

PARTS & SCHEMATICS MANUAL

WATER PULL

SERIAL # 717H01 • 12,000 GALLONS (45,425 LITERS)

Ground Force Worldwide

6001 E. Seltice Way
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ORIGINAL INSTRUCTIONS

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0	11/23/2021	JWEST	Initial release

Valued Ground Force customer:

Thank you for selecting **Ground Force Worldwide** as your mine equipment supplier. Our business is based on providing our customers with innovative solutions, manufactured of high quality, heavy-duty materials designed to out-perform in the most extreme applications.

Upon purchase of your equipment, we strive to provide superior service throughout the life of your product. Our **Parts & Product Support Department** is here to assist you by answering technical questions, troubleshooting your equipment when needed, and expediting your parts ordering. We stock the most commonly used parts for your equipment and can ship overnight, when needed. Our Parts and Product Support Representatives (PPSRs) are available 24/7.

Ground Force Worldwide proudly provides superior customer service through the life of your equipment. Call us anytime at 1 (208) 664-9291, or e-mail service@gfworldwide.com, and let us assist you.

Sincerely,

Ground Force Worldwide

Documentation Department

CONTACT US

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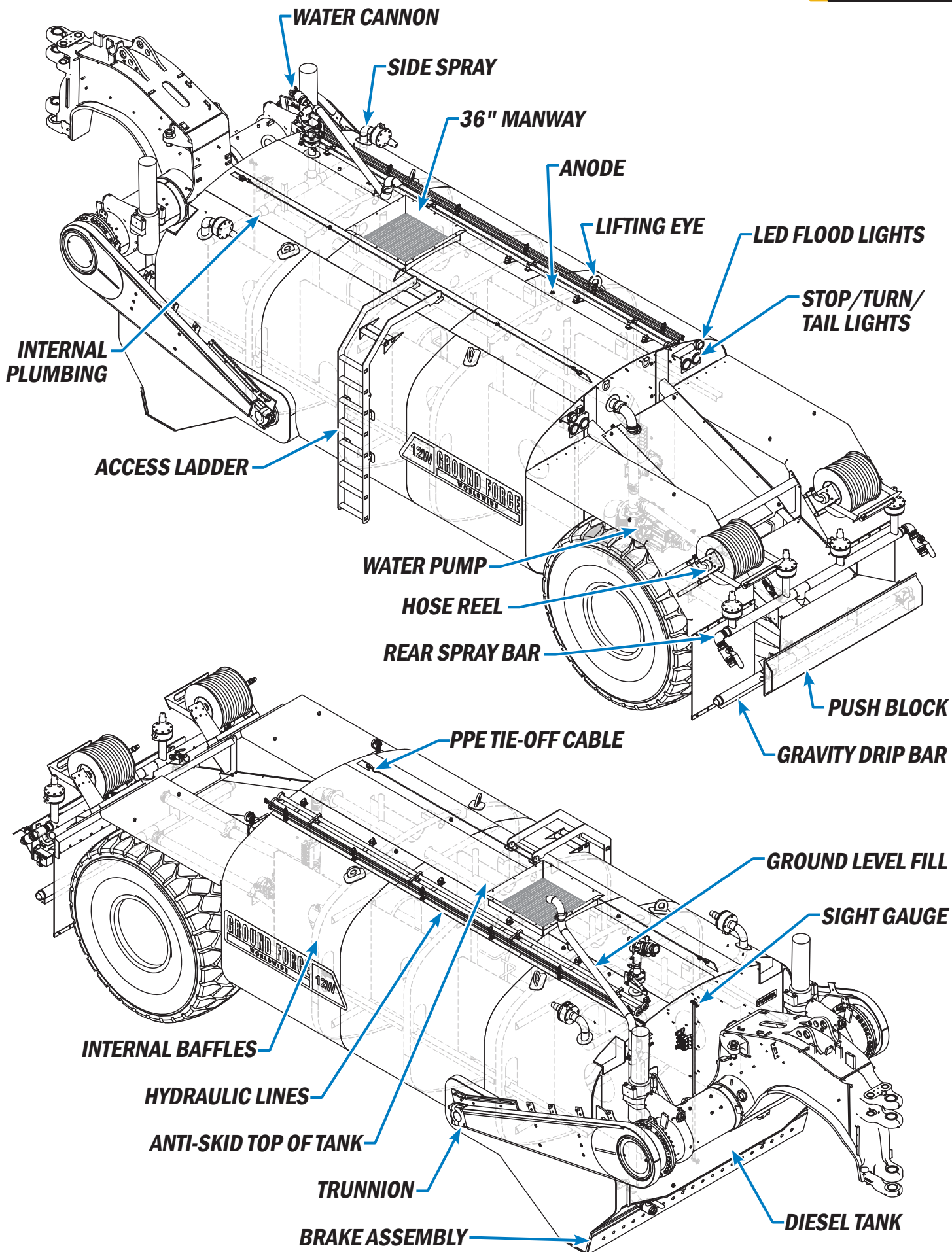
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SPECIFICATIONS

The Ground Force Worldwide Water Tanker is a heavy-duty, custom-engineered water delivery tank, offering solutions for dust suppression, fire fighting and general water truck needs.

Ground Force water tanks are engineered with an internal endoskeleton and dual-radius semi-elliptical design. This allows for an optimal center of gravity while providing the strength needed for the water

tank to last in tough conditions. Ground Force water tanks are fully baffled to break up water flow and increase stability.

WARNING

Do not operate the Ground Force water tank in unsafe conditions. Do not operate the Ground Force water tank in a manner that violates local and site-specific laws and regulations.

717H01

- 12,000-gallon tank for 631K water-pull conversion - (BSDA) new tank build

SCOPE OF WORK

- 12,000-gallon water tank to convert a new 631K tractor to a water pull
- For a Ground Force-supplied new Caterpillar 631K Prime Mover tractor with two tires (tractor side) and Caterpillar 631K - complete rear wheel and brake group, draft arms and related Caterpillar parts kit to complete conversion

GFM WATER TANK SPECIFICATION

- 12,000-gallon water tank with T1 mold-board
- Brake Saver Drop Arm (BSDA) design
- Additional steel plate on shell bottom
- Ground Force baffling system and endo-skeleton
- GFM to chamfer all sharp edges inside of the tank so the interior coating can properly adhere
- GFM to cap the ends of the transverse baffle channel supports so water cannot enter and corrode
- 36" square manway with trash screen/safety grate
- PPE safety tie-off cable, entire length top of tank
- Anti-skid, top of tank
- Sump to be elevated to help prevent damage from debris
- (2) D-ring tie-offs at rear of tank
- Ladder with safety rail, side-mounted
- Trunnions for draft arm connection to tank
- Tank level sight tube with shut-off valves, installed on front head
- High performance (B4) stainless steel water pump
- Low level shut-off

- Stainless steel rear spray bar with (4) hydraulic-op staggered in-line valves with adjustable fan sprays; 3" NPT pipe couplers with plugs on each end of spray bar
- (2) 2-1/2" fire hose coupling, 3" brass ball valve at each side of rear spray bar
- Stainless steel ground-level hydrant fill 3" with legal air gap and bottom 90-degree elbow facing forward; includes brass ball valve at connection point
- Low-point manual drains on all water circuits
- Includes Ground Force WCS (Water Control System); WCS quick start guide
- Front-mounted 215-gallon diesel fuel tank
- New heavy-duty rear frame assembly w/ push block
- Painted Caterpillar yellow to match prime mover
- Rear structure mud flaps
- Rear LED turn/ tail/ stop lights
- Backup lights

ANODES (4)

- Installation of sacrificial (replaceable) anodes in tank for corrosion resistance

GROUND FORCE ENHANCED CORROSION-RESISTANT SPRAY PACKAGE

- All interior tank plumbing upgraded to stainless steel
- Rear spray bar upgraded to stainless steel
- Ground level hydrant fill plumbing to be stainless steel
- 4" stainless steel gravity dump bar
- (6) marine-grade alloy valves / spray heads included; (4) rear spray bar, (2) side sprays
- Maxi spray valve – hydraulic operated, part #MX80-DA-H-MK2

- Pump mounting plate upgraded to heavy-duty stainless steel
- Stainless steel water pump upgrade (B4)

4" STAINLESS STEEL GRAVITY DUMP BAR

- Width of tank, at rear
- 4" schedule 40 pipe with 3/4" holes on 6" centers
- Operated from cab

HYDRAULIC OPERATED SIDE SPRAY

- Side spray (2) located at upper quadrants - front of tank

(2) HYDRAULIC REWIND HOSE REELS

- (2) water hose reel with 100' x 1-1/2" hose and adjustable nozzle
- Mounted on the rear of the machine
- Includes manual in-line shut-off (isolator) valve
- Includes addition of high idle switch box
- Air blow-down and control valve for hose draining

NITRO WATER CANNON

- Hard-wired joystick control operation
- 500 GPM adjustable nozzle
- Includes automatic drain feature to eliminate standing water in Monitor pipe

(2) 24V LED UTILITY LIGHTS (USES BACKUP LIGHTS WITH DEDICATED SWITCH)

- (2) 24V LED rear-mounted sealed-beam work lights
- Include control switch/circuit protection in tractor cab
- TYRI 1313 or similar 7,000 Lumens

WATER LEVEL INDICATOR ELECTRIC

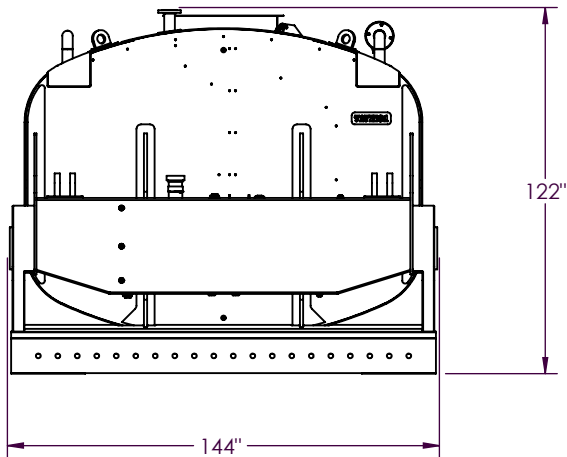
- In-cab water level indicator

AUTOMATED GREASING SYSTEM

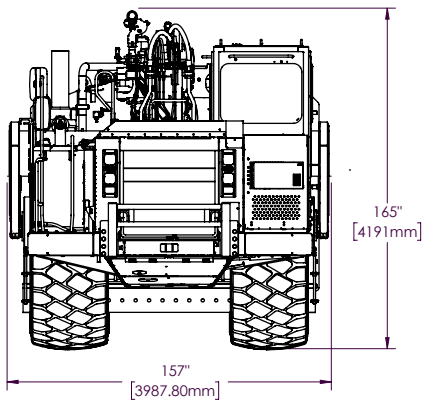
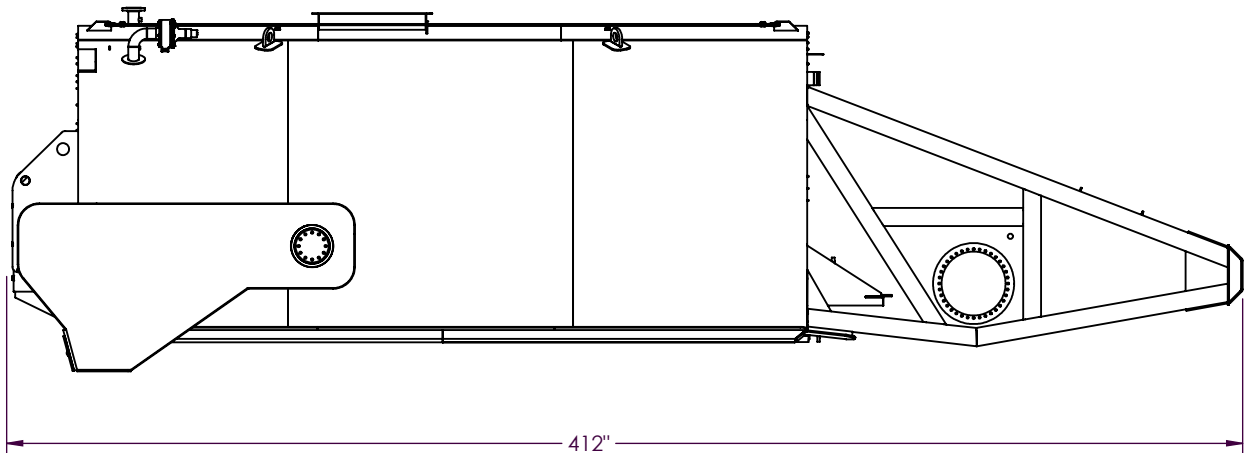
- Groenwald Beka Twin 3.1 Automated Greasing System with 8-liter pump, in-cab display, and auxiliary grease points on Cat 631K water pull with 34 grease points
- Optional add-on, Groenwald Twin 3.1 24V, 8L automated grease pump F605338
- Optional add-on Groenwald Twin system parts kit (large) F198737

INTERIOR COATING

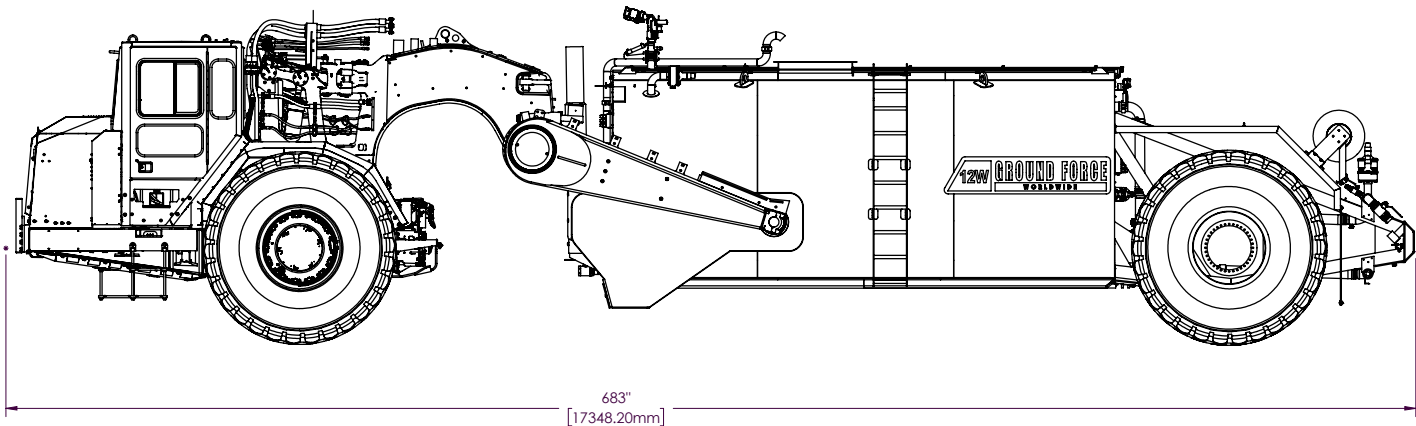
- Interior coating per spec provided by Skip Vernon CLT Inc
- NW Sandblast & Paint to sandblast the 12,000-gallon tank interior to the product preparation specification
- Sandblast the interior of the tank to an SSPC-SP10 near white metal
- Apply two coats of PPG Amerlock 2 Epoxy @ manufacturer's recommendation of 4-8 mils dft per coat
- Apply caulking on all skip welds prior to applying the second coat of epoxy (no additional cost)
- Have hold points for outside inspection QA after blast, each coat of epoxy and caulking



TANK ONLY SHIPPING INFORMATION		
WIDTH:	144"	
HEIGHT:	122"	
LENGTH:	412"	
WEIGHT: (APPROX)	37,000 LBS	
SHIPPING COMPANY TO SUPPLY THEIR OWN DUNNAGE		




TRUCK SHIPPING INFORMATION		
WIDTH:	157"	3,988 mm
HEIGHT:	165"	4,191 mm
LENGTH:	683"	17,348 mm
WEIGHT: (APPROX)	112,000 LBS	50,802 kg
SHIPPING COMPANY TO SUPPLY THEIR OWN DUNNAGE		



PARTS & SCHEMATICS MANUAL

SAFETY

 This safety guide is provided by Ground Force Worldwide to assist you in making a safer workplace. Specific regulations at the site of operations supersede all basic recommendations provided in following sections.

For more information contact your national, state, or local authority. The following links are provided to assist you in compliance:

[Occupational Safety and Health Administration](#)

[Mine Safety and Health Administration](#)

[Canadian Centre for Occupational Health and Safety](#)

[European Agency for Safety and Health at Work](#)

[Safe Work Australia](#)

GUIDELINES

Equipment and vehicles must be maintained to be safe and reliable. Due to Ground Force Worldwide's global presence and distribution, and the myriad of local, state, and federal regulations, it is impractical to provide specific details of these regulations. The following are basic guide lines, which do NOT supersede on-site requirements and regulations, which MUST be followed.

- Ensure that ALL operators have been trained on the equipment they use and operate.
- Check vehicles at the beginning of each shift to ensure that parts, equipment and accessories are in safe operating condition. Repair or replace any defective parts or equipment prior to use.
- Ensure the service, emergency and park brake systems are operational. Verify audible backup alarm system is operational and working. Headlights, tail lights, and brake lights MUST be operational. Verify the windshield is clear and the windshield wipers are operational.
- DO NOT operate the vehicle in reverse with an obstructed rear view, unless it has a signal alarm capable of being heard above ambient noise levels or a signal observer indicates that it is safe to move vehicle. Some operational areas require a spotter at all times.
- Equipment should have roll-over protection, and protection from falling debris as required by law.
- Ensure that vehicles used to transport workers have seat belts, firmly secured and adequate for the number of workers to be carried or transported.
- DO NOT modify the equipment's capacity or safety features without written approval from the Ground Force Mfg. Engineering Department.
- Prior to permitting equipment or vehicles onto an access roadway or grade, verify that the roadway or grade is constructed and maintained to safely accommodate the equipment, vehicles and loads involved.
- Vehicles and equipment loaded from the top must have cab shields or canopies to protect the operator while loading.
- Verify the Pre-Shift Inspection has been completed and signed off.
- Based on site conditions, you may choose to have the chassis supplier lock out the top gears to prevent excessive speed.

WARNING

DO NOT attempt to use this equipment until you have thoroughly read this manual. It includes important safety precautions, detailed starting, operating and maintenance instructions, and parts lists.

2.1 READ INSTRUCTIONS

- Read and follow the Owner's Manual carefully before installing, operating, or servicing equipment. Read safety information at the beginning of the manual and in each section. Heed warning labels on equipment
- Use only genuine replacement parts from the manufacturer
- Perform maintenance and service according to the owner's manual
- ALWAYS follow national, state, and local codes

2.2 GENERAL SAFETY HAZARDS

- Always ensure vehicle is CLEAR of personnel before starting vehicle
- Always use wheel chocks when servicing or working on vehicle

2.3 ENGINE EXHAUST CAN KILL

- Operate in open, well-ventilated areas or vent exhaust outside

2.4 MOVING PARTS CAN INJURE OR KILL

- Do not operate with doors open or guards off or removed
- Stop engine before servicing
- Keep hands, hair, loose clothing and tools away from moving parts and machinery

2.5 BATTERY FUMES AND EXPLOSIONS

- Follow battery manufacturer's instructions when working on or near a battery
- Stop engine before disconnecting or connecting battery cables, battery charging

cables, or servicing battery

- Always wear a face shield, rubber gloves and protective clothing when working on battery
- Batteries produce explosive gases during normal operation and when being charged. Keep sparks, flames, cigarettes and other ignition sources away from batteries
- Observe correct polarity (+ and -) on batteries
- Disconnect negative cable (-) first and reconnect negative (-) cable last
- DO NOT tip battery
- Replace battery if damaged
- Do NOT charge a frozen battery
- Do NOT charge battery in a closed area or where ventilation is restricted
- In case of battery acid getting on face, on skin, or in eyes, flush immediately with water for 5 minutes and seek medical attention as soon as possible

2.6 FIRE HAZARDS

- Stop engine while fueling
- DO NOT smoke while fueling
- DO NOT leave nozzle unattended while fueling
- Wipe up spilled fuel and allow fumes to clear before starting engine
- DO NOT overfill the fuel tank, fuel expansion may cause overflow

2.7 ELECTRICAL SHOCK CAN KILL

- DO NOT touch electrically live parts with skin or wet clothing
- Insulate yourself from work and use safety ground
- Always wear dry insulated gloves when working on electrical equipment
- Always lockout/tagout equipment before performing electrical work

2.8 FALL HAZARDS



- Equipment operators and maintenance personnel are susceptible to falls from equipment during repair and servicing. Prevent falls and slips by following these guidelines:
- **ON-SITE FALL HAZARD** requirements supersede all of the guidelines listed below. Closely follow on-site safety rules.
- Know and identify what slip, fall and trip hazards are, and what preventative measures are required
- Survey work area on and around equipment for slip and fall hazards and remove hazards from area
- Never jump from equipment to the ground
- Use three points of contact when climbing equipment
- Where there is a danger of falling use a **FALL PROTECTION SYSTEM** per OSHA AND MSHA requirements.
- Always follow national, state and local codes: <https://www.osha.gov/SLTC/fallprotection/>

2.9 PINCH POINT HAZARDS



- Never place yourself between a piece of heavy equipment or machinery and an immovable object
- Never work within the swing radius of rotating equipment
- Always work at a safe distance from equipment
- Caught-in hazards exist when workers remove or disable guards. Use extra caution when removing this safety equipment as required for servicing
- Never place your hands or body near moving parts
- Gloves, long sleeve shirts, hair, and loose fitting clothing can be hazardous if caught in moving parts
- Never exceed maximum load limits according to the equipment and machinery specifications
- All workers should wear bright protective clothing. Signs that are highly visible should be set up in a way to warn and discourage nonworkers from entering site
- Never forget one simple rule: **PARKING BRAKES**. They

are easy to operate and can save lives

- Always use wheel chocks when working on or near a vehicle
- Always verify that vehicle is clear before starting

2.10 LOCK-OUT / TAG-OUT



1. **IDENTIFY** the types of energy sources used, potential hazards, and control devices.
2. **NOTIFY** all affected employees.
3. **TURN OFF** all operating controls.
4. **LOCATE** all energy sources
5. **ISOLATE** all energy sources by blocking, bleeding and ventilating stored energy as found in springs, hydraulic systems, electrical systems and pneumatic systems.
6. **LOCK-OUT** all switches and energy controls in the OFF or SAFE position.
7. **TEST** operating controls. Put all controls in ON position. Be sure no one can get hurt before testing.
8. **RETURN** all operating controls to the OFF position.
9. **PERFORM** required task.
10. **REMOVE** lock-out devices only after the equipment is fully assembled and all affected employees have been notified. Each lock-out device must be removed by the person who put it on.

