ENTUR. TRUCK MOUNTED CRANES

(8)

INSTALLATION & OWNER'S MANUAL

12110 BEST PLACE • CINCINNATI, OHIO 45241 • PHONE 1-800-226-2238 • FAX 1-513-326-5427 www.venturo.com

CONTENTS d Ctrl / No Eng Ctrls (HLAAAB-00**)
DESCRIPTION & SPECIFICATIONS INSTALLATION DIMENSIONS BASE MOUNTING DIMENSIONS CAPACITY CHART - HT25KX SERVICE BODY REINFORCEMENT FLAT BED REINFORCEMENT
SAFETY VEHICLE & CRANE ELECTRICAL HAZARD INFORMATION SAFETY & HAZARDS - GENERAL WINCH SAFETY WARNINGS DECAL PLACEMENT
INSTALLATION CRANE INSTALLATION (PAGE 1 OF 2) CRANE INSTALLATION (PAGE 2 OF 2) CRANE OPERATION & MAINTENANCE INSTRUCTIONS (PAGE 1 OF 2) CRANE OPERATION & MAINTENANCE INSTRUCTIONS (PAGE 2 OF 2) SAFETY SHUTOFF INSTRUCTIONS PTO INSTALLATION COMPARTMENT DRAWING WIRE ROPE INSTALLATION IN-COMPARTMENT CONTROLS INSTALLATION RADIO INSTALLATION & OPERATION INSTRUCTIONS - RADIO REMOTE (PAGE 1 OF 2) RADIO INSTALLATION & OPERATION INSTRUCTIONS - RADIO REMOTE (PAGE 1 OF 2) RADIO OPERATION INSTRUCTIONS - RADIO REMOTE (PAGE 2 OF 2)
MAINTENANCE & SERVICE LUBRICATION & MAINTENANCE CHART
REPLACEMENT PARTS HT25KX CRANE REPLACEMENT PARTS DRAWING HT25KX CRANE REPLACEMENT PARTS LIST HT25KX CRANE FASTENER LIST 19950 BOOM REPLACEMENT PARTS DRAWING ANTI-TWO-BLOCK REPLACEMENT PARTS DRAWING ELECTRICAL SCHEMATIC - STANDARD (NON-PROPORTIONAL) ELECTRICAL SCHEMATIC - NON-PROP W/IN-COMP CONTROLS HYDRAULIC SYSTEM COMPONENTS REPLACEMENT PARTS DRAWING HYDRAULIC SYSTEM DIAGRAM - HT25KX 20172 PENDANT REPLACEMENT PARTS DRAWING RADIO REMOTE REPLACEMENT PARTS DRAWING 19830-1 ELEVATION CYLINDER DRAWING

- 19908 19886-1 EXTENSION CYLINDER DRAWING
- 22448 19294 PTO PACKAGE

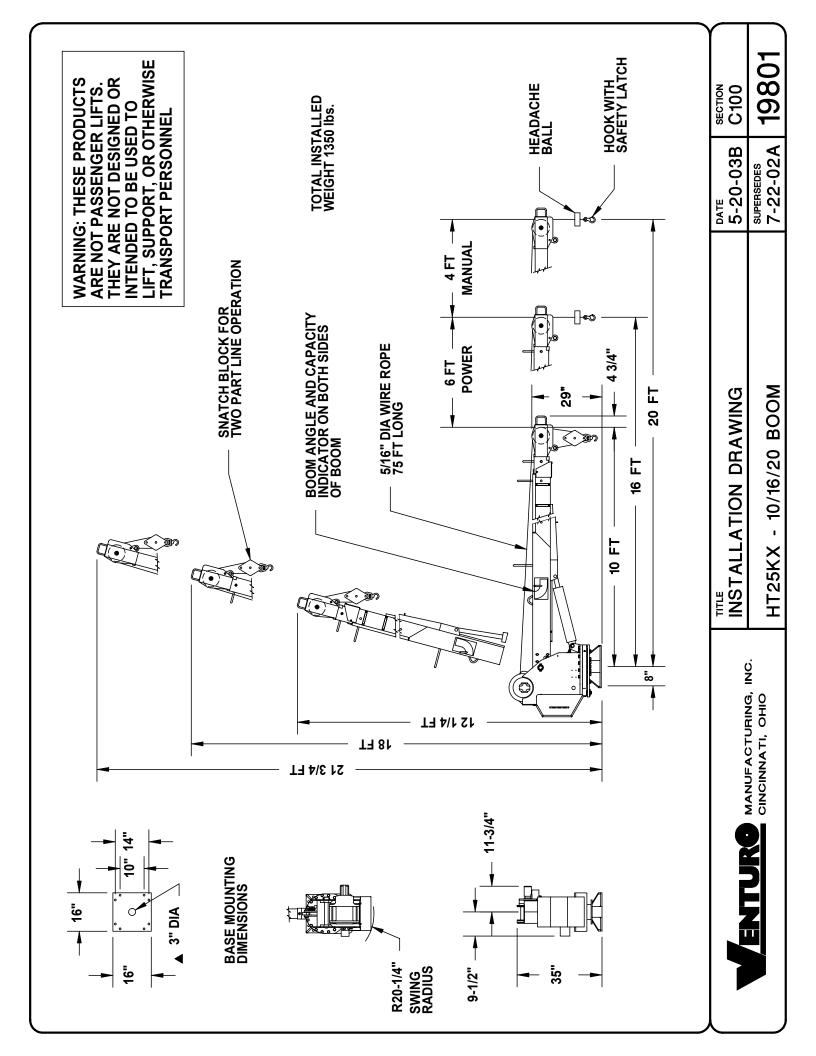
		^{дате} 6-4-03В	SECTION	
	CINCINNATI, OHIO	HT25KX (HLAAAB-00**)	SUPERCEDES 2-14-03A	20594

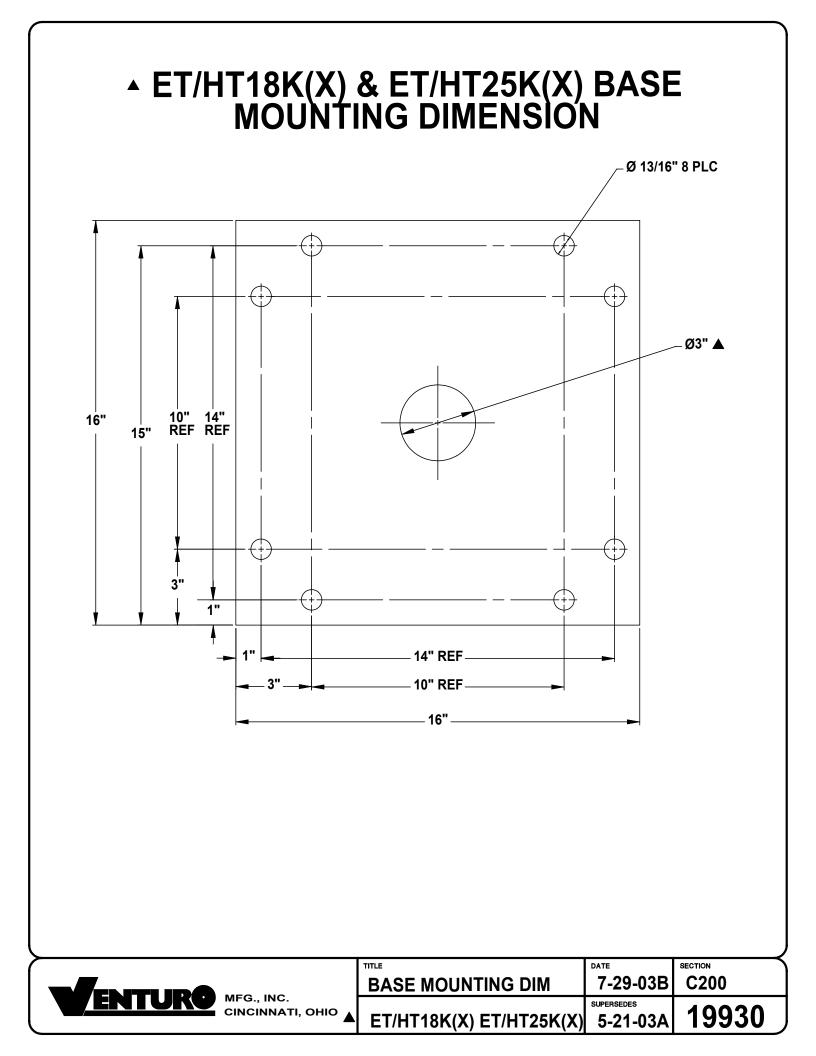
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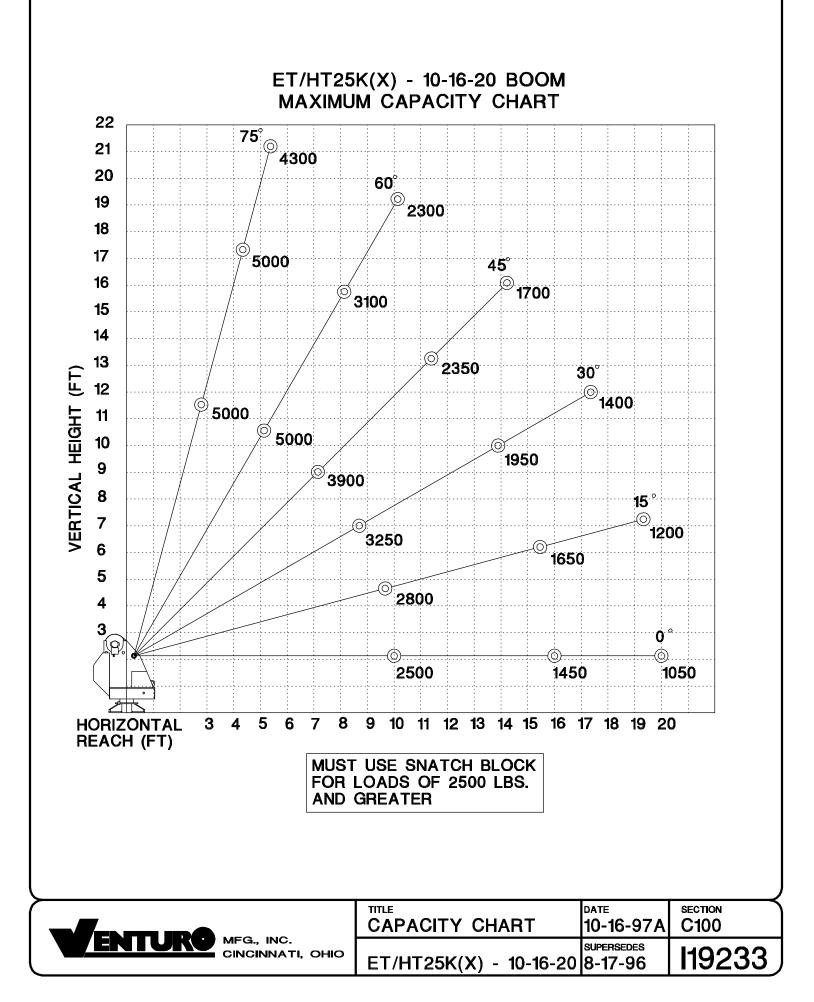


