

VENTURO
TRUCK MOUNTED CRANES

HT40KX

HR*AAD-P***

INSTALLATION & OWNER'S MANUAL

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HT40KX, PROP CNTRL, WITH & W/O ENG CONTRLS (HR*AAD-P***)

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VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

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HT40X(X); HR*AAD-P***

DATE

12-11-18J

SUPERSEDES

05-23-18H

SECTION

-

23004

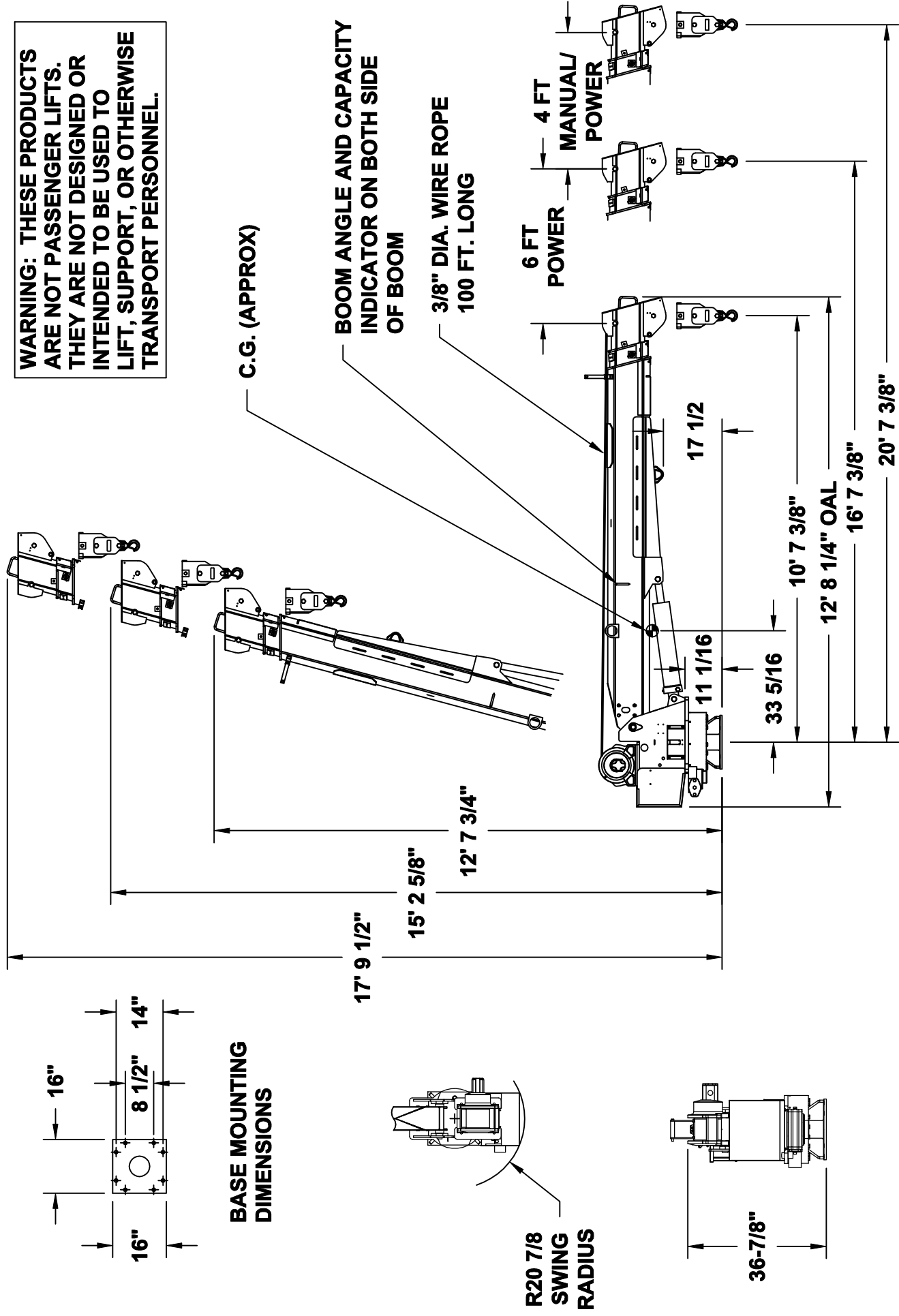
SECTION 100

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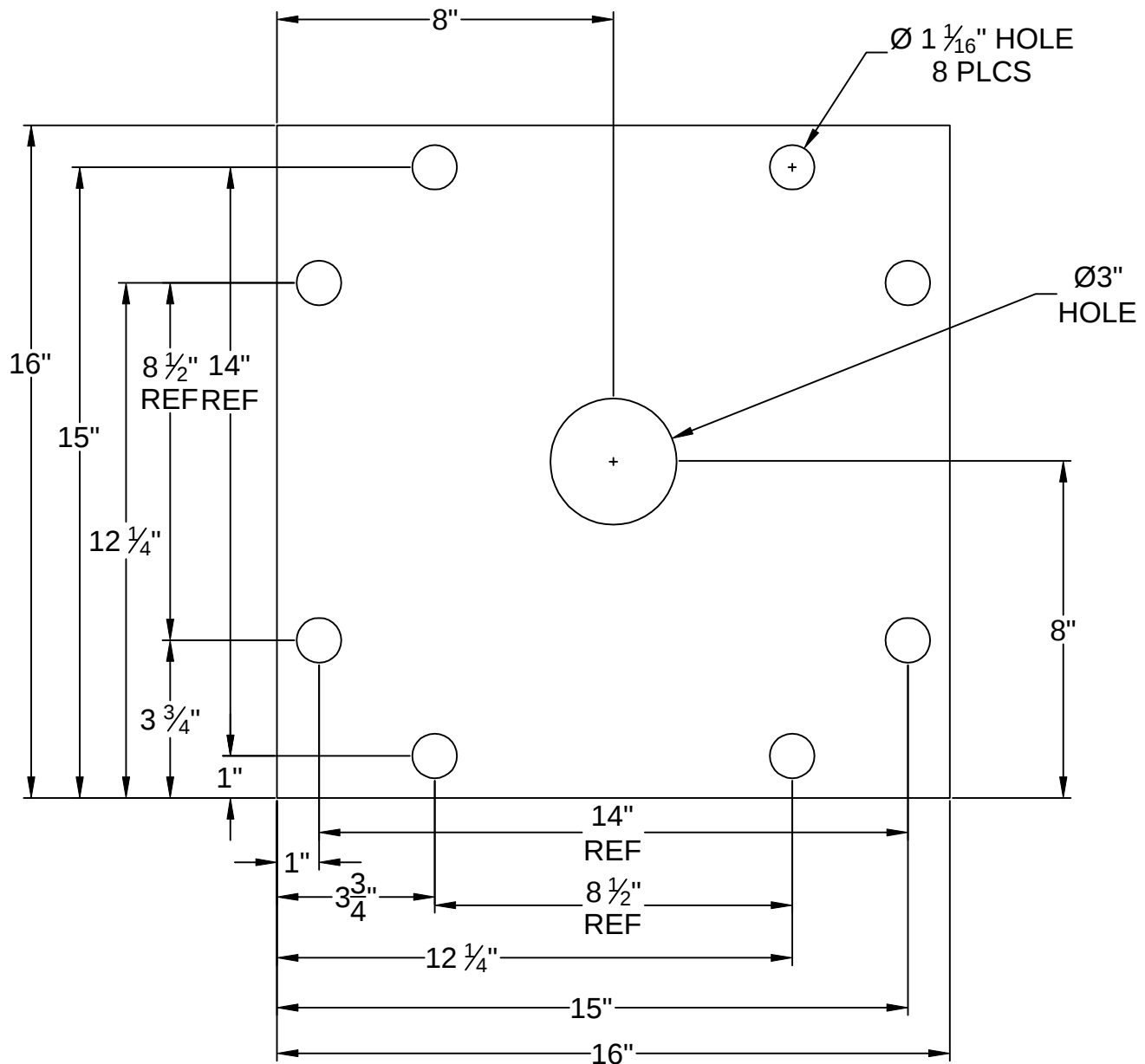
&

