VENCO VENTURO INDUSTRIES LLC

HT66KX-25 VLC

HTBABA-V*A0

INSTALLATION & OWNERS MANUAL

VLC

VENTURO LOGIC CONTROLS

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

www.venturo.com

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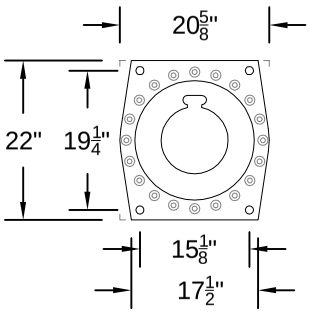
SECTION 100

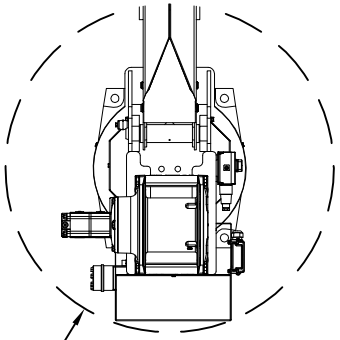
DESCRIPTION

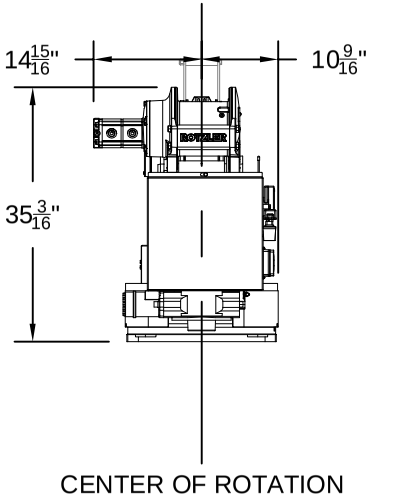
&

SPECIFICATIONS

VENTURO
TRUCK MOUNTED CRANES







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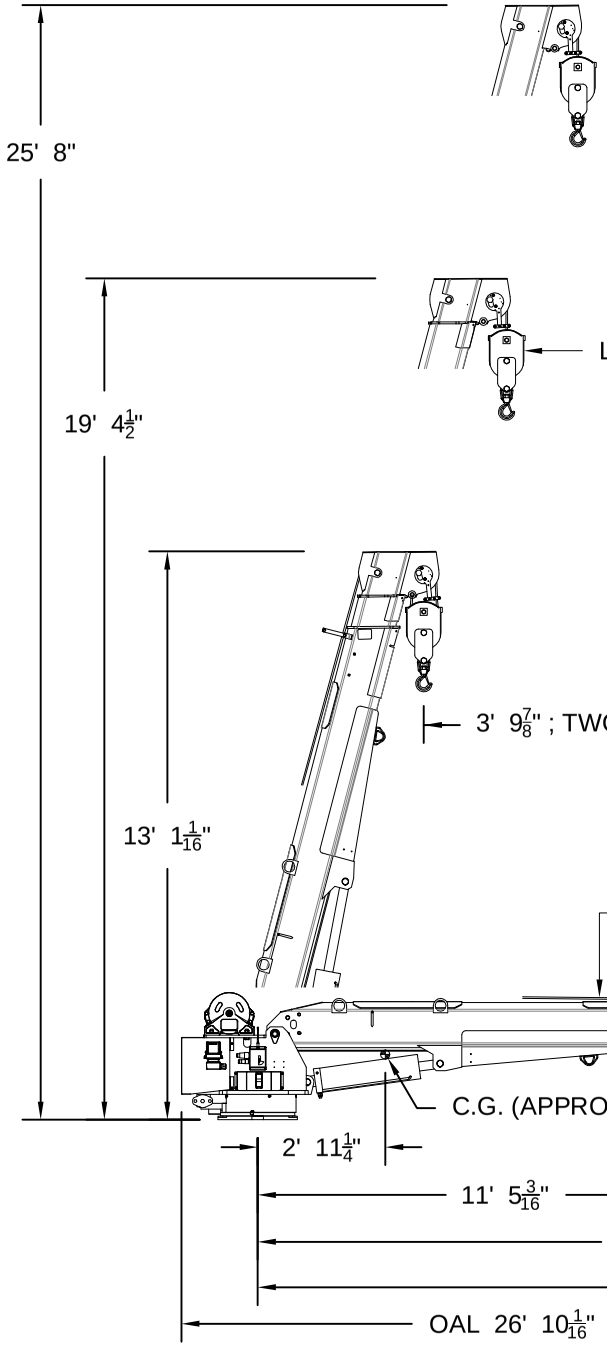

WARNING

- These products are not passenger lifts. They are not designed or intended to be used to lift, support, or otherwise transport personnel.

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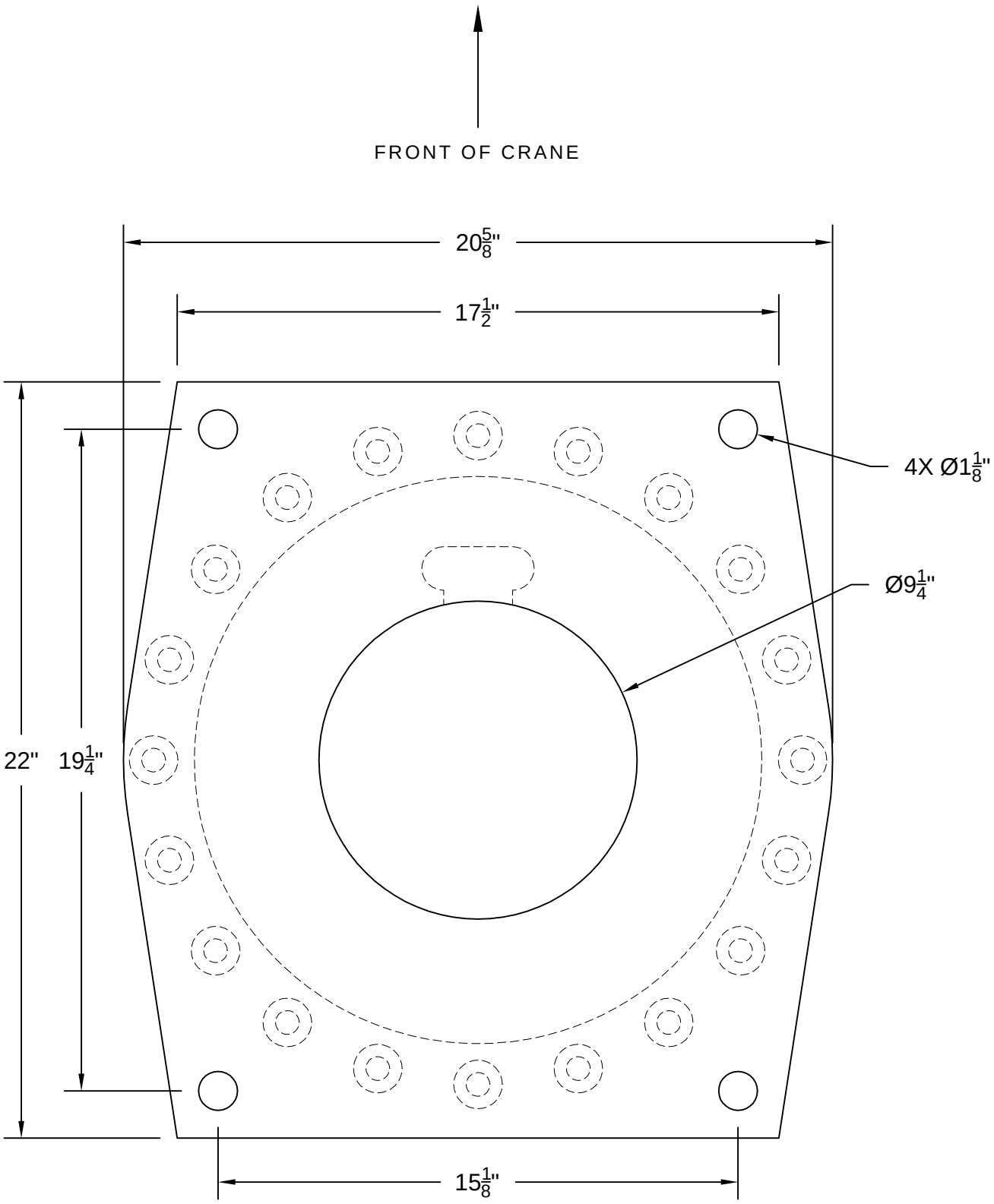
CINCINNATI, OHIO

TITLE	DATE	SECTION
INSTALLATION DIMENSIONS	02-06-19	C100
HT66KX-25' VLC SERIES	SUPERSEDES -	23801

HT66KX VLC SERIES BASE MOUNTING DIMENSIONS

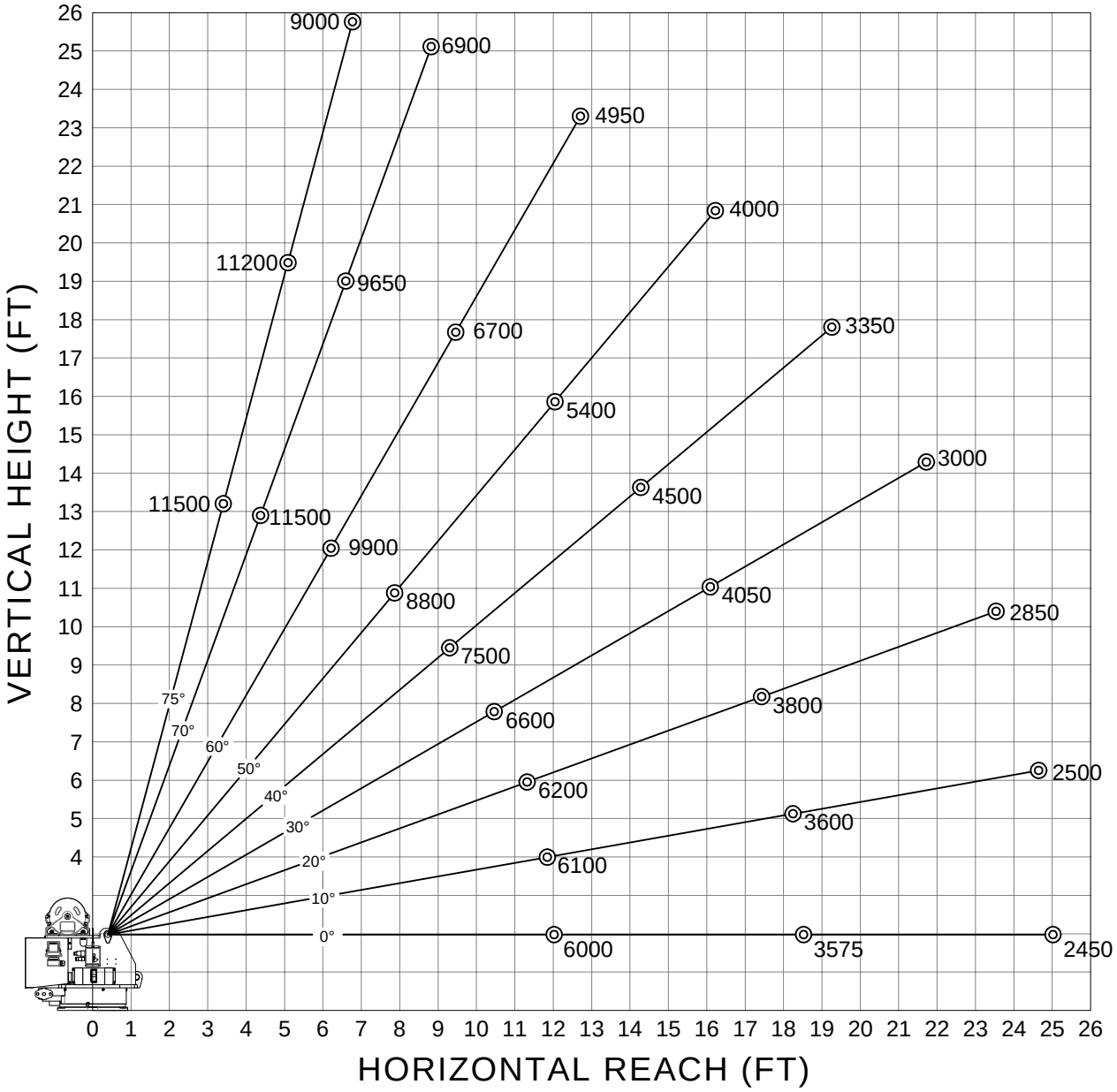


VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: BASE MOUNTING DIMS	DATE: 02-06-19	SECTION: C100
	HT66KX VLC SERIES	SUPERSEDES: -	23802

HT66KX SERIES, 12' - 18.5' - 25' BOOM, WITH VENTURO LOGIC CONTROL SYSTEM (VLC)

CRANE SERIAL NUMBER: _____

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

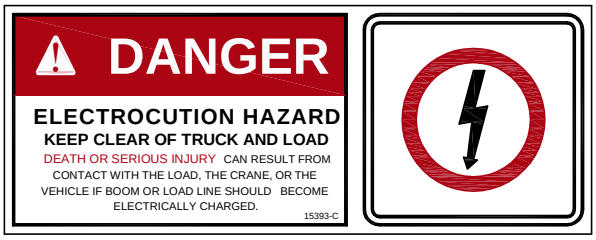
VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE MAXIMUM LOAD CAPACITY	DATE 03-18-19A	SECTION C100
	HT66KX-25' VLC SERIES	SUPERSEDES 02-06-19	23803

SECTION 150

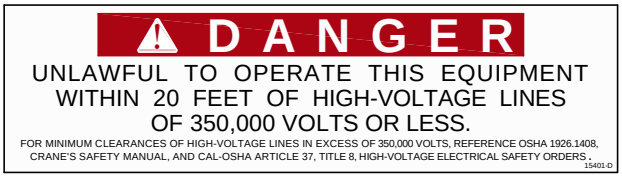
SAFETY

VENTURO
TRUCK MOUNTED CRANES

VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION



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.



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 (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)	While traveling - minimum clearance distance (feet) *
0 - 0.75	4
over 0.75 - 50	6
over 50 - 345	10
over 345 - 750	16
over 750 - 1000	20
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).

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

CRANE SAFETY AND HAZARDS
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.

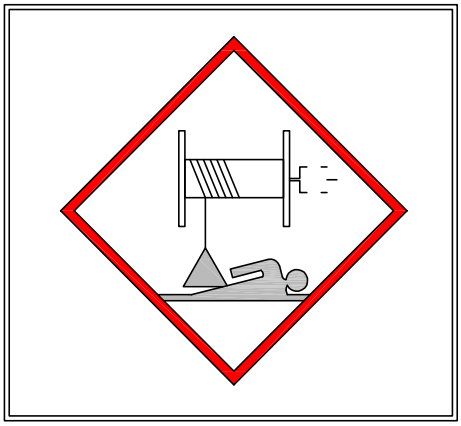
YOU MUST NOT OPERATE THIS CRANE UNLESS

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

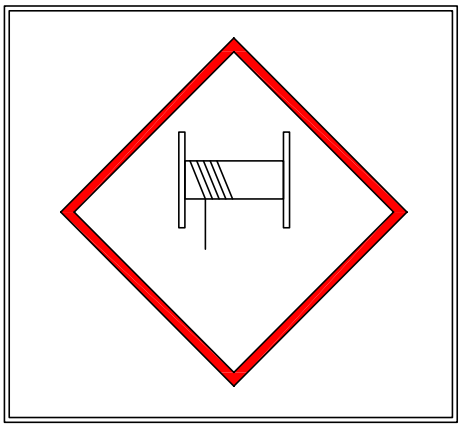
- THIS MACHINE IS NOT INSULATED.
- MAINTAIN SAFE CLEARANCES FROM ELECTRICAL LINES AND APPARATUS.
- YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG, AND ELECTRICAL LINE AND LOADLINE SWAYING.
- THIS LIFTING DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.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



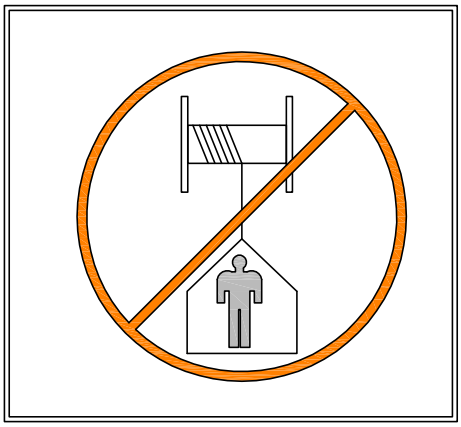
DANGER

- DO NOT DISENGAGE WINCH UNDER LOAD



DANGER

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



WARNING

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

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.

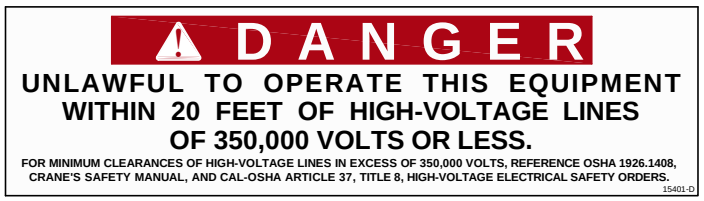
PART NO.: 15401

DECAL: UNLAWFUL TO OPERATE

FUNCTION: To inform the operator of proper operation in vicinity of power lines.

QUANTITY: 1

PLACEMENT: Right side of housing.



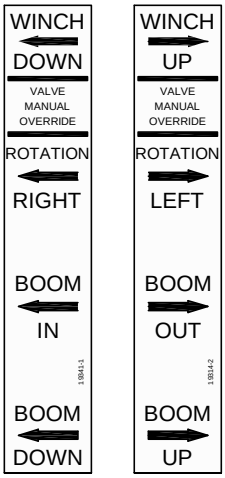
PART NO.: 19314-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (NON-PROP)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1 EACH

PLACEMENT: Inside of rear cover.



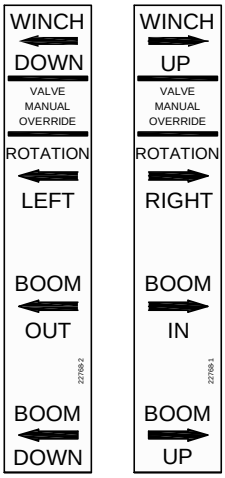
PART NO.: 22768-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To inform the operator of manual overide locations.

QUANTITY: 1

PLACEMENT: Inside of rear cover.



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CINCINNATI, OHIO

TITLE	DATE	SECTION
DECAL DRAWING & LIST	02-21-14D	C150
HT40/50KX	SUPERSEDES 11-29-12C	22181A

▲

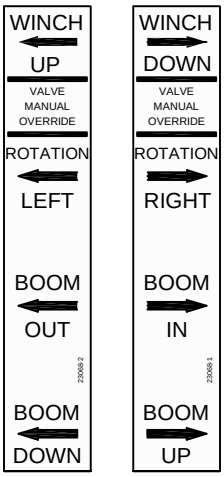
PART NO.: 23068-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (HT66KXX ONLY)

FUNCTION: To inform the operator of manual overide locations.

QUANTITY: 1

PLACEMENT: Inside of rear cover.



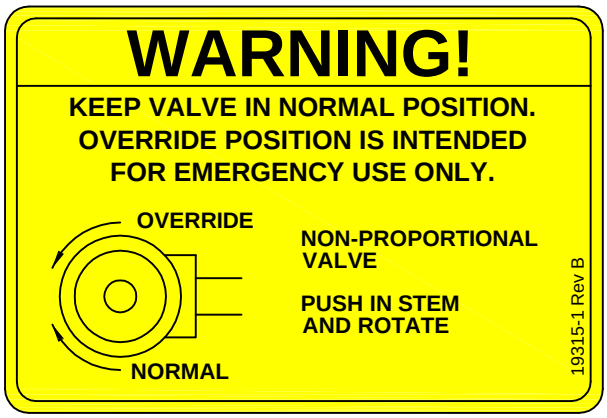
PART NO.: 19315-1

DECAL: SHUT OFF (NON-PROPORTIONAL)

FUNCTION: To show the operator how to override master shut off valve.

