

Parts & Service



Super Star Diesel
Quick Hitch
43-001

SN: 14185

March 2009

Product Support:

Hwy 55 & Poplar Ave; Cameron WI 54822

1-800-891-9435 productsupport@smithco.com

CONTENTS

Introduction

Introduction	1-3
Introduction	1
Safe Practices	2
Specifications	3

Service

Service	4-11
Maintenance	4-6
Service Chart	7
End User's Service Chart	8
Adjustments	9-10
Storage	11

Diagrams

Diagrams	12-15
Wiring Diagram	12-13
Hydraulic Diagram	14-15

Parts

Parts	16-45
Main Frame	16-17
ROPS	18-19
Front Fork	20-21
Linkage	22-25
Gas Tank	26-27
Oil Tank	28-29
Engine	30-33
Rear Axle	34-35
Rake Lift	36-37
13-729 2-Bank Hydraulic Valve	38-39
43-116 Front Wheel Motor	40-41
43-117 Rear Wheel Motor	42-43
Decals	44
Quick Reference	45

Accessories

Accessories	A-C
Plows	A
Belly Attachments	B
Rear Attachments	C

Reference

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

Read this manual and all other manuals pertaining to the Diesel Super Star 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 Super Star is located on the rear axle. 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. After engine has started, machine must not move. If movement is evident, the neutral mechanism is not adjusted correctly. Shut engine off and readjust so the machine does not move when in neutral position.
13. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
14. 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.
15. 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.
16. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
17. Keep the area of operation clear of all bystanders.
18. Never carry passengers.
19. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
20. Use parts and materials supplied by **Smithco** only. Do not modify any function or part.

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.

WEIGHTS AND DIMENSIONS

Length	68" (1.7 m)
Width	60" (1.5 m)
Height	50" (1.2 m)
Wheel Base	44" (1.1 m)
Weight	1010 lbs. (458 kg)

SOUND LEVEL (EAR PROTECTION REQUIRED)

At Ear Level	94 dB
At 3ft (.914 m)	90 dB
At 30 ft (9.14 m)	85 dB

ENGINE

Make	Briggs and Stratton Diesel
Model#	522447
Type / Spec#	0206
Horsepower	23 hp (17 kW)
Fuel	Diesel 40 Octane Minimum
Cooling System	Liquid Cooled
Lubrication System	Full Pressure
Alternator	16 amp

WHEELS & TIRE

Three: 22 X 11 - 10.0 Knobby Tires 8 psi (.55 bar)
 Optional: 23-10.50 x 12 Turf Tires 8 psi (.55 bar)
 43-124 Front tire fluid filled to 80 lbs. total 45.5 pints of windshield washer fluid or equivalent. 42-158 Rear Tires.

Speed

Forward Speed	0 to 11 m.p.h. (0-18 kph)
Reverse Speed	0 to 5 m.p.h. (0-8 kph)

BATTERY

	Automotive Type 45-12 Volt
BCI Group	Size 45
Cold Cranking Amps	480
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	20 quarts (18.93 liters)
Hydraulic Fluid	20 quarts (18.93 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil

MAINTENANCE



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.

LUBRICATION

Use No. 2 General purpose Lithium Base Grease and lubricate every 100 hours. The Diesel Super Star has four grease fittings. One is located on the foot pedal. One located on the steering cylinder and two on the rake lift.

REMOTE AIR CLEANER

1. Unclip the two clips, remove the cover and pull out the element.
2. To service, clean by tapping gently on flat surface. Do not oil. Replace if very dirty or damaged.
3. Clean out the inside of the body and cover.
4. Place the element into the body and put the cover back on.

TOWING

When it is necessary to move the Super Star without engine running, bypass valve built into hydrostatic pump must be "open" by turning it counterclockwise. The valve is located on the right side of the pump. An "open" valve allows fluid to pass through the wheels freely. When normal, driven, operation is desired, valve should be "closed" by turning it clockwise. Failure to "close" the valve with engine running means no power to wheels. The machine can be moved for a short distance with the engine off, but we **do not** recommend this as a standard procedure. When towing **do not** tow the machine faster than 2-3 MPH (3-5 km/h) because the drive system may be damaged. The tires may lock up if the machine is towed too fast. If this occurs, stop towing the machine. If the machine must be moved a considerable distance, transport it on a truck or trailer.

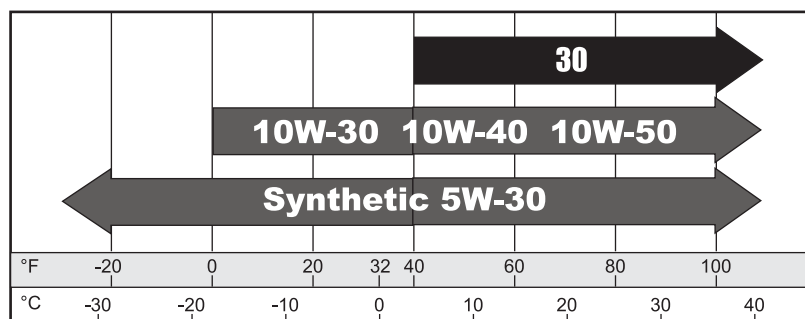
TIRE PRESSURE

Caution must be used when inflating a low tire to recommended pressure. Over inflating can cause tires to explode. Tires should be 8 psi (0.55 bar). Improper inflation will reduce tire life considerably.

ENGINE

Change and add oil according to chart below. Do not overfill. Use a high quality detergent oil classified "For Service SJ or higher" SAE 30 oil. Use no special additives with recommended oils. Do not mix oil with gasoline.

SAE VISCOSITY GRADES



Starting Temperature Range Anticipated Before Next Oil Change

Use of multi-viscosity oils (10W-30, etc.) above 40° F (4° C) will result in high oil consumption and possible engine damage. Check oil level more frequently if using these types of oils.

SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

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 filter after the first 20 hours, then at 100 hours, then every 250 hours thereafter.
3. The oil level should be 2" to 2½" from top of 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 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.

MAINTENANCE

WHEEL MOUNTING PROCEDURE

1. Turn machine off and remove key.
2. Block one of the other wheels.
3. Loosen nuts slightly on wheel to be removed.
4. Jack up machine being careful not to damage underside of machine.
5. Remove nuts. Remove wheel.
5. Place new wheel on hub lining up bolt holes.
6. Torque nuts to 64-74 ft/lb (87-100 Nm) using a cross pattern. Re-torque after first 10 hours and every 200 hours thereafter.
7. Lower machine to ground and remove blocks and jack.

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.

JUMPSTARTING



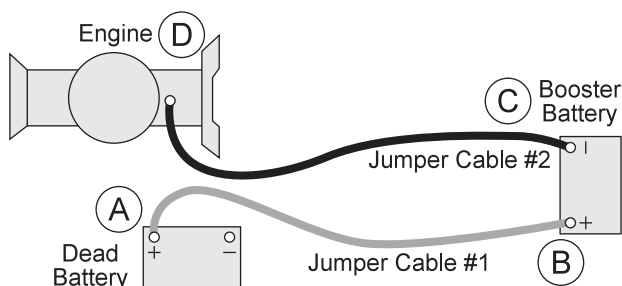
WARNING

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.





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



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

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.

Maintenance Service Interval	Maintenance Procedure
After the first 8 operating hours	Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm))
	Change the engine oil filter.
	Change the hydraulic filter.
After the first 20 operating hours	Change oil filter after first 20 and first 100 hours.
Before each use daily	Check the engine oil.
	Check the hydraulic fluid level.
	Check the tire pressure.
	Check condition of hydraulic hoses and fittings.
	Inspect and clean the machine.
Every 25 hours	Inspect cooling system.
	Check the battery fluid level and cable connections.
Every 50 hours	Change oil when operating under heavy load or high
	Change the engine oil and filter.
Every 100 hours	Check engine for leaks or loose parts.
	Check air cleaner.
	Check tire pressure (5 psi (.035 bar)).
	Torque the wheel lug nuts. (64-74 ft/lb (87-100 Nm))
	Grease Machine.
Every 250 hours	Check belt tension (where needed)
	Change oil filter
	Change hydraulic filter
Every 400 hours	Clean battery terminals
	Check spark plugs
Every 500 hours or yearly	Lubricate machine
	Visual inspection of machine and hydraulic hoses
	Change oil.
	Torque lug nuts.
	Check battery terminals and electrolyte level.
	Change all filters.



END USER'S SERVICE CHART

[illegible]

Duplicate this page for routine use.

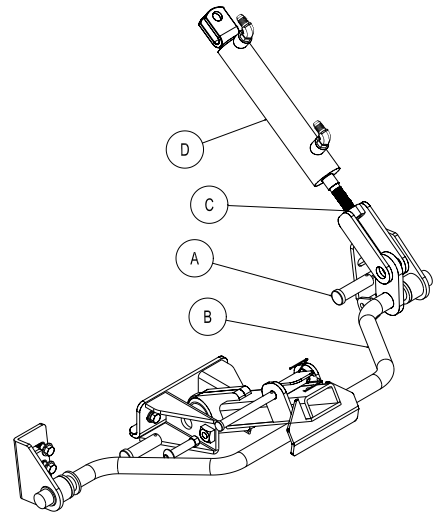
ADJUSTMENT SPEED BOSS

RAKE LIFT CYLINDER

Completely lower Rake Lift. Remove the clevis pin (A). Twist lift linkage (C) so clevis pin end of cylinder extension lines up with holes in attachment lift arm. Replace clevis and cotter pins. Raise and lower Rake Lift to check for proper clearance.



When the rear rake attachment is lowered while the machine is in forward motion, the forward speed of the machine will slow drastically. Operator should be prepared for a rapid change in speed.



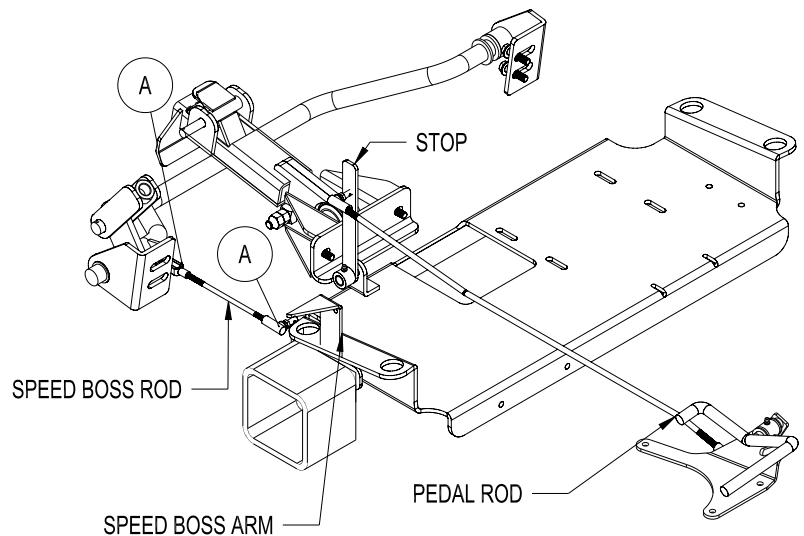
Service

SPEED BOSS

Speed Boss allows the machine to operate at a proper speed while raking sand traps on golf courses. This speed boss has been factory set at an average speed of 3-4 m.p.h. (5-6.5 kph). The Speed Boss will only limit the speed while the rake is lowered into the operating position.

Quick Disconnect Ball Joints (A) are used in applications where the housing needs to be easily disconnected from the ball stud. This is accomplished by pulling back the spring-loaded outer housing.

The speed setting may be adjusted by turning the Ball Joint (A) counterclockwise to make the machine operate slower or turn clockwise to go faster. Tighten jam nut. Check to make sure nothing is binding and test drive to check desired speed.



For RBS System, Spiker and Grader Box remove the speed boss arm and the speed boss rod from machine so it does not interfere with other operations.spring-loaded outer housing.

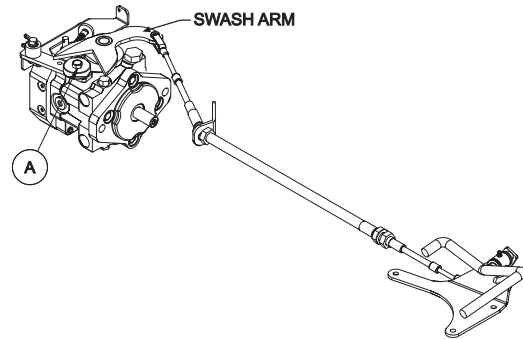
The speed setting may be adjusted by turning the Ball Joint (A) counterclockwise to make the machine operate slower or turn clockwise to go faster. Reconnect the ball joint. Check to make sure nothing is binding and test drive to check desired speed.

For RBS System, Spiker and Grader Box remove the speed boss arm and the speed boss rod from machine so it does not interfere with other operations.

WHEEL 'CREEP' ADJUSTMENT

'Creep' is when engine is running and hydrostatic transmission is in neutral, but due to inadequate alignment, wheels still move. Do the following procedures to stop this motion.

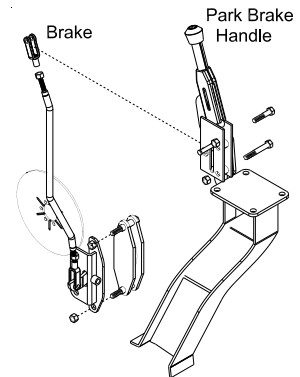
1. Lift up and support machine so all wheels are off the ground and can turn freely.
2. On the top of the pump there is a ball bearing on a creep arm. Loosen the bolt (A).
3. With engine running adjust the ball bearing right or left in slot so ball bearing centers on the swash arm.
4. Tighten all fasteners and test by using foot pedal linkage to see that the "creep" is removed.
5. Turn engine off and lower machine.



