## HTBABA-V*AO

Pages 1-60

## PARTS \& INSTALLATION MANUAL

## HT66KX-25

Included in this manual:
HT66KX-25 (VLC)

- 11,500 lb Hydraulic Telescopic Service Crane
- Venturo Logic Control System w/ Proportional Control
- 25 ft Fully-Powered, Two-Stage, Boom Extension

TABLE OF CONTENTS
HT66KX VLC SERIES (HTBABA-V*A0)


# SECTION 100 <br> DESCRIPTION <br>  <br> SPECIFICATIONS <br> Enturo <br> TRUCK MOUNTED CRANES 



## HT66KX VLC SERIES BASE MOUNTING DIMENSIONS



FRONT OF CRANE


| ${ }^{\circledR}$ | TITLE <br> BASE MOUNTING DIMS | $\begin{array}{\|l\|} \hline \text { DATE } \\ 02-06-19 \end{array}$ | $\begin{aligned} & \hline \text { SECTION } \\ & \mathrm{C} 100 \end{aligned}$ |
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| CINCINNATI, OHIO | HT66KX VLC SERIES | SUPERSEDES | 23802 |

HT66KX SERIES, 12' - 18.5' - 25' BOOM, WITH VENTURO LOGIC CONTROL SYSTEM (VLC) CRANE SERIAL NUMBER: $\qquad$
MAXIMUM LOAD CAPACITY CHART


WEIGHT OF LOAD HANDLING DEVICES ARE PART OF THE LOAD AND MUST BE DEDUCTED FROM THE GROSS CAPACITY. LOAD BLOCK USAGE

1-PART LINE FOR LOADS LESS THAN 5750 LBS 2-PART LINE FOR LOADS OF 5750 LBS AND GREATER

## WEIGHT OF LOAD BLOCK = 67 LBS

| (बenco venturo industries lic | TITLE <br> MAXIMUM LOAD CAPACITY |  | $\stackrel{\text { SECTION }}{\mathrm{C} 100}$ |
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| - CIncinnati, ohio | HT66KX-25' VLC SERIES | $\begin{array}{\|l\|} \hline \text { SUPRRSEEDES } \\ 02-06-19 \end{array}$ | 23803 |

## SECTION 150

SAFETY

## VEHICLE \& CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION \& INFORMATION

## A DANGER

ELECTROCUTION HAZARD KEEP CLEAR OF TRUCK AND LOAD DEATH OR SERIOUS INJURY CAN RESULT FROM CONTACT WITH THE LOAD, THE CRANE, OR THE VEHICLE IF BOOM OR LOAD LINE SHOULD BECOME ELECTRICALLY CHARGED.

SIGN NO. 15393 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 D A N G ER

UNLAWFUL TO OPERATE THIS EQUIPMENT WITHIN 20 FEET OF HIGH-VOLTAGE LINES OF 350,000 VOLTS OR LESS.
FOR MINIMUM CLEARANCES OF HIGH-VOLTAGE LINES IN EXCESS OF 350,000 VOLTS, REFERENCE OSHA 1926.1408, CRANE'S SAFETY MANUAL, AND CAL-OSHA ARTICLE 37, TITLE 8 , HIGH-VOLTAGE ELECTRICAL SAFETY ORDERS ${ }_{15401}$

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.

Table A - Minimum Clearance Distances

## Voltage <br> (nominal, kV, alternating current)

Minimum clearance distance (feet) *

| Up to 50. | 10 |
| :---: | :---: |
| over 50-200. | 15 |
| over 200-350. | 20 |
| over 350-500. | 25 |
| over 500-750.. | 35 |
| over 750-1000.. | 45 |
| Over 1000............................................................................... | (as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution). |

Table T - Minimum Clearance Distances While Traveling With No Load
Voltage
(nominal, kV, alternating current)

0-0.75.
over 0.75-50.
over 50-345.
over 345-750.
over 750-1000.
Over 1000..

While traveling - minimum clearance distance (feet) *
$\square$
6
10
16
20
(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).


## CRANE SAFETY AND HAZARDS <br> HT SERIES CRANES

## 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 20 FEET BETWEEN ANY PART OF THE CRANE, LOADLINE, OR LOAD, AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 350 kV (SEE NEW CHART). ADDITIONAL CLEARANCES ARE 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.


## WINCH SAFETY WARNINGS



## 1 DANGER

- DO NOT DISENGAGE WINCH UNDER LOAD

A DANGER

- THE LAST [5] (DEAD) WRAPS OF WIRE ROPE MUST BE LEFT ON TO ASSIST WIRE ROPE CLAMP IN HOLDING LOAD



## 4. WARNING

- Winches are not to be used to lift, support, or otherwise transport personnel

| TTILE <br> WINCH SAFETY | DATE <br> 02-21-14D | secton <br> C150 |
| :--- | :--- | :--- |
| HT CRANES | supersedes <br> 04-04-12C | 19217 |

PART NO.: 15398
DECAL: UNPLUG REMOTE CONTROL
FUNCTION: To inform the operator to unplug remote control when not being used.

QUANTITY: 1
PLACEMENT: Right side of housing.

PART NO.: 15401
DECAL: UNLAWFUL TO OPERATE
FUNCTION: To inform the operator of proper operation in vicinity of power lines.

QUANTITY: 1
PLACEMENT: Right side of housing.

PART NO.: 19314-1 [LEFT] \& -2 [RIGHT]
DECAL: MANUAL OVERRIDE (NON-PROP)
FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1 EACH
PLACEMENT: Inside of rear cover.

PART NO.: 22768-1 [LEFT] \& -2 [RIGHT]
DECAL: MANUAL OVERRIDE (PROPORTIONAL)
FUNCTION: To inform the operator of manual overide locations.

QUANTITY: 1
PLACEMENT: Inside of rear cover.


|  | DECAL DRAWING \& LIST | $\begin{array}{\|l\|} \hline \text { DATE } \\ 02-21-14 D \end{array}$ | $\begin{aligned} & \text { section } \\ & \text { C150 } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
| INCI | HT40/50KX | $\begin{array}{\|l\|} \hline \text { Sureasebes } \\ 11-29-12 C \end{array}$ | $22181 \mathrm{~A}$ |



DECAL: CAUTION - INSPECT VEHICLE \& CRANE
FUNCTION: To inform the operator of key operating requirements.

