QUIC-LIFT™ Hydraulic Hard Sleeve System
Model HA-HS
Parts and Instruction Manual

ZICO®

3090PM2

REV. 10-22-14

I. STANDARD EQUIPMENT

The following items are included with each complete HA-HS 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 HA-HS.

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. You may purchase an optional audio-visual alarm (see P/N 8047-125-000, Model AVA), but it is not provided.

II. OPTIONAL EQUIPMENT

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

A. Audio-Visual Alarm (Model AVA)

An audio-visual alarm may be added to any HA-HS. See Section I. C. above.

B. 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.

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

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

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

Required for mounting system to elliptical tanker.

III. GENERAL INSTALLATION INFORMATION

PLEASE NOTE: The HA-HS is NOT a direct, bolt-on replacement for the standard/hydraulic PTS and LAS systems.

When the hard sleeves are placed into the box (9 & 10), there should be approximately 2 inches of space left over top of the hard sleeves.

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 19).

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, double throw momentary 25 amp switch, and a single pole, single throw switch. They should be placed in such a position that the operator has full view of the HA-HS 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 24). 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 HA-HS, a separate "Lock Out" circuit should be used. The "Lock Out" circuit should be separated from the HA-HS circuit by a relay. This will prevent damage to the existing wiring system. The HA-HS 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. An audio-visual alarm may be ordered as an option (see Model AVA, P/N 8047-125-000 in catalog).

C. Synchronization of Actuators

It is important to the operation of the HA-HS 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 hard sleeves while stored on the HA-HS. 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 HARD SLEEVE SYSTEM

A. Preparation for Mounting

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 III. B. (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 HA-HS was designed for use on a shelf with a minimum depth of 8-1/2". The total depth of the HA-HS is 9-3/4". To determine the total length required to mount the HA-HS, measure the length of the hard sleeves and add 21". We are allowing 10-1/2" for each device on the end of the sleeves which includes 1" at each end or a total of 2" of "play". This 2" must be provided or the sleeves may bind during raising or lowering (see page 16).

B. Mounting the System

Double check your measurements making sure to add 21" to the length of the hard sleeves. 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 19 & 20. Note the minimum clearance required for the hinge to pivot (detail drawing in top right corner, page 20). Mark the outside edges of each device on the mounting surface.

The 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. <u>Mounting the System</u> (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 11 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 shelf castings (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 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. Mounting the System (continued)

12. Attach the flashing light kit (Model PTS-FLK) at this time (see pages 17 & 18), following the "Wiring System" directions on page 24.

13. Connect the electrical system at this time (see Section III. B.) 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 x 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 boxes (9 & 10) to the shelf casting (3). Use 5/16-18 x 5/8" button head socket screws (42) through front of casting and 5/16-18 x 7/8" button head socket screws (30) through base of casting.

18. The HA-HS is now operational and you are ready to mount the cover & hard sleeves.

C. Electrical System

A "WARNING" label (48) is provided with each HA-HS. 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 HA-HS clear of personnel when the HA-HS 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. INSTALLING HARD COVER AND ADDITIONAL HARD SLEEVES

A hard cover (not provided) must be mounted directly to the box of the HA-HS. Up to two additional hard sleeves may be mounted on top of box (Model HHS-TM-1 or HHS-TM-2).

A. Preparation for Mounting

Follow installation instructions for the Hydraulic Hard Sleeve System (Section IV.A. & B.). Particular attention must be paid to ensure that the center hinge is in alignment with the left and right casting sets.

Recommended Cover dimensions (page 21) are provided.

B. Mounting

Use the 1/2" hinge pin (114) for alignment. Shims may be required to correct adjustment problems. All three pins should be aligned to within 1/16" (Figure 5, page 19).

After the three hinges are aligned and the hard cover (page 21) has been fabricated, you are ready to proceed with mounting.

NOTE: Measure the box (see page 22) to determine the "A & B" dimensions. This will determine the size of your 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 hard cover as follows:

1. Lay the center hinge down along side of truck.

2. Place top of cover onto the top of the boxes. You may have to place temporary shims between tank cover and tank box to raise the cover. The bottom edge of the hard cover should be just above the hinges.

3. Clamp the hard cover to the boxes.

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

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

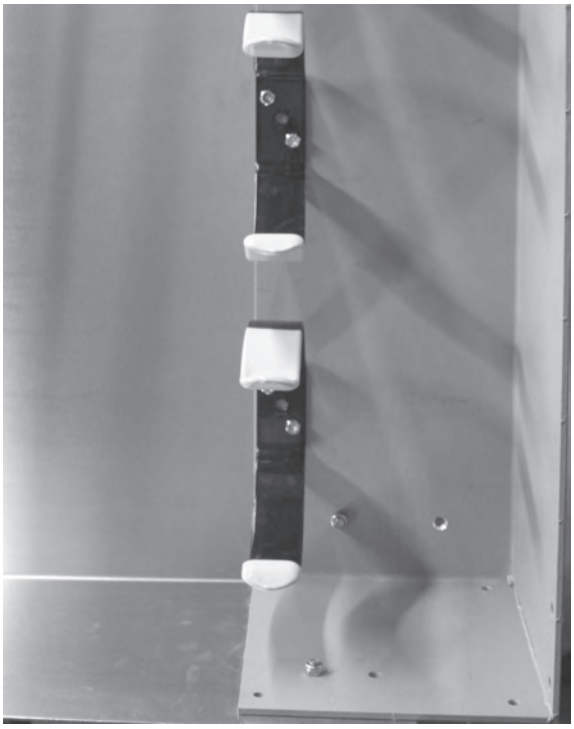
6. Drill holes for 5/16-18 screws in the backplate and attach with nuts.

7. Two pieces of 3/16" Aluminum Plate 17" x 4" are provided as spacers between the cover and tank boxes. They will be placed at the ends at the shelf casings (4) (5).

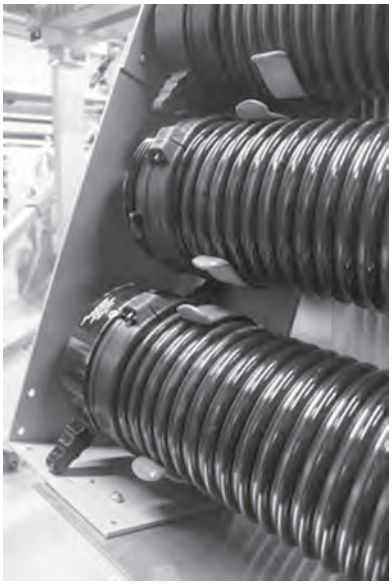
8. Secure the ends of the cover to the tank boxes with 5/16 hardware (not provided).

VI. HA-HS CLIP MOUNTING RECOMMENDATIONS

We recommend mounting the clips flush with the inner edge of the boxes using at least (2) screws per clip to prohibit rotation during use.

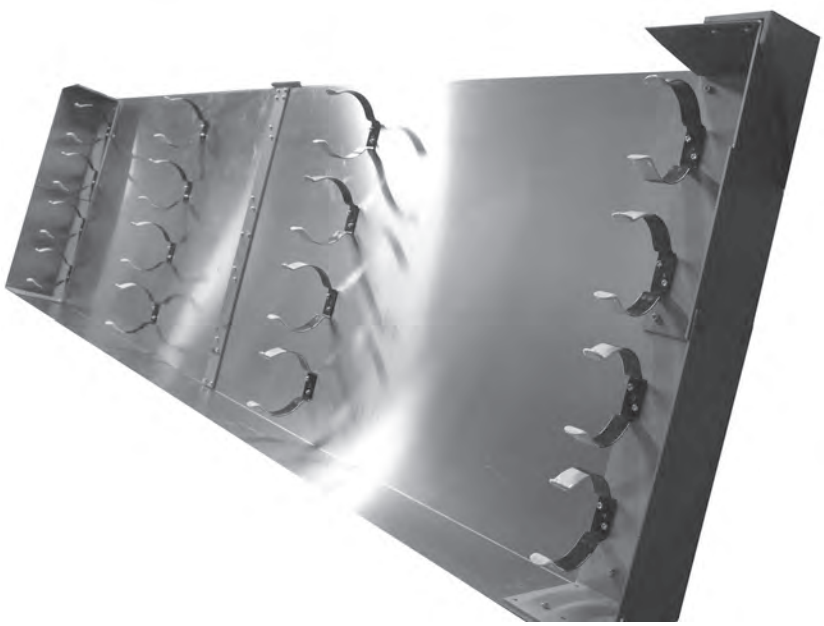


Mount the clips evenly top to bottom leaving ample space between each clip for the hard sleeve couplings (see page 23 for an example). Alternating the male/female ends of the hard sleeve couplings from side to side will typically offer more space (see below).