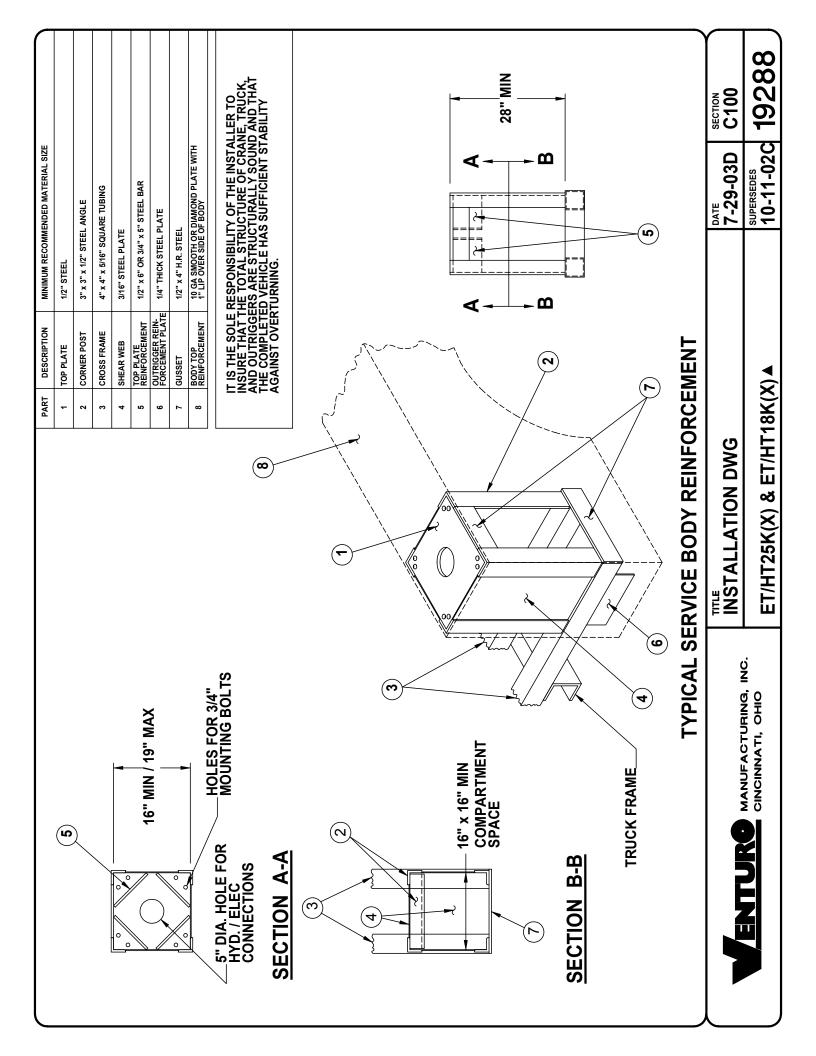
SPECIFICATIONS

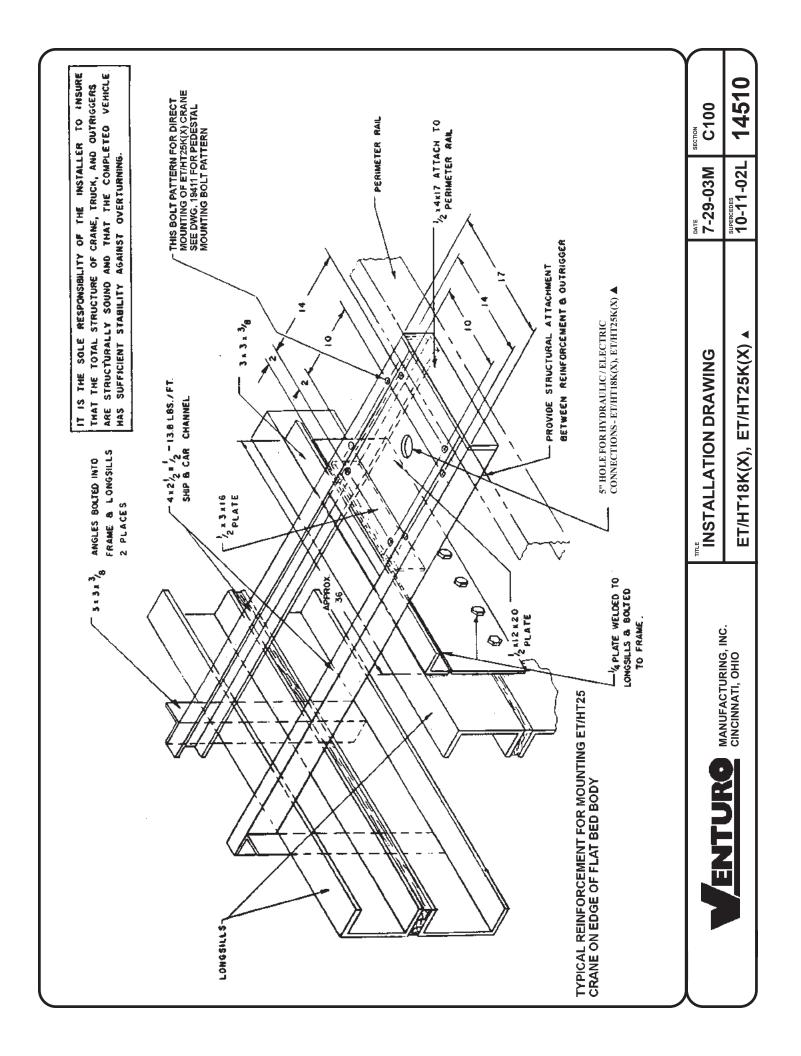












SAFETY



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.

A DANGER UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN 10 FEET OF HIGH - VOLTAGE LINES OF 50,000 VOLTS OR LESS.

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

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

NOMINAL VOLTAGE (kV)	MINIMUM REQUIRED
(PHASE TO PHASE)	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



TITLE	
INSTALLATION [DWG

ET & HT CRANE SERIES

^{Бате} 5-15-02Н	C150	
supercedes 5-13-97G	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

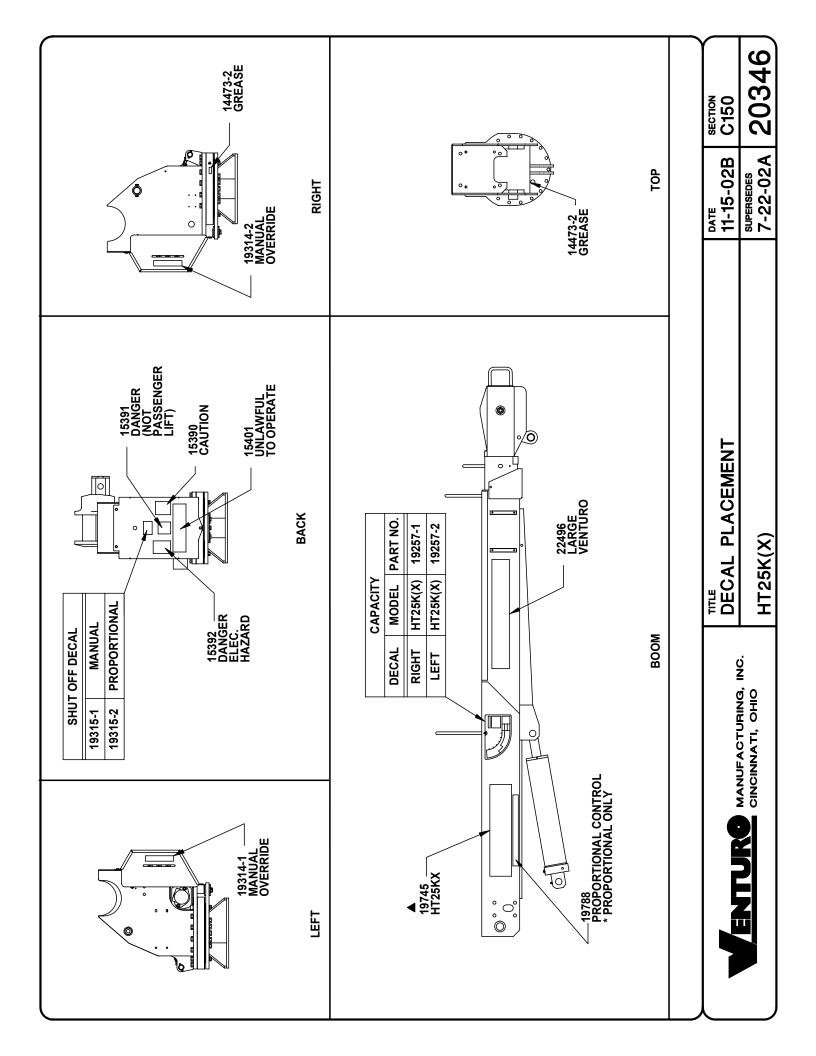
- THIS MACHINE IS NOT INSULATED.
- MAINTAIN SAFE CLEARANCES FROM ELECTRICAL LINES AND APPARATUS.
- YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG, AND ELECTRICAL LINE AND LOADLINE SWAYING.
- THIS LIFTING DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.
- 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.

ENTURO MFG., INC. CINCINNATI, OHIO		^{DATE} 5-13-97A	SECTION C150	
	HYDRAULIC CRANES	supercedes 6-12-92	920612	ig]

WINCH SAFETY WARNINGS



ENTURO MFG., INC. CINCINNATI, OHIO		^{дате} 5-26-98В	section C150)
	HT CRANES	supercedes 10-17-97A	l19217]



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. These hoses are to be arranged in the compartment or pedestal below the crane as shown on drawing 119213 using the angle bulkhead fittings furnished in the installation kit.