QUANTITY: 1

PLACEMENT: Inside rear cover.



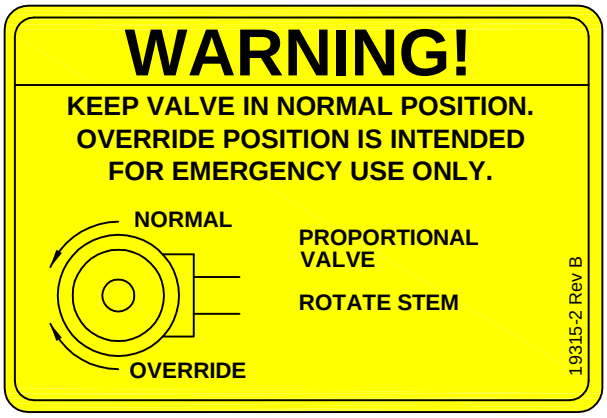
PART NO.: 19315-2

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To show the operator how to override proportional valve.

QUANTITY: 1

PLACEMENT: Inside rear cover.



PART NO.: 20834

DECAL: MANUAL OVERRIDE NOTICE

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Inside rear cover.

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CINCINNATI, OHIO

TITLE	DATE	SECTION
DECAL DRAWING & LIST	08-21-14F	C150
HT40/50KX	SUPERSEDES 02-21-14E	22181B

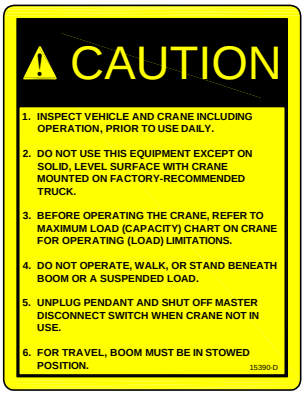
PART NO.: 15390

DECAL: CAUTION - INSPECT VEHICLE & CRANE

FUNCTION: To inform the operator of key operating requirements.

QUANTITY: 1

PLACEMENT:Left side of rear cover.



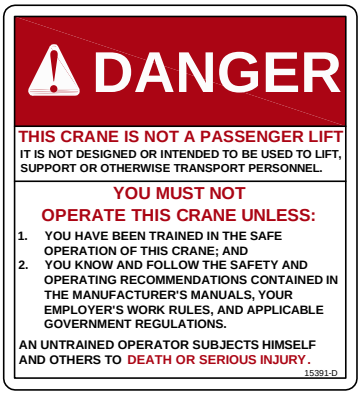
PART NO.: 15391

DECAL: DANGER - NOT PASSENGER LIFT

FUNCTION: To inform the operator not to lift, support or transport personnel, and to ensure that crane operator is adequately trained.

QUANTITY: 1

PLACEMENT:Left side of rear cover.



PART NO.: 15392

DECAL: DANGER - ELECTROCUTION HAZARD

FUNCTION: To inform the operator that the machine (crane) represents an electrocution hazard should it come too near or in contact with electrical voltage source.

QUANTITY: 1

PLACEMENT:Left side of rear cover.

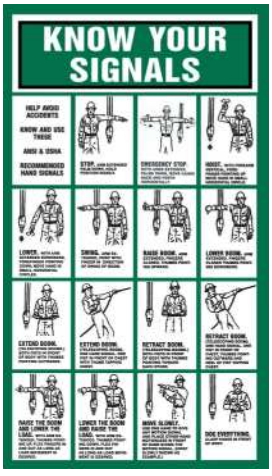
PART NO.: 22499

DECAL: KNOW YOUR SIGNALS

FUNCTION: To inform the operator of proper signals.

QUANTITY: 1

PLACEMENT:Right side of rear cover.



PART NO.: 17389

DECAL: MEDIUM VENTURO

FUNCTION: Branding.

QUANTITY: 1

PLACEMENT: Rear cover.

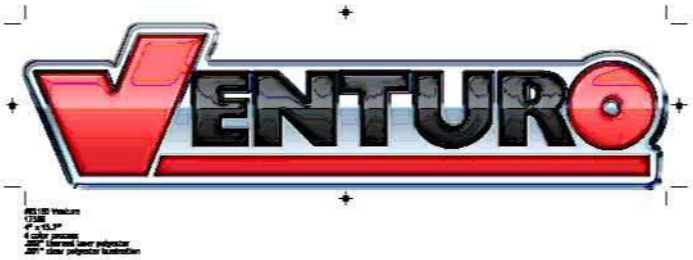
PART NO.: 22496

DECAL: LARGE VENTURO

FUNCTION: Branding.

QUANTITY: 2

PLACEMENT: Boom.



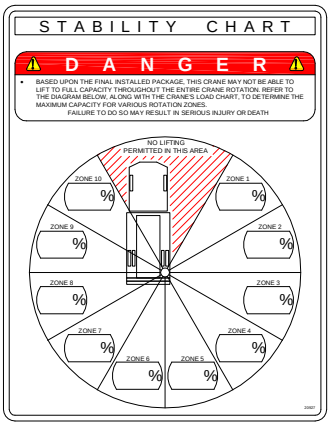
PART NO.: 20927

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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LEFT SIDE OF BOOM RIGHT SIDE OF BOOM

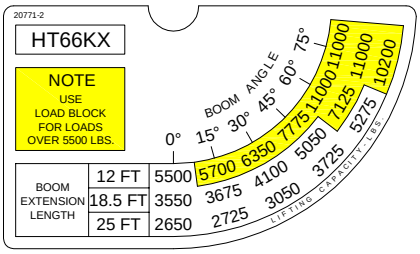
PART NO.: 20771-1 & 20771-2

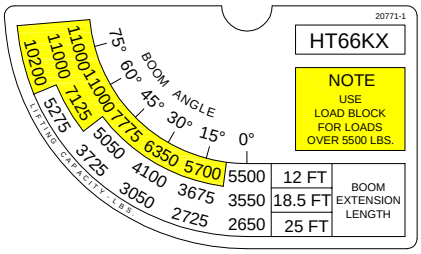
DECAL: HT66-25' CRANE CAPACITY

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

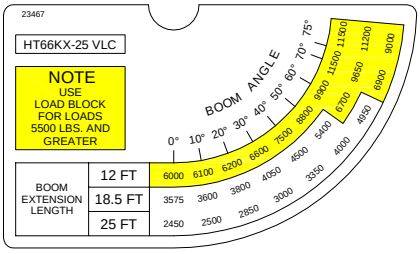
PART NO.: 23466 & 23467

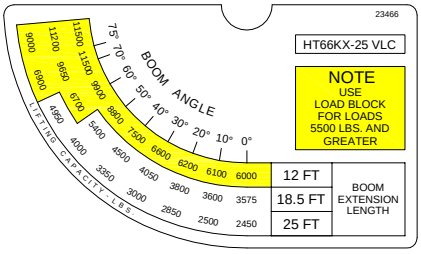
DECAL: HT66-25' CRANE CAPACITY (VLC)

FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each

PLACEMENT: Right side of boom, Left side of boom





23467 23466

SPACE INTENTIONALLY LEFT BLANK

SPACE INTENTIONALLY LEFT BLANK

▲

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 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 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

SECTION 200

INSTALLATION

VENTURO
TRUCK MOUNTED CRANES

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 ft. lbs.

The maximum vertical load for the HT66 VLC is 14,000 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" 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.

⚠ C A U T I O N ⚠

- 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.

ELECTRICAL CONNECTIONS

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

A 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 25 foot electrical power lead. For added protection, the 25 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:

	NON-PROP	PROP
PRESSURE	N/A	5/8"
RETURN	N/A	3/4"
SUCTION	N/A	1-1/4"

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 (E.G., 10 gallon reservoir 20 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.

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.

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 xx%* *Angle xx°*	None
80% - 89%	NORMAL OPERATION	Yellow flashing	*Load xx%* *Angle xx°*	None
90% - 99%	All crane functions speed reduced to 50%	Red flashing	*Load xx%* *Angle xx°* 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* 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).

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 (°F)	Winch Gear Oil
120° to 10°	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.

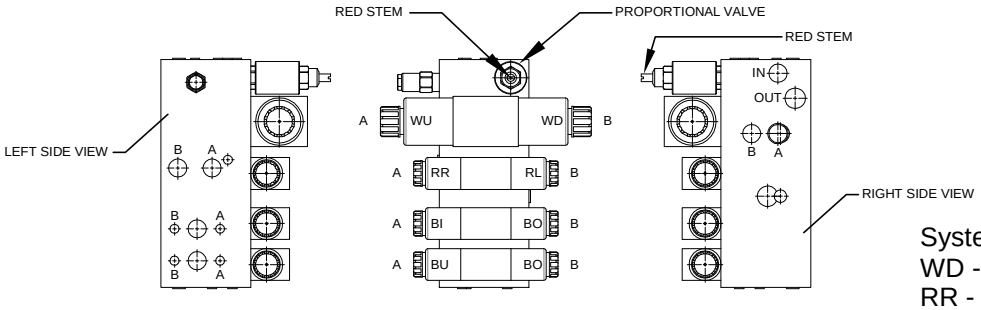
Check electrical connections for looseness and corrosion.

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").



System abbreviations are as follows:

WD - Winch Down	WU - Winch Up
RR - Rotation Right	RL - Rotation Left
BI - Boom In (Ext.)	BO - Boom Out (Ext.)
BD - Boom Down (Elev.)	BU - Boom Up (Elev.)

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

W A R N I N G

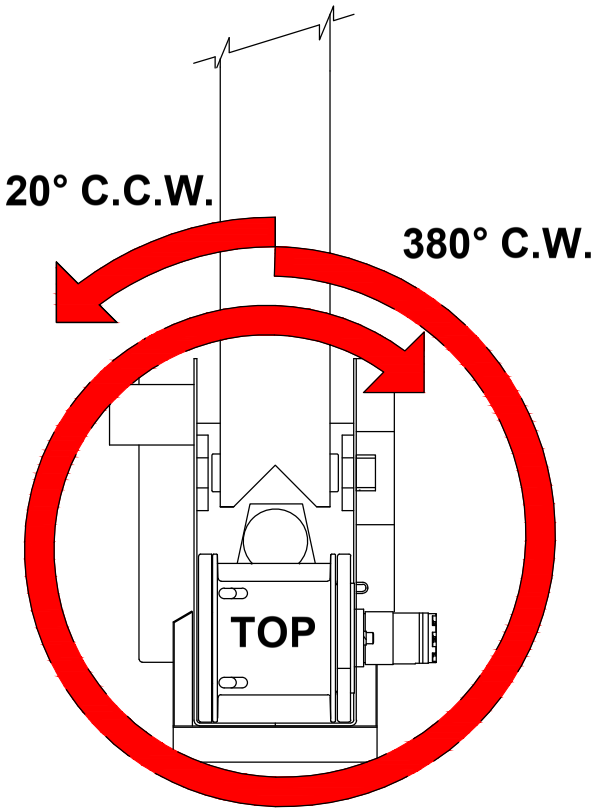
- For normal crane operation, the proportional valve must be in the 'normal' position (as described above). To verify 'normal' operation, you may set the pendant (or radio) control aside and actuate a single crane function by pushing inward on any of the manual override pins, located at the ends of each 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

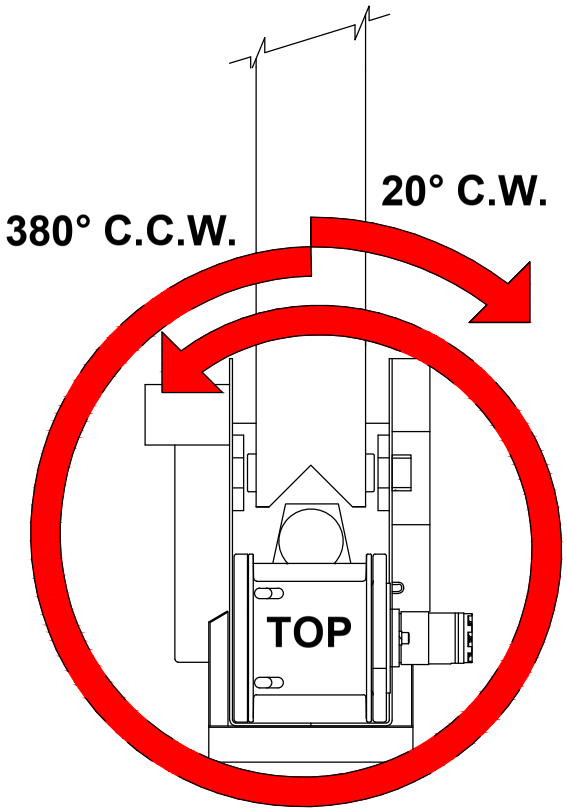
In the unlikely event that a function of the crane does not stop once the function's toggle switch is released, the proprtional crane can be stopped by releasing the trigger.

400° ROTATION STOP LOCATION

CURBSIDE



STREETSIDE



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CINCINNATI, OHIO

TITLE	DATE	SECTION
ROTATION STOP LOCATION	05-20-20E	C400
400° ROTATION CRANES	SUPERSEDES 02-21-14D	20051

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. Extend the boom slowly, until one of three conditions occur: ***1)*** the over load system stops the ***boom out*** function, ***2)*** the boom reaches full extension or ***3)*** the vehicle begins to be unstable, ***whichever occurs first.*** Note: If the boom reaches full extension (without an overload or unstable condition) the % of Rated Capacity is 100% for the given ZONE.
11. Use the formula below to determine the ***% of Rated Capacity*** for each ZONE on the Stability Chart (ref. page 20907).
12. Note: The "***Max Stable Reach in inches"*** is measured from the ***center of rotation*** of the crane housing to the ***lifting load hook.***

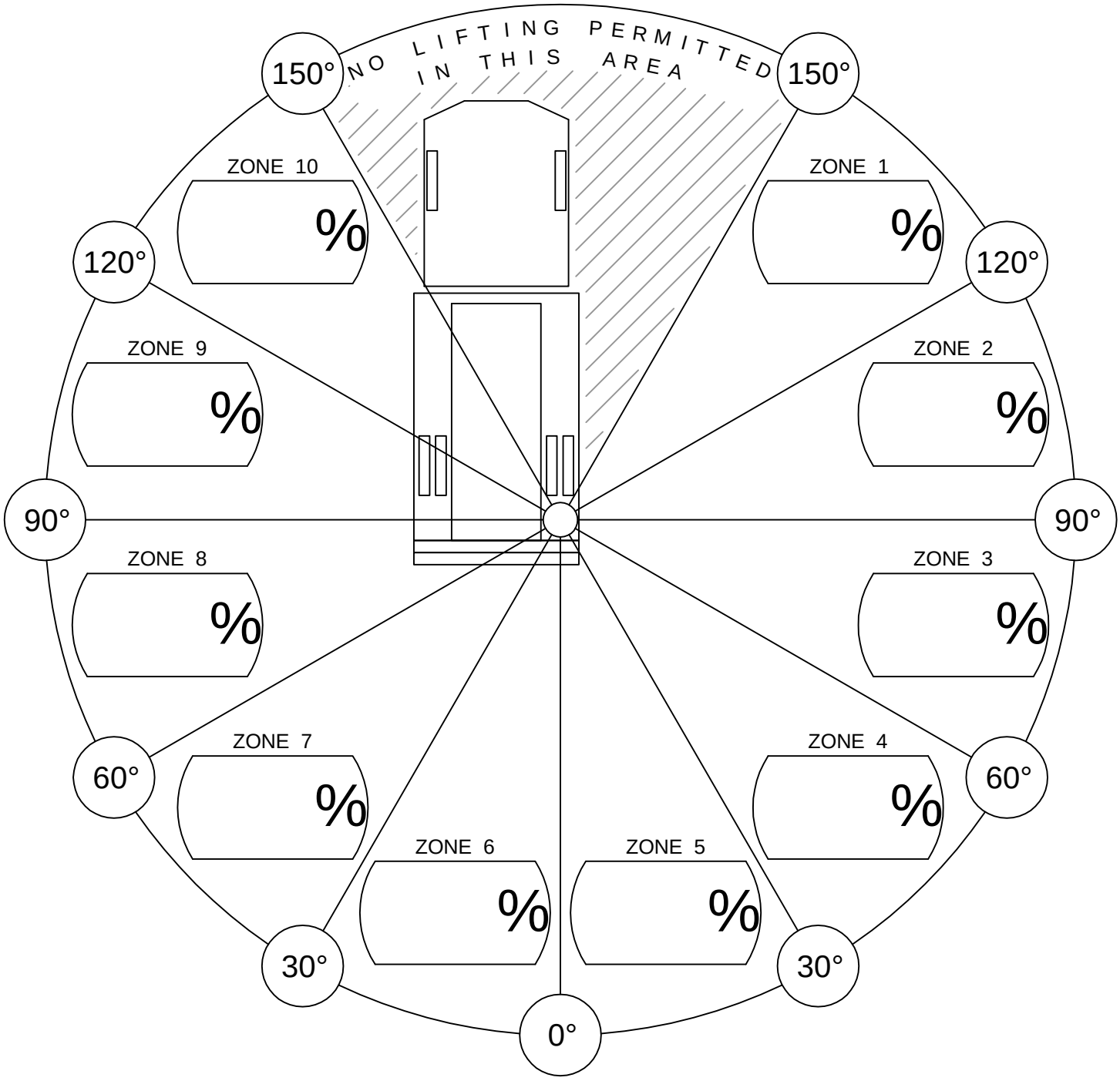
$$\text{\% Rated Capacity} = \frac{\text{"Max Stable Reach" in inches}}{299} \times 100$$

Example 1) Max Stable Reach = 299 (inches, full extension) ÷ 299 x 100 = ***100*** or 100% of Rated Capacity for the given ZONE

Example 2) Max Stable Reach = 291 (inches) ÷ 299 x 100 = ***97.32*** or 97% (rounded) of Rated Capacity for the given ZONE

13. Record the % of Rated Capacity in the appropriate blank (region) on the Crane Stability page (ref. 20907) and decal.
14. Repeat Steps 7 through 12 for each ZONE on the stability page.

CRANE STABILITY

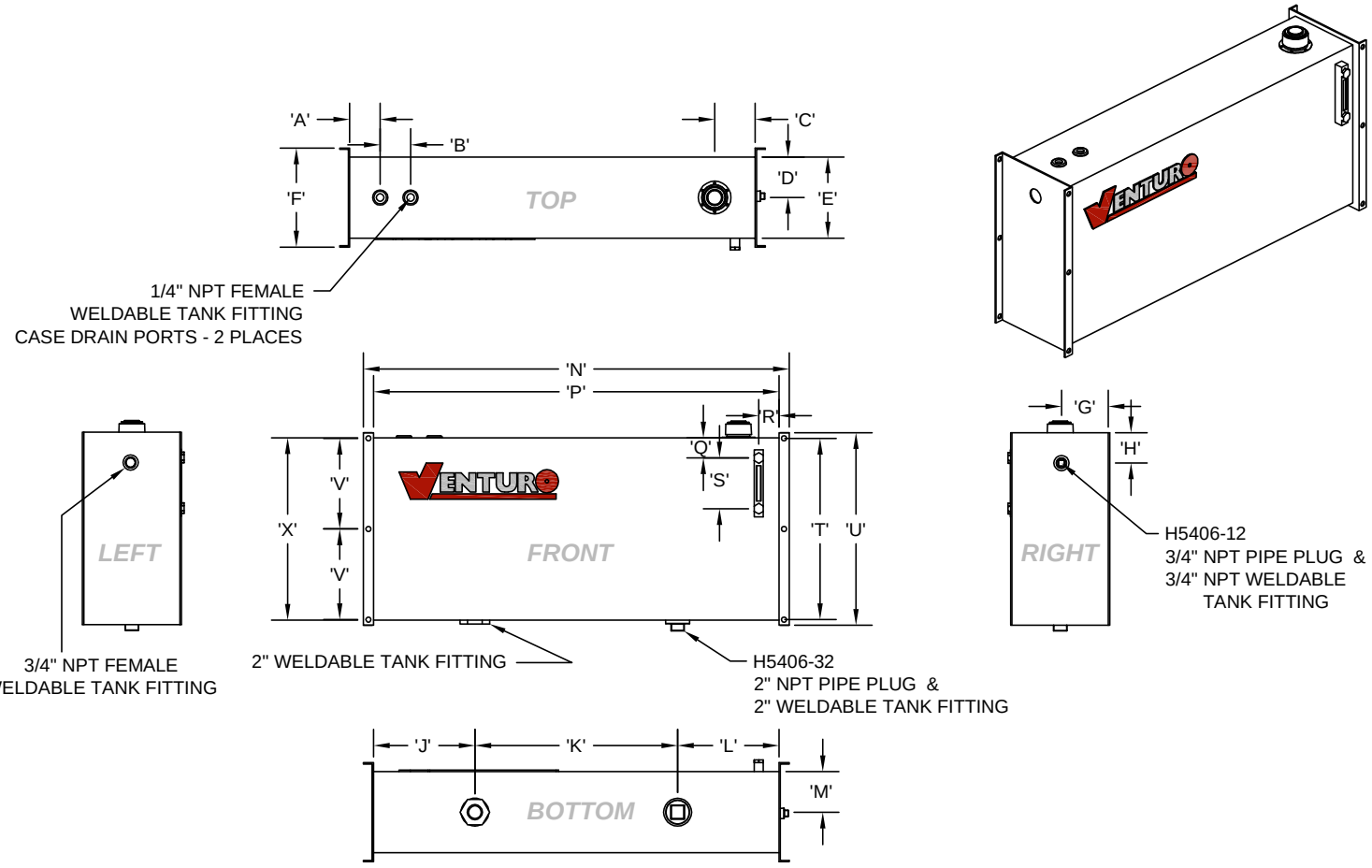


% of Rated Capacity for each of the 10 regions are provided above.

