



MANUFACTURING  
QUALITY PRODUCTS  
FOR 30 YEARS

# OPERATION & MAINTENANCE MANUAL



# LA5000 LIQUID APPLICATOR

1050 GALLON TANK W/ 27', 30', 35' OR 40' TOOLBAR

BAKERSFIELD, CA  
661.391.9081

COLUMBUS, NE  
402.564.4544

DOTHAN, AL  
334.673.0580

FARGO, ND  
701.280.2862

GREENWOOD, MS  
662.453.4524

HOPKINSVILLE, KY  
270.886.0296

MANKATO, MN  
507.388.6295

NEWTON, KS  
316.283.4444

OTHELLO, WA  
509.488.6631

TEMPE, AZ  
480.705.8047

SHOP ONLINE @  
[WWW.AGSPRAY.COM](http://WWW.AGSPRAY.COM)

# TABLE OF CONTENTS

---

<b>3</b>	<b>INTRODUCTION</b>
<b>3</b>	<b>PRE-OPERATION CHECKLIST</b>
<b>4</b>	<b>PLACING IN STORAGE</b>
<b>4</b>	<b>REMOVING FROM STORAGE</b>
<b>5</b>	<b>LIMITED WARRANTY</b>
<b>6-9</b>	<b>OPERATING INSTRUCTIONS</b>
<b>10</b>	<b>BREAK-IN</b>
<b>10</b>	<b>SERVICE AND MAINTENANCE</b>
<b>11</b>	<b>GREASING</b>
<b>12-31</b>	<b>PART BREAKDOWNS</b>

# INTRODUCTION

---

1. Read and understand the Operators Manual and all safety signs before using.
2. Place all controls in neutral, stop tractor engine, turn monitor off, set park brake, remove ignition key, wait for nozzles to stop spraying before servicing, adjusting, or repairing.
3. Before using it in a field, be familiar with all potential hazards: trees, rocks, ditches, gullies, etc. Plan the spraying route to avoid hazards. Remember you are driving a wide machine. **USE CAUTION WHEN CORNERING.**
4. Keep hands, feet, hair and clothing away from all moving and/or rotating parts.
5. Do not allow riders on the applicator or tractor during operation or transporting.
6. Clear the area of all bystanders, especially children, before starting or filling with water or chemical.
7. Stay away from wing pinch points when folding or extending wings. Keep others away.
8. Stay away from power lines when extending or folding wings. Electrocution can occur without direct contact.
13. In case of poisoning, get immediate medical attention.
15. Do not eat in the field when side dressing.
16. Before applying pressure to the hydraulic system, make sure all components are tight and that steel lines, hoses and couplings are in good condition.
17. Before applying pressure to fertilizer system make sure that all connections are tight and that all hoses and fittings are in good condition.
18. Review safety instructions annually.

## PRE-OPERATION CHECKLIST

---

Before operating the Applicator and each time thereafter, the following areas should be checked off:

1. Lubricate the machine per the schedule outlined in the "Maintenance Section".
2. Use only a tractor of adequate power and weight to operate the Applicator.
3. Ensure that the machine is properly attached to the tractor. Be sure that a mechanical retainer is installed through the drawbar pin and the safety chain is attached to the drawbar cage. Jack is in full up position.
4. Check the hydraulic system. Ensure that the hydraulic reservoir in the tractor is filled to the required specifications.
5. Inspect all hydraulic lines, hoses, fittings and couplers for tightness. Use a clean cloth to wipe any accumulated dirt from the couplers before connecting to the hydraulic system of the tractor.
6. Check the tires and ensure that they are inflated to the specified pressure.
7. Calibrate the Applicator if it is the start of the season or a new chemical is being used. Calibrate as specified in rate control manual.
8. Check the condition and routing of all chemical hoses and lines. Replace any that are damaged. Re-route those that are rubbing pinched or crimped.
9. Check the spray pattern of each nozzle. Remove and clean or replace any that have an unusual pattern.
10. Remove the steel mesh line filters and wash with clean water. Reinstall.
11. Check that all connections in the electrical system are connected and tight.
13. Before unfolding boom remove transport wing lock pins (Figure 4) and tower cylinder Transport stop (Figure 3) Reinstall lock pins and tower stop before parking sprayer.

# PLACING IN STORAGE

---

At the end of the spray season, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the beginning of the next season. Follow this procedure:

1. Thoroughly wash the machine using a hose or a pressure washer to remove all dirt, mud, debris or residue.
2. Thoroughly wash the inside of the tank.
3. In climates that encounter freezing temperatures during the storage period, the following preparation should be done:
  - a. Add 10 gallons (40 liters) of a potable RV antifreeze to the tank.
  - b. Run unit for 5 minutes in the spray cycle to circulate solution to all parts of the circuit.
  - c. While circulating the fluid, open and close all the valves in the system to flush all the water from the system.
  - e. Flush the solution out the booms.
  - f. Open all disconnects and drain hoses, pumps, filters, solenoids and tanks.

g. Remove nozzles from boom Disassemble and wash nozzle, Spring, diaphragm and housing. Store inside.

4. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any water residue from the washing.
5. Inspect all the hydraulic hoses, couplers and fittings. Tighten any loose fittings. Replace any hose that is badly cut, nicked, abraded or is separating from the crimped end of a fitting.
6. Inspect all the spray hoses and fittings. Tighten any loose fittings. Replace any hose That is badly cut, nicked, abraded or is separating from a fitting.
7. Touch up all paint nicks and scratches to prevent rusting.

## **\*\*STORAGE SAFETY\*\***

1. Store unit in an area away from human activity.
2. Do not permit children to play on or around the stored applicator.
3. Unhook and store in the transport configuration.

# REMOVING FROM STORAGE

---

When removing from storage and preparing to use, follow this procedure.

1. Clear the area of bystanders, especially small children, and remove foreign objects from the machine and the working area.
2. Check
  - a. Tank for cracks
  - b. Tank hold down hardware
  - c. All hardware. Tighten as required.
  - d. Tire pressure.
  - e. All sprayer and hydraulic lines, fittings and connections. Tighten as required.

3. Lubricate all grease fittings.
4. Replace any defective parts.
5. Fill the tank with 20 gallons (75 liters) of clean water and run for 5 minutes. Open and close all valves several times. Flush water through the booms.
6. Repeat step 5.
7. Calibrate the pump, nozzles and sprayer before using.
8. Go through the pre-operation checklist before using.

# LIMITED WARRANTY

Ag Spray Equipment warrants to the buyer that the new machinery is free from defects in material and workmanship.

This warranty is only effective as to any new machinery which has not been altered, changed, repaired or treated since its delivery to the buyer, other than by Ag Spray Equipment or its authorized dealers or employees, and does not apply to accessories, attachments, tools or parts, sold or operated with the new machinery, if they have not been manufactured by Ag Spray Equipment.

Ag Spray Equipment shall only be liable for defects in the materials or workmanship attributable to faulty material or bad workmanship that can be proved by the buyer, and specifically excludes liability for repairs arising as a result of normal wear and tear of the new machinery or in any other manner whatsoever, and without limiting the generality of the foregoing, excludes application or installation of parts not completed in accordance with Ag Spray Equipment operator's manual, specifications or printed instructions.

Written notice shall be given by registered mail, to Ag Spray Equipment within seven (7) days after the defect shall have become apparent or the repairs shall have become necessary, addressed as follows: Ag Spray Equipment, 5834 East 23rd Street, Columbus, NE 68601.

This warranty shall expire 2 years after the date of delivery of the new machinery.

If these conditions are fulfilled, Ag Spray Equipment shall at its own cost and at its own option either repair or replace any defective parts provided that the buyer shall be responsible for all expenses incurred as a result of repairs, labor, parts, transportation or any other work, unless Ag Spray Equipment has authorized such expenses in advance.

The warranty shall not extend to any repairs, changes, alterations, or replacements made to the new equipment other than by Ag Spray Equipment or its authorized dealers or employees.

This warranty extends only to the original owner of the new equipment.

Rubber parts are not warranted. (including tires, hoses, grommets)

This warranty is limited to the terms stated herein and is in lieu of any other warranties whether express or implied, and without limiting the generality of the foregoing, excluded all warranties, express or implied or conditions whether statutory or otherwise as to quality and fitness for any purpose of the new equipment. Ag Spray Equipment disclaims all liability for incidental or consequential damages.

This sprayer is subject to design changes and Ag Spray Equipment shall not be required to retro-fit or exchange items on previously sold units except at its own option.

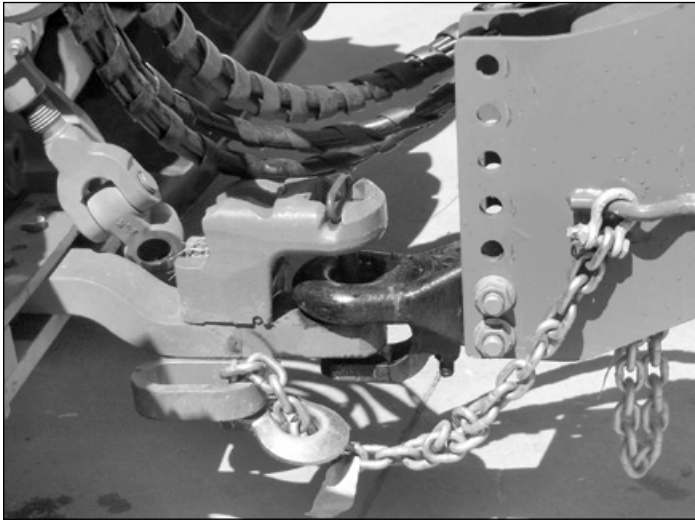


**MANUFACTURING  
QUALITY PRODUCTS  
FOR 30 YEARS**

# OPERATING INSTRUCTIONS

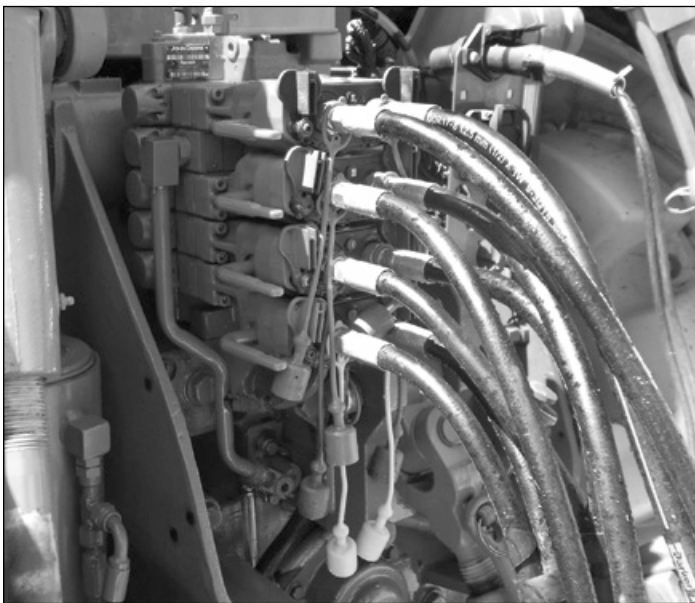
1. Ensure applicator is connected securely to tractor draw bar with clevis pin and safety chain (Figure 1).

FIG. 1



2. Connect applicator hydraulic hoses to the tractor remote couplers. The blue hoses are for the main bar height control. The green hoses are for the outside wing fold. The yellow hoses are for main wing fold on 35' through 40' bars. The red hoses are for the hydraulic pump (Figure 2).

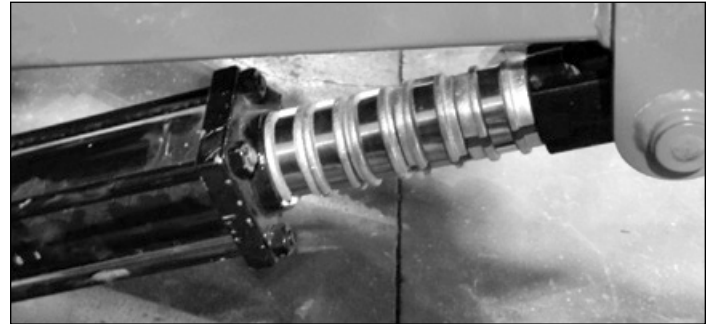
FIG. 2



3. Connect wiring harness if using hydraulic pump with rate control.
4. Grease Applicator (Refer to Maintenance).
5. Before road travel, install all locking collars on toolbar cylinders and safety pins on wings.

6. Remove locking collars as needed to maintain a depth of 4 to 5 inches. Constant down pressure on main lift is not recommended (weight of toolbar will keep unit in the ground). Leave hydraulic selector in neutral for field operation (Figure 3).

FIG. 3



7. Remove safety pins on wing cylinders. Wing cylinders remote will run in constant while down (Figure 4).

FIG. 4



The Applicator is equipped with adjustable down pressure relief valve on wing cylinders. The valve is preset at 800 PSI. This may be adjusted as needed. The relief valve is located on drivers side of linkage arm mount, and requires an allen wrench to adjust (clockwise to increase pressure and counterclockwise to decrease pressure. Figure 5).

FIG. 5



# OPERATING INSTRUCTIONS



8. After unfolding main wing, engage hydraulic lever in “constant pressure.” This is necessary to allow wings to maintain constant depth and follow uneven terrain, as well as the ability to “gullwing” (Lift both wings evenly when turning).

9. **Field Operation:** When you come to the end of the field.

1. Lift main section
2. Pull back on main wing lever long enough to lift both wings slightly (“gullwing”).
3. After turning, lower main section and wing section and return wing hydraulics to constant pressure.
4. Main section must be lifted to maximum height to hold gullwing.

10. Check and clean screens as needed.

11. Pump Settings

### Optional Ground Drive Pump

11a - Remove transport pin

11b - Use John Blue pump setting slide chart. Loaded radius is 9.75 and sprocket ratio is 32 drive and 18 driven.

11c - Set pump to recommended setting.

### Optional Hydraulic Drive Pump

- a. Hydraulic pump hoses supplied on the applicator include (1) 1/2” line and (1) 3/4” line. The 1/2” hose is the hydraulic supply (in/pressure) and the 3/4” hose is the return (out/non-pressure).

**NOTE: It is recommended for optimal pump performance that the 3/4” return line connect directly to the tractor hydraulic reservoir (not tractor SCV port). Doing so eliminates possible back pressure restriction on the 3/4” return line. Excessive back pressure restriction can cause hydraulic orbital motor damage/failure.**

- b. Proper hydraulic pump disengagement. When shutting off the pump, move the selector to the FLOAT position to allow the centrifugal pump to come to a gradual stop. Standard spool valves, which are found on all tractor hydraulic systems, can cause potentially damaging high peak pressures in the hydraulic system when closed, because of abrupt shutoff of oil flow in both the supply and return lines.

- c. Close and lock down the bypass adjusting screw in the hydraulic motor (if applicable).

Switch rate controller to manual and press the “+” button on TeeJet or “Increase” button on Raven, hold for 8 seconds. Then press the “-” button on TeeJet or “Decrease” button on Raven for 4 seconds.

Set the tractor hydraulic flow control valve for minimum hydraulic oil flow to the remote outlet (Tortoise position).

Start the tractor and allow the hydraulic oil to circulate for approximately 10 to 15 minutes or until adequately warmed.

Prime the centrifugal pump with all valves open.

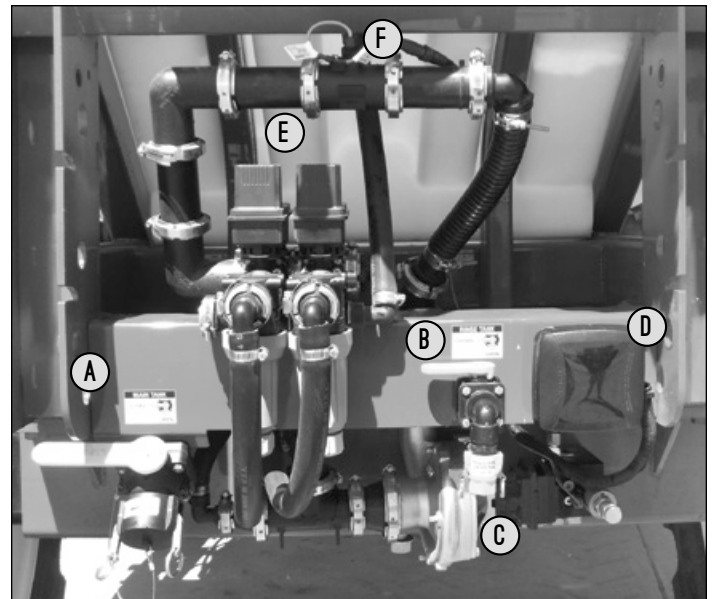
Open the sprayer PWM (pulse width modulation) valve on rate controller and the boom shut-off valves.

