

# Demco manufacturing

**Dethmers Manufacturing Company**

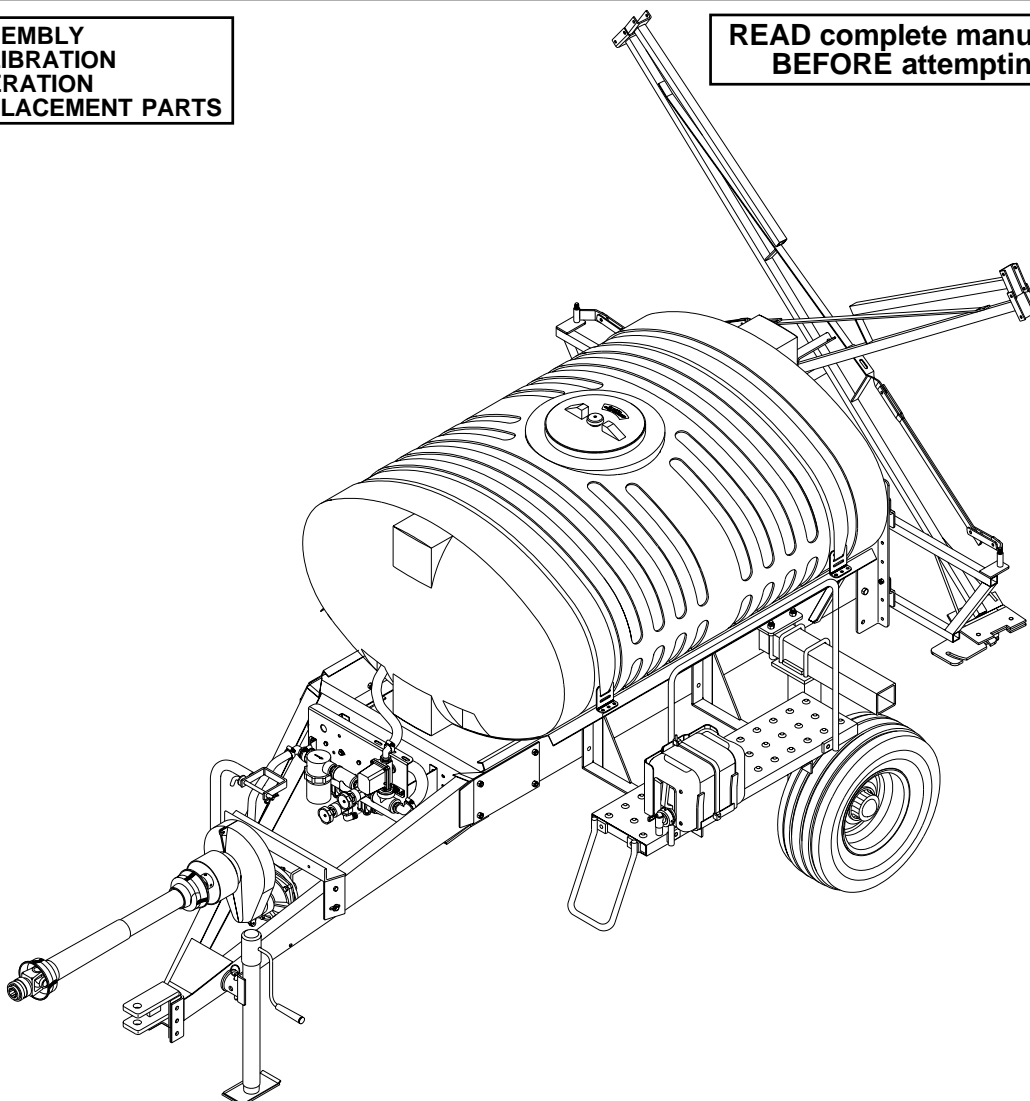
DOING OUR BEST TO PROVIDE YOU THE BEST

## HCM

### 300 GALLON SPRAYER OWNER/OPERATORS MANUAL

ASSEMBLY  
CALIBRATION  
OPERATION  
REPLACEMENT PARTS

READ complete manual CAREFULLY  
BEFORE attempting operation.



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# INTRODUCTION

Thank you for purchasing a Demco sprayer. We feel you have made a wise choice and hope you are completely satisfied with your new piece of equipment.

If you have any questions regarding the applications of certain solutions or chemicals, contact your chemical supplier and follow chemical manufacturer recommendations as well as all licensing and use restrictions or regulations.

Please read and understand this manual before operation.



**WARNING:** TO AVOID PERSONAL INJURY OR PROPERTY DAMAGE, OBSERVE THE FOLLOWING INSTRUCTIONS:

**Chemicals are dangerous. Know exactly what you're going to do and what is going to happen before attempting to work with these products. Improper selection or use can injure people, animals, plants and soil.**

**Always wear protective clothing such as coveralls, goggles and gloves when working with chemicals or the sprayer.**

**Be sure to dispose of all unused chemicals or solutions in a proper and ecologically sound manner.**

## GENERAL INFORMATION

1. Unless otherwise specified, high-strength **(grade5)** **(3 radial-line head markings)** hex head bolts are used throughout assembly of this piece of equipment.
2. Whenever the terms "**LEFT**" and "**RIGHT**" are used in this manual it means from a position behind the sprayer and facing forward.
3. When placing a parts order, refer to this manual for proper part numbers and place order by **PART NO. and DESCRIPTION.**
4. All reference numbers used in the assembly instructions of the sprayer main frame correspond with the reference numbers in the HCM Main Parts List.

## SAFETY

**TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.**



**THIS SYMBOL MEANS**

**ATTENTION**

**BECOME ALERT**

**YOUR SAFETY IS INVOLVED!**

### **SIGNAL WORDS**

Note: use of the following signal words **DANGER**, **WARNING**, and **CAUTION** with safety messages. Appropriate signal word for each has been selected using following guidelines:

#### **DANGER:**

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

#### **WARNING:**

Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

#### **CAUTION:**

Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

If you have questions not answered in this manual, require additional copies, or if your manual is damaged, please contact your dealer or Dethmers Mfg. Co., P.O. Box 189, 4010 320th Street, Boyden, IA 51234  
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## **SAFETY...YOU CAN LIVE WITH IT**



### **EQUIPMENT SAFETY GUIDELINES**

Every year many accidents occur which could be avoided by a few seconds of thought and more careful approach to handling equipment. You, the operator, can avoid accidents by observing precautions in this section. To avoid personal injury, study precautions and insist those working with you, or you yourself, follow them.

In order to provide a better view, certain illustrations in this manual may show an assembly with a safety shield removed. However, sprayer should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace shield prior to use.

Replace any caution, warning, danger or instruction safety decal that is not readable or is missing. Location of such decals is indicated in this booklet.

Do not attempt to operate this sprayer under the influence of alcohol or drugs.

Review safety instructions with all users.

Operator should be a responsible adult. **DO NOT ALLOW PERSONS TO OPERATE OR ASSEMBLE THIS SPRAYER UNTIL THEY HAVE DEVELOPED A THOROUGH UNDERSTANDING OF SAFETY PRECAUTIONS AND HOW IT WORKS.**

To prevent injury or death, use a tractor equipped with a roll over protective system (ROPS). Do not paint over, remove, or deface any safety signs or warning decals on your sprayer. Observe all safety signs and practice instructions on them.

Never exceed limits of sprayer. If its ability to do a job, or to do so safely is in question **DON'T TRY IT.**



### **LIGHTING AND MARKING**

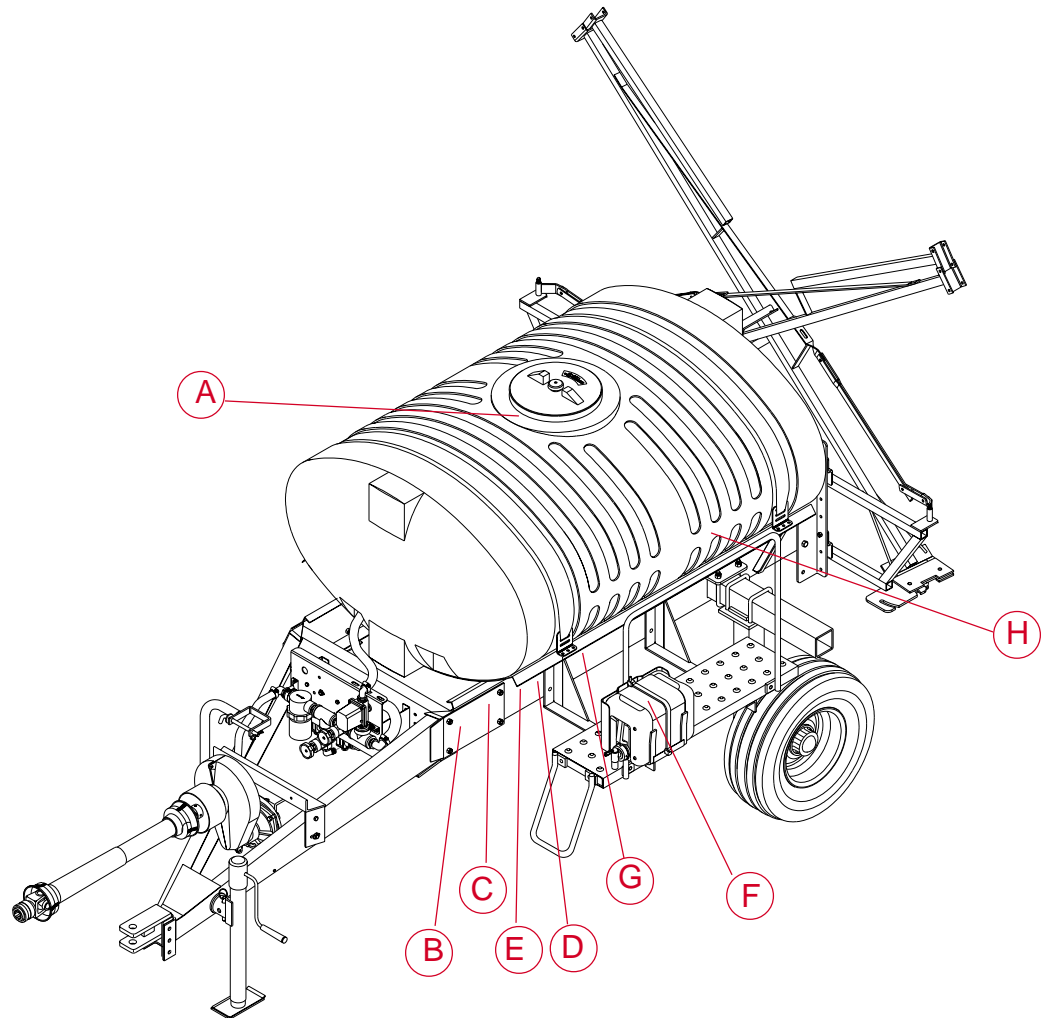
It is the responsibility of operator to know lighting and marking requirements of local highway authorities and to install and maintain equipment to provide compliance with regulations. Add extra lights when transporting at night or during periods of limited visibility.

Lighting kits are available from your dealer or manufacturer.



## SAFETY SIGN LOCATIONS

Types of safety sign and locations on a HCM Sprayer are shown in the illustration below. Good safety requires that you familiarize yourself with various safety signs, type of warning, and particular function related to that area, that requires your SAFETY AWARENESS.



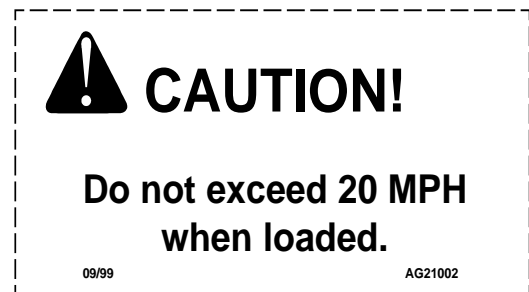
- A** AB21014 - Warning Observe Following Instructions
- B** AB21001 - Warning Do Not Stand on Sprayer
- C** AG21001 - Tire Rating & Pressure chart
- D** AG21002 - Caution 20 M.P.H.
- E** ZA21002 - Qty.2 Made in America
- F** AA21014 - Fresh Water Only
- G** DD137 - Qty.2 Model HCM
- H** AA21026 - Qty. 2 Small Demco's  
(See Next Page for decal picture)

A AB21014

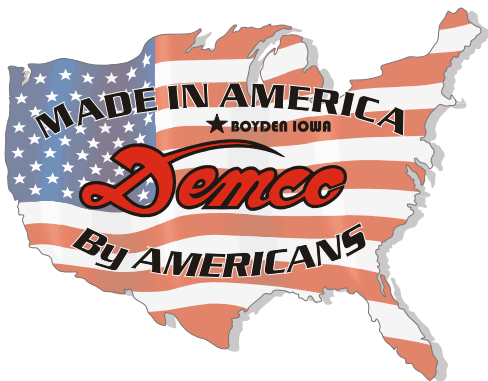
B AB21001

C AG21001

D AG21002



E ZA21002



F AA21014

G DD137

H AA21026







## **SAFETY SIGN CARE**

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current sign.
- Safety signs are available from your distributor, dealer parts department, or the factory.

### **How to install safety signs:**

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal into place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of decal backing paper.



