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HANDIFUELER™

TECHNICAL MANUAL

TR-SERIES

Trailer Mounted
Applicable to:
TR1000DA Serial Number 9570
TR1000SDA Serial Number 9677

SI AVIATION

Spokane, Washington

1000 GALLON HandiFueler™ on tandem axle trailer

ONE YEAR LIMITED WARRANTY

Seller warrants its 1000 Gallon HandiFueler™ tank to be free from defects in material and workmanship under the normal use and service for which the unit is intended if, but only if the unit has been properly operated, maintained and stored in accordance with printed directions contained in the product manual. Our obligation under this Warranty shall be limited to the repair or exchange of SI manufactured equipment and parts which may prove defective within one year of the date the unit is put into service but shall in no event extend beyond a date three years from the date the unit is shipped from our plant. All transportation charges on parts returned to us for replacement under this warranty must be returned prepaid.

Other manufacturers' components warranties apply as their warranty reads.

This warranty does not extend to damage caused be environmental factors varying from normal design conditions, whether natural or man-made, or to units subjected to misuse, negligence or accident. This warranty likewise does not extend to the unit or any parts thereof which have been repaired or altered improperly or in any way so as to effect adversely its stability or reliability. This warranty does not cover parts or labor required to repair or replace parts whose usefulness is exhausted due to normal operation of the unit.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOT SET FORTH IN WRITING SIGNED BY AN AUTHORIZED REPRESENTATIVE OR SELLER. SELLER SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL LOSS OR DAMAGE RESULTING FROM THE USE OR LOSS OF USE OF THE UNIT.

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Section 1.0 Introduction

1.1 The instructions in this manual cover the operation, maintenance and specifications the SI HandiFueler™

1.2 Purpose

a. The HandiFueler™ is designed to provide a portable, clean, safe, self contained and efficient fueling system for the aviation industry.

1.3 Description

a. Refer to Figure 1 for location and identification of major components. The HandiFueler™ consists of a tank assembly, a trailer chassis, and a pumping module.

1.4 Table 1.1

Leading Particulars
TR1000DA
Length .....248-1/2 in.
Width .....90-1/2 in.
Height .....75-1/2 in.
TR1000SDA
Length.....245-1/2 in.
Width.....96 in.
Height.....72-3/4 in.
Single Wall Construction
Weight Full .....10,910 LB.
Weight Empty .....4,400 LB.
Double Wall Construction
Weight Full.....11,721 LB.
Weight Empty.....5,211 LB.
Environmental Conditions
Operating temperatures .....-20 F to +110 F
Tank capacity .....1000 Gallons
Tank Certification 49CFR 178.346 DOT-406
Unit standards NFPA-407
High level jet sensor setting .....92% tank capacity
2" Pump flow .....38 GPM
Diesel Pump HP .....4.7 HP
Fuel Filter .....1 Micron solids, 5PPM water 60GPM
Fuel Hose .....1-1/4 in. x 50 Ft.
Trailer rating .....12,000 GVW
Brakes .....Hydraulic surge 4 wheel drum type.
Tire size .....LT 235/85R16 Load Range "E"
Tire inflation .....80 PSI cold
Hitch .....2-5/16 Ball or Luennette

Section 2.0 Safety

2.1 Summary

a. This manual contains suggested safety procedures, in addition the end user must comply with all International, Federal, state, local, and company safety and environmental regulations.

b. **WARNING** and **CAUTION** statements have been inserted throughout this publication and are essential to the protection of personnel (**WARNING**) or equipment or property (**CAUTION**)

c. Prior to operating this equipment all **WARNINGS** and **CAUTIONS** in this publication must be reviewed and understood.

2.2 Definitions

a. **WARNING**: an operation or maintenance procedure that if not observed could result in injury or death to personnel.

b. **CAUTION**: an operation or maintenance procedure that if not observed could result in damage or destruction to equipment

2.3 General Safety Precautions

a. This section covers general safety precautions that may or may not be related to any other specific procedures located elsewhere in this manual.

b. Cleaners/Chemicals

(1) Some cleaners, chemicals, solvents, fuels, paints, etc. may have adverse effects on eyes, skin and respiration. Observe all manufacturers warnings and read the manufacturers safety data sheets (MSDS) to ensure proper handling, storage, and disposal, and safety directives.

c. Confined Space

(1) Personnel that work in a confined space (limited openings for entry and exit) or unfavorable ventilation or space not intended for humans or contains any recognized safety hazards shall comply with all International, Federal, state, local, and company safety and environmental regulations. (Confined space entry permit may be required). Never service or adjust equipment alone. Do not attempt internal service or adjustment of equipment unless another capable person is present to provide rescue in the event of injury.

d. Lifting and Handling

(1) To ensure safety use the proper amount of personnel when lifting or handling equipment

e. Lockout/Tagout

(1) Personnel shall be aware of the hazards associated with equipment, Lockout/Tagout any energy source prior to performing any repairs, adjustments or any procedures that could bypass safety devices. Comply with all International, Federal, state, local, and company safety and environmental regulations.

f.. Finger rings/jewelry

(1) Prior to operating, repairing, or maintaining equipment remove watches rings and jewelry, unless specifically allowed by local procedures.

g. Spring loaded mechanisms/cables

(1) Spring loaded mechanisms and cables can cause injury if released or activated in an uncontrolled manner. Always be careful when adjusting or maintaining these devices.

h. Personal Protective Equipment (PPE)

(1) Always ensure personnel are equipped with and wear the proper PPE prior to operating, adjusting or maintaining equipment.

(2) Comply with all International, Federal, state, local and company safety and environmental regulations.

i. Weather Conditions

(1) Use extreme caution operating HandiFueler™ during adverse weather conditions (ie... ice, snow, rain, strong and gusting winds)

Section 3.0 Special Tools & Test Equipment

3.1 No special tools or test equipment are required to service or maintain this equipment.

Section 4.0 Preparation for Use

4.1 To obtain optimum benefit from your equipment, it is recommended that all personnel operating it read and understand this manual prior to operation. (pay special attention to the **WARNINGs** and **CAUTIONs** in this manual)

4.2 Upon receipt of the unit, a visual inspection should be made to determine that it is complete and has not sustained any damage during transportation

4.3 Always perform the safety check on this equipment prior to using. Refer to paragraphs 5.3 and 5.4

Section 5.0 Safety Check

5.1 Inspection of tires, surge brakes, undercarriage, tow hitch, valves, hoses, pumps, sight gauge, reflectors, lights, safety labels, etc., These should be inspected on a periodic basis. It is recommended these inspections be performed daily.

5.2 Pre-Towing Safety Checks

a) Tires properly inflated
b) Visual check of all tank spring mounting hardware
c) Visual check of the trailer undercarriage
d) Visual check for any fuel leaks from tank or plumbing
e) All running lights, stop and turn lights operate properly
f) All hoses and nozzles, static ground wires, properly stowed
g) All valves and switches in the off position
h) All cabinet doors closed and locked
i) All 3 lever operators in full forward position
j) Top manway on tank closed and latched
k) Tow hitch properly secured to towing vehicle
l) Parking brakes released

5.3 Pre-Operation safety check

a) Parking brakes set
b) Wheel chocks placed in front and rear of tires
c) Safety cones placed around unit
d) Static discharge grounding wires attached to a proper ground
e) Visual check for any fuel leaks from tank or plumbing
f) Draw off low point water drains and sump daily **See Fig 6.2 & 6.7**
g) Pump compartment should be open during operation for proper ventilation

Section 6.0 Operation

6.1 Introduction

a. The instructions contained in this manual provide step by step procedures for operating this equipment. Personnel using this equipment should familiarize themselves with this manual prior to equipment operation. Improper operation presents extreme hazards to personnel and equipment.

6.2 General Precautions

a. **WARNING**

(1) Always apply parking brake prior to any fuel servicing operations, maintenance repairs or when the unit is left unattended. **See Fig 6.1**

(2) Always connect static discharge ground cables to an approved ground prior to performing any fuel servicing.

(3) Do not carry or smoke lighted cigars, cigarettes, pipes or any other device capable of lighting fuel vapors on or near the HandiFueler.

(4) Never leave the pump unit running when left unattended. Always turn pump motor off after fueling takes place.

(5) Do not allow smoking, sparks, or flames within 50 feet of unit.

(6) Never operate the Handi-Fueler™ in an enclosed area. Proper ventilation must be maintained at all times.

Table 6.1: Controls and indicators.

Name	Function
12V electrical connector plug	supplies signals from the tow vehicle that operates all trailer lighting.
3 lever operator	Sets parking brake, locks & unlocks fuel nozzle, opens bottom tank outlet valve. Inboard lever controls the parking brake. Middle lever controls fuel nozzle locks. Outboard lever controls bottom drain valve. **See Fig 6.1**
liquid level gauge, side mounted	Determines the amount of liquid in the tank.
Tank Sump Valve	Drains water condensate that collects on the tank bottom. **See Fig 6.2**
High level jet sensor	Turns off 3" internal valve at 92% tank capacity when bottom filling to prevent overfilling tank.
3" Internal Valve	This is a DOT approved internal spring loaded valve operated by the outer lever of the 3 lever operator. This valve has a built in shear joint so the internal part of the valve stays inside the tank in case of an accident. It is equipped with a fusible frangible connector that in the event of a fire the valve closes.
Pump control switches	Controls the motor to the pump.
Fuel nozzle	Used to fill the fuel tank.
Pressure bypass valve	Relieves excess pump pressure when not fueling, and prevents pump form cavitating and overheating.
Check Valve	Prevents fuel from entering the pressure, side of the pump when tank is being bottom filled.
Filter Differential Pressure Indicator	Indicates filter pressure differential and when to change the filter element. **See Fig 6.7**
Aviation Fuel Sampling Port	Allows sampling of fuel for testing **See Fig 6.13**

6.3 HandiFueler™ Fueling Checklist:

NOTE: These are general instructions that are recommended for proper operation of the HandiFueler™ and in no way over-rides local policies and directives

CAUTION: Before any operation of the HandiFueler™ ensure you are familiar with its operation and features. Review the operator's manual to familiarize yourself with sections 5, 6, and 8. Operate within applicable guidelines according to manufacturer's recommendations and local directives and policies

CAUTION: During refuel of the HandiFueler™ the outboard lever of the 3-lever operator must remain in the closed (full forward) position ensuring the 3" internal valve remains closed to provide over-fill protection. Failure to follow this procedure will cause a fuel spill

WARNING: Never leave the unit unattended during any operation. You must stay vigilant for possible malfunctions, overfill and other emergency situations

To refuel the HandiFueler™ accomplish the following:

1. Park HandiFueler™
2. Place wheel chocks in front of and behind trailer tires of one axle
3. Apply HandiFueler™ parking brake by pulling the inboard lever on the 3 lever operator rearward **See Fig 6.1**
4. Set safety cones around the HandiFueler™ to cordon off re-fuel area
5. Connect the static ground cables to approved grounding points
6. Close the pump suction valve on the inlet side of the pump **See Fig 6.16**
7. Connect fill line to the 2" cam-lock bottom fill inlet line located right rear of tank **See Fig 6.2**
8. Open bottom fill inlet valve next to 2" cam-lock. **See Fig 6.2**
9. Begin bottom filling the HandiFueler™
10. Fuel will shut-off when jet level sensor automatically closes the 3" internal valve See CAUTION above.
11. Close bottom fill inlet valve, next to 2" cam-lock **See Fig 6.2**
12. Disconnect fill line from the 2" cam-lock **See Fig 6.2**
13. Open pump suction valve on inlet side of pump
14. Disconnect static ground clamps and walk cables back to the reels
15. Stow safety cones back on HandiFueler™
16. Remove parking brake by pushing the inboard lever on the 3-lever operator to its full forward position.
    NOTE: All 3 levers should be in the full forward position, if not then place in proper position **See Fig 6.1**
17. Remove and stow wheel chocks

CAUTION: to secure the nozzle, you must first push down on the nozzle so that the nozzle is properly aligned to allow lock pin to slide inside of nozzle handle before moving middle lever to the full forward position. **See Fig 6.5 & 6.6**

6.4 Aviation Fuel Sampling Port

a. Your HandiFueler™ may be equipped with the optional Aviation Fuel sampling port. It accommodates the ASTM Aviation Fuel particulate contamination test D 2276, Part A2.3 requires a sample point; Part 2.3.2 requires a sample valve connection. The sampling port provided on the HandiFueler allows leak tight sampling. There is a return line back into the tank provided so that the fluid can be circulating while a sample is being drawn from the HandiFueler.