2.11 CONFINED SPACE SAFETY

Some maintenance procedures on Ground Force Worldwide water trucks require entering the tank itself. Working inside a confined space such as a water tank is highly dangerous. Technicians working inside the tank must follow safety guidelines.

To work safely in a confined space, the entrant must be able to communicate with the attendant who is on duty outside the space. A system of communication must be set up prior to beginning work.

The attendant must always be aware of what is going on inside the space in order to be able to react in event of an emergency.

Oxygen-deficient atmospheres have less than 19.5 percent available oxygen by volume while normal air contains approximately 21 percent oxygen. Deviations from normal concentrations are a major concern in confined spaces.

Ground Force water truck tanks are considered "Permit-Required Confined spaces," based on the following guidelines:

- Contains or has a potential to contain a hazardous atmosphere.
- Contains a material that has the potential for engulfing an entrant.
- Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section.
- Contains any other recognized serious safety or health hazard, ex., reduced visibility, darkness, etc.

Equipment will include at a minimum:

- Ventilation Fans (1 minimum for Assembly, 2 minimum for Fabrication) and hoses.
- A calibrated and tested air monitor.
- PPE appropriate to the tasks or jobs being performed.
- Lighting equipment appropriate to the task or jobs being performed.
- Signs posting the confined space and restricting access.



- Stanchions or other barriers restricting the access of non-permit personnel.
- Radio equipment as necessary to support communication between the attendant(s) and entrant(s)
- Rescue equipment tested and in a place near the confined space and readily available for rescue personnel.
- OSHA requires that a standby person be present with suitable rescue equipment when self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health.

The following are other hazards you should consider when evaluating a confined space:

- Temperature extremes can have an adverse effect on entrants. For example, if a space has been steam-cleaned, it must cool before any entry is made.
- Engulfment hazards such as loose material (grain, sand, coal, etc.) can crust over in a bin and break loose under your weight and trap you during entry.
- Noise can become excessive in a confined space and can not only damage hearing but can affect communication, causing warnings to go unheeded.
- Slick/wet surfaces can cause slips and falls and increase the chances of electric shock.
- Falling objects are a danger if work is being done above the entrant in a confined space.

2.12 FIRE EXTINGUISHER USE

⚠ WARNING

If you have the slightest doubt about your ability to fight a fire, **EVACUATE IMMEDIATELY**

Sound the fire alarm and call the fire department, if appropriate. Identify a safe evacuation path before approaching the fire. Do not allow the fire, heat, or smoke to come between you and your evacuation path. Select the appropriate type of fire extinguisher.

Discharge the extinguisher within its effective range using the PASS method (Pull, Aim, Squeeze, Sweep).

Back away from an extinguished fire in case it flames up again. Evacuate immediately if the extinguisher is empty and the fire is not out. Evacuate immediately if the fire progresses beyond the incipient stage.



Most fire extinguishers operate using the following **P.A.S.S.** technique:

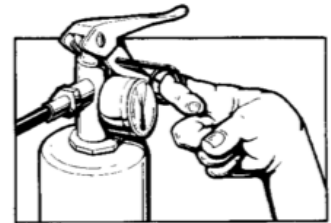
1. **PULL** - Pull the pin. This will also break the tamper seal.
2. **AIM** - Aim low, pointing the extinguisher nozzle (or its horn or hose) at the base of the fire.
3. **NOTE:** Do not touch the plastic discharge horn on CO2 extinguishers. It gets very cold and may damage skin.
4. **SQUEEZE** - Squeeze the handle to release the extinguishing agent.
5. **SWEEP** - Sweep from side to side at the base of the fire until it appears to be out. Watch the area. If the fire re-ignites, repeat steps 2 - 4.

Remember:

If you are called on to use an extinguisher, just think of the word "P.A.S.S."

PULL

the safety pin at the top of the extinguisher.



AIM

the nozzle or hose at the base of the flames. Stay between six and eight feet away from the flames.



SQUEEZE

or press the handle.



SWEEP

from side to side at the base of the fire until it goes out.











By following these procedures, a fire can be extinguished in the quickest and safest manner possible.

2.13 COMPRESSED AIR HAZARDS

FOLLOW ON-SITE COMPRESSED AIR HAZARDS SAFETY REQUIREMENTS FOR PLACE OF OPERATIONS. THE FOLLOWING ARE ONLY BASIC GUIDELINES:

- Incorrect installation or operation of this unit could result in equipment failure and personal injury. Only qualified persons should install, operate, and service this unit according to the owner's manual, and industry standards, always in compliance with national, state and local codes
- DO NOT exceed the rated output or capacity of the compressor or any equipment in the compressed air system Before working on the compressed air system, follow the in house (on site) LOCKOUT/TAG-OUT procedure of the unit
- Turn off and follow above lockout/tag out procedure; ensure that the pressure is released from the system, and cannot accidentally be applied
- The air compressor can start up at any time the switch is "on." Use caution any time the switch is on

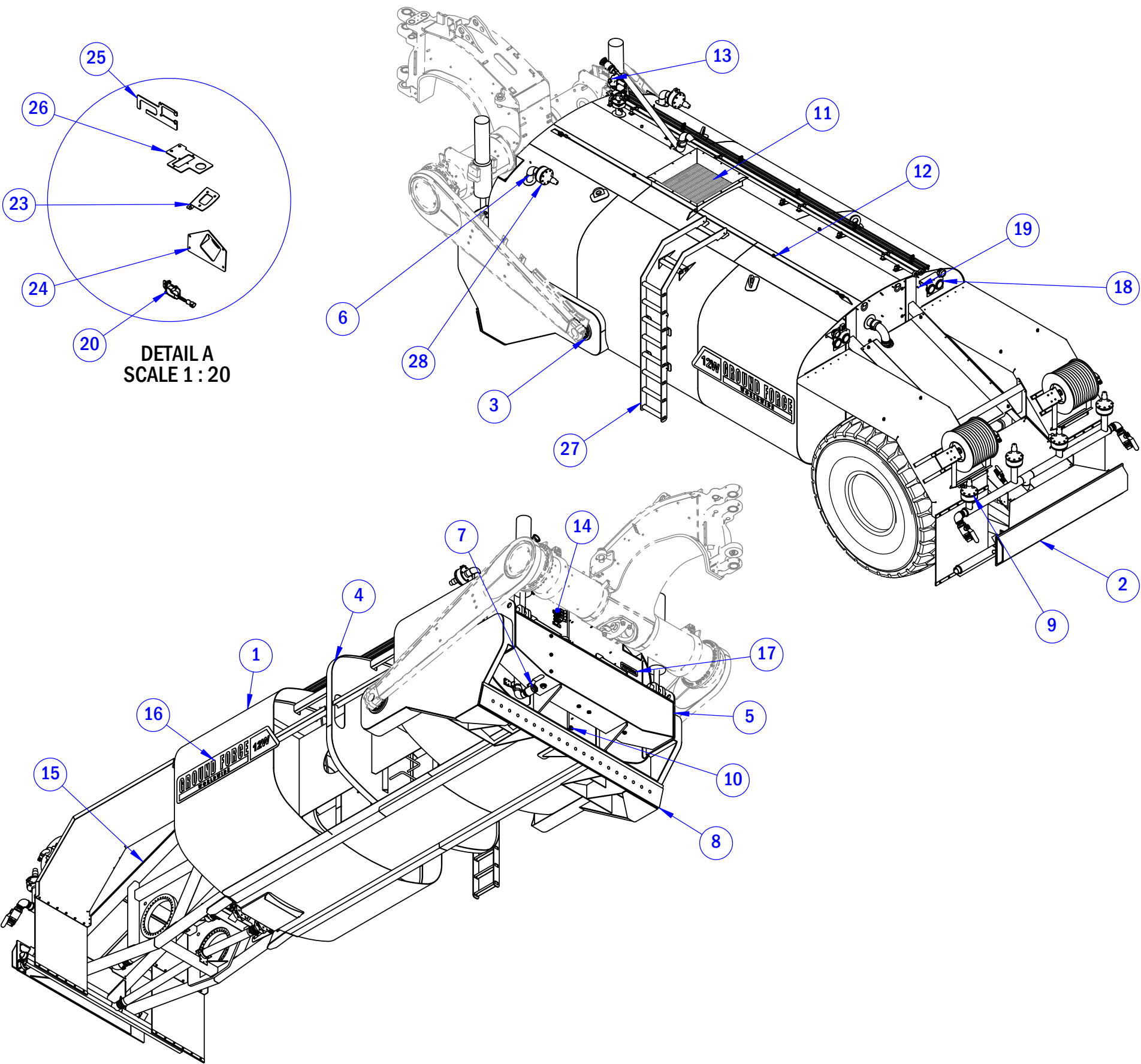
2.14 PERSONAL PROTECTIVE EQUIPMENT

	<ul style="list-style-type: none"> • Hard hats. All persons shall wear suitable hard hats when in an area where falling objects may create a hazard.
	<ul style="list-style-type: none"> • Protective footwear. All persons shall wear suitable protective footwear when in or around an area where a hazard exists which could cause an injury to the feet.
	<ul style="list-style-type: none"> • Eye protection. All persons shall wear safety glasses, goggles, or face shields or other suitable protective devices when in or around an area where a hazard exists which could cause injury to unprotected eyes.
	<ul style="list-style-type: none"> • Safety belts and lines. Safety belts and lines shall be worn when persons work where there is danger of falling; a second person shall tend the lifeline when bins, tanks, or other dangerous areas are entered.
	<ul style="list-style-type: none"> • Reflective clothing. Wear reflective clothing which is highly visible (360 degrees) when the arms are up or down or when the body is in any position and even on top of hard hat.
	<ul style="list-style-type: none"> • Ear protection. Ear protection must be worn when the noise exposure level is above 85 dBA.
	<ul style="list-style-type: none"> • Respirators. A respirator should be worn if there is danger of harmful dusts, fogs, smokes, mists, gases, vapors, and sprays.
	<ul style="list-style-type: none"> • Hand protection. Wear appropriate gloves if there is danger of skin absorption of harmful substances, chemical or thermal burns, electrical dangers, bruises, abrasions, cuts, punctures, fractures or amputations.

PARTS & SCHEMATICS MANUAL

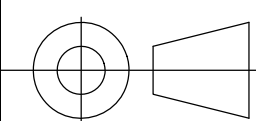
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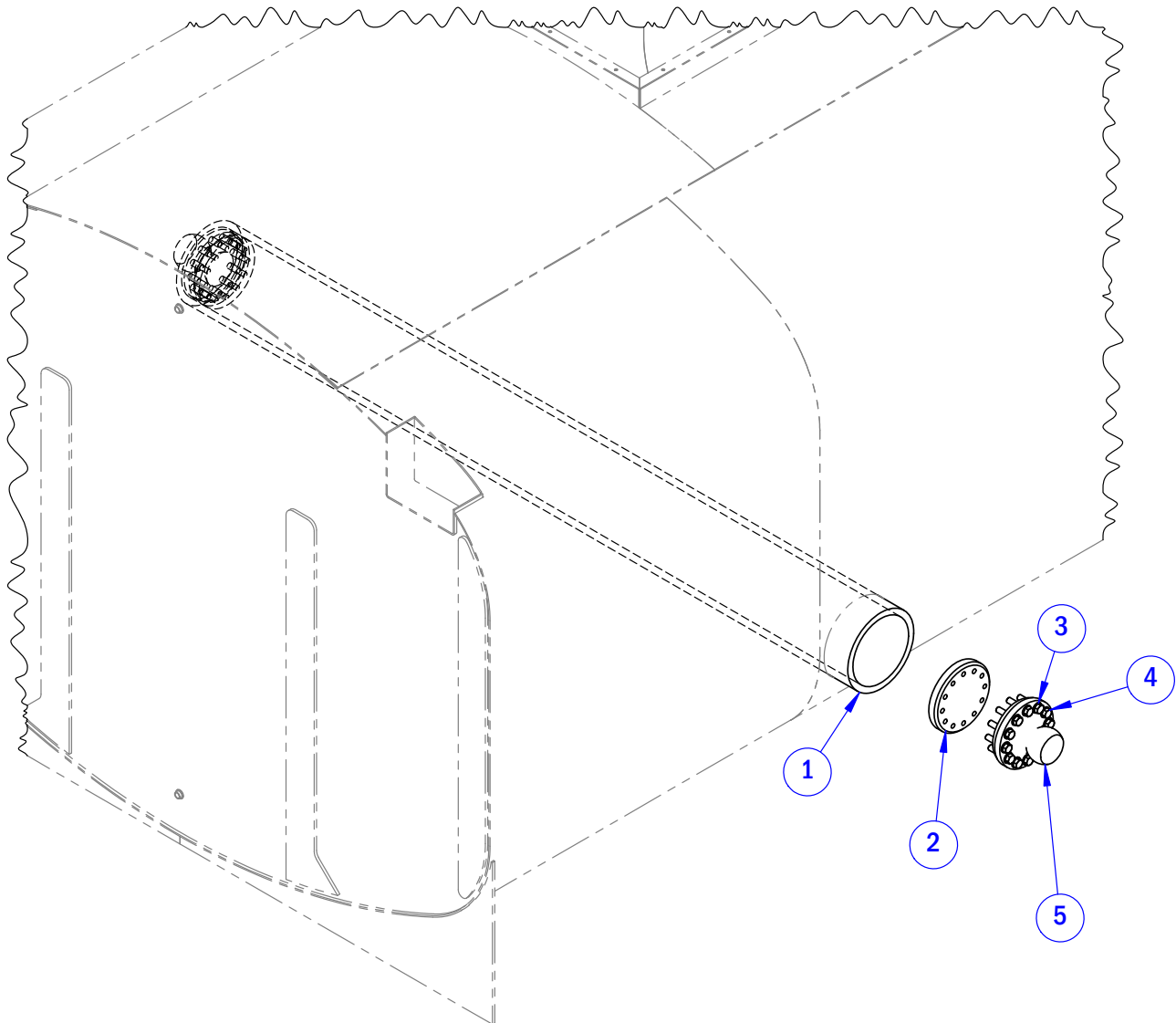


ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	12K SHELL	13465.386	91081936402
2	1	631K REAR MOUNT STRUCTURE, 12K	9846.689	91081936429
3	1	TRUNNION MOUNT, 12K	2014.290	91081936431
4	1	12K BAFFLE ASSEMBLY	6310.635	91081936404
5	1	FUEL TANK AND CYL MOUNTS, 12K	4927.103	91081936433
6	1	INTERNAL PLUMBING, 12K, 631K	641.045	91081936405
7	1	GROUND LEVEL FILL, 12K	181.799	91081936432
8	1	BRAKE WELDMENT, 12K	4750.101	91081936434
9	1	REAR WATER DISTRIBUTION ASSEMBLY, 12K	781.825	91081936435
10	1	SIGHT GAUGE, CAT 631K, 12K	3.079	91081936436
11	1	36" SQUARE MANWAY GRATE	53.03	91081928430
12	1	COMPONENTS, TOP OF TANK, CAT 631, 12K	73.513	91081936437
13	1	WATER MONITOR ASSEMBLY	52.51	91081932134
14	1	HYDRAULICS LAYOUT, 12K	316.242	91081936438
15	1	FENDERS AND REAR COVERS	1472.721	91081936440
16	1	BRANDING, 12K 631K	47.019	91081936441
17	1	SERIAL NUMBER PLATE	1.51	717H01-SERIAL
18	1	ELECTRICAL LAYOUT	72.386	91081936442
19	1	STUD LAYOUT, 12K CAT 631K	2.152	91081936443
20	1	HIGH IDLE THROTTLE POSITION SENSOR ASSEMBLY	0.32	91081929169
21*	2	RAM 2.5" ROUND PLATE WITH BALL 1.5" C	0.000	2600000202U
22*	1	RAM MEDIUM DOUBLE SOCKET ARM 1.5" C	0.000	2600000201U
23	1	E-BRACKET ENCODER MOUNT	0.796	90181165584
24	1	E-BRACKET, 621/631K NITRO HD JOYSTICK MOUNT	2.253	91081933574
25	1	E-BRACKET, 621K FRONT ARTICULATION BRACKET	0.671	90181165130
26	1	E-BRACKET, WATER PULL FRONT OF TANK	1.047	90181174993
27	1	LADDER MOUNTING	174.056	91081936446
28	2	MAXI SPRAY VALVE HYDRAULIC OPERATED	20.00	MX80-DA-H-MK2
29	1	HOSE REEL LAYOUT	971.736	91081936583

*NOTE: ITEM IS NOT SHOWN

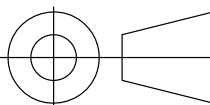
PROPRIETARY AND CONFIDENTIAL		<div>GROUND FORCE</div> <div>WORLDWIDE</div>	
<div>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF GROUND FORCE MFG., LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF GROUND FORCE MFG., LLC. IS PROHIBITED.</div>		TITLE: 631K 12K WATER PULL	
		<div>DWG. NO.</div> <div>717H01</div> <div>WEIGHT: 46584.721</div>	
		<div>REV</div> <div>0</div> <div>SHEET 1 OF 1</div>	

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	TRUNNION MOUNT PIPE	1779.673	90181163899
2	2	TRUNNION BOLT PLATE	42.783	90181163900
3	24	7/8 FLAT WASHER L-9	0.009	0945.087.0.20
4	24	7/8 X 4 NC GR8 BOLT	0.1191	0801.087.0400.20
5	2	TRUNNION (CAT PART)	72.99	9J-6260



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GROUND FORCE
WORLDWIDE

TITLE:
TRUNNION MOUNT, 12K

DWG. NO.

936431

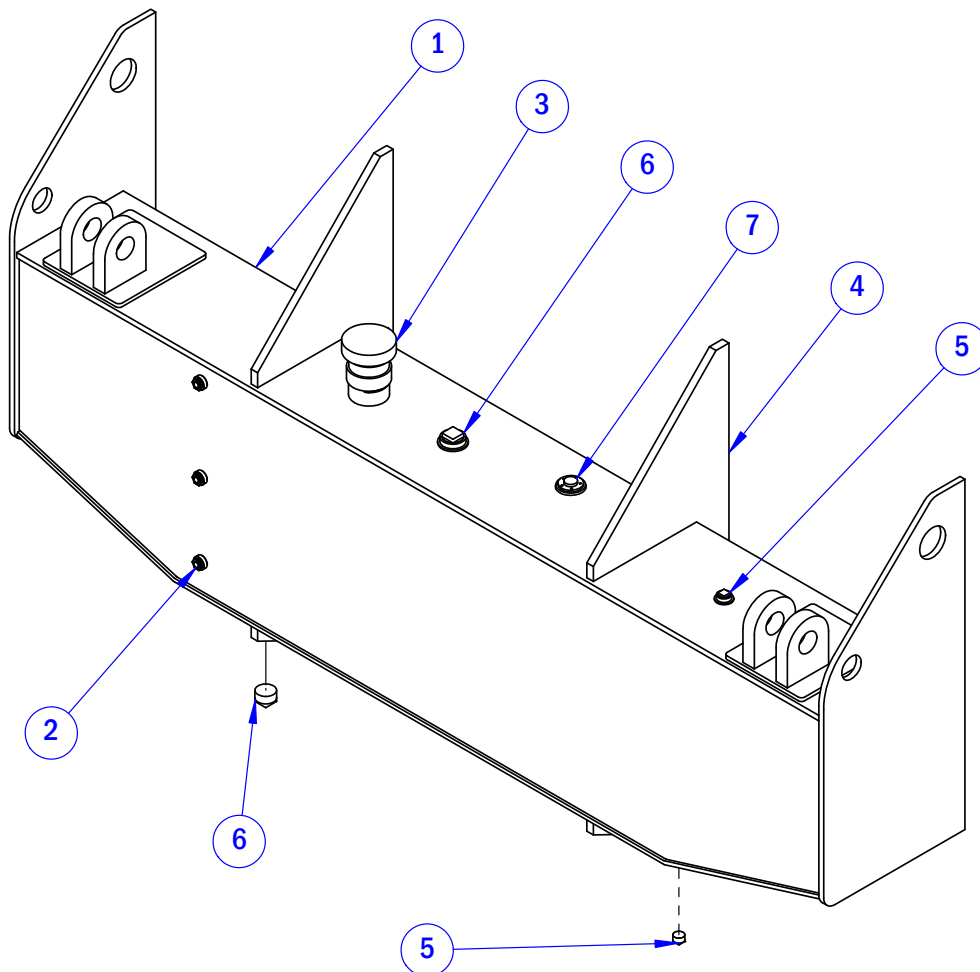
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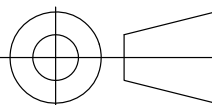
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	12K 215 GAL FUEL TANK AND CYL EYE WELDMENT	4569.937	91081936579
2	3	SIGHT GLASS #12 SAE	0.11	1812HY001
3	1	CAT FUEL FILL MODIFICATION	5.39	91081924813
4	2	TANK MID-MOUNT PLATE	165.043	90181164545
5	2	PLUG, 1" SQUARE HEAD BIP	0.32	BIP1XPLUG
6	2	PLUG, 2" SQUARE HEAD BIP	1.67	BIP2XPLUG
7	1	SENSOR ASSEMBLY FUEL LEVEL	17.408	336-9883



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GROUND FORCE
WORLDWIDE

TITLE:
FUEL TANK AND CYL MOUNTS, 12K

DWG. NO.