VI. HA-HS CLIP MOUNTING RECOMMENDATIONS (continued)

To prevent longer hard sleeves from sagging inside the box, additional support clips may be mounted against the hard cover (see below). Position these clips parallel to end clips.



VII. 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 15):

1. Loosen 3/8-16 x 1-5/8" 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).

A. Actuator Adjuster (continued)

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 hard sleeves removed, and the devices in the lowered position, pull cotterless pins (34 & 35) and remove shelf arm casting (3). Remove 1/2" x 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.

VIII. MAINTENANCE

A. Periodic

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

B. Semi-Annually or at Scheduled Apparatus Lube Service

1. Actuator Adjuster (7) - Check for loose bolts; refer to adjustment directions (Section VII. A., page 8).

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

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.

IX. SERVICE

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

X. DRAWINGS AND DIAGRAMS

- **Model HA-HS Hydraulic Hard Sleeve System**

XI. WARRANTY

A copy of the warranty registration MUST be returned to ZICO to ensure registration of your System (page 30). You may mail the copy or fax it to (215) 493-1401.

CHART 1. PARTS LIST - SYSTEM

ITEM	PART NO.	DESCRIPTION	QTY.
1	3098-400-101	Base Right Casting	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
5	3098-105-104	Shelf Left Casting	1
6	3098-400-105	Back Arm Casting	2
7	3098-400-107	Actuator Adjuster Casting	2
9	3098-110-000	Tank Box Right .187 Thick Aluminum	1
10	3098-112-000	Tank Box Left .187 Thick Aluminum	1
11	3098-105-111	Shelf Arm Cover .062 Thick Aluminum	2
12	3098-105-112	Base Cover .062 Thick Aluminum	2
13	3098-400-113	Actuator	2
14	3098-105-114	Neoprene Pad	2
15	3098-105-115	Shaft 1/2" Dia. x 16-7/8"	2
16	3098-105-116	Pin 1/2" Dia. x 4-1/2" (not shown)	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	9015-103726	Hex Head Bolt 3/8-16 x 1-5/8"	2
28	9110-222008	Pan Head Screw Phillips 10-32 x 1/2"	8
29	9113-10900	Hex Head Lock Nut 10-32 Nylon	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
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
38	9113-173700	Hex Head Lock Nut 3/8-16 Nylon	6
39	9114-103800	Flat Washer, Narrow, 3/8" I.D.l	1
41	9114-202500	Lock Washer 1/4" I.D.	4
42	9110-353110	Button Head Socket Screw 5/16-18 x 5/8"	16
43	3097-500-156	Switch, Operation (not shown)	1
44	3097-105-145	Boot, Toggle Switch (not shown)	2
45	3098-400-109	Spacer 1" O.D., .505" I.D., .203" thick	4
48	3098-105-148	Label - Warning Keep Clear (not shown)	2
49	3098-105-149	Label - Warning Vibration (not shown)	2
50	3098-160-000	Flashing Light Kit (see pages 14 & 15)	1
51	9114-115000	Flat Washer 1/2" I.D. (not shown)	10
53	3098-400-115	Forward/Reverse Relay Mod. (not shown)	1
54	3098-400-117	Forward/Reverse Relay Mod. Cover (not shown)	1
55	9014-353700	Spherical Washer Set	1
56	9114-113700	Flat Washer 3/8"	2
57	3097-500-157	Switch, On/Off (not shown)	2

NOTE: ITEMS 9 & 10 ARE THE ONLY PARTS THAT VARY BETWEEN SYSTEMS

CHART 2. PARTS LIST - HARD SLEEVE CLIP KIT

Model HA-HS-6-4

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	32
9013-172501	1/4-20 NYLOC NUT	32
1072-000-135	H7 CLIP	16
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-158-104	CENTER BACKPLATE 38"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

Model HA-HS-6-3

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	24
9013-172501	1/4-20 NYLOC NUT	24
1072-000-135	H7 CLIP	12
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-152-104	CENTER BACKPLATE 32"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" X 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

Model HA-HS-6-2

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	16
9013-172501	1/4-20 NYLOC NUT	16
1072-000-135	H7 CLIP	8
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-150-104	CENTER BACKPLATE 3.5"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" X 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

Model HA-HS-5-4

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	32
9013-172501	1/4-20 NYLOC NUT	32
1062-000-130	H6 CLIP	16
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-154-104	CENTER BACKPLATE 34"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" X 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

Model HA-HS-5-3

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	24
9013-172501	1/4-20 NYLOC NUT	24
1062-000-130	H6 CLIP	12
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-150-104	CENTER BACKPLATE 30.5"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" X 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

Model HA-HS-5-2

PART NO.	DESCRIPTION	QTY.
9010-462514	1/4-20 X 7/8" FLAT HEAD 100° TORX	16
9013-172501	1/4-20 NYLOC NUT	16
1062-000-130	H6 CLIP	8
3098-150-101	HINGE	1
3098-150-102	CENTER HINGE	1
3098-150-103	CENTER HINGE PIN	1
3098-150-104	CENTER BACKPLATE 30.5"	1
9110-362514	1/4-20 X 7/8" FL. HEAD 82° PHILLIPS	4
9140-101214	SPRING PIN 1/8" DIA. X 7/8" LONG	1
3090-500-101	17" X 4" X 3/16" SHIM PLATE	2
3098-400-000	PTS-HA SYSTEM	1

