



VENTURO
TRUCK MOUNTED CRANES

HT25KX

INSTALLATION & OWNER'S MANUAL

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HT25KX / Std Ctrl / No Eng Ctrls (HLAAAB-00**)

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MFG., INC.
CINCINNATI, OHIO

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HT25KX (HLAAAB-00)**

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9-23-03A

SUPERCEDES
10-10-02

SECTION
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20693

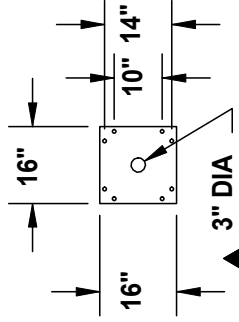
SECTION 100

DESCRIPTION

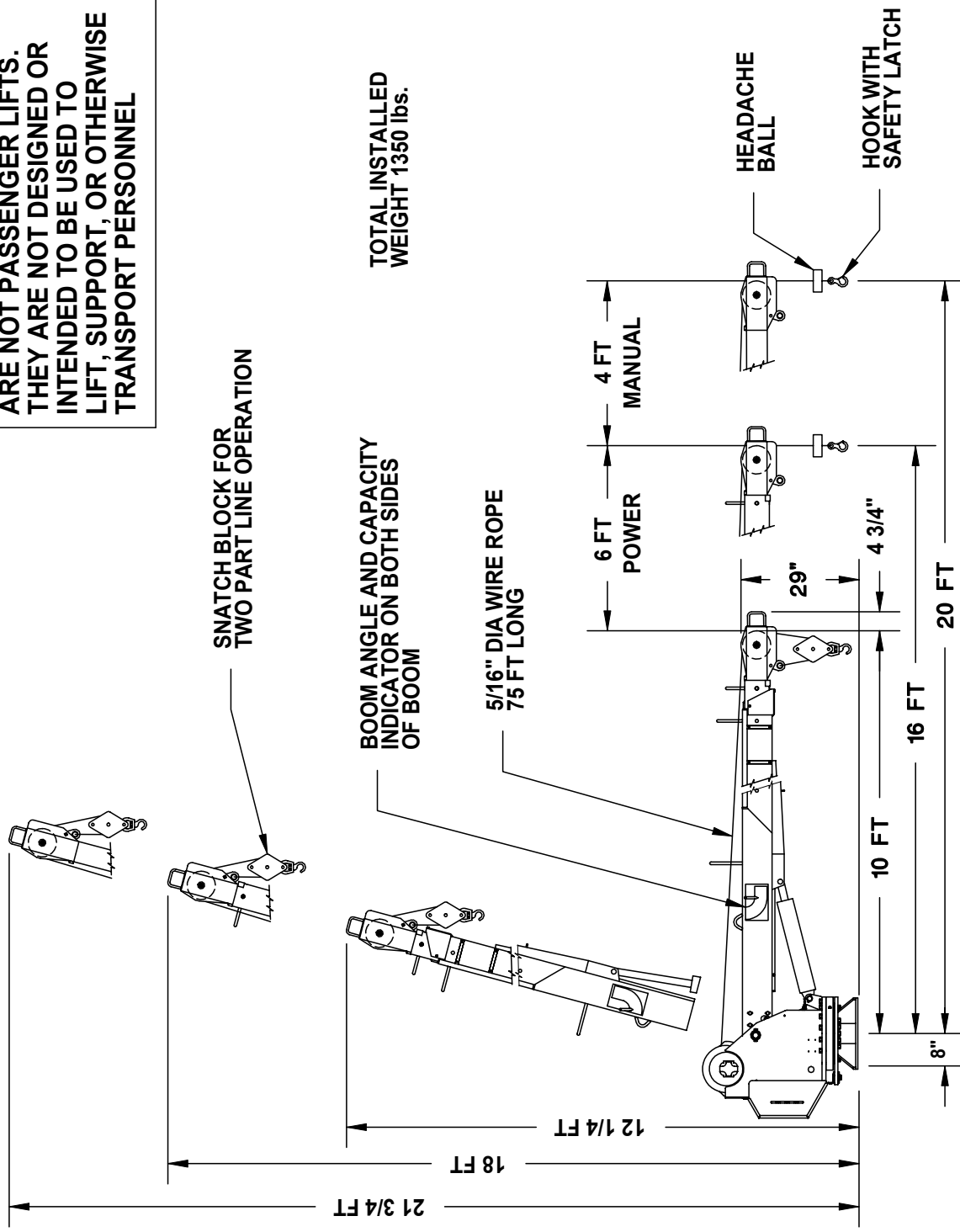
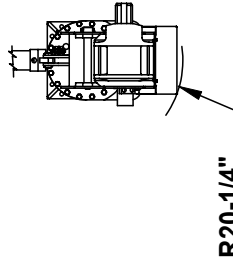
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SPECIFICATIONS

WARNING: THESE PRODUCTS ARE NOT PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL



BASE MOUNTING DIMENSIONS



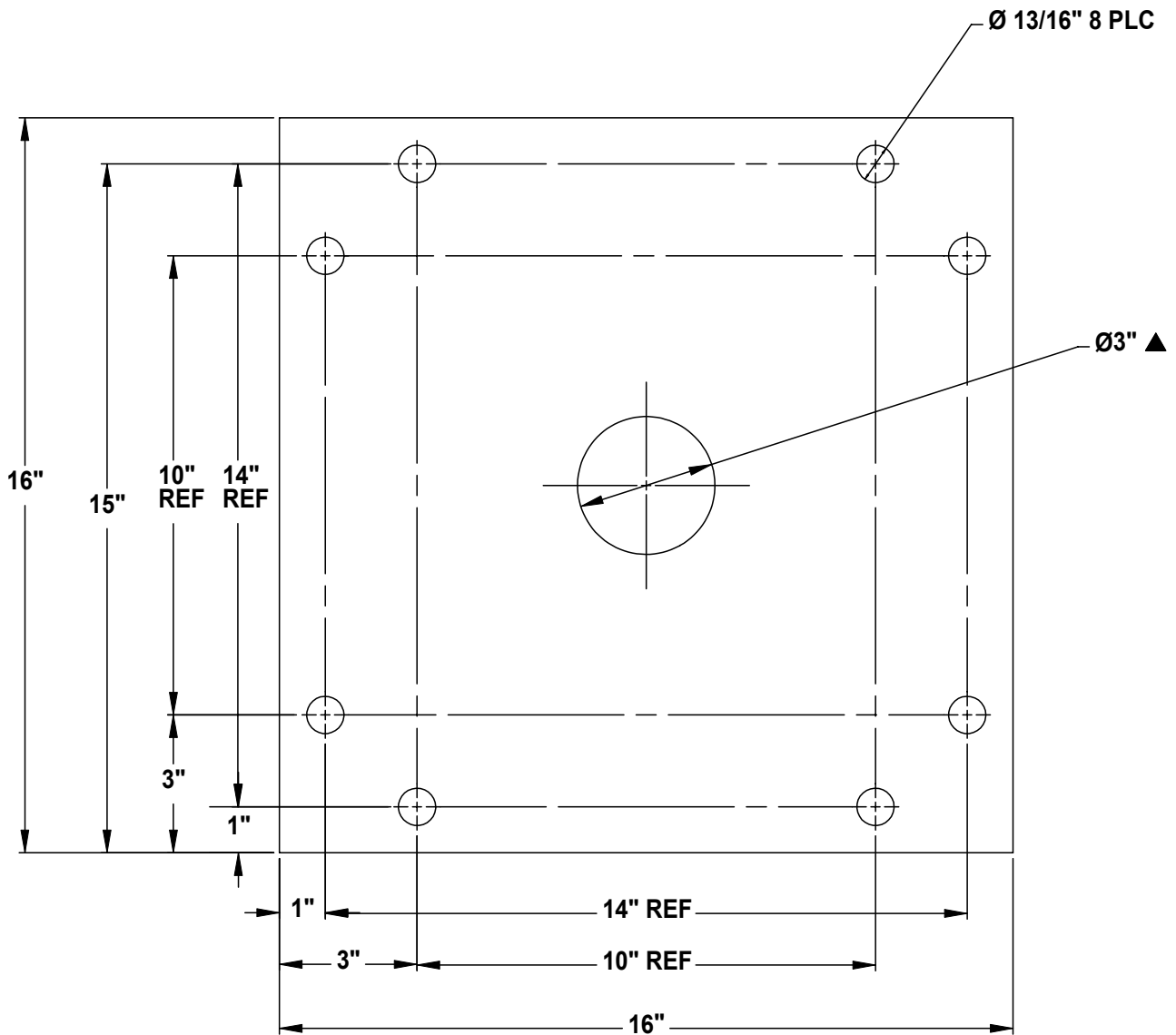
VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DRAWING
HT25KX - 10/16/20 BOOM

DATE
5-20-03B
SUPERSEDES
7-22-02A

SECTION
C100
19801

▲ ET/HT18K(X) & ET/HT25K(X) BASE MOUNTING DIMENSION



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TITLE

BASE MOUNTING DIM

DATE

7-29-03B

SECTION

C200

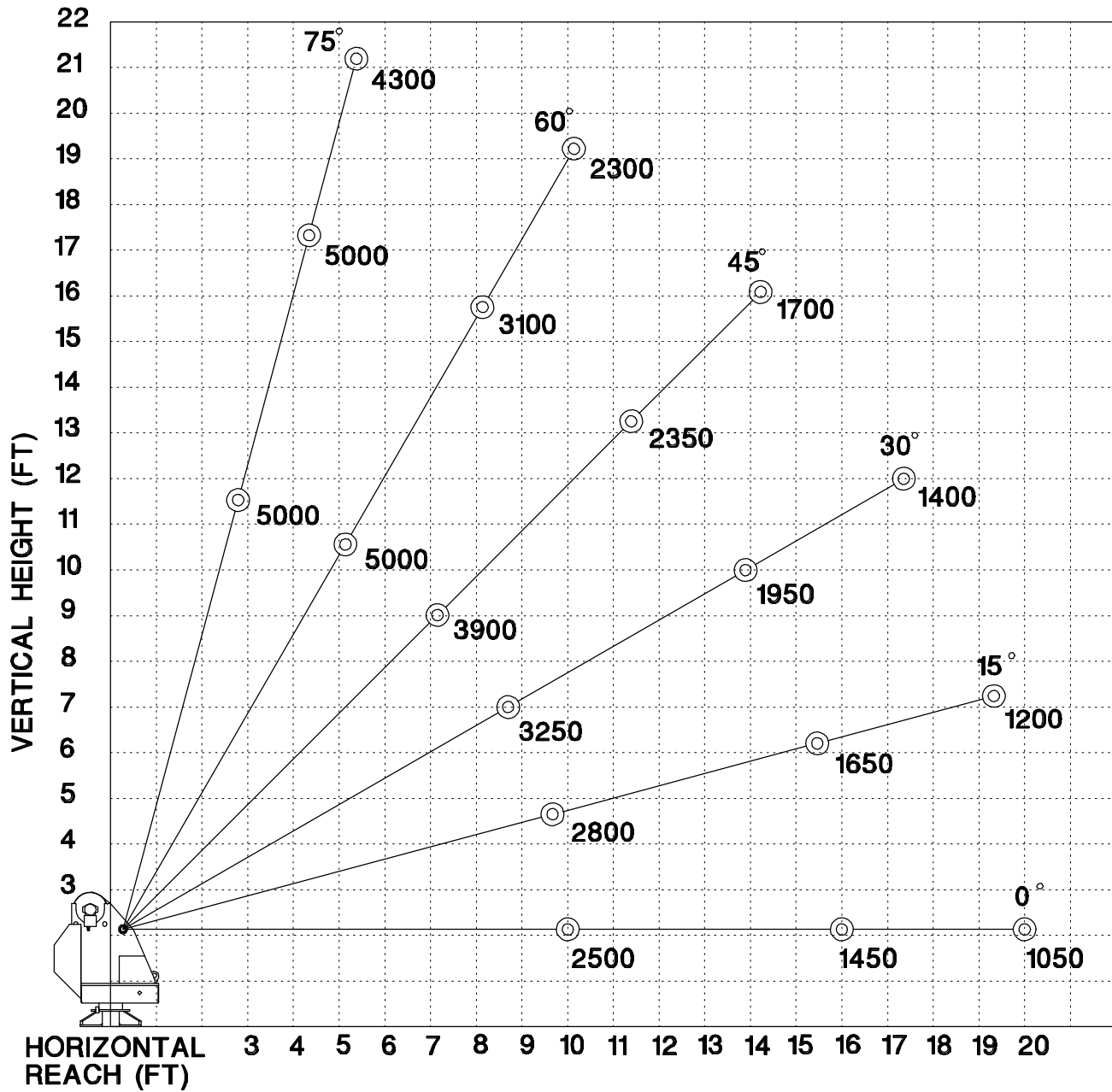
SUPERSEDES

5-21-03A

ET/HT18K(X) ET/HT25K(X)

19930

ET/HT25K(X) - 10-16-20 BOOM MAXIMUM CAPACITY CHART



**MUST USE SNATCH BLOCK
FOR LOADS OF 2500 LBS.
AND GREATER**



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TITLE
CAPACITY CHART

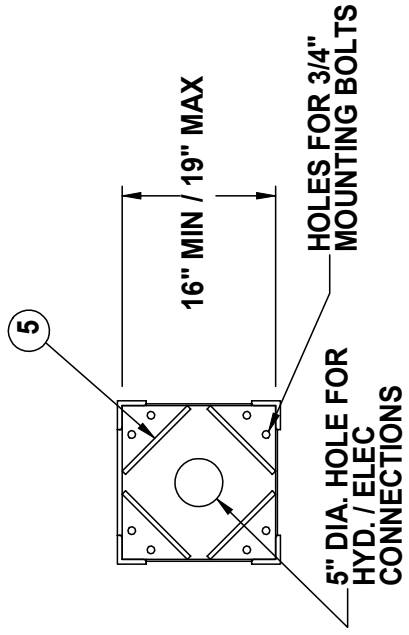
DATE
10-16-97A

SECTION
C100

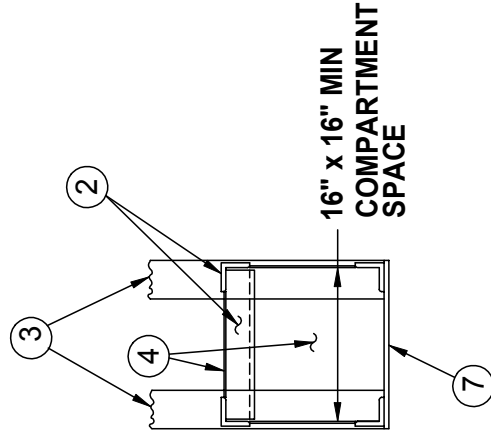
ET/HT25K(X) - 10-16-20

SUPERSEDES
8-17-96

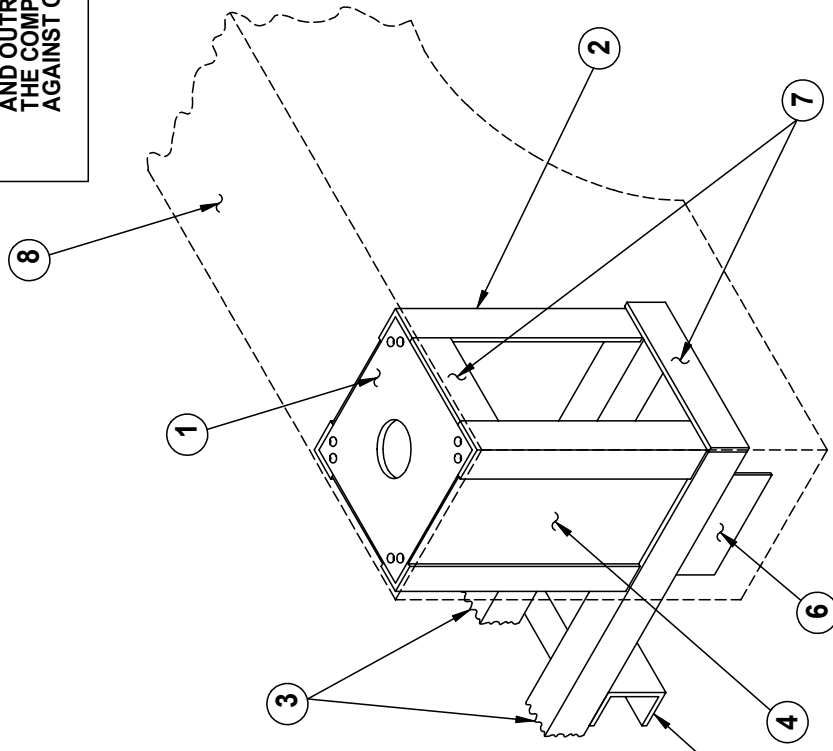
I19233



SECTION A-A



SECTION B-B



TYPICAL SERVICE BODY REINFORCEMENT

PART	DESCRIPTION	MINIMUM RECOMMENDED MATERIAL SIZE
1	TOP PLATE	1/2" STEEL
2	CORNER POST	3" x 3" x 1/2" STEEL ANGLE
3	CROSS FRAME	4" x 4" x 5/16" SQUARE TUBING
4	SHEAR WEB	3/16" STEEL PLATE
5	TOP PLATE REINFORCEMENT	1/2" x 6" OR 3/4" x 5" STEEL BAR
6	OUTTRIGGER REINFORCEMENT PLATE	1/4" THICK STEEL PLATE
7	GUSSET	1/2" x 4" H.R. STEEL
8	BODY TOP REINFORCEMENT	10 GA SMOOTH OR DIAMOND PLATE WITH 1" LIP OVER SIDE OF BODY

IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO INSURE THAT THE TOTAL STRUCTURE OF CRANE, TRUCK, AND OUTRIGGERS ARE STRUCTURALLY SOUND AND THAT THE COMPLETED VEHICLE HAS SUFFICIENT STABILITY AGAINST OVERTURNING.



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TITLE
INSTALLATION DWG

DATE
7-29-03D

SECTION
C100

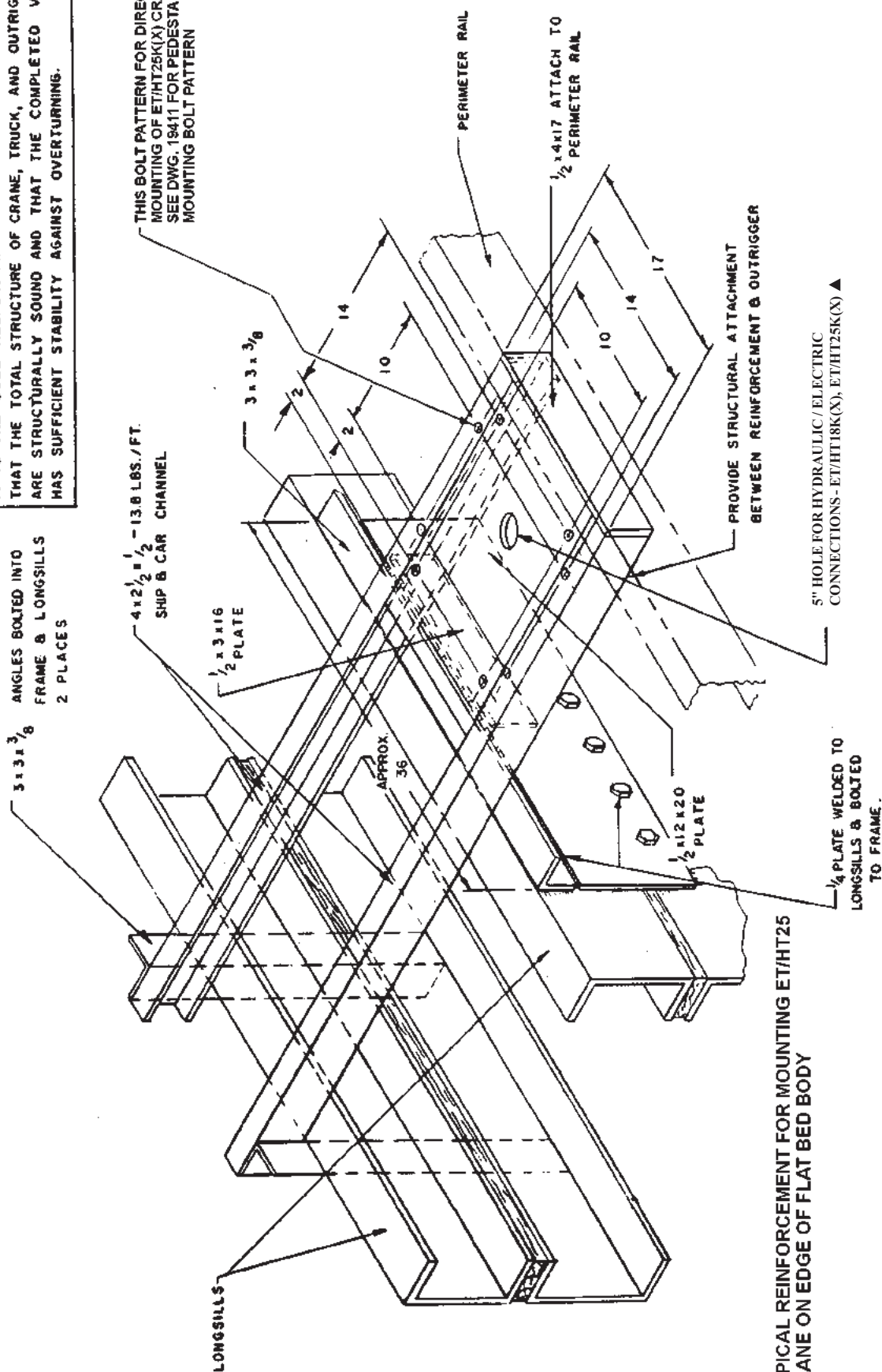
ET/HT25K(X) & ET/HT18K(X)▲

SUPSEDES
10-11-02C

19288

ANGLES BOLTED INTO
FRAME & LONGSILLS
2 PLACES

THIS BOLT PATTERN FOR DIRECT
MOUNTING OF ET/HT25K(X) CRANE
SEE DWG. 19411 FOR PEDESTAL
MOUNTING BOLT PATTERN



**TYPICAL REINFORCEMENT FOR MOUNTING ET/HT25
CRANE ON EDGE OF FLAT BED BODY**

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TITLE

INSTALLATION DRAWING

ET/HT18K(X), ET/HT25K(X) ▲

DATE
7-29-03M

SUPERCEDES
10-11-02L

SECTION
C100

14510

SECTION 150

SAFETY

VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION

ET & HT CRANE SERIES



▲ SIGN NO. 15393A DISPLAYS THE INTERNATIONAL SYMBOL FOR ELECTRICITY AND WARNS OF DANGER FROM AN ELECTRICALLY CHARGED VEHICLE, CRANE, OR LOAD. FOUR ARE RECOMMENDED (ONE FOR EACH SIDE AND ONE FOR EACH END OF VEHICLE) TO BE APPLIED IN LOCATIONS WHICH ARE READILY VISIBLE TO GROUND PERSONNEL.



▲ SIGN NO. 15401 PROVIDES ADDITIONAL WARNING OF LEGAL REQUIREMENTS WHEN OPERATING NEAR HIGH VOLTAGE LINES. THIS SIGN IS PLACED ON THE CONTROL PENDANT SIDE OF BOOM.

REQUIRED MINIMUM CLEARANCES REFERRED TO ON SIGN NO. 15401

REQUIRED CLEARANCES FROM OVERHEAD HIGH-VOLTAGE LINES

NOMINAL VOLTAGE (kV) (PHASE TO PHASE)	MINIMUM REQUIRED CLEARANCE (FEET) *
0 - 50	10
over 50 - 200	15
over 200 - 350	20
over 350 - 500	25
over 500 - 750	35
over 750 - 1000	45

REQUIRED CLEARANCES FROM ENERGIZED HIGH-VOLTAGE CONDUCTORS (WHILE IN TRANSIT)

NOMINAL VOLTAGE (kV) (PHASE TO PHASE)	MINIMUM REQUIRED CLEARANCE (FEET) *
0 - 0.75	4
over 0.75 - 50	6
over 50 - 345	10
over 345 - 750	16
over 750 - 1000	20

* NOTE: ENVIRONMENTAL CONDITIONS SUCH AS FOG, SMOKE, OR PRECIPITATION MAY REQUIRE INCREASED CLEARANCES



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INSTALLATION DWG

ET & HT CRANE SERIES

DATE
5-15-02H

SUPERCEDES
5-13-97G

SECTION
C150

15394

CRANE SAFETY AND HAZARDS

HT25KX, HT40KX, HT50KX

CAUTIONS

1. INSPECT VEHICLE AND CRANE, INCLUDING OPERATION, PRIOR TO USE DAILY.
2. DO NOT USE THIS EQUIPMENT EXCEPT ON SOLID, LEVEL SURFACE WITH CRANE MOUNTED ON FACTORY-RECOMMENDED TRUCK.
3. BEFORE OPERATING THE CRANE, REFER TO MAXIMUM LOAD (CAPACITY) CHART ON CRANE FOR OPERATING (LOAD) LIMITATIONS.
4. DO NOT OPERATE, WALK, OR STAND BENEATH BOOM OR A SUSPENDED LOAD.
5. ATTACH PENDANT CORD SUPPORT SNAP TO ATTACHMENT POINT BEFORE PLUGGING IN PENDANT.
6. UNPLUG PENDANT AND DISENGAGE PTO SYSTEM WHEN CRANE NOT IN USE.
7. FOR TRAVEL, BOOM MUST BE IN STOWED POSITION.

DANGER

- THIS CRANE IS NOT A PASSENGER LIFT
- IT IS NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.

YOU MUST NOT OPERATE THIS CRANE UNLESS

1. YOU HAVE BEEN TRAINED IN THE SAFE OPERATION OF THIS CRANE
AND
2. YOU KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUALS, YOUR EMPLOYER'S WORK RULES, AND APPLICABLE GOVERNMENT REGULATIONS. AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

ELECTROCUTION HAZARD

- THIS MACHINE IS NOT INSULATED.
- MAINTAIN SAFE CLEARANCES FROM ELECTRICAL LINES AND APPARATUS.
- YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG, AND ELECTRICAL LINE AND LOADLINE SWAYING.
- THIS LIFTING DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.
- YOU MUST MAINTAIN A CLEARANCE OF AT LEAST 10 FEET BETWEEN ANY PART OF THE CRANE, LOADLINE, OR LOAD, AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. ADDITIONAL CLEARANCE IS REQUIRED FOR VOLTAGES IN EXCESS OF 50,000 VOLTS. REFER TO DRAWING 15394 FOR ADDITIONAL INFORMATION.
- **DEATH OR SERIOUS INJURY** WILL RESULT FROM CONTACT OR INADEQUATE CLEARANCE.



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TITLE
INSTALLATION DWG

HYDRAULIC CRANES

DATE
5-13-97A

SUPERCEDES
6-12-92

SECTION
C150

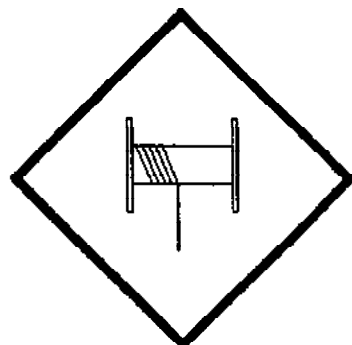
920612

WINCH SAFETY WARNINGS



DANGER

**DO NOT DISENGAGE
WINCH UNDER LOAD**



DANGER

**THE LAST FIVE
WRAPS OF WIRE ROPE
MUST BE LEFT ON
THE DRUM TO ASSIST
THE WIRE ROPE CLAMP IN
HOLDING THE LOAD**



WARNING

**WINCHES ARE NOT
TO BE USED FOR
THE LIFTING OR
MOVING OF
PERSONS**



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TITLE
INSTALLATION DWG

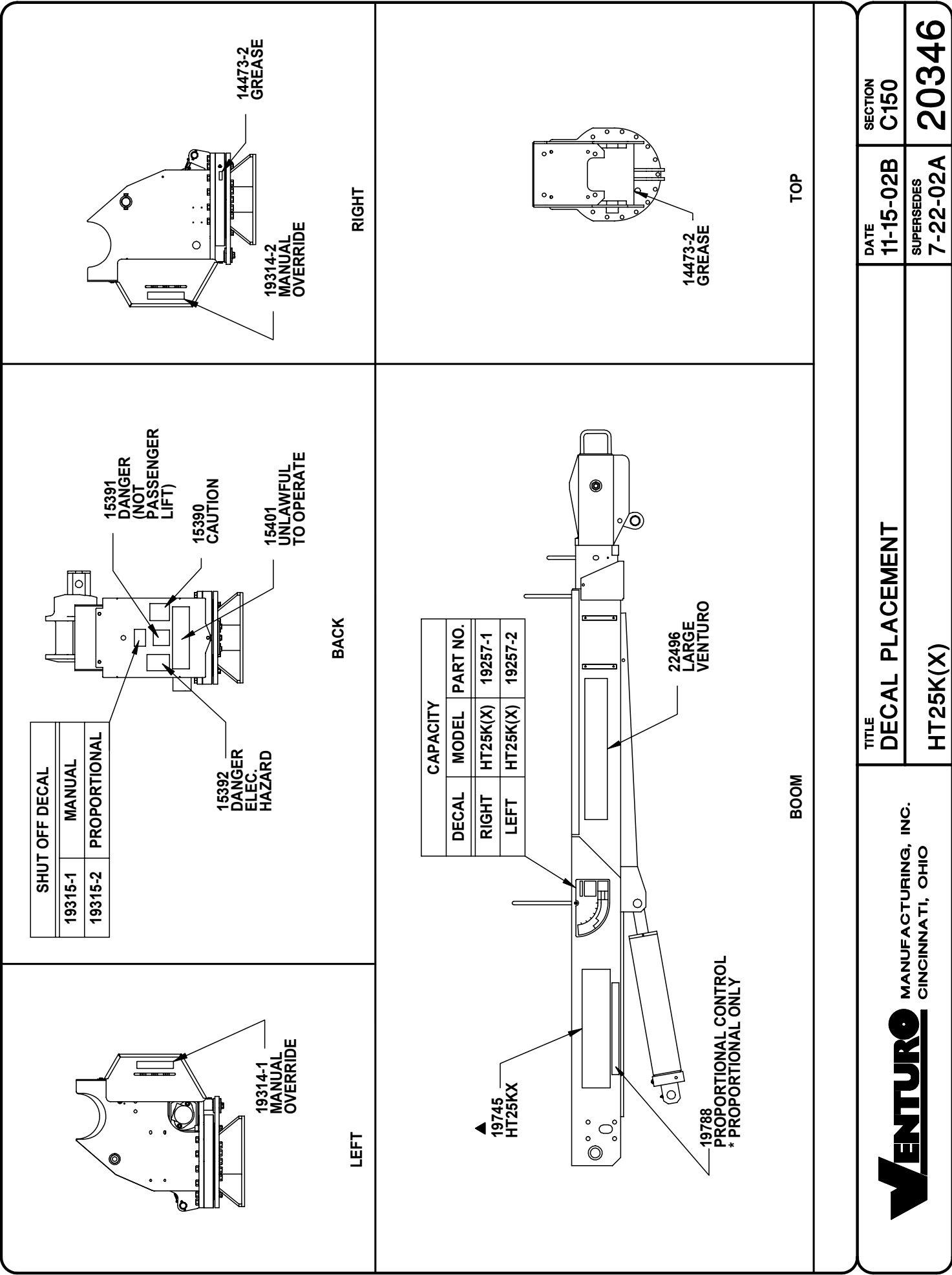
HT CRANES

DATE
5-26-98B

SUPERCEDES
10-17-97A

SECTION
C150

I19217



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TITLE

DECAL PLACEMENT

HT25K(X)

DATE

11-15-02B

SUPERSEDES

7-22-02A

SECTION

C150

20346

SECTION 200

INSTALLATION



CRANE INSTALLATION

HT25KX

BODY REINFORCEMENT

The truck body must be reinforced and outriggers provided to withstand the combined loads resulting from lifting and the weight of the crane and boom.

