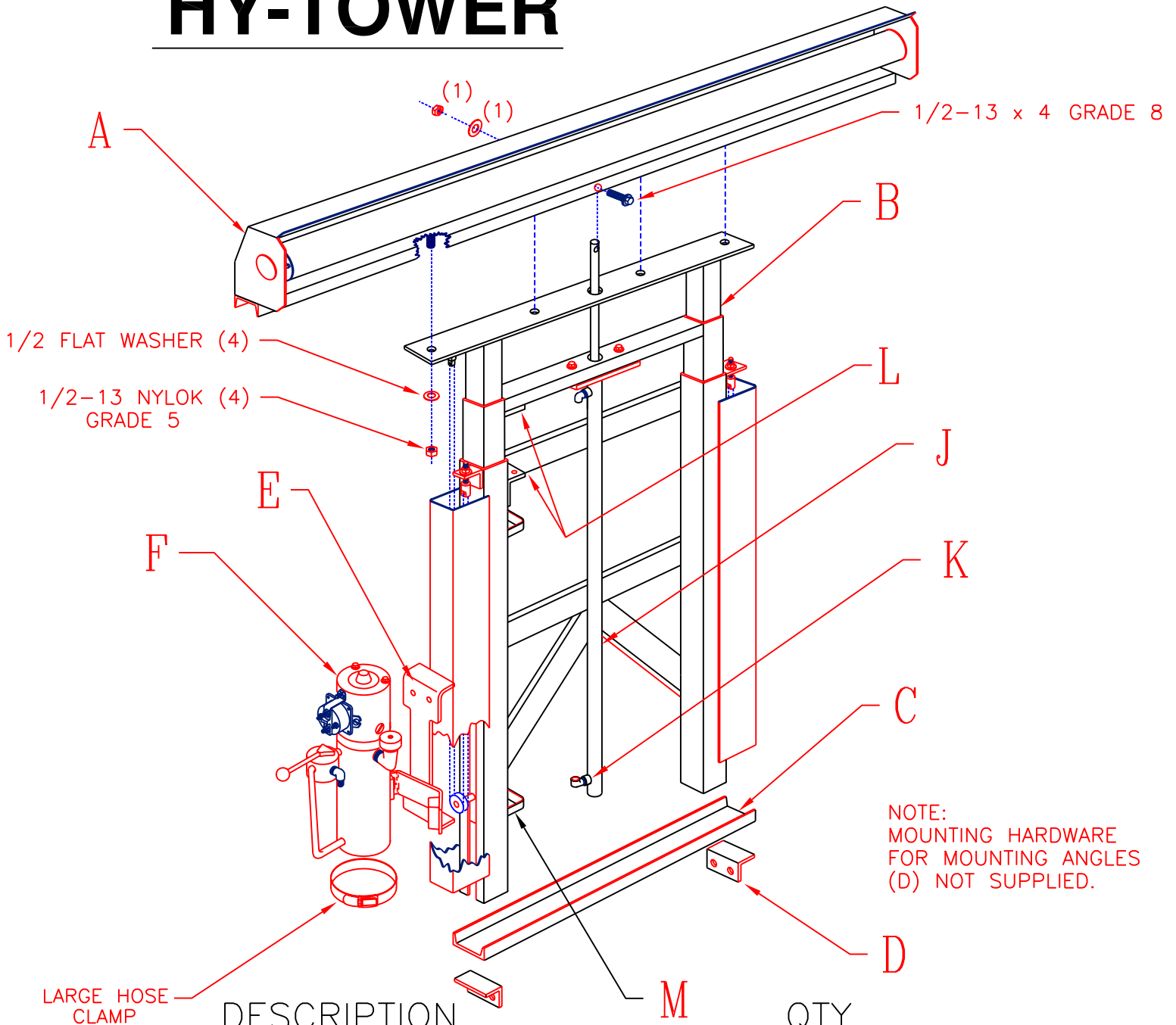


HY-TOWER

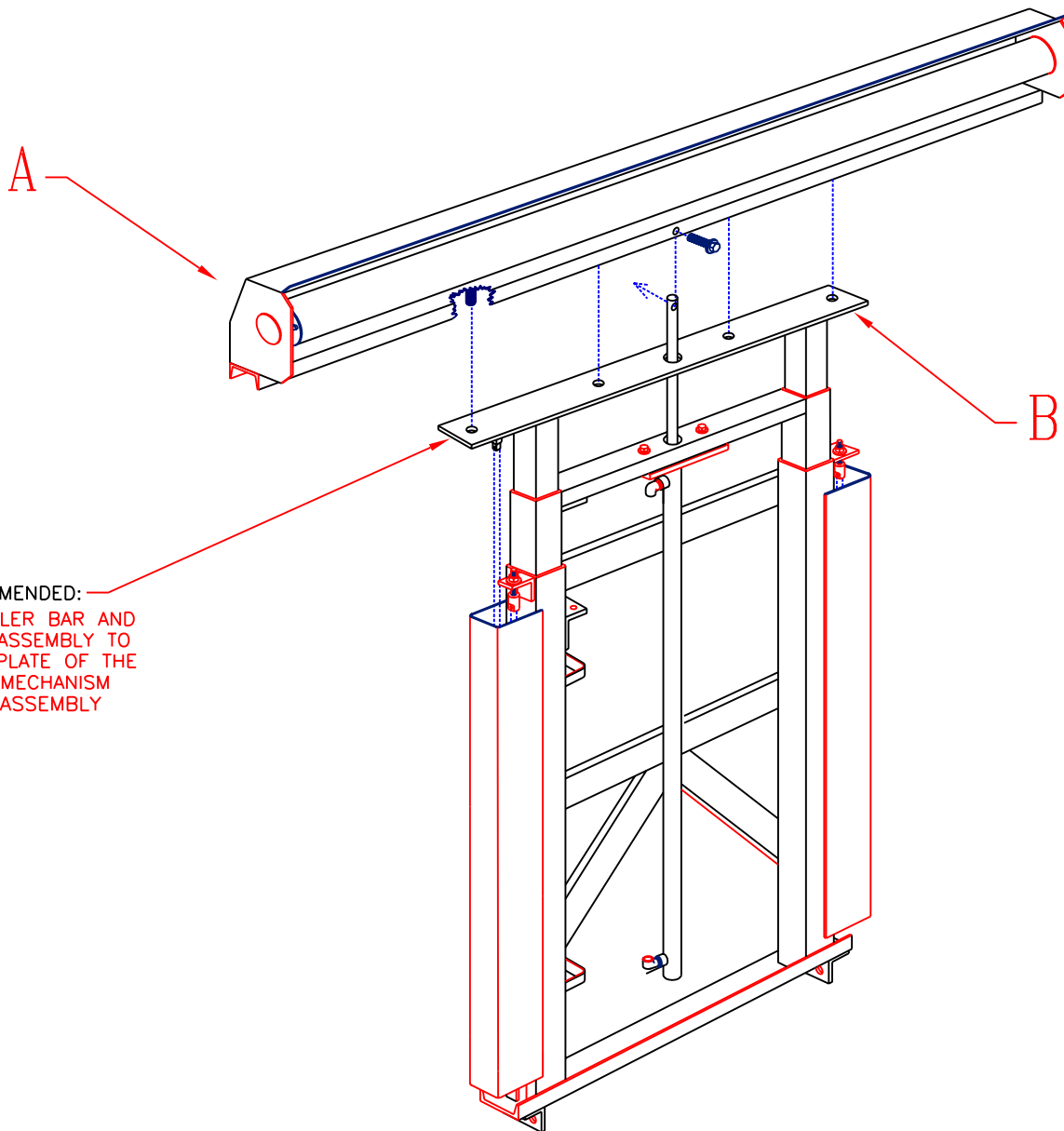


LARGE HOSE CLAMP

DESCRIPTION

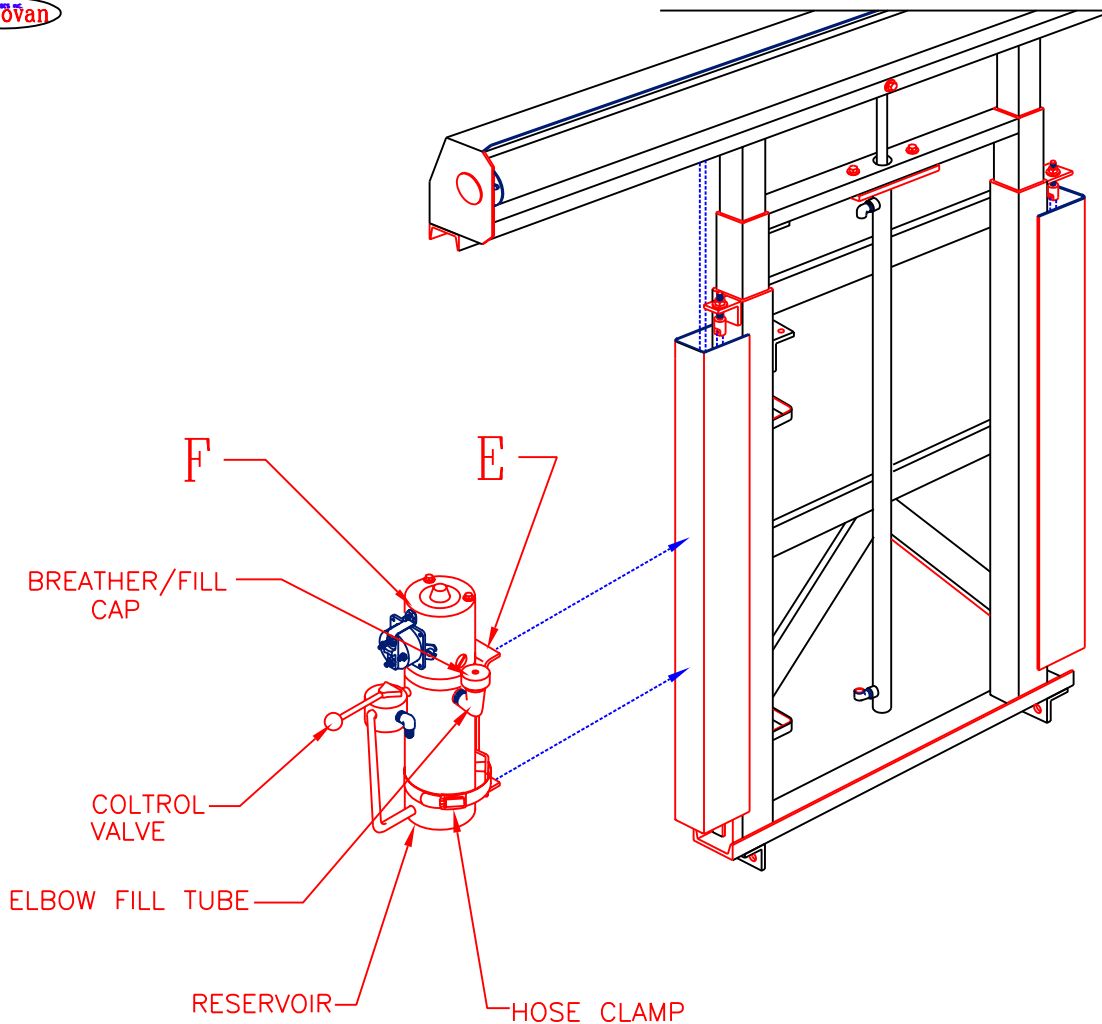
QTY

A	ROLLER BAR AND HOUSING	1
B	LIFTING MECHANISM	1
C	MOUNTING CHANNEL	1
D	MOUNTING ANGLES	2
E	PUMP MOUNTING BRACKET	1
F	HYDRAULIC PUMP	1
G	HYDRAULIC HOSE 9'	1 (NOT SHOWN)
H	HYDRAULIC HOSE 12'	1 (NOT SHOWN)
I	POWER CABLE/GROUND CABLE 15'	2 (NOT SHOWN)
J	HYDRAULIC CYLINDER 1 1/2" x 42"	1
K	JIC MALE FITTING 1/4"	2
L	ALARM SWITCH/ACTUATOR BRACKETS	1 EACH
M	HOSE RETAINING BRACKETS	2
N	METAL RING (CUT IN HALF)	1 (NOT SHOWN)