936433

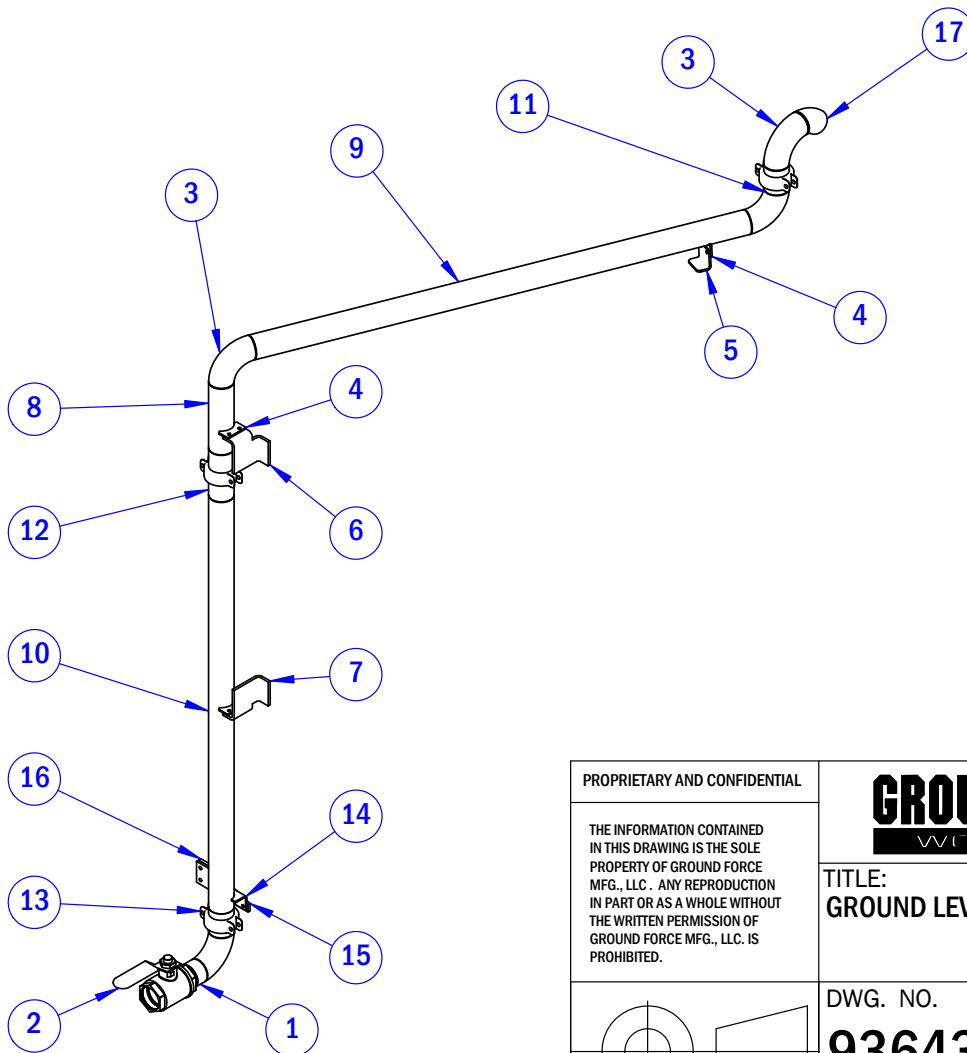
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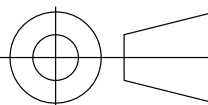
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	NIPPLE 3" X 3" NPT WELD-ON SS	1.77	PNS3000
2	1	BALL VALVE 3" BRASS	21.698	3451VA021
3	4	ELBOW, 3" SCH40SS LR WELD-90	4.50	4500SM390
4	3	BRACKET, 2-1/2" PIPE	0.352	90181174988
5	1	BRACKET	1.072	90181164151
6	1	MOUNTING BRACKET	3.881	90181174992
7	1	MOUNTING BRACKET	3.881	90181174991
8	1	PIPE SECTION, STAINLESS	7.085	90181174982
9	1	PIPE SECTION, STAINLESS	47.661	90181174983
10	1	PIPE SECTION, STAINLESS	44.441	90181174984
11	4	3" STAINLESS VIC MODIFICATION	1.060	91081936526
12	2	NIPPLE 3" VICTAULIC STAINLESS	2.17	VIC42-3S
13	3	CLAMP 3" VICTAULIC	4.92	VIC77-3
14	1	BRACKET, 2-1/2" PIPE	1.203	90181174989
15	1	PIPE MOUNT PLATE	2.767	90181173225
16	1	TAP PAD	1.683	90181173226
17	1	3" STAINLESS ELBOW, MODIFIED TO 45 DEG	2.253	91081936527



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GROUND FORCE
WORLDWIDE

TITLE:
GROUND LEVEL FILL, 12K

DWG. NO.

936432

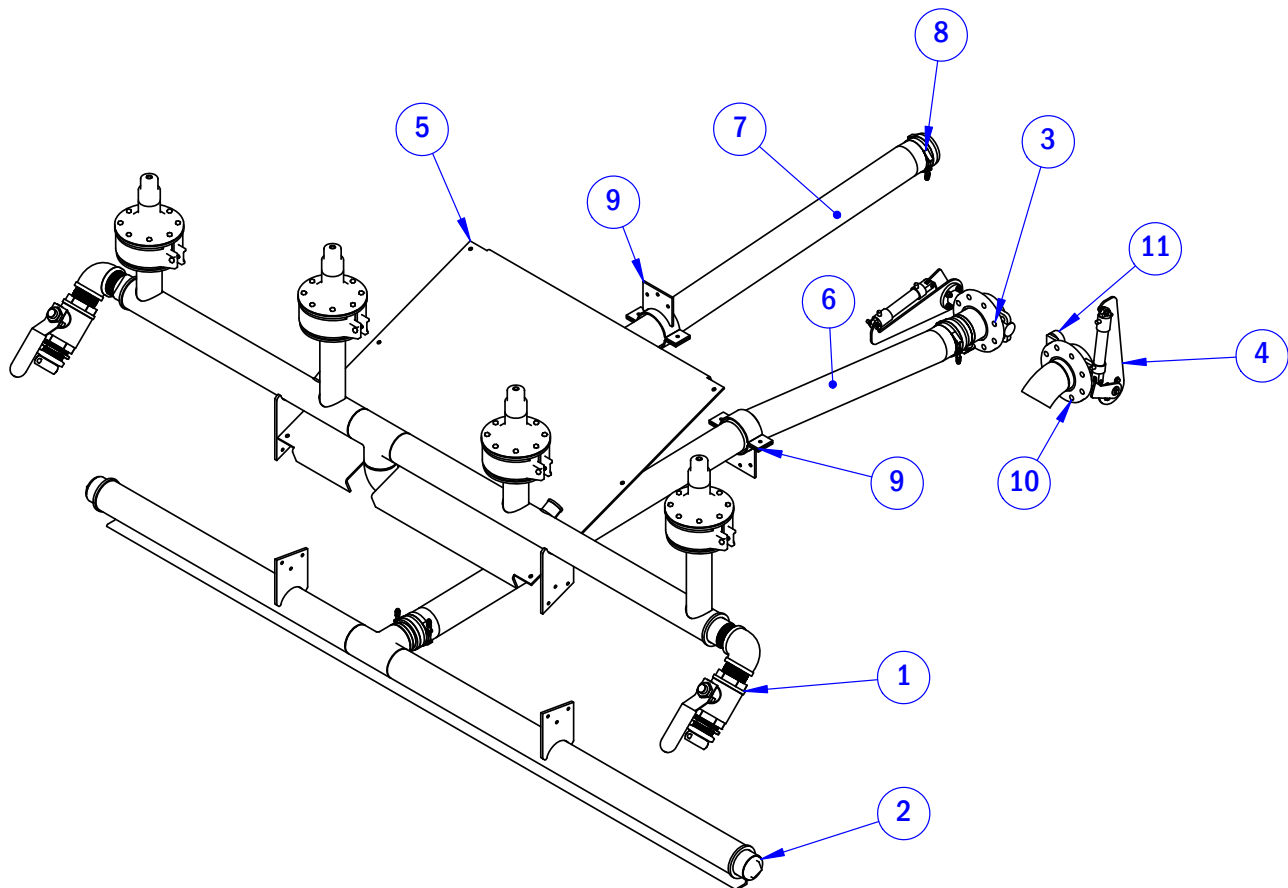
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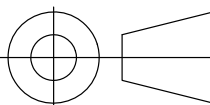
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	REAR SPRAY BAR	302.23	91081936532
2	1	4" DIA. GRAVITY DUMP BAR, STAINLESS	179.60	91081936533
3	1	ADAPTER, STAINLESS, 4" FLANGE TO 4" HOSE	17.47	91081936552
4	2	4" HYD OP BUTTERFLY VALVE	0.00	91081923653
5	1	LOWER COVER PLATE	156.211	91081936546
6	1	HOSE	17.272	90181175000
7	1	HOSE	15.408	90181174999
8	8	CLAMP 4-1/2" T-BOLT	0.217	TBC450
9	2	PIPE CRADLE	5.34	91081936547
10	1	ADAPTER, 4" FLANGE TO 45 DEGREE ELBOW	17.67	91081936550
11	1	PLUG, 2" SQUARE HEAD, BRASS	1.80	B2XPLUG



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GROUND FORCE
WORLDWIDE

TITLE:
**REAR WATER DISTRIBUTION
ASSEMBLY, 12K**

DWG. NO.

936435

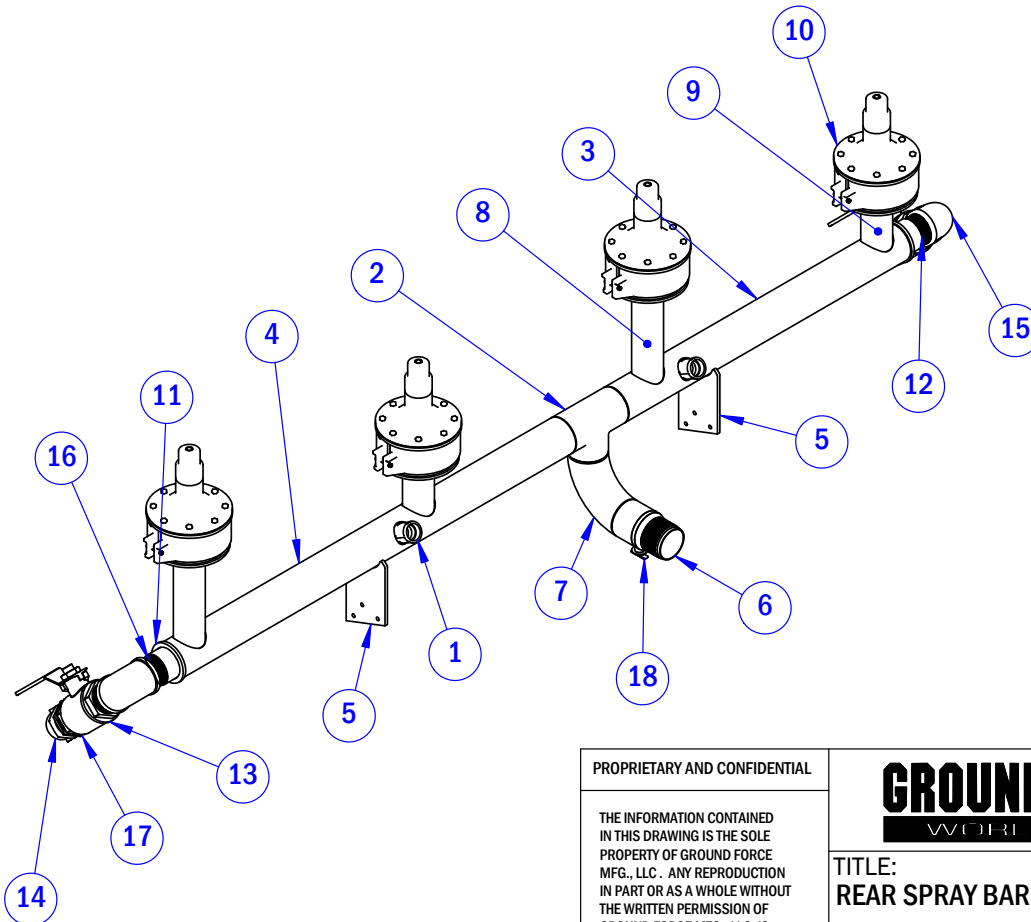
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REV

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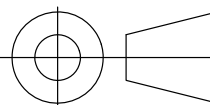
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	2	COUPLER 1.5" NPT 304 STAINLESS	0.89	S1.5XCPL
2	1	TEE 4" STANDARD BUTT WELD STAINLESS	8.87	4500SM026
3	1	PIPE, STAINLESS	38.00	90181175031
4	1	PIPE, STAINLESS	53.60	90181175032
5	2	SPRAY BAR SUPPORT CRADLE	5.43	90181175001
6	1	MODIFIED 4" STAINLESS KING NIPPLE	2.65	91081936505
7	1	ELBOW 4" SCH40SS LR WELD-90	8.58	4500SM492
8	2	STAINLESS RISER PIPE, LONG	7.73	90181175035
9	2	STAINLESS RISER PIPE, SHORT	3.86	90181175036
10	4	MAXI SPRAY VALVE HYDRAULIC OPERATED	20.00	MX80-DA-H-MK2
11	2	COUPLER ADAPTER	0.79	90181154306
12	2	COUPLER 3" SS	1.29	S3XCPL
13	2	BALL VALVE 3" BRASS	21.698	3451VA021
14	2	ADAPTER 2-1/2 MALE NPT X 2-1/2 FEMALE NST SWIVEL PIN LUG BRASS	2.91	SM250F-D
15	2	ELBOW 3" 90 DEGREE BIP	5.55	BIP3X90
16	4	NIPPLE 3" CLOSE	1.16	BIP3XCL
17	2	BUSHING 3" X 2-1/2" BIP	1.79	BIP3X2.5B
18	1	PIPE SECTION, LOW POINT DRAIN	2.993	91081936553



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GROUND FORCE
WORLDWIDE

TITLE:
REAR SPRAY BAR

DWG. NO.

936532

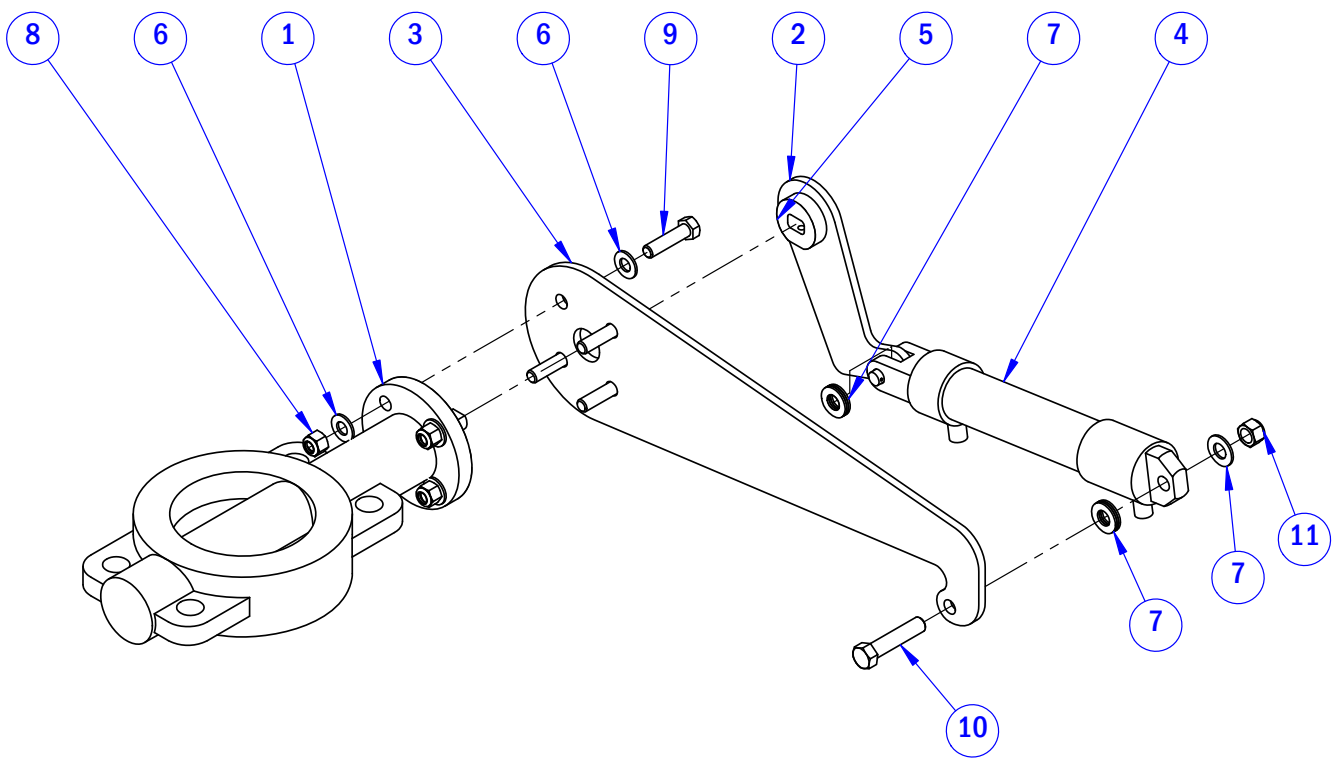
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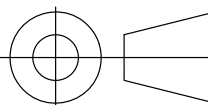
SHEET 1 OF 1

ITEM	QTY	DESCRIPTION	WEIGHT	ERP
1	1	VALVE 4" BUTTERFLY 150# FLANGE	19.9	20169040
2	1	ACTUATING ARM FOR 6" 8" AND 10" BUTTERFLY - HYDRAULIC	0.8	90181112277
3	1	STATIONARY ARM - FOR 6" 8" AND 10" BUTTERFLIES - HYDRAULIC	3.9	90181112276
4	1	CYLINDER 1.25" BORE 6" STROKE	5.8	22095662228
5	1	WELD-IN HUB, 4" BUTTERFLY VALVE	0.2	90181149945
6	8	3/8" FLAT CUT WASHER PLATED	0.0	1101.037.0.20
7	7	7/16" FLAT CUT WASHER PLATED	0.0	1101.043.0.20
8	4	3/8"-16 NC NYLOC NUT, PLATED	0.0	0120.037.01.20
9	4	3/8" X 1-1/2" NC GR8 BOLT, PLATED	0.0	0801.037.0150.20
10	1	7/16 X 2 NC GR8 BOLT PLATED	0.0	0801.043.0200.20
11	1	7/16 NC NYLOC NUT PLATED	0.0	0120.043.01.20



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GROUND FORCE
WORLDWIDE

TITLE:
4" HYD OP BUTTERFLY VALVE

DWG. NO.