QUANTITY: 1
PLACEMENT:Left side of rear cover.
INSPECT VEHICLE AND CRANE INCLUDING OPERATION, PRIOR TO USE DAILY.
2. DO NOT USE THIS EQUIPMENT EXCEPT ON
SOLID, LEVEL SURFACE WITH CRANE SOLID, LEE OLSURFACE WITH CRANE TRUCK.
3. BeFore operating the crane, refer to FOR OPERATING (LOAD) LIMITATIONS.
4. Do not operate, walk, or stand beneath BOOM OR A SUSPENDED LOAD.

UNPLUG PENDANT AND SHUT OFF MASTEA disconnect switch when crane not il
6. FOR TRAVEL, BOOM MUST BE IN STOWED POSITION.

## 1. DANGER

## A. DANGER

 ELECTROCUTION HAZARD LINES AND APPARATUS. YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG, AND ELLCTTRICAL LINE AND LOAD LINE SWAYING.THIS LIFTING DEVICE DOES NOT PROVIDE PRO TO AN ELECTRICALLY CHARGED CONDUCTOR.
YOU MUST MAINTAIN A CLEARANCE OR AT LEAST 10
FEET BETWEEN ANY PART OF THE CRANE
FEET BETWEEN ANY PART OF THE CRANE, LOAD
LINE OR LOAD, AND ANY ELECTRICALIINE OR LIIE OR LOAD, AND AN ELEETRICAL LINE OR
APPARATUS ARRYY
FOO FOOT ADDIIIONALCLEARANCE S REQUIRED
EVERY ADDITIONAL 30,000 VOITS OR LESS EVERY ADDITIONAL 30,000 VOLTS OR LESS. DEA MONTACR OR INADEQUATE CLEARANCE.



PART NO.: 17389
DECAL: MEDIUM VENTURO
FUNCTION: Branding.
QUANTITY: 1
PLACEMENT: Rear cover.


PART NO.: 22496
DECAL: LARGE VENTURO
FUNCTION: Branding.
QUANTITY: 2
PLACEMENT: Boom.


PART NO.: 20927
DECAL: CRANE STABILITY
FUNCTION: To inform the operator of the crane's lifting capacity throughout the entire rotation.

QUANTITY: 1
PLACEMENT: In prominent location, so it is easily seen and readily identifiable.

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| $\wedge^{\circledR}$ | DECAL DRAWING \& LIST | $\begin{aligned} & \hline \text { DATE } \\ & 12-11-18 \mathrm{~J} \end{aligned}$ | $\begin{aligned} & \text { section } \\ & \text { C150 } \end{aligned}$ |
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|  | HT40/50/66 SERIES | $\begin{aligned} & \hline \text { Supreasedes } \\ & 08-23-18 \mathrm{H} \end{aligned}$ | 22181 D |

PART NO.: 20771-1 \& 20771-2
DECAL: HT66-25' CRANE CAPACITY
FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each


PLACEMENT: Right side of boom, Left side of boom

> 20771-2

20771-1

## LEFT SIDE OF BOOM

RIGHT SIDE OF BOOM
PART NO.: 23466 \& 23467
DECAL: HT66-25' CRANE CAPACITY (VLC)
FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each


PLACEMENT: Right side of boom, Left side of boom


SPACE I NTENTIONALLY LEFTIBLANK

SPACE I NTENTIONALLY LEFTIBLANK

| venco venturo industries lla | BOOM CAPACITY DECALS | $\begin{array}{\|l\|} \hline \text { DATE } \\ \text { 02-06-19 } \end{array}$ | $\begin{aligned} & \text { section } \\ & \text { C150 } \end{aligned}$ |
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| Nnat, OHIO | HT66KX SERIES | SUPERSEDES | 23804 |

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PART NO.: 23742
DECAL: VLC, 2.94" x 6.00"
FUNCTION: To show that the crane is equipped with Venturo Logic Controls

QUANTITY: 2 each


PLACEMENT: Each side of Housing
-
S P A C E I N T E N T I O N A L L Y
L E F T
B L A N K

S PACE I NTENTIONALLY
L E F T
B L A N K

S PACE I NTENTIONALLY
L E F T
B L A N K

| P. ${ }^{\circ}$ venoonemuramuosmesuc | VLC decals | ${ }_{\text {O2-06-19A }}^{\text {Oef }}$ | C150 |
| :---: | :---: | :---: | :---: |
|  | vLC SERIES CRANES |  | 23748 |

# SECTION 200 

## INSTALLATION

## CRANE INSTALLATION, PAGE 1

## 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 HT66 VLC is $66,000 \mathrm{ft}$. Ibs.
The maximum vertical load for the HT66 VLC is $14,000 \mathrm{lbs}$.

## CRANE MOUNTING

The crane base plate or mounting pedestal must be bolted to the body reinforcing plate with four [4] grade eight (8) bolts of $1-1 / 16^{\prime \prime}$ dia. with either coarse or fine threads, torqued to 772 foot pounds. A 6 " 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 as shown on drawing 20051. It can be in any position that pleases the user 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, return and a case drain hoses that come down through the center of the housing. The pressure and return hoses connect to two hydraulic swivels to prevent damage while rotating the crane right and left.


- THE CASE DRAIN HOSE MUST BE A DEDICATED RETURN HOSE UNRESTRICTED TO TANK / RESERVOIR. DO NOT 'T' INTO ANOTHER EXISTING RETURN HOSE OR DAMAGE TO THE HYD. WINCH FROM BACK-PRESSURE WILL OCCUR. BACK-PRESSURE IN EXCESS OF 200 PSI WILL DAMAGE THE HYD. WINCH.

Arrange the pressure \& return hoses in the compartment below the crane so that they are connected in a relaxed position while the crane is at the midpoint of the 400 degree rotation range -regardless of the final position of the boom during storage/travel. See installation pages 22913 for more information on hose connections.

NOTE: If you purchased one of Venturo's hydraulic packages (P/N 19294-X.XXX), you will have received our pressure gauge kit. This kit includes a gauge, hose and bulkhead "T" fitting and should be installed on the main pressure hose.

|  | TITLE <br> CRANE INSTALLATION | $\begin{aligned} & \text { DATE } \\ & \text { 02-06-19 } \end{aligned}$ | $\begin{aligned} & \hline \text { sестоом } \\ & \text { C200 } \end{aligned}$ |
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| CINCINNATI, OHIO | HT66KX-25' VLC SERIES | SUPERSEDES |  |

## CRANE INSTALLATION, PAGE 2 <br> HT66 VLC SERIES CRANES

## - ELECTRICAL CONNECTIONS

A 9 ft . electrical power lead - intended for 12V DC only - comes down through the center of the crane base plate along with the hoses. This power lead should be slacked in the compartment so that it remains relaxed throughout the 400 degree rotation of the crane.