Slowly adjust the tractor hydraulic flow control valve until the desired boom pressure is attained.

**NOTE: See manufacture pump operators manual for further setup and maintenance.**

**NOTE: See specific rate controller manual for further setup and maintenance.**

FIG. 6



12. Plumbing (See Figure 6)

- a. Main Tank Fill Valve (2” Quick Fill)
- b. Rinse Tank Fill Valve (Garden Hose Fitting)
- c. PWM Control Pump (9306C-HM1C-BU-002)
- d. Electrical Junction Box
- e. Section Control Valves (450BEC-FB Series)
- f. Flow Meter (RFM60P)

# 440/450 RAVEN CONTROLLER WITH PWM SETUP

---

1. Install Raven 440 or 450 control console and hook up to sprayer (see instructions inside controller box).
2. Turn on control console.  
**When making selections/entering numbers, always be sure to press enter to save your settings.**
3. Make the following selections when prompted:
  - Units US (Enter)
  - Speed sensor 2 "SP2" (Enter)
  - Valve type C-P "Closed PWM" (Enter)
4. Select Boom Cal "Raven 440, 1-3", "Raven 450, 1-5"
  - Enter number of inches covered for each section (not full width of boom).  
To find the number of inches covered, multiply the number of nozzles per section and the number of inches between nozzles. (Ex. Section one; 12 nozzles x 20 inch between nozzles =240 inches)
5. Select Speed Cal
  - Enter 783 (This is the cal number for a Garmin GPS Sensor).
6. Select Meter Cal-Enter the meter cal number which is printed on the tag for on your Flow Meter. (ex. 720)
7. Select Valve Cal
  - Enter 43 (This is only for use with the PWM controlled hydraulic pump).
8. Select Rate 1
  - Enter the number of gallons/acre you want to spray in Rate 1. (ex. 10.0)
9. Select Rate 2-Enter the number of gallons/acre you want to spray in Rate 2. (ex. 20.0)
10. Select DATA MENU
  - Scroll to PWM Frequency and enter 110.
11. Hold SELF TEST
  - This will scroll through all settings to make sure everything is entered.
  - If all cal numbers are entered, it will stop scrolling after a few seconds. (move to step 12.)
  - If any cal numbers have not yet been entered, it will keep scrolling. (If so, you will need to go back through your cal numbers and make sure they are all entered correctly.)
12. Turn the Flow Control to MAN for manual control, turn the Booms all to the off position and turn the master on.
13. Hold INC to build pressure. This will allow you to check any leaks and use your inductor tank (if applicable) while sitting. BE AWARE NOT TO OVER PRESSURIZE SYSTEM
14. TO SPRAY
  - Turn the Flow Control to Rate 1 or Rate 2 (preference).
  - The speed you need to travel is dependent on the rate at which you are spraying.



# 2630 JD RATE CONTROLLER WITH PWM SETUP

---

1. After hooking up all wiring between tractor and sprayer, turn the system on.
2. Make sure all nozzles are open with desired tips installed.
3. From the Menu, select Rate Controller
4. Setup your Implement type
  - Select Pull Behind Sprayer, enter a name and tank size.
5. Select the Setup Tab (right)
6. Select the Implement Tab (top)
  - Enter your boom width
  - Adjust the width of each section
  - Be sure to enter any Fence Row(s) if applicable
7. Select the System Tab (top)
  - Section Valve type – 3 wire
  - Constant Flow – no
  - Control Valve Type – PWM
8. Select PWM Setup
  - Control Valve Calibration – 2743
  - Coil Frequency – 110
  - High Limit – 100
  - Low Limit – 1
9. Select Calibrate PWM
  - Turn Master ON and press Start
  - Decrease if necessary to make sure Low limit is at or around 1 gal/min. Set Low Limit
  - Increase if necessary to make sure High limit is at or just below max pump rotation or 80 psi. Set High Limit and turn off Master.
  - If you return to PWM Setup it may show new numbers in the High Limit and Low Limit.
10. Setup your Flowmeter
  - Flowmeter Calibration – Enter the Flowmeter cal. number located on your flow meter.
  - Flowmeter Units – 10 Gal.
11. Select the Rates Tab (top)
  - Set your rates at gal/acre.
12. Select the Diagnostics Tab (right)
  - From the dropdown menu under the Tests tab, select Nozzle Flow Check
  - Enter your desired speed into the Test Speed
  - Enter your desired Gal/Acre into the Rate
  - Turn the Master on and press Start to test  
(At this point you can see the system will adjust its self to run at the desired speed while you are not driving.)

# BREAK-IN

---

Although there are no operational restrictions on the applicator when used for the first time, it is recommended that the following mechanical items be checked:

- A. After operating for 1/2 hour
  1. Re-torque all the wheel bolts.
  2. Re-torque all other fasteners and hardware.
  3. Check that all electrical connections are tight.
  4. Check that no fertilizer or hydraulic lines are being pinched or crimped. Re-align as required.
  5. Check that all nozzles are working properly. Clean or replace as required.
  6. Lubricate all grease fittings.
- B. After 5 hours and 10 hours of operation
  1. Retorque all wheel bolts, fasteners and hardware.
  2. Check fertilizer and hydraulic line routing.
  3. Check that all nozzles are working properly.
  4. Then go to the normal servicing and maintenance schedule as defined in the Maintenance Section.
  5. Lift right hand side of machine and check main wheel bearing for proper play (slight wobble when pulling on top of wheel). Repeat for left hand side.

## SERVICE AND MAINTENANCE

---

1. Review the Operator's Manual and all safety items before working with, maintaining or operating the Applicator.
2. Place all controls in neutral, stop the tractor engine, turn monitor off, set park brake, remove ignition key, wait for nozzles to stop spraying before servicing, adjusting, repairing or unplugging.
3. Follow good shop practices:
  - Keep service area clean and dry
  - Be sure electrical outlets and tools are properly grounded
  - Use adequate light for the job at hand.
4. Before applying pressure to a hydraulic system, make sure all components are tight and that steel lines, hoses and coupling are in good condition.
5. Before applying pressure to fertilized system, make sure that all connection are tight and that all hoses and fittings are in good condition.
6. Install wing lock pins and tower stops before relieving pressure from hydraulic circuit to service Applicator.
7. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
8. Clear the area of bystanders, especially children, when carrying out any maintenance and repairs or making any adjustments or filling.
9. Place stands or blocks under the frame before working beneath the machine.
10. Wear safety goggles, neoprene gloves and protective clothing when working on the Applicator filled with active chemical.
11. Wash machine to remove all chemical residue before working on unit. Wear appropriate protective gear at all times.
12. Protect yourself from chemical contamination.

# GREASING

1. Wipe grease fitting with a clean cloth before greasing to prevent injecting dirt and grit into joint.
2. Replace and repair broken fittings immediately.
3. If a fitting will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

**\*Note: Grease 20 points 8 hours or daily. Along with 2 points per coulter. Hubs and spindles should be greased biannually.**

**\*Note: It is best to grease the machine at the end of the day to ensure that fertilizer/chemicals do not have time to start corroding parts.**

## L/R GREASE LOCATIONS

**Apply adequate grease to the following:**

1. L/R Main Wing Hinge (Fig. 20b)
2. L/R Flip Wing (35') (Fig. 20c)
3. Coulter Pivots (Fig. 20d)
4. Parallel Hinge Bushings (Fig. 20a)
5. Piston Pump (Refer to pump operators manual)

FIG. 7a

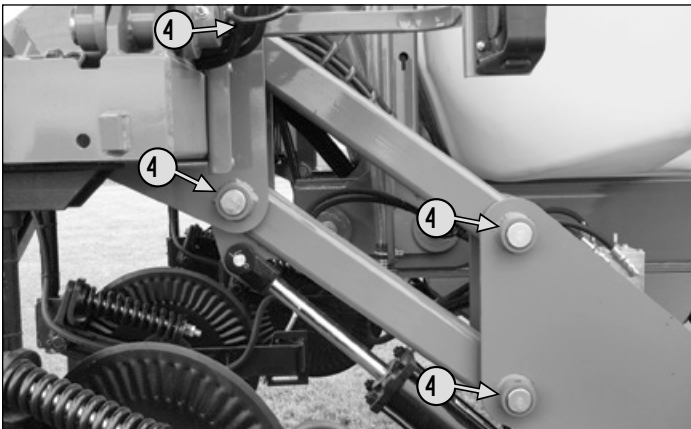


FIG. 7b

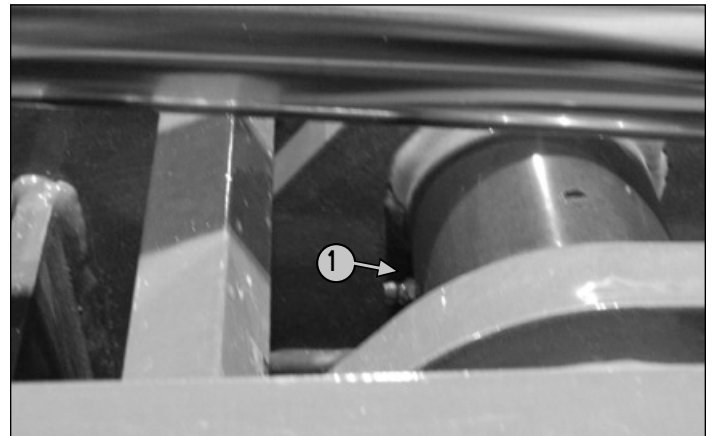


FIG. 7c

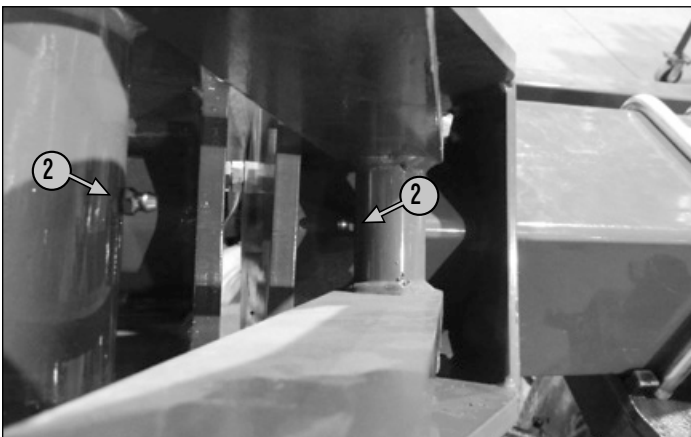
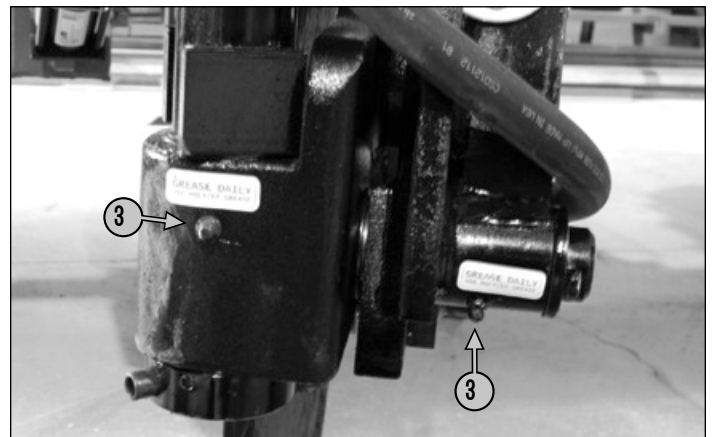
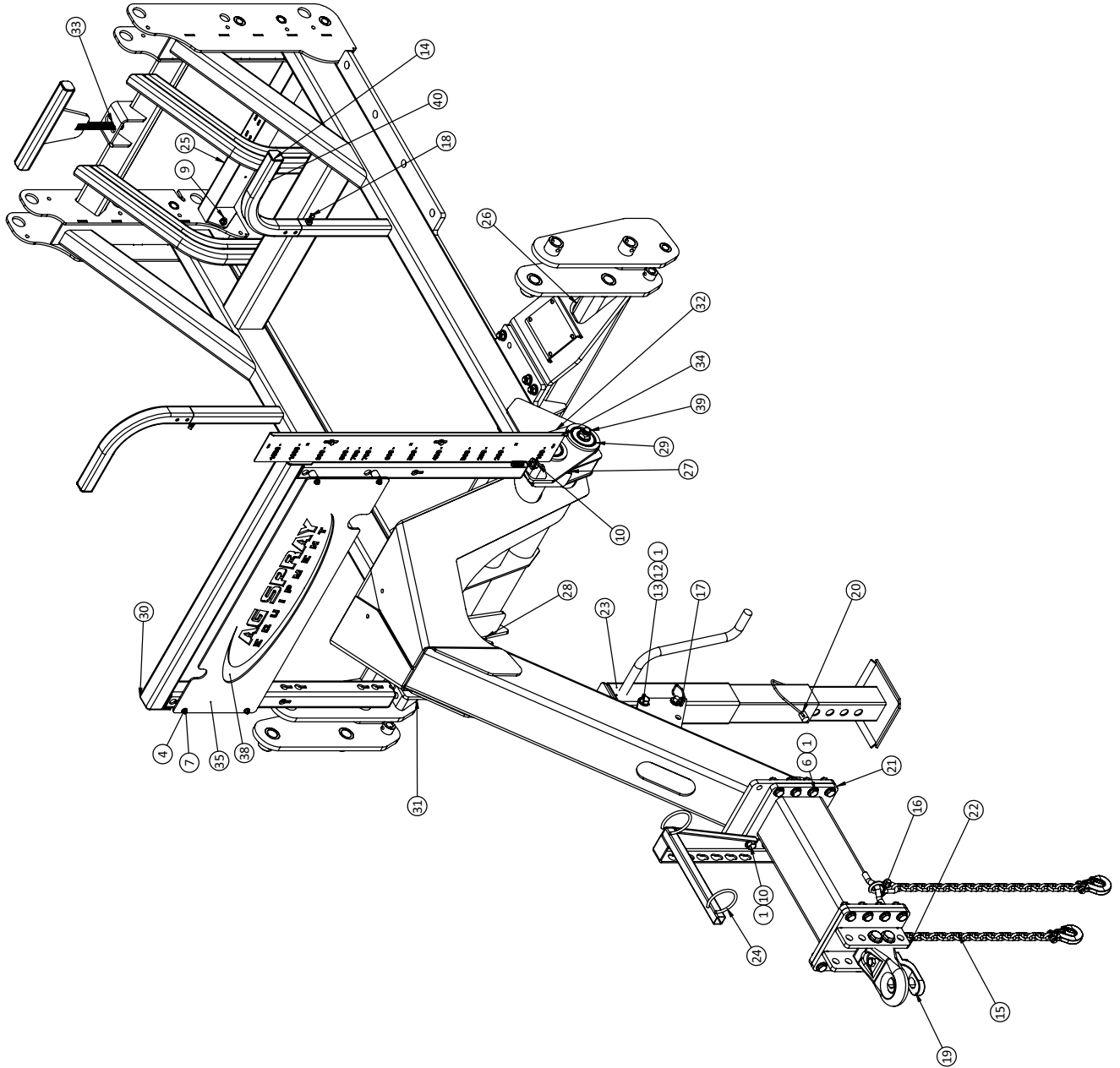


