QUIC-LIFT[™] Hydraulic Portable Tank System Model PTS-HA Parts and Instruction Manual



Rev. 11-29-22

I. <u>STANDARD EQUIPMENT</u>

The following items are included with each complete PTS-HA system:

A. Instruction Packet

1. Installer Copy - Includes all information required to install a complete system, including wiring diagram and parts list.

2. Customer Copy - Includes all information provided to installer plus "Warning" labels that must be affixed to apparatus prior to operating the PTS-HA.

B. Control Switch and Motor Reversing Module

A single pole, double throw, momentary switch, single pole, single throw toggle switch and motor reversing module are provided for operation of system.

C. Flashing Light Kit (Model PTS-FLK)

NFPA 1901-96 requires flashing lights be mounted to all Systems, and must remain activated whenever the System is out of the stored position. ALL systems include a Flashing Light Kit.

II. <u>OPTIONAL EQUIPMENT</u>

The following equipment may be added to any PTS-HA:

A. Horizontal Hard Sleeve Mount with One 10' Solid Tray (Model HHS-TM-1)

Mounts to top of system to store an additional single 10' hard sleeve.

B. Horizontal Hard Sleeve Mount with One 10' Split Tray (Model HHS-TM-1-ST)

Mounts to top of system to store an additional single 10' hard sleeve (tray ships in two sections).

C. Center Hinge Hardware Kit (Model PTS-HA-CH)

Required for mounting of a tank cover.

D. Elliptical tank Adapter (Model PTS-HA-ETA)

Required for mounting system to elliptical tanker.

III. GENERAL INSTALLATION INFORMATION

PLEASE NOTE: The PTS-HA is NOT a direct, bolt-on replacement for the standard PTS.

When the portable tank is placed into the tank box (9 & 10), there should be approximately 2 inches of space left over top of the tank.

A. Mounting Points for Base Castings

Mounting holes have been provided on both the vertical and horizontal mounting surfaces. Although the device may be securely mounted from the horizontal surface only, it is of great advantage to use mounting bolts on the vertical surface as well. If using only the vertical or horizontal hole sets for mounting, one-half inch thick aluminum backing plates should be used (see page 15).

All bolts should have a reinforcement structure added underneath the mounting surface whenever possible.

B. Electrical Circuit

The control switches (supplied) are a single pole, single throw toggle switch and single pole double throw momentary 25 amp switch. They should be placed in such a position that the operator has full view of the PTS-HA and any personnel that might come in contact with it. The control switches and motor reversing module should be mounted in waterproof compartments. The motor reversing module is activated by the momentary switch. Using wiring of equal length between power source and the hydraulic actuators will help keep the actuators running in synchronization (see page 20). We recommend that all electrical connections be soldered.

Several "Lock Out" circuits may be considered to prevent accidents from occurring. An ideal "Lock Out" system would only permit operation when the ignition switch is on, the transmission is in park, and any obstructing compartment doors are shut. Because of the higher amperage required to operate the PTS-HA, a separate "Lock Out" circuit should be used. The "Lock Out" circuit should be separated from the PTS-HA circuit by a relay. This will prevent damage to the existing wiring system. The PTS-HA circuit should be protected by an 80 amp fuse.

After all electrical connections are complete and system has been tested, protect connections with a weather proofer like liquid tape.

The NFPA 1901-96 standard requires flashing lights be provided, facing the front and rear of the apparatus. Lights must flash whenever the System is out of the stored position.

C. Synchronization of Actuators

It is important to the operation of the PTS-HA that the actuators work in synchronization. The actuators may operate out of synch a considerable amount before binding occurs, however, reducing this occurence will increase the life of the actuators and prevent damage to the existing wiring system.

Do not permit personnel to hang, sit or stand on portable tank while stored on the PTS-HA. If the unit *is* overloaded, it will reach peak pressure and begin to bypass the internal fluid, producing an audible whine.

Whenever the operator raises or lowers the unit, they should let it run until both units reach their extent, so that the actuators re-synchronize and are ready to run in the opposite direction.

IV. INSTALLING THE HYDRAULIC PORTABLE TANK SYSTEM

A. <u>Preparation for Mounting</u> (Refer to page 10 for item numbers in parentheses)

Plan and lay out the entire installation before making any cuts or drilling any holes in the body of the fire apparatus. This will keep "out of service" time to a minimum and also help to minimize mistakes. See Section IV. C. (Electrical System) before any holes are drilled into the apparatus. Check both halves of unit to verify they have the same Serial Number on their tags.

The PTS-HA was designed for use on a shelf with a minimum depth of 8-1/2". The total depth of the PTS-HA is 9-3/4". To determine the total length required to mount the PTS-HA, measure the length of the collapsed portable tank and add 21". We are allowing 10-1/2" for each device on the end of the tank which includes 1" at each end or a total of 2" of "play" for the tank to move within the boxes (9 & 10). This 2" must be provided or the tank may bind during raising or lowering (see page 12).

B. Mounting the System

Double check your measurements making sure to add 21" to the collapsed length of the portable tank. Mark this total length on your mounting surface (as a reference) and then set the two devices in place on the shelf. Mark absolute locations on shelf using measurement guides on pages 15 & 16. Note the minimum clearance required for the hinge to pivot (detail drawing in top right corner, page 16). Mark the outside edges of each device on the mounting surface.

The tank boxes (9 & 10) are shipped separate from the devices. The neoprene pads (14) and 14-20 x 1" flat head screws (20) are also shipped loose.

B. Mounting the System (continued)

Check for any obstructions behind or below the selected mounting locations. Also be sure you can run your wiring unobstructed through the back of the base castings. The outboard ends of the devices cannot be obstructed as access is necessary for mounting, emergency operation, and adjustment of the actuators.