## **TIRE SAFETY**

- Failure to follow proper procedures when mounting a tire on a rim can produce an explosion which may result in a serious injury or death.
- Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
- Inflating or servicing tires can be dangerous. Whenever possible, trained personnel should be called to service and/or mount tires.
- Always order and install tires and wheels with appropriate capacity to meet or exceed the anticipated weight to be placed on the equipment.



## **REMEMBER**

Your best assurance against accidents is a careful and responsible operator. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.



## **BEFORE OPERATION:**

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- It is recommended that suitable protective hearing and eye protection be worn.
- The operator may come in contact with certain materials which may require specific safety equipment relative to the handling of such materials. (Examples: extremely dusty, molds, fungus, bulk fertilizers, etc.)
- Keep wheel and lug nuts tightened to specified torque.
- Assure that agricultural implement tires are inflated evenly.
- Give the unit a visual inspection for any loose bolts, worn parts, or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included in this manual.
- Be sure there are no tools lying on or in the equipment
- Do not use the unit until you are sure that the area is clear, especially around children and animals.
- Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and it's attachments. Completely familiarize yourself and other operators with it's operation before using.
- Make sure that the brakes are evenly adjusted (if equipped with brakes)
- Use a tractor equipped with Roll Over Protection System (ROPS) and fasten your seat belt prior to starting the engine.
- The manufacturer does not recommend usage of a tractor with the ROPS removed.
- Move the tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach a safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.



## **DURING OPERATION:**

- Install the safety chain by crossing the chains under the tongue and secure to the draw bar cage, hitch, or bumper frame.
- Beware of bystanders, **PARTICULARLY CHILDREN!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the unit. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.

- **NO PASSENGERS ALLOWED-** Do not carry passengers anywhere on or in the tractor or equipment.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate, or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine, and **remove the ignition key**.
- Be especially observant of the operating area and terrain- watch for holes, rocks, or other hidden hazards. Always inspect the area prior to operation.
  - DO NOT operate near the edge of drop-offs or banks.
  - DO NOT operate on steep slopes as overturn may result.
  - Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.
- Pick the levellest possible route when transporting across fields. Avoid the edges of ditches, gullies, and steep hillsides.
- Be extra careful when working on inclines.
- Periodically clear the equipment of brush, twigs, or other materials to prevent buildup of dry combustible materials.
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks, and holes; they can be dangerous for equipment operation or movement.
- Allow for unit length when making turns.
- Do not walk or work under raised components or attachments unless securely positioned and blocked.
- Keep all bystanders, pets, and livestock clear of the work area.
- Operate the towing vehicle from the operators seat only.
- Never stand alongside of unit with engine running or attempt to start engine and/or operate machine while standing alongside of unit.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.



## **FOLLOWING OPERATION**

- Following operation, or when unhitching, stop the tractor or towing vehicle, set the brakes, disengage the PTO and all power drives, shut off the engine and **remove the ignition keys**.
- Store the unit in an area away from human activity.

- Do not park equipment where it will be exposed to livestock for long periods of time. Damage and livestock injury could result.
- Do not permit children to play on or around the stored unit.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Wheel chocks may be needed to prevent unit from rolling.



## **HIGHWAY AND TRANSPORT OPERATIONS**

- **SAFETY CHAINS:** If equipment is going to be transported on a public highway, Always follow state and local regulations regarding safety chains and auxiliary lighting. Be sure to check with local law enforcement agencies for your own particular regulations. If required safety chains should be obtained and installed. Only safety chains (not elastic or nylon/plastic tow straps) should be used to retain connection between towing and towed machines in event of separation of primary attaching system. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chains. Criss cross chains under tongue and secure to draw bar cage, mounting loops, or bumper frame.
- Adopt safe driving practices:
  - Keep brake pedals latched together at all times. **NEVER USE INDEPENDENT BRAKING WITH SPRAYER IN TOW. LOSS OF CONTROL OR UPSET MAY RESULT.**
  - Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop. Keep speed to a minimum.
  - Reduce speed prior to turns to avoid risk of overturning.
  - Always keep tractor or towing unit in gear to provide engine braking when going downhill. Do not coast.
  - Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on highway during transport. Various safety lights and devices are available from your dealer.
- Use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway lighting and marking requirements.
- When driving tractor and sprayer under 20 mph (40 kph) day or night, use flashing amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge load ratings. Do not cross bridges rated lower than gross weight of unit you are operating.

- Watch for obstructions overhead and side to side while transporting.
- Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of sprayer when making turns, or stopping.



## **PERFORMING MAINTENANCE**

- Good Maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Make sure there is plenty of ventilation. Never operate engine of towing vehicle in a closed building. Exhaust fumes may cause asphyxiation.
- Before working on this machine, stop towing vehicle, set brakes, disengage PTO and all power drives, shut off engine and **remove ignition key**.
- Be certain all moving parts and attachments have come to a complete stop before attempting to perform maintenance.
- Always use a safety support and block wheels. Never use a jack to support machine.
- Always use proper tools or equipment for job at hand.
- Use extreme caution when making adjustments.
- Follow torque chart in this manual when tightening bolts and nuts.
- Never use your hands to locate a hydraulic leak on attachments. Use a small piece of cardboard or wood. Hydraulic fluid escaping under pressure can penetrate skin.
- Openings in skin and minor cuts are susceptible to infection from hydraulic fluid. **Without immediate medical treatment, serious infection and reactions can occur.**
- When disconnecting hydraulic lines, shut off hydraulic supply and relieve all hydraulic pressure.
- Replace **all shields** and **guards** after servicing and before moving.
- After servicing, be sure all tools, parts and service equipment are removed.
- Do not allow grease or oil to build up on any steps or platform.
- When replacing bolts refer to owners manual.
- Refer to bolt torque chart for head identification marking.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. Manufacturer will not claim responsibility for use of unapproved parts or accessories and other damages as a result of their use.
- If equipment has been altered in any way from original design, manufacturer does not accept any liability for injury or warranty.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment

## BOLT TORQUE

### TORQUE DATA FOR STANDARD NUTS, BOLTS, AND CAPSCREWS.

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with same grade bolt.

NOTE: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.

#### Bolt Torque for Standard bolts \*



#### Torque Specifications

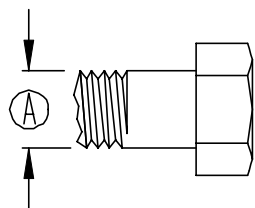
"A"	GRADE 2		GRADE 5		GRADE 8	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	(8)	9	(12)	12	(16)
5/16"	10	(13)	18	(25)	25	(35)
3/8"	20	(27)	30	(40)	45	(60)
7/16"	30	(40)	50	(70)	80	(110)
1/2"	45	(60)	75	(100)	115	(155)
9/16"	70	(95)	115	(155)	165	(220)
5/8"	95	(130)	150	(200)	225	(300)
3/4"	165	(225)	290	(390)	400	(540)
7/8"	170	(230)	420	(570)	650	(880)
1"	225	(300)	630	(850)	970	(1310)

#### Bolt Torque for Metric bolts \*

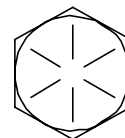
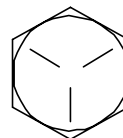
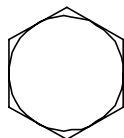
"A"	CLASS 8.8		CLASS 9.8		CLASS 10.9	
	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	(13)	10	(14)	13	(17)
7	15	(21)	18	(24)	21	(29)
8	23	(31)	25	(34)	31	(42)
10	45	(61)	50	(68)	61	(83)
12	78	(106)	88	(118)	106	(144)
14	125	(169)	140	(189)	170	(230)
16	194	(263)	216	(293)	263	(357)
18	268	(363)	--	--	364	(493)
20	378	(513)	--	--	515	(689)
22	516	(699)	--	--	702	(952)
24	654	(886)	--	--	890	(1206)

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

\* GRADE or CLASS value for bolts and capscrews are identified by their head markings.