These hoses are to be connected in a relaxed position as shown on I19213, 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.

		6-17-02D	SECTION C200
EIN I UNI CINCINNATI, OHIO	HT25KX	supercedes 8-12-99C	119212a

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 re-

mains 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.

	6-17-02E	SECTION C200
	supercedes 4-24-02D	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.

VENTURO MFG., INC.		^{DATE} 6-17-02	SECTION C200
	HT25KX	SUPERCEDES	20435A

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.

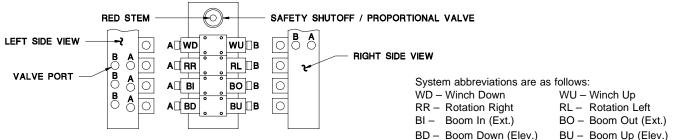
	INSTALLATION DWG	^{DATE} 6-17-02	section C200
ENIONO INC. CINCINNATI, OHIO	НТ25КХ	SUPERCEDES	20435B

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.

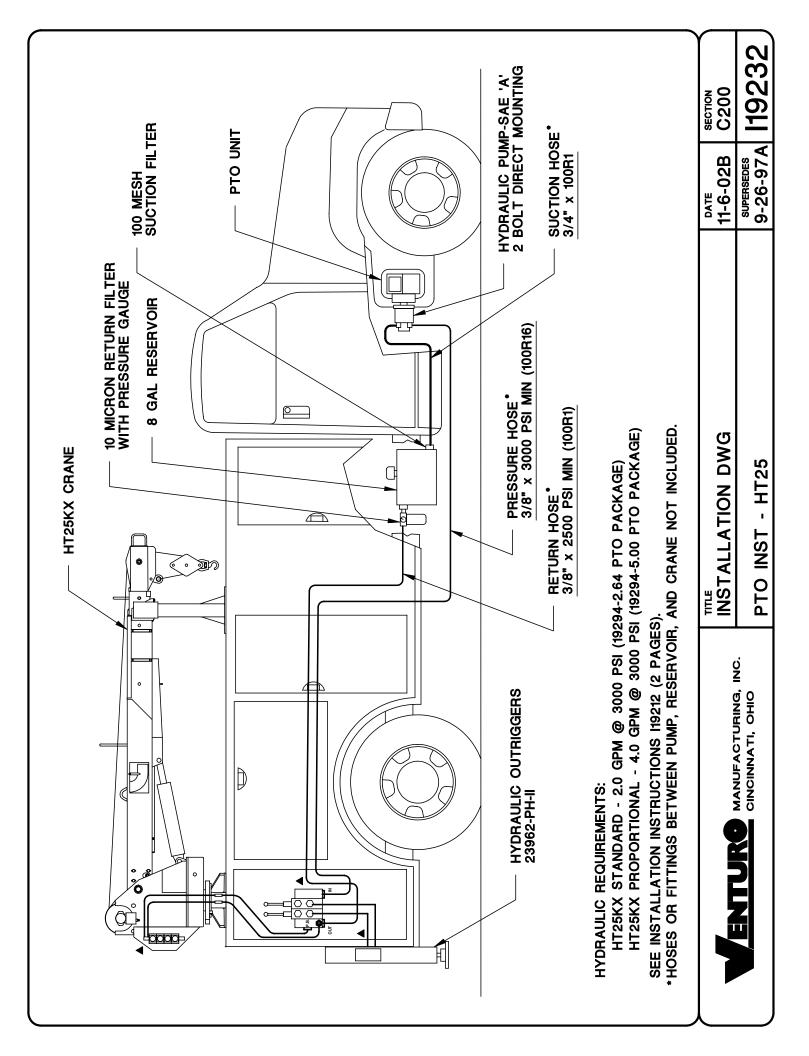
(2) Determine the coil/override associated with the function you wish to operate, then insert a small diameter object (an allen wrench works well) into the detent on the end of the valve stem and press firmly inward. For example, pushing the stem labeled A on the first bank (refer to the illustration)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

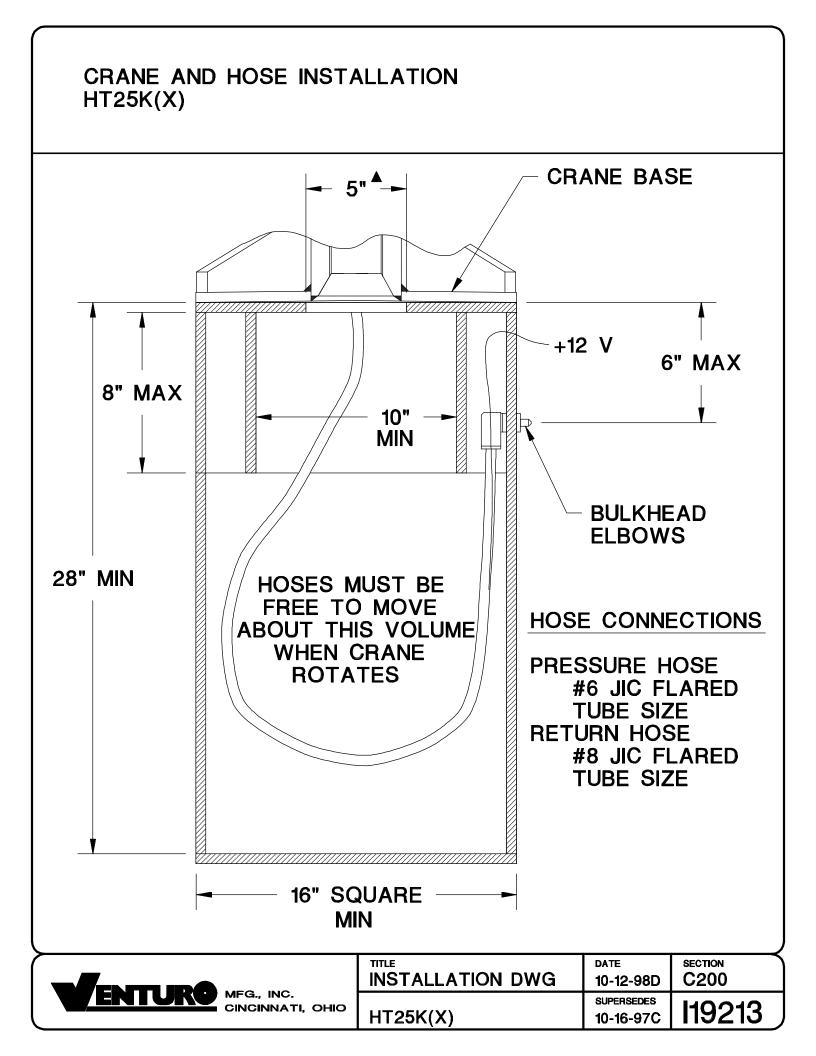
WARNING! For normal crane operation, the safety shutoff or proportional valve must be in the "normal" position (as described above). Test the crane before each use by placing the power toggle switch or trigger in the "OFF" position and testing each crane function *using the manual overrides*. If any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

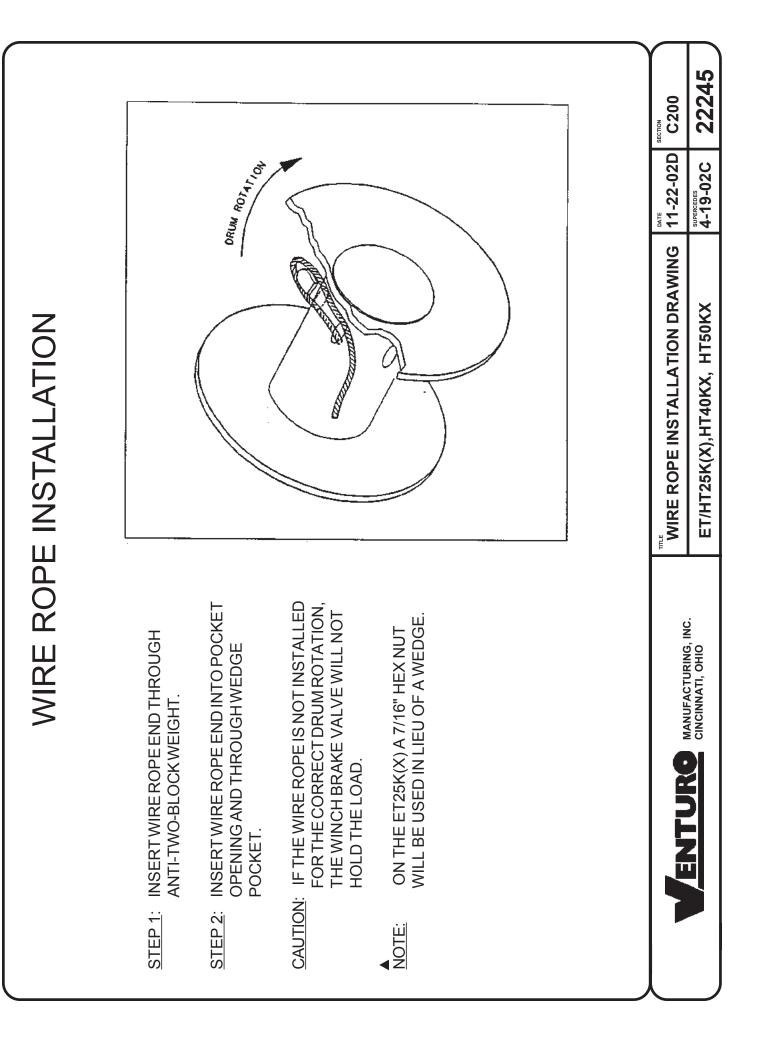
EMERGENCY STOP

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.