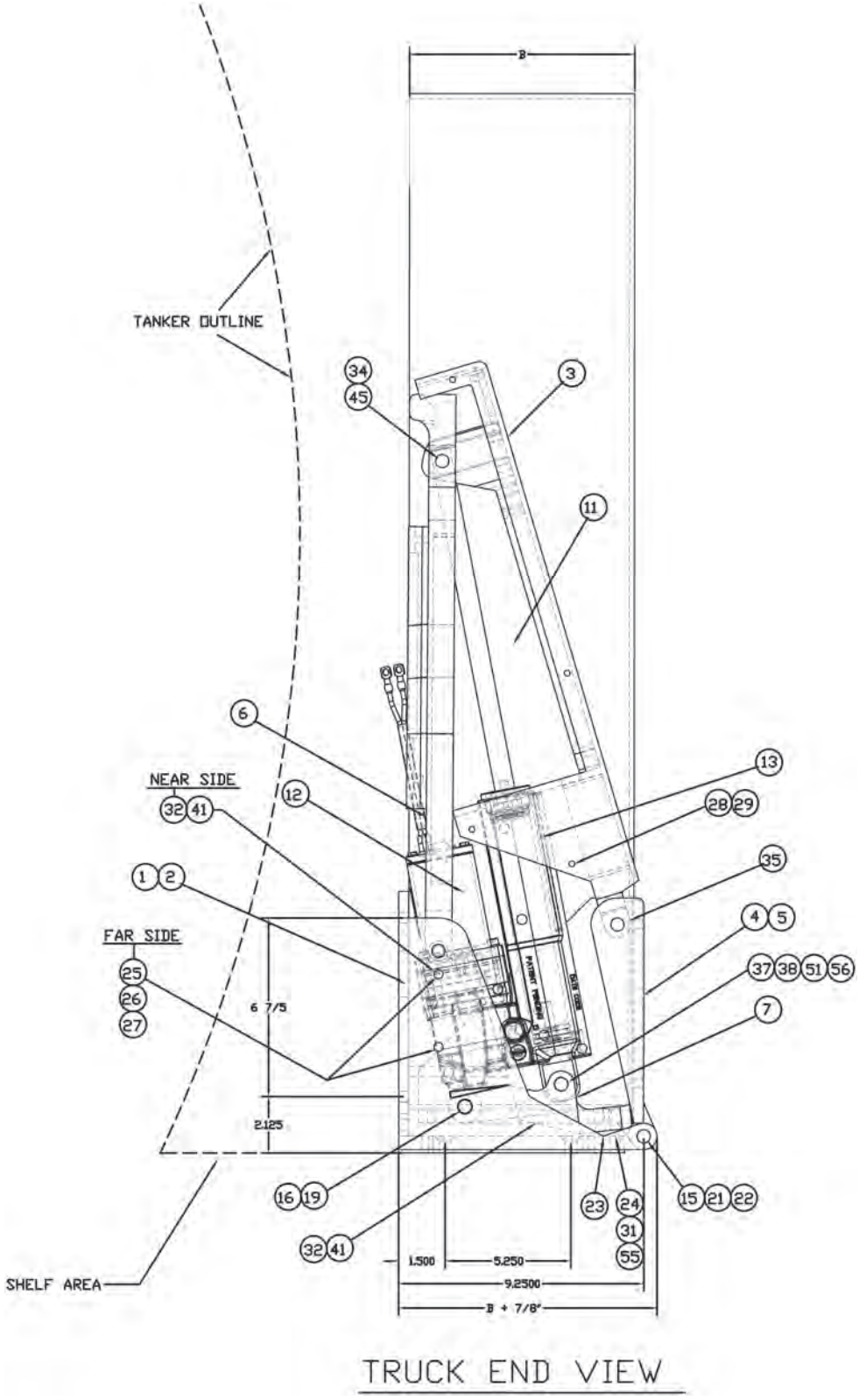


FIGURE 1. TRUCK END VIEW COMPONENT PARTS

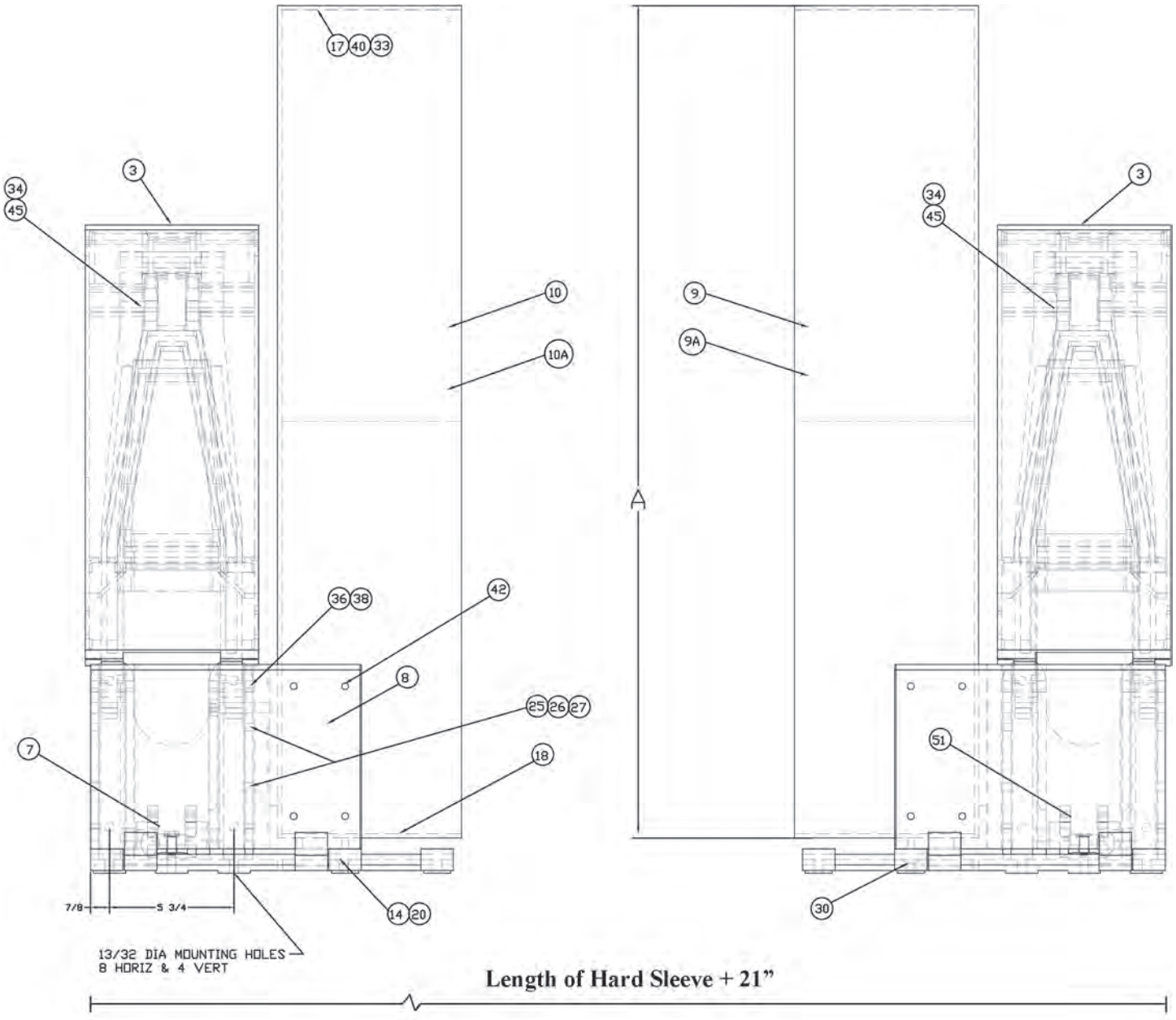
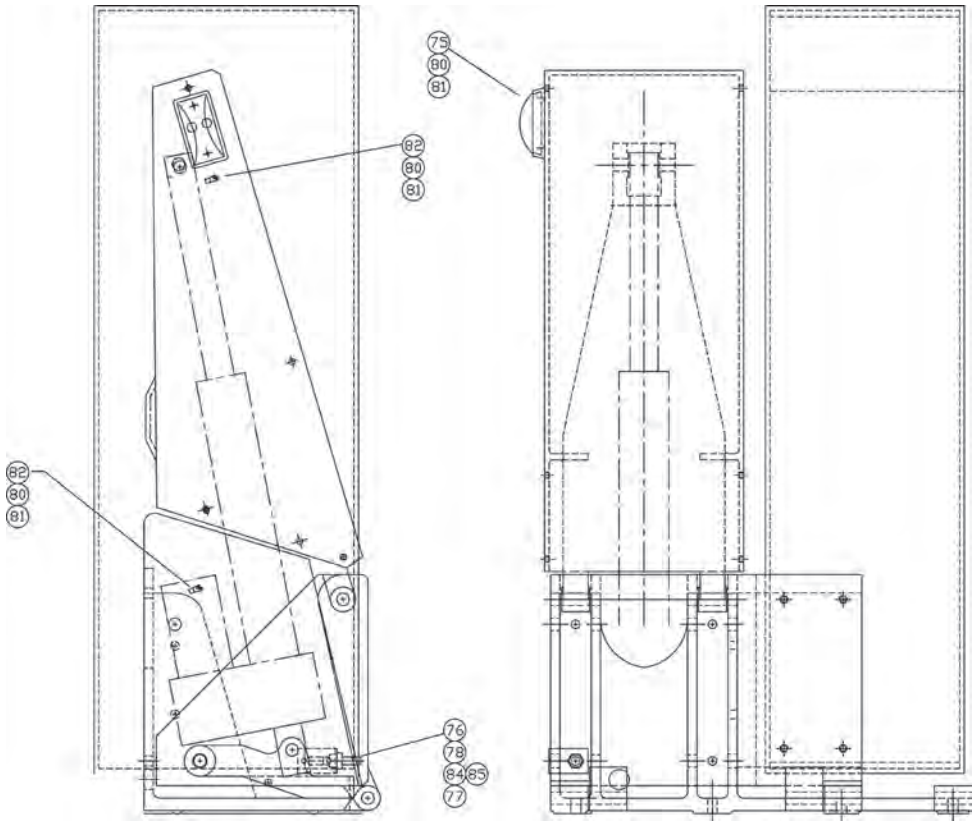
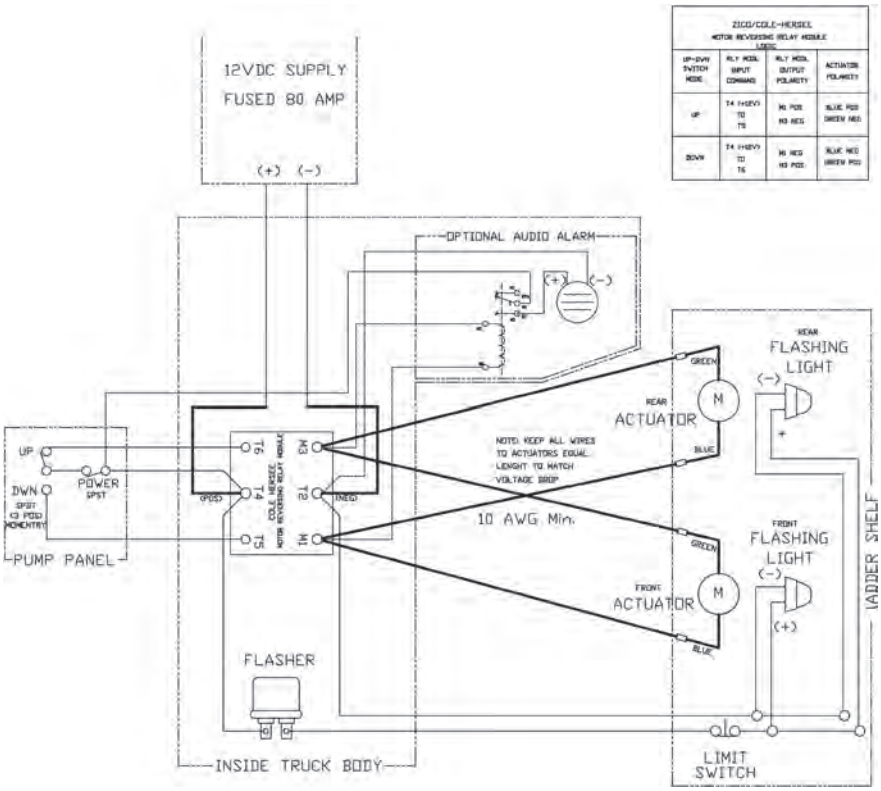