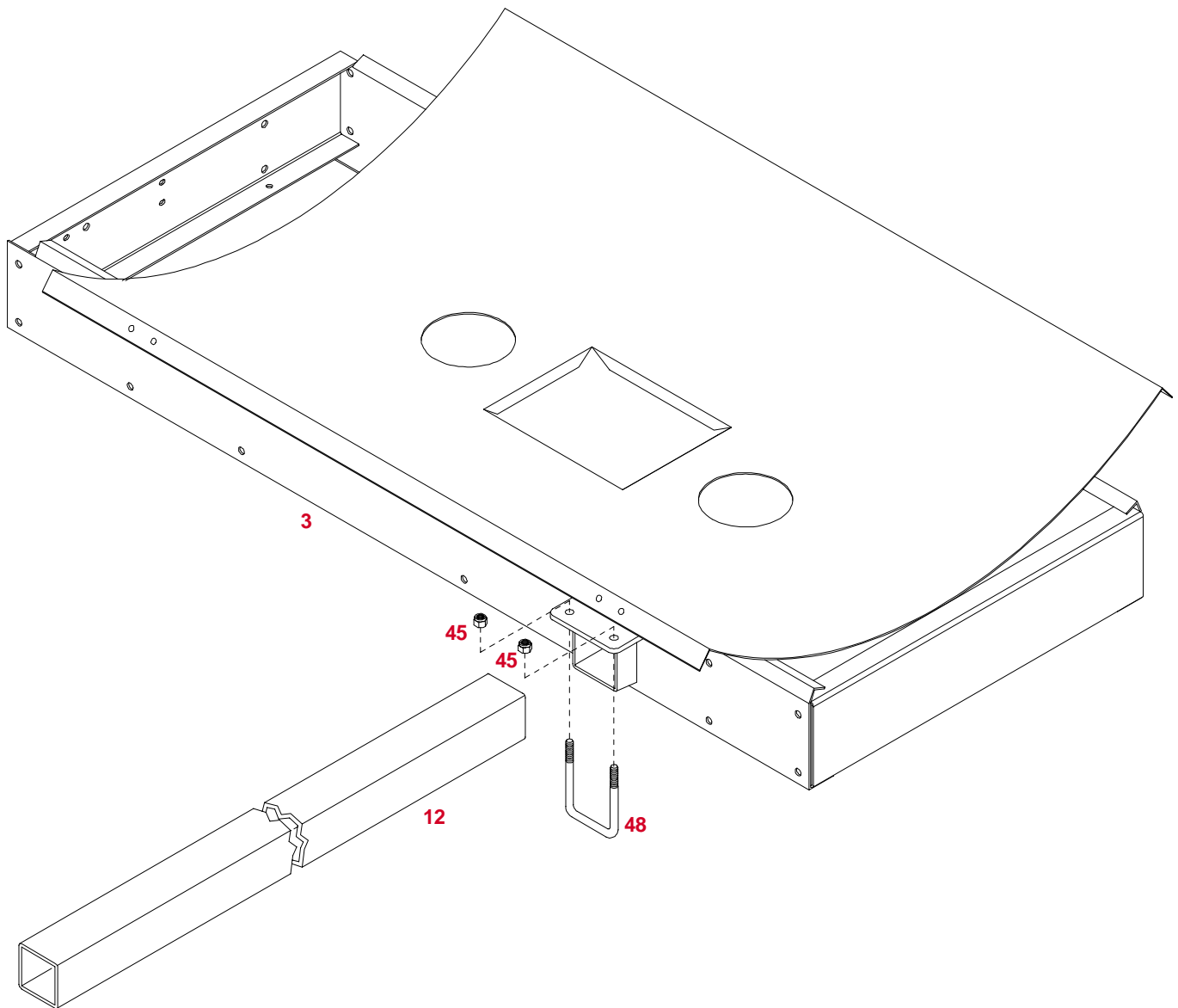
GRADE-2    GRADE-5    GRADE-8



CLASS 8.8    CLASS 9.8    CLASS 10.9



## AXLE INSTALLATION

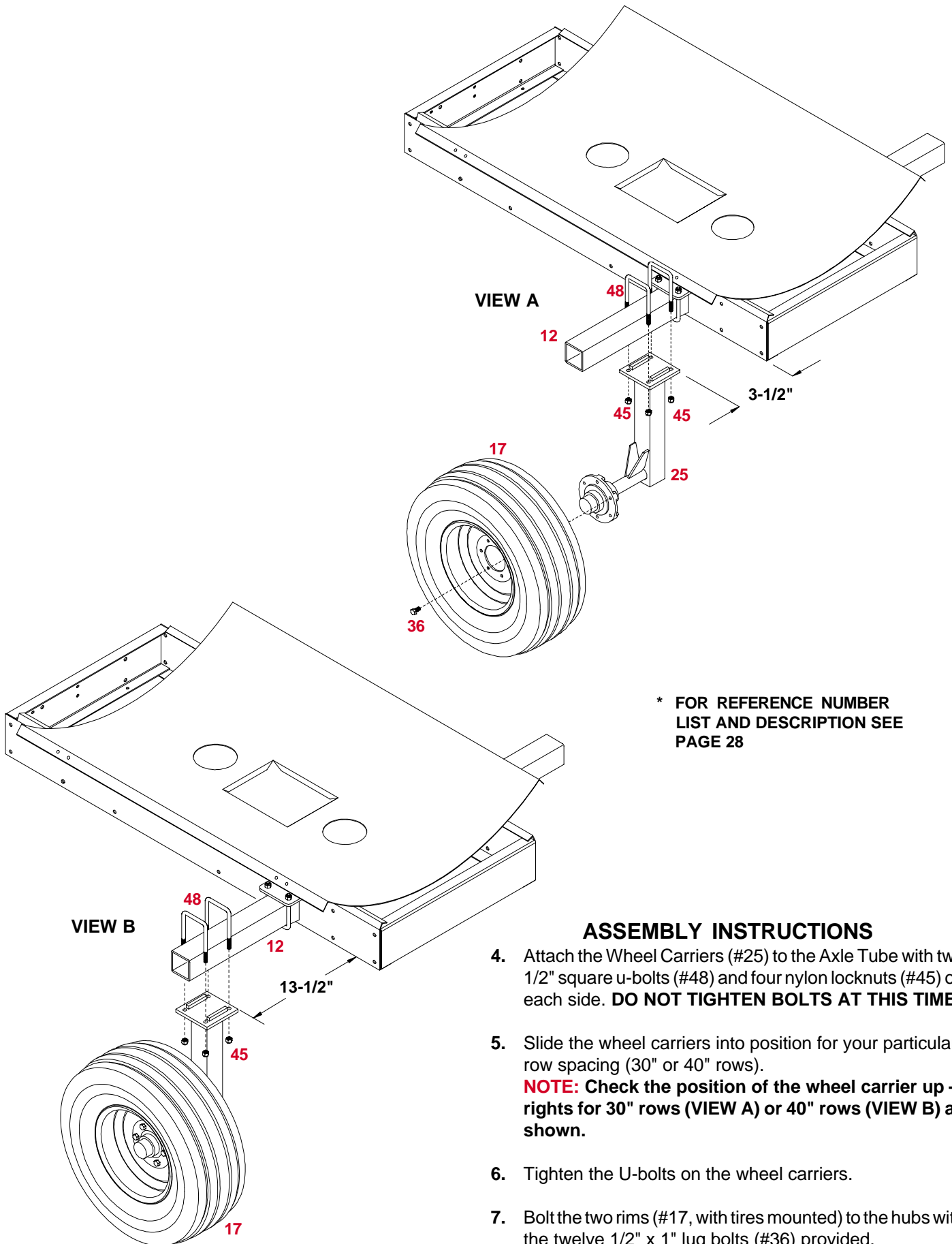


\* FOR REFERENCE NUMBER  
LIST AND DESCRIPTION SEE  
PAGE 28

### ASSEMBLY INSTRUCTIONS

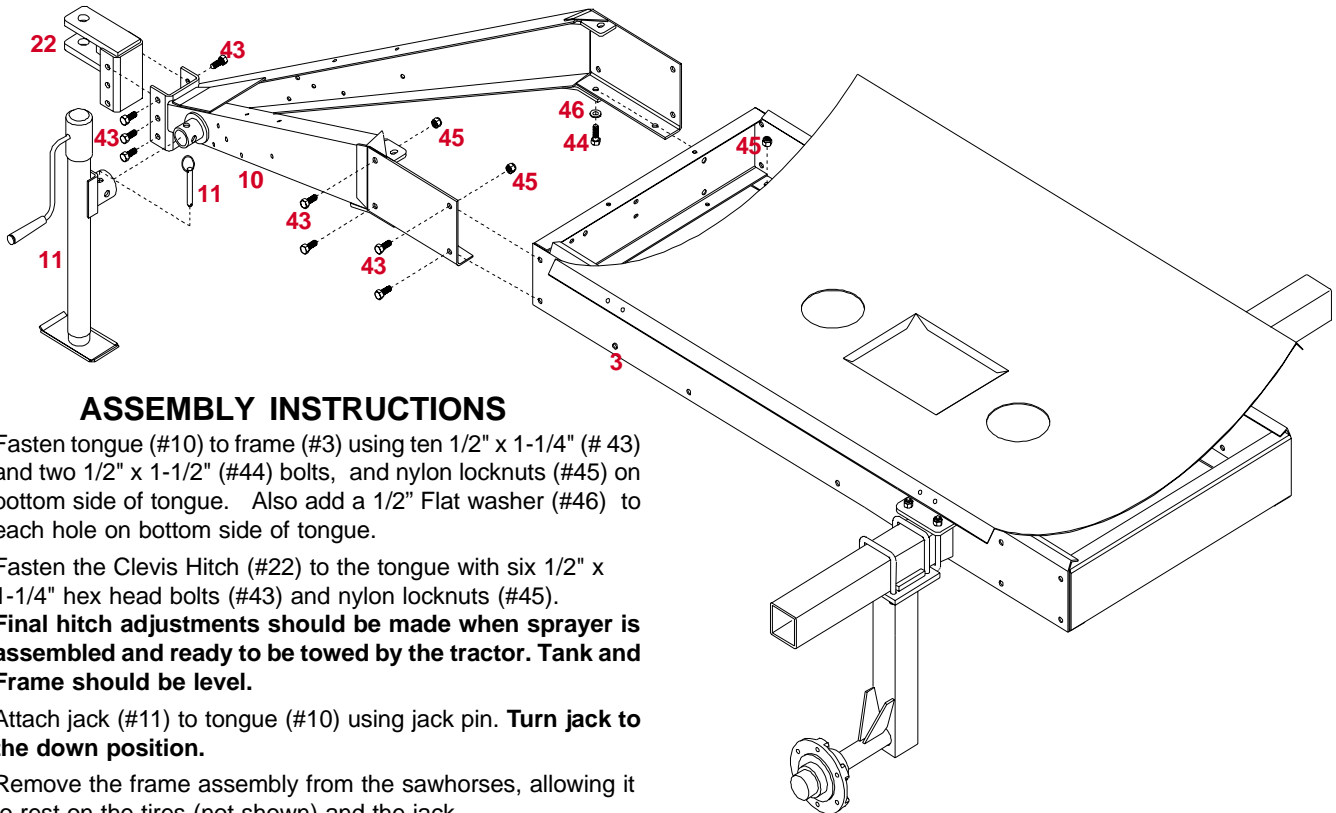
1. Begin by resting the Frame (#3) on saw horses, barrels or some other solid object, so that the frame is about 36" off the ground.
2. Slide the Axle Tube (#12) through the Frame (#3) as shown.
3. Center the Axle Tube in the frame. Secure in place with one 1/2" square U-bolt (#48) and two nylon locknuts (#45) on each side.

# WHEEL CARRIER INSTALLATION AND ROW SPACING





## TONGUE AND HITCH INSTALLATION



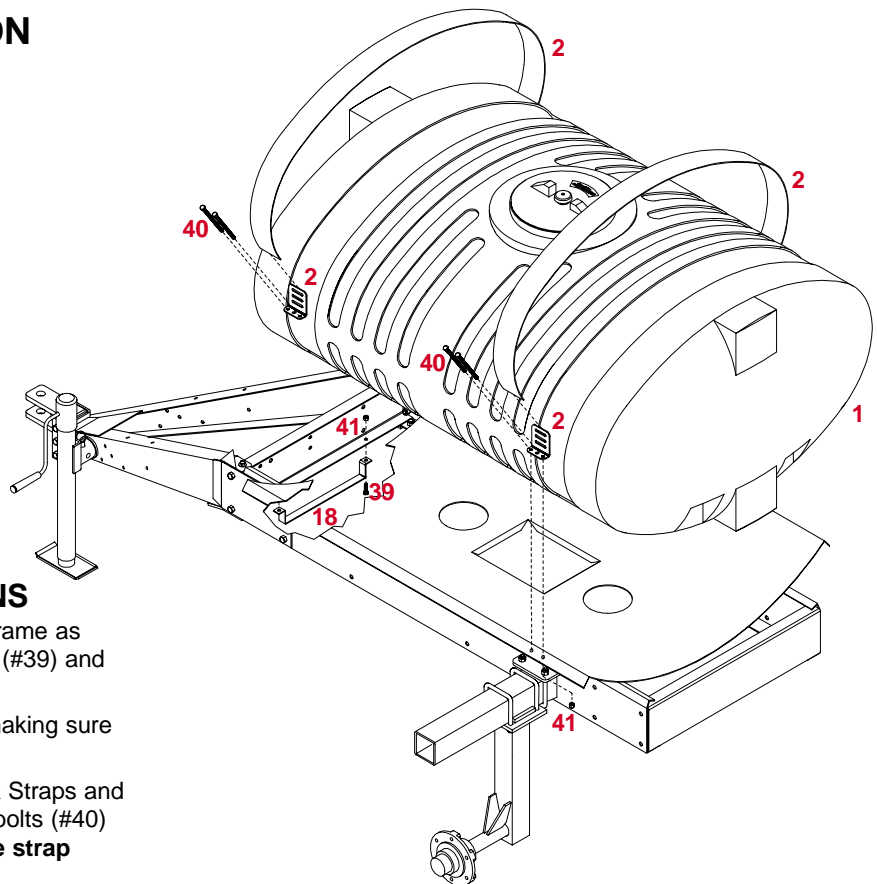
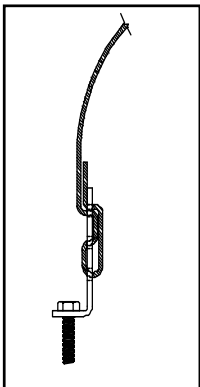
### ASSEMBLY INSTRUCTIONS

8. Fasten tongue (#10) to frame (#3) using ten 1/2" x 1-1/4" (#43) and two 1/2" x 1-1/2" (#44) bolts, and nylon locknuts (#45) on bottom side of tongue. Also add a 1/2" Flat washer (#46) to each hole on bottom side of tongue.
9. Fasten the Clevis Hitch (#22) to the tongue with six 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts (#45).  
**Final hitch adjustments should be made when sprayer is assembled and ready to be towed by the tractor. Tank and Frame should be level.**
10. Attach jack (#11) to tongue (#10) using jack pin. **Turn jack to the down position.**
11. Remove the frame assembly from the sawhorses, allowing it to rest on the tires (not shown) and the jack.  
**Block the tires to prevent sprayer from rolling during the rest of the assembly.**

\* FOR REFERENCE NUMBER LIST AND DESCRIPTION SEE PAGE 28

## TANK INSTALLATION

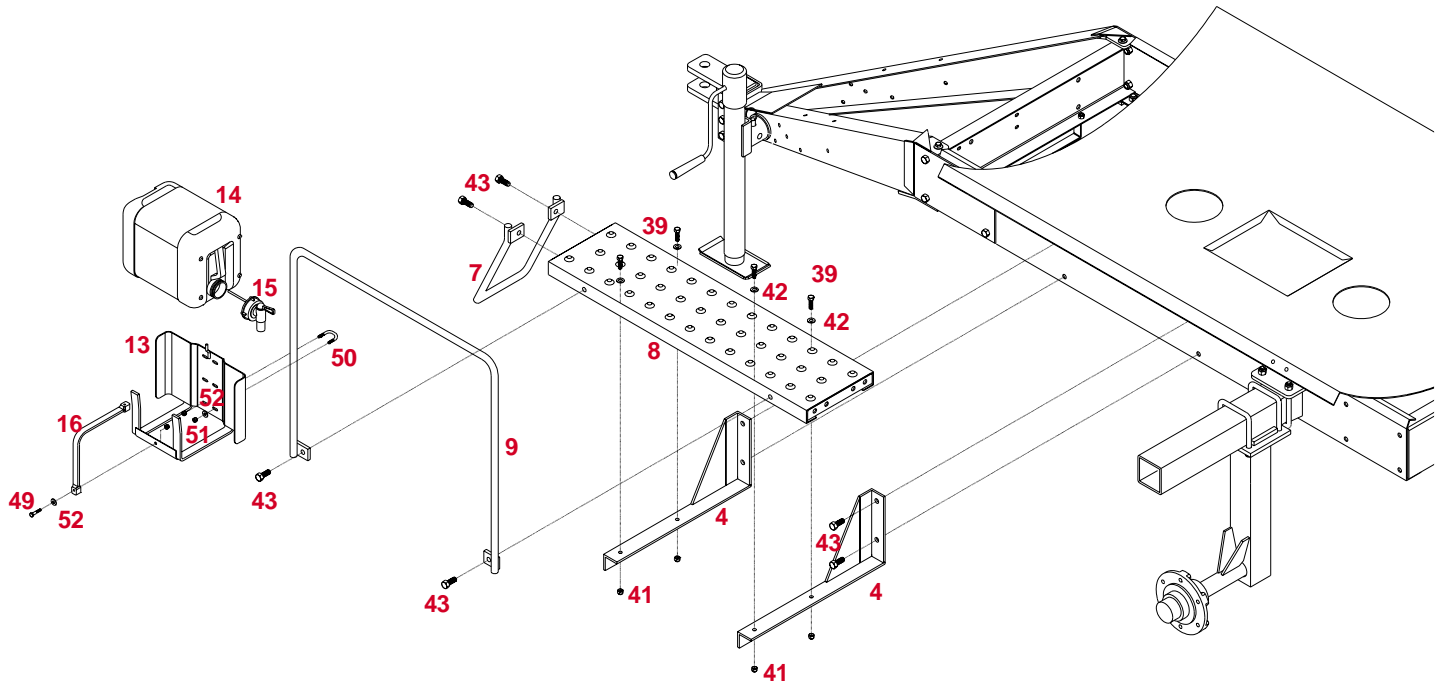
### VIEW A



### ASSEMBLY INSTRUCTIONS

12. Bolt the Plumbing Support (#18) to the front frame as shown using two 3/8" x 1-1/4" hex head bolts (#39) and nylon locknuts (#41).
13. Place the Tank (#1) in the frame as shown, making sure tank is well centered.
14. Secure the tank with the two heavy duty Tank Straps and Anchors (#2) using eight 3/8" x 5" full thread bolts (#40) and nylon locknuts (#41). **NOTE: Weave the strap through the anchor as shown in VIEW A.**

