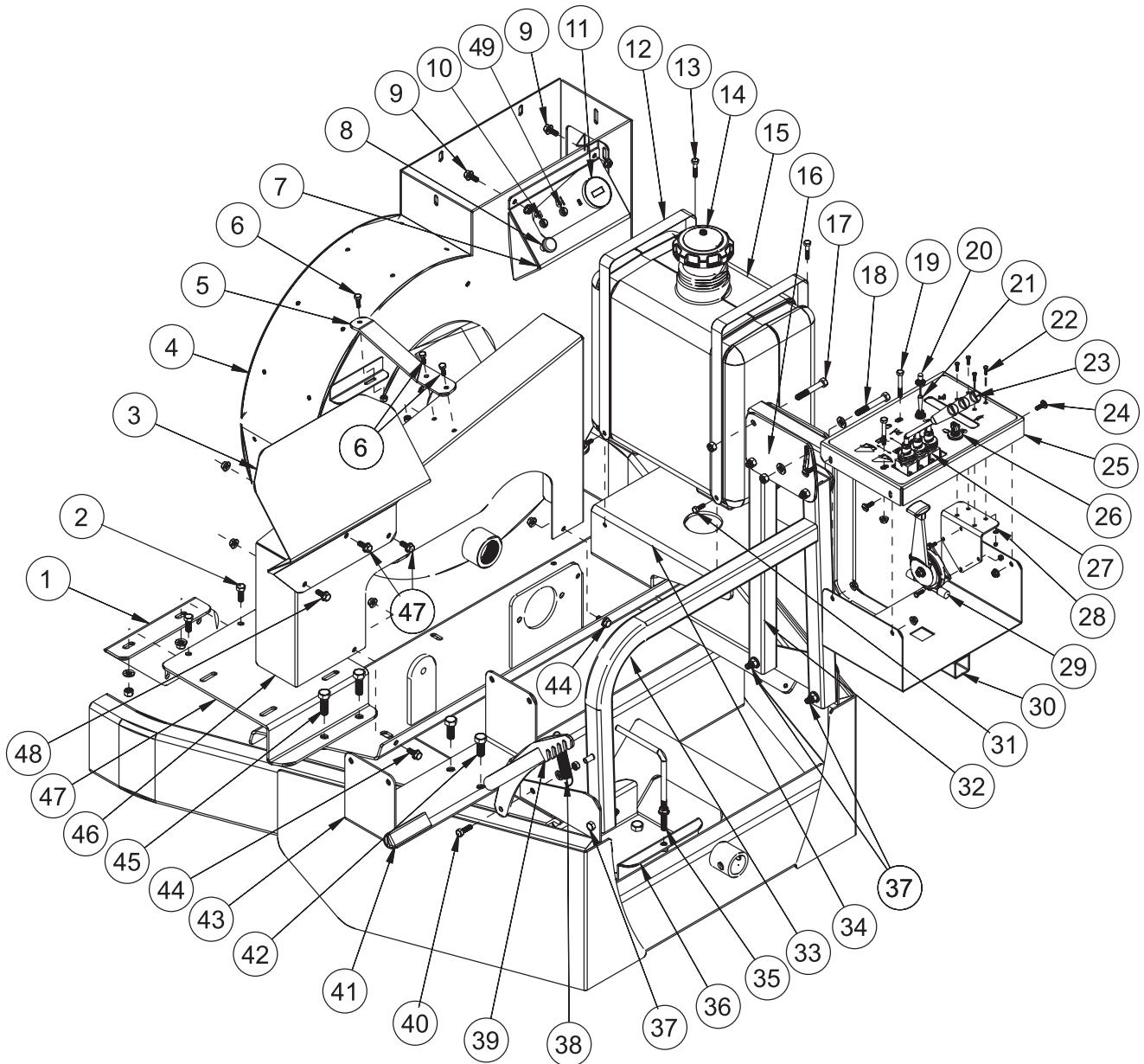
Parts

CONTROL PANEL PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	73-020	Engine Support	1
2	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x 1	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	2
3	73-037	Heat Shield	1
4	78-375	Blower Housing	1
	78-436	Pipe Plug	1
5	73-036	Belt Guard	1
6	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	3
	HNTL-14-20	Lock Nut $\frac{1}{4}$ - 20	3
7	73-023	Dashboard	1
	73-054	Decal, Dashboard	1
8	11-086	Choke Cable	1
9	HSTP-14-20-075	Truss Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	2
10	78-340	Oil Light	1
11	12-017	Hour Meter	1
12	73-051	Fuel Tank Strap	2
13	HB-14-20-125	Bolt $\frac{1}{4}$ - 20 x $1\frac{1}{4}$	2
	HW-14	Washer $\frac{1}{4}$	2
	HNTL-14-20	Lock Nut $\frac{1}{4}$ - 20	2
14	73-050	Fuel Tank Cap	1
15	73-049	Fuel Tank	1
	26-054	Bushing Insert	1
	26-055	Shut-off Valve	1
16	72-119	Control Panel Adjustment Bracket	2
17	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{2}$	3
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	3
18	HB-38-16-275	Bolt $\frac{3}{8}$ - 16 x $2\frac{3}{4}$	1
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	1
19	HB-14-20-200	Bolt $\frac{1}{4}$ - 20 x 2	2
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	2
20	15-472	Switch Boot	1
21	15-314	Toggle Switch	1
22	HSM 8-32-050	Machine Screw #8-32 x $\frac{1}{2}$	4
	HWL-8	Lock Washer #8	4
	HN-8-32	Nut #8-32	4
23	78-418	Bent Handle	2
	78-417	Straight Handle	1
24	HST-14-20-075	Truss Head Bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Lock Nuts $\frac{1}{4}$ - 20	4
25	78-281	Control Panel	1
	78-217	Decal, Control Panel	1
26	12-016	Ignition Switch	1
27	78-416	3-Bank Hydraulic Valve	1
28	34-159	Throttle Mounting Bracket	1
29	78-337	Throttle Cable	1
30	73-040	Control Panel Mount	1

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CONTROL PANEL DRAWING

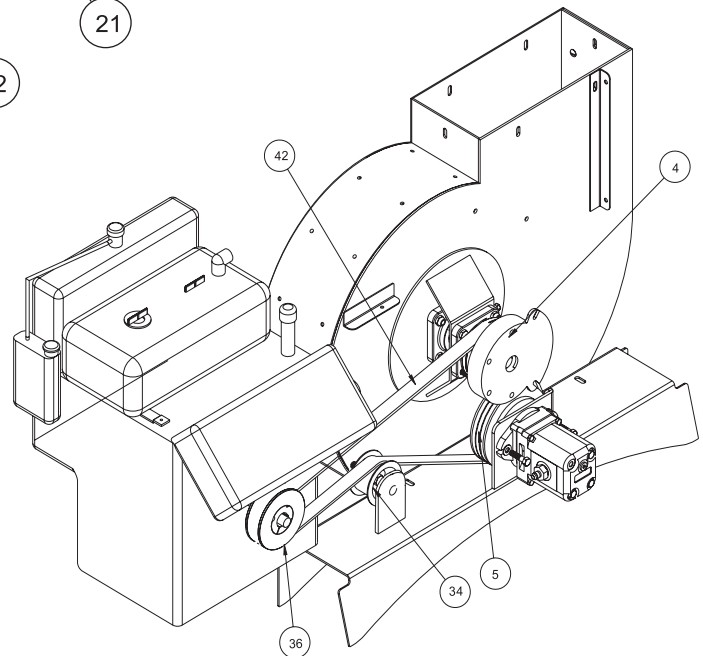
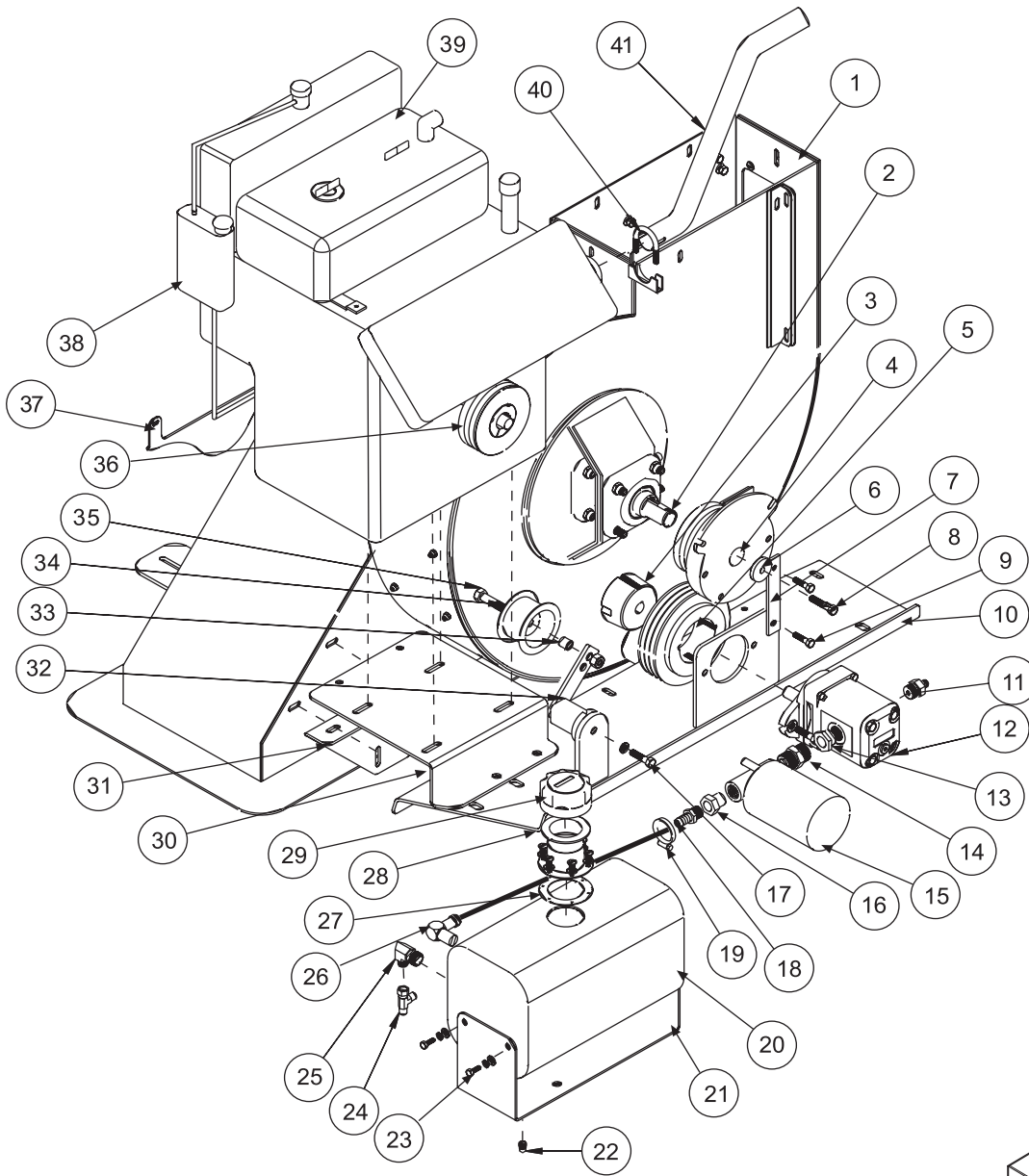


PARTS

CONTROL PANEL PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
31	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{2}$	3
	HW-38	Washer $\frac{3}{8}$	6
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	3
32	72-120	Adjustment Leg	1
33	72-121	Control Panel Leg	1
34	73-021	Fuel Tank Mount	1
35	73-053	Battery Hold-down	1
36	73-018	Battery Box	1
37	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{2}$	3
	HW-38	Washer $\frac{3}{8}$	6
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	3
38	60-323	Spring	1
39	72-093	Adjustment Lock Arm	1
40	HB-516-18-100	Bolt $\frac{5}{16}$ - 18 x 1	1
	HW-516	Washer $\frac{5}{16}$	2
	HNTL-516-18	Lock Nut $\frac{5}{16}$ - 18	1
41	15-020	Grip	1
42	HB-12-13-150	Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$	4
	HW-12	Washer $\frac{1}{2}$	4
	HNFL-12-13	Flange Whiz Lock Nut $\frac{1}{2}$ - 13	4
43	73-022	Oil Tank Mount	1
44	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
45	HB-12-13-150	Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$	2
	HNTL-12-13	Lock Nut $\frac{1}{2}$ - 13	2
46	73-028	Belt Guard	1
47	73-019	Engine Plate	1
48	HBFL-516-18-075	Flange Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$	3
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ -18	3
49	78-341	Temperature Light	1