You are now ready to mount the devices as follows (refer to page 10 for item numbers in parenthesis):

1. The flat surface, between the three ears on the base castings (1 or 2) should be flush and parallel with the edge of the mounting surface. Both devices should be parallel and in-line to within 1/16'' of each other.

2. Pull cotterless pin (35) and lower the shelf casting (4 or 5).

3. Mark eight base holes and two lower back holes. Remove devices.

4. Drill ten holes for 3/8" mounting bolts (not supplied). Replace devices, insert bolts and snug up on nuts.

5. Pull cotterless pin (34) and remove the shelf arm casting (3).

6. Lay hydraulic actuator (13) forward and also lay Back Arm Casting (6) forward.

7. Mark two top holes in base casting (if used). Also mark hole location for electrical wiring through bottom rear of base casting.

8. Remove device and drill holes for the two top holes in base casting and for the wiring.

9. Re-position devices on shelf and mount in place with 3/8" bolts and nuts.

10. Wiring should be run through lower hole in base casting at this time. We suggest the wire be run in a protective sheath to prevent chaffing. The wire should be run under the actuator adjuster casting (7) and up to the wire harness.

11. Flip the back arm casting (6) and hydraulic actuator (13) back. Connect wires to actuator and check clearance through full swing of actuator. Replace shelf arm casting (3) and pin the three units together using cotterless pin (34). Flip up the shelf casting (4 or 5) and place cotterless pin (35) through the shelf casting and shelf arm casting (3).

B. <u>Mounting the System</u> (continued)

12. Attach the flashing light kit (Model PTS-FLK) at this time (see pages 13 & 14), following the "Wiring System" directions on page 20.

13. Connect the electrical system at this time (see Section IV. C.) so the system may be tested.

14. With the electric connected, run the devices up and down through a couple of cycles. The units should run in synchronization. The units may appear to be a little loose at this time.

15. Lower the devices so the neoprene pads (14) may be attached using $1/4-20 \times 1"$ flat head screws (20). Tighten the screws so they depress approximately 1/16" into the neoprene.

16. Run the units to the up position until they both reach their extent. The units should now be tight.

17. Lower the units 15 to 20 degrees and attach tank boxes (9 & 10) to the shelf casting (3). Use $5/16-18 \ge 5/8$ " button head socket screws (42) through front of casting and $5/16-18 \ge 7/8$ " button head socket screws (30) through base of casting.

18. The PTS-HA is now operational and you are ready to mount the portable tank.

C. Electrical System

A "WARNING" label (48) is provided with each PTS-HA. The pressure sensitive label must be mounted by the electrical control switch (43). All apparatus operators must be instructed to keep area in front of the PTS-HA clear of personnel when the PTS-HA is being raised or lowered.

An additional "WARNING" label (49) is also provided. This pressure sensitive label must also be mounted by the electrical control switch. This label is a reminder to the operator to check for any deviation from standard operation that may signal a problem in the System.

V. TROUBLESHOOTING

All units are tested after final assembly to ensure proper operation and adjustment. You should not have to make any adjustments when mounting the devices.

The following procedures are offered in the event of problems in the field. We strongly urge you to contact Ziamatic if any problems are encountered before attempting to correct them yourself.

A. Actuator Adjuster

The actuator adjuster (7) is factory set and should not be touched unless you are replacing a failed actuator. The following sequence should be used for adjusting the actuator (see drawing on page 11):

1. Loosen $3/8-16 \ge 1-3/4$ " hex head clamp bolt (24).

2. Back out 1/2-13 x 1" socket set screw (23) until actuator adjuster casting (7) drops as low as it will go.

3. Tighten socket set screw (23) until actuator adjuster casting (7) begins to raise.

4. Tighten clamp bolt (24).

5. Bring device to full up or raised position. Actuator is properly adjusted when the bottom of the shelf casting (4 or 5) is resting firmly on the neoprene pad (14). NOTE: Four flat head screws in neoprene pad should be 1/16" below the surface of the neoprene pad.

6. If there is play between the shelf casting and pad, continue raising the actuator adjuster casting with set screw (23). Use 1/2 turn of screw at a time.

7. Always re-tighten clamp bolt (24) before checking adjustment.

B. One Actuator Running Two Seconds or More Slower Than the Other

When one actuator is running more than two seconds behind the other, it is normally due to some type of resistance in the wiring system. Check all wire connections to make sure they are secure. Make sure to bring both actuators to their extent at the end of each up and down cycle. If they are still greatly out of synch after checking the security of the wires and bringing the units to their extent at the end of each cycle, you may switch the actuators to confirm that the problem is in the wiring system itself. With the portable tank removed, and the devices in the lowered position, pull cotterless pins (34 & 35) and remove shelf arm casting (3). Remove $1/2" \times 2-1/4"$ shoulder bolt (37) and 3/8-16 nut (38) to remove hydraulic actuator (13). Switch the two actuators and reassemble. If the rear actuator was running slower before switching, and is still running slower after, then there is a problem in the wiring.

VI. INSTALLING PORTABLE TANK COVER AND HARD SLEEVES

A. <u>Preparation for Mounting</u>

Follow installation instructions for the Portable Tank System (Section IV. A. & B.). If using the optional center hinge kit, particular attention must be paid to ensure that the center hinge (page 15) is in alignment with the left and right casting sets.

Parts (page 17) and cover dimensions (page 18) are provided.

B. Mounting

Use the 1/2" hinge pin (102) for alignment. Shims may be required to correct adjustment problems. If using center hinge, all three pins should be aligned to within 1/16".

After the three hinges are aligned and the tank cover (page 18) has been fabricated, you are ready to proceed with mounting.