# PLATFORM, STEP AND HANDRAIL INSTALLATION

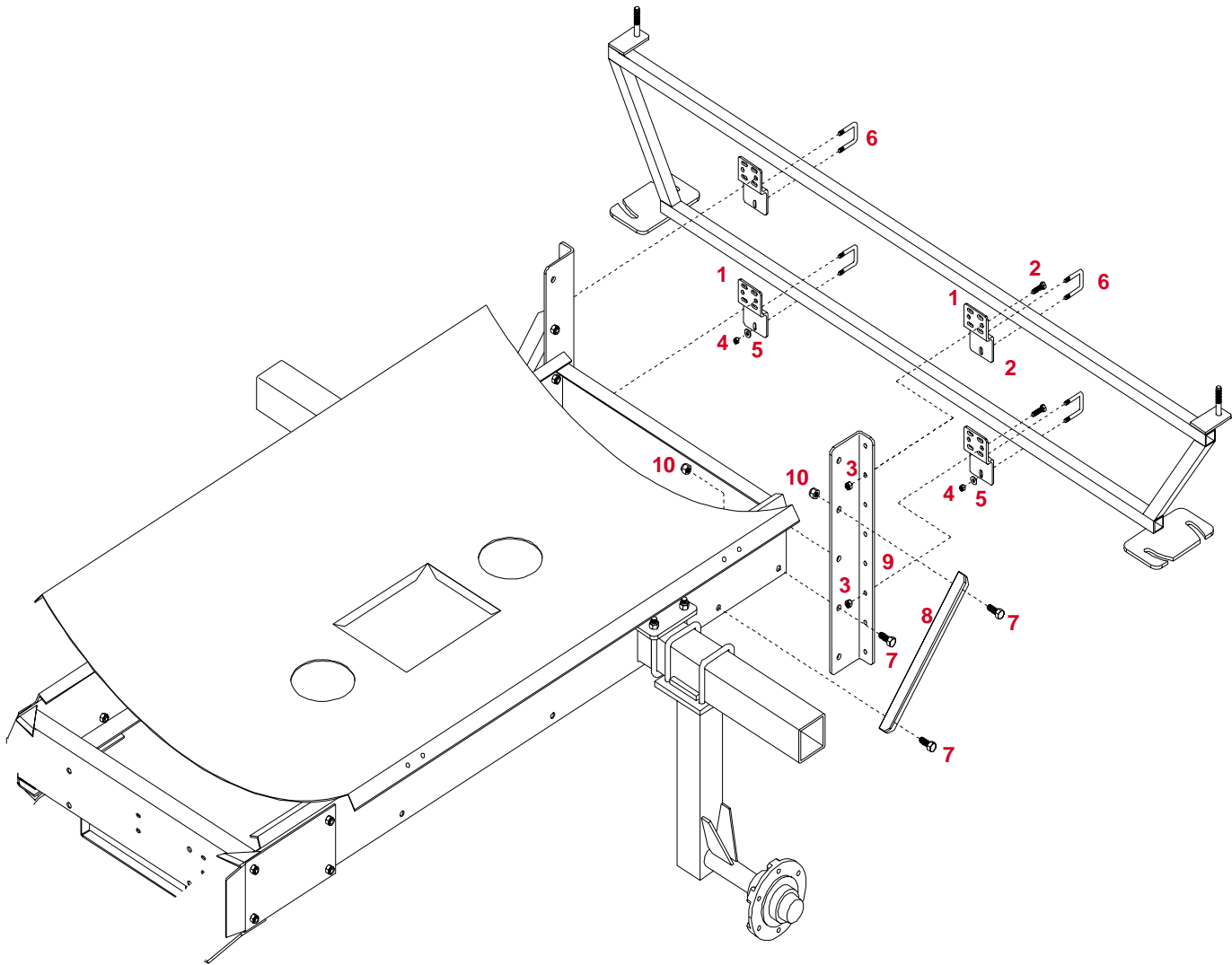


## ASSEMBLY INSTRUCTIONS

15. Bolt the Platform Mounting Brackets (#4) to the frame using four 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts.
16. Bolt the Platform (#8) to the Mounting Brackets (#4) using four 3/8" x 1-1/4" hex head bolts (#39), flatwashers (#42) and nylon locknuts (#41).
17. Bolt the Step (#7) to the platform as shown using two 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts.
18. Bolt the Safety Rail (#9) to the platform as shown using two 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts. Mount wash tank bracket (#13) to front handrail (#9) with two 1/4" x 1" round U-bolts (#50), flatwashers and nylon locknuts. Attach tarp strap (#16) to bracket with 1/4" x 1" carriage bolt (#49) flatwasher (#52) and nylon locknut (#51). Place tank (#14) in bracket and secure with strap onto peg of tank bracket.

\* FOR REFERENCE NUMBER LIST AND DESCRIPTION SEE PAGE 28

# TRUSS-T BOOM INSTALLATION



## TRUSS-T BOOM PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	02678-95	4	Boom Mounting Plate
2.	00523	4	3/8"-16 UNC x 1-1/4" Hex Head Bolt
3.	02592	4	3/8"-16 UNC Nylon Insert Locknut
4.	02802	8	5/16"-18 UNC Nylon Insert Locknut
5.	00004	8	5/16" Flatwasher
6.	00909	4	5/16"-18 UNC x 1-1/4" Square U-Bolt
7.	00967	6	1/2"-13 UNC x 1-1/4" Hex Head Bolt
8.	02693-30	2	Boom Mtg. Brace
9.	01792-30	2	23" Boom Mtg. Bracket
10.	02178	6	1/2"-13 UNC Nylon Insert Locknut

Please order replacement parts by PART NO. and DESCRIPTION.

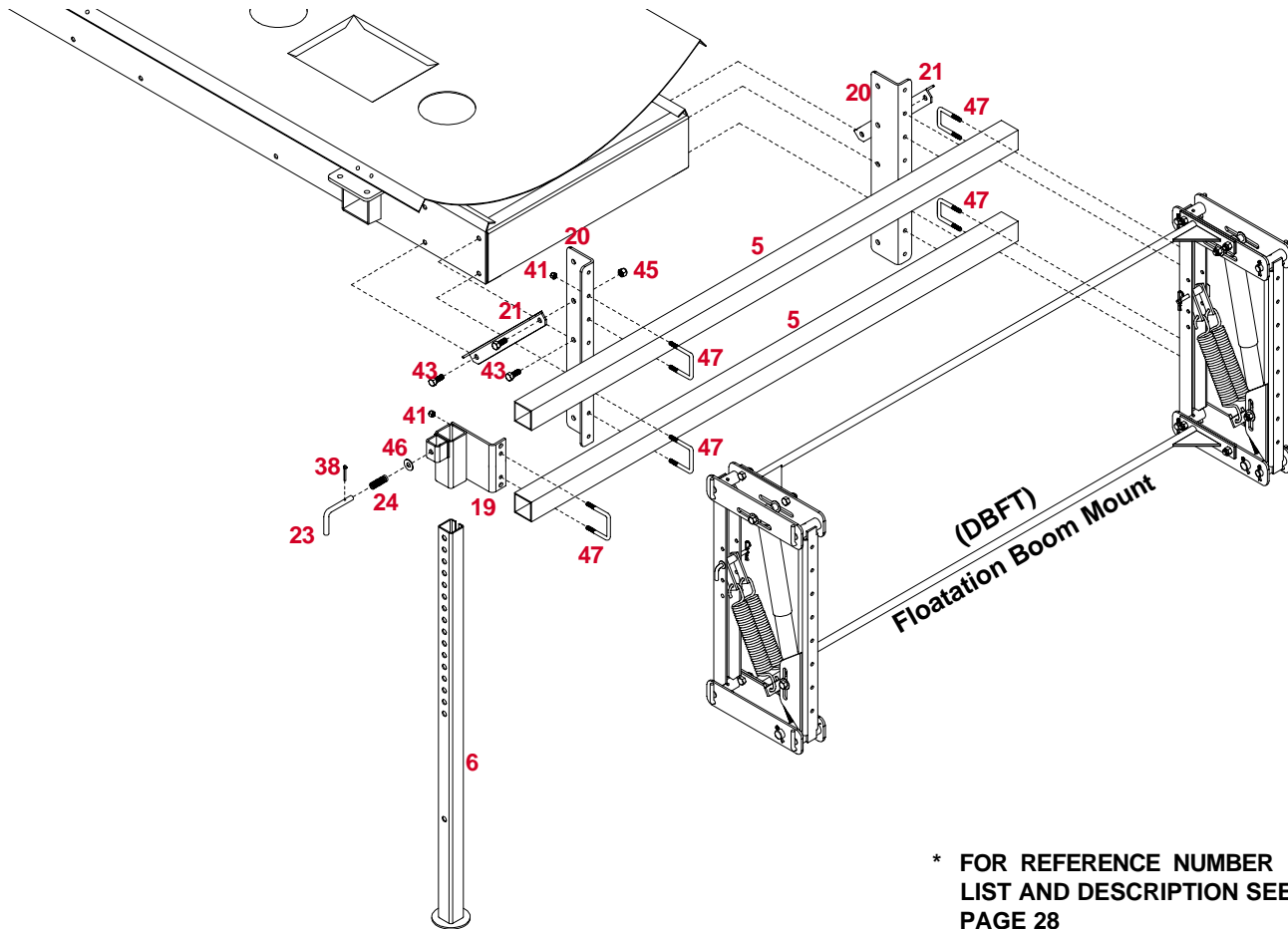
## ASSEMBLY INSTRUCTIONS

19. Begin by bolting on the Boom Mounting Plate (supplied with Truss-T Boom) using four 3/8" x 1-1/4" hex head bolts (#2) and nylon locknuts (#3). **NOTE: Use the hole to the inside of the mounting plate as shown.**

20. Attach the Truss-T Boom Center Section to the Mounting Plates using four 5/16" x 1-1/2" square u-bolts (#6), nylon locknuts (#4) and flatwashers (#5). (U-bolts and Locknuts are supplied with Truss-T Boom.)

**NOTE:** The boom mounting brackets and the boom center section may be mounted using any set of two holes depending on boom height desired.

# TRUSS BOOM, BOOM CARRIER AND SAFETY STAND INSTALLATION



\* FOR REFERENCE NUMBER LIST AND DESCRIPTION SEE PAGE 28

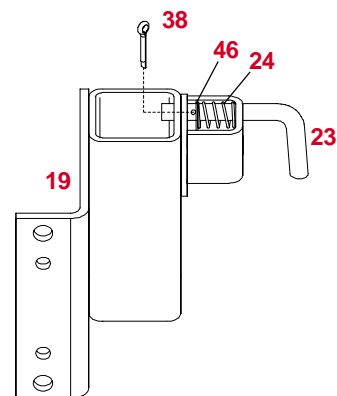
**NOTE:** Always lock the Safety Stand in the down position when unhitching the sprayer and lock it in the up position before towing the sprayer.

## BOOM CARRIER ASSEMBLY INSTRUCTIONS

21. Bolt the Boom Mounting Brackets (#20) to the rear of the frame as shown using four 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts (#45).
- NOTE:** The Boom Mounting Brackets and Boom Mounting Tubes may be mounted using any set of two holes depending on boom height desired.
22. Bolt the Boom Mount Brace Angles (#21) to the frame and the Boom Mounting Brackets (#20) using four 1/2" x 1-1/4" hex head bolts (#43) and nylon locknuts (#45).
  23. Bolt the Boom Mounting Tubes (#5) to the back of the boom mounting brackets using four 3/8" x 2-1/2" square U-bolts (#47) and nylon locknuts (#41).
  24. Attach the DBFT to the Boom Mounting Tubes using four 3/8" x 2-1/2" square u-bolts (#47) and 3/8" nylon locknuts (#41) then bolt the Truss Boom Center Section onto the DBFT using six 1/2" x 1-1/4" hex head bolts (#43) and 1/2" nylon locknuts (#45).