PARK BRAKE

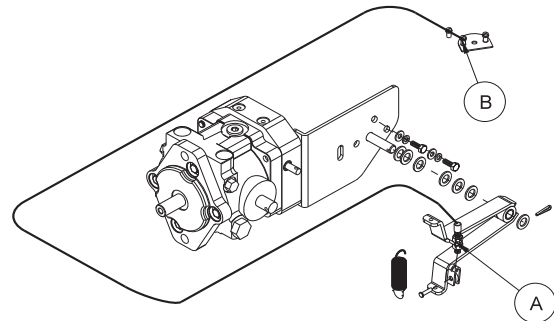
The park brake is located on the right hand side of the machine and operates a brake on the right rear wheel. Push lever forward to engage and pull back to disengage.

To adjust turn the knob on the end of the handle. For further adjustment you may turn the yokes (A) clockwise to tighten and counter clockwise to loosen.



TO ADJUST FOOT PEDAL THROTTLE CABLE

1. Jack up unit so that all drive wheel are off the ground. (Use jack stands)
2. Start the engine, make certain that the hand throttle is in the idle position (1200 engine RPM).
3. Engine speed must increase as soon as the foot pedal begins to move in either direction. At the full forward position, the engine RPM must be 3600 RPM ± 100 .
4. Minor adjustment can be made by backing out (unscrewing) (Ref A) until you reach full engine RPM with the foot pedal fully depressed in the forward position. Be sure to recheck after the nuts are fully tightened.
5. Major adjustment needs to be made at (Ref B) by pulling the slack out of the cable. Loosen the screw in the wire block that is clamped onto the end of the cable and sliding it up to the cable block that is through the throttle plate. Do not let the throttle plate move to increase idle speed. Tighten the screw.
6. Test run to determine that there is no binding and that engine idle speed is 1200 RPM and that it is 3600 RPM at full forward position of the foot pedal.



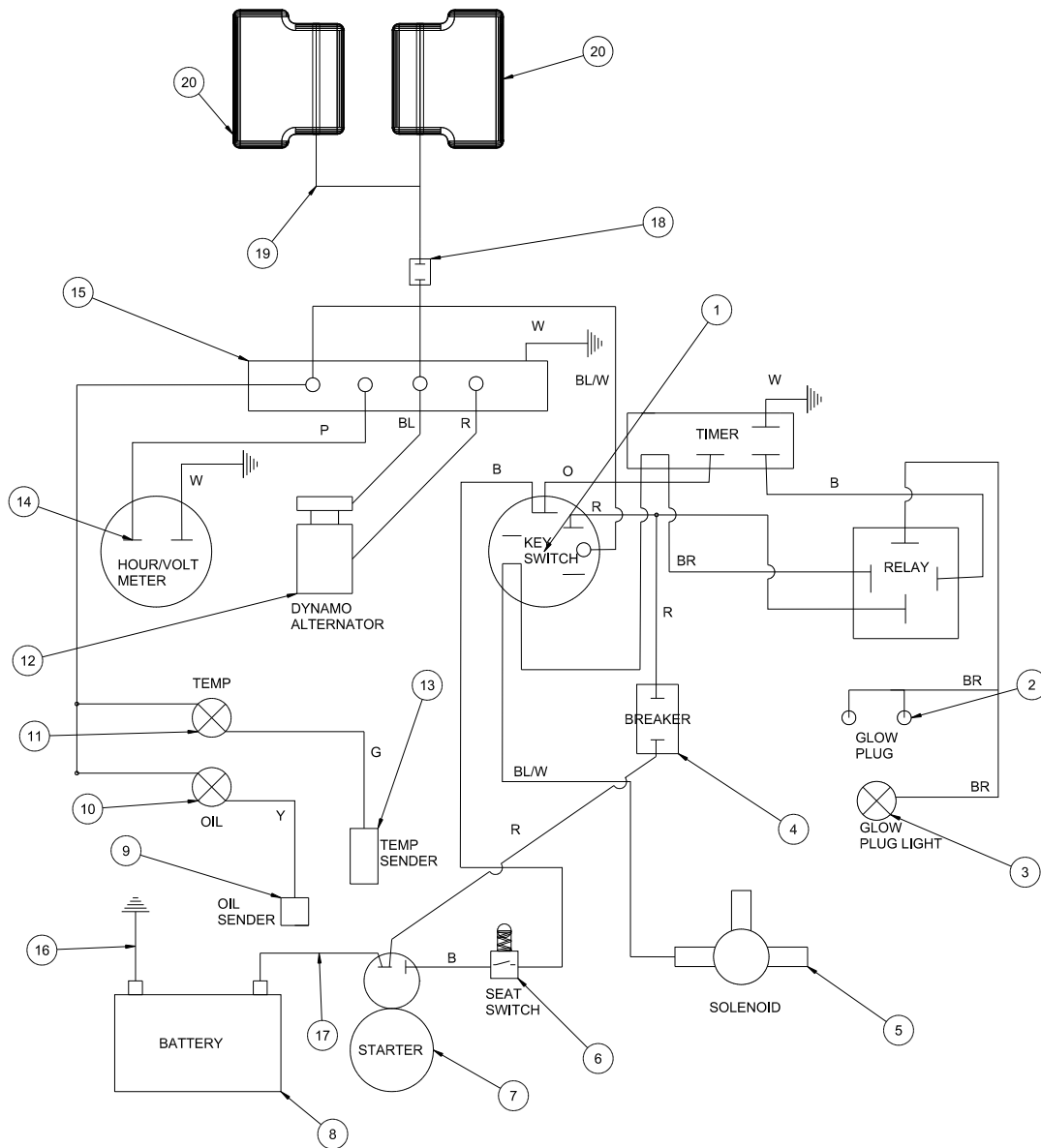
When storing, remove the key from the key switch to avoid unauthorized persons from operating machine.

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

Color Code Chart

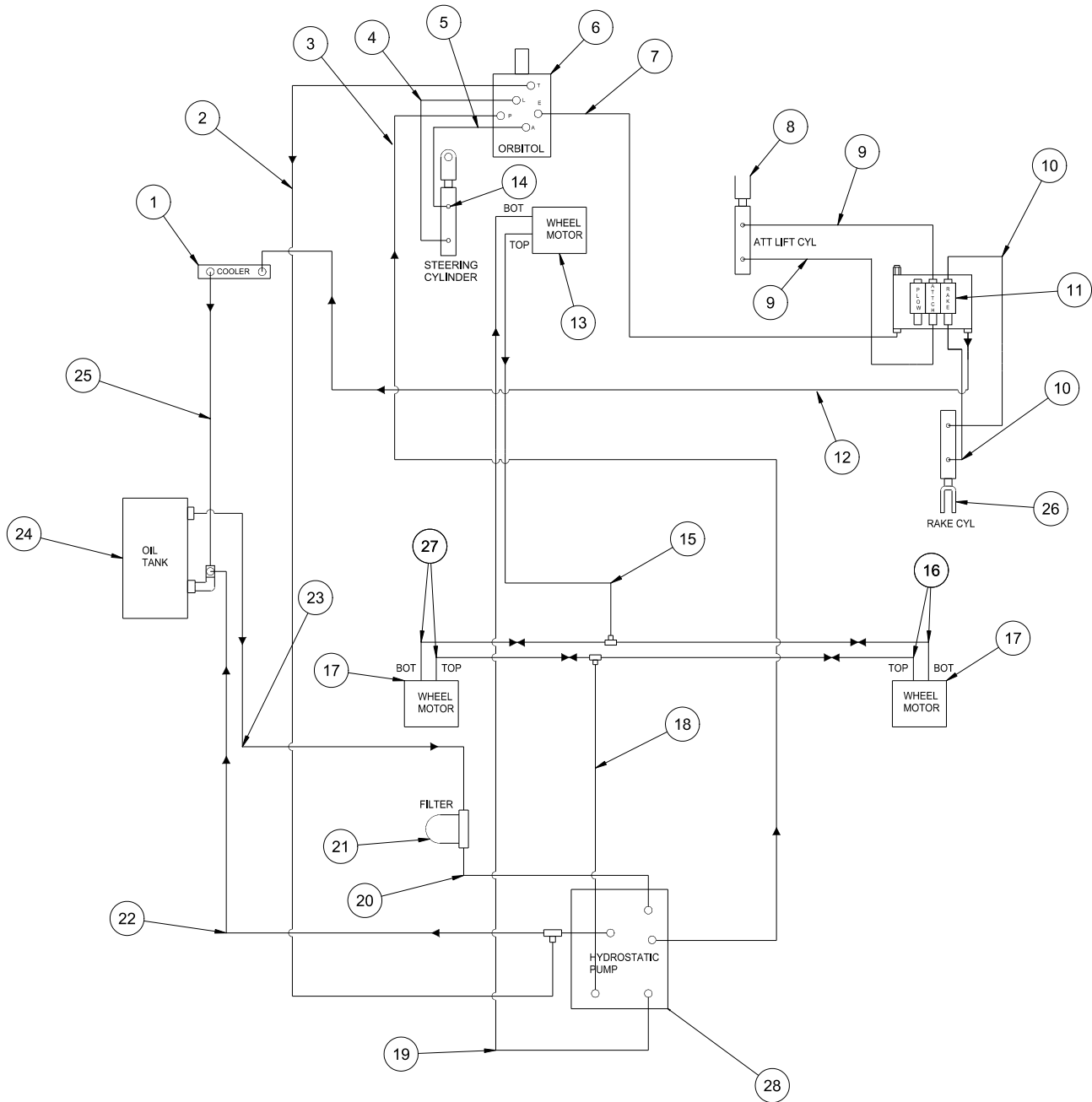
Bl	Blue
Br	Brown
Y	Yellow
Grn	Green
O	Orange
R	Red
B	Black
P	Purple
W	White



WIRING PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1	13-488	Ignition Switch (B & S# 496603)	1
	76-310	Key Set (comes with 13-488)	1
2	17-171	Glow Plug (comes with engine)	1
3	50-359	Glow Plug Indicator Light	1
4	8975	Breaker	1
	8977	Breaker Boot	
5		After Fire Solenoid (on engine)	1
6	14-292	Seat Switch	1
7		Starter (on engine)	
8		Battery (not included)	
9	13-491	Oil Sender (on engine B & S# 491657)	1
10	50-359	Oil Pressure Warning Light	1
11	50-359	Water Temperature Light	1
12		Dynamo Alternator (comes with engine)	1
13		Temp Sender (comes with engine)	
14	12-017	Hour Meter	1
15	8935	Bus Bar	1
16	22-054	Ground Battery Cable Black	1
17	22-055	Battery Cable Red	1
18	12-003	Toggle Switch	1
	15-472	Switch Boot	1
19	42-319	Light Wire Harness	1
20	42-317	Lights	2
	42-317-01	Replacement Bulb	1
	43-073	Wire Harness (includes all wire colors with *)	1