FIG. 7d

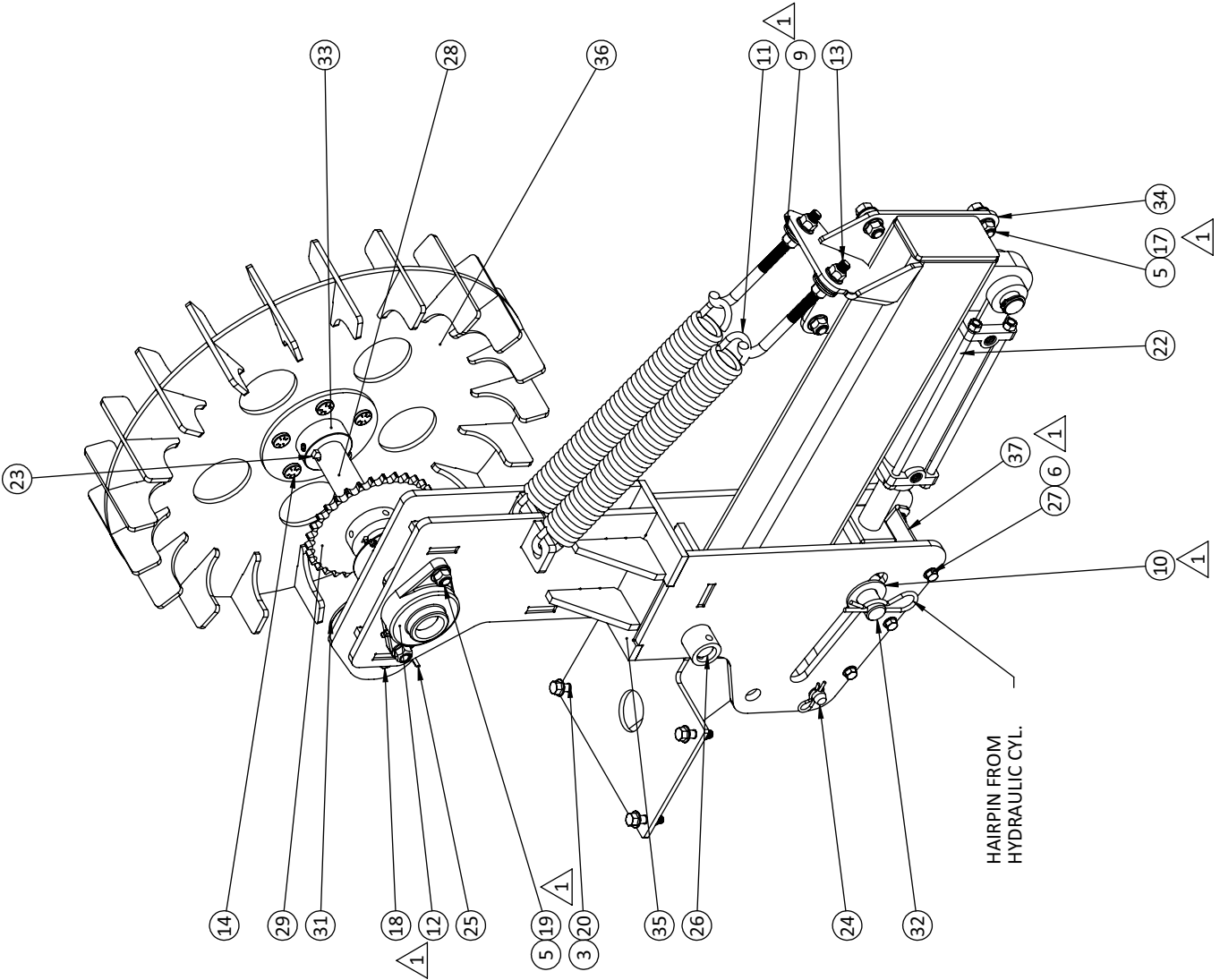


# 5280827 - APPLICATOR FRAME FOR 1050 TANK

Item No	Part Number	Qty.	Description
1	5006359	23	3/4-10nc Hex Flanged Toplock Nut Gr. 8
2	5006363	6	1"-8nc Hex Flanged Toplock Nut Gr. 8
3	5006365	4	1/2-13nc Hex Flanged Toplock Nut Gr. 8
4	5006366	8	3/8-16nc Hex Flanged Toplock Nut Gr. 8
5	5034482	2	3/8"-16nc x 1" lg Carriage Bolt
6	5034510	20	H.H.C.S., 3/4"-10 x 2 1/2"
7	5034544	4	3/8"-16nc x 2 1/2" lg (Full Thread) Carriage Bolt
8	5034547	2	H.H.C.S. 1"-8nc x 6 1/2" Long
9	5034692	4	H.H.C.S. Flanged 1/2"-13nc x 1 1/2" Long
10	5034755	4	Fling HH Bolt 3/4-10 X 3 1/2"
11	5034764	2	Fling HH Bolt 3/8-16 X 1"
12	5034801	1	3/4-10x7 Fling Frame Bit
13	5041094	2	Machinery Bushing, 3/4" ID x 1-1/4" OD
14	5046445	2	TUBE CAP, 2x2x3/16" WALL
15	5049042	2	Safety Chain, 3/8" x 37" w/.4375" Clevis Hook
16	5052019	2	1/2" Safety Anchor Shackles w/Screw Pin
17	5101327	1	Hitch Pin
18	5117104	2	1/2-13 x 1 1/2" Square Head Cup Point Set Screw
19	5274832	1	Cast Hitch
20	5275427	1	Jack
21	5277462	1	Tongue Extension Weldment
22	5277463	1	Bolt On Hitch Weldment
23	5277467	1	LA5000 Jack Swing Tube Weldment
24	5277636	1	Hose Guide Weldment LA5000
25	5278725	1	VALVE MOUNTING BRACKET
26	5279268	1	WIDMT, 1050 FIXED POSITION LIFTARM
27	5279273	1	WIDMT, SMALL FRAME
28	5279278	1	WIDMT, SMALL GOOSENECK MAIN FRAME
29	5279372	4	WIDMT, APPLICATOR GOOSENECK ATTACH PIN
30	5279378	1	WIDMT, 1050 TANK HOLD DOWN
31	5279383	1	WIDMT, 1050 TANK HOLDDOWN ATTACH RH
32	5279384	1	WIDMT, 1050 TANK HOLDDOWN ATTACH LH
33	5279386	1	WIDMT, SMALL FRAME REAR ADJUSTABLE TANK HOLD DOWN
34	5280023	1	1050 SIGHT GAGE ANGLE W/GRADUATIONS
35	5280501	1	PLATE, 1050 HAND RINSE TANK HOLD DOWN
36	5280573	4	TUBE, SPACER HAND RINSE TANK
37	5280584	2	BRACKET, SIGHT GAGE UPPER MOUNT
38	5280588	1	PLATE, 1050 HAND RINSE TANK HOLD DOWN BACKING
39	5280803	2	WIDMT, LARGE SPRAYER GOOSENECK ATTACH
40	5280885	2	WIDMT, TANK SUPPORT



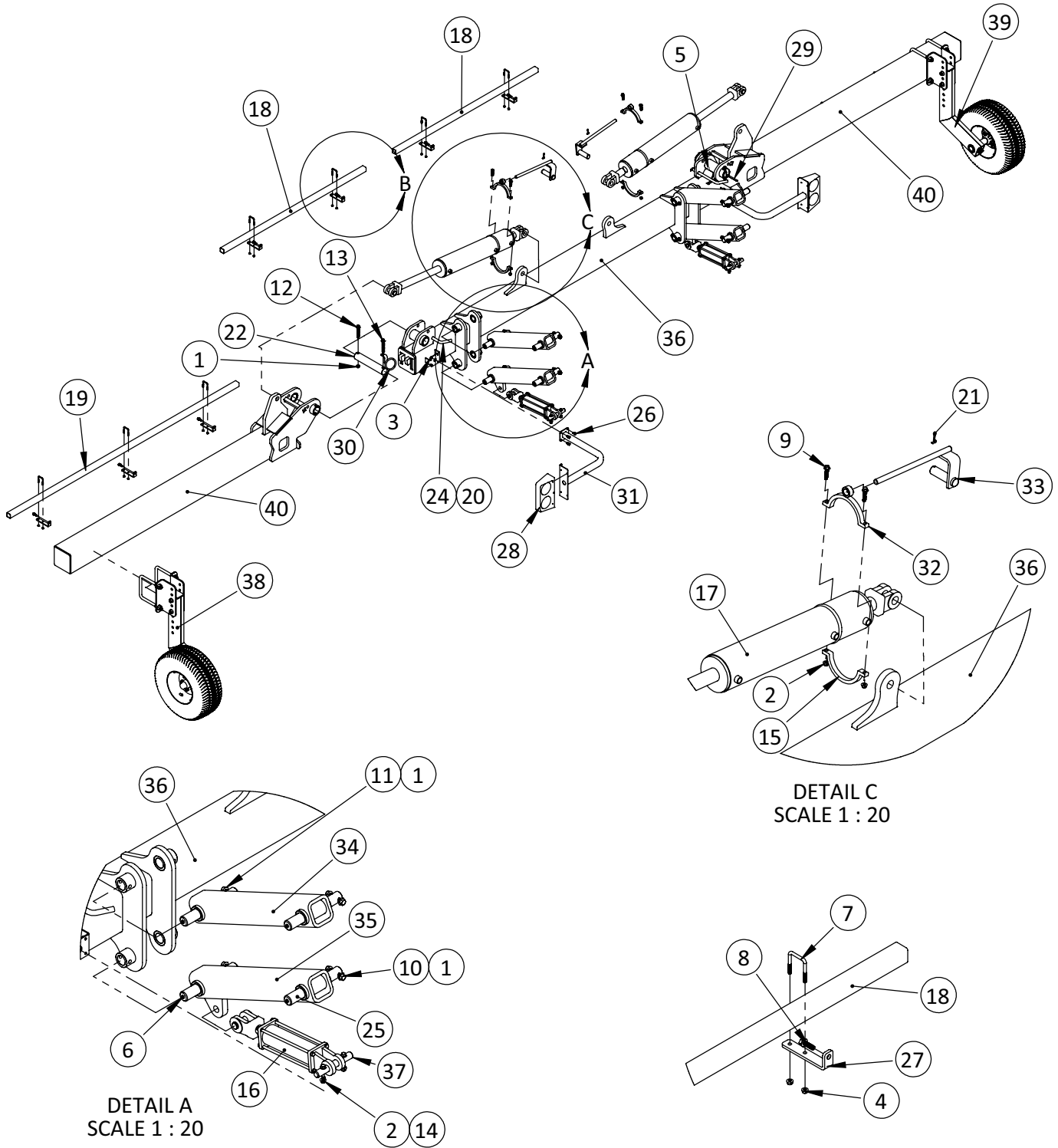
# 5280054 - WHEEL DRIVE PUMP



Item No	Part Number	Qty.	Description
1	5006035	1	5/16"-18 Hex Locknut
2	5006092	1	3/8"-16 Hex Locknut
3	5006259	4	3/8"-16 Hex Whiz (Flange) Locknut
4	5006301	5	1/2"-20 Hex Cone Wheel Nut
5	5006365	12	1/2"-13nc Hex Flanged Toplock Nut Gr. 8
6	5006367	6	5/16"-18nc Hex Flanged Toplock Nut Gr. 8
7	5012015	1	Grease Zerk, 1/4"-28 Thread
8	5016030	5	Flatwasher, 3/8"
9	5016031	8	Flatwasher, 1/2"
10	5016190	4	Flatwasher - 1"
11	5019265	2	Extension Spring
12	5031174	2	2-Bolt Flanged Ball Bearing (for 1.438" Shaft)
13	5034111	2	1/2" x 6" Hook Bolt
14	5034540	5	Serrated Shoulder Bolt, 1/2"-20 N.F. x 1 1/8"
15	5034640	1	H.H.C.S. Flanged 5/16"-18nc x 2" Long
16	5034666	1	H.H.C.S. Flanged 3/8"-16nc x 2 1/4" Long
17	5034691	4	H.H.C.S. Flanged 1/2"-13nc x 1 1/4" Long
18	5034697	1	H.H.C.S. Flanged 1/2"-13nc x 2 3/4" Long
19	5034761	4	Fing HH Bolt 1/2-13 X 1 1/2"
20	5034763	4	Fing HH Bolt 3/8-16 X 1 1/2"
21	5041153	2	Bushing
22	5061035	1	Hydraulic Cylinder, 2" x 6", 1.125" Rod
23	5089054	2	3/8" Square Key x 1 3/4" Long
24	5101226	1	Hitch Pin, 5/8" Dia., 4 1/4" Useable w/Hairpin Cotter
25	5101230	1	Cotter Pin, 3/16" x 2"
26	5101282	1	Pump Pivot Pin
27	5117323	6	H.H.C.S. Flanged 5/16"-18nc x 3/4" Long
28	5118193	1	Pump Drive Shaft
29	5130014	1	Sprocket (50B32) (1 7/16" Keyway)
30	5130015	1	15-Tooth Sprocket
31	5275325	1	#50 Spring Loaded Rotary Chain Tensioner
32	5275425	1	Lift Arm Cylinder Pin Weldment
33	5275436	1	Wheel Hub Weldment
34	5280042	1	WLDMNT, PUMP PIVOT
35	5280043	1	WLDMNT, ROCKER ARM
36	5280044	1	WLDMNT, STEEL GROUND DRIVE WHEEL
37	5280628	1	PLATE, ROCKER ARM SPACER FLAT

# 27' SINGLE TUBE APPLICATOR - 5280890

## EXPLODED STATE



DETAIL C  
SCALE 1 : 20

DETAIL A  
SCALE 1 : 20

DETAIL B  
SCALE 1 : 12

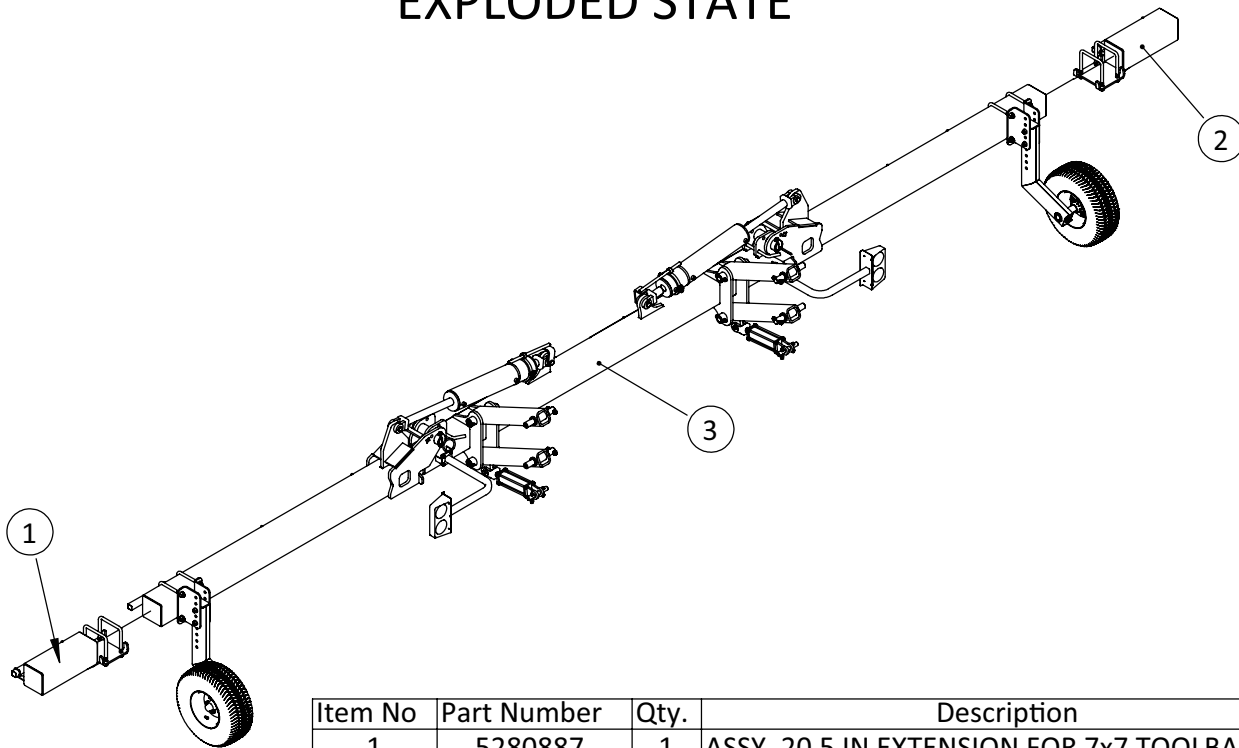
NOTE: THIS TOOLBAR IS COMPATIBLE WITH THE FOLLOWING APPLICATOR FRAMES:  
5280827  
5280879