## SAFETY STAND ASSEMBLY INSTRUCTIONS

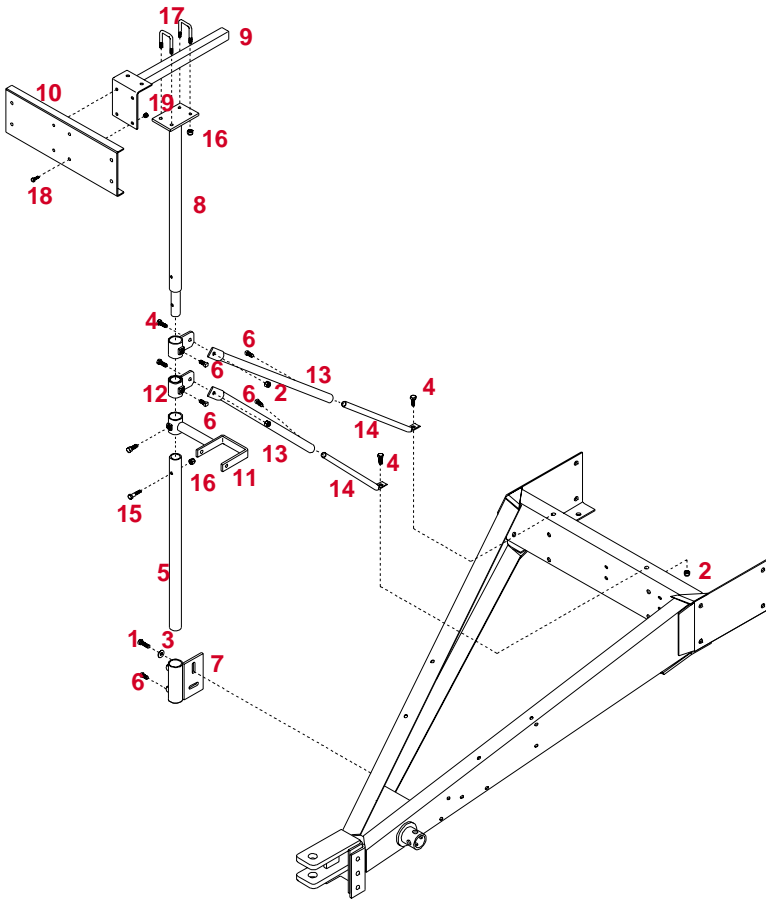
25. Insert safety stand (#6) through holder (#19) before mounting onto boom bracket.
26. Attach safety stand holder (#19) to boom mounting tubes using a 3/8" x 2-1/2" sq. u-bolt (#47) and nylon locknut.



## SAFETY STAND LOCK ASSEMBLY

27. Install lock spring (#24) and 1/2" flatwasher (#46) into small tube on safety stand holder (#19) as shown.
28. Insert Lockpin (#23) through tube into spring and lock washer.
29. Place 5/32" x 1" cotter pin (#38) between flatwasher and wall of tube into lock pin.

# MANUAL BOOM CONTROL, PANEL MOUNT INSTALLATION



## ASSEMBLY INSTRUCTIONS

(For electric control panel mounting location see page 22)

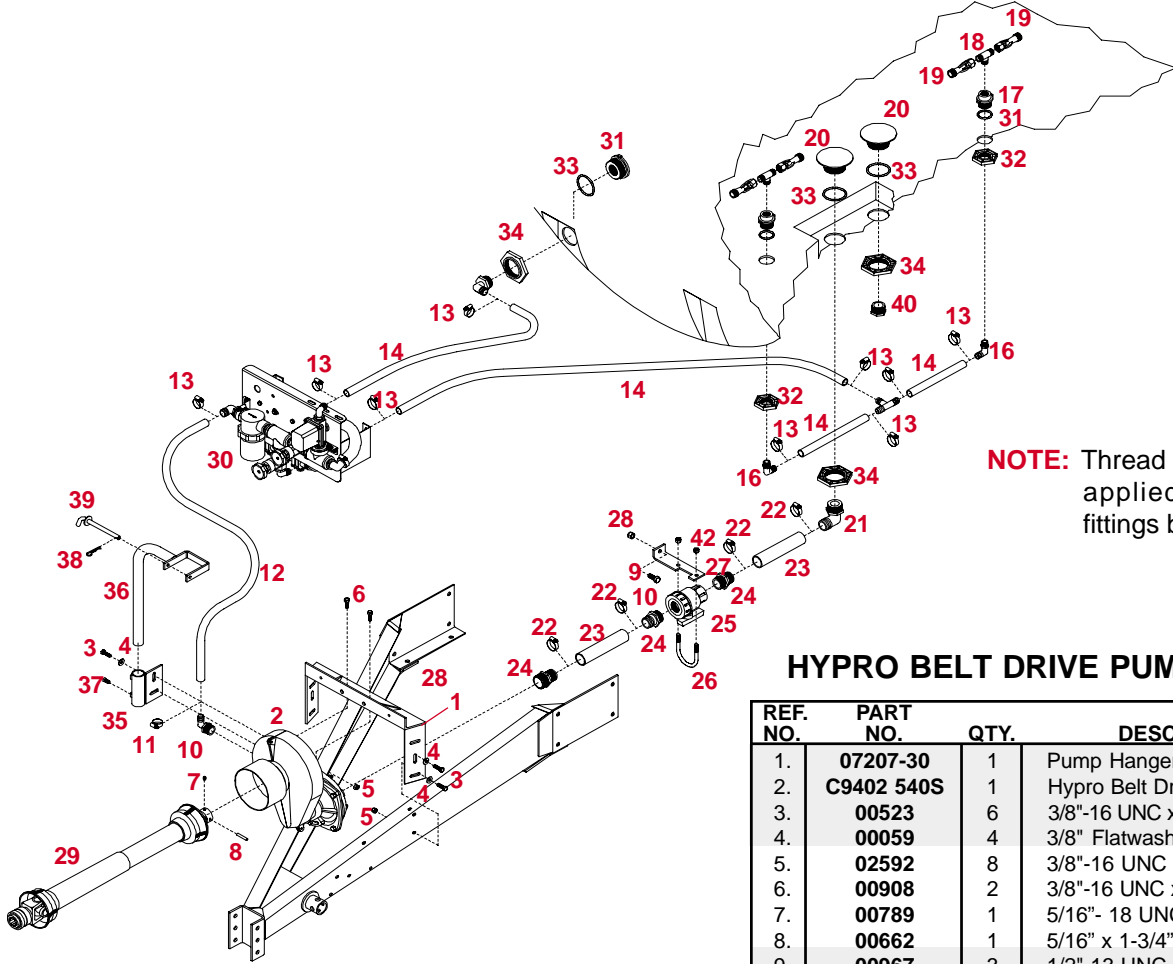
30. Bolt on manual panel mount (#7) using two 3/8" x 1-1/4" bolts (#1), flat washers (#3) and nylon locknuts (#2).
31. Insert lower valve mounting bracket (#5) into panel mount on frame and tighten 3/8" x 3/4" square head set screws (#6).
32. Slide PTO shaft holder (#11) and two panel mount collars (#12) over upper valve mounting bracket (#8) and insert into lower valve mounting bracket (#5). Bolt the two halves together with 5/16" x 1-3/4" bolt (#15) and nylon locknut (#16).
33. Tighten PTO shaft holder (#11) with 3/8" x 3/4" set screw (#6) when you know where it goes.
34. Bolt female stabilizer braces (#13) to panel mount collars (#12) with 3/8" x 1" bolts (#4) and nylon locknuts (#2). Insert male stabilizer braces (#14) and secure to frame with 3/8" x 1" bolt (#4) and nylon locknut (#2), as shown. Tighten collars and braces with 3/8" x 3/4" set screws (#6).
35. Bolt the horizontal valve mounting bracket (#9) to upper valve mounting bracket (#8) using two 5/16" square U-bolts (#17) and nylon locknut (#16). Bolt mounting plate (#10) to mounting bracket using four 1/4" x 3/4" bolts (#18) and nylon locknuts (#19).

## PANEL MOUNT PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	00523	4	3/8"-16 UNC x 1-1/4" Hex Hd. Bolt
2.	02592	7	3/8"-16 UNC Nylon Insert Locknut
3.	00059	2	3/8" Flatwasher
4.	00907	3	3/8"-16 UNC x 1" Hex Hd. Bolt
5.	04934-30	1	Lower Valve Mtg. Bracket
6.	00095	7	3/8" x 3/4" Set Screw
7.	02148-30	1	Manual Panel Mount
8.	04933-30	1	Upper Valve Mtg. Bracket
9.	04935-30	1	Horizontal Valve Mtg. Bracket
10.	04936-30	1	Panel Mounting Plate
11.	05117-30	1	PTO Shaft Holder
12.	02145-30	2	Panel Mount Collar
13.	02147-30	2	Female Stabilizer Brace
14.	02146-30	2	Male Stabilizer Brace
15.	04759	1	5/16"-18 UNC x 1-3/4" Hex Hd. Bolt
16.	02802	5	5/16"-18 UNC Nylon Insert Locknut
17.	00909	2	5/16" x 1-1/4" Sq. U-Bolt
18.	01076	4	1/4"-20 UNC x 3/4" Hex Hd. Bolt
19.	02772	4	1/4"-20 UNC Nylon Insert Locknut

Please order replacement parts by PART NO. and DESCRIPTION.

# HYPRO BELT DRIVE MOUNTING AND CENTRIFUGAL PUMP PLUMBING



**NOTE:** Thread sealant should be applied to all threaded fittings before assembly.

## HYPRO BELT DRIVE PUMP PARTS LIST

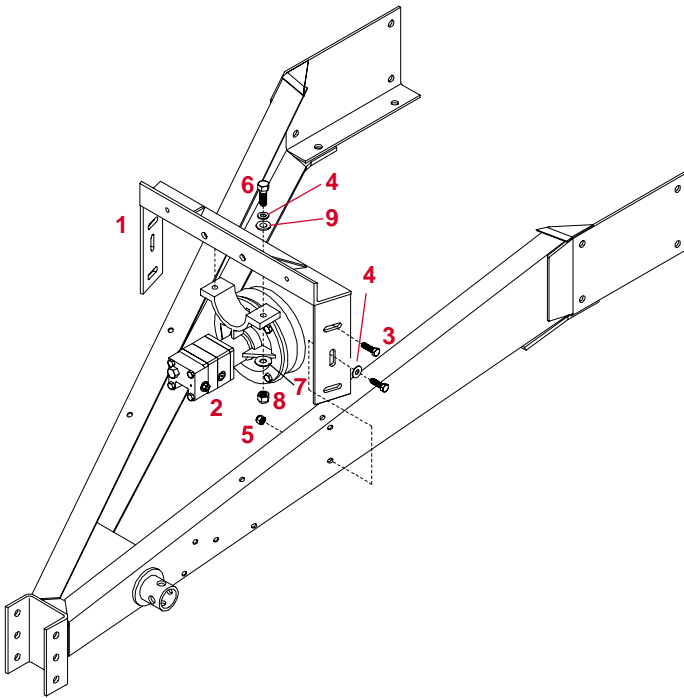
REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	07207-30	1	Pump Hanger
2.	C9402 540S	1	Hypro Belt Drive Pump
3.	00523	6	3/8"-16 UNC x 1-1/4" Hex Hd. Bolt(Gr.5)
4.	00059	4	3/8" Flatwasher
5.	02592	8	3/8"-16 UNC Nylon Insert Locknut
6.	00908	2	3/8"-16 UNC x 1-3/4" Hex Head Bolt(Gr.5)
7.	00789	1	5/16"- 18 UNC x 3/8" Socket Set Screw
8.	00662	1	5/16" x 1-3/4" Roll Pin
9.	00967	3	1/2"-13 UNC x 1-1/4" Hex Head Bolt(Gr.5)
10.	BEL1010	1	1" MPT x 1" HB Elbow (GFP)
11.	B20H	2	1" Gear Clamp
12.	1010RB	-	1" Rubber Hose
13.	B12H	12	3/4" Gear Clamp
14.	340RB	-	3/4" Rubber Hose
15.	T34	1	3/4" HB Insert Tee
16.	BEL1234	2	1/2" MPT x 3/4" HB Elbow (GFP)
17.	PO12D	2	1/2" Double Thread Outlet
18.	R1212	2	1/2" MPT Tee
19.	5044 1	4	Single Agitation
20.	CP114PAV	2	1-1/4" Anti-Vortex Outlet Fitting
21.	EL114 112	1	1-1/4" MPT x 1-1/4" HB Elbow (GFP)
22.	B32H	4	1-1/2" Gear Clamp
23.	S112	-	1-1/2" Suction Line
24.	A114 112	3	1-1/4" MPT x 1-1/2" HB (GFP)
25.	UV125FP	1	1-1/4" Poly Ball Valve
26.	02757	1	7/16" U-bolt
27.	01811-30	1	Valve Mounting Bracket
28.	02178	3	1/2"-13 UNC Nylon Insert Locknut
29.	00211	-	32" 540 RPM PTO Shaft
30.	CP414HVR	-	Electric Control Panel
	CP3B3HV	-	Manual Control Panel
31.	5077V	2	Viton Grommet
32.	N5P	2	Nut for Tank Outlets
33.	5078V	3	Viton Grommet
34.	N8P	3	Tank Outlet Nut
35.	02148	1	PTO Holder Mount
36.	04932-30	1	PTO Holder Shaft
37.	00095	2	3/8"x 16 UNC x 3/4" Sq. Hd. Set Screw
38.	00182	1	1/8" Small Hairpin
39.	00183-95	1	1/4" x 5-3/4" PTO Pin
40.	F1014	2	1-1/4" Hex Plug
41.	CP114P	1	1-1/4" Outlet Fitting
42.	04168	2	7/16" Nylon Insert Locknut

### HYPRO BELT DRIVE PUMP MOUNTING

36. Begin by bolting the pump hanger (#1) to the sprayer tongue with 3/8" x 1-1/4" bolts, flat washers and nylon locknuts as shown.
37. Bolt Hypro pump mounting bracket (#2) to hanger using two 1/2" x 1-1/4" bolts, flat washers and nylon locknuts.
38. Next bolt pump (#3) to the bracket (#2) using two 3/8" x 1-3/4" bolts, flat washers, and nylon locknuts.
39. **For Electric Control Panels Only-**  
Bolt the PTO holder mount (#37) to the tongue using two 3/8" x 1-1/4" bolts (#4), flatwashers (#5) and nylon locknuts (#6). Insert PTO shaft holder (#38) into mount and secure with two 3/8" x 3/4" set screws(#39). Place 3/8" removable pin (#41) in holder along with small hairpin (#40). The drawing and parts breakdown are for installing the hoses and various components. Be sure to run 1-1/2" hose from the anti-vortex tank outlet fitting to the inlet side of the pump, 1" hose from the outlet side of the pump to the control panel, 3/4" hose from the panel to the agitators and 3/4" hose from the panel to the boom insert tees.