FIGURE 2. TRUCK SIDE VIEW



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
75	3097-270-101	Clearance Light	2
76	3097-270-205	Switch, Limit	1
77	3097-270-117	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	9025-111308	Screw, #6 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:

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.

Limit switch (76) makes contact with the shelf (right or left) casting to shut off the lights.

FIGURE 4.
FLASHING LIGHT KIT
(see page 24 for larger image)

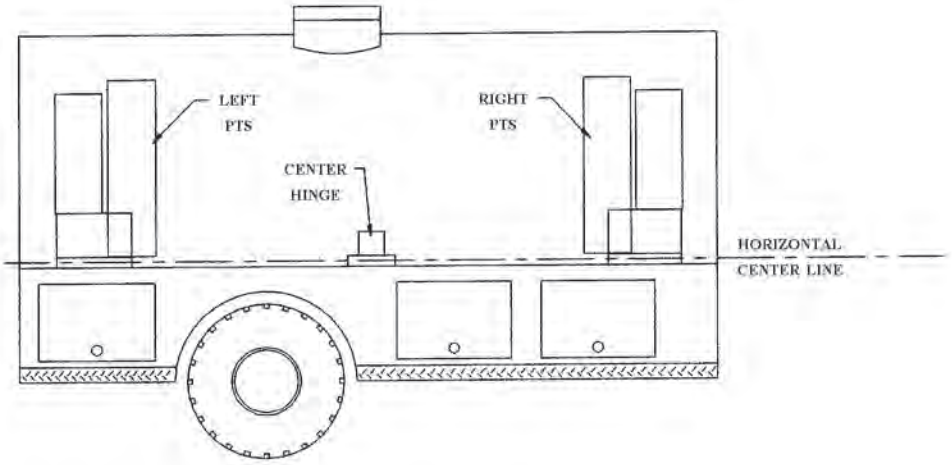


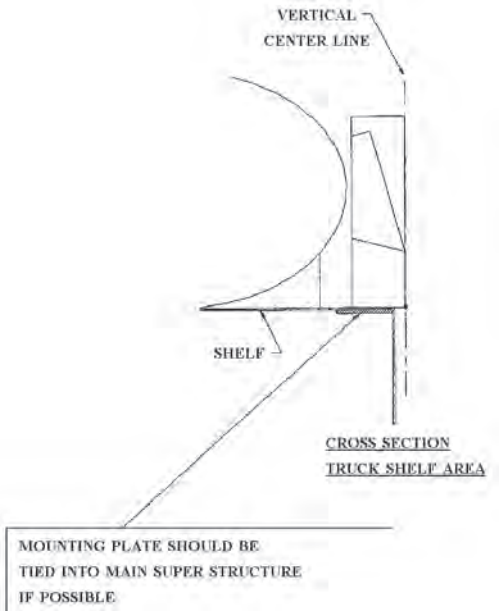
FIGURE 5.
ALIGNMENT OF CASTING SETS

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 elliptical adapter is to be used, order Hinge Extension (3098-115-113) in addition to elliptical adapter.