# 27' SINGLE TUBE APPLICATOR - 5280890

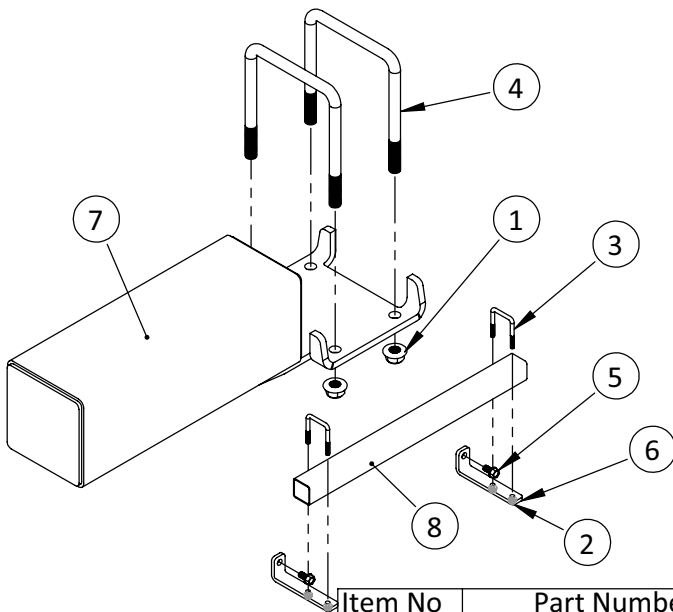
Item No	Part Number	Qty.	Description
1	5006365	12	1/2-13nc Hex Flanged Toplock Nut Gr. 8
2	5006366	8	3/8-16nc Hex Flanged Toplock Nut Gr. 8
3	5006367	8	5/16-18nc Hex Flanged Toplock Nut Gr. 8
4	5006386	20	Fling Head Lock Nut 1/4-20
5	5012015	2	Grease Zerk, 1/4"-28 Thread
6	5012016	8	Grease Zerk, 1/8"-27 NPT Thread
7	5034473	10	Square U-Bolt, 1/4" x 1 9/16" x 2 1/8"
8	5034597	10	3/4" Self Tapping Screw Type 23
9	5034664	4	H.H.C.S. Flanged 3/8"-16nc x 1 3/4" Long
10	5034697	4	H.H.C.S. Flanged 1/2"-13nc x 2 3/4" Long
11	5034698	4	H.H.C.S. Flanged 1/2"-13nc x 3" Long
12	5034701	2	H.H.C.S. Flanged 1/2"-13nc x 3 3/4" Long
13	5034702	2	H.H.C.S. Flanged 1/2"-13nc x 4" Long
14	5034775	4	Fling HH Bolt 3/8-16 X 2 1/2"
15	5051148	2	Anti-Rotation Clamp
16	5061037	2	Hyd. Cyl., 3" x 8", 1.25" Rod
17	5061049	2	Hydraulic Cylinder 5" Bore x 18.00/2.00 Stroke
18	5100705	2	Nozzle Tube (59 3/4")
19	5100706	2	Nozzle Tube (96")
20	5101065	2	#211 Hitch Pin Clip (Zinc Plated)
21	5101230	2	Cotter Pin, 3/16" x 2"
22	5101315	2	Inner Wing Pivot Pin
23	5101318	1	Linkage Pivot Pin
24	5101322	2	Bent Pin 3/4 Dia. x 9 1/4 Usable Length
25	5101342	8	PIN, SMALL TOOLBAR LIFTARM
26	5117323	8	H.H.C.S. Flanged 5/16"-18nc x 3/4" Long
27	5133256	10	Hose Deflector Strap (Long)
28	5274831	2	Warning Light
29	5275468	1	Short Hose Guide Weldment (R.H.)
30	5275469	1	Short Hose Guide Weldment (L.H.)
31	5277391	2	Light Mount Weldment
32	5278161	2	WLDMNT, ANTI-ROTATION CYLINDER MOUNT
33	5278162	2	WLDMNT, ANTI-ROTATION PIN
34	5278738	2	WLDMT, SMALL UPPER LIFTARM
35	5278739	2	WLDMT, SMALL LOWER LIFTARM
36	5278780	1	WLDMT, SMALL TOOLBAR CENTER
37	5279882	2	PIN, SMALL FRAME LIFTARM CONNECT
38	5280886	1	ASSY, GUAGE WHEEL FOR 7x7 TUBE, RIGHT HAND
39	5280886	1	ASSY, GUAGE WHEEL FOR 7x7 TUBE, LEFT HAND
40	5280889	2	WLDMT, 27 FT TOOLBAR OUTER

# 30' SINGLE TUBE APPLICATOR - 5280891

## EXPLODED STATE



Item No	Part Number	Qty.	Description
1	5280887	1	ASSY, 20.5 IN EXTENSION FOR 7x7 TOOLBAR
2	5280887	1	ASSY, 20.5 IN EXTENSION FOR 7x7 TOOLBAR
3	5280890	1	27' SINGLE BAR, SINGLE FOLD TOOLBAR



Item No	Part Number	Qty.	Description
1	5006359	4	3/4-10nc Hex Flanged Toplock Nut Gr. 8
2	5006386	4	Flng Head Lock Nut 1/4-20
3	5034473	2	Square U-Bolt, 1/4" x 1 9/16" x 2 1/8"
4	5034589	2	Square U-Bolt, 3/4" Dia. x 7 1/8" x 8 1/2"
5	5034597	2	3/4"-16 X 3/4" SELF TAPPING SCREW
6	5133256	2	Hose Deflector Strap (Long)
7	5280181	1	WLDMT, EXTENSION OUTER TOOLBAR
8	5280613	1	Nozzle Tube (20")

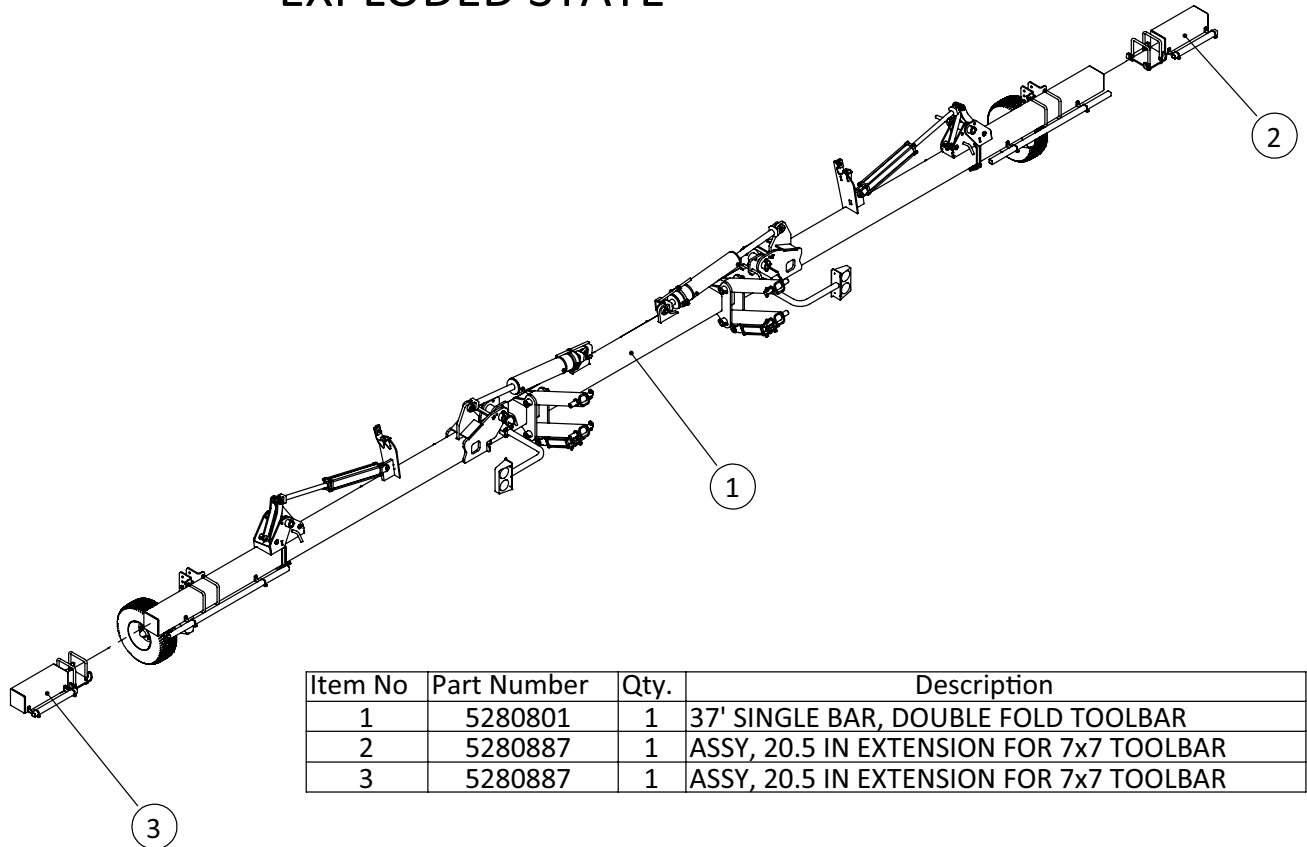
NOTE: THIS TOOLBAR IS COMPATIBLE WITH THE FOLLOWING APPLICATOR FRAMES:

5280827  
5280879

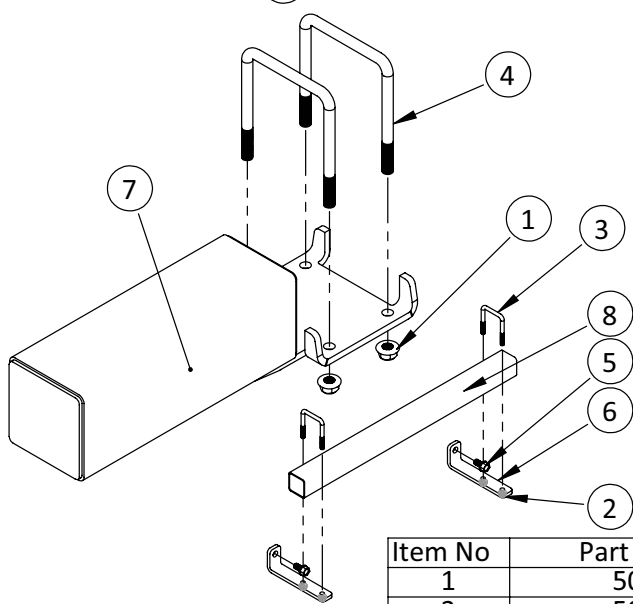


# 40' SINGLE TUBE APPLICATOR - 5279129

## EXPLODED STATE



Item No	Part Number	Qty.	Description
1	5280801	1	37' SINGLE BAR, DOUBLE FOLD TOOLBAR
2	5280887	1	ASSY, 20.5 IN EXTENSION FOR 7x7 TOOLBAR
3	5280887	1	ASSY, 20.5 IN EXTENSION FOR 7x7 TOOLBAR

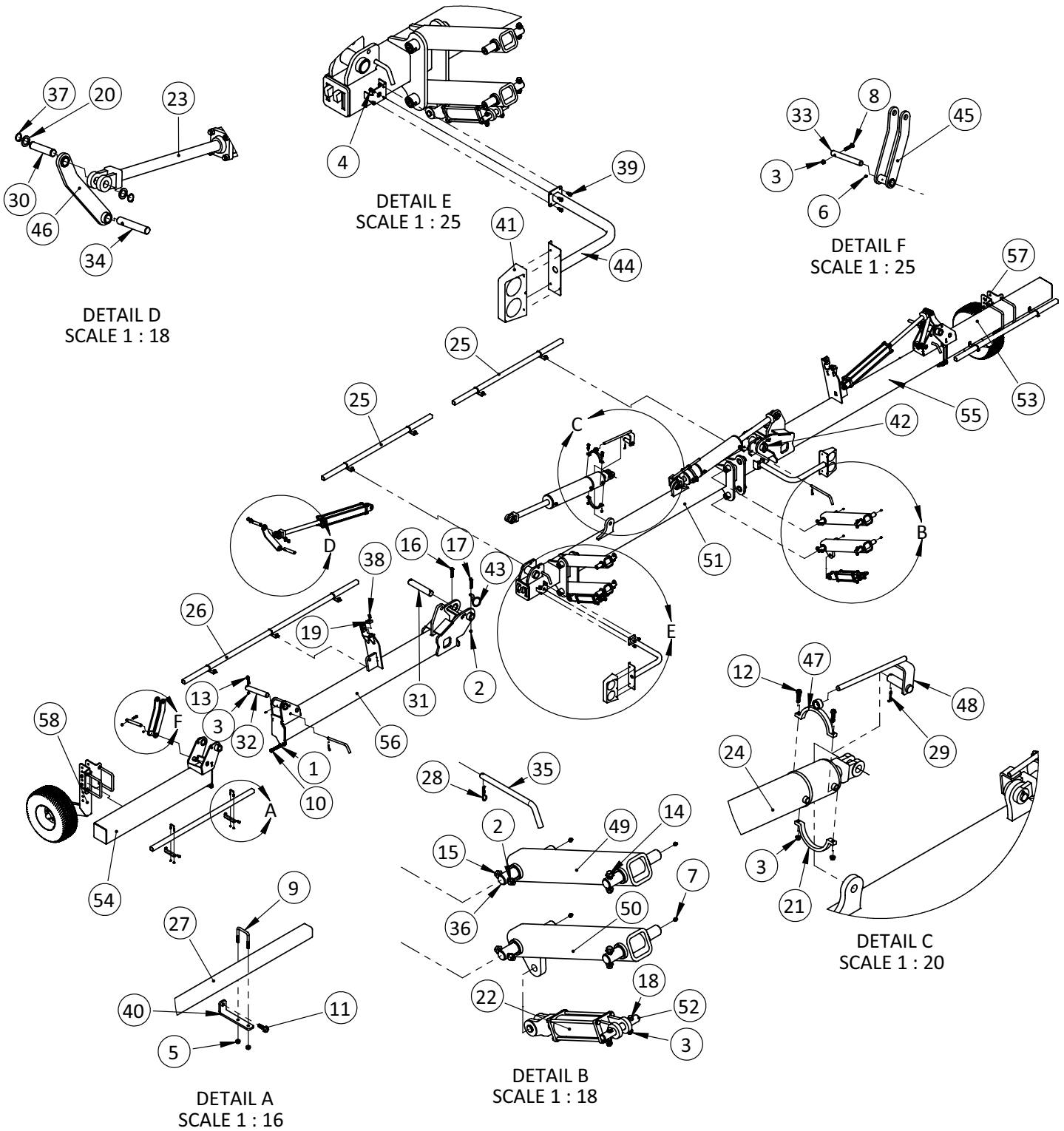


Item No	Part Number	Qty.	Description
1	5006359	4	3/4-10nc Hex Flanged Toplock Nut Gr. 8
2	5006386	4	Flng Head Lock Nut 1/4-20
3	5034473	2	Square U-Bolt, 1/4" x 1 9/16" x 2 1/8"
4	5034589	2	Square U-Bolt, 3/4" Dia. x 7 1/8" x 8 1/2"
5	5034597	2	3/4"-16 x 3/4" SELF TAPPING SCREW
6	5133256	2	Hose Deflector Strap (Long)
7	5280181	1	WLDMT, EXTENSION OUTER TOOLBAR
8	5280613	1	Nozzle Tube (20")

NOTE: THIS TOOLBAR IS COMPATIBLE WITH THE FOLLOWING APPLICATOR FRAMES:  
 5280827  
 5280879

# 37' SINGLE TUBE APPLICATOR - 5280801

## EXPLODED STATE



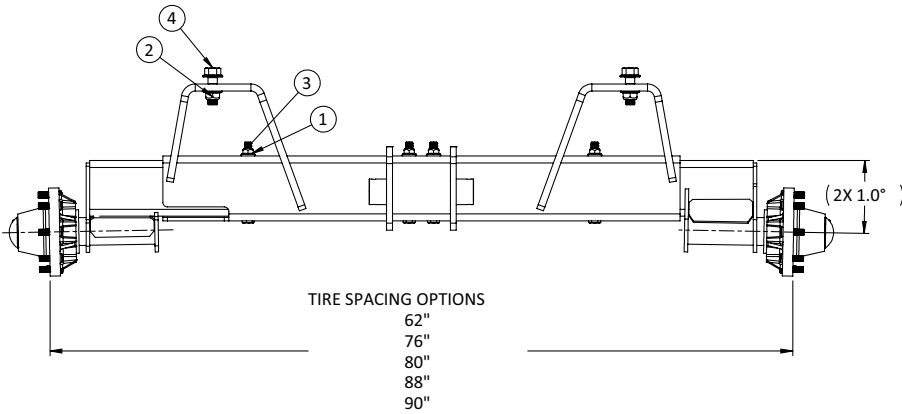
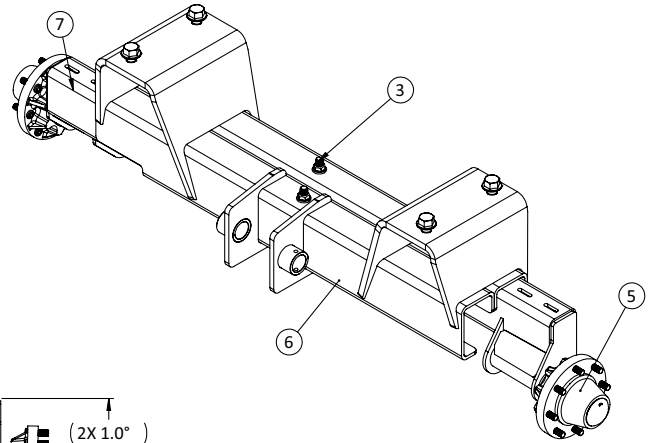
NOTE: THIS TOOLBAR IS COMPATIBLE WITH THE FOLLOWING APPLICATOR FRAMES:  
 5280827  
 5280879