NOTE: Measure the tank box (see page 19) to determine the "A & B" dimensions. This will determine the size of your tank cover. The length of the cover will also vary depending on the mounting distance between the casting sets.

You are now ready to mount the tank cover and hardware as follows (refer to page 17 for item numbers in parenthesis):

1. Center the center hinge (100) between the left and right castings along the side of the truck.

2. Place top of cover (115) onto the top of the tank boxes (9 & 10). You may have to place temporary shims between tank cover and tank box to raise the cover. The bottom edge of the tank cover should be just above the hinge (page 16 top right drawing).

3. Clamp the tank cover to the tank boxes.

4. Raise the center hinge and mark the four holes for the hinge. Use 9/32 drill to drill out the four holes.

5. Place the center backplate (103) in place and attach with 1/4-20 screws (111). Holes are tapped in the backplates.

6. Drill holes for 5/16-18 screws (110) in the backplates and attach with nuts (113).

VII. <u>MAINTENANCE</u>

A. <u>Periodic</u>

Any time the tank boxes (9 & 10) appear to be "loose", refer to Actuator Adjuster (Section V. A.).

B. Semi-Annually or at Scheduled Apparatus Lube Service

1. Actuator Adjuster (7) (page 10) - Check for loose bolts; refer to adjustment directions (Section V. A., page 6).

2. Lubrication - We suggest that all pivoting surfaces be sprayed in the joints and pivot points with CRC brand Stor&Lube long-term lubricant and rust preventative #03032. Excess lubrication should be wiped off.

3. Hydraulic Actuator - We suggest the exposed shaft be cleaned and sprayed with WD-40 or a similar light, moisture-repelling silicon-type lubricant.

C. Pressure Washing

WARNING: Do not operate pressure washer on or anywhere around the hydraulic actuators. Excessive pressure may allow soap and water to blow past the seal, damaging the actuator.

VIII. <u>SERVICE</u>

If you experience any problems with your Hydraulic Portable Tank System, please call us at 1-800-711-FIRE (3473) for assistance. Please have the serial number of your System available.

IX. DRAWINGS AND DIAGRAMS

Model PTS-HA Hydraulic Portable Tank System

- 1. Parts List (page 10)
- 2. Assembly Drawing (pages 11 & 12)
- 3. Side View of System (page 11)
- 4. Flashing Light Kit (pages 13 & 14)
- 5. Alignment of Casting Sets (page 15)
- 6. Elliptical Tank Adapter (page 15)
- 7. Dimension Drawing (page 16)
- 8. Tank Cover (pages 17 & 18)
- 9. Tank Boxes (page 19)
- 10. Wiring Diagram (page 20)
- 11. Stack Height and Max. Weight Limits (page 21)
- 12. Left Side Assembly Photos (page 22)
- 13. Right Side Assembly Photos (page 23)
- 14. Light Kit Components Photo (page 24)
- 15. Center Hinge Photo (page 24)
- 16. Tank Box Component Photos (page 25)

X. <u>WARRANTY</u>

A copy of the warranty registration **MUST** be returned to ZICO to ensure registration of your System (page 27). You may mail the copy or fax it to (215) 493-1401.

CHART 1. PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY.]
1	3098-400-101	Base Right Casting	1	1
2	3098-400-102	Base Left Casting	1	
3	3098-400-106	Shelf Arm Casting	2	
4	3098-105-103	Shelf Right Casting	1	1
5	3098-105-104	Shelf Left Casting	1	
6	3098-400-105	Back Arm Casting	2	
7	3098-400-107	Actuator Adjuster Casting	2	
8	3098-105-108	Tank Stop .187 Thick Steel	2	
9	3098-110-000	Tank Box Right .187 Thick Aluminum	1	
10	3098-112-000	Tank Box Left .187 Thick Aluminum	1	-
10	3098-105-111	Shelf Arm Cover .062 Thick Aluminum	2	
11	3098-105-112	Base Cover .062 Thick Aluminum	2	
	3098-400-113	Actuator	2	-
13	3098-105-114	Neoprene Pad	2	
14		Shaft 1/2" Dia. x 16-7/8"	2	
15	3098-105-115		2	-
16	3098-105-116	Pin 1/2" Dia. x 4-1/2" (not shown) D = L^{1} = $T = 7.5^{10}$ " = 7.7^{10} " = 2^{11} C"		
17	3098-105-117	Box Liner Top 7-5/8" x 7-7/8" x 3/16"	2	
18	3098-105-118	Box Liner Bottom 7-5/8" x 7-7/8 x 3/16"	2	-
19	9140-101220	Spring Pin 1/8" Dia. x 1/4" (not shown)	2	
20	9010-152516	Flat Head Screw 1/4-20 x 1"	8	
21	9114-105000	Washer 1/2" I.D. x 1/16" Thick	4	-
22	9140-101214	Spring Pin 1/8" Dia. x 7/8"	4	
23	9110-395016	Socket Set Screw Flat Point 1/2-13" x 1"	2	
24	9115-103728	Hex Head Bolt 3/8-16 x 1-3/4"	2	
25	9110-103116	Hex Head Bolt 5/16-18 x 1"	4	
26	9114-203100	Lock Washer 5/16" I.D.	4	
27	9112-103100	Hex Head Nut 5/16-18	4	
28	9110-222008	Pan Head Screw Phillips 10-32 x 1/2"	8	
29	9014-201900	Split Washer #10 SST	8	
30	9110-353114	Button Head Socket Screw 5/16-18 x 7/8"	8	
31	4005-000-105	Reflective Tape	2	
32	9110-222510	Pan Head Screw 1/4-20 x 5/8"	4	
33	9113-172500	Hex Head Lock Nut 1/4-20 Nylon	8	
34	9050-135090	Cotterless Pin 5.6 Lg.	2	1
35	9050-1050128	Cotterless Pin 8 Lg.	2	
36	9010-625028	Hex Head Shoulder Bolt 1/2" Dia. x 1-3/4"	4	
37	9010-315040	Shoulder Bolt 1/2" Dia. x 2-1/2"	2	1
38	9113-173700	Hex Head Lock Nut 3/8-16 Nylon	6	
39	9114-103700	Spacer, Shoulder Screw	4	
40	9110-162512	Flat Head Screw 1/4-20 x 3/4"	8	1
40 41	9114-202500	Lock Washer 1/4" I.D.	4	
41 42	9110-353110	Button Head Socket Screw 5/16-18 x 5/8"	8	
42 43	3097-500-156	Switch (not shown)	1	1
	3097-105-145	Boot, Toggle Switch (not shown)	2	
44			4	
45	3098-400-109	Spacer 1" O.D., .505" I.D., .203" thick		-
48	3098-105-148	Label - Warning Keep Clear (not shown)	1	
49	3098-105-149	Label - Warning Vibration (not shown)	1	
50	3098-160-000	Flashing Light Kit (see page 22)	1	
51	9114-115000	Flat Washer 1/2" I.D. (not shown)	12	NOTE: ITEMS 9
53	3098-400-115	Forward/Reverse Relay Mod. (not shown)	1	10 ARE THE ON
54	3098-400-117	Forward/Reverse Relay Mod. Cover (ns)	1	PARTS THAT
55	9014-353700	Spherical Washer Set	1	VARY BETWEEN
56	9114-113700	Flat Washer 3/8"	2	SYSTEMS
57	3097-500-157	Switch, On/Off	1	1
58	3098-110-113	Adjustable Tank Stop	2	
59	9140-111828	3/16 x 1-3/4" Roll Pin	4	