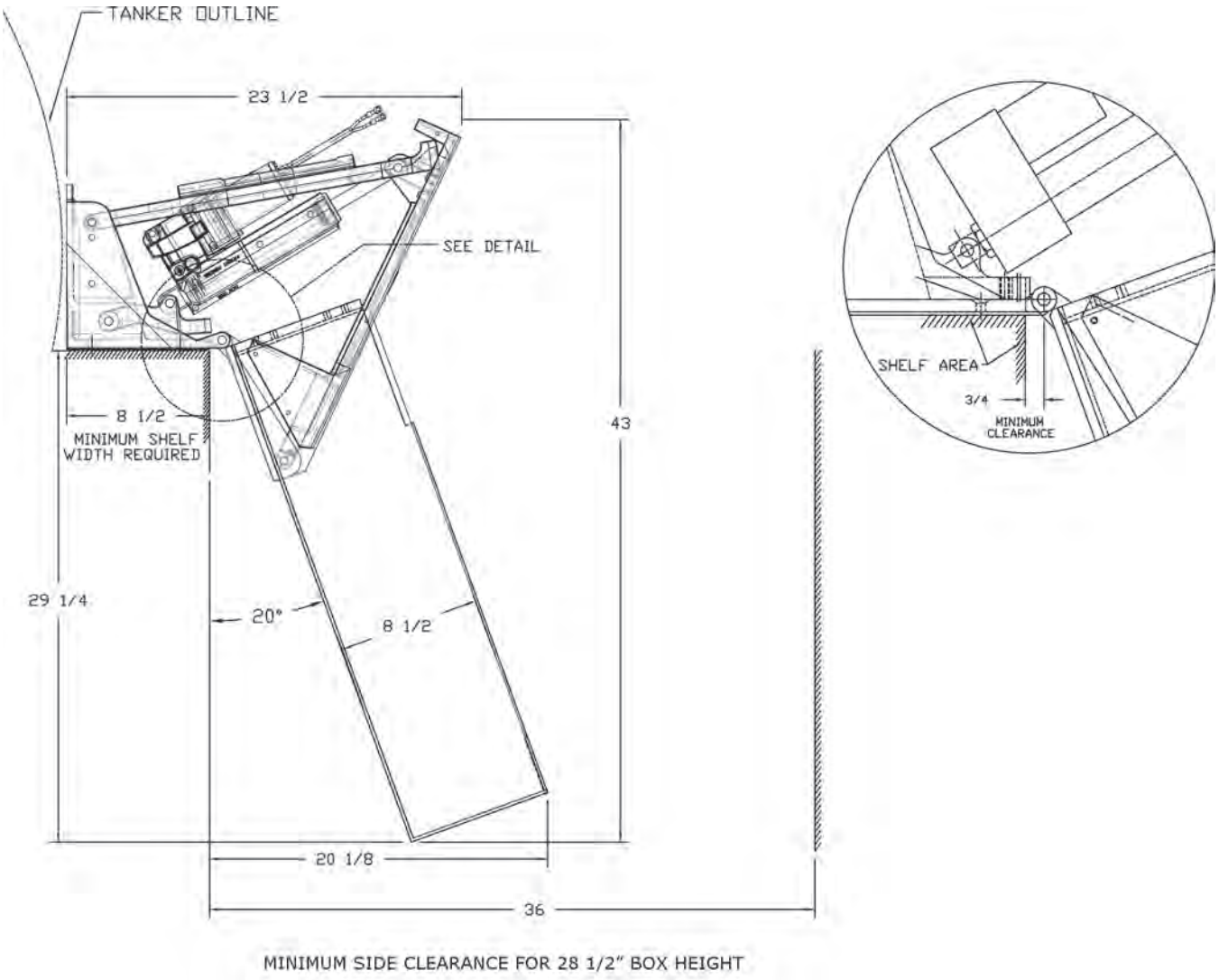


FIGURE 7. TRUCK END VIEW
FULL EXTENDED DOWN POSITION

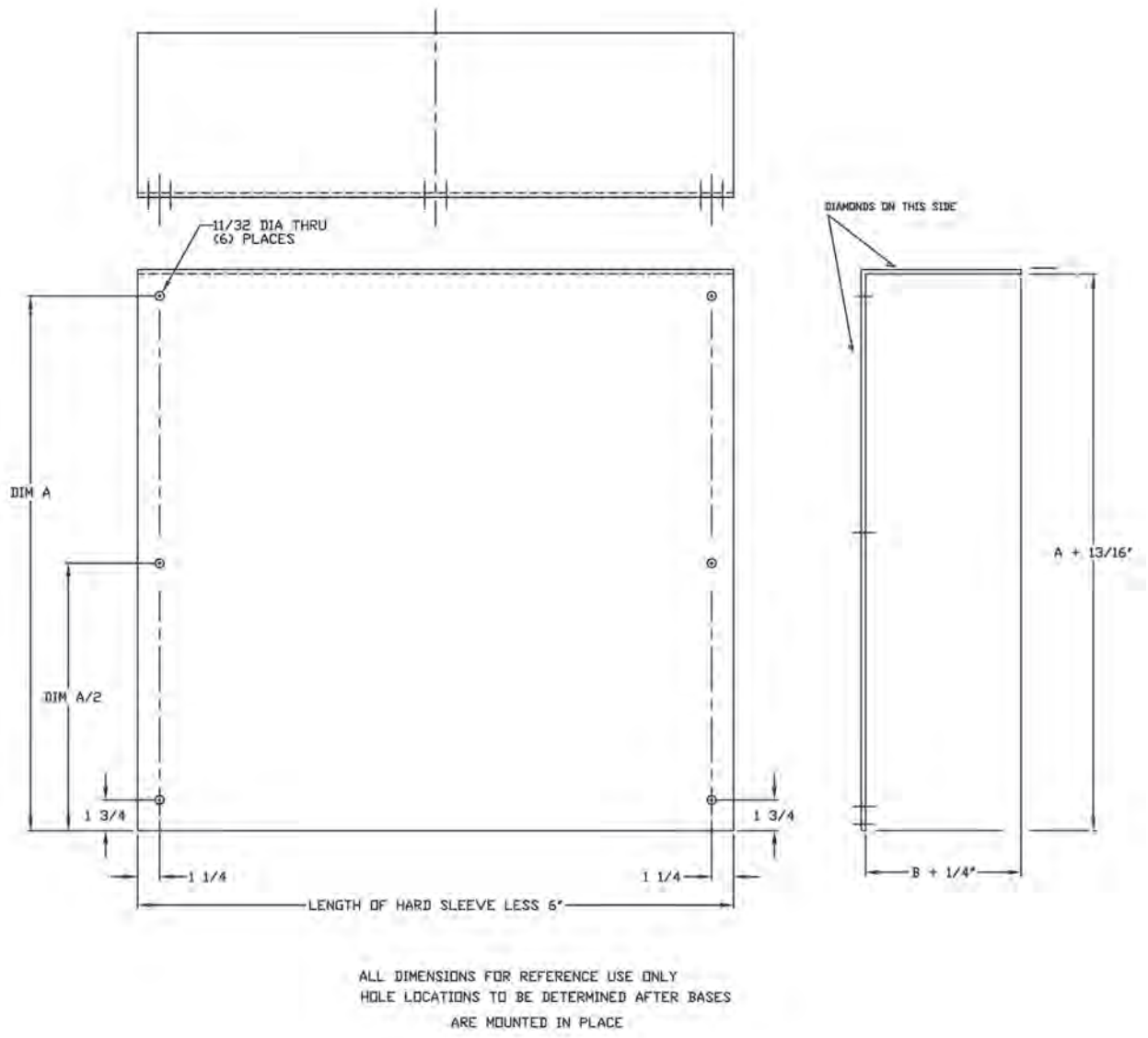
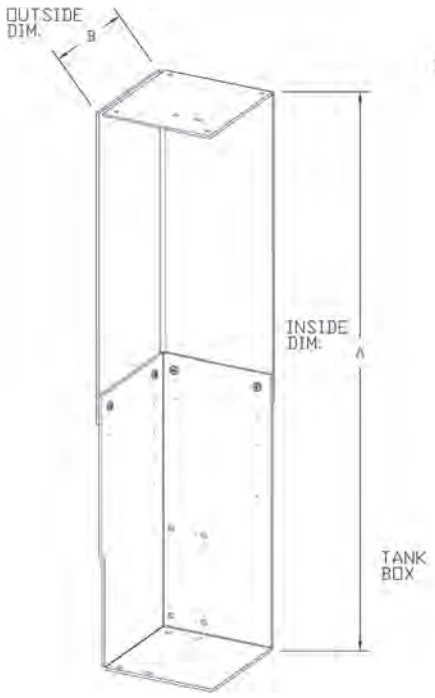
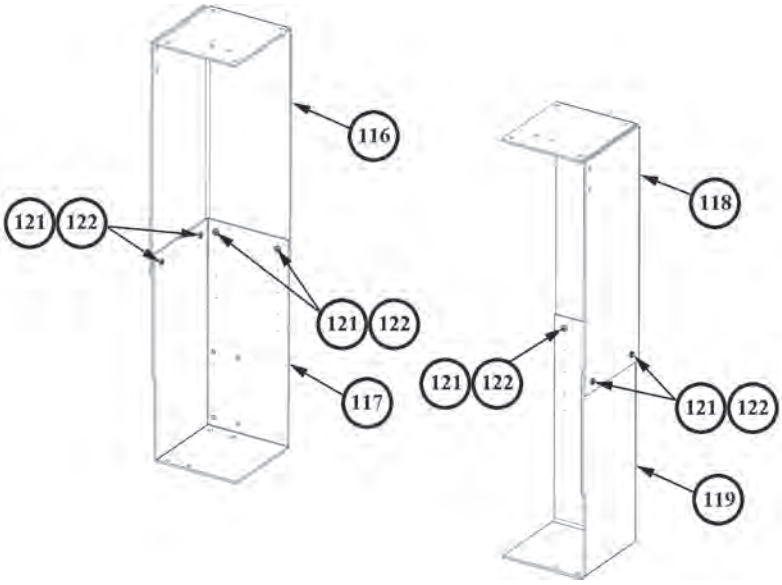