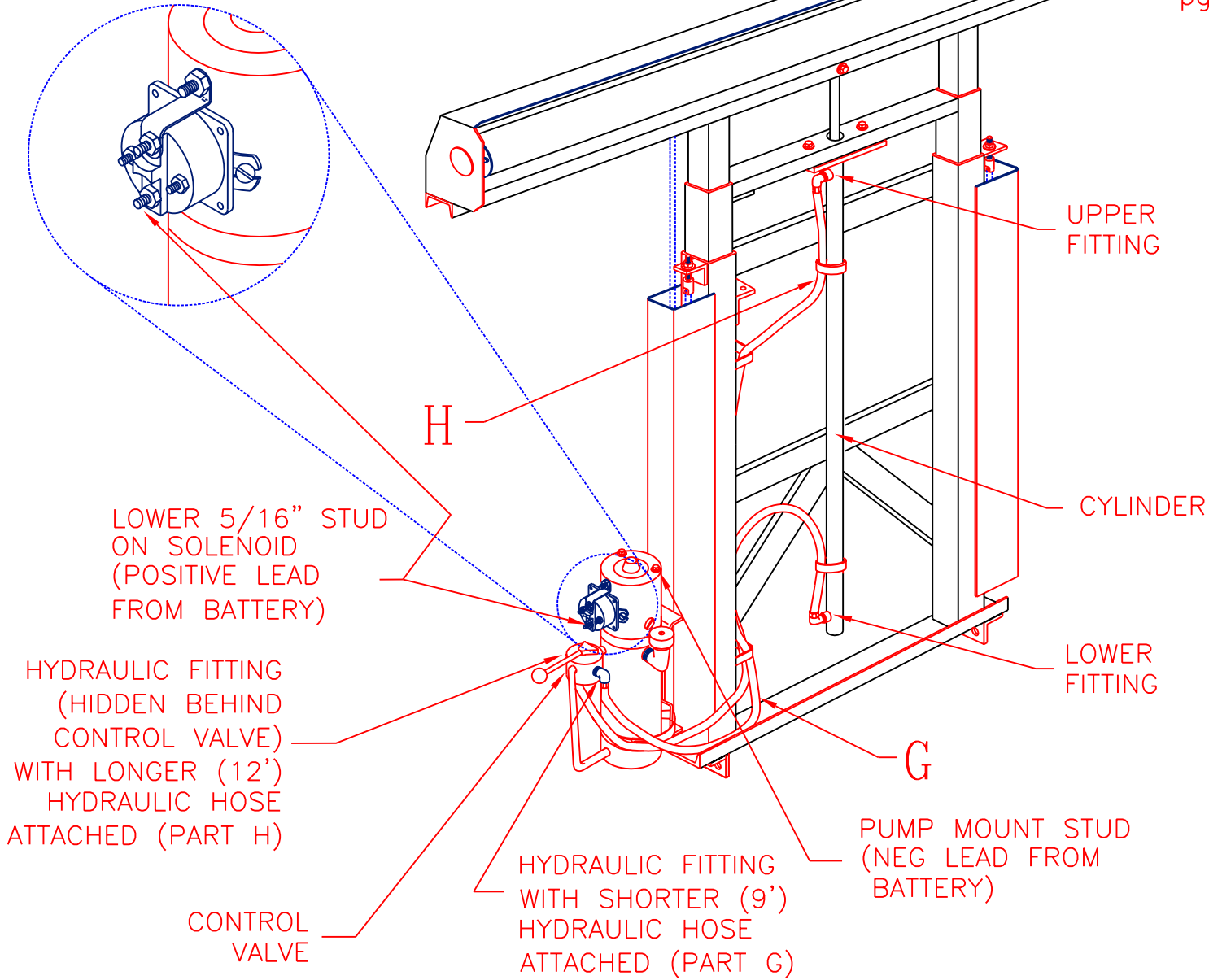
**RECOMMENDED:**

WELD ROLLER BAR AND HOUSING ASSEMBLY TO THE TOP PLATE OF THE LIFTING MECHANISM AFTER ASSEMBLY

- 6) MOUNT ROLLER BAR AND HOUSING (A) TO THE LIFTING MECHANISM (B) USING THE FOUR STUDS (SHOWN IN CUTAWAY.) ATTACH WITH FOUR LOCKING NYLON NUTS.
- 7) USING THE 1/2" GRADE 8 BOLT SUPPLIED, ATTACH THE HYDRAULIC CYLINDER ROD TO THE ROLLER BAR HOUSING.



- 8) WELD THE PUMP MOUNTING BRACKET (E) TO THE CHAIN GUARD OR IN A LOCATION EASILY ACCESSIBLE BY THE DRIVER.
- 9) THE HYDRAULIC PUMP (F) MUST BE MOUNTED VERTICALLY WITH THE CONTROL VALVE AND MOTOR ON TOP AND THE RESERVOIR ON THE BOTTOM. ENSURE THE HOSE CLAMP IS TIGHT AROUND THE RESERVOIR FOR PROPER SUPPORT.
- 10) REMOVE RED PLUG FROM ELBOW FILL TUBE. FILL THE RESERVOIR WITH DEXTRON AUTOMATIC TRANSMISSION FLUID THROUGH THE ELBOW FILL TUBE (APPROX 1 GALLON)
- 11) ONCE RESERVOIR IS FULL, SCREW BLACK BREATHER CAP ONTO ELBOW FILL TUBE (DO NOT REINSTALL THE RED PLUG).



LOWER 5/16" STUD ON SOLENOID (POSITIVE LEAD FROM BATTERY)

HYDRAULIC FITTING (HIDDEN BEHIND CONTROL VALVE) WITH LONGER (12') HYDRAULIC HOSE ATTACHED (PART H)

CONTROL VALVE

H

HYDRAULIC FITTING WITH SHORTER (9') HYDRAULIC HOSE ATTACHED (PART G)

G

PUMP MOUNT STUD (NEG LEAD FROM BATTERY)