Please order replacement parts by PART NO. and DESCRIPTION.

## ACE CENTRIFUGAL HYDRAULIC PUMP MOUNTING



40. Begin by bolting the pump hanger (#1) to the frame with four 3/8" x 1-1/4" bolts, two flatwashers and four nylon locknuts as shown.

41. Bolt pump (#2) to hanger using two 7/16" x 1-1/2" bolts, flatwashers and nylon locknuts.

**NOTE:** Be sure to match hydraulic motor driven pump capabilities to your tractors hydraulic system.

### ACE HYDRAULIC PUMP PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	07207-30	1	Pump Hanger
2.	FMCHYD204	1	Ace Hydraulic Pump
3.	00523	4	3/8"-16 UNC x 1-1/4" Hex Head Bolt
4.	00059	4	3/8" Flatwasher
5.	02592	4	3/8"-16 UNC Nylon Insert Locknut
6.	00908	2	3/8"-16 UNC x 1-3/4" Hex Head Bolt
7.	00078	2	3/8" Lockwasher
8.	00079	2	3/8"-16 UNC Hex Nut
9.	00085	2	1/2" Flatwasher

Please order replacement parts by PART NO. and DESCRIPTION.

### START-UP INSTRUCTIONS FOR CENTRIFUGAL PUMPS WITH MANUAL CONTROL PANEL

1. Run approximately 50 gallons of water in the tank.
2. Open the poly ball valve in the pump intake line. **Important: Remove top plug on pump to bleed all air from the suction line to the pump or damage will result to the seals. (Pump cannot be run dry).**
3. Close the wedge valve on the front of the control panel.
4. Close the wedge agitation valve on the control panel back.
5. Make sure the ratchet valve on the control panel back is in the open position.
6. Open the three manual valves on the control panel.
7. Start the pump and run at 540 RPM.
8. Open the wedge valve on the front of control panel until the gauge reads approx. 3 PSI over your desired spraying pressure with all three booms spraying.
9. Open the wedge agitation valve on the control panel until the gauge drops to your desired spraying pressure.  
**Example:** If desired spraying pressure is 30 PSI open the wedge valve on the back of the control panel until the gauge reads 33 PSI. After this, open the wedge agitation valve on the control panel until the gauge drops back down to 30 PSI. (This is to insure the recommended pressure to the tank jet agitators).
10. Check for leaks.
11. Make certain all bolts and clamps are tight.

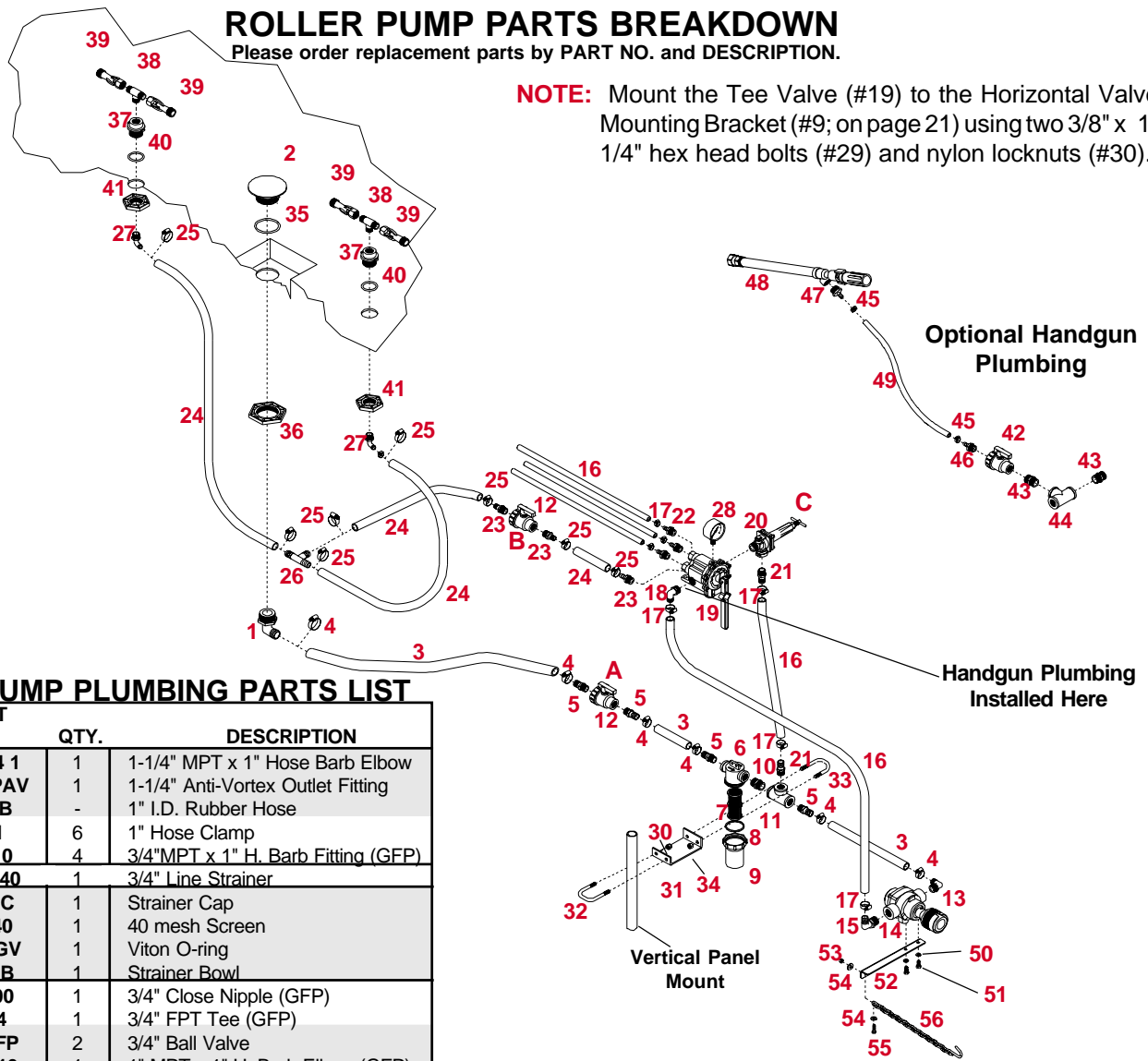
### START-UP INSTRUCTIONS FOR CENTRIFUGAL PUMPS WITH ELECTRIC CONTROL PANEL

1. Run approximately 50 gallons of water in the tank.
2. Open the poly ball valve valve in the pump intake line. **Important: Remove top plug on pump to bleed all air from the suction line to the pump or damage will result to the seals. (Pump cannot be run dry).**
3. Close the wedge valve on the front of the control panel.
4. See "Panel Mounting and Operation" in Electric Control Panel Instruction Manual.

# ROLLER PUMP PARTS BREAKDOWN

Please order replacement parts by PART NO. and DESCRIPTION.

**NOTE:** Mount the Tee Valve (#19) to the Horizontal Valve Mounting Bracket (#9; on page 21) using two 3/8" x 1-1/4" hex head bolts (#29) and nylon locknuts (#30).



## ROLLER PUMP PLUMBING PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	BEL114 1	1	1-1/4" MPT x 1" Hose Barb Elbow
2.	CP114 PAV	1	1-1/4" Anti-Vortex Outlet Fitting
3.	1010RB	-	1" I.D. Rubber Hose
4.	B20H	6	1" Hose Clamp
5.	BA3410	4	3/4" MPT x 1" H. Barb Fitting (GFP)
RVF34 40		1	3/4" Line Strainer
6.	RVF34C	1	Strainer Cap
7.	RVF340	1	40 mesh Screen
8.	RVF34GV	1	Viton O-ring
9.	RVF34B	1	Strainer Bowl
10.	BM3400	1	3/4" Close Nipple (GFP)
11.	BTT34	1	3/4" FPT Tee (GFP)
12.	UV075FP	2	3/4" Ball Valve
13.	BEL1010	1	1" MPT x 1" H. Barb Elbow (GFP)
14.	C1700D	1	Roller Pump w/coupler
15.	BEL1034	1	1" MPT x 3/4" H. Barb Elbow (GFP)
16.	340RB	-	3/4" I.D. Rubber Hose
17.	B12H	10	3/4" Hose Clamp
18.	BEL3434	1	3/4" MPT X 3/4" H. B. Elbow (GFP)
19.	AA171	1	Three Section Tee Valve
20.	8460	1	3/4" Pressure Relief Valve
21.	BA3434	2	3/4" MPT x 3/4" H. B. Fitting (GFP)
22.	BA1234	3	1/2" MPT x 3/4" H. B. Fitting (GFP)
23.	BA3412	3	3/4" MPT x 1/2" H. B. Fitting (GFP)
24.	120RB	-	1/2" I.D. Rubber Hose
25.	B8H	8	1/2" Hose Clamp
26.	T12	1	1/2" Hose Barb Tee
27.	BEL1212	2	1/2" MPT x 1/2" H. B. Fitting (GFP)
28.	100 GB	1	100 # Brass Pressure Gauge
29.	00523	2	3/8"-16 UNC x 1-1/4" Hex Hd. Bolt
30.	02592	8	3/8"-16 UNC Nylon Insert Locknut
31.	02800-10	1	Strainer Holder
32.	00263	1	3/8"-16 UNC x 1-1/2" Rd. U-bolt
33.	00851	1	5/16"-18 UNC x 1-3/4" Rd. U-bolt
34.	02802	5	5/16"-16 UNC Nylon Insert Locknut
35.	5078V	1	Viton Grommet
36.	N8P	1	Tank Outlet Nut
37.	PO12D	2	1/2" Double Thread Outlet
38.	R1212	2	1/2" MPT Tee
39.	5044 1	4	Single Agitation Wand
40.	5077V	1	Viton Grommet
41.	N5P	1	Nut for Tank Outlets
50.	00036	2	5/16" Lock Washer
51.	01263	2	5/16" x 3/4" Grd. 5 Hex Bolt
52.	04298-30	1	Roller Pump Mounting Plate
53.	02772	1	1/4" Nylon Insert Lock Nut

54.	00214	2	1/4" Flat Washer
55.	04055	1	1/4" x 1" Grd. 5 Hex Bolt
56.	04299	1	Roller Pump Chain w/ hook

## OPTIONAL HANDGUN PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
42.	UV075FP	1	3/4" Poly Ball Valve
43.	BM3400	2	3/4" MPT Nipple
44.	BTT100	1	1" FPT Tee (GFP)
45.	B8H	2	1/2" Gear Clamp
46.	BEL3412	1	3/4" MPT x 1/2" Hose Barb Elbow
47.	D3412	1	3/4" MGHT x 1/2" Hose Barb
48.	2AAL60	1	15" Hand Spray Gun
49.	120RB	-	1/2" Rubber Hose

## OPERATING INSTRUCTIONS

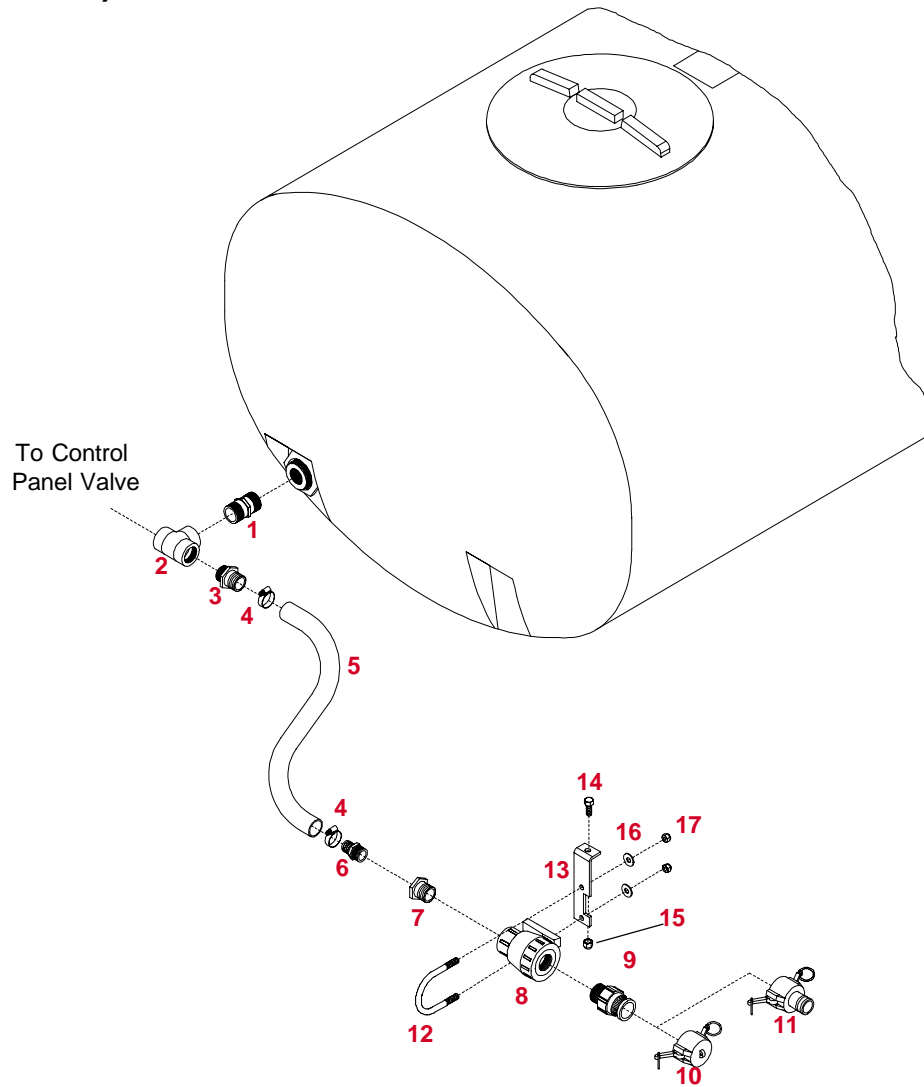
Begin operation by filling tank with liquid. Next, open the ball valve (A) and the ball valve (B) in the agitation line. Open the AA171 Tee valve (#19) and the by-pass valve (C). Start the pump. To regulate pressure, slowly close valve (C) until the desire pressure is attained. If adequate spraying pressure cannot be reached, slowly close the agitation valve (B) until the desire spraying pressure is reached.