CONDITIONS:

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

VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: STABILITY CHART	DATE: 05-11-17F	SECTION: C200
	VENTURO CRANES	SUPERSEDES: 02-21-14E	20907



ILLUSTRATIONS FOR REFERENCE ONLY!
- COMPONENT LOCATIONS MAY DIFFER -

HYD. TANK DIMENSION (HTD) CHART		
DIMENSION / PART NO.	22786 (25 GAL.)	22999 (40 GAL.)
'A'	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"

MEASUREMENTS EXCLUDE MOUNTING APARATUSES

MOUNTING DIMENSION (*TMD*) CHART		
DIMENSION / PART NO.	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

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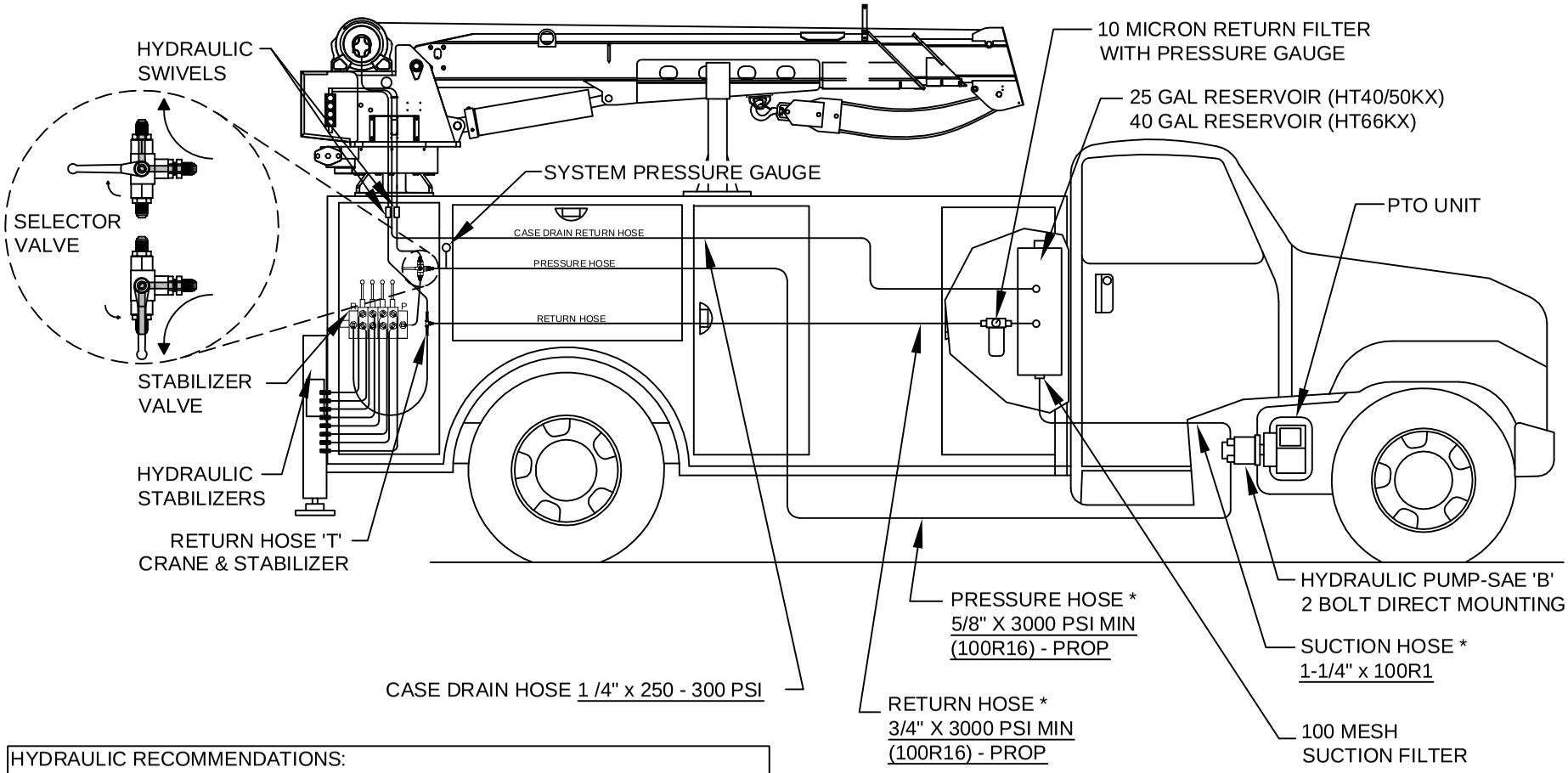
CINCINNATI, OHIO

TITLE	DATE	SECTION
RESERVOIR DIMENSIONS	02-21-14E	C200
HYD. TANKS (25/40 GAL.)	SUPERSEDES 06-04-13D	22825



HYDRAULIC RECOMMENDATIONS:

HT40KX PROPORTIONAL - 12.0 GPM @ 3000 PSI (22784 PTO PACKAGE)
HT50KX PROPORTIONAL - 12.0 GPM @ 3000 PSI (22784 PTO PACKAGE)
HT66KX PROPORTIONAL - 12.0 GPM @ 3000 PSI (22998 PTO PACKAGE)

CAUTION

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

REFER TO SECTION 200 FOR MORE INFORMATION ON INSTALLING HYDRAULIC COMPONENTS.

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

CAUTION

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

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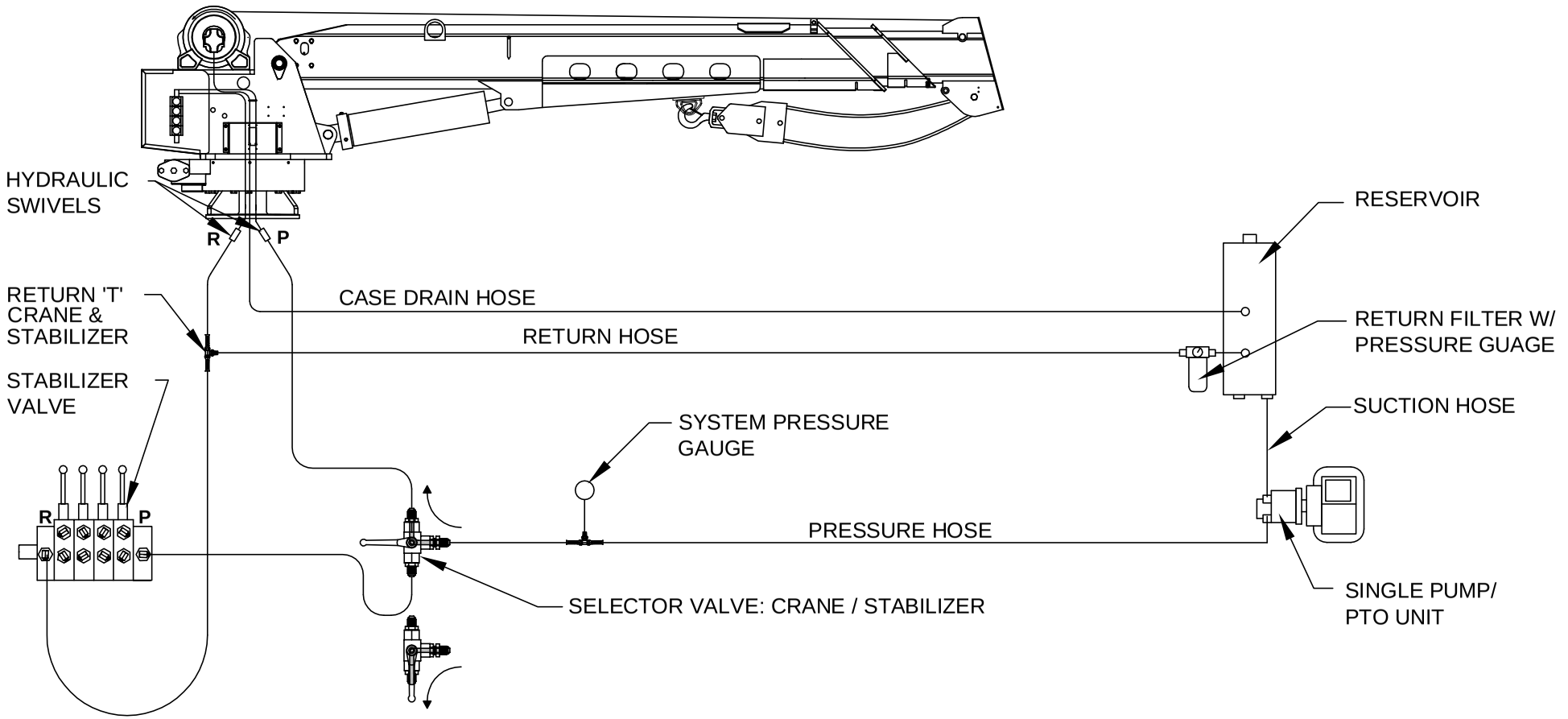
TITLE	DATE	SECTION
HYDRAULIC COMPONENT INSTALLATION	05-07-14E	C200
HT40/50/66KX, PROPORTIONAL	SUPERSEDES 02-21-14D	22883

HYDRAULIC CIRCUIT CONNECTION GUIDE - SINGLE PUMP (NO COMPRESSOR)
(REFER TO SECTION 200 FOR MORE INFORMATION, INCLUDING HOSE SPECIFICATIONS)



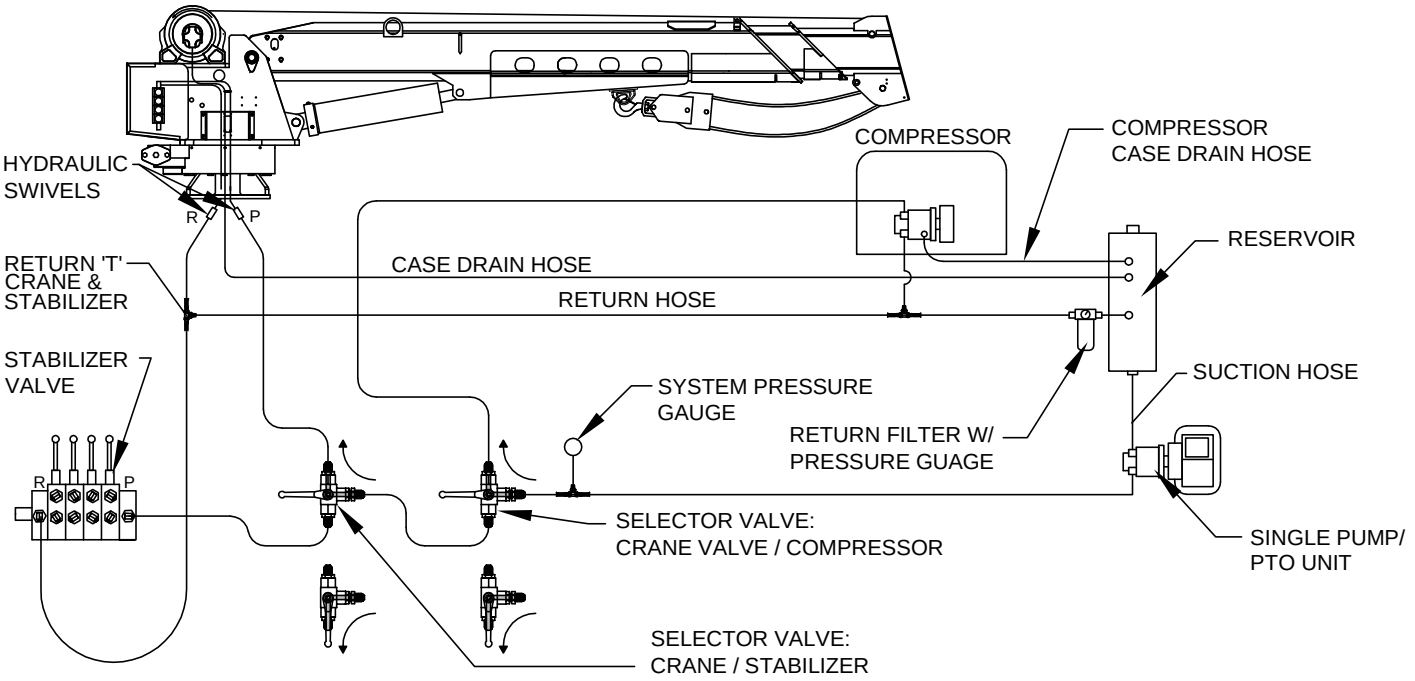
⚠ CAUTION

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

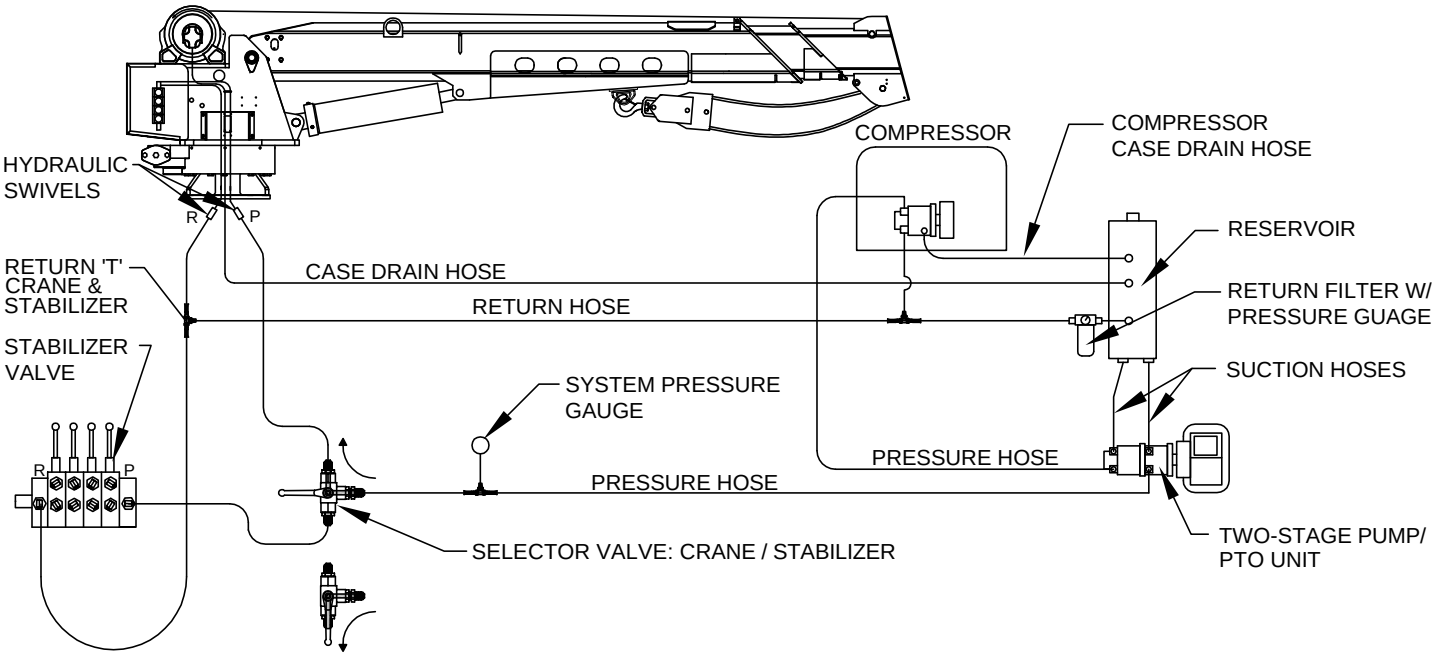
⚠ CAUTION

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

HYDRAULIC CIRCUIT CONNECTION GUIDE - SINGLE PUMP W/ COMPRESSOR



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



CAUTION

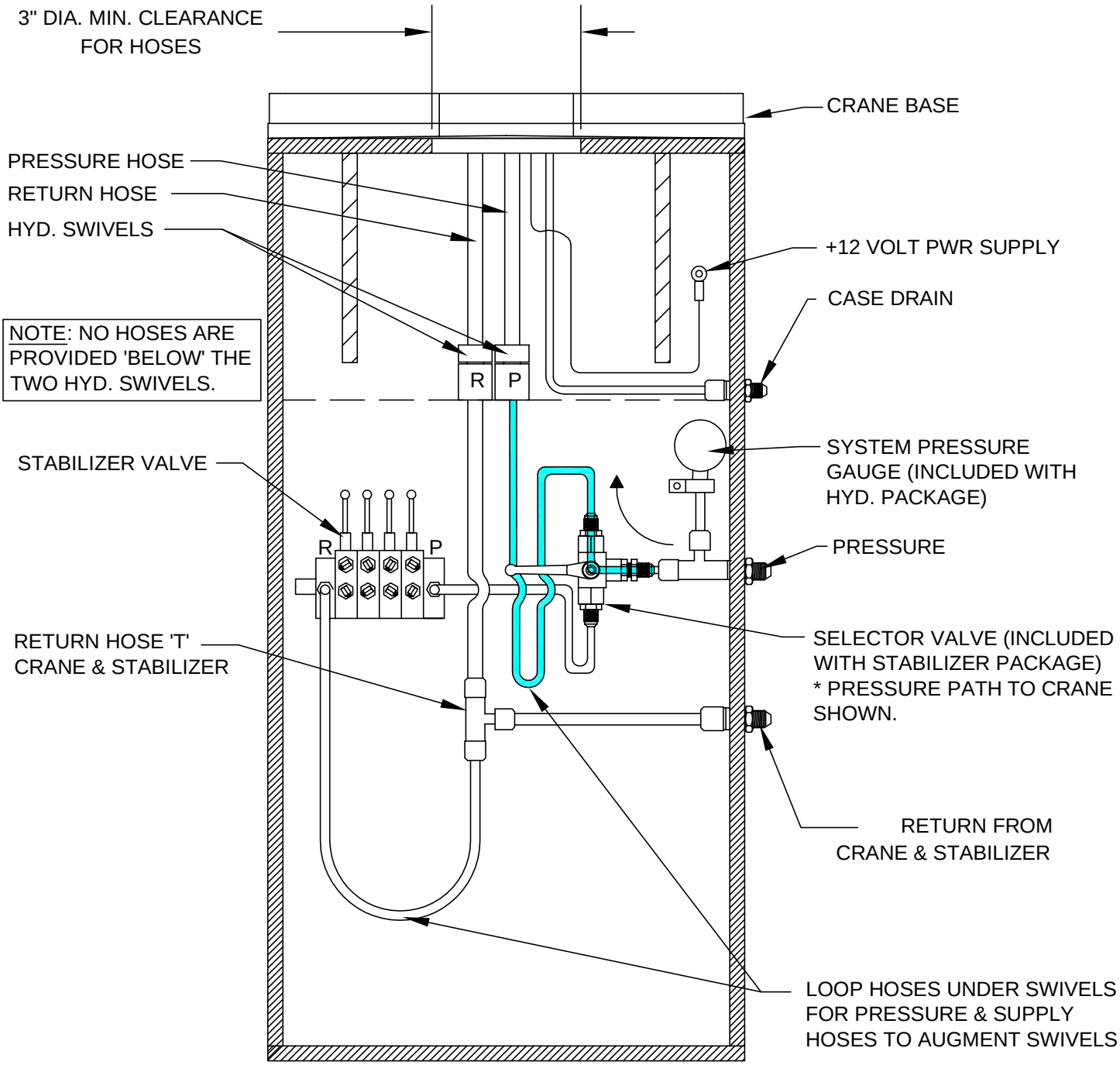
- SELECTOR VALVE MUST BE 'NON-CLOSED CENTER TRANSITION' TYPE.