# 37' SINGLE TUBE APPLICATOR - 5280801

Item No	Part Number	Qty.	Description
1	5006260	2	3/4"-10 Hex Jam Nut
2	5006365	12	1/2-13nc Hex Flanged Toplock Nut Gr. 8
3	5006366	14	3/8-16nc Hex Flanged Toplock Nut Gr. 8
4	5006367	12	5/16-18nc Hex Flanged Toplock Nut Gr. 8
5	5006386	28	Fling Head Lock Nut 1/4-20
6	5012015	6	Grease Zerk, 1/4"-28 Thread
7	5012016	8	Grease Zerk, 1/8"-27 NPT Thread
8	5034087	4	H.H.C.S., 3/8"-16 x 2"
9	5034473	14	Square U-Bolt, 1/4" x 1 9/16" x 2 1/8"
10	5034594	2	H.H.C.S 3/4"-10nc x 3.5" Long (Full Thread)
11	5034597	14	3/4" Self Tapping Screw Type 23
12	5034664	4	H.H.C.S. Flanged 3/8"-16nc x 1 3/4" Long
13	5034669	2	H.H.C.S. Flanged 3/8"-16nc x 3" Long
14	5034697	4	H.H.C.S. Flanged 1/2"-13nc x 2 3/4" Long
15	5034698	4	H.H.C.S. Flanged 1/2"-13nc x 3" Long
16	5034701	2	H.H.C.S. Flanged 1/2"-13nc x 3 3/4" Long
17	5034702	2	H.H.C.S. Flanged 1/2"-13nc x 4" Long
18	5034775	4	Fling HH Bolt 3/8-16 X 2 1/2"
19	5040015	4	Bumper
20	5041113	4	Machinery Bushing, 1 1/2" O.D. x 1" I.D. x 10 Ga.
21	5051148	2	Anti-Rotation Clamp
22	5061037	2	Hyd. Cyl., 3" x 8", 1.25" Rod
23	5061048	2	Hyd. Cyl. - 3" x 20" x 1.5" Rod
24	5061049	2	Hydraulic Cylinder 5" Bore x 18.00/2.00 Stroke
25	5100705	2	Nozzle Tube (59 3/4")
26	5100706	2	Nozzle Tube (96")
27	5100707	2	Nozzle Tube (56")
28	5101065	4	#211 Hitch Pin Clip (Zinc Plated)
29	5101230	2	Cotter Pin, 3/16" x 2"
30	5101256	2	Front Cylinder Pin
31	5101315	2	Inner Wing Pivot Pin
32	5101316	2	Outer Wing Pivot Pin
33	5101317	2	Linkage Pivot Pin
34	5101318	2	Linkage Pivot Pin
35	5101322	4	Bent Pin 3/4 Dia. x 9 1/4 Usable Length
36	5101342	8	PIN, SMALL TOOLBAR LIFTARM
37	5110316	4	External Snap Ring 1"
38	5117300	4	H.H.C.S. Flanged 5/16"-18nc x 1" Long
39	5117323	8	H.H.C.S. Flanged 5/16"-18nc x 3/4" Long
40	5133256	14	Hose Deflector Strap (Long)
41	5274831	2	Warning Light
42	5275468	1	Short Hose Guide Weldment (R.H.)
43	5275469	1	Short Hose Guide Weldment (L.H.)
44	5277391	2	Light Mount Weldment
45	5277392	2	Link Arm Double Weldment
46	5277393	2	Link Arm Weldment
47	5278161	2	WLDMNT, ANTI-ROTATION CYLINDER MOUNT
48	5278162	2	WLDMNT, ANTI-ROTATION PIN
49	5278738	2	WLDMT, SMALL UPPER LIFTARM
50	5278739	2	WLDMT, SMALL LOWER LIFTARM
51	5278780	1	WLDMT, SMALL TOOLBAR CENTER
52	5279882	2	PIN, SMALL FRAME LIFTARM CONNECT
53	5280182	1	WLDMT, OUTER TOOLBAR RH
54	5280185	1	WLDMT, OUTER TOOLBAR LH
55	5280188	1	WLDMT, MIDDLE TOOLBAR RH
56	5280189	1	WLDMT, MIDDLE TOOLBAR LH
57	5280886	1	ASSY, GUAGE WHEEL FOR 7x7 TUBE, RIGHT HAND
58	5280886	1	ASSY, GUAGE WHEEL FOR 7x7 TUBE, LEFT HAND

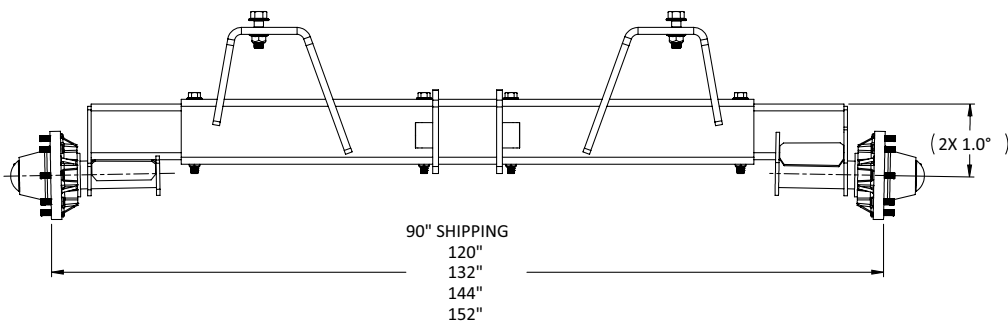
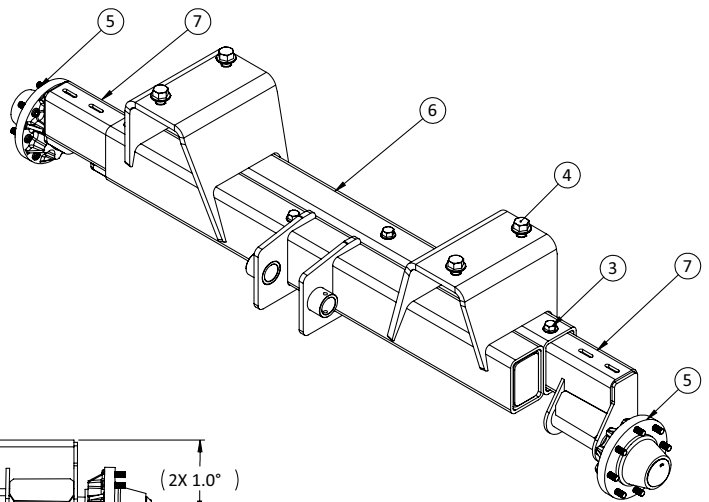
# 5279145 - SMALL FRAME NARROW SINGLE AXLE ASSEMBLY

Item No	Part Number	Qty.	Description
1	5006359	4	3/4-10nc Hex Flanged Toplock Nut Gr. 8
2	5006363	4	1"-8nc Hex Flanged Toplock Nut Gr. 8
3	5034742	4	Fling HH Bolt 3/4-10 X 8"
4	5034750	4	Fling HH Bolt 1-8 X 3"
5	5085016	2	Hub Assembly (758) (8-Bolt)
6	5279368	1	WLDMT, SMALL AXLE CENTER SHORT
7	5279370	2	WLDMT, SMALL AXLE RH SHORT

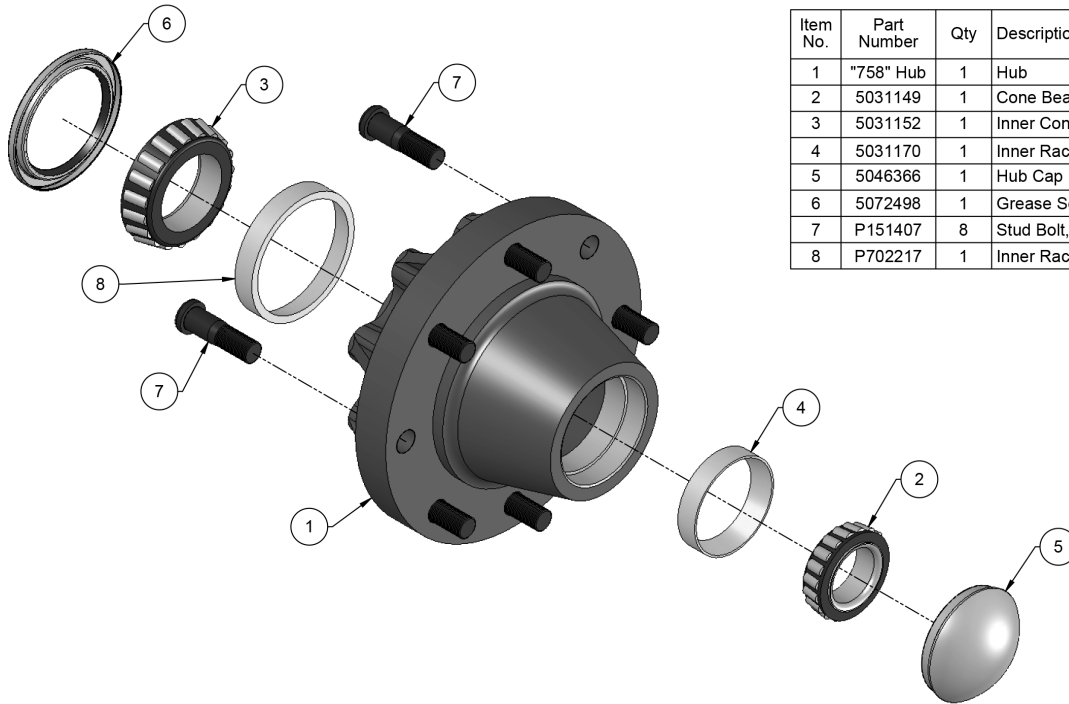


# 5279143 - SMALL FRAME WIDE SINGLE AXLE ASSEMBLY

Item No	Part Number	Qty.	Description
1	5006359	4	3/4-10nc Hex Flanged Toplock Nut Gr. 8
2	5006363	4	1"-8nc Hex Flanged Toplock Nut Gr. 8
3	5034742	4	Fling HH Bolt 3/4-10 X 8"
4	5034750	4	Fling HH Bolt 1-8 X 3"
5	5085016	2	Hub Assembly (758) (8-Bolt)
6	5279355	1	WLDMT, SMALL AXLE CENTER
7	5279357	2	WLDMT, SMALL AXLE RH



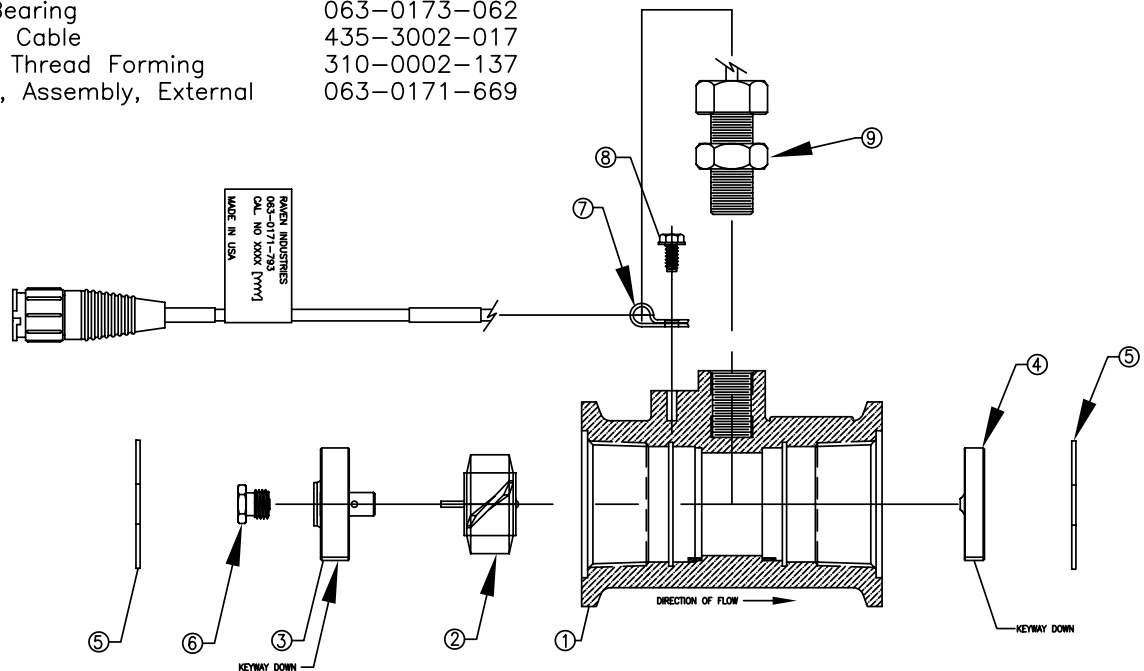
# 5085016 - HUB ASSEMBLY



Item No.	Part Number	Qty	Description	List Price
1	"758" Hub	1	Hub	---
2	5031149	1	Cone Bearing	17.25
3	5031152	1	Inner Cone Bearing	23.19
4	5031170	1	Inner Race	9.00
5	5046366	1	Hub Cap	5.79
6	5072498	1	Grease Seal (For 758 Hub)	16.41
7	P151407	8	Stud Bolt, 5/8"-18 U.N.F.	---
8	P702217	1	Inner Race	---

## RFM 60 P FLOWMETER REPLACEMENT PARTS 063-0171-793

ITEM	DESCRIPTION	RAVEN PART #
1	Body, RFM 60 P Flowmeter	106-0159-514
2	Rotor/ Magnet Assembly	063-0171-673
3	Hub/Bearing Assy, Upstream	063-0171-674
4	Hub Assembly, Downstream	063-0171-769
5	Ring, Retaining, Internal	335-0000-278
6	Stud Bearing	063-0173-062
7	Clamp, Cable	435-3002-017
8	Screw, Thread Forming	310-0002-137
9	Sensor, Assembly, External	063-0171-669