SPECIFICATIONS

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



HT40/50KX MOUNTING DIMENSIONS



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
BASE MOUNTING DIM

HT40/50KX

DATE
02-21-14H

SUPERSEDES
05-03-12G

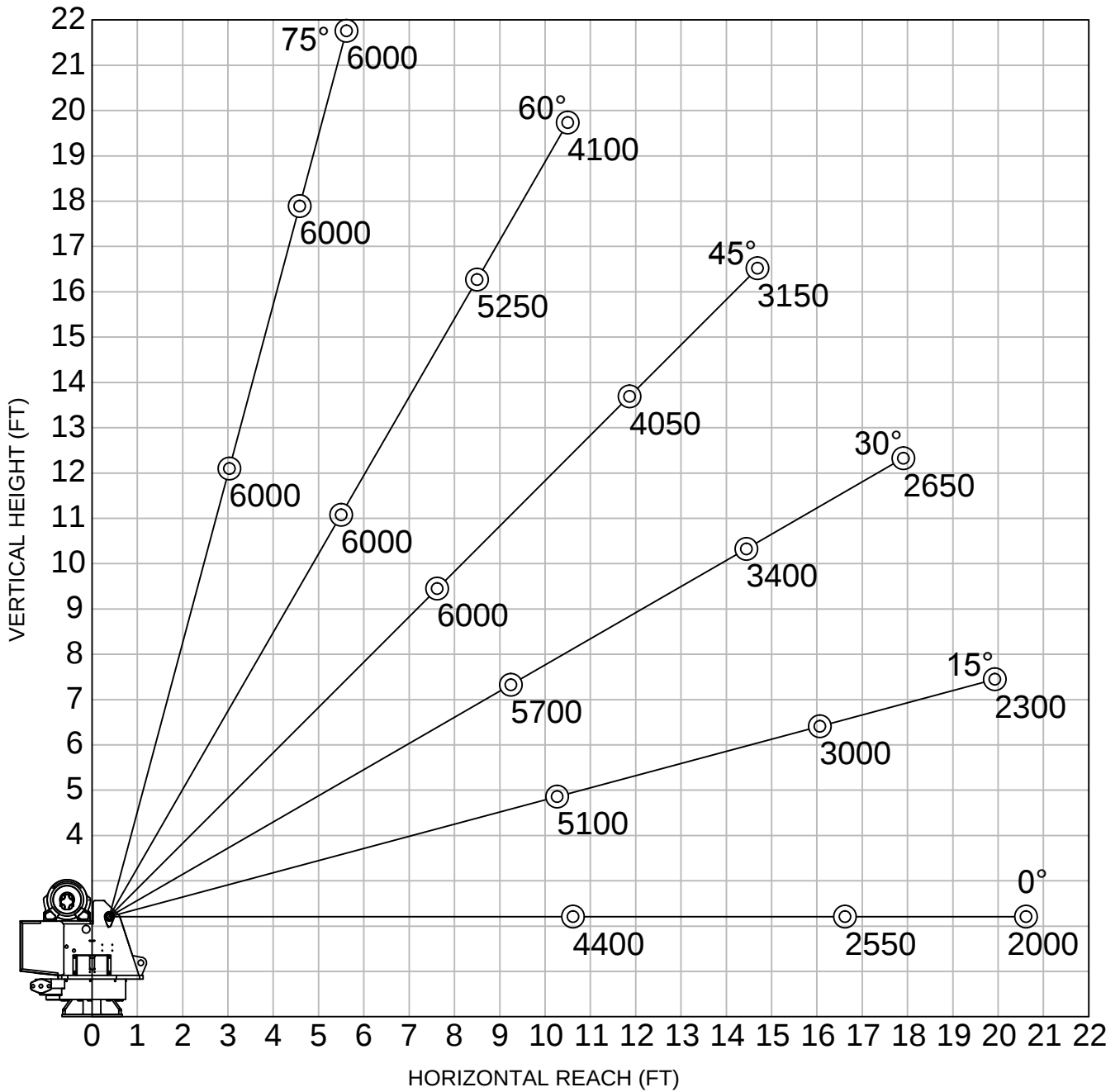
SECTION
C100

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



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CINCINNATI, OHIO

TITLE
MAXIMUM LOAD CAPACITY

HT40KX, 10'-16'-20' BOOM

DATE
05-03-16H

SUPERSEDES
06-17-14G

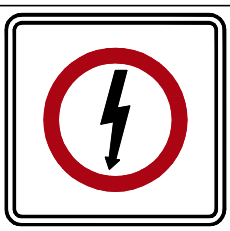
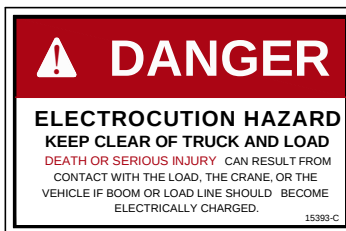
SECTION
C100