Diagrams

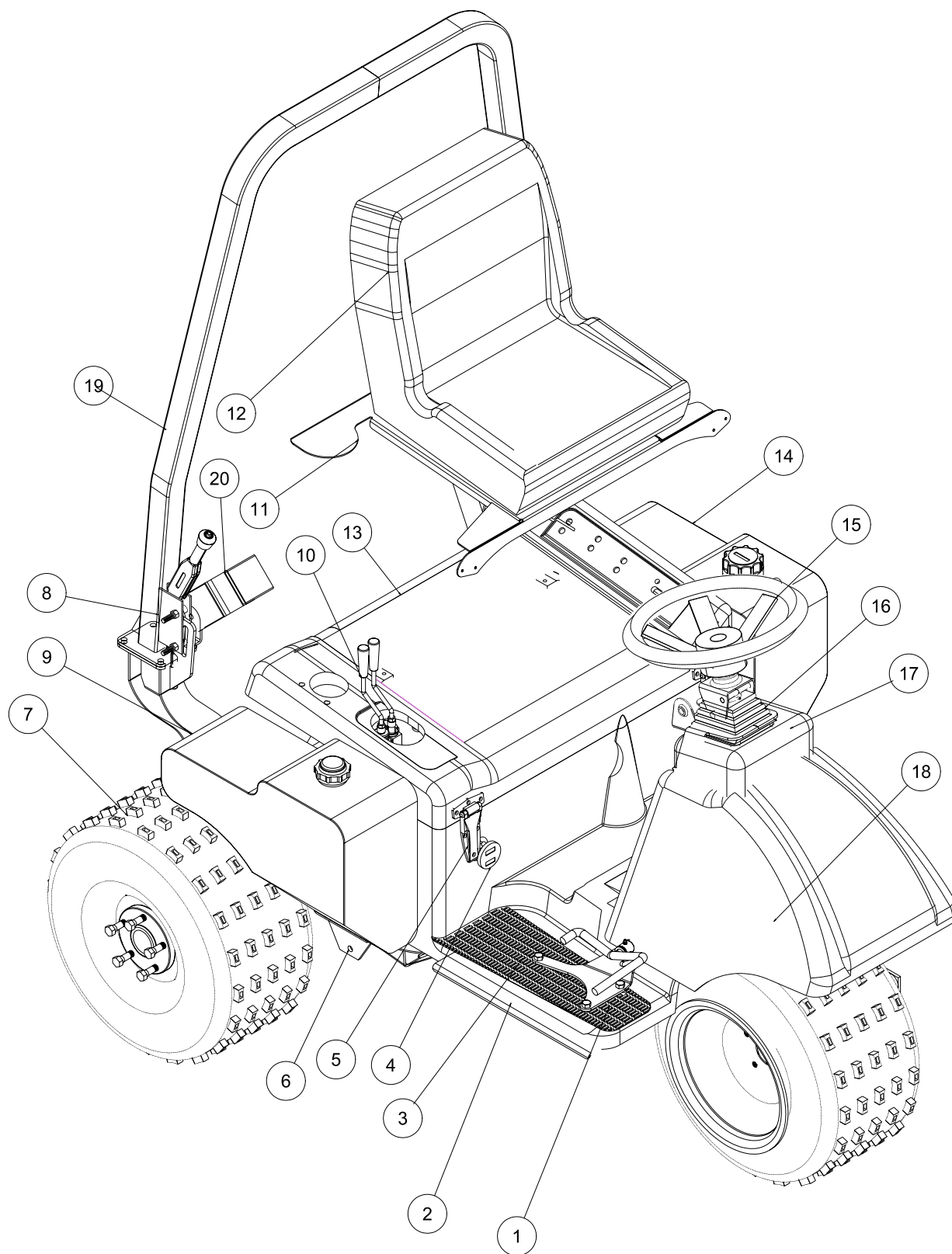


HYDRAULIC PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1	34-105	Cooler	1
2	43-034	Hydraulic Hose - 32"	1
3	43-033	Hydraulic Hose - 48"	1
4	43-029	Hydraulic Hose - 24"	1
5	43-035	Hydraulic Hose - 20"	1
6	34-103	Orbitol	1
7	43-036	Hydraulic Hose - 55"	1
8	10-135	Attachment Lift Cylinder	1
	18-154	Rod End	1
	HNJ-58-18	Jam Nut $\frac{5}{8}$ - 18	1
9	42-047	Hydraulic Hose - 32"	2
10	42-048	Hydraulic Hose - 14"	2
11	13-729	2-Bank Valve	1
12	42-045	Hydraulic Hose - 41"	1
13	43-116	Front Wheel Motor, 17.1 in ³	1
14	75-714	Steering Cylinder	1
15	43-071	Hydraulic Hose - 69 $\frac{1}{2}$ "	1
16	43-094	Hydraulic Line - RH	2
17	43-117	Rear Wheel Motor, 8.6 in ³	2
18	43-125	Hydraulic Hose - 22.5"	1
19	43-070	Hydraulic Hose - 98"	1
20	8832-11	$\frac{3}{4}$ " Suction Hose - 12	1
	18-222	Hose Clamp	2
21	23-006	Oil Filter	1
	23-031	Replacement Filter only	
22	42-787	Hydraulic Hose - 36 $\frac{1}{2}$ "	1
23	8832-50	$\frac{3}{4}$ " Suction Hose - 49"	1
	18-222	Hose Clamp	2
24	42-005	Oil Tank	1
	13-747	Filler Breather	1
25	42-045	Hydraulic Hose - 41"	1
26	13-357	Rake Cylinder	1
	42-040	Yoke End	1
	HNJ-34-16	Jam Nut $\frac{3}{4}$ - 16	2
27	43-095	Hydraulic Line - LH	2
28	42-797	Hydrostatic Pump	1

Pump Displacement	.913 in ³ /rev	Charge Pump Displacement	.33 in ³ /rev
Pump Input Speed (up to)	3600 rpm	Max. Inlet Vacuum	5 in. Hg
Max. Operating Pressure	3000 peak psi	Max. Case Pressure	25 psi
Implement Setting	700-1000 psi	Relief Valve Pressure (set at)	3000 psi
13-729 Hydraulic Valve (2 bank)	900 psi		

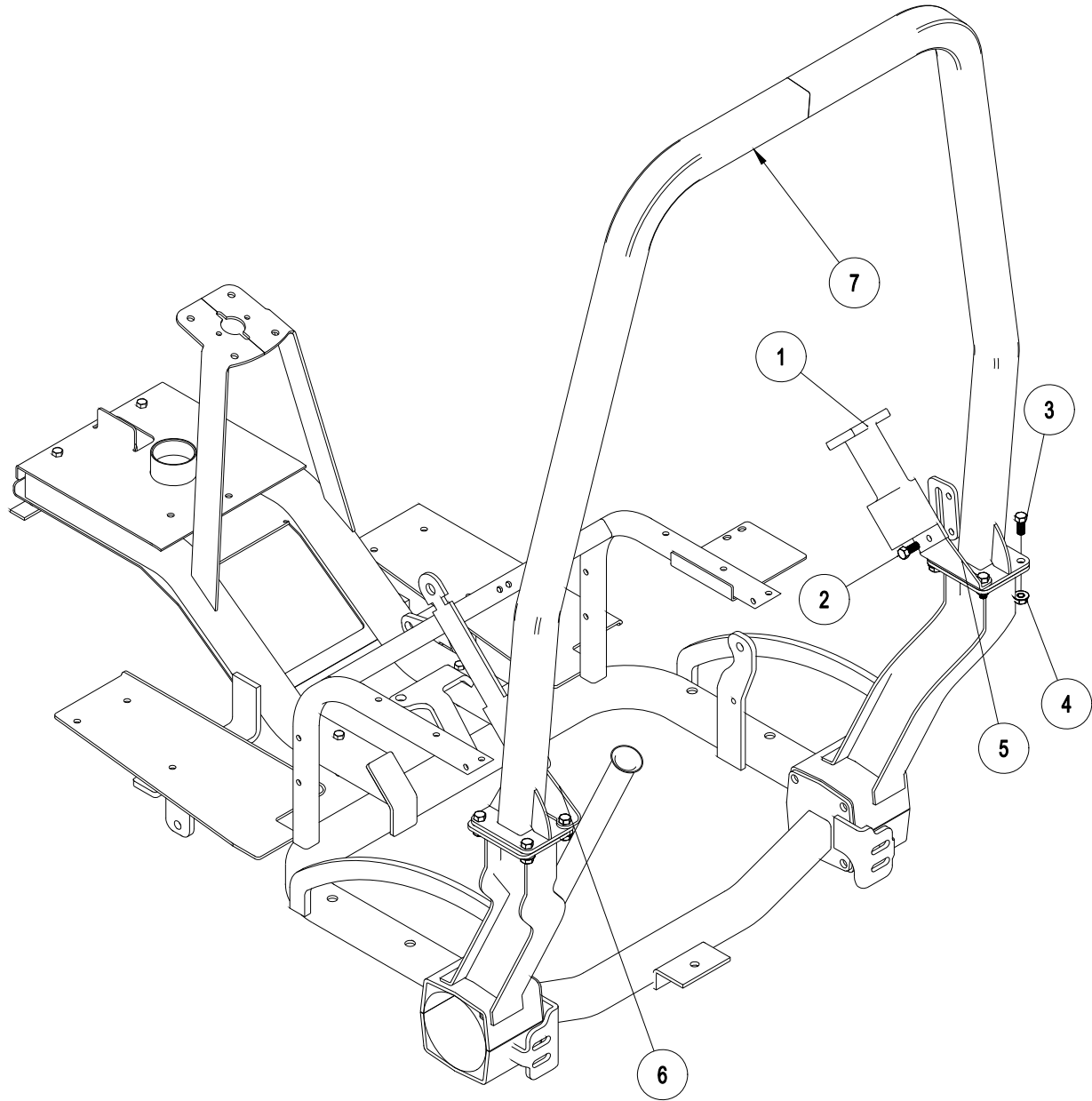
MAINFRAME DRAWING



Parts

MAIN PARTS COMMON LIST

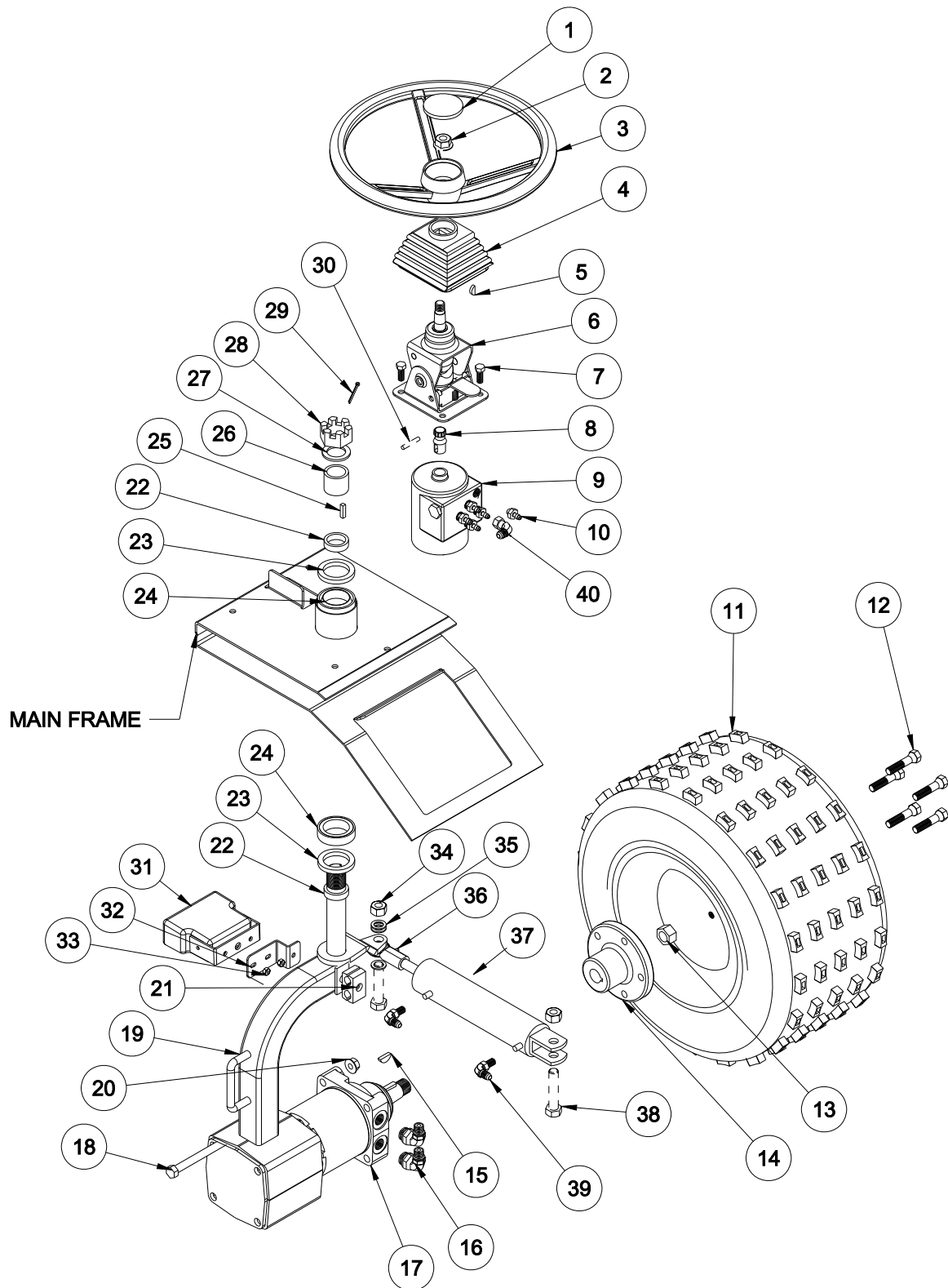
REF#	PART#	DESCRIPTION	QUANTITY
1	43-087	Foot Pedal	1
2	42-780	Floor Panel (fiberglass)	1
3	42-767	Right Floor Mat	1
	42-768	Left Floor Mat	1
4	12-017	Hour Meter	1
5	27-055	Hinge	2
6	43-120	Main Frame	1
7*	43-058	Tire and Wheel	3
	42-161-01	Tire 22 x 11 - 10 Knobby Type	3
	43-058-01	Wheel	3
	25-383	Wheel Bolt	10
8	60-106	Park Brake Lever	1
9	42-006	Fuel Tank	1
	77-179	Cap	1
10	42-778	Valve Handle	2
11	42-772	Seat Panel	1
	8803-17	Trim w/ Black Lace	1
12	14-518	Adjustable Low Back Seat	1
13	43-080	Seat Panel (fiberglass)	1
14	42-005	Oil Tank	1
	13-747	Filler Breather	1
	13-586-03	Neck	1
15	13-718	Steering Wheel	1
16	76-364	90° Black Boot (comes with 76-362)	1
	76-362	Tilt Steering Mechanism	1
17	42-782	Console (fiberglass)	1
18	42-471	Nose Cone (fiberglass)	1
	HSTP-14-20-100	Phillips Machine Screw 1/4 - 20 x 1	6
	HNTL-14-20	Lock Nut 1/4 - 20	6
19	42-801	ROPS	1
20	76-198-03	Seat Belt	1
* Optional Tires			
Front	43-124	Turf Tire	1
Rear	42-158	Turf Tire	2



ROPS PART LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	76-198-03	Seat belt	1
2	HB-716-14-100	Bolt $\frac{7}{16}$ - 14 x 1	2
3	HB-716-14-125	Bolt $\frac{7}{16}$ - 14 x $1\frac{1}{4}$	8
4	HNTL-716-14	Lock Nut $\frac{7}{16}$ - 14	10
5	42-802	Right Seat belt Bracket	1
6	42-803	Left Seat Belt Bracket	1
7	42-801	ROPS Bar	1