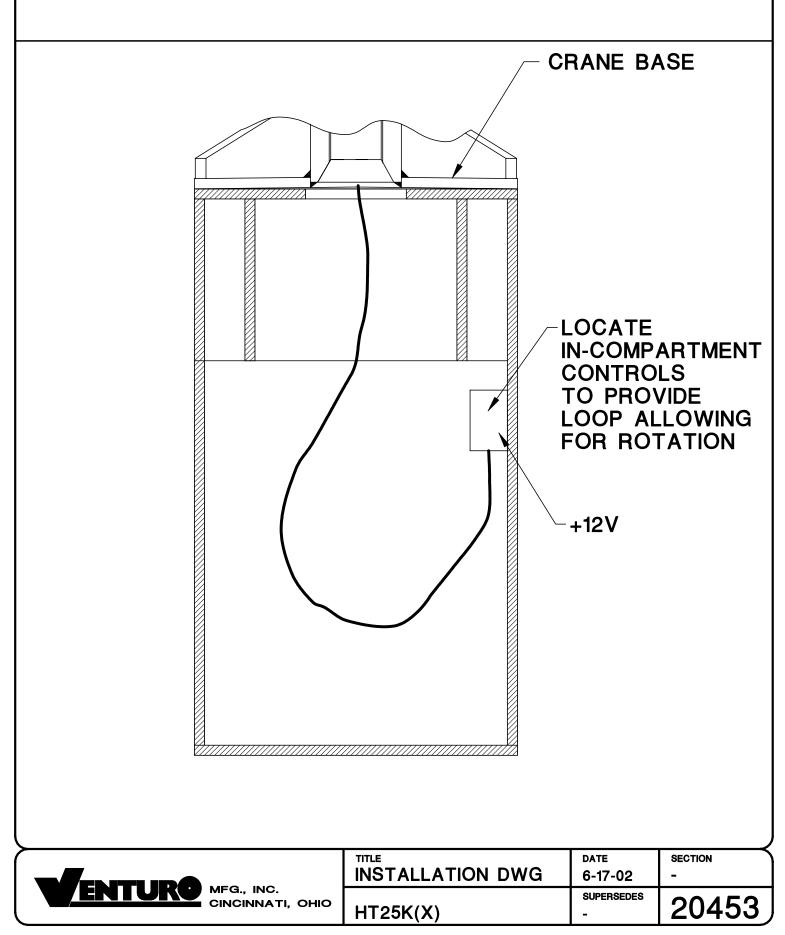
MFG., INC.		^{дате} 5-1-98А	SECTION C200
CINCINNATI, OHIO	HT25, HT40/50	SUPERCEDES 2-24-98	22328







IN-COMPARTMENT CONTROLS INSTALLATION HT25K(X)



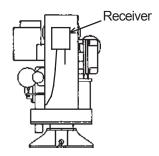
▲ <u>REMTRON RADIO REMOTE CONTROL</u> ▲ (20410, 20412 & 20414) INSTALLATION

Mounting locations:

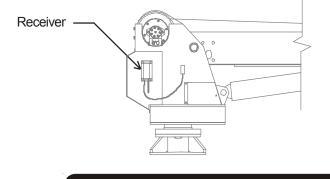
On-crane mounting:

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.



 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.

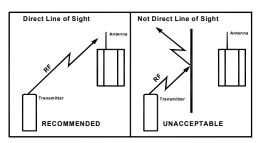
VENTURO	MFG., INC.		^{DATE} 7-25-03A	SECTION C200
ENIONO	CINCINNATI, OHIO	RADIO REMOTE CONTROL	supercedes 2-10-03	20415A

<u>REMTRON RADIO REMOTE CONTROL</u>

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 acess between the transmitter and receiver.

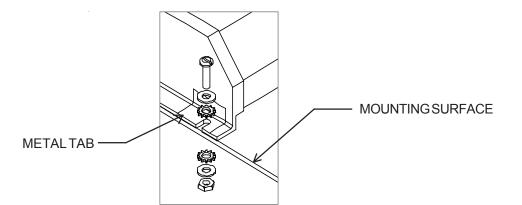


In-compartment mounting:

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.

VENTURO	MFG., INC.		^{дате} 7-25-03А	SECTION C200
ENTONO		RADIO REMOTE CONTROL	supercedes 2-10-03	20415B

<u>REMTRON RADIO REMOTE CONTROL</u>

▲ <u>(20410, 20412 & 20414)</u>

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.

• 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.

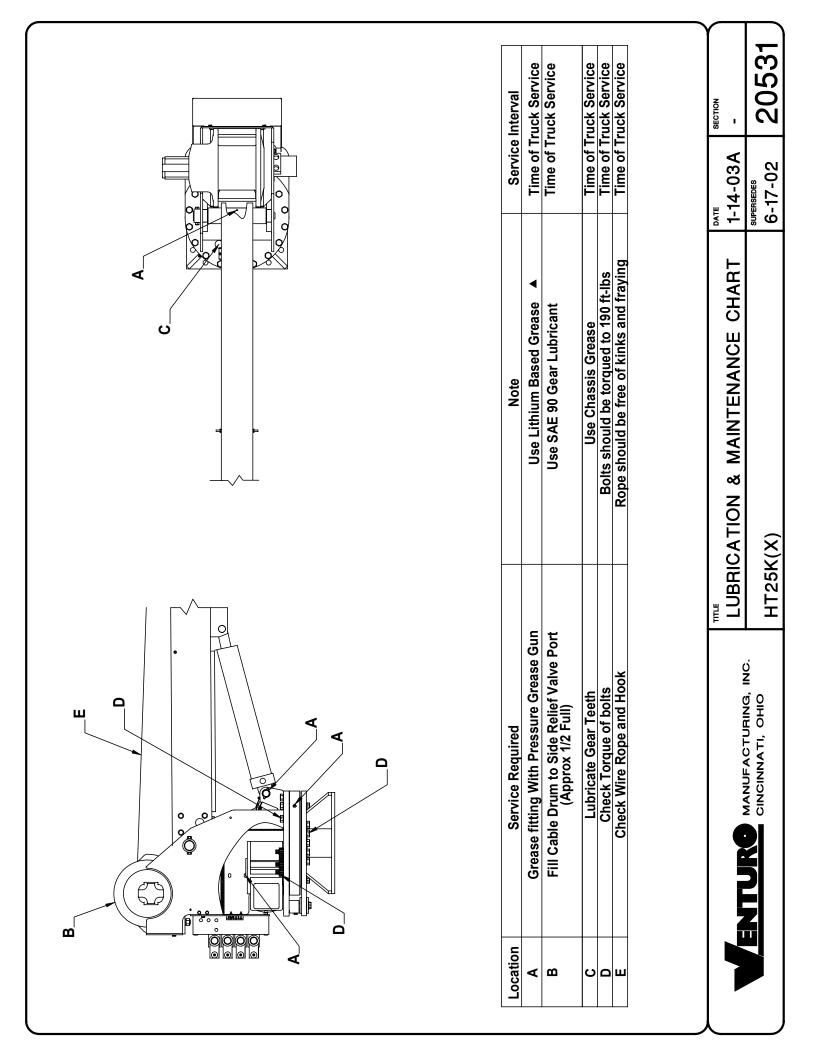
VENTURO	MFG., INC.	INSTALLATION DWG.	^{дате} 7-25-03А	section C200
ENIONO	CINCINNATI, OHIO	RADIO REMOTE CONTROL	SUPERCEDES 2-11-03	20416

MAINTENANCE

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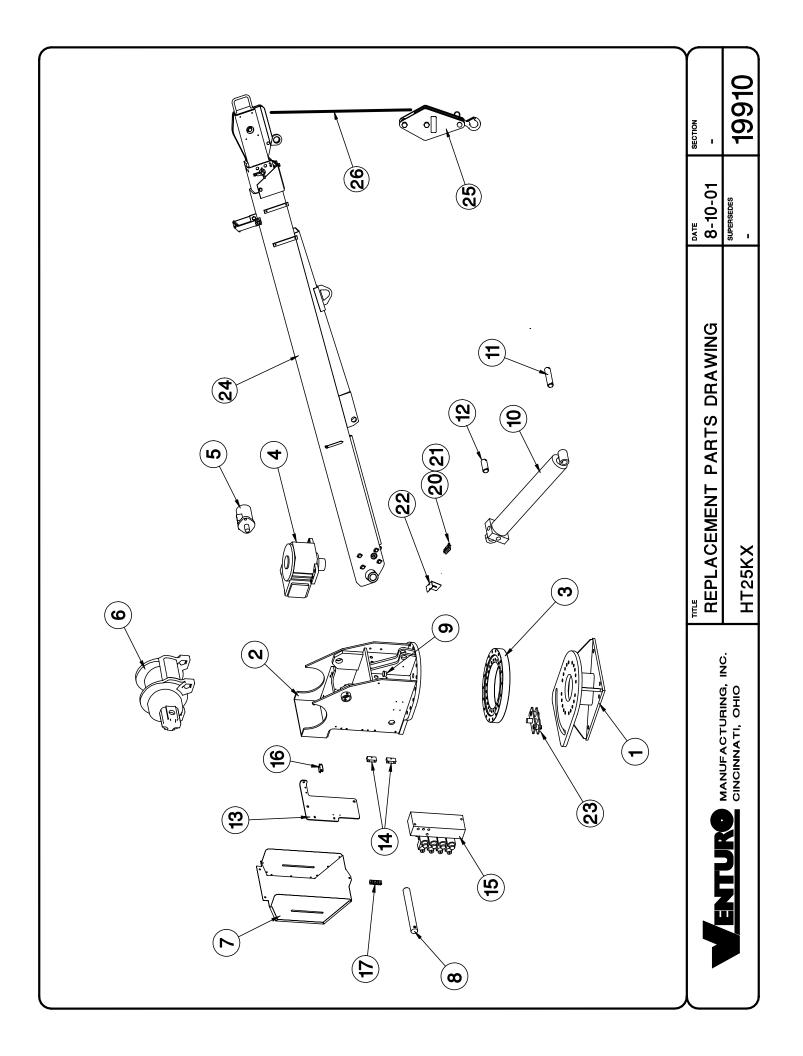
SERVICE