REFER TO SECTION 200 FOR MORE INFORMATION, INCLUDING HOSE SPECIFICATIONS

CAUTION

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

RECOMMENDED SUPPLY & RETURN HOSE CONNECTIONS
CRANE & STABILIZERS



⚠ CAUTION

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

⚠ CAUTION

- CASE DRAIN MUST RETURN DIRECTLY TO RESERVOIR WITHOUT RESTRICTION.

WIRE ROPE INSTALLATION

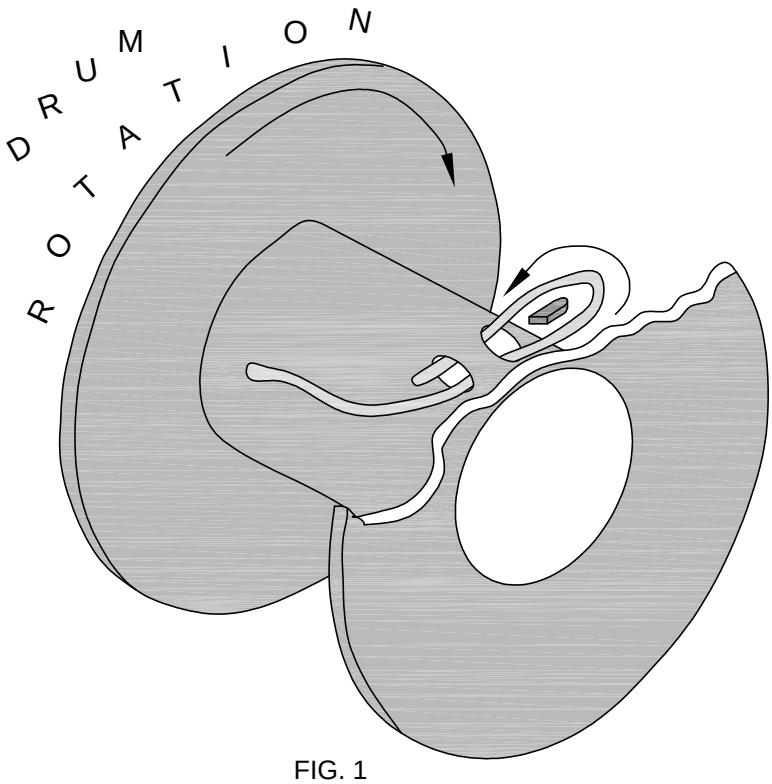


FIG. 1

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.

⚠ 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.

SECTION 300

MAINTENANCE

&

SERVICE

VENTURO
TRUCK MOUNTED CRANES

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 .

WIRE ROPE ASSEMBLY

WIRE ROPE:

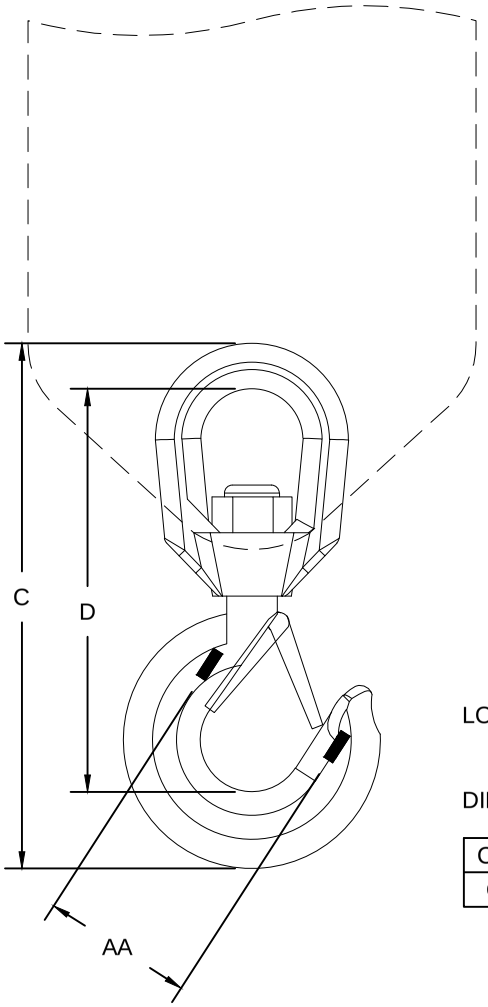
7/16" DIA, 100' LONG

▲ GAC 6X25 XIP-LHRL-IWRC, SB 20,400 LBS

TERMINATES IN THIMBLE

NO HOOK

LOAD BLOCK ASSEMBLY



LOAD BLOCK HOOK:

RATING: 5 TONNE (11,023 LBS)

DIMENSIONS:

COLOR	BRAND	AA	C	D
GOLD	CROSBY	2.50"	9.69"	7.50"

▲

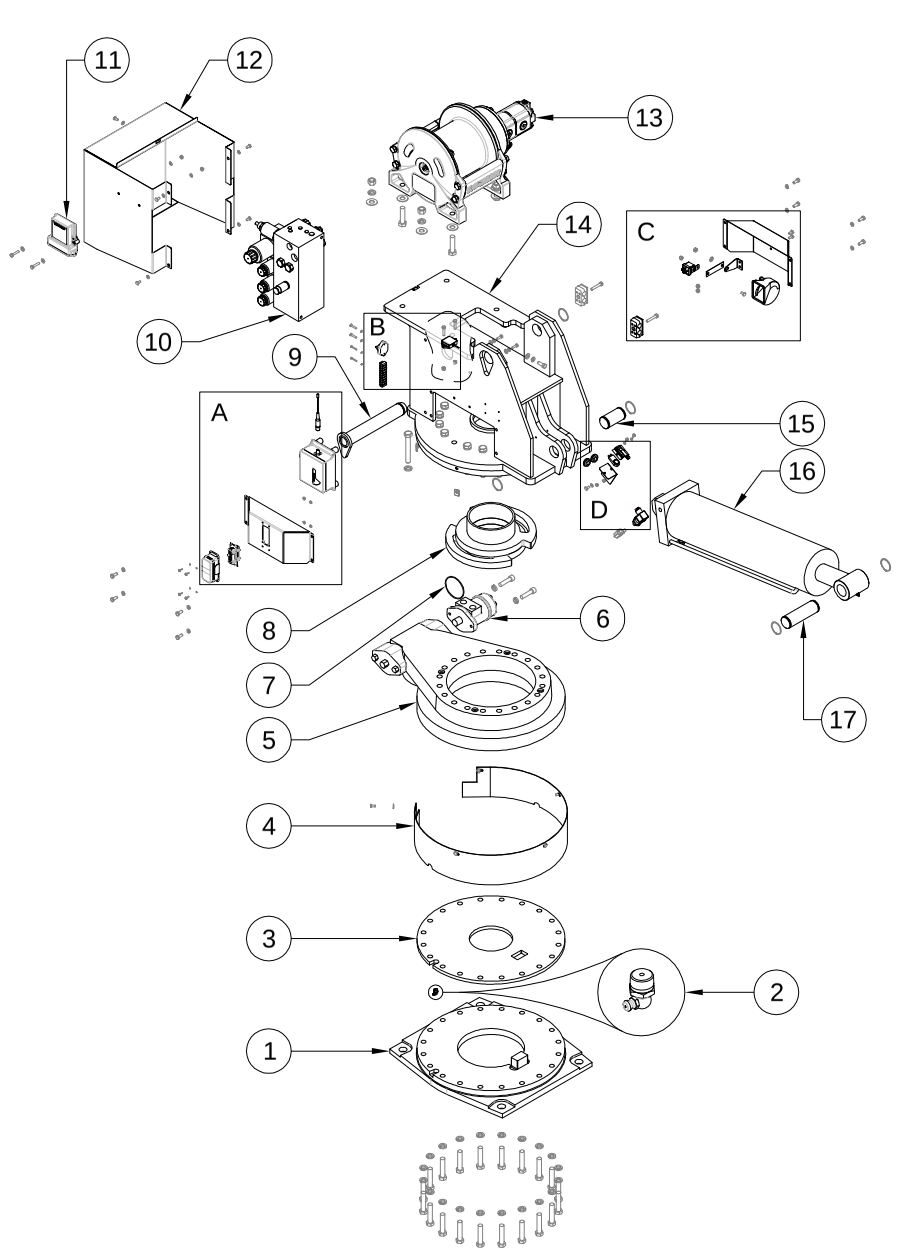
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

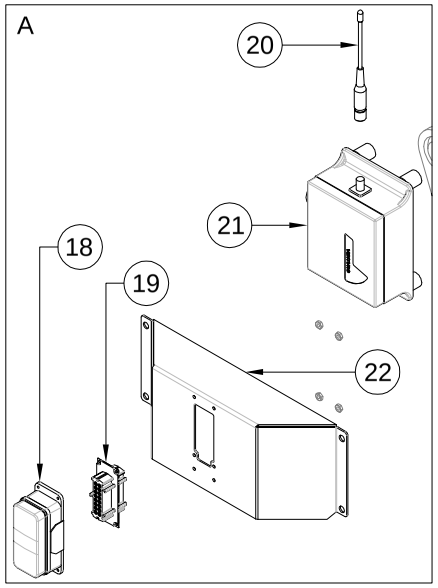
TITLE	DATE	SECTION
WIRE ROPE & HOOK SPECIFICATIONS	05-09-16B	C300
HT66KX	SUPERSEDES 11-17-11A	23232

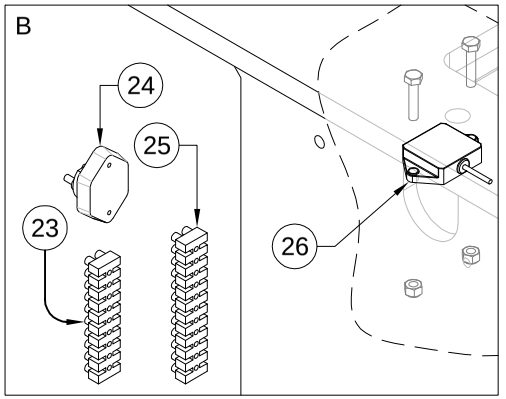
SECTION 400

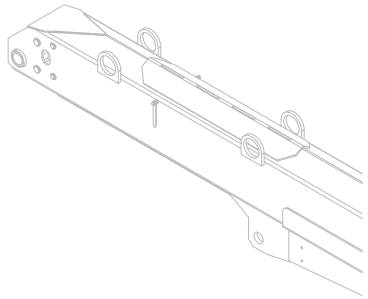
PARTS

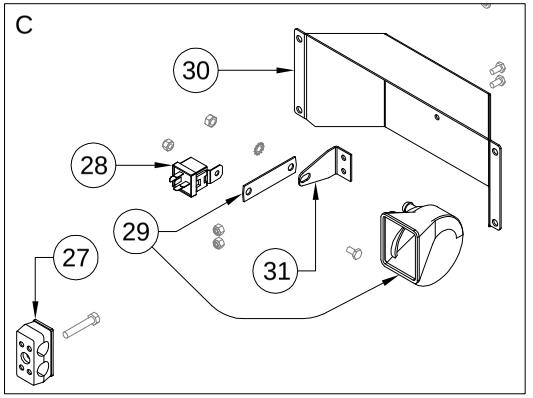
VENTURO
TRUCK MOUNTED CRANES

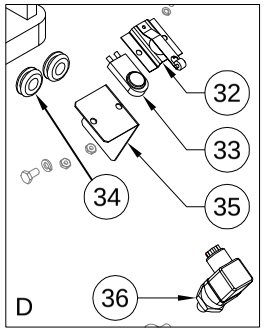












REFERENCE #23811 FOR REPLACEMENT PARTS LIST

VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPLACMENT PARTS DRWNG - MECHANISM	02-06-19	C400
HT66KX VLC SERIES	SUPERSEDES -	23810

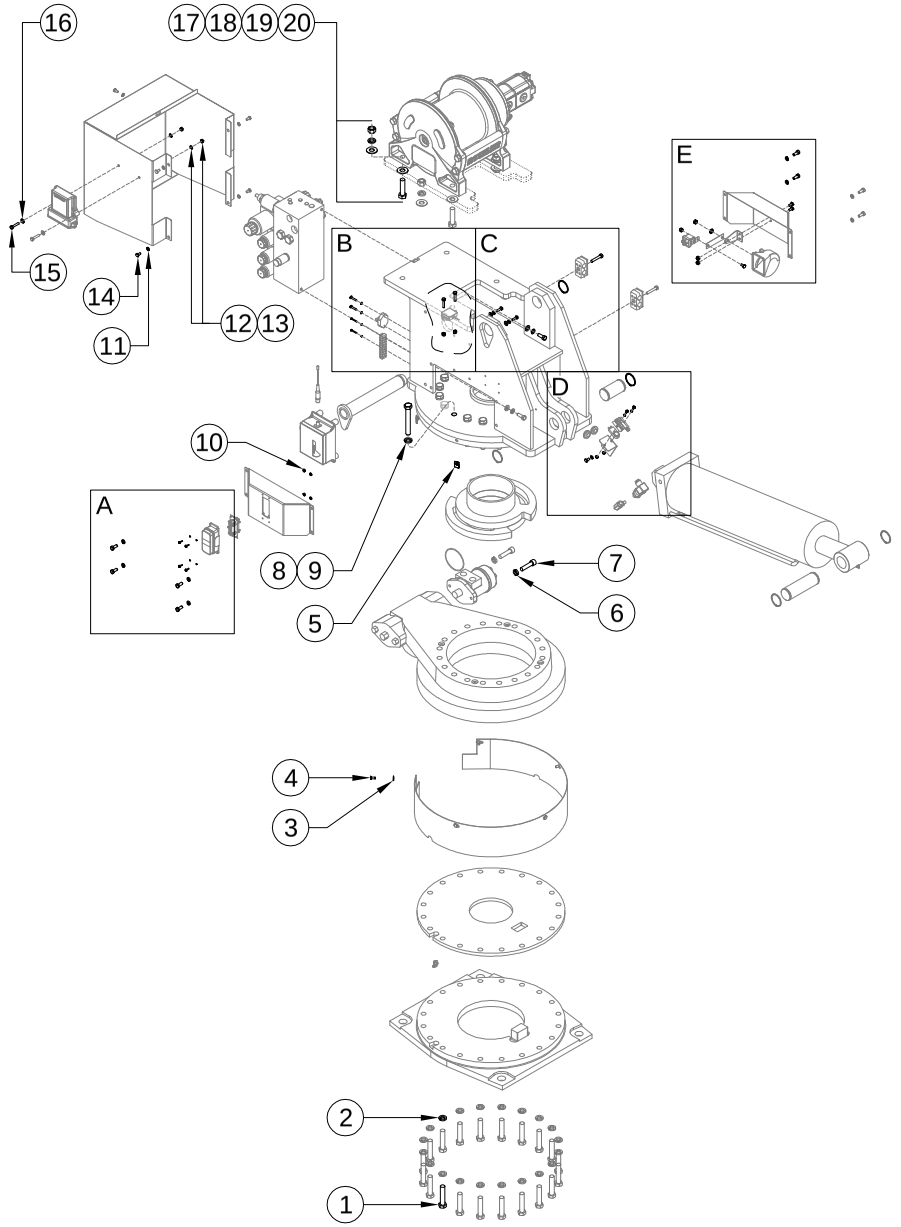
REPLACEMENT PARTS LIST - HT66KX VLC SERIES; MECHANISM

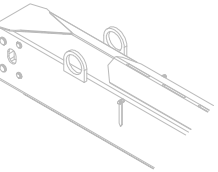
ITEM	PART NO.	QTY	DESCRIPTION
1	27708	1	WELDED ASS'Y; BASE
2	!ZERK-NPT-90	1	FITTING; GREASE, 90°
3	27710	1	PLATE; SPACER
4	27406	1	COVER; SLEWING RING
5	27275	1	SLEWING RING
6	27276	1	MOTOR; HYDRAULIC ROTATION
7	OR-152-5	1	O-RING; ROTATION MOTOR
8	27296	1	ASS'Y; ROTATION STOP
9	22721	1	PIN; MAIN BOOM PIVOT
10	22736H-1	1	VALVE MANIFOLD
* 11	23720-VCM	1	* VALVE CONTROL MODULE
12	27505	1	COVER; REAR, 1-PC
13	27274	1	WINCH
14	27284	1	WELDED ASS'Y; HOUSING
15	27502	1	PIN; ELEVATION CYLINDER PIVOT, INBOARD
16	21750	1	CYLINDER; ELEVATION, 6" X 20-1/8", DA
17	27503	1	PIN; ELEVATION CYLINDER PIVOT, OUTBOARD
18	22481	1	SOCKET CASE W/ HOOD; 16+1 POLE
19	22482	1	PLUG; FEMALE INSERT, 16+1 POLE
* 20	23720-ANT	1	* ANTENNA

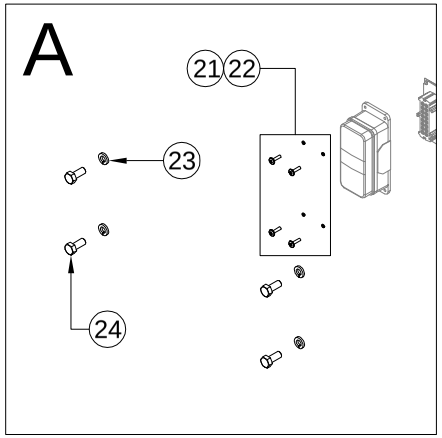
ITEM	PART NO.	QTY	DESCRIPTION
* 21	23720-RX	1	* RECEIVER; ESCAN, 2.4GHz
22	27400-1	1	COVER; SIDE W/ SOCKET CUTOUT
23	19187-10	1	TERMINAL STRIP; 10 SECTIONS
24	15683-20A	1	CIRCUIT BREAKER; 20 AMP
25	19187-12	1	TERMINAL STRIP; 12 SECTIONS
* 26	23720-INC	1	* UNIVERSAL INCLINOMTER
27	27307	2	CLAMP ASS'Y; HOSE / TUBING
28	22739	1	RELAY; HIGH CAPACITY
29	2948	1	HORN
30	27400	1	COVER; SIDE W/ HORN BRACKET HOLES
31	22000	1	BRACKET; HORN
32	19917	1	BRACKET; BOOM SHUT-OFF SWITCH
33	19918	1	SWITCH; BOOM TOP POSITION
34	14775	2	GROMMET; 1/2 x 3/16 x 3/16" THICK
35	20497	1	BRACKET; SWITCH
* 36	23720-PTD	2	* PRESSURE TRANSDUCER
37			
38			
39			
40			

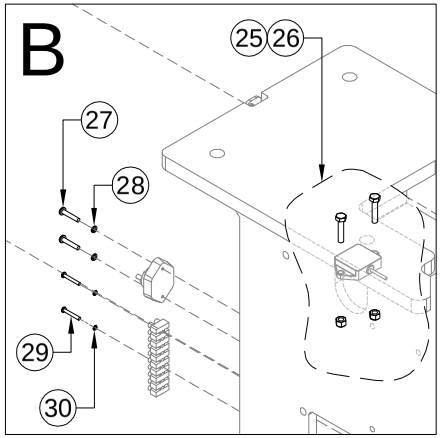
* THESE ITEMS ARE INCLUDED IN 23720 KIT. PLEASE CALL TECHNICAL SUPPORT AT 1-800-226-2238 FOR ASSISTANCE.