NOTE: These are general instructions that are recommended for proper operation of the HandiFueler™ and in no way over-rides local policies and directives.

CAUTION: Before any operation of this unit ensure you are familiar with its operation and features. Review the operator's manual to familiarize yourself with sections 5, 6, and 8. Operate within applicable guidelines according to manufacturer's recommendations and local directives and policies

WARNING: Never leave the unit unattended during any operation. You must stay vigilant for possible malfunctions and possible overfill and other emergency situations

b. Operation of HandiFueler™ when taking Fuel Samples

1. Place wheel chocks in front of and behind trailer tires of one axle.
2. Connect static ground cables to approved ground points
3. Unlock and open the pump box
4. Apply HandiFueler™ parking brake by pulling the inboard lever to the full rearward position on the 3 way lever operator. **See Fig 6.1**
5. Check to ensure the 2" Bottom fill valve is in the closed position
6. Open the 3" internal valve by pulling the outer most lever to the full rearward position on the 3 way lever operator.
7. Check to ensure the 2" pump inlet suction valve is in the open position.
8. Start pump motor (manufactures information later in this manual)
   a. Open fuel cock
   b. Place engine speed lever in "START" position
   c. Slowly pull the starting handle (rope) until you feel resistance and then return it slowly.
   d. Push the decompression lever down and release
   e. Pull the starting handle (rope) hard and fast all the way out
   f. If engine does not start, repeat steps c, d and e
9. Locate sample port between the fuel filter and the hose reel inlet side inside the pump compartment
10. Remove the sample port cap by sliding the raised edge on the port toward the valve portion of the device **See Fig 6.13**

11. Connect the particle detection unit line to the sample port by inserting it in place of the cap
12. Open sample port valve by turning arrow pointed lever toward the cap end of the sample port.
13. Locate the spring loaded ball valve on the bottom rear head of the tank and hold down to the open position. **See Fig 6.14**
14. After sampling is completed let go of the spring loaded ball valve
15. Close sample port valve by turning arrow pointed lever perpendicular to the end of the port
16. Remove the particle detection unit line from the sample port
17. Reinstall the sample port cap
18. Turn off pump motor
    a. Move engine speed lever to low and run for 3 minutes with no load
    b. Return the engine speed lever to the “STOP” position
    c. Close fuel cock
    d. Slowly pull the start handle (rope) until pressure is felt
19. Close and lock pump box
20. Close the 3" internal valve by pushing the outboard lever to the full forward position on the 3 way lever operator. **See Fig 6.1**

6.5 Operation of HandiFueler™ During Aircraft Refueling

NOTE: These are general instructions that are recommended for proper operation of the HandiFueler™ and in no way over-rides local policies and directives

CAUTION: Before any operation of this unit ensure you are familiar with its operation and features. Review the operator’s manual to familiarize yourself with sections 5, 6, and 8. Operate within applicable guidelines according to manufacturer’s recommendations and local directives and policies

WARNING: Never leave the unit unattended during any operation. You must stay vigilant for possible malfunctions and possible overfill and other emergency situations

1. Park HandiFueler™
2. Place the wheel chocks in front of and behind trailer tires of one axle
3. Set safety cones around the HandiFueler™ to cordon off re-fuel area
4. Connect static ground cables to approved grounding points
5. Unlock and open the pump box
6. Ensure fire bottles are serviceable
7. Apply HandiFueler™ parking brake, unlock fuel nozzle and open 3" internal valve by pulling the middle lever on the 3-lever operator to the full rearward position, all three levers should move together **See Fig’s 6.3 & 6.4 lever operation 1 & 2**
8. Drain low points and sump daily or before use

9. Start pump motor (See section 7 of manufactures instructions)
   a. Open Fuel Cock
   b. Place engine speed lever in “START” position
   c. Slowly pull the starting handle (rope) until you feel resistance and then return it slowly
   d. Push the decompression lever down and release
   e. Pull the Starting handle (rope) hard and fast all the way out.
   f. If engine does not start, start over at step c
10. Zero out meter and insert ticket

WARNING: Nozzle ground clip must be connected prior to placing nozzle into aircraft fuel port

11. Pull nozzle and hose to the aircraft fuel port
12. Connect the nozzle ground clip to the aircraft
13. Place nozzle into the aircraft fuel port.
14. Begin fueling by pulling nozzle trigger
15. When aircraft fuel port is full release the nozzle trigger
16. Remove the nozzle from the aircraft fuel port
17. Disconnect the nozzle ground clip from the aircraft
18. Walk hose back to reel and stow nozzle into the holster
19. Turn off the pump motor (See section 9 of manufacturers instructions)
    a. Move engine speed lever to low and run 3 minutes with no load
    b. Return the engine speed lever to the “STOP” position
    c. Close the fuel cock
    d. Slowly pull the start handle (rope) until pressure is felt
19. Close and lock pump box
20. Disconnect and walk the static ground cables back to the reels
21. Stow safety cones back on the HandiFueler™
22. Release parking brake, lock fuel nozzle and close tank outlet valve by pushing each of the levers on the 3-lever operator to the full forward position. Pay special attention to the middle lever that locks the nozzle into its holster. Nozzle and holster must be pushed full down to allow the lock pin to slide in behind nozzle handle before moving middle lever to the full forward position **See Fig’s 6.5 & 6.6**
23. Remove and stow the wheel chocks

CAUTION: ***to secure the nozzle, you must first push down on the nozzle so that the nozzle is properly aligned to allow lock pin to slide inside of nozzle handle before moving middle lever to the full forward position.*** **See Fig’s 6.5 & 6.6**

6.6 Basic Operations

a. Parking Brake: The unit is equipped with a mechanically operated parking brake. The brake must be applied prior to disengaging tow hitch and when filling, or draining tank, or whenever the trailer is left unattended. To activate parking brake pull inboard lever operator handle rearward. To release parking brake push the inboard lever operator forward. **See Fig 6.1**

b. Tires: Tire inflation should be checked and maintained as directed by the manufacturer.

c. Before Towing: Follow checklist 5.3. Make sure the trailer is securely attached to the towing vehicle. Check to see the parking brake is disengaged, grounding reel and hoses are disconnected and properly stowed, rear pump module cabinet is closed and locked, valves are closed, and all manways and covers are closed and latched tight.

d. Grounding Reels: The unit is supplied with two (2) grounding reels. Before filling, draining, or when unit is unattended, the grounding reels must be attached to an appropriate ground.

e. DOT Certification: This tank is designed, constructed, and tested per 49CFR 178.346 (DOT-406) TM and will require yearly inspections per 49CFR 180.407

f. NFPA Standards: This tank was designed and built to meet the NFPA 407 standards. Safeguards must be in operational condition if not discontinue use immediately. No work around of emergency mechanism/safeguards are authorized.

g. Emergency shutoff: There are two emergency shut off levers located on both sides of the unit. In case of an emergency where fuel flow needs to stop, pull one of the two Levers to close the bottom tank drain valve. (Note: the emergency lock out box will need to be reset prior to using the unit) **See Fig 6.15**

h. Empty low point drains and drain tank sump as needed or daily

6.7 Priming the Pump

NOTE: Pump is Self-Priming; however, there could be times where you might have to prime the pump. Follow these instructions for priming.

CAUTION: Make sure the bottom fill inlet ball valve 2" is shut before opening the tank valve **See Fig 6.2**

1) Open Tank Bottom drain valve by moving the outboard lever on the 3-way actuator rearward **See Fig 6.1**
2) Open the pump suction valve on inlet side of pump
3) Open air vent in the top of the filter housing until all the air exits. **See Fig 6.7**
4) Your pump cavity should now be fully primed. Pump should not have to primed except when ran dry

6.8 Emergency lock out box: In the event one of the emergency shut off levers are pulled the emergency lock Out box will need to be reset.

WARNING: Only trained and certified personell should reset after emergency situation is resolved and HandiFueler™ is safe to operate.

1) Unlock and open the emergency lockout box **See Fig 6.8**
2) Find the released loose cable end and reinsert it back into the socket while you hold the spring loaded lock latch open **See Fig 6.9**
3) Line up the slot in the cable end plug with the slot in the socket **See Fig 6.9**
4) Release the spring loaded latch back into the slotted opening on the socket **See Fig 6.10**
5) Check cables to make sure they are tight, secure and in place **See Fig 6.11**
6) Close and lock emergency lockout box **See Fig 6.12**

6.9 See the following section (Section 9.0 for manufacturers operations on all purchased out components, such as the pump, meter, hose reel, trailer suspension, etc...