The maximum combined overturning moment for the HT25KX is 27,000 ft. lbs.

The maximum vertical load is 6500 lbs.

CRANE MOUNTING

The crane base plate or mounting pedestal must be bolted to the body reinforcing plate with eight (8) grade five (5) bolts of 3/4" dia. with either coarse or fine threads. A 4.5" dia. hose clearance hole must be cut in this plate to allow the hoses to swing and coil freely.

ROTATION POSITIONING

The HT cranes are shipped with the boom rotated to the middle of the 400 degree rotation travel limit. The location of this middle position relative to the center line of the truck must be decided prior to mounting. It can be in any position that pleases the users since the boom can always reach the storage and travel position by rotating one way or the other.

HYDRAULIC CONNECTIONS

The crane is furnished with a pressure and a return hose that come down through the center of the housing. Included in the installation kit are two hydraulic swivels and two more hoses.

These hoses and swivels are to be arranged in the compartment or pedestal below the crane as shown on drawing 20691 using the angle bulkhead fittings furnished in the installation kit.

These hoses are to be connected in a relaxed position as shown on 20691, while the crane is at the midpoint of the 400 degree rotation range as received -- regardless of the final position of the boom during storage/travel.

The bulkhead fittings may be located on any side of the compartment relative to the middle of rotation position.

The crane pressure and return hoses have different sizes of SAE 37 degree flare swivel fittings. The smaller swivel is on the pressure hose which has a 3/8" flare. The larger swivel is on the return hose which has a 1/2" flare.



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INSTALLATION DWG

HT25KX

DATE
10-10-02

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20690

ELECTRICAL CONNECTIONS

- ▲ A 25 ft. electrical power lead - intended for 12V DC only - also comes down through the center of the housing with the hoses. This lead should be looped in the compartment so that it remains relaxed throughout the 400 degree rotation of the crane.

A 15amp circuit breaker is mounted on the crane and protects the crane's internal wiring and solenoid coils. The 15amp circuit breaker does not protect the 25 foot electrical power lead. For added protection, the 25 ft. lead can be connected to a 15-20 amp protected circuit that, if possible, is powered only when the vehicle engine is running

HYDRAULIC FLUID

<u>Average Climate</u>	<u>Type of Oil</u>
Cold to Moderate	ISO Grade AW 46
Warm to Hot	ISO Grade AW 68

The fluid should have the highest anti-wear characteristics and treated to inhibit rust and oxidation.

HYDRAULIC HOSES & LINES

The minimum sizes for lines and hoses are as follows:

PRESSURE	1/4"
RETURN	3/8"
SUCTION	3/4"

RESERVOIR

The PTO reservoir should have a capacity of 8 gallons fitted with 100 mesh suction screen, 10 micron return line filter, and filler/breather cap.

PTO PUMP

For standard (non-proportional) cranes, the PTO pump should be sized to provide 2.0 gpm (or 1.5 gpm for more delicate control of loads) at 3000 psi when engine is at desired idle speed.

For proportional cranes, the PTO pump should be sized to provide 4.0 gpm at 3000 psi when engine is at desired idle speed.

PTO START-UP

Before connecting the PTO system to the crane pressure and return hoses, connect the PTO pressure and return lines together at the bulkhead. Operate the PTO system for about two (2) minutes per gallon of reservoir capacity (in this case 16 minutes) to flush out the lines and filter all the fluid several times.

ENGINE START/STOP & THROTTLE CONTROL

If your crane was purchased with optional engine start/stop and throttle control, refer to drawing 22615 in the replacement parts section for further information.



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INSTALLATION DWG

HT25KX

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6-17-02E

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4-24-02D

SECTION
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119212b

CRANE OPERATION AND MAINTENANCE INSTRUCTIONS

HT25KX

SAFETY

Before operating this crane, read and understand these instructions, the 920612 Crane Safety and Hazards Information Sheet, and review all safety & instruction labels on the crane.

CRANE INSPECTION

Before operating this crane, inspect for wear, damage, or oil leakage. After the wire rope has been run out, check for wear, kinks, and broken strands. Check the hook and safety latch for damage. Correct any problems before using the crane.

CAPACITY

Before operating this crane, review the capacity charts on the sides of the boom to relate the load to be lifted to the boom length and angle. The boom angle is shown by a gravity arrow.

SNATCH BLOCK

If the load exceeds 2500 lbs. or reduced winching speed for better control of smaller loads is required, use the snatch block to rig the crane for two part line operation.

CONTROLS

This crane is operated by a remote control pendant. The pendant should be unplugged and stored in a compartment when the crane is not in use.

Before plugging the pendant in, inspect the plug, socket, cord, pendant head, and switches for damage. Actuate all four switches both ways to verify that they all have the same feel and sound and that they return to the center position.

PTO SYSTEM

Check the hydraulic fluid level in the PTO system reservoir. Engage PTO and set the engine idle speed to provide a hydraulic flow rate per the PTO system instructions. A lower idle setting may be used for more delicate spotting of loads if required.

CRANE OPERATION

Use "Winch Down" to release tension on the wire rope to unhook it from the storage tie down position.

Use "Boom Up" to elevate the boom from the boom rest position.

Avoid repeated rapid reversals of the control switches. This can cause the load to swing.

Check all control functions to see that they are working as described in the following section

CONTROL FUNCTIONS

WINCH "UP" and "DOWN" - Raises and lowers the load with the winch.

BOOM "UP" and "DOWN" - Raises and lowers the boom elevation angle. The boom elevates from 8 degrees below horizontal to 75 degrees above horizontal.

BOOM "OUT" and "IN" - Extends and retracts the boom. The boom hydraulic extension stroke is 6 ft.



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ROTATION "L" and "R" - Controls the left and right direction of the crane rotation. The crane rotation is limited to 400 degrees.

POWER (Non Proportional Systems with Engine Controls) - Energizes safety shutoff valve. See page 22328 for detailed operating instructions and warnings.

TRIGGER (Proportional Systems Only) - Varies the flow rate delivered to the crane valve. The farther the trigger is pulled, the faster the selected crane function operates.

OVERLOAD SENSING SYSTEM

This crane is equipped with an Overload Sensing System. If the capacity of the crane is exceeded, the "Winch Up", "Boom Down", and "Boom Out" functions will be shut down. The "Winch Down", "Boom Up", and "Boom In" functions will continue to operate and can be used to relieve the overload condition. The "Rotation" function also will continue to operate.

The Overload system is inoperative if the boom elevation is at the bottom or top limit of travel. To relieve this condition, raise or lower the boom slightly before lifting the load.

TWO-BLOCK SENSING SYSTEM

This crane is equipped with an anti two-block device that is mounted at the tip of the boom. If the snatch block/overhaul weight contacts the device the "Winch Up", "Boom Down", and "Boom Out" functions are disabled. The "Winch Down", "Boom Up", and "Boom In" functions will continue to operate and can be used to relieve the two-block condition. Refer to Drawing 19050 for parts breakdown and configuration information.

MANUAL TELESCOPIC BOOM

The 10 to 20 ft. boom has a 4 ft. manual telescoping section in addition to the 6 ft. power extension. A pin locks the manual extension into either the extended or retracted position.

TRUCK SETUP & OUTRIGGERS

1. The truck should be parked on ground that is as level and as firm as possible when using the crane.
2. The center of the crane should be positioned close enough to the job so that it can be operated at a reach that puts the load within the rated capacity of the crane.
3. Set the vehicle parking brake and put the vehicle transmission in "park" if it is an automatic.
4. Deploy the outriggers to help stabilize the vehicle against rocking or overturning when lifting with the crane.

PREPARATION FOR TRAVEL

1. Return the outriggers to the stowed position. Install and secure all pins.
2. Stow the crane boom in the boom support.
3. Hook the winch line to the tie down point on the boom and apply light tension.
4. Disengage the PTO pump and idle speed control.
5. Unplug the control pendant and store in a body compartment or the cab.



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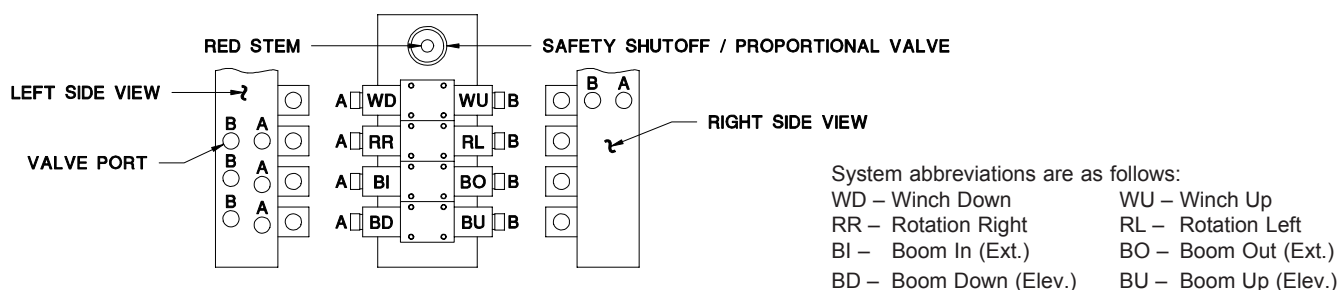
20435B

EXPLANATION OF HYDRAULIC VALVE SYSTEM

OVERVIEW

Venturo's hydraulic cranes are available in two general configurations: Proportional and Non-proportional. The **Non-proportional** configuration utilizes a safety shutoff valve which, when **not** actuated, allows hydraulic fluid to bypass the valve bank and return to tank; the crane will not function when the safety shutoff valve is not actuated. When the safety shutoff valve is actuated (control pendant energizes the coil or the coil is manually overridden), hydraulic fluid cycles through the valve bank and allows the crane to function. The **Proportional** configuration utilizes a proportional valve which in its fully closed and fully opened positions functions similarly to the safety shutoff valve, but adds the ability to operate the crane at any speed in between these two extremes.

In both the Non-proportional and Proportional configurations, the four crane functions (winch, rotation, boom elevation, and boom extension) are controlled by four separate valve sections. Each valve section has two solenoid coils (and two manual overrides) which control the direction that the function operates (e.g. winch up vs. winch down). For a given crane function and direction (e.g. winch up) the solenoid coil and the associated manual override lie on the same side of the valve bank (both "push").



MANUAL OVERRIDE SYSTEM

Should an electrical failure occur, your Venturo crane can be operated manually. **The manual overrides are intended for emergency use only and should not be used for normal operation.**

To operate in manual override mode:

- (1) Override the safety shutoff or proportional valve by turning the red stem on the valve as stated below.

Non-proportional system:

For override operation, press stem in and rotate counterclockwise until it stops.

To return to normal operation, press stem in and rotate clockwise until it stops.

Proportional system:

For override operation, rotate stem clockwise (the farther the stem is turned the faster the crane will operate).

To return to normal operation, rotate the stem counterclockwise until it stops.

- (2) Determine the coil/override associated with the function you wish to operate, then insert a small diameter object (an allen wrench works well) into the detent on the end of the valve stem and press firmly inward. For example, pushing the stem labeled A on the first bank (refer to the illustration) will actuate winch down.

WARNING! For normal crane operation, the safety shutoff or proportional valve must be in the "normal" position (as described above). Test the crane before each use by placing the power toggle switch or trigger in the "OFF" position and testing each crane function *using the manual overrides*. If any crane function operates, verify that the red stem on the safety shutoff or proportional valve is in the normal position then retest.

EMERGENCY STOP

In the unlikely event that a function of the crane does not stop once the function's toggle switch is released, the **Non-proportional** crane can be stopped by simply toggling the power switch to the off (emergency stop) position and the **Proportional** crane can be stopped by releasing the trigger.



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TITLE
HYDRAULIC SYSTEM

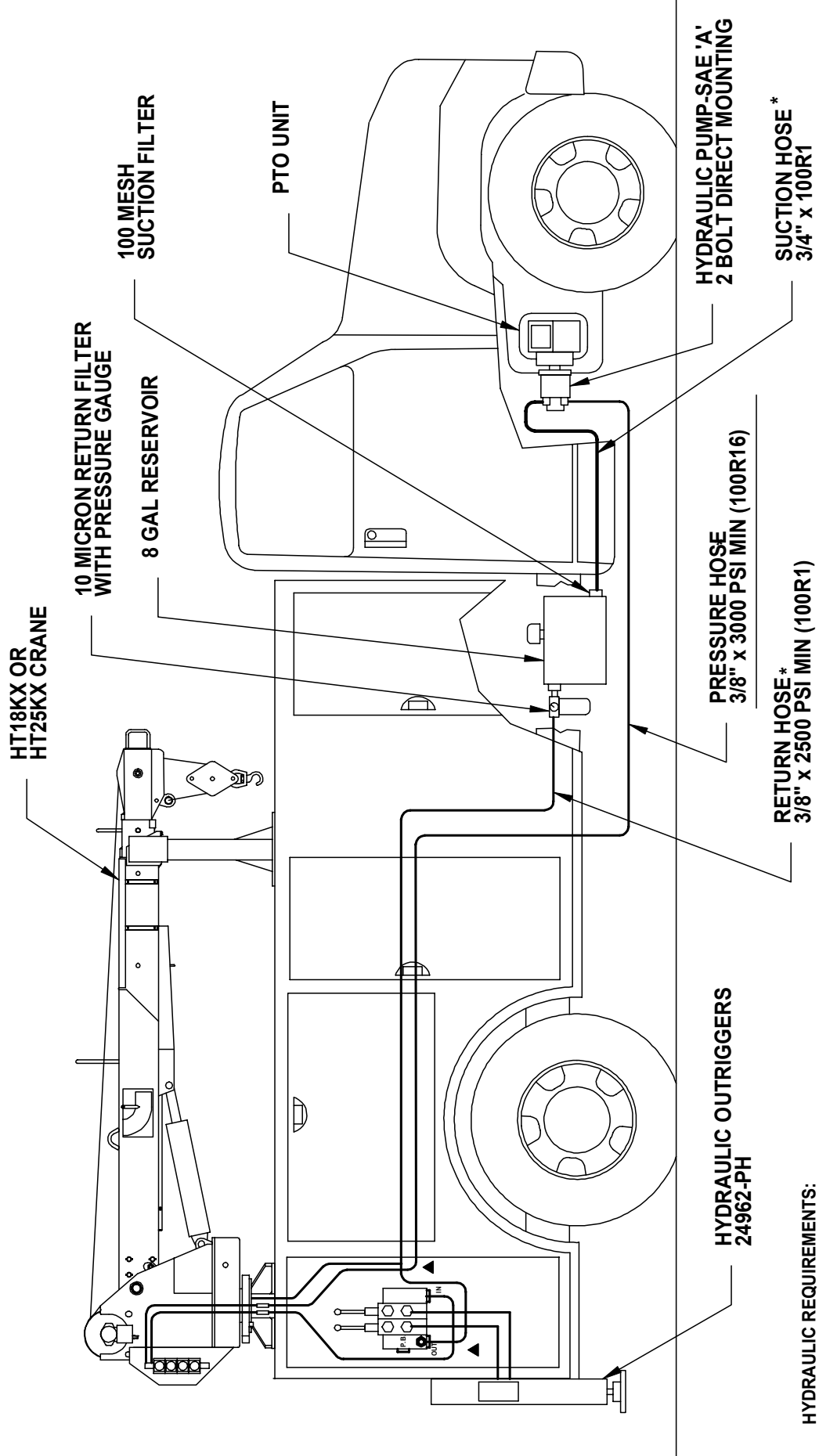
▲HT18, HT25, HT40/50

DATE
9-24-03B

SUPERCEDES
5-1-98A

SECTION
C200

22328



HYDRAULIC REQUIREMENTS:

HT18KX STANDARD - 1.75 GPM @ 3000 PSI (19294-1.60 PTO PACKAGE)


HT25KX STANDARD - 2.0 GPM @ 3000 PSI (19294-1.64 PTO PACKAGE)

HT18KX PROPORTIONAL - 3.5 GPM @ 3000 PSI (19294-3.68 PTO PACKAGE)

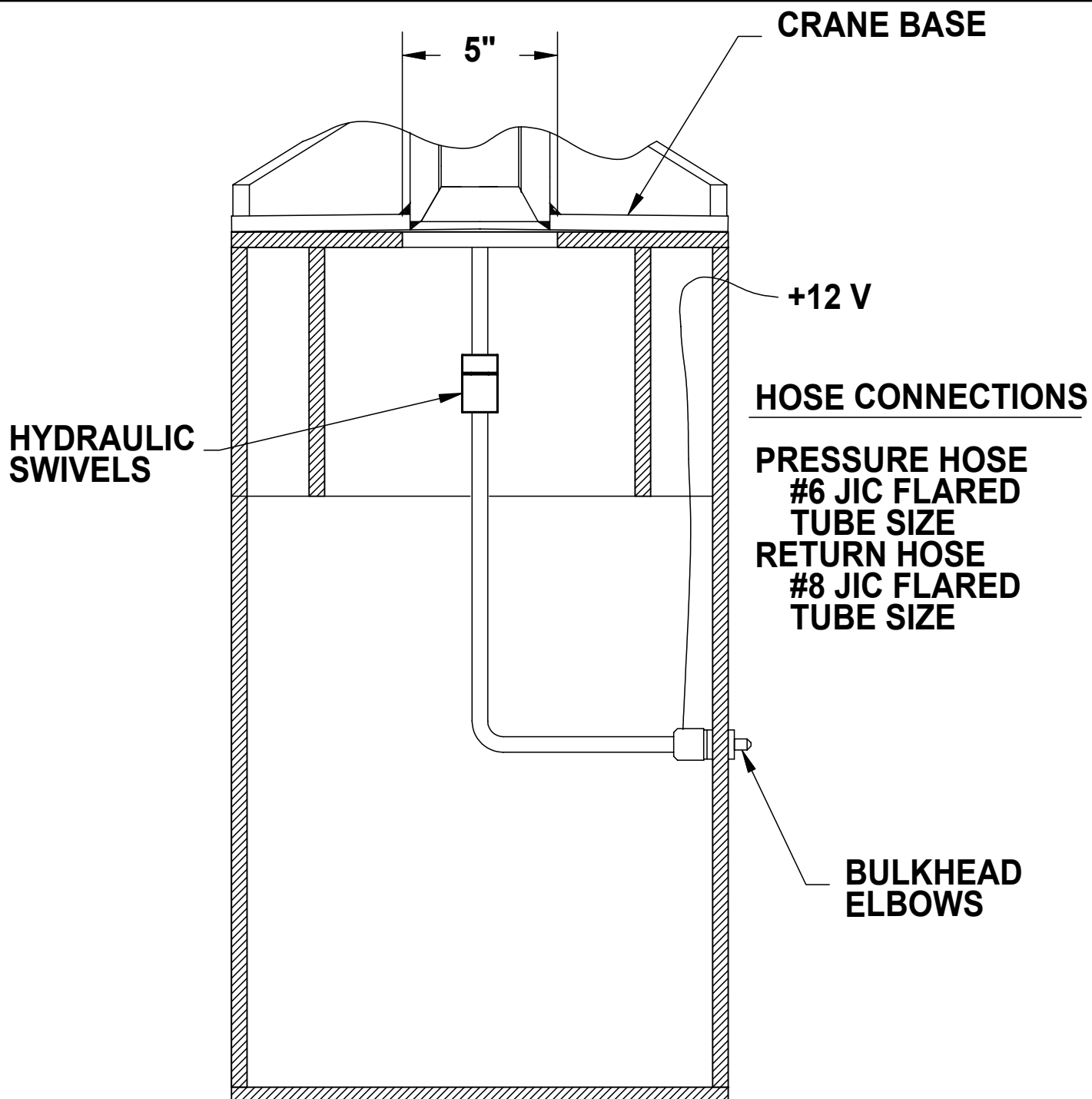
HT25KX PROPORTIONAL - 4.0 GPM @ 3000 PSI (19294-3.68 PTO PACKAGE)

SEE INSTALLATION INSTRUCTIONS 119212 (2 PAGES).

* HOSES OR FITTINGS BETWEEN PUMP, RESERVOIR, AND CRANE NOT INCLUDED.

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE INSTALLATION DWG		DATE 4-23-04E	SECTION C200
	PTO INST - HT18KX / HT25KX		SUPERSEDES 11-20-03D	I19232

CRANE AND HOSE INSTALLATION HT18KX / HT25KX▲



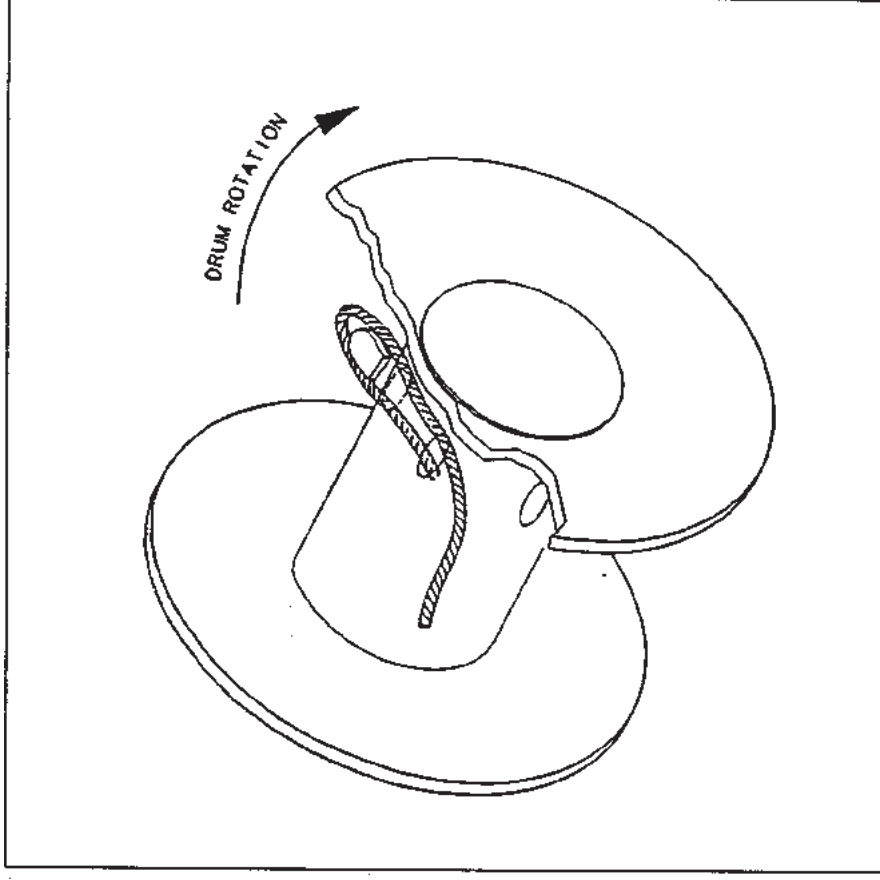
WIRE ROPE INSTALLATION

STEP 1: INSERT WIRE ROPE END THROUGH ANTI-TWO-BLOCK WEIGHT.

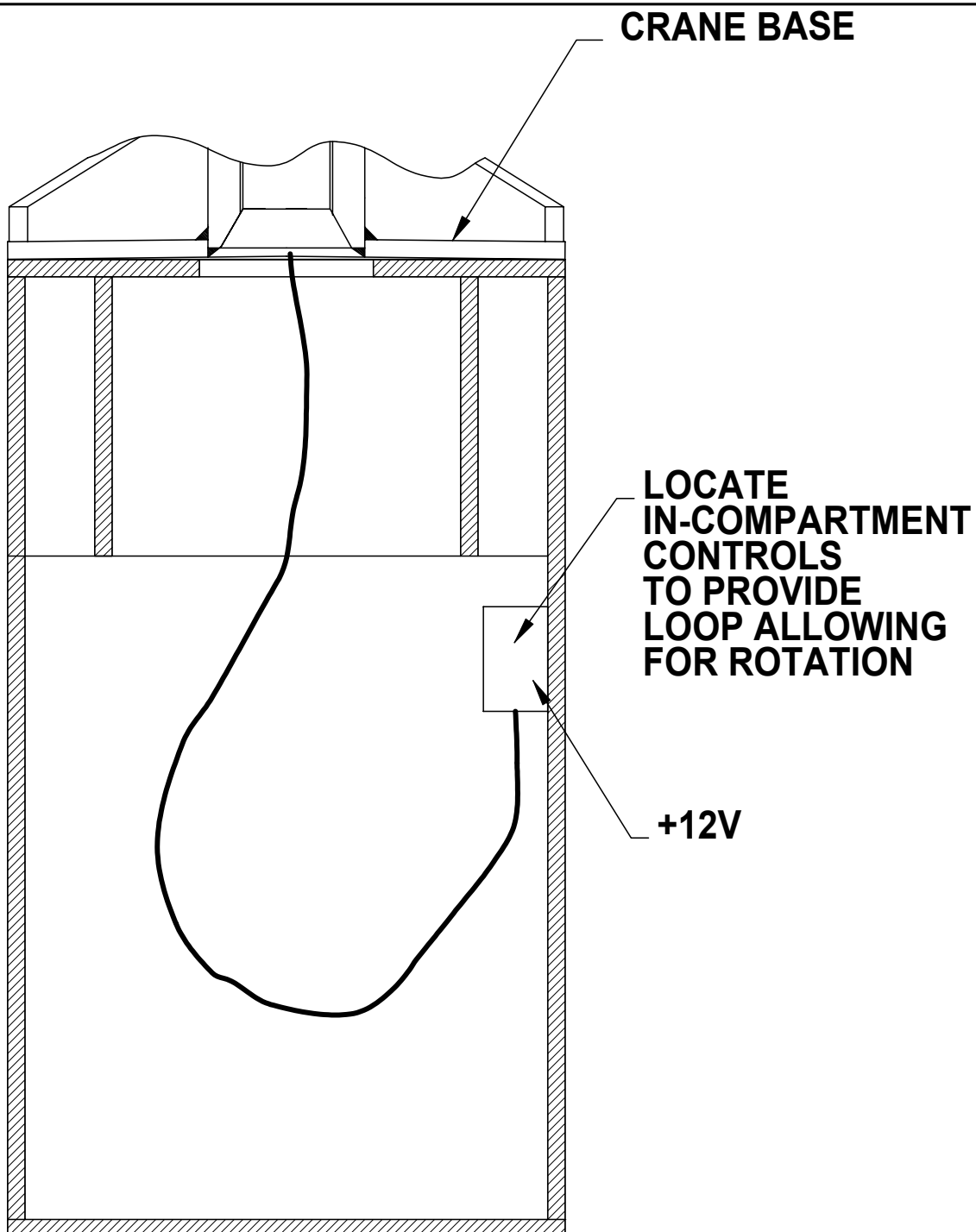
STEP 2: INSERT WIRE ROPE END INTO POCKET OPENING AND THROUGH WEDGE POCKET.

CAUTION: IF THE WIRE ROPE IS NOT INSTALLED FOR THE CORRECT DRUM ROTATION, THE WINCH BRAKE VALVE WILL NOT HOLD THE LOAD.

▲ NOTE: ON THE ET25K(X) A 7/16" HEX NUT WILL BE USED IN LIEU OF A WEDGE.



IN-COMPARTMENT CONTROLS INSTALLATION HT18KX / HT25KX ▲



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

HT18KX / HT25KX ▲

DATE
9-26-03A

SUPERSEDES
6-17-02

SECTION
-

20453

▲ REMTRON RADIO REMOTE CONTROL

▲ (20410, 20412 & 20414)

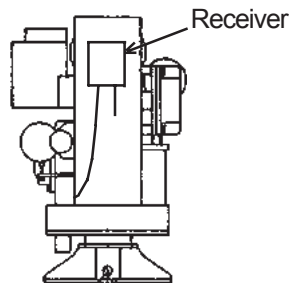
INSTALLATION

Mounting locations:

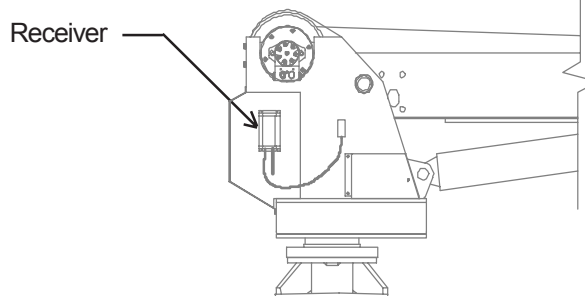
On-crane mounting:

For cranes without the "In-Compartment Controls" option, where the pendent/receiver connector plugs into a connector mounted on the crane housing, the receiver must be mounted directly on the crane as follows.

The **ET10KX** model without "In-Compartment Controls" requires the radio to be mounted on the rear of the crane housing with the cable and antenna facing downward as shown. Mounting the radio in this location will obscure several decals. Replacement decals (decals 15390A instructions, 15391B warning, 15392 warning) have been included in the retrofit kit and should be installed as close to the original locations as possible.



The **HT40/50KX** model without "In-Compartment Controls" requires the radio to be mounted on the right side of the crane's rear cover with the cable and antenna facing downward as shown.



WARNING

- The master disconnect (power) switch must be turned off when the crane is not in use! Leaving the power on when not in use may result in dangerous, unintentional activation of the crane functions.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

RADIO REMOTE CONTROL

DATE
7-25-03A

SUPERCEDES
2-10-03

SECTION
C200

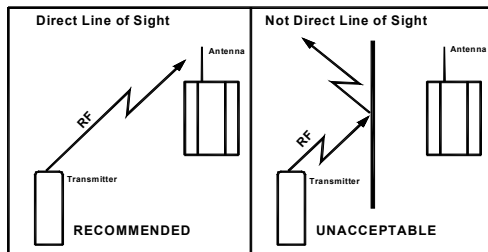
20415A

▲ REMTRON RADIO REMOTE CONTROL

Remote antenna location:

Some applications may not provide adequate radio reception and therefor may require mounting the antenna in a remote location from the receiver. A remote antenna mounting kit (part number 20965) includes an extension cable and antenna mounting bracket. Note that a replacement antenna, part number 20966, is available but is not included in the remote antenna mounting kit.

