

PARTS & INSTALLATION MANUAL

HT40KX-20

Included in this manual:

HT40KX-20

- 6,000 lb Hydraulic Telescopic Service Crane
- 20 ft Fully-Powered, Two-Stage, Boom Extension

HT40KXX-20', NON-PROP

INST-24193 - 12/4/2023 (Rev: C2)

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12-00073_VNT1	WARRANTY PAGE

SECTION 100

DESCRIPTION

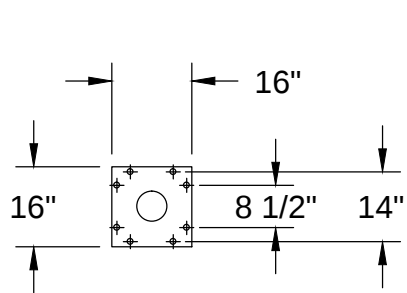
&

SPECIFICATIONS

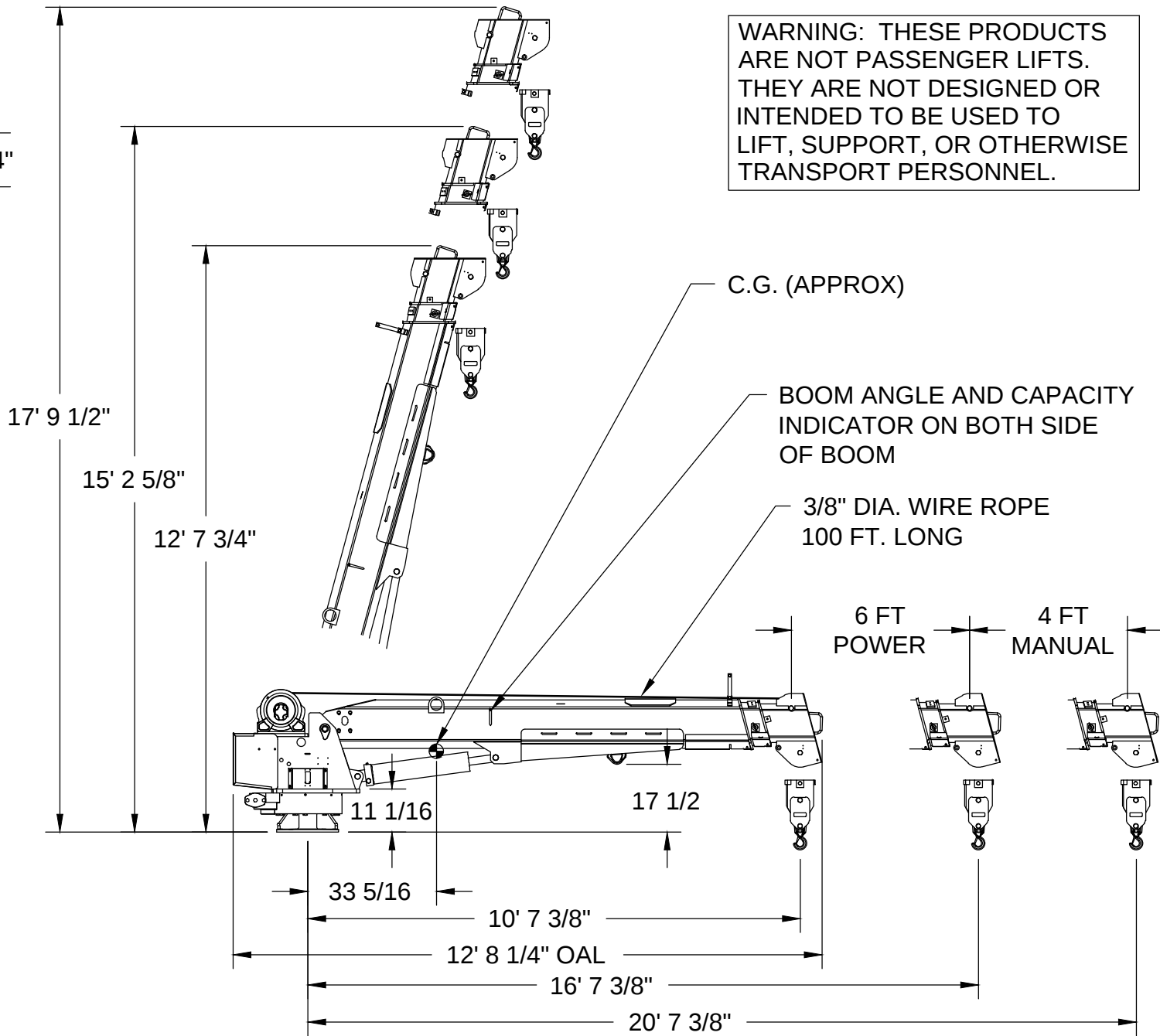
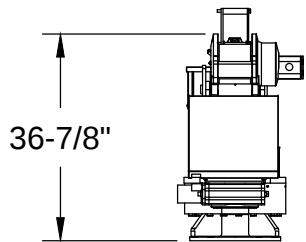
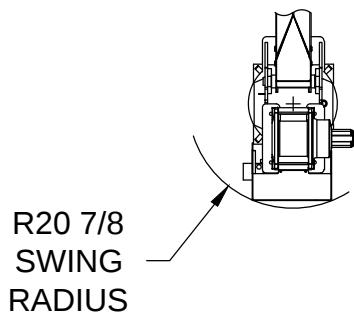


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CINCINNATI, OHIO

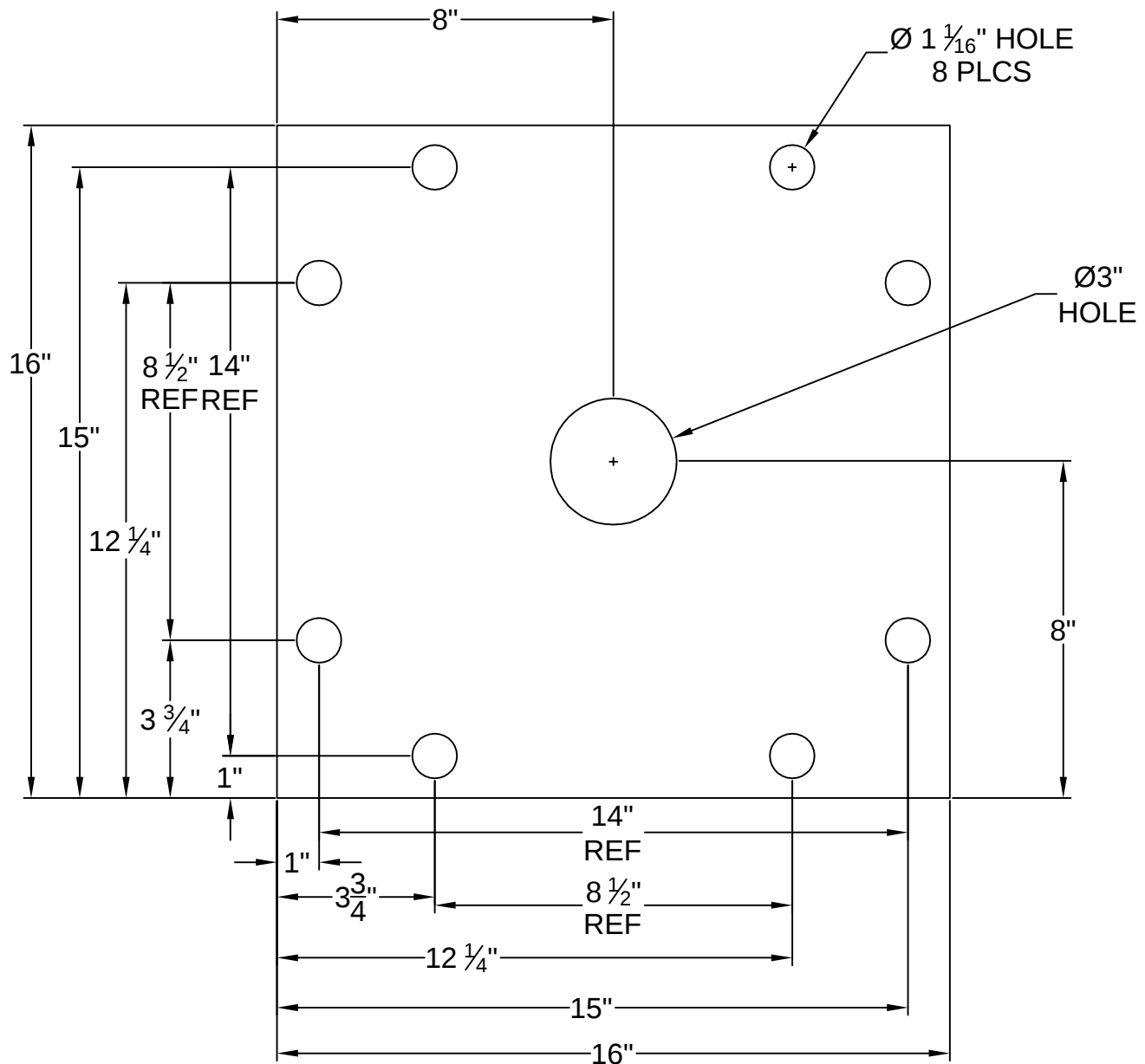
WARNING: THESE PRODUCTS ARE NOT PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.



BASE MOUNTING DIMENSIONS



HT40/50KX MOUNTING DIMENSIONS



REFERENCE INSTALLATION DWG 22172 FOR MOUNTING BOLT SIZE AND TORQUE SPECIFICATIONS.



VENCO VENTURO INDUSTRIES LLC
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TITLE
BASE MOUNTING DIM

HT40/50KX

DATE
02-21-14H

SUPERSEDES
05-03-12G

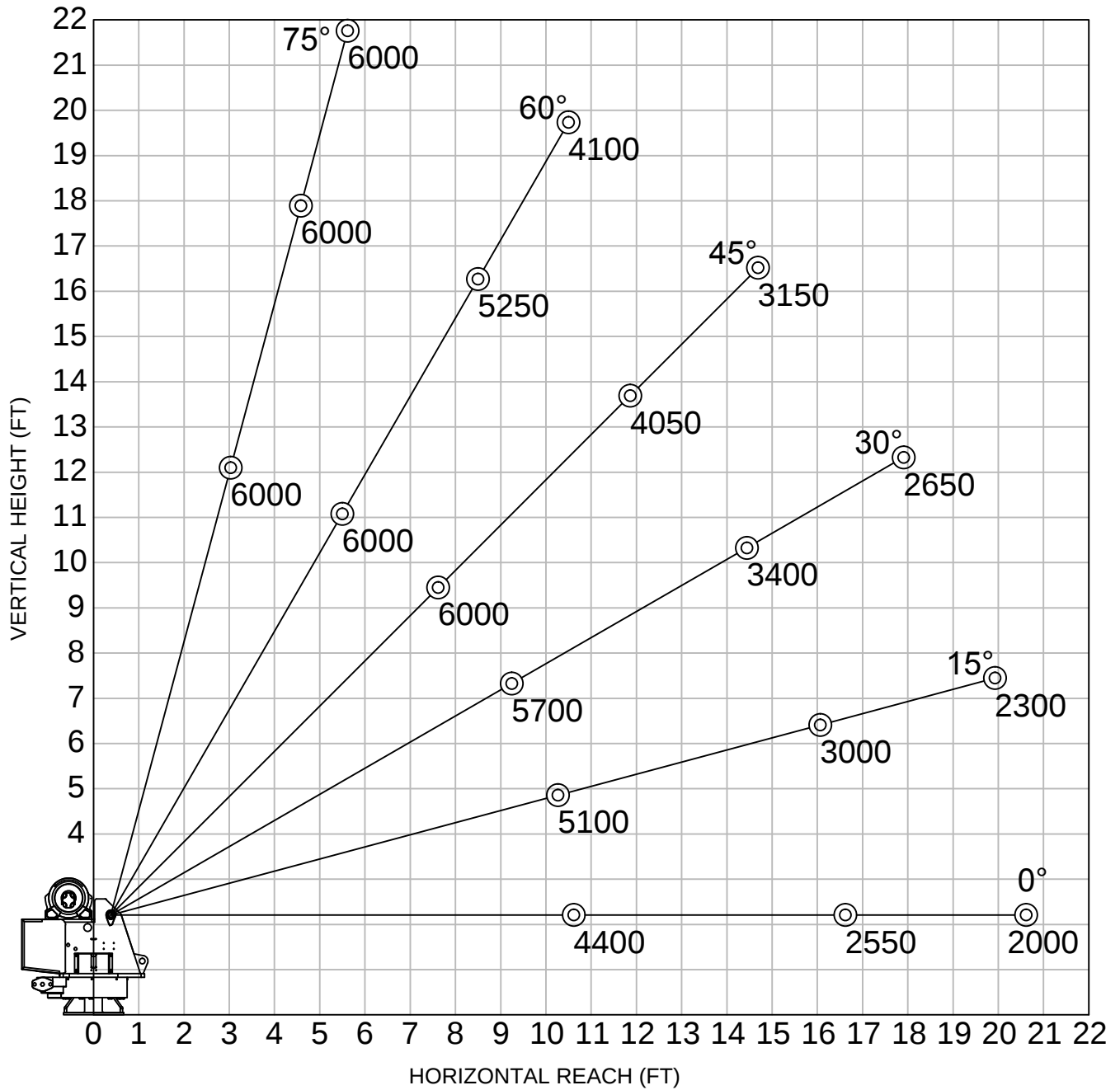
SECTION
C100

18353

HT40KX, 10'-16'-20' BOOM

▲ 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 3000 LBS

2 PART LINE FOR LOADS OF 3000 LBS AND GREATER

WEIGHT OF LOAD BLOCK = 51 LBS



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
MAXIMUM LOAD CAPACITY

HT40KX, 10'-16'-20' BOOM

DATE
05-03-16H

SUPERSEDES
06-17-14G

SECTION
C100

22341

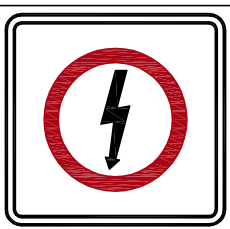
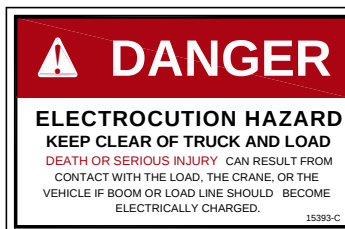
SECTION 150

SAFETY

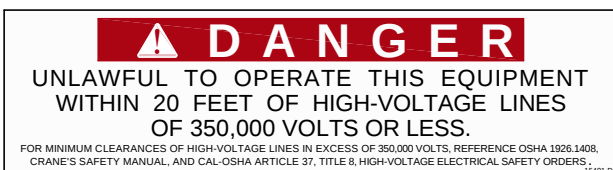


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VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION



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



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CINCINNATI, OHIO

TITLE	DATE	SECTION
HAZARD APPS & INFO	02-21-14M	C150
ET/HT CRANES	SUPERSEDES 12-20-13L	15394

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.



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TITLE

CRANE SAFETY & HZRDS

DATE

02-21-14D

SECTION

C150

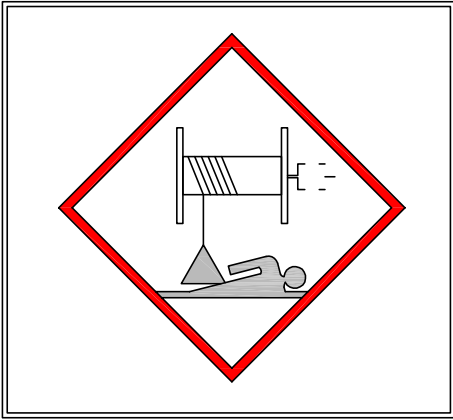
HYDRAULIC CRANES

SUPERSEDES

04-04-12C

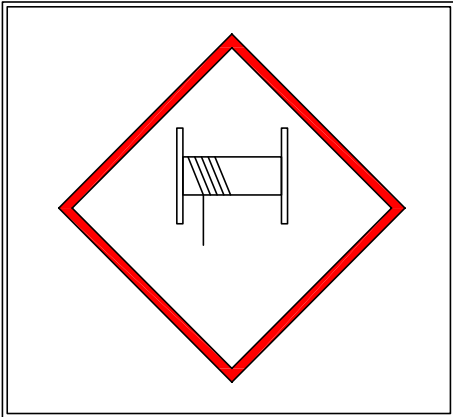
920612

WINCH SAFETY WARNINGS



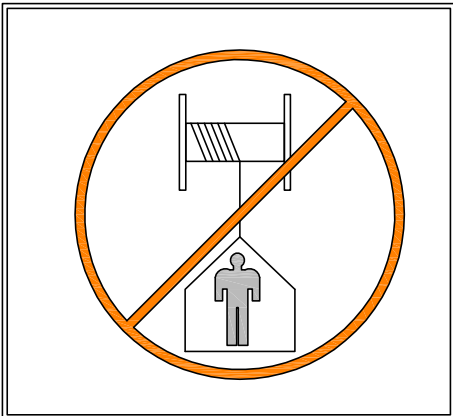
DANGER

- 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



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TITLE
WINCH SAFETY
HT CRANES

DATE
02-21-14D
SUPERSEDES
04-04-12C

SECTION
C150
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.