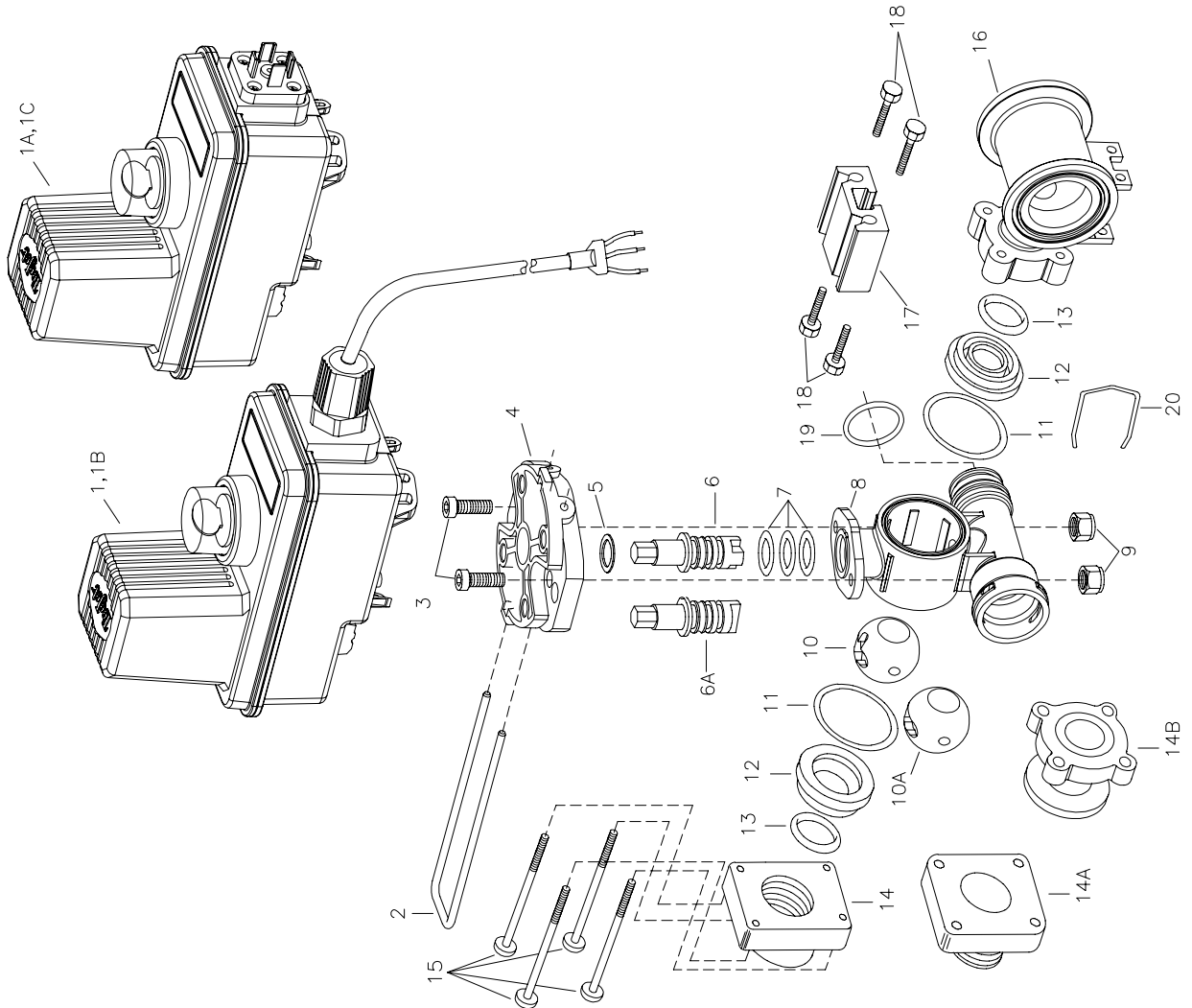
# PL450BEC-FB - ELECTRIC SHUT-OFF FLOW BACK BALL VALVE MANIFOLD

ITEM	PART NO.	DESCRIPTION
	50515-22CP03 ■	BEC MOTOR, 22-RPM (0.7-SEC), 0.3-METER CABLE, POSITIVELY SWITCHED
1	50515-22CP05 ■	BEC MOTOR, 22-RPM (0.7-SEC), 0.5-METER CABLE, POSITIVELY SWITCHED
	50515-22CP15 ■	BEC MOTOR, 22-RPM (0.7-SEC), 1.5-METER CABLE, POSITIVELY SWITCHED
	50515-22CP60 ■	BEC MOTOR, 22-RPM (0.7-SEC), 6.0-METER CABLE, POSITIVELY SWITCHED
1A	50515-22DP ■	BEC MOTOR, 22-RPM (0.7-SEC), DIN CONNECTION, POSITIVELY SWITCHED
	50533-22C03	BE MOTOR, 22-RPM (0.7-SEC), 0.3-METER CABLE
1B	50533-22C05	BE MOTOR, 22-RPM (0.7-SEC), 0.5-METER CABLE
	50533-22C15	BE MOTOR, 22-RPM (0.7-SEC), 1.5-METER CABLE
	50533-22C60	BE MOTOR, 22-RPM (0.7-SEC), 6.0-METER CABLE
1C	50533-22D	BE MOTOR, 22-RPM (0.7-SEC), DIN CONNECTION
2	CP50517-SSPV	RETAINING CLIP, 304 STAINLESS STEEL
3	CP26197-7/8-SS	SOCKET HEAD CAP SCREW, 1/4"-20 X 7/8", STAINLESS STEEL (2 REQ'D)
4	CP50514-PP	MOTOR ADAPTER, POLYPROPYLENE (BLACK)
*	CP20125-TEF	THRUST WASHER, TEFLON
6	CP56613-SS	STEM, 303 STAINLESS STEEL (FOR POLYPROPYLENE BALL)
6A	CP56615-SS	STEM, 303 STAINLESS STEEL (FOR STAINLESS STEEL BALL)
7	CP7717-M12X2.5-VI	O-RING, VITON (3 REQ'D)
8	CP55223-NYB	FLOW BACK BODY, NYLON (BLACK)
9	CP38435-1/4-SSNY	ELASTIC LOCKNUT, 1/4"-20, STAINLESS STEEL (2 REQ'D)
10	CP20106-2-PP	FLOW BACK BALL, POLYPROPYLENE (WHITE)
10A	CP19926-2-SS	FLOW BACK BALL, 303 STAINLESS STEEL
11	CP20564-VI	GASKET, VITON (2 REQ'D)
*	CP20103-TEF	SEAL, TEFLON (2 REQ'D)
*	CP7717-2-213-VI	O-RING, VITON (2 REQ'D)
13	CP20104-3/4-NYB	END CAP, NYLON (BLACK) (3/4" NPT THREAD)
14	CPB20104-3/4-NYB	END CAP, NYLON (BLACK) (3/4" BSPT THREAD)
	CP20104-1-NYB	END CAP, NYLON (BLACK) (1" NPT THREAD)
	CPB20104-1-NYB	END CAP, NYLON (BLACK) (1" BSPT THREAD)
14A	CP45514-NYB	END CAP, NYLON (BLACK) (QUICK CONNECT)
14B	CP45253-NYB	END CAP, NYLON (BLACK) (50-SERIES FLANGE)
15	CP45252-2-3/4-SSPV	SCREW, 1/4"-12 X 2-3/4" PAN HEAD, STAINLESS STEEL (4 REQ'D)
16	CP55224-PP	#75 NARROW TEE BODY, POLYPROPYLENE (BLACK)
17	CP45216-AL	MOUNTING RAIL, ALUMINUM
18	CP45259-SS	SCREW, M6 X 1 X 16MM HEX, STAINLESS STEEL (4 REQ'D)
19	CP7717-M25X3-VI	O-RING, VITON
20	CP37166-1-302SS	QUICK CONNECT RETAINING CLIP, 302 STAINLESS STEEL
	56609-3FB----	VALVE BODY SUB-ASSY, SPECIFY OUTLET SIZE & BALL MATERIAL (INCLUDES ITEMS 3-19)

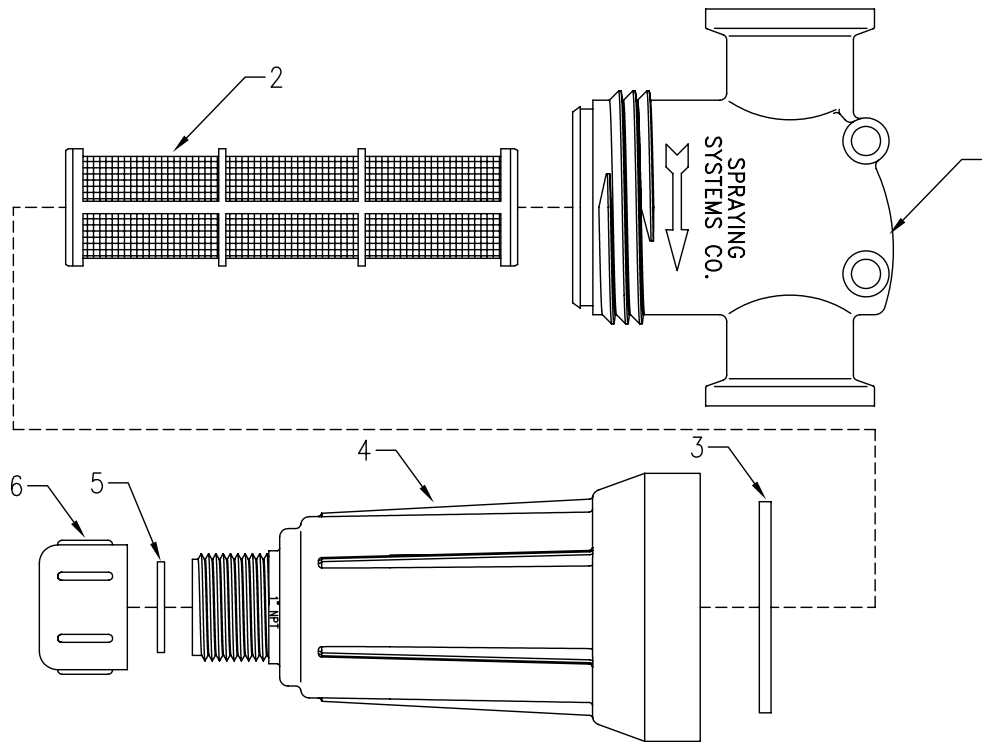
■ AB344AE-KIT, SPARE PARTS KIT (INCLUDES ALL ITEMS MARKED WITH \*)  
 NOTE: (B) IN PART NUMBER INDICATES B.S.P.T INLET AND OUTLET CONNECTIONS  
 NOTE: FOR NEGATIVELY SWITCHED MOTORS SPECIFY "N" RATHER THAN "P" IN MOTOR PART NUMBER  
 EXAMPLE: 50515-22CN05

NOTE: FOR QUICK CONNECT FITTING PART NUMBERS SEE PARTS LIST PL45529

TEFLON® IS A TRADEMARK OF DUPONT COMPANY  
 VITON® IS A TRADEMARK OF DUPONT DOW ELASTOMERS



# AA(B)126ML-3-\*, AA(B)126ML-4-\*, AA(B)126ML-F50-\* LINE STRAINERS



ITEM	PART NO.	DESCRIPTION
1	CP50491-PP	Strainer Head, Polypropylene (Black) (50-Series Flange)
	CP50492-3/4-PP	Strainer Head Polypropylene (Black) (3/4" NPT)
	CP50492-1-PP	Strainer Head, Polypropylene (Black) (1" NPT)
	CPB50492-3/4-PP	Strainer Head, Polypropylene (Black) (3/4" BSPT)
	CPB50492-1-PP	Strainer Head, Polypropylene (Black) (1" BSPT)
2	CP16903-1-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 16 Mesh (Gray)
	CP16903-3-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 30 Mesh (Yellow)
	CP16903-4-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 50 Mesh (Red)
	CP16903-5-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 80 Mesh (Blue)
	CP16903-6-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 100 Mesh (Green)
	CP16903-7-SSPP	Screen, Stainless Steel w/ Polypropylene Frame, 200 Mesh (Orange)
3	CP50494-EPR *	Gasket, EPDM Rubber
	CP50494-VI **	Gasket, Viton
4	CP50493-PP	Bowl, Polypropylene (Gray) (1" NPT)
	CPB50493-PP	Bowl, Polypropylene (Gray) (1" BSPT)
5	CP63150-EPR *	Gasket, EPDM Rubber
	CP63150-VI **	Gasket, Viton
6	CP48655-PP	Cap, Polypropylene (Gray)
AB126ML-50-EPR-KIT - Repair Kit, Contains Items Marked With *		
AB126ML-50-VI-KIT - Repair Kit, Contains Items Marked With **		
NO. AA126ML-F50-__(-VI) Liquid Strainer (50-Series Flange Connections) (Viton optional)		
NO. AAB126ML-F50-__(-VI) Liquid Strainer (50-Series Flange Connections) (Viton optional)		
NO. AA126ML-3-__(-VI) Liquid Strainer (3/4" NPT Connections) (Viton optional)		
NO. AA126ML-4-__(-VI) Liquid Strainer (1" NPT Connections) (Viton optional)		
NO. AAB126ML-3-__(-VI) Liquid Strainer (3/4" BSPT Connections) (Viton optional)		
NO. AAB126ML-4-__(-VI) Liquid Strainer (1" BSPT Connections) (Viton optional)		

## Technical Details

Operating Pressure (max):            Inlet: 3000 PSI (207 bar)    Outlet: 3000 PSI (207 bar)  
 Regulated Flow (max):             14 GPM (53 LPM) – Bypass Port Plugged (0 gpm Bypass)  
    15 GPM (57 LPM) - Bypass Port Open (15 gpm Max Bypass)

**Electrical:**

Voltage: 12 VDC  
 Frequency: 110 Hz  
 Valve Type: Normally Closed Proportional Flow Control  
 Threshold (Activation) Current: 350+/-100 mA  
 Max. Control Current: 1600+/-200 mA

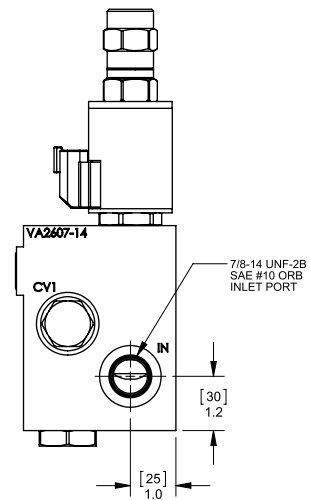
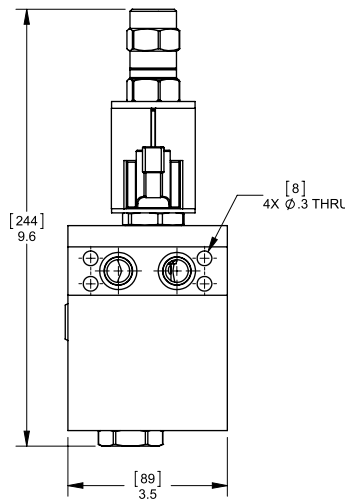
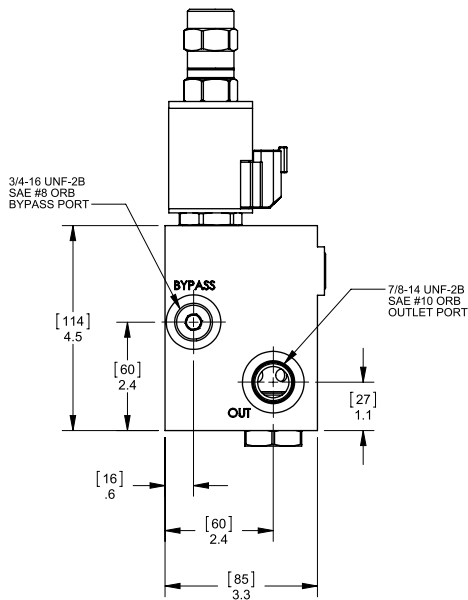
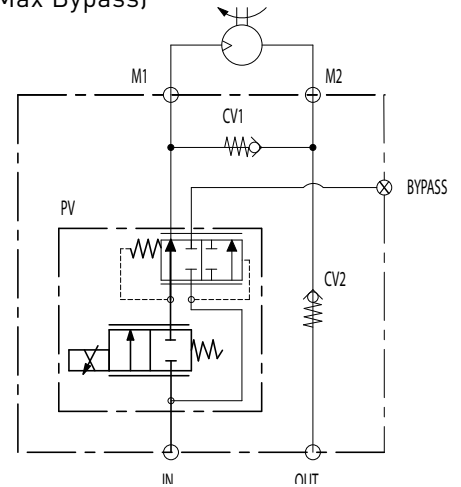
Initial Current Draw: 2.7 amps

Power: 32.8 watts

Resistance: 4.5 ohms at 68 degree F (20 degree C)

Storage Temperature: 32 to 140 degrees F (0 to 60 degrees C)

Fluids: Mineral based or synthetic hydraulic fluid at viscosities of 7.4 to 420 cSt



The Hypro hydraulic control assembly is designed to directly mount to modified Hypro HM series hydraulic motors. The control assembly provides a convenient solution for increased efficiency and damage prevention from abuse conditions.



## Operation Instructions

The hydraulic control assembly is designed to work with a digital controller with PWM signal output. As the signal current increases, the hydraulic flow control valve opens.

To ensure proper hydraulic oil flow metering, follow the calibration procedure described by the manufacturer of the controller that is being used as each controller's procedure is different. In general, balancing reaction time and system stability are key to proper calibration.

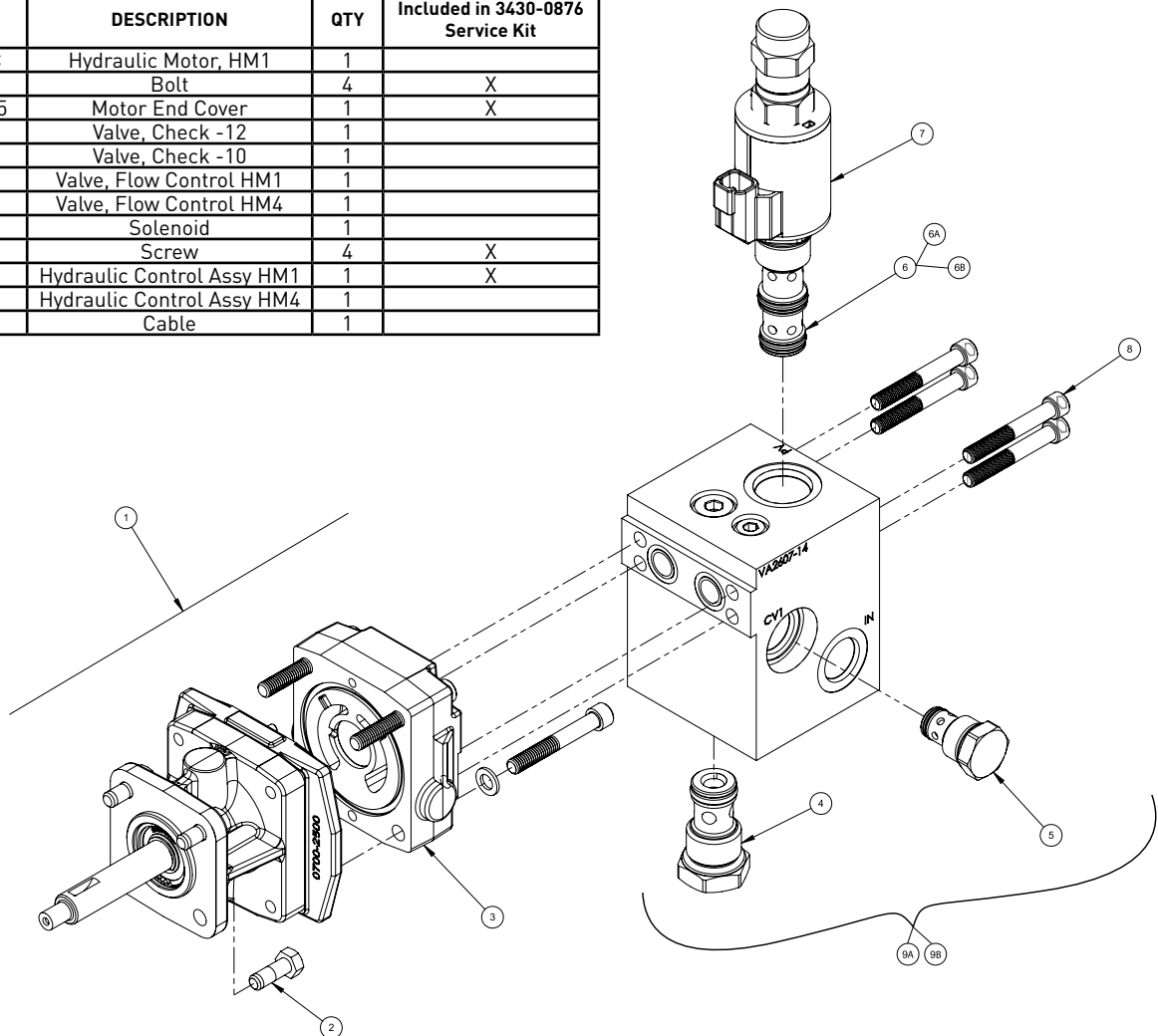
The hydraulic flow control valve has a manual override option fitted from the factory. This feature can be used to open or close the valve in the event that the digital controller has an error or fails. To use this feature, remove the override cover on the top of the valve to reveal the red override toggle. The override is engaged by turning the toggle clockwise. One full turn is required to start opening the valve and full open is achieved with 6 full turns. To close the valve, turn the toggle counter clockwise 6 turns until a stop is reached.