FIGURE 8. HARD COVER (NOT PROVIDED)



ALL DIMENSIONS FOR REFERENCE USE ONLY
HOLE LOCATIONS TO BE DETERMINED AFTER BASES
ARE MOUNTED IN PLACE



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
121	9110-503110	Btn Hd, Socket 5/16-18 x 5/8" SS.	8
122	9113-103100	5/16-18 Low Pro. Nylock Nut SS.	8

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

FIGURE 9. HARD SLEEVE BOXES

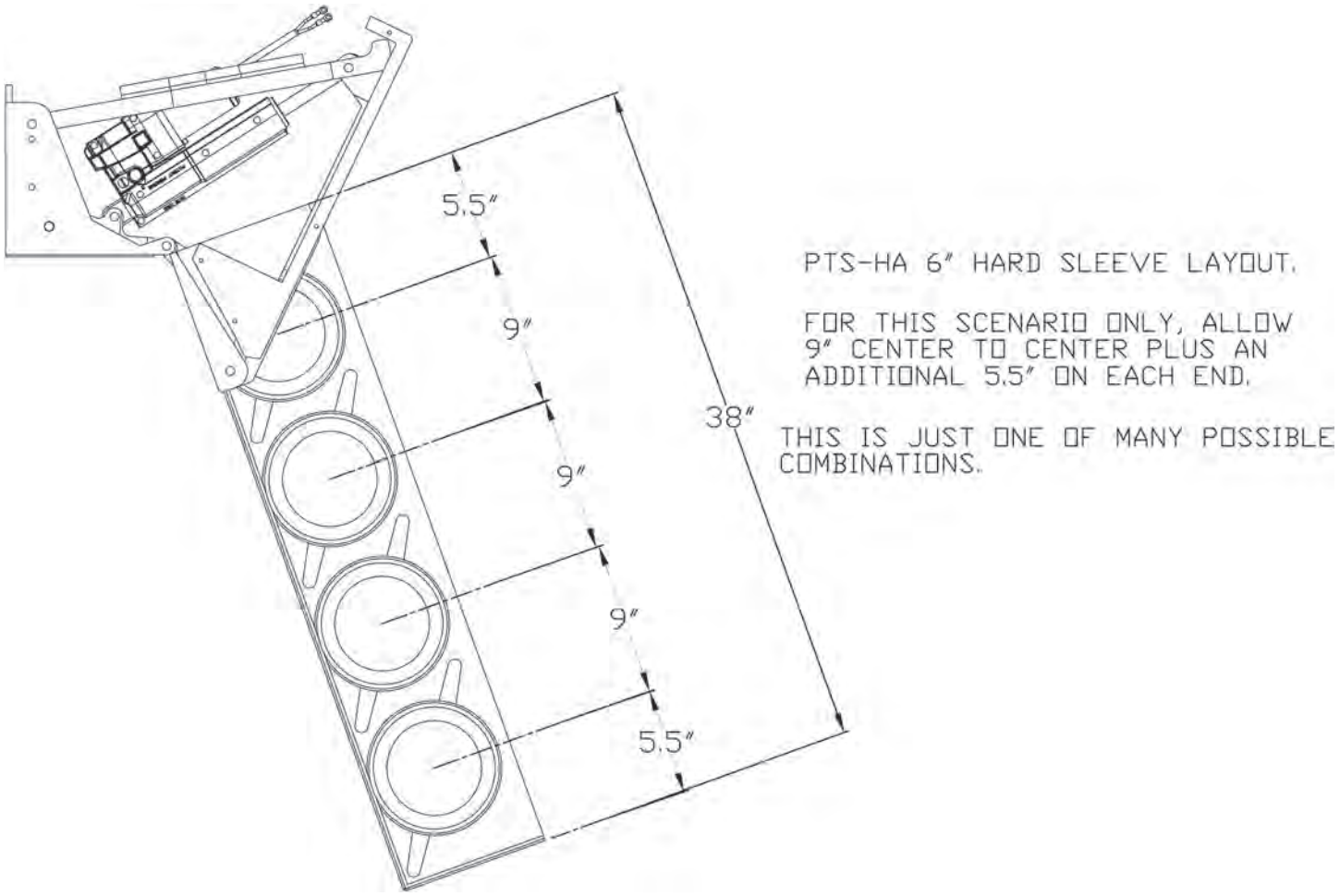


FIGURE 10. CLIP MOUNTING

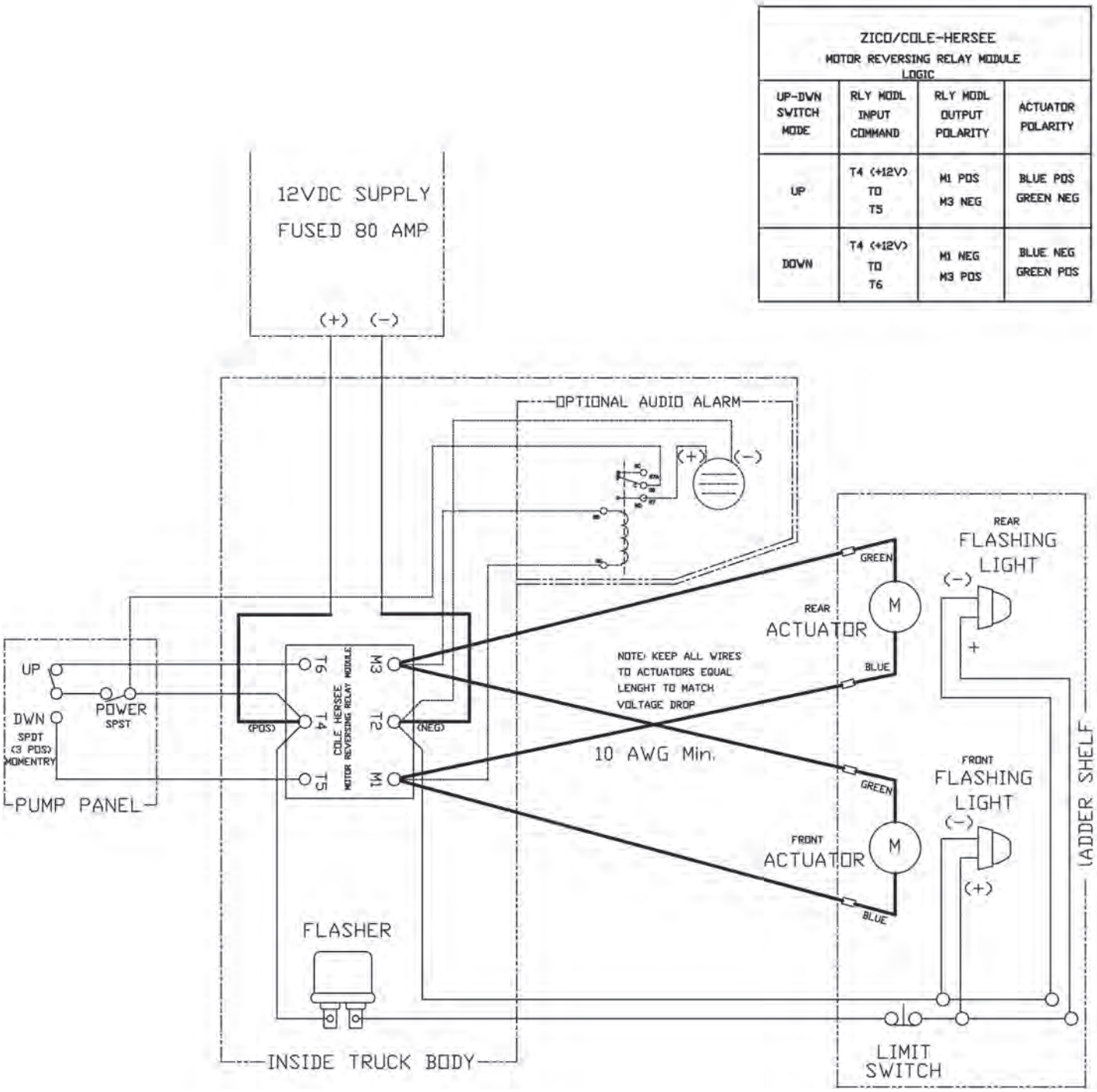


FIGURE 11. WIRING SYSTEM

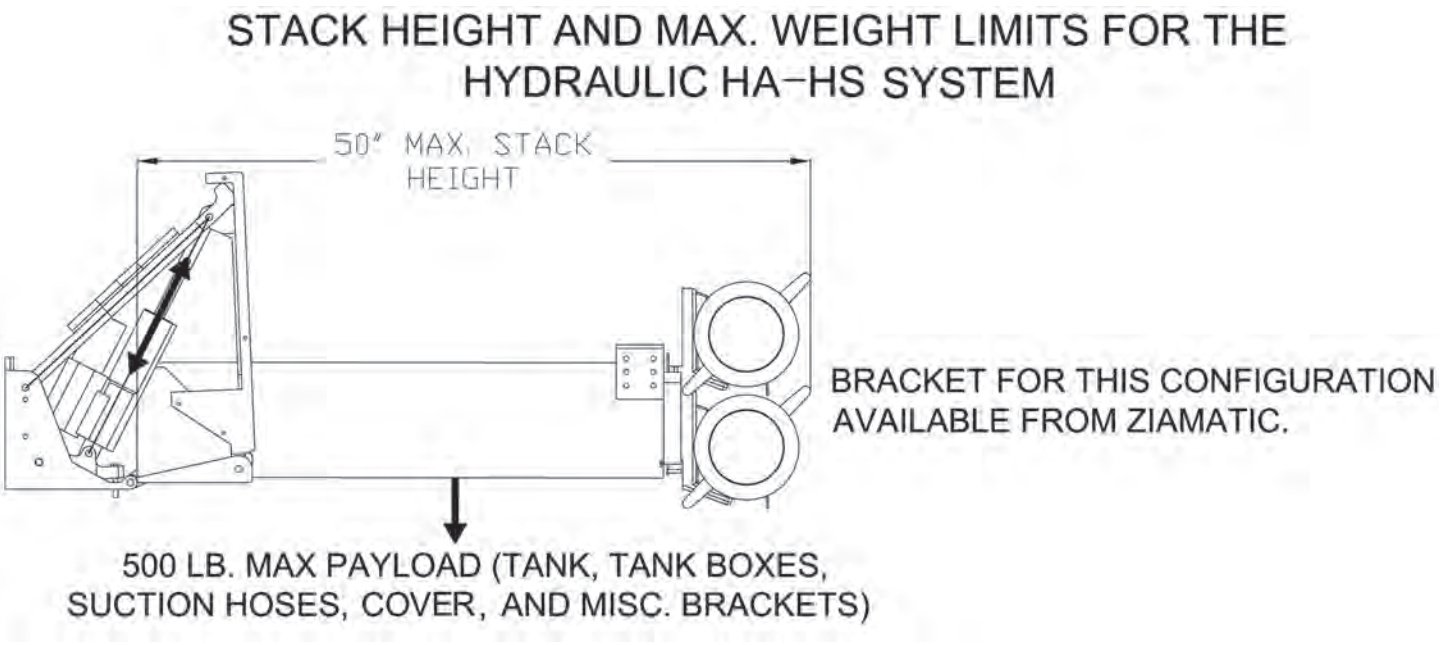
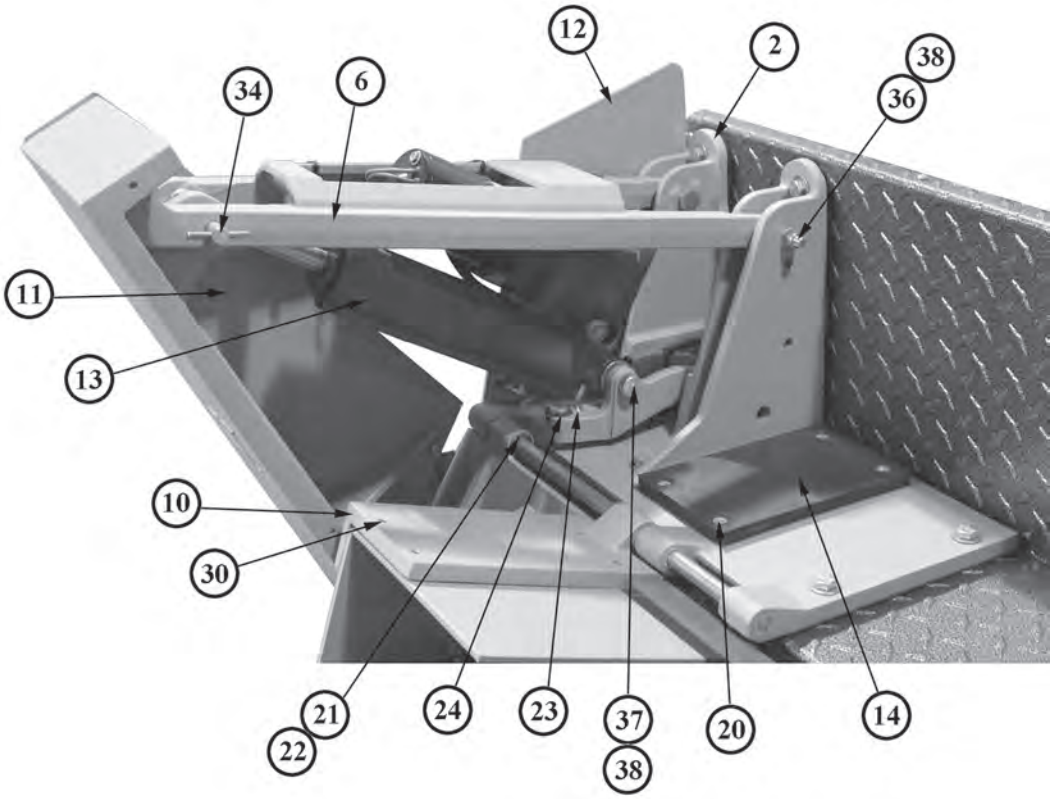