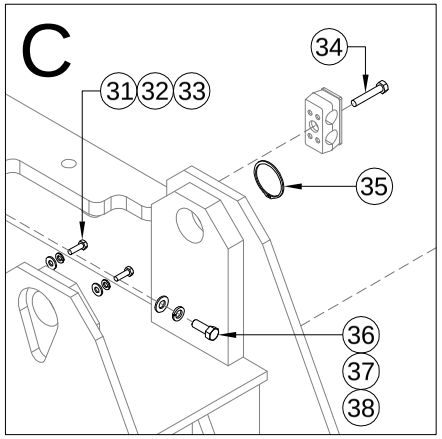
REFERENCE #23810 FOR REPLACEMENT PARTS DRAWING

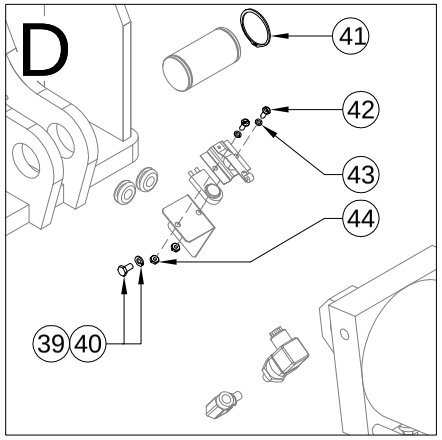


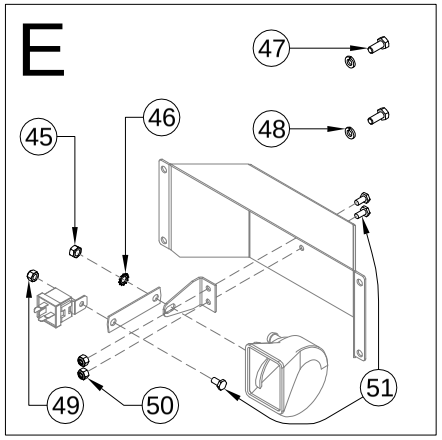












REFERENCE #23813 FOR REPLACEMENT FASTENERS LIST

VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPLACMENT FASTENERS DRWNG - MECH	02-06-19	C400
HT66KX VLC SERIES	SUPERSEDES -	23812

ITEM #	PART #	QTY	DESCRIPTION	WHERE-USED
1	!HHCS06311300	20	HHCS; 5/8-11 x 3" LG, GR. 5, ZINC	BASE PLATE - SLEW DRV
2	!LWSH-063	20	LOCK WASHER; 5/8", GR. 5, ZINC	BASE PLATE - SLEW DRV
3	!FWSH-25S	5	FLAT WASHER; 1/4", S/S	ROTATION GEAR COVER
4	!HHCS02520050S	5	HHCS; 1/4-20 x 1/2" LG, S/S	ROTATION GEAR COVER
5	!UNUT-02520-LKG	5	U-NUT; 1/4-20, LOCKING	ROTATION GEAR COVER
6	!LWSH-050-HC	2	LOCK WASHER; 1/2", HI-COLLAR	ROTATION MOTOR
7	!SHCS05013200	2	SHCS; 1/2-13 X 2"	ROTATION GEAR COVER
8	!HHCS06311400	20	HHCS; 5/8-11 x 4" LG, GR. 5, ZINC	HSNG - ROTATION DRV.
9	!LWSH-063	20	LOCK WASHER; 5/8", GR. 5, ZINC	HSNG - ROTATION DRV.
10	!HNUT-#0832S	4	HEX NUT; #08-32, S/S	SOCKET - SCKT CASE
11	!LWSH-025S	5	LOCK WASHER; 1/4", S/S	REAR COVER - HOUSING
12	!LWSH-025S	2	LOCK WASHER; 1/4", S/S	RECEIVER - REAR CVR
13	!HNUT-02520S	2	HEX NUT; 1/4-20, S/S	RECEIVER - REAR CVR
14	!HHCS02520050S	5	HHCS; 1/4-20 x 1/2" LG, S/S	REAR COVER - HOUSING
15	!HHCS02520125S	2	HHCS; 1/4-20 x 1-1/4" LG, S/S	RECEIVER - REAR CVR
16	!FWSH-025S	2	FLAT WASHER; 1/4", S/S	RECEIVER - REAR CVR
17	!HHCS06311250-8	4	HHCS; 5/8-11 X 2-1/2" LG, GR. 8	WINCH MOUNTING
18	!FWSH-063-8	8	FLAT WASHER; 5/8", GR. 8	WINCH MOUNTING
19	!LWSH-063-8	4	LOCK WASHER; 5/8", GR. 8	WINCH MOUNTING
20	!HNUT-06311-8	4	HEX NUT; 5/8-11, GR. 8	WINCH MOUNTING
21	!SHPMS#0832050S	4	SLOT-HD PMS; 08-32 x 1/2", S/S	SCKT CASE - SIDE CVR
22	!LWSH-#08S	4	LOCK WASHER; #08, S/S	SCKT CASE - SIDE CVR
23	!HHCS03118075S	4	HHCS; 5/16-18 X 3/4", S/S	SIDE COVER
24	!LWSH-031S	4	LOCK WASHER; 5/16", S/S	SIDE COVER
25	!HHCS02520125S	2	HHCS; 1/4-20 X 1-1/4", S/S	INCLINOMETER
26	!LNUT-02520NS	2	LOCK NUT; 1/4-20, NYLON, S/S	INCLINOMETER

ITEM #	PART #	QTY	DESCRIPTION	WHERE-USED
27	!PHPMS#1024100S	2	PHILIPS-HD PMS; #10-24 X 1", S/S	CIRCUIT BRKR - HSNG
28	!LWSH-#10S	2	LOCK WASHER; #10, S/S	CIRCUIT BRKR - HSNG
29	!PHPMS#0632100S	2	PHILIPS-HD PMS; #6-32 X 1", S/S	TERMINAL STRIP - HSNG
30	!LWSH-#06S	2	LOCK WASHER; #06. S/S	TERMINAL STRIP - HSNG
31	!HHCSM6M1M16S	4	HHCS; 6mm-1mm X 16mm, S/S	ESCAN - HOUSING
32	!LWSH-025S	4	LOCK WASHER; 1/4", S/S	ESCAN - HOUSING
33	!FWSH-025S	4	FLAT WASHER; 1/4", S/S	ESCAN - HOUSING
34	!HHCS03118175S	2	HHCS; 5/16-18 X 1-3/4", S/S	HOSE CLAMPS - HSNG
35	!SRNG-175	1	SNAP RING; 1-3/4", ZINC-PLTD	MAIN BOOM PIVOT PIN
36	!HHCS03816100	2	HHCS; 3/8-16 X 1", ZINC-PLTD	MANIFOLD - HOUSING
37	!FWSH-038	2	FLAT WASHER; 3/8", ZINC-PLTD	MANIFOLD - HOUSING
38	!LWSH-038	2	LOCK WASHER; 3/8", ZINC-PLTD	MANIFOLD - HOUSING
39	!HHCS02520050S	1	HHCS; 1/4-20 x 1/2", S/S	SWITCH BRKT - HSNG
40	!LWSH-025S	1	LOCK WASHER; 1/4", S/S	SWITCH BRKT - HSNG
41	!SRNG-150	4	SNAP RING; 1-1/2", ZINC-PLTD	ELEV. CYL. PIVOTS
42	!PHPMS#1024050S	2	PHILIPS-HD PMS; #10-24 X 1/2", S/S	SWITCH & SWITCH BRKT
43	!LWSH-#10S	2	LOCK WASHER; #10, S/S	SWITCH & SWITCH BRKT
44	!HNUT-#1024S	2	HEX NUT; #10-24, S/S	SWITCH & SWITCH BRKT
45	!HNUT-03120	1	HEX NUT; 5/16-20, ZINC	HORN - HORN BRKT
46	!LWSH-031-STAR	1	LOCK WASHER; 5/16", ZINC	HORN - HORN BRKT
47	!HHCS03118075S	4	HHCS; 5/16-18 X 3/4", S/S	SIDE COVER
48	!LWSH-031S	4	LOCK WASHER; 5/16", S/S	SIDE COVER
49	!LNUT-02520NS	1	LOCK NUT; 1/4-20, NYLON, S/S	RELAY - BRACKET
50	!LNUT-02520NS	2	LOCK NUT; 1/4-20, NYLON, S/S	RELAY-HORN - SIDE CVR
51	!HHCS02520050S	3	HHCS; 1/4-20 X 1/2", S/S	RELAY, BRKT - SIDE CVR
52	-	-	-	-

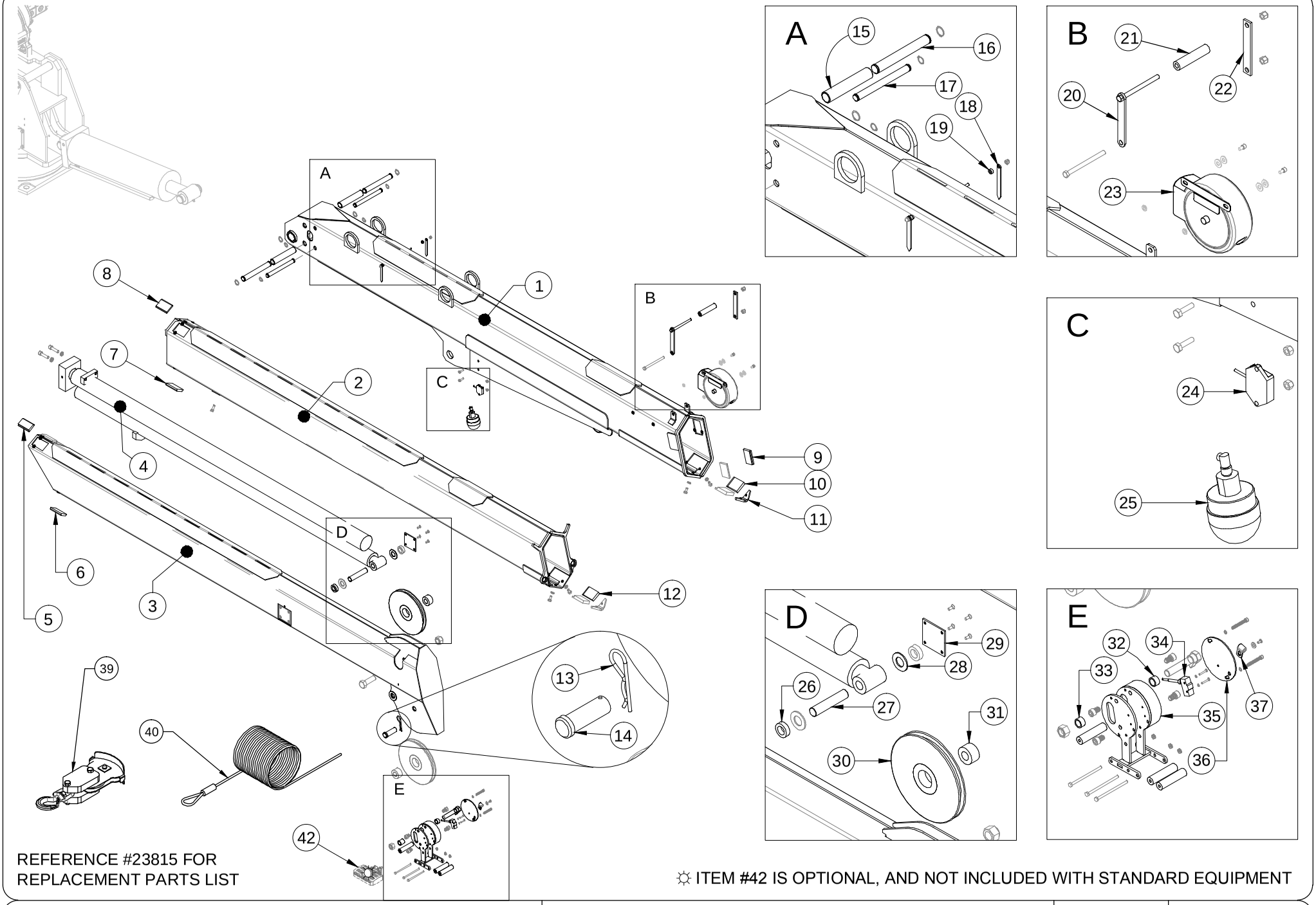
REFERENCE #23812 FOR REPLACEMENT FASTENERS DRAWING

HHCS = HEX HEAD CAP SCREW PMS = PAN MACHINE SCREW S/S = STAINLESS STEEL

VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
PLCMNT FASTENERS LIST - MECHANISM	02-06-19	C400
HT66KX VLC SERIES	SUPERSEDES -	23813



REFERENCE #23815 FOR
REPLACEMENT PARTS LIST

☼ ITEM #42 IS OPTIONAL, AND NOT INCLUDED WITH STANDARD EQUIPMENT

VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
RPLCMNT PARTS DRAWING - 27260 BOOM	02-09-21C	C400
HT66KX-25' VLC SERIES	SUPERSEDES 01-05-21B	23814

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

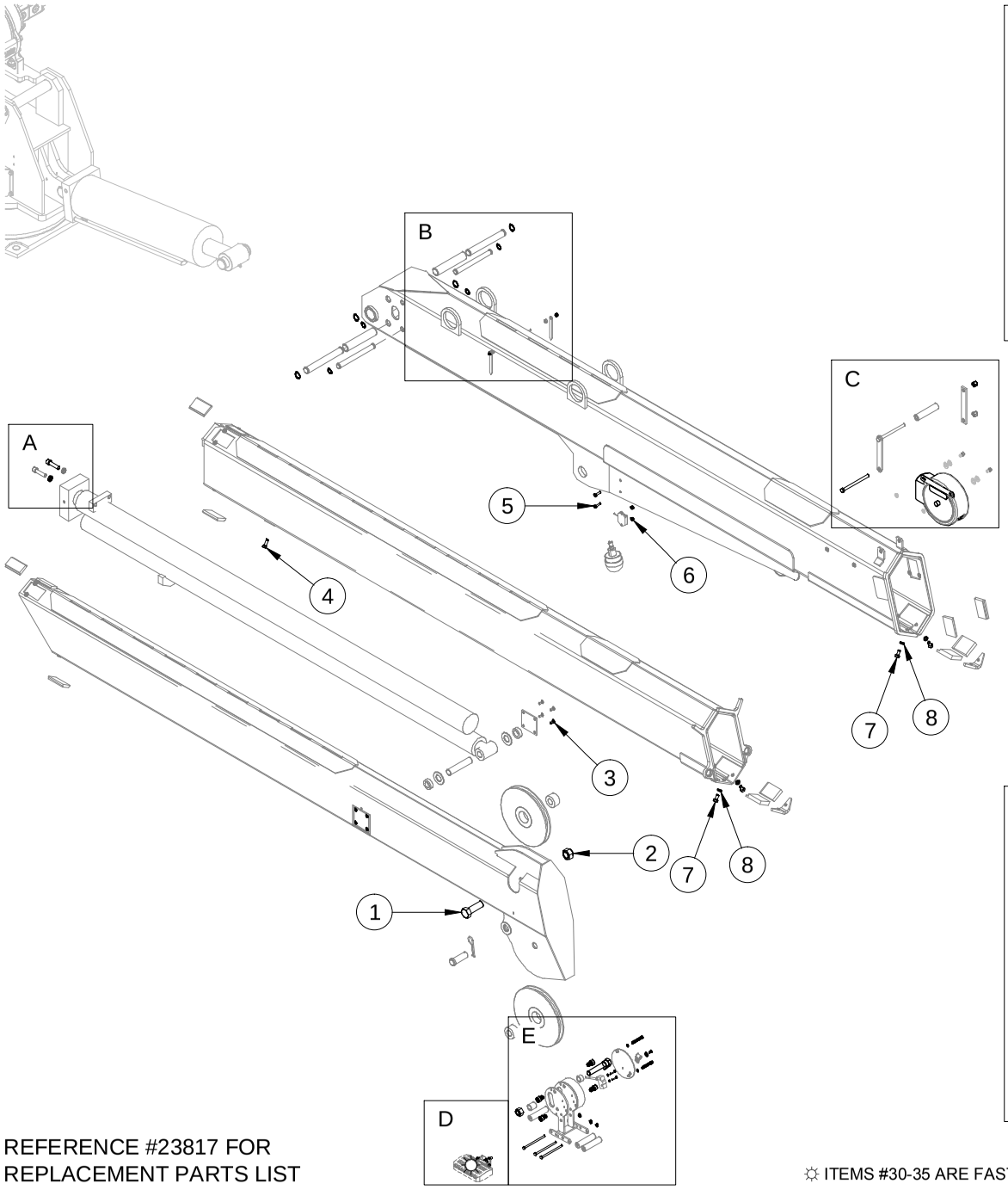
ITEM	PART NO.	QTY	DESCRIPTION
1	27262	1	WELDED ASS'Y; PRIMARY BOOM
2	27264	1	WELDED ASS'Y; SECONDARY BOOM
3	27266	1	WELDED ASS'Y; TERTIARY BOOM
4	21751	1	EXTENSION CYLINDER
5	23217-11	2	BOOM PAD; UHMW, 'A', 3.19 x 1.88 x 0.50
6	23217-1	2	BOOM PAD; UHMW, 'A', 3.19 x 1.88 x 0.44
7	23217-2	2	BOOM PAD; UHMW, 'A', 3.19 x 2.13 x 0.44
8	23217-13	2	BOOM PAD; UHMW, 'A', 3.19 x 2.13 x 0.38
9	23217-2	2	BOOM PAD; UHMW, 'A', 3.19 x 2.13 x 0.44
10	23217-4	2	BOOM PAD; UHMW, 'B', 3.19 x 2.50 x 0.63
11	23183	2	V-BLOCK, SLIDER
12	23217-3	2	BOOM PAD; UHMW, 'B', 3.19 x 2.13 x 0.63
13	21-08	1	PIN; HAIRPIN COTTER
14	27272	1	CLEVIS PIN
15	27283	2	THRUST ROLLER; EXTENSION CYLINDER
16	27282	2	THRUST PIN; REAR, EXTENSION CYLINDER
17	27293	2	THRUST PIN; FRONT, EXTENSION CYLINDER
18	13459-2	2	ARROW
19	22490	2	SPACER; BOOM ARROW
20	21935	1	WELDED ASS'Y; WIRE ROPE GUIDE
21	21560	1	ROLLER; UHMW, WIRE ROPE GUIDE

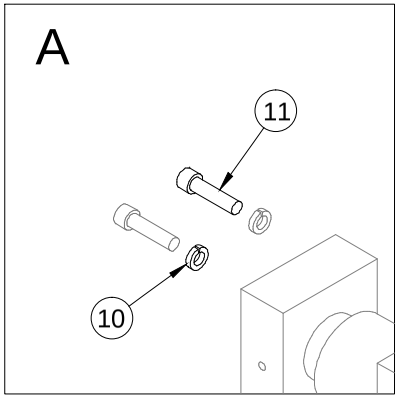
ITEM	PART NO.	QTY	DESCRIPTION
22	21936	1	FLAT, MOUNT; WIRE ROPE GUIDE
23	28190	1	COMPLETE CORD REEL
* 24	23720-INC	1	UNIVERSAL INCLINOMTER
25	23438	1	WARNING LIGHT; TRI-COLOR, LED
26	21428	2	BUSHING; EXTENSION CYLINDER
27	21405	1	PIN; PIVOT, EXTENSION CYLINDER
28	!FWSH-100SAE	2	FLAT WASHER; 1" SAE
29	23116	2	PIN BLOCK REINFORCING
30	27241	2	CABLE SHEAVE
31	27256	2	SPACER; SHEAVE
32	27466-1	1	SPACER; COMPACT A2B, 0.47" LONG
33	27466-2	1	SPACER; COMPACT A2B, 0.81" LONG
34	19376	1	LIMIT SWITCH; MODIFIED
35	27486	1	WLDMNT; COMPACT A2B FRAME, LEFT-HAND
36	27473	1	PLATE; COMPACT A2B COVER
37	19269	1	CLAMP; 1/4" CABLE
38	27475	3	ROLLER; COMPACT A2B, WIRE ROPE GUIDE
39	27254	1	LOAD BLOCK ASSEMBLY
40	27587-7/16-100	1	WIRE ROPE; 7/16 * 100 FT
41	-	-	-
☼42	27483	1	ASS'Y; WORK LIGHT, LED

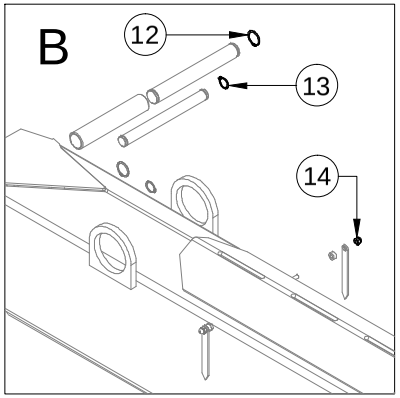
* THESE ITEMS ARE INCLUDED IN 23720 KIT. PLEASE CALL TECHNICAL SUPPORT AT 1-800-226-2238 FOR ASSISTANCE.

