

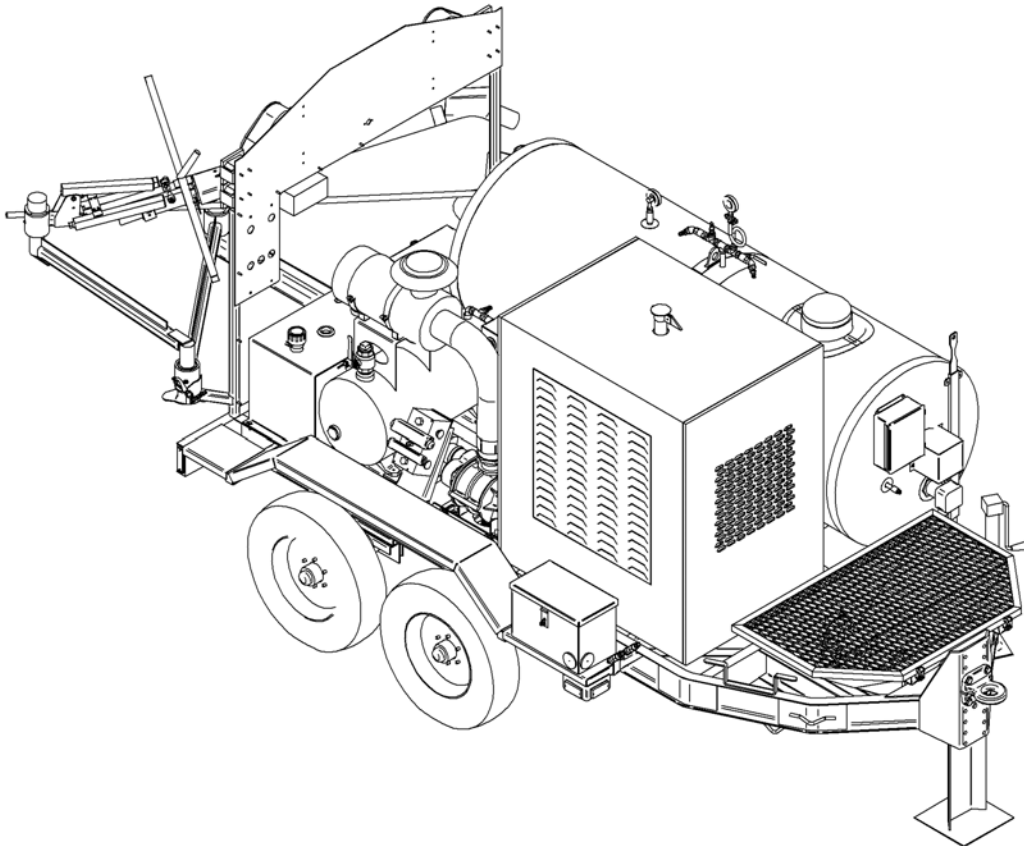


**OPERATING AND SERVICE MANUAL  
MODEL: MAGNUM SPRAY INJECTION  
PATCHER**

**PART MANUAL - 91285  
Rev. "H"**



# CRAFCO MAGNUM SPRAY INJECTION PATCHER PART NUMBER 91000 - 250 GAL.



REVISED: 04/06

# TABLE OF CONTENTS

CrafcO Magnum Spray Injection Patcher.....	6
Safety Precautions.....	7-8
Limited Warranty.....	9
Warranty Claim Instructions.....	10
Cautions.....	11
Operating Instructions	
Preparing for Operation.....	12
Start Up.....	13-15
Shut Down.....	16
Clean Out Instructions.....	17
Maintenance	
Specifications.....	18
Lubricating and Maintenance Instructions.....	19
Trouble Shooting	
Trouble Shooting.....	20-21
Material Specifications.....	22
Wiring Code for Tail Lights and Brakes.....	22
Tensioning V-Belt Drives	
Instructions.....	23
Maintenance Guide of the V-Belt Drives.....	24
Photos, Drawings and Parts	
Operator Boom, 45 Degree Elbow/Boom Nozzle.....	25
Rear Components of the Magnum	
Operator Boom, Aggregate Hose and Tail Lights.....	26
Operator Boom, Rear Control Console.....	27
Dual Hydraulic Control Valve.....	28
Rotary Air Blower - Components .....	29
Hydraulic Tank -Components.....	30
Aggregate Feed System, Center Auger, Rear Hydraulic Motor.....	31
Aggregate Feed System, Airlock System - Below Frame .....	32
Front View of Magnum - Engine Cover, Jack, Aggregate Hopper, Hitch, Chains.....	33
Front View of Magnum - Back-Up Alarm, Hopper Safety Switch.....	34
Rear Passenger Side View of Magnum-Diesel Flush Tank, Fuel Tank.....	35
Battery Box.....	36
Emulsion Tank, Crack Filling Attachment (Option).....	37
Emulsion Tank, Top Valve Assembly.....	38
Emulsion Tank Temperature Gauge.....	39
Front View of Emulsion Tank and Components.....	40
Rear Driver's Side Flush Out Box and Trough of Machine.....	41
Emulsion Tank Rear Valve Assembly.....	42
Control Console Panel.....	43

# TABLE OF CONTENTS

## Photos, Drawings and Parts

Engine and Engine Cover/Components.....	44
Drive Train System - Engine to Blower/Belt Drive.....	45-46
Thermostat Box and Components.....	47
Diesel Flush Tank.....	48
Engine Air Compressor and Compressor Governor.....	49
Hydraulic System.....	50
John Deere Engine Components.....	51
Magnum Blower Air Cleaner.....	52
Magnum Blower Air Cleaner.....	53
Decal-Towing of The Spray Injection Patcher.....	54
Electric Throttle-Remot Control/Actuator.....	55
Operator Boom and Hose.....	56
Tail Light and License Bracket.....	57
John Deere Engine Control Panel.....	58-59
Arrow Board Controller Protection Box.....	60-61
Emulsion Tank Gauge.....	62
Hydraulic Tailgate Assembly (91196k).....	63
Rear Boom Saddle.....	64
Spring Arm Assembly.....	65
Control Console.....	66
Clearance Light.....	67
Water/Fuel Separator.....	68
8 Foot Quick Flush Hose-Option.....	69
Manual Box.....	70
Emulsion Tank Drain Valve Assembly.....	71
Magnum Air Discharge Plumbing Circuit.....	72-73
Magnum Aggregate Boom Clamp Assembly.....	74-75
Magnum 6" Aggregate Screw Feed Assembly.....	76-77
Magnum-Engine to Blower Drive Belt System-3 Belt System .....	78-79
Magnum Emulsion Supply Line Routing.....	80
Magnum Air Line supply Line Routing.....	81
Magnum Hydraulic Schematic.....	82
Magnum Wiring Schematic.....	83
Magnum Engine Contol Panel Sub-Assembly-80 h.p.....	84
Standard Dump Truck and Standard Crafc0 Hydraulic Tailgate.....	85-87
Top Side Support, Bottom Side Support, Top board Installed.....	88
Hitch Extension.....	89

# CRAFCO MAGNUM SPRAY INJECTION PATCHER

This manual is furnished with each new **CRAFCO MAGNUM SPRAY INJECTION PATCHER**. The manual will help your machine operators learn to run the machine properly and understand its mechanical functions for trouble-free operation.

Your **CRAFCO MAGNUM SPRAY INJECTION PATCHER** is designed to give excellent service and save maintenance expense. However, as with all specifically engineered equipment, you can get best results at minimum costs if:

- (1) You operate your machine as instructed in this manual, and
- (2) Maintain your machine regularly as stated in this manual.

# SAFETY PRECAUTIONS

- All operators must be thoroughly trained.

- High operating temperatures of machine require protective clothing and gloves be worn by operator.



- Wear gloves while operating equipment.

- Always wear eye and ear protection.

- Always wear proper protective clothing.



- Observe all **CAUTION AND WARNING** signs posted on machine.

- Read Operator Manual thoroughly before operating machine.



- Make sure operator is familiar with machine operation.

- Do not operate in closed building or confined areas. (Example: due to exhaust fumes)

- Shut-down engine prior to refilling diesel tank.

- Keep hands, feet, and clothing away from all moving parts.

- Always keep a fire extinguisher near the unit. Maintain extinguisher properly and be familiar with its use.

- Calibrate temperature control prior to initial operation and each 50 hours of operation.

- Replace any hoses which show signs of wear, fraying, or splitting. Be sure all fittings and joints are tight and leak-proof.

- Precaution is the best insurance against accidents.



- The CrafcO Magnum should not be left unattended while running.

- Tighten all bolts and screws after every 100 hours of operation.

- CRAFTCO, Inc. assumes no liability for an accident or injury incurred through improper use of the machine.

- Check and maintain correct tire pressure, check tires weekly. Check axles weekly.

- Check machine thoroughly for any signs of improper wear.

## **SAFETY PRECAUTIONS continued**

- Crafco, Inc. recommends that the purchasers or users of the merchandise or products frequently and consistently undertake inspections and protective measures with respect to the use and application of the product and merchandise.

- Do not disassemble any valve while under pressure.

- Hose assemblies to service should be inspected frequently for leakage, kinking, corrosion, abrasion or any other signs of wear damage.

- A good place to begin preventive maintenance is with a periodic drive inspection as a normal part of your maintenance rounds. Look and listen for any unusual vibration or sound while observing the guarded drive in operation. A well designed and maintained drive will operate smoothly and quietly.

> Caution: Do not fill the emulsion storage tank more than 2/3's full. The emulsion will expand after the emulsion is heated up. Starting at the bottom of the lid opening, fill the emulsion about 12" down from the bottom of the lid opening. If you over fill the emulsion storage tank, you can damage the slide gate, compressor, and other vital componets of the machine. If you over fill your emulsion storage tank you will void the warranty.



# CRAFCO SPRAY INJECTION PATCHER LIMITED WARRANTY

Crafco, Inc., through its authorized distributor, will replace for the original purchaser free of charge any parts found upon examination by the factory at Mesa, Arizona, to be defective in material or workmanship. This warranty excludes engine or components, tires, and battery as these items are subject to warranties issued by their manufacturers.

Crafco, Inc., warrants for (2) years the machined venturi on Air Stream and Air Stream T-M models.

Crafco, Inc., warrants structural parts, blower and coupling, boom arm, emulsion heating system, and air-feed system, (excluding nozzle and rubber discharge hose and auger and housing tube on Magnum models) for a period of (1) one year from date of delivery. Excluded from this warranty are normal wear items i.e., hoses, belts, filters, and lubricants. Crafco, Inc., shall not be liable for parts that have been damaged by accident, alteration, abuse, improper lubrication/maintenance, normal wear, or other cause beyond our control.

The warranty provided herein extends only to the repair and/or replacement of those components on the equipment covered above and does not cover **labor** costs. The warranty does not extend to incidental or consequential damages incurred as a result of any defect covered by this warranty.

All transportation and labor costs incurred by the purchaser in submitting or repairing covered components must be borne by the purchaser.

Crafco, Inc. specifically disavows any other representation, warranty, or liability related to the condition or use of the product.



**WARNING:** Use of replacement parts other than genuine Crafco parts may impair the safety or reliability of your equipment and nullifies any warranty.

## **WARRANTY CLAIM INSTRUCTIONS**

Please follow the instructions stated below when calling in a Warranty Claim. Failure to follow these procedures may be cause to void the warranty.

1. Call your local CrafcO distributor. If you do not know who your local distributor is, call a CrafcO Customer Service Representative, (Toll Free 1-800-528-8242) for name, location, and telephone number.
2. On contacting the dealer, be prepared to identify the machine type, model number, and serial number, also, the date of purchase if available.
3. Should the cause of the malfunction be a defective part, the distributor will advise you of the procedure to follow for a replacement.
4. The warranty is valid only for parts, which have been supplied or recommended by CrafcO, Inc.

If you have any additional questions regarding warranty repairs and parts, please do not hesitate to call toll free 1-800-528-8242.

CrafcO, Inc.  
Corporate Office  
420 N. Roosevelt Ave.  
Chandler, AZ 85226  
Toll Free 1-800-528-8242  
602-276-0406

CrafcO, Inc.  
Mesa Equipment Plant  
235 S. Hibbert  
Mesa, AZ 85210  
480-655-8333

# CAUTIONS

1. NEVER OPERATE MACHINE WITHOUT ALL GUARDS IN PLACE.
2. DO NOT OPEN HATCH LID ON EMULSION TANK (90640). DO NOT OPEN DIESEL FLUSH TANK FILL PORT (90860). DO NOT OPEN EITHER TANK UNDER PRESSURE. DO NOT OPEN EMULSION TANK REAR VALVE ASSEMBLY (90628). TO RELIEVE PRESSURE, USE THE EMULSION TANK TOP VALVE ASSEMBLY (90629). OPEN BRONZE BALL VALVE - 1/2" (29214). TO RELIEVE PRESSURE ON DIESEL FLUSH TANK OPEN 2" BRASS BALL VALVE (29281). GAUGE (29961) SHOULD READ "0".
3. Do not plug in emulsion tank heater (91799) unless emulsion is above the heating element enclosure inside the tank. This requires a minimum of 60 gallons in the tank.
4. Keep emulsion tank airtight when not in use.
5. Do not allow emulsion to freeze. (Store in dry area.)
6. Do not put hands, feet, etc. near truck auger tailgate (91196).
7. Do not fill flush tank (90860) more than 2/3 full.
8. Do not point the nozzle (91100) at another person.
9. Do not operate near an open flame.
10. Do not use any type of flame to unclog the emulsion hose or spray ring if they should become clogged.
11. When applying material out the nozzle (91100), protective eye glasses and protective clothing should be worn.
12. Do not operate diesel engine above 2200 RPM MAX.
13. Do not touch the silencer as it can become very hot while the CRAFCO MAGNUM is operating.
14. Hose should not be kinked or run over by any equipment. Hose should not be stored outdoors due to potential damage from the elements, which may shorten hose life.
15. Hydraulic hose assemblies that are worn or damaged should be removed from service and replaced immediately.

# CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES

## PREPARING FOR OPERATION

**Emulsion** - The emulsion tank should be filled with an asphalt emulsion suitable for the climate and condition in which the unit will be operating. Commonly this is an RS 2 or a CRS 2.

*(Note: All emulsions are not compatible. When changing emulsion brand or type, you should completely empty and flush out the tank before the new emulsion is added.)*

Proper operation temperature for the emulsion is 160°F (+/- 10°F). If the emulsion is below this temperature the unit must be plugged into a 110 volt outlet. *(Optional 220 Volt wiring is available)* The thermostat should be set at 160°F. The electric heating elements are designed to gently heat the emulsion at a rate of 10°F per hour. If the emulsion temperature is low it will take several hours to get the emulsion to operation temperature. Plugging the unit in overnight is recommended.

*(Never allow emulsion to freeze or heat emulsion above 190°F.)*

**Stone** - A 3/8" crushed washed aggregate is the most common and versatile stone to use in patching operations. Smaller stone (1/4") can be used and may improve results when skin patching. Larger stone (1/2") can be used to improve results when patching larger holes or repairing shoulders.

**Solvent** - Fill the solvent tank with diesel fuel or another solvent that has been recommended by the emulsion supplier.

Each day, before operating the unit, raise the dump body on the truck and rinse the stone with water. Allow the water to drain for several minutes. This will greatly reduce the dust developed during the patching operation and will improve the adhesion of the emulsion to the stone.

# CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES

## START UP

### 1. Pressurize the emulsion tank.

- a. Remove the boom from the holder and remove the nozzle from the **Flush Box**.
- b. With the nozzle pointed at the ground, start the engine and allow to run for several minutes. The compressor runs when the engine is running and will automatically start building pressure in the emulsion tank. Allow the pressure to build until the pressure reaches a minimum of 90 PSI.

### 2. Charge the auger with stone.

- a. Set the auger flow control at 4 and the tailgate control at 3.
- b. With the engine running at an idle, turn ON the "STONE" switch at the operator control panel.
- c. Stone will quickly start to shoot out of the nozzle. Run the unit for 45 to 90 seconds until stone is flowing smoothly with no surging then shut OFF the "STONE" switch.
- d. Shut off the engine, place the boom back in the transport support, and place the nozzle in the "FLUSH BOX".

### 3. Set the auger feed for operation.

- a. **SKIN PATCHING** - Auger at 3 - Tailgate at 1.
- b. **POT HOLE PATCHING** - Auger at 4 - Tailgate at 2.
- c. **SHOULDER REPAIRS** - Auger at 8 - Tailgate at 4.

*These settings may be adjusted to meet the operators comfort level. As you make adjustments you should always keep the flow of material into the hopper above the top of the auger. About half full in the hopper is correct. Overfilling the hopper can jam the auger.*

### 4. Purge the solvent from the emulsion lines.

- a. Locate the EMULSION TANK VALVE at the rear of the emulsion tank.

# CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES

## START UP

- b. With the nozzle positioned in the flush box and the engine off, turn the EMULSION TANK VALVE to the position marked Emulsion Only.
- c. Slowly open the EMULSION VALVE at the OPERATOR CONTROL PANEL approximately 1/4 open. Solvent will begin to flow from the nozzle. This will take 10 to 15 seconds.
- d. When the solvent is purged and emulsion is visible at the nozzle, quickly close the EMULSION VALVE.

### 5. Patching

- a. Remove the boom from the transport supports and position the nozzle over the area to be repaired.
- b. Start the engine.
- c. Adjust the throttle up to 2000 RPM.
- d. Lower the nozzle to about 12" from the ground and blow all dust, dirt and standing water away for the repair area.
- e. Reduce the engine RPMs to:
  - Skin Patching - 900 to 1000 RPM
  - Holes - 1100 to 1200 RPM
  - Shoulder Repairs 1300 to 1500 RPM

*(With variables in stone, equipment and operator you may find that your unit works better at slightly higher RPM. These settings are our recommended settings for 3/8" stone. Each operator can adjust to their comfort level. We suggest with 1/2" stone increase by 100 RPM and with 1/4" stone decrease slightly.)*
- f. Raise the nozzle to 24" to 30" from the pavement (*Knee High*) and slowly open the EMULSION VALVE approximately 1/4 open.
- g. Tack the repair area with emulsion. *(Coating the entire area including 6" past the edge of the repair is best. Highly distressed areas and damp areas require heavier tack application for good long lasting repairs.)*

# CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES

## START UP

- h. With the emulsion running, turn on the STONE SWITCH. Stone will immediately start shooting from the nozzle. *(If stone surges you may need to increase the engine RPM of the stone feed to the auger & tailgate.)*
- i. Continuously move the nozzle over the repair, building your repair from the bottom up. *(If you hold the nozzle still, material will build up and you will not achieve a smooth repair.)*
- j. As the stone builds on the pavement you should see that less than 10% of the stone looks uncoated when your stone and emulsion flow are adjusted properly. If an excess of emulsion appears reduce the emulsion flow. If the stone appears undercoated increase the emulsion flow. *(Emulsion is the glue. To get a long-lasting repair, make sure you have enough emulsion.)*
- k. When the repair is at the desired level, close the EMULSION VALVE. Dry stone will continue to flow from the nozzle. Lightly cover the entire repair with dry stone to complete the repair.
- l. Shut off STONE SWITCH. *(Stone continues to flow for about 10 seconds after the switch is off.)*
- m. Move the nozzle away from the repair area.
- n. Lower the engine RPM.

***(TIP: With a push broom clean up any overspray of material by sweeping it back onto the repair area.)***

- 6. **Move to the next repair area.**  
***(Never travel without properly stowing boom in the transport supports and locking into position. NEVER place the nozzle in the flush box with the engine running.)***

# CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES

## SHUT DOWN

1. Shut down the engine
2. Stow boom in transport supports and place the nozzle in the FLUSH BOX.
3. Turn the FLUSH VALVE to Flush Only.
4. Open the EMULSION VALVE and allow emulsion to flow into the FLUSH BOX until solvent replaces the emulsion coming out of the nozzle.
5. Shut EMULSION VALVE.
6. Turn the FLUSH VALVE to Off.
7. Set the tailgate control to 0 and the Auger control to 4.
8. Remove the nozzle from the flush box.
9. Start the engine and set the RPM at 1200.
10. Turn on the rock switch.
11. Rock will flow from the nozzle. Allow rock to flow until most of the rock is purged from the auger and the hopper, 2 to 3 minutes.
12. Shut off the rock switch.
13. Shut down the engine.
14. Stow the boom and the nozzle and lock in position for transport.

***Stone can also be purged by opening the gate below the hopper, reversing the hydraulic line for the auger and feeding the stone back towards the trailer tong. This method allows you to capture the stone in pails rather than depositing on the roadside.***



# **CRAFCO MAGNUM SPRAY INJECTION PATCHER OPERATING PROCEDURES**

## **CLEAN OUT INSTRUCTIONS**

### ASPHALT EMULSION LINE

The emulsion line (29596) should be flushed preferably with a non-flammable citrus based asphalt solvent or diesel fuel, when the time between repairs exceeds 20 minutes, and at the end of every day. To flush the line: Turn valve (90628) to flush and open valve (91700). Flush into flush box (91200). Flush only when engine is turned off. If the emulsion line ever becomes clogged do not attempt to unclog by applying any type of open flame to the emulsion line. No open flame should be used to clean any part of the Magnum equipment.

If some asphalt emulsion is spilled on the machine it can be wiped off immediately with diesel fuel or asphalt solvent.

If asphalt emulsion has accumulated on the machine or hoses you should spray them with your asphalt cleaner, let soak approximately 3 minutes and wash off with water or steam. This should be done weekly.

### AGGREGATE FEED SYSTEM

The aggregate hopper (91130) should be cleaned of fines by dropping the trap door on the bottom of the hopper daily. The entire aggregate feed assembly should be rinsed with water for 10 minutes daily with the engine operating at 1,500 RPM and the center screw (92692) turning at approximately 35 RPM and the truck auger (91196) off. This will thoroughly clean the unit of any fines and assure smooth operation to maintain the Magnum high output.

### AIR CLEANERS (BLOWER AND ENGINE)

1. Replace the filter only when the restriction level has reached the maximum recommended by the engine or equipment manufacturer (91045).
2. Empty dust cap. Dust cap should be dumped when 1/3 full. When reinstalling dust cap, be sure it seals 360° around the air cleaner body. Check the vacuator valve to see that it is not inverted, damaged or plugged. If it is damaged, replace it immediately (91727).

# CRAFCO MAGNUM SPRAY INJECTION PATCHER

## SPECIFICATIONS

Motor (John Deere).....	Maximum 2200 R.P.M.
Air Pump (Blower).....	2475-2887 R.P.M.
Air Pump (Blower).....	Positive Displacement
Hydraulic Pump.....	Maximum 2200 R.P.M.
Hydraulic Fluid.....	22 Gallon Capacity
Diesel Flush Tank.....	30 Gallon Capacity
Diesel Fuel Tank.....	22 Gallon Capacity
Emulsion Tank.....	250 Gallon Capacity
Emulsion Temperature.....	160°F. - 175°F.
Operating Temperature Range.....	Above 0°F.
Hydraulic Pressure (with load).....	600-1000 P.S.I.
Center Screw.....	39 +/- 10 R.P.M.
Truck Auger.....	31 +/- 6 R.P.M.

# LUBRICATING AND MAINTENANCE INSTRUCTIONS

1. Engine - refer to separate manual in packet (John Deere Maintenance Manual). The manual is located in the manual box on the passenger side engine cover.
2. Blower - refer to separate manual in packet (Tuthill Blower Manual). The manual is located in the manual box on the passenger side engine cover.
3. Compressor - check separate manual in packet (John Deere Maintenance Manual). The manual is located in the manual box on the passenger side engine cover.
4. Lubricate bearings at each end of screw conveyor on truck approximately every 75 hours. Lubricate bearing on center auger under the aggregate hopper. See page 79 (Item Number 9.)
5. Check hydraulic oil level every day.
6. Check and tighten all bolts periodically, including axles (approximately 100 hours).
7. Remove and clean hydraulic oil filter in first 30 hours and then every 100 hours. Replace return line filter the first 30 hours then every 100 hours.
8. Lubricate bearings every 100 hours for boom. Boom has two bearings, an upper and a lower. Grease lightly.
9. Grease the bearing stub support shaft assembly on the back of the bell housing.
10. Axle-refer to separate manual in the packet (Dexter Axle Maintenance Manual). The manual is located in the manual box on the passenger side of the engine cover.