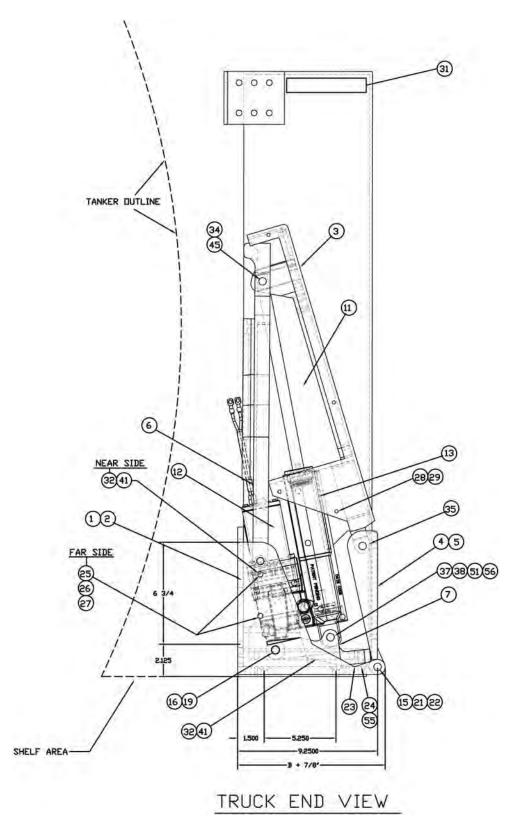
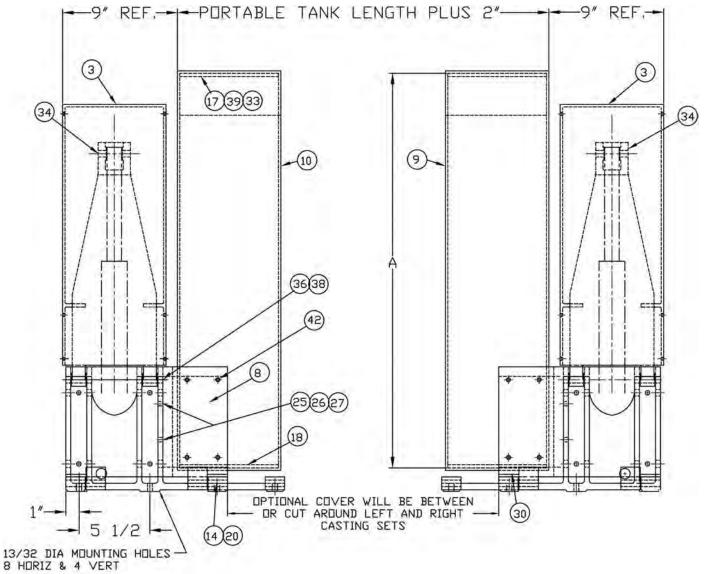
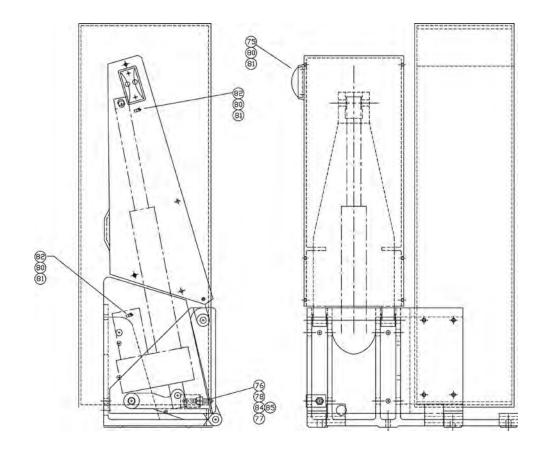