A 20 amp circuit breaker is mounted on the crane and protects the crane's internal wiring and solenoid coils. The 20 amp circuit breaker does not protect the 9 ft . power lead. For added protection, the 9 ft . lead can be connected to a 20 amp protected circuit that, if possible, is powered only when the vehicle engine is running.

## HYDRAULIC FLUID

Average Climate
Type of Oil
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:

| HYDRAULIC LINES | HT66 SERIES |
| :---: | :---: |
| PRESSURE | $5 / 8^{\prime \prime}$ |
| RETURN | $3 / 4^{\prime \prime}$ |
| SUCTION | $1-1 / 4^{\prime \prime}$ |

## RESERVOIR

The PTO reservoir should have a capacity of 25 gallons fitted with 100 mesh suction screen, 10 micron return line filter, and filler/breather cap.

## PTO PUMP

The PTO pump should be sized to allow an engine idle speed range that will deliver approximately 12.0 GPM for the HT66 VLC series. The crane's relief pressure is set at 3000 psi.

## - 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 ( 25 gallons $=50$ 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.

|  | ${ }_{\text {Cres }}^{\text {Crane installation }}$ |  | C200 |
| :---: | :---: | :---: | :---: |
|  | HT66 VLC SERIES | ${ }_{\text {a }}$ | 23806 |

## CRANE OPERATION AND MAINTENANCE INSTRUCTIONS, PAGE 1 HT66KX VLC SERIES

## 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.

## See Crane Safety Manual for proper inspection schedules and reports .

## 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.

## LOAD BLOCK

If the load exceeds 5500 lbs. - HT66 VLC series, or if reduced winching speed for better control of smaller loads is required, use the load block to rig the crane for two part line operation.

## CONTROLS

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

Before activating the pendant, inspect the receiver, cord(s), and pendant head/switches for damage. Actuate all switches in both directions 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 the desired 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.

| FENTUR |
| :---: | :--- | :--- | :--- |

## CRANE OPERATION AND MAINTENANCE INSTRUCTIONS, PAGE 2

 HT66KX VLC SERIES
## 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 . or 10 ft .
- ROTATION "L" and "R" - Controls the left and right direction of the crane rotation. The crane rotation is limited to 400 degrees.
- 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. See page 22168 for detailed operations instructions and warnings.


## 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.

## VENTURO LOGIC CONTROL (VLC) SYSTEM

This crane is equipped with Venturo's logic control system. The receiver collects data from the boom tilt sensor and hydraulic pressure transducer, and translates the results to one of the following actions:

| \% OF LOAD | CRANE RESPONSE | BOOM/RECEIVER INDICATOR LIGHTS | TRANSMITTER LCD | TRANSMITTER VIBRATOR |
| :---: | :---: | :---: | :---: | :---: |
| 0-79\% | NORMAL OPERATION | Green solid | Load $x x \%$ <br> Angle $x x^{\circ}$ | None |
| 80\% - 89\% | NORMAL OPERATION | Yellow flashing | Load $x x \%$ <br> Angle $x x^{\circ}$ | None |
| 90\% - 99\% | All crane functions speed reduced to $50 \%$ | Red flashing | Load $x x \%$ <br> Angle $x x^{\circ}$ flashing text SPD 50\% icon | [3] quick vibrations when $90 \%$ threshold is exceeded |
| >100\% | Winch down, boom retract, and rotation @ $75 \%$. All other functions prevented. | Red solid | Overload Limited functions Speed reduced <br> Flashing text/inverted color - or after pressing OK button- Home Screen, flasing text/inverted color, SPD 25\% icon | Continuous vibration for [4] seconds when $100 \%$ threshold is exceeded |

## 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 load 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.

## TELESCOPIC HEXAGONAL BOOM - VLC SYSTEMS

12' - 25' LENGTH Double stage only
The hexagonal shaped boom shall telescope to provide a horizontal reach range of 12 ft . to 25 ft . using a hydraulic power extension cylinder with a 13 ft . stroke (See pages 23814 thru 23817).

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## CRANE OPERATION AND MAINTENANCE INSTRUCTIONS, PAGE 3 HT66KX VLC SERIES

## TRUCK SETUP \& STABILIZERS

1. The truck should be parked on firm level ground.
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. Fully deploy stabilizers to help stabilize vehicle against rocking or overturning.
5. Use stabilizers to level vehicle only. Tires must maintain contact with ground.

## PREPARATION FOR TRAVEL

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

## MAINTENANCE

The crane requires only periodic lubrication. As a standard procedure, this can be done at the time the vehicle is serviced.

The winch planetary gearbox lube should be maintained at the level plug.
To ensure optimal winch performance, the following lube schedule and lube specifications should be followed:
Initial Change - after 6 weeks or 10 hours of operation.
Periodic Change - on an annual basis or every 50 hours of operation.
Temp Range ( ${ }^{\circ} \mathrm{F}$ ) Winch Gear Oil
$120^{\circ}$ to $10^{\circ} \quad$ High quality SAE 90 gear lubricant oil
Severe Duty Swepco \#201 multi-purpose gear oil
Service grease fittings and rotation gear with molybdenum-disulfide graphite-filled lithium-based extreme pressure grease.

Grease fitting locations:
Boom pivot at rear of boom
Speed reducer (2 fittings)
Elevation cylinder tail clevis
Bottom of Swing Bearing (2 fittings)
Remove rear cover and check all hydraulic tube and hose fittings for tightness.
Check electrical connections for looseness and corrosion.

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## EXPLANATION OF HYDRAULIC VALVE SYSTEM HT40/50/66KX, PROPORTIONAL ONLY

## OVERVIEW

This proportional crane utilizes a proportional valve, which controls the rate at which the hydraulic fluid flows through the valve bank. When the proportional valve is fully closed, hydraulic fluid bypasses the valve bank and returns directly to the tank. When the proportional valve is fully open, hydraulic fluid cycles through the valve bank and allows the crane to function at full speed. When the proportional valve is at any setting between, a portion of the fluid is allowed through the valve bank, with the remainder returning to the tank.