PARTS



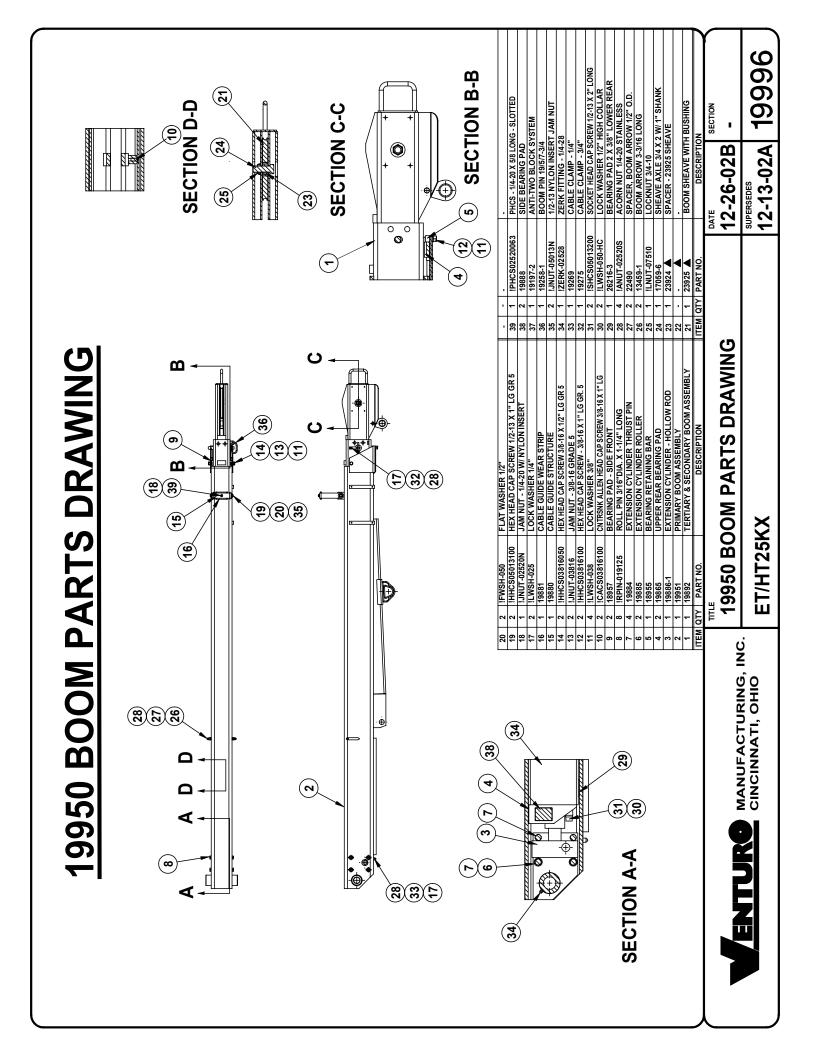


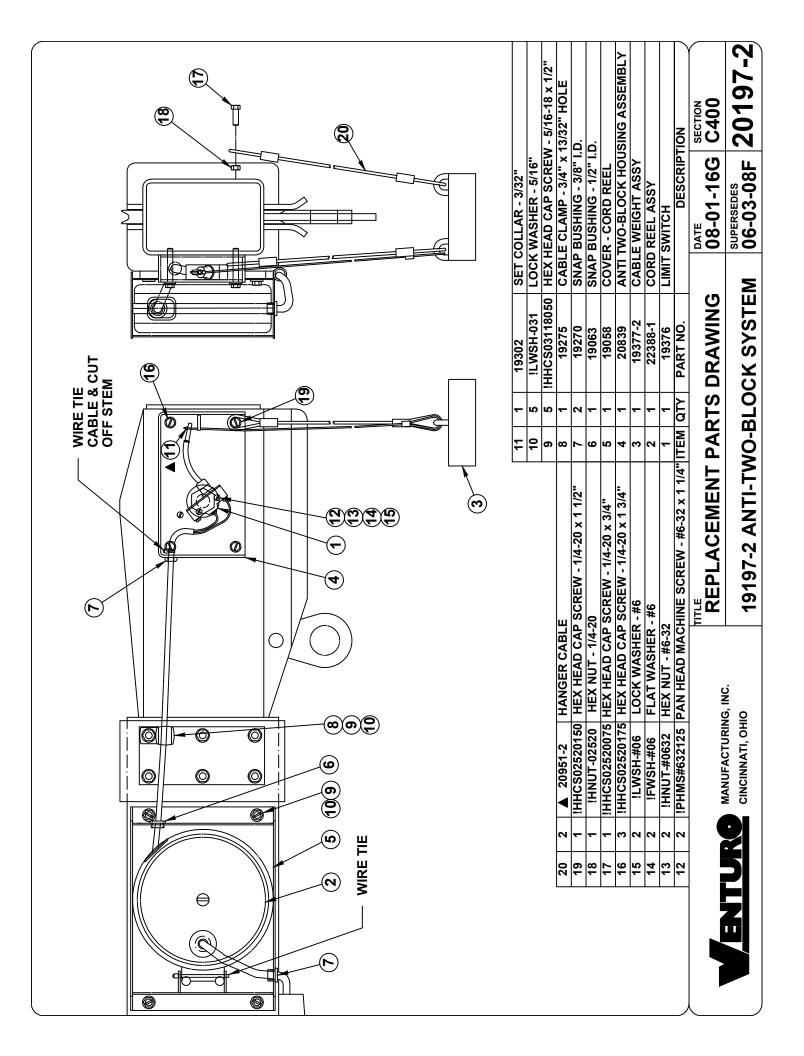
1
EVALION CYLINDER
- 1
▲ ITEM NOT SHOWN ON REPLACEMENT PARTS DRAWING
HT25K(X)
-

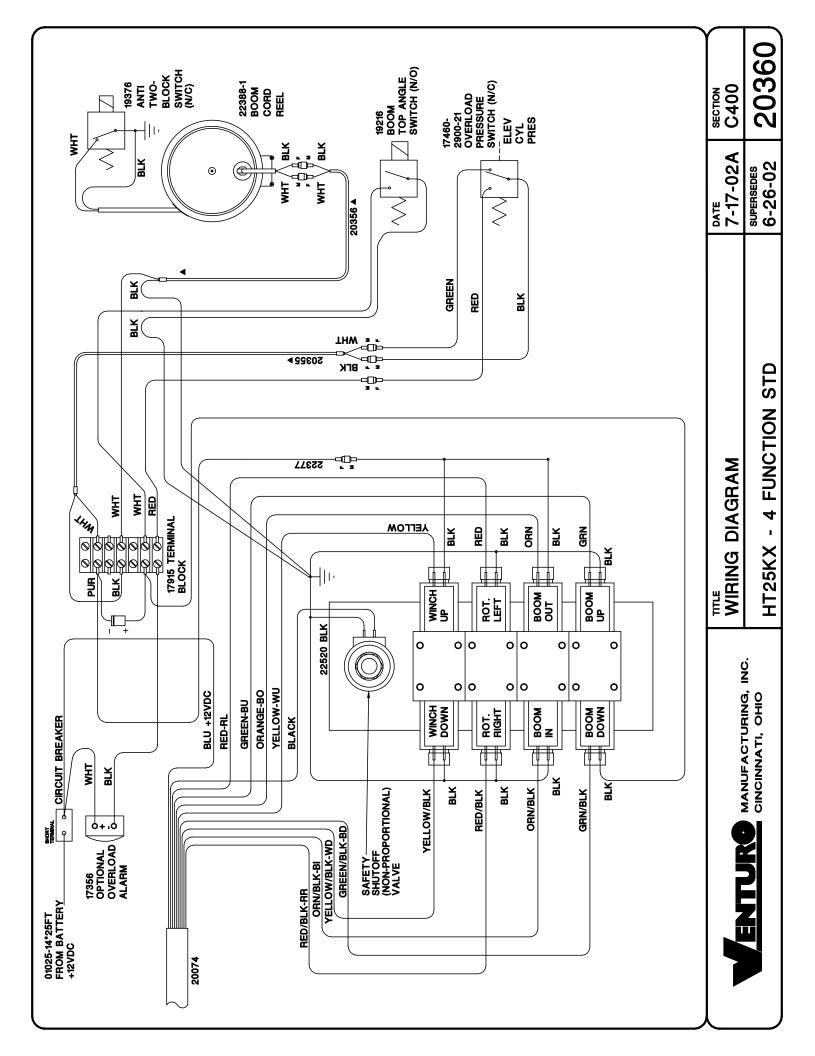
FASTENER LIST FOR HT25KX

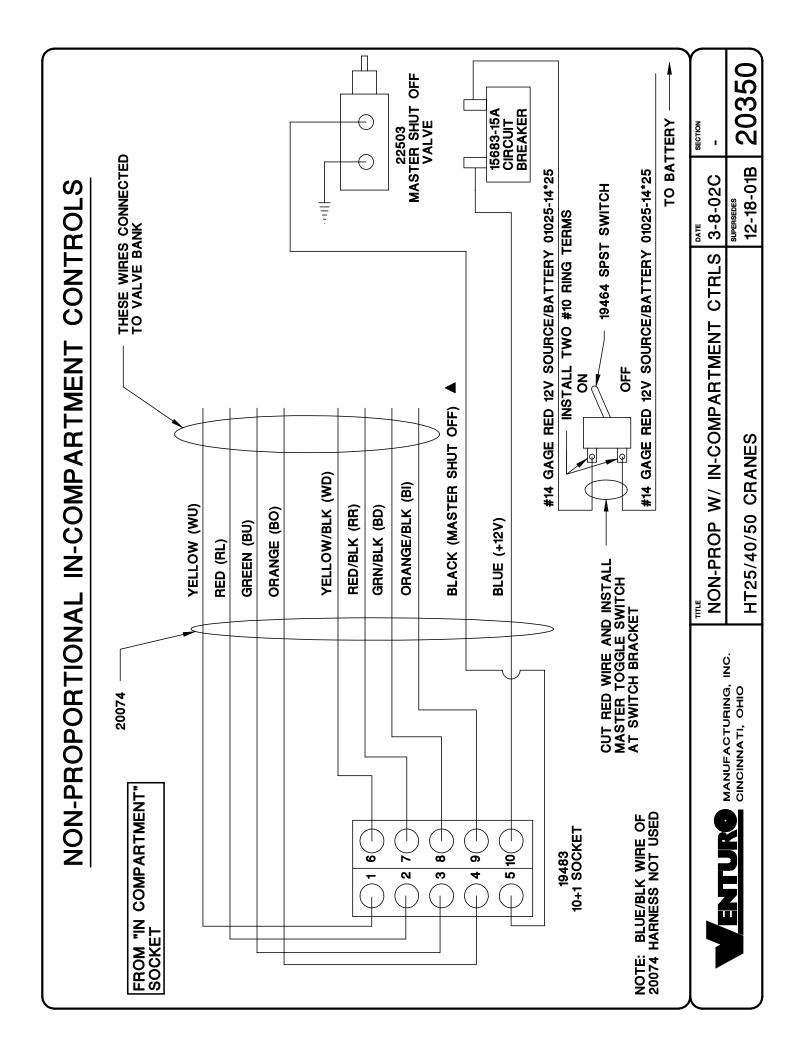
1234 WASHER - 10.0.63" 33 SLEWINGRING 19HCS03031150 BCCKET HEAD CAP SCREW - 58"-11 x 1-1/2" 35 SLEWINGRING 1SWE305174 DCCKET HEAD CAP SCREW - 58"-11 x 1-1/2" 35 SLEWINGRING 1SWE305013125 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/4" 2 HYDRAULICROTATIONMOTOR 1SWE305013150 LOCKWASHER - 1/4" STARINTERNAL HD 6 SPEEDREDUCER 1INSH-052 LOCKWASHER - 1/4" AL20 X 34" LONG 6 HYDRAULICPANEL BLOCK HICKS02280075 HEX HEAD CAP SCREW 1/4-20 X 34" LONG 6 HYDRAULICPANEL BLOCK HICKS02280076 HEX HEAD CAP SCREW 1/4-20 X 34" LONG 1 BOOMUPLIMITSWITCHBRACKET HICKS02808060 HEX HEAD CAP SCREW 5/6-18 X 1*LONG 1 BOOMUPLIMITSWITCHBRACKET HICKS02808070 HEX HEAD CAP SCREW 5/6-18 X 1*LONG 1 BOOMUPCTPIN ILMUT-03318 LOCK WASHER - 5/16" 1 BOOMUPCTPIN ILMUT-03318100 FLAT WASHER - 5/16" 1 HYDRAULICPANEL ILWSH-0318100 HEX HEAD CAP SCREW 5/6-18 X 1*LONG 1 HYDRAULICPANEL ILWSH-0318100 HEX HEAD CAP SCREW 5/6-18	PART NUMBER	DESCRIPTION	QTY	LOCATION/FUNCTION
IHHCS08311200 HEX HEAD CAP SCREW -5/8-11 x 2" 35 SLEWINGRING ISHCS08311150 SOCKET HEAD CAP SCREW-5/8-11 x 1-1/2" 3 SLEWINGRING ILWSH-050-HC LOCK WASHER 1/2" - HI COLLAR 2 HYDRAULIC ROTATION MOTOR ISHCS05013125 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/4" 2 HYDRAULIC ROTATION MOTOR ILWSH-060-ISTAR LOCK WASHER 1/2" STARINTERNAL HD 6 SPEEDREDUCER ILWSH-025 LOCK WASHER 1/4" 1 BOOMUP LIMIT SWITCH BRACKET IHHCS02520075 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 6 HYDRAULIC PANEL BLOCK IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOMUP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOMUP LIMIT SWITCH BRACKET ILWSH-025 LOCK WASHER - 1/4" 1 BOOMUP LIMIT SWITCH BRACKET 1 ILWSH-026 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOTPIN 1 ILNUT-03816 LOCK NUX, NYLON 3/8-16 1 GROUNDINGLUG 1 IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG 1	12534	WASHER - I.D. 0.63"	38	SLEWINGRING
ISHCS06311150 SOCKET HEAD CAP SCREW-5/8-11 X 1-1/2" 3 SLEWINGRING ILWSH-050-HC LOCK WASHER 1/2" - HI COLLAR 2 HYDRAULIC ROTATION MOTOR ISHCS05013125 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/4" 2 HYDRAULIC ROTATION MOTOR ILWSH-050-ISTAR LOCKWASHER 1/2" STARINTERNAL HD 6 SPEEDREDUCER ILWSH-025 LOCKWASHER 1/4" 6 HYDRAULIC PANEL BLOCK ILWSH-025 LOCK WASHER 1/4" 1 BOOMUP LIMIT SWITCHBRACKET IHHCS02520050 HEX HEAD CAP SCREW 1/4-20 X 1/2" LG 1 REAR COVER IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER IHHCS02520050 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM IPUMIT SWITCHBRACKET IHHCS03816250 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 GROUNDINGLUG ILWSH-031 FLAT WASHER - 5/16" 1 BOOM IPUOT PIN ILWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHNUT-03118 HEX NUT 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDR				
ILWSH-050-HC LOCK WASHER 1/2" - HI COLLAR 2 HYDRAULIC ROTATION MOTOR ISHCS05013125 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2" 6 SPEEDREDUCER ILWSH-050-ISTAR LOCKWASHER 1/2" STAINTERNALHD 6 SPEEDREDUCER ISHCS05013150 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2" 6 HYDRAULIC PANEL BLOCK ILWSH-025 LOCKWASHER - 1/4" 6 HYDRAULIC PANEL BLOCK IHHCS02520050 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 6 HYDRAULIC PANEL BLOCK IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOMUPLIMIT SWITCHBRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 REARCOVER ILWSH-025 LOCK WASHER - 1/4" 3 REARCOVER ILWSH-025 LOCK WASHER - 5/16" 1 BOOMPIVOTPIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 2 BOOMPIVOTPIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATIONCYLINDER CLEVISPINS IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL <td></td> <td></td> <td></td> <td></td>				
ISHCS05013125 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/4" PYDRAULIC ROTATION MOTOR ILWSH-050-ISTAR LOCKWASHER 1/2" STAR INTERNAL HD 6 SPEEDREDUCER ILWSH-050-ISTAR LOCKWASHER 1/2" STAR INTERNAL HD 6 SPEEDREDUCER ILWSH-025 LOCKWASHER - 1/4" 6 HTCR000000000000000000000000000000000000				