# TROUBLE SHOOTING

## IF NO EMULSION IS PRESENT

### CHECK THE FOLLOWING:

1. Is the emulsion tank empty? To find out, remove tank pressure first, then open the pressurized lid on emulsion tank.
2. Is the emulsion line valve closed? To find out, the line is located at the rear of the machine on the tank.
3. Is the PSI low in the emulsion tank? Check the PSI gauge located in the middle of the emulsion tank.
4. Is the nozzle spray ring plugged? Remove the nozzle and clean.
5. Is the hose from the emulsion tank to the nozzle plugged? If equipped with a heated hose, start engine to allow heating, and turn the diesel flush on. Do not attempt to unplug the emulsion hose by applying an open flame to the emulsion hose or spray ring. The system is equipped with a heating system (standard). Start the engine and let it run to heat the emulsion hose.
6. Is the emulsion cold? Check the emulsion temperature gauge on the emulsion tank. Check to be sure the thermostat and the heating element are working.
7. Has the emulsion separated and become lumpy? Check the emulsion by placing a rod to the bottom to check for “bubble-gum-like” asphalt residue on the bottom. If the emulsion is separated, drain the tank and flush with the diesel fuel.

## HYDRAULIC SYSTEM MALFUNCTION (OPTIONAL)

### CHECK THE FOLLOWING:

1. Check the oil in the hydraulic reservoir located on the driver’s side of the machine.
2. Check the hydraulic pump bolted to air compressor on John Deere engine. If needed, crack the hydraulic hose slightly to see if the fluid is pumping.
3. Check the stone switch for loose wires.
4. Check the solenoid for all loose wires. (To check, hold hand on solenoid and energize switch, you should be able to feel the impulse in the valve.)
5. Check for hydraulic system overload (PSI over 2,000 on hydraulic gauge) located in engine control panel.
  - A. Check the augers in the tailgate. If too much stone is piled on top of the augers the weight of the stone may cause the augers to stop turning or if dirty wet stone sits in the augers overnight, it may harden thereby preventing the augers from

turning. If either of these conditions exist, be sure to turn off the engine, then remove stone from the top of the augers (top of the auger should be visible) and loosen any packing or buildup under the augers.

- B. Check the tailgate feeder aggregate shoot. If stone is not free falling it will wedge at the top and create undue strain on the hydraulic system. Turn off the AIR STREAM engine, raise the dump bed, lower shoot, or remove the obstruction from the shoot as required. Lower truck bed to appropriate height. Lower shoot and increase angle of shoot in aggregate hopper so stone cannot "sit" on the shoot.

### MOTOR WILL NOT START

CHECK THE FOLLOWING:

Refer to the John Deere Engine Manual located in the manual box on the back of the engine cover.

### AGGREGATE NOT COMING THROUGH HOSE

CHECK THE FOLLOWING:

1. Is the aggregate hopper empty?
2. Is the aggregate stone flowing down the dump body into the tailgate feeder hose? Check the gravity feed tailgate.
3. Check the hydraulic system.
4. Check the engine R.P.M. - 2,200 MAX.
5. Is the aggregate hose plugged? Angle front section of hose and nozzle down and shake hose. If hose is still plugged, remove the hose from the air flow pipe, angle down and shake hose, then reattach hose to air flow pipe. If hose is still plugged, flush out with large amounts of water as described in Aggregate Feed System (page 17).
6. Is the nozzle plugged? Remove the nozzle and clean.
7. Check the 6" airlock to see if the aggregate has become plugged with aggregate.
8. Check the aggregate hose at the airlock to see if the aggregate is wedged.

# CRAFCO MAGNUM SPRAY INJECTION PATCHER

## MATERIAL SPECIFICATIONS

Below are general specifications for the materials used in Magnum. The materials are very common. This is not a complete list, as a variety of materials can be used and manufacturer trade names vary by locality. Please call if we can assist in anyway.

### STONE

General description: 3/8" or 1/4" preferably washed angular crushed stone. Round river rock also acceptable, crushed preferred.

### GENERAL SIEVE ANALYSIS

100%	1/2 inch
90 - 100%	3/8 inch
20 - 100%	3/16 inch (#4 screen)
5 - 30%	1/8 inch (#8 screen)
0 - 10%	1/16 inch (#16 screen)

### EMULSION

General description: Rapid setting asphalt emulsion, commonly referred to as RSII, CRSII and sometimes CMSII. Other trade names are used in some areas. Rapid setting high floats are also acceptable, and are preferable in cold weather (less than 32°F.) operation.

### SPECIFICATIONS

	Min.	Max.
Viscosity, Saybolt Furol @ 122 degrees F. (50°C.), s.....	75	400
Settlement, 5-Day, %.....		5
Storage Stability, Test, 24-h, %.....		1
Demulsibility, 35 ml, 60.....	40	
Sieve test, %.....		0.10
Residue by distillation, %.....	63	
Penetration, 77°F. (25°C.).....	100	
Ductility, 77°F. (25°C.), 5.....	40	
Solubility in trichloroethylene, %.....	97.5	

### WIRING CODE FOR TAIL LIGHTS AND BRAKES

GD (Ground) - Black  
LT (Left Turn) - Red  
RT (Right Turn) - Green  
S (Brakes) - White  
TM (Running Lights) - Brown

# CRAFCO MAGNUM SPRAY INJECTION PATCHER

## TENSIONING V-BELT DRIVES

### INSTRUCTIONS

#### GENERAL RULES OF TENSIONING

Ideal tension is the lowest tension at which the belt will not slip under peak load conditions.

Check tension frequently during the first 24 - 48 hours of operation.

Over tensioning shortens belt and bearing life.

Keep belts free from foreign material which may cause slip.

Make V-drive inspection on a periodic basis. Tension when slipping.

Never apply belt dressing as this will damage the belt and cause early failure.

#### SPECIFIC RULES FOR TENSIONING

To check for proper belt tightness you must measure the force required to achieve the desired deflection at the center of the belt span, midway between the two pulleys. Below are the minimum and maximum forces permissible to achieve the desired deflection. This should be checked after the first 24 hours, 48 hours and weekly thereafter.

Belt	Drive	Desired Deflection	Force to Achieve Deflection - Min.	Force to Achieve Deflection - Max.
91331	Blower	.156"	7.1#	10.5#

## MAINTENANCE GUIDE OF THE V-BELT DRIVES

TYPE OF MAINTENANCE	WHEN TO DO	WHAT TO DO
Check for sheave groove wear.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check for belt riding in the groove. In multiple groove drives, belt ride should be uniform, not more than 1/16" above or below top of sheave groove. Check groove wear area for wear. Side wall of groove should be straight, not dishd out. Bottom of groove should show no signs of belt contact.
Check for sheave runout.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check sheave by eye for runout. If runout is excessive, it can easily be seen by visual inspection. If runout is noticeable, check sheave for source of problem and correct.
Inspect for heat build-up and proper ventilation.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check belts for heat. Ambient temperatures should not exceed 140°F. Contact temperatures should not exceed 180 °F. Make sure drives are properly ventilated.
Clean belts and sheave grooves.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Inspect belts for contaminates, such as oil or grease. Wipe belts clean with detergent and water. Inspect sheave grooves for buildup of such material and remove, if necessary.
Check belt tension.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check belt tension using Browning belt tension checker. Tension to recommendations shown in current catalogs.
Check sheave alignment.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check alignment with straight edge, string or machinist level. Correct alignment to as near perfect as possible.
Mismatched belt check.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check belt sag on slack side of drive. All belts should have a slight bow. If this bow is not uniform with all belts, replace entire set with a matched set.
Check for worn belts.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check wear surfaces of belt for excessive wear. If belts have a slick, glazed look, belts are slipping. Check drive capacity and belt tension. Never replace only one belt in a used set, as used belts will elongate. Replace entire set if replacement is necessary.
Check sheave setscrews and/or bushing capscrews.	Initial inspection - 8 hours. Second inspection - 24 hours. Third inspection - 100 hours. Periodically thereafter.	Check all setscrews and/or capscrews for looseness. Retighten to recommended torque, if necessary.



# OPERATOR BOOM, 45 DEGREE ELBOW/BOOM NOZZLE



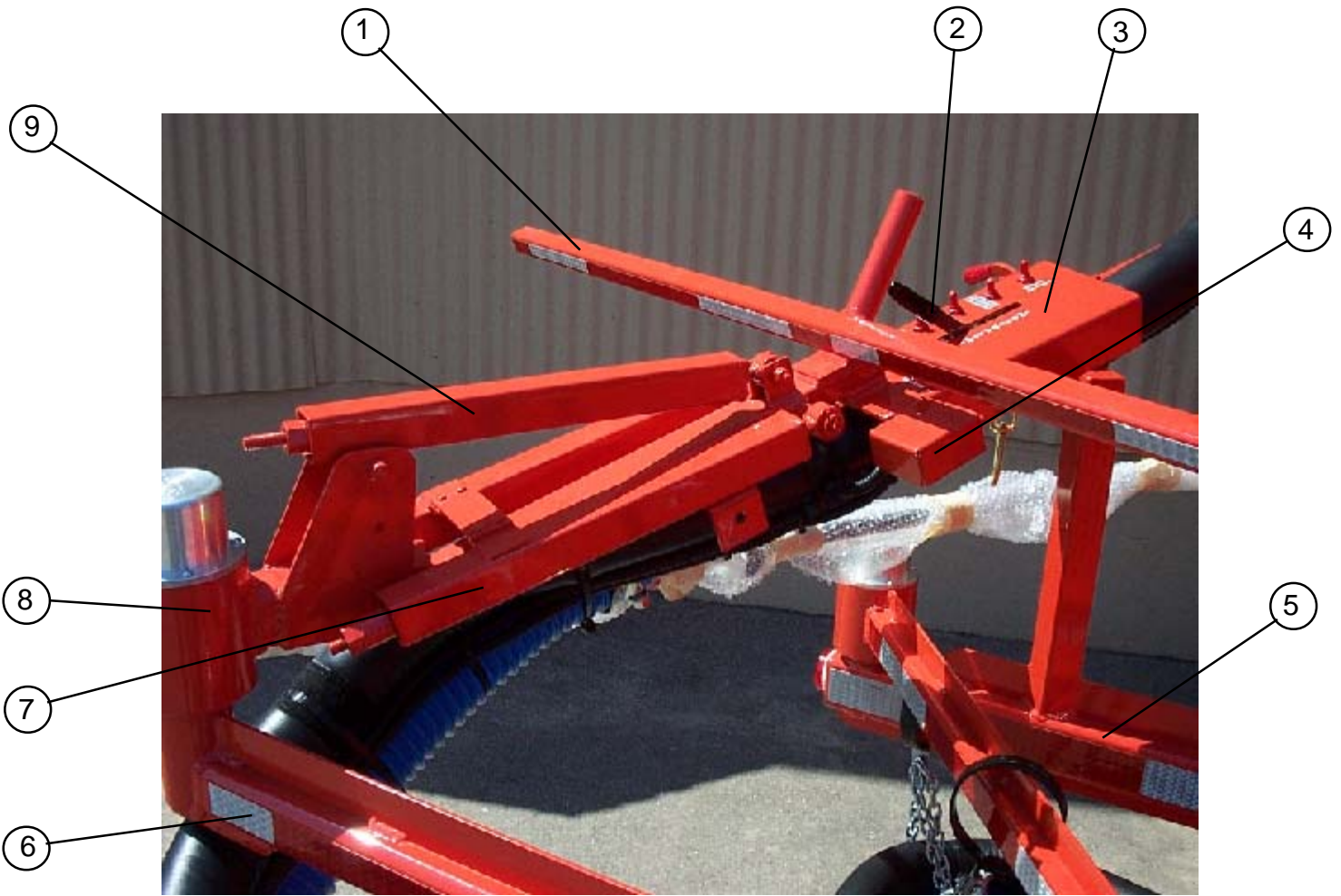
NO.	PART NUMBER	QTY	DESCRIPTION
1	25951	1	3" U-BOLT MUFFLER CLAMP
2	91220	1	3" BOXED 45 DEG. ELBOW
3	91055	1	3" AGGREGATE PIPE & TRIANGLE HANDLE
4	91155	1	HOSE 3" X 24" GUM RUBBER LINED
5	91103	1	3" ALUMINUM NOZZLE HOUSING
6	91162	1	NOZZLE POSITION HANDLE
7	91100	1	NOZZLE WITH SPARY RING ATTACHED
8	90303	1	EMULSION LINE COVER 6'-3" - MAGNUM
9	91099	1	3" O-RING
10	90301	1	EMULSION WATER RETURN BUTTON "U"
11	91356	1	INSERT, NOZZLE
12	91344	1	NIPPLE/HSE COMBO "KING"

## REAR COMPONENTS OF THE MAGNUM OPERATOR BOOM, AGGREGATE HOSE AND TAIL LIGHTS



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90548	1	TAIL LIGHT WITH DOUBLE BULB
2	91032	1	ENGINE PANEL ASSY WITH ENGINE
3	91700	1	EMULSION REGULATION VALVE ASSEMBLY
4	91158	1	AGGREGATE HOSE 3" X 17'
5	91755	1	4-1/2" ID AGGREGATE PIPE HANGER
6	91162	1	NOZZLE POSITION HANDLE
7	29596	19 ft.	EMULSION HOSE - LINE
8	91761	1	SMALL CYCLOPS TAIL LIGHT

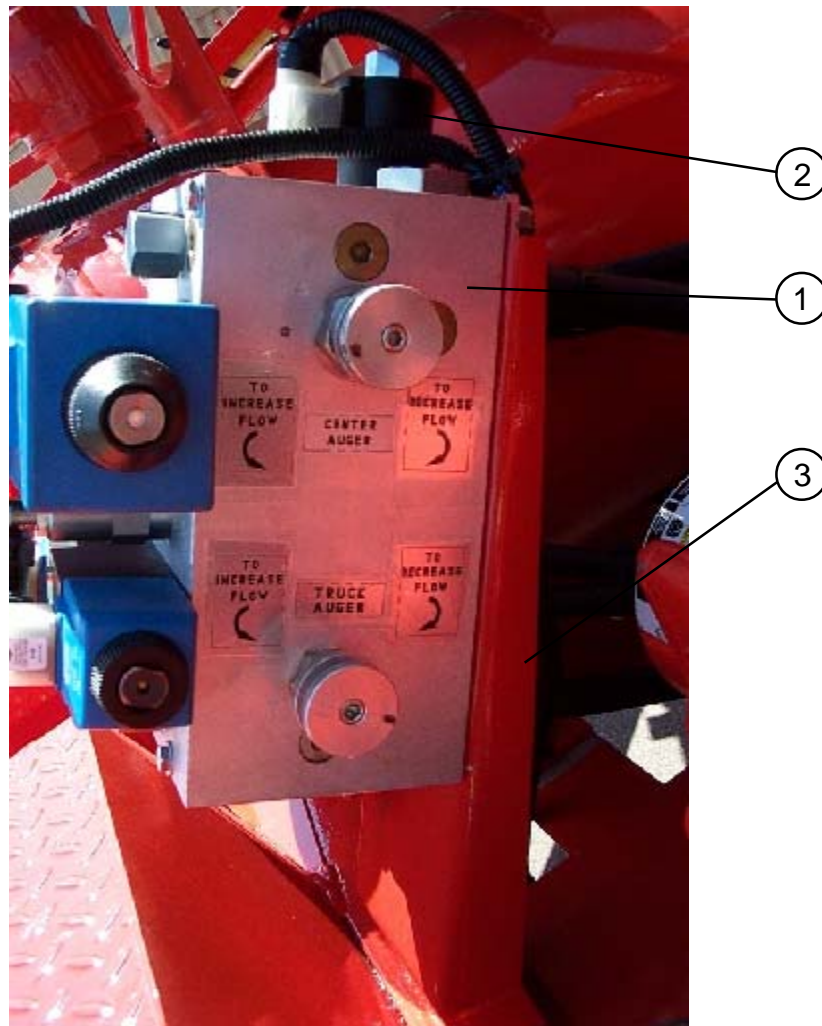
## OPERATOR BOOM, REAR CONTROL CONSOLE



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91396	1	HANDLE ASSEMBLY
2	91700	1	EMULSION REGULATION VALVE ASSEMBLY
3	91230	1	COMPLETE ASSEMBLY CONTROL CONSOLE
4	91046	1	THROTTLE CABLE
5	91310	1	BOOM MOUNT SECTION/FRAME-MAGNUM
6	91545	1	BOOM SECTION 2ND COMPLETE
7	91170	1	SPRING CYLINDER COMPLETE
8	91320	1	BEARG/RACE WELD BUSHING PIVOT ARM
9	91169	1	UPPER SPRING CYLINDER COMPLETE

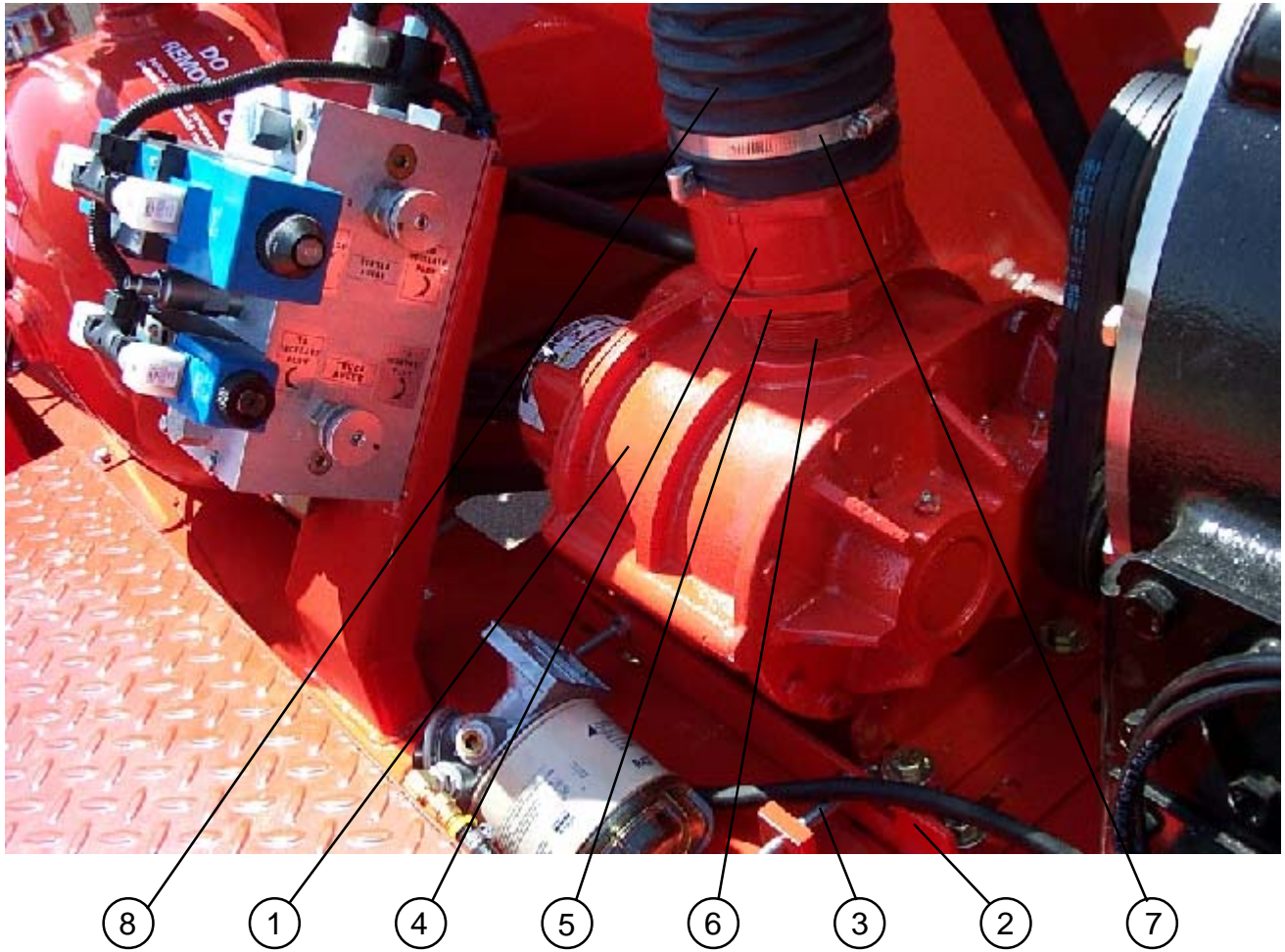


## DUAL HYDRAULIC CONTROL VALVE



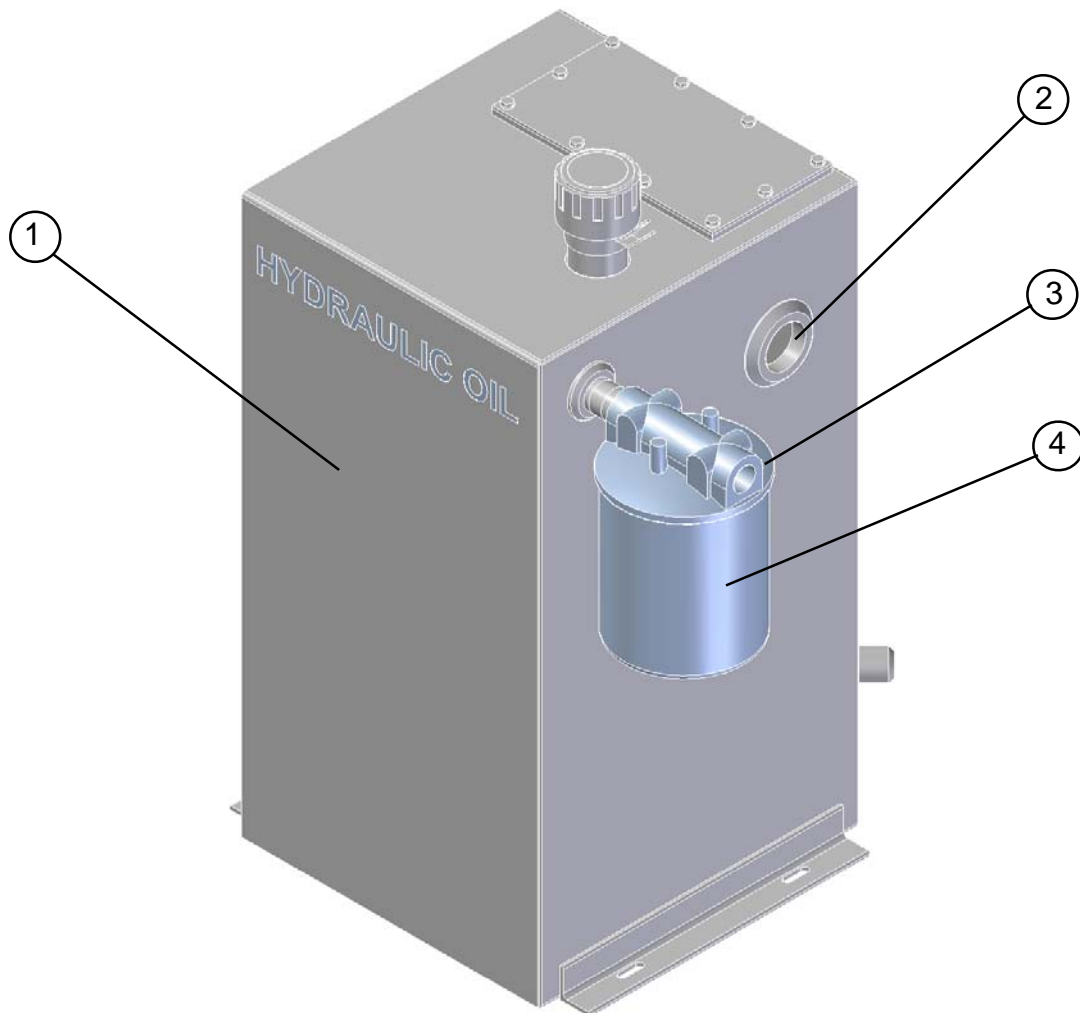
NO.	PART NUMBER	QTY	DESCRIPTION
1	92350	1	HYDRAULIC CONTROL VALVE ASSEMBLY
2	43474	1	DIN PLUG
3	92631	1	HYDRAULIC CONTROL VALVE MOUNTING PLATE