22341

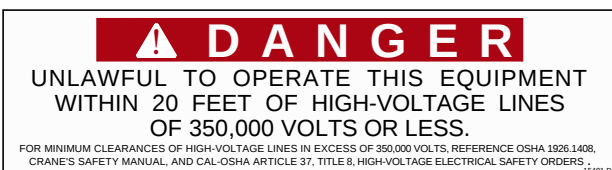
SECTION 150

SAFETY

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

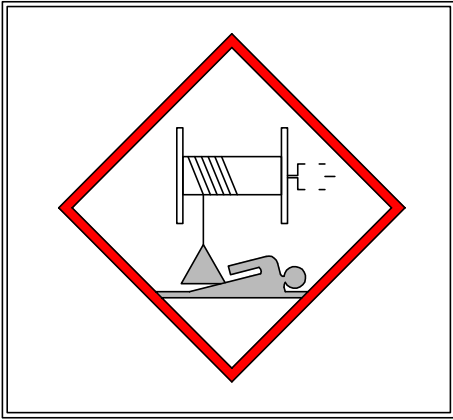
HYDRAULIC CRANES

SUPERSEDES

04-04-12C

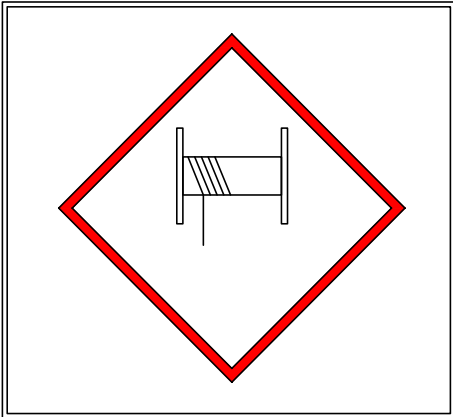
920612

WINCH SAFETY WARNINGS



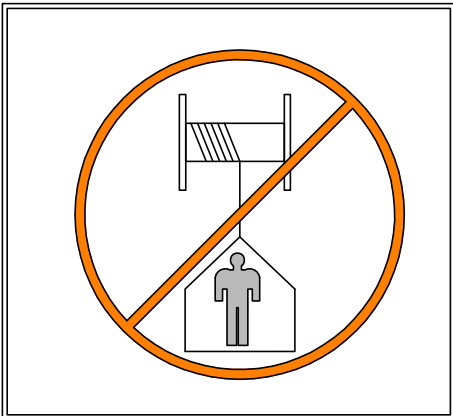
DANGER

- 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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CINCINNATI, OHIO

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.



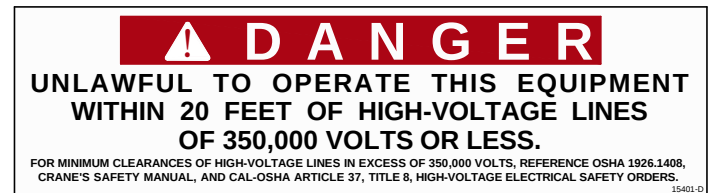
PART NO.: 15401

DECAL: UNLAWFUL TO OPERATE

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

QUANTITY: 1

PLACEMENT: Right side of housing.



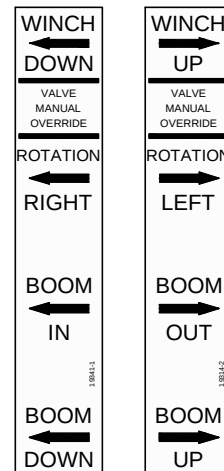
PART NO.: 19314-1 [LEFT] & -2 [RIGHT]

DECAL: MANUAL OVERRIDE (NON-PROP)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1 EACH

PLACEMENT: Inside of rear cover.



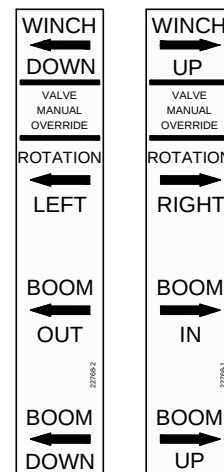
PART NO.: 22768-1 [LEFT] & -2 [RIGHT]