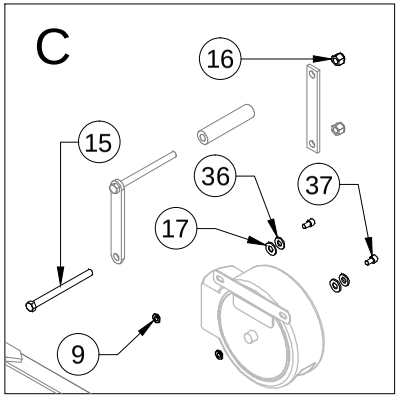
REFERENCE #23814 FOR REPLACEMENT PARTS DRAWING

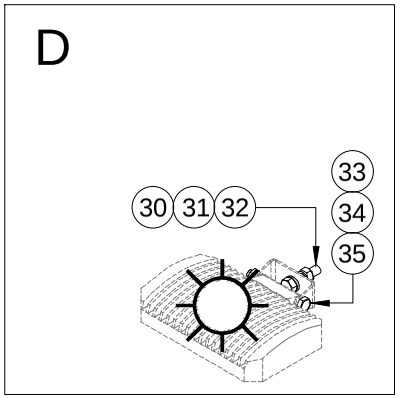
☼ OPTIONAL; NOT INCLUDED WITH STANDARD EQUIPMENT

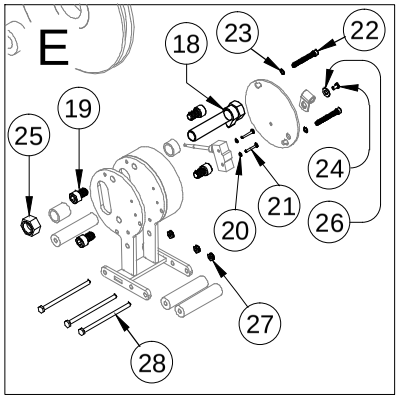












REFERENCE #23817 FOR
REPLACEMENT PARTS LIST

☼ ITEMS #30-35 ARE FASTENERS FOR OPTIONAL COMPONENTS - NOT INCLUDED WITH STANDARD EQUIPMENT

VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
RPLCMNT FASTENERS DRWNG - 27260 BOOM	02-09-21A	C400
HT66KX-25' VLC SERIES	SUPERSEDES 02-06-19	23816

ITEM #	PART #	QTY	DESCRIPTION	WHERE-USED
1	!HHCS10008300	1	HHCS; 1-8 X 3", GR. 5, ZINC -PLTD	TOP SHEAVE
2	!LNUT-10008	1	HEX NUT; 1-8, GR. 5, ZINC-PLTD	TOP SHEAVE
3	!CACS02520050S	8	CACS; 1/4-20 X 1/2", S/S	PIN BLCK REINFORCING
4	!HHCS02520125S	2	HHCS; 1/4-20 X 1-1/4", S/S	EXTENSION CYLINDER
5	!HHCS02520100S	2	HHCS; 1/4-20 X 1", S/S	INCLINOMETER
6	!LNUT-02520NS	2	LOCK NUT; 1/4-20, NYLON, S/S	INCLINOMETER
7	!HHCS03816075S	4	HHCS; 3/8-16 X 3/4", S/S	V-BLOCKS
8	!LWSH-038	4	LOCK WASHER; 3/8", GR. 5, ZINC-PL	V-BLOCKS
9	28198	2	INSULATING SLEEVE WASHER - 5/16"	CORD REEL ASS'Y
10	!LWSH-050-HC	2	LOCK WASHER; 1/2", HI-COLLAR	EXTENSION CYLINDER
11	!SHCS05013200	2	SHCS; 1/2-13 X 2"	EXTENSION CYLINDER
12	!SRNG-100	4	SNAP RING; 1"	EXT. CYL. REAR PINS
13	!SRNG-075	4	SNAP RING; 3/4"	EXT. CYL. FRONT PINS
14	!ANUT-02520S	2	ACORN NUT; 1/4-20, S/S	BOOM ARROWS
15	!HHCS04414550	1	HHCS; 7/16-14 X 5-1/2", GR. 5, ZINC	WIRE ROPE GUIDE
16	!LNUT-04414	2	LOCK NUT; 7/16-14, GR. 5, ZINC	WIRE ROPE GUIDE
17	01016	2	FIBER WASHER	CORD REEL ASS'Y
▲ 18	28373	1	ASSY, CAM & HHCS CA2B CUT-OUT	COMPACT A2B ASS'Y
19	27467	4	SHCS; 1/2-13 X 3/4", BLACK NYLON	COMPACT A2B ASS'Y
20	!LWSH-#06	2	LOCK WASHER; #06, ZINC	COMPACT A2B SWITCH

ITEM #	PART #	QTY	DESCRIPTION	WHERE-USED
21	!PHCS#0632100	2	PHCS; #06-32 X 1", GR. 5, ZINC	COMAPCT A2B SWITCH
22	!SHCS02520200SS	2	SHCS; 1/4-20 X 2", S/S	COMPACT A2B COVER
23	23379	2	WASHER; 3/8" ID, 1/4" OD, NYLON	COMPACT A2B COVER
24	!SHPMS#1032038S	1	SLOT-HD PMS; #10-32 X 3/8", S/S	COMPACT A2B CLAMP
▲ 25	!LNUT-10008	1	LOCK NUT; 1-8, NYLON	COMPACT A2B ASS'Y
26	!FWSH-025S	1	FLAT WASHER; 1/4", S/S	COMPACT A2B CLAMP
27	!JNUT-02520NS	3	JAM NUT; 1/4-20, NYLON, S/S	COMPACT A2B ROLLERS
28	!HHCS02520450	3	HHCS; 1/4-20 X 4-1/2"	COMPACT A2B ROLLERS
29	-	-	-	-
☼ 30	!HHCS03118125S	1	HHCS; 5/16-18 X 1-1/4", S/S	WORK LIGHT
☼ 31	!HNUT-03118S	2	HEX NUT; 5/16-18, S/S	WORK LIGHT
☼ 32	!FWSH-031S	1	FLAT WASHER; 5/16", S/S	WORK LIGHT
☼ 33	!HHCS02520250S	1	HHCS; 1/4-20 X 2-1/2", S/S	WORK LIGHT
☼ 34	!LWSH-025S	1	LOCK WASHER; 1/4", S/S	WORK LIGHT
☼ 35	!HNUT-02520S	1	HEX NUT; 1/4-20, S/S	WORK LIGHT
36	!FWSH-031	2	FLAT WASHER; 5/16"	CORD REEL ASS'Y
37	!SHCS03118063S	2	SHCS; 5/16-18 X 5/8" LG, S/S	CORD REEL ASS'Y
38	-	-	-	-
39	-	-	-	-
40	-	-	-	-

☼ ITEMS #30-35 ARE FOR OPTIONAL COMPONENTS - NOT INCLUDED WITH STANDARD EQUIPMENT

REFERENCE #23816 FOR REPLACEMENT FASTENERS DRAWING

HHCS = HEX HEAD CAP SCREW PMS = PAN MACHINE SCREW S/S = STAINLESS STEEL

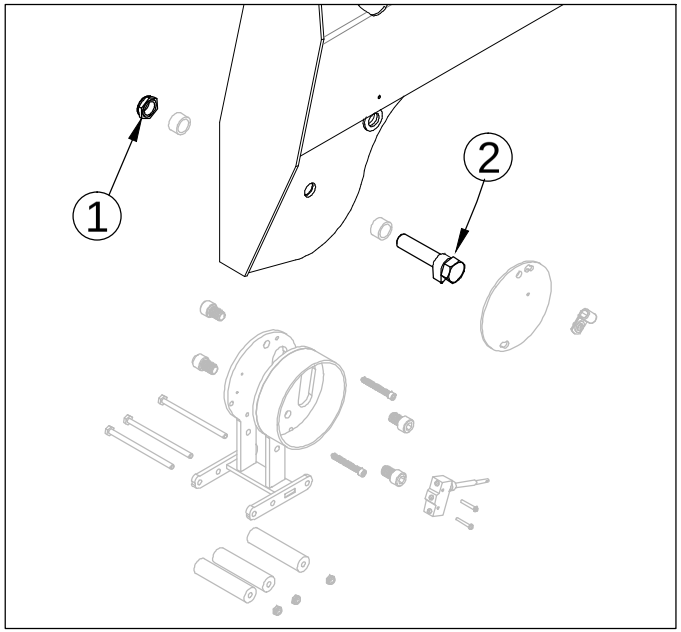
VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
PLCMNT FASTENERS LIST - 27260 BOOM	02-09-21A	C400
HT66KX-25' VLC SERIES	SUPERSEDES 02-06-19	23817

Compact A2B with Stowage Cut-out, Install/Adjustment Instructions

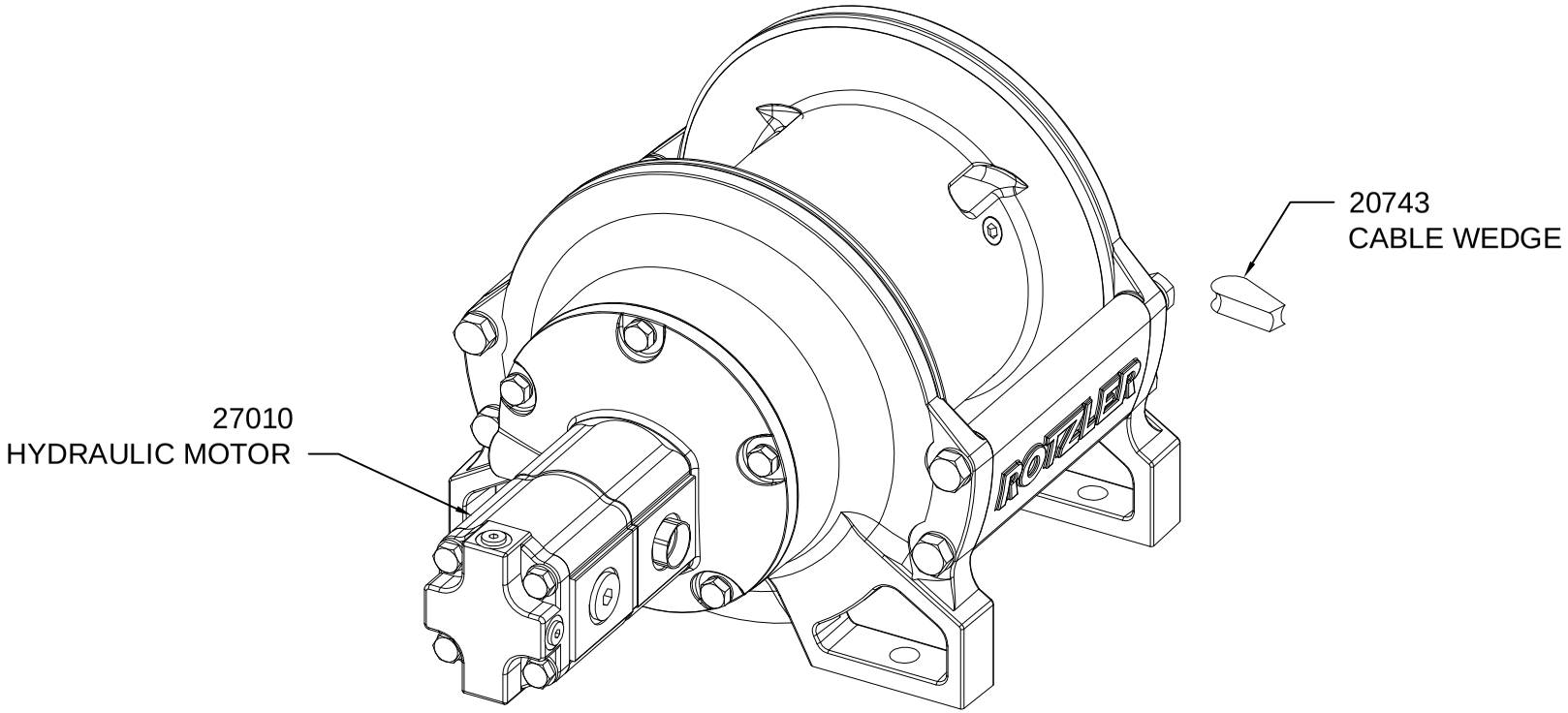
The purpose of the Stowage Cut-out system is to prevent a situation whereby the wire rope is over-tensioned when the load block / wire rope is attached to the stowage hook on the bottom of the primary boom assembly. ***However, the OPERATOR is ultimately responsible for ensuring that the wire rope is not over-tensioned when stowing the wire rope and boom assembly into the boom rest.***



1. Initially, apply a light torque to the nyloc full nut (Item #1), such that the axle bolt & cam welded assembly can be rotated / adjusted in the steps below.
2. Position the cam ***lobe*** *(Item #2)* so that it is pointing towards the housing / mechanism
3. Hang the load block on the open stowage hook under the primary boom.
4. Thread the wire rope through the load block in a two-line configuration; the wire rope end / eyelet is pinned in the standard position on the tertiary boom tip
5. Actuate the Winch Up function until the load block and wire rope are ***taut*** enough to prevent the load block from bouncing during transit, ***but do not tighten excessively so as to prevent damage to the wire rope.***
6. Rotate the axle bolt & cam welded assembly towards the housing (clockwise in standard configuration) until the cam lobe makes contact with and trips the wobble micro switch and actuates the A2B function.
7. Once adjusted, torque the nyloc full nut (Item #1) to 100 ft*lbs to prevent further rotational movement of the axle bolt & cam welded assembly.
8. Test the A2B trip-point by slackening and tightening the wire rope / load block assembly (Winch Up/Down); the point at which the A2B trips should be consistent and repeatable in terms of wire rope tension when stowed.

Contact Venturo Tech Support for assistance. 1-800-226-2238 ext. 124

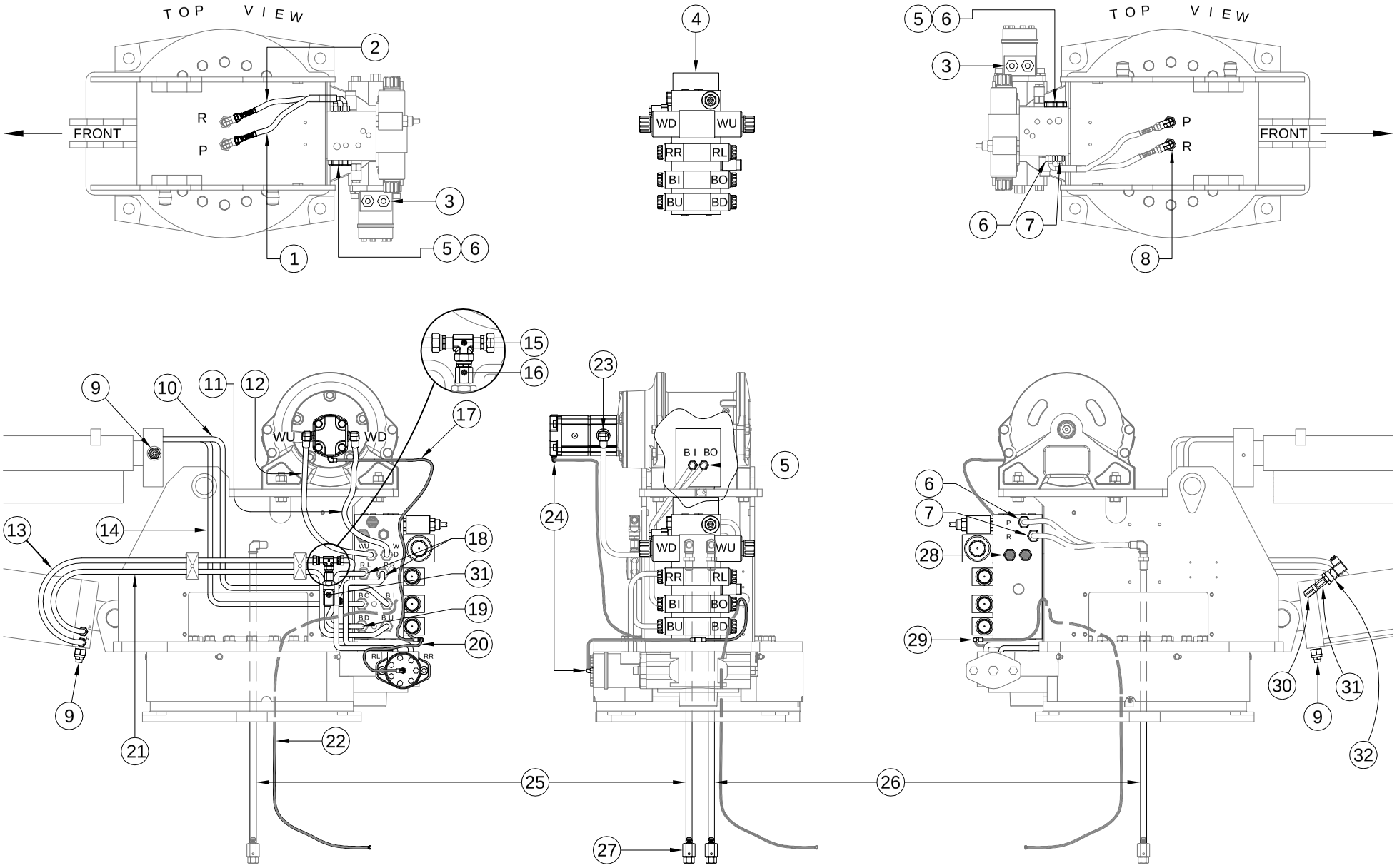
REPLACEMENT PARTS DRAWING; 27274 WINCH



WINCH SERVICE KIT P/N: 27011

MOTOR SERVICE KIT P/N: 27012 (511 MOTOR)

REPLACEMENT PARTS DRAWING - HYDRAULIC COMPONENTS



REFERENCE #23819 FOR REPLACEMENT PARTS LIST

HOSE ROUTINGS ARE FOR REFERENCE ONLY

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
RPLCMNT PARTS DWG - HYD. COMPONENTS	02-06-19	C400
HT66KX VLC SERIES	SUPERSEDES -	23818