## ROTARY AIR BLOWER - COMPONENTS



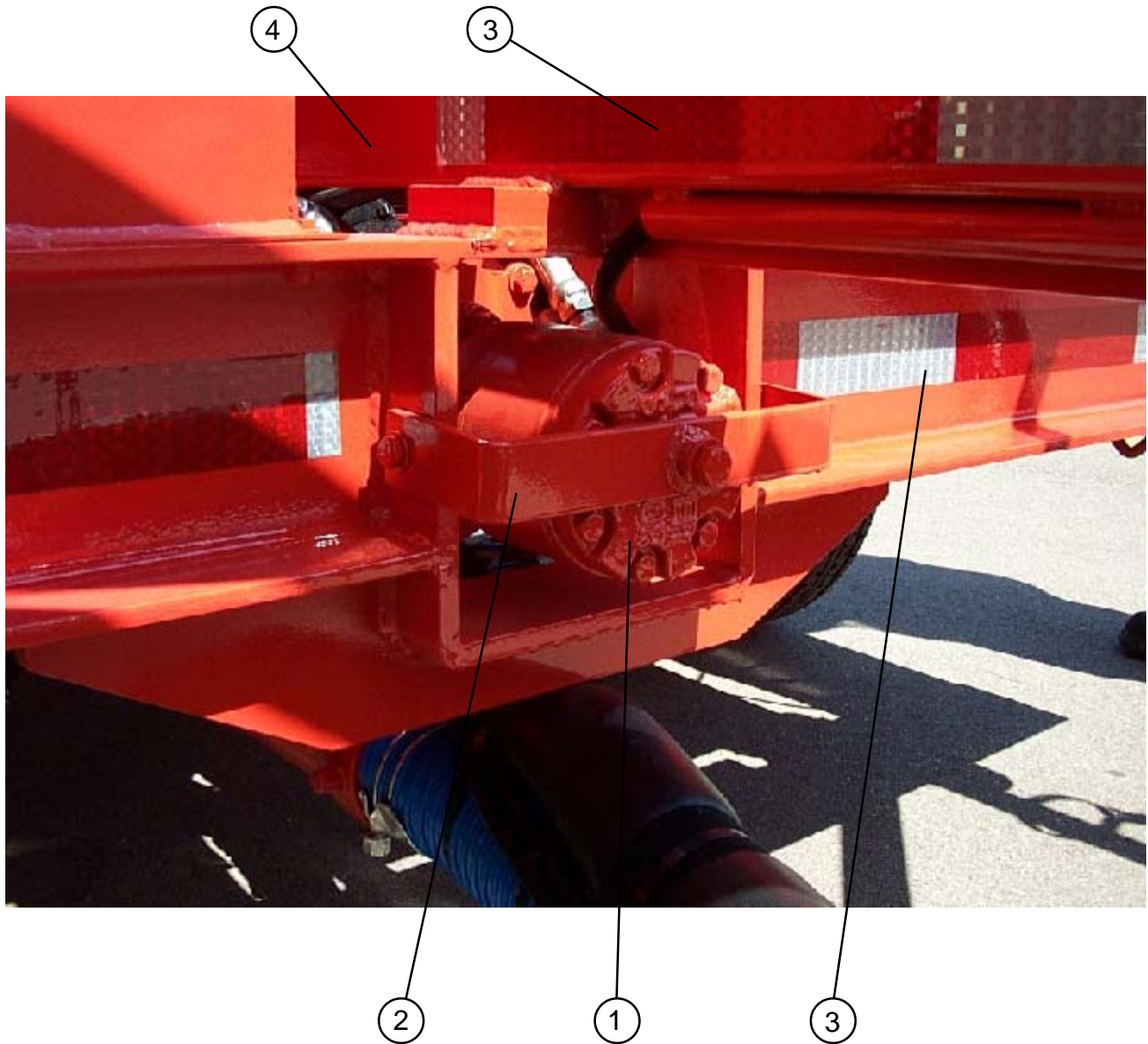
NUMBER	PART NUMBER	QTY	DESCRIPTION
1	60151	1	BLOWER
2	91330	1	BLOWER SLIDE PLATE
3	90858	1	3/8" - 16 X 4" ALL THREAD BOLT
4	90520	1	6" X 5" BLOWER/AIR CLEANER ADAPTOR
5	28364	1	4" X 3" REDUCER BUSHING
6	28010	1	3" CLOSED NIPPLE
7	91843	1	6" WORN - DRIVE HOSE CLAMP
8	91235	1	RUBBER CONNECTION HOSE TO BLOWER

## HYDRAULIC TANK -COMPONENTS



NO.	PART NUMBER	QTY	DESCRIPTION
1	92657	1	HYDRAULIC TANK - COMPLETE ASSEMBLY
2	90564	1	2" ROUND HYDRAULIC LEVEL SIGHT GAUGE
3	43872	1	HYDRAULIC OIL FILTER ASSEMBLY
4	43871	1	HYDRAULIC OIL FILTER ELEMENT

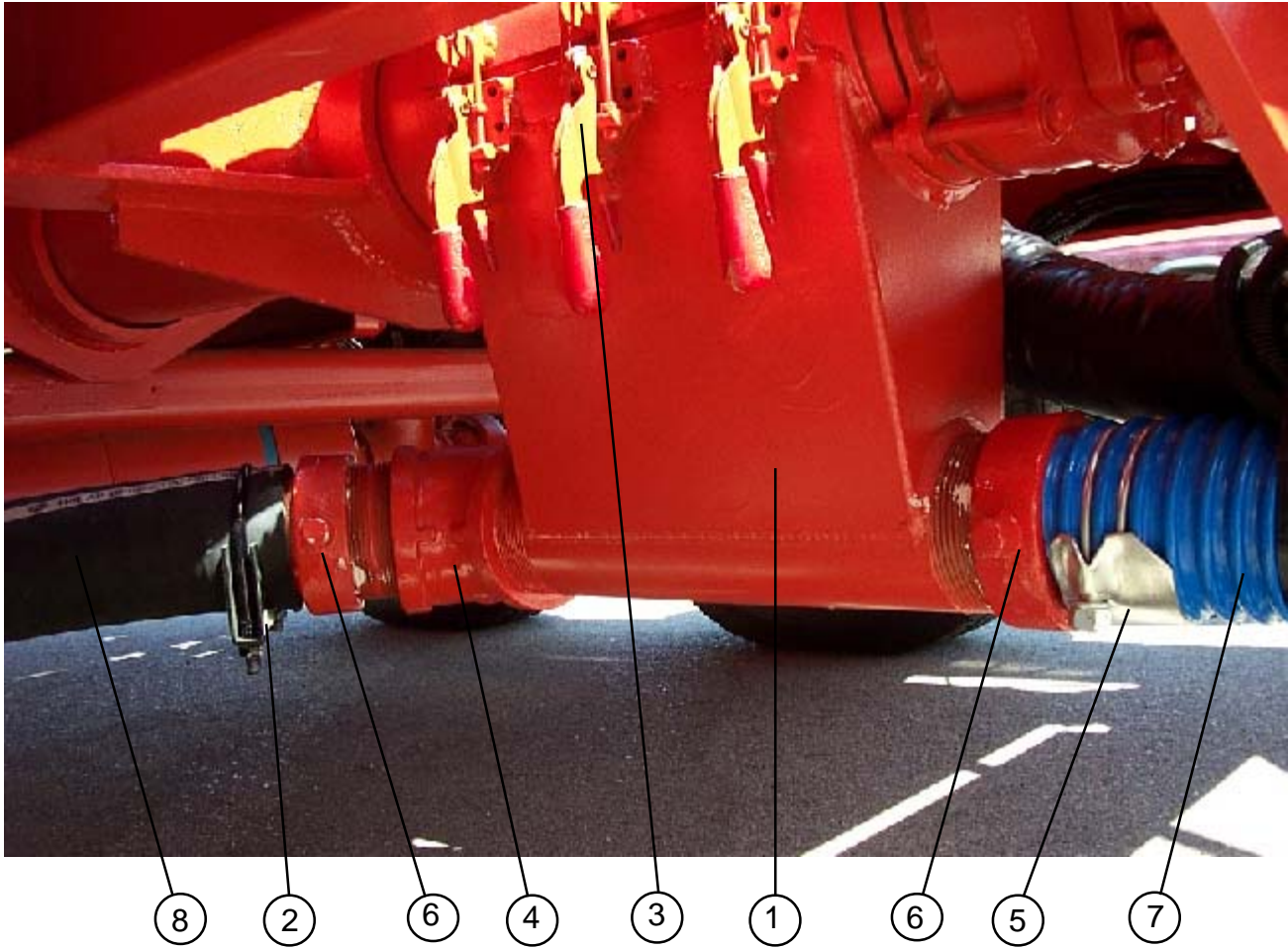
# AGGREGATE FEED SYSTEM, CENTER AUGER, REAR HYDRAULIC MOTOR



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91122	1	HYDRAULIC MOTOR
2	91106	1	HYDRAULIC MOTOR KEEPING BRACKET
3	90539	1	2" REFLECTIVE TAPE
4	91310	1	BOOM MOUNTING SECTION



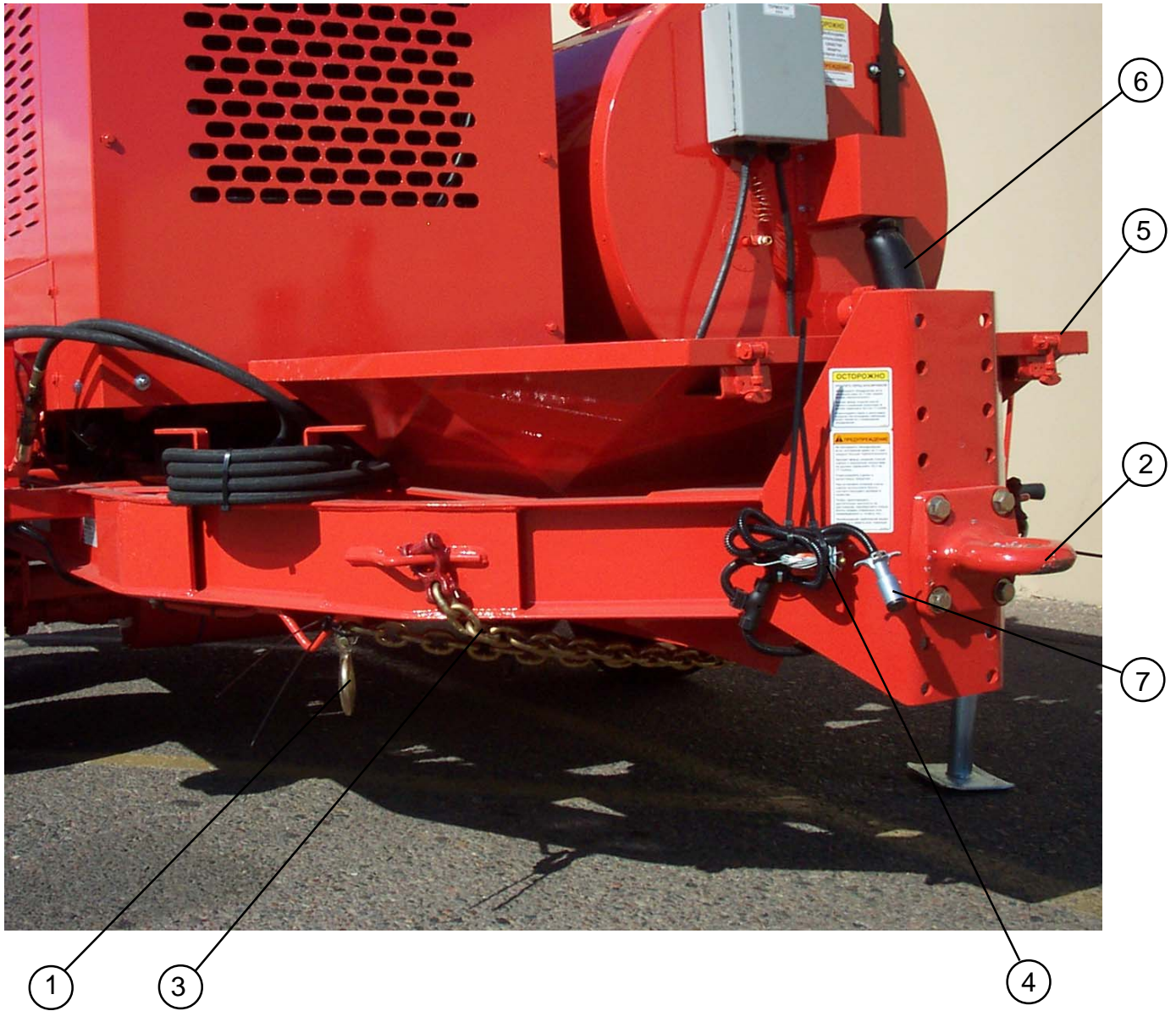
## AGGREGATE FEED SYSTEM, AIRLOCK SYSTEM - BELOW FRAME



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91165	1	6" AIRLOCK COMPLETE
2	25952	1	3"-1/2 U-BOLT MUFFLER CLAMP
3	90606	1	PULL CLAMP 700#
4	28200	1	3" 45 DEGREE THREAD ELBOW
5	91855	1	HOSE CLAMP 3"- TIGER
6	90554	2	PIN PLUG/3" FEMALE LUG COUPLER
7	91157	1	3" BULK AGGRAGATE HOSE-BLUE
8	91338	1	3" WILDCAT HOSE X 28" LONG



## FRONT VIEW OF MAGNUM - ENGINE COVER, JACK, AGGREGATE HOPPER, HITCH, CHAINS



NO.	PART NUMBER	QTY	DESCRIPTION
1	91781	1	3/8" SAFETY CHAIN HOOK
2	91850	1	2-1/2" ID EYE DROP FORGED STEEL DRAWBAR
3	90493	2	3/8" TRANSPORT CHAIN ASSY
4	23117	1	BREAKAWAY SWITCH UNIT
5	91130	1	AGGREGATE HOPPER
6	91207	1	EMULSION INSULATION HOSE COVER
7	24074	1	6-WIRE TRAILER CONNECTOR

## FRONT VIEW OF MAGNUM - BACK-UP ALARM, HOPPER SAFETY SWITCH



NO.	PART NUMBER	QTY	DESCRIPTION
1	91645	1	BACK-UP ALARM HEAVY DUTY
2	91133	1	HOPPER SAFETY SWITCH
3	91799	1	EMULSION TANK HEATER
4	91581	1	3/4" STRAIN RELIEF
5	23082	1	7,000# TONGUE JACK 15"

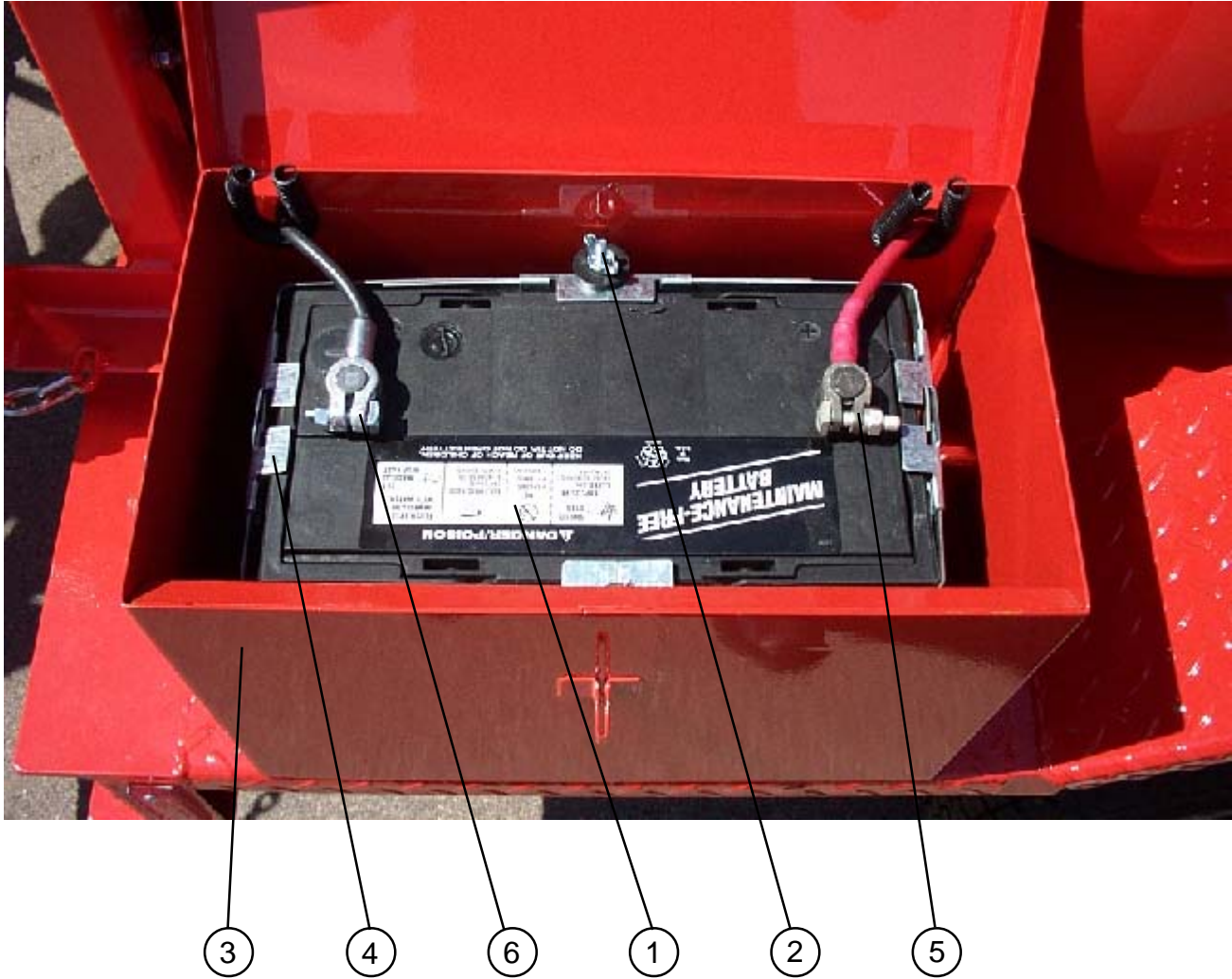


## REAR PASSENGER SIDE VIEW OF MAGNUM - DIESEL FLUSH TANK, FUEL TANK



NO.	PART NUMBER	QTY	DESCRIPTION
1	90640	1	250 GALLON EMULSION TANK WITH INSULATION
2	90703	1	2" PIPE PLUG WITH PSI RELIEF HOLE
3	29281	1	2" BRASS BALL VALVE
4	90860	1	30 GALLON FLUSH TANK
5	91815	1	1/4" DRAIN PET COCK
6	92671	1	FUEL TANK COMPLETE
7	43579	1	PRESSURE FILTER BREATHER CAP
8	92664	1	FUEL LEVEL GAUGE 15"
9	92657	1	HYD TANK ASSY COMPLETE
10	91271	1	AIR CLEANER MOUNTING BRACKET

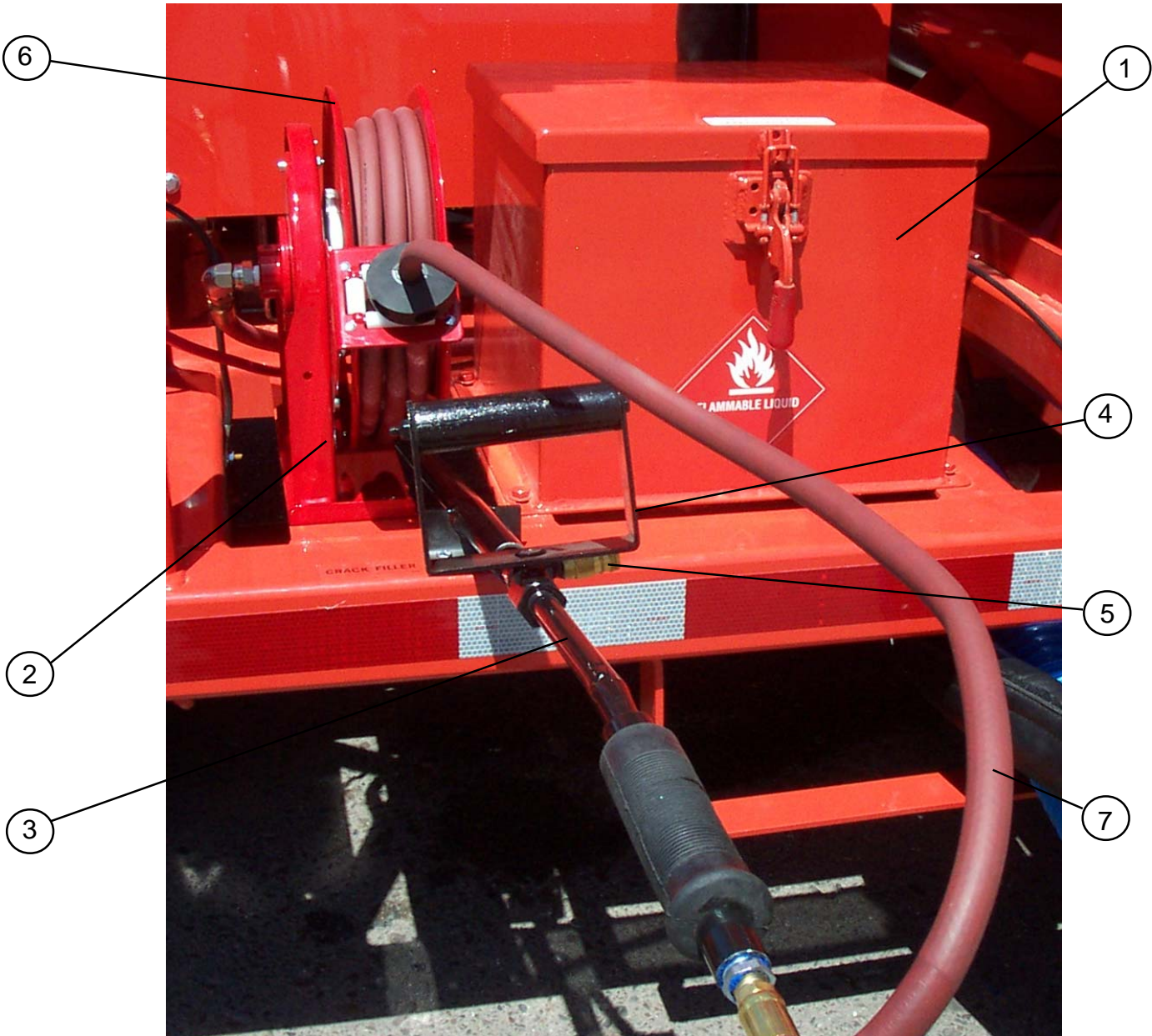
# BATTERY BOX



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	24001	1	1000 C.C.A. BATTERY
2	32030	1	BATTERYHOOK BOLTS
3	90200	1	BATTERY LOCK BOX ASSEMBLY
4	24005	1	BATTERY HOLD DOWN FRAME
5	90905	1	BATTERY CABLE 93" LONG
6	32602	1	20" CRESCENT BATTERY CABLE



## CRACK FILLING ATTACHMENT - OPTION



NO.	PART NUMBER	QTY	DESCRIPTION
1	91530	1	DEEP NOZZLE STORAGE AND BOX
2	90780	1	CRACK FILLING ATTACHMENT (OPTION)
3	90782	1	TACK WAND COMPLETE ASSEMBLY
4	90772	1	TACK WAND GRIP HANDLE ASSEMBLY
5	91825	1	QUICK COUPLER 1/4" MPT X 1/4" FM AIR
6	90777	1	TACK WAND SUPPLY HOSE STOW REEL
7	90771	1	TANK WAND SUPPLY HOSE 25 FT