The four [4] crane functions (winch, rotation, boom elevation, and boom extension) are controlled by four [4] separate valve sections. Each valve section has two [2] solenoid coils (and tow [2] 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 associated manual override reside 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 proportional valve by turning the red stem on the valve as stated below

- 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 counter-clockwise 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 firmly press inward. For example, pushing the stem labeled 'A' on the first bank (refer to illustration) will actuate winch up

- For normal crane operation, the proportional valve must be in the 'normal' position (as described above). To verify 'normal' operation, you may set the pendant (or radio) control aside and actuate a single crane function by pushing inward on any of the manual override pins, located at the ends of each function control valve. If that function operates, the proportional valve is still in manual override. Check the position of the proportional valve's red stem to insure that it is fully counter-clockwise.


## EMERGENCY STOP

In the unlikely event that a function of the crane does not stop once the function's toggle switch is released, the proprtional crane can be stopped by releasing the trigger.



## STABILITY TEST - HT66-25'-VLC SERIES

## Overview

Venturo follows the guidelines of ANSI B30.5 in defining stability. Generally speaking, a truck is considered stable as long as it is not on the verge of tipping - i.e. with the truck level, at least one tire on each corner of the truck must remain in contact with the ground.

It is important to note that nearly every installation is unique and will, therefore, typically require stability testing.
The procedure outlined below follows ANSI's (B30.5-5-1.1.1) specified "maximum load rating" of $85 \%$ of truck stability.

## Testing Procedure

1. Locate the truck on firm, level ground and set parking brake.
2. Fully deploy stabilizers, making sure they are firmly in contact with supportive ground; use stabilizer pads as required. The tires of the truck should remain in full contact with the ground.
3. Inspect wire rope and other key components of crane (consult owners manual for more information).
4. Conduct an operational check of all crane functions.
5. Use a Test Weight weighing a minimum of 2882 lbs, (includes load block weight of 67 lbs.) to a maximum of 3525 lbs.
6. Place the VLC system into Stability Mode (ref. VLC Manual, INST-30000, page 30005)
7. Position the boom level and fully retracted
8. Referring to the Stability Chart (drawing 20907) rotate the crane to a position between 1 and 2 o'clock (truck cab is facing 12 o'clock) to begin testing.
9. Use the winch to lift the Test Weight; DO NOT allow the weight to be more than 6 " off the ground at any time during testing (for safety).
10. Using a test weight weighing between 2882 to 3525 lbs., extend the boom slowly, until one of the three conditions occur:
10.1. Full extension is reached - Mark the ZONE in question $\mathbf{1 0 0 \%}$
10.2. The VLC system stops the boom extension - Mark the ZONE in question $\mathbf{1 0 0 \%}$
10.3. The truck becomes unstable i.e. a tire lifts off the ground
10.3.1. Retract the boom until at least one tire on each corner of the truck is making contact with the ground
10.3.2. Use the formula below to determine the allowable \% of Rated Capacity for the ZONE in question:
11. Note: The "Max Stable Reach in inches" is measured from the center of rotation of the crane housing to the lifting load hook.
$\%$ Rated Capacity $=\frac{\text { "Max Stable Reach" in inches" }}{299} \quad$ X 100
12. Record the \% of Rated Capacity in the appropriate blank (region) on the Crane Stability page (ref. 20907) and decal.
13. Repeat Steps 7 through 12 for each ZONE on the stability page

VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO

| TITLE |  |  |
| :--- | :--- | :--- |
| STABILITY TEST | $11-24-21 \mathrm{C}$ | C20CTION |
| HT66-25'-VLC SERIES | SUPERSEDES | $20906-66 \mathrm{~V}$ |

## CRANE STABILITY


\% of Rated Capacity for each of the 10 regions are provided above.
CONDITIONS:

- STABILIZERS FULLY EXTENDED \& DOWN, ON FIRM LEVEL GROUND.


| HYD. TANK DIMENSION (HTD) CHART |  |  |
| :---: | :---: | :---: |
|  PART <br> DIMENSION No | 22786 (25 GAL.) | 22999 (40 GAL.) |
| ' $\mathrm{A}^{\prime}$ | 3" | 3" |
| 'B' | 3" | 3" |
| 'C' | 4" | 4" |
| 'D' | 4" | 5.5" |
| 'E' | 8" | 11" |
| 'J' | 5" | $6 "$ |
| 'K' | 30" | 30" |
| 'L' | 5" | 6" |
| 'M' | 4" | 5.5" |
| 'P' | 40" | 42" |
| 'Q' | $2 "$ | $2 "$ |
| 'R' | $2 "$ | $2 "$ |
| 'S' | 5" | 5" |
| 'X' | 18" | 20" |


| MOUNTING DIMENSION (TMD) CHART |  |  |
| :---: | :---: | :---: |
|  | 22786 (25 GAL.) | 22999 (40 GAL.) |
| 'F' | 9.75" | $12 "$ |
| 'G' | 4.875" | 6" |
| 'H' | 3" | 3" |
| 'N' | 42" | 44" |
| 'T' | 17.875" | 19.875" |
| 'U' | 19" | 21" |
| 'V' | 8.938" | 9.938" |

MEASUREMENTS INCLUDE MOUNTING APARATUSES





HYDRAULIC CIRCUIT CONNECTION GUIDE - TWO-STAGE PUMP W/ COMPRESSOR

(1) CAUTION

- SELECTOR VALVE MUST BE 'NON-CLOSED CENTER TRANSITION' TYPE.

REFER TO SECTION 200 FOR MORE INFORMATION, INCLUDING HOSE SPECIFICATIONS

## 1. CAUTION

- THE CASE DRAIN LINE FROM THE WINCH MUST HAVE AN UNRESTRICTED PATH TO TANK/ RESERVOIR.

| Titte |  |  |
| :--- | :--- | :--- |
| CNNCTN GDE, PAGE 2/2 | date | section |
| 02-21-14B | C200 |  |
| HT CRANES | supersedes | $04-19-12 A$ |

## RECOMMENDED SUPPLY \& RETURN HOSE CONNECTIONS CRANE \& STABILIZERS



## 4. CAUTION

- SELECTOR VALVE MUST BE 'NON-CLOSED CENTER TRANSITION' TYPE VALVE.
- CASE DRAIN MUST RETURN DIRECTLY TO RESERVOIR WITHOUT RESTRICTION.

| title |  |  |
| :--- | :--- | :--- |
| CONNECTIONS GUIDE | date | section |
| 02-21-14F | C200 |  |
| HT CRANES | supersedes | $10-24-12 E$ |

## WIRE ROPE INSTALLATION



STEP 1: UNWIND COIL OF WIRE ROPE BY 'ROLLING' ALONG THE FLOOR. THIS WILL PREVENT 'KINKING'.