Fig 6.1

1 Outboard lever shown in full forward position. Operates the 3" internal valve.

2 Middle lever shown in full forward position. Locks fuel nozzle in holster

3 Inboard lever shown in full forward position. Operates trailer parking brake.

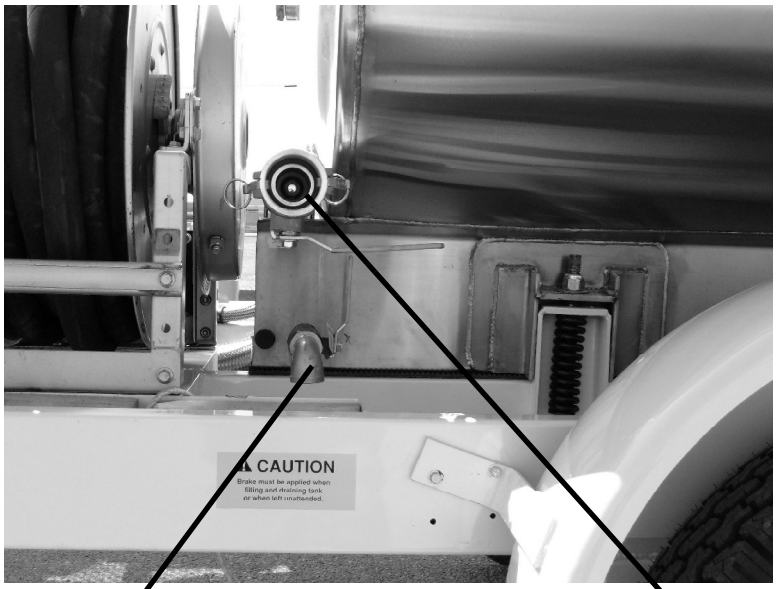


Fig 6.2A TR1000DA

Tank Sump Condensation Drain

2” Cam-Lock Bottom Fill Line

Tank Sump Condensate Drain Valve

Pull Cable

2” Bottom Fill Line Valve

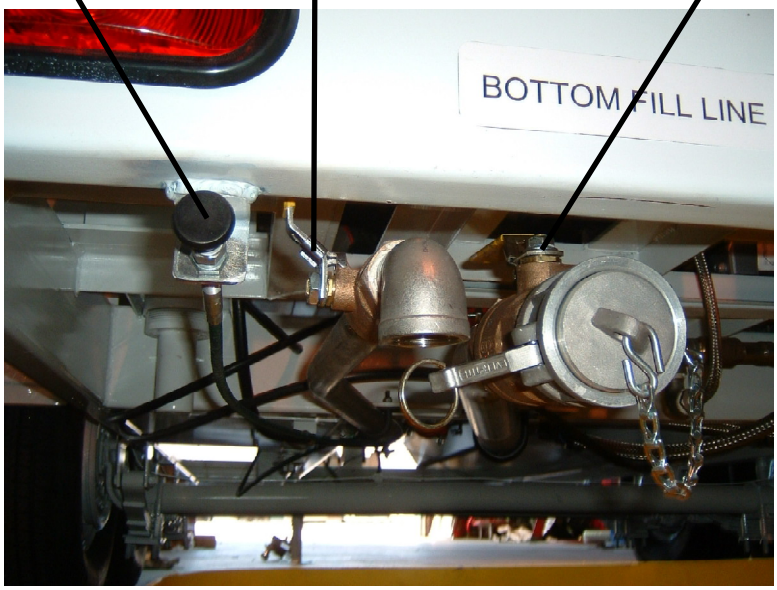


Fig 6.2B TR1000SDA

Fig 6.3

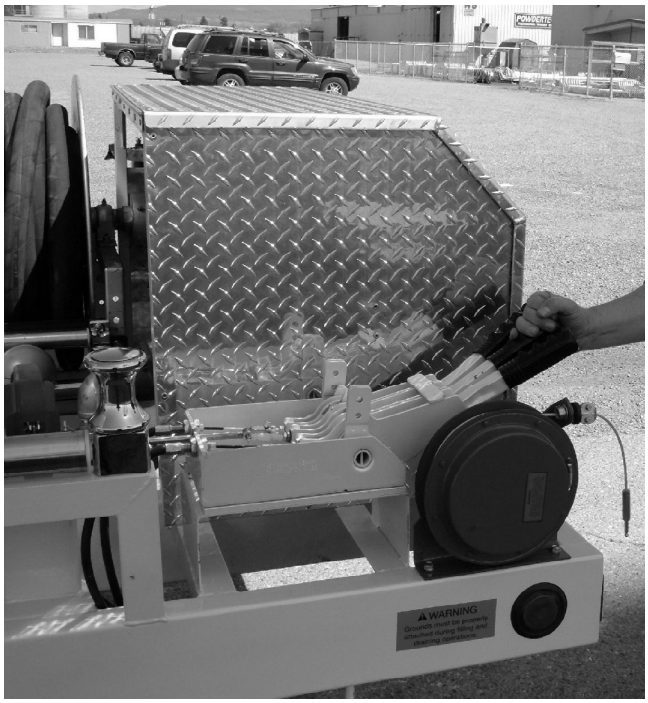


Fig 6.4

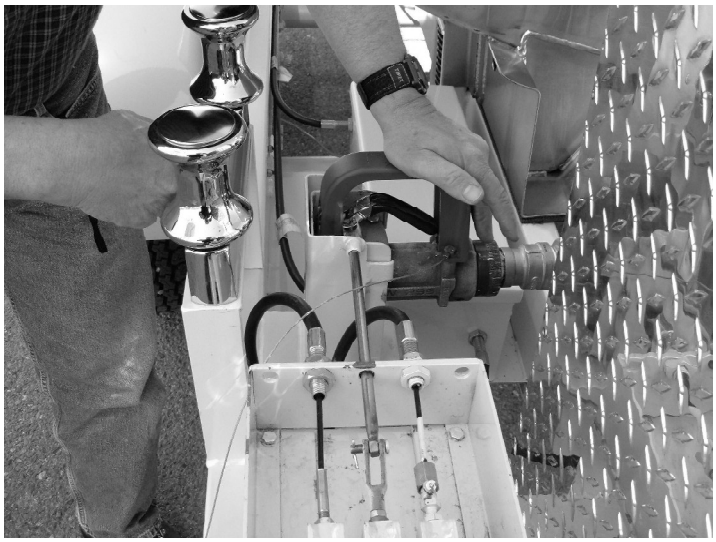


Fig 6.5

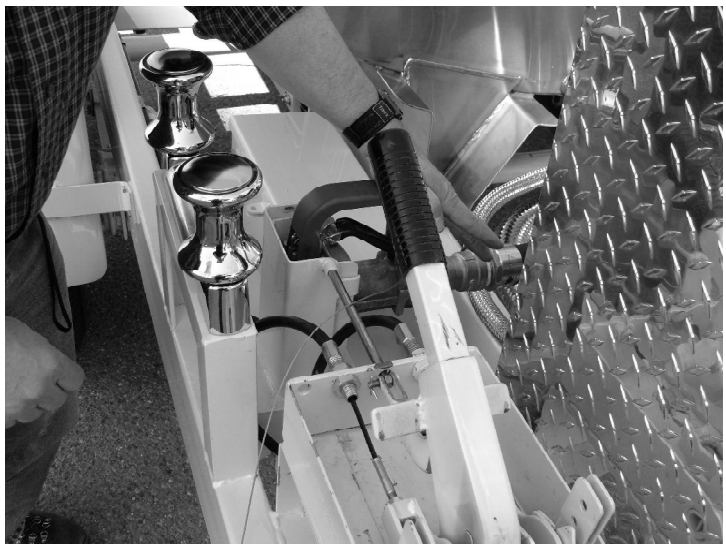


Fig 6.6

Rotate center handle full forward to lock down nozzle

Fig 6.7A

Filter Air Vent & Bleed Air Vent
for Priming Pump

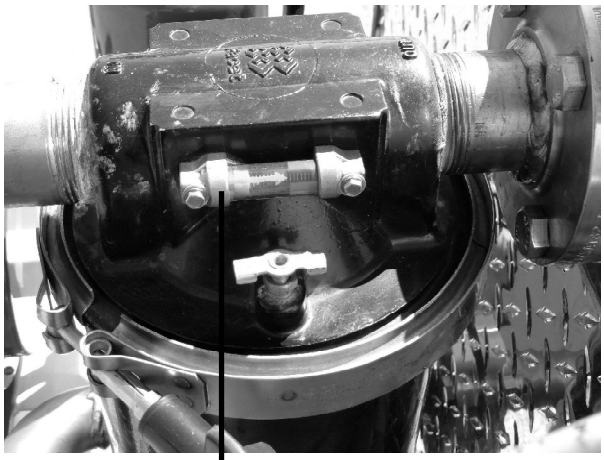


Fig 6.7B

Differential Pressure Indicator

Fig 6.7C

Filter Condensation & Low Point Drain

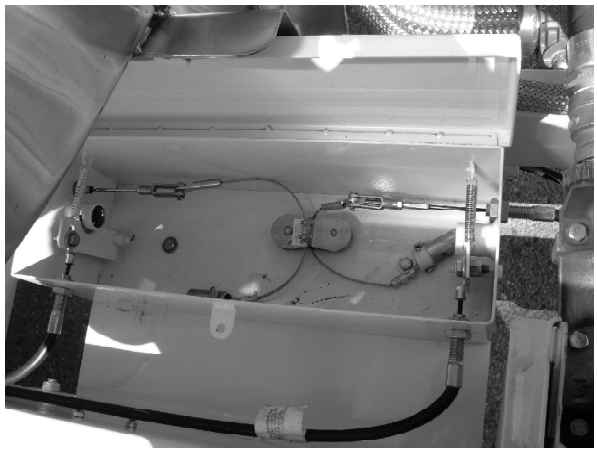


Fig 6.8 (Step 1)

Fig 6.9 (Steps 2 & 3)

Fig 6.10 (Step 4)

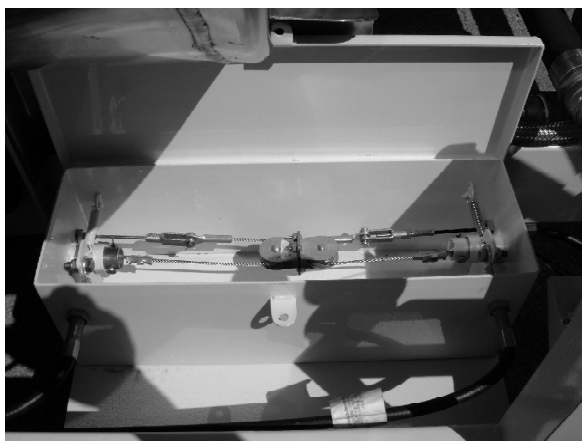


Fig 6.11 (Step 5)

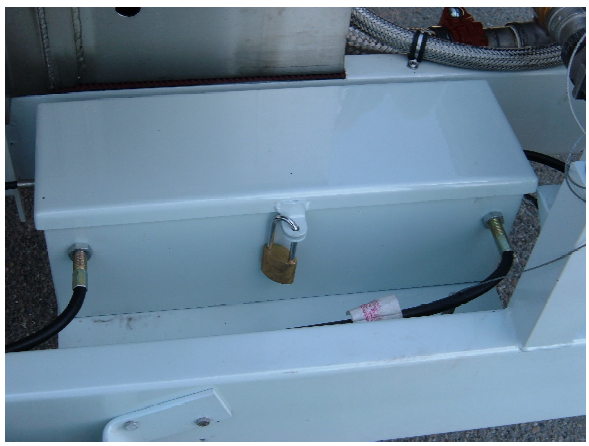


Fig 6.12 (Step 6)