923653

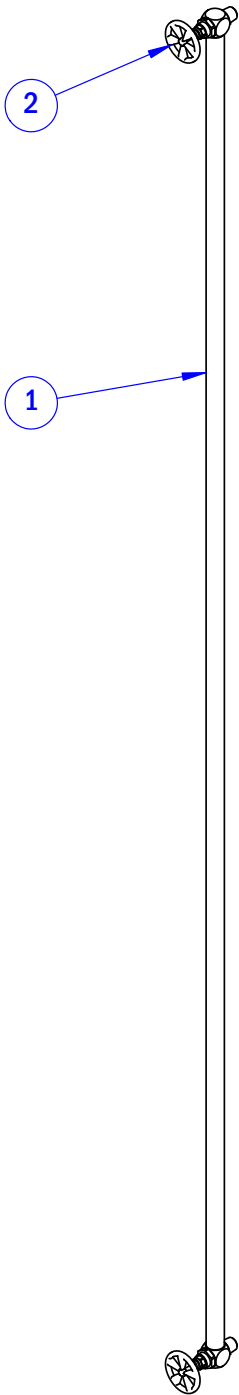
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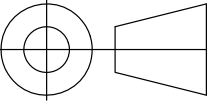
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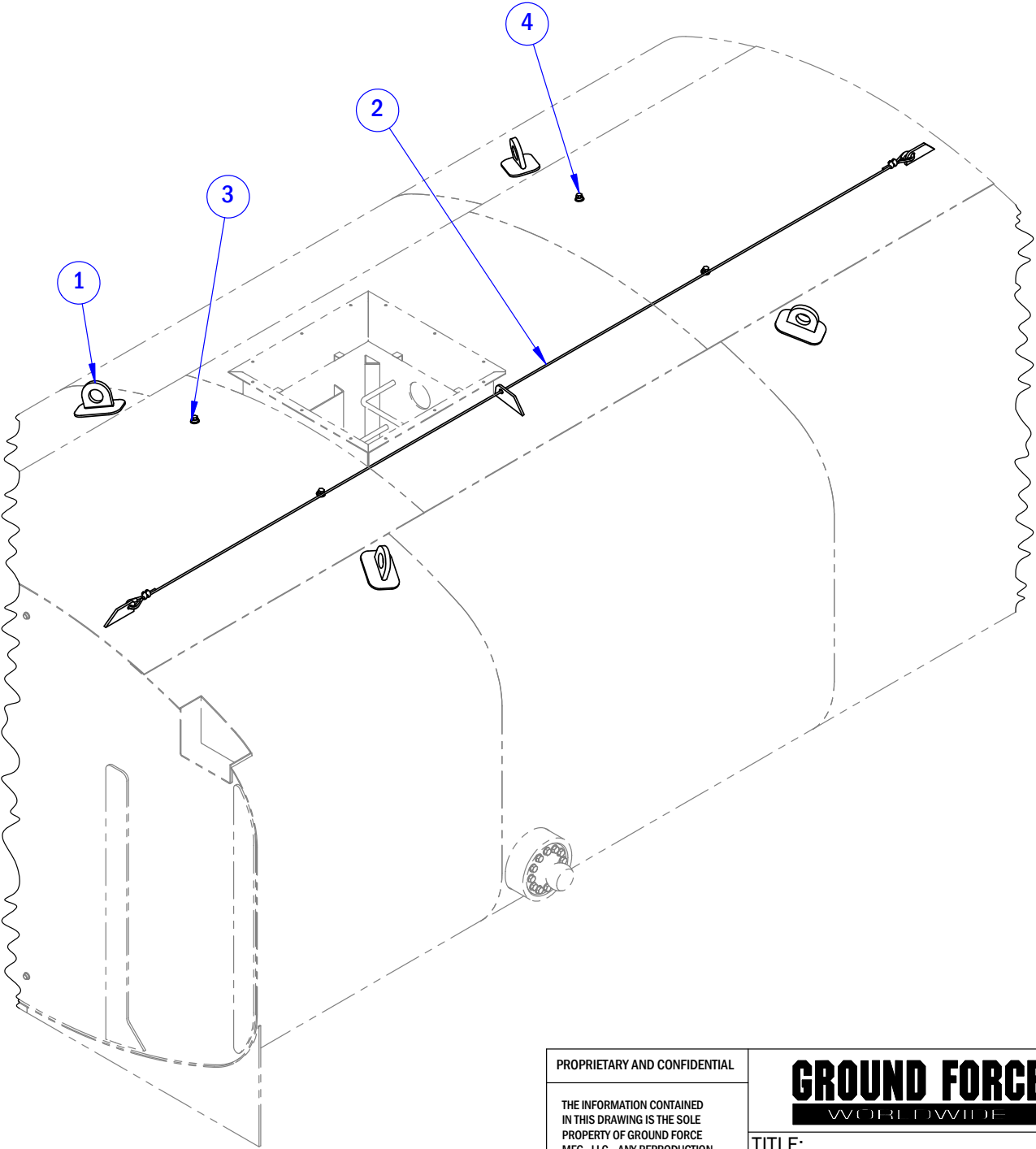
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	HOSE 3/4 ID 1 OD CLEAR	1.17	90181174985
2	2	DRAIN COCK 1/2" MPT 3/4"	0.96	1451



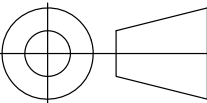
PROPRIETARY AND CONFIDENTIAL		GROUND FORCE WORLDWIDE	
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		DWG. NO. 936436	REV 0
		WEIGHT: 3.079	SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	4	HEAVY LIFTING EYE	12.77	91081911137
2	1	PPE TIE OFF CABLE, 631 WATER PULL	16.85	91081936575
3	4	FLANGE 3/4" WELDABLE BIP	0.15	BIP.75PHX
4	4	ANODE 3/4" X 44" MAGNESIUM POLE	1.24	99000971



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GROUND FORCE
WORLDWIDE

TITLE:
**COMPONENTS, TOP OF TANK, CAT
631, 12K**

DWG. NO.

936437

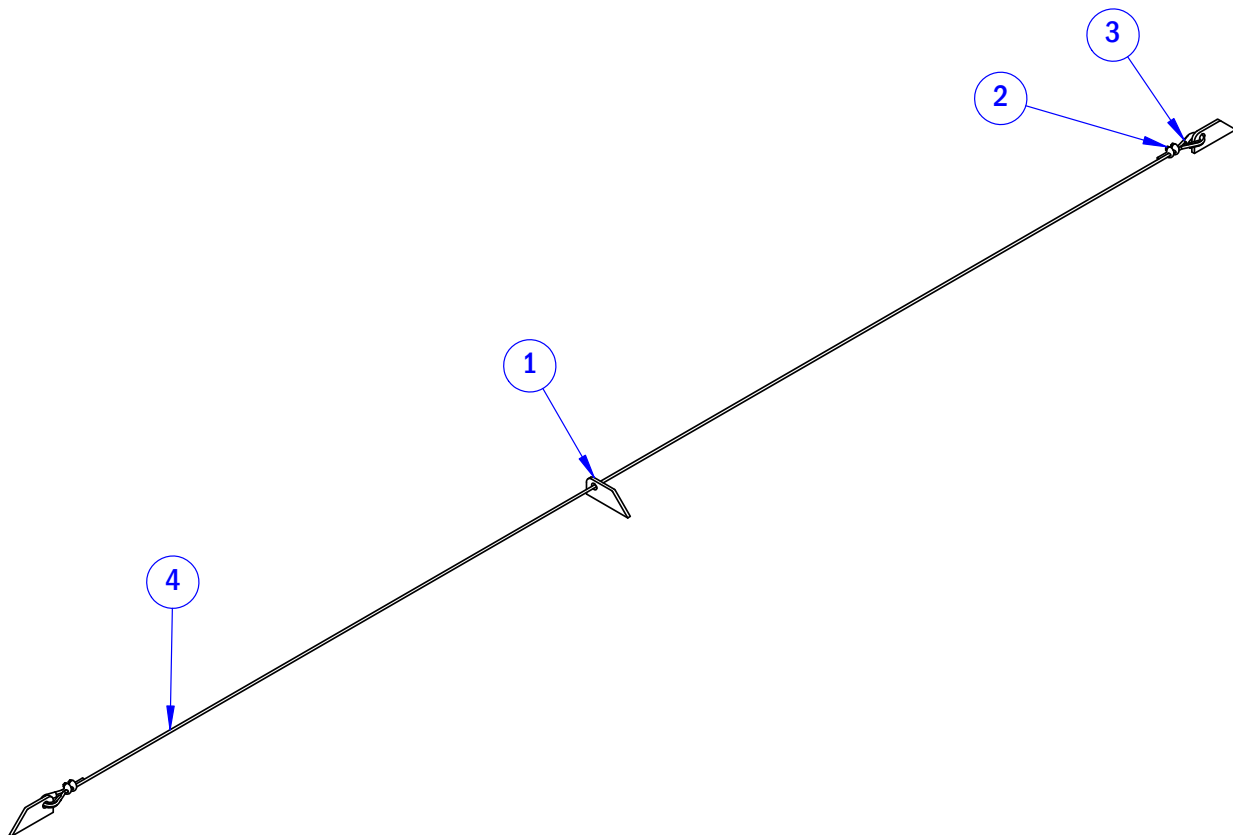
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REV

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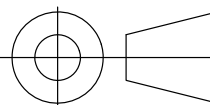
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	3	SAFETY CABLE EYES	2.61	90181104626
2	4	CLIP, 3/8" WIRE ROPE	0.20	6700WH023
3	2	THIMBLE, 3/8"	0.23	6700WH024
4	1	PPE CABLE 3/8" AIRCRAFT	7.76	90181175078



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GROUND FORCE
WORLDWIDE

TITLE:

**PPE TIE OFF CABLE, 631 WATER
PULL**

DWG. NO.

936575

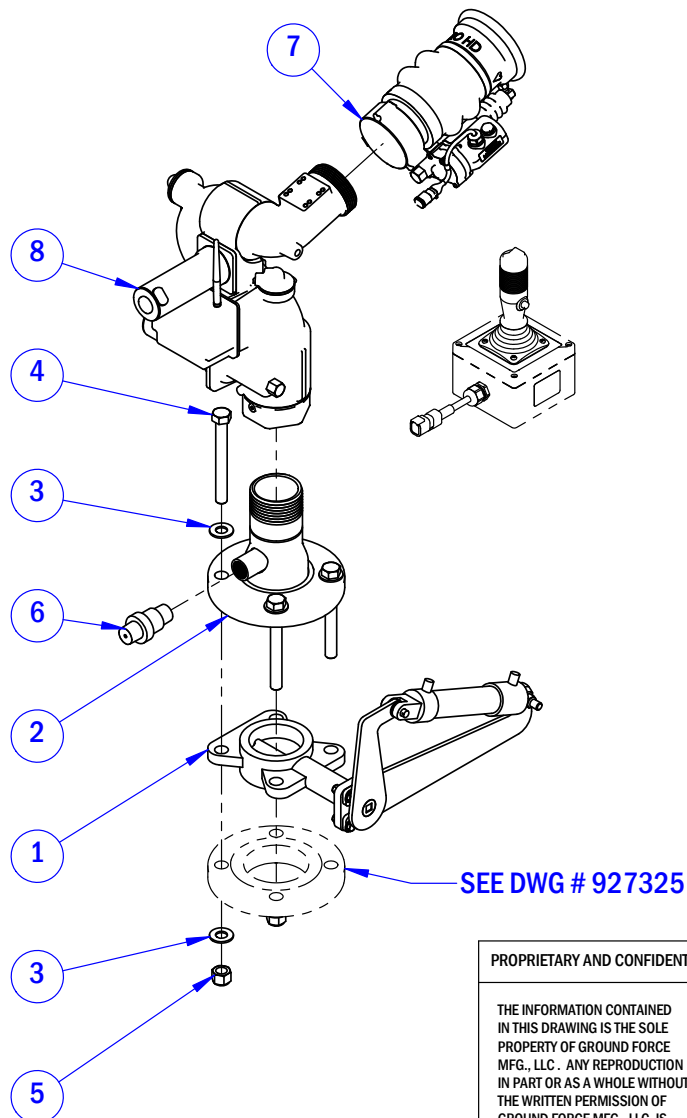
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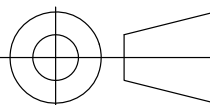
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	3" HYDRAULIC BUTTERFLY ASSEMBLY	17.87	91081924534
2	1	ADAPTER WATER MONITOR ELKHART	11.55	91081916666
3	8	5/8" FLAT WASHER L-9	0.003	0945.062.0.20
4	4	5/8 X 5-1/2 NC GR8 BOLT PLATED	0.0728	0801.062.0550.20
5	4	5/8"-11 NC NYLOC NUT PLATED	0.092	0120.062.01.20
6	1	VALVE AUTO DRAIN 2/3GPM >10 PSI	0.738	20401573001
7	1	NOZZLE 500 GPM NITRO HD	4.67	52298000803
8	1	MONITOR 2.5" FPT 12-24VDC 750 GPM 250 PSI WITH CONTROL MODULE, JOYSTICK, 8' JOYSTICK & 15' MONITOR HARNESS	17.00	52298008102
9	1	NITRO HD JOYSTICK	-	52098067000



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GROUND FORCE
WORLDWIDE

TITLE:

WATER CANNON, NITRO JOYSTICK,
500 GPM, ADJUSTABLE NOZZLE

DWG. NO.

932134

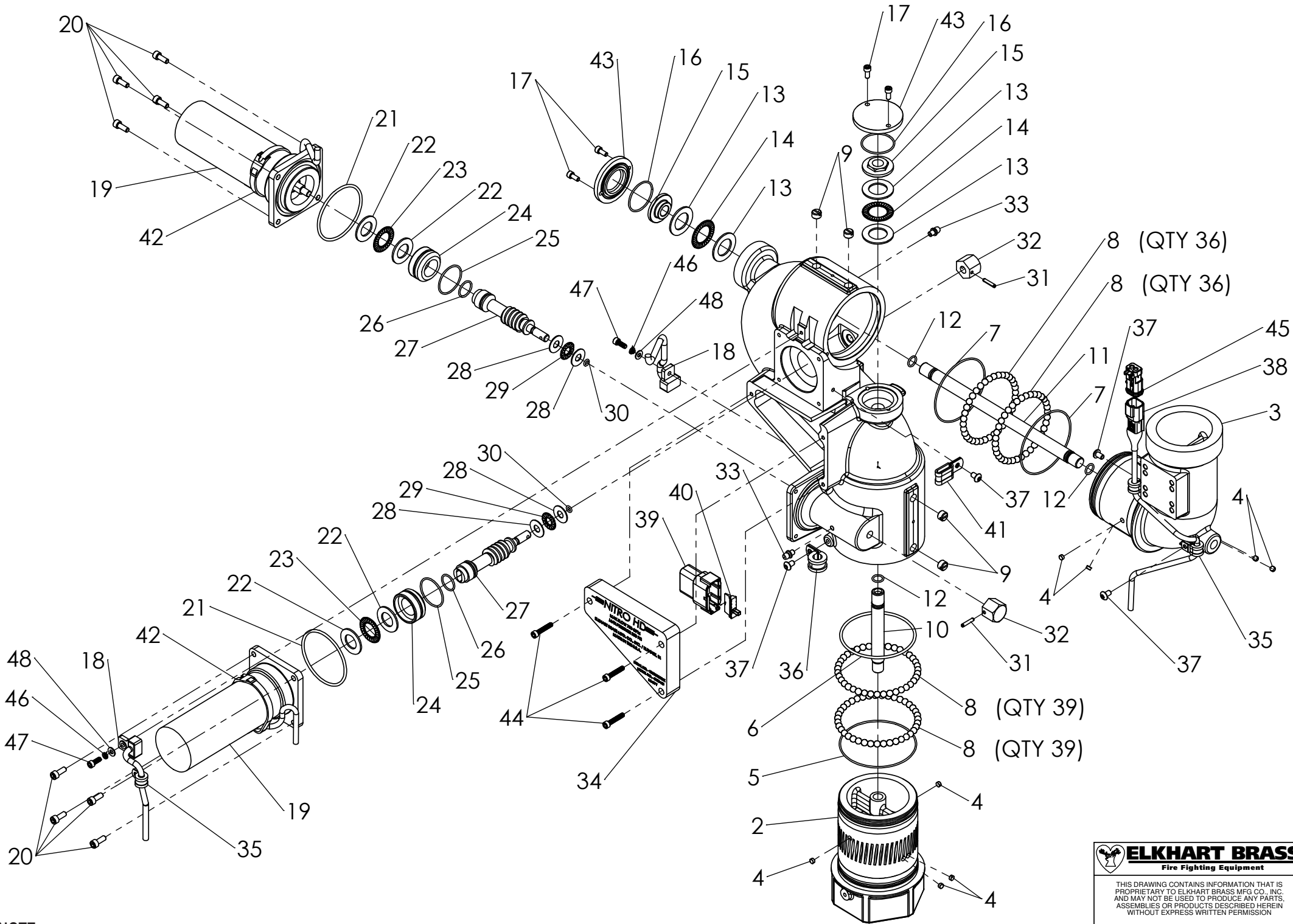
WEIGHT: 52.51

REV

0

SHEET 1 OF 1

ITEM	PART #	DESCRIPTION	QTY
1	16258001	BODY - INLET (8100)	1
2	18037001	BASE MONITOR 2.5 NPT (NITRO HD)	1
3	28452001	ELBOW - DISCHARGE (NITRO HD)	1
4	46057000	MAGNET - 5MM DIA X 2.5MM HT N/S	8
5	57498000	O RING AS-568-041 2.989 X.070	1
6	57563000	O RING AS-568-150 2.862 X.103	1
7	57547000	O RING AS-568-039 2.739 X.070	2
8	15027000	BALL (0.250 DIA) STAINLESS STEEL	150
9	63688000	SCREW-SET (.375-24 X .25) BLACK NYLON (6/6)	4
10	65879001	SHAFT - THRUST (SHORT) RFA	1
11	65880001	SHAFT - THRUST (LONG) RFA	1
12	57298000	O RING AS-568-012 .364 X.070	3
13	71518000	WASHER - 3/4" THRUST	4
14	17705000	BEARING THRUST 3/4"	2
15	47637001	NUT BEARING ADJUST (7100) EXM	2
16	57397000	O RING AS-568-026 1.239 X.070	2
17	63781000	SCREW 8-32X0.375 SOC CAP SS	4
18	67566000	SENSOR - EOT (NITRO HD)	2
19	46114000	MOTOR - GEAR NITRO HD	2
20	61037000	SCREW 10-24X0.500 SOC CAP SS	8
21	57383000	O RING AS-568-141 2.300 X.103	2
22	71513000	WASHER THRUST 5/8"	4
23	15699000	BEARING THRUST 5/8"	2
24	17707001	BEARING BUSHING	2
25	57337000	O RING AS-568-025 1.176 X.070	2
26	57295000	O RING AS-568-016 .614 X.070	2
27	65658000	SHAFT-WORM	2
28	71516000	WASHER-THRUST (5/16)	4
29	17702000	BEARING THRUST 5/16"	2
30	57380000	O RING AS-568-008 .176 X.070	2
31	51248000	PIN ROLL 79-028-125-0.625	2
32	47652001	NUT OVERRIDE (3/4 HEX BR) 8494	2
33	31011000	GREASE FITTING (3/16 DR-SS)	2
34	44808001	LABEL - 8100 HD NAMEPLATE	1
35	23735000	CLAMP CUSHIONED LOOP TYPE 1/4	3
36	23570000	CLAMP - LOOP CUSHIONED (1/2" DIA)	1
37	64132000	SCREW 10-24X0.312 BUTHD CAP SS	4
38	37521000	HARNESS - STRAIGHT NOZZLE (DEUTSCH)	1
39	24177300	DEUTSCH RECEPTACLE, DTM04-12PC	1
40	24177400	DEUTSCH WEDGE LOCK WM-12P	1
41	24502000	CLAMP - CUSHION CLAMP 4 TUBE	1
42	67206000	TIE - CABLE 14" LG X 0.3" WIDE	2
43	24671001	COVER - THRUST (ALUM)	2
44	64167000	SCREW 8-32X0.875 SOC CAP SS	3
45	24198000	DEUTSCH PLUG, DT06-2S-C017	1
46	71705000	WASHER - LOCK #8, 316 SS	2
47	64168000	SCREW - 8-32 X 0.4375 LG	2
48	71609000	WASHER #8	2



NOTE:
• ITEMS HIGHLIGHTED IN YELLOW ARE INCLUDED IN PM KIT 52298008102-PM-1

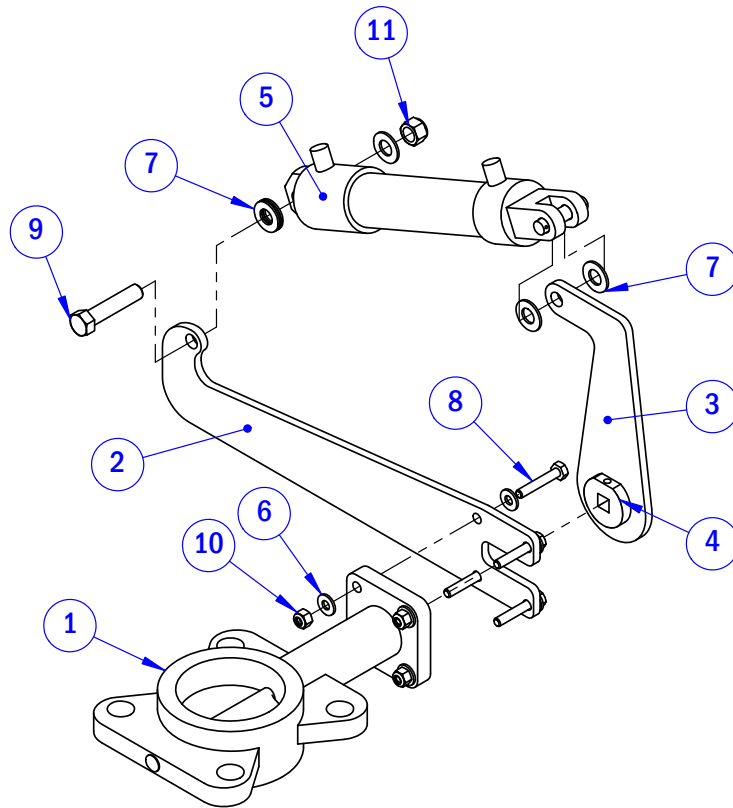
**ELKHART BRASS**
Fire Fighting Equipment

THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO ELKHART BRASS MFG CO., INC. AND MAY NOT BE USED TO PRODUCE ANY PARTS, ASSEMBLIES OR PRODUCTS DESCRIBED HEREIN WITHOUT EXPRESS WRITTEN PERMISSION.

8100 HD (NITRO HD) -
WATER CANNON (PARTS)
PAGE 1 OF 2

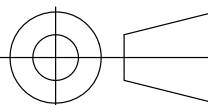
VER. 1.0
PARTS
DRAWING

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	VALVE 3" BUTTERFLY BUNA 150#	8.53	3451VA063
2	1	ARM, ACTUATOR 6" STROKE	2.17	90181111590
3	1	MONITOR, SMALL ARM, 3" BUTTERFLY	1.05	90181145355
4	1	WELD IN HUB, 3" BUTTERFLY VALVE	0.17	90181118367
5	1	CYLINDER 1.25" BORE 6" STROKE	5.85	22095662228
6	8	1/4" FLAT WASHER L-9	0.001	0945.025.0.20
7	6	7/16" FLAT WASHER L-9	0.001	0945.043.0.20
8	4	1/4" X 1-1/2" NC GR8 BOLT, PLATED	0.0038	0801.025.0150.20
9	1	7/16 X 2 NC GR8 BOLT PLATED	0.0147	0801.043.0200.20
10	4	1/4"-20 NC NYLOC NUT, PLATED	0.010	0120.025.01.20
11	1	7/16 NC NYLOC NUT PLATED	0.023	0120.043.01.20



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GROUND FORCE
WORLDWIDE

TITLE:
**3" HYDRAULIC BUTTERFLY
ASSEMBLY**

DWG. NO.