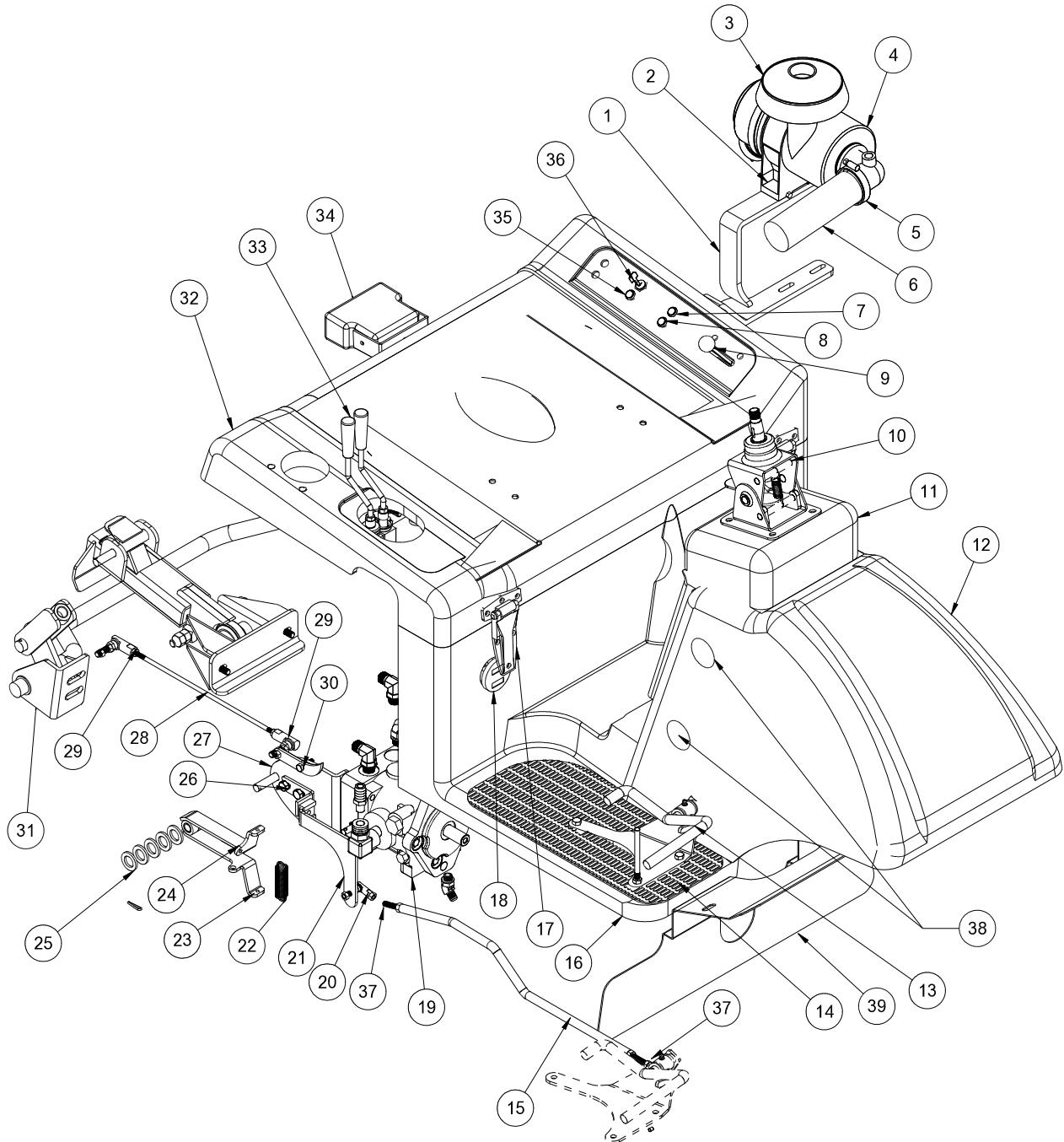
FRONT FORK DRAWING



FRONT FORK PARTSLIST

REF#	PART#	DESCRIPTION	QUANTITY
1	13-726	Center Cap	1
	27-077	Decal, Smithco Round	1
2	HNTL-58-11	Lock Nut $\frac{5}{8}$ - 11	1
3	13-718	Steering Wheel 13"	1
4	76-364	Tilt Steering Boot (comes with 76-362)	1
5	HWK-316-075	Woodruff Key $\frac{3}{16}$ X $\frac{3}{4}$	1
6	76-362	Tilt Steering Mechanism	1
7	HB-516-18-125	Bolt $\frac{5}{16}$ - 18 x $1\frac{1}{4}$	2
	HNTL-516-18	Lock Nut $\frac{5}{16}$ - 18	2
8	48-187	Stub Shaft	1
9	34-103	Orbitrol	1
10	18-169	Adapter 3/8 SAE	5
11	43-058	Knobby Tire and Wheel	1
	43-058-02	Tire 22 x 11 - 10 Knobby Type	1
	43-058-01	Wheel	1
	8839	Windshield Washer Fluid or Equivalent	43.5 pints
12	25-383	Wheel Bolt	5
13	14-265	Nut	1
14	13-033	Hub	1
15	HWK-14-100	Woodruff Key $\frac{1}{4}$ - 1 (part of 76-238)	1
16	18-350	90° Seal Lok Elbow	2
17	43-116	Wheel Motor	1
18	HB-12-13-500	Bolt $\frac{1}{2}$ - 13 x 5	4
19	43-053	Front Fork	1
20	HNFL-12-13	Flange Whiz Lock Nut $\frac{1}{2}$ - 13	4
21	13-652	Hose Clamp	1
22	20-141	Spacer	2
23	20-142	Oil Seal	2
24	20-143	Bearing	2
25	HKSQ-14-100	Square Key $\frac{1}{4}$ X $\frac{1}{4}$ X 1	1
26	43-027	Shaft Spacer	1
27	HMB-114-10	Machine Bushing $1\frac{1}{4}$ x 10GA	1
28	HNA-114-12	Axle Nut $1\frac{1}{4}$ - 12	1
29	HP-18-200	Cotter Pin $\frac{1}{8}$ x 2	1
30	HRP-14-150	Roll Pin $\frac{1}{4}$ x $1\frac{1}{2}$	1
31	42-317	Light	1
	42-317-01	Replacement Bulb	
32	42-323	Light Mount	1
33	HSTP-14-20-100	Truss Head Screw $\frac{1}{4}$ - 20 x 1	2
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	2
34	HNTL-58-11	Lock Nut $\frac{5}{8}$ - 11	2
35	HMB-58-14	Machine Bushing $\frac{5}{8}$ x 14GA	7
36	18-154	Yoke End	1
	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180°	1
37	75-714	Hydraulic Cylinder	1
38	HB-58-11-200	Bolt $\frac{5}{8}$ - 11 x 2	2
39	18-168	$\frac{3}{8}$ Straight Thread Elbow	2
40	18-202	Elbow	1

LINKAGE DRAWING

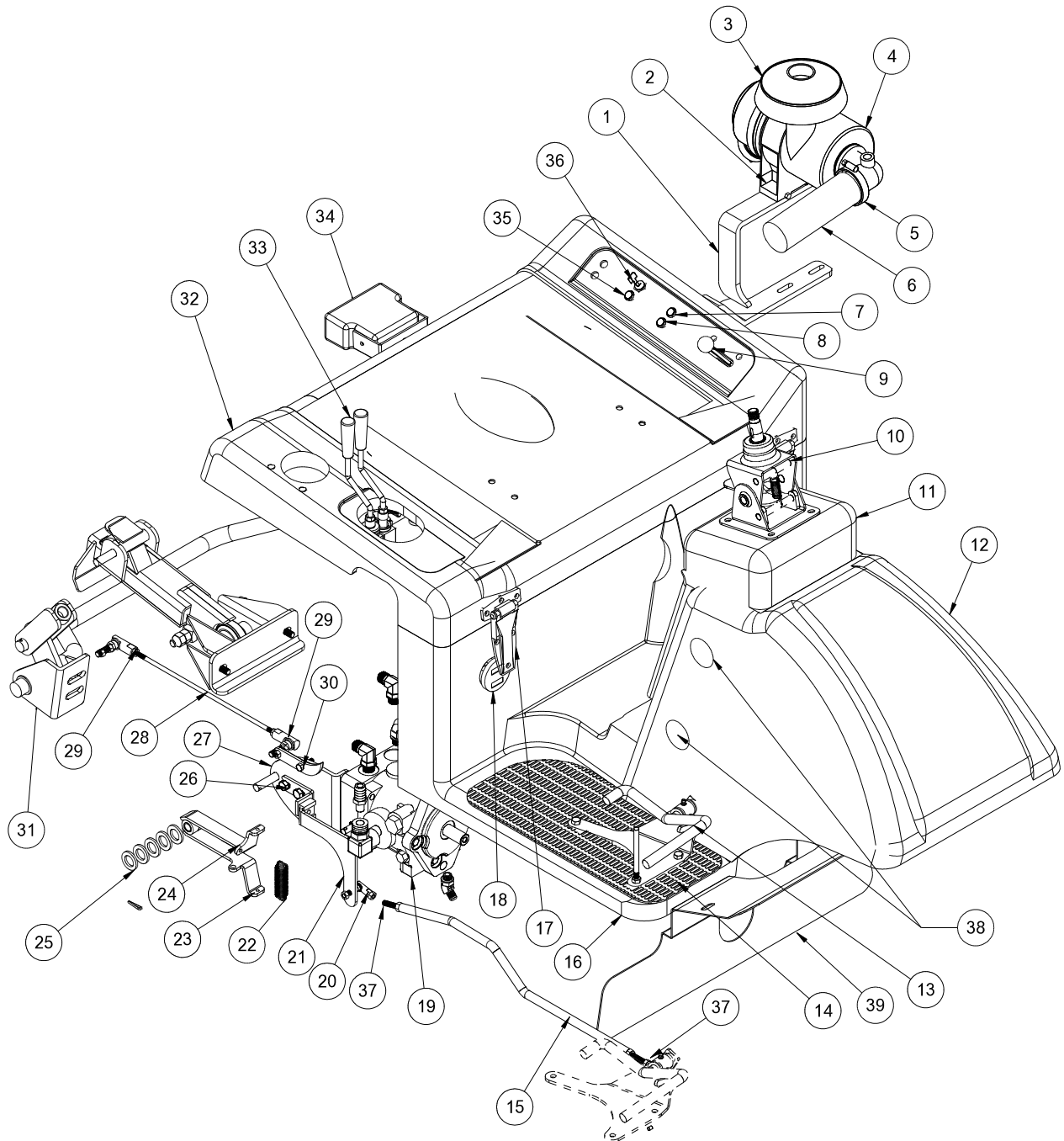


Parts

REF#	PART#	DESCRIPTION	QUANTITY
1	43-067	Oil Tank Support	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
2	42-076-04	Band (part of engine)	1
3	42-076-02	Hat	1
4	42-076	Air Cleaner (part of engine)	1
	42-076-03	Replacement Filter (part of engine)	1
5	18-123	Hose Clamp	2
6	8959-17	Flex Hose x 17"	1
7	50-359	Oil Warning Light	1
8	50-359	Water Temp Warning Light	1
9	42-789	Throttle Cable	1
	42-766	Throttle Bracket	1
	HSTP-14-20-075	Phillips Truss Head Screw $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	2
10	76-362	Tilt Steering	1
	76-364	Boot Black (comes with 76-362)	1
11	42-782	Console (fiberglass)	1
12	42-471	Nose Cone (fiberglass)	1
13	43-087	Foot Pedal	1
	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180° (comes with 42-790)	1
	76-299	Pedal Pad Long	1
	42-791	Pedal Pad Short	1
	HB-516-18-125	Bolt $\frac{5}{16}$ - 18 x $1\frac{1}{4}$	2
	HW-516	Washer $\frac{5}{16}$	2
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	2
14	42-767	Right Floor Mat	1
	42-768	Left Floor Mat	1
15	43-075	Accelerator Linkage	1
16	42-780	Floorboard (fiberglass)	1
17	27-055	Hinge	2
	HSMFCS-10-32-100	Machine Screw #10 - 32 x 1	6
	HSM-10-32-063	Machine Screw #10 - 32 x $\frac{5}{8}$	4
	HNFL-10-32	Flange Whiz Lock Nut #10 - 32	10
18	12-017	Hour Meter	1
19	42-797	Pump	1
20	21-462	Ball Joint $\frac{5}{16}$ - 24	2
	HN-516-24	Nut $\frac{5}{16}$ - 24	2
	HWL-516	Lockwasher $\frac{5}{16}$	2
21	43-068	Swash Arm	1
22	11-050	Extension Spring	1
23	42-312	Bottom Centering Arm	1
	18-234	Bushing (part of 42-312)	1
24	42-311	Top Centering Arm	1
	18-234	Bushing (part of 42-312)	1
25	HMB-12-14	Machine Bushing $\frac{1}{2}$ x 14GA	7
26	42-247	Creep Arm	1
27	17-223	Pump Mount Plate	1
28	43-148	Speed Boss Rod	1

(Continued on next page)