UPPER FITTING

CYLINDER

LOWER FITTING

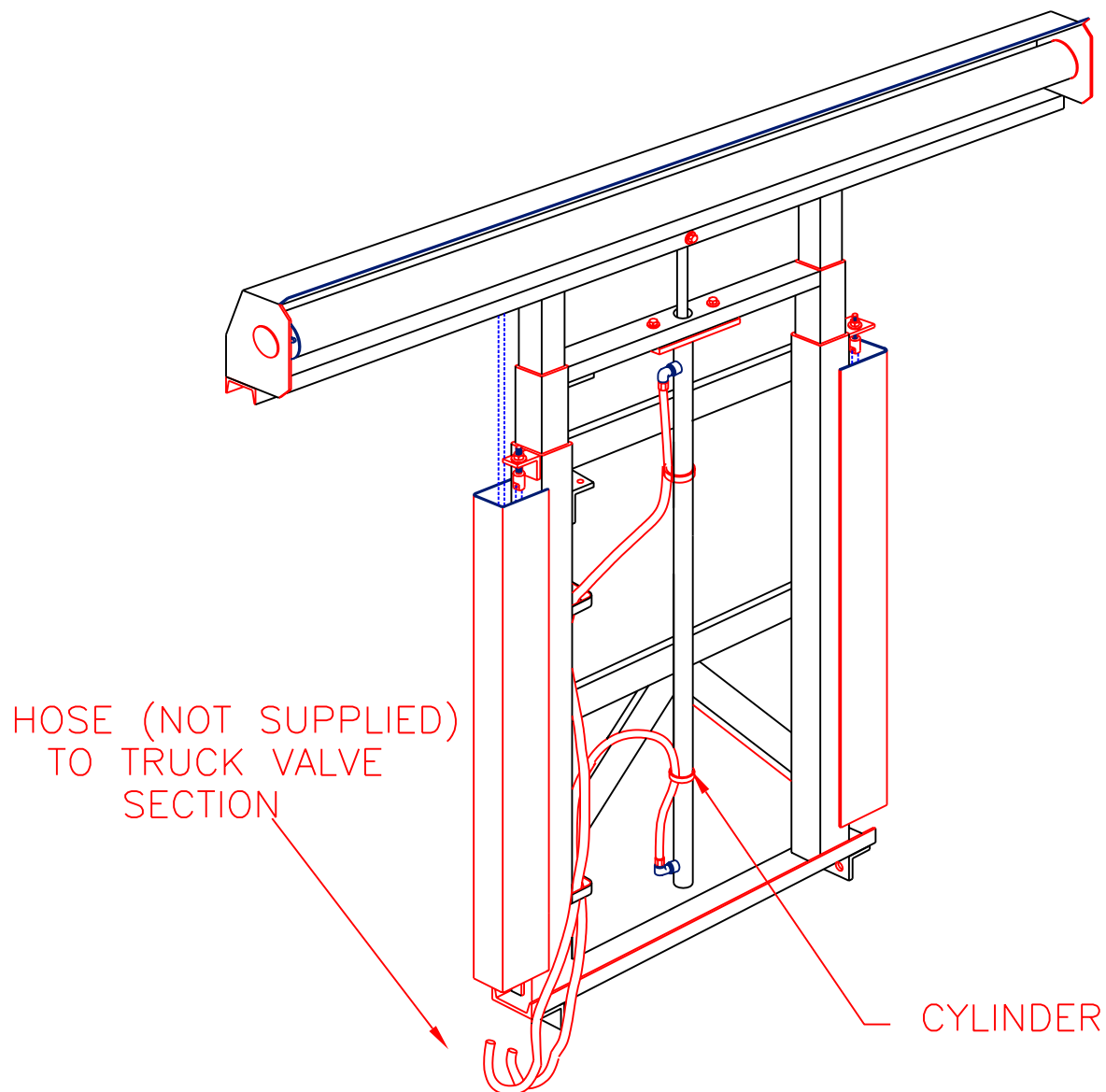
12) FEED THE LONGER (12') HYDRAULIC HOSE (H) THROUGH BOTH HOSE RETAINING BRACKETS, AND THEN CONNECT THE HOSE TO THE UPPER HYDRAULIC FITTING ON THE CYLINDER.

13) FEED THE SHORTER (9') HYDRAULIC HOSE (G) THROUGH THE LOWER HOSE RETAINING BRACKET, AND THEN CONNECT THE HOSE TO THE LOWER HYDRAULIC FITTING ON THE CYLINDER.

NOTE: WHEN INSTALLATION IS COMPLETE, TIE WRAP BOTH HOSES TO ENSURE TARPING SYSTEM OPERATES FREELY THROUGH ITS FULL RANGE OF MOTION.

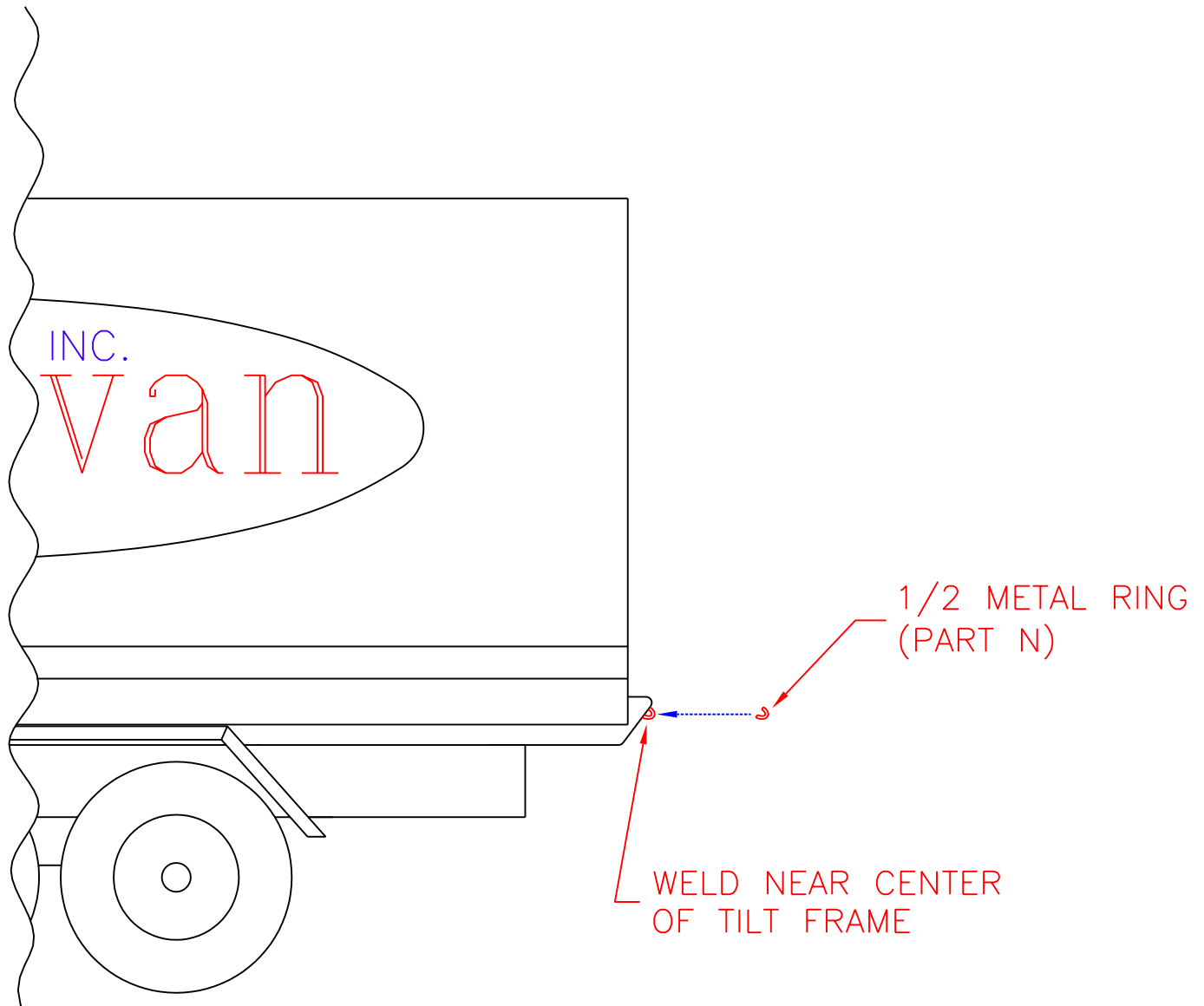
14) CONNECT THE NEGATIVE LEAD FROM THE BATTERY, TO THE PUMP MOUNT STUD. CONNECT THE POSITIVE LEAD FROM THE BATTERY, TO THE LOWER 5/16" STUD ON THE FRONT OF THE SOLENOID.