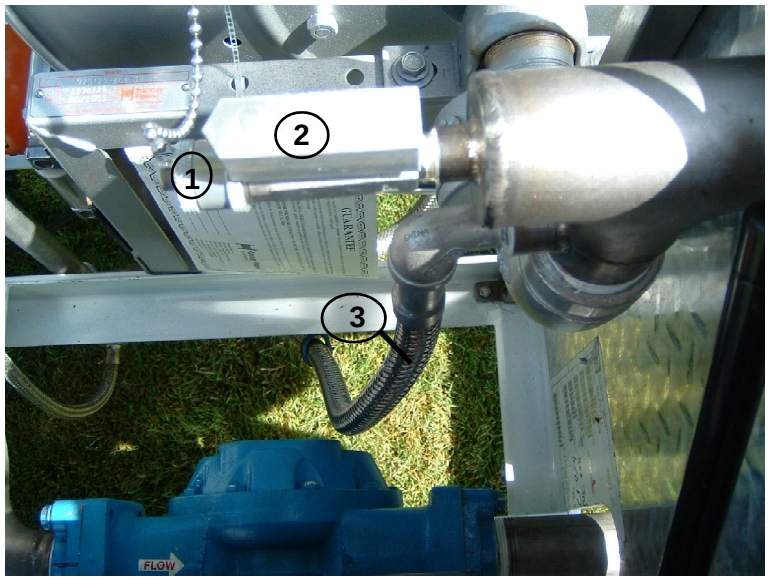


Fig 6.13

1. Sample Port Cap
2. Sample Port Valve
3. Sample Port Circulation Line

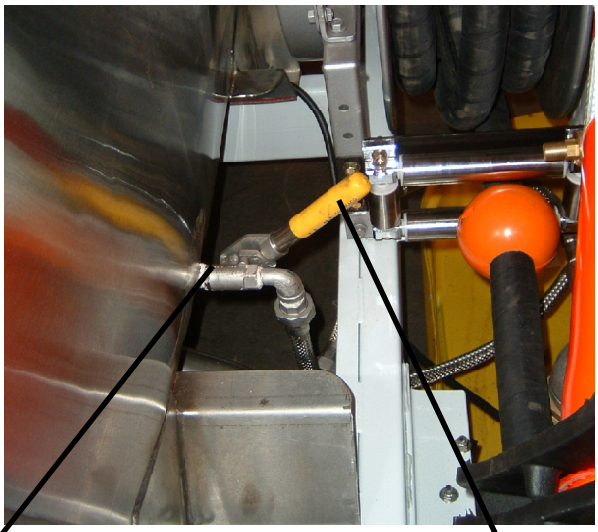


Fig 6.14

Sample Port Circulation Line

Spring Loaded Ball Valve for Sample Port Circulation. (Hold this lever down when taking fuel sample from sample port)

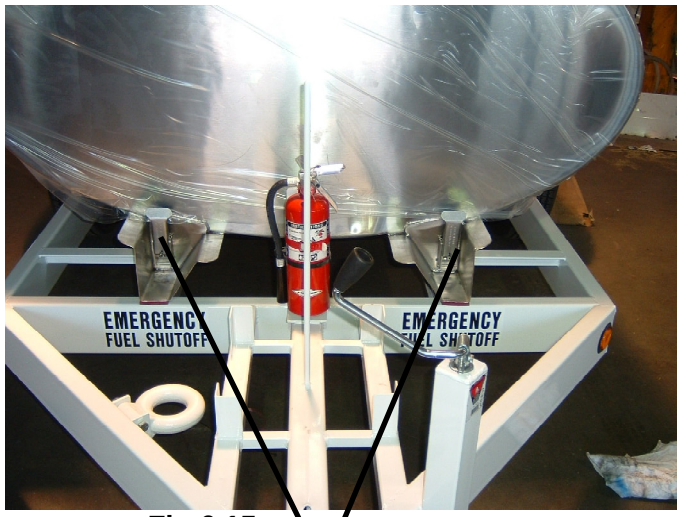


Fig 6.15

Emergency Shut Off Levers

Fig 6.16

Pump Suction Valve on Inlet Side of Pump

Section 7.0 Maintenance

7.1 Tank

a. The tank is constructed from ASTM-A-240 T-304 Stainless steel, with a little care it will last for many years. Never use harsh chemicals such as chlorine, bromine, or acids for cleaning the Tank.

b. Yearly DOT tank inspections are required per 49CFR 180.407

7.2 Tandem Axle Trailer

a. The exterior of the trailer is coated with an automotive polyurethane finish that has excellent resistance to weather and fuels. This finish should be treated like any automotive finish, cleaned regularly with soap and water, and polished on an as needed basis.

b. The tandem axle trailer is constructed to last many years, and with a little care will operate smoothly.

c. For proper maintenance please refer to the Dexter Axle operation and service manual included within this manual.

7.3 Parking Brake

a. The trailer unit is equipped with a parking brake assembly consisting of drum brakes with a cable brake actuator. See the Dexter Axle manual included within this manual for more instructions.

b. Check the 3 lever operator and the cables weekly for signs of wear. Replace as required.

7.4 Delivery Hose

a. The Fueling hose should be inspected monthly for cracks. Any sudden loss of flow may indicate a crack in the hose. Replace as required.

7.5 Grounding Reels

a. Grounding reel cables should be pulled out, cleaned and inspected monthly. Cable clamps and ends should be inspected for loose connections monthly.

7.6 Other Maintenance

a. See Section 9.0 for manufacturers' operation and maintenance procedures on all purchased out components.

b. Internal inspection will be necessary to insure structural integrity and cleanliness. It is recommended that interval inspections be performed at least every (6) six months.

WARNING: When entering confined spaces such as the interior of the tank, provide proper breathing equipment and a second person dedicated solely to safetywatch the person inside. Comply with all International, Federal, state, local and company safety and environmental standards.

Section 8.0 Replacement Parts

This section provides information for identification of parts for oerdering. To order, it is important to have the Model Number, Subassembly Number, Part Number and Description. Parts may be ordered by calling or writing to:

Spokane Industries, Inc.
Aviation Division
PO Box 3303
Spokane, WA 99220-3303
Telephone: 509.921.8869
Fax: 509.927.0826
E-Mail: info@siaviation.com

Please visit our website at: **www.siaviation.com**

8.1 TR1000DA Bill of Materials: SN 9570

1	1000 Gallon DOT-406 Tank	SMP 36X68.5X120
1a	16" DOT Manway self latching	04-2716
1b	Liquid level gauge 1-1/2" side mount	04-0154
1c	High level jet sensor	04-2003
1d	3" internal emergency valve	04-2524
1e	1" Internal condensate drain valve	04-2532
1f	Condensate drain valve cable assembly	SK-947-8
1g	1" condensate ball valve	04-10315
1h	2" bottom fill inlet	04-10318
2	12,000 LB tandem axle trailer	Metallite
2a	2-5/16" Ball Hitch	SK-955-1
2b	Surge brake actuator	SK-955-2
2c	Jack	SK-955-3
2d	Parking brake cable	SK-947-3
2e	Emergency shut off lever (both sides)	04-25222
2f	Wheel chocks (4 each)	04-0410
2g	2 each Fire extinguishers (20 B:C)	04-0700
2h	Traffic cones	04-0400
2k	Grounding reels	04-10361
2m	LT235/85R16 Load range “E” tires	SK-955-4
3	Diesel “DA”series pump module	SMP # DA
3a	Diesel powered pump 2" Gorman Rupp	04-2025
3b	Meter 1-1/2" 60 GPM W/ ticket printer	04-0144
3c	Faucet 1-1/2" 50 GPM filter/seperator	04-0240
3d	Filter element, sediment and water	04-0250
3e	Hose reel	04-2225
3f	1-1/4" x 50' Lg. aircraft fueling hose	06-10158
3g	1" Overwing nozzle	04-1260
3h	3/4" Pressure relief valve 30 PSI	04-103273
3k	Roller/spool assembly	04-2230
3m	3 way Lever actuator/operator	04-25222
3n	3/4" bypass flow check valve	04-103277
4	Emergency lock out box	07-1044
4a	Lock box internal cable, lever side	SK-947-7
4b	Lock box internal cable, valve side	SK-947-6
4c	Pulley assembly	04-2110
4d	Lock box to drain valve cable assembly	SK-947-1
4e	Lever actuator to lock box cable assembly	SK-947-2
4f	Drivers side emergency shut off cable	SK-947-4
4g	Passenger side emergency shut off cable	SK-947-5
4h	latch springs (2 each)	04-10542
4k	Clevis pin (2 each)	SK-947-8
4m	Cotter pin (2 each)	SK-947-9
4n	Latch bar (2 each)	01-8595
4p	Latch plug cable end (2 each)	01-85952
4q	Latch support bolt (2 each)	SK-947-10
4r	Latch support nuts (6 each)	SK-947-11
4s	Latch support washers (4 each)	SK-947-12
4t	Latch cable bolt (2 each)	SK-947-13
4u	Latch cable nut (2 each)	SK-947-14