FIGURE 1. TRUCK END VIEW COMPONENT PARTS



TRUCK SIDE VIEW

FIGURE 2. TRUCK SIDE VIEW



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
75	3097-270-101	Clearance Light	2
76	3097-270-205	Switch, Limit	1
77		Harness, Limit Switch (provided/item 76)	1
78	3098-105-164	Bracket, Limit Switch	1
79	3097-270-109	Flasher (see page 14 - not shown)	1
80	9010-221108	Screw, 4-40 x 1/2 Pan Hd Phillips SMS	8
81	9012-171100	Nylok Hex Nut 4-40, ZPS	8
82	3097-270-111	Cable Tie	4
83	3097-270-113	In Line Splice (see page 14 - not shown)	7
84	9010-221908	10-32 x 1/2 Pan Hd. Phil. M/S	2
85	9113-171900	10-32 Nylok Hex Hd. Nut	2
86	3097-270-115	Snap Plug Connector (see page 14 - not shown)	4
87	3097-270-119	16 ga. Lead Wire - Black	4 Ft
88	3097-270-120	16 Ga. Lead Wire - White	4 Ft
89	3075-175-105	Delrin Tool Clip (not shown)	1
90	3097-270-122	Butt Connector (use/items 87 & 88)	2
91	3097-270-121	Female Spade Connector (use w/# 79)	2

FIGURE 3. FLASHING LIGHT KIT MODEL PTS-FLK

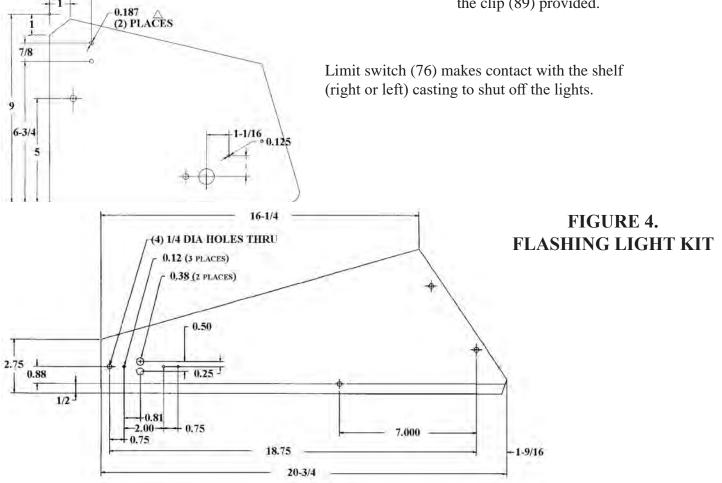
Wiring System: (See page 20 for Wiring Diagram)

1. One white wire 4' long (88) and one black wire 4' long (87) are provided for each light (75).

2. Snap plug connections (86) will be attached to each wire, ready to plug into lights prior to mounting, or wires may be soldered to the light.

3. In-line splices (83) are provided. Seventh splice to be connected to third wire in the limit switch harness (77). This wire may be used for indicator light in the cab.

4. Flasher (79) should be mounted in a weather-proof location and mounted in the clip (89) provided.



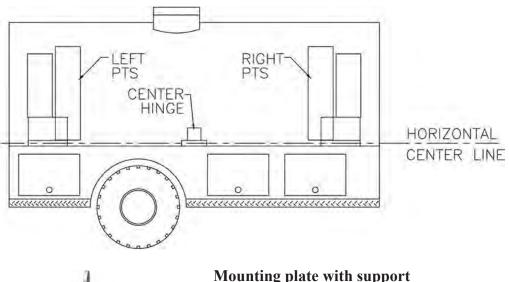


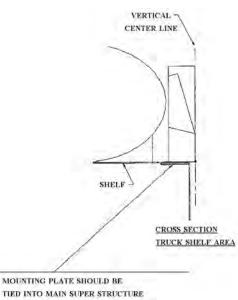
FIGURE 5. ALIGNMENT OF CASTING SETS

Mounting plate with support casting. Mounting plate 3/8" thick aluminum x 16-3/4" W x 16" D. Aluminum support is 9-3/4" H x 7-1/2" W x 3" D. FIGURE 6. ELLIPTICAL TANK ADAPTER

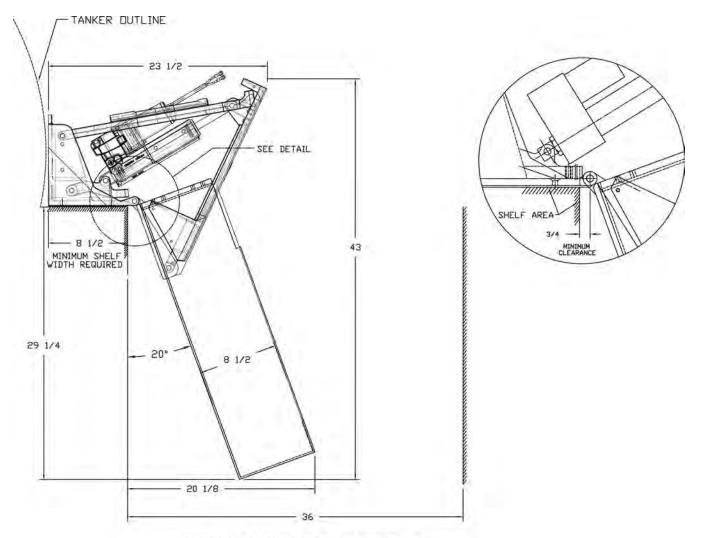
MODEL	DESCRIPTION	WT. IN LBS.
PTS-HA-ETA	Complete Adapter Set/Hardware	29.0/set
3098-115-105	Support Casting - Each	4.4/ea.
3098-415-110	Mounting Plate - Each	10.1/ea.

Note: If tank cover is to be used, order Hinge Extension (3098-115-113) in addition to Center Hinge Kit required. Shim the center hinge to the base casting (1) (2) if necessary.