PULLEY AND PUMP DRAWING



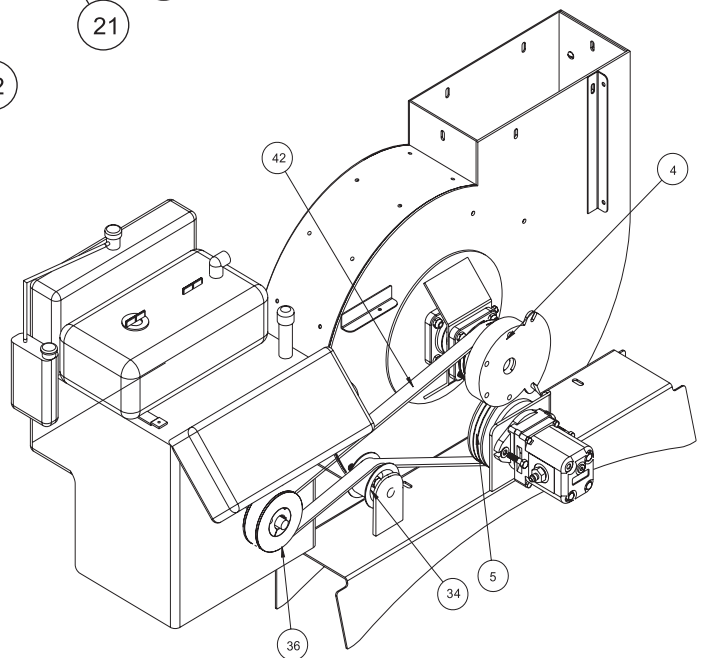
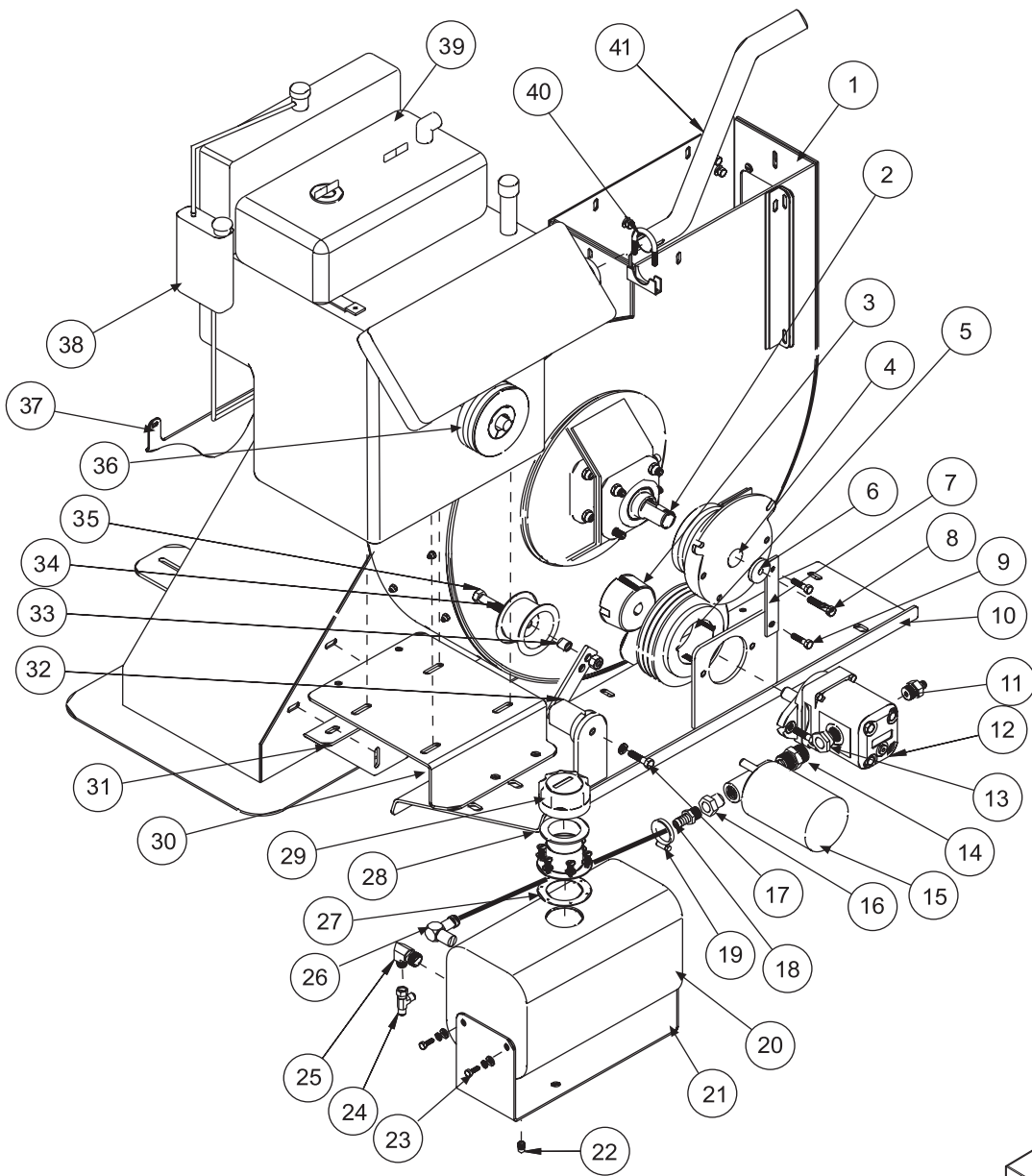
PARTS

PULLEY AND PUMP PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	78-375	Blower Housing	1
2	78-336	Vacuum Housing Shaft	1
3	42-246	Hub ³ / ₄	1
	HSSHS-12-13-100	Set Screw ¹ / ₂ - 13 x 1 (part of 42-246)	2
4	78-368	Electric Clutch	1
5	78-426	Pulley 3-Groove (pump)	1
6	78-370	Washer	1
7	76-340	Clutch Strap	1
8	HB-38-16-175	Bolt ³ / ₈ - 16 x 1 ³ / ₄	1
	HWL-38	Lock Washer 3/8	1
9	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
10	73-025	Blower Mount	1
11	18-331	Adapter	1
12	78-413	Hydraulic Pump (no parts available for service)	1
	HWK-316-063	Woodruff Key ³ / ₁₆ x ⁵ / ₈	1
	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
13	18-362	Adapter	1
14	18-332	Adapter	1
15	23-006	Oil Filter	1
	23-031	Replacement Filter Only	
16	18-008	Pipe Reducer	1
17	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
18	23-139	Barb Fitting	1
19	8917-9	Suction Hose ⁵ / ₈ ID	1
	18-040	Hose Clamp	2
20	13-584	Oil Tank	1
21	73-022	Oil Tank Bracket	1
22	18-118	Pipe Plug ¹ / ₈	1
23	HB-14-20-075	Bolt ¹ / ₄ - 20 x ³ / ₄	4
	HWL-14	Lockwasher ¹ / ₄	4
	HW-14	Washer ¹ / ₄	4
24	18-190	Tee	1
25	17-019	Male Elbow	1
26	23-142	Connector	1
27	13-586-02	Bottom Gasket (part of 13-586)	2
28	13-586-01	Cap Gasket (part of 13-586)	1
29	13-586	Filter Breather	1
	HSM-8-32-050	Machine Screw #8 - 32 x ¹ / ₂	6
	HWS-8	Star Washer #8	6

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PULLEY AND PUMP DRAWING

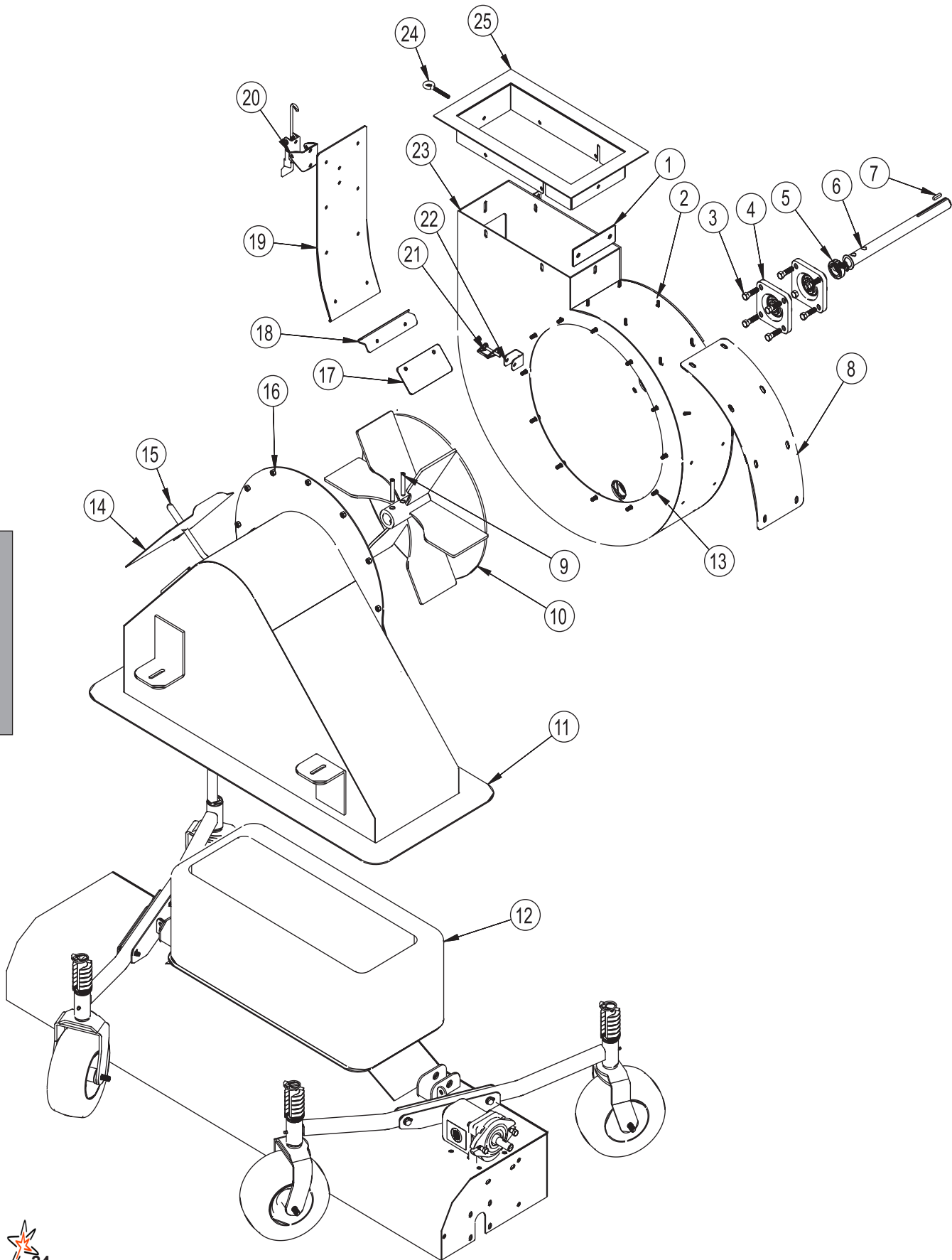


Parts

PULLEY AND PUMP PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
30	73-019	Engine Plate	1
31	73-020	Engine Support	1
32	78-224	Belt Tensioner	1
33	76-275	Spacer (part of 78-224)	1
34	16-013	Idler Pulley	1
35	HB-12-13-250	Bolt $\frac{1}{2}$ - 13 x $2\frac{1}{2}$ (part of 78-224)	1
	HMB-12-14	Machine Bushing $\frac{1}{2}$ - 14GA	2
	HNCL-12-13	Center Lock Nut $\frac{1}{2}$ - 13 (part of 78-224)	1
36	78-424	Pulley	1
	78-427	Hub $1\frac{1}{8}$	1
	HSSHS-38-16-063	Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 78-427)	2
37	78-420	Flywheel Guard	1
38	34-169	Coolant Tank Kit (part of engine)	1
39	78-218	Engine, 22 HP Kawasaki	1
40	18-220	Muffler Clamp	1
41	10-197	Exhaust Pipe	1
42	78-227	Belt	1