## EMULSION TANK, TOP VALVE ASSEMBLY



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90629	1	EMULSION TANK TOP VALVE ASSEMBLY
2	29961	1	PRESURE GAUGE
3	91135	1	1/4" PIPE "PIG TAIL"
4	42629	1	SAFETY VALVE
5	90861	1	1/2" CHECK VALVE
6	90640	1	250 GAL. EMULSION TANK WITH INSULATION
7	29214	1	BRONZE BALL VALVE - 1/2"
8	41243	1	24" TEMPERATURE GAUGE BOTTOM MOUNT

# EMULSION TANK TEMPERATURE GAUGE



8



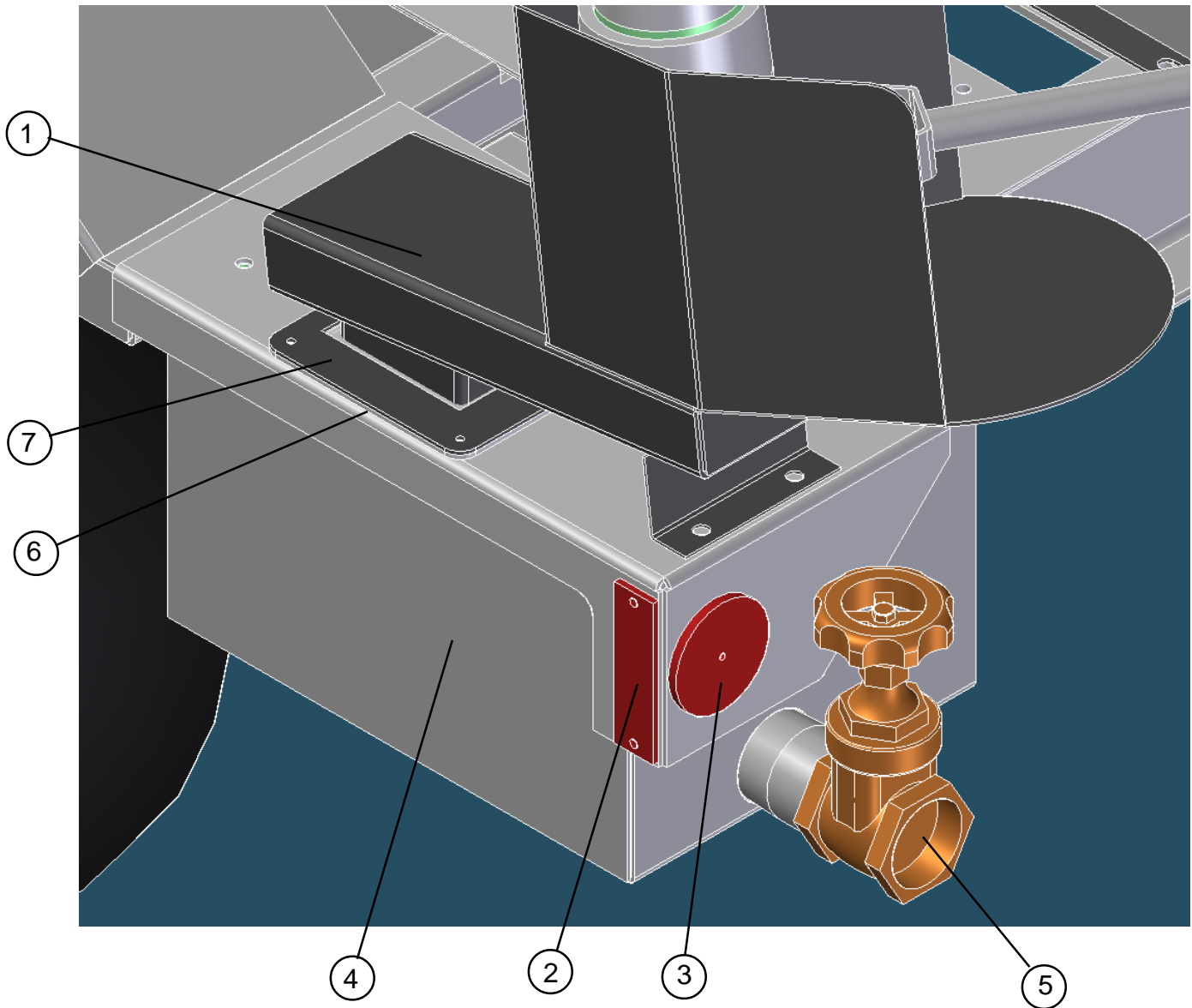
## FRONT VIEW OF EMULSION TANK AND COMPONENTS



NO.	PART NUMBER	QTY	DESCRIPTION
1	91799	1	EMULSION TANK HEATER
2	25203	1	STUFFING BOX
3	91207	1	EMULSION INSTALLATION HOSE COVER
4	91095	1	THERMOSTAT BOX ASSEMBLY
5	91830	1	EMULSION TANK GAUGE DIPSTICK
6	90235	1	DIPSTICK HEIGHT GAUGE HOLDER



## REAR DRIVER'S SIDE - FLUSH OUT BOX AND TROUGH OF MACHINE



NO.	PART NUMBER	QTY	DESCRIPTION
1	92315	1	REAR EMULSION FLUSH TROUGH
2	91299	2	SQUARE RED REFLECTOR
3	90549	2	3" REFLEX REFLECTOR
4	91200	1	FLUSH OUT BOX
5	29270	1	BRONZE GATE VALVE - 2"
6	91267	1	BOTTOM FLANGE GASKET - TROUGH
7	91259	1	BOTTOM FLANGE GASKET COVER - TROUGH

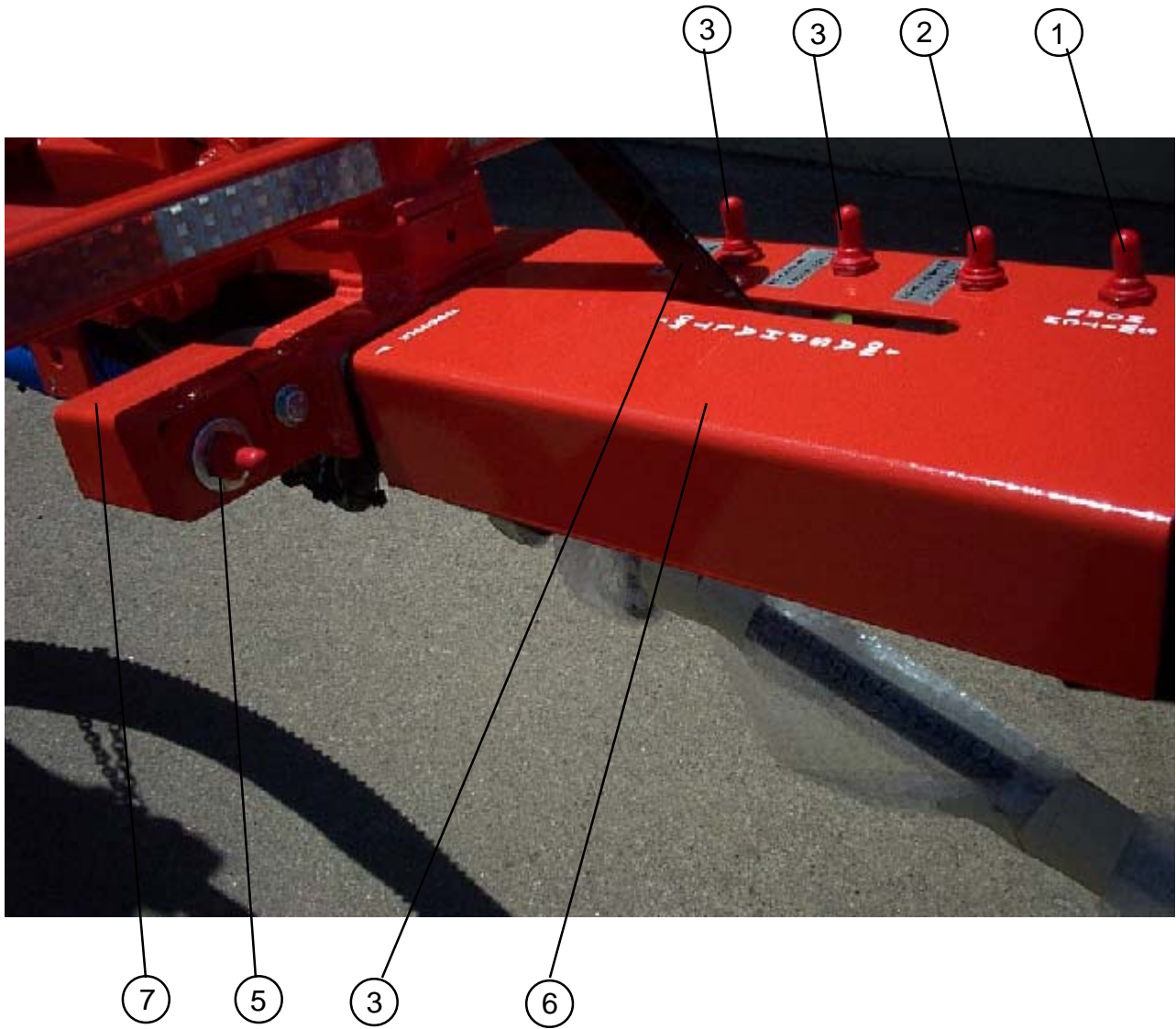
# EMULSION TANK REAR VALVE ASSEMBLY



3 2 1

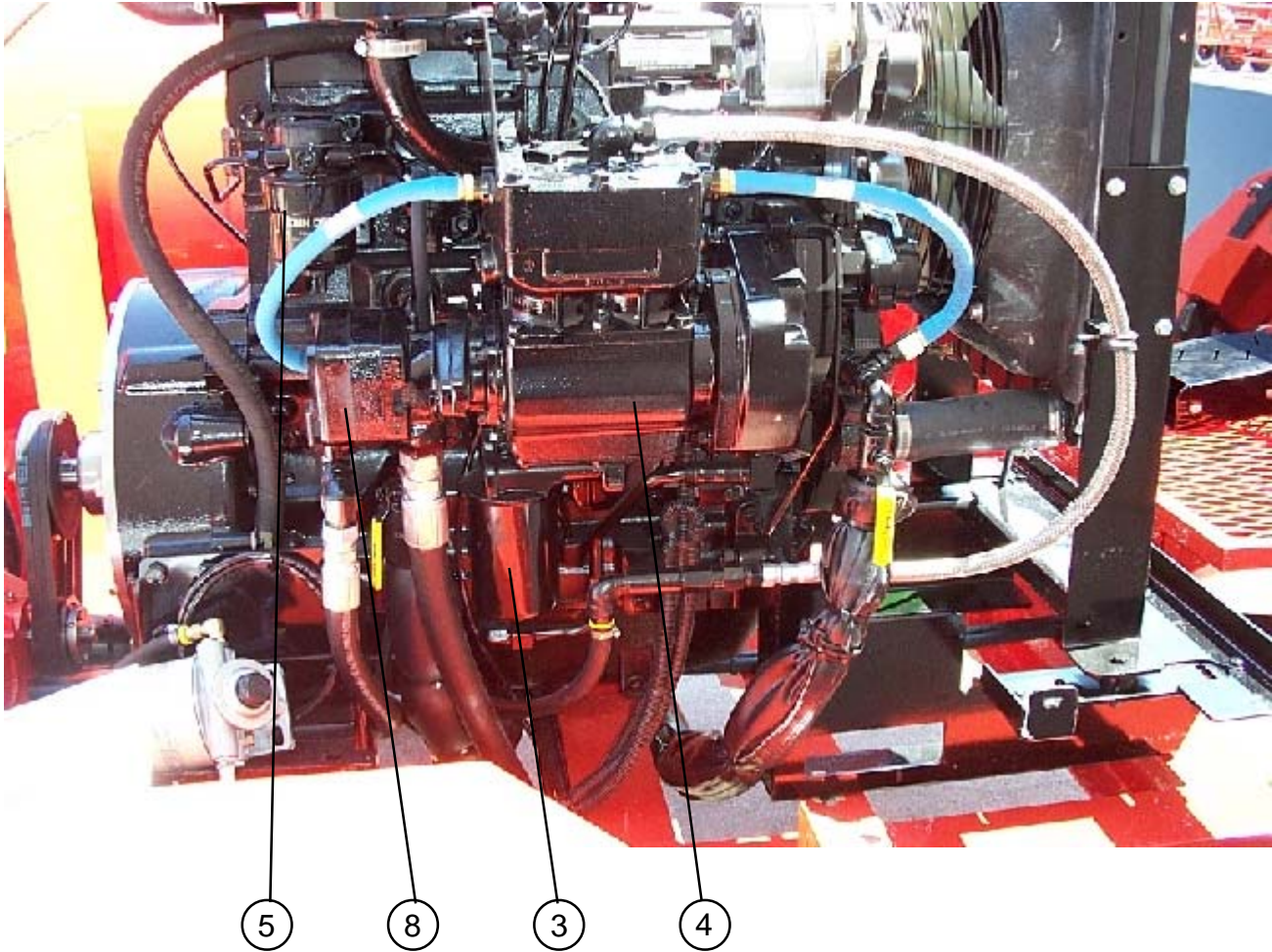
NO.	PART NUMBER	QTY	DESCRIPTION
1	90628	1	EMULSION TANK REAR VALVE ASSEMBLY
2	90569	1	VALVE POSITION INDICATOR PLATE
3	92693	1	EMULSION TANK INSULATION BOX

## CONTROL CONSOLE PANEL



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	50719	1	HORN SWITCH
2	32580	1	STONE SWITCH
3	51678	1	MOMENTARY SWITCH
4	91700	1	EMULSION REGULATION VALVE ASSEMBLY
5	32513	1	THROTTLE SWITCH
6	91230	1	CONTROL PANEL ASSEMBLY
7	90212	1	REMOTE CONTROL ACTUATOR SWITCH COVER

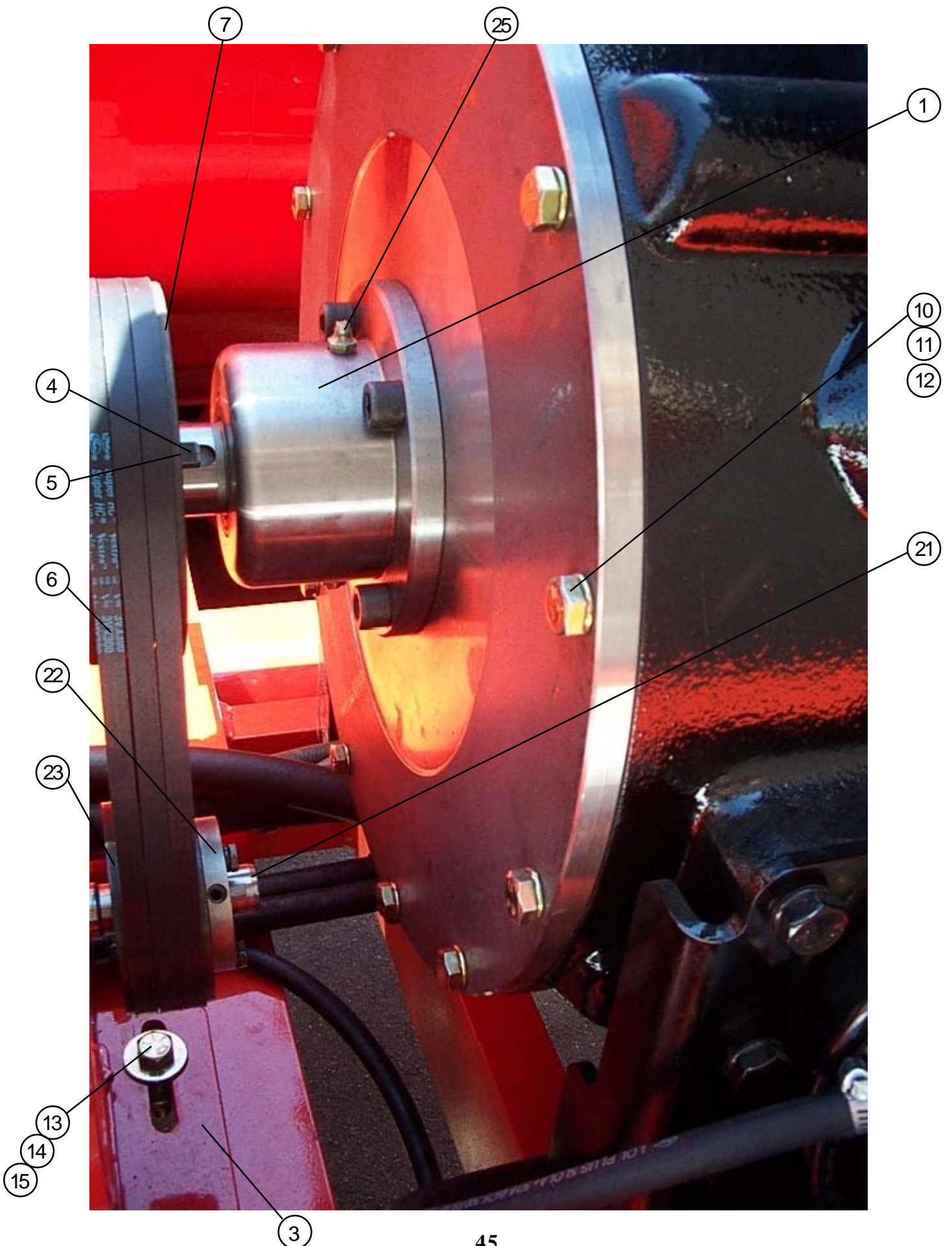
## ENGINE AND ENGINE COVER/COMPONENTS



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91048	1	MUFFLER EXHAUST JOHN DEERE (NOT SHOWN)
2	91030	1	ENGINE COVER (JOHN DEERE T040450)
3	91044	1	OIL FILTER - ENGINE
4	91015	1	ENGINE (JOHN DEERE WITH COVER & COMPRESSOR)
5	91042	1	ENGINE FUEL FILTER
6	91031	1	INLET HOOD - LARGE BLOWER AIR CLEANER (NOT SHOWN)
7	91029	1	INLET HOOD SMALL AIR CLEANER (NOT SHOWN)
8	90800	1	HYDRAULIC PUMP JOHN DEERE ENGINE WITH COMPRESSOR
9	91727	1	RUBBER CHECK VALVE - AIR CLEANER (NOT SHOWN)



# DRIVE TRAIN SYSTEM - ENGINE TO BLOWER/BELT DRIVE



## DRIVE TRAIN SYSTEM - ENGINE TO BLOWER/BELT DRIVE

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91335	1	BEARING SUPPORT STUB SHAFT
2	60151	1	POSITVE DISPLACEMENT ROTARY (NOT SHOWN)
3	91330	1	BLOWER SLID PLATE - MAGNUM
4	91409	1	SDS 1-1/2" BUSHING WITH 3/8"
5	91326	1	ENGINE SHIFT KEY 3/8" - HARDEN
6	92303	3	3V X 300 SUPER HC V-BELT
7	92304	1	3/3V 6.0" QD-SDS SHEAVE
8	60191	0.02	OIL-ROTARY AIR BLOWER (NOT SHOWN)
9	27953	8	3/8"-16 NC X 1" GR8 HEX HEAD (NOT SHOWN)
10	28641	20	3/8" FLAT HARDENED WASHER
11	28658	20	3/8" LOCK WASHER GRADE 8
12	27955	12	3/8"-16NC X 1-1/4" GRADE 8 HEX HEAD
13	28528	8	1/2"-13 ESNA LOCK-NUT
14	28659	8	1/2" LOCK WASHER GRADE 8
15	29026	8	1/2"-13 X 1-1/2" GRADE 8 BOLT
16	90858	2	3/8"-16 X 4 FULL THREAD BOLT (NOT SHOWN)
17	28526	2	3/8"-16 ESNA LOCK NUT (NOT SHOWN)
18	27986	2	3/8" FLAT WASHER GRADE 8 (NOT SHOWN)
19	27964	2	3/8"-16NC GRADE 8 NUT (NOT SHOWN)
20	90827	8	BLOWER MOUNTING TAB
21	91065	1	BLOWER KEY - 1/4"
22	92306	1	7/8" SH BUSHING
23	92302	1	3/3V 3.65" QD-SH SHEAVE
24	91327	1	BLOWER KEY - 3/16" X 1-7/8" (NOT SHOWN)
25	-----	2	GREASE -- HERE

## THERMOSTAT BOX AND COMPONENTS



1

2

3

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91095	1	THERMOSTAT BOX ASSEMBLY
2	91215	1	THERMOSTAT
3	90542	1	LIGHT
4	41157	0.25	INSULATION (NOT SHOWN)

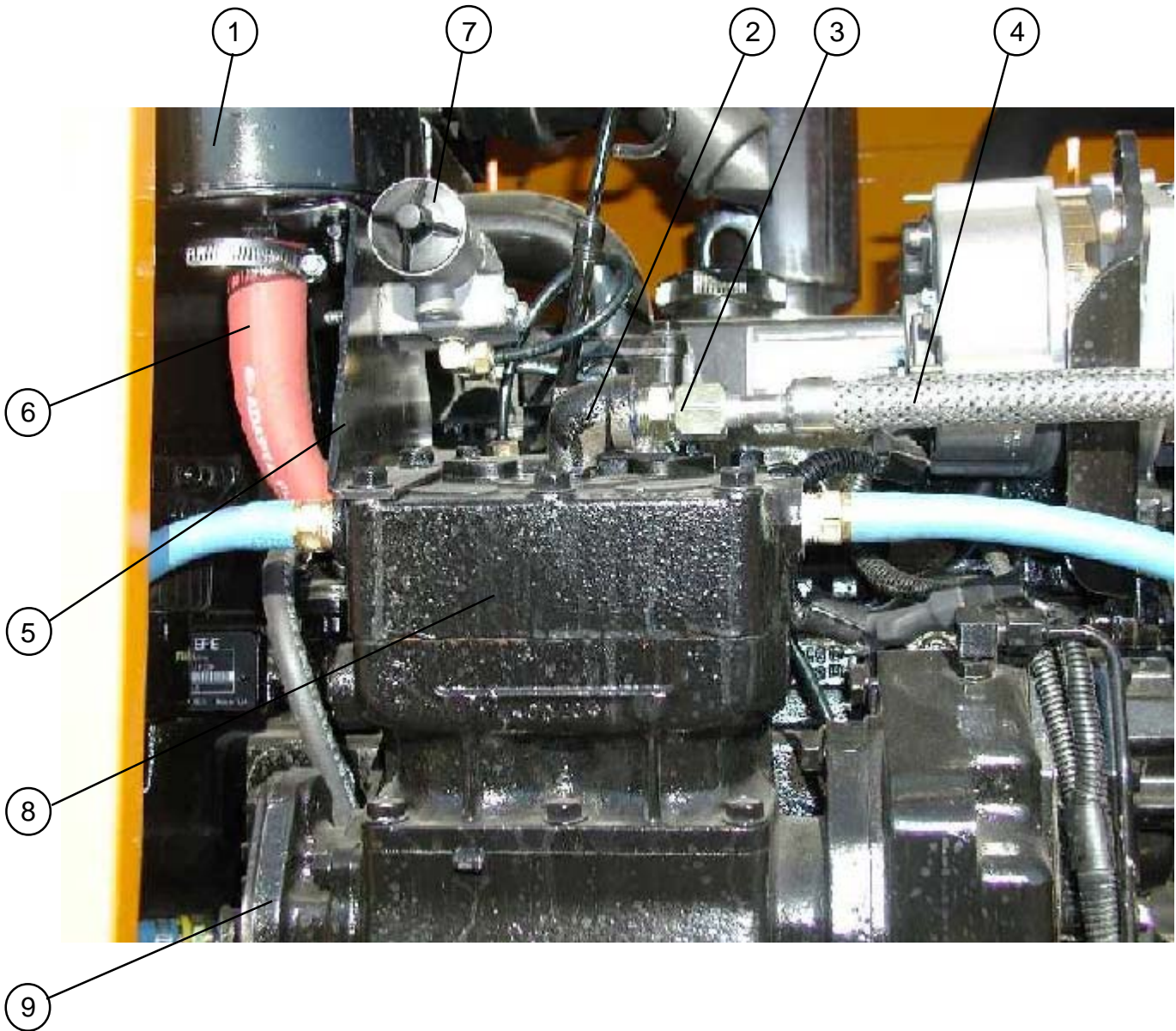
# DIESEL FLUSH TANK



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90860	1	DIESEL FLUSH TANK ASSEMBLY
2	90861	1	1/2" CHECK VALVE
3	28253	1	1/2" PIPE TEE
4	28238	1	1/2" STREET ELBOW
5	29596	1	HOSE - 1/2" PUSH-ON-BLACK