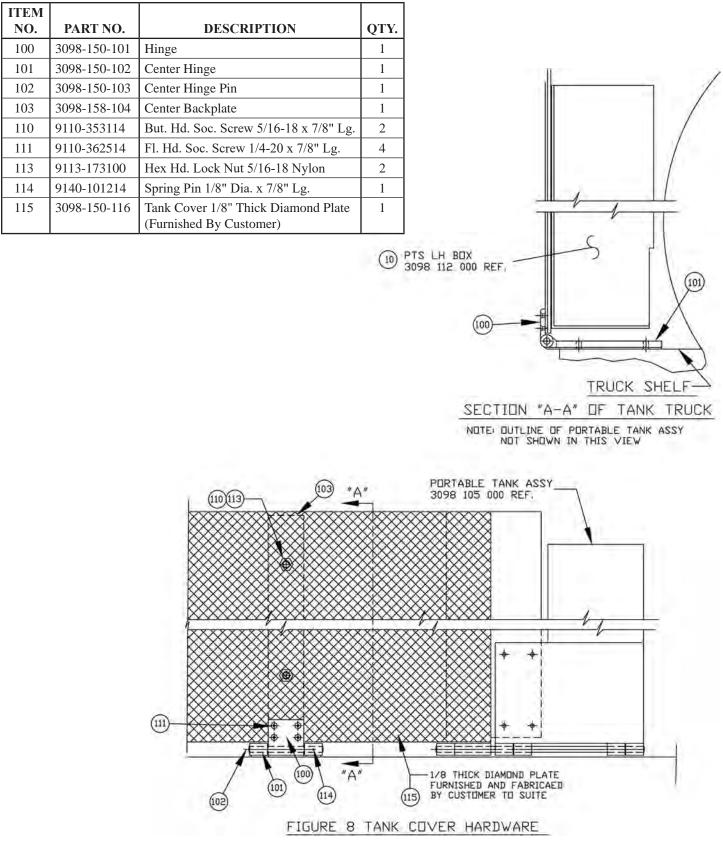


IF POSSIBLE

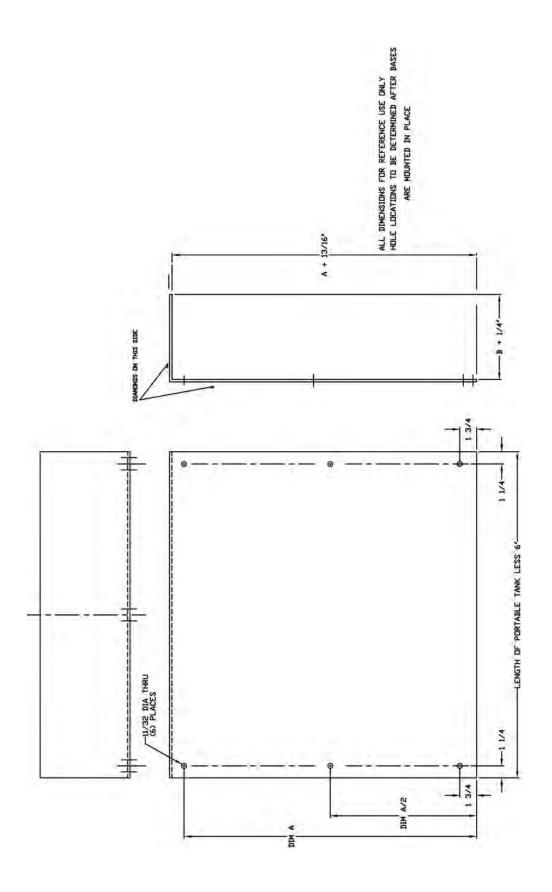


MINIMUM SIDE CLEARANCE FOR 28 1/2' TANK HEIGHT

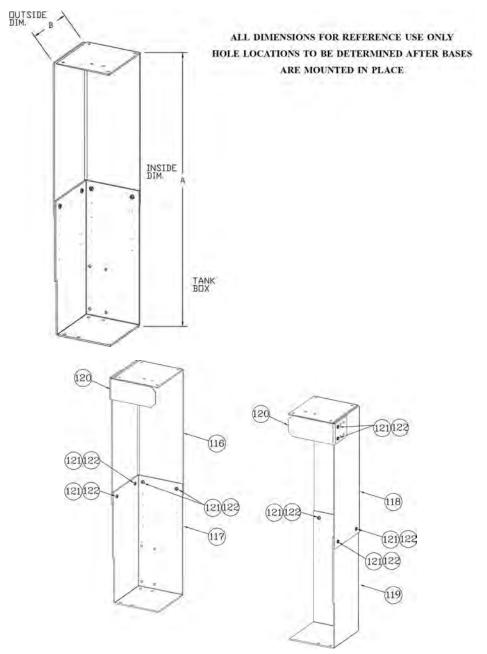
FIGURE 7. TRUCK END VIEW FULL EXTENDED DOWN POSITION









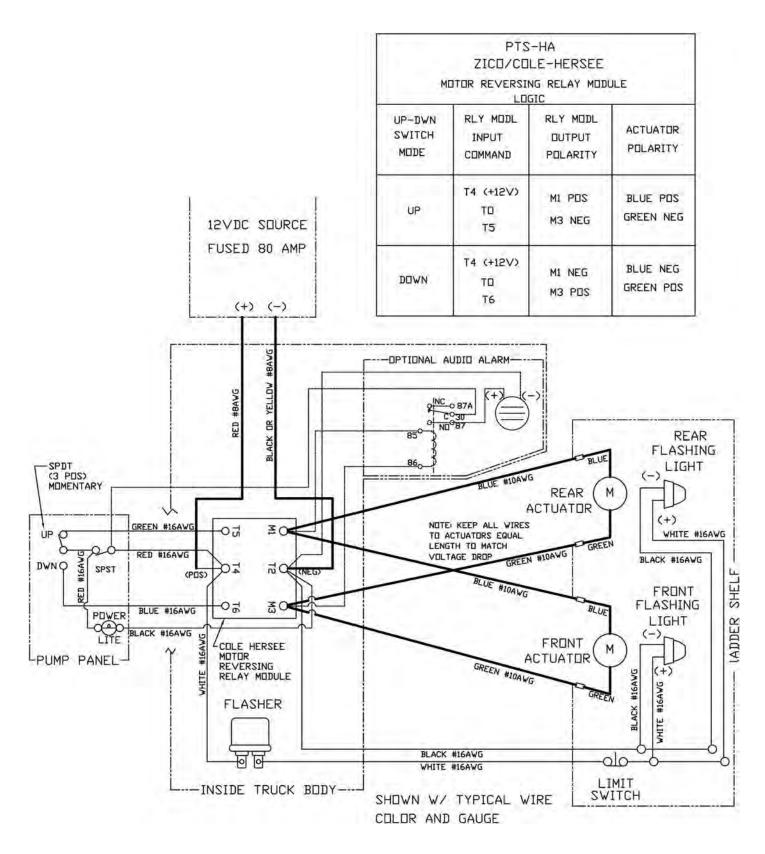


QUANTITIES PER ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION	QTY.
116	3098-110-109	PTS Box Right Top	1
117	3098-110-108	PTS Box Right Bottom	1
118	3098-112-111	PTS Box Left Top	1