VACUUM AND BLOWER DRAWING

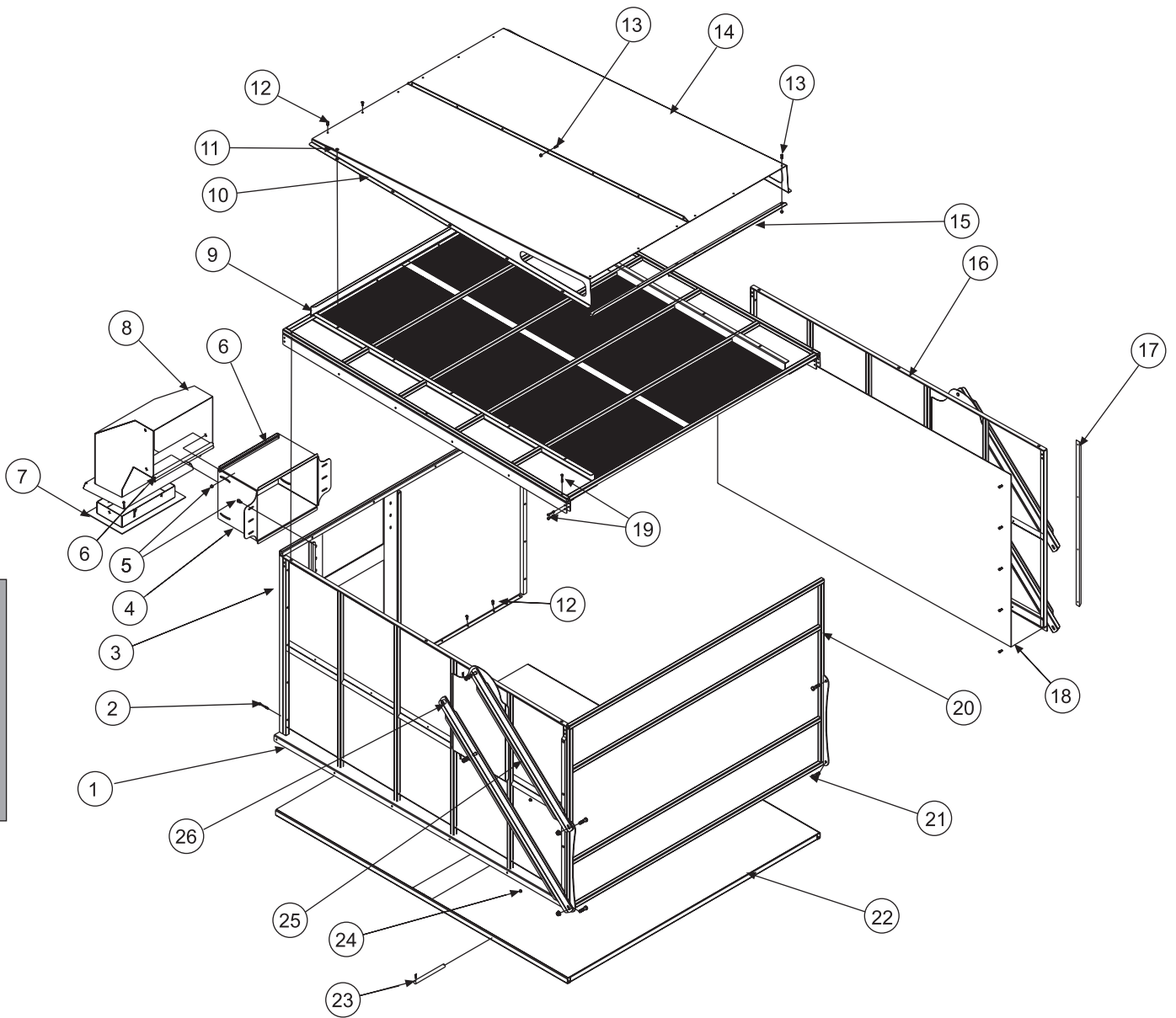


Parts

VACUUM AND BLOWER PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	78-419	Bottom Lining Holder	1
2	HSTP-14-20-075	Phillips Truss Head Machine Screw 1/4 -20 x 3/4	20
	HSTP-14-20-100	Phillips Truss Head Machine Screw 1/4 -20 x 1	12
	HNTL-14-20	Lock Nut 1/4 -20	32
3	HB-716-14-150	Bolt 7/16 -14 x 1 1/2	8
	HNTL-716-14	Lock Nut 7/16 -14	8
4	78-223	Mounted Bearing (1 1/8" Bore)	2
5	78-437	Shaft Collar	1
6	78-336	Vacuum Housing Shaft	1
	HMB-114-10	Machine Bushing 1 1/4 x 10GA	2
7	HKSQ-14-100	Machine Key 1/4 x 1 1/4 x 1	1
8	78-412	Wear Cover	1
9	78-347	Spiral Spring Pin	2
10	78-301	Balanced Fan	1
11	8803-114	Trim Black	1
12	72-140	Sweeper Boot	1
13	HBFL-516-18-075	Flange Bolt 5/16 -18 x 3/4	11
	HNTL-516-18	Lock Nut 5/16 -18	7
	HNFL-516-18	Flange Whiz Lock Nut 5/16 -18	4
14	78-293	Cover Plate	1
	HB-516-18-075	Bolt 5/16 - 18 x 3/4	1
	HNTL-516-18	Lock Nut 5/16 - 18	1
	78-433	Cover Plate Bolt Tab	1
	HB-14-20-075	Bolt 1/4 - 20 x 3/4	1
	HNTL-14-20	Lock Nut 1/4 - 20	1
15	25-120	Handle Grip	1
	19-205	Spring	1
	HP-18-100	Cotter Pin 1/8 x 1	1
16	73-027	Vacuum Housing	1
17	78-411	Top Lining Holder	1
18	78-440	Door Pivot	1
19	73-052	Access Panel	1
	78-403	Lining	1
20	48-115	Adjustable Draw Latch	1
	HSTP-14-20-075	Truss Head Machine Screw 1/4 - 20 x 3/4	2
	78-432	Latch Keeper	1
	HB-516-18-250	Bolt 5/16 -18 x 2 1/2	1
	HNTL-516-18	Lock Nut 5/16 -18	1
21	73-033	Handle Latch	1
22	29-540	Lock Pin	1
23	78-375	Blower Housing	1
	78-436	Pipe Plug	1
	78-402	Blower Lining	1
	HWF-14-150	Fender Washer 1/4 x 1 1/2	32
24	20-008	Eye Bolt	1
	HNFL-516-18	Flange Whiz Lock Nut	1
25	73-024	Chute Flange	1

HOPPER DRAWING



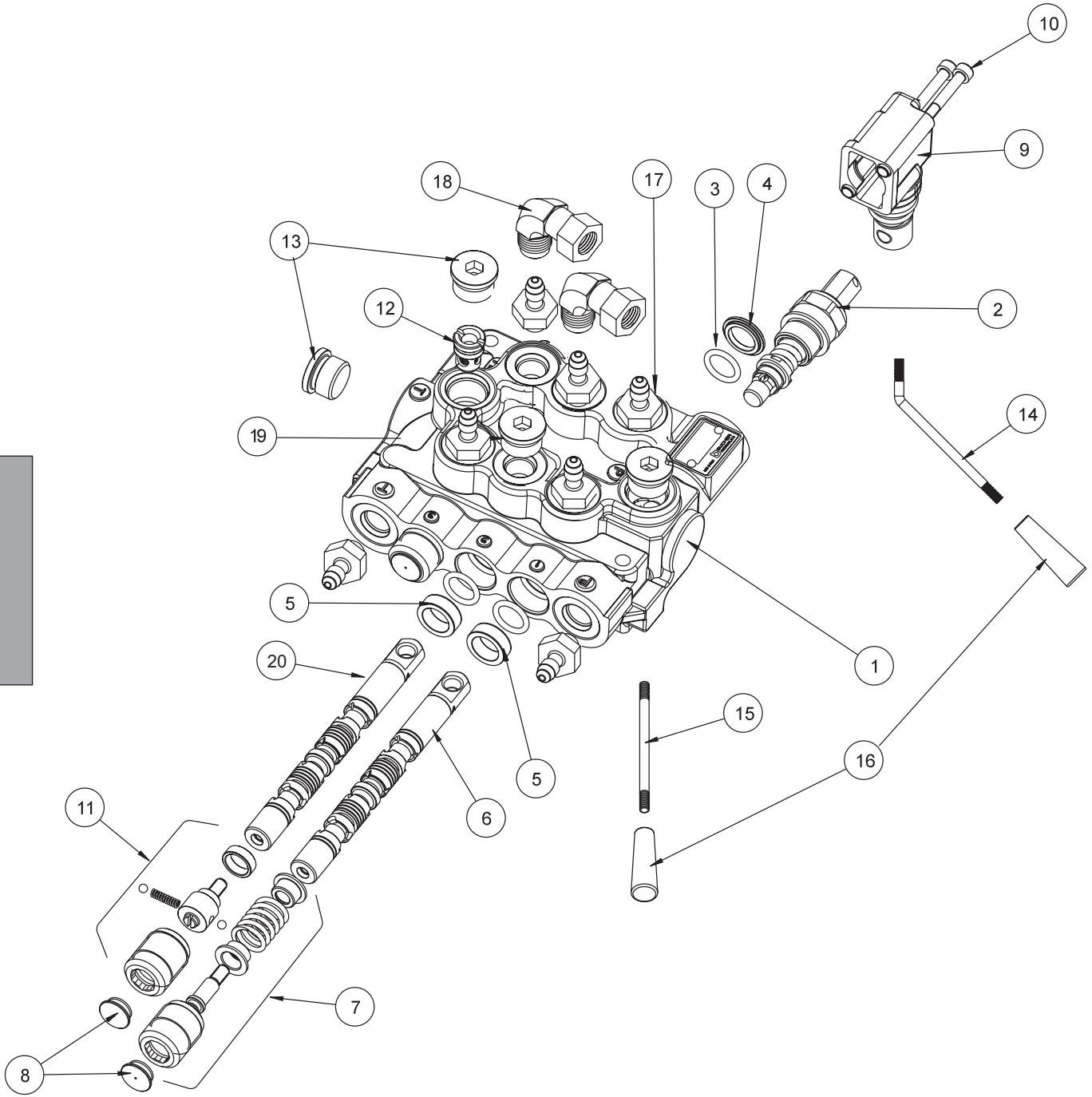
Parts

HOPPER PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1	72-106	Left Hopper Side Frame	1
2	HB-14-20-250	Bolt 1/4 -20 x 2 1/2	15
	HNFL-14-20	Flange Whiz Lock Nut 1/4 -20	15
3	72-115	Hopper Front	1
	HSDPS-14-075	Stainless Pan Head Drill Screw 1/4 x 3/4	9
4	72-110	Hopper Chute	1
	HSTP-14-20-075	Phillip Head Machine Screw 1/4 -20 x 3/4	6
	HNFL-14-20	Flange Whiz Lock Nut 1/4 - 20	6
5	HBFL-516-18-075	Flange Bolt 5/16 -18 x 3/4	10
	HNFL-516-18	Flange Whiz Lock Nut 5/16 -18	10
6	8947-18	Trim Seal	2
7	73-024	Chute Flange	1
8	73-026	Debris Chute	1
	8980-60	Edge Seal	1
9	72-107	Hopper Top	1
10	72-102	Left Hopper Cover	1
11	HW-14	Washer 1/4	10
12	HSDPS-14-075	Stainless Pan Head Drill Screw 1/4 x 3/4	6
13	HB-14-20-075	Bolt 1/4 -20 x 3/4	23
	HNFL-14-20	Flange Whiz Lock Nut 1/4 -20	23
14	72-101	Right Hopper Cover	1
15	72-124	Hood Stiffener	1
16	72-105	Right Hopper Side Frame	1
17	72-138	Slide Strip	2
	HRS-316-075	Pop Rivet 3/16	8
18	72-137	Hopper Side	2
	HSDPS-14-075	Stainless Pan Head Drill Screw 1/4 x 3/4	82
19	HB-14-20-175	Bolt 1/4 -20 x 1 3/4	14
	HNFL-14-20	Flange Whiz Lock Nut 1/4 - 20	14
20	72-116	Tailgate	1
21	HB-12-13-175	Bolt 1/2 -13 x 1 3/4	4
	HNFL-12-13	Flange Whiz Lock Nut 1/2 - 13	4
22	72-098	Hopper Floor	1
23	72-123	Pivot Pin	2
	HP-18-100	Cotter Pin 1/8 x 1	4
24	HSTP-14-20-075	Phillip Head Machine Screw 1/4 -20 x 3/4	18
	HNFL-14-20	Flange Whiz Lock Nut 1/4 - 20	18
25	72-118	Short Tailgate Lift Arm	2
	18-235	Bushing (part of 72-118)	1
	HMB-12-14	Machine Bushing 1/2 x 14 GA	6
	HP-18-100	Cotter Pin 1/8 x 1	2
26	72-117	Long Tailgate Lift Arm	2
	18-235	Bushing (part of 72-117)	2
	HMB-12-14	Machine Bushing 1/2 x 14 GA	6
	HP-18-100	Cotter Pin 1/8 x 1	2

78-416 3-BANK HYDRAULIC VALVE DRAWING

Parts

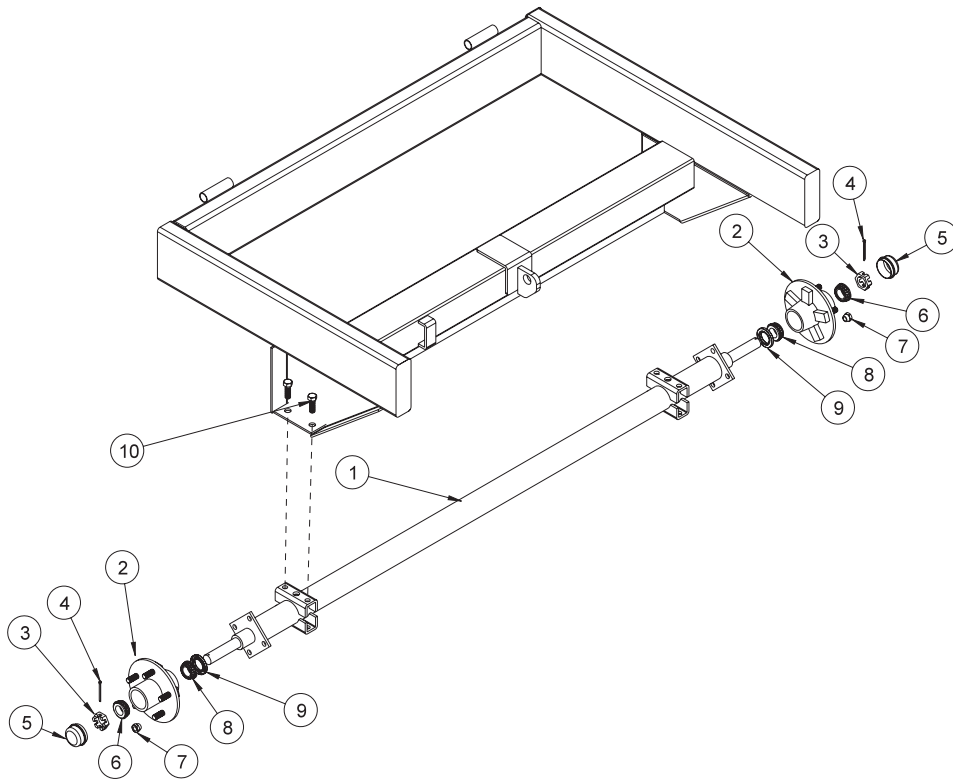


78-416 3-BANK HYDRAULIC VALVE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1*	78-416-01	Body (complete with spacer and check valve)	1
2*	78-415-02	Spool HDM10	1
3*	78-415-03	O-Ring Seal	6
4*	78-415-04	Flanged Washer HDM10	3
5*	78-415-05	Spacer	3
6*	78-415-06	A Type Spool HDS11	3
7*	78-415-11	Positioner HDM10	2
8*	78-415-08	Plug	3
9*	78-415-09	Lever Group HDS11	3
10*	78-415-10	Metric Socket Screw M5 x .8 x 45	6
11*	78-415-07	Positioner	1
12*	78-415-12	Check Valve Assembly HDM12	1
13*	78-415-13	³ / ₄ - 16 SAE 8 Screw Plug	4
14	78-418	Bent Handle	2
15	78-417	Straight Handle (center)	1
16		Tapered Knob	3
17	18-169	Adapter SAE 3/8	7
18	18-202	Elbow	2
19	23-126	O-Ring Plug	1