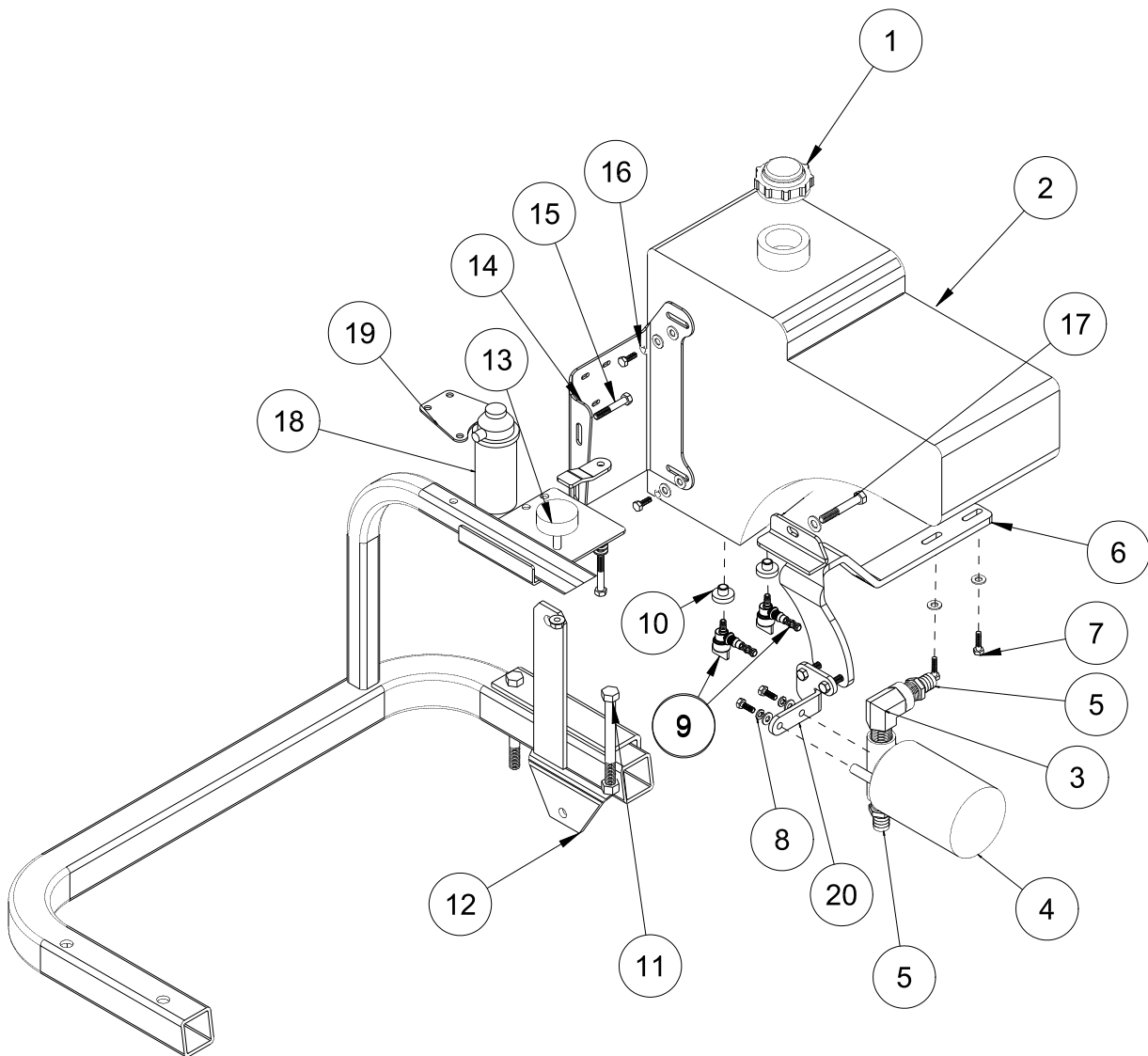
LINKAGE DRAWING



LINKAGE PARTSLIST

REF#	PART#	DESCRIPTION	QUANTITY
29	18-386	Ball Joint $\frac{1}{4}$ - 28	2
	HN-14-28	Nut $\frac{1}{4}$ - 28	2
30	43-076	Speed Boss Arm	1
	HB-38-16-150	Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{2}$	1
	HMB-12-14	Machine Bushing $\frac{1}{2}$ x 14GA	4
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	2
31	43-137	Lift Bar	1
32	43-080	Seat Panel	1
	42-786	Cup Holder	1
	42-772	Seat Mount	1
	26-034	Ball Stud	2
	13-569	Gas Shock	1
	43-069	Decal, Control Panel	1
33	42-778	Levers	2
	42-765	Decal, Lift Controls	1
34	42-317	Light	1
	42-317-01	Replacement Bulb	1
	HSTP-14-20-100	Truss Head Screw $\frac{1}{4}$ - 20 x 1	2
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	2
35	50-359	Glow Plug Warning Light	1
36	13-488	Key Switch (B&S 692318)	1
	76-310	Key Set	1
37	34-021	Foot Pedal Rod	2

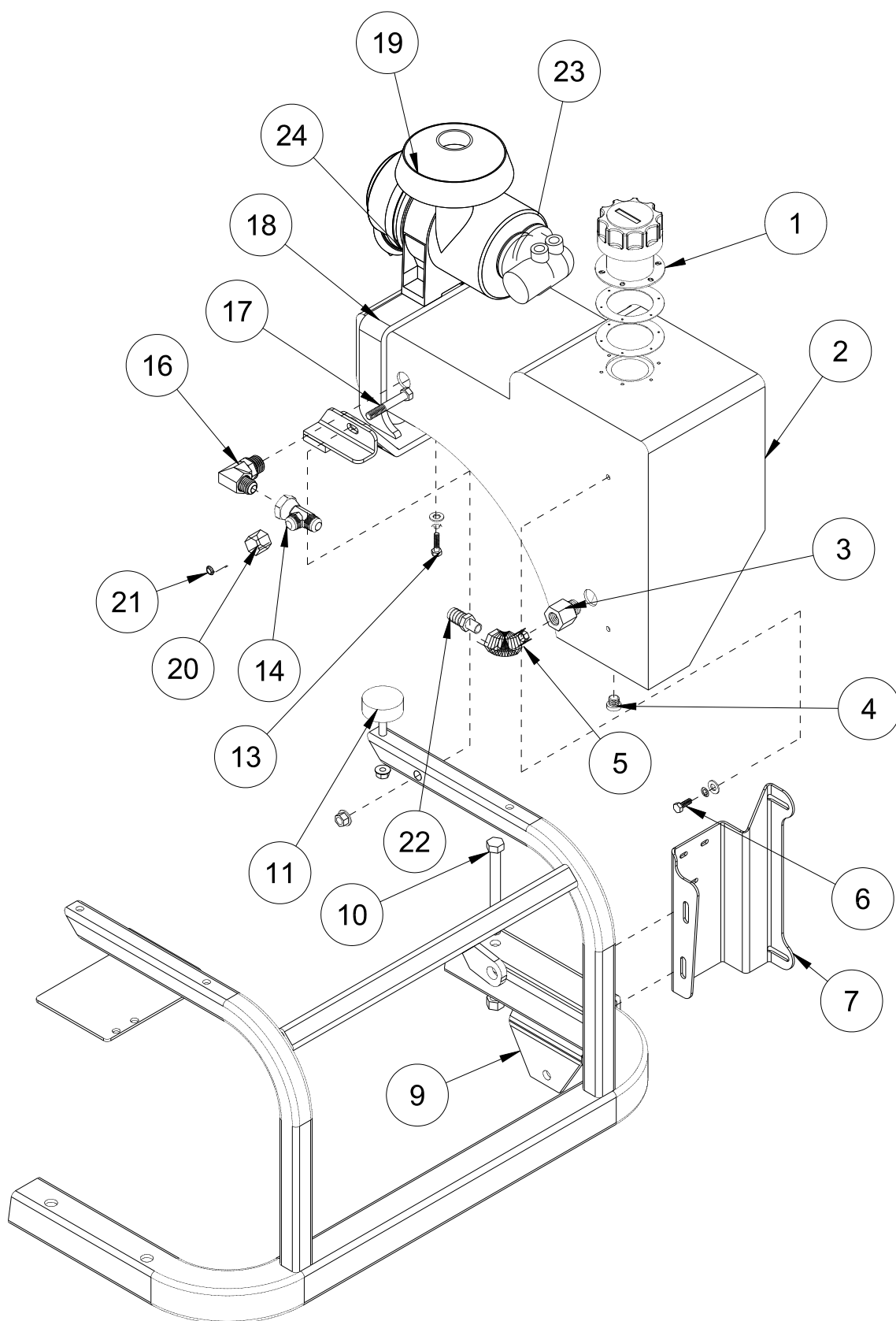
FUEL TANK DRAWING



FUEL TANK PARTSLIST

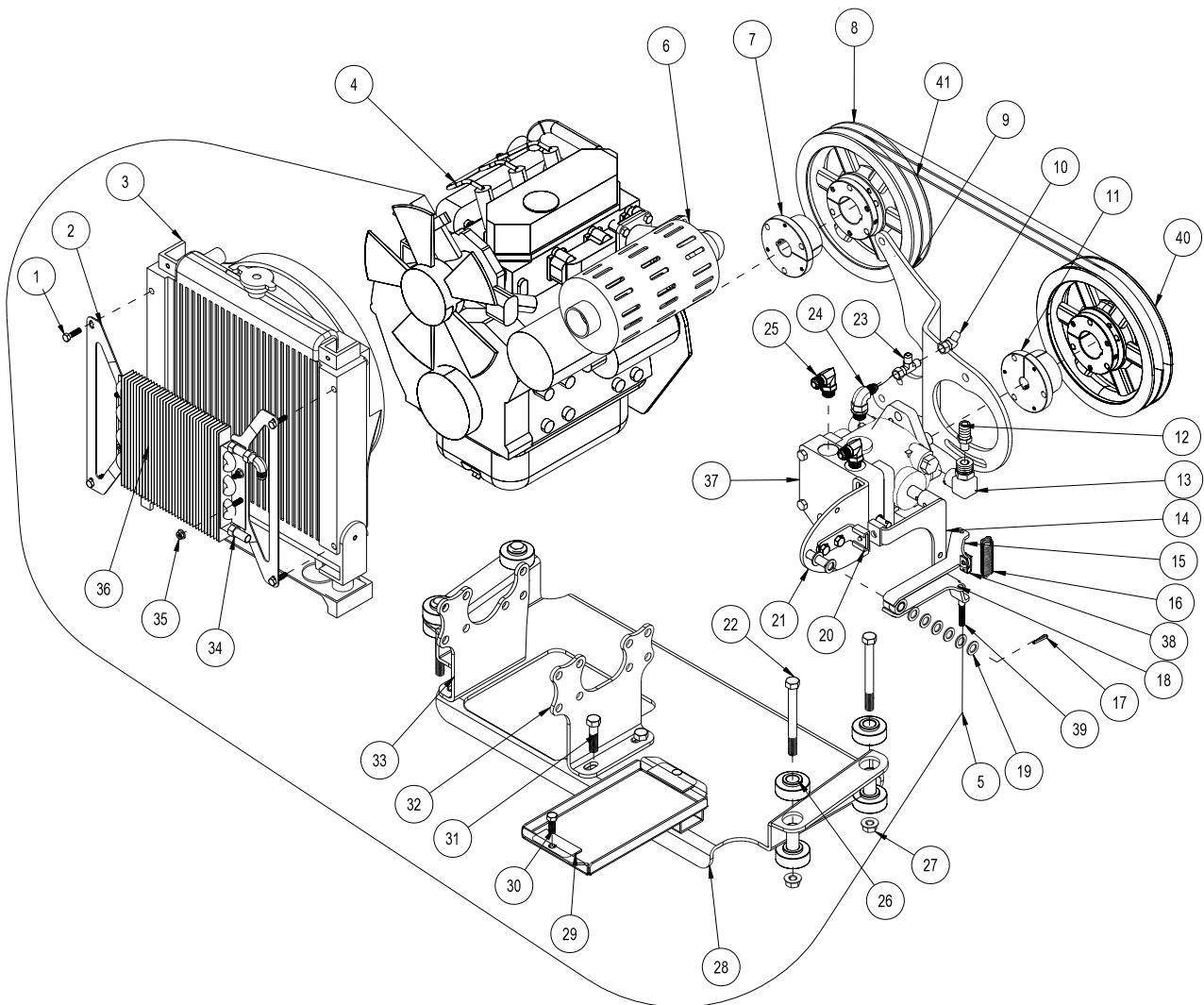
REF#	PART#	DESCRIPTION	QUANTITY
1	77-179	Cap	1
2	42-006	FuelTank	1
3	18-140	Elbow	1
4	23-006	Oil Filter	1
	23-031	Replacement Filter	1
5	18-249	Hose Barb	2
6	42-770	Right Tank Support	1
7	HB-14-20-100	Bolt $\frac{1}{4}$ - 20 x 1	2
	HW-14	Washer $\frac{1}{4}$	2
	HW-516	Washer $\frac{5}{16}$	2
	HWL-14	Lock Washer $\frac{1}{4}$	2
8	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HWL-14	Lockwasher $\frac{1}{4}$	2
	HW-14	Washer $\frac{1}{4}$	2
9	26-055	Fuel Shut Off (1 comes with 42-006)	2
	8940-14	Fuel Hose 14"	1
	8940-48	Fuel Hose 48"	1
	18-186	Hose Clamp	4
10	26-054	Rubber Grommet (1 comes with 42-006)	2
	8800-62	Fuel Hose	1
	18-186	Hose Clamp	2
11	HB-12-13-500	Bolt $\frac{1}{2}$ - 13 x 5	2
	HNFL-12-13	Flange Whiz Lock Nut $\frac{1}{2}$ - 13	2
12	42-015	Attachment Mount	1
13	50-081	Rubber Bumper	1
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	1
14	42-773	Gas Tank Bracket	1
15	HB-516-18-225	Bolt $\frac{5}{16}$ - 18 x $2\frac{1}{4}$	2
	HNFL-516-18	Flange Whiz Lock Nut $\frac{5}{16}$ - 18	2
16	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	2
	HW-14	Washer $\frac{1}{4}$	2
	HWL-14	Lock Washer $\frac{1}{4}$	2
17	HB-38-16-250	Bolt $\frac{3}{8}$ - 16 x $2\frac{1}{2}$	1
	HW-38	Washer $\frac{3}{8}$	2
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	1
18	43-081-03	Fuel Filter	1
	43-081-04	Element	
19	43-064	Filter Bracket	1
20	43-129	Oil Filter Bracket	1
	HB-516-18-100	Bolt $\frac{5}{16}$ - 18 x 1	2
	HNFL-516-18	Flange Nut $\frac{5}{16}$ - 18	2