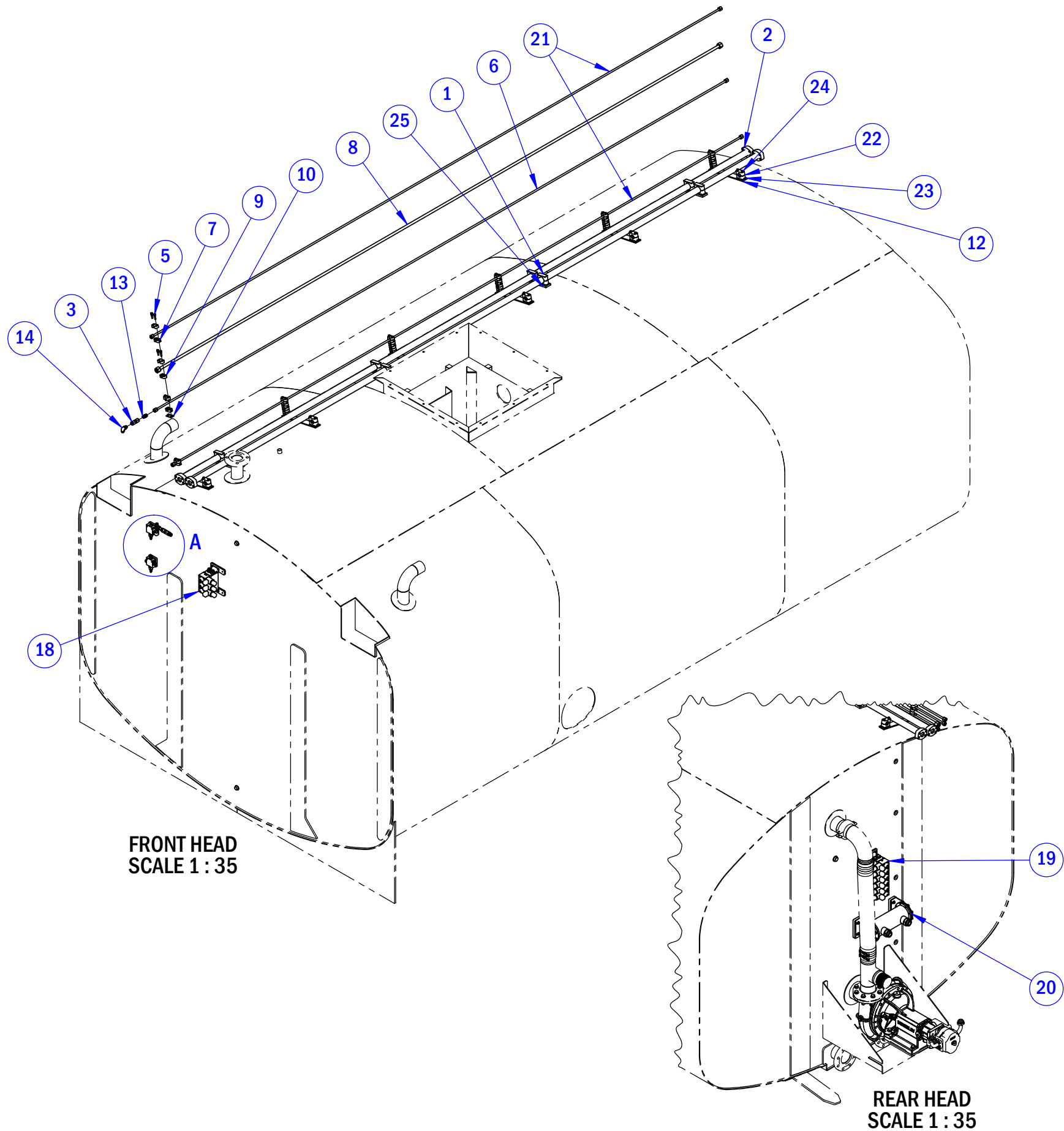
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REV

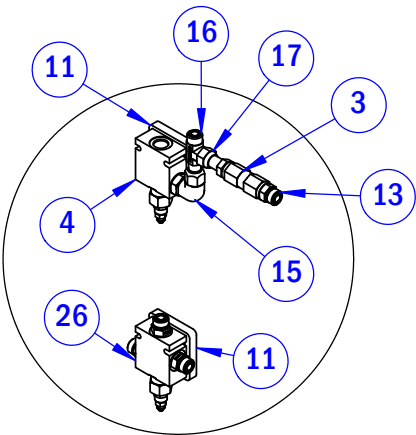
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WEIGHT: 17.87

SHEET 1 OF 1



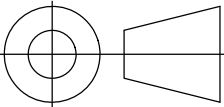
ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	16	CLAMP, 1-1/2" PIPE GROUP 6S	0.16	9483HY060
2	2	HYDRAULIC PRESSURE/RETURN HARDLINE	76.540	91081936557
3	2	CHECK VALVE, #8 SAE INLINE 5PSI	0.47	3212HY003
4	1	PRESSURE REDUCING VALVE	1.30	91081924179
5	48	BOLT STACKING GROUP 3	0.05	9483HY028
6	1	HARDLINE ASSEMBLY, -8 PILOT LINE	5.04	91081936558
7	36	CLAMP, 1/2" TUBE GROUP 3	0.00	9483HY033
8	1	HARDLINE ASSEMBLY, -12 CASE DRAIN	7.93	91081936559
9	12	CLAMP, 3/4" TUBE GROUP 3	0.05	9483HY037
10	6	STAUFF GROUP 3 CLAMP RAIL 1-STATION	57.46	90181164629
11	2	PRV SPACER PLATE	1.252	90181164165
12	6	PLATE	2.04	90181175045
13	2	CONNECTOR 1/2" ORFS 1/2" ORB STRAIGHT	0.16	FF6400-8-8
14	1	ELBOW, 1/2" ORFS 1/2" ORB 90DEG	0.04	FF6801-8-8
15	1	ADAPTOR 1/2" MORFS, 5/8" MORB 90	0.06	FF6801-8-10
16	1	TEE, 1/2" FLAT FACE O-RING	0.05	FF6602-8-8-8
17	1	CONNECTOR, 1/2" ORFS 1/2" ORB STRAIGHT	0.23	FF6402-8-8
18	1	HYDRAULIC MANIFOLD, 3 STATION, 3 SOLENOID	22.84	91081924494
19	1	HYDRAULIC MANIFOLD, 6 STATION, 6 SOLENOID	42.85	91081924837
20	1	WATER TO OIL COOLER, THERMAL TRANSFER	36.39	91081935273
21	2	HARDLINE ASSEMBLY, -8 BRAKE/HOSE REEL	5.01	91081936560
22	12	CLAMP, 1-1/4" TUBE GROUP 5	0.11	9483HY055
23	6	CLAMP WELD PLATE GROUP 5	0.14	9483HY050
24	12	BOLT STACKING GROUP 5	0.06	9483HY048
25	4	PLATE	2.29	90181175046
26	1	PRESSURE REDUCING VALVE, HOSE REEL	1.78	91081926213



DETAIL A
SCALE 1 : 10

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TITLE:
HYDRAULICS LAYOUT, 12K

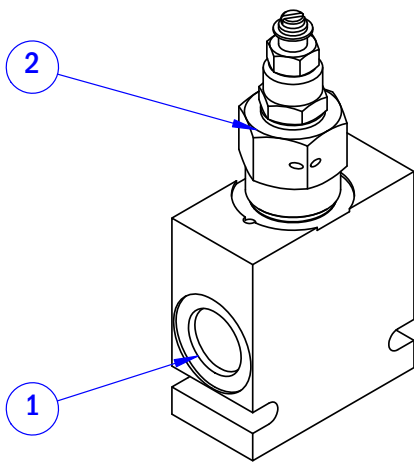
DWG. NO.
936438

WEIGHT: 316.242

REV
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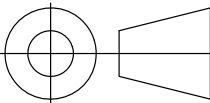
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	VALVE BODY, #10 3-WAY #8 PORTS	0.74	3200HY1038
2	1	VALVE, PRESSURE REDUCING 1500PSI *	0.56	3200HY230



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GROUND FORCE
WORLDWIDE

TITLE:
PRESSURE REDUCING VALVE

DWG. NO.

924179

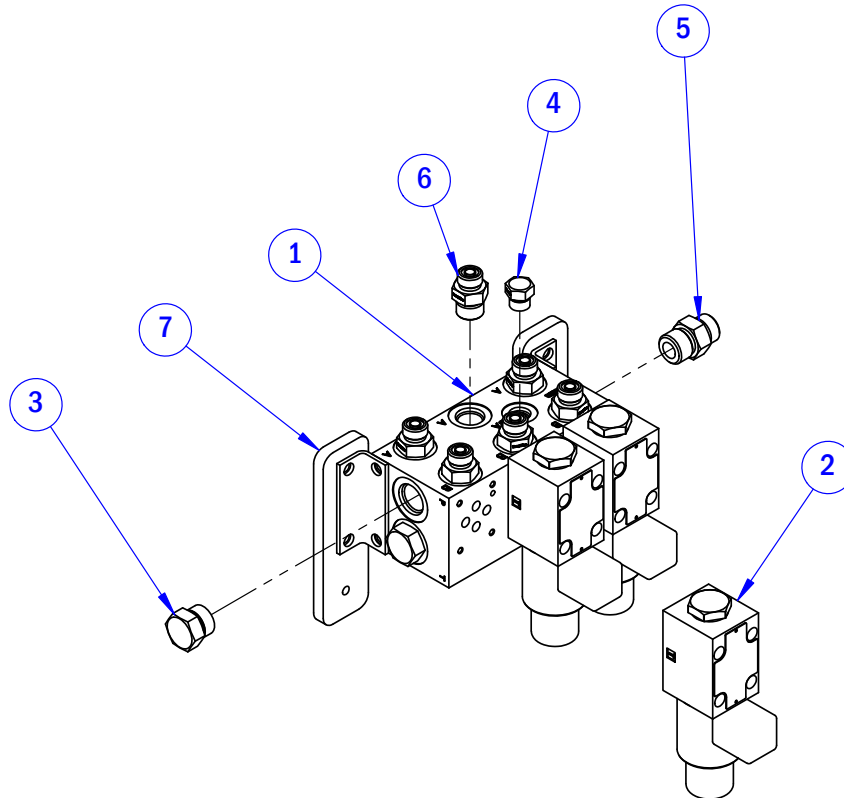
WEIGHT: 1.30

REV

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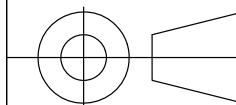
SHEET 1 OF 1

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	MANIFOLD, 3 STATION AD03P PARALLEL	5.3	3292HY032
2	3	SOLENOID VALVE 24V SPRAY VALVE	4.8	3292HY631
3	2	PLUG, HEX HEAD, SIZE 10	0.2	6408-10
4	1	PLUG #6 ORB	0.0	6408-6
5	2	CONNECTOR 1/2"ORFS 5/8"ORB STRAIGHT	0.2	FF6400-8-10
6	6	CONNECTOR 3/8" ORFS 1/2" ORB	0.0	FF6400-6-8
7	2	TAP PAD FOR HYTOS BLOCKS	1.0	90181160910



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GROUND FORCE
WORLDWIDE

TITLE:
**HYDRAULIC MANIFOLD, 3
STATION, 3 SOLENOID**

DWG. NO.

924494

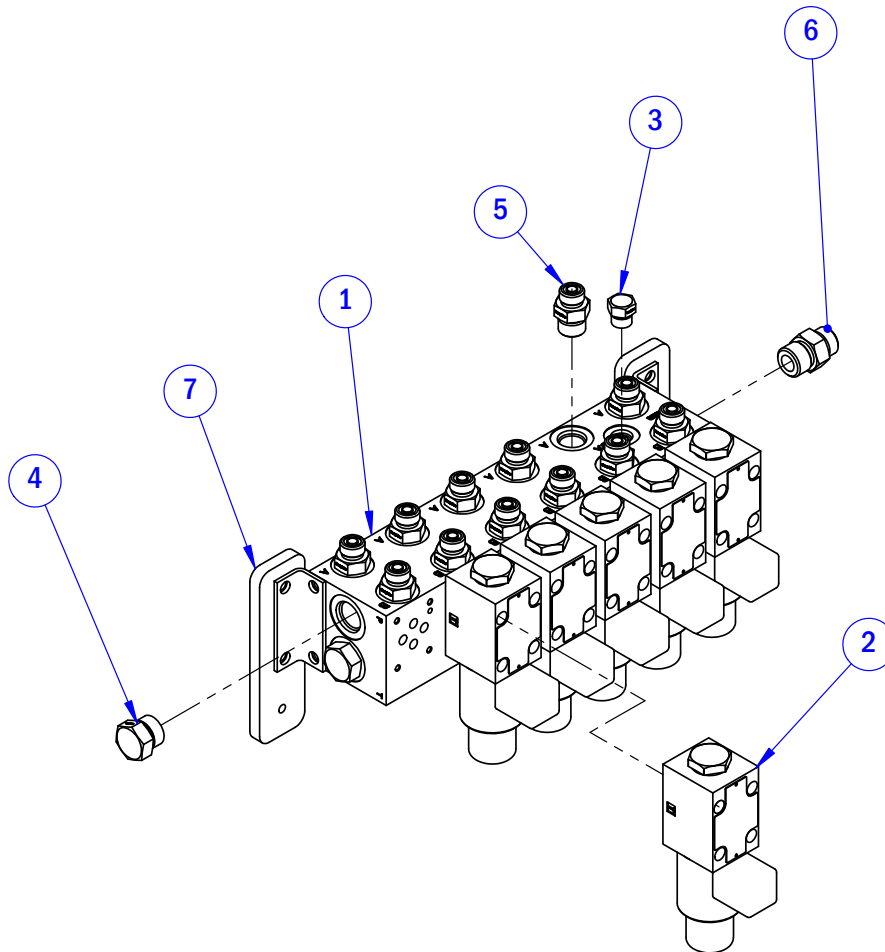
REV

4

WEIGHT: 22.84

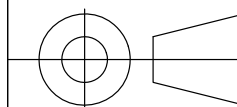
SHEET 1 OF 1

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	MANIFOLD, 6 STATION AD03P PARALLEL	10.6	3292HY062
2	6	SOLENOID VALVE 24V SPRAY VALVE	4.8	3292HY631
3	1	PLUG #6 ORB	0.0	6408-6
4	2	PLUG, HEX HEAD, SIZE 10	0.2	6408-10
5	12	CONNECTOR 3/8" ORFS 1/2" ORB	0.0	FF6400-6-8
6	2	CONNECTOR 1/2"ORFS 5/8"ORB STRAIGHT	0.2	FF6400-8-10
7	2	TAP PAD FOR HYTOS BLOCKS	1.0	90181160910



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GROUND FORCE
WORLDWIDE

TITLE:
**HYDRAULIC MANIFOLD, 6
STATION, 6 SOLENOID**

DWG. NO.

924837

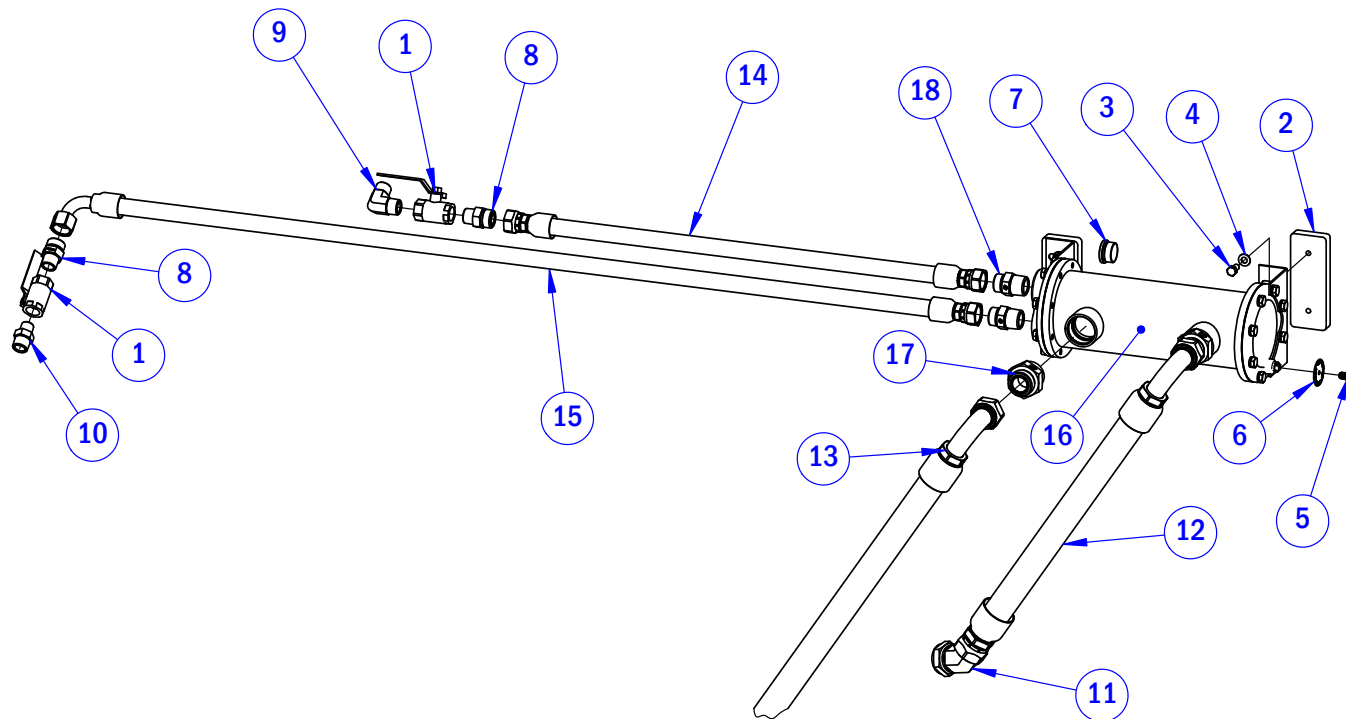
REV

3

WEIGHT: 42.85

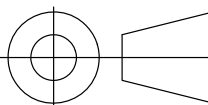
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	2	BALL VALVE, 3/4" BRASS	0.88	3451VA004
2	2	WELD FOOT, WATER TO OIL COOLER	3.39	90181153908
3	4	3/8" X 3/4" NC GR8 BOLT PLATED	0.0056	0801.037.0075.20
4	4	3/8" FLAT CUT WASHER PLATED	0.001	1101.037.0.20
5	1	DRAIN COCK 1/4" MPT	0.03	145WHD
6	1	TAG LOW POINT DRAIN ALUMINUM 1-3/4" RED CIRCLE	0.01	75200058134
7	1	PLUG #16 ORB ALLEN HEAD	0.272	6408-HHP-16
8	2	ADAPTER 3/4" ORFS 3/4" MPT STRAIGHT	0.37	FF2404-12-12
9	1	ELBOW 3/4" MPT 90DEG MALE	0.431	5500-12-12
10	1	NIPPLE 3/4" MPT 1/2" MPT	0.248	5404-12-8
11	1	ADAPTER 1-1/4" TUBE	1.33	6502-20-20
12	1	HOSE, RETURN PUMP TO COOLER	2.934	91081934810
13	1	HOSE, COOLER TO HARDLINE RETURN	5.665	91081934811
14	1	HOSE, COOLER WATER LINE TO TANK	0.693	91081934812
15	1	HOSE, COOLER WATER LINE TO PUMP	1.903	91081934813
16	1	WATER COOLED HYDRAULIC OIL COOLER	9.204	23095001014
17	2	CONNECTOR 1-1/4" ORFS 1-1/2" ORB STR	1.144	FF6400-20-24
18	2	ADAPTER 3/4" ORFS 1" MPT STRAIGHT	0.465	FF2404-12-16



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GROUND FORCE
WORLDWIDE

TITLE:

**WATER TO OIL COOLER, THERMAL
TRANSFER**

DWG. NO.