STEP 2: INSERT WIRE ROPE END UP THROUGH ANTI-2-BLOCK (A2B) CAGE ASSEMBLY, BETWEEN CHEEK PLATES, OVER THE TOP SHEAVE, AND THROUGH WIRE ROPE GUIDE.

STEP 3: INSERT WIRE ROPE END INTO POCKET OPENING ON WINCH, WRAP AROUND WEDGE, AND BACK THROUGH POCKET OPENING AS SHOWN IN FIGURE 1.

## - CAUTION

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


## 1. CAUTION

- THERE MUST ALWAYS be at LEAST [5] DEAD WRAPS OF WIRE ROPE ON THE WINCH DRUM WHILE UNDER LOAD.

NOTE: SOME WINCHES MAY BE SUPPLIED WITH A HEX NUT IN LIEU OF A WEDGE FOR INSTALLING THE WIRE ROPE.

| title | date | SECTION |
| :---: | :---: | :---: |
| WIRE ROPE INSTALLTN | 02-21-14K | C200 |
| ET6K \& LARGER CRANES | SUPERSEDES 12-26-13J | 2 |

# SECTION 300 

 MAINTENANCE \&
## SERVICE

## MAINTENANCE OVERVIEW INFORMATION

## MAINTENANCE

The crane requires only periodic lubrication. As a standard procedure, this can be done at the time the vehicle is serviced.

## GENERAL

Inspect wire rope for any evidence of kinks or fraying. Ensure that lifting hook of wire rope shows no evidence of damage and is functioning normally.

Inspect headache ball ("load block") for any signs of damage or excessive wear.

Service all grease fitting locations.

Inspect hydraulic hoses and hydraulic fittings for hydraulic leaks.

Inspect electrical connections for any looseness or corrosion.

Inspect bolts and verify all are tight, paying particular attention to winch, rotation system, and mounting base bolts.

Inspect all pins and snap rings for proper fit and function.

Inspect sheaves for excessive wear or play.

## WINCH

Perform a basic inspection of the winch with each use, monitoring for unusual noise or hydraulic leaks.

The winch planetary gearbox lube (SAE 90) should be maintained at the level plug (final base relief valve port) which is approximately half-full point.

To ensure optimal winch performance, the following oil change schedule should be followed:

Initial Change - after the initial 100 hours of operation or two months.
Periodic Change - after every 1000 hours of operation or two years .



# SECTION 400 

## PARTS


SERIES; MECHANISM

|  |  |  |  |  |  |  |  |  | $\begin{aligned} & z_{0}^{2} \\ & \text { 오 } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{array}{\|l\|} \hline \vdots \\ \hline 0 \end{array}$ | - |  | - | - | - | - | $\sim$ | - | - | ~ | - | - | - | ~ | - | ~ | - |  |  |  |
| $\left\lvert\, \begin{aligned} & 0 \\ & \underset{y}{z} \\ & 1 \\ & \frac{x}{\alpha} \\ & \underset{\alpha}{2} \end{aligned}\right.$ | $\begin{aligned} & \underset{\sim}{x} \\ & \stackrel{\rightharpoonup}{i} \\ & \underset{\sim}{N} \\ & \text { N } \end{aligned}$ |  | $\begin{aligned} & \stackrel{0}{1} \\ & \stackrel{1}{1} \\ & \stackrel{\infty}{\sigma} \\ & \stackrel{y}{2} \end{aligned}$ | $\begin{aligned} & \mathbb{K} \\ & \underset{N}{N} \\ & \tilde{\infty} \\ & 0 \\ & \stackrel{0}{0} \end{aligned}$ | $\begin{aligned} & \stackrel{N}{1} \\ & \stackrel{\infty}{\infty} \\ & \stackrel{\infty}{\sigma} \end{aligned}$ |  | $\begin{aligned} & \hat{N} \\ & \underset{N}{n} \end{aligned}$ | $\begin{aligned} & \stackrel{\sim}{N} \\ & \underset{\sim}{N} \end{aligned}$ | $\left\lvert\, \begin{aligned} & \underset{\sim}{\underset{\sim}{\sim}} \\ & \hline \end{aligned}\right.$ | $\begin{array}{\|c} \text { O} \\ \underset{\sim}{4} \end{array}$ | 우N | $\begin{aligned} & \stackrel{\rightharpoonup}{\sigma} \\ & \underset{\sim}{2} \end{aligned}$ | $$ | $\left\|\begin{array}{c} \stackrel{\varrho}{\wedge} \\ \underset{\sim}{j} \end{array}\right\|$ | $\begin{aligned} & \hat{N} \\ & \stackrel{\rightharpoonup}{\mathbf{o}} \\ & \stackrel{\sim}{2} \end{aligned}$ | $\begin{aligned} & \mathrm{a} \\ & \stackrel{\rightharpoonup}{\mathbf{o}} \\ & \stackrel{i}{\mathrm{~N}} \\ & \underset{\mathrm{~N}}{ } \end{aligned}$ | $\begin{gathered} \underset{\sim}{N} \\ \underset{\sim}{\infty} \end{gathered}$ |  |  |  |
| $\underset{\underset{\mid}{\mid}}{\substack{\text { \| }}}$ | $\stackrel{\bar{\sim}}{*}$ | N | $\underset{\sim}{\sim}$ | N | $\stackrel{\sim}{\sim}$ | $\stackrel{\leftrightarrow}{*}$ | へ | $\stackrel{\sim}{\sim}$ | ® | 응 | $\overline{\text { m }}$ | ~ | ¢ | \# | ¢ | $\underset{*}{\infty}$ | ¢ | \% | ¢ | 앙 |

* THESE ITEMS ARE INCLUDED IN 23720 KIT. PLEASE CALL TECHNICAL SUPPORT AT 1-800-226-2238 FOR ASSISTANCE.