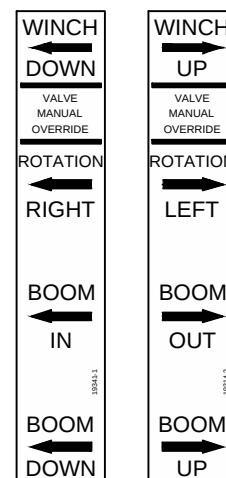
PART NO.: 19314-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (NON-PROP)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1 EACH

PLACEMENT: Inside of rear cover.



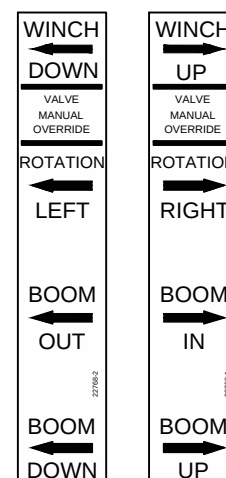
PART NO.: 22768-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Inside of rear cover.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST

HT40/50/60/66 SERIES

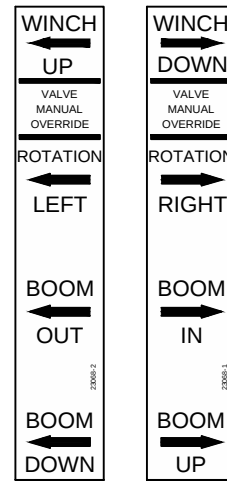
DATE
11-30-22E

SUPERSEDES
02-21-14D

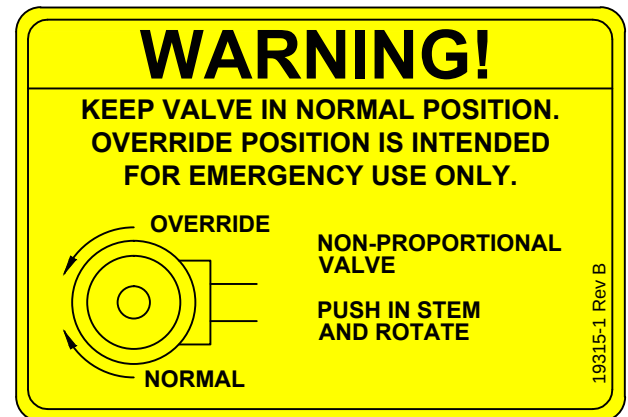
SECTION
C150

22181A

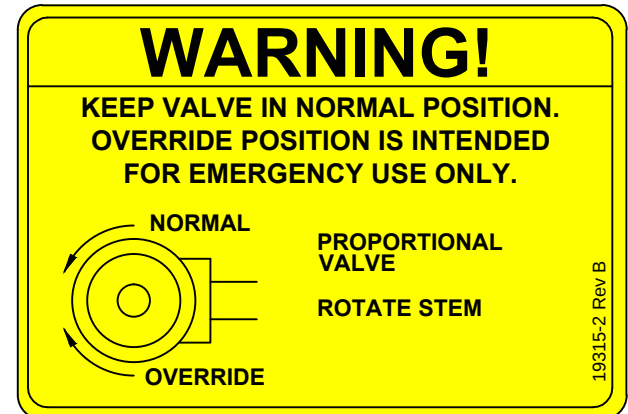
▲
PART NO.: 23068-1 [LEFT] & -2 [RIGHT]
DECAL: MANUAL OVERRIDE
 (HT66KXX w/ TH-2 Winch ONLY)
FUNCTION: To inform the operator of
 manual override locations.
QUANTITY: 1
PLACEMENT: Inside of rear cover.



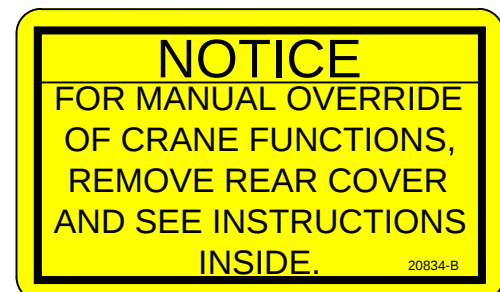
PART NO.: 19315-1
DECAL: SHUT OFF (NON-PROPORTIONAL)
FUNCTION: To show the operator how to
 override master shut off valve.
QUANTITY: 1
PLACEMENT: Inside rear cover.



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.



VENCO VENTURO INDUSTRIES LLC
 CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST

HT40/50/60/66 SERIES

DATE
 04-14-23H

SUPERSEDES
 11-30-22G

SECTION
 C150

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.



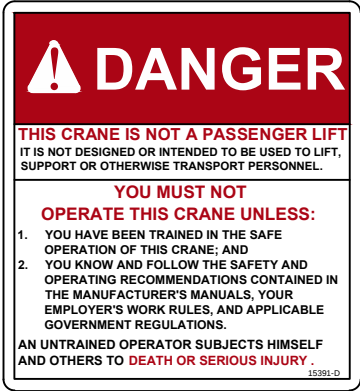
PART NO.: 15391

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.



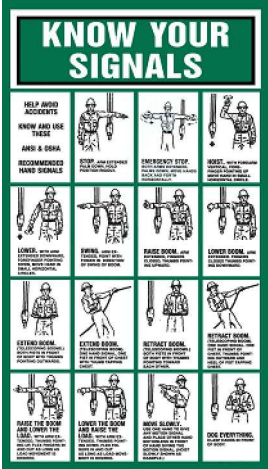
PART NO.: 22499

DECAL: KNOW YOUR SIGNALS

FUNCTION: To inform the operator of proper signals.

QUANTITY: 1

PLACEMENT:Right side of rear cover.



 VENTURO [®] VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE DECAL DRAWING & LIST	DATE 11-30-22F	SECTION C150
	HT40/50/60/66 SERIES	SUPERSEDES 02-21-14E	22181C

PART NO.: 17389

DECAL: MEDIUM VENTURO

FUNCTION: Branding.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 28523

DECAL: MODEL HT40KX

FUNCTION: Branding.

QUANTITY: 2

PLACEMENT: Boom.



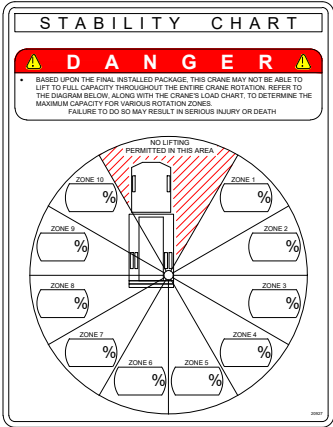
PART NO.: 20927

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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CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST
HT40KX

DATE
06-16-23
SUPERSEDES
-

SECTION
C150
28524

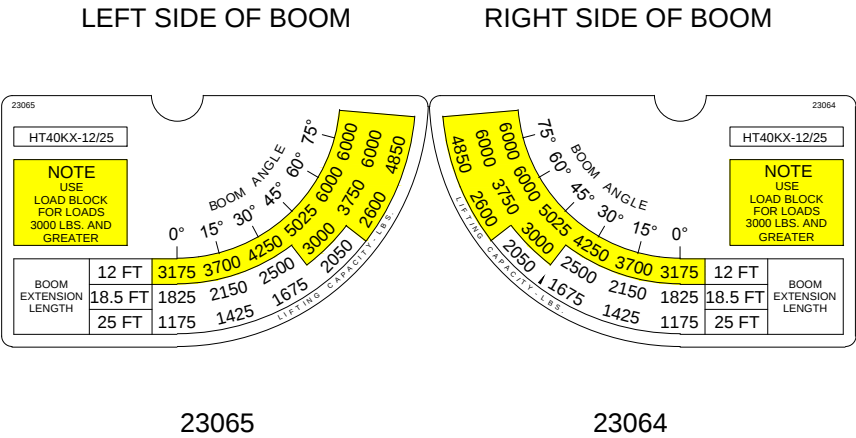
PART NO.: 23065 & 23064

DECAL: HT40-25' 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



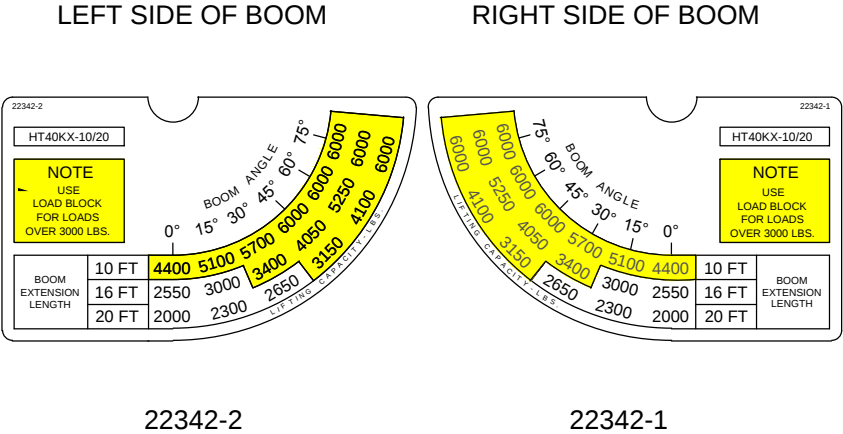
PART NO.: 22342-2 & 22342-1

DECAL: HT40-20' 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



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
BOOM CAPACITY DECALS	11-11-20	C150
HT40 SERIES	SUPERSEDES	24196
	-	

SECTION 200

INSTALLATION



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CRANE INSTALLATION, PAGE 1

HT40/50KX

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 HT40KX is 45,000 ft. lbs. and for the HT50KX is 55,000 ft. lbs.

The maximum vertical load for the HT40KX is 7100 lbs. and for the HT50KX is 9300 lbs .

CRANE MOUNTING

The crane base plate or mounting pedestal must be bolted to the body reinforcing plate with eight (8) grade five (5) bolts of 1" dia. with either coarse or fine threads, torqued to 587 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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

CRANE INSTALLATION

HT40/50KX

DATE

02-21-14F

SUPERSEDES

05-03-12E

SECTION

C200

22172

▲ 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	NON-PROPORTIONAL	PROPORTIONAL
PRESSURE	3/8"	5/8"
RETURN	1/2"	3/4"
SUCTION	3/4"	1-1/4"

RESERVOIR

The PTO reservoir should have a capacity of 10 gallons (non-proportional) or 25 gallons (proportional) 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 2.5 GPM for the HT40 non-proportional, 12.0 GPM for the HT40 proportional, 3.0 GPM for the HT50 non-proportional, or 12.0 GPM for the HT50 proportional. These cranes' relief pressures are all 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 (10 gallon reservoir = 20 minutes / 25 gallon = 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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
CRANE INSTALLATION
HT40/50 SERIES CRANES

DATE
05-10-21G
SUPERSEDES
07-31-15F

SECTION
C200
22173

CRANE OPERATION AND MAINTENANCE INSTRUCTIONS ▲

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 the single-line rated load 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 ▲

The control pendant should be stored in a compartment or the cab when the crane is not in use.

Before activating the control pendant, inspect the cord(s) and pendant head/switches for damage. With the pendant OFF and the PTO disengaged, actuate all switches in both directions to verify that they all have the same feel/sound and return to the center position.

PTO SYSTEM ▲

Check the hydraulic fluid level in the PTO system reservoir. Engage PTO and set the engine speed to provide the desired hydraulic flow rate per the PTO system instructions.

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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

CRANE OP / MNTNC INST

DATE

08-08-23A

SECTION

C200

HT CRANES



SUPERSEDES

10-11-18

23753

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.

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

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

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. Refer to Drawings 23024 or 27029 in this manual for replacement parts and configuration information, respectively.

TELESCOPIC HEXAGONAL BOOM

STANDARD LENGTH (10' - 20'); Double Stage

The hexagonal shaped boom shall telescope to provide a horizontal reach range of 10 ft. to 20 ft. using a hydraulic power extension cylinder with a 10 ft. stroke (See pages 24188 and 24189).

OPTIONAL LENGTH (12' - 25'); 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 24190 and 24191).

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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

CRANE OP / MNTNC INST

HT40/50KX

DATE

12-16-20P

SUPERSEDES

02-21-14N

SECTION

C200

22345B

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. Unplug 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	Swepeco #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 .



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

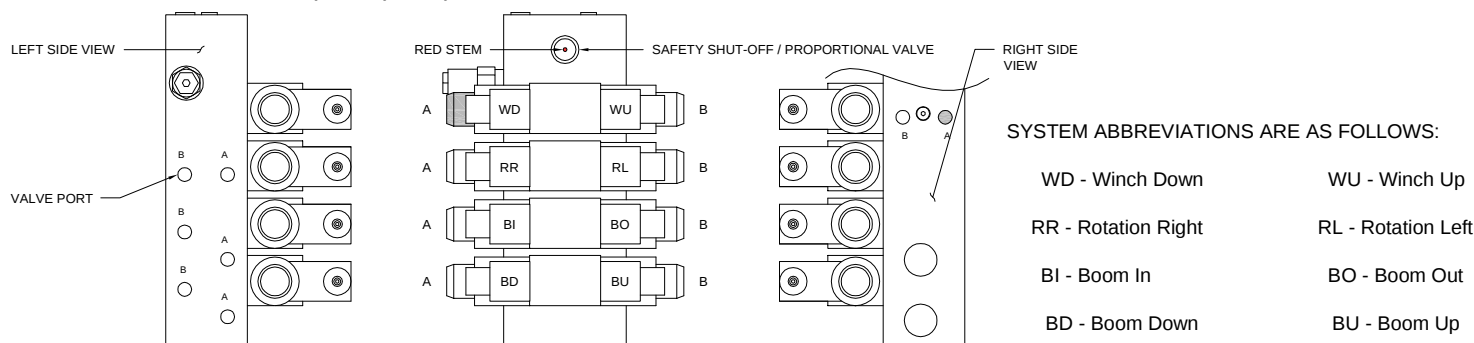
TITLE	DATE	SECTION
CRANE OP / MNTNC INST	02-21-14E	C200
HT40/50KX	SUPERSEDES 11-29-12D	22174

EXPLANATION OF HYDRAULIC VALVE SYSTEMS

OVERVIEW

Venturo's hydraulic cranes are available in two [2] general configurations: Proportional and Non-Proportional. The **Non-Proportional** configuration (see fig. 1) utilizes a safety shut-off valve which, when **not** actuated, allows hydraulic fluid to bypass the valve bank and return to tank; the crane will not function when the safety shut-off valve is not actuated. When the safety shut-off valve is actuated (control pendant energizes the coil or the coil is manually overridden), hydraulic fluid cycles through the valve bank and allows the crane to function. The **Proportional** configuration utilizes a proportional valve which, in its fully closed and fully opened positions, functions similarly to the safety shut-off valve, but adds the ability to operate the crane at any speed in between these two extremes.

In both the Non-Proportional and Proportional configurations, the four [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 two [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 the associated manual override lie on the same side of the valve bank (both 'push').



MANUAL OVERRIDE SYSTEM

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

To operate in manual override mode:

- (1) Override the safety shut-off or proportional valve by turning the red stem on the valve as stated below:

Non-Proportional system

For override operation, press stem in and rotate counter-clockwise until it stops.

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

Proportional system

For override operation, rotate stem clockwise (the farther the stem turns, the faster the crane operates).

To return to normal operation, rotate 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 press firmly. For example, pushing the stem labeled 'A' on the first bank (refer to illustration in Fig. 1) will actuate winch down.