Fig 8.1
TR1000DA Side View

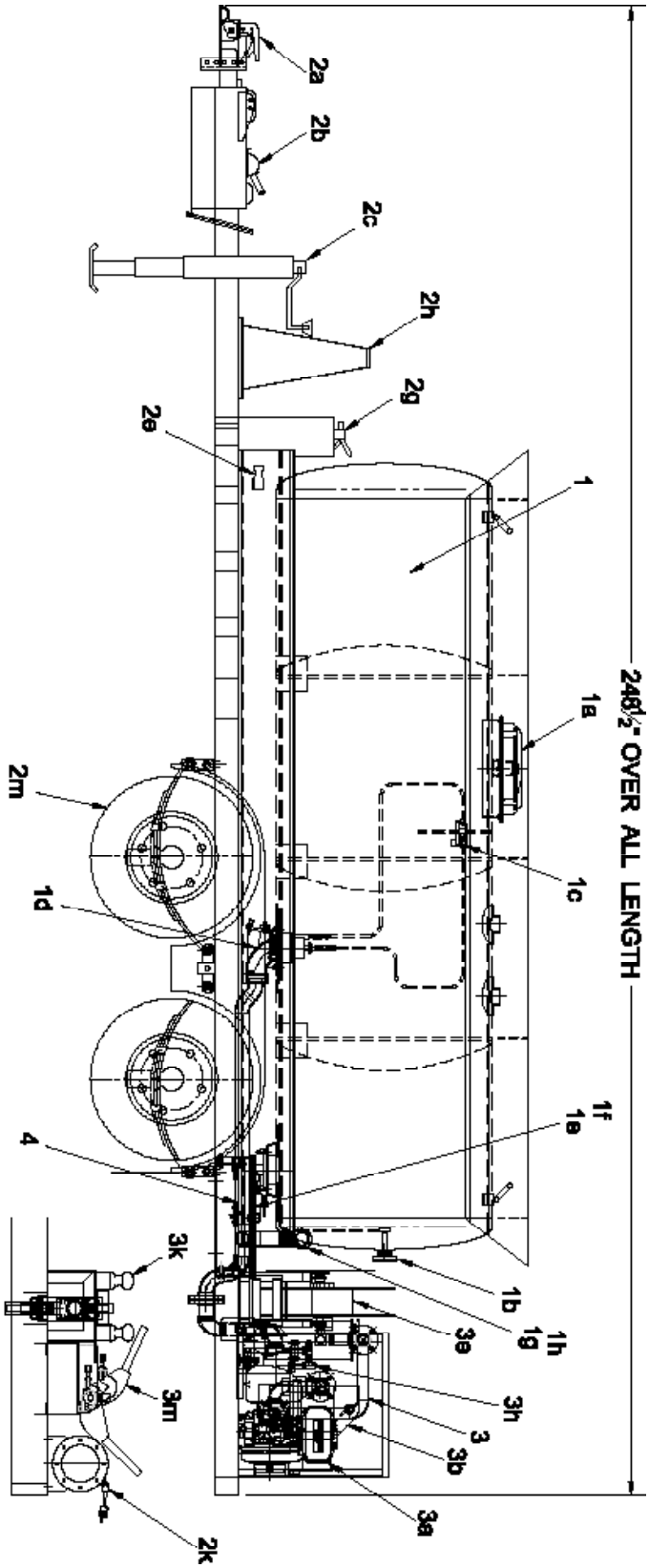


Fig 8.2
TR1000DA Top View

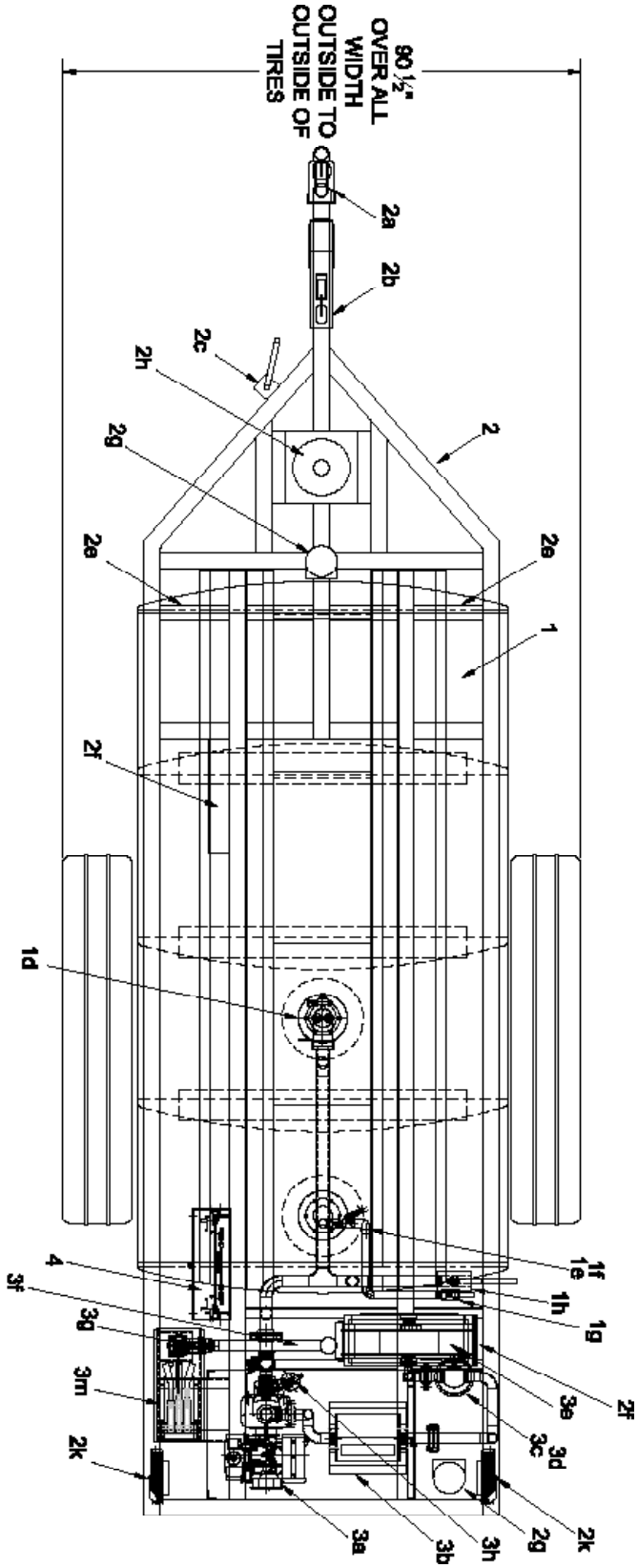


Fig 8.3
TR1000DA End View

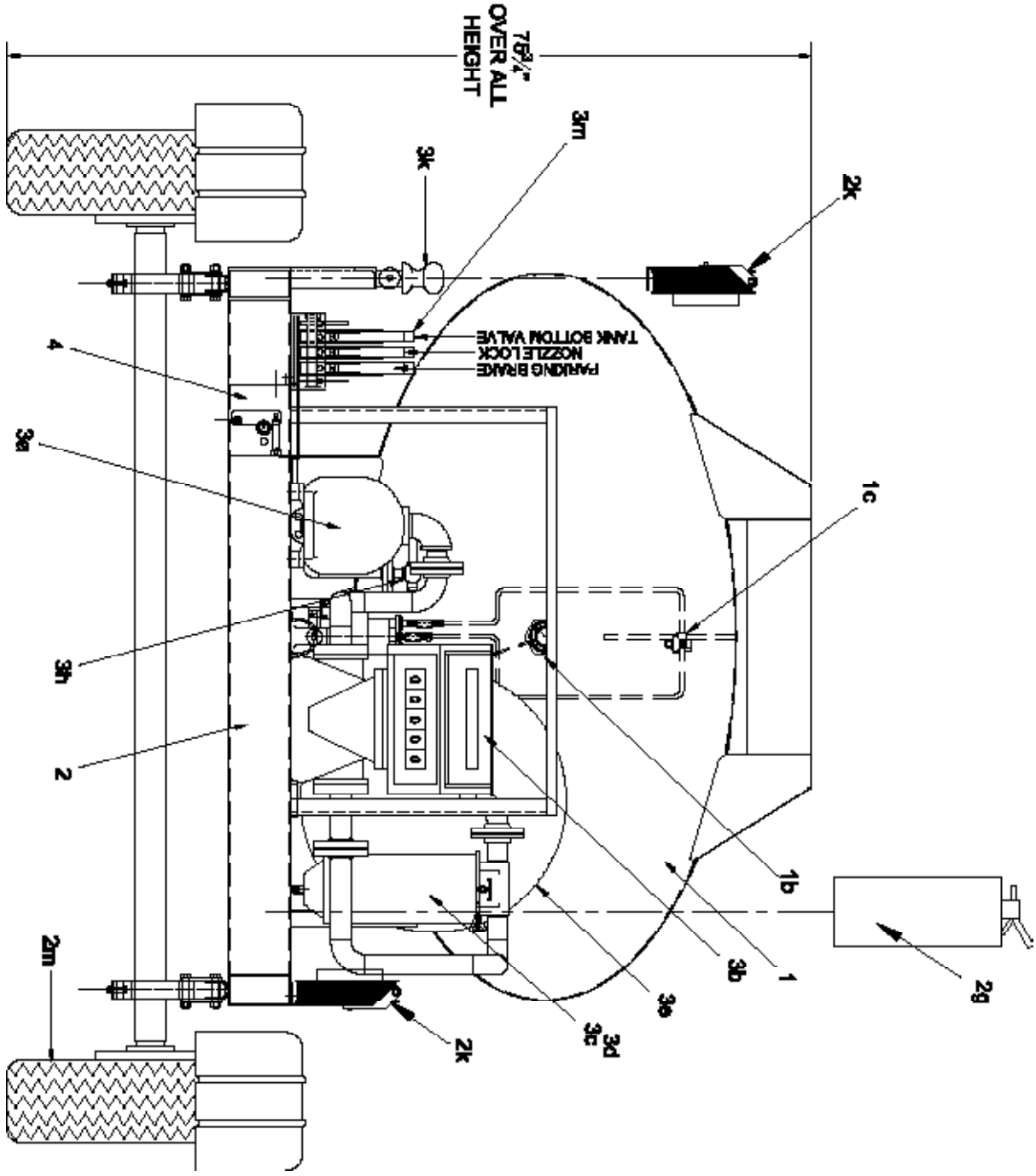
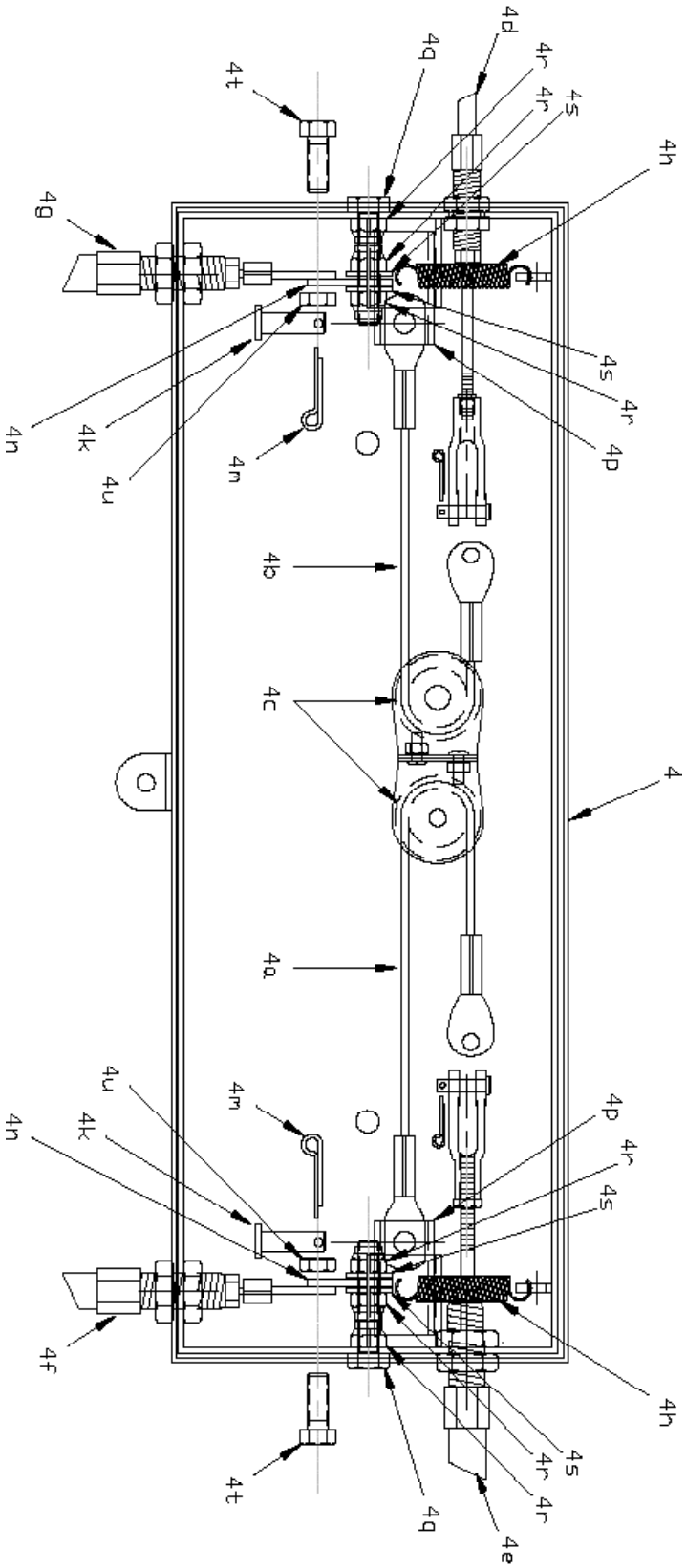