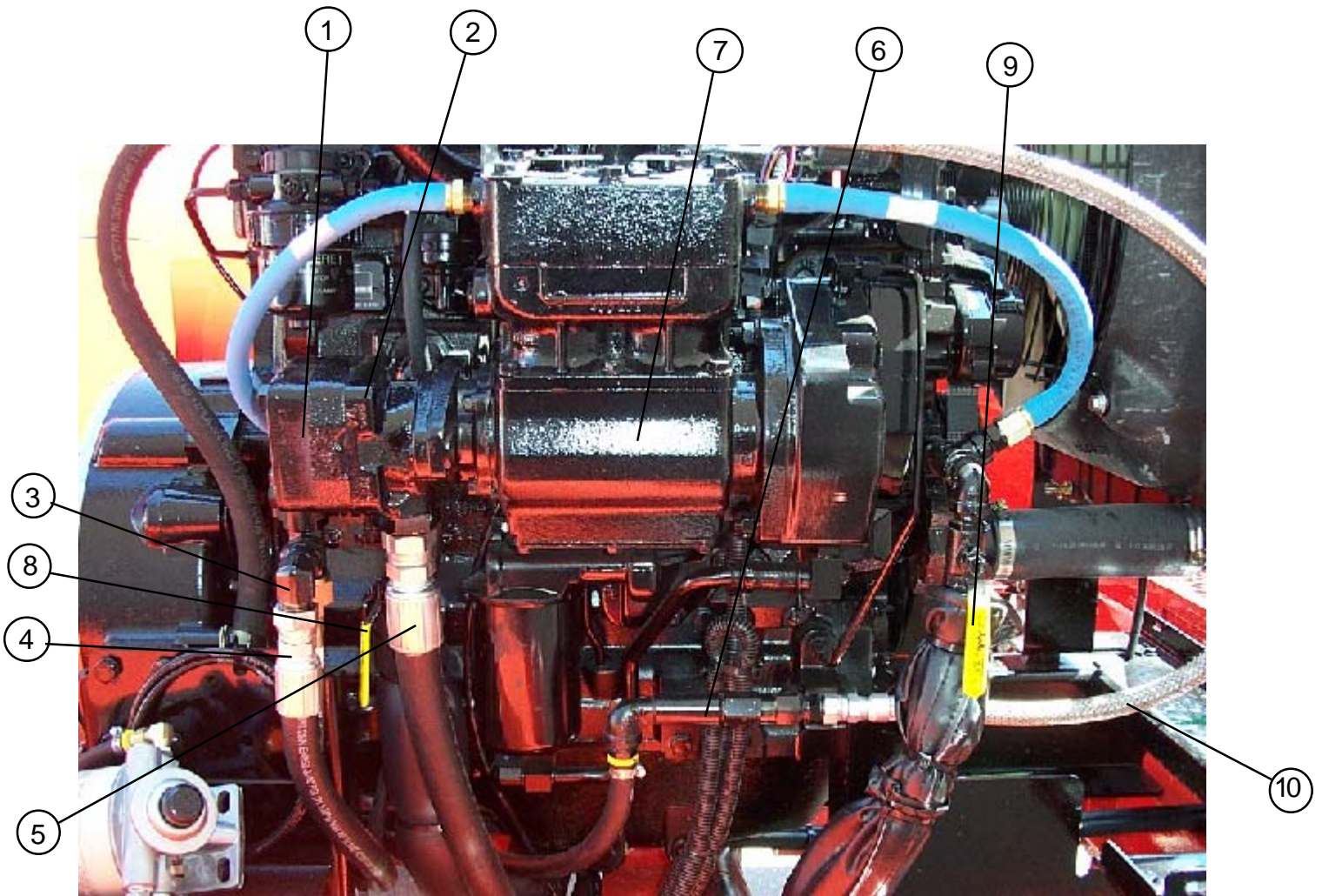


## ENGINE AIR COMPRESSOR AND COMPRESSOR GOVERNOR



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	50109	1	AIR COMPRESSOR FILTER
2	28238	1	1/2" STREET ELBOW
3	29844	1	1/2" MPT X 1/2" 37° ADAPTER
4	41403	1	1/2" STAINLESS STEEL LINE
5	90890	1	BRACKET
6	90891	1	INTAKE AIR COMPRESSOR HOSE
7	90899K	1	GOVERNOR - COMPRESSOR UNLOADING
8	91022	1	ENGINE - BOLT ON AIR COMPRESSOR
9	90800	1	HYDRAULIC MOTOR

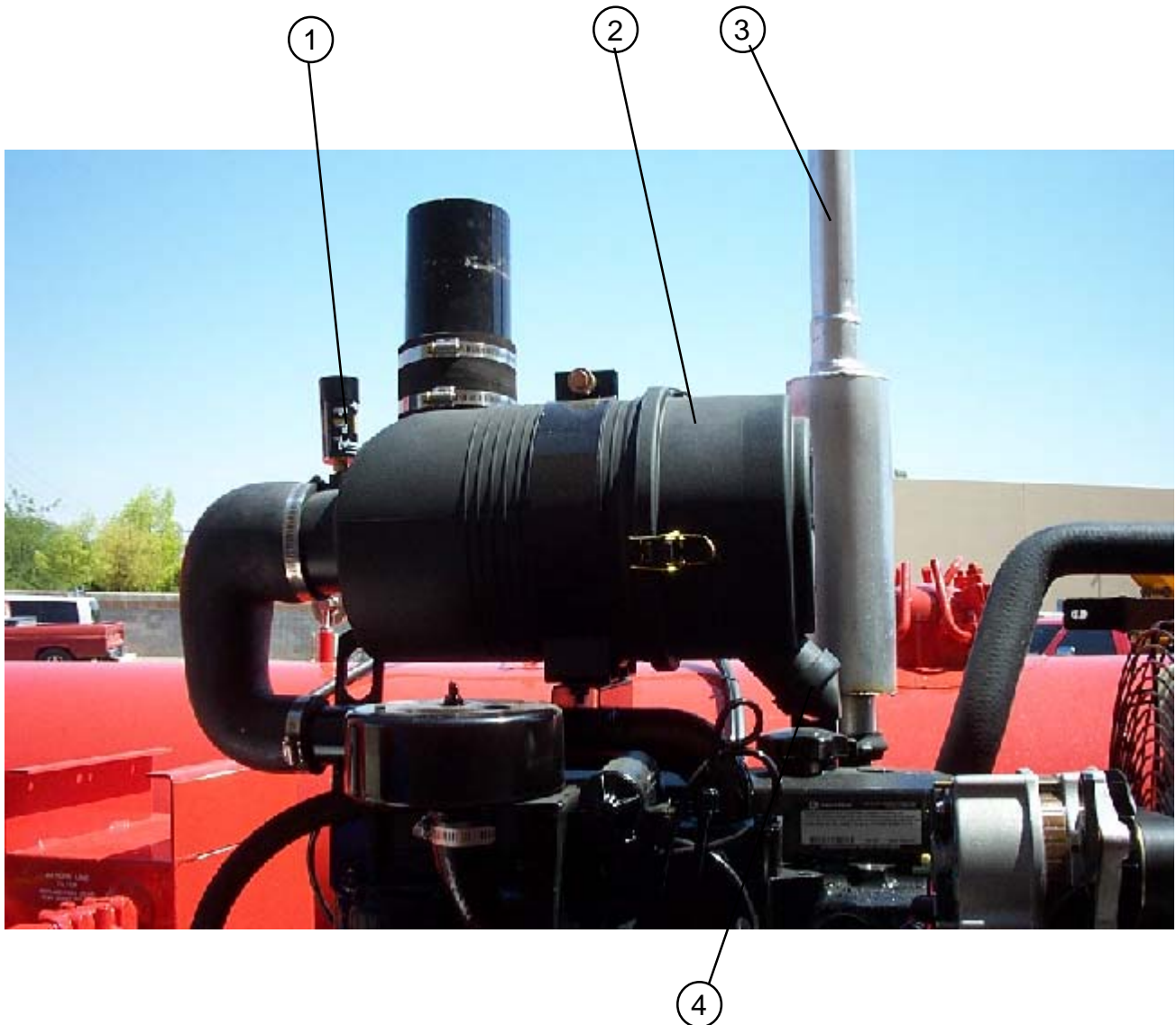
# HYDRAULIC SYSTEM



NO.	PART NUMBER	QTY	DESCRIPTION
1	90794	1	HYDRAULIC PUMP FITTING ASSEMBLY
2	90800	1	HYDRAULIC PUMP JD W/COMPRESSOR
3	27694	1	3/4 INT JIC EXT STRAIGHT CONNECTOR
4	XXXXX	1	AX12-12FJ-12FJ-72
5	XXXXX	1	AX16-16FJ-16FJ-47
6	90895	1	ON-BOARD COMPRESSOR CHECK VALVE (90893)
7	91022	1	13 CFM COMPRESSOR JD BOLT-ON
8	90529	1	RETURN WATER HEATING VALVE ASSEMBLY
9	90530	1	WATER PUMP OUTLET VALVE ASSEMBLY
10	41403	1	1/2" STAINLESS STEEL LINE



## JOHN DEERE ENGINE COMPONENTS



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91795	1	AIR FILTER RESTRICTION INDICATOR
2	-----	1	AIR CLEANER HOUSING-SUPPLIED BY JOHN DEERE
3	-----	1	EXHAUST SYSTEM-SUPPLIED BY JOHN DEERE
4	91727	1	RUBBER CHECK VALVE-AIR CLEANER
5	91028	1	JOHN DEERE OPERATION & MAINTENANCE MANUAL

## MAGNUM BLOWER AIR CLEANER



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91045	1	AIR CLEANER COMPLETE
2	91035	1	AIR CLEANER-AIR FILTER
3	91031	1	INLET HOOD-SMALL HOOD
4	91795	1	AIR FILTER RESTRICTION INDICATOR
5	91708	2	AIR CLEANER MOUNTING RING
6	91235	1	RUBBER CONNECTOR HOSE-BLOWER
7	91843	1	6" WORM-DRIVE HOSE CLAMP
8	91727	1	RUBBER CHECK VALVE-AIR CLEANER

# MAGNUM BLOWER AIR CLEANER



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91035	1	AIR CLEANER-AIR FILTER



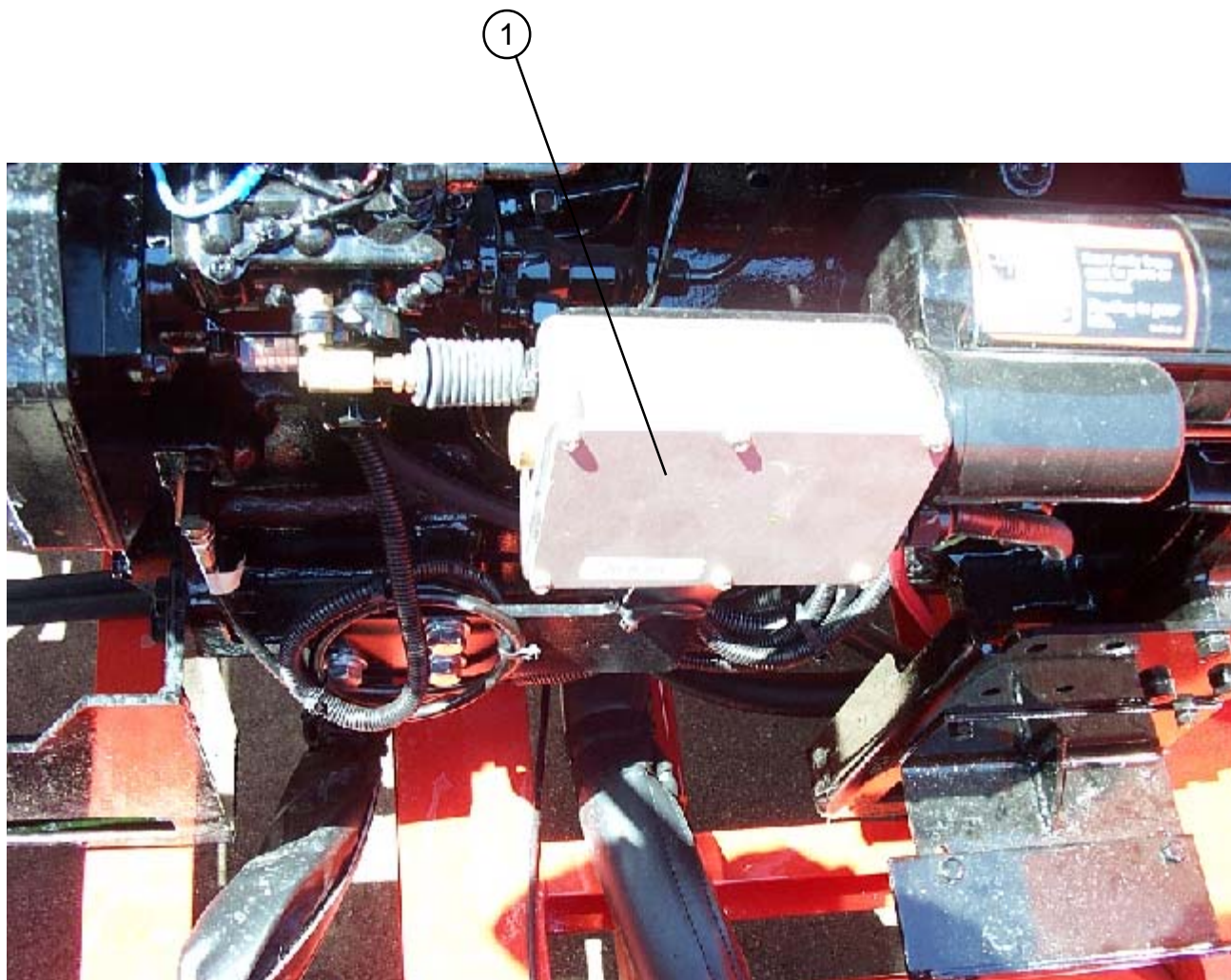
## DECAL-TOWING OF THE SPRAY INJECTION PATCHER



1

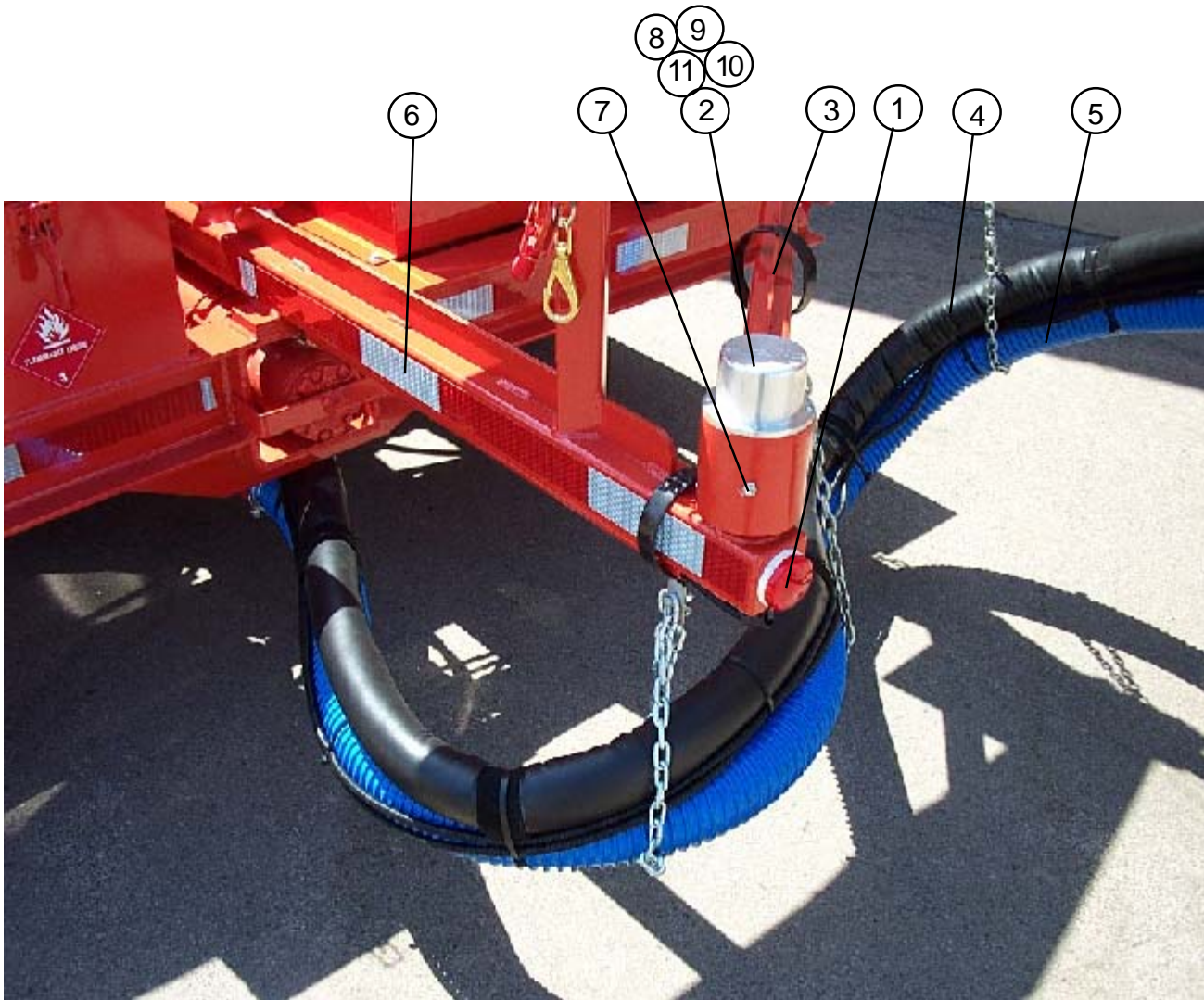
NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90290	1	DECAL-TOWING SPRAY INJECTION PATCHER

# ELECTRIC THROTTLE-REMOTE CONTROL/ACTUATOR



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91021K	1	ELECTRIC REMOTE CONTROL/ACTUATOR

## OPERATOR BOOM AND HOSE



NO.	PART NUMBER	QTY	DESCRIPTION
1	91761	1	SMALL CYCLOPS TAIL LIGHT BOOM
2	90661	2	3" I.D. BEARING COVER
3	92685	1	1ST BOOM SECTION (SHORT)
4	90304	1	EMULSION LINE COVER 15'-5" MAGNUM
5	91157	13'-3"	3" BULK-AGGREGATE HOSE-BLUE
6	91310	1	BOOM MOUNTING SECTION
7	32026	3	1/8NPT GREASE ZERK FITTING
8	90577	2	LARGE TAPER BEARING RACE
9	90576	1	LARGE TAPER BEARING
10	91722	1	LARGE CRENELLATED NUT
11	90581	1	LARGE OIL SEAL

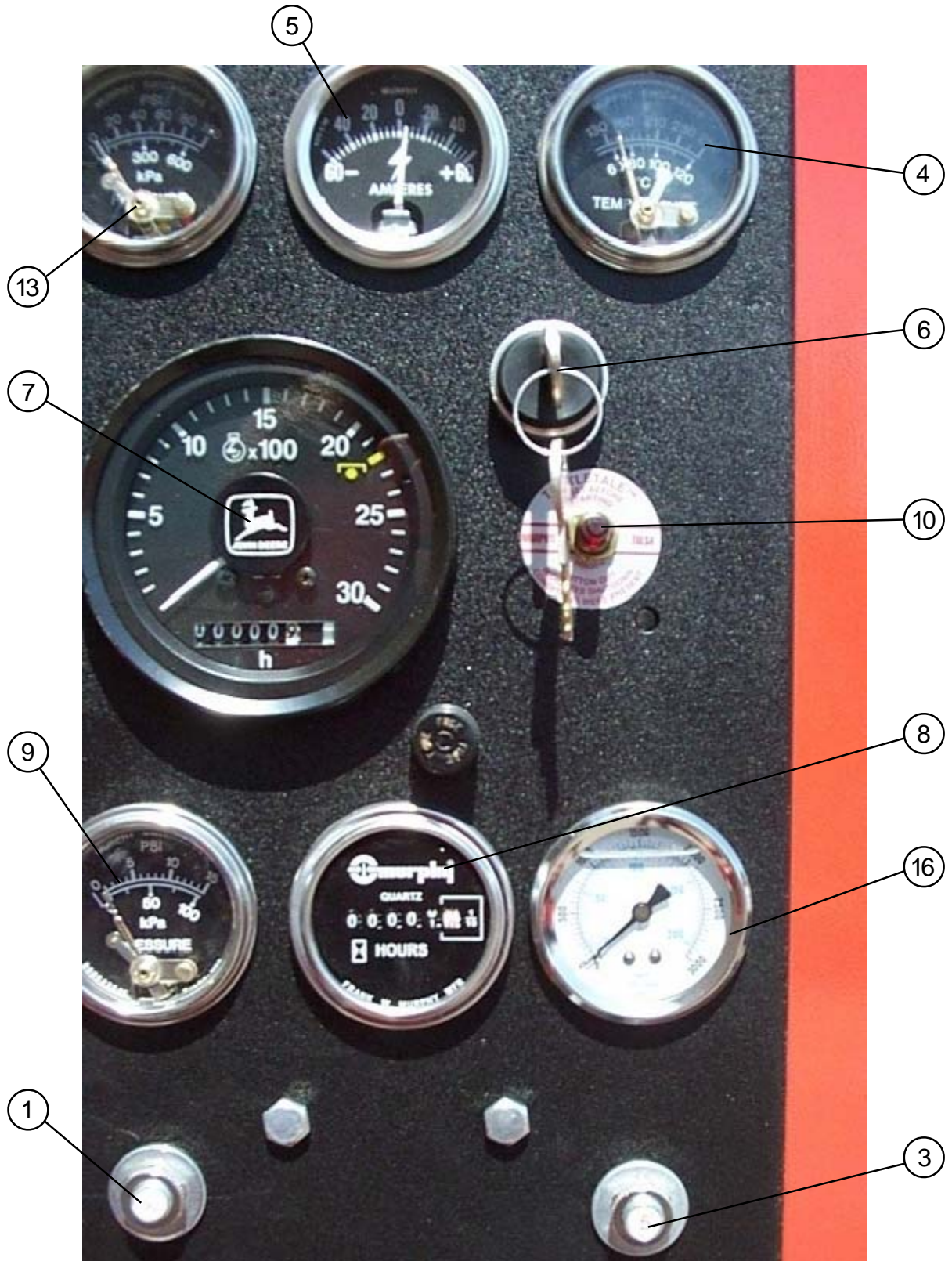


## TAIL LIGHT AND LICENSE BRACKET



NO.	PART NUMBER	QTY	DESCRIPTION
1	24023	2	TAIL LIGHT - LEFT SIDE
2	90544	1	LICENSE BRACKET WITH LIGHT
3	24128	1	RED CLEARANCE LIGHT
4	24022	2	TAIL LIGHT - RIGHT SIDE
5	91440	1	STROBE LIGHT KIT (OPTIONAL)

# JOHN DEERE ENGINE CONTROL PANEL



SEE PAGE 59 FOR PARTS LIST

## JOHN DEERE ENGINE CONTROL PANEL

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	51695	1	CIRCUIT BREAKER 30 AMPS
2	50238	1	JUMPER
3	51694	1	CIRCUIT BREAKER 5 AMPS
4	91764	1	TEMPERATURE SWITCH GAUGE
5	91822	1	AMP METER
6	90537	1	SWTCH KEY
7	91854	1	TACHOMETER WITH HOUR METER
8	91780	1	HOUR METER
9	91837	1	COOLANT PRESSURE SWITCH GAUGE
10	91758	1	MAGNETIC SWITCH
11	91846	1	ENCLOSURE ASSEMBLY
12	91847	1	BACK PANEL
13	91869	1	OIL PRESSURE SWITCH GAUGE
14	91177	1	FUSE HOLDER
15	91032	1	CONTROL PANEL-PURCHASED COMPLETE
16	90453	1	2" 0-300 HYD PRESSURE GAUGE
17	90625	1	ARROW BOARD & CONTROL BOX
18	91032	1	ENGINE CONTROL PANEL - PURCHASED