W A R N I N G



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

EMERGENCY STOP

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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
HYDRAULIC SYSTEM

HT SERIES CRANES

DATE
07-11-14D

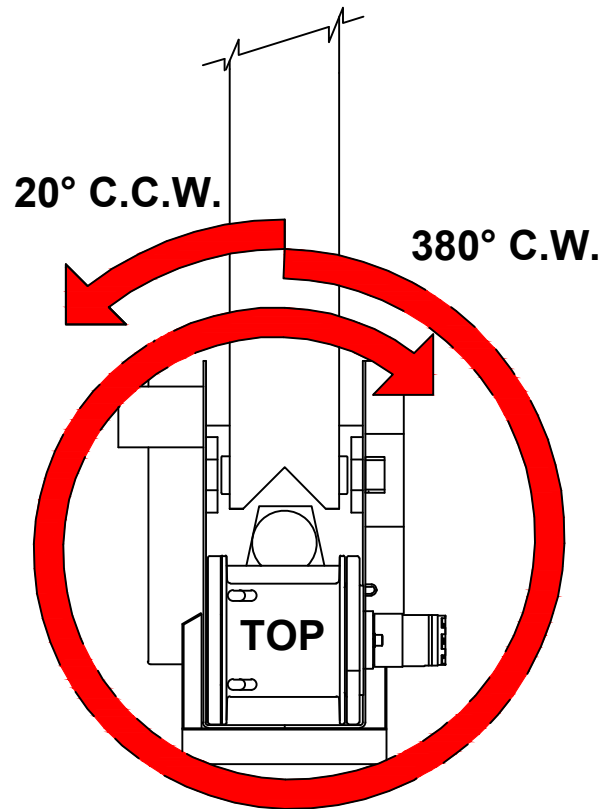
SUPERSEDES
12-14-09C

SECTION
C200

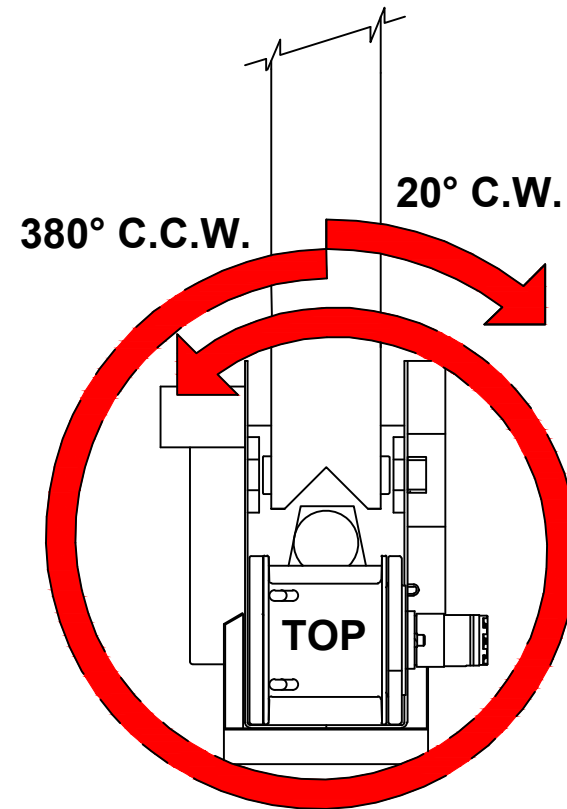
22328

400° ROTATION STOP LOCATION

CURBSIDE



STREETSIDE



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
ROTATION STOP LOCATION

400° ROTATION CRANES

DATE
03-09-23F

SUPERSEDES
05-20-20E

SECTION
C200

20051

STABILITY TEST - HT40-20' 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. Locate the Overload Pressure Switch at the base of the elevation cylinder
 - 5.1. Disconnect the black & white wires from the housing and then connect the black & white wires together to by-pass the Overload Pressure Switch for the stability test. **Note: The black & white wires MUST be reconnected to the Overload Pressure Switch after the stability test has been completed.**
6. Use a **test weight** weighing a **minimum** of **2353 lbs**, (includes load block weight of 51 lbs.) to a **maximum of 2500 lbs**.
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).
 - 9.1. Using the test weight, extend the boom slowly, until one of the two conditions occur:
 - 9.1.1. Full extension is reached - Mark the ZONE in question **100%**
 - 9.1.2. The truck becomes unstable i.e. a tire lifts off the ground
 - 9.1.2.1. Retract the boom until at least one tire on each corner of the truck is making contact with the ground
 - 9.1.2.2. Use the formula below to determine the allowable **% of Rated Capacity** for the ZONE in question:
10. Note: The "**Max Stable Reach in inches**" is measured from the **center of rotation** of the crane housing to the **lifting load hook**.

$$\% \text{ Rated Capacity} = \frac{\text{"Max Stable Reach" in inches}}{247} \times 100$$
11. Record the **% of Rated Capacity** in the appropriate blank (region) on the Crane Stability page (ref. 20907) and decal.
12. Repeat Steps 7 through 12 for each ZONE on the stability page.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

STABILITY TEST

HT40-20' SERIES

DATE

03-01-23H

SUPERSEDES

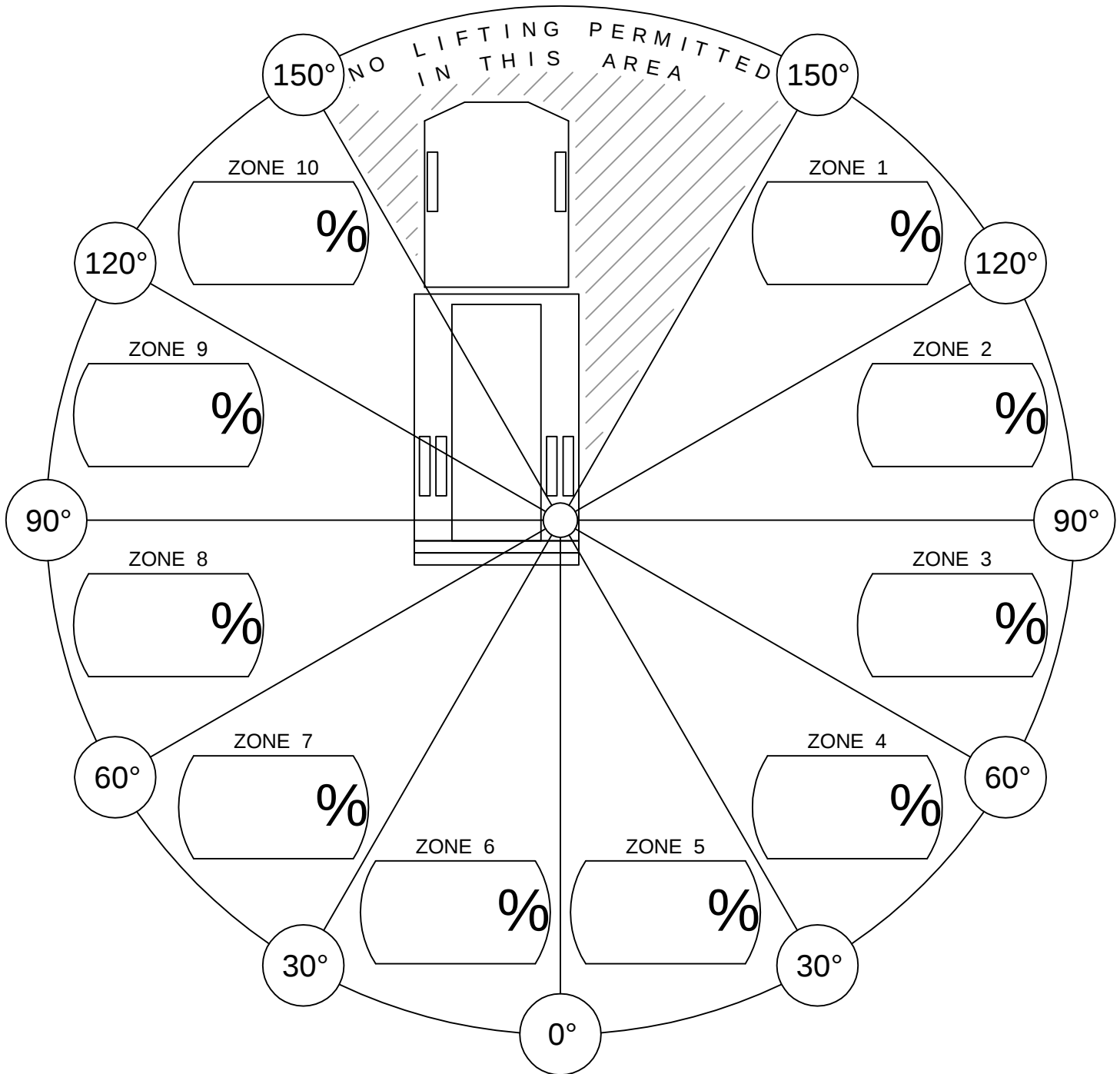
11-24-21G

SECTION

C200

20906-40

CRANE STABILITY



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

CONDITIONS:

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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
STABILITY CHART

VENTURO CRANES

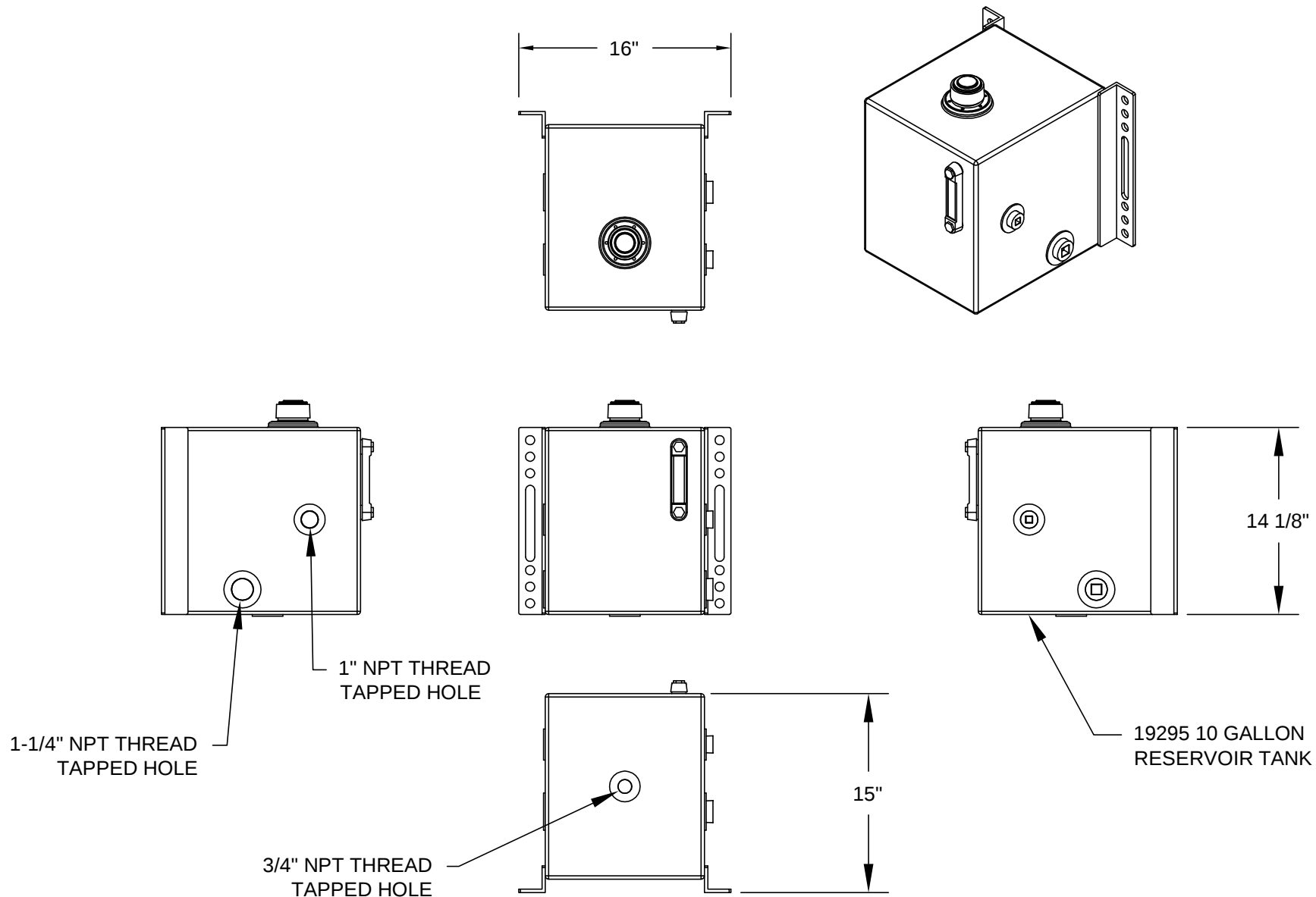
DATE
05-11-17F

SUPERSEDES
02-21-14E

SECTION
C200

20907

19295; 10 GALLON HYDRAULIC TANK



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

10 GALLON HYDRAULIC TANK

VARIOUS APPLICATIONS

DATE

05-01-14A

SUPERSEDES

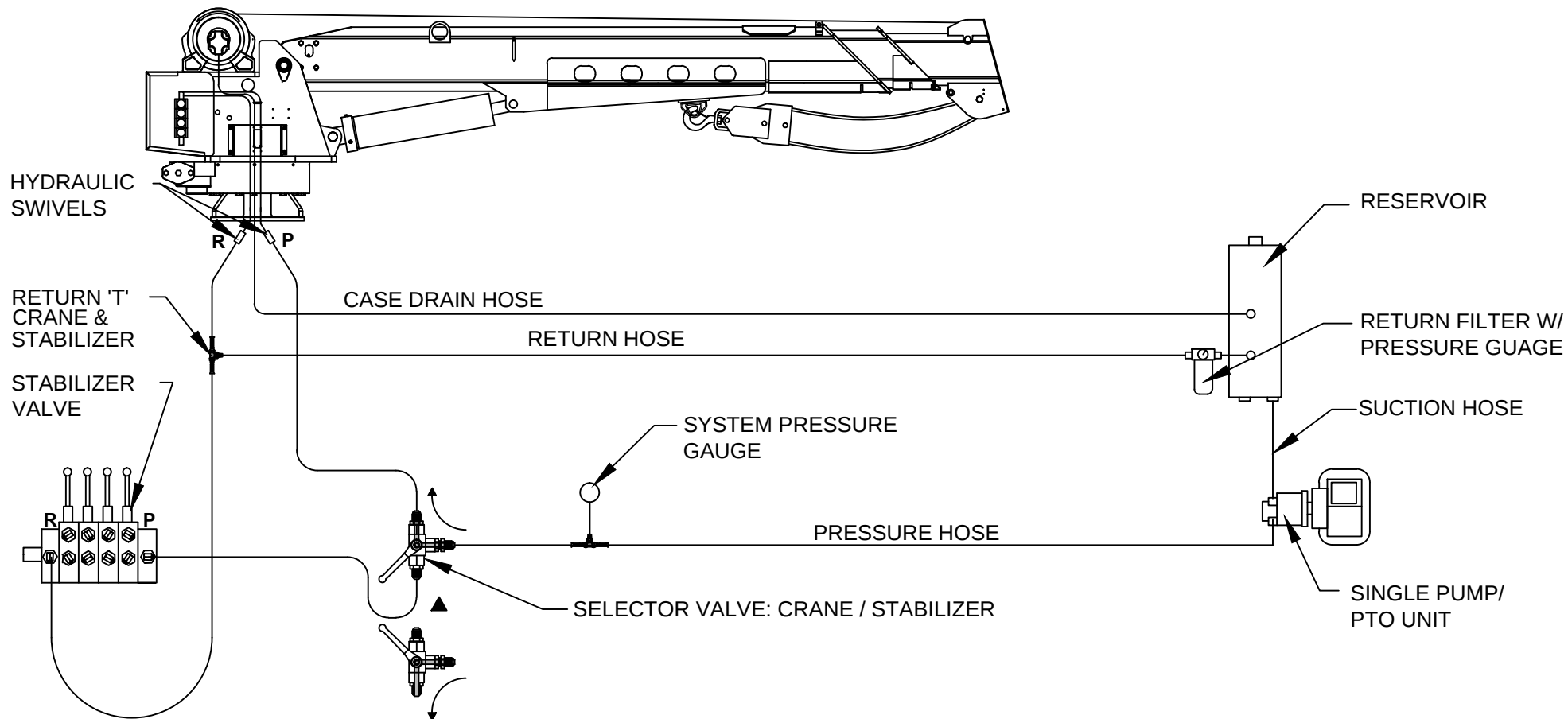
03-17-06

SECTION

-

22826

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



CAUTION

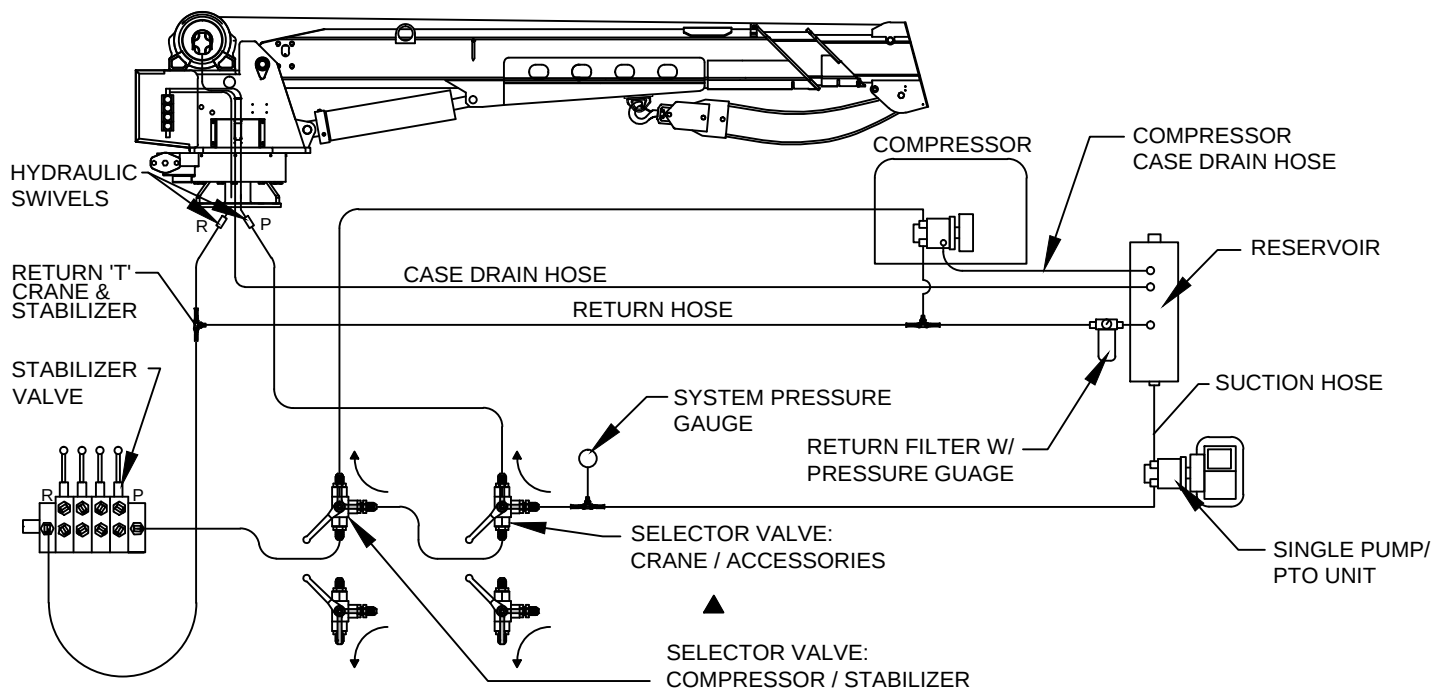
- SELECTOR VALVE MUST BE 'NON-CLOSED CENTER TRANSITION' TYPE.