* 78-416 3 – Bank Hydraulic Valve (includes all * items)

72-048 AXLE DRAWING

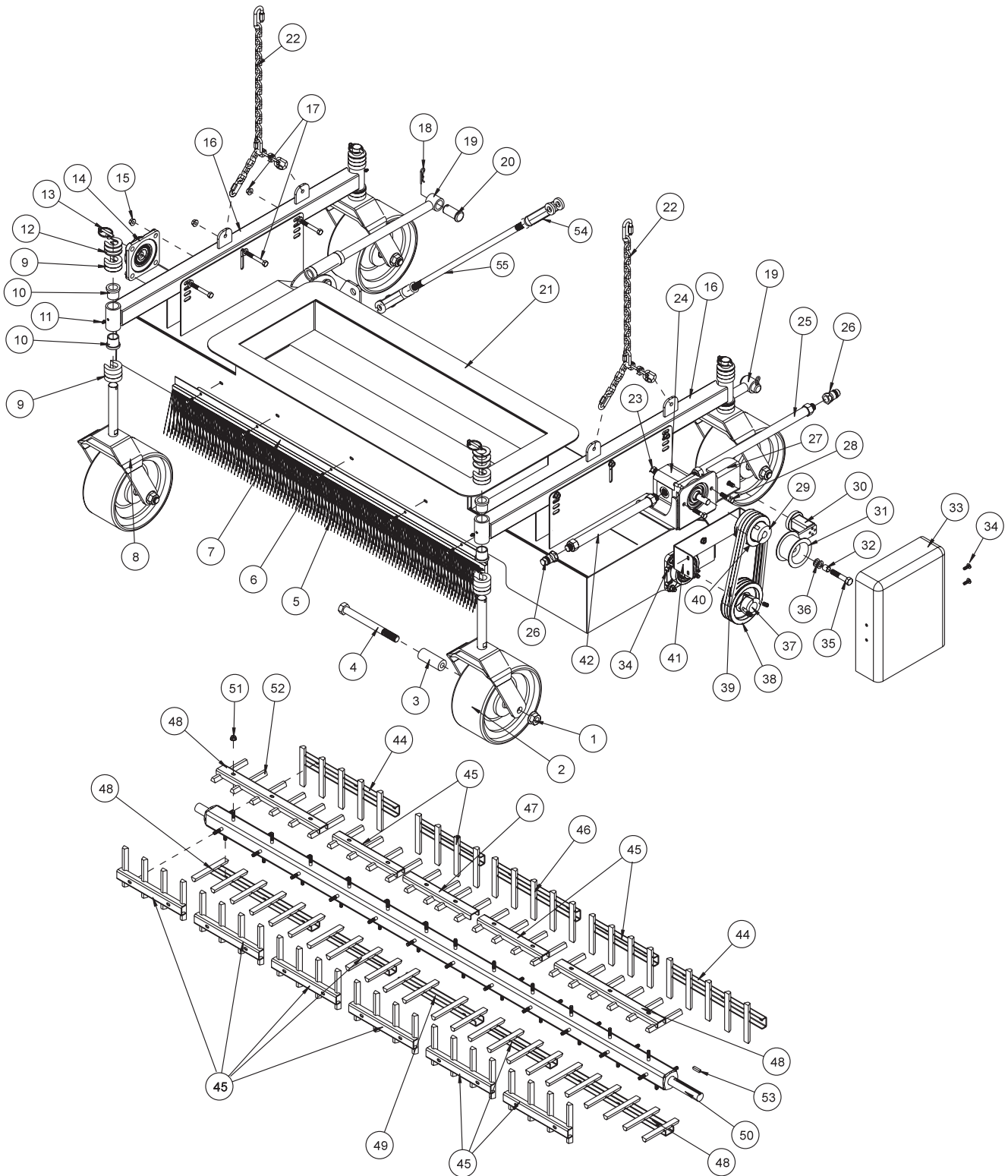


Parts

72-048 AXLE PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1	72-194	Axle (includes all items listed below except #10)	1
2	33-073	Hub Assembly (includes all * items listed below)	2
3	HNAR-100-14	Slotted Jam Nut 1-14	2
4	HP-18-200	Cotter Pin 1/8 x 2	2
5*	33-073-02	Dust Cap	2
6*	78-119	Outer Bearing	2
7*	HNL-12-20	Lug Nut	10
8*	78-118	Inter Bearing	2
9*	33-073-01	Grease Seal	2
10	HB-12-13-125	Bolt 1/2 - 13 x 1 1/4	4
	HNTL-12-13	Lock Nut 1/2 - 13	4

72-002 RUBBER FINGER SWEEPER HEAD DRAWING



Accessories

72-002 RUBBER FINGER SWEEPER HEAD PARTS LIST

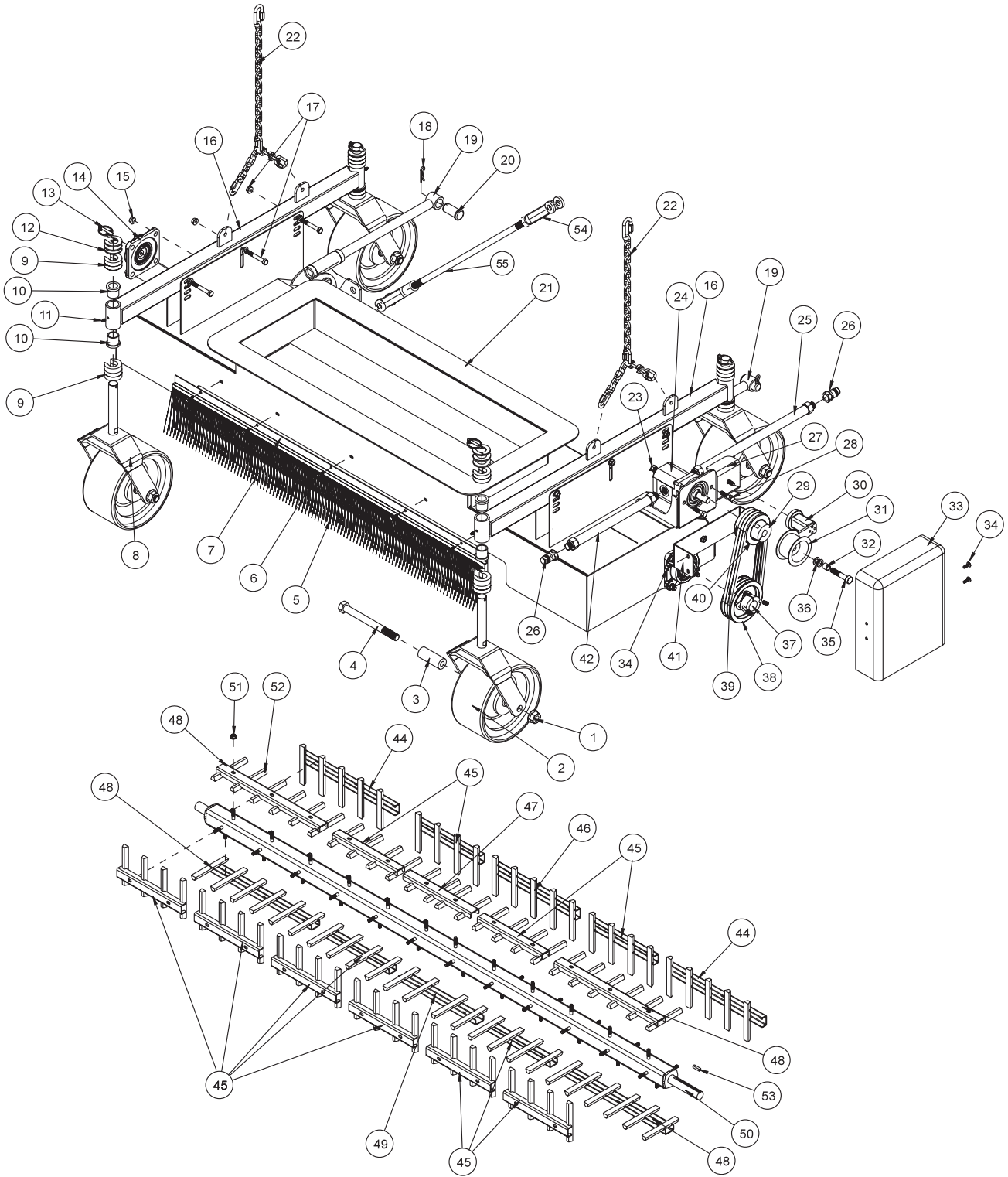
REF#	PART#	DESCRIPTION	QUANTITY
1	HNTL-34-10	Lock Nut $\frac{3}{4}$ - 10	4
2	78-012	Tire and Wheel	4
	78-012-01	Bearing (part of 78-012)	2 per Wheel
3	72-135	Castor Wheel Spacer	8
4	HB-34-10-800	Bolt $\frac{3}{4}$ - 10 x 8	4
5	78-322	Brush	1
6	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	5
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	5
7	78-344	Brush Holder	1
8	72-134	Castor Fork	4
9	72-053	Quick Spacer $\frac{1}{2}$ "	20
10	18-223	Flange Bushing (part of 72-139)	8
11	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180° (part of 72-139)	2
12	72-136	Quick Spacer 10GA	12
13	42-539	Lynch Pin $\frac{5}{16}$	4
14	72-023	Flange Bearing	2
	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180° (part of 72-023)	2
15	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
16	72-139	Single Castor Wheel Arm	2
17	HB-38-16-275	Bolt $\frac{3}{8}$ - 16 x $2\frac{3}{4}$	6
	HW-38	Washer $\frac{3}{8}$	6
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	6
18	HHP-18-100	Bridge Pin $\frac{1}{8}$ x 1	4
19	72-103	Reel Lift Rod	2
20	HCP-100-250	Clevis Pin 1 x 2	4
21	72-133	Single Reel Housing	1
	8803-114	Trim Black with Lace 114"	1
22	72-144	Single Reel Lift Chain	2
23	18-362	Straight Thread Reducer	1
24†	72-199	Hydraulic Motor	1
25	72-075	Hydraulic Hose 48"	1
26	72-043	$\frac{1}{2}$ " Male Quick Coupler	2
27	72-097	Motor Mount	1
	HB-38-16-100	Bolt $\frac{3}{8}$ - 16 x 1	4
	HW-38	Washer $\frac{3}{8}$	4
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	4
28	HB-38-16-125	Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	2
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	2
29	78-428	Hub	1
	HSSHS-38-16-063	Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 78-237)	2

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†	72-199-01	Seal kit	1 per
	HWK-316-063	Woodruff Key $\frac{3}{16}$ x $\frac{5}{8}$	1 per

No other parts are replaceable for hydraulic motors.