# ARROWBOARD CONTROLLER PROTECTION BOX



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91032	1	ENGINE CONTROL PANEL - PURCHASED
2	90395	1	ARROWBOARD C ONTROLLER PROTECTION BOX
3	90626	1	ARROWBOARD C ONTROL BOX - REPLACEMENT BOX

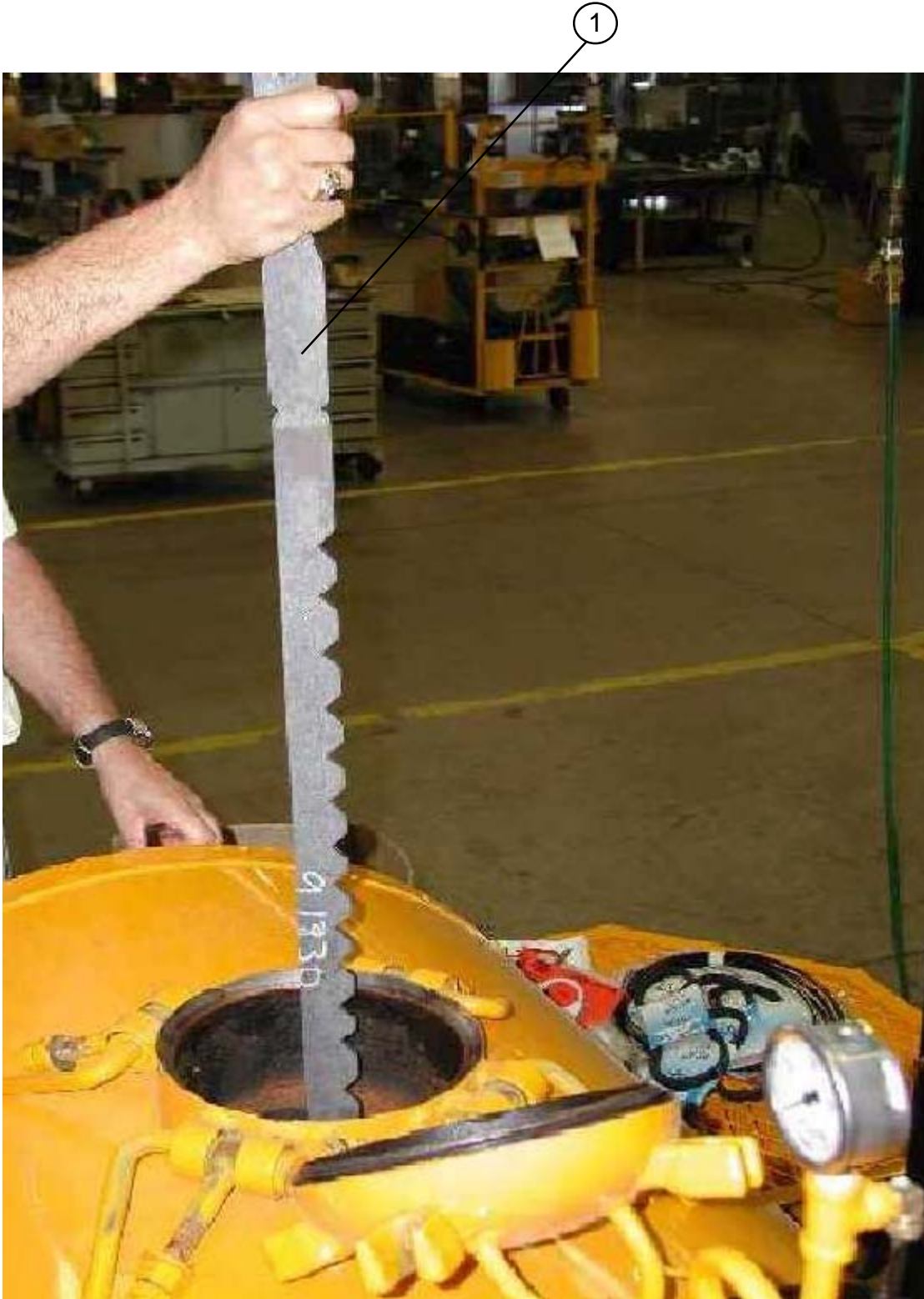
## ARROWBOARD & CONTROL BOX ASSEMBLY (OPTION)



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90624	1	ARROW BOARD & CONTROL BOX ASSY.
2	90797	4	LIGHT BRACKET SUPPORT ANGLE

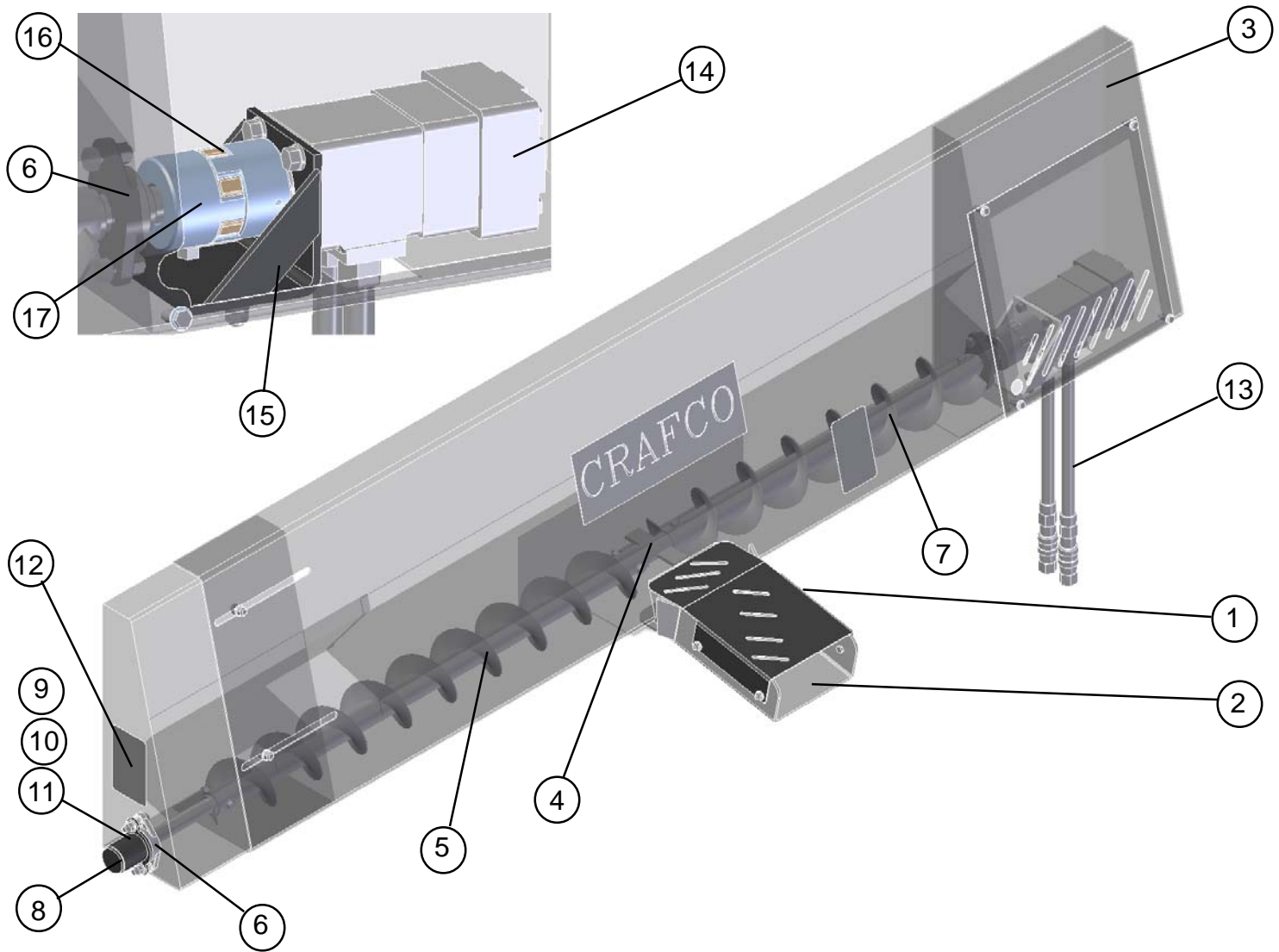


# EMULSION TANK GAUGE



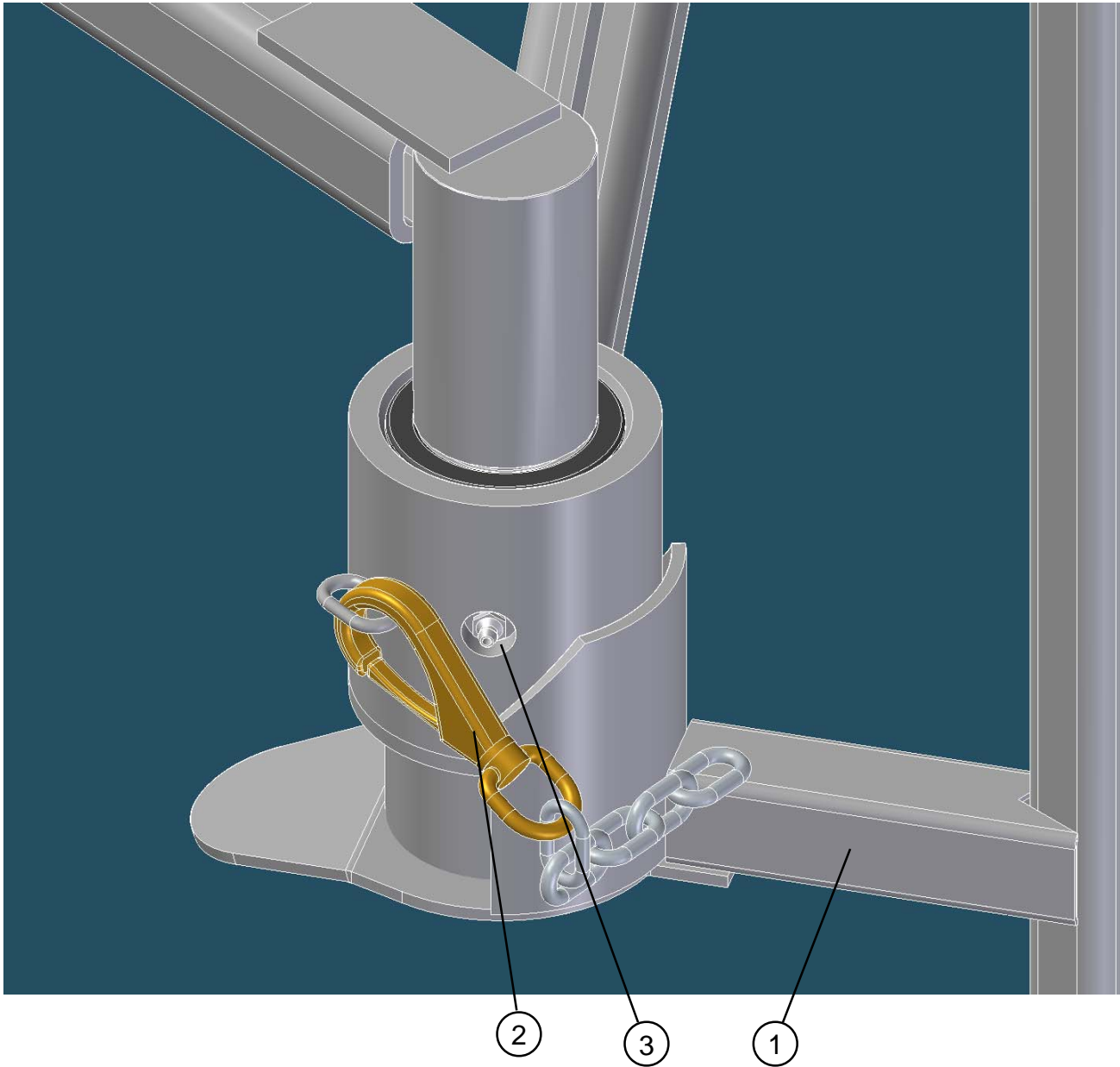
NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91830	1	EMULSION TANK GAUGE DIPSTICK (REF. SEE DECAL ON FRONT OF EMULSION TANK)

## HYDRAULIC TAILGATE ASSEMBLY (91196K)



NO.	PART NUMBER	QTY	DESCRIPTION
1	90752	1	ROCK CHUTE COVER
2	90650	1	SHORT ROCK CHUTE
3	91196	1	TRUCK AUGER TAILGATE ASSY
4	90613	1	SCREW AUGER SHAFT WITH PADDLES
5	90614	1	LONG SCREW AUGER
6	90578	2	TRUCK AUGER BEARING 2-BOLT FLANGE
7	90611	1	SHORT SCREW AUGER
8	90399	1	TAILGATE COVER ASSY
9	28672	2	3/8 FLAT WASHER
10	28502	2	3/8-16 NC HEX NUT
11	28734	2	3/8-16 X 1-3/4 HEX HEAD BOLT
12	90288	2	DECAL, WARNING NO OPERATION W/O GUARDS
13	XXXXX	2	AX8-8MP-8MP-12 HOSE
14	41102	1	HYDRAULIC MOTOR
15	91428	1	TAILGATE HYD BRKT ASSY
16	90601	1	SPIDER INSERT
17	90602	2	1/2" HYDRAULIC MOTOR COUPLER

## REAR BOOM SADDLE



NO.	PART NUMBER	QTY	DESCRIPTION
1	92683	1	BOOM SADDLE JOINT HOLDER
2	91648	1	BOOM STOW SAFETY CHAIN
3	32026	1	1/8 NPT GREASE ZERK



# SPRING ARM ASSEMBLY



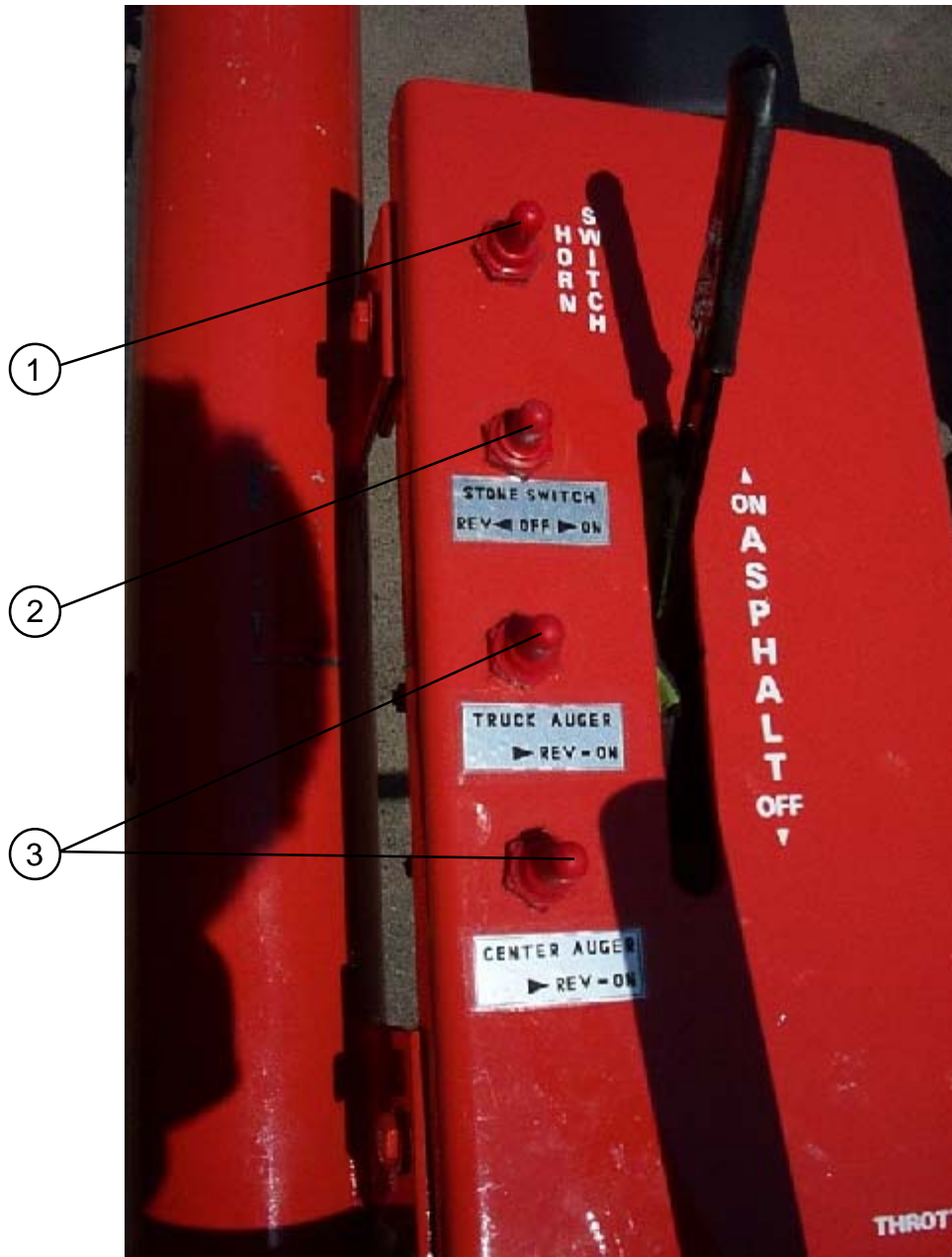
3

2

1

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91184	1	SPRING CYLINDER ASSEMBLY R.H.
2	91170	1	SPRING CYLINDER ASSEMBLY L.H.
3	91169	1	UPPER SPRING CYLINDER ASSEMBLY

# CONTROL CONSOLE



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	50719	1	TOGGLE SWITCH
2	32580	1	TOGGLE SWITCH DPDT/ON-OFF-ON
3	51678	2	SWITCH SPDT

# CLEARANCE LIGHT



1

2

NO.	PART NUMBER	QTY	DESCRIPTION
1	92684	4	CLEARANCE LIGHT
2	90547	4	3" ROUND AMBER REFLECTOR

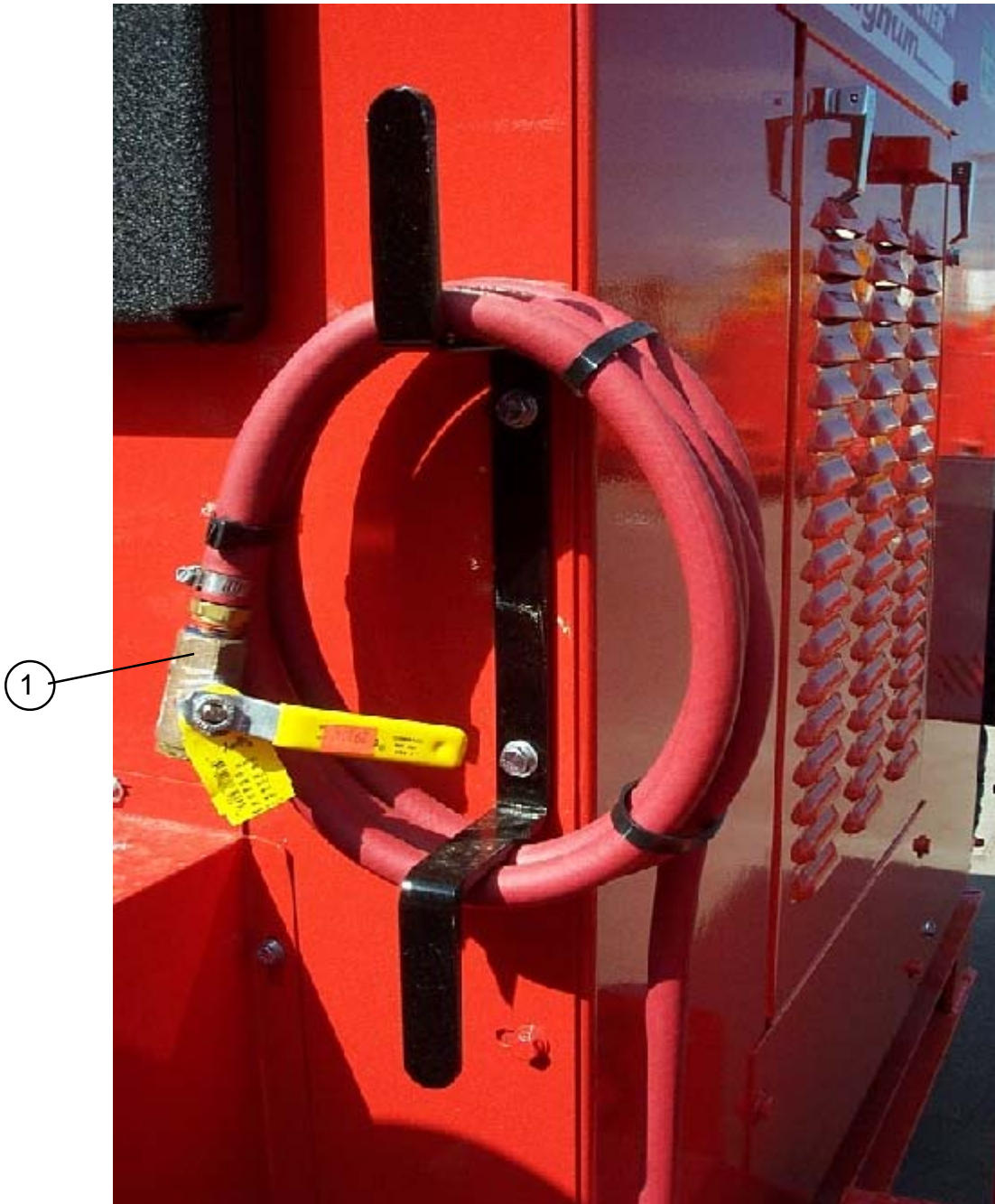
# WATER/FUEL SEPARATOR



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90420	1	WATER/FUEL SEPARATOR J.D. ENGINE 4045D COMPLETE



## 8 FOOT QUICK FLUSH HOSE-OPTION



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90225	1	8 FOOT QUICK FLUSH HOSE-OPTION

# MANUAL BOX



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	25289	1	MODEL 550 MANUAL BOX
2	91285	1	MAGNUM PARTS MANUAL (NOT SHOWN)