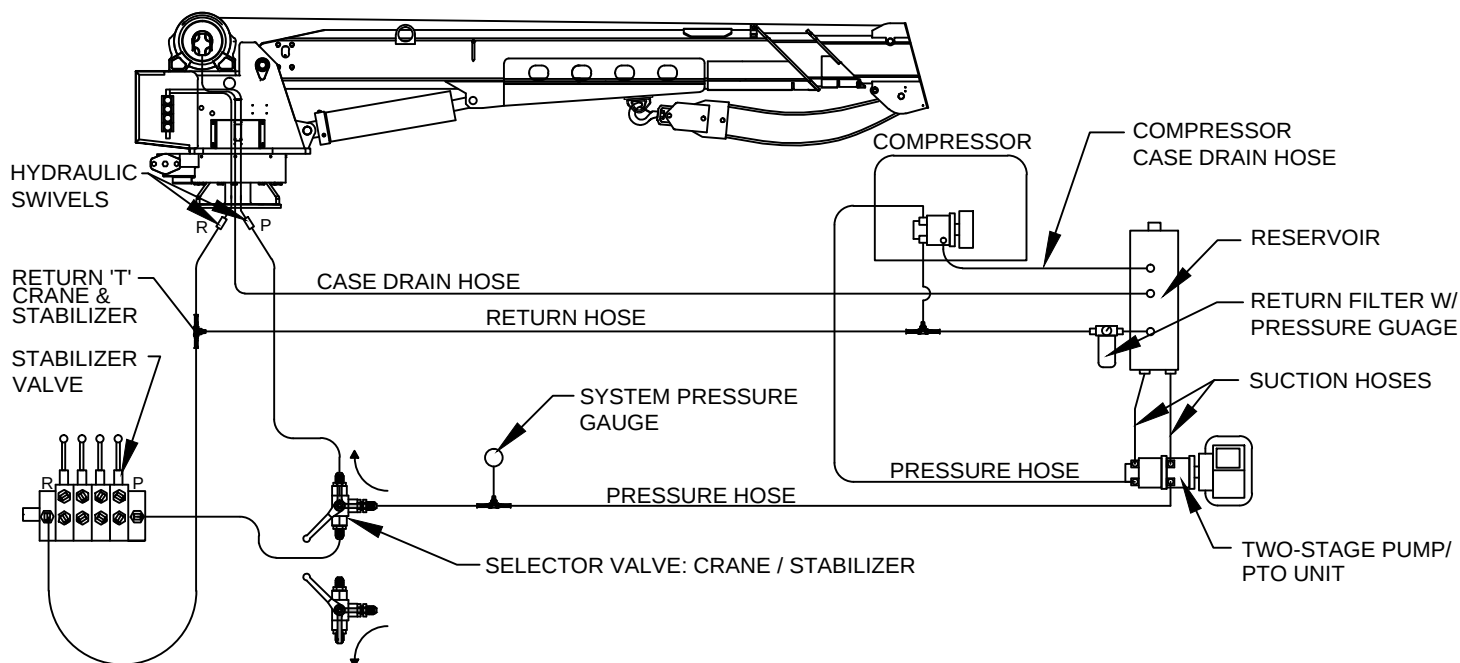
CAUTION

- 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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
CNNCTN GDE, PAGE 2/2

HT CRANES

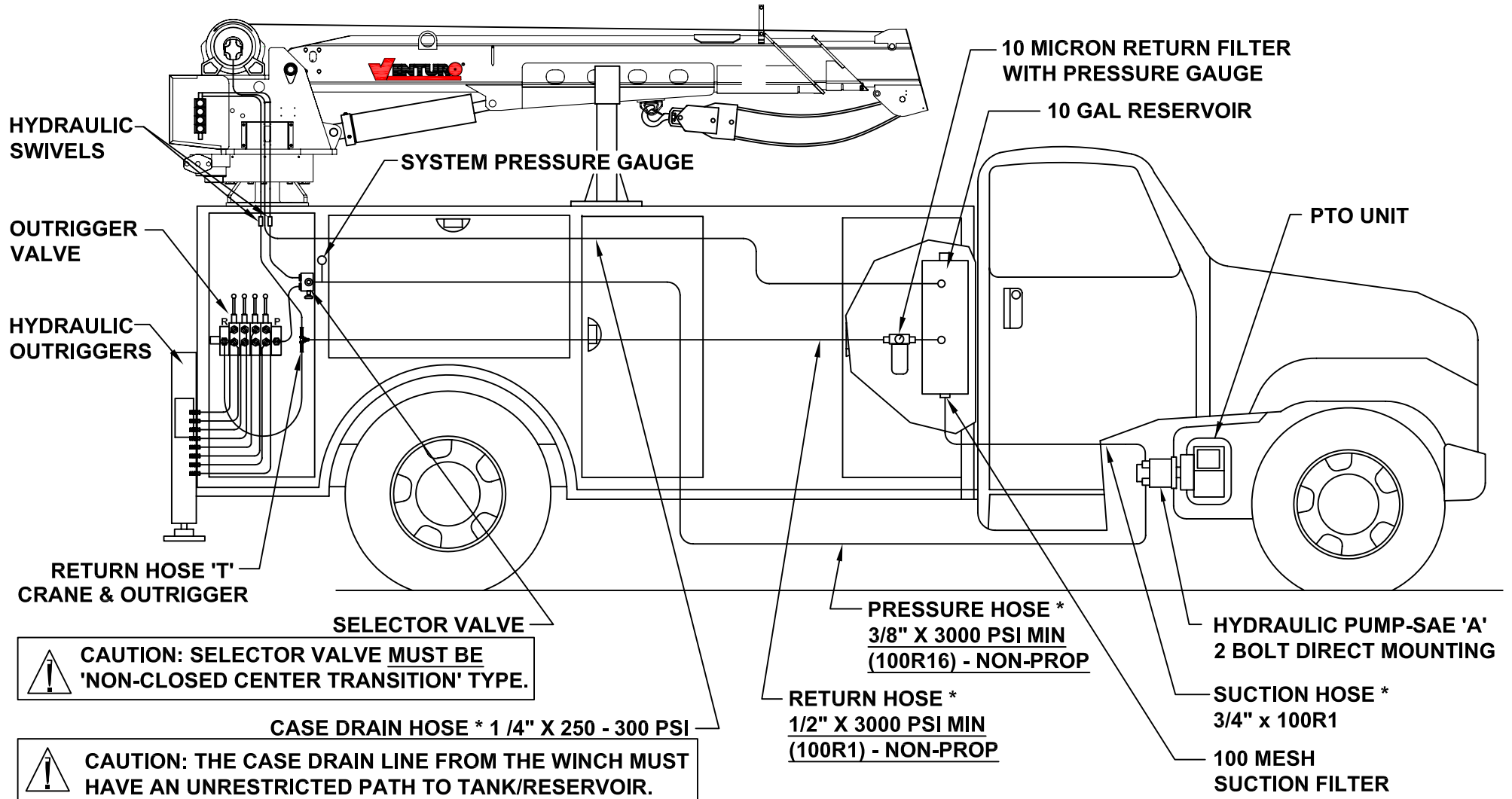
DATE
08-08-23C

SUPERSEDES
02-21-14B

SECTION
C200

23014

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



HYDRAULIC RECOMMENDATIONS :
HT40/50KX STANDARD, 2.6 TO 3.0 GPM @ 3000 PSI (19294-2.64 PTO PACKAGE)

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



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
HYDRAULIC COMPONENT INSTALLATION

DATE
7-13-10

SECTION
C200

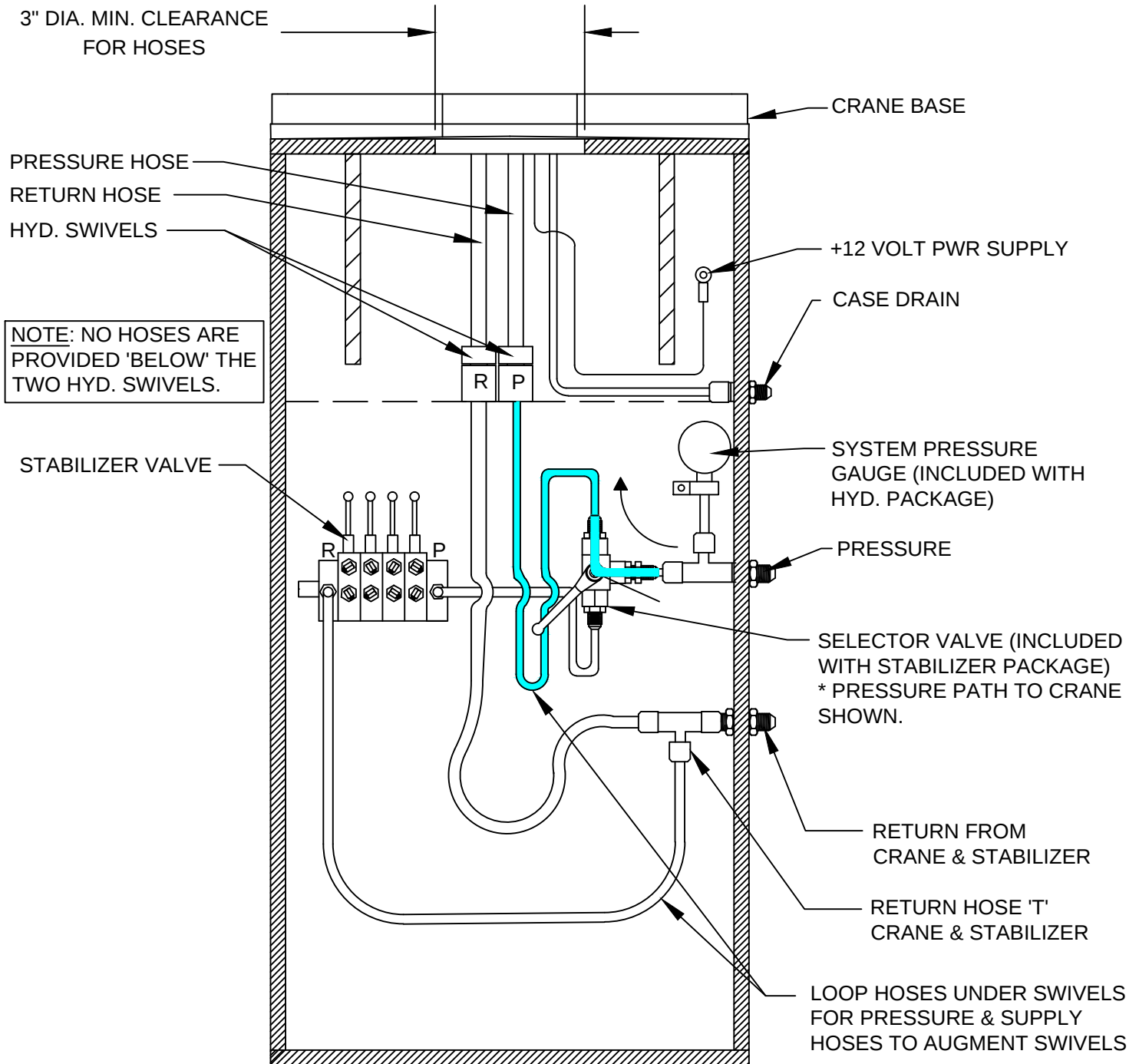
PTO INST - HT40/50 (NON-PROPORTIONAL)

SUPERSEDES

-

22980

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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
CONNECTIONS GUIDE

HT CRANES

DATE
08-07-23G

SUPERSEDES
02-21-14F

SECTION
C200

22913

WIRE ROPE INSTALLATION

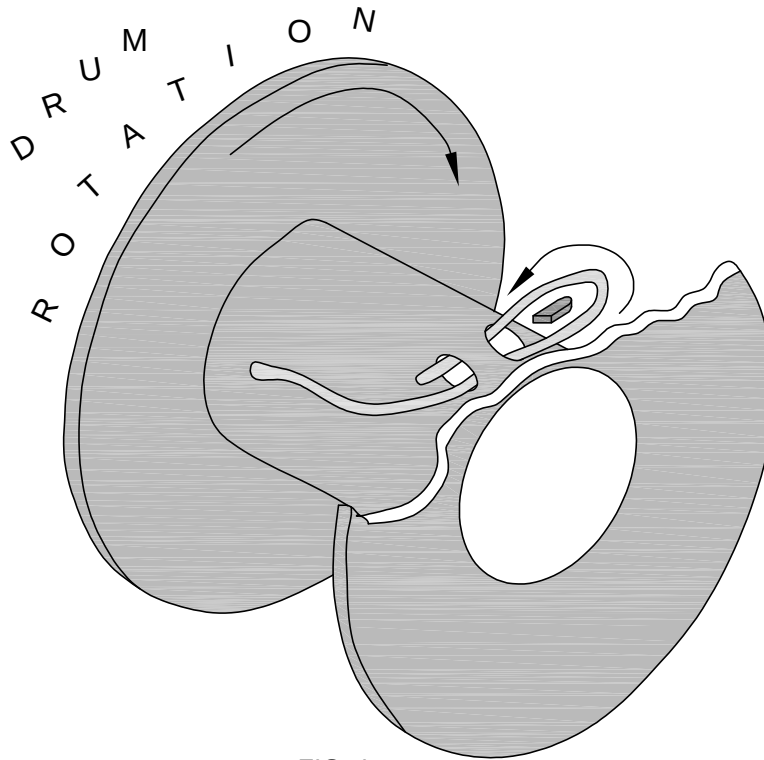


FIG. 1

- 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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

WIRE ROPE INSTALLTN

DATE

02-21-14K

SECTION

C200

ET6K & LARGER CRANES

SUPERSEDES

12-26-13J

22245

SECTION 300

MAINTENANCE

&

SERVICE



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

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.

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 performance, the following oil change schedule should be followed:

Initial Change - after the initial 100 hours of operation or six months.

Periodic Change - after every 300 hours of operation or two years.

Temp Range (°F)	Winch Gear Oil
120° to 10°	High quality SAE 90 gear lubricant oil
Severe Duty	Swepeco #201 multi-purpose gear oil



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

MAINTENANCE INFO

DATE

11-10-22D

SECTION

C300

HT25/30/40/50/60/66KX(P)

SUPERSEDES

02-21-14C

23203

WIRE ROPE ASSEMBLY

WIRE ROPE:

3/8" DIA, 100' LONG

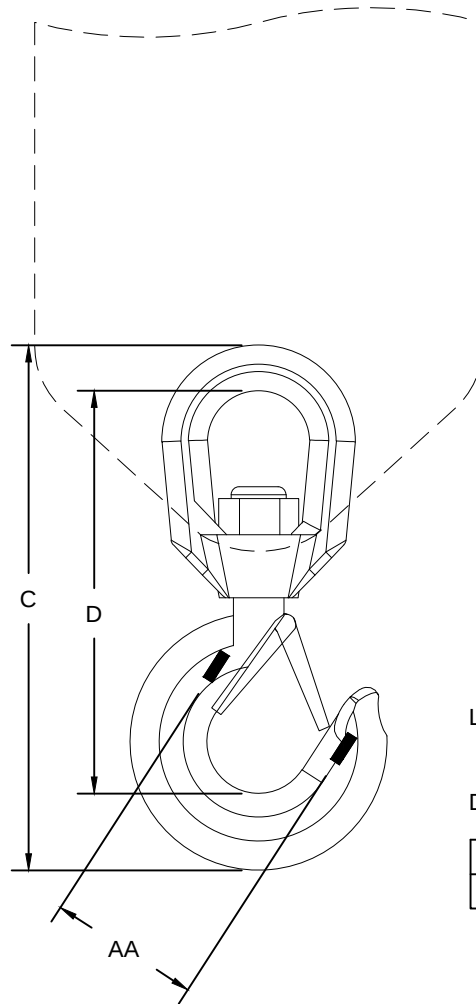
▲ GAC 7X19 XIP-RHRL-IWRC, SB 14,400 LBS



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

WIRE ROPE & HOOK SPECIFICATIONS

HT40/50KX

DATE

05-09-16D

SUPERSEDES

02-21-14C

SECTION

C300

23231

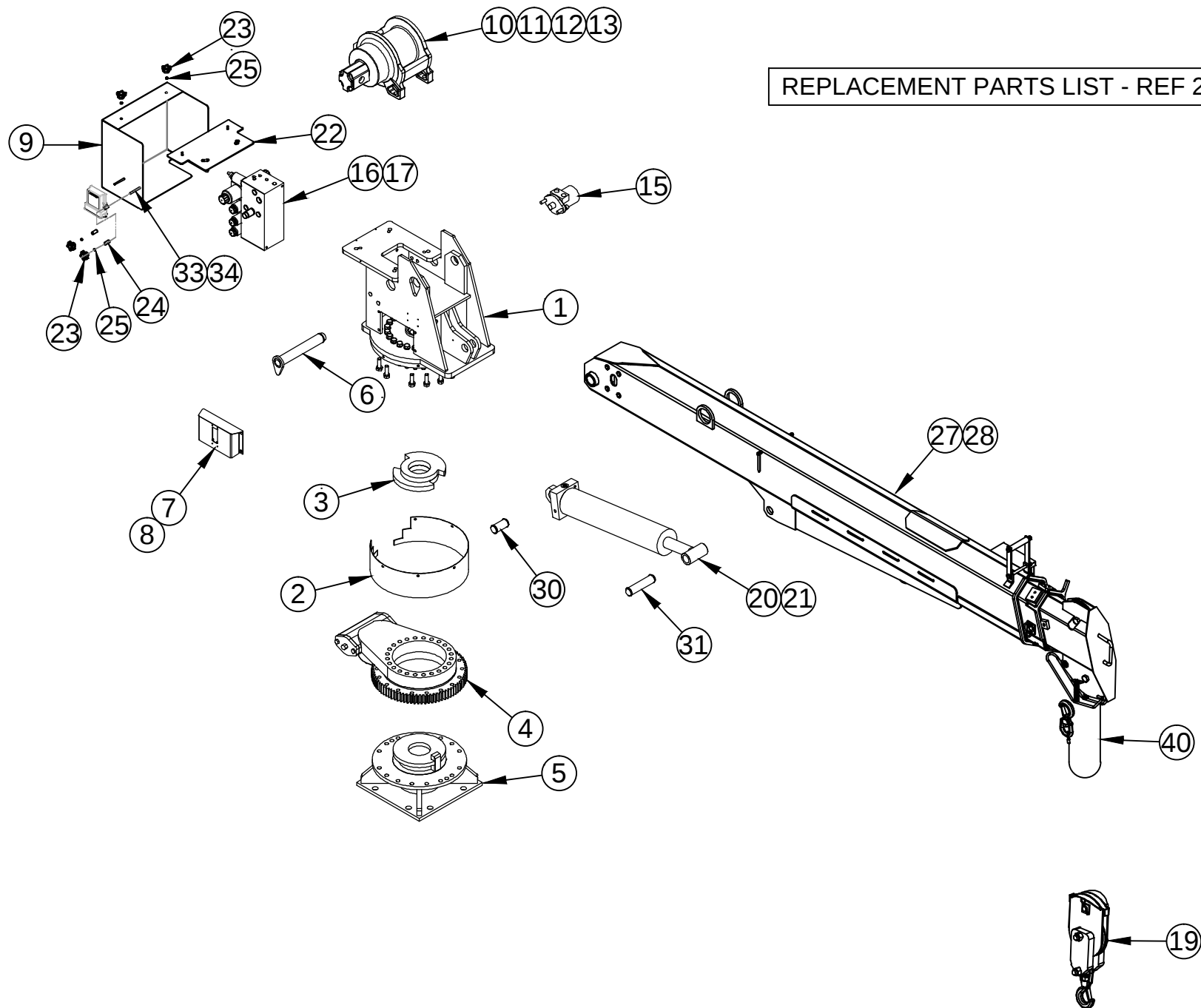
SECTION 400

REPLACEMENT PARTS



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

REPLACEMENT PARTS LIST - REF 22988



ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	27033	HOUSING WELDED ASSEMBLY	41	-	FIELD SERVICE LABEL KIT - HT40KX NON-PROP. FIELD SERVICE LABEL KIT - HT40KX PROPORTIONAL FIELD SERVICE LABEL KIT - HT50KX NON-PROP. FIELD SERVICE LABEL KIT - HT50KX PROPORTIONAL
2	22726	OUTER RING	42	-	
3	22702	ROTATION STOP RING WELDED ASSEMBLY	43	-	
4	22704	SLEWING RING	44	-	
5	22710	PEDESTAL WELDED ASSEMBLY	45	-	
6	22721	PIVOT PIN MAIN BOOM PIVOT	46	-	
7	22715-2	SIDE COVER W/ PENDANT HOLE (REF. 22987)	47	-	
8	22715-1	SIDE COVER W/O HOLE (NOT SHOWN)	48	-	
9	22842	REAR HYD. VALVE COVER FOR PROP. & NON-PROP. APPLC.	49	-	
10	22828	WINCH - 3000 LB (SINGLE LINE) - HT40KX - NON-PROP	50	-	
11	22829	WINCH - 3000 LB (SINGLE LINE) - HT40KX - PROP	51	⚠ 22920	
12	22909	WINCH - 4000 LB (SINGLE LINE) - HT50KX-NON-PROP	52	⚠ 22921	
13	22830	WINCH - 4000 LB (SINGLE LINE) - HT50KX-PROP	53	⚠ 22924	
14	-		54	⚠ 22925	
15	19177	HYDRAULIC ROTATION MOTOR	55	-	
16	22501	HYDRAULIC VALVE ASSEMBLY - NON-PROP	56	-	
17	22736H	HYDRAULIC VALVE ASSEMBLY - PROP.	57	-	
18	-		58	-	
19	17949	LOAD BLOCK ASSEMBLY	59	-	
20	21747	ELEV. CYL. 4.5" BORE x 2" ROD x 19.63" STROKE	60	-	
21	21748	ELEV. C YL. 5" BORE x 2" ROD x 19.63" STROKE	61	-	
22	28269	REAR COVER MOUNTING PLATE, WELDED ASS'Y	62	-	
23	28327	KNOB, HAND, 5-POINT	63	-	
24	28328	NYLON SPACER, .25" ID X .5" OD X 1"	64	-	
25	!LNUT-02520-H	LOCK NUT, 1/4-20, HVY PATT, NYLON INSERT	65	-	
26	-		66	-	
27	21420	BOOM ASSEMBLY - HT40/50KX	67	-	
28	21410	BOOM ASSEMBLY - HT40/50KXX	68	-	
29	-		69	-	
30	22256	ELEVATION CYLINDER PIN - INBOARD	70	-	
31	22257	ELEVATION CYLINDER PIN - OUTBOARD	71	-	
32	-		72	-	
33	!HHCS02520250SF	HHCS, 1/4-20 X2.50"LG, STAINLESS, FULL THRD	73	-	
34	!JNUT-02520NS	JAM NUT, NYLON INSERT, 1/4-20, STAINLESS	74	-	
35	-		75	-	
36	-		76	-	
37	-		77	-	
38	-		78	-	
39	-		79	-	
40	17094-3/8-100	WIRE ROPE ASSEMBLY - 3/8" x 100 FT	80	-	

REPLACEMENT PARTS DWG REFERENCE 22987

⚠ ITEM NOT SHOWN ON REPLACEMENT PARTS DRAWING



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST

HT40/50KX

DATE

06-24-22J

SUPERSEDES

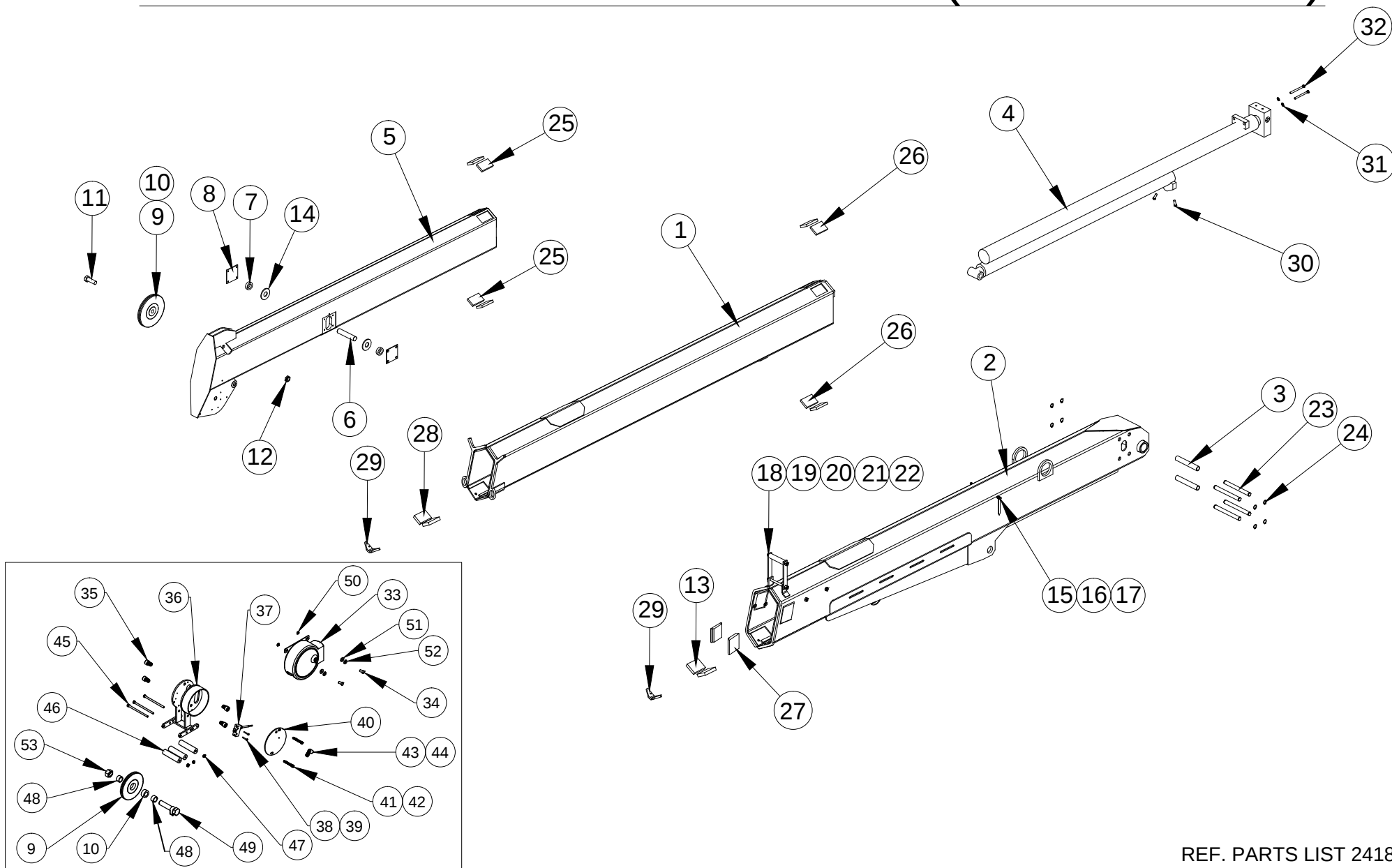
05-17-22H

SECTION

C400

22988

21410 BOOM PARTS DRAWING (FULL POWER)



REF. PARTS LIST 24189



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

21410 BOOM PARTS DRAWING

HT40KX(P) - 20' BOOM

DATE

06-07-23B

SUPERSEDES

02-09-21A

SECTION

C400

24188

21410 BOOM PARTS LIST

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	27209	SECONDARY BOOM WELDED ASSEMBLY
2	1	27207	PRIMARY BOOM WELDED ASSEMBLY
3	2	24535	THRUST ROLLER
4	1	21744	EXTENSION CYLINDER
5	1	21416	TERTIARY BOOM ASSEMBLY
6	1	21405	PIN - CYLINDER
7	2	21428	BUSHING
8	2	23116	PIN BLOCK REINFORCING
9	2	23928	BOOM SHEAVE WITH BUSHING
10	2	23929	SPACER - 23927 & 23928 POLY SHEAVES
11	2	17059-1	SHEAVE AXLE
12	1	!JNUT-07510N	NYLON LOCK-JAMNUT 3/4-10
13	2	23217-17	UHMW GUIDE PAD - B 3.19 x 2.50 x 0.50
14	2	!FWSH-100	FLAT WASHER - 1"
15	2	22490	SPACER, BOOM ARROW 1/2" O.D.
16	2	13459-2	BOOM ARROW 4-7/16 LONG
17	2	!ANUT-02520S	ACORN NUT 1/4-20 STAINLESS
18	1	21935	WIRE-ROPE GUIDE WELDED
19	1	21936	FLAT, MOUNT; WIRE ROPE GUIDE
20	1	!HHCS04414550	HHCS - 7/16-14 X 5-1/2 LG
21	1	21560	ROLLER, UHMW GUIDE
22	2	!LNUT-04414	NYLON INSERT LOCK NUT - 7/16-14
23	4	22255	EXTENSION CYLINDER THRUST PIN
24	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
25	4	23217-1	UHMW GUIDE PAD
26	4	23217-2	UHMW GUIDE PAD
27	2	23217-13	UHMW GUIDE PAD

ITEM	QTY.	PART NUMBER	DESCRIPTION
28	2	23217-14	UHMW GUIDE PAD - B 3.19 x 2.13 x 0.50
29	2	23183	V-BLOCK SLIDER
30	2	!HHCS03816100	HEX HEAD CAP SCREW; 3/8-16 X 1" LG
31	2	!LWSH-050-HC	LOCK WASHER; 1/2" HI-COLLAR
32	2	!SHCS05013200	SOCKET HEAD CAP SCREW; 1/2-13 X 2" LG
33	1	28190	CORD REEL ASSEMBLY
-	1	28191	BRACKET, CORD REEL (RIGHT HAND MOUNTING)
34	2	!SHCS03118075S	SOCKET HEAD CAP SCREW; 5/16-18 X 3/4"
35	4	27467	SOCKET HEAD CAP SCREW; NYLON, 1/2-13 X 3/4"
36	1	27468	WELDMENT, COMPACT A2B FRAME (LEFT HAND)
37	1	19376	A2B SWITCH
38	2	!PHCS#0632100	PHCS; 6-32 X 1"
39	2	!LWSH-#06	LOCK WASHER; #06, GR. 5
40	1	27473	COVER PLATE; COMPACT A2B
41	2	!SHCS02520200SS	SOCKET HEAD CAP SCREW; 1/4-20 X 2", SS
42	2	23379	WASHER, NYLON, BLACK, .375" OD X .25" ID X .02"
43	1	19269	CABLE CLAMP, 1/4"
44	1	!PHCS#1032038-M	PHCS; 10-32 X 3/8", GR. 5
45	3	!HHCS02520450	HHCS; 1/4-20 X 4-1/2" LG
46	3	27475	WIRE ROPE GUIDE ROLLER
47	3	!JNUT-02520N	JAM NUT; 1/4-20 W/ NYLON INSERT
48	1	27476	SPACER/PIVOT; COMPACT A2B
49	1	28362	ASSY, WELDED, CAM & HHCS CA2B CUT-OUT
50	2	28198	INSULATING SLEEVE WASHER - 5/16"
51	2	01016	FIBER WASHER
52	2	!FWSH-031	FLAT WASHER; 5/16" SAE
53	1	!LNUT-07510	NYLOC LOCK NUT, FULL, 3/4-10, GR. 5, ZINC

REF PARTS DRAWING 24188



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST

HT40KX(P) - 20' BOOM

DATE

06-09-23C

SUPERSEDES

06-07-23B

SECTION

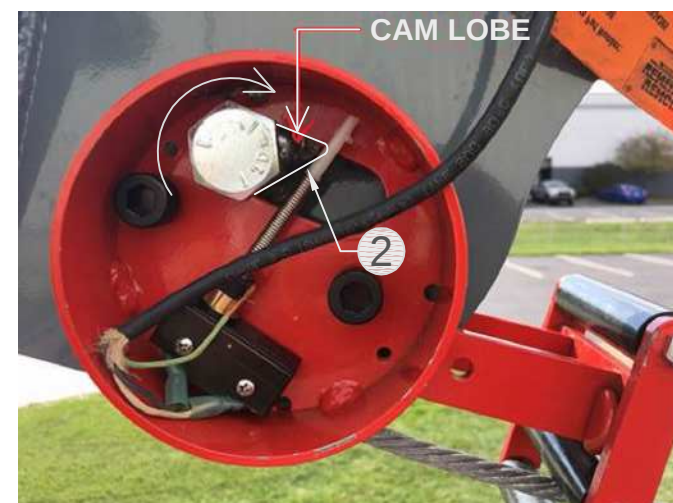
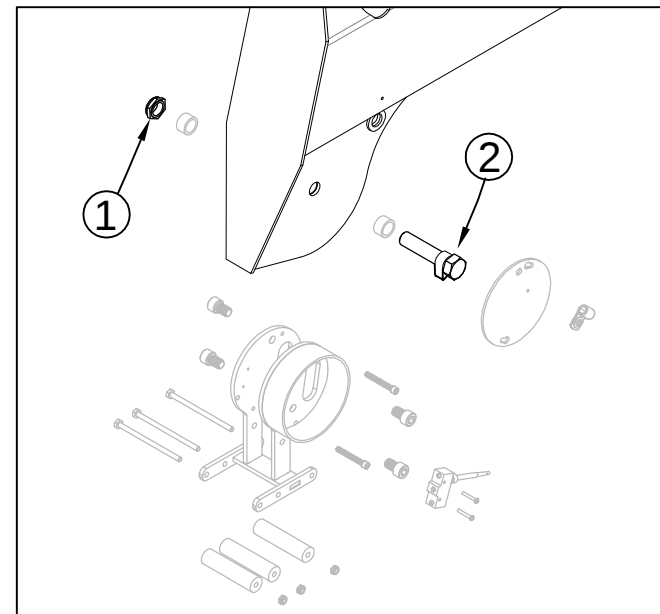
C400

24189

Compact A2B with Stowage Cut-out, Install/Adjustment Instructions (Kit: 28375)

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 (P/N !LNUT-07510), such that the axle bolt & cam welded assembly can be rotated / adjusted in the steps below.
2. Position the cam **lobe** Item #2 (P/N 28362) 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 by actuating Winch Up/Down. **NOTE: The point at which the A2B trips WILL vary to some degree, depending upon the winch up speed. It is recommended to actuate the winch up function slowly, which will yield a consistent and repeatable result, in terms of wire rope tension when stowed.**