HYDRAULIC INSTALLATION WHEN RUNNING HY-TOWER OFF TRUCK HYDRAULIC SYSTEM



- FITTINGS SUPPLIED ON CYLINDER ARE 1/4" JIC. HOSES ARE NOT SUPPLIED.
- HOSES SUPPLYING THE CYLINDER SHOULD BE 1/4". USING LARGER HOSE MAY ALLOW EXCESSIVE FLOW, AND CAUSE HY-TOWER TO OPERATE IMPROPERLY.
- THE HY-TOWER IS SUPPLIED WITH A DOUBLE ACTING CYLINDER, AND MUST BE POWERED IN BOTH DIRECTIONS.
- HOSES MUST BE SUFFICIENT LENGTH TO TRAVEL UPWARD 42" WHEN THE TOWER IS RAISED.

NOTE: WHEN INSTALLATION IS COMPLETE, TIE WRAP BOTH HOSES TO ENSURE TARPING SYSTEM OPERATES FREELY THROUGH ITS FULL RANGE OF MOTION.



NOTE: WHEN WELDING RING IN PLACE ON TILT FRAME ENSURE IT IS IN A POSITION THAT WILL NOT INTERFERE WITH LOADING/UNLOADING A CONTAINER OR TOUCH THE GROUND WHEN FRAME FULLY TILTED.

- 15) WELD THE 1/2 METAL RING (PART N) TO THE REAR OF THE TILT FRAME. POSITION RING AS CLOSE TO CENTER OF THE TILT FRAME AS POSSIBLE. THE CLOSER THE RING IS TO THE CENTER THE BETTER THE TARP WILL LAY ON THE CONTAINER

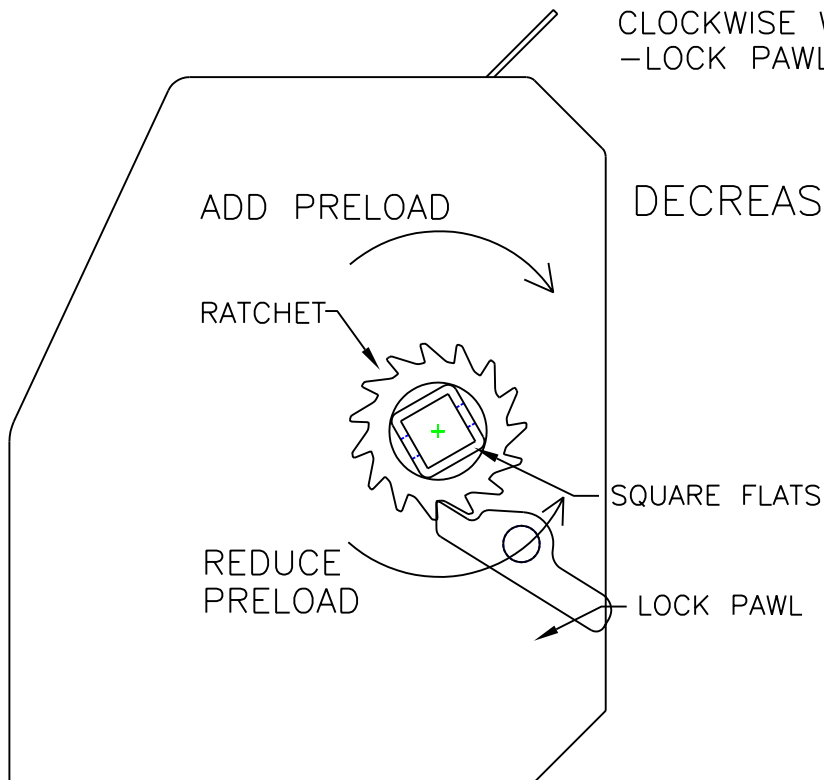
ROLLER BAR PRE-LOAD TENSION INSTRUCTIONS

----- WARNING -----

- DO NOT ADJUST ROLLER BAR SPRING TENSION WITHOUT PROPER SIZED 1" WRENCH.
- MAINTAIN A TIGHT GRIP ON WRENCH AT ALL TIMES TO AVOID POSSIBLE INJURY.
- ALWAYS ENSURE LOCK PAW IS FULLY ENGAGED IN RATCHET BEFORE RELEASING WRENCH.
- RECOMMENDED PRE-LOAD TURNS OF ROLLER:
(PRE-LOAD IS ADDED TO ROLLER AT FACTORY ON NEW SYSTEMS. THIS PRE-LOAD GUIDE IS TO BE USED IF YOU ARE REPLACING A TARP)
- LIGHTWEIGHT TARP : 32 TURNS
- HEAVYWEIGHT TARP : 38 TURNS
- DO NOT EXCEED 50 FULL TURNS OF ROLLER.