FIGURE 12. STACK HEIGHT AND MAX. WEIGHT LIMITS



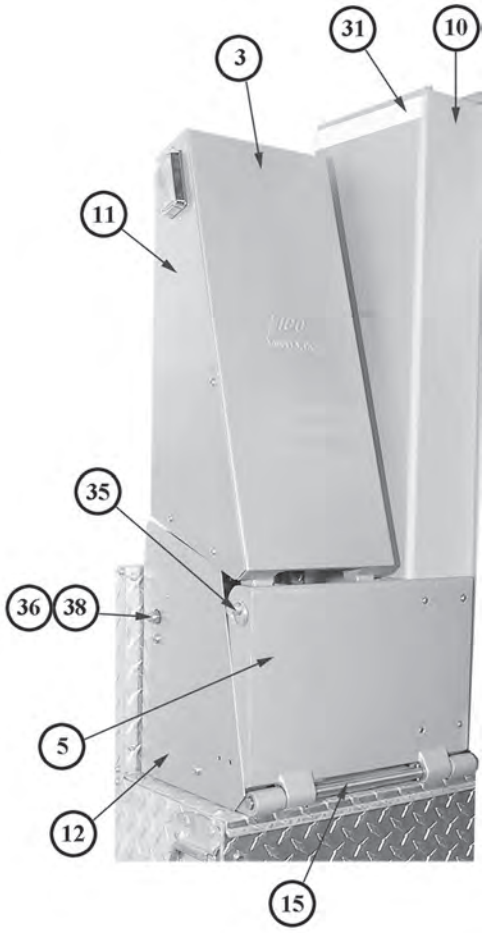


FIGURE 13.
LEFT SIDE ASSEMBLY

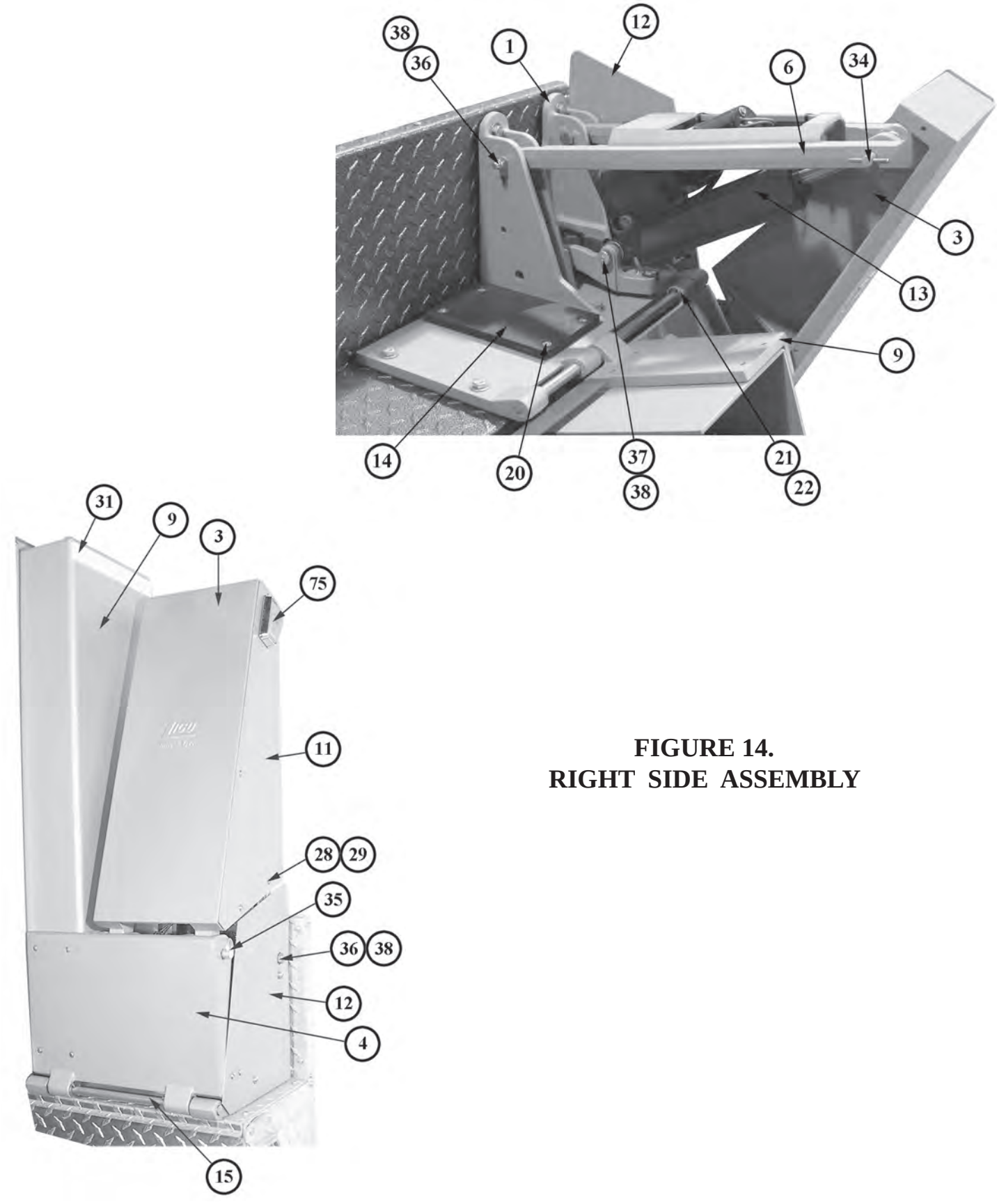


FIGURE 14.
RIGHT SIDE ASSEMBLY

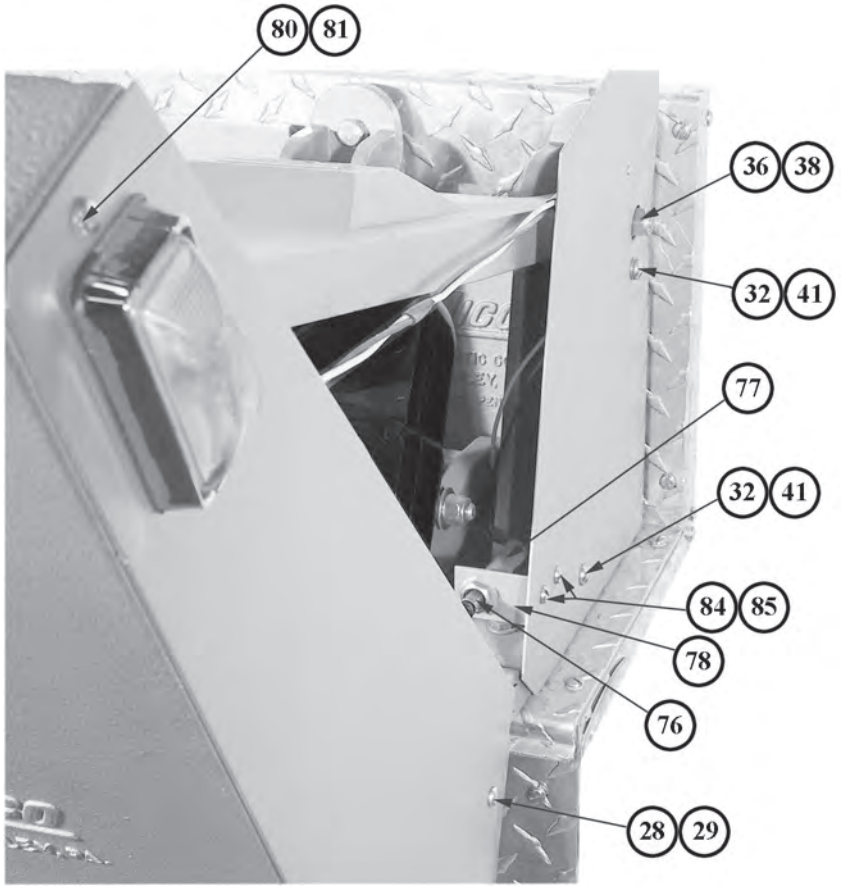


FIGURE 15.
LIGHT KIT COMPONENTS

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: _____

CITY: _____ STATE: _____ ZIP: _____

SERIAL NO. ON UNIT: _____

INSTALLED ON: (VEHICLE MFG.) _____ DELIVERED: (DATE) _____

WAS UNIT INSTALLED ON: _____ NEW VEHICLE

_____ RETROFITTED ONTO EXISTING VEHICLE

SIZE OF HARD SLEEVES:

_____ LENGTH

_____ DIAMETER

WHERE DID YOU HEAR ABOUT OUR PRODUCT?

_____ MAGAZINE AD (SPECIFY) _____

_____ DEALER (SPECIFY) _____

_____ VEHICLE MFG. (SPECIFY) _____

_____ ANOTHER DEPARTMENT (SPECIFY) _____

_____ OTHER (SPECIFY) _____

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