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

A2B Stowage Cut-out

ET/HT Cranes w/ Comp. A2B

DATE

10-04-21B

SUPERSEDES

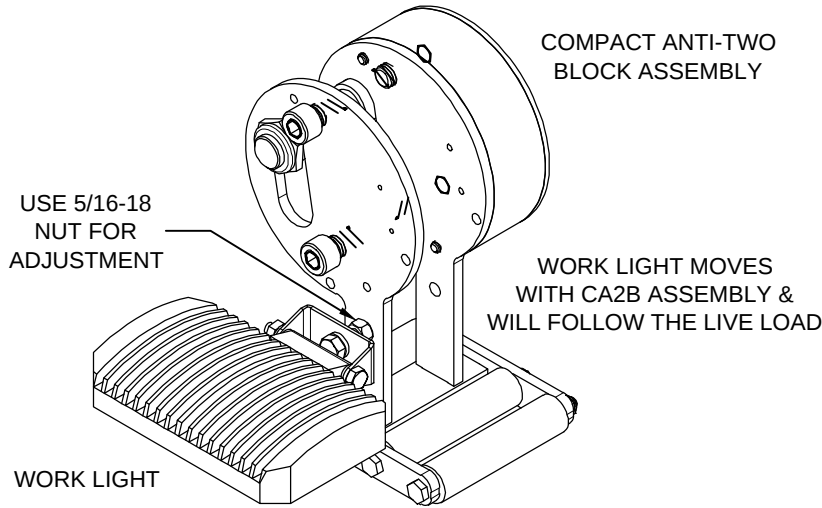
08-03-21A

SECTION

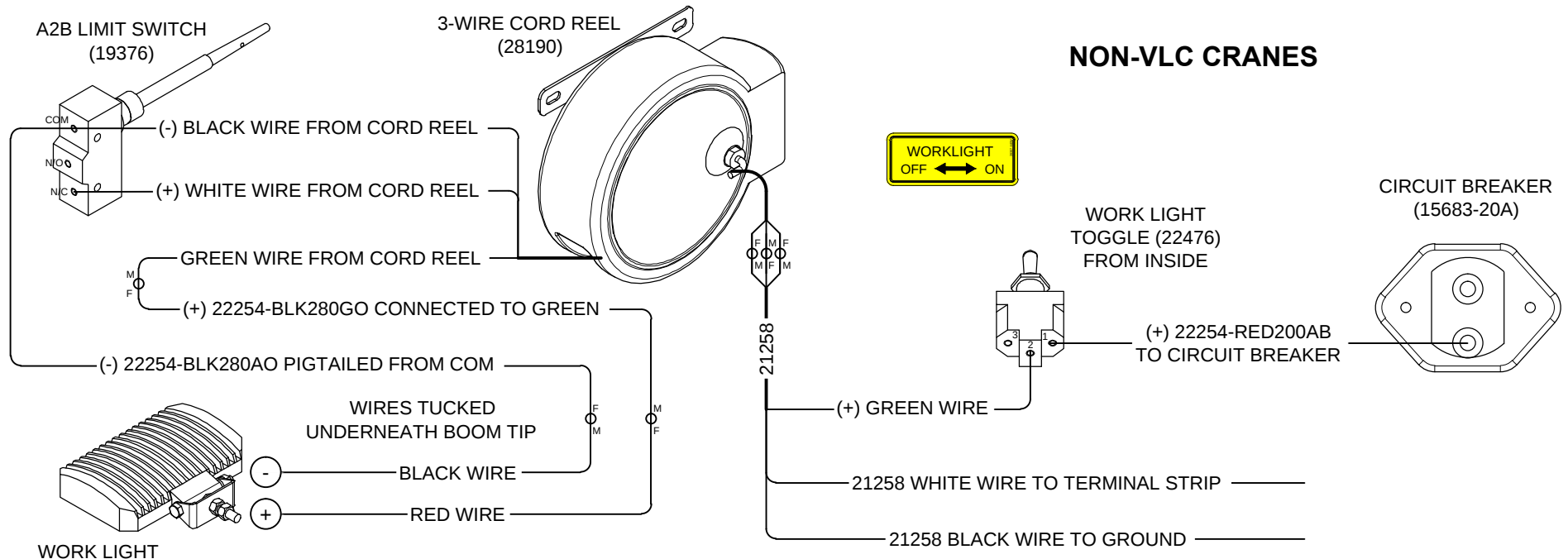
C400

28239

WORK LIGHT INSTALLATION: 28240-1 (3-WIRE CORD REEL ON NON-VLC CRANES)



BILL OF MATERIALS		-1	28240
#	DESCRIPTION		PART NUMBER
1	IDWG; WORK LIGHT INSTALLATION, NON-VLC CRANES	1	28199
2	LED WORK LIGHT	1	27483
3	TERMINAL; 16G, FEMALE, QUICK-CONNECT	3	ITEM16G250QCFI
4	TERMINAL; 16G, MALE, QUICK-CONNECT	4	ITEM16G250QCM
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	TOGGLE SWITCH; ON / OFF, IP-RATED	1	22476
8	HALF-BOOT, FOR IP-RATED TOGGLE SWITCH	1	19793
9	DECAL; ON/OFF, OPTIONAL WORK LIGHT W/ TOGGLE	1	28307
10	WIRE ASS'Y; 16G, RED, 20", #6 RING - #10 RING	1	22254-RED200AB
11	TERMINAL; 16G, #6 RING, CLOSED-END	1	ITEM16G#6RG



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

WORK LIGHT INSTALLATION, 3-WIRE CORD REEL

NON-VLC CRANES

DATE

02-10-21

SUPERSEDES

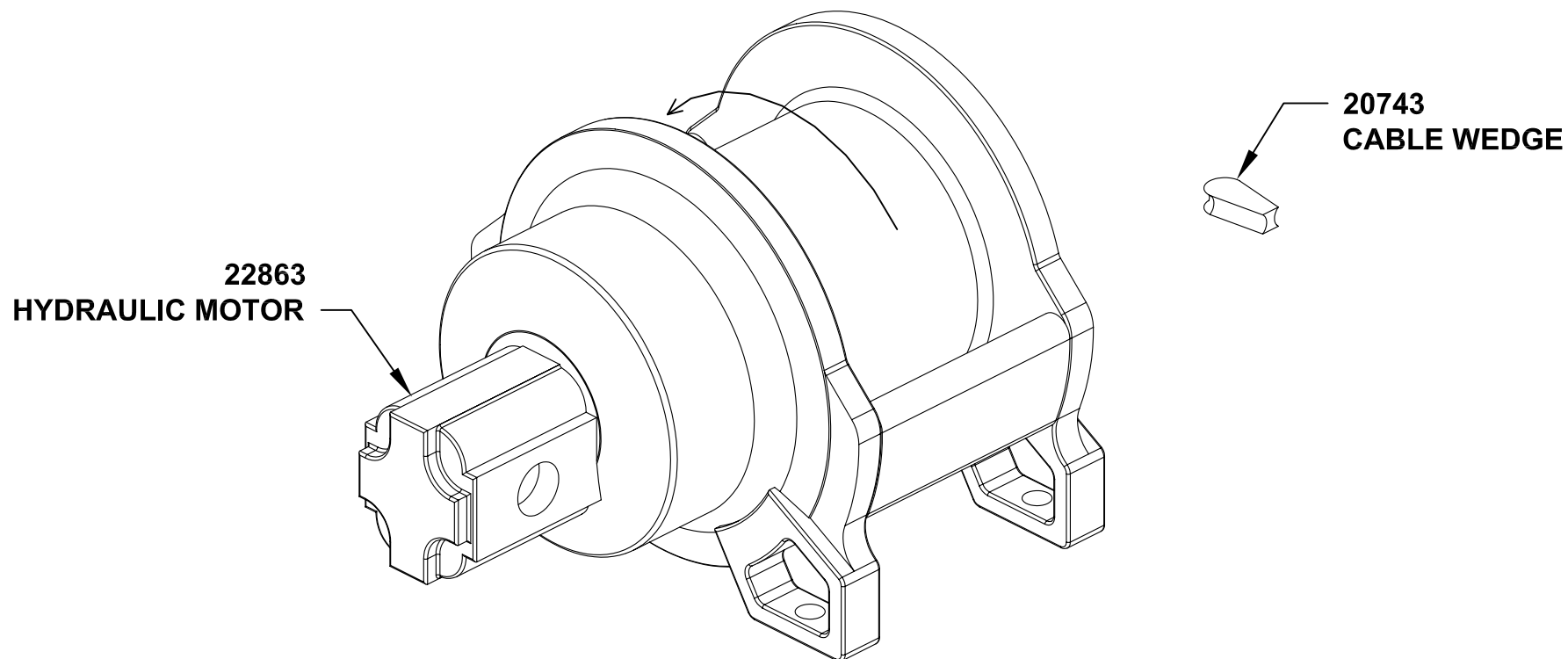
-

SECTION

C400

28199

REPLACEMENT PARTS 22828 WINCH



▲ FINAL DRIVE GEAR & SEAL KIT P/N: 22938-KIT

WINCH SERVICE KIT P/N: 21381

MOTOR SERVICE KIT P/N: 22902



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS DRAWING

22828 ROTZLER WINCH HT40KX NON-PROP

DATE

9-13-11C

SUPERSEDES

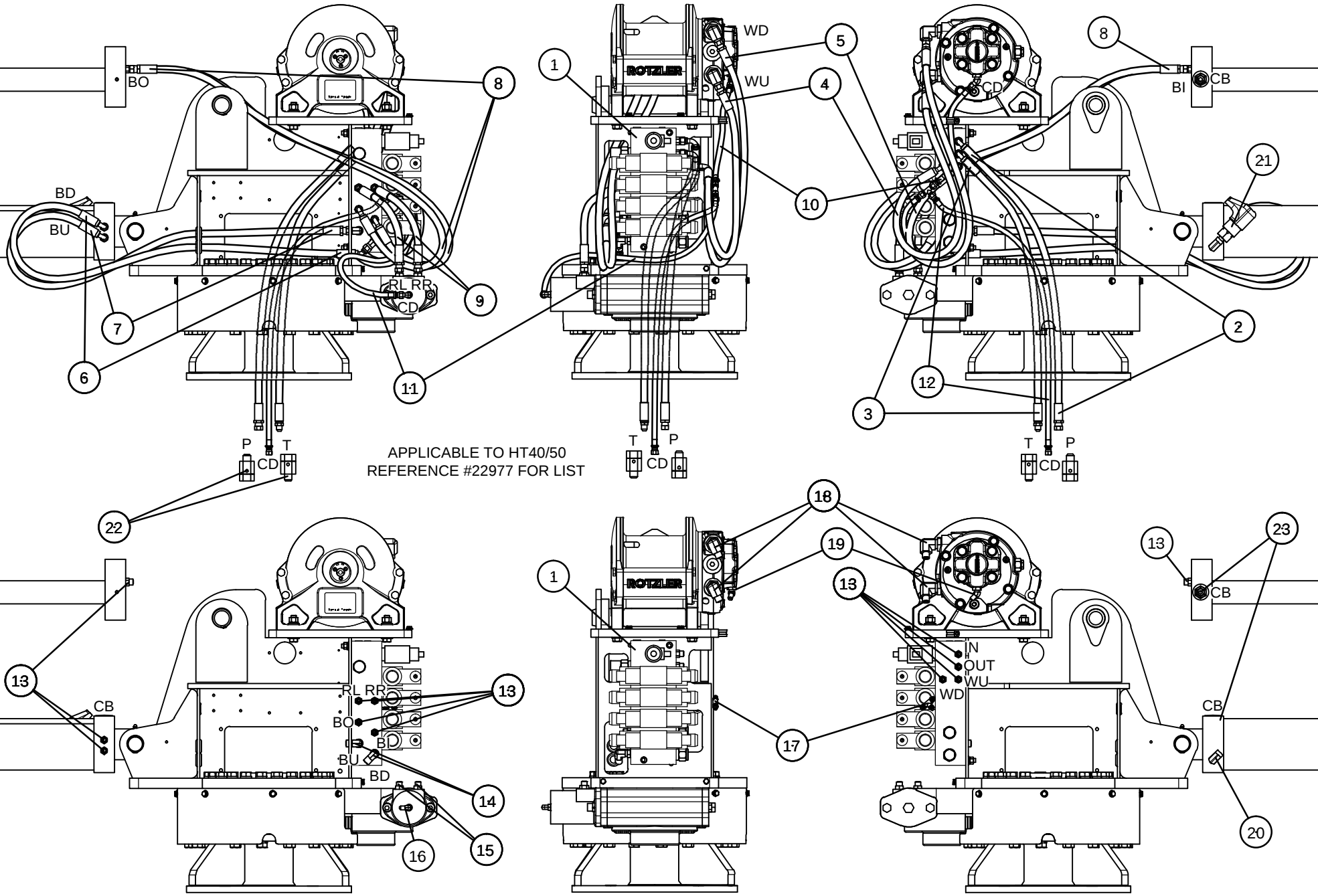
7-14-11B

SECTION

400

22884

REPLACEMENT PARTS DRAWING, HYDRAULIC COMPONENTS



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS, HYD. COMPONENTS
HT40/50 NON-PROPORTIONAL SERIES

DATE
04-27-21B
SUPERSEDES
12-16-16A

SECTION
C400
22976

REPLACEMENT PARTS LIST; HYDRAULIC COMPONENTS

#	DESCRIPTION	QTY	PART NUMBER	APPLICATION
1	VALVE MANIFOLD; NON-PROPORTIONAL, HT40/50KX	1	22501-0-225-225	REAR OF MECHANISM, INSIDE REAR COVER
2	HOSE ASSEMBLY; PRESSURE SUPPLY	1	23832	RIGHT SIDE VALVE BANK TO COMPARTMENT SIDE
3	HOSE ASSEMBLY; RETURN SUPPLY	1	23833	RIGHT SIDE VALVE BANK TO COMPARTMENT SIDE
4	HOSE ASSEMBLY; WINCH UP	1	27046	RIGHT SIDE VALVE BANK TO WINCH UP PORT
5	HOSE ASSEMBLY; WINCH DOWN	1	27047	RIGHT SIDE VALVE BANK TO WINCH DOWN PORT
6	HOSE ASSEMBLY; BOOM DOWN	1	27026	LEFT SIDE VALVE BANK TO BOOM UP PORT
7	HOSE ASSEMBLY; BOOM UP	1	27027	LEFT SIDE VALVE BANK TO BOOM DOWN PORT
8	HOSE ASSEMBLY; BOOM IN & OUT	2	27592	EXTENSION PORTS TO LEFT SIDE VALVE BANK
9	HOSE ASSEMBLY; ROTATION LEFT & RIGHT	2	27043	LEFT SIDE VALVE BANK TO ROTATION PORTS
10	HOSE ASSEMBLY; WINCH CASE DRAIN	1	22952	ROTATION CASE DRAIN TO T-FITTING JUNCTION
11	HOSE ASSEMBLY; ROTATION CASE DRAIN	1	22953	WINCH CASE DRAIN TO T-FITTING JUNCTION
12	HOSE ASSEMBLY; CASE DRAIN OUT	1	22903	T-FITTING JUNCTION TO COMPARTMENT SIDE
13	FITTING; ADAPTER, STRAIGHT, 6OFS-6MO	12	FF6400-0606	IN, OUT, WU, WD, RL, RR, BI, BO, EL. & EXT. CYL'S
14	FITTING; ADAPTER, 90° ELBOW, 6OFS-6MO	2	FF6801-0606	LEFT SIDE VALVE BANK, BU & BD PORTS
15	FITTING; ADAPTER, STRAIGHT, 6OFS-10MO	2	FF6400-0610	ROTATION MOTOR PORTS
16	FITTING; ADAPTER, 90° ELBOW, 4MJ-4MO	1	H6801-0404	ROTATION CASE DRAIN PORT
17	FITTING; ADAPTER, T-SHAPE, 4MJ-4MJ-4MJ	1	H2603-040404	T-FITTING JUNCTION, CASE DRAIN HOSES
18	FITTING; ADAPTER, 90° ELBOW, 6OFS-8MO BRITISH	2	FF3801-06-08	WINCH UP & DOWN PORTS, ROTZLER TI SERIES
19	FITTING; ADAPTER, 45° ELBOW, 4MJ-4MO BRITISH	1	3802-0404	WINCH CASE DRAIN PORT, ROTZLER TI SERIES
20	FITTING; ADAPTER, 90° ELBOW, 4MO-4FP	1	H6805-0404	ELEVATION CYLINDER, PRESSURE SWITCH
21	PRESSURE SWITCH, 2900 PSI RATING	1	17460-2900-21	BASE-END ON ELEVATION CYLINDER
22	LIVE SWIVEL; CONTINUOUS, STRAIGHT, 6MJ-6FJ	2	20684	PRESSURE & RETURN HOSES, COMPARTMENT SIDE
23	COUNTER-BALANCE VALVE; CBPA, 50/40, 3000 PSI SYS.	2	20893	ELEVATION & EXTENSION CYLINDER VALVE

HYDRAULIC FUNCTION KEY

P	PRESSURE SUPPLY	RL	ROTATION LEFT
T	TANK RETURN	RR	ROTATION RIGHT
CD	CASE DRAIN	BO	BOOM OUT
IN	PRESSURE IN	BI	BOOM IN
OUT	RETURN OUT	BU	BOOM UP
WU	WINCH UP	BD	BOOM DOWN
WD	WINCH DOWN	CB	COUNTER-BALANCE VALVE