OIL TANK DRAWING

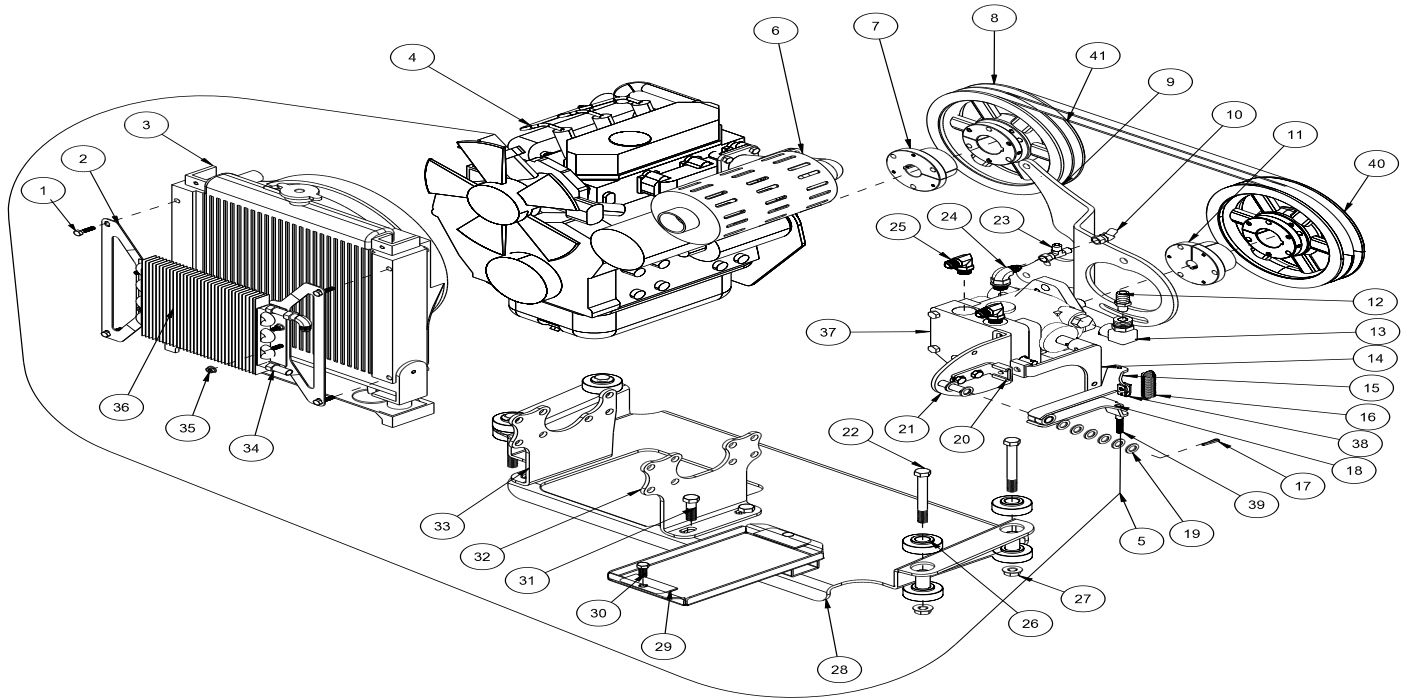


OIL TANK PARTSLIST

REF#	PART#	DESCRIPTION	QUANTITY
1	13-747	Filler Breather	1
	13-586-03	Neck	1
	HSM-8-32-050	Machine Screw #8 - 32 x 1/2	6
	HWS-8	Star Washer #8	6
2	42-005	Oil Tank	1
3	18-240	Adapter	1
4	23-126	#6 Plug	1
5	18-009	Elbow	1
6	HB-14-20-075	Bolt 1/4 - 20 x 3/4	2
	HW-14	Washer 1/4	2
	HWL-14	Lock Washer 1/4	2
7	42-774	Oil Tank Bracket	1
	HB-516-18-225	Bolt 5/16 - 18 x 2 1/4	2
	HNFL-516-18	Flange Whiz Lock Nut 5/16 - 18	2
9	42-015	Attachment Mount	1
10	HB-12-13-500	Bolt 1/2 - 13 x 5	2
	HNFL-12-13	Flange Whiz Lock Nut 1/2 - 13	2
11	50-081	Rubber Bumper	1
	HNFL-38-16	Flange Whiz Lock Nut 3/8 - 16	1
13	HB-38-16-150	Bolt 3/8 - 16 x 1 1/2	1
	HW-38	Washer 3/8	1
	HNFL-38-16	Flange Whiz Lock Nut 3/8 - 16	1
14	18-337	Tee	1
16	23-189	90° Elbow	1
17	HB-38-16-250	Bolt 3/8 - 16 x 2 1/2	1
	HW-38	Washer 3/8	1
	HNFL-38-16	Flange Whiz Lock Nut 3/8 - 16	1
18	43-067	Left Tank Bracket	1
19	42-076	Remote Air Cleaner	1
20	34-128	Adapter	1
21	23-120	Tube Nut	1
22	18-133	Barb Fitting	1



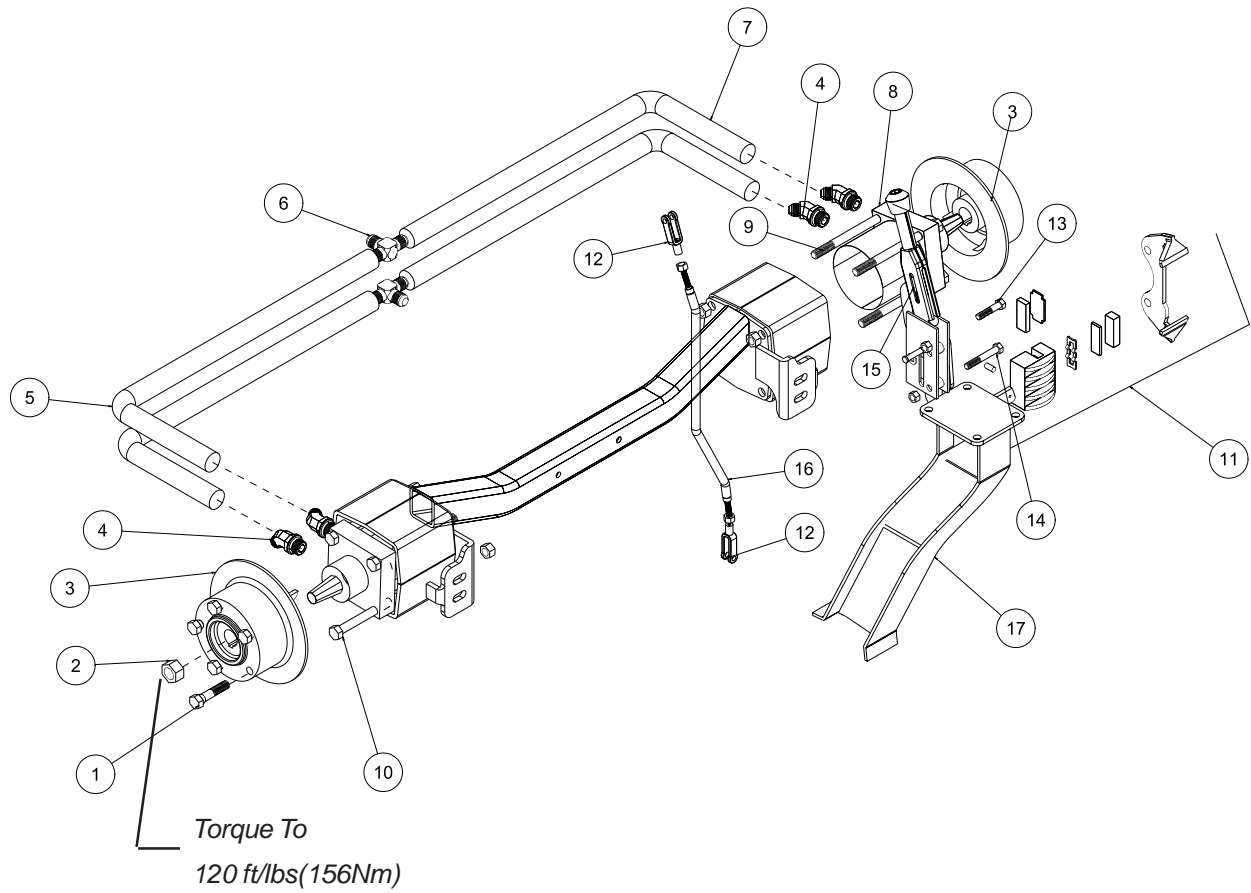
REF #	PART #	DESCRIPTION	QUANTITY
1	HB-14-20-100	Bolts $\frac{1}{4}$ - 20 x 1	4
2	43-066	Oil Cooler Mount	2
3		Radiator (comes with engine)	1
	HBM-8-1.25-20	Metric Hex Bolt M8-1.25 x 20	8
	HWLM-8	Metric Washer M8	8
	HBM-10-1.25-35	Metric Hex Bolt M10 - 1.25 x 35	2
4	43-081	Engine 19HP 850D	1
	21-161	Wire Block	3
5	17-151	Cable	1
	17-152	Conduit	1
	17-156	Conduit Button	1
6	43-122	Muffler	1
7	43-084	Hub $1\frac{1}{8}$ "	1
	HKSQ-14-100	Square Key $\frac{1}{4}$ x 1	1
8	43-159	Pulley	1
9	43-065	Pump Mount	1
	HBM-8-1.25-20	Metric Hex Bolt M8-1.25 x 20	4
	HWLM-8	Metric Washer M8	4
10	18-202	Elbow 90°	1
11	42-246	Hub	1
12	18-133	Elbow	1
13	23-130	Elbow	1
14	43-068	Swash Arm	1
	HRP-14-100	Roll Pin $\frac{1}{4}$ x 1	1
15	42-311	Top Centering Arm	1
16	11-050	Spring	1
17	HP-18-100	Cotter Pin $\frac{1}{8}$ x 1	1
18	42-312	Bottom Centering Arm	1
19	HMB-12-14	Machine Bushing $\frac{1}{2}$ x 14GA	7
20	42-247	Creep Arm	1
	HB-38-16-100	Bolt $\frac{3}{8}$ - 16 x 1	2
	HNFL-38-16	Flange Whiz Lock Nut $\frac{3}{8}$ - 16	2
21	17-223	Filter Mount	1
22	HB-12-13-500	Bolt $\frac{1}{2}$ - 13 x 5	4
23	18-190	Tee	1
24	18-185	Elbow	1
25	18-174	Elbow	2
26	60-107	Rubber Insulator	8
	60-168	Spacer	4
27	HNFL-12-13	Flange Whiz Lock Nut $\frac{1}{2}$ - 13	4
28	43-061	Engine Plate	1
29	42-027	Battery Holddown	2
30	HB-38-16-125	Bolt $\frac{3}{8}$ - 16 x $1\frac{1}{4}$	2
	HNFL-38-16	Flange Lock Nut $\frac{3}{8}$ - 16	2
31	HB-12-13-150	Bolt $\frac{1}{2}$ - 13 x $1\frac{1}{2}$	4
	HNFL-12-13	Flange Whiz Lock Nut $\frac{1}{2}$ - 13	4
32	43-062	Right Engine Mount	1
33	43-063	Left Engine Mount	1
34	18-202	Elbow	1
35	HB-14-20-075	Bolt $\frac{1}{4}$ - 20 x $\frac{3}{4}$	4
	HNFL-14-20	Flange Whiz Lock Nut $\frac{1}{4}$ - 20	4