- ▲ It is suggested that in applications requiring remote mounting of the antenna, that a high location be chose such as on top of the truck body but in a location which is not vulnerable to damage. The remote antenna mounting location must provide line of sight access between the transmitter and receiver.

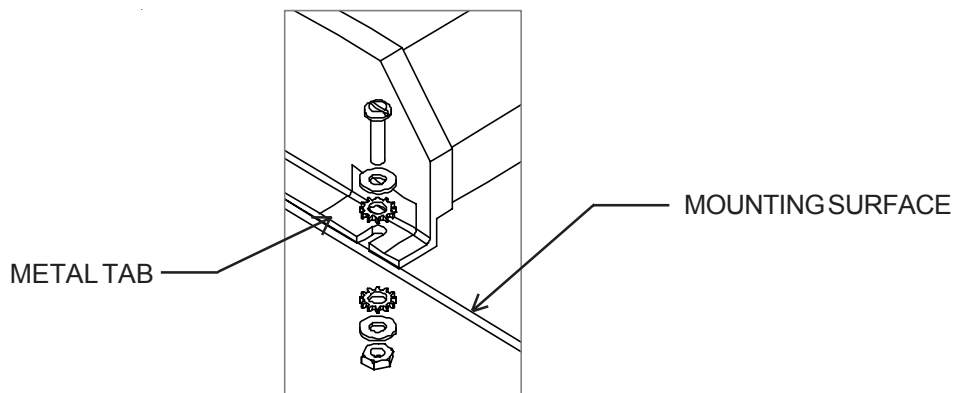


In-compartment mounting:

For cranes with the “In-Compartment Controls” option the radio will be mounted inside the body compartment where the pendent/receiver connector is located. In order to provide full radio range the receiver must be mounted such that a line of sight path to the transmitter is provided, Note that the compartment door must remain open during operation to minimize interference with radio transmissions.

Mounting instructions for all locations:

Locate the radio as described above and mark for mounting hardware making sure that both drilling and installation of the mounting hardware will not cause damage or interference with other components. Drill four .25 inch diameter clearance holes for the mounting hardware. Install the four #10x.75 long screws with flat washers through the mounting flanges on the receiver and through the mounting surface. Secure with the flat washers, lock washers and nuts provided. Note that one mounting flange has a metal ground tab. Star washers should be installed between the metal tab and hardware as well as between the mounting surface and hardware as shown. Install antenna and plug receiver connector into the socket to operate the crane.



The transmitter is powered by a single 9V alkaline battery which may be replaced by removing the 4 screws from the transmitter housing and separating the 2 halves. Be sure to carefully align the two housing halves when reassembling the transmitter.



MFG., INC.
CINCINNATI, OHIO

TITLE

INSTALLATION DWG

DATE

7-25-03A

SECTION

C200

RADIO REMOTE CONTROL

SUPERCEDES

2-10-03

20415B

▲ REMTRON RADIO REMOTE CONTROL

▲ (20410, 20412 & 20414)

OPERATION

To operate the crane the receiver plug must be plugged into the socket and power must be switched on. The indicator on the receiver will light when it is powered and ready. The indicator will flash when the receiver is receiving a properly coded signal from the transmitter. The receiver requires "line of sight" access to the transmitter for full range operation. For cranes with in-compartment controls the compartment door must be left open during operation of the crane in order to avoid obstructing the radio signal.



WARNING

- The receiver connector must be unplugged from the socket and the master disconnect (power) switch must be turned off when the crane is not in use! Leaving the receiver connected and the power on when not in use may result in dangerous, unintentional activation of the crane functions.

For safety reasons the receiver will only function when it recognizes coded transmissions which match that of the intended transmitter. In the event that the receiver fails to recognize commands from the intended transmitter or when initially using a replacement transmitter the receiver must "learn" the transmission code of the transmitter. "Learning" a new transmission code is accomplished by depressing any button on the transmitter then depressing the "learn" button on the receiver, next to the antenna, until the light on the receiver begins to flash. Once the receiver light begins to flash release the learn button and then the transmitter button. The receiver will now recognize transmissions from the "learned" transmitter.

The transmitter is powered by a single 9V alkaline battery which may be replaced by removing the 4 screws from the transmitter housing and separating the 2 halves. Be sure to carefully align the two housing halves when reassembling the transmitter.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG.

RADIO REMOTE CONTROL

DATE
7-25-03A

SUPERCEDES
2-11-03

SECTION
C200

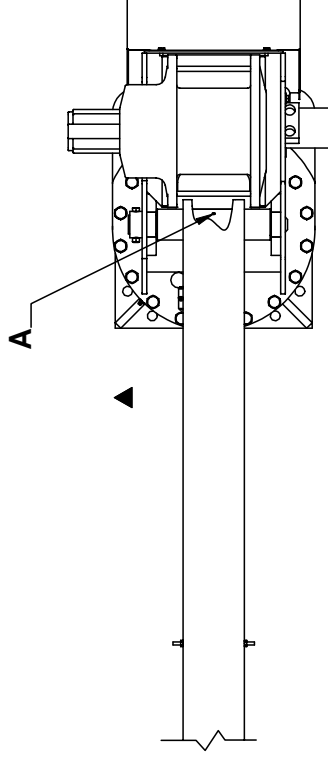
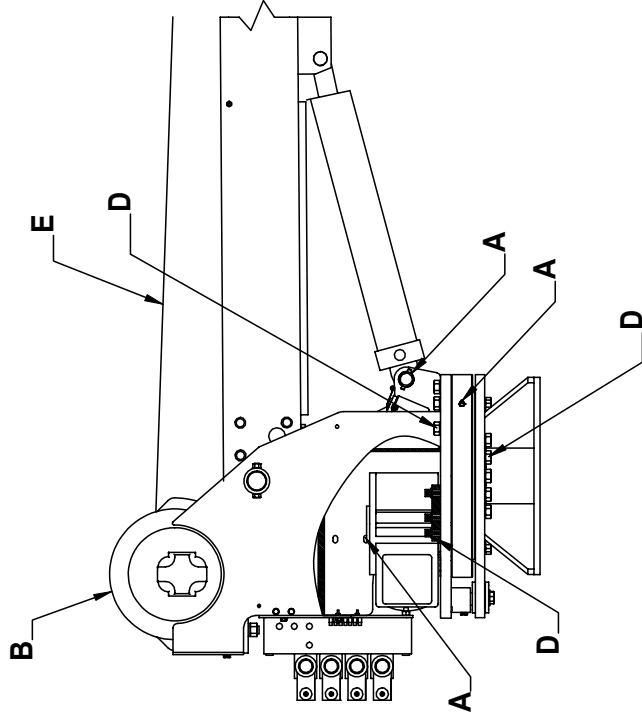
20416

SECTION 300

MAINTENANCE

&

SERVICE



Location	Service Required	Note	Service Interval
A	Grease fitting With Pressure Grease Gun	Use Lithium Based Grease	Time of Truck Service
B	Fill Cable Drum to Side Relief Valve Port (Approx 1/2 Full)	Use SAE 90 Gear Lubricant	Time of Truck Service
D	Check Torque of bolts	Bolts should be torqued to 190 ft-lbs	Time of Truck Service
E	Check Wire Rope and Hook	Rope should be free of kinks and fraying	Time of Truck Service



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

LUBRICATION & MAINTENANCE CHART

HT25K(X)

DATE

12-1-03C

SECTION

-

SUPERSEDES

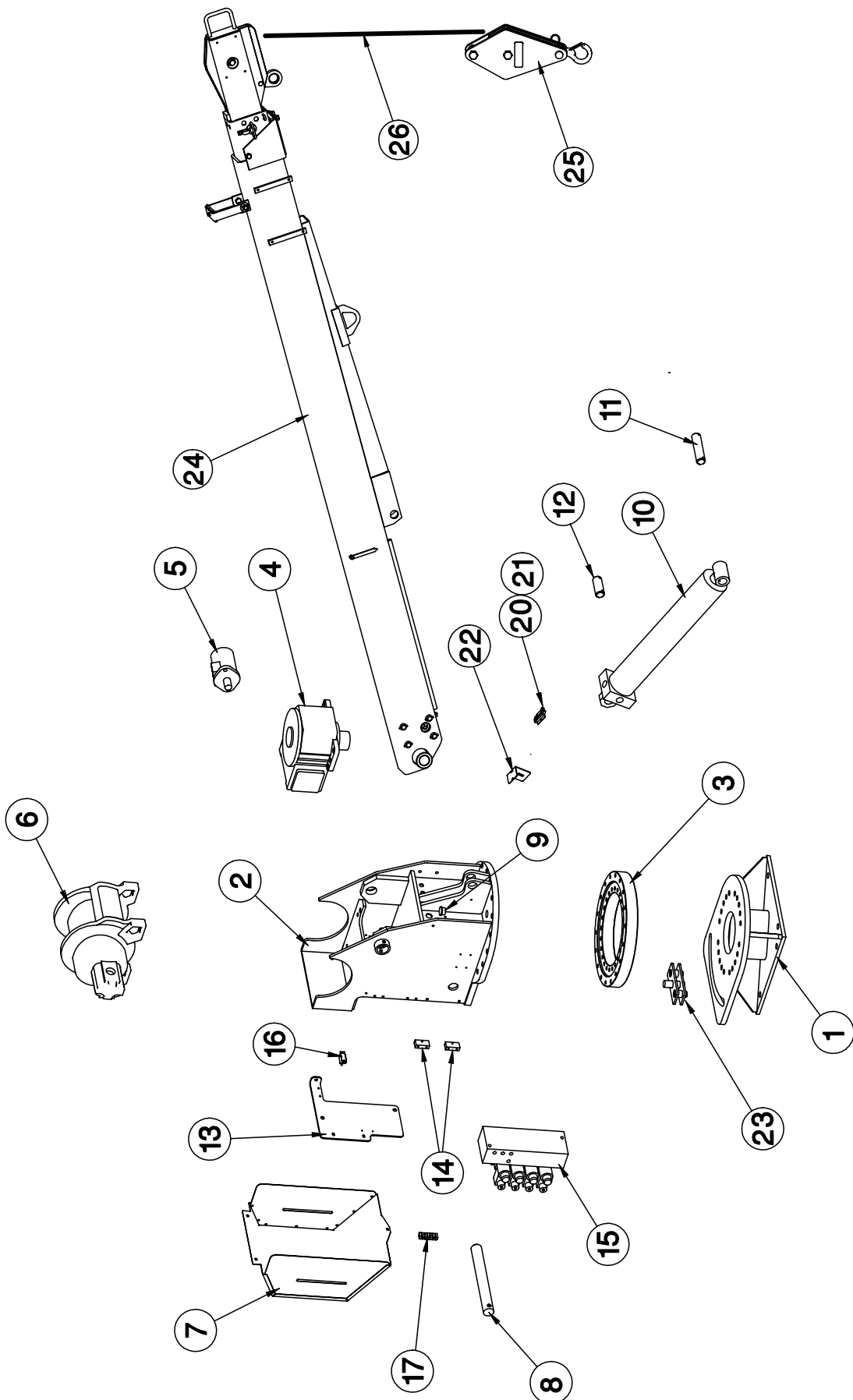
11-18-03B

20531

SECTION 400

PARTS





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[illegible]

FASTENER LIST FOR HT25KX

PART NUMBER	DESCRIPTION	QTY	LOCATION/FUNCTION
12534	WASHER - I.D. 0.63"	38	SLEWING RING
!HHCS06311200	HEX HEAD CAP SCREW - 5/8"-11 x 2"	35	SLEWING RING
!SHCS06311150	SOCKET HEAD CAP SCREW-5/8-11 X 1-1/2"	3	SLEWING RING
!LWSH-050-HC	LOCK WASHER 1/2" - HI COLLAR	2	HYDRAULIC ROTATION MOTOR
!SHCS05013125	SOCKET HEAD CAP SCREW 1/2-13 X 1-1/4"	2	HYDRAULIC ROTATION MOTOR
!LWSH-050-ISTAR	LOCK WASHER 1/2" STAR INTERNAL HD	6	SPEED REDUCER
▲ !SHCS05013150	SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2"	6	SPEED REDUCER
!LWSH-025	LOCK WASHER - 1/4"	6	HYDRAULIC PANEL BLOCK
!HHCS02520075	HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG	6	HYDRAULIC PANEL BLOCK
!LWSH-025	LOCK WASHER - 1/4"	1	BOOM UP LIMIT SWITCH BRACKET
!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG	1	BOOM UP LIMIT SWITCH BRACKET
!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG	3	REAR COVER
!LWSH-025	LOCK WASHER - 1/4"	3	REAR COVER
!HHCS03816250	HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG	1	BOOM PIVOT PIN
!LNUT-03816	LOCK NUT, NYLON 3/8-16	1	BOOM PIVOT PIN
!SRNG-125	SNAP RING - 1-1/4"	4	ELEVATION CYLINDER CLEVIS PINS
!FWSH-031	FLAT WASHER - 5/16"	1	GROUNDING LUG
!HHCS-3118100	HEX HEAD CAP SCREW 5/16-18 X 1" LONG	1	GROUNDING LUG
!FWSH-031	FLAT WASHER - 5/16"	1	HYDRAULIC PANEL
!LWSH-031	LOCK WASHER - 5/16"	1	HYDRAULIC PANEL
!HHCS03118100	HEX HEAD CAP SCREW 5/16-18 X 1" LONG	1	HYDRAULIC PANEL
!HNUT-03118	HEX NUT 5/16-18	1	HYDRAULIC PANEL
!LWSH-038-HC	LOCK WASHER 3/8" - HI COLLAR	2	HYDRAULIC MANIFOLD
!SHCS03816350	SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2"	2	HYDRAULIC MANIFOLD
!HNUT-03816	HEX NUT 3/8-16	2	HYDRAULIC MANIFOLD
!PHCS#1024050	PAN HEAD CAP SCREW - #10-24 X 1/2" LG	2	CIRCUIT BREAKER
!LWSH-#10	LOCK WASHER - #10	2	CIRCUIT BREAKER
!HNUT-#1024	HEX NUT - #10-24	2	CIRCUIT BREAKER
!LWSH-#10	LOCK WASHER - #10	2	BOOM LIMIT SWITCH
!PHCS#1024038	PAN HEAD CAP SCREW - #10-24 X 3/8" LG	2	BOOM LIMIT SWITCH
!HNUT-#1024	HEX NUT - #10-24	2	BOOM LIMIT SWITCH
!PHCS#0632100	PHILLIPS HEAD CAP SCREW 6-32 X 1" LG	2	BARRIER STRIP
!LWSH-#06	LOCK WASHER - #6	2	BARRIER STRIP
!HNUT-#0632	HEX NUT - #06-32	2	BARRIER STRIP
!HHCS06311175	HEX HEAD CAP SCREW 5/8-11 X 1-3/4 LG	4	WINCH
!LWSH-063	LOCK WASHER - 5/8	4	WINCH
!HNUT06311	HEX NUT - 5/8-11	4	WINCH