ILWSH-050-ISTAR LOCKWASHER 1/2"STARINTERNALHD 6 SPEEDREDUCER ISHCS05013150 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2" 6 SPEEDREDUCER ILWSH-025 LOCKWASHER - 1/4" 6 HYDRAULIC PANEL BLOCK ILWSH-025 LOCKWASHER - 1/4" 1 BOOM UPLIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOM UPLIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 4 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ILNUT-03816 LOCK WASHER - 5/16" 1 GROUNDINGLUG IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-303 SOCKE				
▲ ISHCS05013150 SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2" 6 SPEEDREDUCER ILWSH-025 LOCKWASHER - 1/4" 6 HYDRAULIC PANEL BLOCK IHHCS02520075 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATIONCYLINDERCLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER 3/8" - HI COLLAR 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER 3/8" - HI COLLAR 1 HYDRAULIC PANEL </td <td>!SHCS05013125</td> <td></td> <td>2</td> <td>HYDRAULIC ROTATION MOTOR</td>	!SHCS05013125		2	HYDRAULIC ROTATION MOTOR
ILWSH-025 LOCKWASHER - 1/4" 6 HYDRAULIC PANEL BLOCK IHHCS02520075 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 6 HYDRAULIC PANEL BLOCK IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILWUT-03816 LOCK WASHER - 5/16" 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATIONCYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHNUT-0318 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-036 DOCK WASHER - 5/16" 1 HYDRAULIC PANEL	LWSH-050-ISTAR	LOCKWASHER 1/2" STAR INTERNAL HD	6	SPEEDREDUCER
ILWSH-025 LOCKWASHER - 1/4" 6 HYDRAULIC PANEL BLOCK IHHCS02520075 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 6 HYDRAULIC PANEL BLOCK IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER IHHCS03816250 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILWSH-025 LOCK WASHER - 5/16" 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHUS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER - 4/10" 2 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER + 4/10 2 HYDRAULIC MANIFOLD	▲ !SHCS05013150	SOCKET HEAD CAP SCREW 1/2-13 X 1-1/2"	6	SPEEDREDUCER
IHHCS02520075 HEX HEAD CAP SCREW 1/4-20 X 3/4" LONG 6 HYDRAULIC PANEL BLOCK ILWSH-025 LOCK WASHER - 1/4" 1 BOOMUPLIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER ILWUSH-025 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWUSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHNUT-03118 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER 3/8" - HI COLLAR 1 HYDRAULIC PANEL ILWSH-031 HEX HEAD CAP SCREW 3/8-16 X 3-1/2" HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD				HYDRAULIC PANEL BLOCK
ILWSH-025 LOCK WASHER - 1/4" 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOM UP LIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILWDT-03816 LOCK NUT, NYLON 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-036 LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC PANEL ILWSH-038-6 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD IHNUT-3016 HEX NUT 3/8-16 2 HYDRAULIC				
IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 1 BOOMUPLIMIT SWITCH BRACKET IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS02580050 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL IHNUT-0318 HEX NUT 5/16-18 1 HYDRAULIC PANEL IHNUT-03816 LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC MANIFOLD IHNUT-03816 HEX NUT 3/8-16 2 HYDRAULIC MANIFOLD IHNUT-03816 HEX NUT 3/8-16 2 CIRCUIT BREAKER ILWSH-300				
IHHCS02520050 HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG 3 REAR COVER ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILNUT-03816 LOCK KUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 HEX NUT 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-038 HEX NUT 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-038 DOCK WASHER * 410 CICK WASHER 1 HYDRAULIC MANIFOLD ILWSH-10 <				
ILWSH-025 LOCK WASHER - 1/4" 3 REAR COVER IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER - #10 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 <				