935273

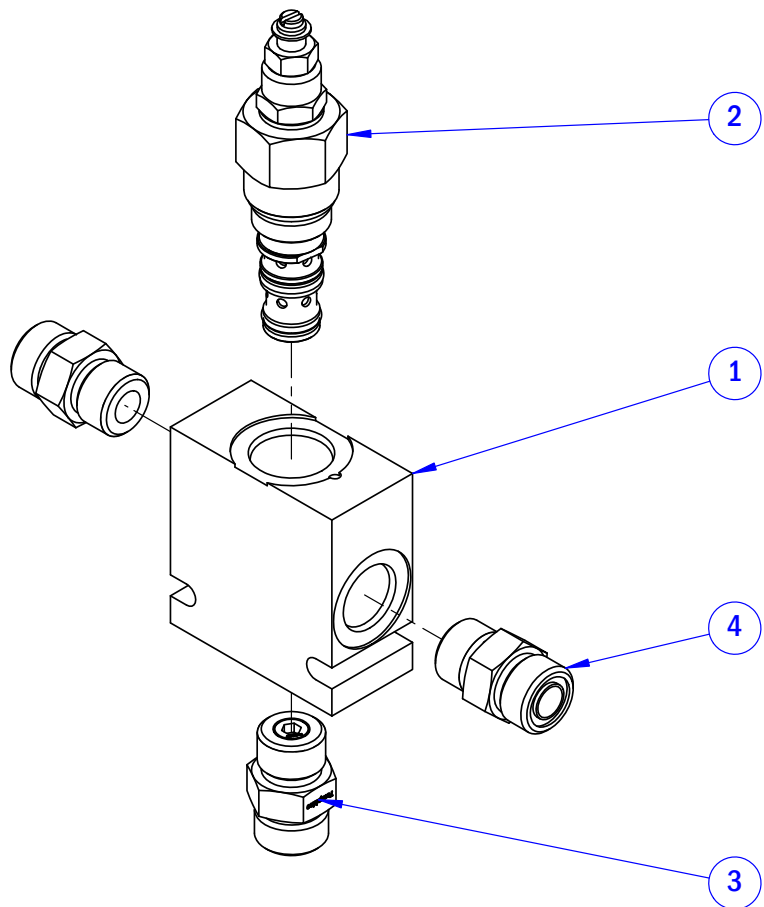
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REV

0

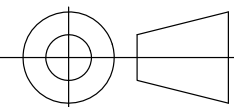
SHEET 1 OF 1

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	VALVE BODY, #10 3-WAY #8 PORTS	0.74	3200HY1038
2	1	VALVE, PRESSURE REDUCING 1500PSI	0.56	3200HY230
3	1	ORIFICE, HOSE REEL, 2 GPM ADAPTER	0.17	91081926204
4	2	CONNECTOR 1/2"ORFS 1/2"ORB STRAIGHT	0.16	FF6400-8-8



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GROUND FORCE
WORLDWIDE

TITLE:
**PRESSURE-REDUCING VALVE,
HOSE REEL**

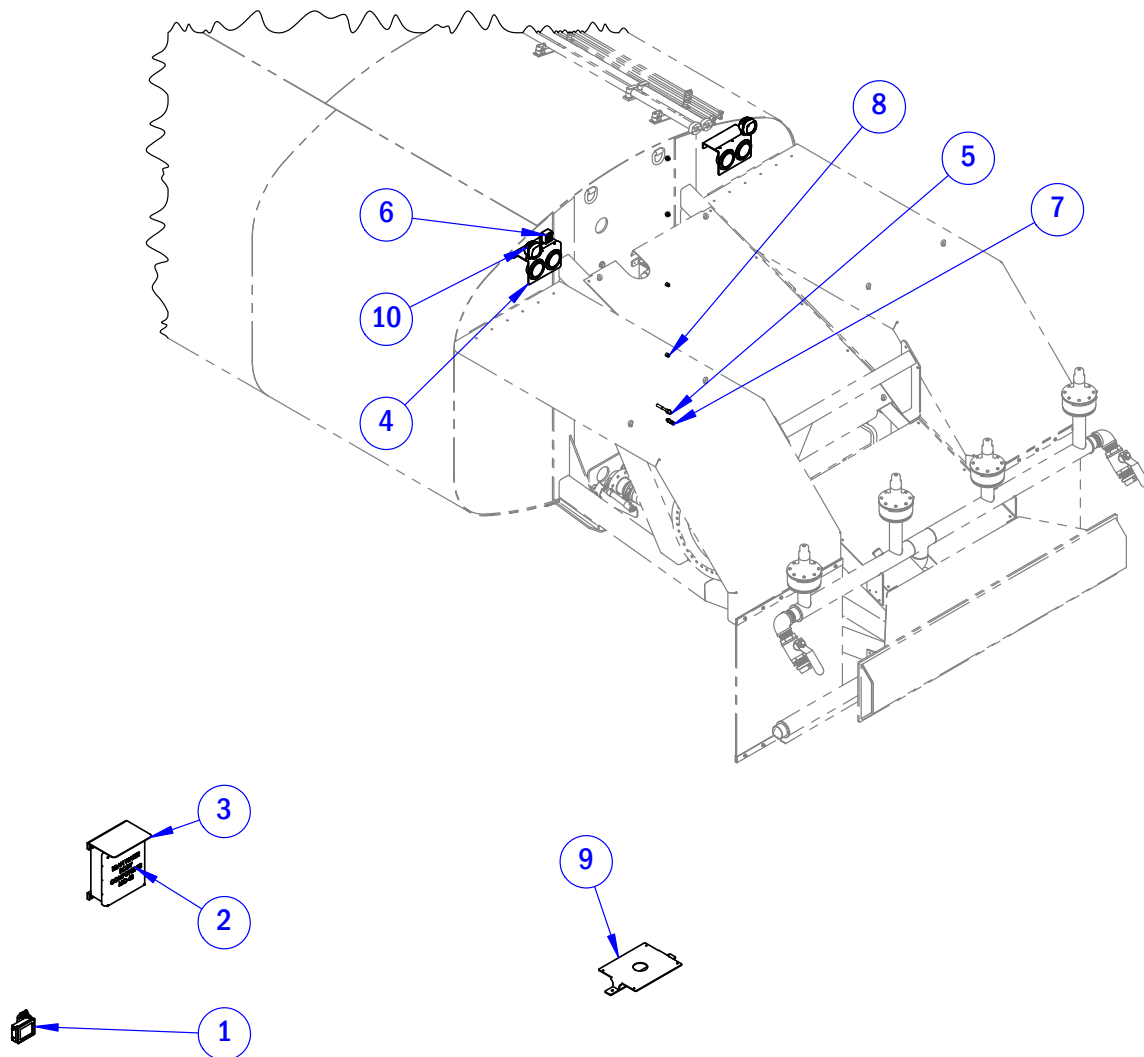
DWG. NO.
926213

REV
0

WEIGHT: 1.78

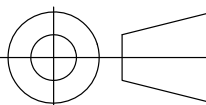
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	E-HARNESS, WCS, DISPLAY W/O KEYPADS	1.857	91081936088
2	1	IQAN MAIN ELECTRICAL BOX (LARGE) - WATER BODY MC-42	11.47	91081936075
3	1	BOX MOUNT W/SHEDDER, MAIN ELECTRICAL	18.359	91081932496
4	2	LIGHTS AND BRACKET ASSEMBLY	9.648	91081933197
5	1	FLOAT SWITCH ASSEMBLY - STAINLESS	0.55	91081923667
6	1	BACK UP ALARM, 12-24 VDC 107DECIBEL	0.45	14900SD270
7	1	PRESSURE SENSOR, 0-5PSI, 0-5V, -60RB	0.021	60098087737
8	4	PLUG 1/2" SQUARE HEAD SS	0.14	S.5XPLUG
9	1	FENDER MOUNT FOR WATER PULL ELECTRICAL BOX	18.054	91081933381
10	1	LIGHT 12-24V LED FLOOD 2000lm IP69K	0.899	61075008742



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GROUND FORCE
WORLDWIDE

TITLE:
ELECTRICAL LAYOUT

DWG. NO.

936442

WEIGHT: 72.386

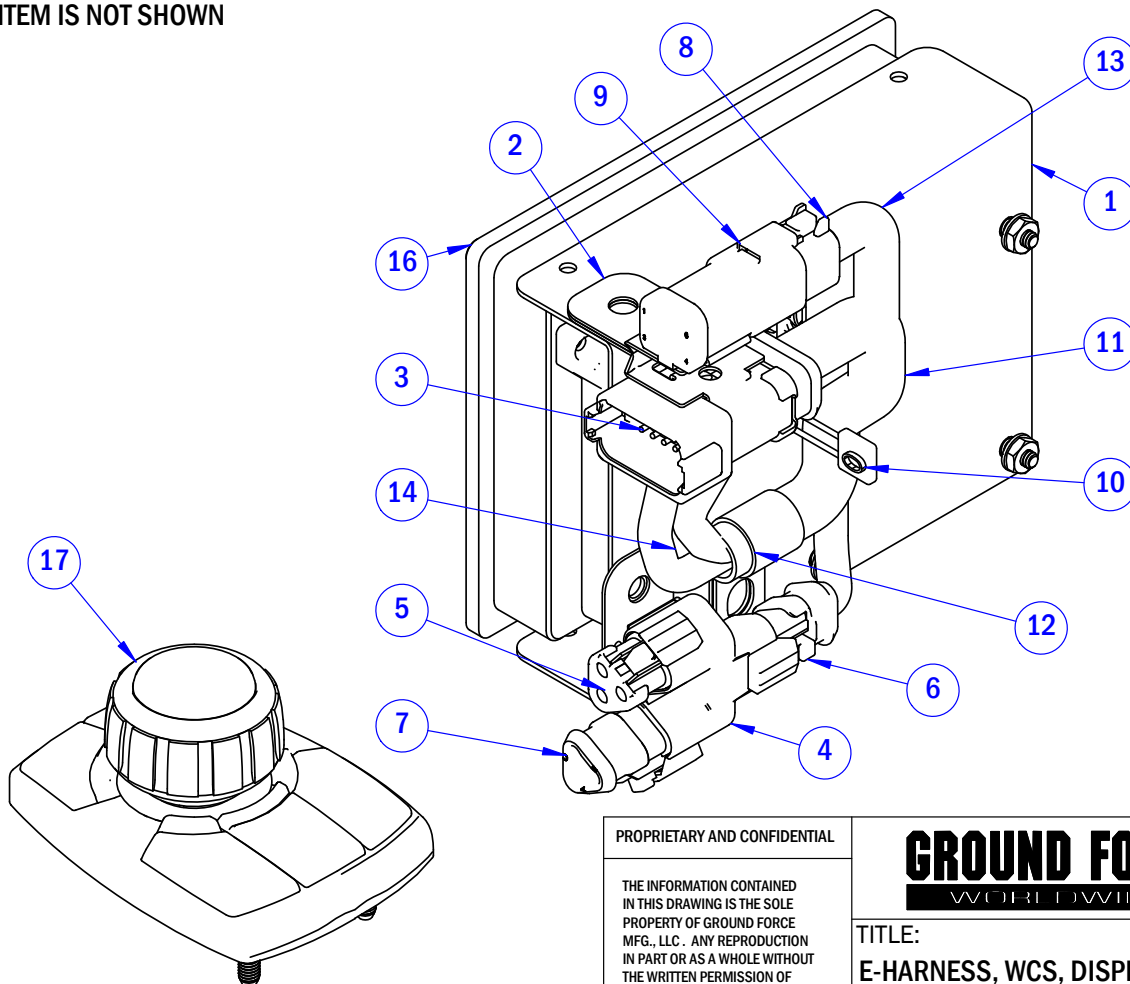
REV

0

SHEET 1 OF 2

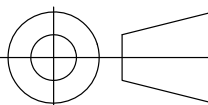
ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	PARKER IQAN MD4 ADAPTER FOR DANFOSS MOUNT	0.81	91081929575
2	3	MOUNTING CLIP DT SERIES	0.030	1027-017-1200
3	1	DT04-12PA-E008 COMPLETE	0.068	DT04-12PA-E008-C
4	1	3 PIN "Y" CONNECTOR	0.03	DT04-3P-P007
5	1	3 PIN RESISTOR	0.02	DT06-3S-P006
6	1	DT06-3S-CE04-COMPLETE	0.02	DT06-3S-CE04-C BLUE WEDGE
7	1	DT06-3S-CE04-COMPLETE	0.02	DT06-3S-CE04-C
8	1	DT06-6S-COMPLETE	0.03	DT06-6S-C
9	1	6-PIN BUS (3-3)	0.03	DT04-6P-EP14
10	1	RESISTOR TAG, ADDRESS 0, MX64	0.00	600020085130
11	1	SPLIT LOOM 1/2" ID FLAME RETARDANT POLY	0.024	90181167181
12	1	CLAMP, 5/8" DIA	0	HK1113
13	1	SPLIT LOOM 3/8" ID FLAME RETARDANT POLY	0.009	90181167182
14	1	SPLIT LOOM 1/4" ID FLAME RETARDANT POLY	0.018	90181167183
15*	1	PIN KIT MICRO CONTROLLER 24PIN	0.00	60000100945
16	1	WCS-SANDER DISPLAY	0.43	91081936074
17	1	VEHICLE DISPLAY CONTROLLER 5 BUTTON WITH ENCODER 12/24 VDC CAN-BUS IP67	0.248	600983J2015

*NOTE: ITEM IS NOT SHOWN



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GROUND FORCE
WORLDWIDE

TITLE:

E-HARNESS, WCS, DISPLAY W/O
KEYPADS

DWG. NO.

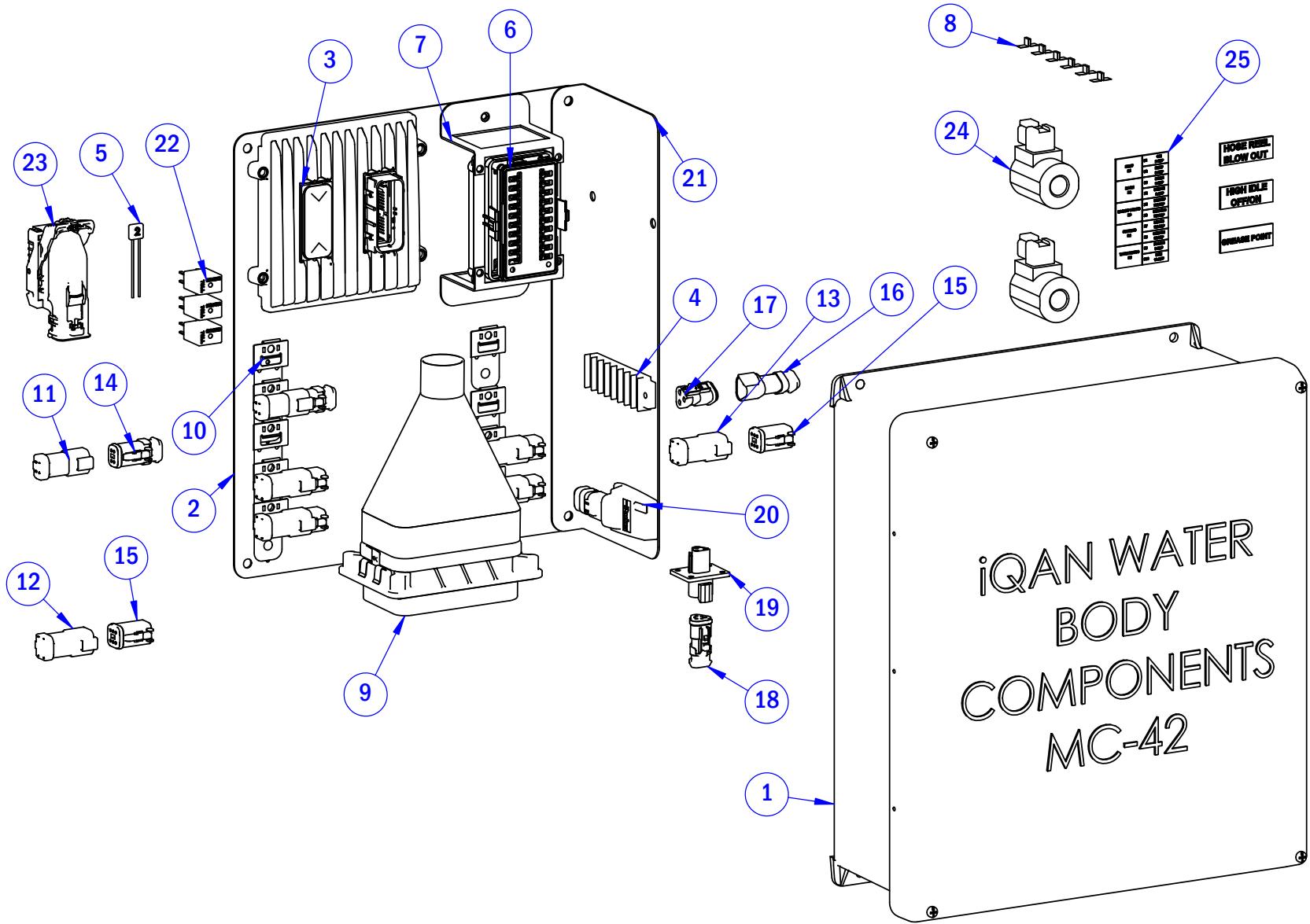
936088

REV

0

WEIGHT: 1.887

SHEET 1 OF 1



ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	ENCLOSURE, 16X14X5.74 FIBERGLASS	1.98	2068EL036
2	1	E-BRACKET MAIN BOX PANEL MC42 WCS	3.39	90181160880
3	1	WCS MC42 CONTROLLER	0.027	91081936076
4	1	TERMINAL BLOCK 8 CONTACT D-ROW	0.05	4645EL002
5	1	RESISTOR TAG, ADDRESS 2, MX64	0.00	600020085132
6	1	FUSE PANEL	0.0039	60098046345
7	2	E-BRACKET, BUSSMANN FUSE PANEL MOUNT	0.015	60098046085
8	6	TERMINAL JUMPERS J TYPE	0.00	4645EL003
9	1	102 PIN RECEP COMPLETE	1.28	DRB12-102PAE-L018-C
10	9	MOUNTING CLIP DT SERIES	0.030	1027-017-1200
11	2	4-PIN BUSS	0.02	DT04-4P-P021
12	3	6-PIN BUSS	0.03	DT04-6P-P021
13	3	6-PIN BUS (3-3)	0.03	DT04-6P-EP14
14	3	DT06-4S-CE04-COMPLETE	0.02	DT06-4S-CE04-C
15	6	DT06-6S-COMPLETE	0.03	DT06-6S-C
16	1	DT04-3P-CE04-COMPLETE	0.03	DT04-3P-CE04-C
17	1	3 PIN RESISTOR	0.02	DT06-3S-P006
18	1	DT06-3S-CE04-COMPLETE	0.02	DT06-3S-CE04-C
19	1	DT04-3P-L012-COMPLETE	0.03	DT04-3P-L012-C
20	1	IQAN G11 BLUETOOTH COMMUNICATION ADAPTER	0.04	60098208510
21	1	E-BRACKET LONG SIDE MAIN BOX MC42 WCS	1.57	90181160888
22	3	RELAY 24V SPDT MICRO ISO	0.019	60098075738
23	1	CONNECTOR KIT, IQAN-MC4x,C1 WITH HOUSING, CONVER, CONTACTS, SEAL PLUGS	0.026	60020085114
24	2	SOLENOID COIL 24VDC 26WATT DEUTSCH, DIODE, FOR USE WITH SVP10 VALVE	1.063	3260EL024
25	1	TAGS, IQAN WCS GENERIC	0.034	91081933474

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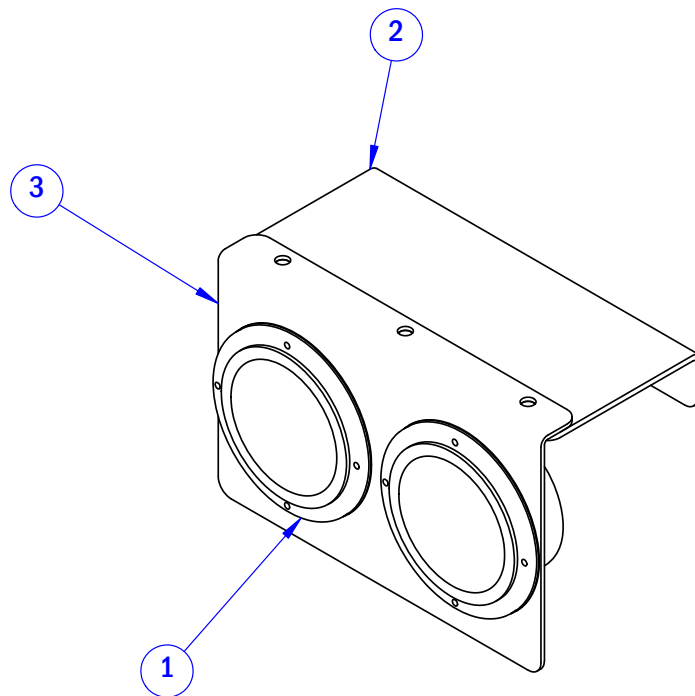
GROUND FORCE
WORLDWIDE

TITLE:
IQAN MAIN ELECTRICAL BOX
(LARGE) - WATER BODY MC-42

DWG. NO.
936075
WEIGHT: 11.47

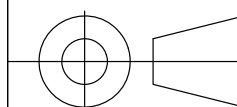
REV
0
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	2	LIGHT, LED, TURN/TAIL RED	0.79	7813LT064
2	1	MOUNT, TAIL LIGHTS	5.045	90181164713
3	1	MOUNT, TAIL LIGHTS	3.028	90181164714



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GROUND FORCE
WORLDWIDE

TITLE:
LIGHTS AND BRACKET ASSEMBLY

DWG. NO.