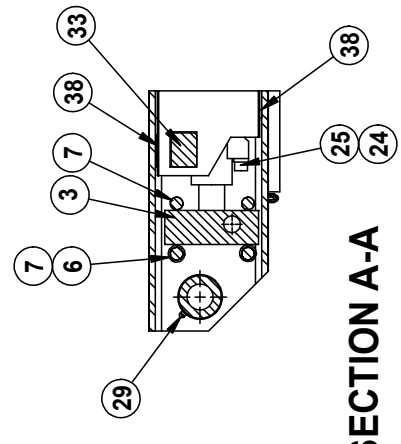
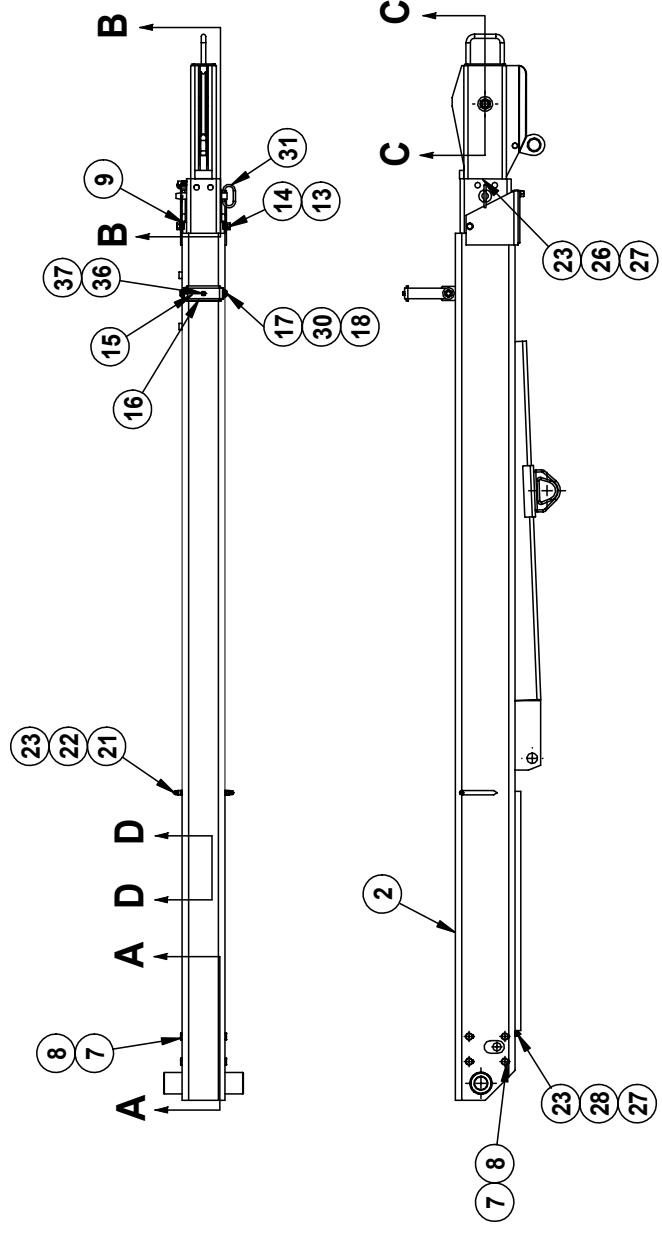
MFG., INC.
CINCINNATI, OHIO

TITLE
REPL. FASTENERS LIST
HT25KX

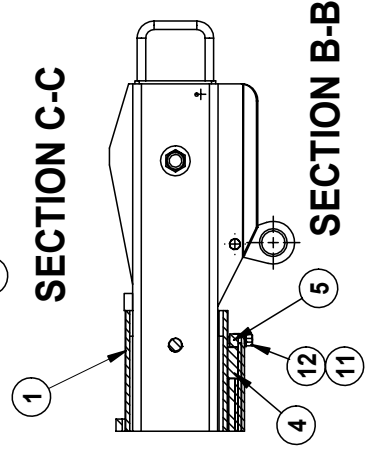
DATE
9-17-09B
SUPERCEDES
9-16-03A

SECTION
C400
19944

19950 BOOM PARTS DRAWING

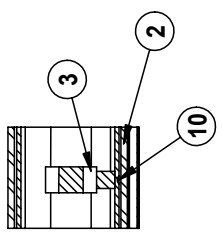


SECTION A-A

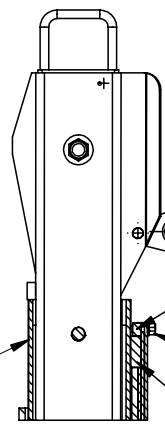


SECTION B-B

SECTION D-D

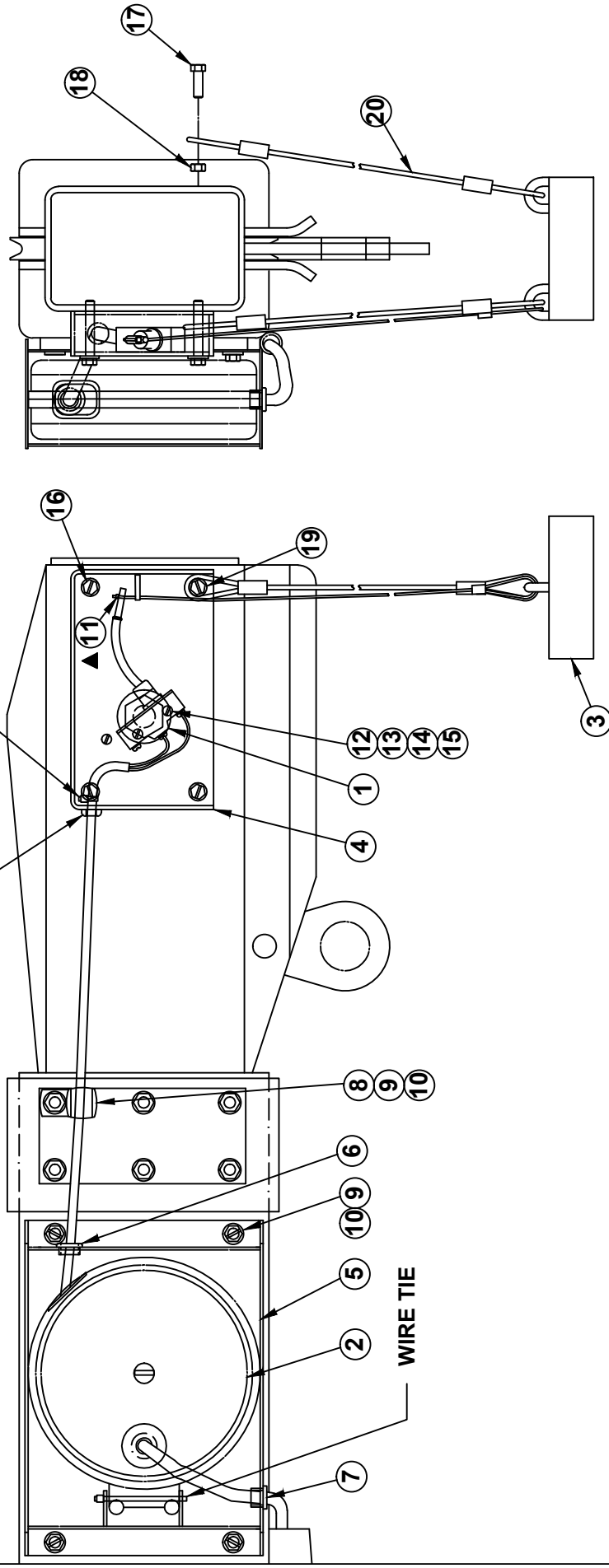


SECTION C-C



ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
20	1	ILNUT-7510	LOCKNUT 3/4-10	39	-	-	
19	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK	38	2	20960	BEARING PAD, SECONDARY
18	2	ILWSH-050	FLAT WASHER - 1/2"	37	1	ILNUT-02520N	NYLON INSERT JAM NUT - 1/4-20
17	2	IHCSC05013100	HEX HEAD CAP SCREW 1/2-13 X 1" LONG	36	1	IPHCSC02520063	PAN HEAD CAP SCREW - 1/4-20 X 5/8" LONG
16	1	19881	CABLE GUIDE WEAR STRIP	35	1	23924	SPACER - 23925 SHEAVE
15	1	19880	CABLE GUIDE STRUCTURE	34	1	23925	BOOM SHEAVE WITH BUSHING
14	2	IHCSC03816050	HEX HEAD CAP SCREW 3/8-16 X 1/2" LG GR 5	33	2	19888	SIDE BEARING PAD
13	2	ILNUT-03816	JAM NUT - 3/8-16 GRADE 5	32	1	21276	ANTI-TWO BLOCK ASSEMBLY - L.H.
12	2	IHCSC03816100	HEX HEAD CAP SCREW - 3/8-16 X 1" LG GR. 5	31	1	19258-1	BOOM PIN 19/67-3/4
11	4	ILWSH-038	LOCK WASHER 3/8"	30	2	ILNUT-05013N	1/2-13 NYLON INSERT JAM NUT
10	2	ICACSC03816100	CNTRSK ALLEN HEAD CAP SCREW 3/8-16 X 1" LG	29	1	IZERK-02528	ZERK FITTING - 1/4-28
9	2	18957	BEARING PAD - SIDE FRONT	28	1	19269	CABLE CLAMP - 3/4"
8	8	ISRNG-075	SNAP RING - 3/4" DIA. PLATED	27	2	ILWSH-025	LOCK WASHER - 1/4"
7	4	21211	EXTENSION CYLINDER THRUST PIN	26	1	19275	CABLE CLAMP - 3/4"
6	2	18985	EXTENSION CYLINDER ROLLER	25	2	ISHCS05013200	SOCKET HEAD CAP SCREW - 1/2-13 X 2" LONG
5	1	18955	BEARING RETAINING BAR	24	2	ILWSH-050-HC	LOCKWASHER 1/2" HI COLLAR
4	1	19865	UPPER REAR BEARING PAD	23	4	IANUT-02520S	ACORN NUT 1/4-20 STAINLESS
3	1	19886-1	EXTENSION CYLINDER - HOLLOW ROD	22	2	22490	SPACER, BOOM ARROW 1/2" O.D.
2	1	19951	PRIMARY BOOM ASSEMBLY	21	2	13459-2	BOOM ARROW 4-7/16" LONG
1	1	19992	TERTIARY & SECONDARY BOOM ASSEMBLY				

WIRE TIE
CABLE & CUT
OFF STEM



11	1	19302	SET COLLAR - 3/32"
10	5	ILWSH-031	LOCK WASHER - 5/16"
9	5	IHHCS03118050	HEX HEAD CAP SCREW - 5/16-18 x 1/2"
8	1	19275	CABLE CLAMP - 3/4" x 13/32" HOLE
7	2	19270	SNAP BUSHING - 3/8" I.D.
6	1	19063	SNAP BUSHING - 1/2" I.D.
5	1	19058	COVER - CORD REEL
4	1	20839	ANTI TWO-BLOCK HOUSING ASSEMBLY
3	1	19377-2	CABLE WEIGHT ASSY
2	1	22388-1	CORD REEL ASSY
1	1	19376	LIMIT SWITCH
			DESCRIPTION
20	2	▲ 20951-2	HANGER CABLE
19	1	IHHCS02520150	HEX HEAD CAP SCREW - 1/4-20 x 1 1/2"
18	1	IHNUT-02520	HEX NUT - 1/4-20
17	1	IHHCS02520075	HEX HEAD CAP SCREW - 1/4-20 x 3/4"
16	3	IHHCS02520175	HEX HEAD CAP SCREW - 1/4-20 x 1 3/4"
15	2	ILWSH-#06	LOCK WASHER - #6
14	2	IFWSH-#06	FLAT WASHER - #6
13	2	IHNUT-#0632	HEX NUT - #6-32
12	2	IPHMS#632125	PAN HEAD MACHINE SCREW - #6-32 x 1 1/4"
ITEM	QTY	PART NO.	

TITLE

REPLACEMENT PARTS DRAWING

DATE

08-01-16G

SECTION

C400

MANUFACTURING, INC.
CINCINNATI, OHIO



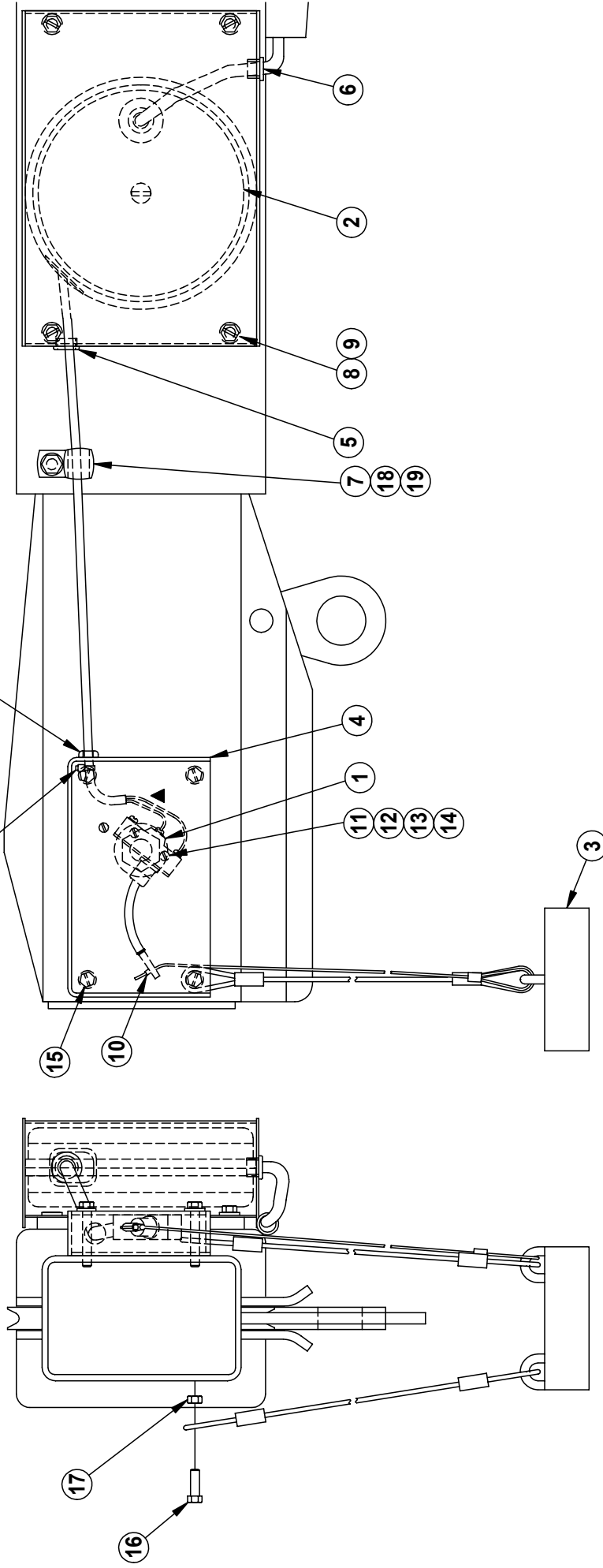
19197-2 ANTI-TWO-BLOCK SYSTEM

SUPERSEDES

06-03-08F

20197-2

WIRE TIE
CABLE & CUT
OFF STEM



ITEM		QTY	PART NO.	DESCRIPTION
10	1	19302	SET COLLAR	
9	4	ILWSH-031	LOCK WASHER - 5/16"	
8	4	ISHCS03118050-5	SOCKET HEAD CAP SCREW - 5/16-18 x 1/2"	
7	1	19275	CABLE CLAMP - 3/4" x 13/32" HOLE	
6	2	19270	SNAP BUSHING - 3/8" I.D.	
5	1	19063	SNAP BUSHING - 1/2" I.D.	
4	1	21277	SWITCH BRACKET	
3	1	19377-2	CABLE WEIGHT ASSY	
2	1	22683	CORD REEL ASSY	
1	1	19376	LIMIT SWITCH	