ENGINE PARTS LIST

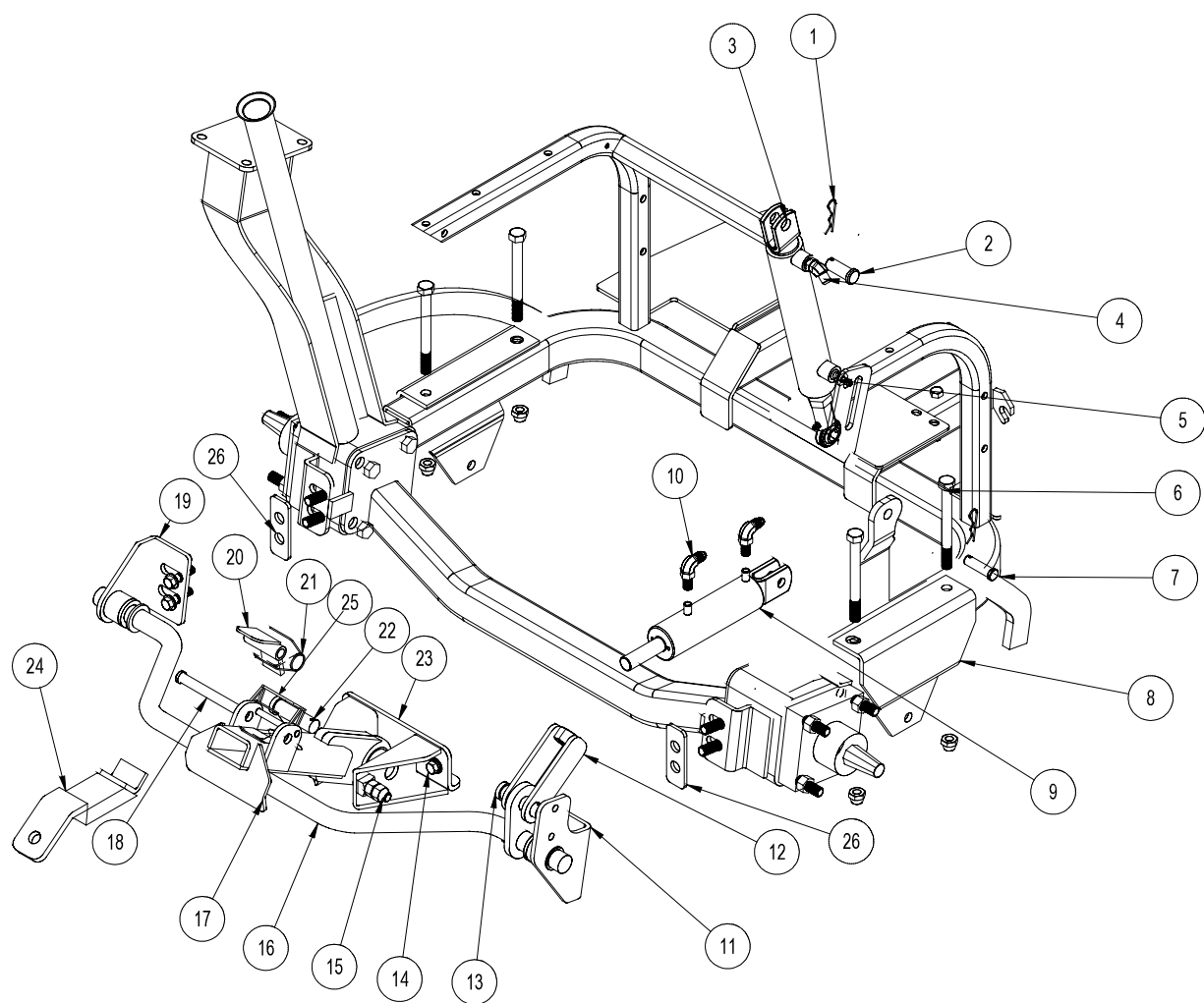
REF #	PART #	DESCRIPTION	QUANTITY
36	34-105	Oil Cooler	1
37	42-797	Variable Pump	1
	18-188	45° Elbow	1
	23-126	Pipe Plug	1
38	17-153	Clevis	1
39	17-155	Retainer	1
40	43-160	Pulley	1
41	43-161	Belt	2

REAR AXLE DRAWING



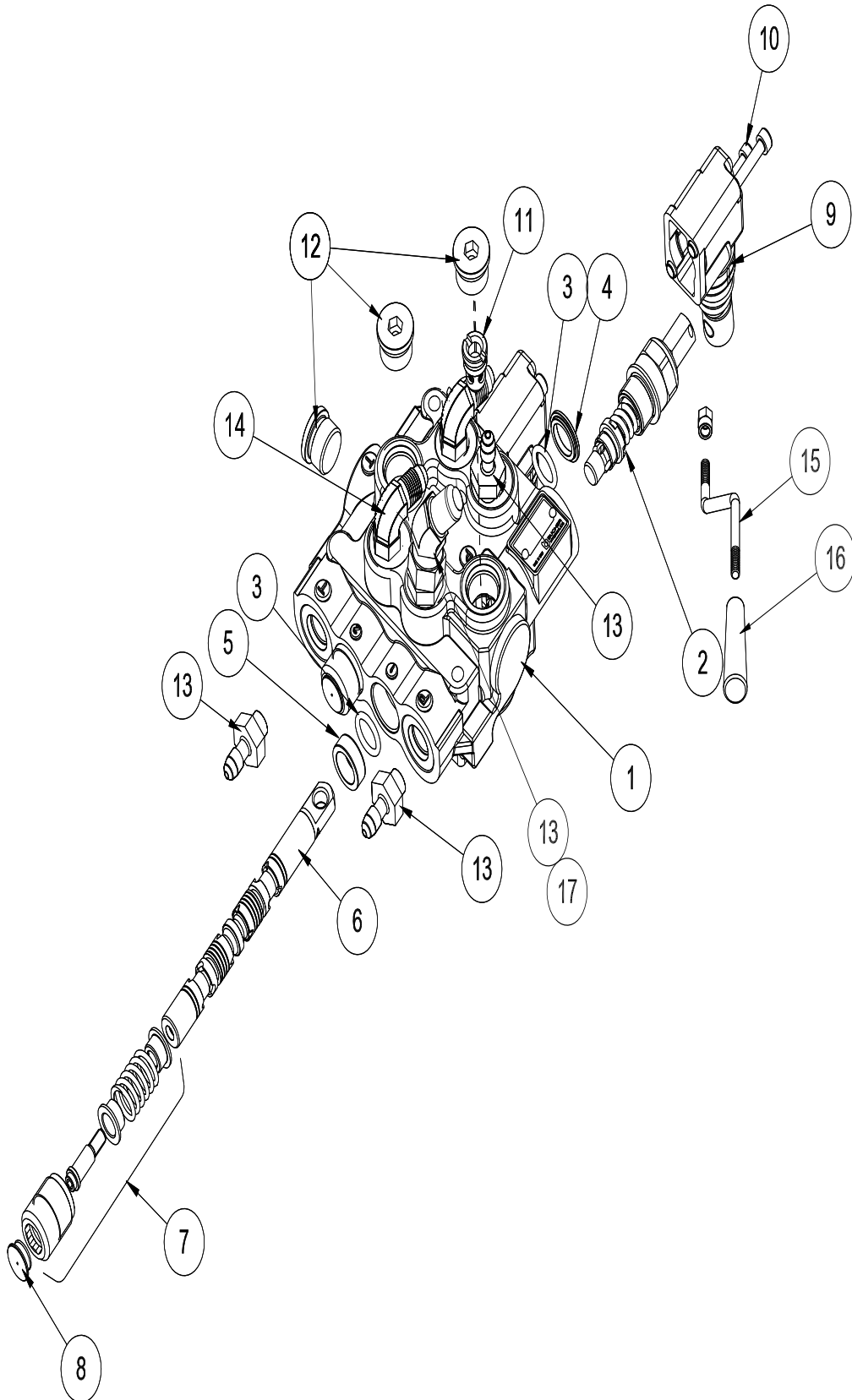
REAR AXLE PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1	60-268	Lug Bolt	10
2	14-265	Nut 1-20	2
3	76-239	Brake Disc	2
4	18-383	45° Adapters	4
5	43-095	Hydraulic Tube	2
6	18-170	Tee	2
7	43-094	Hydraulic Tube	2
8	43-117	Wheel Motor	2
	HWK-14-100	Woodruff Key 1/4 x 1	2
9	HB-12-13-750	Bolt 1/2 - 13 x 7 1/2	2
	HNTL-12-13	Lock Nut 1/2 - 13	2
10	HB-12-13-700	Bolt 1/2 - 13 x 7	6
	HNTL-12-13	Lock Nut 1/2 - 13	6
11	42-496	Right Caliper CW	1
12	11-100	Linkage Yoke	2
	HCP-516-100	Clevis Pin 5/16 x 1	2
	HP-18-100	Cotter Pin 1/8 x 1	2
13	HB-516-18-175	Bolt 5/16 - 18 x 1 3/4	1
	HNFL-516-18	Flange Whiz Lock Nut 5/16 - 18	1
14	HB-516-18-250	Bolt 5/16 - 18 x 2 1/2	1
	HNFL-516-18	Flange Whiz Lock Nut 5/16 - 18	1
15	60-106	Brake Lever	1
16	42-804	Brake Rod	1
	HN-516-24	Nut 5/16 - 24	2
17	42-596	Main Frame	1
	34-101-01	Brake Pads (only)	
	34-101-02	Brake Pad Kit (pads with steel backing plate)	



REF#	PART#	DESCRIPTION	QUANTITY
1	HHP-18	Bridge Pin $\frac{1}{8}$	3
2	HCP-58-175	Clevis Pin $\frac{5}{8}$ - $1\frac{3}{4}$	1
3	10-135	Hydraulic Cylinder	1
	HNJ-58-18	Jam Nut $\frac{5}{8}$ - 18	1
	8-154	Rod End	1
	HG-14-28-180	Grease Fitting $\frac{1}{4}$ - 28 x 180°	1
4	18-214	45° Elbow	1
5	18-169	$\frac{3}{8}$ Adapter	1
6	HB-12-13-500	Bolt $\frac{1}{2}$ - 13 x 5	4
	HNFL-12-13	Flange Lock Nut $\frac{1}{2}$ - 13	4
7	HCP-12-300	Clevis Pin $\frac{1}{2}$ - 3	1
	HP-18-100	Cotter Pin $\frac{1}{8}$ x 1	1
8	42-015	Attachment Mount	2
9	43-150	Hydraulic Cylinder	1
10	18-168	90° Elbow	2
11	34-220	Pivot Bracket - RH	1
12	43-138	Lift Linkage	1
13	HCP-34-200	Clevis Pin $\frac{3}{4}$ x 2	1
14	HB-38-24-100	Bolt $\frac{3}{8}$ - 24 x1	2
15	HSSHB-12-13-200	Button Socket Head Cap Screw	2
	HN-12-13	Nut $\frac{1}{2}$ -13	2
	HNCL-12-13	Center Lock Nut $\frac{1}{2}$ - 13	2
16	43-137	Lift Bar	1
	15-019	Rubber Grip	2
17	43-141	Lift Arm	1
18	HCP-12-450	Clevis Pin $\frac{1}{2}$ - $4\frac{1}{2}$	1
19	34-219	Pivot Bracket - LH	1
20	43-139	Lock	1
21	43-136	Torsion Spring	1
22	HCP-78-350	Clevis Pin $\frac{7}{8}$ x $3\frac{1}{2}$	1
23	43-140	Frame Mount	1
24	43-143	Towing Hitch	1
25	25-382	Lock Pin	1

13-729 2-BANK HYDRAULIC VALVE DRAWING

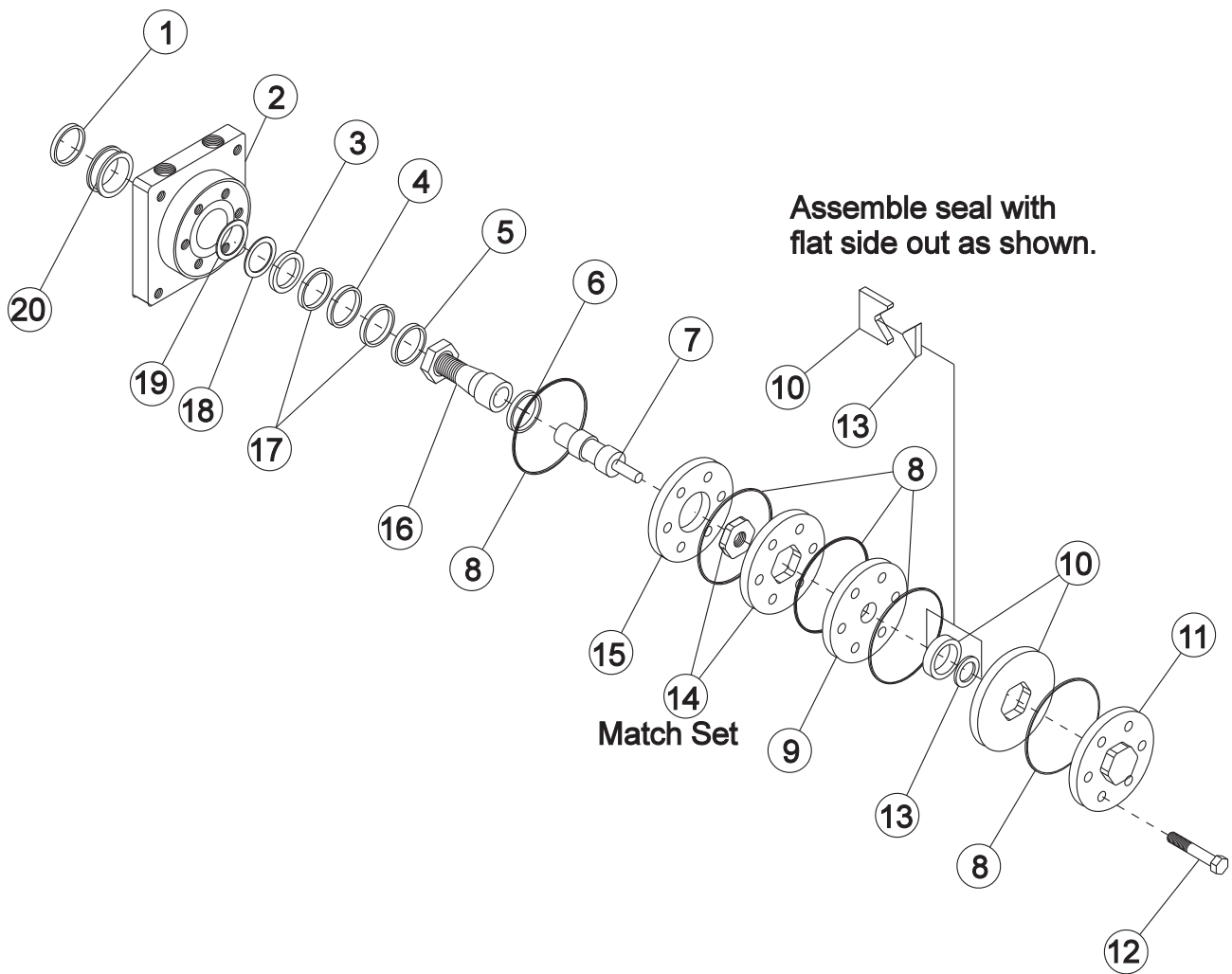


13-729 2-BANK HYDRAULIC VALVE PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1*	78-415-01	Body (complete with spacer and check valve)	1
2*	78-415-02	Spool HDM10	1
3*	78-415-03	O-Ring Seal	4
4*	78-415-04	Flanged Washer HDM10	2
5*	78-415-05	Spacer	2
6*	78-415-06	A Type Spool HDS11	2
7*	78-415-11	Positioner	2
8*	78-415-08	Plug	2
9*	78-415-09	Lever Group HDS11	2
10*	78-415-10	Metric Socket Screw M5 x .8 x 45	4
11*	78-415-12	Check Valve Assembly HDM12	1
12*	78-415-13	3/4 - 16 SAE 8 Screw Plug	3
13	18-169	Adapter 1/4 - 3/8 SAE	4
14	18-168	Elbow 3/8 Straight Thread	2
15	42-778	Bent Handle	2
16	8-552-01	Tapered Knob	2
17	18-214	Elbow 45°	1