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

HT40/50KX

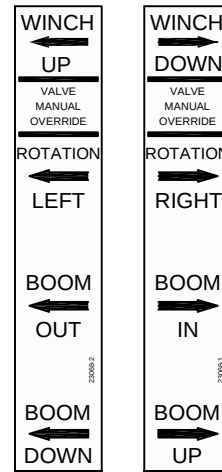
DATE
02-21-14D

SUPERSEDES
11-29-12C

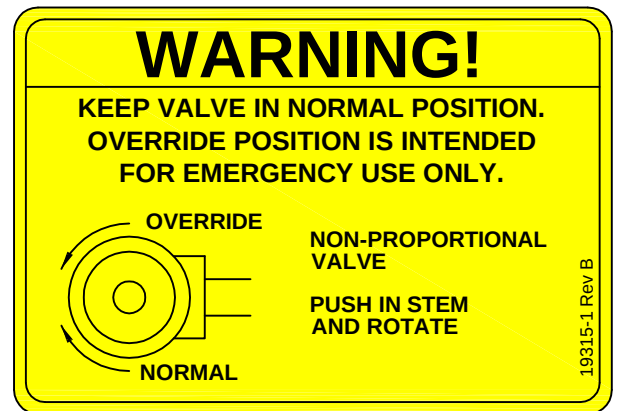
SECTION
C150

22181A

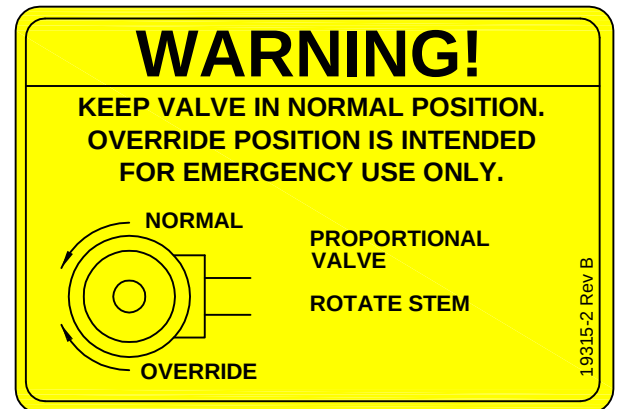
▲
 PART NO.: 23068-1 [LEFT] & -2 [RIGHT]
 DECAL: MANUAL OVERRIDE (HT66KXX ONLY)
 FUNCTION: To inform the operator of manual override locations.
 QUANTITY: 1
 PLACEMENT: Inside of rear cover.



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.



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 CINCINNATI, OHIO

TITLE
 DECAL DRAWING & LIST
 HT40/50KX

DATE
 08-21-14F
 SUPERSEDES
 02-21-14E

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.



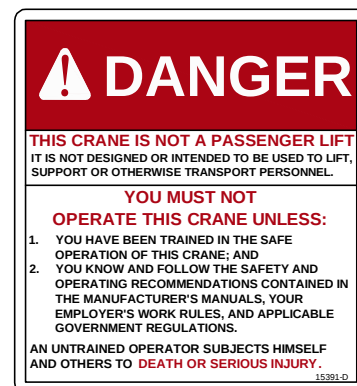
PART NO.: 15391

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.



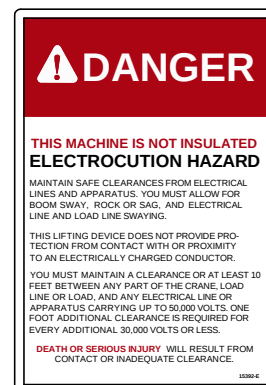
PART NO.: 15392

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.



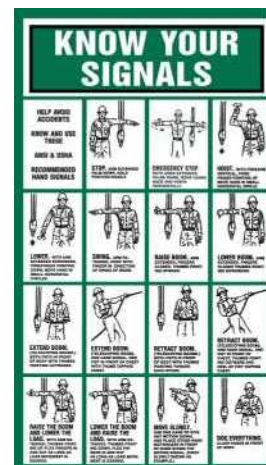
PART NO.: 22499

DECAL: KNOW YOUR SIGNALS

FUNCTION: To inform the operator of proper signals.

QUANTITY: 1

PLACEMENT: Right side of rear cover.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST
HT40/50KX

DATE
02-21-14E
SUPERSEDES
11-29-12D

SECTION
C150
22181C

PART NO.: 17389

DECAL: MEDIUM VENTURO

FUNCTION: Branding.

QUANTITY: 1

PLACEMENT: Rear cover.



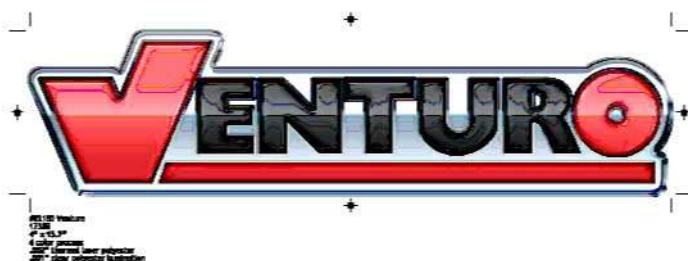
PART NO.: 22496

DECAL: LARGE VENTURO

FUNCTION: Branding.

QUANTITY: 2

PLACEMENT: Boom.



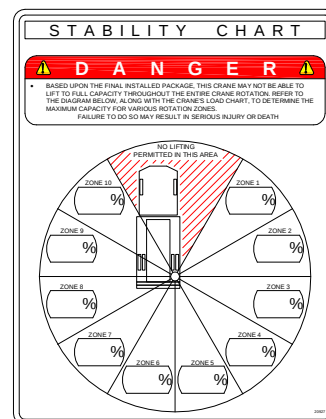
PART NO.: 20927

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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CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST
HT40/50/66 SERIES