TITLE		DATE	SECTION
REPLACEMENT PARTS DWG		8-8-03	C400
21276 ANTI-TWO-BLOCK SYSTEM		SUPERSEDES	21275
VENTURO MANUFACTURING, INC. CINCINNATI, OHIO			

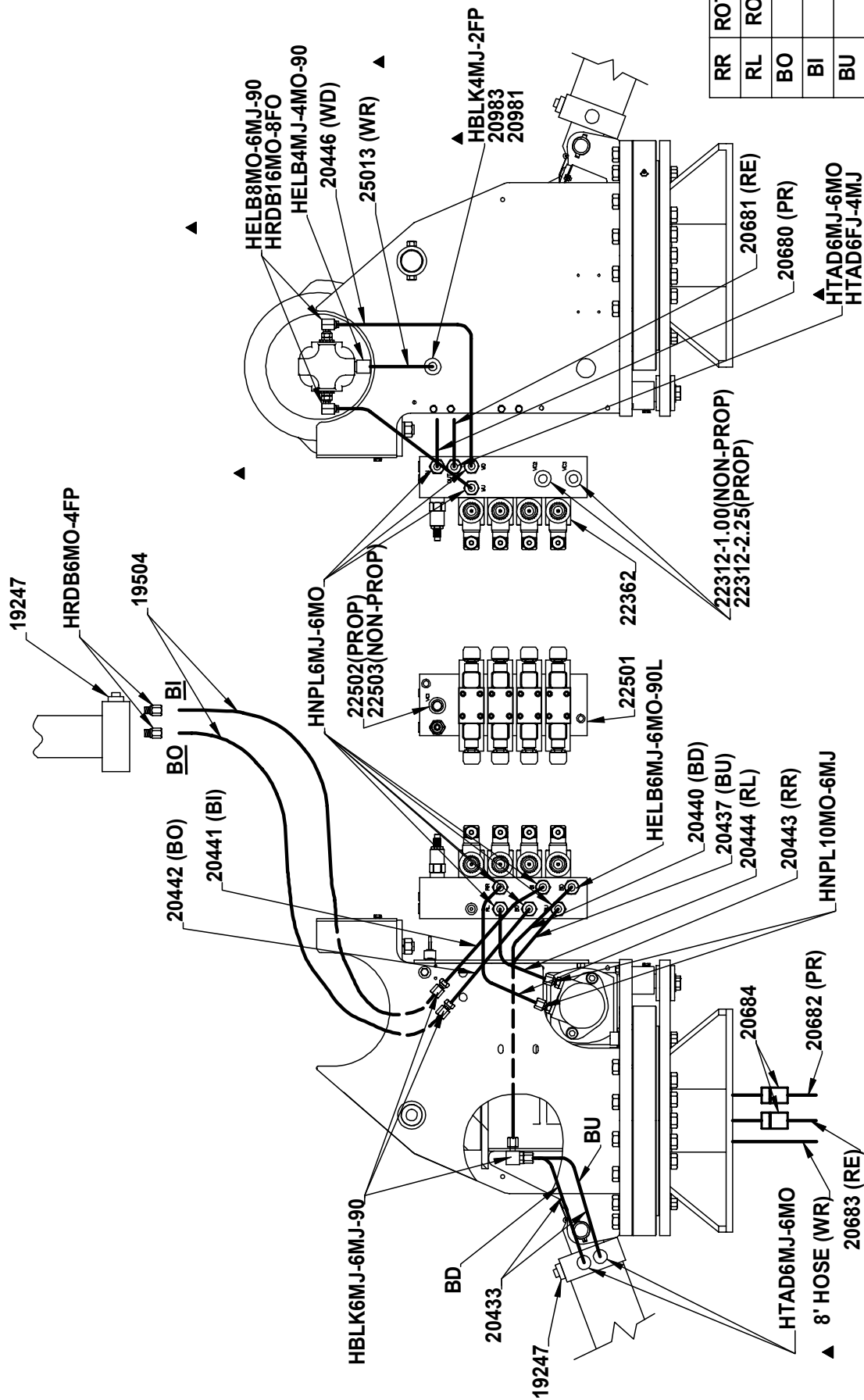


FROM "IN COMPARTMENT" SOCKET

**THESE WIRES CONNECTED
TO VALVE BANK**



TITLE	DATE	SECTION
NON-PROP W/ IN-COMPARTMENT CTRLS	9-26-03D	-
HT18/25/40/50 CRANES▲	SUPERSEDES 3-8-02C	20350

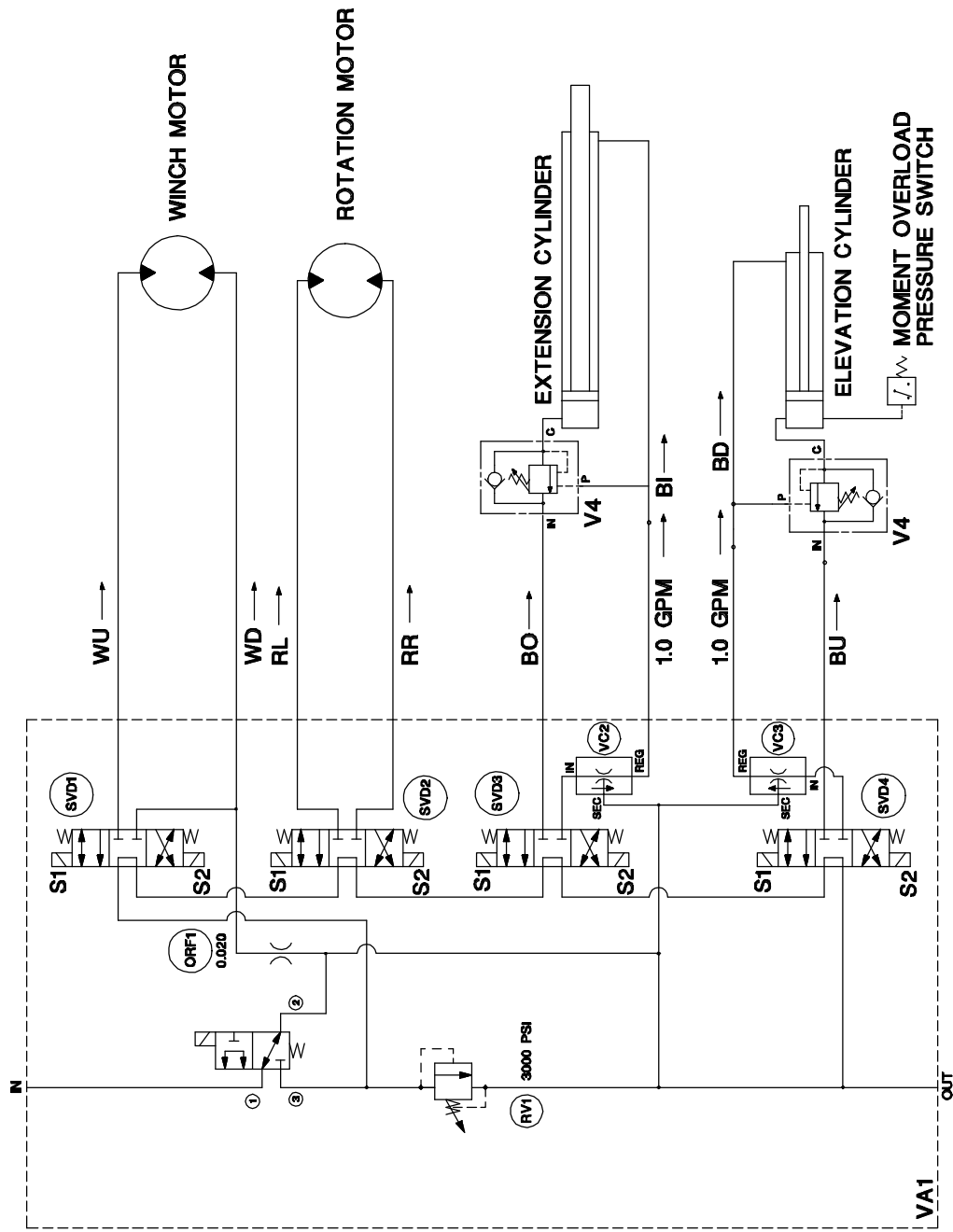


LEFT SIDE VIEW

REAR VIEW

RIGHT SIDE VIEW

RR	ROTATION RIGHT
RL	ROTATION LEFT
BO	BOOM OUT
BI	BOOM IN
BU	BOOM UP
BD	BOOM DOWN
PR	PRESSURE
RE	RETURN
WU	WINCH UP
WD	WINCH DOWN
WR	WINCH RELIEF



- VA1 CONTROL VALVE ASSY
RV1 INLET RELIEF VALVE (3000 PSI)
SVD1 3 POSITION-4 WAY VALVE
SVD2 3 POSITION-4 WAY VALVE
SVD3 3 POSITION-4 WAY VALVE
SVD4 3 POSITION-4 WAY VALVE
V4 COUNTERBALANCE CARTRIDGE VALVE
VC1 PROPORTIONAL CONTROL VALVE (SIMPLIFIED REP)
VC2 PRIORITY FLOW REGULATOR VALVE
VC3 PRIORITY FLOW REGULATOR VALVE

SERIAL NO. 80125 & UP

VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
HYDRAULIC SYSTEM DIAGRAM

DATE
3-27-98

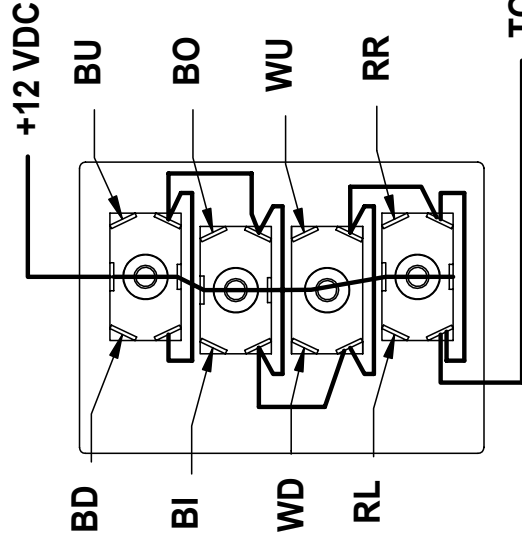
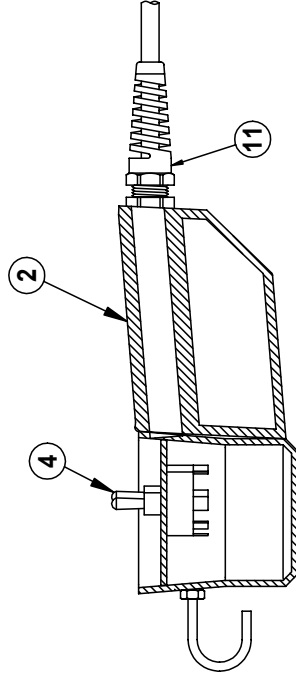
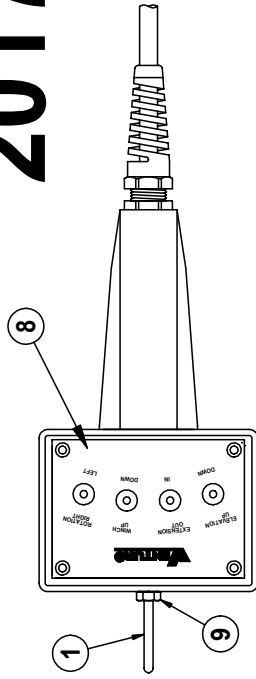
SECTION
C400

HT25KX WITH SAFETY SHUTOFF VALVE

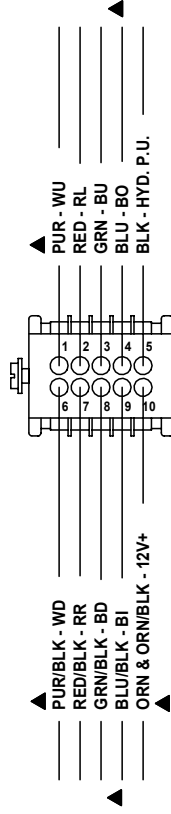
SUPERSEDES
-

19496

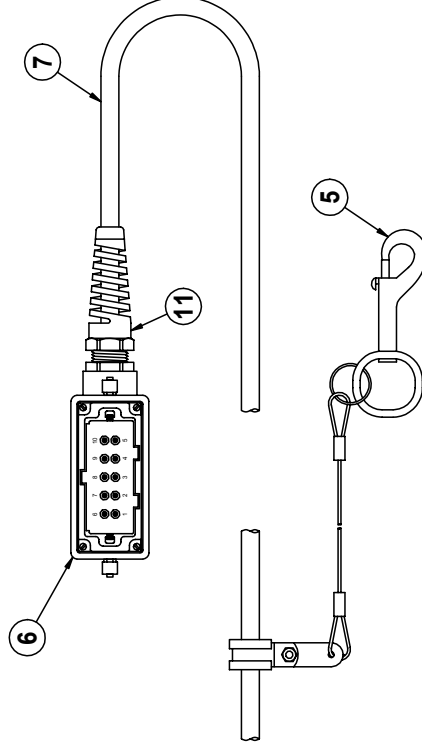
20172 PENDANT



TO HYD. P.U.