72-002 RUBBER FINGER SWEEPER HEAD DRAWING



Accessories

72-002 RUBBER FINGER SWEEPER HEAD PARTS LIST

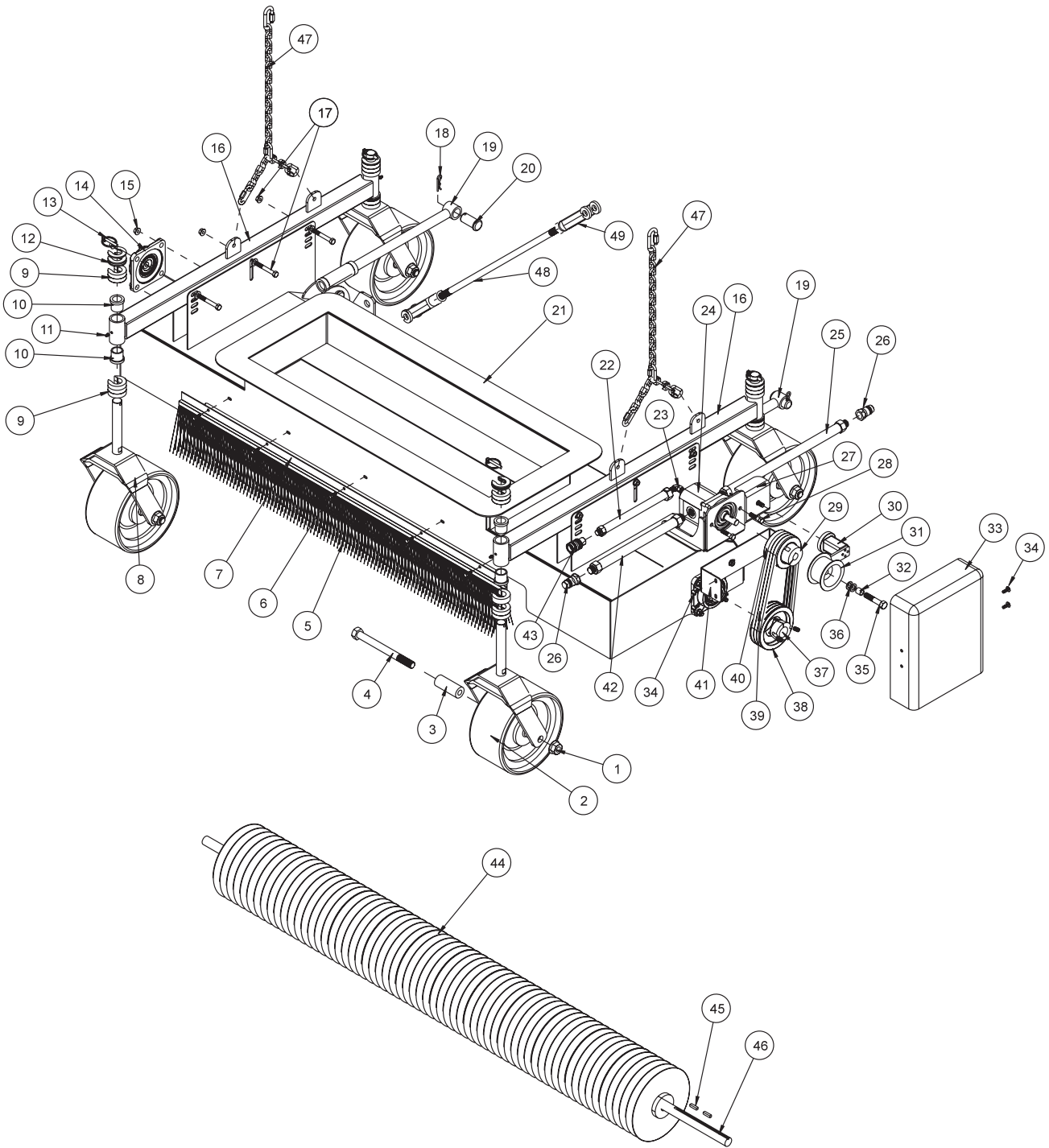
REF#	PART#	DESCRIPTION	QUANTITY
30	78-224	Belt Tensioner	1
	HBM-10-1.50-30	Metric Bolt 10 - 1.50 x 30 (part of 78-224)	1
	HWLM-10	Metric Lockwasher 10 (part of 78-224)	1
31	16-013	Idler pulley	1
32	76-275	Spacer (part of 78-224)	1
33	72-056	Belt Guard	1
34	HSTP-14-20-075	Phillip Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	4
35	HB-12-13-250	Bolt $\frac{1}{2}$ - 13 x $2\frac{1}{2}$ (part of 78-224)	1
	HNCL-12-13	Center Lock Nut $\frac{1}{2}$ - 13 (part of 78-224)	1
36	HMB-12-14	Machine Bushing $\frac{1}{2}$ x 14GA	2
37	78-431	Hub $1\frac{1}{4}$	1
	HSSHS-38-16-063	Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 72-035)	2
	78-425	Pulley	1
39	72-038	Belt	3
40	78-424	Pulley	1
41	72-058	Belt Guard Mount	1
	HB-516-18-075	Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$	2
	HW-516	Washer $\frac{5}{16}$	2
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	2
	72-074	Hydraulic Hose 39"	1
44	72-091	Finger Clamp 14 $\frac{3}{4}$ "	2
45	78-297	Finger Clamp 10"	12
46	78-287	Finger Clamp 13"	1
47	78-327	Finger Clamp 10 $\frac{1}{2}$ "	1
48	72-092	Finger Clamp 16"	4
49	78-326	Finger Clamp 12"	1
50	72-125	Finger Reel	1
51	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	48
52	8969-5.250	Sweeper Finger	96
53	HKSQ-14-100	Square Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1	1
54	42-040	Yoke End	2
	HNJ-34-16	Jam Nut $\frac{3}{4}$ - 16	2
	HCP-34-200	Clevis Pin $\frac{3}{4}$ x 2	2
	HHP-18	Bridge Pin $\frac{1}{8}$ x 1	2
	42-148	Sway Bar	1

VERTICUT REEL VALVE HANDLE



If the rubber finger sweeper head is installed on your unit and verticut reel handle is activated, the hydraulic system may be damaged due to overheating the oil. Remove the verticut reel valve handle when using the rubber finger sweeper head (72-002).

72-005 BRUSH REEL SWEEPER HEAD DRAWING



Accessories

72-005 BRUSH REEL SWEEPER HEAD PARTS LIST

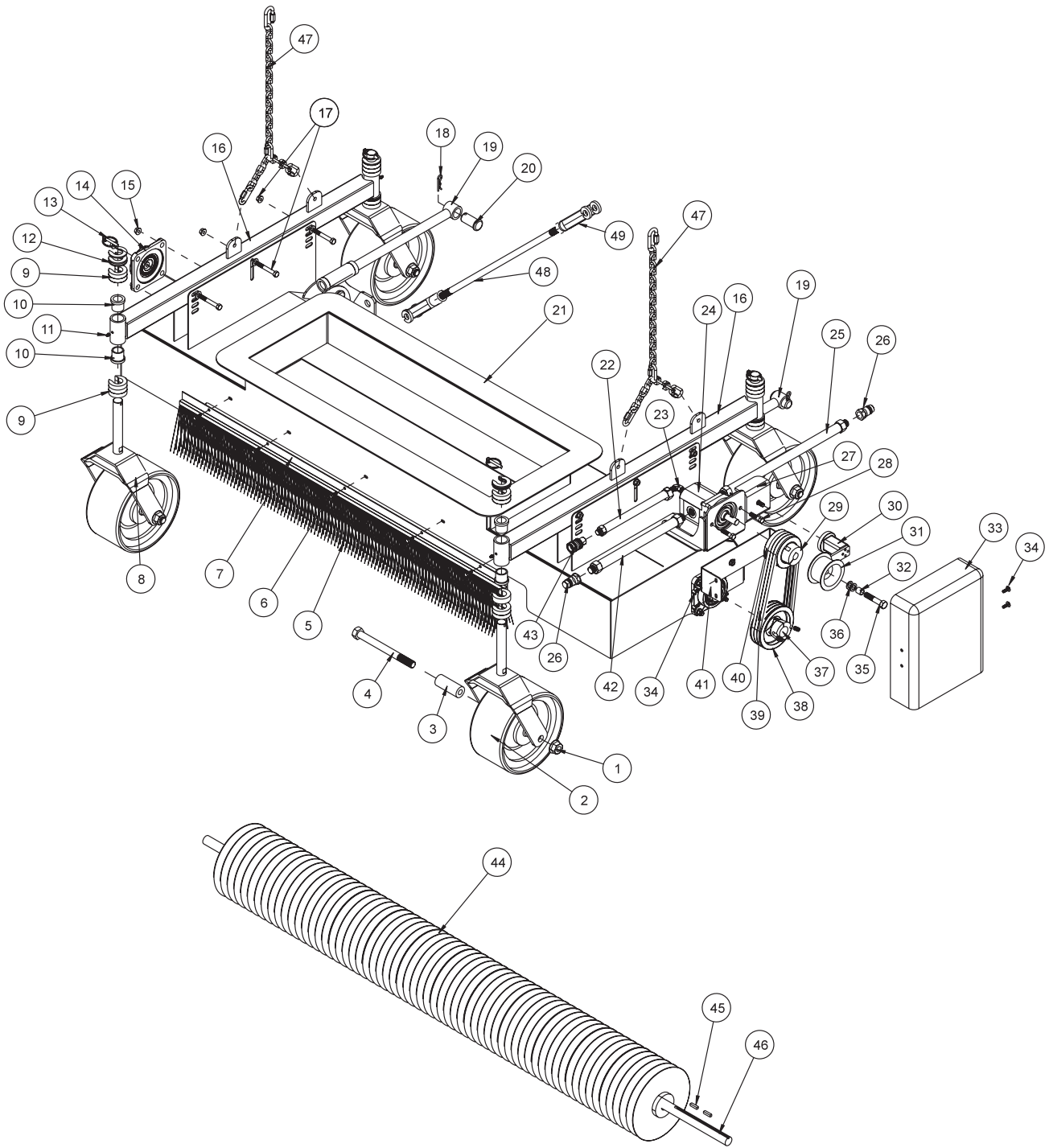
REF#	PART#	DESCRIPTION	QUANTITY
1	HNTL-34-10	Lock Nut $\frac{3}{4}$ - 10	4
2	78-012	Tire and Wheel	4
	78-012-01	Bearing (part of 78-012)	2 per Wheel
3	72-135	Castor Wheel Spacer	8
4	HB-34-10-800	Bolt $\frac{3}{4}$ - 10 x 8	4
5	78-322	Brush	1
6	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	5
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	5
7	78-344	Brush Holder	1
8	72-134	Castor Fork	4
9	72-053	Quick Spacer $\frac{1}{2}$ "	20
10	18-223	Flange Bushing (part of 72-139)	8
11	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180° (part of 72-139)	2
12	72-136	Quick Spacer 10GA	12
13	42-539	Lynch Pin $\frac{5}{16}$	4
14	72-023	Flange Bearing	2
	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180° (part of 72-023)	2
15	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
16	72-139	Single Castor Wheel Arm	2
17	HB-38-16-275	Bolt $\frac{3}{8}$ - 16 x $2\frac{3}{4}$	6
	HW-38	Washer $\frac{3}{8}$	6
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	6
18	HHP-18-100	Bridge Pin $\frac{1}{8}$ x 1	4
19	72-103	Reel Lift Rod	2
20	HCP-100-250	Clevis Pin 1 x 2	4
21	72-133	Single Reel Housing	1
	8803-114	Trim Black with Lace 114"	1
22	72-076	Hydraulic Hose 22"	1
23	18-168	Elbow	1
24†	78-219	Hydraulic Motor	1
25	72-075	Hydraulic Hose 48"	1
26	72-043	$\frac{1}{2}$ " Male Quick Coupler	2
27	72-097	Motor Mount	1
	HB-38-16-100	Bolt $\frac{3}{8}$ - 16 x 1	4
	HW-38	Washer $\frac{3}{8}$	4
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	4
28	HB-38-16-125	Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	2
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	2
29	78-428	Hub	1
	HSSHS-38-16-063	Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 78-237)	2

(Continued on next page)

†	78-219-01	Seal kit	1 per
	78-219-02	Driver Coupler	1 per
	HWK-316-063	Woodruff Key $\frac{3}{16}$ x $\frac{5}{8}$	1 per

No other parts are replaceable for hydraulic motors.