DATE
12-11-18J
SUPERSEDES
08-23-18H

SECTION
C150
22181D

LEFT SIDE OF BOOM

RIGHT SIDE OF BOOM

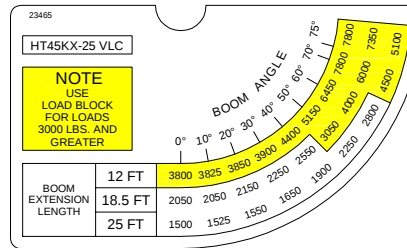
PART NO.: 23464 & 23465

DECAL: HT45-25' CRANE CAPACITY (VLC)

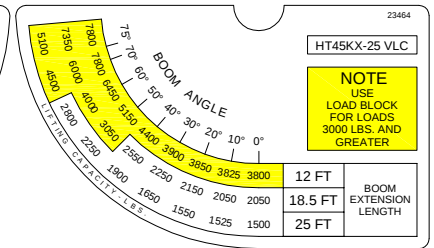
FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each

PLACEMENT: Right side of boom, Left side of boom



23465



23464

SPACE INTENTIONALLY LEFT BLANK

LEFT SIDE OF BOOM

RIGHT SIDE OF BOOM

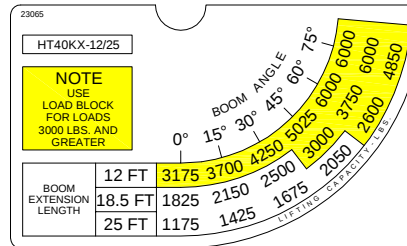
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HT45-25' CRANE CAPACITY

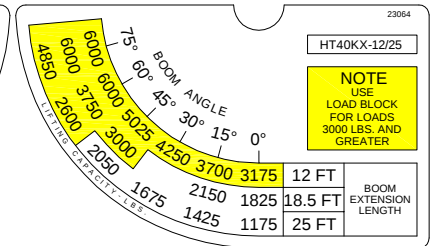
FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each

PLACEMENT: Right side of boom, Left side of boom



23065



23064

LEFT SIDE OF BOOM

RIGHT SIDE OF BOOM

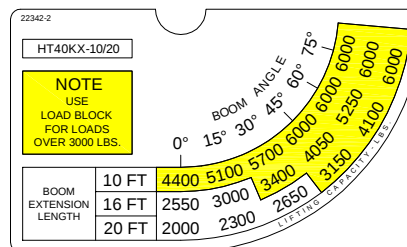
PART NO.: 22342-1 & 22342-2

DECAL: HT45-20 CRANE CAPACITY (VLC)

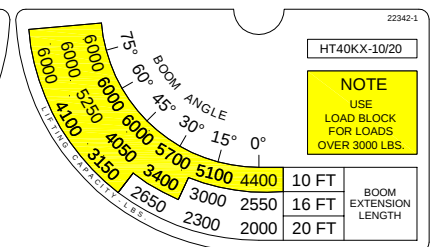
FUNCTION: To show the operator the operating capacities of the crane

QUANTITY: 1 each

PLACEMENT: Right side of boom, Left side of boom



22342-2



22342-1



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CINCINNATI, OHIO

TITLE
BOOM CAPACITY DECALS
HT40 SERIES

DATE
10-11-18
SUPERSEDES
-

SECTION
C150
23749

SECTION 200

INSTALLATION



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 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	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 HT40KX standard (non-proportional), 12.0 GPM for the HT40KX proportional, 3.0 GPM for the HT50KX standard or 12.0 GPM for the HT50KX proportional. 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 (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.



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CINCINNATI, OHIO

TITLE

CRANE INSTALLATION

HT40/50KX

DATE

07-31-15F

SUPERSEDES

02-21-14E

SECTION

C200

22173

CRANE OPERATION AND MAINTENANCE INSTRUCTIONS, PAGE 1

HT40/50KX

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 3000 lbs.-HT40KX or 4000 lbs.-HT50KX 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 remote control pendant. The pendant should be unplugged and stored in a compartment when the crane is not in use.

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

Plug the pendant into the socket on the right side of the crane and secure with socket case handle.

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.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

CRANE OP / MNTNC INST

HT40/50KX

DATE

02-21-14E

SUPERSEDES

06-18-12D

SECTION

C200

22345A

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'); Single and Double Stages

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 22930 and 22931). A 6 ft. hydraulic power extension and a 4 ft. manual extension section is also available (See pages 22916 and 22917).

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 22885 and 22886).

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	DATE	SECTION
CRANE OP / MNTNC INST	02-21-14N	C200
HT40/50KX	SUPERSEDES 04-16-13M	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 .