REFERENCE #22976 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST

HT40/50 NON-PROPORTIONAL

DATE

04-27-21B

SUPERSEDES

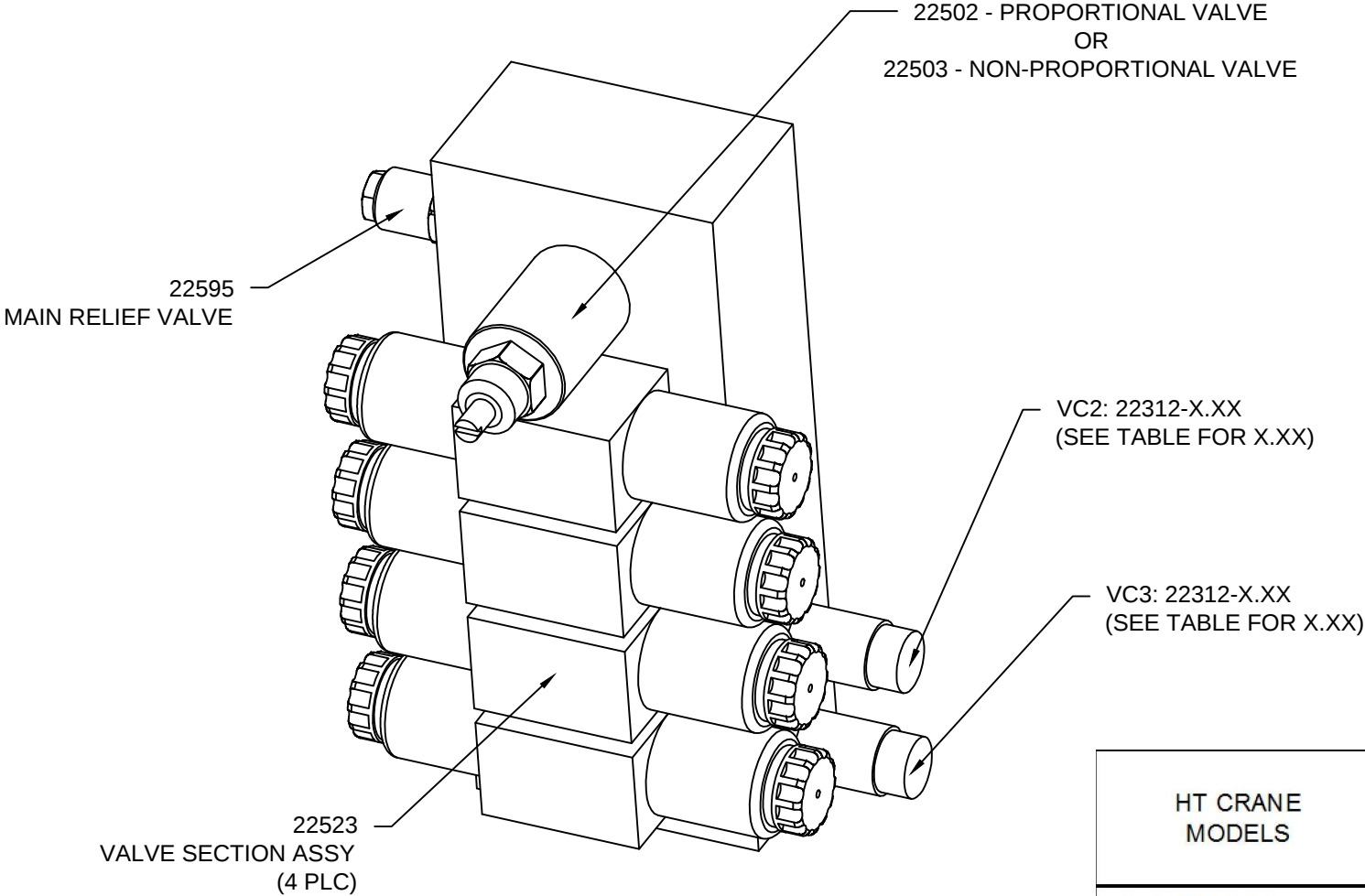
12-19-16A

SECTION

C400

22977

22501 HYDRAULIC VALVE MANIFOLD, REPLACEMENT PARTS



HT CRANE MODELS	PRIORITY FLOW VALVES	
	VC2	VC3
	EXTENSION	ELEVATION
HT 25/30 NON-PROP	1.00	1.75
HT 25/30 PROP	1.75	3.00
HT 40/50 NON-PROP	▲ 2.25	2.25



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS

22501 VALVE BLOCK, HT SERIES CRANES

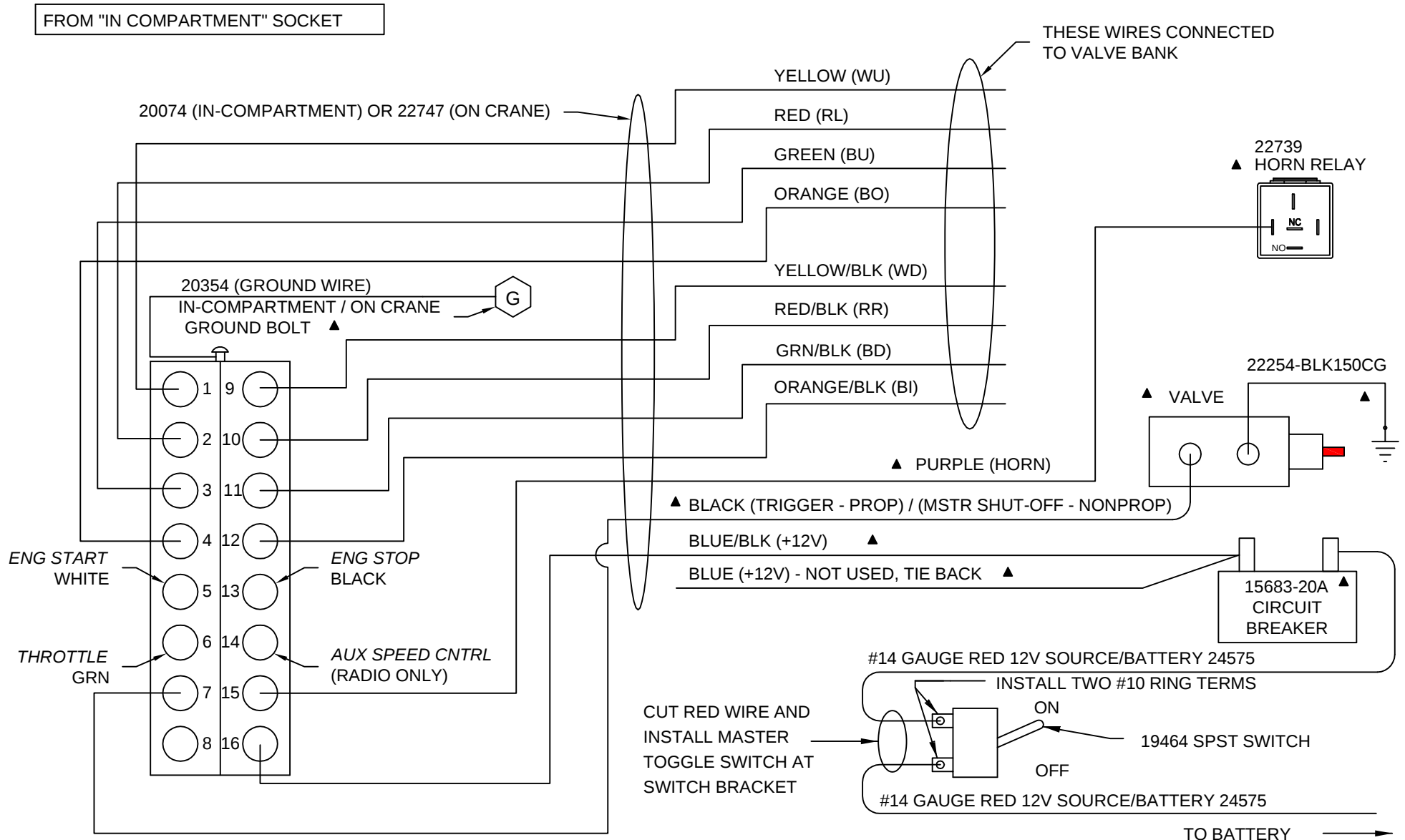
DATE
10-22-15B

SUPERSEDES
03-04-10A

SECTION
C400

22939

▲ SOCKET WIRING; 16-PIN, W/ OPTIONAL ENG CONTROLS



▲ ENGINE CONTROLS (#22616) SOLD AS AN OPTION (NOT INCLUDED WITH CRANE)



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

SOCKET WIRING; 16 PIN

HT CRANES

DATE

02-17-15G

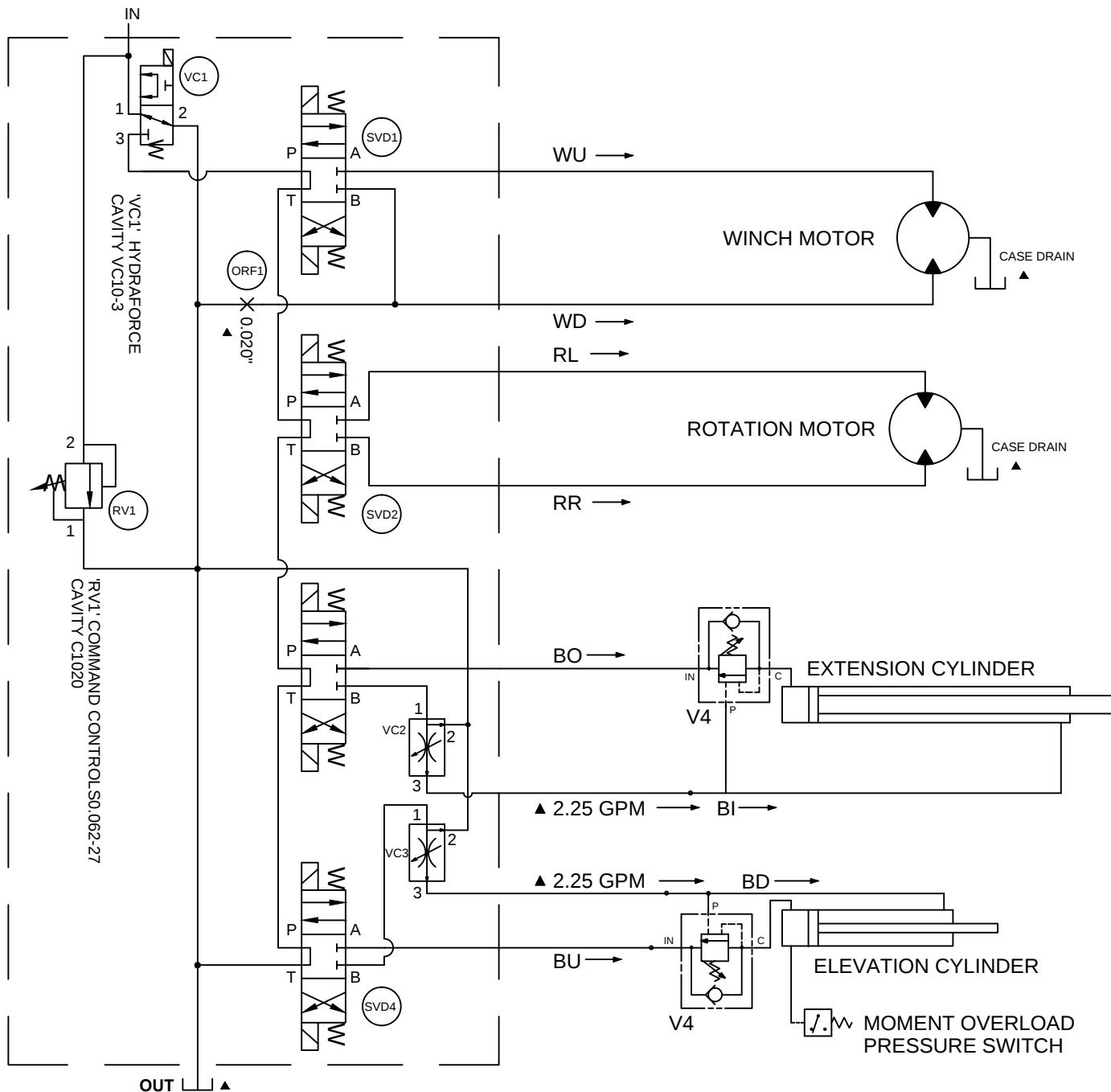
SUPERSEDES

02-21-14F

SECTION

C400

22125



VA1	CONTROL VALVE ASSEMBLY
RV1	RELIEF VALVE (3000 PSI)
SVD1	3 POSITION - 4 WAY VALVE SECTION
SVD2	3 POSITION - 4 WAY VALVE SECTION
SVD3	3 POSITION - 4 WAY VALVE SECTION
SVD4	3 POSITION - 4 WAY VALVE SECTION
V4	COUNTERBALANCE CARTRIDGE VALVE
VC1	MAIN FLOW VALVE (MANUAL OVERRIDE)
VC2	PRIORITY FLOW REGULATOR VALVE
VC3	PRIORITY FLOW REGULATOR VALVE