**NOTE:** Roller pumps will wear after normal use and a drop in pressure can be expected. Simply reset the by-pass valve (C) to get the pressure back to normal.

**NOTE:** Each jet agitator in the tank requires a minimum of 3 GPM. Some roller pumps are limited in their capacity to spray and agitate at the same time.



# (OPTIONAL CPTK1) QUICK REFILL PARTS BREAKDOWN AND INSTALLATION



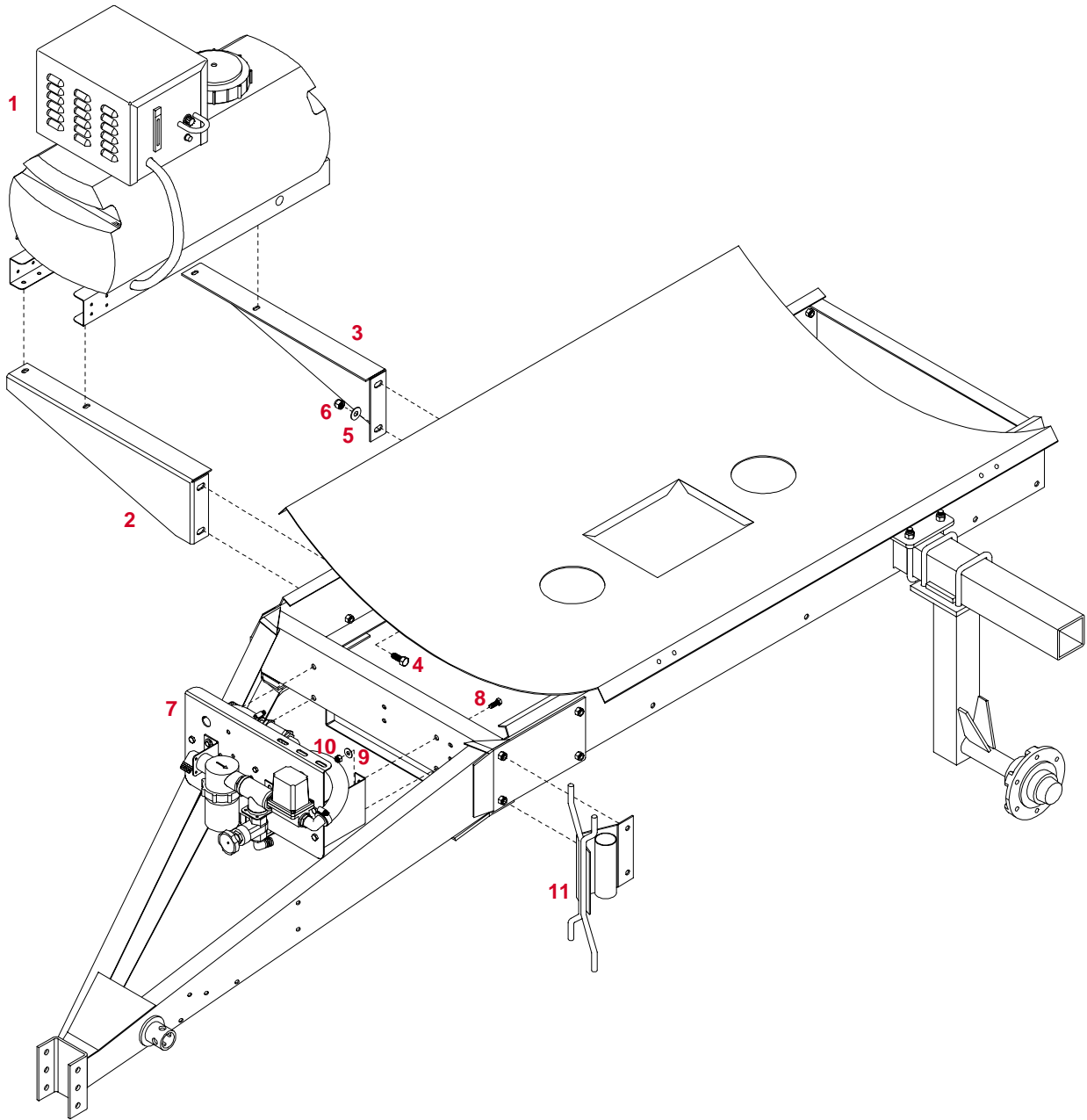
## QUICK REFILL (CPTK1) PARTS LIST

**NOTE:** Apply thread sealant to the fittings. Do not use sealant on external threads of tank outlet fitting.

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	<b>BM1140</b>	2	1-1/4" MPT Nipple (GFP)
2.	<b>BTT114</b>	2	1-1/4" FPT Tee (GFP)
3.	<b>A114-112</b>	1	1-1/4" MPT x 1-1/2" HB (GFP)
4.	<b>B32H</b>	2	1-1/2" SS Gear Hose Clamp
5.	<b>1120RB</b>	-	1-1/2" Rubber Hose
6.	<b>BA112</b>	1	1-1/2" MPT x 1-1/2" Hose Barb (GFP)
7.	<b>BA200-112</b>	1	2" MPT x 1-1/2" FPT Reducer (GFP)
8.	<b>UV200FP</b>	1	2" Poly Ball Valve
9.	<b>633F2020</b>	1	2" Adapter - Male NPT
10.	<b>634B2020</b>	1	2" Cap for Adapter
11.	<b>633C2020</b>	1	2" Hose Shank Coupler
12.	<b>02757</b>	1	7/16"-14 UNC x 3" U-Bolt
13.	<b>01811-30</b>	1	Quick Refill Mounting Bracket
14.	<b>00967</b>	2	1/2"-13 UNC x 1-1/4" Hex Head Bolt (Gr 5)
15.	<b>02178</b>	2	1/2"-13 UNC Nylon Insert Locknut
16.	<b>00205</b>	2	7/16" Flatwasher
17.	<b>02771</b>	2	7/16"-14 UNC Nylon Insert Locknut

Please order replacement parts by **PART NO.** and **DESCRIPTION.**

# FOAM MARKER, ELECTRIC CONTROL PANEL, AND HAND GUN STORAGE BRACKET MOUNTING LOCATIONS



## MOUNTING INSTRUCTIONS

45. Mount the mounting brackets (#2 & 3), using four 1/2" x 1-1/4" bolts, flatwashers and nylon locknuts, provided with foam marker.
46. Mount the electric control panel (#7) using four 3/8" x 1" bolts, lockwashers and nuts provided with CP414 control panel.
47. Mount handgun bracket (#11) using existing bolts already in tongue.

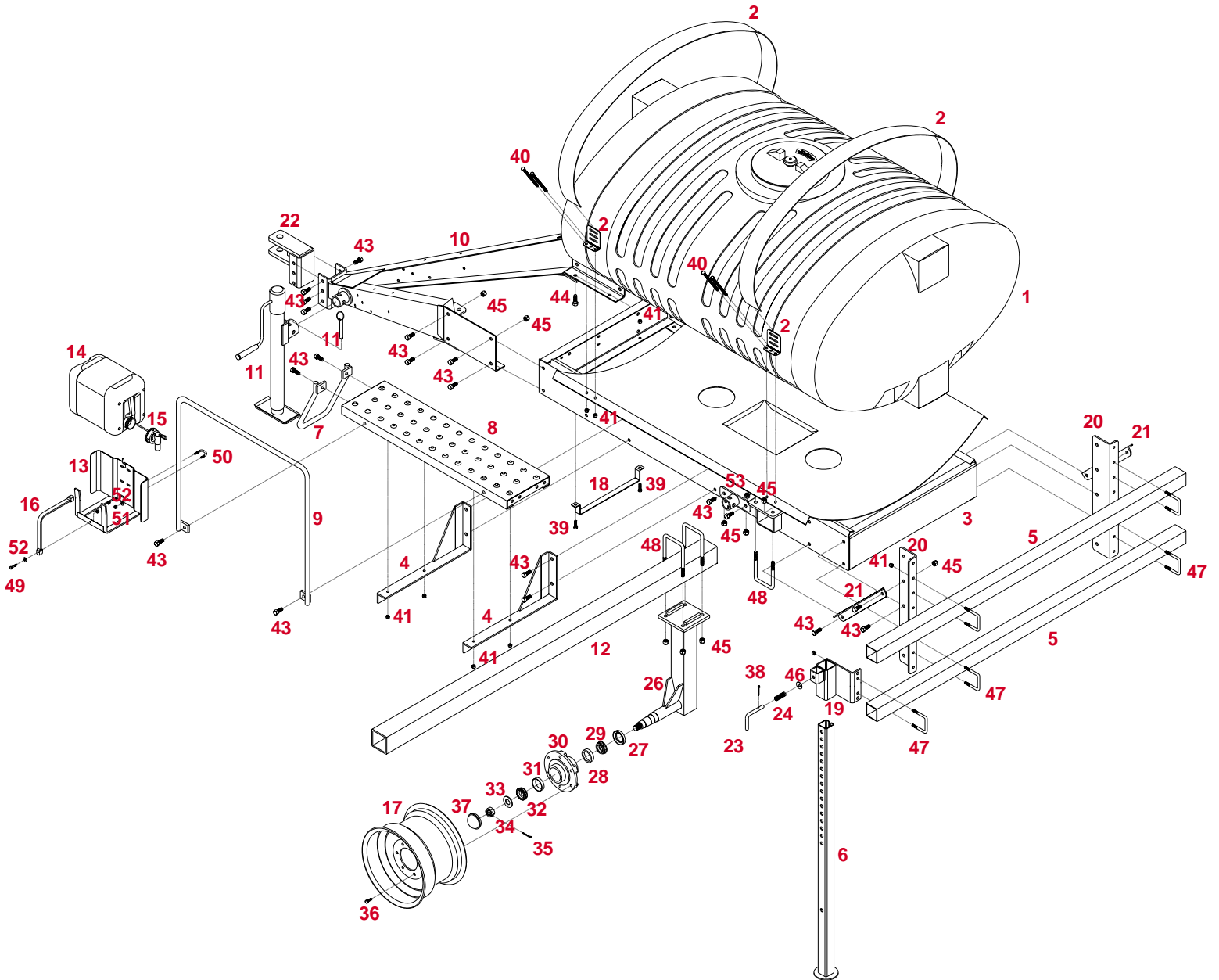
## PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	-	1	Foam Marker
2.	05462-30	1	Left Foam Marker Mount
3.	05463-30	1	Right Foam Marker Mount
4.	00967	4	1/2"-13 UNC x 1-1/4" Hex Hd. Bolt
5.	00085	12	1/2" Flatwasher
6.	02178	4	1/2"-13 UNC Nylon Insert Locknut
7.	CP414HVR	1	Electric Control Panel
8.	00907	4	3/8"-16 UNC x 1" Hex Hd. Bolt
9.	00060	4	3/8" Lockwasher
10.	00061	4	3/8"-16 UNC Hex Nut
11.	04931-10	1	Handgun Bracket

Please order replacement parts by PART NO. and DESCRIPTION.