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CINCINNATI, OHIO

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

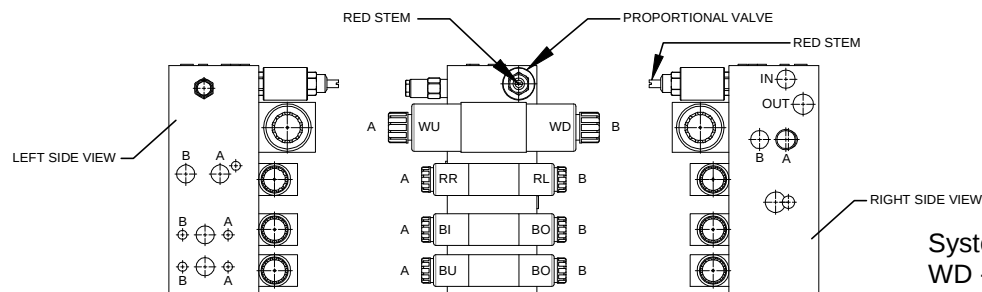
EXPLANATION OF HYDRAULIC VALVE SYSTEM

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 proportional crane can be stopped by releasing the trigger.



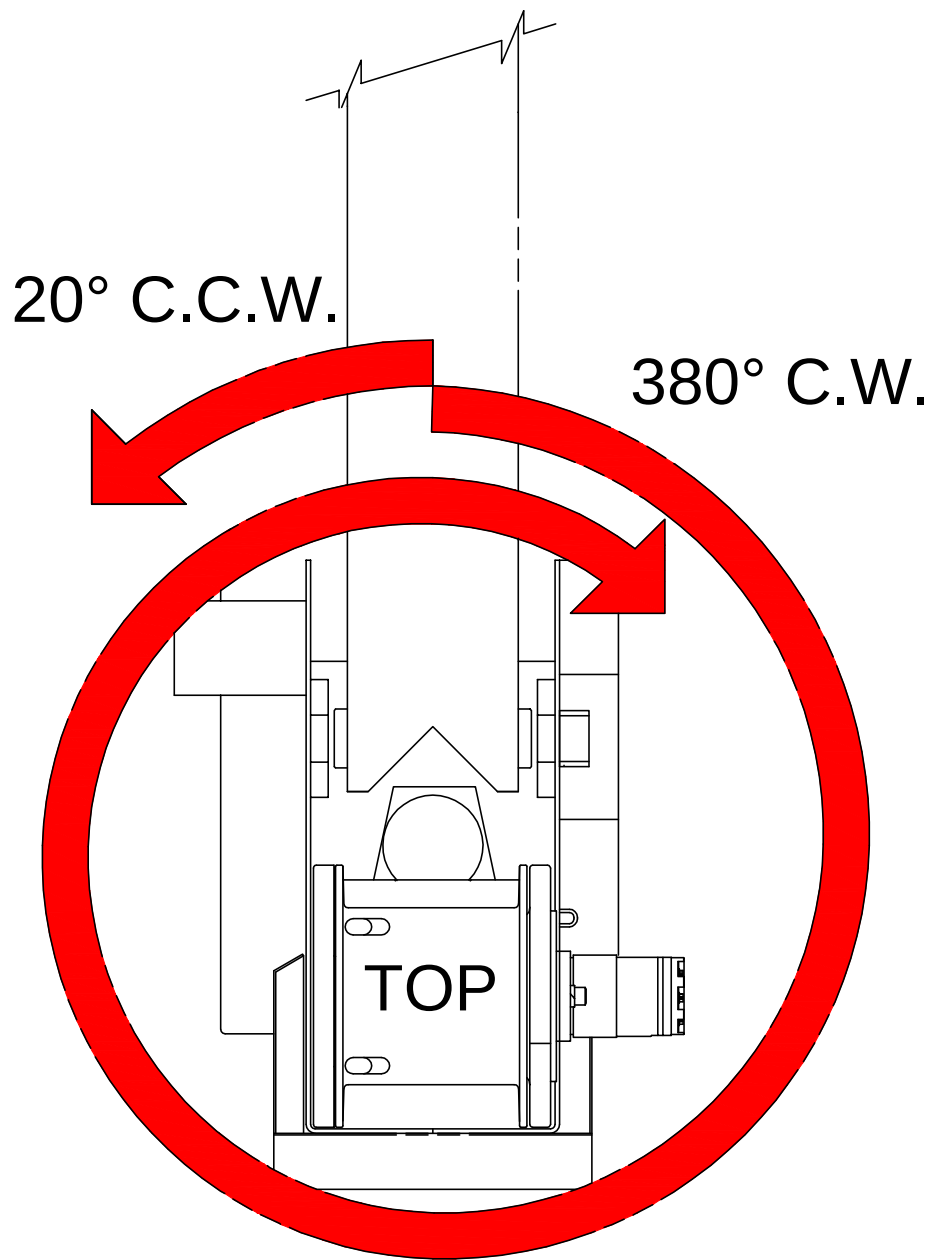
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
HYDRAULIC SYSTEM
HT40/50/66KX; PROP

DATE
02-21-14D
SUPERSEDES
05-25-11C

SECTION
C200

22168



This Venturo crane is shipped with the rotation orientation as shown above. To change the orientation rotate crane base prior to mounting to suit your application.