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
HYDRAULIC SCHEMATIC

HT40KX NON-PROPORTIONAL

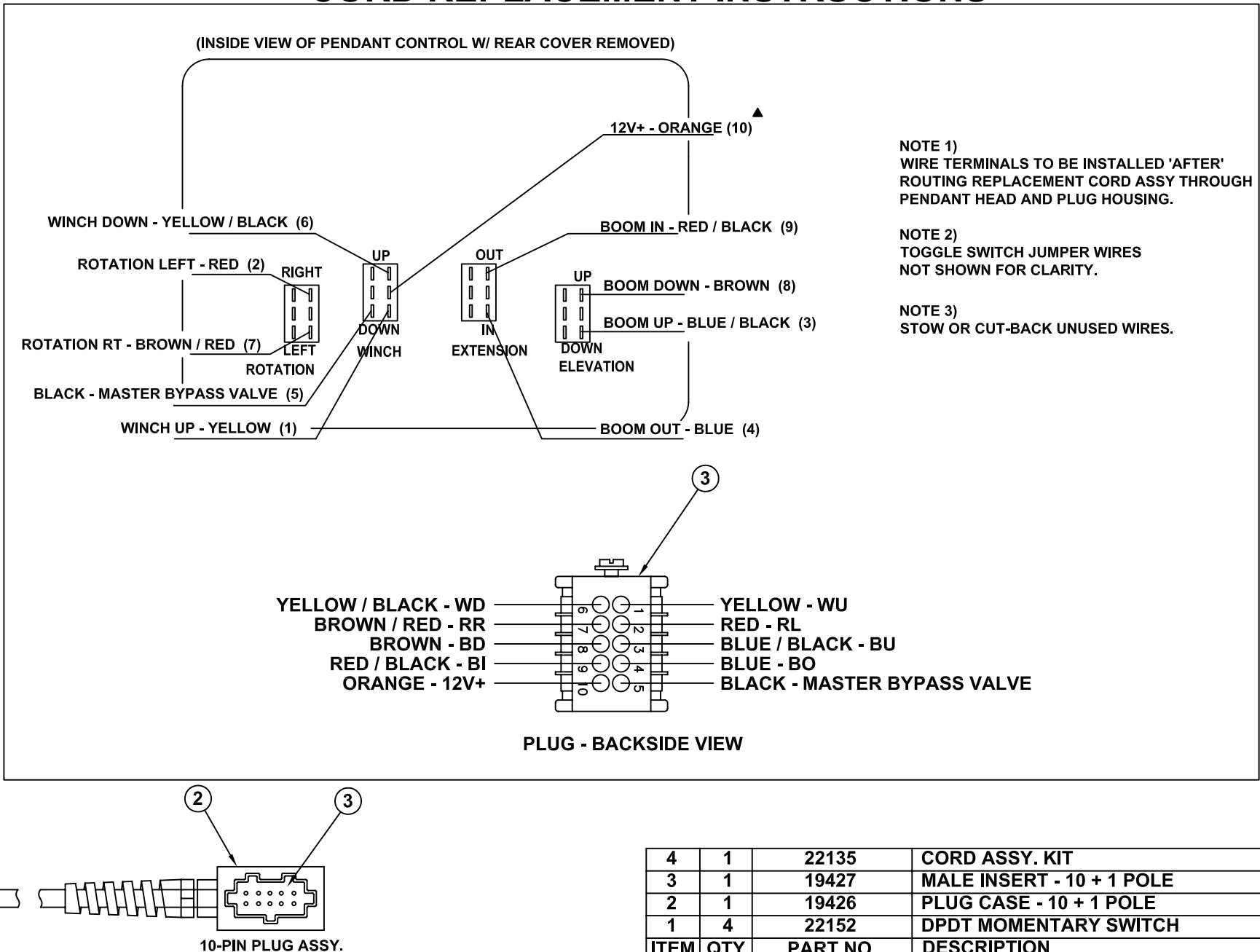
DATE
12-04-23E

SUPERSEDES
10-22-15D

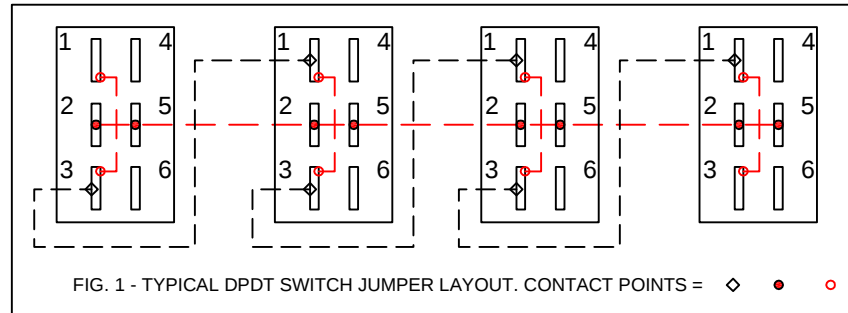
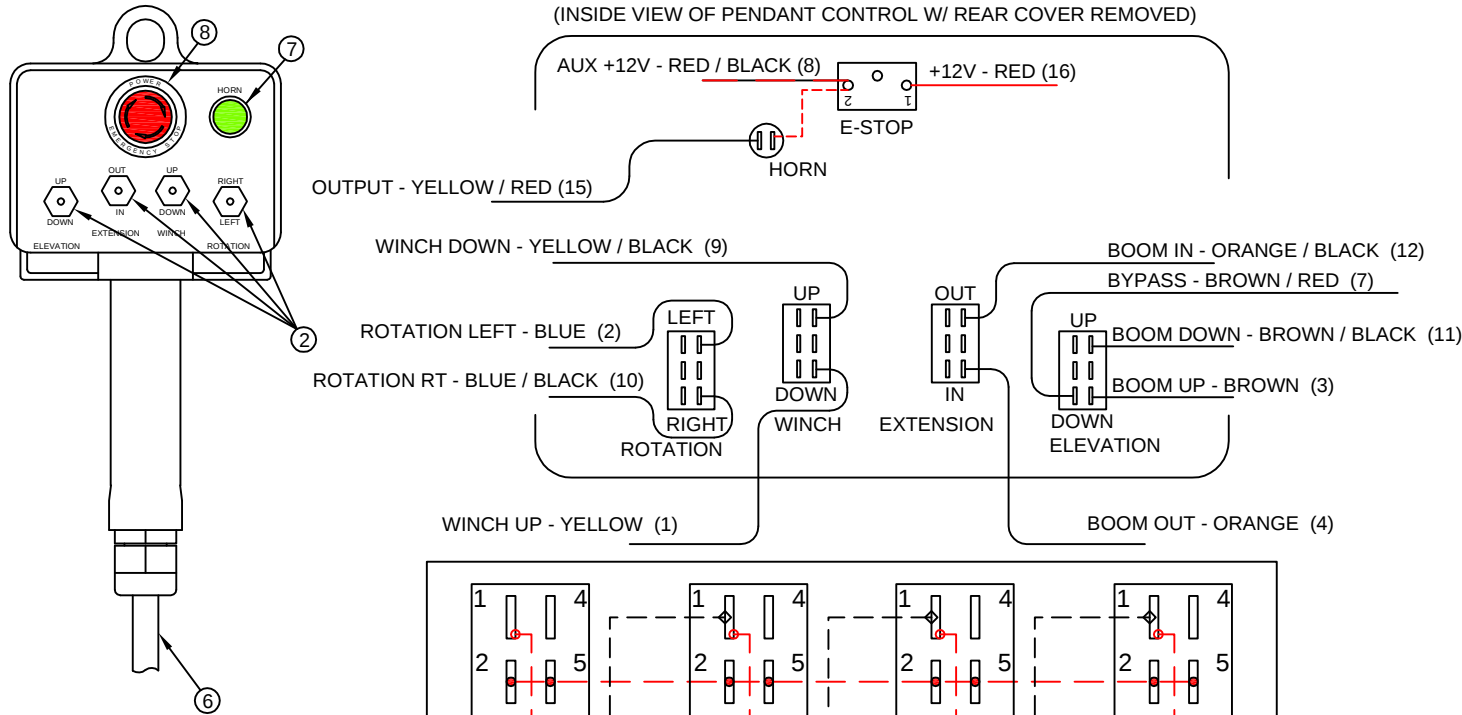
SECTION
C400

22486

CORD REPLACEMENT INSTRUCTIONS



21989 PENDANT; HT CRANES, NON-PROP, E-STOP / HORN



BLACK - GROUND

YELLOW / BLACK - WD
BLUE / BLACK - RR
BROWN / BLACK - BD
ORANGE / BLACK - BI

YELLOW - WU
BLUE - RL
BROWN - BU
ORANGE - BO

YELLOW / RED - HORN
RED - 12V+

BROWN / RED - MASTER BY-PASS VALVE ▲
RED / BLACK - AUX 12V+

16-PIN PLUG ASSY.

16-PIN PLUG - BACKSIDE VIEW

NOTE 1:

WIRE TERMINALS TO BE INSTALLED 'AFTER'
ROUTING REPLACEMENT CORD ASSY
THROUGH PENDANT HEAD AND PLUG
HOUSING.

NOTE 2:

STOW OR CUT BACK UNUSED WIRES.

MODEL

STARTING S/N

HT25K(X)	120300
HT30K(X)	115300
HT40KX(X)	100900
HT50KX(X)	110600
HT66KXX	150300

ITEM	QTY	PART NO.	DESCRIPTION
8	1	22156	SWITCH; E-STOP
7	1	22155	SWITCH; PUSHBUTTON, HORN
6	1	22135	KIT; REPLACEMENT CORD ASSY
5	-	-	-
4	1	22472	INSERT; MALE, 16 + 1 POLE
3	1	22471	PLUG CASE; 16 + 1 POLE
2	4	22152	SWITCH; DPDT, MOMENTARY
1	-	-	-



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS DWG & LIST

DATE

01-12-17A

SECTION

C400

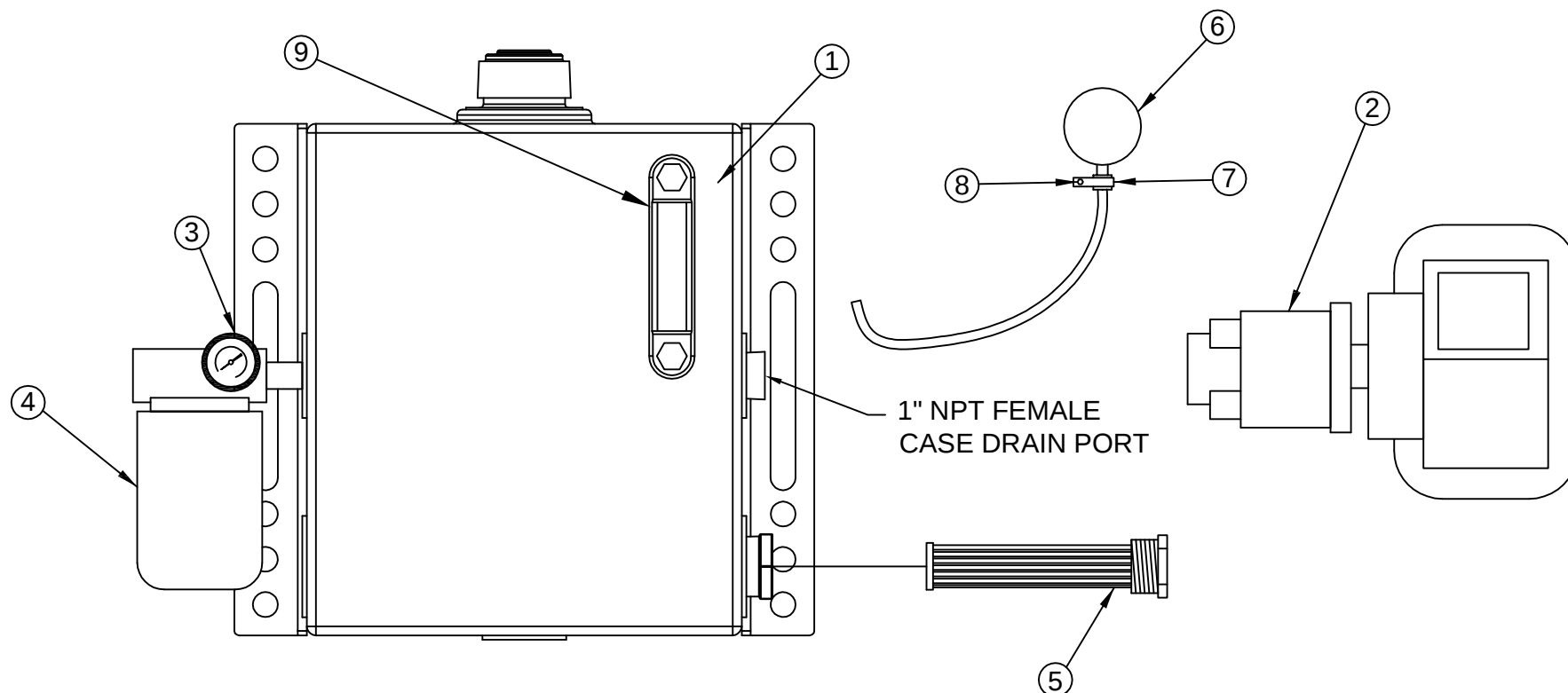
21989 PNDNT; HT, NON-PROP, ESTP/HRN

SUPERSEDES

10-03-14

23074

19294 PTO PACKAGES; 5.0 GPM & LOWER



PUMP	MOUNTING	RECOMMENDED GPM (RPM)
19296-1.60	SAE "A" 9 TOOTH SPLINED SHAFT	HT25/30 - STD. - 2.00 GPM (1250 RPM) ▲
19296-2.64		HT40 - STD. - 2.6 GPM (1000 RPM)
		HT50 - STD. - 3.0 GPM (1150 RPM)
19296-4.00		HT25/30 - PROP. - 4.0 GPM (1000 RPM) ▲

9	1	22184	SIGHT GLASS
8	1	!HWHS02520075-F	HEX WSHR HEAD, 1/4-20 X 3/4 SELF-TAP
7	1	19275	CLAMP
6	1	22730	PRESSURE GAUGE ASSEMBLY
5	1	19300	SUCTION SCREEN - 100 MESH
4	1	19298	FILTER ASSY, RETURN - 10 MICRON
3	1	19297	PRESSURE GAUGE - RETURN
2	1	SEE CHART	PTO PUMP - HT18/25/40/50KX
1	1	19295	RESERVOIR TANK - 10 GALLON
ITEM	QTY	PART NO.	DESCRIPTION



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS DIAGRAM

PTO KIT; HT CRANES (LOW FLOW)

DATE

08-04-15E

SUPERSEDES

05-01-15D

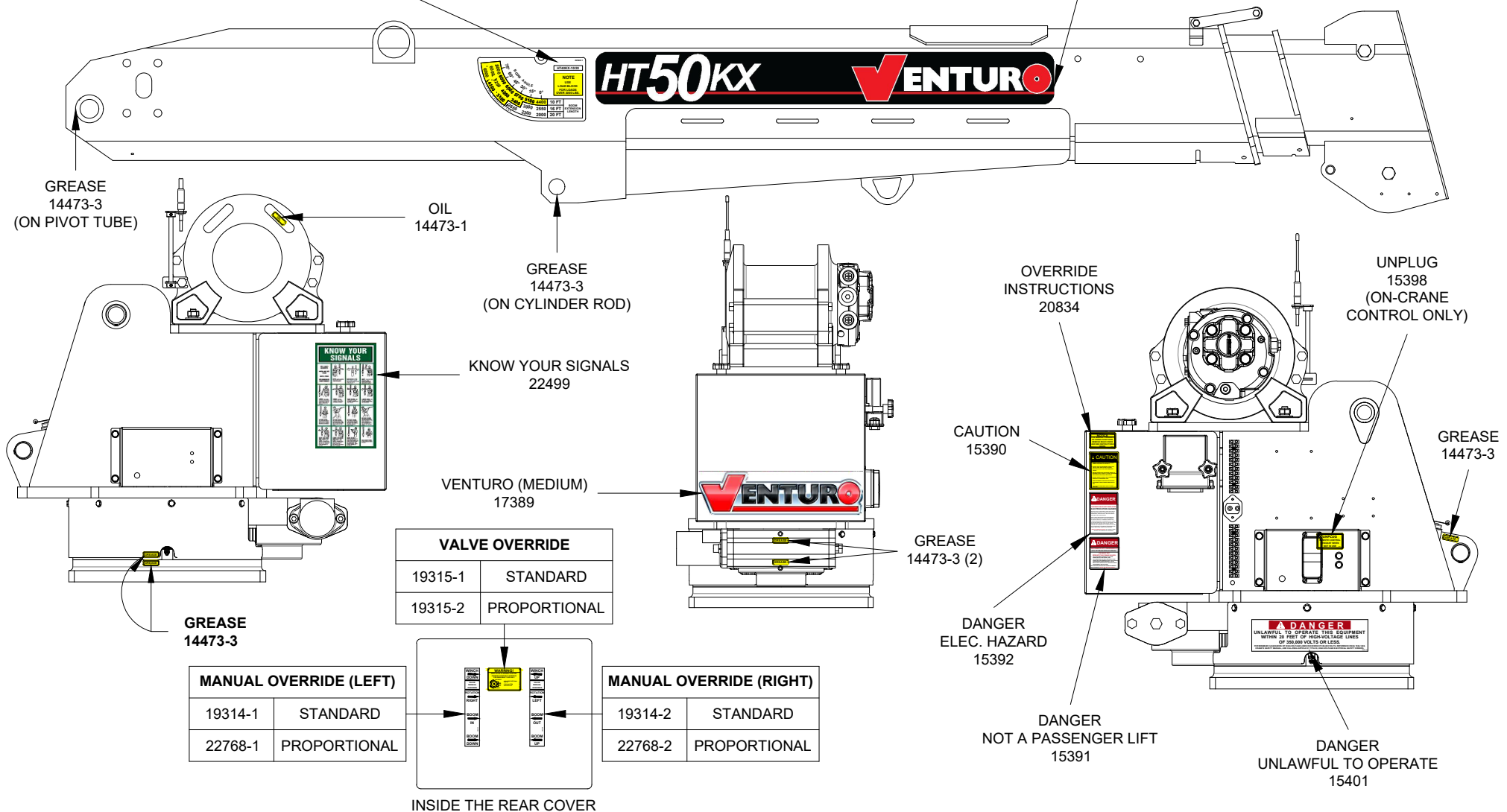
SECTION

C400

22744

	BOOM CAPACITY DECALS			
	HT40KX		HT50KX	
	20' BOOM	25' BOOM	20' BOOM	25' BOOM
RIGHT	22342-1	23064	22352-1	22877-1
LEFT	22342-2	23065	22352-2	22877-2

MODEL NAME DECALS	
HT40KX	HT50KX
28523 (2)	28520 (2)



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
DECAL PLACEMENTS

HT40/50KX SERIES

DATE
06-16-23

SUPERSEDES
-

SECTION
C400

28522

HT40KX FIELD SERVICE LABEL KITS

HT40KX				22920 FIELD SERVICE LABEL KITS (FOR HT40KX)	
STANDARD 20'	PROPORTIONAL 20'	STANDARD 25'	PROPORTIONAL 25'		
QUANTITY				PART #	DESCRIPTION
2	2	2	2	28523	DECAL; MODEL HT40KX
1	1	1	1	17389	DECAL; VENTURO LOGO, MEDIUM
1	1			22342-1	DECAL; BOOM CAPACITY, HT40KX, 10'/16'/20', RIGHT
1	1			22342-2	DECAL; BOOM CAPACITY, HT40KX, 10'/16'/20', LEFT
		1	1	23064	DECAL; BOOM CAPACITY, HT40KX, 12'/18.5'/25', RIGHT
		1	1	23065	DECAL; BOOM CAPACITY, HT40KX, 12'/18.5'/25', LEFT
1	1	1	1	14473-1	DECAL; OIL
7	7	7	7	14473-3	DECAL; GREASE
1	1	1	1	17813	DECAL; OVERLOAD SENSING SYSTEM
1	1	1	1	14459	DECAL; OVERLOAD ALARM SYSTEM (OPTIONAL PART)
1	1	1	1	22499	DECAL; KNOW YOUR SIGNALS
1	1	1	1	20834	DECAL; MANUAL OVERRIDE, INSTRUCTIONS
1		1		19315-1	DECAL; MANUAL OVERRIDE, SHUTOFF, STANDARD
	1		1	19315-2	DECAL; MANUAL OVERRIDE, SHUTOFF, PROPORTIONAL
1		1		19314-1	DECAL; MANUAL OVERRIDE, STANDARD, LEFT
1		1		19314-2	DECAL; MANUAL OVERRIDE, STANDARD, RIGHT
	1		1	22768-1	DECAL; MANUAL OVERRIDE, PROPORTIONAL, LEFT
	1		1	22768-2	DECAL; MANUAL OVERRIDE, PROPORTIONAL, RIGHT
1	1	1	1	22922	IDWG; FIELD SERVICE LABEL KITS, HT40KX
1	1	1	1	28522	IDWG; DECAL PLACEMENTS, HT40/50KX
1	1	1	1	INST-23233	SAFETY MANUAL, VENTURO CRANES
1	1	1	1	15397	KIT; ACCIDENT PREVENTION SIGNS



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
FIELD SERVICE LABEL KITS	07-17-23H	C400
HT40KX	SUPERSEDES	22922
	06-16-23G	



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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