| ITEM \# | PART \# | QTY | description | WHERE-USED |  | ITEM \# | PART \# | QTY |  |  | WHERE-USED |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | !HHCS06311300 | 20 | HHCS; 5/8-11 × 3"LG, GR. 5, ZINC | BASE PLATE - SLEW DRV |  | 27 | IPHPMS\#1024100S | 2 | PHILIPS-HD PM | 1", S/S CIRC | UIT BRKR - HSNG |
| 2 | !LWSH-063 | 20 | LOCK WASHER; 5/8", GR. 5, ZINC | BASE PLATE - SLEW DRV |  | 28 | !LWSH-\#10S | 2 | LOCK WASHER | CIRC | UIT BRKR - HSNG |
| 3 | IFWSH-25S | 5 | FLAT WASHER; 1/4", S/S | ROTATION GEAR COVER |  | 29 | !PHPMS\#0632100S | 2 | PHILIPS-HD PM | 1", S/S | MINAL STRIP - HSNG |
| 4 | !HHCS02520050S | 5 | HHCS; 1/4-20 x 1/2" LG, S/S | Rotation gear cover |  | 30 | LLWSH-\#06S | 2 | LOCK WASHER |  | MINAL STRIP - HSNG |
| 5 | !UNUT-02520-LKG | 5 | U-NUT; 1/4-20, LOCKING | ROtATION GEAR COVER |  | 31 | !HHCSM6M1M16S | 4 | HHCs; 6mm-1m | S/S | An - HOUSING |
| 6 | !LWSH-050-HC | 2 | LOCK WASHER; 1/2", H-COLLAR | ROTATION MOTOR |  | 32 | LWSH-025S | 4 | LOCK WASHER | ESC | An - HOUSING |
| 7 | ISHCS05013200 | 2 | SHCS; 1/2-13 $\times 2$ " | Rotation gear cover |  | 33 | IFWSH-025S | 4 | FLAT WASHER; | ESC | AN - HOUSING |
| 8 | !HHCS06311400 | 20 | HHCS; 5/8-11 × 4"LG, GR. 5, ZINC | HSNG - ROTATION DRV. |  | 34 | !HHCS03118175S | 2 | HHCS; 5/16-18 X | HOS | CLAMPS - HSNG |
| 9 | !LWSH-063 | 20 | LOCK WASHER; 5/8", GR. 5, ZINC | HSNG - ROTATION DRV. |  | 35 | ISRNG-175 | 1 | SNAP RING; 1-3/ | LTD | boom Pivot Pin |
| 10 |  | - | - |  |  | 36 | !HHCS03816100 | 2 | HHCS; 3/8-16 X | - TD | IFOLD - HOUSING |
| 11 | 28327 | 4 | KNOB, HAND, 5-POINT | VCM \& REAR COVER |  | 37 | IFWSH-038 | 2 | FLAT WASHER; | PLTD ${ }^{\text {Pr }}$ | IFOLD - HOUSING |
| 12 | 28328 | 2 | NYLON SPACER, .25" ID X .5" OD X 1 " | VCM TO REAR COVER |  | 38 | !LWSH-038 | 2 | LOCK WASHER | -PLTD ${ }^{\text {a }}$ | IFOLD - HOUSING |
| 13 | !HHCS02520250SF | 2 | HHCS, 1/4-20 $2.500^{\prime \prime}$, S/S, FULL THRD | VCM To Rear cover |  | 39 | !HHCS02520050S | 1 | HHCS; 1/4-20 x | SWIT | CH BRKT - HSNG |
| 14 | !LNUT-02520-H | 4 | LOCK NUT; 1/4-20, HVY PAT, NYLON | VCM \& REAR COVER |  | 40 | LLWSH-025S | 1 | LOCK WASHER | SWIT | CH BRKT - HSNG |
| 15 | IJNUT-02520NS | 2 | JNUT, NYLON INSERT, 1/4-20, S/S | VCM TO REAR COVER |  | 41 | ISRNG-150 | 4 | SNAP RING; 1-1 | LTD ${ }^{\text {ELEV }}$ | V. CYL. PIVOTS |
| 16 | IFWSH-025S | 2 | FLAT WASHER; 1/4", S/S | RECEIVER - REAR CVR |  | 42 | IPHPMS\#1024050S | 2 | PHILIPS-HD PM | 1/2", s/S ${ }^{\text {SWl }}$ | CH \& SWITCH BRKT |
| 17 | IHHCS06311250-8 | 4 | HHCS; $5 / 8-11 \times 2-1 / 2^{\prime \prime}$ LG, GR. 8 | WINCH MOUNTING |  | 43 | LWSH-\#10S | 2 | LOCK WASHER | SWIT | CH \& SWITCH BRKT |
| 18 | IFWSH-063-8 | 8 | FLAT WASHER; 5/8", GR. 8 | WINCH MOUNTING |  | 44 | HNUT-\#1024S | 2 | HEX NUT; \#10-22, | SWIT | CH \& SWITCH BRKT |
| 19 | LLWSH-063-8 | 4 | LOCK WASHER; 5/8", GR. 8 | WINCH MOUNTING |  | 45 | HNNUT-03120 | 1 | HEX NUT; 5/16-20, | HOR | - - HORN BRKT |
| 20 | !HNUT-06311-8 | 4 | HEX NUT; 5/8-11, GR. 8 | WINCH MOUNTING |  | 46 | LLWSH-031-STAR | 1 | LOCK WASHER | C\|l | - - HORN BRKT |
| 21 |  | - | - | - |  | 47 | !HHCS03118075S | 4 | HHCS; 5/16-18 X | SIDE | Cover |
| 22 |  | - |  | - |  | 48 | !LWSH-031s | 4 | LOCK WASHER | SIDE | Cover |
| 23 | !HHCS03118075S | 4 | HHCS; 5/16-18 × 3/4", S/S | SIDE COVER |  | 49 | !LNUT-02520NS | 1 | LOCK NUT; 1/4-20, | S/S | LAY - bracket |
| 24 | LLWSH-031S | 4 | LOCK WASHER; $5 / 16$ ", S/S | SIDE COVER |  | 50 | !LNUT-02520NS | 2 | LOCK NUT; 1/4-2 | S/S | LAY-horn - SIDE CVR |
| 25 | !HHCS02520125S | 2 | HHCS; 1/4-20 X 1-1/4", S/S | INCLINOMETER |  | 51 | !HHCS02520050S | 3 | HHCS; 1/4-20 X | RELA | AY, BRKT - SIDE CVR |
| 26 | !LNUT-02520NS | 2 | LOCK NUT; 1/4-20, NYLON, S/S | INCLINOMETER |  | 52 | - | - |  | - |  |
| REFER | NCE \#23812 For | R RE | PLACEMENT FASTENERS DR | AWIN |  |  | HHCS = HEX HEA | $D \text { CAP }$ | SCREW PMS = | HINE SCREW S/S | = STAINLESS STEEL |
| VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO |  |  |  |  | $\begin{aligned} & \text { TTILE } \\ & \text { PLCMNT } \end{aligned}$ | STE | ERS LIST |  | HANISM | $\begin{aligned} & \text { DATE } \\ & 03-09-23 C \end{aligned}$ | $\begin{aligned} & \text { SECTION } \\ & \text { C400 } \end{aligned}$ |
|  |  |  |  |  | HT66KX | S | ES |  |  | $\begin{array}{\|l\|} \hline \text { SUPPRSEDEES } \\ 06-24-22 B \end{array}$ | $23813$ |