# HCM (300 GALLON) MAIN PARTS BREAKDOWN

See Next Page for Parts List



## HCM (300 GALLON) MAIN PARTS LIST

REF. NO.	PART NO.	QTY.	DESCRIPTION	REF. NO.	PART NO.	QTY.	DESCRIPTION
1.	<b>PE300RA</b>	1	300 gallon Poly Tank w/agitation	38.	<b>00185</b>	1	5/32" x 1" Cotter Pin
	<b>5478R</b>	1	10" dia. Lid with external threads	39.	<b>00523</b>	10	3/8"-16 UNC x 1-1/4" Hex Head Bolt
2.	-	2	Tank Strap (4" x 82")	40.	<b>02157</b>	8	3/8"-16 UNC x 5" Full Thread Bolt
	<b>09828</b>	-	4" Polyester Strap (Black)	41.	<b>02592</b>	34	3/8"-16 UNC Nylon Insert Locknut
	<b>05784-95</b>	2	Large Strap Anchor	42.	<b>00059</b>	4	3/8" Flatwasher
3.	<b>02713-10</b>	1	HCM Main Frame	43.	<b>00967</b>	32	1/2"-13 UNC 1-1/4" Hex Head Bolt
4.	<b>02714-10</b>	2	Platform Mounting Bracket	44.	<b>01254</b>	2	1/2"-13 UNC x 1-1/2" Hex Head Bolt
5.	<b>04930-30</b>	2	Boom Mount Tube (2-1/2" x 72")	45.	<b>02178</b>	46	1/2"-13 UNC Nylon Insert Locknut
6.	<b>05559-30</b>	1	Square Safety Stand	46.	<b>00085</b>	7	1/2" Flatwasher
7.	<b>00164-10</b>	1	Step	47.	<b>01887</b>	8	3/8" x 2-1/2" Square U-bolt
8.	<b>00162-10</b>	1	Step Platform	48.	<b>00109</b>	6	1/2"-13 UNC Square U-bolt
9.	<b>00165-10</b>	1	Safety Rail	49.	<b>04177</b>	1	1/4"-20 UNC x 1" Carriage Bolt
10.	<b>00103-10</b>	1	Tongue	50.	<b>00955</b>	2	1/4"-20 UNC x 1" Round U-bolt
11.	<b>07805</b>	1	2000#, sidewind "G" Style Jack w/ Pin	51.	<b>02772</b>	5	1/4"-20 UNC Nylon Insert Locknut
12.	<b>00846-10</b>	1	3-1/2" x 72" Axle Tube	52.	<b>00214</b>	5	1/4" Flatwasher
13.	<b>05615-30</b>	1	Wash Tank Mtg. Bracket	53.	<b>07966-30</b>	1	Jack Storage Bracket
14.	<b>05616</b>	1	2-1/2 Gallon Wash Tank	<b>Please order replacement parts by</b>			
15.	<b>PL2S</b>	1	Cap & Spout	<b>PART NO. and DESCRIPTON.</b>			
16.	<b>04742</b>	1	Tarp Straps less Hooks	<b>All REF. NO.'s correspond with reference numbers</b>			
*17.	<b>00118-??</b>	2	15" x 8" Rim (See Note Below)	<b>used in the assembly instructions of the sprayer main</b>			
18.	<b>02094-30</b>	1	Plumbing Support	<b>frame.</b>			
19.	<b>05558-30</b>	1	Safety Stand Holder				
20.	<b>01792-30</b>	2	18" Boom Mtg. Bracket				
21.	<b>02693-30</b>	2	Boom Mtg. Brace				
22.	<b>00130-30</b>	1	Clevis Hitch				
23.	<b>02187-95</b>	1	Lock Pin				
24.	<b>02208</b>	1	Lock Spring				
25.	<b>5208-10</b>	2	Wheel Carrier Assembly				
*	<b>5157</b>	2	6 Bolt Hub Assembly Contains Items (27-37 ONLY)				
26.	<b>02700-10</b>	2	Wheel Carrier Upright				
27.	<b>00110</b>	1	Oil Seal (16289)				
28.	<b>01464</b>	1	Inner Cup(JL 69310)				
29.	<b>00111</b>	1	Inner Cone Bearing (JL 63949)				
30.	-	1	6 Bolt Hub (888)				
31.	<b>01465</b>	1	Outer Cup (LM 67010)				
32.	<b>00113</b>	1	Outer Cone Bearing (LM 67048)				
33.	<b>00114</b>	1	Washer				
34.	<b>00115</b>	1	Castle Nut				
35.	<b>00116</b>	1	5/32" x 1-1/2" Cotter Pin				
36.	<b>00120</b>	6	1/2" - 20 UNF x 1" Lg. Lug Bolt				
37.	<b>00117</b>	1	Dust Cap				

**Note:** ??= 15 for Yellow Rim  
56 for Off White Rim

# SPRAYER CALIBRATION PROCEDURES

**NOTE:** To avoid wind drift, use lower pressure and higher spray volume.

## Guidelines For Sprayer Calibration

Before calibrating your sprayer, first determine whether each nozzle is delivering at a uniform rate. Place quart jars under all nozzles and watch as they fill up. The level should rise uniformly and take the same time (within 10%) for all nozzles to fill the jars. Replace any nozzle showing a discharge rate different from the others.

### Calibrating the Sprayer

1. Mark off 660 feet (1/8 mile).
2. Fill the tank with water.
3. Set the sprayer to your desired operating pressure.
4. Turn the sprayer on and drive at the constant speed you will be spraying. Calibration on a road or unplowed field will give different results than on soft cultivated ground. **Note** tachometer reading so same speed can be maintained later.
5. Measure the amount of water it takes to refill the tank completely.
6. Calculate the amount applied:

$$\frac{\text{Number of gallons used} \times 66 \text{ (factor)}}{\text{Spray Swath in Feet}} = \frac{\text{Gallons applied}}{\text{per acre}}$$

**Example:** If 10 gallons are used in 660 feet and the spray swath is 40 feet, spraying rate is 16.5 gallons per acre.

$$\frac{10 \times 66}{40} = \frac{660}{40} \quad \text{or } 16.5 \text{ gallons per acre}$$

7. To calculate the amount of chemical to put in the tank:

$$\frac{\text{Sprayer Tank Size}}{\text{Desired GPA}} = \text{Acres covered} \quad \text{then;}$$

$$\text{Recom. amount of chemical per acre} \times \text{Acres covered} = \text{Amt. of chemical per tankful}$$

**Example:** If a 500 gallon tank is used and 16.5 gallons per acre are applied, one tank will cover 30.3 acres. If three pounds of chemical are required per acre, then 90.0 pounds of chemical are required per tankful.

$$\frac{500}{16.5} = 30.3 \text{ acres covered} \quad \text{then;}$$

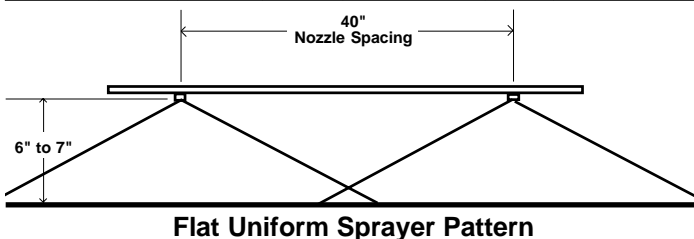
$$3 \text{ lbs. (gal.)} \times 30.3 = 90.0 \text{ lbs. (gal.) per tankful}$$

### FLAT SPRAY NOZZLE FOR BROADCAST SPRAYING

Nozzle No.	Liquid Pressure In PSI.	Nozzle Capacity In GPM.	Gallons Per Acre Based on 20" Nozzle Spacing			
			4 MPH	5 MPH	7.5 MPH	10 MPH
8002	20	.14	10.5	8.4	5.6	4.2
	25	.16	11.8	9.4	6.3	4.7
	30	.17	12.9	10.3	6.9	5.2
	40	.20	14.8	11.8	7.9	5.9
8003	20	.21	15.7	12.6	8.4	6.3
	25	.24	17.6	14.1	9.4	7.1
	30	.26	19.0	15.4	10.3	7.7
	40	.30	22.0	17.8	11.8	8.9
8004	20	.28	21.0	16.8	11.2	8.4
	25	.32	24.0	18.7	12.5	9.4
	30	.35	26.0	21.0	13.7	10.3
	40	.40	30.0	24.0	15.8	11.9
8005	20	.35	26.0	21.0	14.0	10.5
	25	.40	29.0	23.0	15.7	11.7
	30	.43	32.0	26.0	17.2	12.9
	40	.50	37.0	30.0	19.8	14.9

### FLOODJET TIPS FOR BROADCAST SPRAYING

Nozzle No.	Orifice Dia.	Liquid Pressure In PSI.	Capacity In GPM.	Gallons Per Acre				
				4 MPH	5 MPH	6 MPH	8 MPH	10 MPH
TKSS2	.046"	10	.20	7.4	6.0	4.9	3.7	3.0
		20	.28	10.5	8.4	6.9	5.2	4.2
		30	.35	12.9	10.3	8.7	6.5	5.2
		40	.40	14.8	11.8	9.9	7.5	5.9
TKSS2.5	.052"	10	.25	9.3	7.4	6.1	4.6	3.7
		20	.35	12.9	10.3	8.7	6.5	5.2
		30	.43	15.9	12.8	10.6	8.0	6.4
		40	.50	18.6	14.9	12.4	9.3	7.4
TKSS3	.057"	10	.30	11.1	8.9	7.5	5.6	4.5
		20	.42	15.7	12.6	10.4	7.8	6.3
		30	.52	19.3	15.4	12.8	9.7	7.7
		40	.60	22.0	17.8	14.8	11.2	8.9
TKSS4	.065"	10	.40	14.9	11.9	9.9	7.5	5.9
		20	.57	21.0	16.8	13.9	10.5	8.4
		30	.69	26.0	21.0	17.1	12.8	10.3
		40	.80	30.0	24.0	19.8	14.8	11.9
TKSS5	.073"	10	.50	18.6	14.9	12.4	9.3	7.4
		20	.71	27.0	21.0	17.6	13.1	10.7
		30	.87	33.0	26.0	21.7	16.1	13.1
		40	1.00	38.0	30.0	25.2	18.6	15.1
TKSS7.5	.091	10	.75	28.0	22.0	18.7	14.0	11.1
		20	1.10	39.0	32.0	26.4	19.8	15.8
		30	1.30	49.0	39.0	31.9	24.1	19.3
		40	1.50	56.0	45.0	37.4	27.5	22.0



Floodjet tips are positioned as shown in the diagram by the chart below. When positioning the tip as shown in Figure A the tip can be operated closer to the ground, thereby reducing the chance of wind drift.

The chart below shows capacities in gallons per acre at various speeds and liquid pressures. Capacities are based on water at 70 degrees F. with nozzles spaced at 40 inches.

The rate chart is based on 40 inch row spacings. For other spacings of nozzles on the boom, multiply the tabulated GPA coverage by the conversion factors shown below.

Other Spacing	20	24	28	30	32	34	36	38	40	42	44
Conversion Factor	2	1.67	1.43	1.33	1.25	1.18	1.11	1.05	1.00	.95	.91

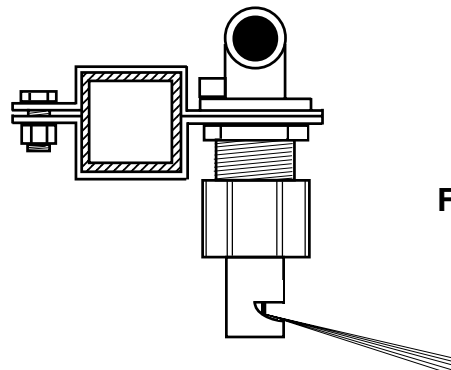


Figure A

# SPRAYER CHECKLIST:

Downtime caused by field breakdowns is costly and time consuming. Many breakdowns can be eliminated by periodic equipment maintenance. By spending time reviewing this checklist before seasonal spraying application time and following proper after-season care, you can save time and money later.



## **WARNING:** To Prevent Serious Injury Or Death

- Keep hands, feet, and loose clothing away from rotating parts.
- Wear protective clothing recommended by your chemical and fertilizer manufacturer when working with chemicals.

### Check Before Going To The Field :

#### 1. NOZZLES

Check tip for excessive wear by checking for grooves in or near tip opening. Check nozzle spacing by starting at center and working outwards. Check boom for proper height.

#### 2. HOSES

Check all hoses for worn or soft spots. Be sure all hose clamps are tightened and hoses are not kinked or pinched. Check for leakage in any lines.

#### 3. TANK

Remove and clean agitator orifices. Check orifices for excessive wear by checking for grooves in or near orifice opening. Inspect fitting and grommets to insure they are in good condition.

#### 4. CONTROLS

Check for leakage, plugging, or wear on all valves, fittings, etc. Clean off any build up of foreign material.

#### 5. PUMP

Check to be sure pump turns freely.

#### 6. FRAME

Be sure all bolts are tightened.

#### 7. REPLACEMENT PARTS

Replace all worn or damaged parts.

### After Season Care:

**NOTE:** It is important to wear proper safety equipment when cleaning the sprayer. See your chemical or fertilizer package for this information.

1. After spraying chemicals, run water mixed with cleaners through tank, pump and all hose hookups. If wettable powder dries out in the system, it is very difficult to put back into suspension and can cause malfunction, damage or injury.
2. When cleaned, tank should have all openings closed or covered to keep dirt from entering.
3. Pump should be flushed with soluble oil and pump ports plugged to keep out moisture and air.
4. Disassemble tips and rinse with water or cleaning solution. (Appropriate for chemical sprayed).
5. Clean tip opening with a wooden toothpick. Never use wire or hard object that could distort opening.
6. Dispose of all unused chemicals or solutions in a proper and ecologically sound manner.
6. Water rinse and dry tips before storing.

---

**NOTE:** DETHMERS MANUFACTURING COMPANY does not and will not make any recommendations concerning application of various chemicals or solutions. These recommendations relate to either amount or procedure of materials applied. If you have any questions regarding application of certain chemicals or solutions, contact your chemical supplier and follow chemical manufacturer recommendations.

# NOTES



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