119	3098-112-110	PTS Box Left Bottom	1
120	3098-110-113	PTS Bracket	1
121	9110-503110	Btn Hd, Socket 5/16-18 x 3/4" SS.	6
122	9113-103100	5/16-18 Low Pro. Nylock Nut SS.	6

NOTE #117 & #119 REQUIRE 11/32" HOLE DRILLED TO SET REQUIRED SIZE

FIGURE 10. TANK BOXES





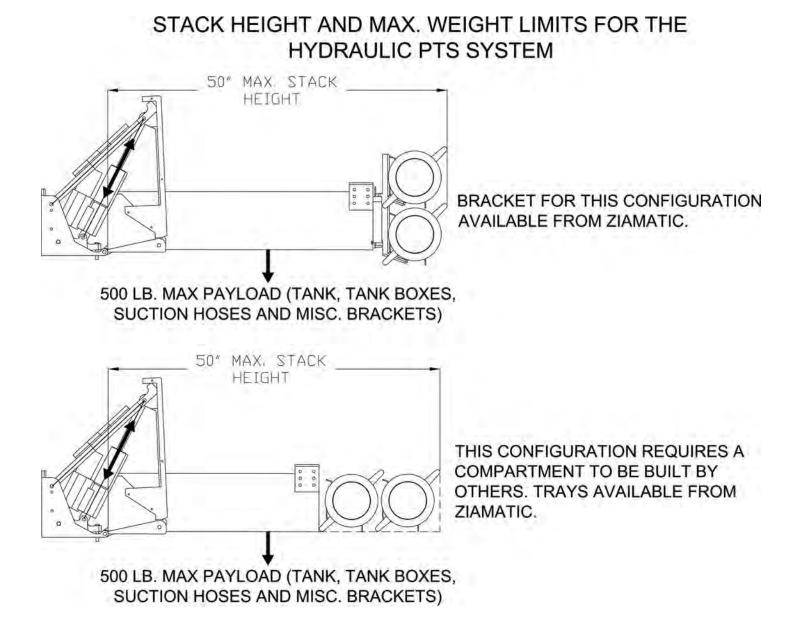


FIGURE 12. Stack Height and Max. Weight Limits

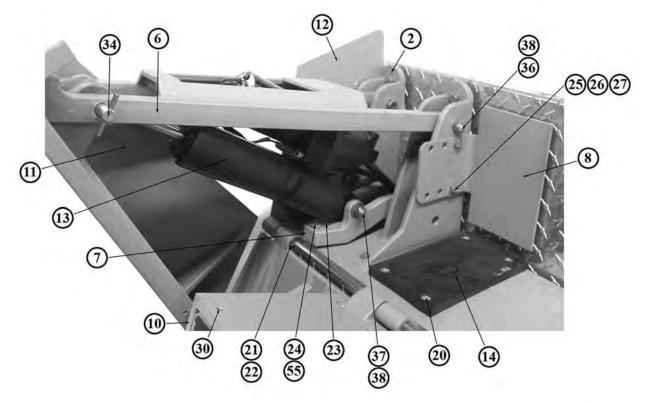
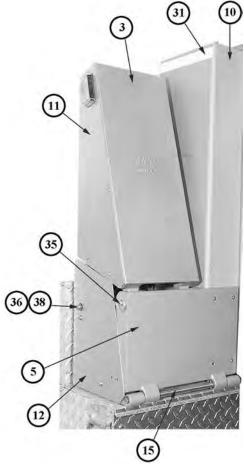
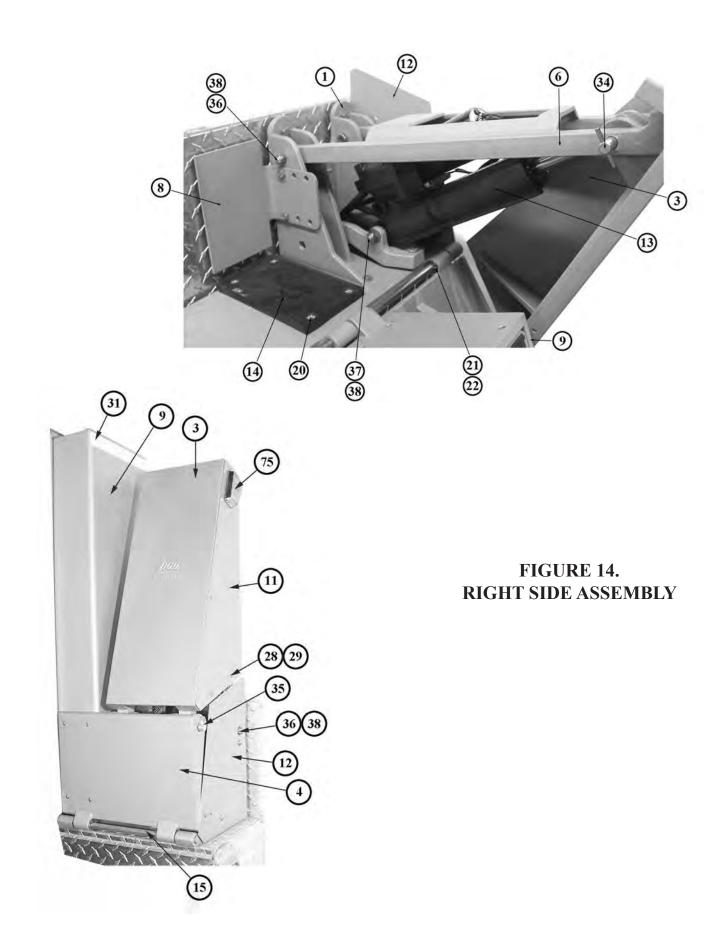