Connections to the control assembly are SAE #10 (7/16-14 UNF-2B) O-ring boss ports. Ensure that the mating fitting has an O-ring free of any debris or damage before installation.

Match the high pressure line to the port labelled "IN" and the low pressure line back to tank to the port labelled "OUT".

The port labelled "BYPASS" is a SAE #8 (3/4-16 UNF-2B) port intended return excess oil flow back to the reservoir. This port comes plugged from the factory. When plugged, the hydraulic control assembly can be used with hydraulic circuits that have a variable displacement pump. If the hydraulic circuit uses a fixed displacement pump, the plug must be removed and a line should be run from the bypass port to the reservoir. The maximum input flow is 30 GPM (114 LPM) for the bypass configuration.

ITEM NUMBER	PART NUMBER	DESCRIPTION	QTY	Included in 3430-0876 Service Kit
1	2500-0144C	Hydraulic Motor, HM1	1	
2	2210-0217	Bolt	4	X
3	0204-2500C5	Motor End Cover	1	X
4	3320-0079	Valve, Check -12	1	
5	3320-0078	Valve, Check -10	1	
6	3320-0080	Valve, Flow Control HM1	1	
6B	3320-0081	Valve, Flow Control HM4	1	
7	2525-0036	Solenoid	1	
8	2220-0129	Screw	4	X
9	2404-0443	Hydraulic Control Assy HM1	1	X
9B	2404-0452	Hydraulic Control Assy HM4	1	X
-	2520-0212	Cable	1	



## Service Instructions

The three valves used in the hydraulic control assembly are screw-in cartridge type valves and are replaceable. Each valve must be installed with the correct tightening torque to ensure proper operation. If the valve is tightened above the specified torque value, the valve internals may be damaged causing the valve to stick.

Before installing a new valve, inspect the valve to ensure all O-rings are seated in their appropriate grooves and have no damage, such as nicks or cuts.

Lubricate all O-rings with the oil being used in the hydraulic circuit. This will ensure that the valve can slide into the cavity without dislodging or damaging the O-rings.

Screw in the new valve and tighten to the following specifications:

Valve	Cavity Label	Torque (Ft-Lbs) [Nm]
PV72-30 Flow Control	PV	33-37 [44.7-50.2]
Check Valve	CV1	24-26 [32.5-35.3]
Check Valve	CV2	33-37 [44.7-50.2]

## Troubleshooting

Symptom	Corrective Action(s)
No flow from the pump	Engage the manual override on the flow control valve and send hydraulic flow to the motor. If no pump output is generated check the tractor hydraulic system for adequate supply flow and pressure or check the pump troubleshooting guide for pump evaluation.
No flow from the pump	Measure the resistance of the valve solenoid coil with an ohmmeter. The nominal resistance of the solenoid coil is 4.5 ohms. If the resistance rating is near zero or very high, the solenoid may be damaged.
Unstable pump performance	Review controller settings. Valve is normally closed, 110Hz PWM frequency. Decreasing brake point and/or increasing dead band tolerance settings incrementally may help improve stability.
Unable to get agitation flow	Review controller procedure for pump operation for manual control or methods for sending PWM signal to the valve while no flow is being detected by system flowmeters.

# Limited Warranty on Hypro/Shurflo Agricultural Pumps & Accessories

Hypro/Shurflo (hereafter, "Hypro") agricultural products are warranted to be free of defects in material and workmanship under normal use for the time periods listed below, with proof of purchase.

- Pumps: one (1) year from the date of manufacture, or one (1) year of use. This limited warranty will not exceed two (2) years, in any event.
- Accessories: ninety (90) days of use.

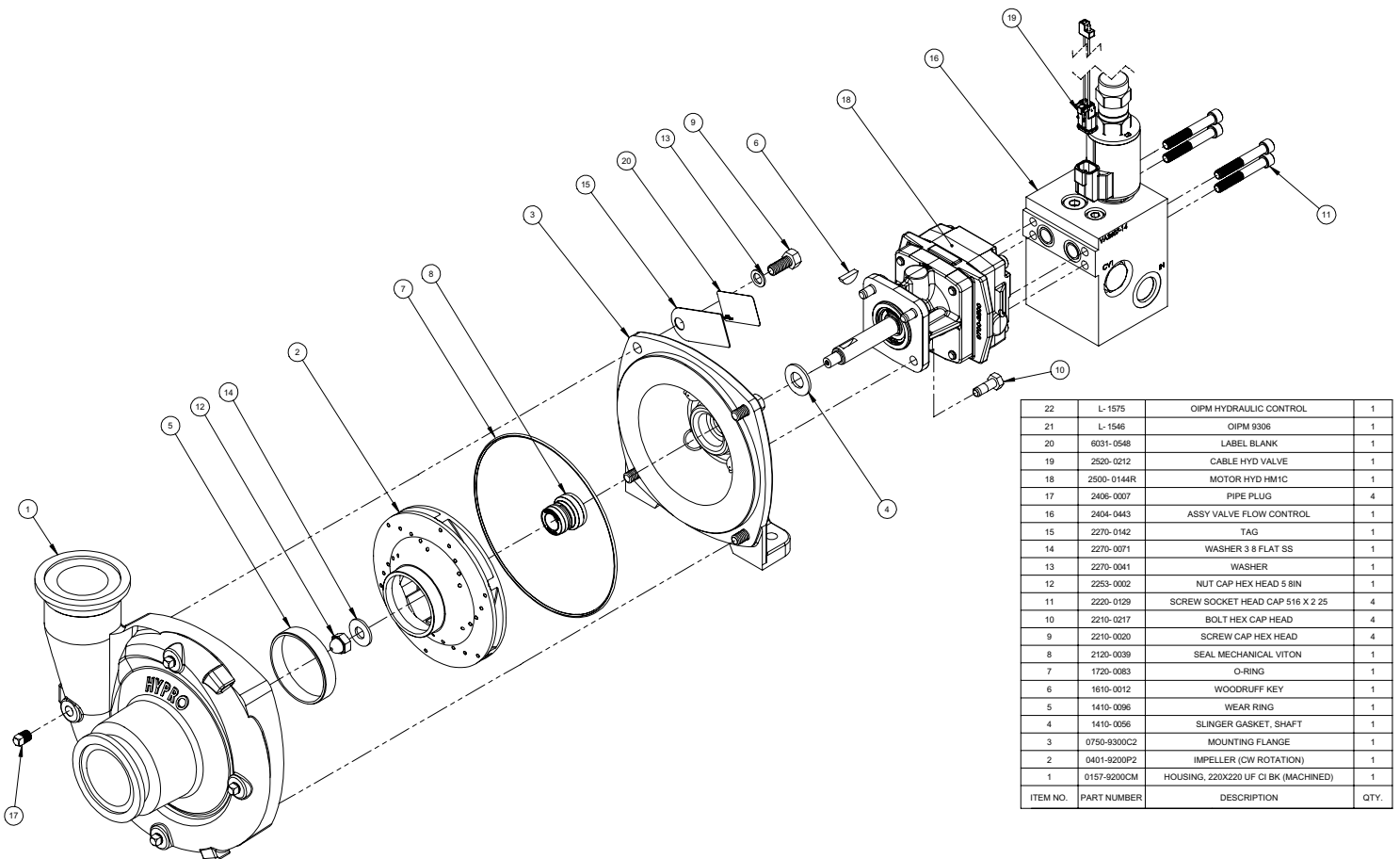
This limited warranty will not apply to products that were improperly installed, misapplied, damaged, altered, or incompatible with fluids or components not manufactured by Hypro. All warranty considerations are governed by Hypro's written return policy.

Hypro's obligation under this limited warranty policy is limited to the repair or replacement of the product. All returns will be tested per Hypro's factory criteria. Products found not defective (under the terms of this limited warranty) are subject to charges paid by the return-ee for the testing and packaging of "tested good" non-warranty returns.

No credit or labor allowances will be given for products returned as defective. Warranty replacement will be shipped on a freight allowed basis. Hypro reserves the right to choose the method of transportation.

This limited warranty is in lieu of all other warranties, expressed or implied, and no other person is authorized to give any other warranty or assume obligation or liability on Hypro's behalf. Hypro shall not be liable for any labor, damage or other expense, nor shall Hypro be liable for any indirect, incidental or consequential damages of any kind incurred by the reason of the use or sale of any defective product. This limited warranty covers agricultural products distributed within the United States of America. Other world market areas should consult with the actual distributor for any deviation from this document.

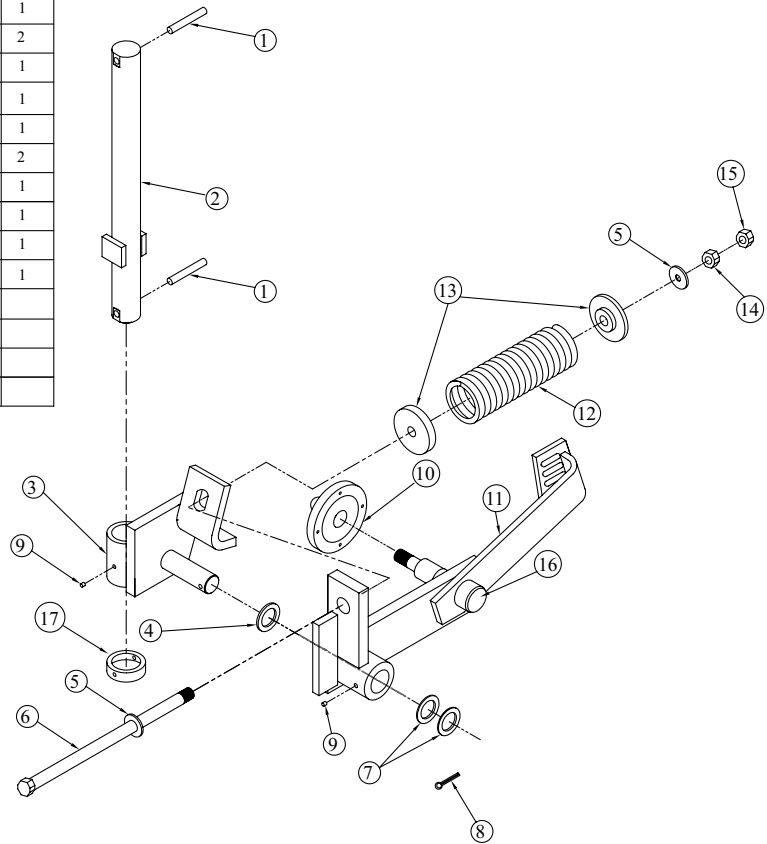
## 9306C-HM1C-BU-002 PUMP



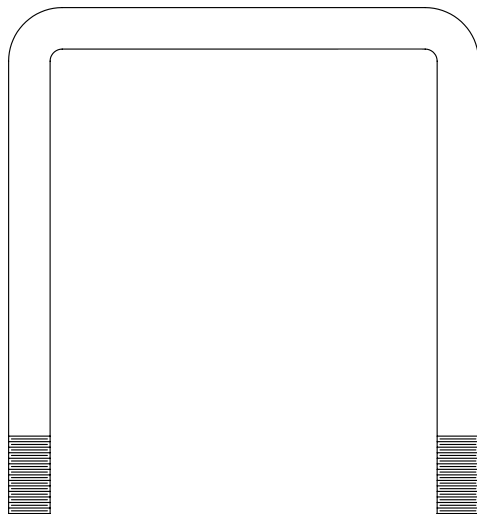
22	L-1575	OIPM HYDRAULIC CONTROL	1
21	L-1546	OIPM 9306	1
20	6031-0548	LABEL BLANK	1
19	2520-0212	CABLE HYD VALVE	1
18	2500-0144R	MOTOR HYD HM1C	1
17	2406-0007	PIPE PLUG	4
16	2404-0443	ASSY VALVE FLOW CONTROL	1
15	2270-0142	TAG	1
14	2270-0071	WASHER 3/8 FLAT SS	1
13	2270-0041	WASHER	1
12	2253-0002	NUT CAP HEX HEAD 5/8IN	1
11	2220-0129	SCREW SOCKET HEAD CAP 5/16 X 2 25	4
10	2210-0217	BOLT HEX CAP HEAD	4
9	2210-0020	SCREW CAP HEX HEAD	4
8	2120-0039	SEAL MECHANICAL VITON	1
7	1720-0083	O-RING	1
6	1610-0012	WOODRUFF KEY	1
5	1410-0096	WEAR RING	1
4	1410-0056	SLINGER GASKET, SHAFT	1
3	0750-9300C2	MOUNTING FLANGE	1
2	0401-9200P2	IMPELLER (CW ROTATION)	1
1	0157-9200CM	HOUSING, 220X220 UF CI BK (MACHINED)	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

# COULTER ASSEMBLY

Item	Part #	DESCRIPTION	QTY
1	KSC-466360-RP716	Spring Pin, 7/16 X 3	2
2	KSC-466315 (20" & 24")	COULTER SHAFT	1
3	KSC-466320	COULTER PIVOT ASSEMBLY	1
4	KSC-466360-MB10	Machine Bushing 10 ga	1
5	MF6H	Washer, Flat, 3/4" High Strength	2
6	106-N1	HHCS, 3/4" X 14" BOLT GR.5	1
7	KSC-466360-MB14	Machine Bushing, 14 ga	2
8	KSC-466360-CP	Cotter Pin, 1/4 X 2	1
9	KSC-466360-GF	Drive Zerk	2
10	KSC-466300-HUB	N633 Hub Assembly With Bearings	1
11	KSC-531020	COLTER ARM ASSEMBLY	1
12	SPR-1 (20"&24")	MAIN SPRING	1
13	S1244SL-SPC	SPRING CAP WELDMENT	2
14	N6	NUT, HEX, 3/4" High Strength	1
15	N6J	NUT, HEX, JAM, 3/4" PLATED	1
16	KSC-466300-SPL	N633 Spindle W/ Hardware	1
17	KSC-466315-C	COLLAR	1
	20 PL COMBO (NOT SHOWN)	20" SMOOTH BLADE	
	20 FL COMBO (NOT SHOWN)	20" FLUTED BLADE	
	20 FLC COMBO (NOT SHOWN)	20" CRUCIBLE BLADE	
	20 NO COMBO (NOT SHOWN)	20" NOTCHED BLADE	