Fig 8.4
TR1000DA Emergency Lock Out Box
Top View



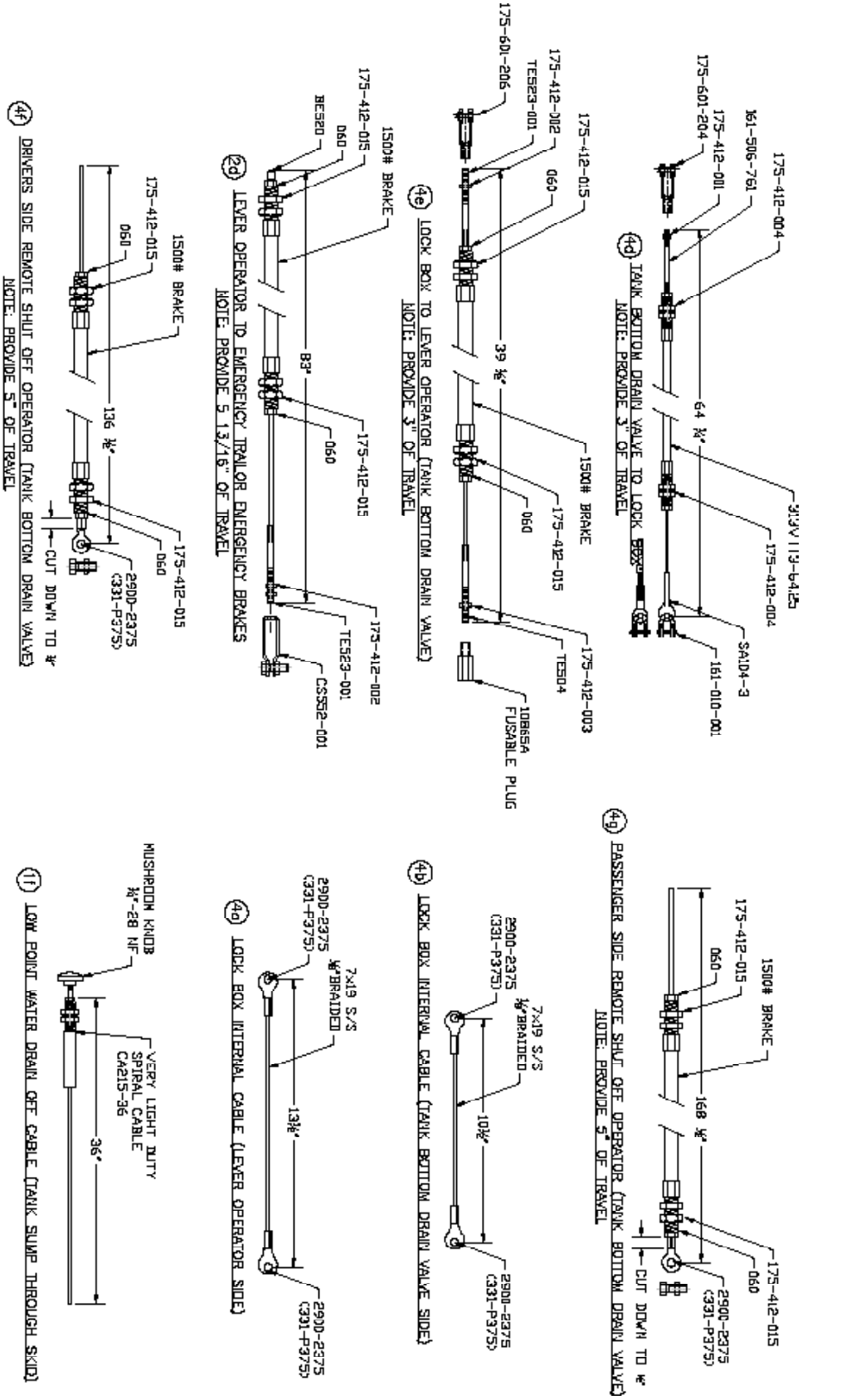


Fig 8.5
TR1000DA
Push Pull
Cable Details

8.2 TR1000SDA Bill of Materials: SN 9677

1	1000 Gallon DOT-406 Tank	SMP 36X68.5X120
1a	16" DOT Manway self latching	04-2716
1b	Liquid level gauge 1-1/2" side mount	04-0154
1c	High level jet sensor	04-2003
1d	3" internal valve	04-2524
1e	1" Internal condensate drain valve	04-2532
1f	Condensate drain valve cable assembly	SK-947-8
1g	1" condensate ball valve	04-10315
1h	2" bottom fill inlet	04-10318
2	12,000 LB tandem axle trailer	Metallite
2a	2-5/16" Ball Hitch	SK-955-1
2b	Surge brake actuator	SK-955-2
2c	Jack	SK-955-3
2d	Parking brake cable	SK-947-3
2e	Emergency shut off lever (both sides)	04-25222
2f	Wheel chocks (4 each)	04-0410
2g	2 each Fire extinguishers (20 B:C)	04-0700
2h	Traffic cones	04-0400
2k	Grounding reels	04-10361
2m	LT235/85R16 Load range “E” tires	SK-955-4
3	Diesel “DA” series pump modules	SMP # DA
3a	Diesel powered pump 2" Gorman Rupp	04-2025
3b	Meter 1-1/2" 60 GPM W/ ticket printer	04-0144
3c	Faucet 1-1/2" 50 GPM filter/seperator	04-0240
3d	Filter element, sediment and water	04-0250
3e	Hose reel	04-2225
3f	1-1/4" x 50' Lg. aircraft fueling hose	06-10158
3g	1" Overwing nozzle	04-1260
3h	3/4" Pressure relief valve 30 PSI	04-103273
3k	Roller/spool assembly	04-2230
3m	3 Lever operator	04-25222
3n	3/4" bypass flow check valve	04-103277
3p	Aviation Fuel Sampling Port (Optional)	SC-2007-1
3q	Fuel Sampling Dead Man Valve (Optional)	04-2104
4	Emergency lock out box	07-1044
4a	Lock box internal cable, lever side	SK-947-7
4b	Lock box internal cable, valve side	SK-947-6
4c	Pulley assembly	04-2110
4d	Lock box to drain valve cable assembly	SK-947-1
4e	Lever actuator to lock box cable assembly	SK-947-2
4f	Drivers side emergency shut off cable	SK-947-4
4g	Passenger side emergency shut off cable	SK-947-5
4h	latch springs (2 each)	04-10542
4k	Clevis pin (2 each)	SK-947-8
4m	Cotter pin (2 each)	SK-947-9
4n	Latch bar (2 each)	01-8595
4p	Latch plug cable end (2 each)	01-85952
4q	Latch support bolt (2 each)	SK-947-10
4r	Latch support nuts (6 each)	SK-947-11
4s	Latch support washers (4 each)	SK-947-12
4t	Latch cable bolt (2 each)	SK-947-13
4u	Latch cable nut (2 each)	SK-947-14