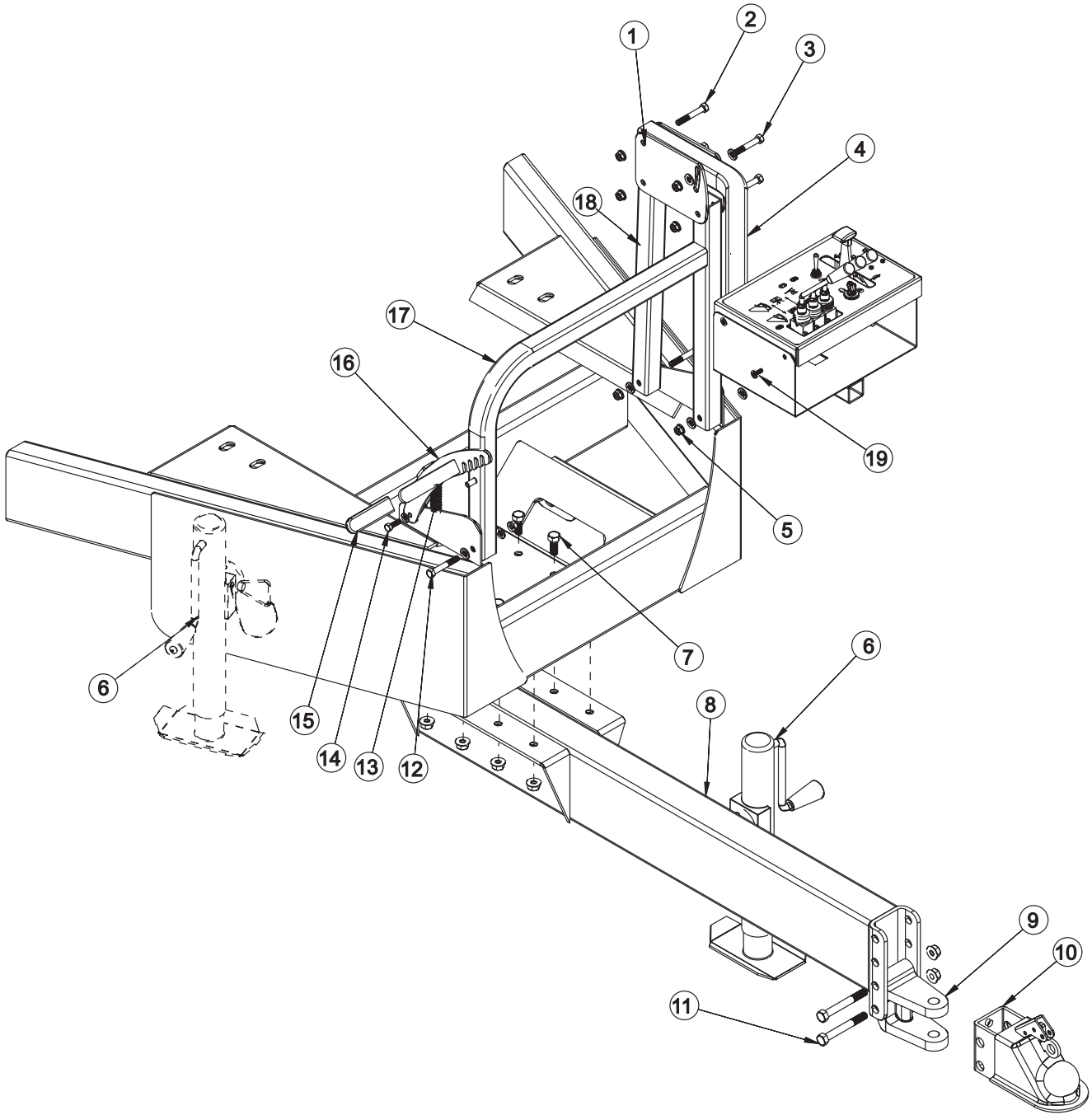
72-005 BRUSH REEL SWEEPER HEAD DRAWING



72-005 BRUSH REEL SWEEPER HEAD PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
30	78-224	Belt Tensioner	1
	HBM-10-1.50-30	Metric Bolt 10 - 1.50 x 30 (part of 78-224)	1
	HWLM-10	Metric Lockwasher 10 (part of 78-224)	1
31	16-013	Idler pulley	1
32	76-275	Spacer (part of 78-224)	1
33	72-056	Belt Guard	1
34	HSTP-14-20-075	Phillip Head Machine Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	4
35	HB-12-13-250	Bolt $\frac{1}{2}$ - 13 x $2\frac{1}{2}$ (part of 78-224)	1
	HNCL-12-13	Center Lock Nut $\frac{1}{2}$ - 13 (part of 78-224)	1
36	HMB-12-14	Machine Bushing $\frac{1}{2}$ x 14GA	2
37	78-431	Hub $1\frac{1}{4}$	1
	HSSHS-38-16-063	Set Screw $\frac{3}{8}$ - 16 x $\frac{5}{8}$ (part of 72-035)	2
38	78-425	Pulley	1
39	72-038	Belt	3
40	78-424	Pulley	1
41	72-058	Belt Guard Mount	1
	HB-516-18-075	Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$	2
	HW-516	Washer $\frac{5}{16}$	2
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	2
42	72-074	Hydraulic Hose 39"	1
43	72-045	$\frac{3}{8}$ Female Quick Coupler	1
44*	72-188	Spiral Brush	1
45*	HKSQ-14-100	Square Key $\frac{1}{4}$ x $\frac{1}{4}$ x 1	2.
46*	72-189	Shaft	1
47	72-144	Single Reel Lift Chain	2
48	72-148	Sway Bar	1
49	42-040	Yoke End	2
	HNJ-34-16	Jam Nut $\frac{3}{4}$ - 16	2
	HCP-34-200	Clevis Pin $\frac{3}{4}$ x 2	2
	HHP-18	Bridge Pin $\frac{1}{8}$ x 1	2
*	72-006	Brush Head Only (includes * items)	

73-003 STANDARD CLEVIS HITCH DRAWING



Accessories

73-003 STANDARD CLEVIS HITCH PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	72-119	Control Panel Adjustment	2
2	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$	3
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	3
3	HB-38-16-275	Bolt $\frac{3}{8}$ - 16 x 2 $\frac{3}{4}$	1
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	1
4	73-040	Control Panel Mount	1
5	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$	2
	HW-38	Washer $\frac{3}{8}$	4
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	2
6	78-240	Jack (part of machine)	1
7	HB-12-13-125	Bolt $\frac{1}{2}$ - 13 x 1 $\frac{1}{4}$	8
	HNTL-12-13	Lock Nut $\frac{1}{2}$ - 13	8
8	72-086	Tongue	1
9	78-244	Adjustable $\frac{3}{4}$ " Clevis Hitch	1
10	78-245	2-5/16 Ball Hitch (Optional)	
11	HB-58-11-400	Bolt $\frac{5}{8}$ - 11 x 4	2
	HNCL-58-11	Center Lock Nut $\frac{5}{8}$ - 11	2
12	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$	1
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	1
13	60-323	Spring	1
14	HB-516-18-100	Bolt $\frac{5}{16}$ - 18 x 1	1
	HW-516	Washer $\frac{5}{16}$	2
	HNTL-516-18	Lock Nut $\frac{5}{16}$ - 18	1
15	15-020	Hand Grip	1
16	72-093	Adjustment Lock Arm	1
17	72-121	Control Panel Leg	1
18	72-120	Adjustment Leg	1
19	HST-14-20-075	Truss Head Bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Lock Nuts $\frac{1}{4}$ - 20	4

INSTALLATION INSTRUCTIONS

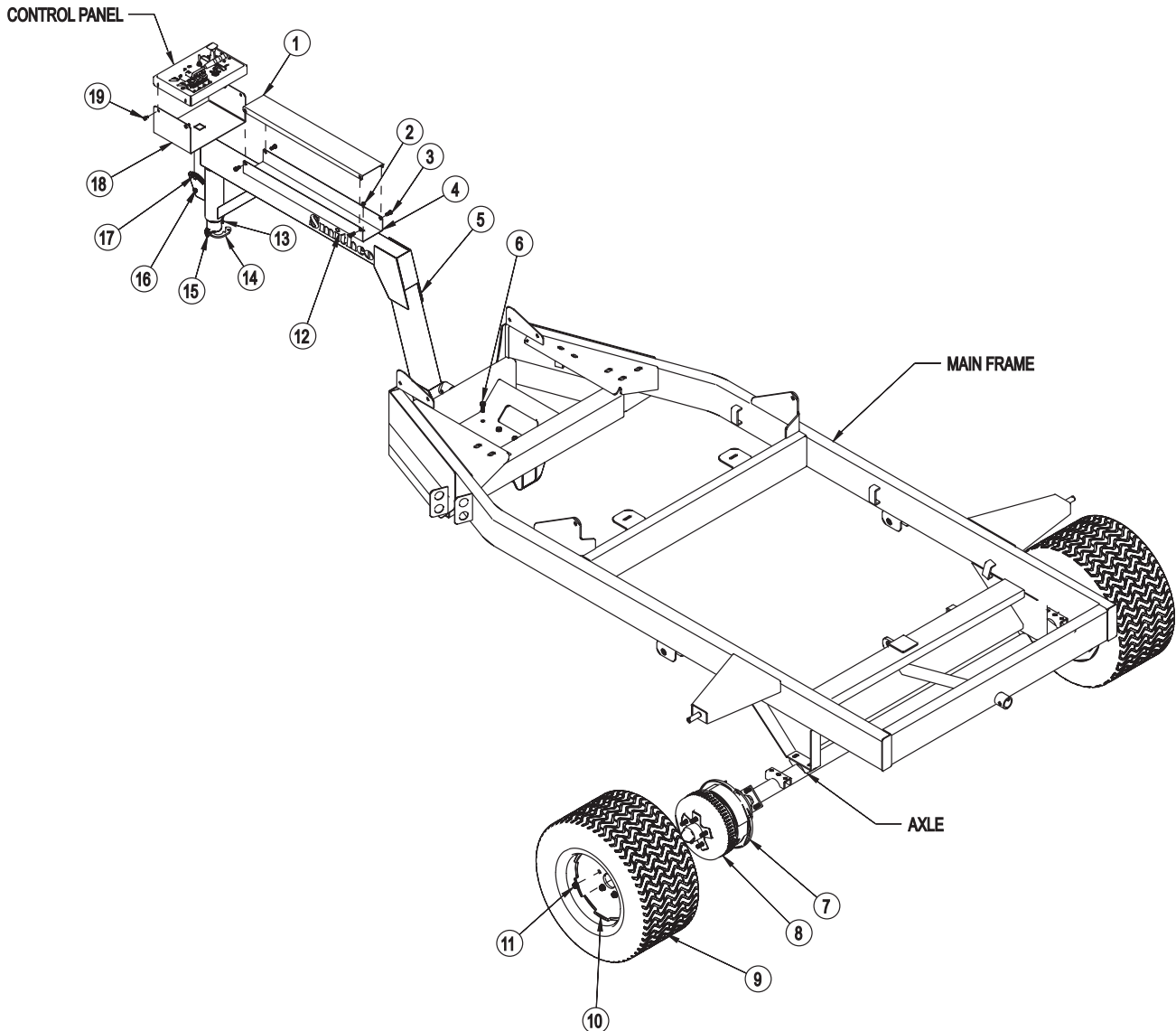
Use two people to install hitches.

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 8) under the sweeper frame. Use the eight $\frac{1}{2}$ - 13 x 1 $\frac{1}{4}$ bolts (Ref 7) and lock nuts to secure tongue. Tighten all hardware.
4. Block up machine and remove jack from machine and place it on the tongue. Use the jack here for more support.
5. Install the control panel leg (Ref 17) and the adjustment leg (Ref 18) as shown, using two $\frac{3}{8}$ - 16 x 2 $\frac{1}{2}$ bolts (Ref 5 and 12). Install the control panel adjustment plates (Ref 1) using hardware (Ref 2 and 3) as shown. Install control panel arm (Ref 4).
6. Install the adjustment lock arm (Ref 16) with the bolt and the spring (Ref 13 and 14) as shown. Put the hand grip (Ref 15) on the arm. Tighten all hardware.
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 Bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (Ref 19) and four Flange Lock Nuts. Tighten all hardware.

Do not tow on public roads.



73-004 5TH WHEEL HITCH FOR TURF TRUCKSTER W/ ELECTRIC BRAKES



INSTALLATION INSTRUCTIONS

1. Remove tires (Ref 9) from wheels on sweeper and mount on new wheels (Ref 10) supplied with kit. Block rear of machine up. Remove the rear tires and rear hubs. All parts except hubs to be reused.
2. There is a right and left brake. Place the brake on the axle and bolt to axle using the $\frac{7}{16}$ - 20 nuts and lockwashers (Ref 11).
3. Then place the hub and drum assembly (Ref 8) over the brake. Be sure to install the grease seal and the bearing cup and cone.
4. Put new wheel assembly back on and hold in place with the $\frac{1}{2}$ -20 lug nuts.
5. Check all nuts and be sure they are tight.
6. Take the wire harness and hook the female butt connectors to the wires on the brake assemblies. Run wire harness up side of main frame to front of machine. Hold wire harness in place with the tie straps.
7. Dealer must provide the connector that hooks to the tow unit. Place one side of connector onto wire harness, connect the other half to the tow unit.
8. Check all connections and hardware. Test brakes before putting machine into service.

73-004 5TH WHEEL HITCH FOR TURF TRUCKSTER W/ ELECTRIC BRAKES

REF#	PART#	DESCRIPTION	QUANTITY
1	73-045	Hose Guard Cover	1
2	HSDPS-14-100	Pan Head Drill Screw 1/4 x 1	2
	HW-14	Washer 1/4	2
3	HB-516-18-075	Bolt 5/16 - 18 x 3/4	4
	HNFL-516-18	Flange Whiz Lock Nut 5/16 - 18	4
4	73-044	Hose Guard	1
5	73-038	5th Wheel Gooseneck	1
6	HB-12-13-125	Bolt 1/2 - 13 x 1 1/4	8
	HNTL-12-13	Lock Nut 1/2 - 13	8
7	73-041	LH Backplate	1
	73-042	RH Backplate	1
8	72-162	Hub & Drum Assembly	2
9	33-072-01	Tire	1
10	78-103-02	Wheel	2
11	HN-716-20	Nut 7/16 - 20	8
	HWL-716	Lock Washers 7/16	8
12	25-358	Decal, Smithco	1
13	HB-516-18-100	Bolt 5/16 - 18 x 1	1
	HNTL-516-18	Lock Nut 5/16-18	1
14	78-390	Ball Lock Arm	1
15	HB-14-20-075	Bolt 1/4 - 20 x 3/4	1
	HNTL-14-20	Lock Nut 1/4 - 20	1
16	HB-38-16-225	Bolt 3/8 - 16 x 2 1/4	1
	HW-38	Washer 3/8	1
	HNTL-38-16	Lock Nut 3/8 - 16	1
17	HB-38-16-225	Bolt 3/8 - 16 x 2 1/4	1
	HW-38	Washer 3/8	1
	HNW-38-16	Wing Nut 3/8 - 16	1
18	78-352	Control Panel Mount	1
19	HST-14-20-075	Truss Head Bolts 1/4 - 20 x 3/4	4
	HNFL-14-20	Flange Lock Nuts 1/4 - 20	4

INSTALLATION INSTRUCTIONS

Use two people to install hitches.