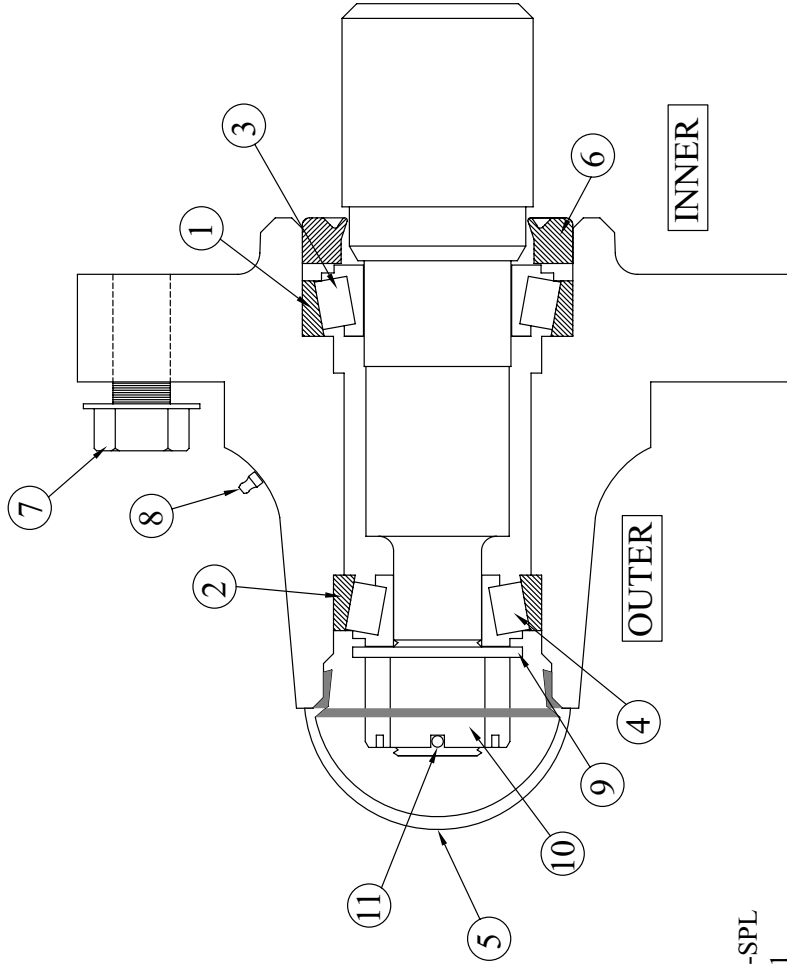


## 3/4" U-BOLT FOR 7 X 7 TOOLBAR



**Comes with nuts  
and lockwashers**

# COULTER HUB

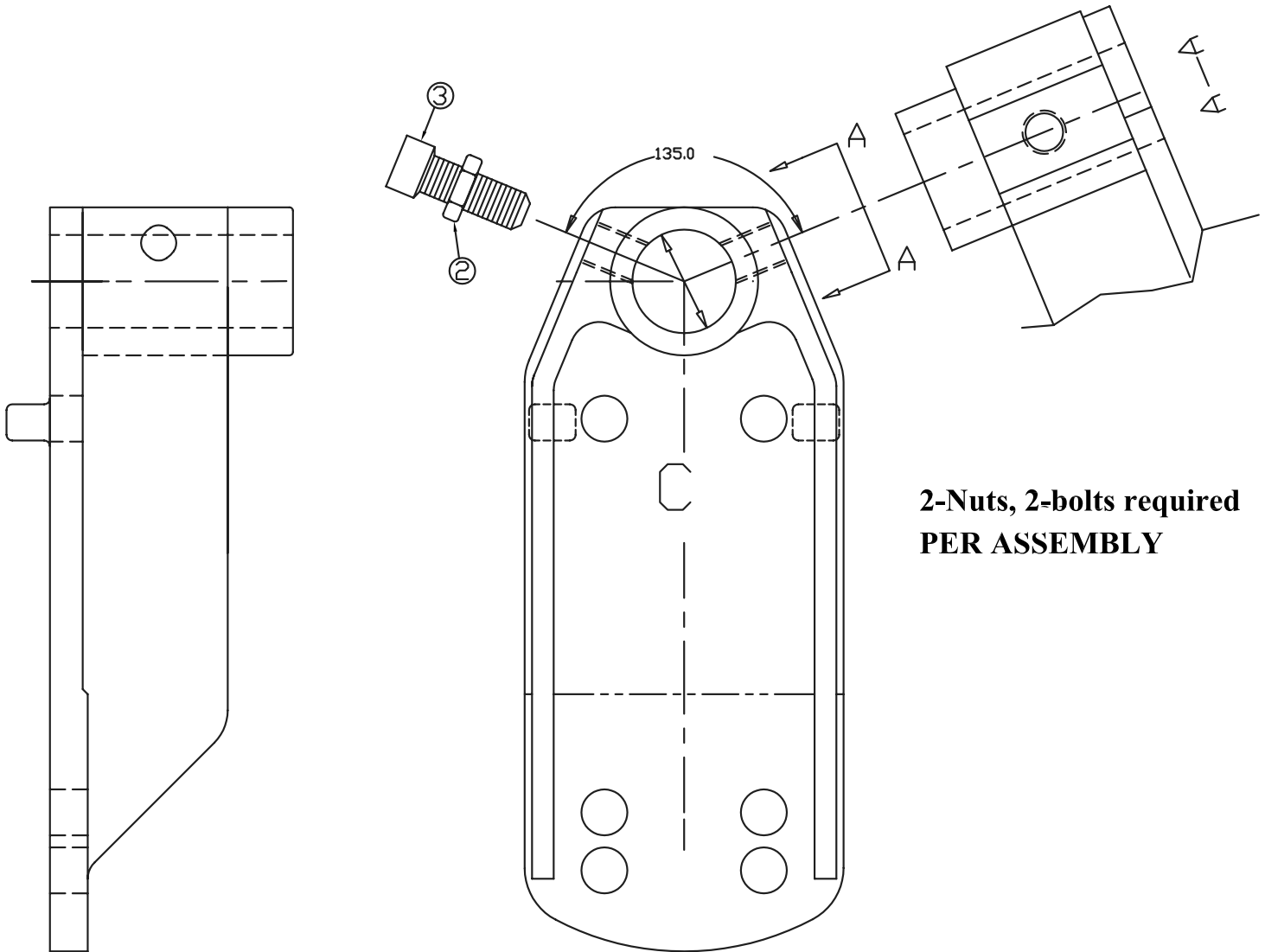


Item	Part #	Description	QTY
	KSC-466300-HUB	Comes Complete With Items 1-8	
1	KSC-LM67010	Inner Bearing Cup(large race)	1
2	KSC-LM11910	Outer Bearing Cup(small race)	1
3	KSC-LM67048	Inner Bearing Cone (large rollers/cage)	1
4	KSC-LM11949	Outer Bearing Cone (small rollers/cage)	1
5	KSC-909911	Hub Cap	1
6	KSC-906296	Seal	1
7	KSC-913572	Flange Head Bolts (each)	4
8	KSC-G1641-B	1/4-28 X 35/64 Grease Zerk	1

Item	Part #	Description	QTY
	KSC-466300-SPL	Comes Complete With Items 9-11	
9	KSC-913608	Spindle Washer	1
10	KSC-912953	Spindle Castle Nut	1
11	KSC-905936	Spindle Cotter Pin	1

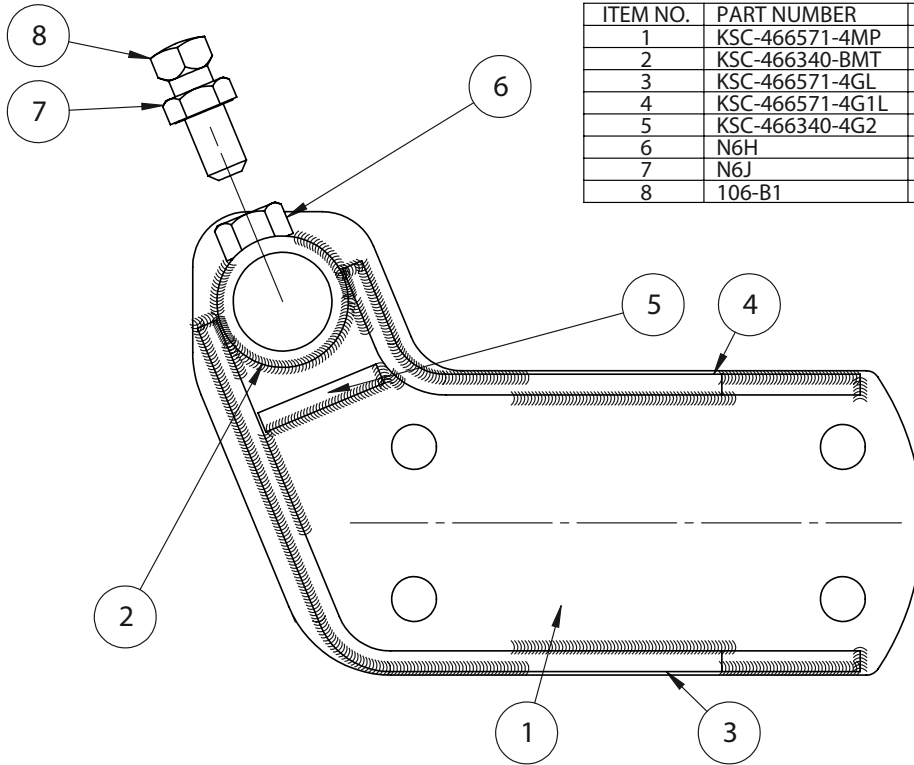
**Note:** HUB P/N KSC-466300-HUB    **Note:** Spindle P/N KSC-466300-SPL  
 Comes Complete With Items 1-8    Comes Complete With Items 9-11

# 7 X 7 STANDARD COULTER MOUNT



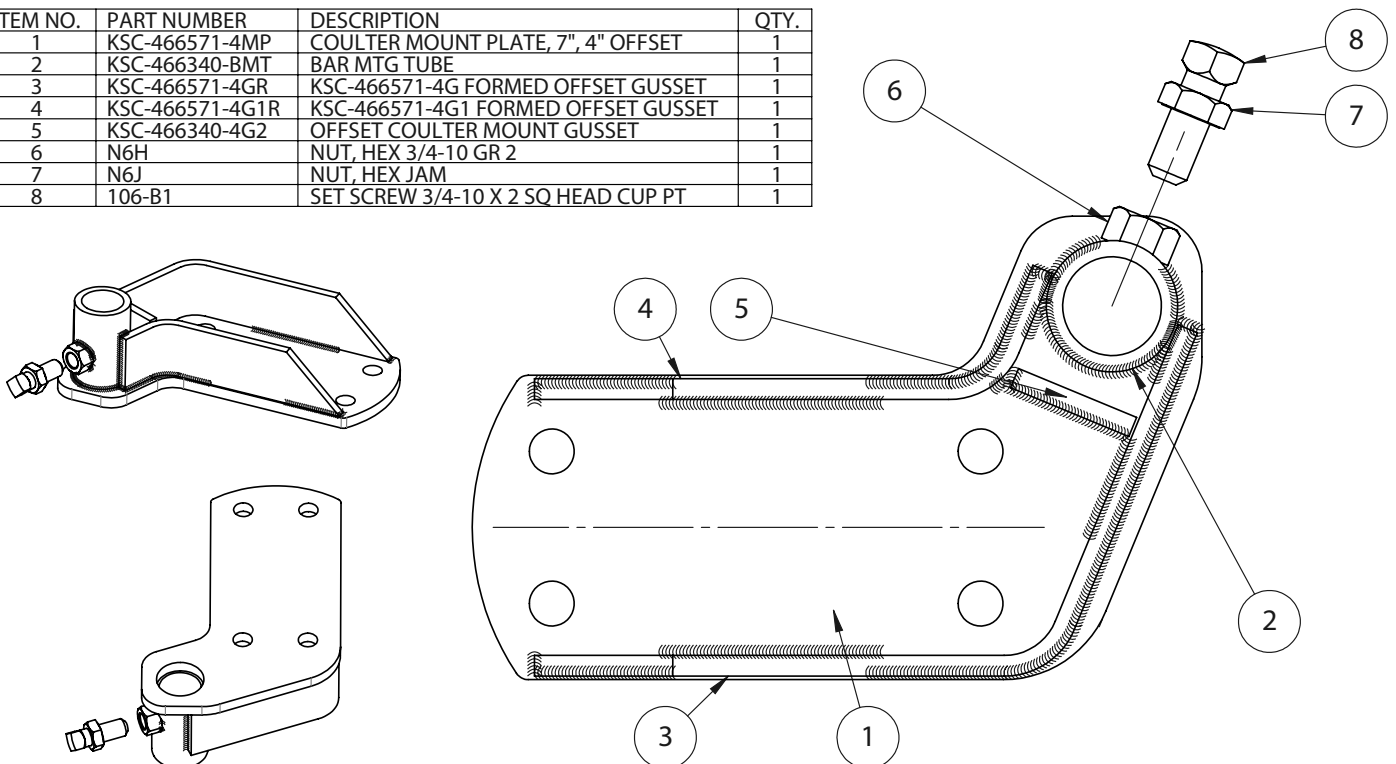
ITEM#	QTY.	PART#	DESCRIPTION
1	1	KSC-466670C	Casting
2	2	N6J	3/4 - 10 Jam Nut
3	2	106-B1	3/4 - 10 x 2 Square Head Set Screw
1	1	KSC-466571-4R	4" Right Hand Off-set Mount
1	1	KSC-466571-4L	4" Left Hand Off-set Mount

# 7 X 7 OFFSET COULTER MOUNT



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	KSC-466571-4MP	COULTER MOUNT PLATE, 7", 4" OFFSET	1
2	KSC-466340-BMT	BAR MTG TUBE	1
3	KSC-466571-4GL	KSC-466571-4G FORMED OFFSET GUSSET	1
4	KSC-466571-4G1L	KSC-466571-4G1 FORMED OFFSET GUSSET	1
5	KSC-466340-4G2	OFFSET COULTER MOUNT GUSSET	1
6	N6H	NUT, HEX 3/4-10 GR 2	1
7	N6J	NUT, HEX JAM	1
8	106-B1	SET SCREW 3/4-10 X 2 SQ HEAD CUP PT	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	KSC-466571-4MP	COULTER MOUNT PLATE, 7", 4" OFFSET	1
2	KSC-466340-BMT	BAR MTG TUBE	1
3	KSC-466571-4GR	KSC-466571-4G FORMED OFFSET GUSSET	1
4	KSC-466571-4G1R	KSC-466571-4G1 FORMED OFFSET GUSSET	1
5	KSC-466340-4G2	OFFSET COULTER MOUNT GUSSET	1
6	N6H	NUT, HEX 3/4-10 GR 2	1
7	N6J	NUT, HEX JAM	1
8	106-B1	SET SCREW 3/4-10 X 2 SQ HEAD CUP PT	1



# LA5000 LIQUID APPLICATOR

1050 GALLON TANK W/ 27', 30', 35' OR 40' TOOLBAR

## OPERATION & MAINTENANCE MANUAL



### BAKERSFIELD, CA

4618 SACO RD, 93308

**661.391.9081**

Toll Free: 877.724.2236

F: 661.391.9085

BAKERSFIELD@AGSPRAY.COM

### COLUMBUS, NE

5834 E 23RD ST, 68601

**402.564.4544**

Toll Free: 800.274.1025

F: 402.564.0549

COLUMBUS@AGSPRAY.COM

### DOTHAN, AL

2401 FORRESTER RD, 36301

**334.673.0580**

Toll Free: 800.227.4098

F: 334.673.1974

DOTHAN@AGSPRAY.COM

### FARGO, ND

4350 48TH AVE N, 58102

**701.280.2862**

Toll Free: 800.373.4084

F: 701.293.0961

FARGO@AGSPRAY.COM

### GREENWOOD, MS

2900 BALDWIN RD, SUITE A, 38930

**662.453.4524**

Toll Free: 800.844.4524

F: 662.455.4442

GREENWOOD@AGSPRAY.COM

### HOPKINSVILLE, KY

3303 PEMBROKE RD, 42240

**270.886.0296**

Toll Free: 800.637.7172

F: 270.885.7392

HOPKINSVILLE@AGSPRAY.COM

### MANKATO, MN

907 SOUTHBEND AVE, 56001

**507.388.6295**

Toll Free: 800.722.9376

F: 507.388.4668

MANKATO@AGSPRAY.COM

### NEWTON, KS

7000 SCHABEN CT, 67114

**316.283.4444**

Toll Free: 800.394.7662

F: 316.283.4646

NEWTON@AGSPRAY.COM

### OTHELLO, WA

81 E PINE ST, 99344

**509.488.6631**

Toll Free: 800.634.2026

F: 509.488.2927

OTHELLO@AGSPRAY.COM

### TEMPE, AZ

8464 S KYRENE RD, 85284

**480.705.8047**

Toll Free: 877.874.7166

F: 480.705.8048

TEMPE@AGSPRAY.COM



MANUFACTURING  
QUALITY PRODUCTS  
FOR 30 YEARS