Figure 8.6
TR1000SDA Side View

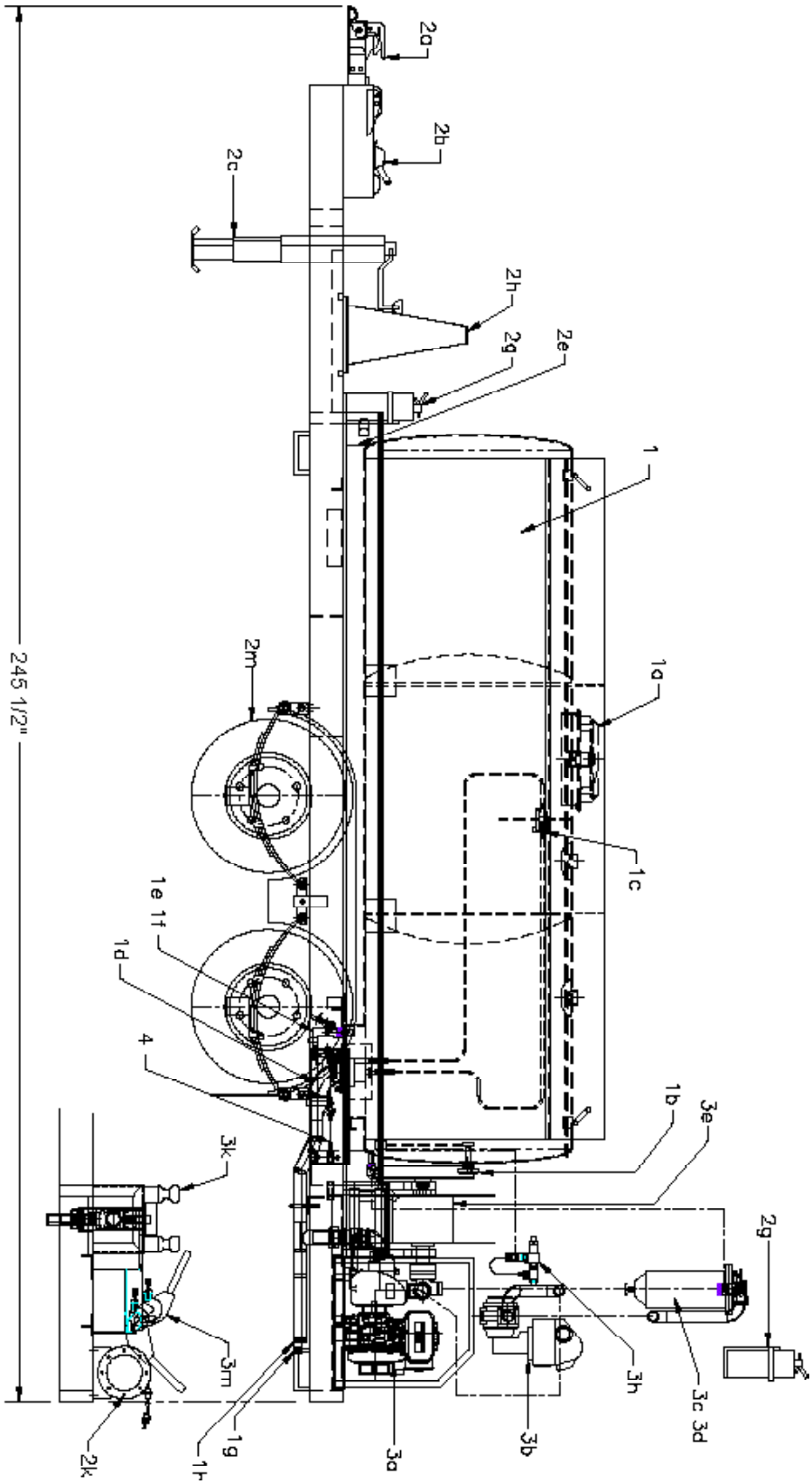


Fig 8.7
TR1000SDA Top View

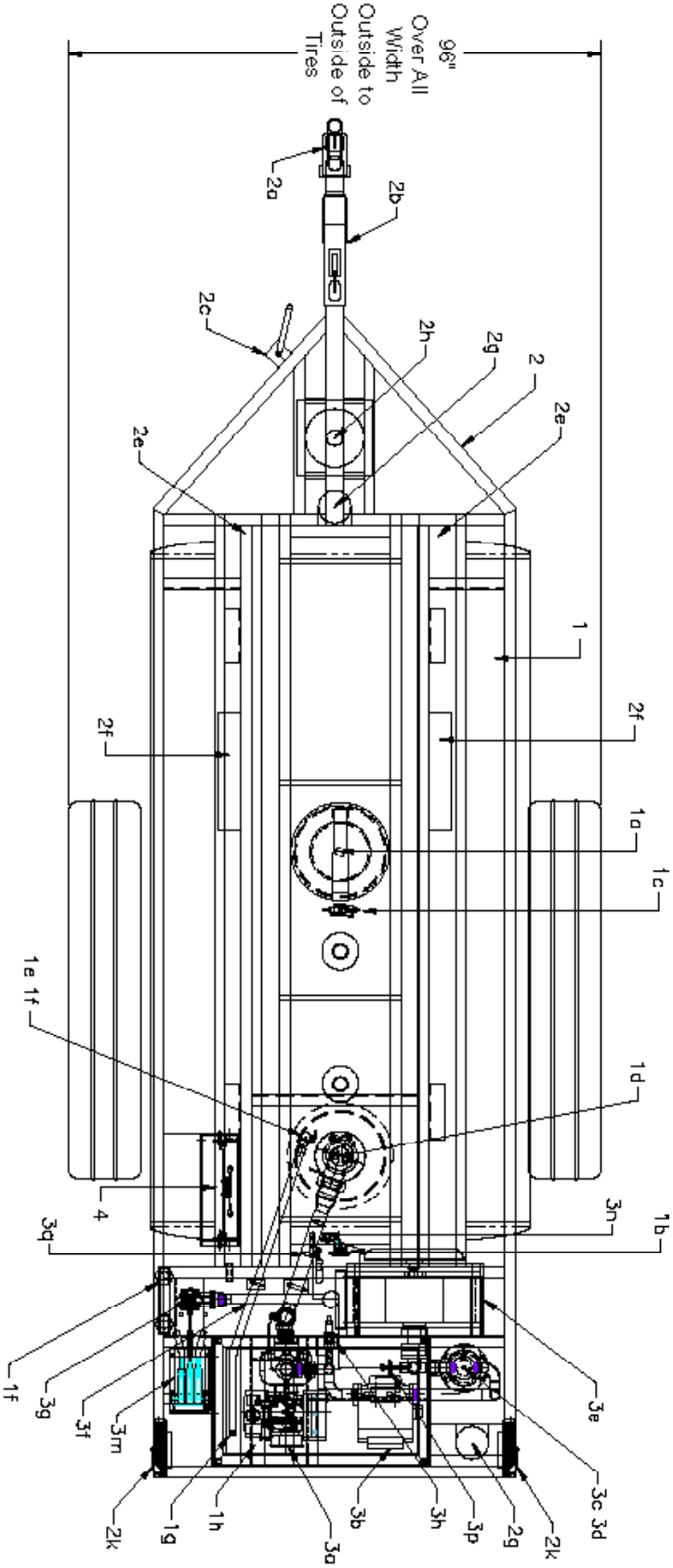


Fig 8.8
TR1000SDA End View

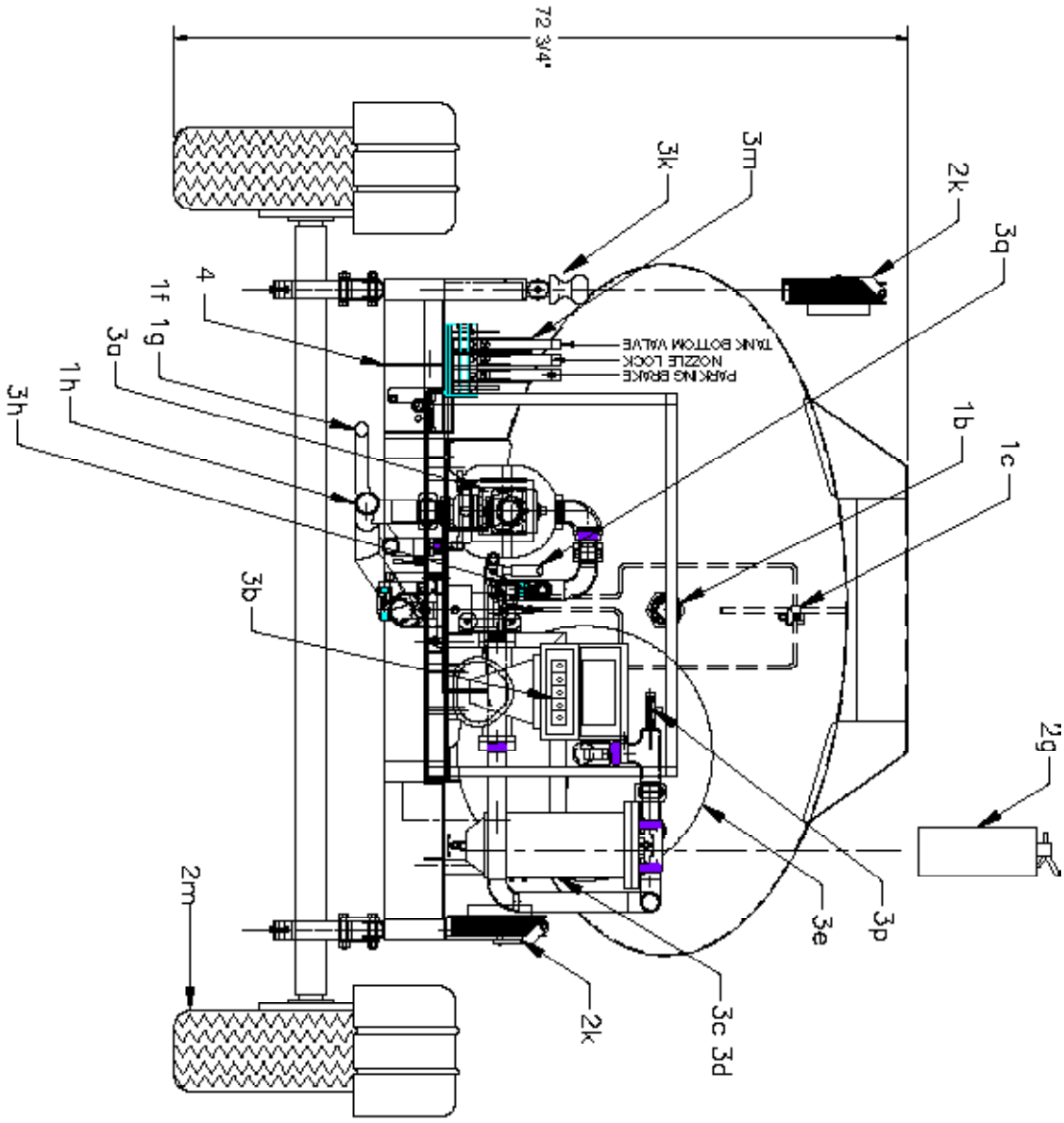


Fig 8.9
TR1000SDA Emergency Lock Out
Top View

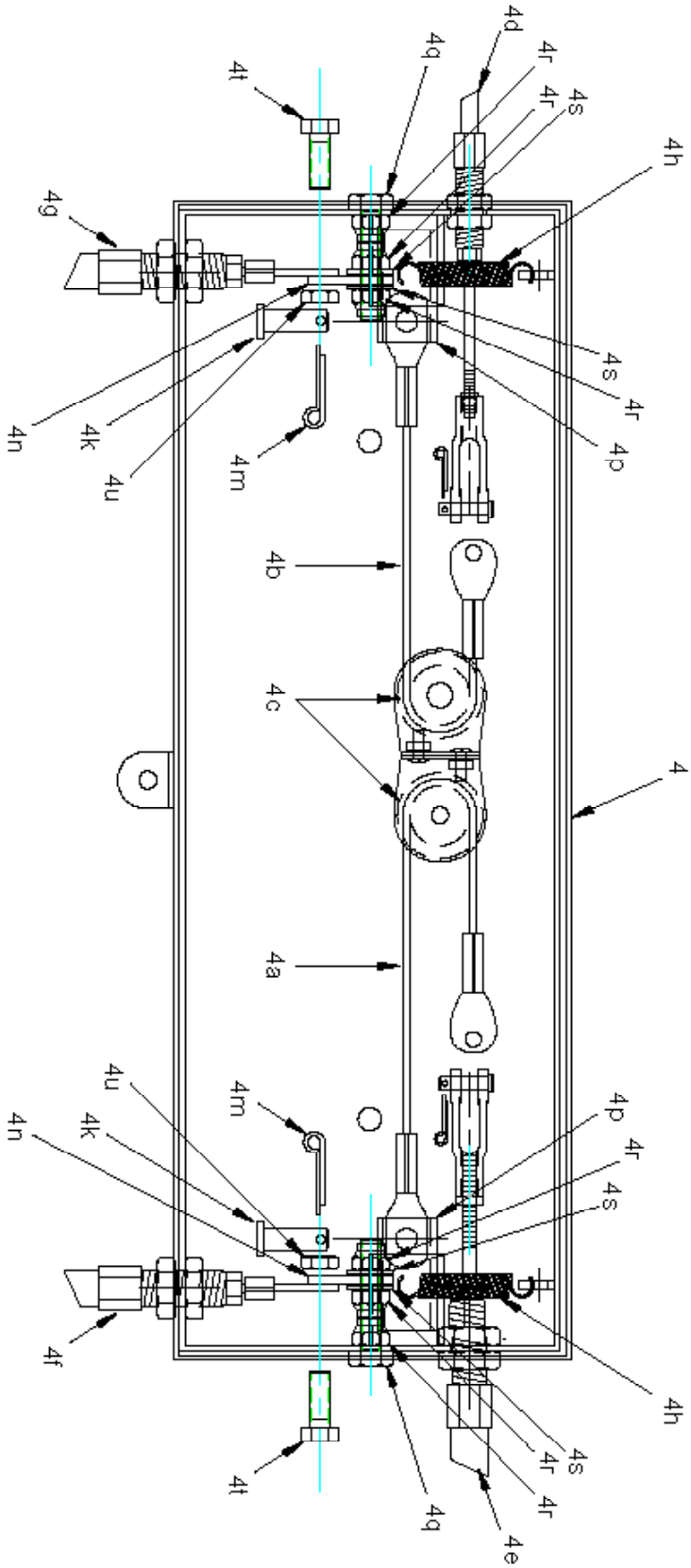
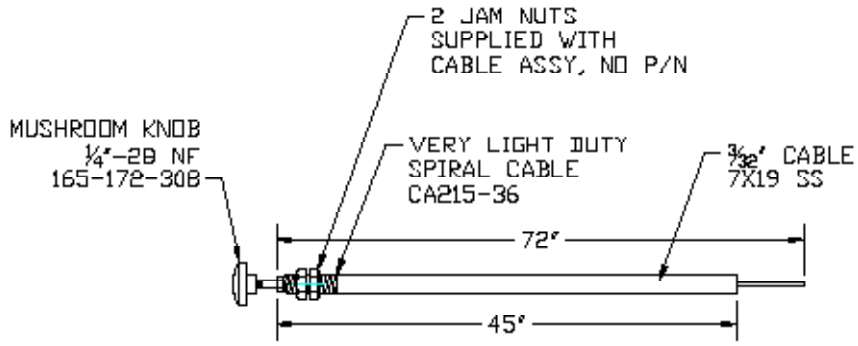
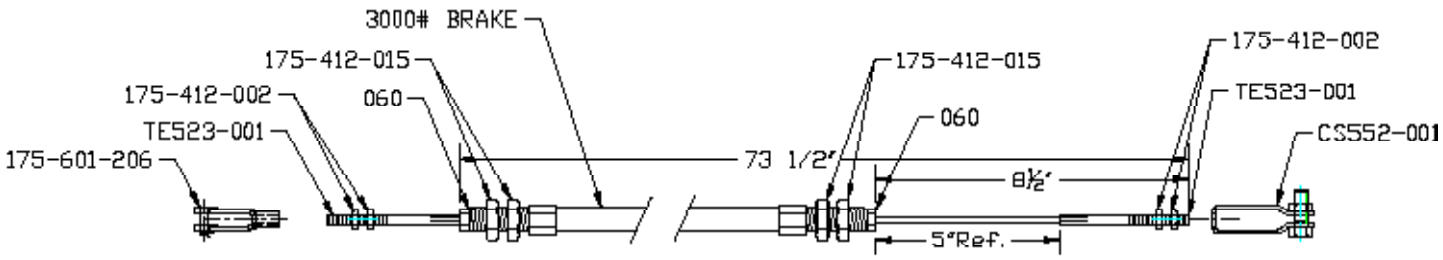