IHHCS03816250 HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG 1 BOOM PIVOT PIN ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOM PIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS: 3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 HEX NUT 5/16-18 1 HYDRAULIC PANEL IHHCS03118100 HEX NUT 5/16-18 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-3036 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10-24 2 CIRCUIT BREAKER IPHCS#0632100 PAN H	!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2" LG	3	REARCOVER
ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOMPIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD IPHCS#1024050 PAN HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10-24 X 3/8" LG 2 BOOM LIMIT SWITCH IPHCS	!LWSH-025	LOCK WASHER - 1/4"	3	REARCOVER
ILNUT-03816 LOCK NUT, NYLON 3/8-16 1 BOOMPIVOT PIN ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDING LUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL ILWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD IPHCS#1024050 PAN HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10-24 X 3/8" LG 2 BOOM LIMIT SWITCH IPHCS	!HHCS03816250	HEX HEAD CAP SCREW 3/8-16 X 2-1/2 LG	1	BOOMPIVOTPIN
ISRNG-125 SNAP RING - 1-1/4" 4 ELEVATION CYLINDER CLEVIS PINS IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 GROUNDINGLUG IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-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 !HNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL !LWSH-035 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD !SHCS03816350 SOCKET HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER !LWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER !LWSH-#10 LOCK WASHER - #10-24 2 BOOMLIMIT SWITCH !HNUT-#1024 HEX NUT - #10-24 2 BOOMLIMIT SWITCH !HNUT-#1024 HEX NUT - #10-24 2 BOOMLIMIT SWITCH !HNUT-#1024 HEX NUT - #1				
IFWSH-031 FLAT WASHER - 5/16" 1 GROUNDINGLUG IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL IEWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL IWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL IHHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-033-HC LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD IPHOS#1024050 PAN HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 BOOMLIMIT SWITCH IPHCS#1024038 PAN HEAD CAP SCREW 6-32 X 1" LG 2 BOOMLIMIT SWITCH IPHCS#6632100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BOOMLIMIT SWITCH IPHCS#66321100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BARRIER STRIP				
IHHCS-3118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 GROUNDINGLUG IFWSH-031 FLAT WASHER - 5/16" 1 HYDRAULIC PANEL ILWSH-031 LOCK WASHER - 5/16" 1 HYDRAULIC PANEL IHHCS03118100 HEX HEAD CAP SCREW 5/16-18 X 1" LONG 1 HYDRAULIC PANEL IHNUT-03118 HEX NUT 5/16-18 1 HYDRAULIC PANEL ILWSH-038-HC LOCK WASHER 3/8" - HI COLLAR 2 HYDRAULIC MANIFOLD ISHCS03816350 SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2" 2 HYDRAULIC MANIFOLD IPHCS#1024050 PAN HEAD CAP SCREW - #10-24 X 1/2" LG 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 CIRCUIT BREAKER ILWSH-#10 LOCK WASHER - #10 2 BOOMLIMIT SWITCH IPHCS#1024038 PAN HEAD CAP SCREW - #10-24 X 3/8" LG 2 BOOMLIMIT SWITCH IPHCS#0632100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BOOMLIMIT SWITCH IPHCS#06321100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BARRIER STRIP ILWSH+#06 LOCK WASHER - #6 2 BARRIER STRIP <td></td> <td></td> <td></td> <td></td>				
!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 !LWSH-#10 LOCK WASHER - #10-24 2 BOOMLIMIT SWITCH !PHCS#1024038 PAN HEAD CAP SCREW - #10-24 X 3/8" LG 2 BOOMLIMIT SWITCH !PHCS#0632100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BARRIER STRIP !LWSH+#06 LOCK WASHER - #6 2 BARRIER STRIP !LWSH+#06 LOCK WASHER - 5/8 4 WINCH				
!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 !LWSH-#10 LOCK WASHER - #10 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 !PHCS#0632100 PHILLIPS HEAD CAP SCREW 6-32 X 1" LG 2 BARRIER STRIP !LWSH-#06 LOCK WASHER - #6 2 BARRIER STRIP !LWSH-#06 LOCK WASHER - #6 2 BARRIER STRIP !HNUT-#0632	!HHCS-3118100	HEX HEAD CAP SCREW 5/16-18 X 1" LONG	1	GROUNDINGLUG
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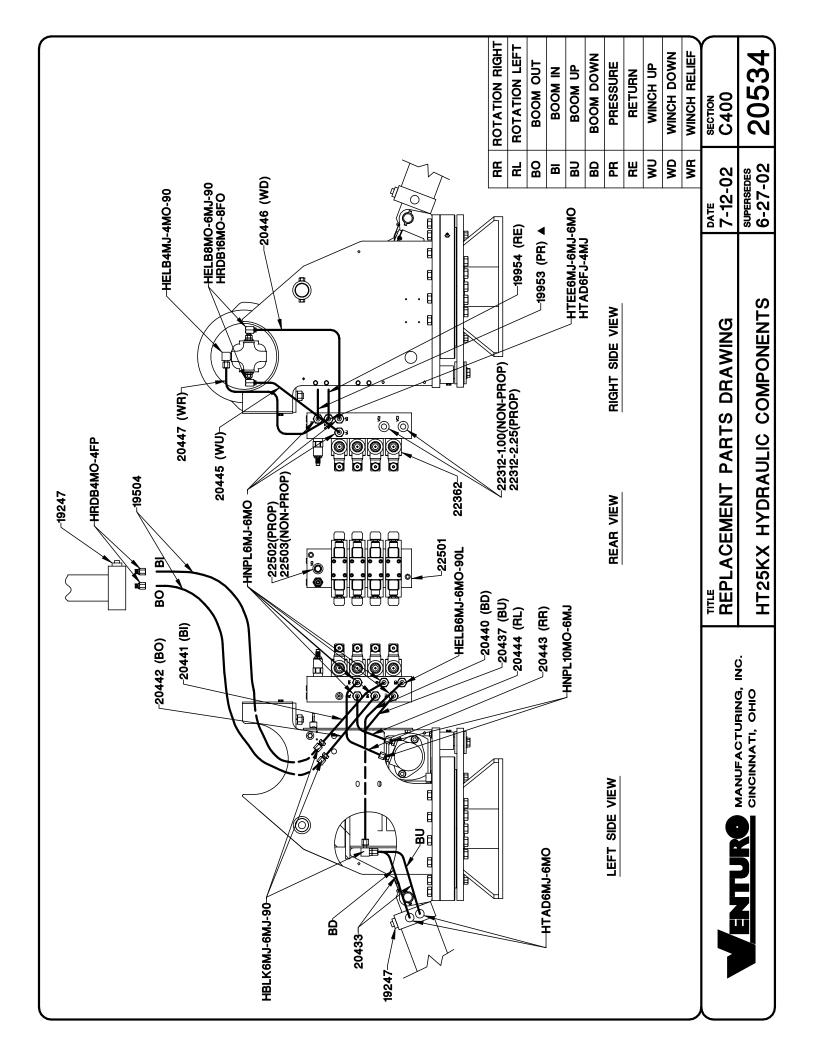