* 13-729 2 – Bank Hydraulic Valve (includes all * items)

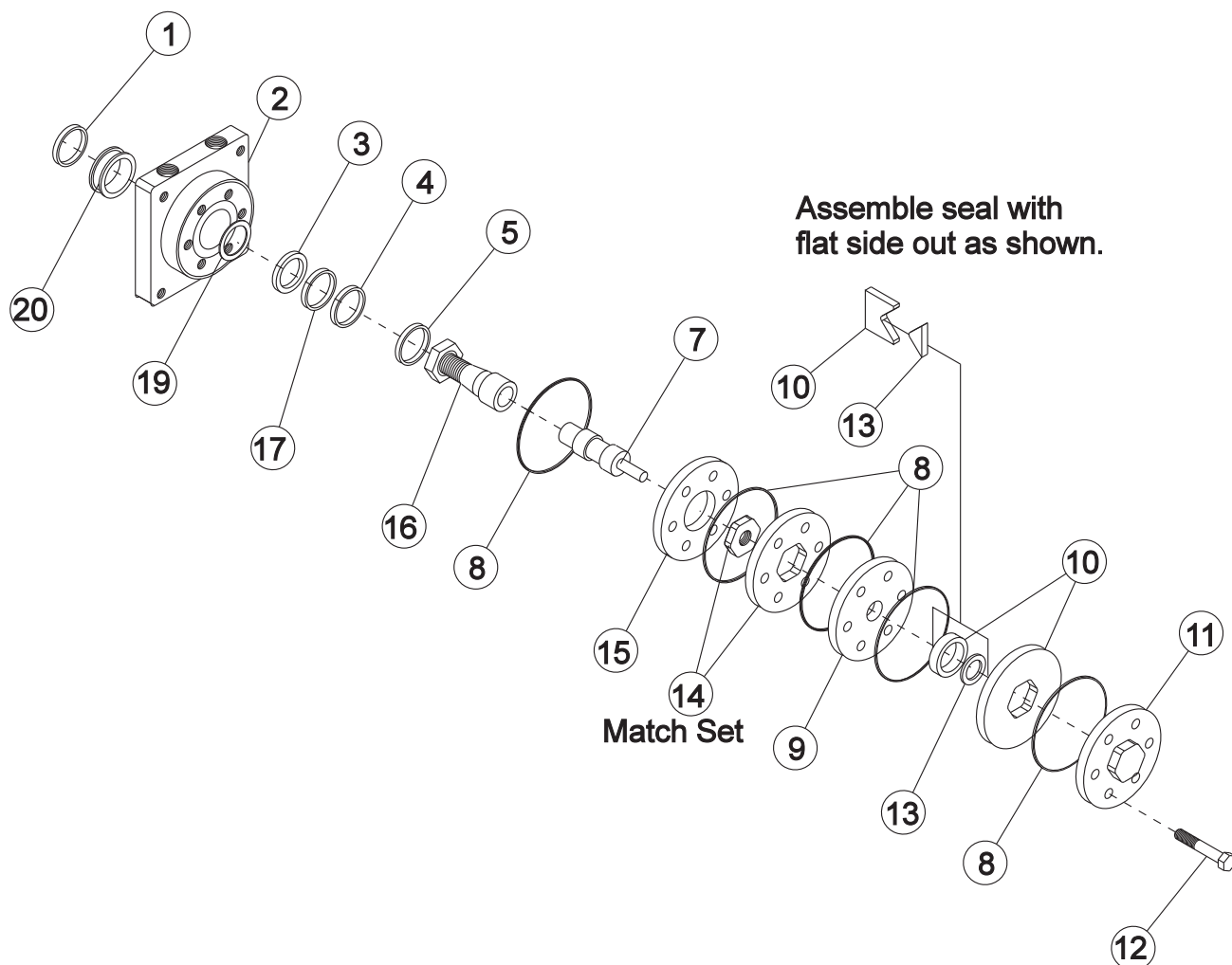
43-116 FRONT WHEEL MOTOR DRAWING



43-116 FRONT WHEEL MOTOR PARTS LIST

REF#	PART#	DESCRIPTION	QUANTITY
1*		Water & Dirt Seal	1
2†	13-615-05	Service Housing Assembly	1
3*		Inner Seal	1
4†	13-032-27	Thrust Bearing	1
5†	13-032-28	Inner Bearing	1
6	13-032-29	Thrust Bearing	1
7	43-116-01	Drive Link	1
8*		Ring Seal	5
9	13-032-31	Manifold	1
10	13-032-32	Commutator Assembly (matched set)	1
11	13-032-33	End Cover	1
12	43-116-02	Bolt	7
13*		Commutator Seal (matches with #10)	1
14	43-116-03	Rotor Set (matched set)	1
15	13-032-35	Plate Wear	1
16	13-615-04	Coupling Shaft	1
	HWK-516-100	Woodruff Key $\frac{5}{16} \times 1$	1
	14-265	Nut 1 - 20	1
17†	13-032-37	Thrust Washer	2
18*		Backup Washer	1
19*		Backup Washer	1
20†	13-032-38	Outer Bearing	1
*	14-080	Seal Kit	1
†	Included in 13-615-05 Service Housing Assembly		

43-117 REAR WHEEL MOTOR DRAWING



43-117 REAR WHEEL MOTOR PARTS LIST

REF #	PART #	DESCRIPTION	QUANTITY
1*		Water & Dirt Seal	1
2†	13-615-05	Service Housing Assembly	1
3*		Inner Seal	1
4†	13-032-27	Thrust Bearing	1
5†	13-032-28	Inner Bearing	1
6	13-032-29	Thrust Bearing	1
7	76-321-02	Drive Link	1
8*		Ring Seal	5
9	13-032-31	Manifold	1
10	13-032-32	Commutator Assembly (matched set)	1
11	13-032-33	End Cover	1
12	76-321-01	Bolt	7
13*		Commutator Seal (matches with #10)	1
14	76-321-03	Rotor Set (matched set)	1
15	13-032-35	Plate Wear	1
16	13-615-04	Coupling Shaft	1
	HWK-516-100	Woodruff Key $\frac{5}{16} \times 1$	1
	14-265	Nut 1 - 20	1
17†	13-032-37	Thrust Washer	2
18*		Backup Washer	1
19*		Backup Washer	1
20†	13-032-38	Outer Bearing	1
*	14-080	Seal Kit	1
†	Included in 13-615-05 Service Housing Assembly		

DECAL LIST

This is a list of decals located on the Super Star. Part number, description and location will help in reordering decals.

13-556	Decal, Warning	1	Left Side Below Seat
25-371	Decal, Diesel	2	Nose Cone
16-088	Decal, Moving Parts Hot	1	Rear Seat Panel
17-128	Decal, Radiator Coolant	1	Radiator
25-277	Decal, Battery	1	Bottom Seat
25-286	Decal, Pinch Point	1	Bottom Seat Panel
25-298	Decal, Warning Hot	3	Seat Panel, Both Sides of Radiator
25-337	Decal, Speed Boss	1	Hang from Steering
25-373	Decal, Smithco Star	1	Steering Column
25-349	Decal, Foot Pedal	1	Right Side Nose Cone
25-352	Decal, By-Pass Valve	1	Hang Tag
25-354	Decal, Tire Pressure 5psi	2	Rear Wheels
25-372	Decal, Smithco	1	Rear Seat Panel
25-379	Decal, Fluid Filled Tire	1	Front Wheel
27-077	Decal, Smithco Round	1	Steering Cap
43-110	Decal, Super Star	2	Nose Cone
42-765	Decal, Lift Control	1	Right Body Top
43-069	Decal, Control Panel	1	Left of Seat

QUICK REFERENCE REPLACEMENT PARTS

REPLACEMENT FILTERS

23-031	Hydraulic Oil Filter	
15-165-01	Air Filter Element with Pre-Cleaner	Briggs and Stratton# 5050
42-076-03	Air Filter Element Fender Mounted	
50-403	Fuel Filter	
13-531	Engine Oil Filter	Briggs and Stratton #492932
43-081-01	Stub Shaft	Briggs and Stratton #835039
43-081-02	Oil filter	Briggs and Stratton #820314
43-081-03	Filter Assembly	Briggs and Stratton #825219
43-081-04	Filter Element	Briggs and Stratton #820311
43-081-05	Fan Belt	Briggs and Stratton #821075

SEAL KITS

42-797	Variable Pump	
14-098	Seal Kit	
43-117	Wheel Motor (Rear)	
14-080	Seal Kit	
43-116	Wheel Motor (Front)	
14-080	Seal Kit	
13-729	2-Bank Valve	
78-415-03	Seal Kit	
10-135	Hydraulic Cylinder (Attachment Lift Cylinder)	
14-267	Seal Kit	
43-150	Hydraulic Cylinder (for Rake Lift)	
43-150-01	Seal Kit	
75-714	Hydraulic Cylinder for Sand Plow Lift	
14-254	Seal Kit	

FLUIDS

Engine Oil	Refer to Engine Manual
Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil

OTHER PARTS

43-124	Turf Front Tire	
42-158	Spark Plugs	RC12YC (Gap 0.030 inch (0.76mm))
	Turf Rear Tire	

The Smithco Commercial Products Two-Year Limited Warranty

Smithco, Inc. (Smithco) warrants your 2007 or newer Smithco Commercial Product ("Product") purchased after January 1, 2007, to be free from defects in materials or workmanship for the period of time listed below. Where a warrantable condition exists, Smithco will repair the Product at no cost to you including diagnosis, labor (at the Smithco standard labor rate, subject to the Smithco flat rate schedule), and parts.

Warranty Duration is:

- (1) Two years, 1500 operational hours* from the date of delivery to the original purchaser or three years from the date of original manufacturer of the product, whichever occurs first. (*Products equipped with hour meter).
- (2) Products used in rental situations are covered for 90 days from date of delivery to original user/ renter.

Owner Responsibilities:

As the Product owner, you are responsible for required maintenance and adjustments stated in your Owner's Manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim. **You are particularly responsible to train all present and future operators of this product on the safe operation of this product at your location.**

Instructions for Obtaining Warranty Service:

You are responsible for notifying the Authorized Smithco Products Distributor from whom you purchased the Product as soon as you believe a warrantable condition exists and not later than 30 days from discovery of the condition.

If you need help locating an Authorized Smithco Distributor, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Smithco Product Support Department
200 W Poplar PO Box 487
Cameron, Wisconsin 54822

Telephone: 1-800-891-9435

E-Mail: ProductSupport@smithco.com

Maintenance Parts:

Parts scheduled for replacement as required maintenance ("Maintenance Parts"), are warranted for the period of time up to the scheduled replacement time for that part.

Items/Conditions Not Covered:



Not all product failures or malfunctions that occur during the warranty period are defects in materials or workman-ship. The items/conditions listed below are not covered by this warranty:



Product failures which result from the use of non-Smithco replacement parts, or from installation and use of add-on, modified, or unapproved accessories are not covered.



Product failures which result from failure to perform required maintenance and/or adjustments are not covered.



Product failures that result from operating the Product in an abusive, negligent or reckless manner are not covered.



This warranty does not apply to parts subject to consumption through use, unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to: blades, tines, teeth, scarifiers, rakes, plates, wear plates, castor wheels, tires, batteries, filters, belts, nozzles, etc.



This warranty does not apply to failures caused by out-side influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.



This warranty does not apply to normal “wear and tear” items. Normal “Wear and Tear” includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.



Smithco may require the return of failed parts or components in order to determine the validity of any warranty claim.



Smithco will not be obligated to replace components of other manufacturers if inspection by the original component manufacturer indicates that failure was due to normal wear and tear, expected consumption through use or improper care or service.

Other Legal Disclaimers:

The above remedy for product defects through repair or replacement by an authorized Smithco distributor or dealer is the purchaser's sole remedy for any defect. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

THERE ARE NO OTHER EXPRESS WARRANTIES OTHER THAN THOSE SET FORTH ABOVE. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE ARE LIMITED TO THE DURATION OF THE LIMITED WARRANTIES CONTAINED HEREIN.

Some states may not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

THE SMITHCO COMPANY IS NOT LIABLE FOR INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE USE OF THE PRODUCT, INCLUDING ANY COST OR EXPENSE OF PROVIDING A SUBSTITUTE PRODUCT OR SERVICE DURING PERIODS OF MALFUNCTION OR NON-USE.

Some states may not allow the exclusion of indirect, incidental or consequential damages, so the above exclusion may not apply to you.

Smithco neither assumes, nor authorizes any person to assume for it, any other liability in connection with the sale or use of this product.

SMITHCO, INC.

Wayne, PA 19087