933197

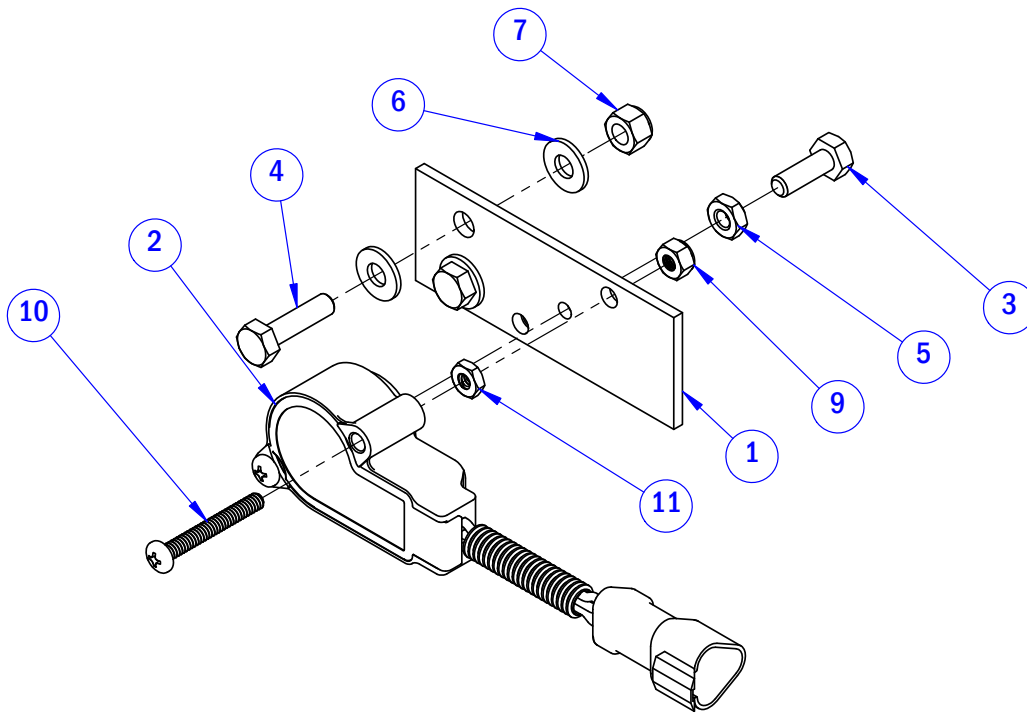
REV

0

WEIGHT: 9.648

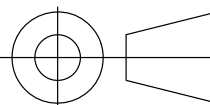
SHEET 1 OF 1

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	HIGH IDLE THROTTLE POSITION SENSOR MOUNT BRACKET	0.2	90181152673
2	1	THROTTLE POSITION SENSOR CAT	0.1	266-1466
3	1	1/4" X 3/4" NC GR8 BOLT, PLATED	0.0	0801.025.0075.20
4	2	1/4" X 1" NC GR8 BOLT, PLATED	0.0	0801.025.0100.20
5	1	1/4"-20 JAMB NUT PLATED	0.0	0103.025.01.20
6	4	1/4 FLAT WASHER L-9	0.0	0945.025.0.20
7	2	1/4"-20 NC NYLOC NUT, PLATED	0.0	0120.025.01.20
8	1	RELAY 24V 40/60AMP	0.0	60BU5084V24
9	2	#10 NYLOCK NUT	0.0	0120.1024.0.20
10	2	#10 SCREW	0.0	
11	2	#10 NUT	0.0	



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GROUND FORCE
WORLDWIDE

TITLE:
**HIGH IDLE THROTTLE POSITION
SENSOR ASSEMBLY**

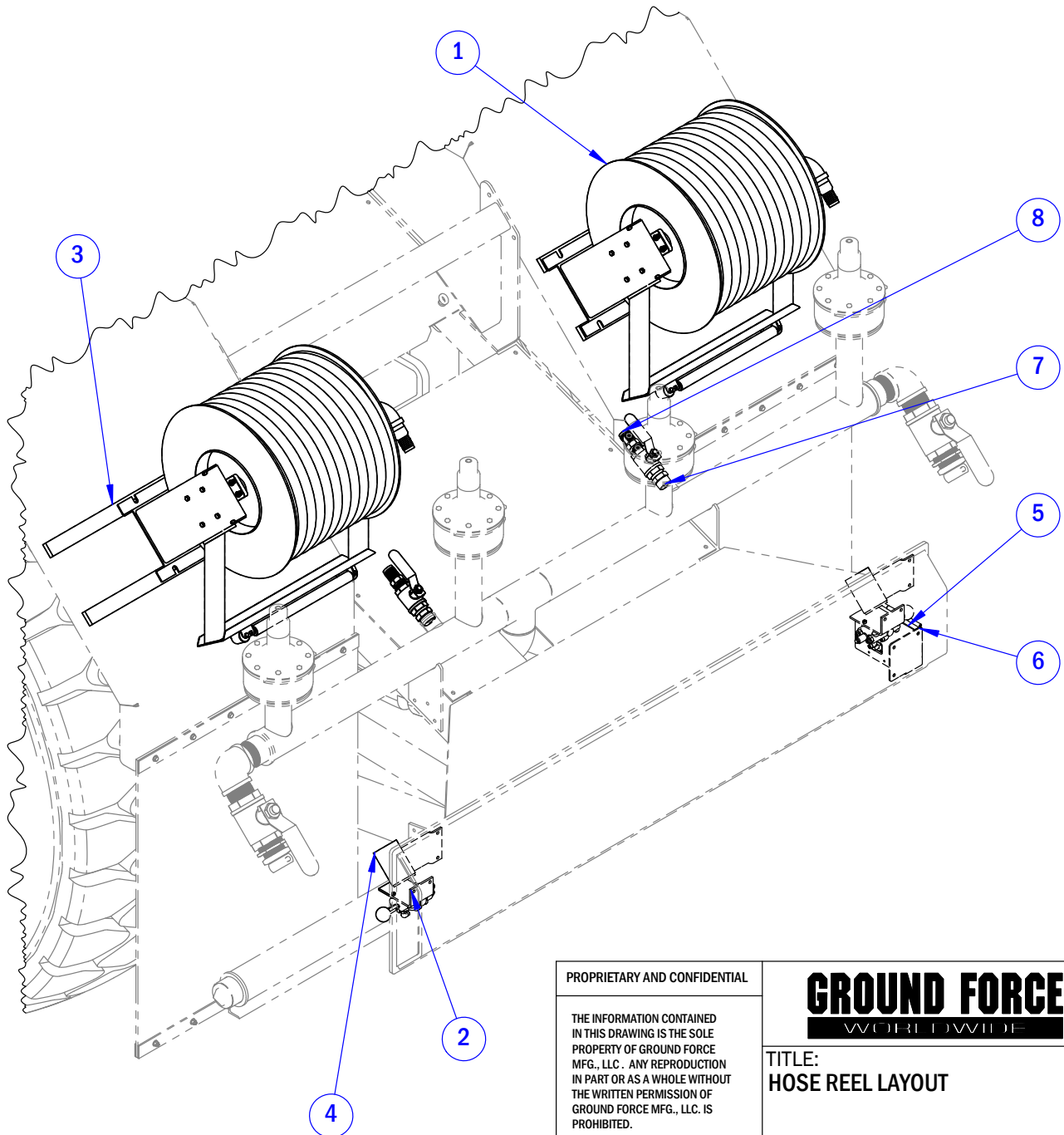
DWG. NO.
929169

REV
0

WEIGHT: 0.32

SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	2	HOSE REEL, WATER, HYD, 1-1/2" X 100', DS	422.021	91081936539
2	2	HOSE REEL CONTROL	9.00	91081936588
3	4	TAP PAD	17.271	90181175103
4	2	NOZZLE HOLSTER	6.099	91081936594
5	1	HIGH IDLE SWITCH BOX	13.40	91081923572
6	1	HIGH IDLE SWITCH MOUNT PLATE	3.192	90181175108
7	2	NIPPLE 1.5 MPT STAINLESS	0.840	5404-24-24-SS
8	2	KING NIPPLE 1-1/2" STAINLESS	0.71	S1.5KN



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GROUND FORCE
WORLDWIDE

TITLE:
HOSE REEL LAYOUT

DWG. NO.

936583

REV

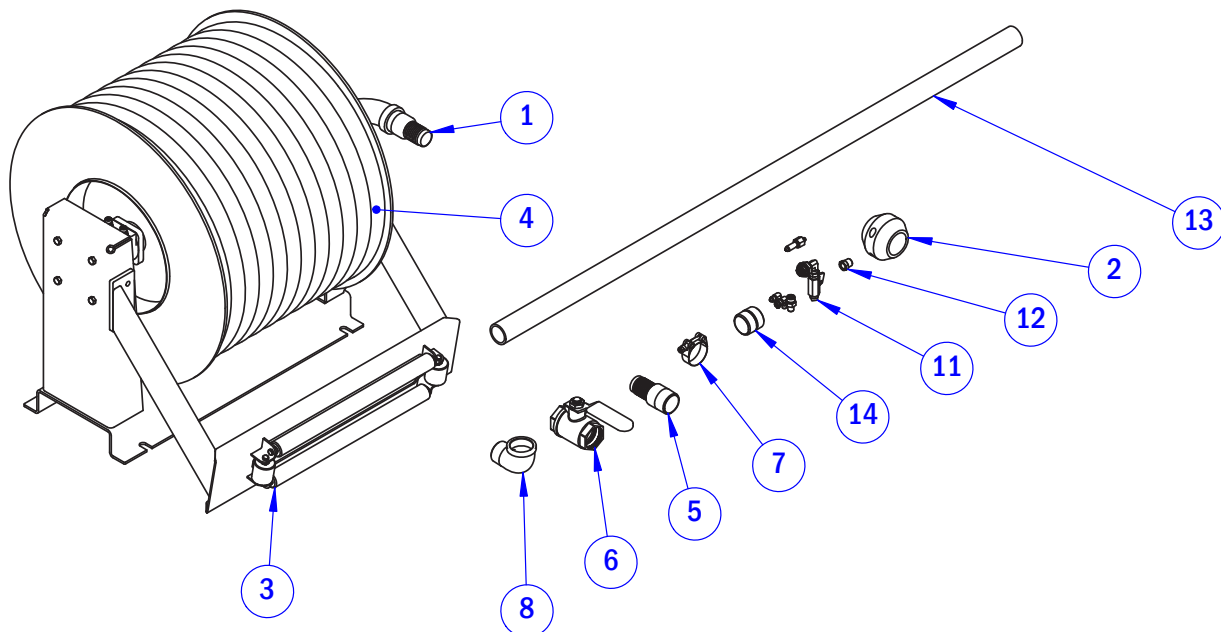
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WEIGHT: 971.736

SHEET 1 OF 2

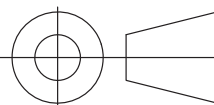
ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	HOSE REEL, HYDRAULIC, 1-1/2" X 100'	171.28	91081936536
2	1	HOSE BUMPER 1-1/2" HOSE 2.032" OD	0.57	9600RL024
3	1	FAIRLEAD ASSEMBLY, DS	21.54	91081936538
4	1	HOSE 1 1/2" X 100' WATER	219.55	3400HS052
5	1	KING NIPPLE, 1-1/2" BIP	0.74	BIP1.5KN
6	1	BALL VALVE 1-1/2" BRASS	4.361	3451VA007
7	4	CLAMP T-BOLT STAINLESS	0.152	TBC188
8	1	ELBOW 1-1/2"X 90 STREET BIP	0.18	BIP1.5X90STR
9	1	NOZZLE 1 1/2" ADJUSTABLE	0.00	15NZIPT-AD-LX
10*	1	PLUG 3/8" MPT HEX HEAD	0.00	5406-6P
11	1	HOSE REEL REMOTE AIR BLOW DOWN	10.00	91081926761
12	1	BUSHING 3/8" MPT 1/4" FPT	0.05	5406-6-4
13	1	HOSE	1.93	90181143659
14	1	NIPPLE 1-1/2"X CLOSE BIP	0.34	BIP1.5XCL

*NOTE: ITEM IS NOT SHOWN



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GROUND FORCE
WORLDWIDE

TITLE:

HOSE REEL, WATER, HYD, 1-1/2"
X 100', DS

DWG. NO.

936539

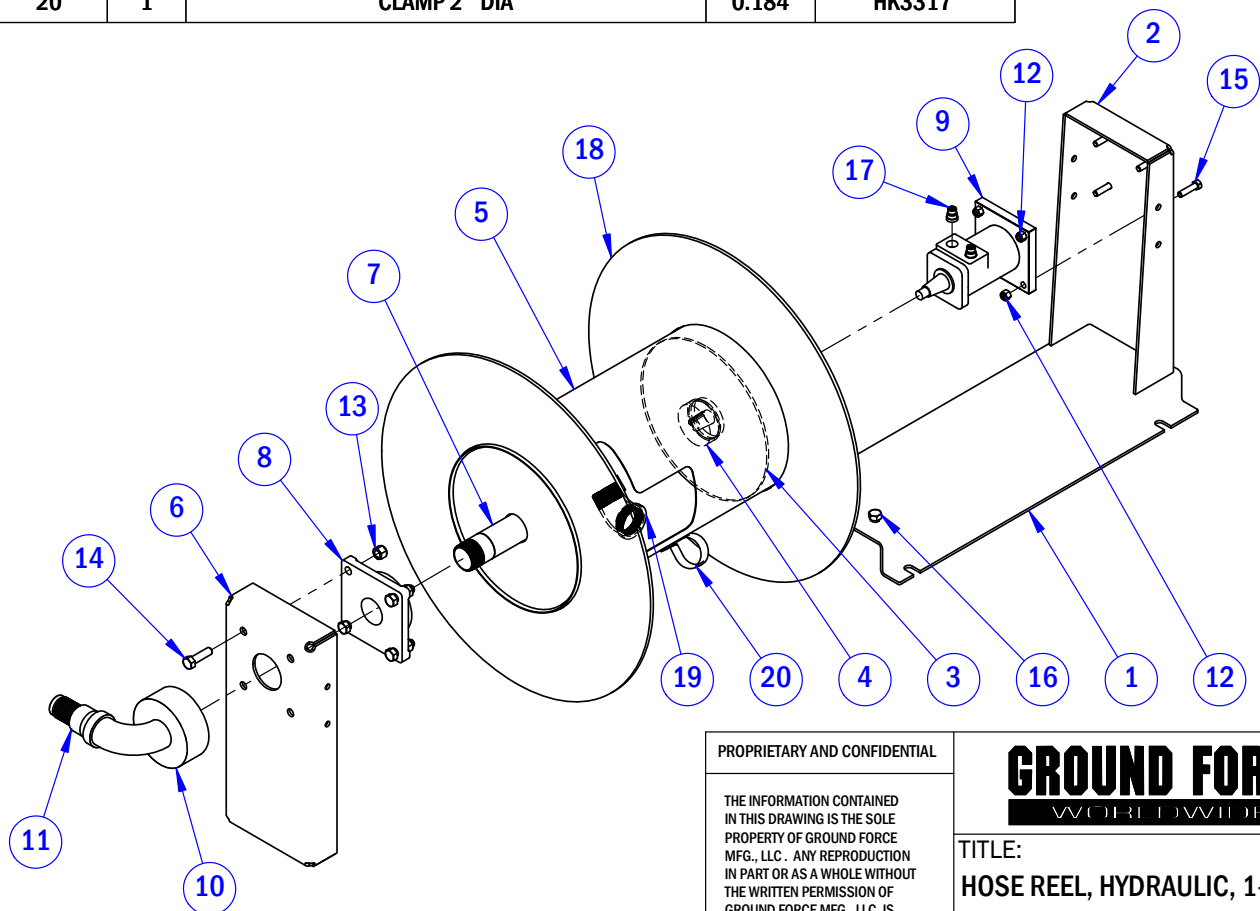
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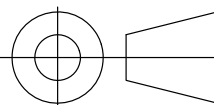
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	HOSE REEL BASE	23.23	90181175008
2	1	HOSE REEL VERTICAL PLATE	13.71	90181175007
3	1	HOSE REEL DRUM PLATE 3/16" 11.7" OD	5.37	9900SM605
4	1	HOSE REEL DRIVE HUB, TAPERED	2.31	9900RL002
5	1	HOSE REEL DRUM	10.12	90181175009
6	1	VERTICAL PLATE - HOSE REEL	13.02	90181175005
7	1	PLUMBING, HOSE REEL	9.64	91081931012
8	1	BEARING, 1-15/16" FLANGE 4-BOLT	8.08	2100BR019
9	1	MOTOR, HYDRAULIC 11.3 CID HOSE REEL	18.52	9414HY253
10	1	SWIVEL JOINT, 1-1/2" 90DEG VITON	11.81	9930.4220
11	1	KING NIPPLE, 1-1/2" BIP	0.74	BIP1.5KN
12	4	3/8"-16 NC NYLOC NUT, PLATED	0.020	0120.037.01.20
13	6	1/2 NC NYLOC NUT PLATED	0.047	0120.050.01.20
14	4	1/2" X 1-3/4" NC GR8 BOLT, PLATED	0.0187	0801.050.0175.20
15	4	3/8" X 1-1/2" NC GR8 BOLT, PLATED	0.0086	0801.037.0150.20
16	2	1/2"-11NC X 1" GR8 BOLT, PLATED	0.0134	0801.050.0100.20
17	2	ADAPTER 1/2" FORFS 1/4" MORFS STRAIGH	0.07	FF2407-8-4
18	2	REEL END PLATE	26.45	90181175006
19	1	ELBOW 1-1/2" X 45 STREET BIP	1.01	BIP1.5X45STR
20	1	CLAMP 2" DIA	0.184	HK3317



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GROUND FORCE
WORLDWIDE

TITLE:

**HOSE REEL, HYDRAULIC, 1-1/2" X
100'**

DWG. NO.

936536

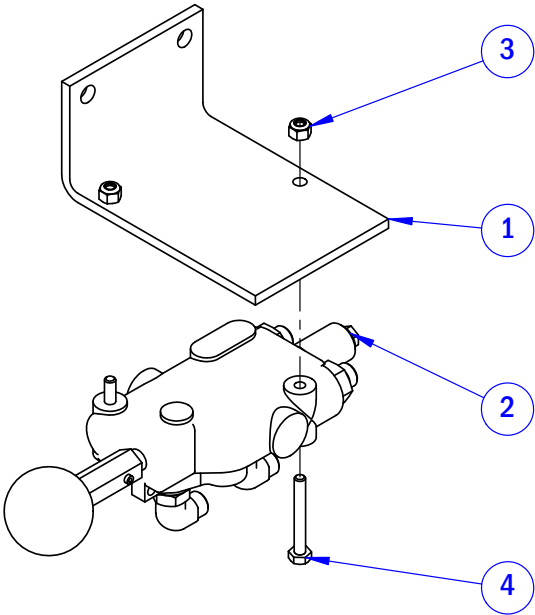
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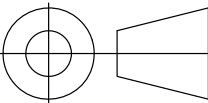
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	MOUNT PLATE, HOSE REEL CONTROL VALVE	2.46	90181175092
2	1	CONTROL HYDRAULIC HOSE REEL	6.50	91081914272
3	2	1/4" -20 NC NYLOC NUT, PLATED	0.010	0120.025.01.20
4	2	1/4" X 2" NC GR8 BOLT, PLATED	0.0047	0801.025.0200.20



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GROUND FORCE
WORLDWIDE

TITLE:
HOSE REEL CONTROL

DWG. NO.

936588

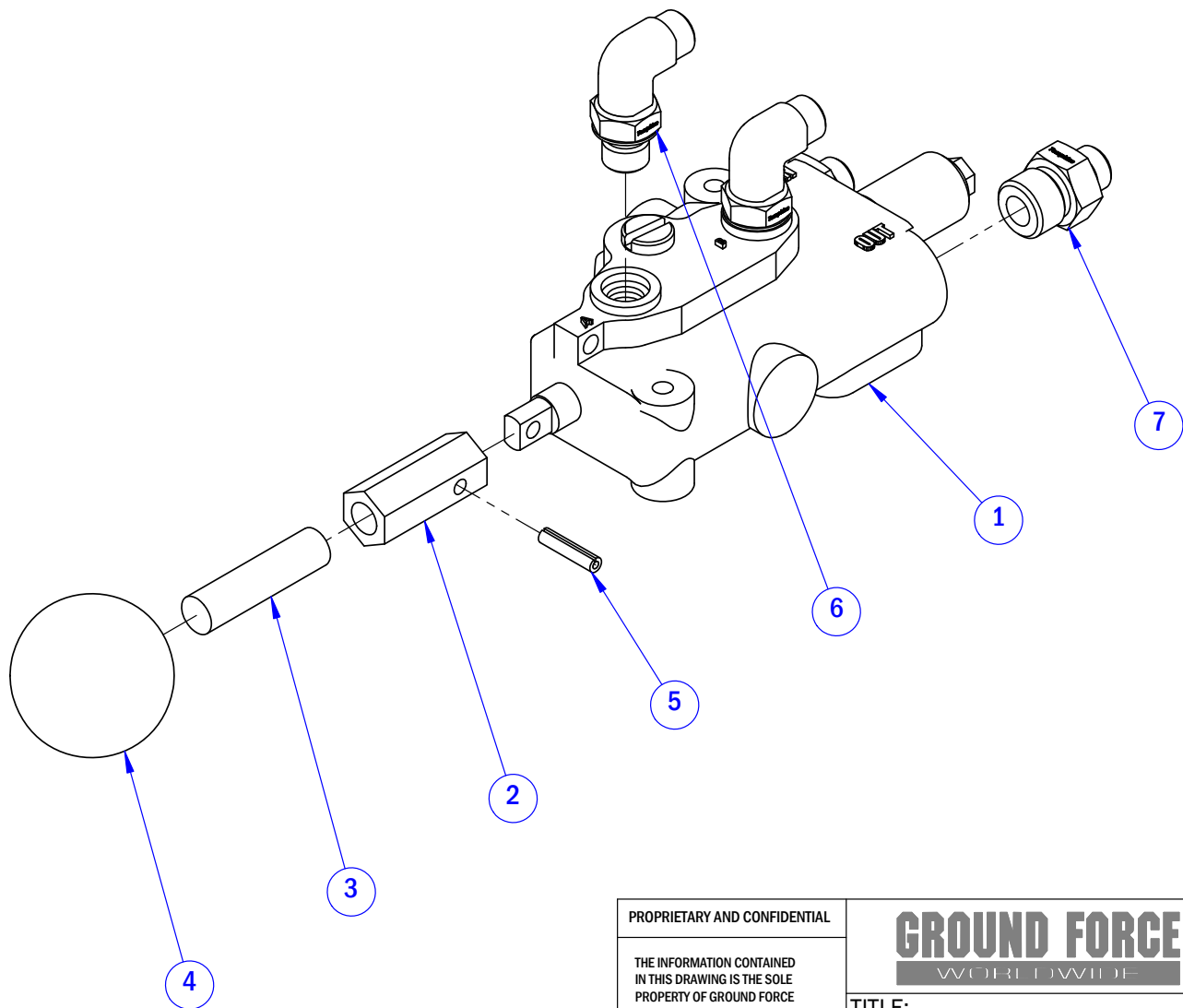
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REV

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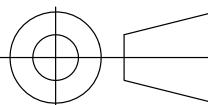
SHEET 1 OF 1

ITEM	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	VALVE 1-SPOOL HYDRAULIC REEL	0.0	9411HY001
2	1	KNOB EXTENSION 5MM PIN	0.1	9411WH004
3	1	ADAPTER 9411WH001-12300WH001	0.1	9411WH002
4	1	KNOB 1-7/8" DIA. 1/2-13" BALL	0.1	12300WH001
5	1	TENSION PIN 5MM X 22MM	0.0	9411WH006
6	2	ELBOW 1/4" ORFS 3/8" ORB	0.2	FF6801-4-6
7	2	CONNECTOR 1/4" ORFS 1/2" ORB	0.1	FF6400-4-8



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GROUND FORCE
WORLDWIDE

TITLE:
HYDRAULIC HOSE REEL CONTROL

DWG. NO.