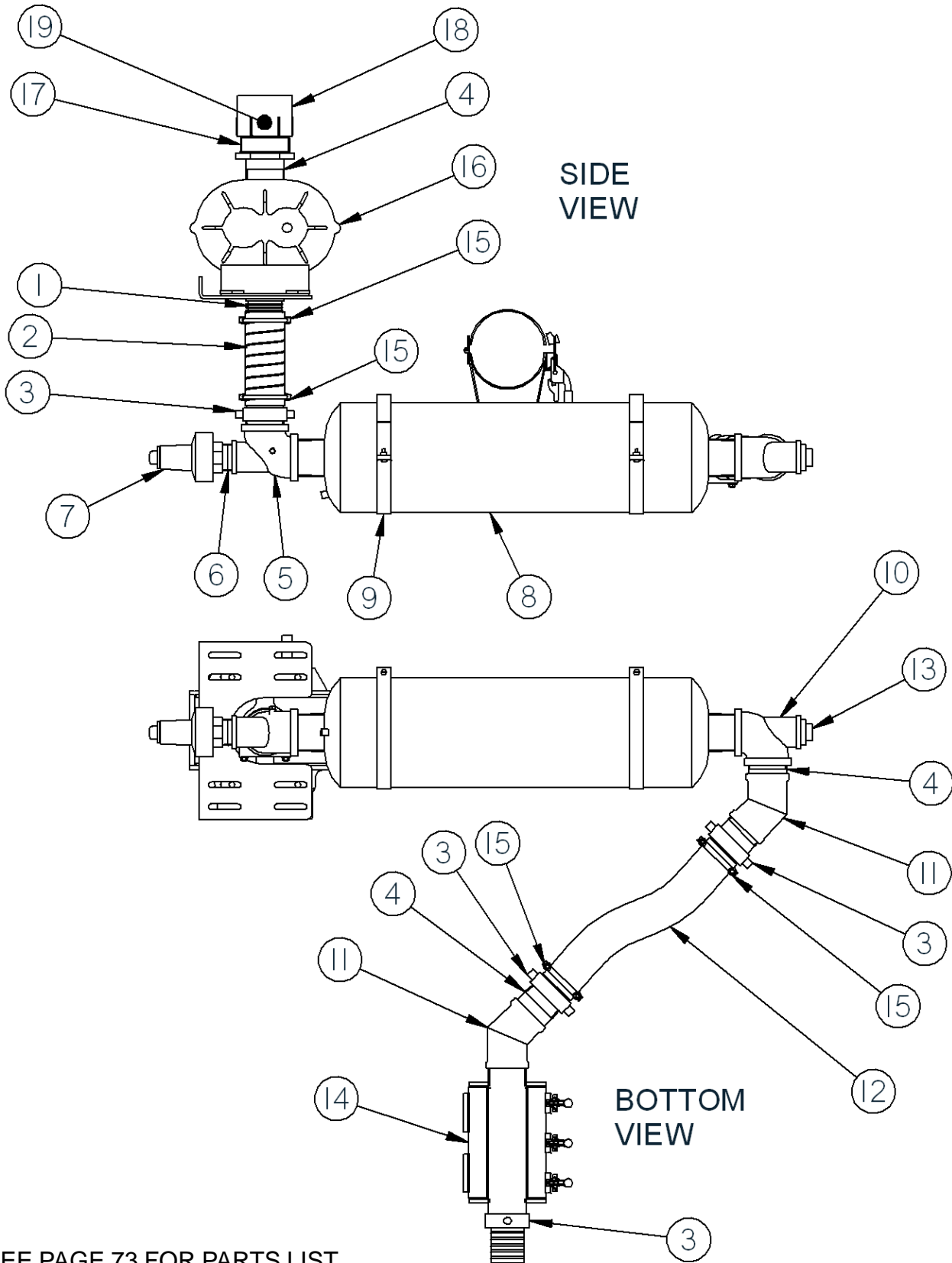


# EMULSION TANK DRAIN VALVE ASSEMBLY



NO.	PART NUMBER	QTY	DESCRIPTION
1	28060	1	NIPPLE 2" (5" LONG)
2	28198	1	2" - 45 DEG ELBOW IRON PIPE
3	28008	1	CLOSE NIPPLE 2"
4	29270	1	BRONZE GATE VALVE - 2"
5	28136	1	2" NIPPLE X 9" LONG THREAD BOTH ENDS

# MAGNUM AIR DISCHARGE PLUMBING CIRCUIT PART NUMBERS

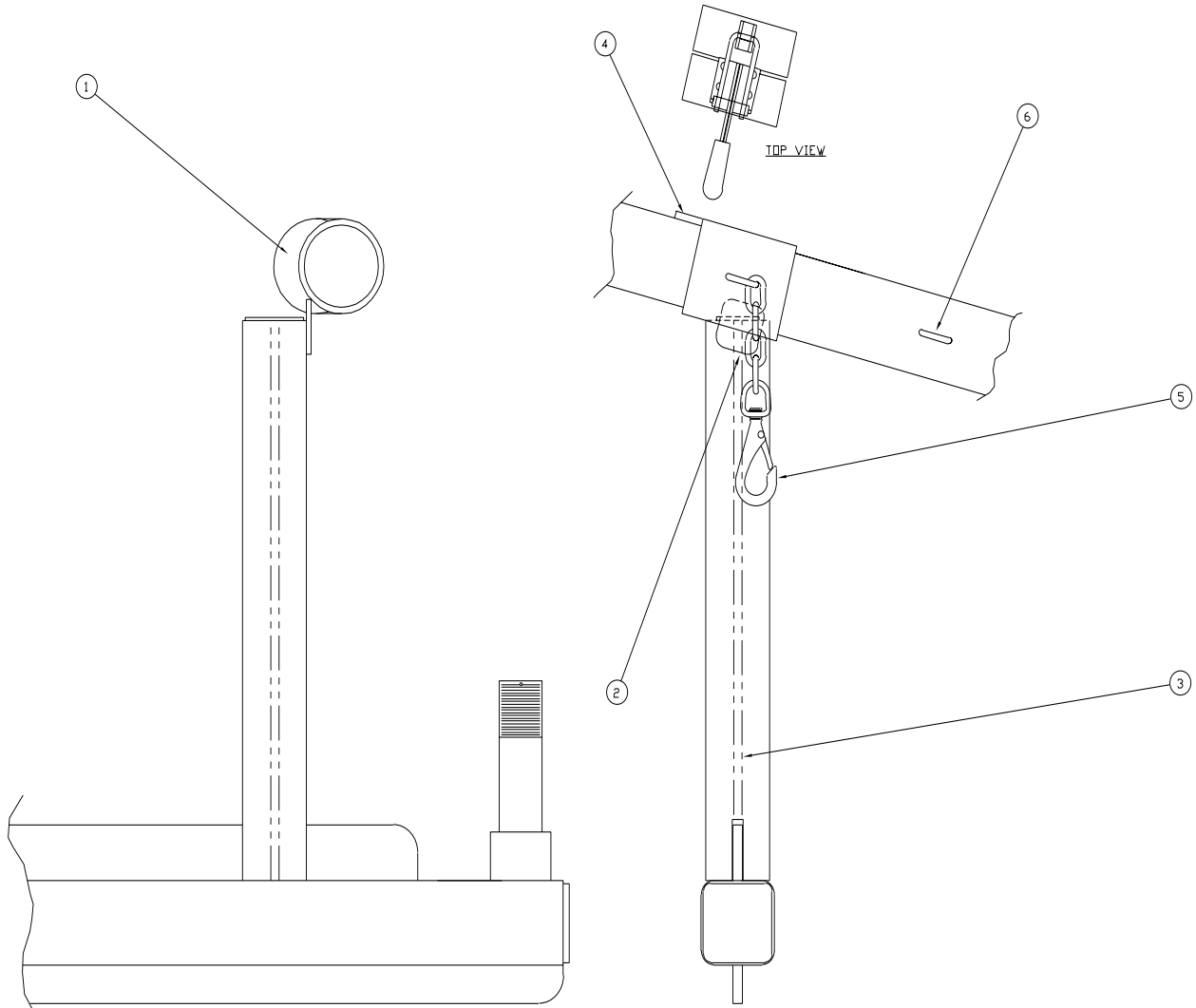


SEE PAGE 73 FOR PARTS LIST

## MAGNUM AIR DISCHARGE PLUMBING CIRCUIT PART NUMBERS

NO.	PART NUMBER	QTY	DESCRIPTION
1	91344	1	3" NIPPLE/HOSE COMBO KING
2	91339	1	3" WILDCAT HOSE X 8-1/2" LG
3	90554	4	PIN PLUG / 3" FEMALE COUPLER
4	28010	5	3" CLOSED NIPPLE
5	91668	1	3" X 2" X 3" BLACK MI TEE-DRILLED
6	28008	1	CLOSED NIPPLE 2"
7	91250	1	BLOWER PRESS RELIEF VALVE - 7 PSI
8	92691	1	CHAMBER ABSORPTION SILENCER
9	91708	2	MOUNTING RING CLAMP
10	28259	1	3" X 2" X 3" BLACK MI TEE
11	28200	2	3" 45 DEG. THREADED ELBOW
12	91338	1	3" WILDCAT HOSE X 28" LG
13	28288	1	PIPE PLUG 2"
14	91165	1	6" AIRLOCK COMPLETE
15	25952	4	3-1/2" U-BOLT MUFFLER CLAMP
16	60151	1	MAGNUM BLOWER
17	28364	1	4" X 3" REDUCING BUSHING
18	91332	1	4" SCH 40 FEMALE PVC ADAPTOR DRILLED
19	90754	1	ELBOW OIL - HOLE COVER

# MAGNUM AGGREGATE BOOM CLAMP ASSEMBLY PART NUMBERS

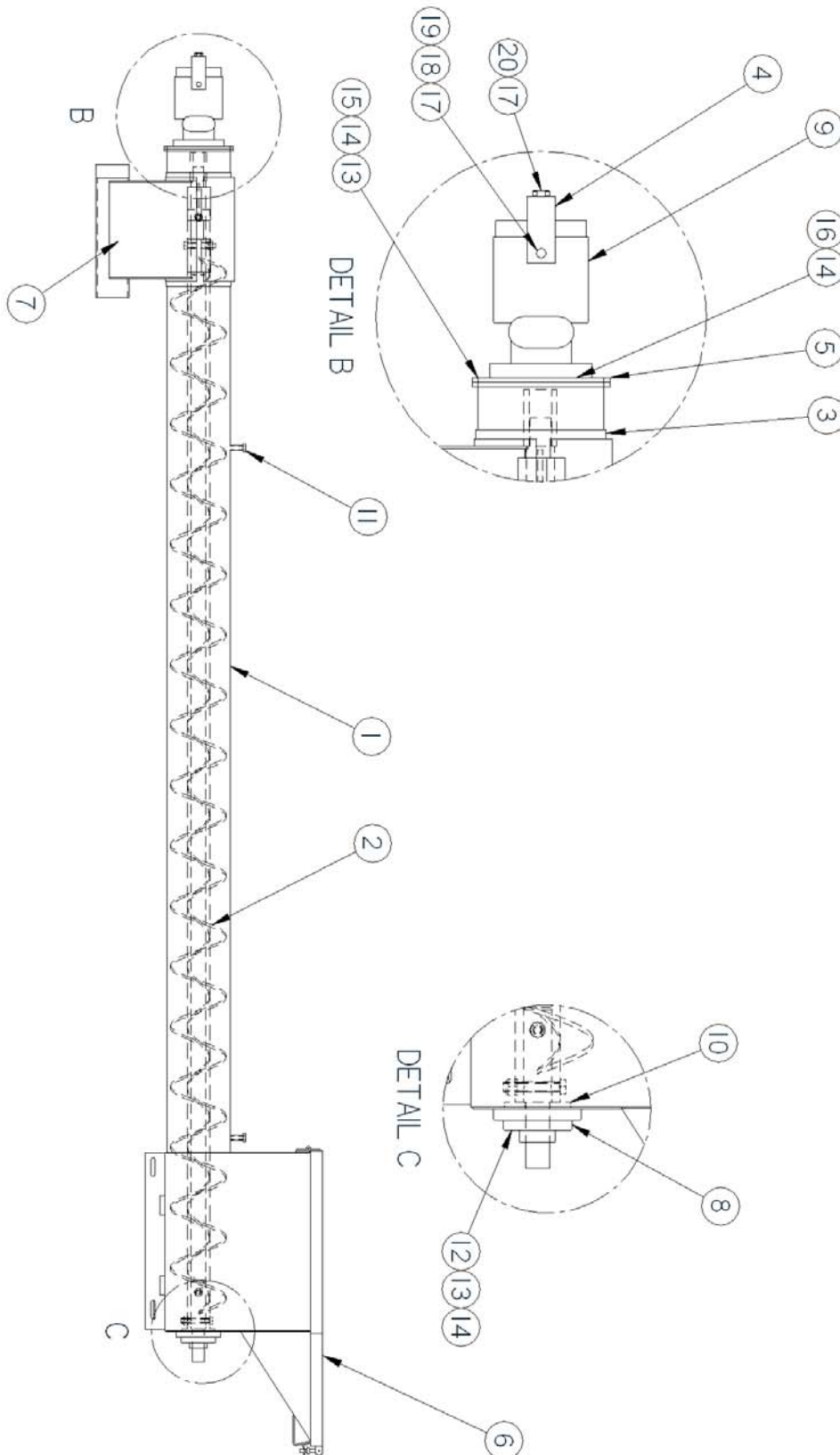


SEE PAGE 75 FOR PARTS LIST

## MAGNUM AGGREGATE BOOM CLAMP ASSEMBLY PART NUMBERS

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91312	1	AGGREGATE BOOM CLAMP ASSEMBLY
2	90490	1	TUBE CAP
3	91310	1	BOOM MOUNT SECTION/FRAME
4	37032	1	1/4" X 1-1/8" KEY
5	91648	1	BOOM STOW SAFETY CHAIN
6	43897	1	3/16" CHAIN, 1 LINK

# MAGNUM 6" AGGREGATE SCREW REED ASSEMBLY PART NUMBERS



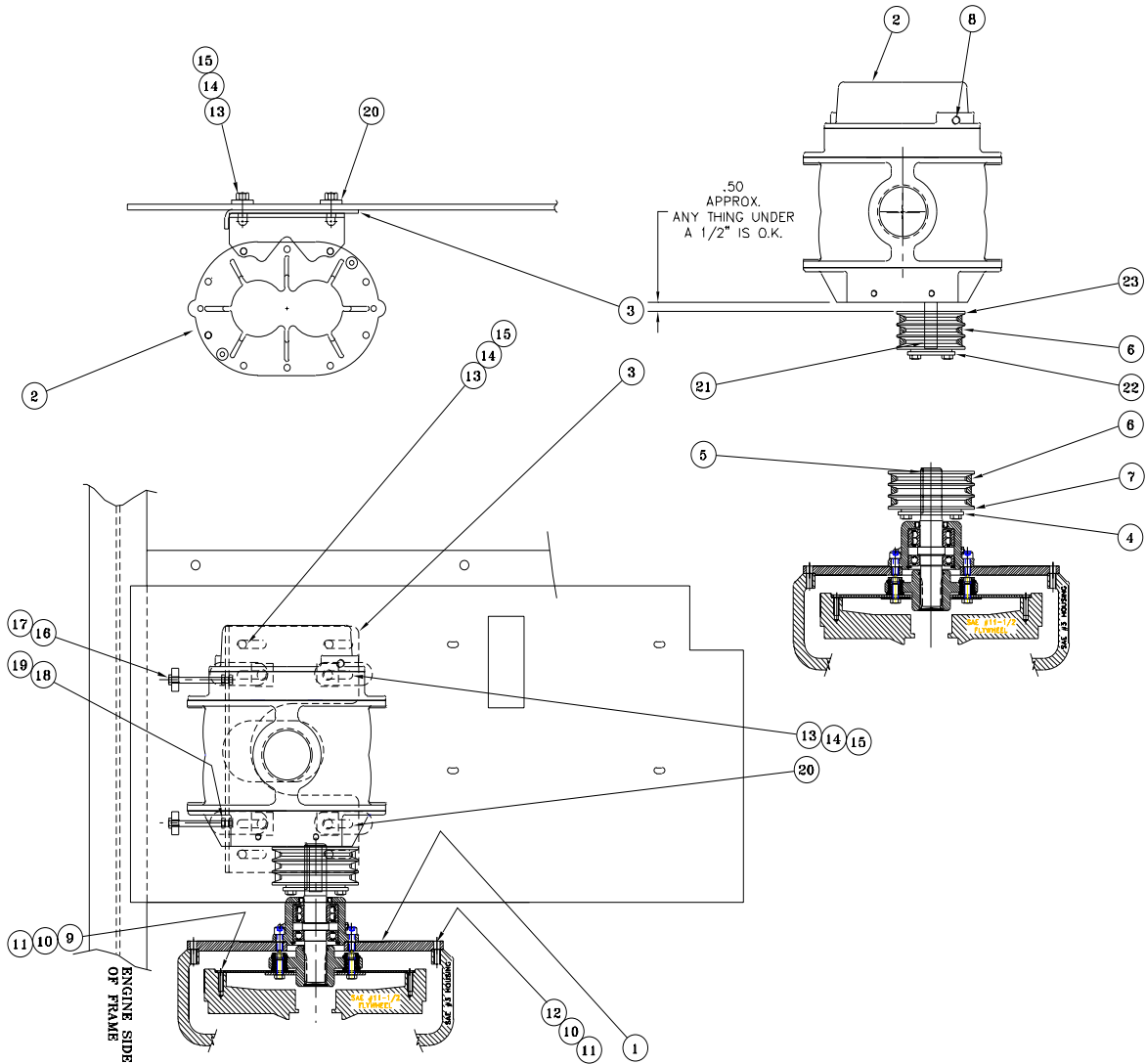
SEE PAGE 77 FOR PARTS LIST



## MAGNUM 6" AGGREGATE SCREW REED ASSEMBLY PART NUMBERS

NO.	PART NUMBER	QTY	DESCRIPTION
1	92683	1	6" MAGNUM AGGREGATE SCREW FEED PIPE
2	92692	1	MAGNUM AUGER ASSEMBLY
3	91057	1	AIR LOCK GASKET
4	91106	1	HYDRAULIC MOTOR KEEPING BRACKET
5	91127	1	FACE PLATE
6	91130	1	AGGREGATE HOPPER (MAGNUM)
7	91165	1	6" AIR LOCK COMPLETE
8	91131	1	1-1/4" HOPPER BEARING
9	91122	1	HYDRAULIC MOTOR
10	91265	1	ANTI-FRICTION NYLON WASHER
11	28762	2	1/2" X 1-1/2" HEX HEAD BOLT
12	27953	4	3/8" X 1" GR8 HEX HEAD BOLT
13	28634	8	3/8" FLAT WASHER
14	28526	12	3/8"-16 ESNA LOCK NUT
15	28733	4	3/8"-16 X 1-1/2" HEX HEAD BOLT
16	28732	4	3/8"-16 X 1-1/4" HEX HEAD BOLT
17	28764	3	1/2"-13 X 2" HEX HEAD BOLT
18	28528	2	1/2"-13 ESNA LOCK NUT
19	28674	4	1/2" FLAT WASHER
20	28504	1	1/2"-13 HEX NUT STEEL

# MAGNUM - ENGINE TO BLOWER DRIVE BELT SYSTEM 3 BELT SYSTEM

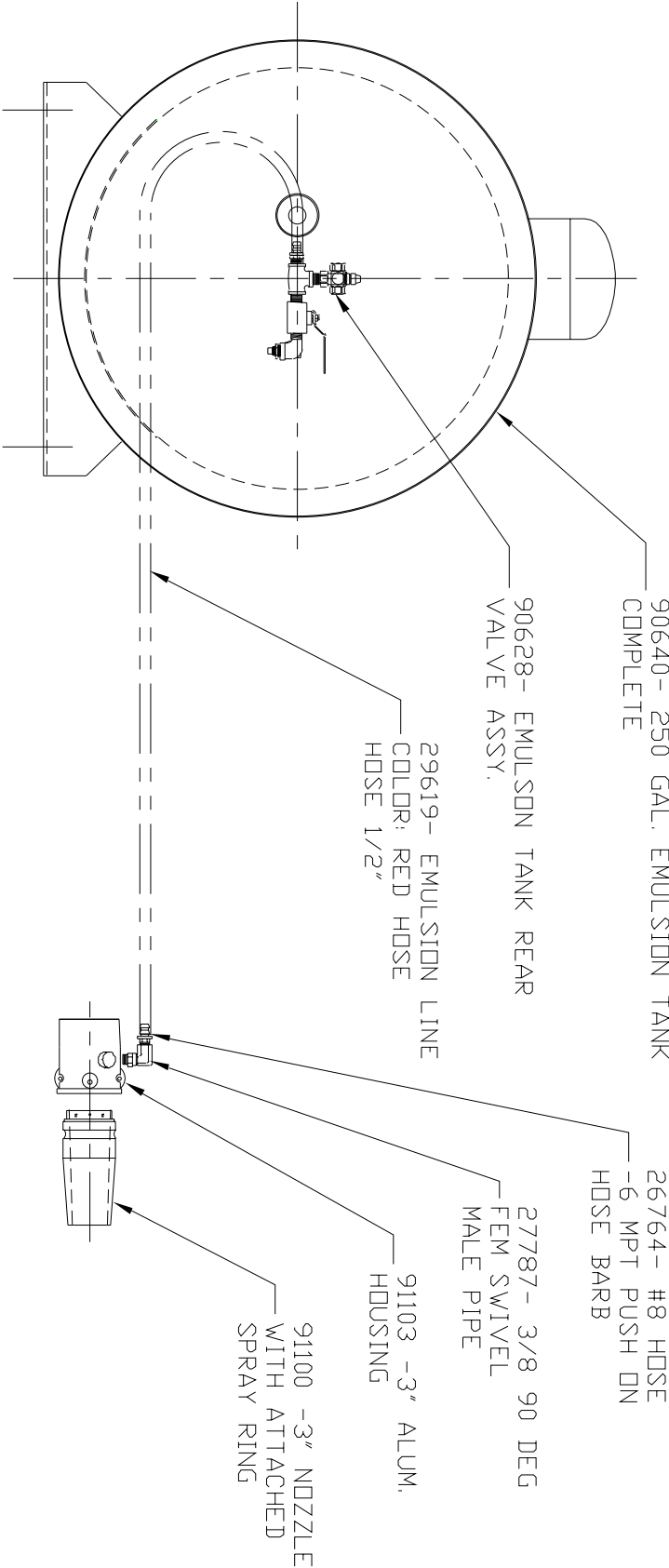


SEE PAGE 79 FOR PARTS LIST

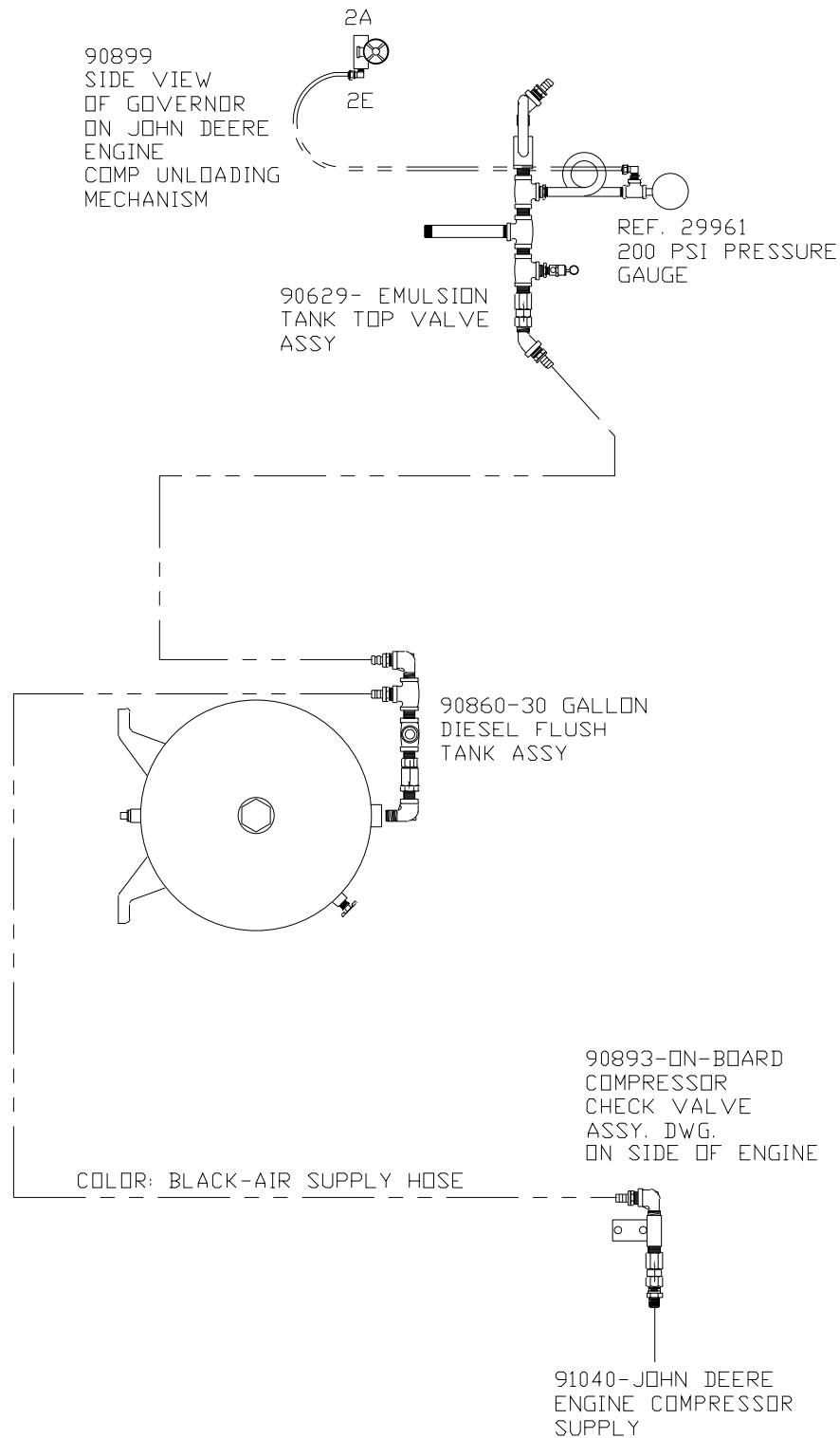
## MAGNUM - ENGINE TO BLOWER DRIVE BELT SYSTEM 3 BELT SYSTEM

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	91335	1	BEARING SUPPORT STUB SHAFT
2	60151	1	POSITIVE DISPLACEMENT ROTARY
3	91330	1	BLOWER SLIDE PLATE - MAGNUM
4	91409	1	SDS 1-1/2" BUSHING WITH 3/8"
5	91326	1	ENGINE SHAFT KEY 3/8" - HARDEN
6	92303	3	3V X 300 SUPER HC V-BELT
7	92304	1	3/3V 6.0" QD-SDS SHEAVE
8	60191	0.02	OIL-ROTARY AIR BLOWER
9	27953	8	3/8"-16 NC X 1" GR8 HEX HEAD
10	28641	20	3/8" FLAT HARDENED WASHER
11	28658	20	3/8" LOCK WASHER GRADE 8
12	27955	12	3/8"-16NC X 1-1/4" GR8 HEX HEAD
13	28528	8	1/2"-13 ESNA LOCK-NUT
14	28659	8	1/2" LOCK WASHER GRADE 8
15	29026	8	1/2"-13 X 1-1/2" GR8 BOLT
16	90858	2	3/8"-16 X 4" FULL THREAD BOLT
17	28526	2	3/8"-16 ESNA LOCK NUT
18	27986	2	3/8" FLAT WASHER GRADE 8
19	27964	2	3/8"-16NC GRADE 8 NUT
20	90827	8	BLOWER MOUNTING TAB
21	91065	1	BLOWER KEY - 1/4"
22	92306	1	7/8" SH BUSHING
23	92302	1	3/3V 3.65" QD-SH SHEAVE
24	91327	1	BLOWER KEY - 3/16" X 1-7/8"