REPLACEMENT PARTS LIST - HT66KX-25' VLC SERIES; 27260 BOOM

| ITEM | PART NO. | QTY | DESCRIPTION | ITEM | PART NO. | QTY | DESCRIPTION |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 27262 | 1 | WELDED ASS'Y; PRIMARY BOOM | 22 | 21936 | 1 | FLAT, MOUNT; WIRE ROPE GUIDE |
| 2 | 27264 | 1 | WELDED ASS'Y; SECONDARY BOOM | 23 | 28190 | 1 | COMPLETE CORD REEL |
| 3 | 27266 | 1 | WELDED ASS'Y; TERTIARY BOOM | * 24 | 23720-INC | 1 | UNIVERSAL INCLINOMTER |
| 4 | 21751 | 1 | EXTENSION CYLINDER | 25 | 23438 | 1 | WARNING LIGHT; TRI-COLOR, LED |
| 5 | 23217-11 | 2 | BOOM PAD; UHMW, 'A', $3.19 \times 1.88 \times 0.50$ | 26 | 21428 | 2 | BUSHING; EXTENSION CYLINDER |
| 6 | 23217-1 | 2 | BOOM PAD; UHMW, 'A', $3.19 \times 1.88 \times 0.44$ | 27 | 21405 | 1 | PIN; PIVOT, EXTENSION CYLINDER |
| 7 | 23217-2 | 2 | BOOM PAD; UHMW, 'A', $3.19 \times 2.13 \times 0.44$ | 28 | !FWSH-100SAE | 2 | FLAT WASHER; 1" SAE |
| 8 | 23217-13 | 2 | BOOM PAD; UHMW, 'A', $3.19 \times 2.13 \times 0.38$ | 29 | 23116 | 2 | PIN BLOCK REINFORCING |
| 9 | 23217-2 | 2 | BOOM PAD; UHMW, 'A', $3.19 \times 2.13 \times 0.44$ | 30 | 27241 | 2 | CABLE SHEAVE |
| 10 | 23217-4 | 2 | BOOM PAD; UHMW, 'B', $3.19 \times 2.50 \times 0.63$ | 31 | 27256 | 2 | SPACER; SHEAVE |
| 11 | 23183 | 2 | V-BLOCK, SLIDER | 32 | 27466-1 | 1 | SPACER; COMPACT A2B, 0.47" LONG |
| 12 | 23217-3 | 2 | BOOM PAD; UHMW, 'B', $3.19 \times 2.13 \times 0.63$ | 33 | 27466-2 | 1 | SPACER; COMPACT A2B, 0.81" LONG |
| 13 | 21-08 | 1 | PIN; HAIRPIN COTTER | 34 | 19376 | 1 | LIMIT SWITCH; MODIFIED |
| 14 | 27272 | 1 | CLEVIS PIN | 35 | 27486 | 1 | WLDMNT; COMPACT A2B FRAME, LEFT-HAND |
| 15 | 27283 | 2 | THRUST ROLLER; EXTENSION CYLINDER | 36 | 27473 | 1 | PLATE; COMPACT A2B COVER |
| 16 | 27282 | 2 | THRUST PIN; REAR, EXTENSION CYLINDER | 37 | 19269 | 1 | CLAMP; 1/4" CABLE |
| 17 | 27293 | 2 | THRUST PIN; FRONT, EXTENSION CYLINDER | 38 | 27475 | 3 | ROLLER; COMPACT A2B, WIRE ROPE GUIDE |
| 18 | 13459-2 | 2 | ARROW | 39 | 27254 | 1 | LOAD BLOCK ASSEMBLY |
| 19 | 22490 | 2 | SPACER; BOOM ARROW | 40 | 27587-7/16-100 | 1 | WIRE ROPE; 7/16 * 100 FT |
| 20 | 21935 | 1 | WELDED ASS'Y; WIRE ROPE GUIDE | 41 | - | - | - |
| 21 | 21560 | 1 | ROLLER; UHMW, WIRE ROPE GUIDE | \$ 42 | 27483 | 1 | ASS'Y; WORK LIGHT, LED |