914272

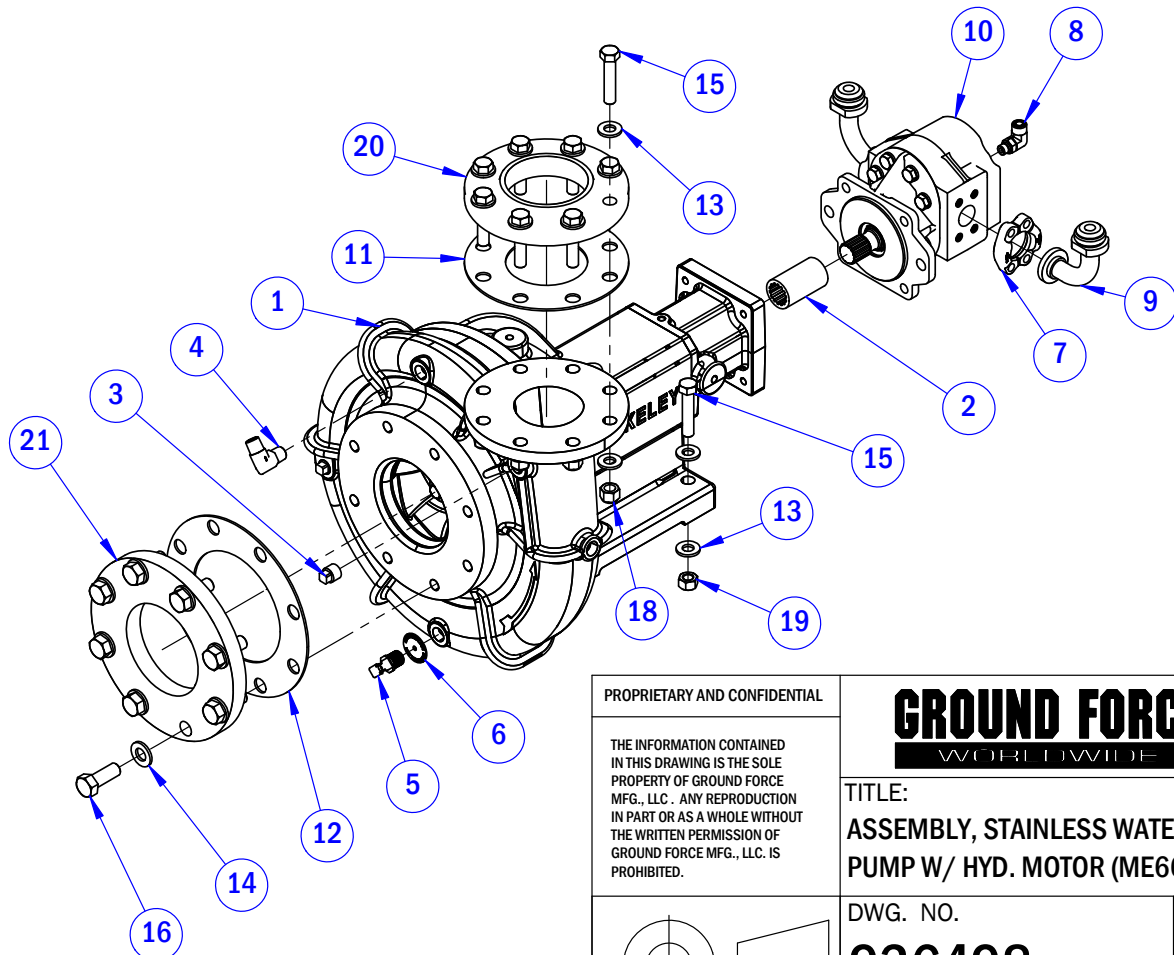
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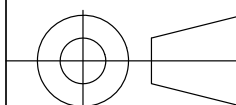
SHEET 1 OF 1

ITEM #	QTY.	DESCRIPTION	WEIGHT	ERP
1	1	PUMP WATER 4" X 5" DIRECT MOUNT CW 316 SS IMPELLER & VOLUTE WITH 6" 150# FLANGE B.C.	0.00	12003PM404
2	1	COUPLER 1-1/4" SPLINE 14 TOOTH FEM	1.01	8357DC001
3	2	PLUG 1/2" SQUARE HEAD SS	0.14	S.5XPLUG
4	1	ELBOW, 1/2" MPT 90DEG MALE	0.28	5500-8-8
5	1	DRAIN COCK 1/2" MPT	0.17	108WHD
6	1	TAG LOW POINT DRAIN ALUMINUM 1-3/4"	0.01	75200058134
7	2	FLANGE 1-1/4" FPT SPLIT 3000PS	0.09	1812HY025
8	1	ELBOW 1/2" ORFS 3/8" ORB 90DEG ADJUS	0.255	FF6801-8-6
9	2	ADAPTER #20 CODE 61 #20 JIC 90	1.64	1704-20-20
10	1	MOTOR HYDRAULIC 1.25" -14T SAE C	7.08	3200HY251
11	1	GASKET 4" ANSI FLANGE 150#	0.20	4300GA004
12	1	GASKET 6" 150# ANSI	0.24	4300GA034
13	24	5/8 FLAT WASHER L-9	0.005	0945.062.0.20
14	8	3/4 FLAT WASHER L-9	0.007	0945.075.0.20
15	10	5/8"X3" NC GR8 BOLT PLATED	0.0451	0801.062.0300.20
16	8	3/4" X2" NC GR8 BOLT. PLATED	0.0525	0801.075.0200.20
17	2	5/8" X4-1/2" NC GR8 BPLT PLATED	0.0617	0801.062.0450.20
18	8	5/8 NC NYLOC NUT PLATED	0.092	0120.062.01.20
19	4	5/8"-11 NC STEEL LOCK NUT PLATED	0.011	0128.062.01.20
20	1	FLANGE 4" 150# ANSI RAISED FACE STAINLESS	11.83	4500SM006
21	1	FLANGE 6" 150# ANSI X 5" PIPE SLIP ON	19.15	4800SM076



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GROUND FORCE
WORLDWIDE

TITLE:

**ASSEMBLY, STAINLESS WATER
PUMP W/ HYD. MOTOR (ME66)**

DWG. NO.

936498

WEIGHT: 45.88

REV

0

SHEET 1 OF 1

BERKELEY® B4JRM RH

316 Stainless Steel Impeller

Packing Construction

BEARING FRAME MOUNT

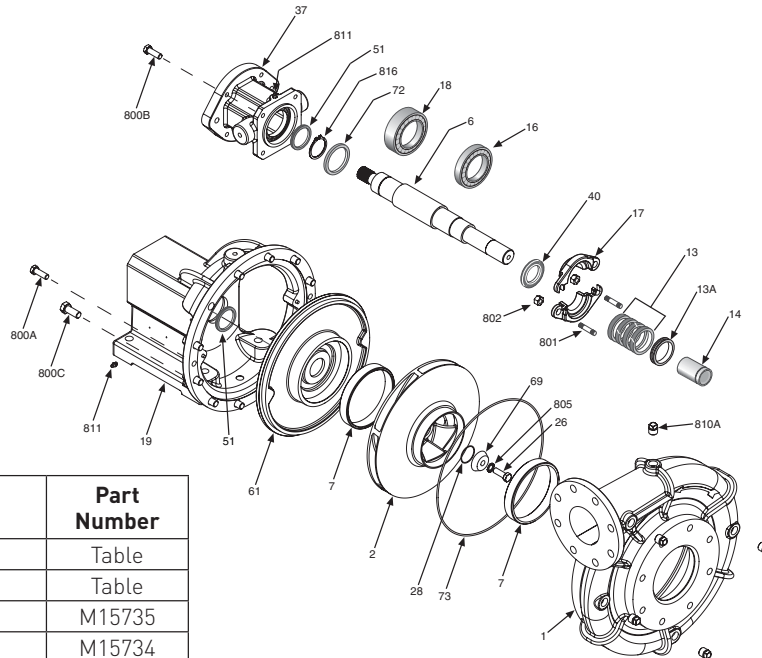
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Page	190.11
Date	March 4, 2013
Supersedes 07/01/12	

GROUND FORCE PART

12003PM404

Table I

B/M No.	Rotation	Casing w/ Wear Ring	Impeller	Impeller Diameter
B86083	CW	M15767	M15703	13.5"



6506-0712

Item No.	Part Description	Part Number
1	Casing w/ Wear Ring	Table
2	Impeller	Table
6	Shaft	M15735
7	Ring, Wear (2 required)	M15734
13	Ring, Packing (quantity 1; 4 required)	M14761
13A	Ring, Metallic (quantity 1)	S13434
14	Sleeve, Shaft	S33429L
16	Bearing, Roller	S15604
17	Slotted Split Gland	B82472
18	Bearing, Ball	M10184
19	Bracket, Frame Mount	M15706
26	Capscrew, Hex	M15737
28	O-ring	U9-239
37	Bearing Cap Motor Bracket	M15709
40	Slinger, Water	S10964
51	Seal, Oil (2 required)	S14765
61	Seal Plate w/ Wear Ring	M15769
69	Impeller Washer	M15736
72	Ring, Thrust	S06519
73	Casing, O-ring	M14948
800A	Capscrew, (12 required)	M15740
800B	Capscrew, Hex (4 required)	M15737
800C	Capscrew (2 required)	U30-883SS
801	Stud (2 required)	M15741

Item No.	Part Description	Part Number
802	Nut, Hex (2 required)	S23488
805	Washer, Lock External Tooth	M15738
810A	Plug, Pipe (5 required)	M15742
811	Fitting, Grease (2 required)	M11141
816	Ring, Retaining, External	S23016

NOTE 1: B86093, complete pump less volute, #1.

NOTE 2: B86097, Casing Kit, includes items #1, 800A, 73.

NOTE 3: B86099, Seal Plate Kit, includes items #73, 800C, 26, 805, 69, 28, 800A, 61, 17, 801, 802, 13, 13A.

NOTE 4: B86090, Impeller Kit, includes items #800A, 2, 7, 26, 805, 69, 28, 73.

NOTE 5: B86089, Shaft Kit, included items #6, 14, 16, 26, 805, 69, 28, 72, 816, 40, 51, 73, 18.

NOTE 6: B86177 Overhaul Kit, includes items #73, 51, 14, 16, 18, 26, 805, 69, 28, 72, 816, 40.



293 WRIGHT STREET, DELAVAN, WI 53115 WWW.berkeleypumps.COM PH: 888-237-5353 ORDERS FAX: 800-321-8793
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S4855BK

PARTS & SCHEMATICS MANUAL
SCHEMATICS

**Call or email for schematics and for
troubleshooting assistance.**

1-208-664-9291 | service@gfworldwide.com

PARTS & SCHEMATICS MANUAL

WARRANTY

LIMITED WARRANTY

- A. GROUND FORCE MANUFACTURING, LLC (GFM) warrants that the specialty-equipment manufactured by (GFM), including accessory equipment and parts manufactured by (GFM), shall be free from:
1. Defects in material and workmanship furnished by (GFM) and used in the fabrication thereof;
 2. Defects arising from the selection of materials or processes of manufacture;
 3. Defects in the design thereof in view of the state of the art on the date hereof.

The foregoing warranty shall apply also to accessories, equipment, and parts manufactured to (GFM) detailed design and specifications and supplied to (GFM) by other manufacturers.

- B. (GFM) makes no warranty with regard to component parts not manufactured by (GFM), but agrees to assign to the purchaser all of its rights under any original manufacturer's warranty covering such component parts and agrees to assist the purchaser in making such contacts with the manufacturer of such component parts as may be necessary to protect its right under the warranty covering them.
- C. In case of defects in materials, defects in workmanship, defects arising from the selection of material or processes of manufacture, or defects inherent in the design, such defects must become apparent in the machine, accessory, equipment, or part manufactured by (GFM) within one calendar year or 5,000 hours of operations, whichever shall first expire after the equipment is commissioned by the original purchaser. It is required that the original purchaser complete the Product Registration Form within 45 days from the time the equipment is placed into service. Failure to complete the Product Registration Form will void the warranty. The date of commissioning must be within 12 months from the original date of invoice by GFM. The end-user must provide all information, which is relevant to the warranty, to GFM upon request. GFM reserves the right to determine what information is relevant.

The extent of (GFM) liability under this warranty, as to defects in materials, defects in workmanship, defects arising from the selection of material or processes of manufacture, or defects inherent in the design, is limited to the repair of such defects, or to the repair or replacement (with a new or rebuilt similar item, free from the defect in question) of any accessory, equipment, or part manufactured by (GFM), which is defective in any such respects.

- D. The (GFM) Limited Warranty does not cover, and (GFM) makes no warranty with respect to:
1. Defects not reported and defective items not returned to (GFM) within the warranty period;
 2. Failure and damages due to misapplication, lack of proper maintenance, abuse, improper installation, or abnormal conditions of temperature, moisture, dirt, or corrosive matter;
 3. Abrasion or wear, including that of wear-resistant liner packages in dump truck bodies;
 4. Failure due to the operation, intentional or otherwise, in any improper manner;
 5. Cracks, dents, bends or other damage resulting from impact or dragging;
 6. Damage caused by components, or parts, or accessories built by others, or which were not manufactured, nor installed, nor sold by (GFM);
 7. Any damage that results from continued use of equipment after a defect has become apparent;
 8. Item(s) which have/has in any way been altered by anyone other than an authorized representative of (GFM);
 9. Any damage which occurs during shipment, or otherwise, without the fault of (GFM);
 10. Taxes, consumables, environmental fees, or surcharges;
 11. Freight, transportation, or shipping;
 12. Rental expenses;
 13. Travel expenses, including travel labor, mileage, lodging, and meals;
- E. (GFM) shall in no way be liable for any expenses incurred by the purchaser in any attempt to repair, replace, or rework any originally defective item of sale. (GFM) shall in no way be liable for any losses, costs, forfeiture or damages (including loss of profits, liabilities of the purchaser, its customers, or third persons, and all other consequential damages), whether direct or indirect, and whether or not resulting from, or contributed to by the default, or negligence of (GFM), its agents, employees, and subcontractors, which might be claimed as a result of the defect, use, or failure of the item delivered. Except as stated, there is no warranty, express or implied, in connection with the design, manufacture, sale, service or use of the machinery, accessories, equipment, and parts sold by (GFM). (GFM) liability on its warranty shall in no event exceed the cost of the item of sale.

This warranty policy supersedes, merges, and voids all negotiations, prior discussions, agreements, and understandings, whether oral or written. This warranty policy may not be altered or amended except by a document executed by officers of each party.

Effective September 16, 2020

DISTRIBUTOR WARRANTY POLICY

GROUND FORCE MANUFACTURING, LLC (GFM) will allow warranty claims for repairs on (GFM) manufactured equipment per the terms laid out in this warranty policy. All claims must follow the rules set forth in this policy; no other payment schedule will be recognized by (GFM). The proper procedure, including paperwork, must be followed for the warranty to be considered. The following warranty schedule will be applicable to distributors of Ground Force MFG. LLC products, along with their subsidiaries, affiliates, sister, and parent companies:

- Labor will be credited at 80% of the Distributor's prevailing in-shop service charge (at the time the repair is performed) up to, but not to exceed \$80 per hour.
- A warranty job number must be assigned by (GFM) and referred to in any billing. The warranty job number expires 90 days from the date it is assigned by (GFM).
- All warranty labor hours are subject to review by (GFM) Product Support Department for validity. Excess labor hours charged due to Distributor's technicians' inexperience or lack of training on the servicing of (GFM) equipment is not covered under warranty.
- All warranty work, which may entail major repair of (GFM) equipment, is subject to being performed by (GFM) technicians dispatched from (GFM) plant rather than by Distributor's technicians. The decision whether to have (GFM) technicians perform said repair work is solely at the discretion of (GFM). Major repair work performed by Distributor without pre-approval from (GFM) is subject to claim denial.
- Warranty expenses incurred because of the failure of a component part used by (GFM) in the manufacture of equipment (GFM) builds is subject to coverage under the warranty of the component manufacturer in regard to the cost of the part, mileage, and to the labor cost for replacing it. (GFM) will submit non-GFM manufactured parts returned to (GFM) for warranty consideration to the component manufacturer; credit will be issued for the part if deemed payable by the component manufacturer (parts are billed for, when shipped, as per (GFM) Parts Warranty Policy).
- Warranty claims must be made on the GFM website, <https://gfworldwide.com/warranty/>. A detailed labor report will be required for warranty labor consideration.
- Claims arising from defects in materials, defects in workmanship, defects arising from the selection of material or processes of manufacture, or defects inherent in the design will be credited within 60 days from receipt of the warranty claim documentation at (GFM) if allowed.
- Warranty claims arising from component parts not manufactured by (GFM) will be credited per the respective manufacturer's warranty once the respective manufacturer has settled the claim.

This warranty policy supersedes, merges, and voids all negotiations, prior discussions, agreements, and understandings, whether oral or written. This warranty policy may not be altered or amended except by a document executed by officers of each party.

Effective September 16, 2020

WARRANTY PARTS

GROUND FORCE MANUFACTURING, LLC (GFM) utilizes parts made by many vendors. All vendor component parts have their respective manufacturer's warranties. (GFM) makes no warranty with regard to component parts not manufactured by GFM, but agrees to assign to the purchaser all of its rights under any original manufacturer's warranty covering such component parts, and agrees to assist the purchaser in making such contacts with the manufacturer of such component parts as may be necessary to protect its right under the warranty covering them.

HOW TO FILE A CLAIM

1. Locate the (GFM) serial number (six digits).
2. Prepare a PO for the replacement part and shipping
3. Call (GFM) at (208) 664-9291 with the serial number of your (GFM) equipment and the purchase order number and request to speak with the Parts and Product Support Representative for your area. Alternatively, you can also e-mail the serial number and purchased order number to the Parts and Product Support Representative for your area.
4. (GFM) will ship the part out to you, along with a Return Materials Authorization (RMA).
5. Replace the failed part and return it, along with the RGA, to the address instructed on the RGA.
6. Upon arrival, (GFM) will route the part to the appropriate vendor for warranty consideration.
7. The vendor will report their findings to (GFM) and either deny the claim or issue a credit.
8. (GFM) will forward the vendor's findings to you, the customer. If a credit is issued, by the vendor, (GFM) will pass the credit on to you by issuing a credit to your account.

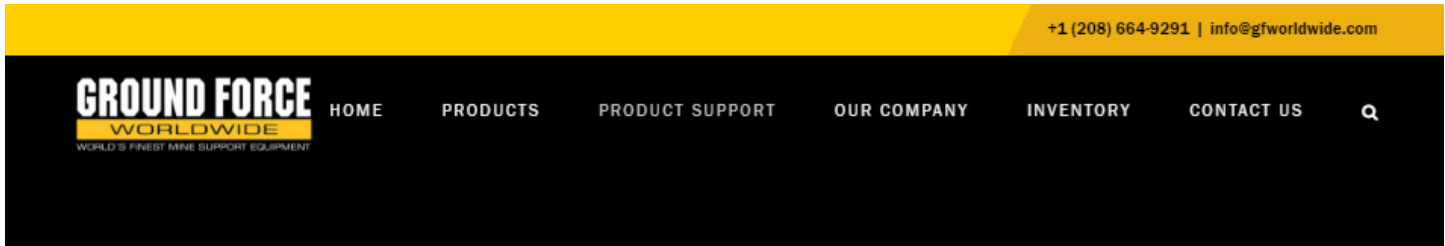
Effective August, 2016

PRODUCT REGISTRATION

(Must be completed and submitted within 45 days of commissioning to activate warranty coverage)

Please visit our Web site to submit your product registration form online.

[GROUND FORCE PRODUCT REGISTRATION](#)



GROUND FORCE WORLDWIDE PRODUCT REGISTRATION

We believe in our products and strive to provide you with World-class service! To do so, we offer a Product Registration form to make sure we have all the necessary information to communicate with you efficiently. Please take a moment to fill in this form and submit to us. We will use the information to better serve you. Thank you for choosing Ground Force Worldwide!



QUESTIONS? CONTACT OUR PRODUCT SUPPORT DEPARTMENT.

Service@gfworldwide.com | +1 (208) 664-9291

*Product Registration Form
must be submitted within 45
days of commissioning to
activate warranty coverage.*

**PRODUCT
REGISTRATION FORM**

A large-scale mining operation is shown in the background, featuring a massive pile of dark ore, a conveyor belt system, and a large yellow mining truck in the foreground. The scene is set in a deep, open-pit mine under a clear sky.

REGISTER & LET US TAKE CARE OF THE REST.

C

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