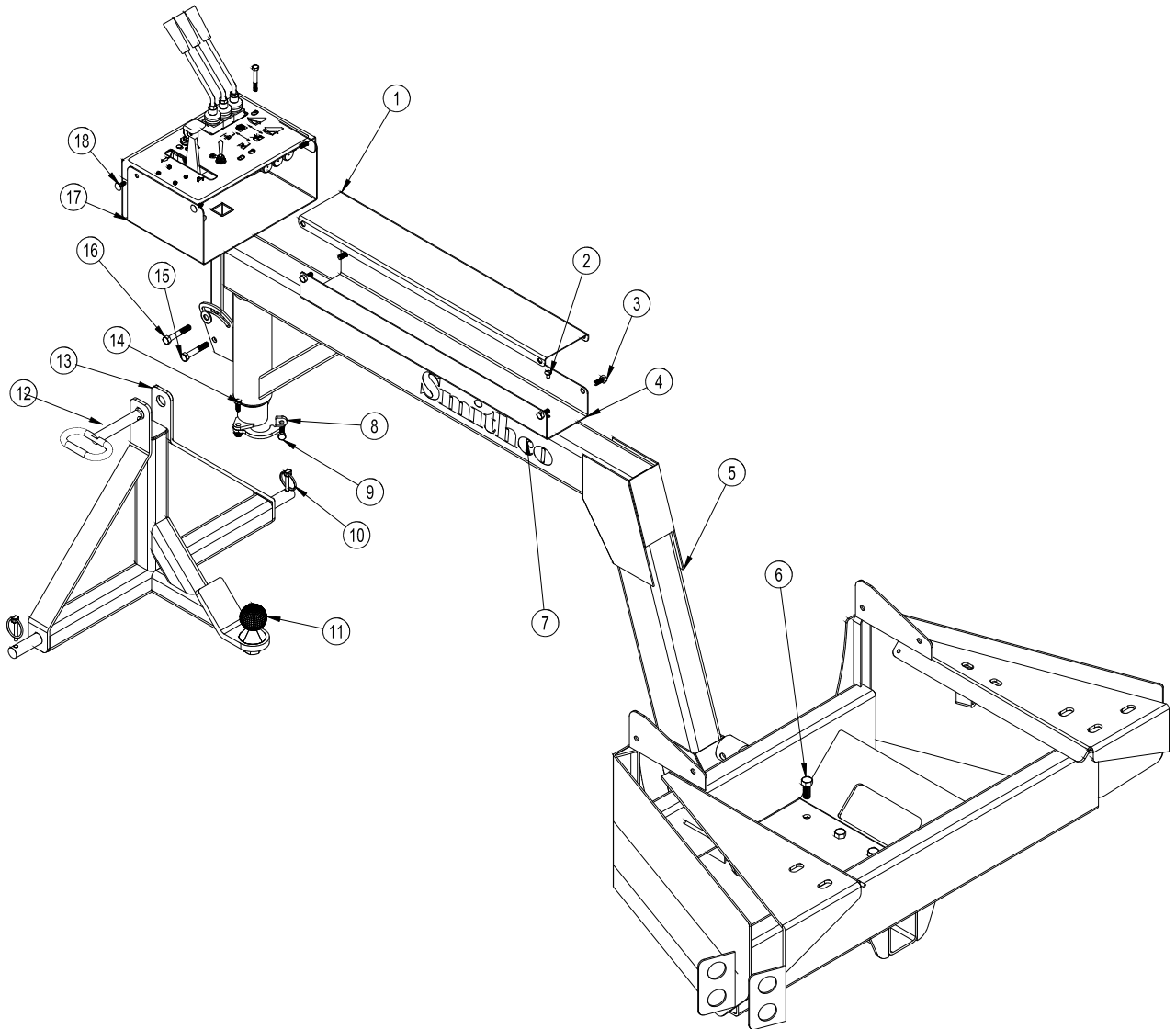
1. Block both wheels so machine does not roll.
2. Use the jack that is part of the sweeper to raise or lower sweeper to comfortable working height.
3. Slide the gooseneck (Ref 5) under the sweeper frame. Use the eight 1/2 - 13 x 1 1/4 bolts (Ref 6) and lock nuts to secure gooseneck. Tighten all hardware.
4. Install the control panel mount (Ref 19) on the front of the gooseneck (Ref 5) as shown, using two 3/8 - 16 x 2 1/4 bolts (Ref 17 and 18). On the bottom bolt use lock nut (Ref 18) and just tighten snug. On the top bolt use the 3/8 washer and wing nut (Ref 17). 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 Bolts 1/4 - 20 x 3/4 (Ref 19) and four Flange Lock Nuts. Tighten all hardware.
9. Lay the hoses, wiring and throttle cable on top of the gooseneck in hose guard(Ref 4). secure hose guard cover (Ref 1) with Bolt 5/16 - 18 x 3/4 (Ref 3) and Flange Lock Nuts.



Do not tow on public roads.



73-005 5TH WHEEL FOR TRACTOR



Accessories



Do not tow on public roads.

73-005 5TH WHEEL FOR TRACTOR

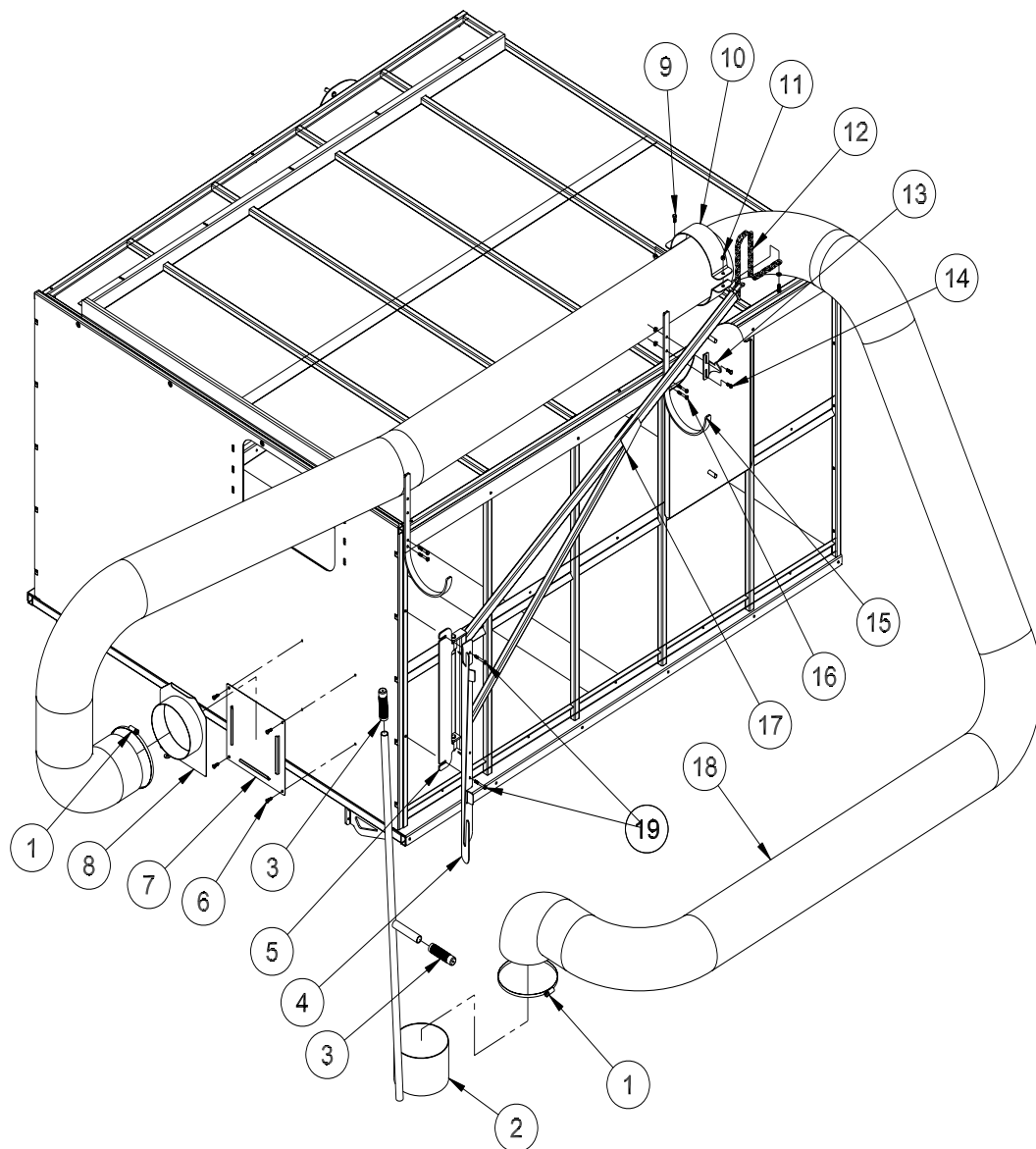
REF#	PART#	DESCRIPTION	QUANTITY
1	73-045	Hose Guard Cover	1
2	HSDPS-14-100	Pan Head Drill Screw $\frac{1}{4}$ x 1	2
	HW-14	Washer $\frac{1}{4}$	2
3	HB-516-18-075	Bolt $\frac{5}{16}$ - 18 x $\frac{3}{4}$	4
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	4
4	73-044	Hose Guard	1
5	73-038	5th Wheel Gooseneck	1
6	HB-12-13-125	Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{4}$	8
	HNTL-12-13	Lock Nut $\frac{1}{2}$ - 13	8
7	25-358	Decal, Smithco	1
8	78-390	Ball Lock Arm	1
9	HB-516-18-100	Bolt $\frac{5}{16}$ - 18 x 1	1
	HNTL-516-18	Lock Nut $\frac{5}{16}$ -18	1
10*	42-539	Lynch Pin	2
11*	18-371	2"Ball	1
12*	7-029	Hitch Pin $\frac{3}{4}$ x 4	1
13*	73-039	3-Point Hitch	1
14	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	1
	HNTL-14-20	Lock Nut $\frac{1}{4}$ - 20	1
15	HB-38-16-225	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{4}$	1
	HW-38	Washer $\frac{3}{8}$	2
	HNTL-38-16	Lock Nut $\frac{3}{8}$ - 16	1
16	HB-38-16-225	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{4}$	1
	HW-38	Washer $\frac{3}{8}$	1
	HNW-38-16	Wing Nut $\frac{3}{8}$ - 16	1
17	78-352	Control Panel Mount	1
18	HST-14-20-075	Truss Head Bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Lock Nuts $\frac{1}{4}$ - 20	4
*	73-007	3pt Add-On Kit (includes all * items)	

INSTALLATION INSTRUCTIONS

Use two people to install hitches.

- Block both wheels so machine does not roll.
- Remove tires (Ref 6) from wheels on sweeper and mount on new wheels (Ref 7) supplied with kit. Block rear of machine up. Remove the rear tires and rear hubs. All parts except hubs to be reused.
- Put new wheel assembly back on and hold in place with the $\frac{1}{2}$ -20 lug nuts.
- Check all nuts and be sure they are tight.
- Use the jack that is part of the sweeper to raise or lower sweeper to comfortable working height.
- Slide the gooseneck (Ref 2) under the sweeper frame. Use the eight $\frac{1}{2}$ - 13 x $1\frac{1}{4}$ bolts (Ref 3) and lock nuts to secure gooseneck. Tighten all hardware.
- Install the control panel mount (Ref 1) on the front of the gooseneck (Ref 2) as shown, using two $\frac{3}{8}$ - 16 x $2\frac{1}{4}$ bolts (Ref 15 and 16). On the bottom bolt use lock nut (Ref 15) and just tighten snug. On the top bolt use the $\frac{3}{8}$ washer and wing nut (Ref 16). Tighten both after adjusting for the proper position.
- 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.
- Remove the control panel from the sweeper, bring it forward with the hoses to the rear and the throttle on the left hand side.
- Fasten the control panel to the control panel mount with the four Truss Head Bolts $\frac{1}{4}$ - 20 x $\frac{3}{4}$ (Ref 17) and four Flange Lock Nuts. Tighten all hardware.
- Intall 3-point Hitch (Ref 13) on tractor. Install 2" Ball (Ref 12) into 3-point hitch.