FIGURE 13. LEFT SIDE ASSEMBLY





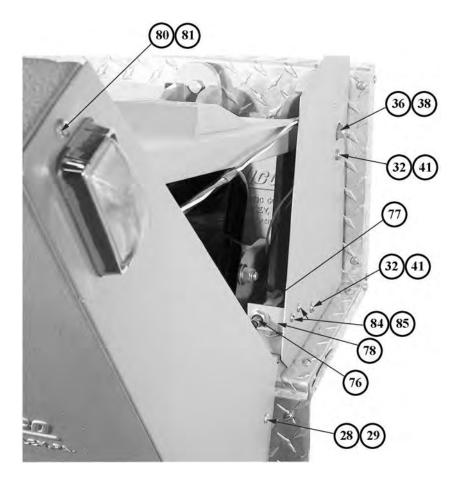


FIGURE 15. LIGHT KIT COMPONENTS

FIGURE 16. CENTER HINGE



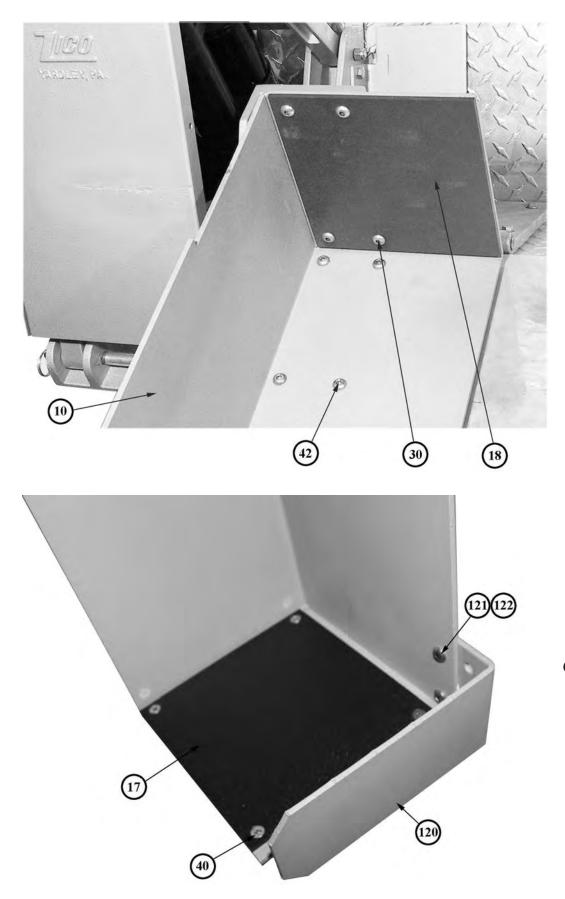


FIGURE 17. TANK BOX COMPONENTS

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WARRANTY REGISTRATION Please Mail or Fax a Copy to ZICO to Register Your Unit

FIRE DEPARTMENT NAME:	CONTACT PERSON:		
PHONE NO	FAX NO.		
STREET ADDRESS:		P.O. BOX:	
СІТҮ:	STATE:	ZIP:	
SERIAL NO. ON UNIT:			
INSTALLED ON: (VEHICLE MFG.)		DELIVERED: (DATE)	
WAS UNIT INSTALLED ON:	NEW VEHICLE		
	RETROFITTED ONTO	EXISTING VEHICLE	
WAS A HARD COVER INSTALLED OVER THE PORTA	ABLE TANK?	YES NO	
MANUFACTURER OF PORTABLE TANK:	SIZE OF TAN	к:	
FOL-DA-TANK		GALLONS (U.S.)	
FIRL		LENGTH (COLLAPSED)	
BURCH		WIDTH (COLLAPSED)	
OTHER (SPECIFY)		HEIGHT (COLLAPSED)	
WHERE DID YOU HEAR ABOUT OUR PRODUCT?			
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DEALER (SPECIFY)			
VEHICLE MFG. (SPECIFY)			
ANOTHER DEPARTMENT (SPECIFY)			
OTHER (SPECIFY)			

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