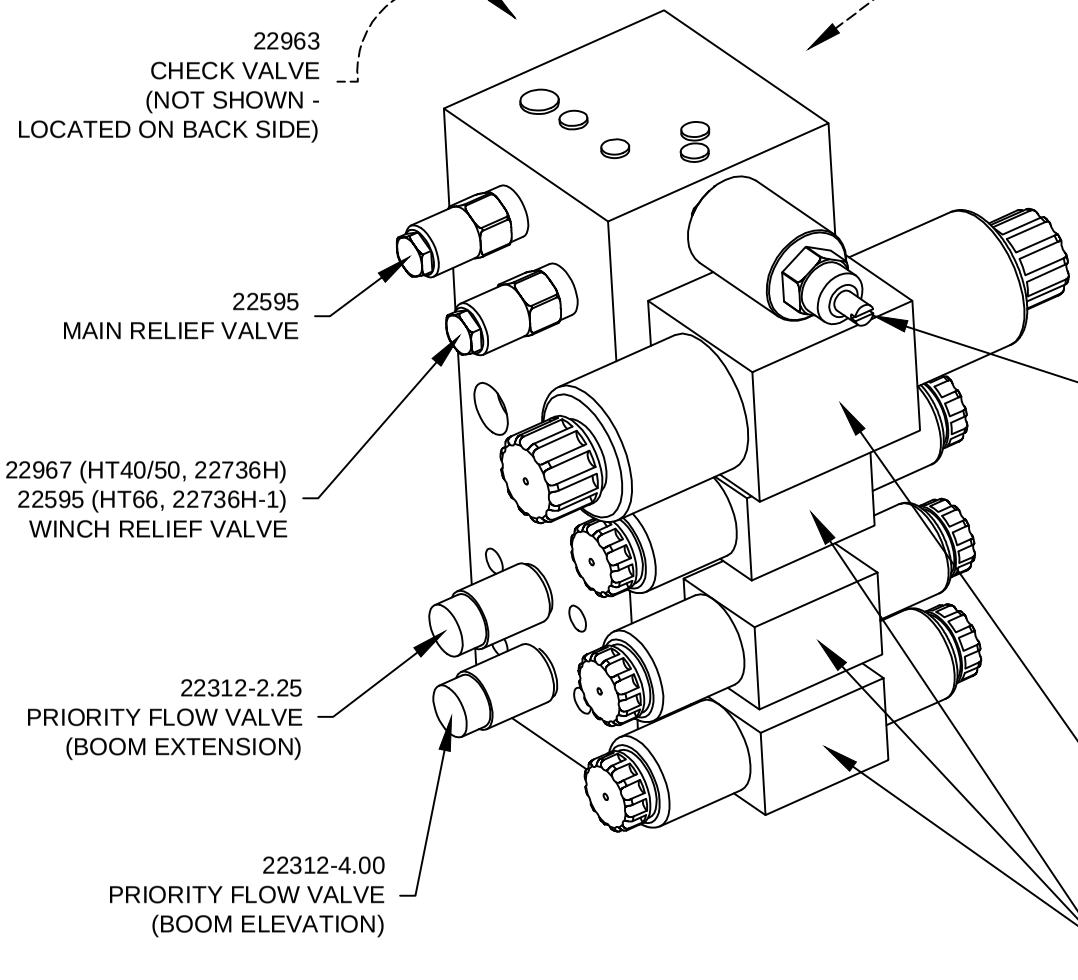
REPLACEMENT PARTS LIST - HYD. COMPONENTS

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° 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	27597	1	HOSE ASS'Y; WINCH DOWN	FF6400-0810 (MANIFOLD) - FF6801-0810 (WINCH)
12	27596	1	HOSE ASS'Y; WINCH UP	FF6400-0810 (MANIFOLD) - FF6801-0810 (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	FF6801-0810	2	FITTING; 90° ELBOW ADAPTER, 8OFS-10MO	WINCH PORTS - 27596, 27597
24	H6801-0404	2	FITTING; 90° ELBOW ADAPTER, 4MJ-4MO	WINCH & ROTATION MOTOR CASE DRAIN PORTS
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° 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)

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

REFERENCE #23818 FOR REPLACEMENT PARTS DRAWING

22736 SERIES VALVE MANIFOLD REPLACEMENT PARTS



PRIORITY FLOW VALVE		
VALVE P/N	MANIFOLD	CRANE
22312-6.00	22736H	HT40/50KX
	22736L	
22312-7.50	22736H-1	HT66KX
	22736L-1	
NOT SHOWN - LOCATED ON RIGHT SIDE		

PROPORTIONAL VALVE			
VALVE P/N & DESCRIPTION	MANIFOLD	CRANE MODEL	SERIAL # RANGES
23046 HYDRAFORCE (ROUND COIL)	22736H	HT40KX	100544 - CURRENT
		HT50KX	110346 - CURRENT
	22736H-1	HT66KX	150031 - CURRENT
22966 COMMAND CONTROLS (SQUARE COIL)	22736L	HT40KX	100300 - 100543
		HT50KX	110300 - 110345
	22736L-1	HT66KX	150000 - 150030

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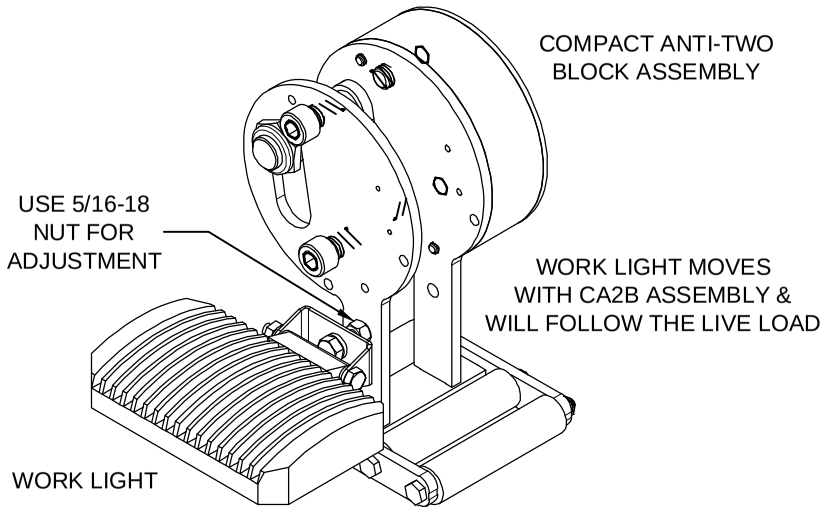
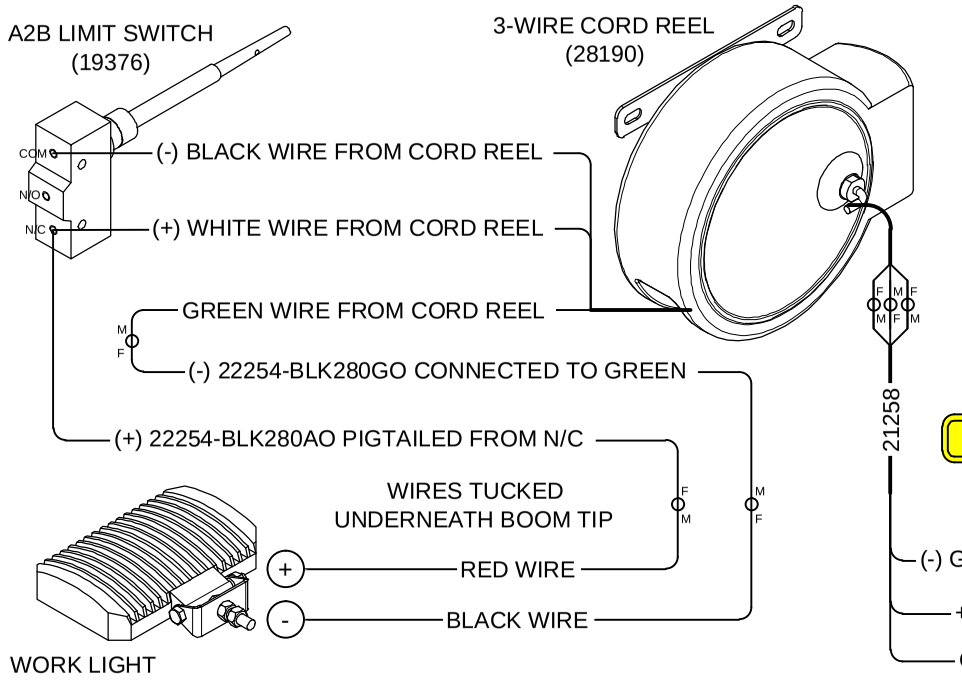
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

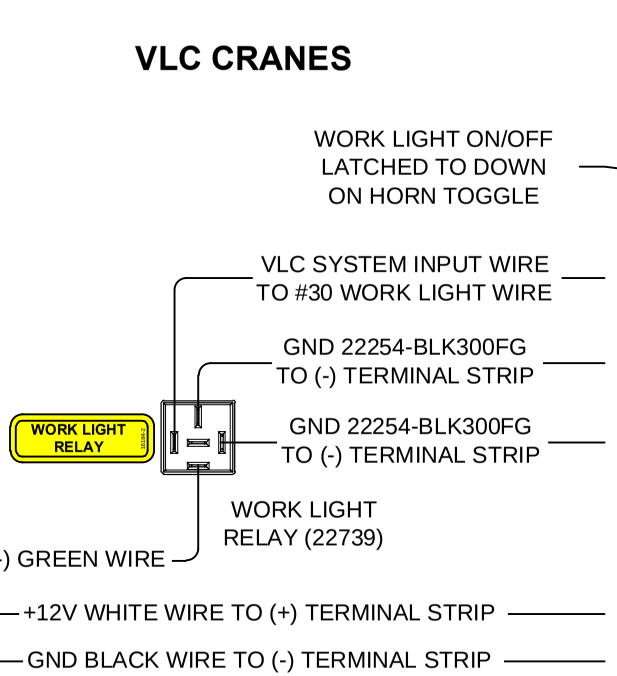
TITLE	DATE	SECTION
22736 REPLACEMENT PARTS	11-13-17F	C400
HT40/50/66KX PROPORTIONAL	SUPERSEDES 02-21-14E	22940

WORK LIGHT INSTALLATION: 28240 (3-WIRE CORD REEL ON VLC CRANES)



BILL OF MATERIALS		N/D	28240
#	DESCRIPTION	QTY	PART NUMBER
1	IDWG; WORK LIGHT INSTALLATION, VLC CRANES	1	28188
2	LED WORK LIGHT	1	27483
3	TERMINAL; 16G, FEMALE, QUICK-CONNECT	5	!TERM16G250QCFI
4	TERMINAL; 16G, MALE, QUICK-CONNECT	4	!TERM16G250QCM
5	WIRE ASS'Y; 16G, BLACK, 28", #6 RING - STRIPPED END	1	22254-BLK280AO
6	WIRE ASS'Y; 16G, BLACK, 28", QCF - STRIPPED END	1	22254-BLK280GO
7	RELAY; 12VDC	1	22739
8	DECAL; WORK LIGHT RELAY	1	16184-2
9	WIRE ASS'Y; 16G, BLACK, 30", MALE PIN - QCF	2	22254-BLK300FG

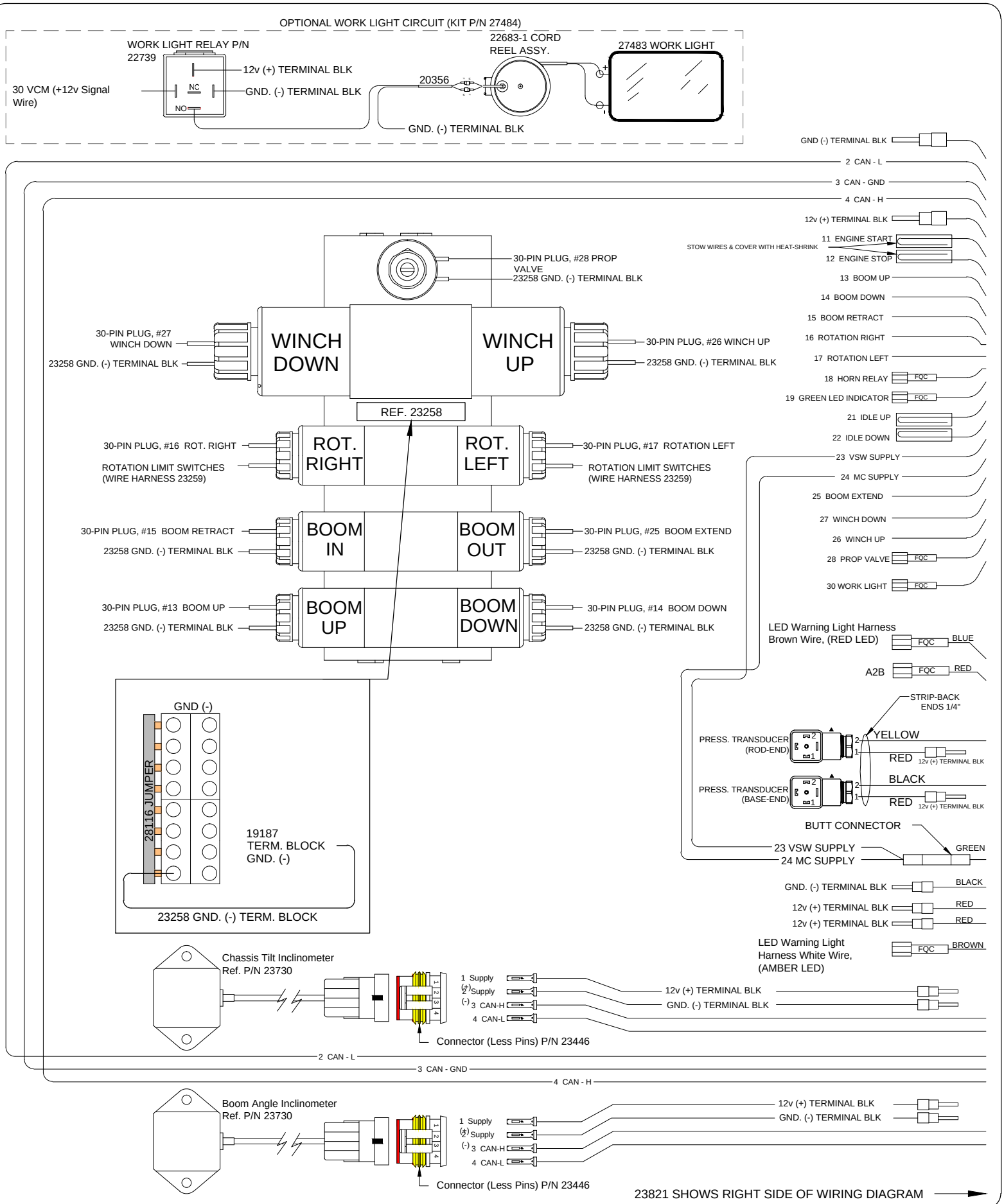




VENTURO®

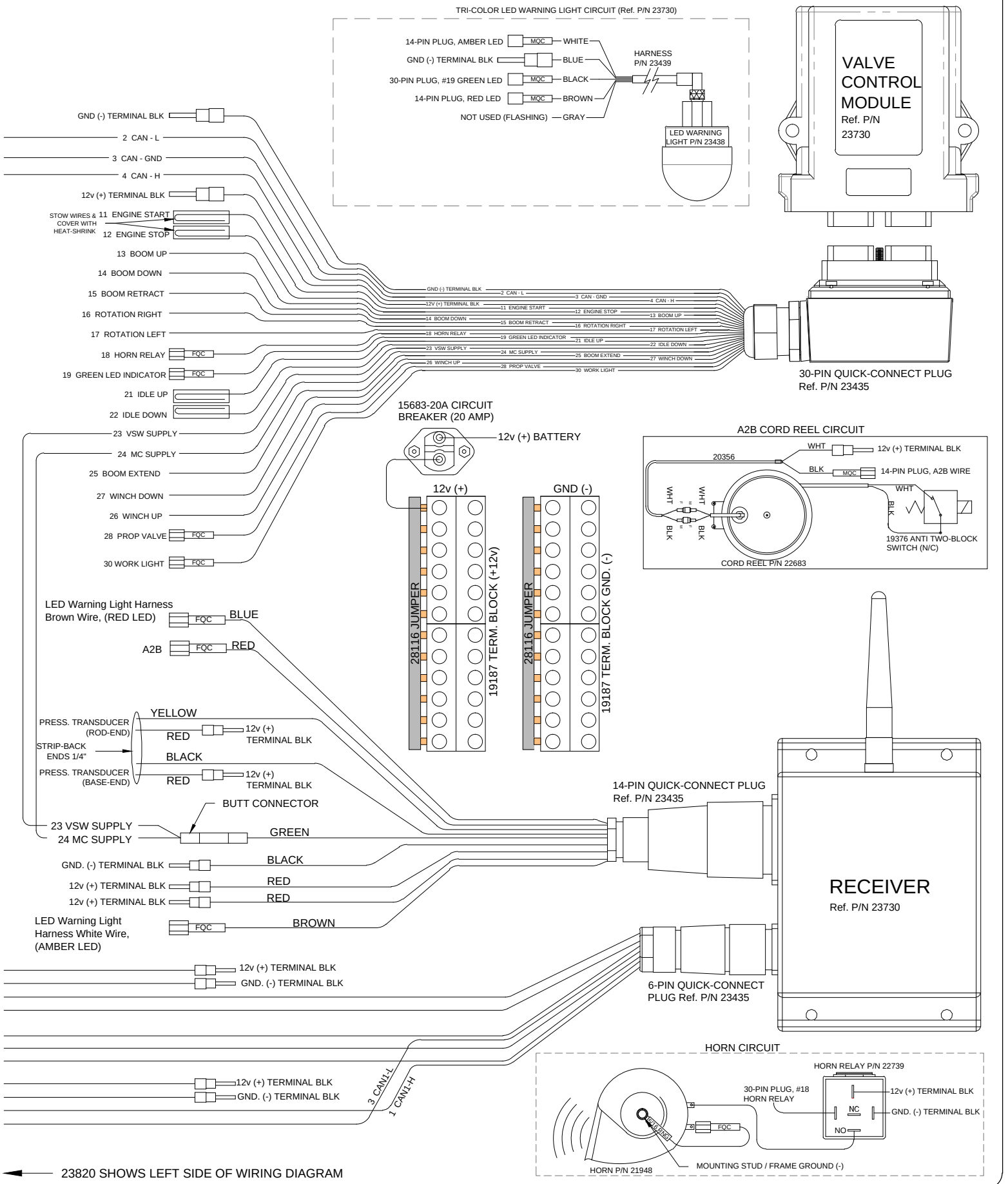
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
WORK LIGHT INSTALLATION, 3-WIRE CORD REEL	02-05-21	C400
VLC CRANES	SUPERSEDES: -	28188



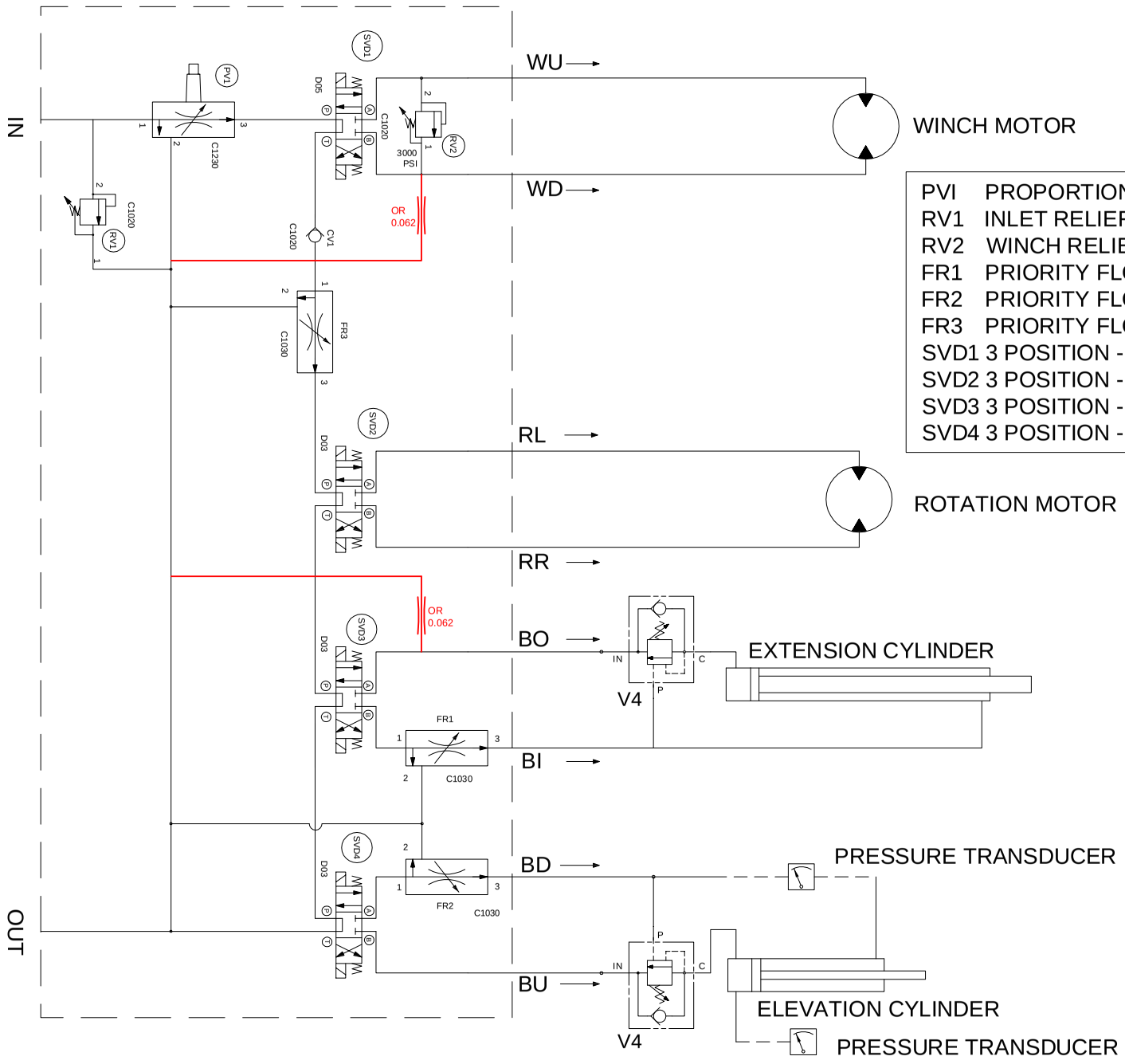
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
WIRING DIAGRAM, PG. 1	08-05-20B	C400
HT66KX VLC SERIES	SUPERSEDES 04-28-20A	23820