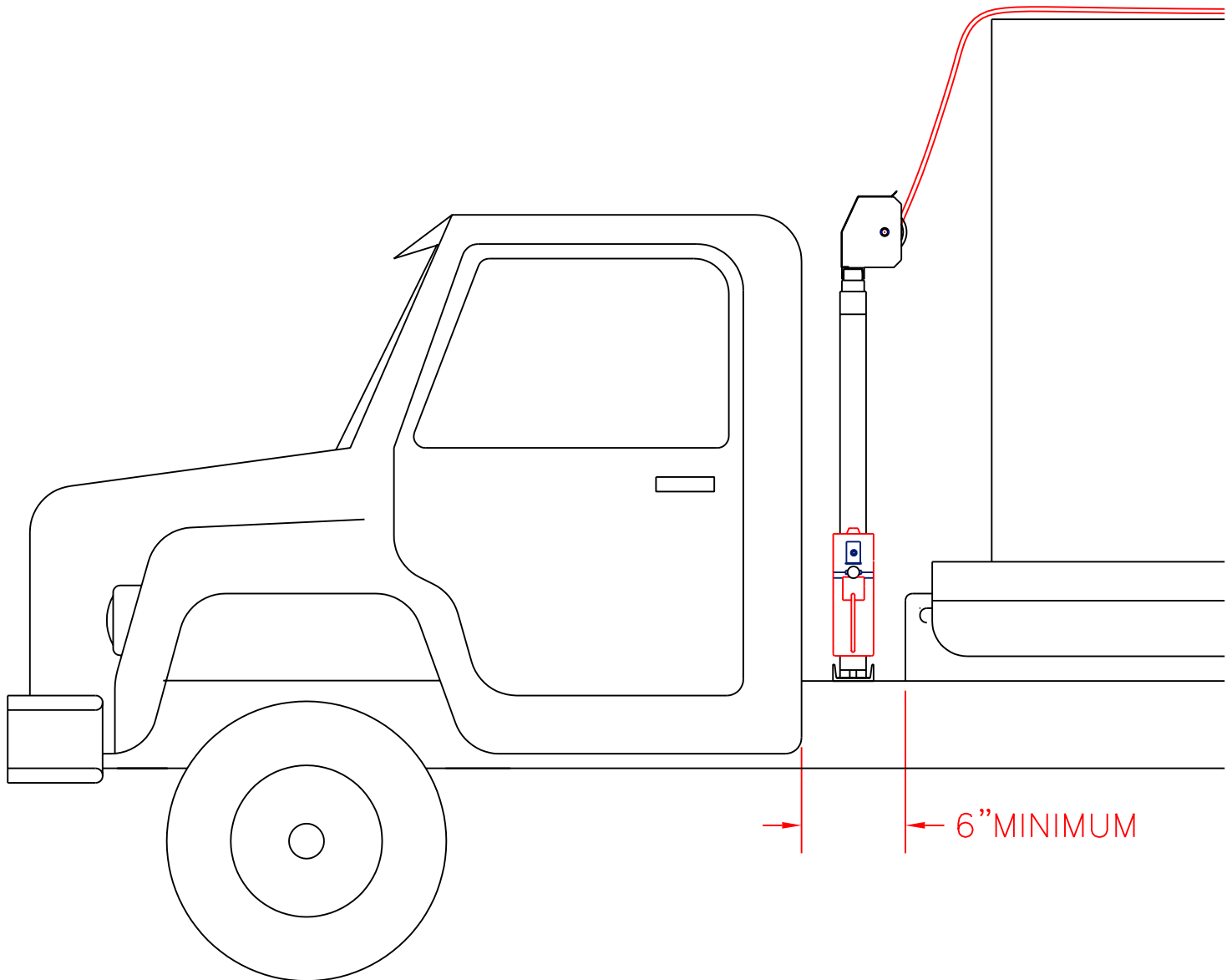
ADJUSTING ROLLER BAR SPRING TENSION

INCREASE SPRING TENSION: USE A 1" WRENCH ON SQUARE FLATS AND ROTATE RATCHET CLOCKWISE WHILE COUNTING EACH FULL ROTATION.
-LOCK PAWL MUST BE FULLY ENGAGED BEFORE WRENCH IS REMOVED.



DECREASE SPRING TENSION: WHILE HOLDING A 1" WRENCH ON SQUARE FLATS, LIFT LOCK PAWL TO DISENGAGE IT FROM THE RATCHET. ROTATE RATCHET COUNTERCLOCKWISE WHILE COUNTING EACH FULL ROTATION.
-ENGAGE LOCK PAWL AFTER EACH TURN OF THE WRENCH.