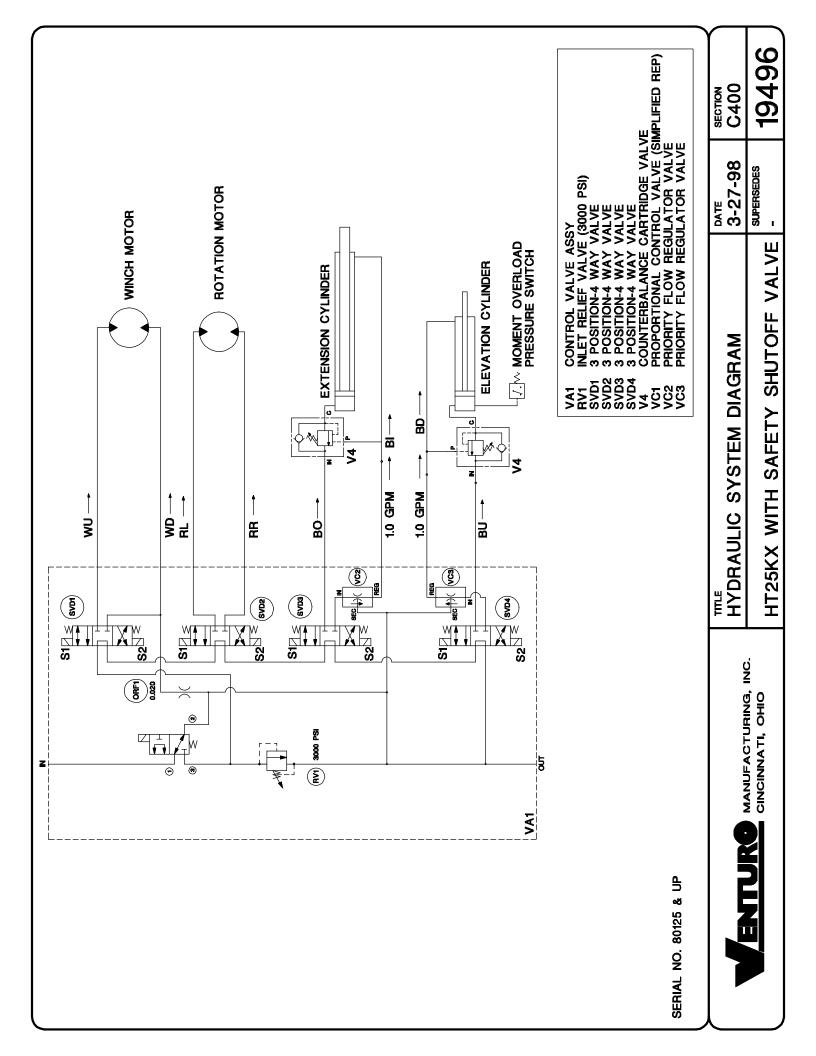


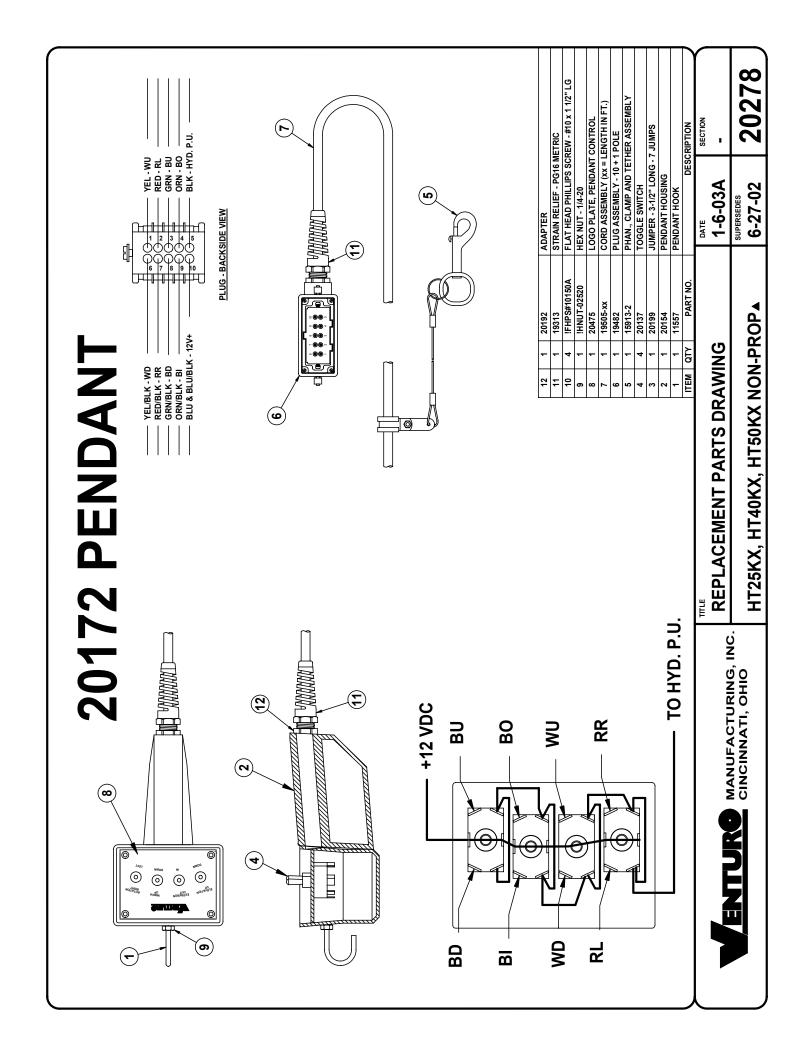




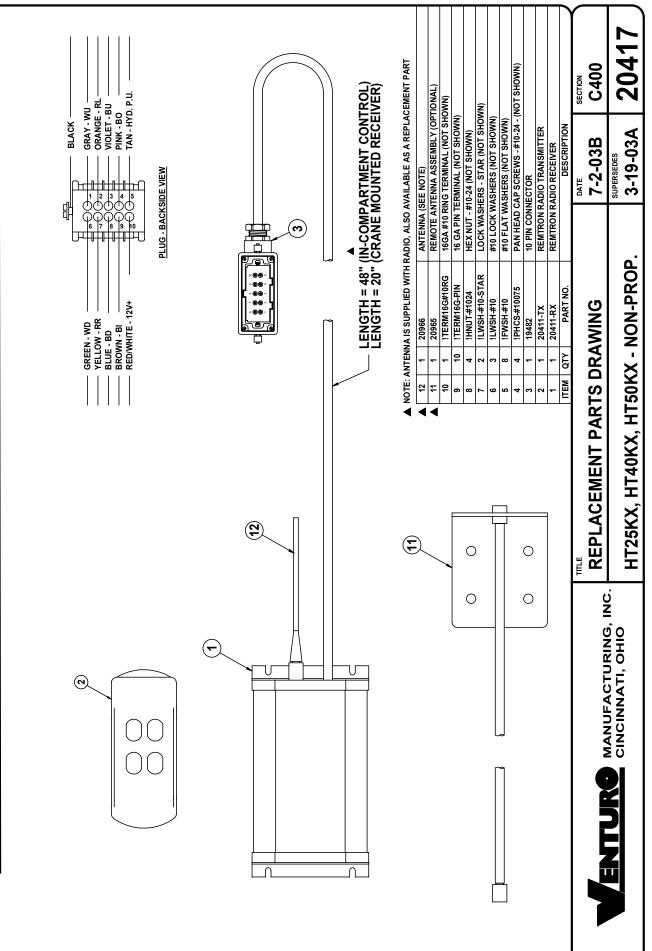


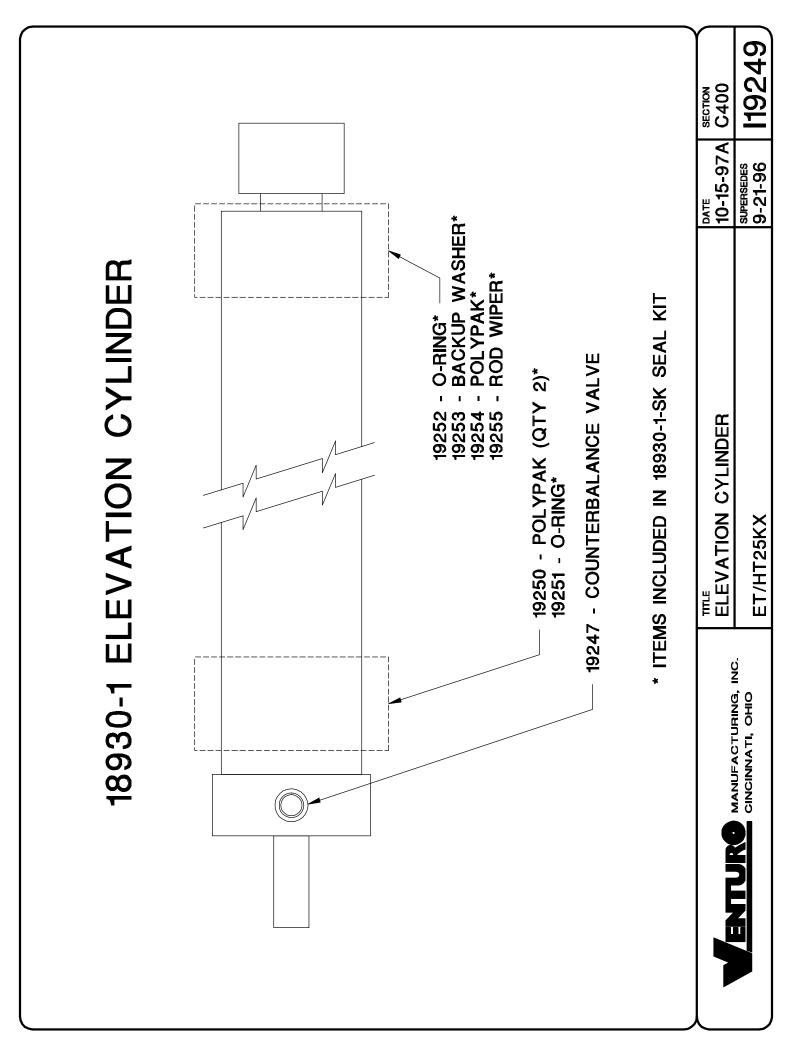


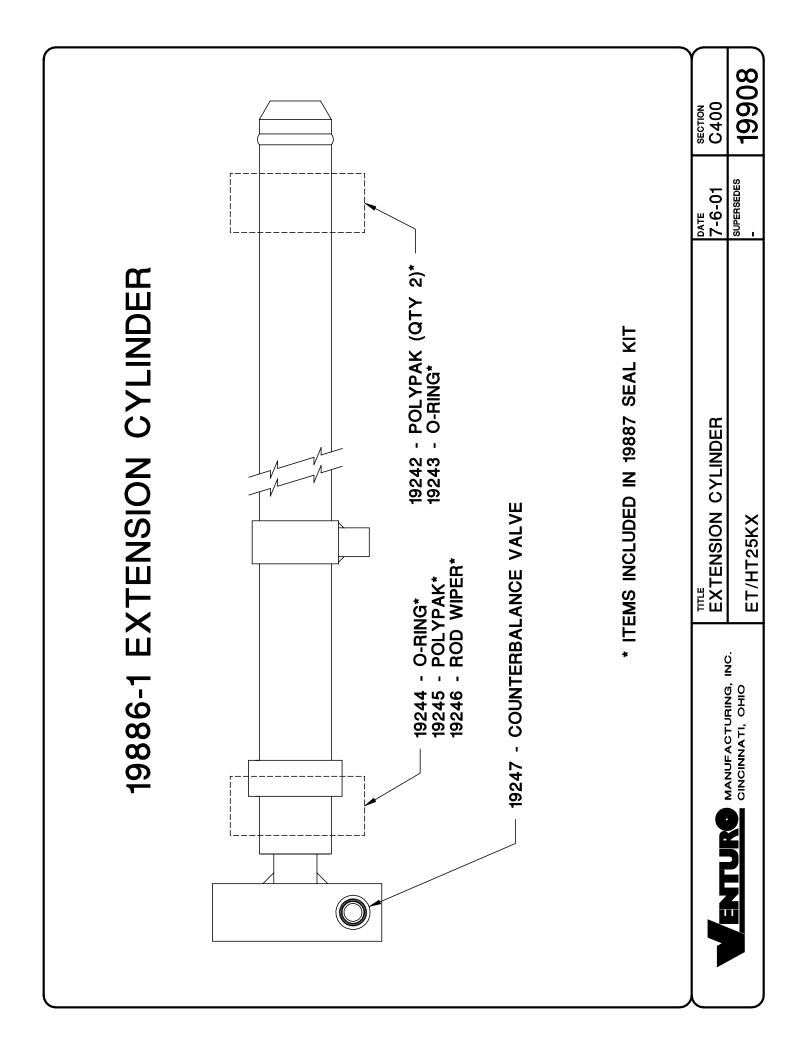




20410 RADIO REMOTE FOR NON-PROPORTIONAL HYDRAULIC CRANES







19294 PTO PACKAGES		SUCTION SCREEN - 100 MESH FILTER ASSY, RETURN - 10 MICRON PRESSURE GAUGE - RETURN PTO PUMP - HT25/40/50KX PROPORTIONAL PTO PUMP - HT25/40/50KX NON-PROP PTO PUMP - HT25/40/50KX NON-PROP RESERVOIR TANK - 10 GALLON DESCRIPTION DESCRIPTION DESCRIPTION 7-2-01C C400 SUPERSEDES 7-21-00B 22448
		SUCTION S FILTER ASS PRESSURE PTO PUMP RESERVOIR
	0	Image: black state Image: black state Image: black state Image: black state
		1) 1) M) M) PM) 6 1 PM) 6 1 PM) 6 1 PM) 3 1 PM) 3 1 PM) 2 1 PM 0TY PART No TTLE MOLANT PARTS D PTO KIT - HT25/40/50KX
		RECOMMENDED GPM (RPM) STANDARD (NON-PROP) HT25 - 2:0 GPM (800 RPM) HT40 - 2:6 GPM (1000 RPM) HT50 - 3:0 GPM (1150 RPM) HT50 - 3:0 GPM (1150 RPM) HT40 - 5:6 GPM (1000 RPM) HT50 - 3:0 GPM (1150 RPM) HT50 - 0.0 GPM (1000 RPM) HT25 - 4.0 GPM (1000 RPM) HT20 - 6.0 GPM (1200 RPM) HT50 - 6.0 GPM (1200 RPM)
		A SAE "A" 9 TOOTH 9 TOOTH 9 TOOTH 9 TOOTH SPLINED SHAFT 9 TOOTH SPLINED SHAFT
	Q	PUMP 19296-2.64 19296-5.00



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 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 12110 BEST PLACE • CINCINNATI, OHIO 45241 513.772.8448 www.venturo.com