73-006 HAND HELD VACUUM HOSE PARTS LIST

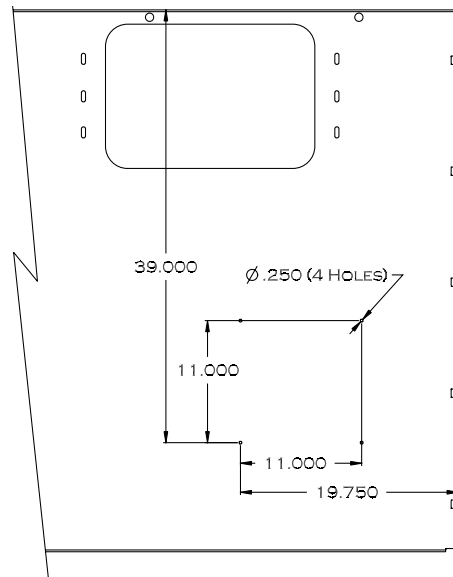
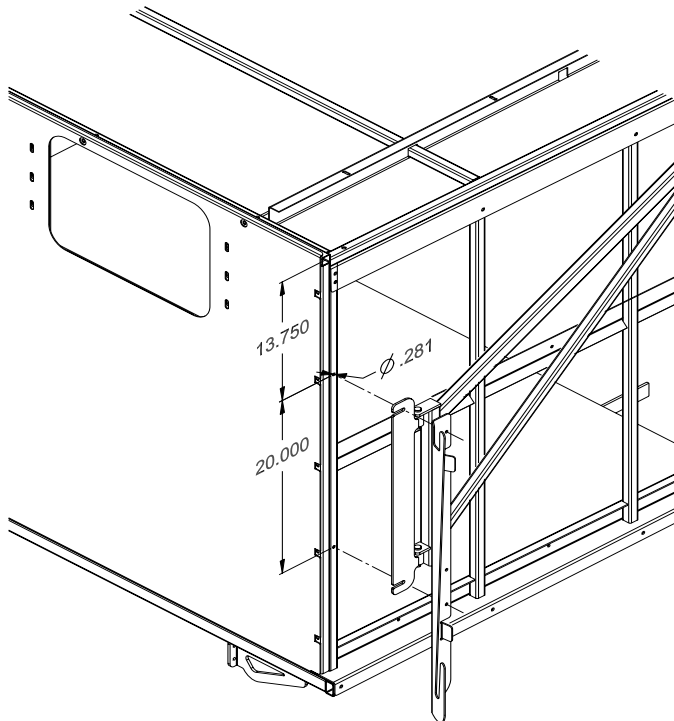
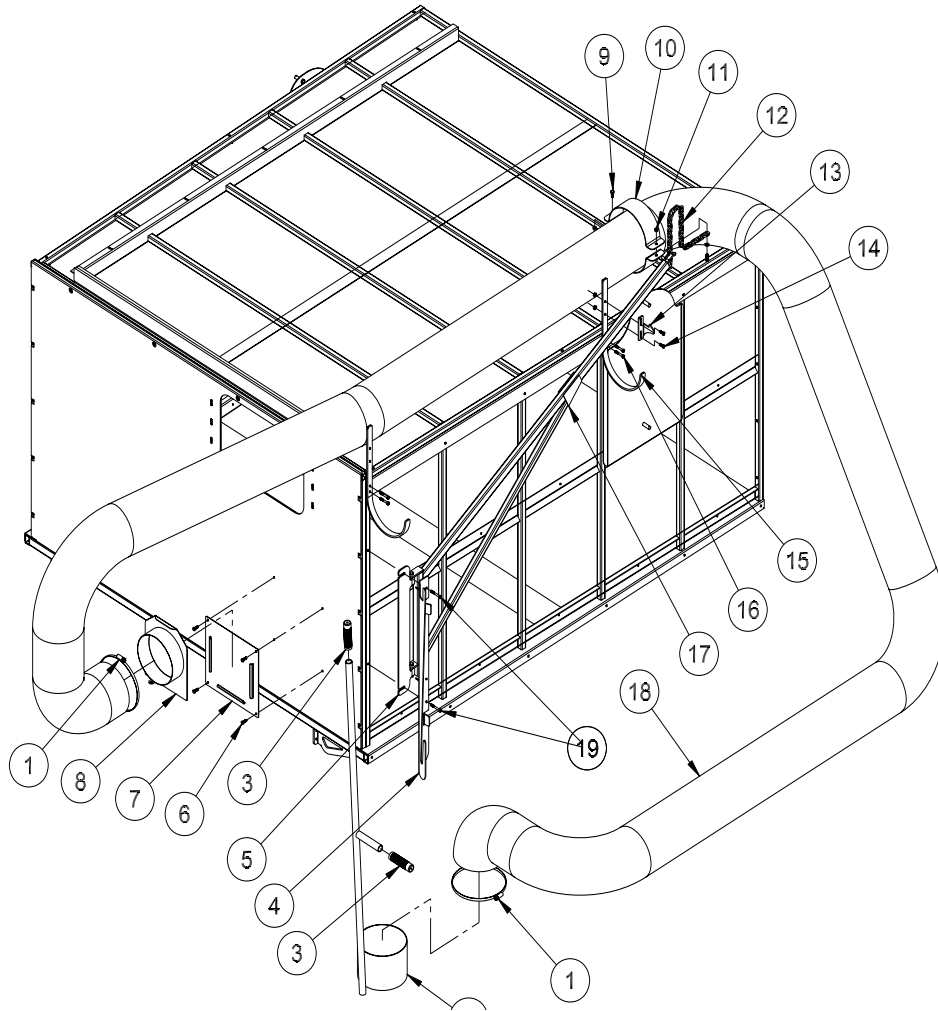


73-006 HAND HELD VACUUM HOSE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	18-340	Hose Clamp	2
2	78-354	Hose Handle	1
3	15-019	Round Grip	2
4	78-350	Handle Holder	1
	8803-17	Trim, Black	1
5	72-153	Boom Mounting Bracket	1
	HP-18-100	Cotter Pin, 1/8 x 1	2
	18-043	Flange Bushing (part of 72-153)	2
6	HB-14-20-075	Bolt, 1/4 - 20 x 3/4	4
	HNFL-14-20	Flange Whiz Lock Nut, 1/4 - 20	4
7	72-141	Hose Plate	1
8	78-314	Remote Hose Connection	1
9	HB-516-18-075	Bolt, 5/16 - 18 x 3/4	1
	HNFL-516-18	Flange Whiz Lock Nut, 5/16 - 18	1
10	72-154	Hose Clamp	2
11	HB-516-18-075	Bolt, 5/16 - 18 x 3/4	1
	HW-516	Washer, 5/16	1
	HNFL-516-18	Flange Whiz Lock Nut, 5/16 - 18	1
12	8820-25	Straight Link Chain, 25"	1
13	72-152	Latch Bracket	1
14	HSTP-14-20-075	Machine Screw, 1/4 - 20 x 3/4	2
	HNFL-14-20	Flange Whiz Lock Nut, 1/4 - 20	2
15	72-142	Hose Hanger	2
16	HB-14-20-175	Bolt, 1/4 - 20 x 1 3/4	4
	HNFL-14-20	Flange Whiz Lock Nut, 1/4 - 20	4
17	72-155	Vacuum Hose Boom	1
18	8970-300	Vacuum Hose	1
19	HB-14-20-200	Bolt, 1/4 - 20 x 2	2
	HNFL-14-20	Flange Whiz Lock Nut, 1/4 - 20	2

(Continued on next page)

73-006 HAND HELD VACUUM HOSE DRAWING



Accessories



73-006 HAND HELD VACUUM HOSE PARTS LIST

You will need two people and the tailgate open with an empty hopper **and the machine not operating.**

Note: **Left** and **Right** sides are determined by standing and facing the rear of the machine.

1. Start by drilling four(4) $\frac{9}{32}$ holes in the front panel on the left side, under the hopper chute opening, as illustrated. Start with the top right hole at 28 inches down from the top and $8\frac{3}{4}$ inches in from the right, as illustrated in the drawing.
2. Drill the three remaining holes in a square pattern as illustrated in the drawing. Deburr holes and mount the Hose Plate(Ref 7) and secure with four(4) $\frac{1}{4}$ -20 x $\frac{3}{4}$ Bolts and Flange Whiz-Lock nuts.
3. To mount the Handle Holder(Ref 4) drill two(2) $\frac{9}{32}$ holes through the front vertical tube and hopper side panel on the Left Hand Hopper Side. Mark hole locations by measuring from the top of the hopper side, down $13\frac{3}{4}$ inches to the first hole and $33\frac{3}{4}$ inches to the second hole. Drill holes centered ($\frac{1}{2}$ ") from the side of the tube. Reference illustration to the left.
4. Install Boom Mount Bracket with Boom(Ref's 5 & 17) and Handle Holder(Ref 4) using two(2) $\frac{1}{4}$ -20 x $2\frac{3}{4}$ Bolts and $\frac{1}{4}$ -20 Flange Whiz-Lock nuts(Ref 19) in the holes drilled in the previous step. Mount parts (Ref's 5 & 4) loosely, do not tighten yet. Pull boom mount bracket outward in the slots and tighten bolts.
5. Mount one Hose Hanger(Ref 15) on the front of the hopper using the existing hardware. Tighten hardware.
5. To mount the second hose hanger, remove the drill screw in the upright to the front of hopper door arm plate. In the remaining screw hole, drill a $\frac{9}{32}$ hole completely through to the inside and deburr. Mount the remaining Hose Hanger(Ref 15) using the lower hole of the hanger with one(1) $\frac{1}{4}$ - 20 x $1\frac{3}{4}$ Bolt and Flange Whiz-Lock nut(Ref 16). Position the hanger in the vertical position and drill another $\frac{9}{32}$ " hole using the second hole as a guide. Drill hole completely through to inside of hopper. Deburr and install the remaining bolt and nut.
6. Mount Latch Bracket(Ref 13) on the rear Hose Hanger(Ref 15) in the top holes using two(2) $\frac{1}{4}$ - 20 x $\frac{3}{4}$ Machine Screws and Flange Whiz-Lock nuts(Ref 14). Tighten hardware.
7. Next, swing the Boom back alongside the hopper until it comes in contact with the Latch Bracket(Ref 13). Slide Latch Bracket up until it lifts the Boom $\frac{1}{8}$ ". Tighten the hardware(Ref 14) for the Latch Bracket and the hardware(Ref 19) for the Boom Mount Bracket.
8. Now connect the Hose(Ref 18) to the Hose Handle(Ref 2) in the position illustrated and secure with one Hose Clamp(Ref 1). Connect the other end of the hose to the Remote Hose Connector(Ref 8) and secure with the remaining Hose Clamp.
9. Bolt Hose Clamps(Ref 10) together over the Hose(Ref 18), close to center. Use one(1) $\frac{5}{16}$ - 18 x $\frac{3}{4}$ Bolt and Flange Whiz-Lock nut(Ref 9) for one side. For the other side, use the remaining $\frac{5}{16}$ - 18 x $\frac{3}{4}$ Bolt, $\frac{5}{16}$ Washer and Flange Whiz-Lock nut(Ref 11) to connect the Chain(Ref 12). Place the Washer between the Bolt and the Chain with the bolt going through the end link in the chain first, then through the clamp.
10. Slide the two round Grips(Ref 3) on to the Hose Handle.
11. For storage, place Remote Hose Connector(Ref 8) in Hose Plate(Ref 7) on the front panel. Drape hose over the top and go toward the back of machine, past the rear hose hanger bring hose to the side of machine and up into the Hose Hangers. At the front place the Hose Handle(Ref 2) into the Handle Holder(Ref 4).
12. To use the remote vacuum, remove the Cover Plate from either side of the vacuum housing and replace with the Remote Hose Connector(Ref 8). Store the Cover Plate in the Hose Plate(Ref 7). Before using the vacuum the lever on the left hand side of the vacuum housing must be pulled out and turned counterclockwise 90° and secured in the handle bracket with lynch pin.
13. You may want to remove the hose handle, hose and remote hose connector if you are not going to use the remote vacuum for an extended amount of time.

NOTES

DECAL LIST

16-088	Decal, Moving Parts Hot	Right Main Frame
25-277	Decal, Battery Warning	By Battery Plate
25-298	Decal, Warning Hot	Muffler Guard and Belt Guard
25-279	Decal, Safety Warning	Left Frame Front
25-286	Decal, Pinch Point	Right and Left Tailgate Lift Arms.
25-355	Decal, Tire Pressure 18 PSI	Rear Wheels
25-356	Decal, Tire Pressure 20 PSI	All Castor Wheel
25-358	Decal, Smithco 12"	Blower Chute
25-359	Decal, Smithco 17"	Tailgate
25-362	Decal, Danger Fire	Hopper Front
25-363	Decal, Max. Depth	Front Hopper
27-093	Decal, Hydraulic Oil	Oil Tank Bracket
72-047	Decal, Big Vac (Large)	Hopper Front
72-061	Decal, Big Vac (Small)	Each Side of Hopper
72-089	Decal, Hose Routing	Left side frame in front
72-182	Decal, Max Load	Front Hopper
73-034	Decal, V72E (large)	Hopper Front
72-035	Decal, V72E (small)	Each Side of Hopper
73-054	Decal, Dashboard Panel	Control Panel by Blower
75-651	Decal, Hopper Lift Safety	Hopper Lift Safety
76-304	Decal, Crush Points	Front Hopper Sides
76-305	Decal, Rotating Parts	Cover Plant and Access Plate
76-307	Decal, Tower Warning	One On Each Side of Deck
78-217	Decal, Control Panel	Control Panel
78-438	Decal, Hang Tag Dumping	

QUICK REFERENCE REPLACEMENT PARTS

REPLACEMENT FILTER

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

72-038	Belt 3V x 315 (finger reel) 3
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SEAL KITS

78-416	Hydraulic Valve 3 Bank
10-187	Hydraulic Cylinder
14-273	Seal Kit
72-040	Hydraulic Cylinder
72-040-01	Seal Kit
72-040-02	Pin with Clips (2 per cylinder)
*72-199	Hydraulic Motor (finger reel)
72-199-01	Seal Kit
78-413	Hydraulic Pump
78-413-01	Seal Kit
72-077	Hearing Protection

* NO OTHER PARTS ARE REPLACEABLE FOR HYDRAULIC MOTOR OR PUMP

HYDRAULIC FLUID

SAE 10W-40 API Service SJ or higher motor oil