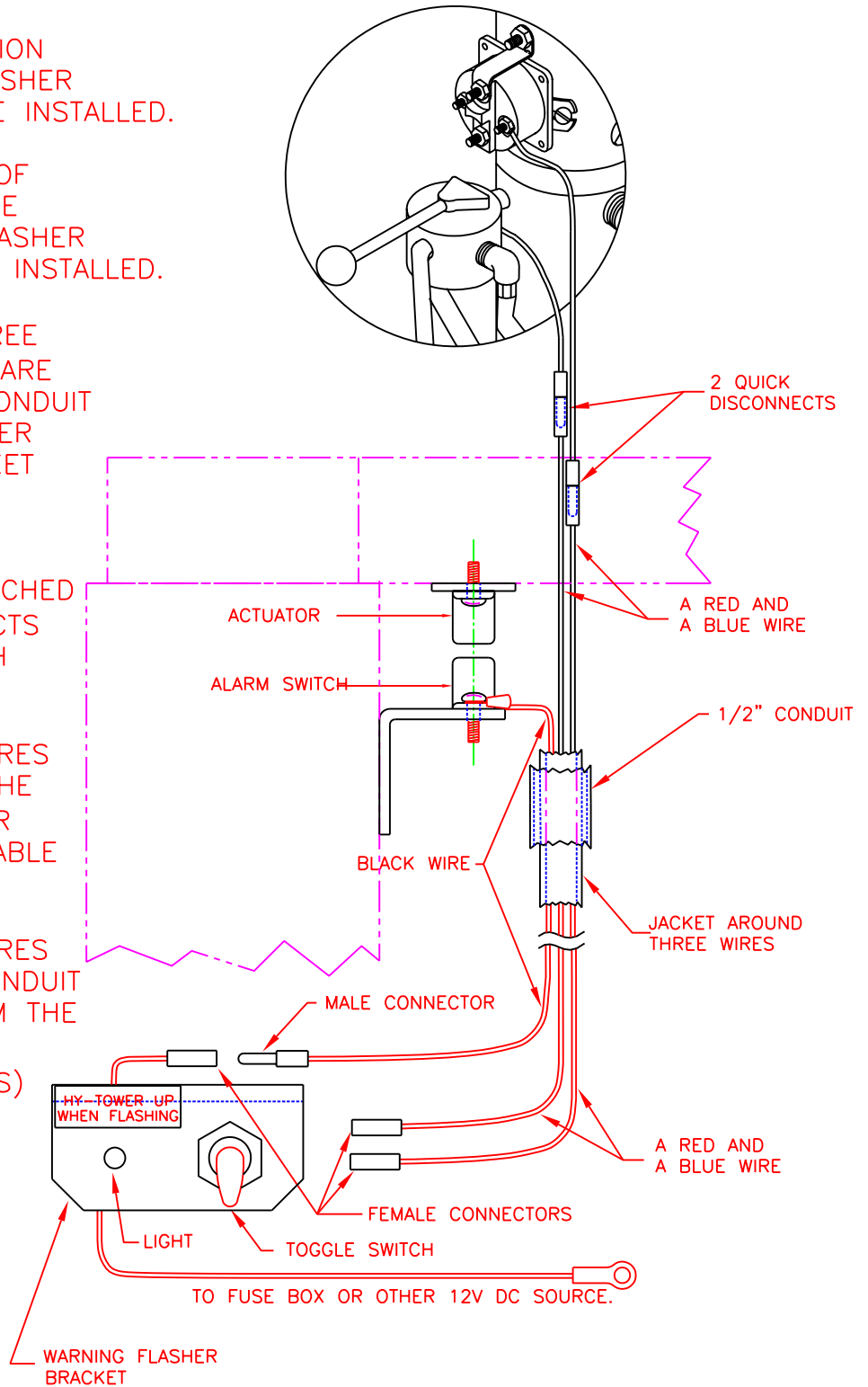
HY-TOWER INSTALLATION CLEARANCE REQUIREMENTS



- A MINIMUM CLEARANCE OF 6" BETWEEN THE CAB AND THE TILTFRAME IS REQUIRED.
- HYDRAULIC HOSES, EXHAUST, AND OTHER COMPONENTS MAY INTERFERE WITH THE STANDARD MOUNTING BRACKETS SUPPLIED BY DONOVAN AND SPECIAL MOUNTING BRACKETS MAY NEED TO BE FABRICATED BY THE INSTALLER.
- FOR BEST STRENGTH AND DURABILITY ADDITIONAL GUSSETS ARE RECOMMENDED.

HY-TOWER WARNING FLASHER INSTALLATION

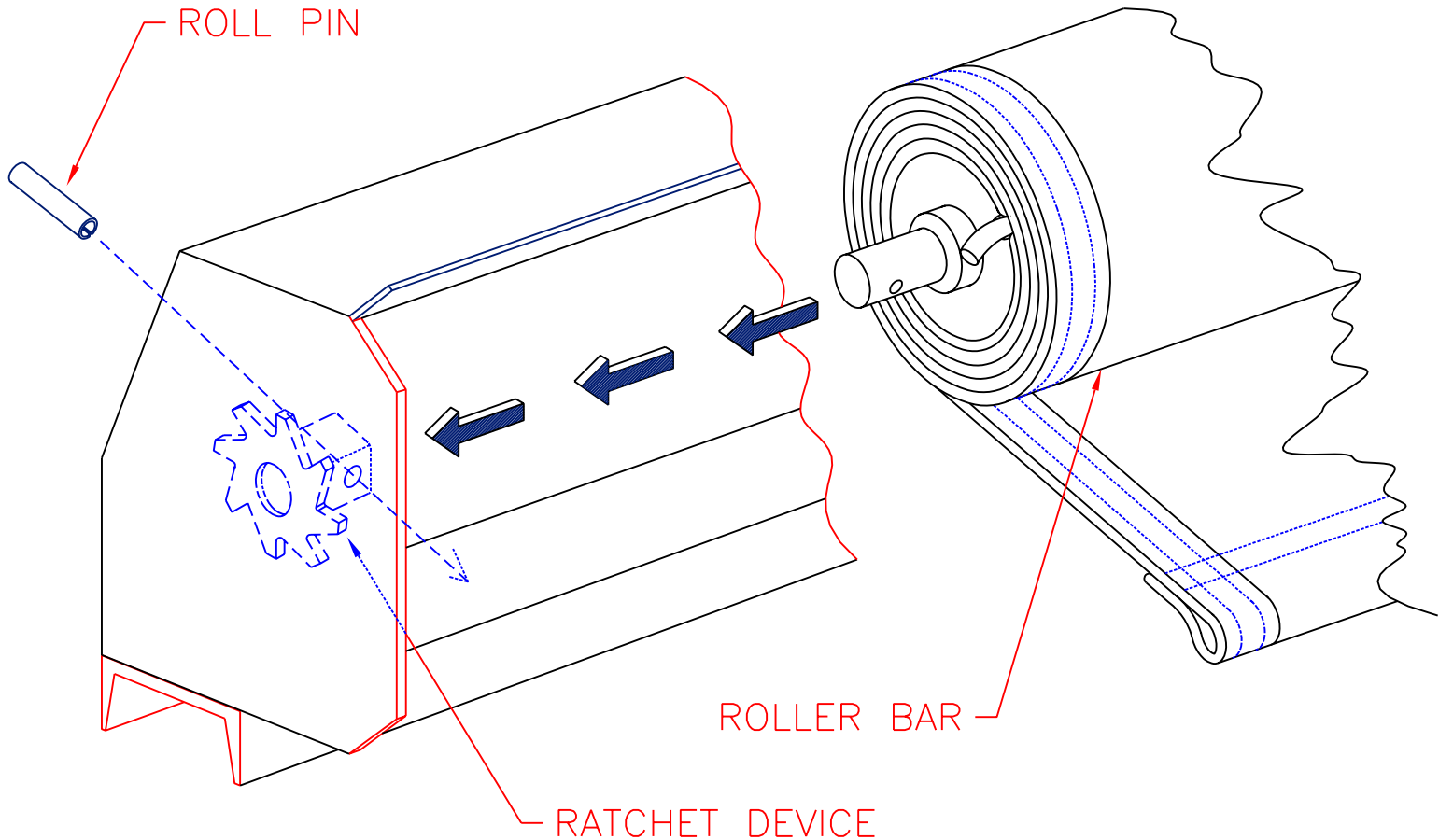
1. AFTER HY-TOWER UNIT INSTALLATION IS COMPLETED, THE WARNING FLASHER AND CUTOUT SWITCH NEED TO BE INSTALLED.
2. DETERMINE MOUNTING LOCATION OF WARNING FLASHER BRACKET INSIDE CAB OF TRUCK. THE WARNING FLASHER SHOULD BE EASILY VISIBLE ONCE INSTALLED.
3. RUN THE WIRES (THERE ARE THREE WIRES INSIDE THE JACKET) THAT ARE BUNDLED AT THE END OF THE CONDUIT NEAR THE BASE OF THE HY-TOWER TO THE WARNING FLASHER BRACKET YOU JUST MOUNTED.
4. CONNECT BLACK WIRE FROM THE ALARM SWITCH TO THE WIRE ATTACHED TO THE LIGHT. (QUICK DISCONNECTS ARE ALREADY INSTALLED ON BOTH WIRES)
5. CONNECT THE BLUE AND RED WIRES TO THE MALE CONNECTORS ON THE BACK OF TOGGLE SWITCH. (EITHER WIRE CAN GO TO THE TWO AVAILABLE CONNECTORS.)
6. CONNECT THE RED AND BLUE WIRES LOCATED AT THE TOP OF THE CONDUIT TO THE TWO WIRES COMING FROM THE PUMP (QUICK DISCONNECTS ARE ALREADY INSTALLED ON ALL WIRES)
7. CONNECT THE BLACK WIRE COMING FROM THE LIGHT (WITH THE RING TERMINAL ON ONE END) TO THE FUSE BOX OR SOME OTHER 12 VDC POWER SOURCE.