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
WIRING DIAGRAM, PG. 2	08-05-20C	C400
HT66KX VLC SERIES	SUPERSEDES 04-27-20B	23821

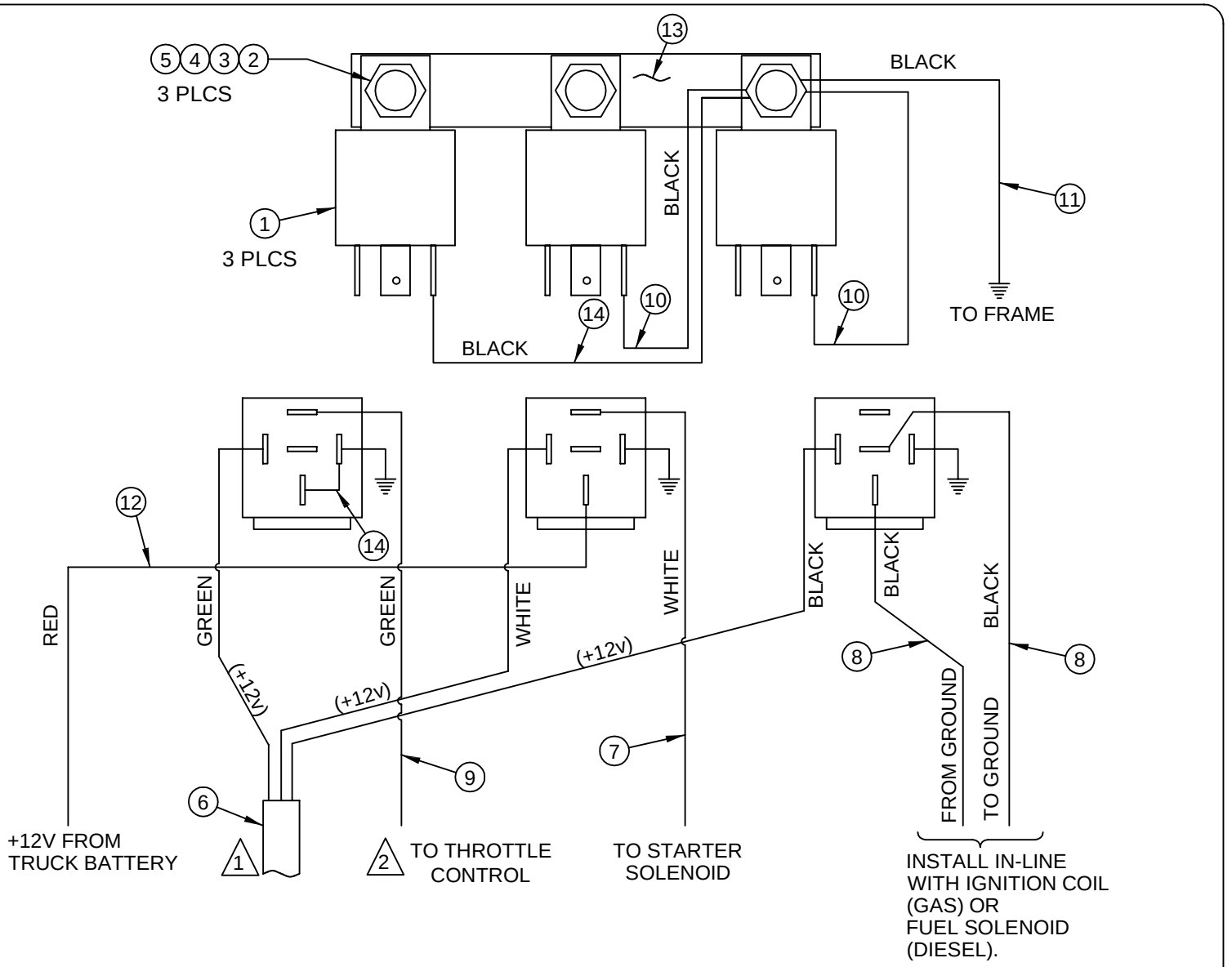


PVI PROPORTIONAL CONTROL VALVE (SIMPLIFIED REP)
RV1 INLET RELIEF VALVE (3000 PSI)
RV2 WINCH RELIEF VALVE
FR1 PRIORITY FLOW REGULATOR - 2.25 GPM
FR2 PRIORITY FLOW REGULATOR - 4.00 GPM
FR3 PRIORITY FLOW REGULATOR - 7.50 GPM ▲
SVD1 3 POSITION - 4 WAY VALVE
SVD2 3 POSITION - 4 WAY VALVE
SVD3 3 POSITION - 4 WAY VALVE
SVD4 3 POSITION - 4 WAY VALVE

VENTURO®

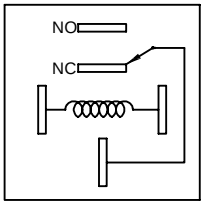
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
HYDRAULIC SYSTEM DIAGRAM	12-11-20B	C400
HT66KX VLC SERIES	SUPERSEDES 03-26-19A	23822



1 USER-CONTROLLED +12V INPUT SIGNALS FROM HETRONIC VLC SYSTEM OR ANALOG PENDANT OR RADIO SYSTEM

2 THROTTLE CONTROL IS DESIGNED TO PROVIDE A GROUND SIGNAL WHEN RELAY IS ACTIVATED



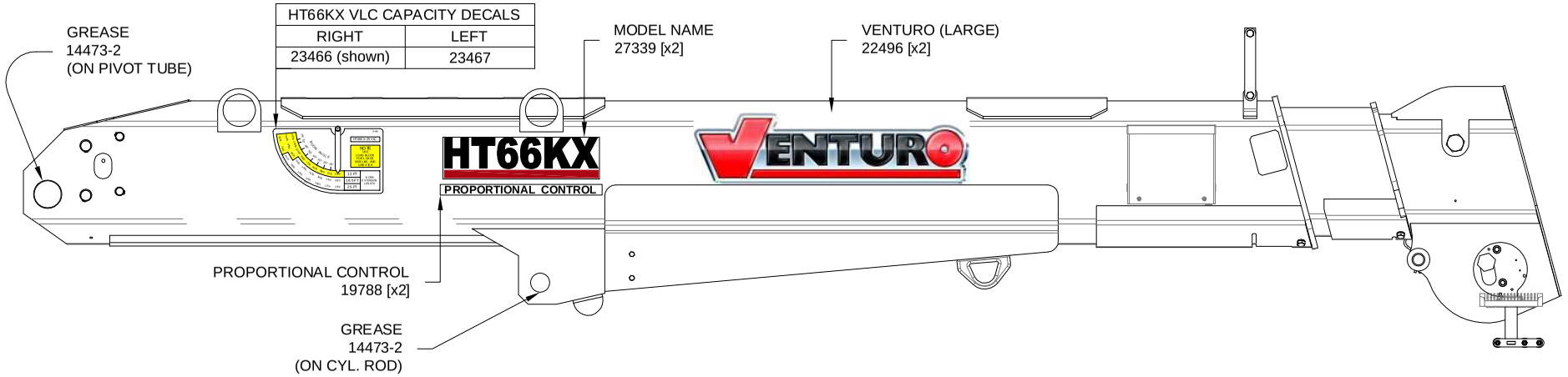
RELAY SCHEMATIC

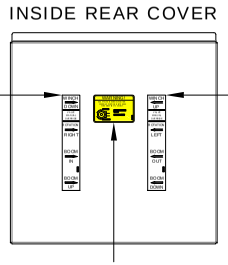
ITEM	QTY	PART#	DESCRIPTION
1	3	22739	RELAY
2	3	!PHCS#1024075	#10-24 X 3/4 PHIL PAN HD BOLT
3	3	!LWSH-#10	#10 LOCKWASHER
4	3	!FWSH-025	#10 WASHER
5	3	!HNUT-#1024	#10 NUT
6	1	22607	WIRE HARNESS - 12/3 SJO
7	1	22609	WHITE - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
8	2	22610	BLACK - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
9	1	22611	GREEN - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
10	2	22612	BLACK - 16 GAGE ELECTRICAL WIRE - 6 INCHES LONG
11	1	22613	BLACK - 16 GAGE ELECTRICAL WIRE - 8 FEET LONG
12	1	22614	RED - 14 GAGE ELECTRICAL WIRE - 15 FEET LONG
13	1	01181	BUSS BAR
14	1	22619	BLACK - 16GA WIRE ASSY - 6" LONG W/ 3 INCH PIGTAIL

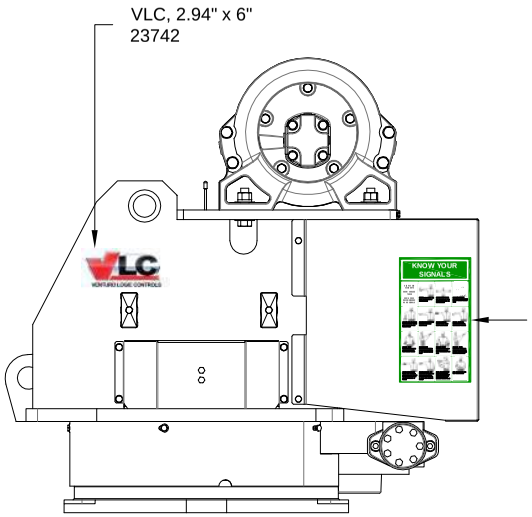
VENTURO®

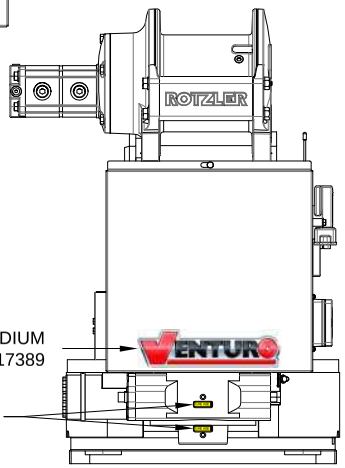
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

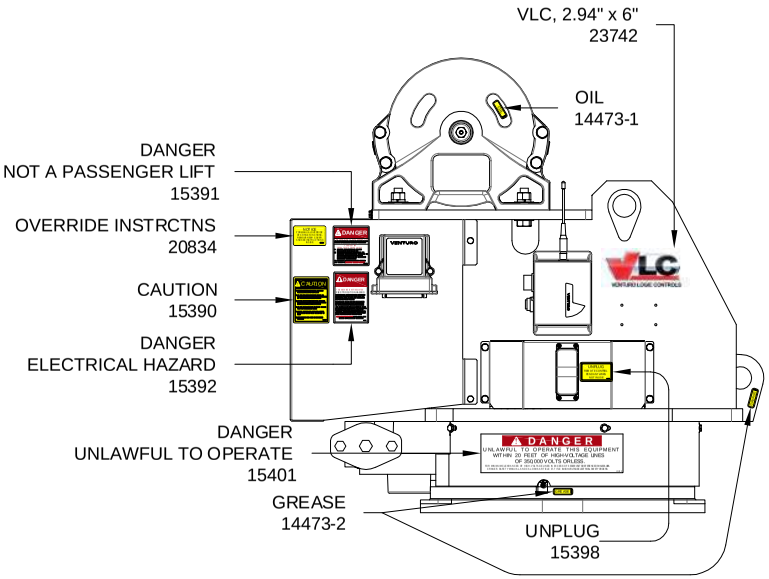
TITLE	DATE	SECTION
ENGINE START / STOP THROTTLE CONTROL	06-09-20F	C400
HT CRANES	SUPERSEDES 02-21-14E	22615







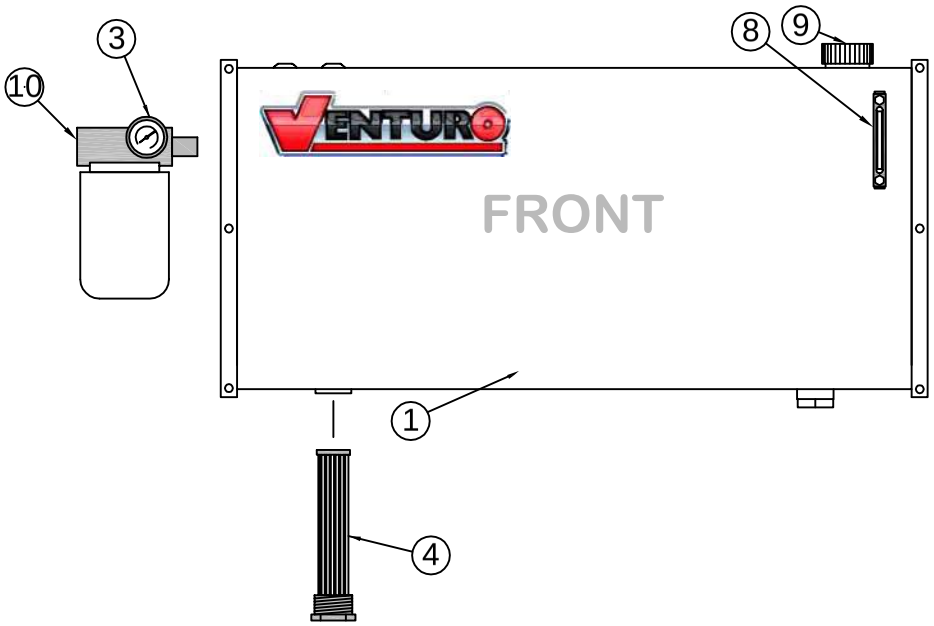


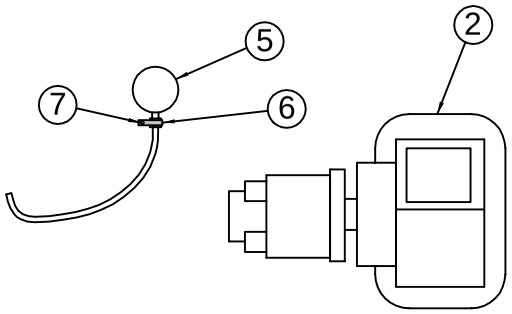


VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
DECAL PLACEMENT	02-06-19	C400
HT66KX VLC SERIES	SUPERSEDES -	23823





ILLUSTRATIONS FOR REFERENCE ONLY!
- COMPONENT LOCATIONS MAY DIFFER -

19296 PTO CONFIGURATION CHART		
DASH #	MOUNTING	RECOMMENDED GPM (RPM)
- 1.60	SAE 'A' 9 TOOTH SPLINE SHAFT	HT25/30 - STD. - 2.0 GPM (1250 RPM)
- 4.00		HT25/30 - PROP.- 4.0 GPM (1000 RPM)
- 2.64		HT40 - STD. - 2.6 GPM (1000 RPM) HT50 - STD. - 3.0 GPM (1150 RPM)
- 10.0	SAE 'B' 13 TOOTH SPLINE SHAFT	HT40 - PROP. -10.0 GPM (1000 RPM) HT50 - PROP. -12.0 GPM (1200 RPM)

ITEM	QTY	PART NUMBERS	DESCRIPTION
10	1	19298	FILTER ASSY, RETURN
9	1	22789	FILLER / BREATHER CAP ASSEMBLY
8	1	22787	SIGHT GLASS
7	1	!HWHS02520075-F	HEX WASHER HEAD 1/4-20 X 3/4 SELF TAPPING
6	1	19275	CLAMP
5	1	22730	PRESSURE GAUGE ASSEMBLY
4	1	22788	SUCTION SCREEN - 100 MESH
3	1	19297	PRESSURE GAUGE - RETURN
2	1	SEE PTO CHART	PTO PUMP
* 1	1	SEE TANK CHART	HYDRAULIC TANK

* REFERENCE DWG #22825 IN SECTION 200

23825 FIELD SERVICE LABEL KIT; HT66KX VLC SERIES

	23825 FIELD SERVICE LABEL KIT (FOR HT66KX GENERATION 'A' VLC)		HT66-25' VLC SERIAL NUMBER RANGE: 10A000015 - CURRENT
QTY	PART #	DESCRIPTION	
2	22496	DECAL; VENTURO LOGO, LARGE	
1	17389	DECAL; VENTURO LOGO, MEDIUM	
2	27339	DECAL; MODEL NAME, HT66KX	
2	19788	DECAL; PROPORTIONAL CONTROL	
1	23466	DECAL; BOOM CAPACITY, RIGHT (HT66KX-25')	
1	23467	DECAL; BOOM CAPACITY, LEFT (HT66KX-25')	
1	14473-1	DECAL; OIL	
6	14473-2	DECAL; GREASE	
1	17813	DECAL; OVERLOAD SENSING SYSTEM	
1	22499	DECAL; KNOW YOUR SIGNALS	
1	20834	DECAL; MANUAL OVERRIDE, INSTRUCTIONS	
1	19315-2	DECAL; MANUAL OVERRIDE, SHUTOFF, PROPORTIONAL	
1	23068-1	DECAL; MANUAL OVERRIDE, HT66KX SERIES, LEFT	
1	23068-2	DECAL; MANUAL OVERRIDE, HT66KX SERIES, RIGHT	
2	23742	DECAL; VLC, 2.94" x 6.00"	
1	16184-1	DECAL: HORN RELAY	
1	16184-2	DECAL; WORK LIGHT RELAY	
1	23824	IDWG; FIELD SERVICE LABEL KIT, HT66KX VLC SERIES	
1	23823	IDWG; DECAL PLACEMENT, HT66KX VLC SERIES	
1	INST-23233	SAFETY MANUAL; VENTURO CRANES	
1	15397	KIT; ACCIDENT PREVENTION SIGNS	

15397 ACCIDENT PREVENTION SIGNS		
QTY	PART #	DESCRIPTION
1	15390	DECAL; CAUTION
1	15391	DECAL; DANGER, NOT A PASSENGER LIFT
1	15392	DECAL; DANGER, ELECTROCUTION HAZARD
4	15393	DECAL; ELECTRICAL HAZARD
1	15394	DECAL; HAZARDS & INFORMATION
1	15398	DECAL; UNPLUG THE PENDANT
1	15401	DECAL; UNLAWFUL TO OPERATE
1	15513	DECAL; MASTER DISCONNECT; ON/OFF
1	22317	DECAL SHEET; VENTURO, COMPLEMENTARY
1	20927	DECAL; CRANE STABILITY

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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Revised: January 2015 12-00073_VNT1-D