## REPLACEMENT PARTS LIST - HYD. COMPONENTS

| ITEM | PART NO. | QTY | DESCRIPTION | INSTALLATION |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 27584 | 1 | HOSE ASS'Y; PRESSURE | H2701LN-0808 (BLKHD) - FF6400-0810 (MANIFOLD) |
| 2 | 27618 | 1 | HOSE ASS'Y; RETURN | H2701LN-0808 (BLKHD) - FF6400-0812 (MANIFOLD) |
| 3 | FF6400-0610 | 2 | FITTING; STRAIGHT ADAPTER, 6OFS-10MO | ROTATION MOTOR PORTS |
| 4 | 22736H-1 | 1 | VALVE MANIFOLD; HI-FLOW, 3000 PSI | - |
| 5 | FF6400-0606 | 10 | FITTING; STRAIGHT ADAPTER, 6OFS-6MO | RL/RR/BI/BO/BU/BD MANIFOLD PORTS, CYL. PORTS |
| 6 | FF6400-0810 | 3 | FITTING; STRAIGHT ADAPTER, 8OFS-10MO | MANIFOLD PORTS: 'P' (RIGHT), WU/WD (LEFT) |
| 7 | FF6400-0812 | 1 | FITTING; STRAIGHT ADAPTER, 8OFS-12MO | MANIFOLD RETURN PORT (RIGHT) |
| 8 | H2701LN-0808 | 2 | FITTING; BULKHEAD, $90^{\circ}$ ELBOW, 8MJ-8MJ | MECHANISM; MIDPLATE |
| 9 | 20893 | 2 | COUNTER-BALANCE VALVE | ELEVATION \& EXTENSION CYLINDERS |
| 10 | 27593 | 1 | HOSE ASS'Y; BOOM IN | FF6400-0606 (MANIFOLD) - FF6400-0606 (EXT. CYL.) |
| 11 | $27025{ }^{1}$ | 1 | HOSE ASS'Y; WINCH DOWN | FF6400-0810 (MANIFOLD) - FF3801-8-12 (WINCH) |
| 12 | $27024{ }^{2}$ | 1 | HOSE ASS'Y; WINCH UP | FF6400-0810 (MANIFOLD) - FF3801-8-12 (WINCH) |
| 13 | 28052 | 1 | HOSE ASS'Y; BOOM DOWN, CYL-SIDE | 23731 - FF6400-0606 (ELEV. CYL. 'R' PORT) |
| 14 | 27592 | 1 | HOSE ASS'Y; BOOM OUT | FF6400-0606 (MANIFOLD) - FF6400-0606 (EXT. CYL.) |
| 15 | 23731 | 1 | FITTING; TEE, 6MORFS-6FORFS-6MORFS | 28052, 28053, \& 23732 |
| 16 | 23732 | 1 | FITTING; REDUCER, 6FORFS-4FORB | 23731 - PRESSURE TRANDUCER |
| 17 | 22953 | 1 | HOSE ASS'Y; CASE DRAIN, 30" LONG | H6801-0404 (WINCH) - H2603-040404 (TEE) |
| 18 | 27598 | 2 | HOSE ASS'Y; ROTATION LEFT/RIGHT | FF6400-0606 (MANIFOLD) - FF6400-0610 (ROT. MTR.) |
| 19 | 28053 | 1 | HOSE ASS'Y; BOOM DOWN, MANIFOLD-SIDE | 23731 - FF6400-0606 (MANIFOLD) |
| 20 | 22952 | 1 | HOSE ASS'Y; CASE DRAIN, 13" LONG | H6801-0404 (ROTATION MTR) - H2603-040404 (TEE) |
| 21 | 27663 | 1 | HOSE ASS'Y; BOOM UP | FF6400-0606 (X2); MANIFOLD - ELEV. CYL. 'E' PORT |
| 22 | 22903 | 1 | HOSE ASS'Y; CASE DRAIN, 96" LONG | H2603-040404 - COMPARTMENT |
| 23 | FF3801-8-12 | 2 | FITTING; $90^{\circ}$ ELBOW ADAPTER, 8OFS-12MBP (MALE BRITISH PARALLEL) | WINCH PORTS - 28271, 28272 |
| 24 | H6801-0404 | 1 | FITTING; $90^{\circ}$ ELBOW ADAPTER, 4MJ-4MO | ROTATION MOTOR CASE DRAIN PORT |
| 25 | 27665 | 1 | HOSE ASS'Y; PRESSURE SUPPLY | 22764 (SWIVEL) - H2701LN-0808 (BULKHEAD) |
| 26 | 27664 | 1 | HOSE ASS'Y; RETURN SUPPLY | 22764 (SWIVEL) - H2701LN-0808 (BULKHEAD) |
| 27 | 22764 | 2 | HYDRAULIC SWIVELS; 8MJ-8FJ | COMPARTMENT - 22765 (PRESS), 22764 (RETURN) |
| 28 | H6408-10 | 2 | FITTING; PLUG, 10MO | MANIFOLD (WU/WD PORTS) |
| 29 | H2603-040404 | 1 | FITTING; T-SHAPE, 4MJ-4MJ-4MJ | 22952, 22953, \& 22903 (CASE DRAIN HOSES) |
| 30 | 23733 | 1 | FITTING; $90^{\circ}$ ELBOW, 6FORFS-4FORB | TRANSDUCER - ELEV. CYLINDER PORT (RIGHT SIDE) |
| 31 | H6404-0404 | 1 | FITTING; ADAPTER, STRAIGHT, 4MP-4FORB | H6801-0404 TO TRANSDUCER |
| * 32 | 23720-PTD | 2 | PRESSURE TRANSDUCER | 23733 (ELEV. CYLINDER PORT, RIGHT SIDE) |
| 33 | $\begin{aligned} & 3802-0404 \\ & \text { (FF3802-4-4) } \end{aligned}$ | 1 | FITTING; ADAPTER, $45^{\circ}$ ELBOW, 04MJ-04MBP (MALE BRITISH PARALLEL) | WINCH CASE DRAIN PORT |

* THESE ITEMS ARE INCLUDED IN 23720 KIT. PLEASE CALL TECHNICAL SUPPORT AT 1-800-226-2238 FOR ASSISTANCE.
${ }^{1}$ WINCH DOWN HOSE \#27025 IS APPLICABLE TO CRANES WITH SERIAL \#10A000024 \& HIGHER. ITEM \#11 WAS 28272
2 WINCH UP HOSE \#27024 IS APPLICABLE TO CRANES WITH SERIAL \#10A000024 \& HIGHER. ITEM \#12 WAS 28271


## REFERENCE \#23818 FOR REPLACEMENT PARTS DRAWING











## 23837 FIELD SERVICE LABEL KIT; HT66KX W/ ROTZLER TI-2



| ${ }^{\circledR}$ | TITLE <br> FIELD SERVICE LABEL KIT | $\begin{array}{\|l\|} \hline \text { DATE } \\ 03-13-23 B \end{array}$ | $\begin{aligned} & \text { SECTION } \\ & \text { C4OO } \end{aligned}$ |
| :---: | :---: | :---: | :---: |
|  | HT66KX W/ ROTZLER TI-2 | $\begin{aligned} & \text { SUPRERSEDES } \\ & 02-13-23 A \end{aligned}$ | 23838 |

## VENTURO CRANES LIMITED WARRANTY POLICY

Venturo products are built to last...we guarantee them.

As a purchaser of any new Venturo product covered by warranty, you will receive 1 year of the most complete coverage available...and, at no added cost to you.

## 1-Year Limited Warranty Policy

This limited policy warrants new products of Venturo to be free from defects in material and workmanship for a period of one (1) year from date of original installation. OEM products or accessories purchased by Venturo as part of or offered with our product will carry the OEM manufacturer's respective warranty. Our 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. There is no warranty of merchantability, fitness for a particular purpose, warranty arising from course of dealing or usage of trade, or any other implied or expressed warranty, except as made specifically herein. This warranty supersedes all previous warranties, written or implied.

## Warranty Claims

Venco Venturo Industries LLC 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 ensure the installation is completed according to the manufacturer's recommendations, ensure 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 product without the expressed written consent of Venco Venturo Industries LLC. Installation 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 be instructed as to the safe operation at time of delivery. Maintenance, service, operation and safety warning decals are available on request from Venco Venturo Industries LLC.

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