TEST OPERATION:

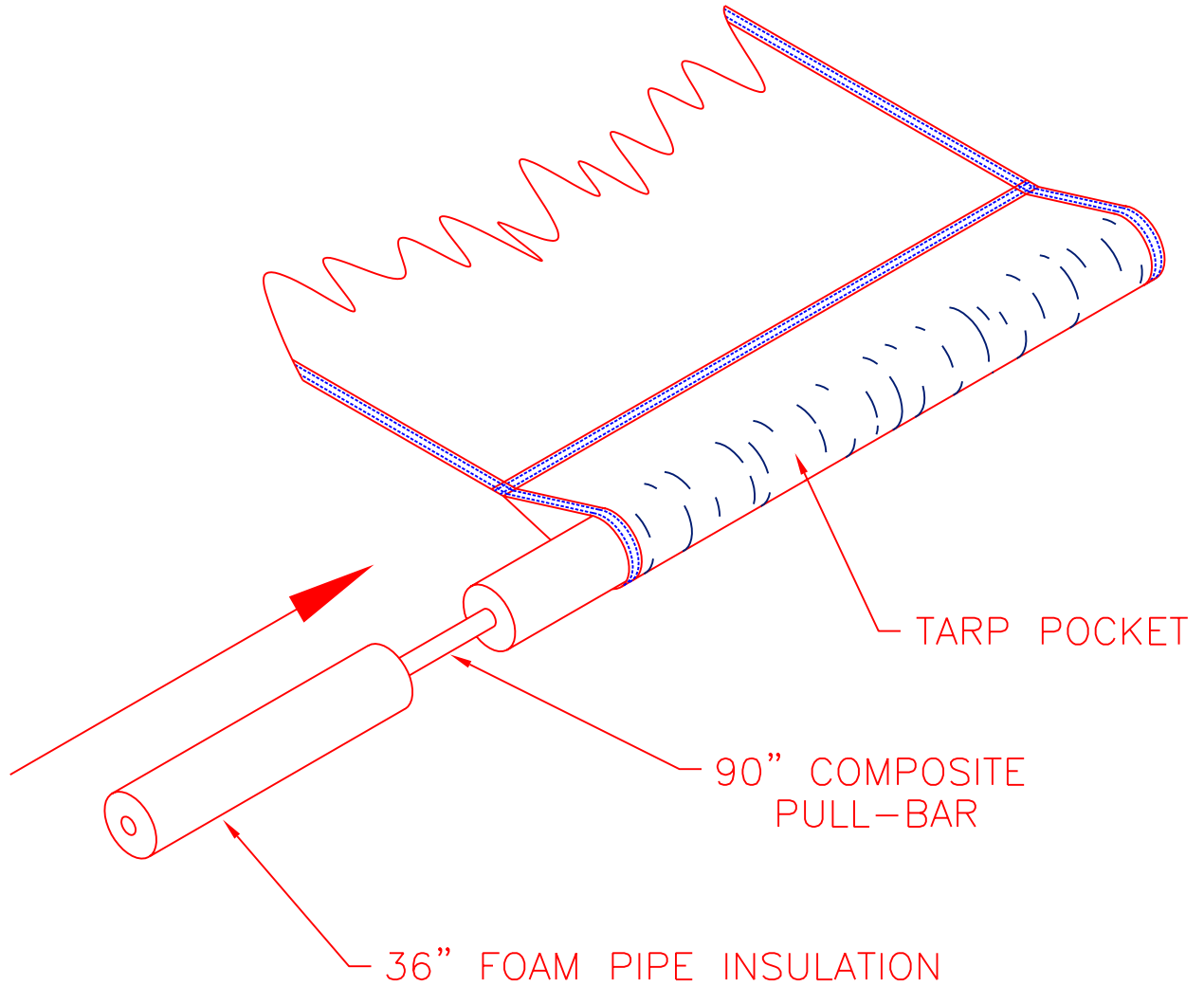
1. WHEN THE HY-TOWER IS RAISED APPROXIMATELY 1" THE RED LIGHT ON THE WARNING FLASHER SHOULD BE BLINKING.
2. PLACE THE TOGGLE SWITCH IN THE "OFF" POSITION AND TRY TO RAISE THE HY-TOWER. THE HY-TOWER HYDRAULIC PUMP SHOULD NOT START. ALWAYS PLACE THE TOGGLE SWITCH IN THE "OFF" POSITION WHEN THE HY-TOWER IS NOT BEING RAISED OR LOWERED.

HY-TOWER TARP INSTALLATION INSTRUCTIONS



INSERT ROLLER BAR INTO THE RATCHET TENSIONING DEVICE WITH THE PRELOAD WARNING LABEL ON THE DRIVER'S SIDE OF THE TRUCK (IN THE U.S.), WITH ARROWS POINTING UP WHEN VIEWING ROLLER BAR FROM REAR. (PRE-LOAD IN THE DIRECTION OF ARROWS SHOULD BE COUNTER CLOCKWISE FROM DRIVER'S SIDE.) INNER SHAFT OF ROLLER BAR IS TELESCOPIC AND CAN BE ADJUSTED IN OR OUT TO A MAXIMUM OF 106" WIDE BY LOOSENING THE SET SCREWS OF EACH BEARING SHAFT COLLAR. SECURE SHAFT COLLARS IN THE DESIRED LOCATION AND LOCK-TITE THE THREADS. SECURE THE ROLLER BAR TO THE ROLLER BAR RATCHET DEVICE WITH A 1/4" ROLL-PIN, AND A GRADE FIVE 1/4" x 1 1/2 BOLT ON THE OPPOSITE SIDE OF THE HOUSING.

HY-TOWER COMPOSITE PULL-BAR INSTALLATION INSTRUCTIONS



1. SLIDE ONE 36" PIECE OF FOAM OVER EACH END OF THE COMPOSITE PULL-BAR AND SLIDE THE COMPLETE ASSEMBLY INTO THE POCKET OF THE TARP. (SEE DRAWING ABOVE)
2. USING ZIP TIES SUPPLIED, CLOSE EACH END OF THE TARP POCKET WITH THREE TIES. (SEE DWG BELOW)