PLUG - BACKSIDE VIEW



ITEM	QTY	PART NO.	DESCRIPTION
12	-	-	-
11	1	20975	STRAIN RELIEF - M20
10	4	IFHPS#10150A	FLAT HEAD PHILLIPS SCREW - #10 x 1 1/2" LG
9	1	1HNUT-02520	HEX NUT - 1/4-20
8	1	20475	LOGO PLATE, PENDANT CONTROL
7	1	19505-xx	CORD ASSEMBLY (xx = LENGTH IN FT.)
6	1	19482	PLUG ASSEMBLY - 10 + 1 POLE
5	1	15913-2	PHAN., CLAMP AND TETHER ASSEMBLY
4	4	20137	TOGGLE SWITCH
3	1	20199	JUMPER - 3-1/2" LONG - 7 JUMPS
2	1	20154	PENDANT HOUSING
1	1	11557	PENDANT HOOK

TITLE

REPLACEMENT PARTS DRAWING

DATE

1-12-04C

SECTION

-

MANUFACTURING, INC.
CINCINNATI, OHIO



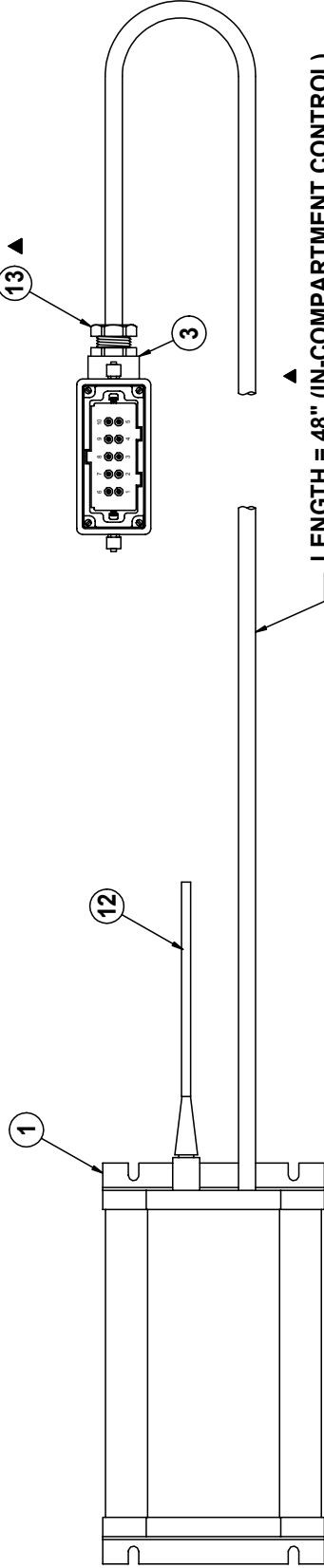
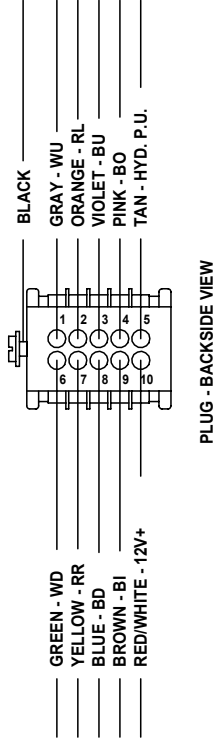
HT25KX, HT40KX, HT50KX NON-PROP

SUPERSEDES

10-1-03B

20278

20410 RADIO REMOTE FOR NON-PROPORTIONAL HYDRAULIC CRANES



NOTE: ANTENNA IS SUPPLIED WITH RADIO, ALSO AVAILABLE AS A REPLACEMENT PART

ITEM	QTY	PART NO.	DESCRIPTION
13	1	20405	CABLE GLAND - M20
12	1	20986	ANTENNA (SEE NOTE)
11	1	20965	REMOTE ANTENNA ASSEMBLY (OPTIONAL)
10	1	16GA #10 RING TERMINAL	(NOT SHOWN)
9	10	16 GA PIN TERMINAL	(NOT SHOWN)
8	4	16GA #10-24	(NOT SHOWN)
7	2	16GA #10-24	(NOT SHOWN)
6	3	16GA #10-24	(NOT SHOWN)
5	8	16GA #10-24	(NOT SHOWN)
4	4	16GA #10-24	(NOT SHOWN)
3	1	16GA #10-24	(NOT SHOWN)
2	1	20411-TX	REMITRON RADIO TRANSMITTER
1	1	20411-RX	REMITRON RADIO RECEIVER

**VENTURO**
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS DRAWING

HT25KX, HT40KX, HT50KX - NON-PROP.

DATE

10-8-03C

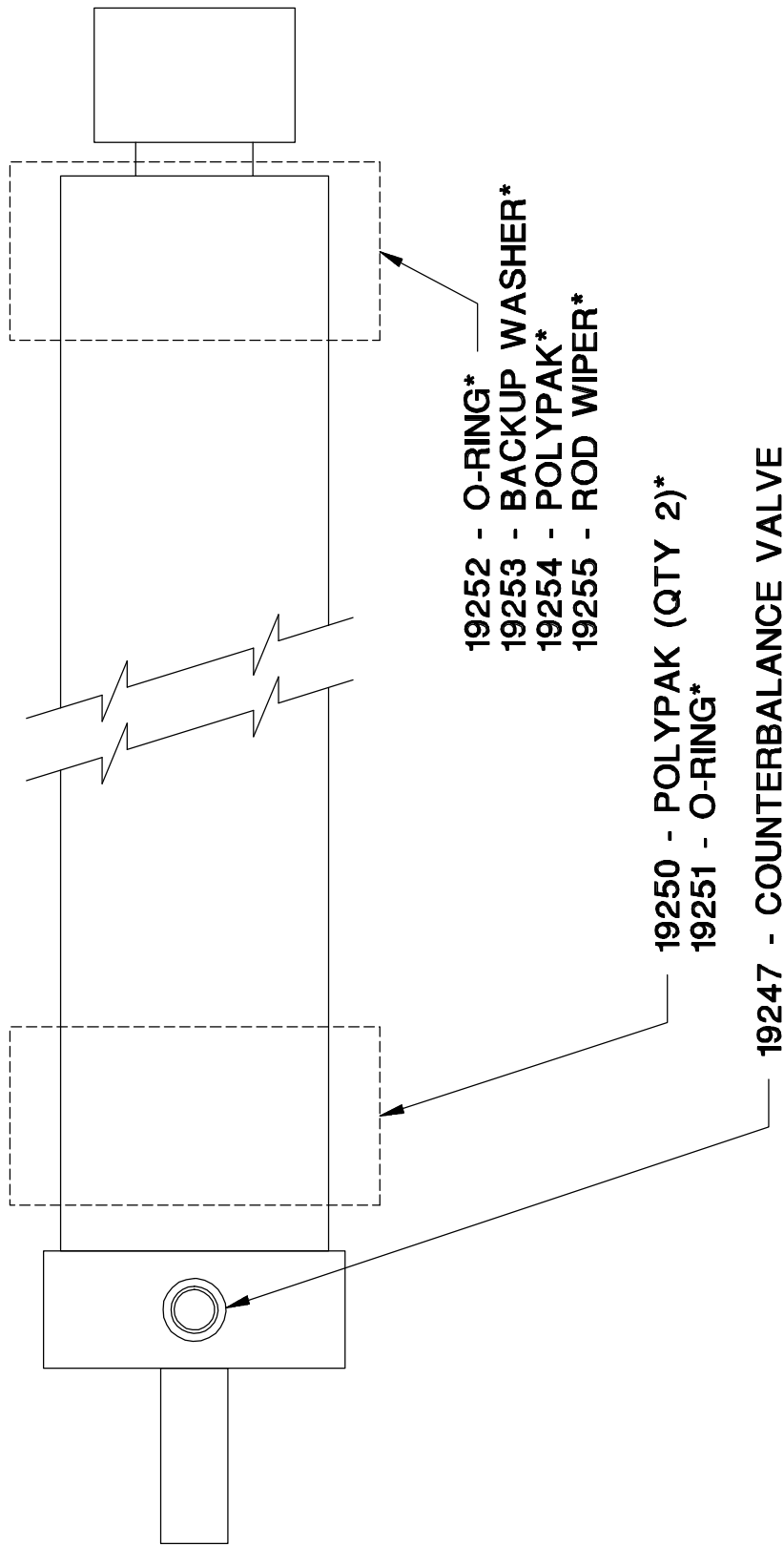
7-2-03B

SECTION

C400

20417

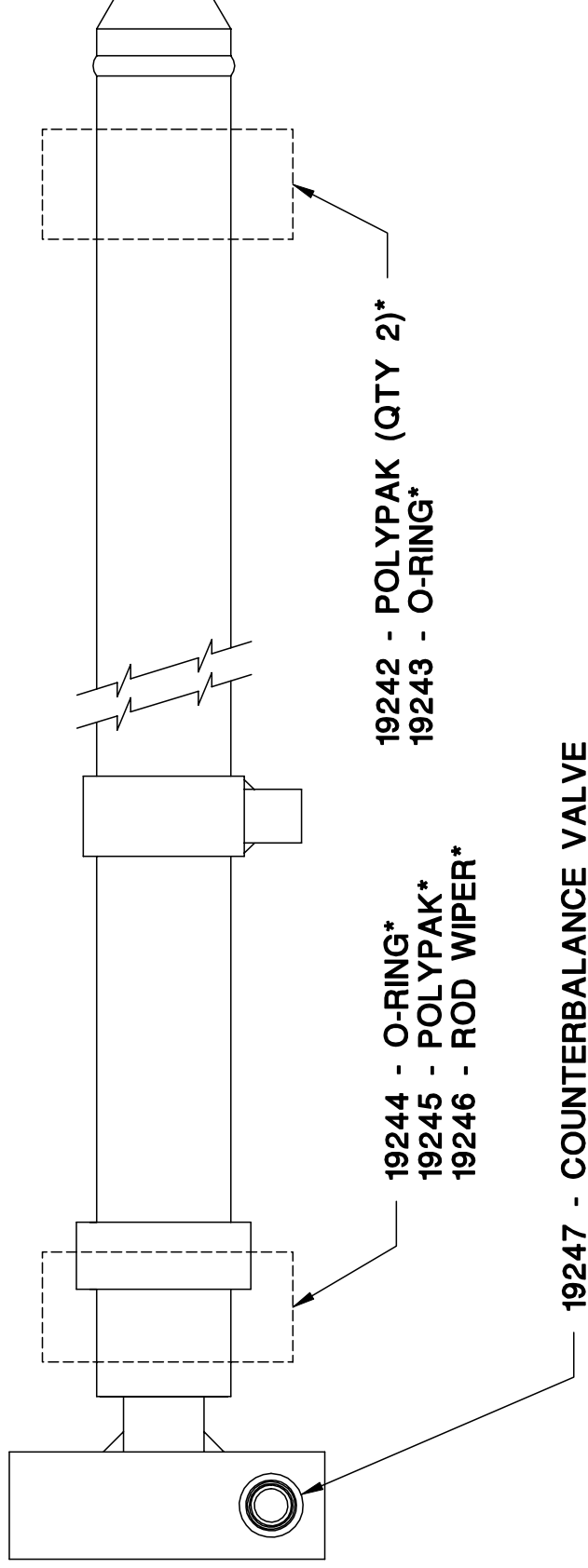
18930-1 ELEVATION CYLINDER



* ITEMS INCLUDED IN 18930-1-SK SEAL KIT

 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE ELEVATION CYLINDER		DATE 10-15-97A	SECTION C400
	ET/HT25KX		SUPERSEDES 9-21-96	119249

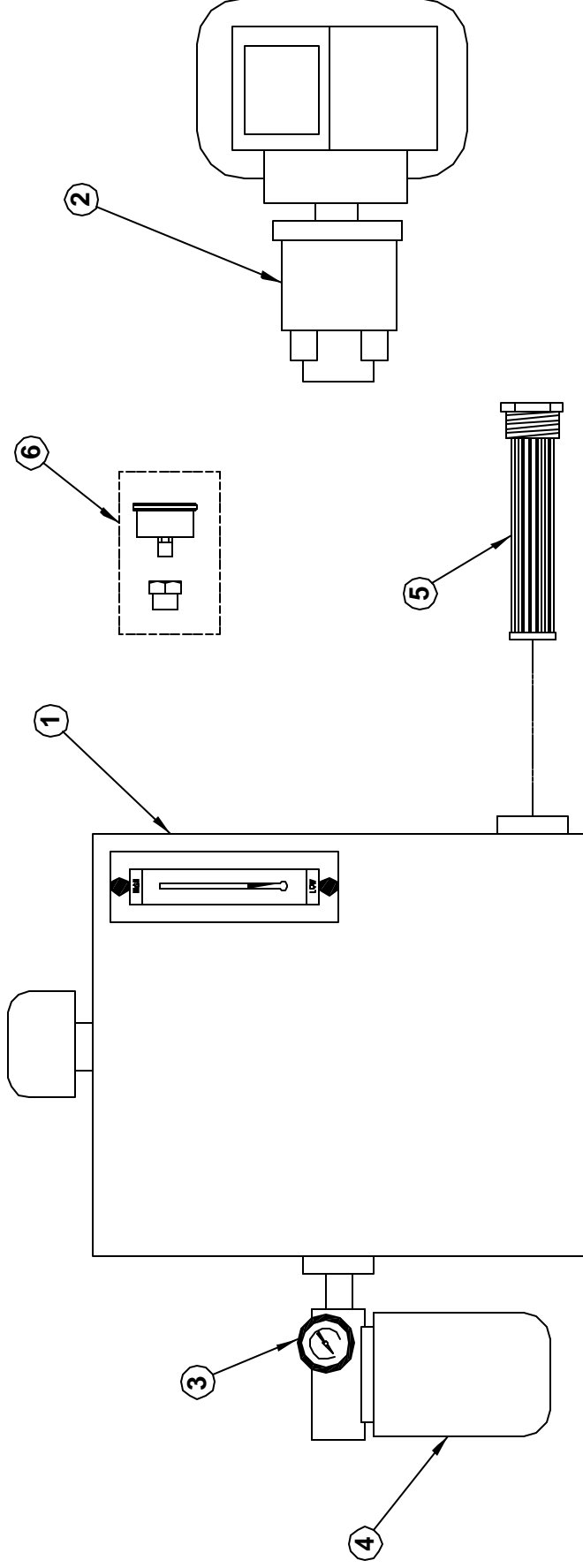
19886-1 EXTENSION CYLINDER



* ITEMS INCLUDED IN 19887 SEAL KIT

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE EXTENSION CYLINDER		DATE 7-6-01	SECTION C400
	ET/HT25KX		SUPERSEDES -	19908

19294 PTO PACKAGES



PUMP	MOUNTING	RECOMMENDED GPM (RPM)
19296-1.60	SAE "A" 9 TOOTH SPLINED SHAFT	HT18 - STD. - 1.75 GPM (1110 RPM)
		HT25 - STD. - 2.00 GPM (1250 RPM)
19296-2.64		HT40 - STD. - 2.6 GPM (1000 RPM)
		HT50 - STD. - 3.0 GPM (1150 RPM)
19296-4.00		HT18 - PROP. - 3.5 GPM (875 RPM)
▲		HT25 - PROP. - 4.0 GPM (1000 RPM)
19296-5.00		HT40 - PROP. - 5.0 GPM (1000 RPM)
		HT50 - PROP. - 6.0 GPM (1200 RPM)

6	1	22263	PRESSURE GAUGE ASSEMBLY
5	1	19300	SUCTION SCREEN - 100 MESH
4	1	19298	FILTER ASSY, RETURN - 10 MICRON
3	1	19297	PRESSURE GAUGE - RETURN
2	1	SEE CHART	PTO PUMP - HT18/25/40/50KX
1	1	19295	RESERVOIR TANK - 10 GALLON
ITEM	QTY	PART NO.	DESCRIPTION

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE		REPLACEMENT PARTS DWG	DATE	SECTION
				7-13-04F	C400
			PTO KIT - HT18/25/40/50KX	SUPERSEDES	
			3-4-04E	22448	



LIMITED WARRANTY POLICY

This limited policy warrants new products of Venturo be free from defects in material and workmanship for a period of one (1) year from date of original installation. This warranty covers:

- ◆ ***Repair or replacement of product***
- ◆ ***Labor to repair or replace product***
- ◆ ***Freight to return and/or replace product***

We shall not be liable for any contingent liabilities arising out of the improper function of any products. Warranty shall become void if the product is improperly installed, modified, damaged, abused or used for application other than intended use.

WARRANTY CLAIMS

Venturo Manufacturing, Inc. will make a good faith effort for prompt correction or other adjustment with respect to any product, which proves to be defective after our inspection and within the warranty period. Before any repairs are attempted or before returning any product, your Venturo Distributor is required to obtain a warranty claim number. This number is necessary for any claim to be considered. To obtain a warranty claim number, Venturo requires the model and serial number. Only authorized Venturo Distributors can perform warranty. For the name and address of your local Venturo Distributor call the **Warranty Claim Department – 513-772-8448**.

WARNING – It is the responsibility of the installer to insure the installation is completed according to the manufacturer's recommendations, insure the ultimate user understands how to operate product in a safe manner and understands the need for regular service and maintenance by an authorized Venturo Distributor. No modifications or alterations may be made to any Venturo products without the expressed written consent of the manufacturer. Reinstallation of any Venturo product must be done by an authorized Venturo Distributor, to the standards of the industry including maintenance, service and affixing of all instruction, safety and warning decals. Users should again be instructed as to the safe operation at time of delivery. Maintenance, service, operation and safety warning decals are available on request from Venturo Manufacturing, Inc.

VENTURO MANUFACTURING, INC

DIVISION OF COLLINS ASSOCIATES, INC
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