# MAGNUM EMULSION SUPPLY LINE ROUTING PART NUMBER - 91264



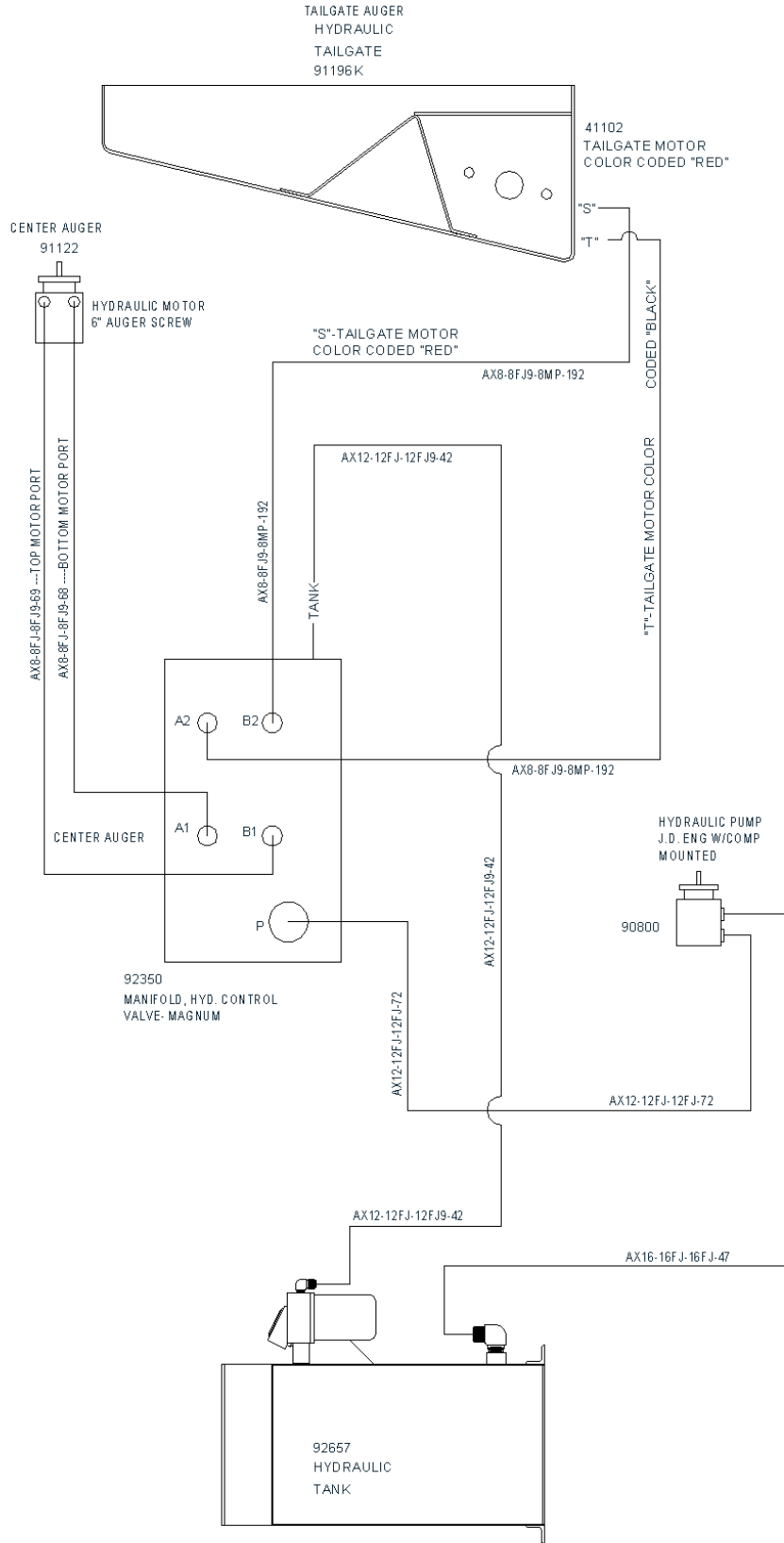
# MAGNUM AIR LINE SUPPLY LINE ROUTING PART NUMBER - 91266





# MAGNUM HYDRAULIC SCHEMATIC

## PART NUMBER - 92352

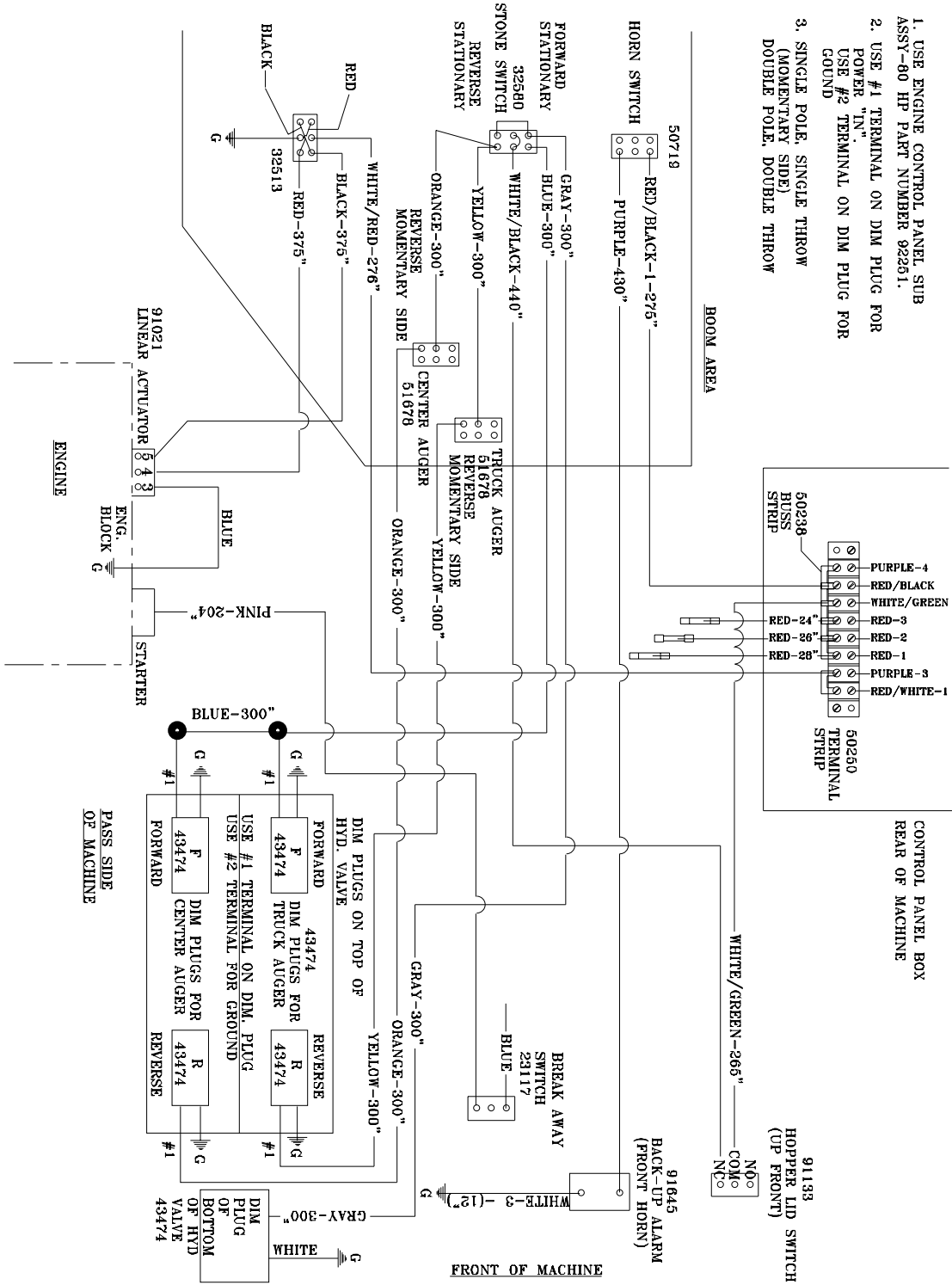


### "HYDRAULIC SCHEMATIC MANIFOLD CONTROL VALVE"

HYD. PUMP TO TURNS CLOCKWISE  
HYD. PRESSURE 1500 PSI @ 1500 RPMS.  
HYD. PUMP FLOW 22.0 GPM @ 2200 RPMS.

# MAGNUM WIRING SCHEMATIC - JOHN DEERE ENGINE

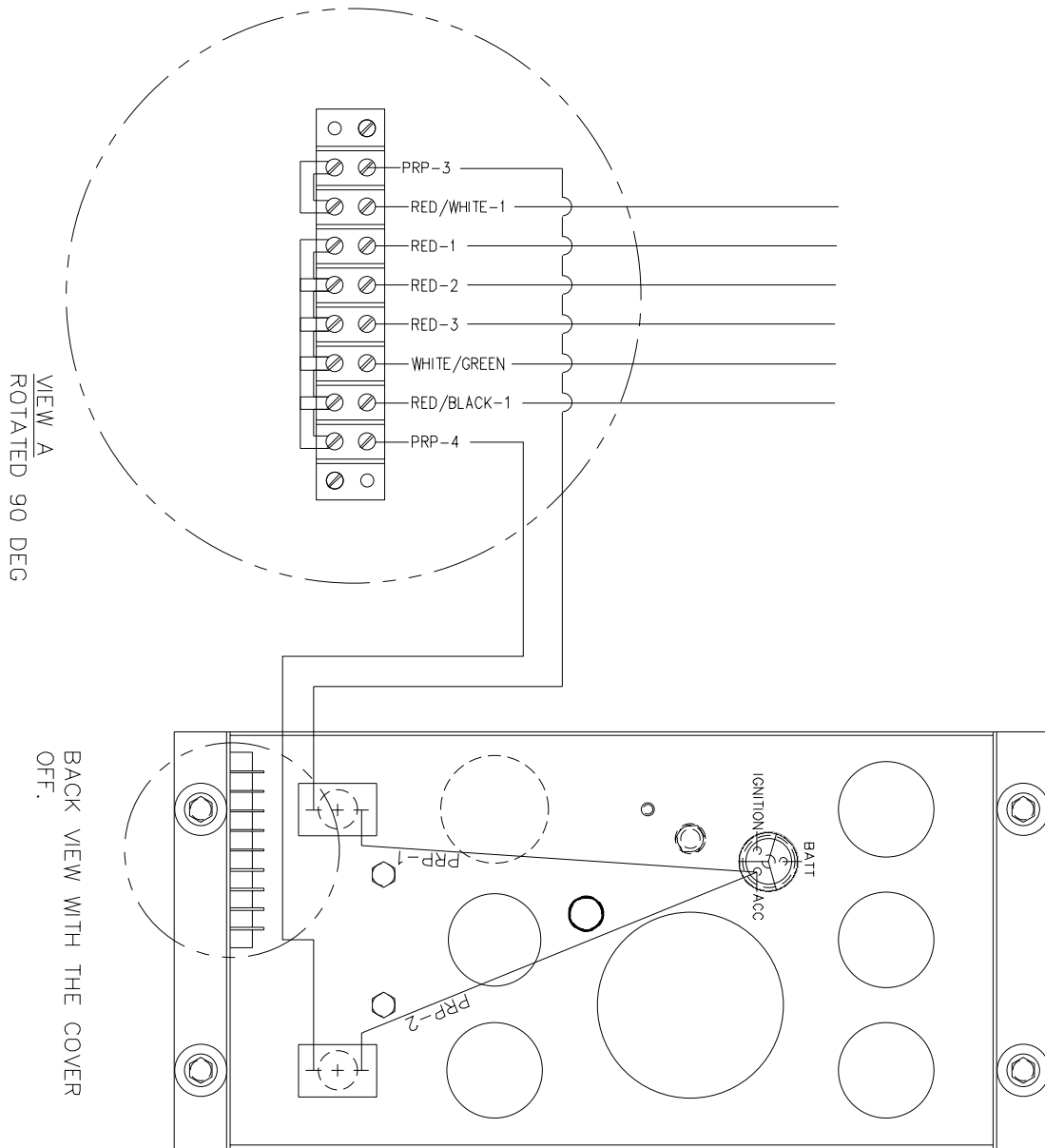
## PART NUMBER - 92353



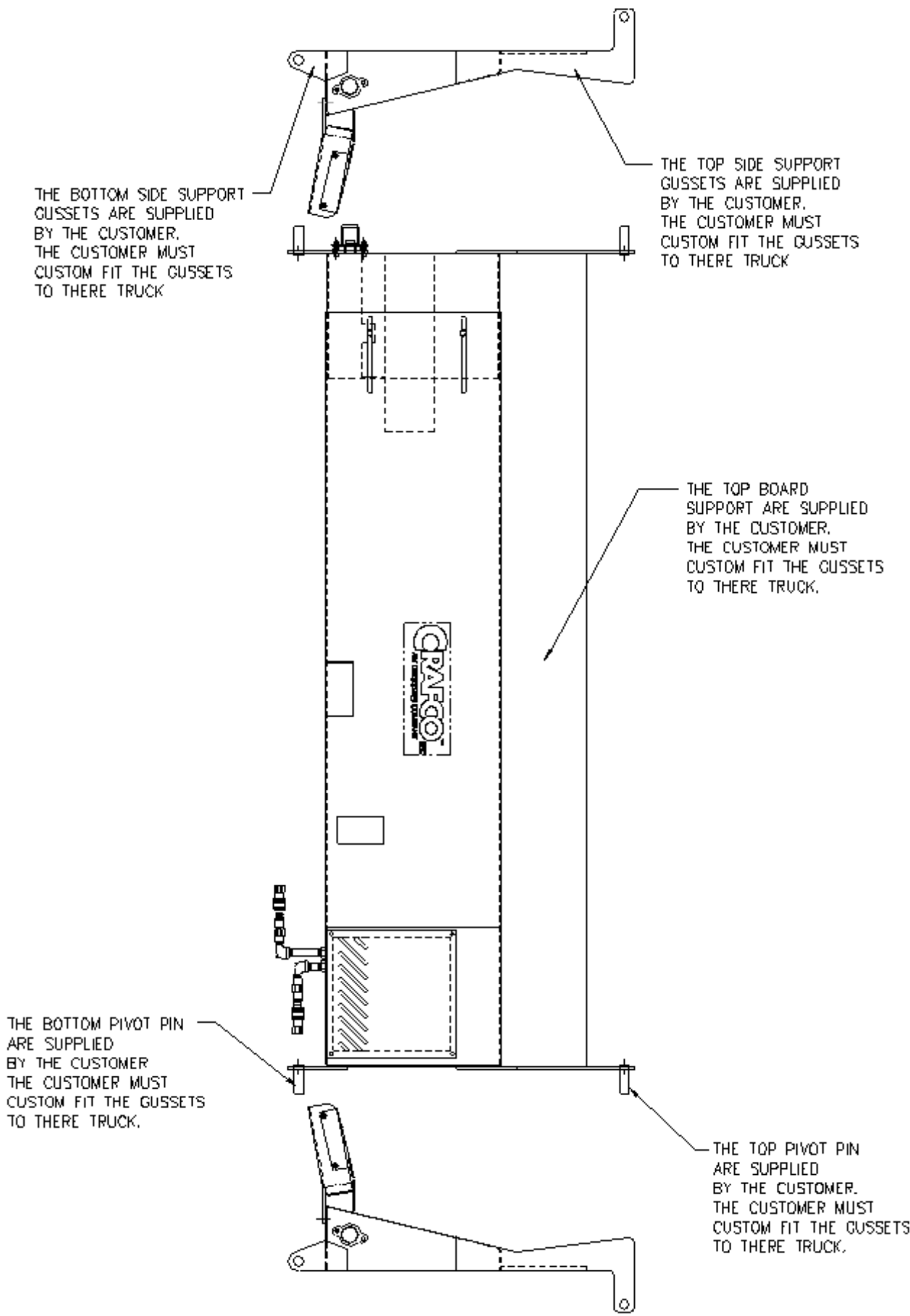
1. USE ENGINE CONTROL PANEL SUB ASSY-80 HP PART NUMBER 92261.
2. USE #1 TERMINAL ON DIM PLUG FOR POWER "IN" USE #2 TERMINAL ON DIM PLUG FOR GROUND
3. SINGLE POLE, SINGLE THROW (MOMENTARY SIDE) DOUBLE POLE, DOUBLE THROW

# MAGNUM ENGINE CONTROL PANEL SUBASSEMBLY - 80 HP

## PART NUMBER - 92251



# STANDARD DUMP TRUCK AND STANDARD CRAFTCO HYDRAULIC TAILGATE



## STANDARD DUMP TRUCK WITH STANDARD TAILGATE



NUMBER	DESCRIPTION
1	DUMP TRUCK TOP PIVOT PIN (EXISTING TRUCK PARTS)
2	DUMP TRUCK BOTTOM PIVOT PIN (EXISTING TRUCK PARTS)
3	EXISTING DUMP TRUCK DOOR (EXISTING TRUCK PARTS)



# SIDEVIEW OF CRAFCO TAILGATE INSTALLED



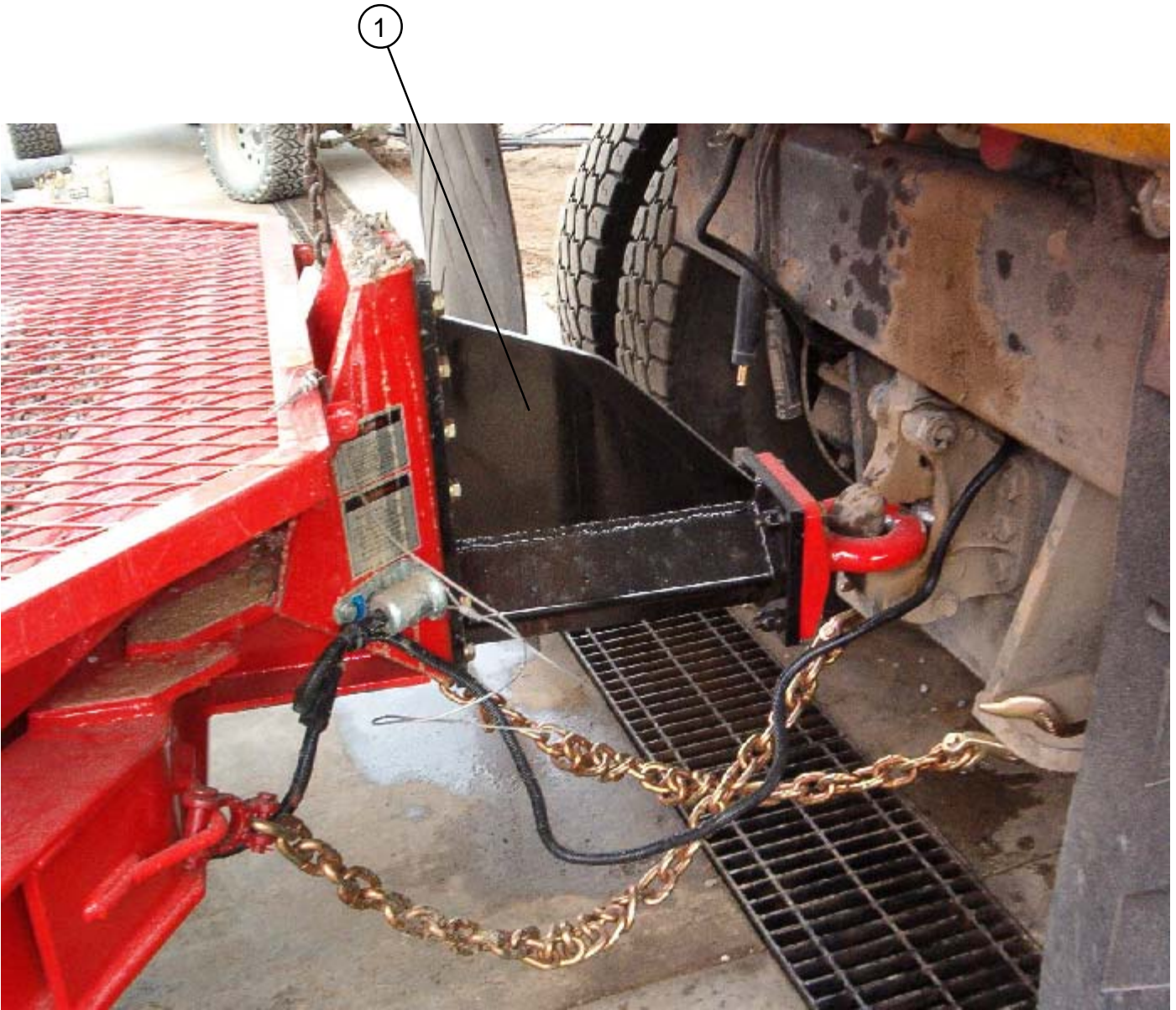
NUMBER	PART NUMBER	DESCRIPTION
1	-	SUPPLIED BY THE CUSTOMER; THE TOP SIDE SUPPORT GUSSETS
2	-	SUPPLIED BY THE CUSTOMER; BOTTOM PIVOT PIN
3	91196K	PURCHASED CRAFCO TAILGATE

**TOP SIDE SUPPORT, BOTTOM SIDE SUPPORT,  
TOP BOARD INSTALLED BY CUSTOMER TO CRAFCO TAILGATE**



NUMBER	DESCRIPTION
1	TOP SIDE GUSSET
2	TOP PIVOT PIN
3	TOP BOARD
4	TAILGATE SUPPLIED BY CRAFCO, INC.
5	BOTTOM PIVOT PIN
6	BOTTOM SIDE GUSSET

# HITCH EXTENSION



NUMBER	PART NUMBER	QTY	DESCRIPTION
1	90887	1	24" HITCH EXTENSION ASSEMBLY SPECIAL- 19" OFFSET

---

---

**Pioneering Leadership and  
Innovation in Quality  
Pavement Maintenance  
Products.**



**235 South Hibbert • Mesa, Arizona 85210  
480-655-8333 • Watts 1-800-528-8242  
Fax 480-655-1712**

©Copyright 2004 by Crafco, Inc.