Fig 8.10A
TR1000SDA Push Pull Cable Details



(1f) LOW POINT WATER DRAIN OFF CABLE (TANK SUMP THROUGH SKID)



(2d) LEVER OPERATOR TO EMERGENCY TRAILOR EMERGENCY BRAKES
NOTE: PROVIDE 5" OF TRAVEL

Fig 8.10B
TR1000SDA Push Pull Cable Details

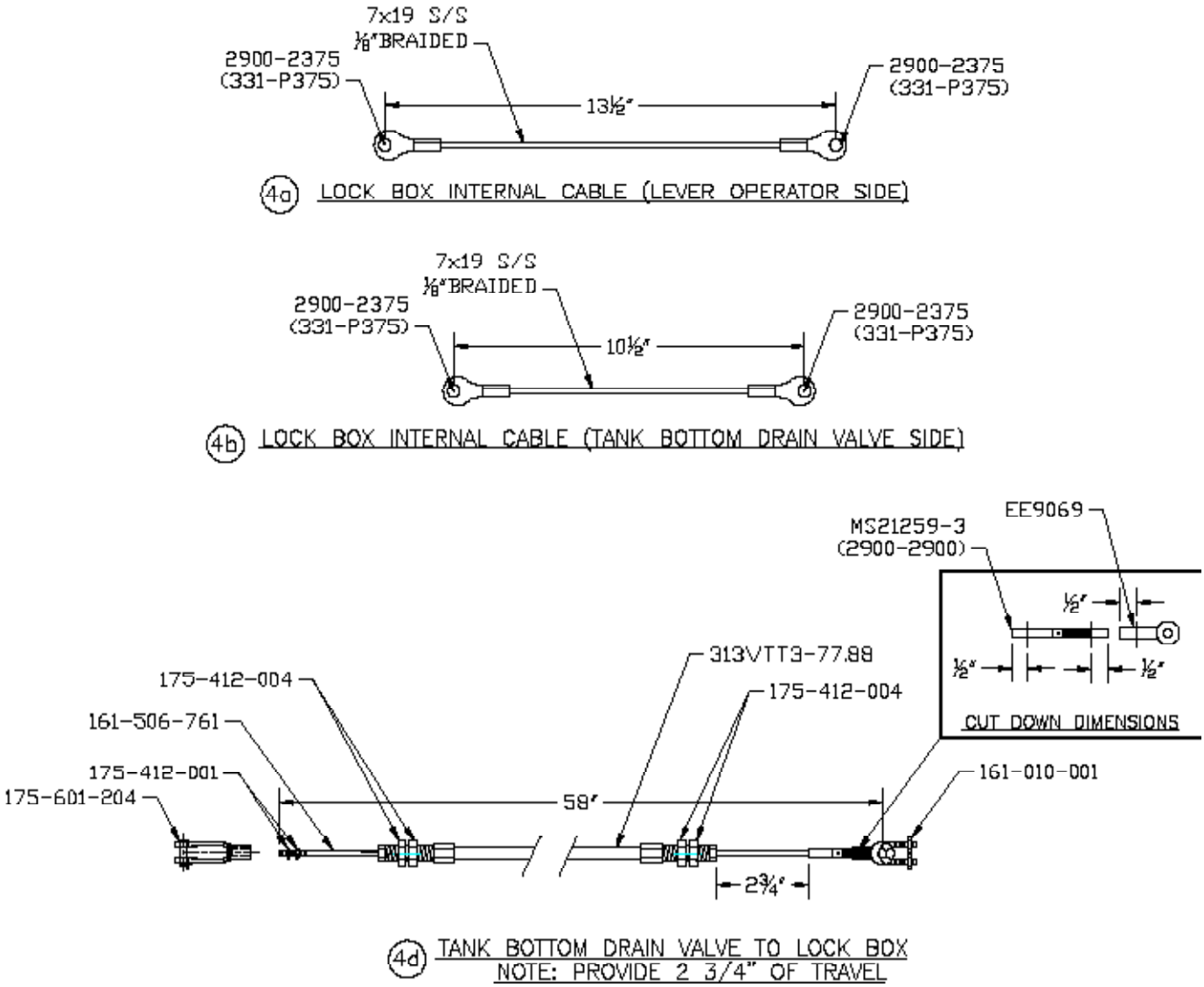
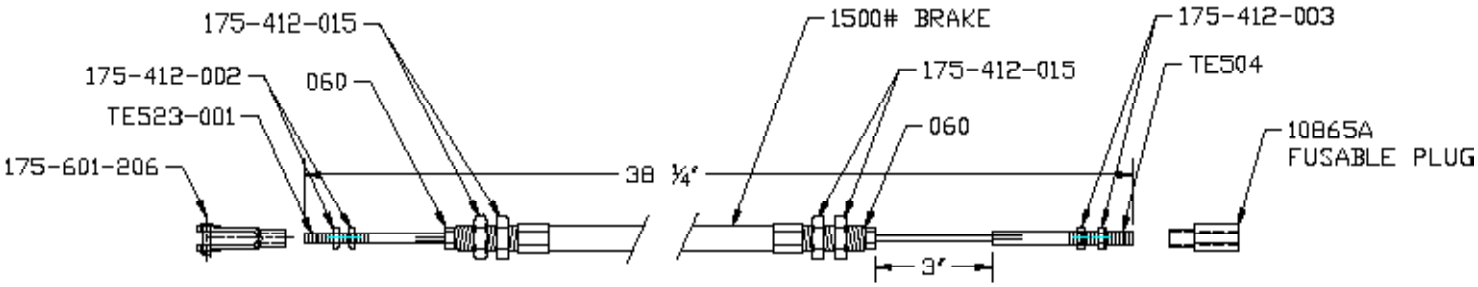
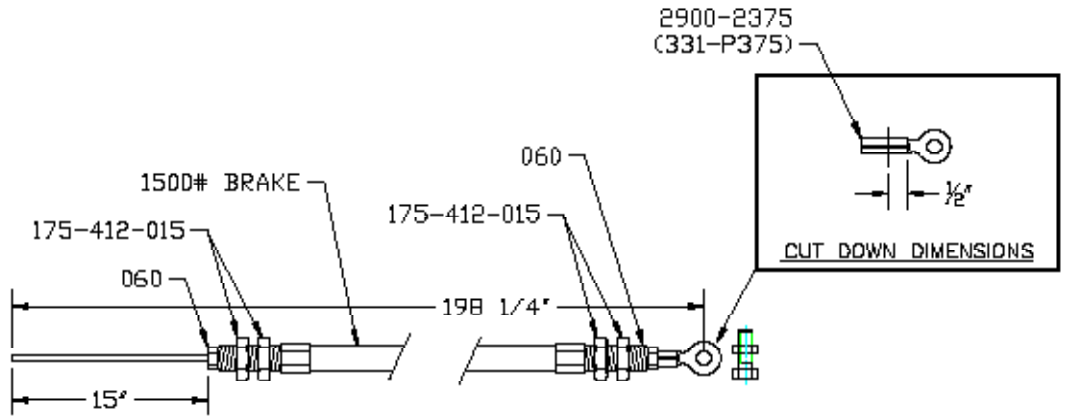


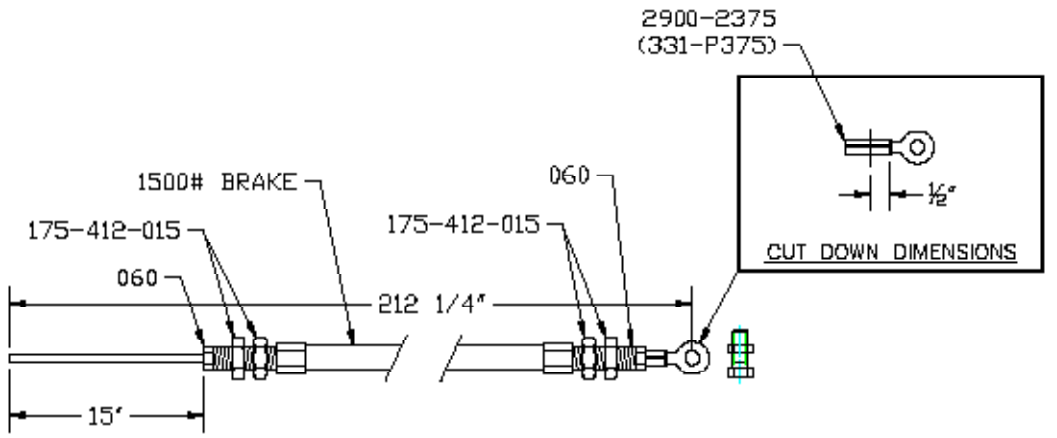
Fig 8.10CTR1000SDA
Push Pull Cable Details



4e LOCK BOX TO LEVER OPERATOR (TANK BOTTOM DRAIN VALVE)
NOTE: PROVIDE 3" OF TRAVEL



4f DRIVERS SIDE REMOTE SHUT OFF OPERATOR (TANK BOTTOM DRAIN VALVE)
NOTE: PROVIDE 15" OF TRAVEL



4g PASSENGER SIDE REMOTE SHUT OFF OPERATOR (TANK BOTTOM DRAIN VALVE)
NOTE: PROVIDE 15" OF TRAVEL

Trouble Shooting

Symptom	Probable Cause	Possible Correction
Parking brake does not work	Cable or operator tension too loose	Adjust cable tension as required
	Bad brake shoes	Replace as required
3" Internal valve will not open	Emergency lock out box triggered	Re-set as described in section 6.7
	Cable or operator tension too loose	Adjust cable tension as required
3" Internal valve will not close	A foreign object stuck in valve Cable or operator tension too tight	Remove object Adjust cable tension as required
	Bad valve spring or seal	replace as required (see section 9.0)
Nozzle holster will not lift up	broken lift spring	replace as required
No fluid flow through fueling nozzle	Tank empty	Refuel HandiFueler as described in section 6.3
	3" Internal valve closed	Open valve
	2" Pump suction valve closed	Open valve
	Emergency lock out box triggered	Re-set as described in section 6.7
	Pump lost prime	Re-prime pump as described in section 6.6
	Clogged filter element	Replace element (see section 9.0)