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
ROTATION STOP LOCTN
400° ROTATION CRANES

DATE
02-21-14D
SUPERSEDES
12-14-09C

SECTION
-
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 2400 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 a test weight weighing between **2353 to 2400 lbs.**, 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
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TITLE

STABILITY TEST

HT40-20' SERIES

DATE

11-24-21G

SUPERSEDES

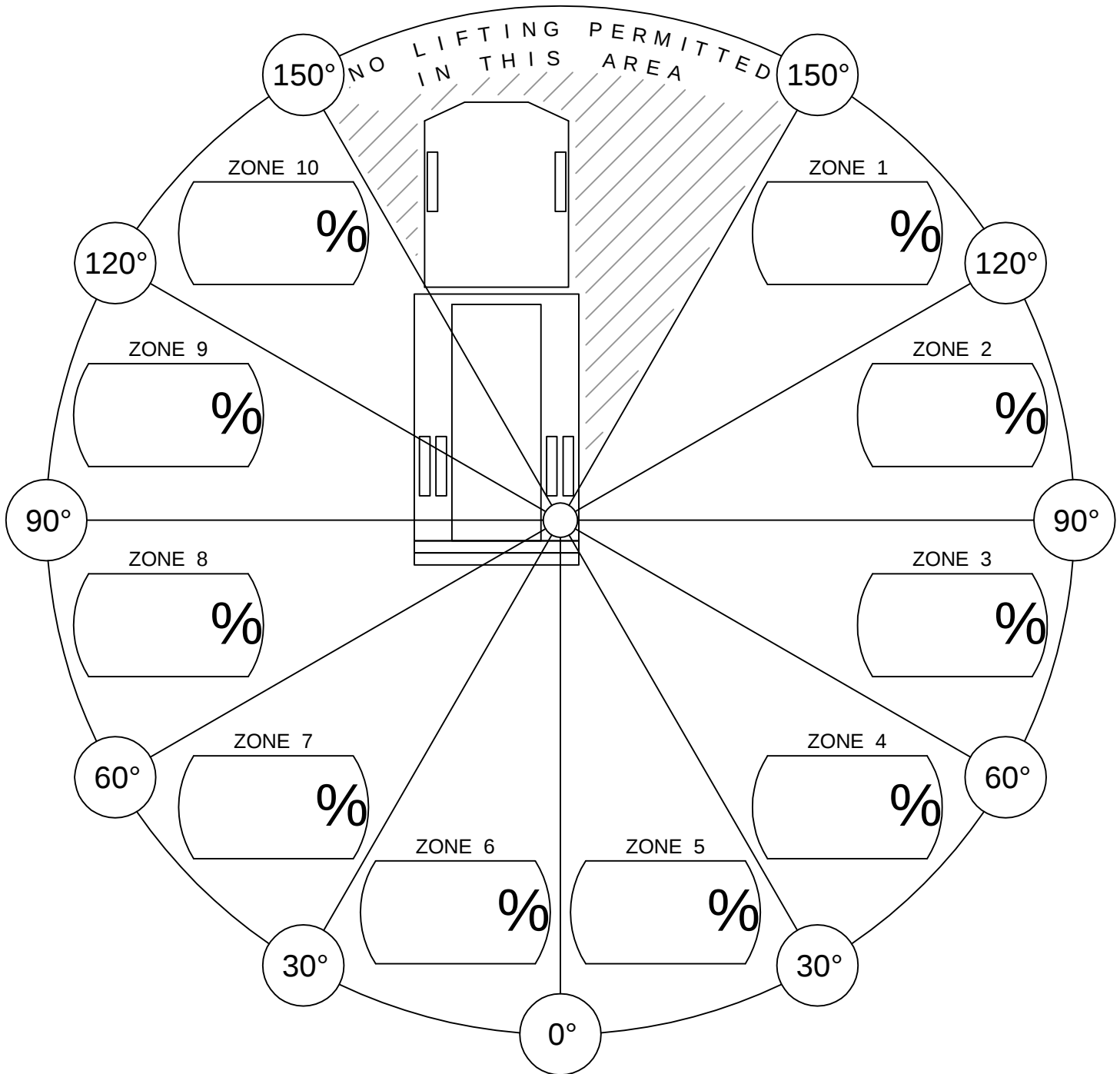
02-25-21F

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

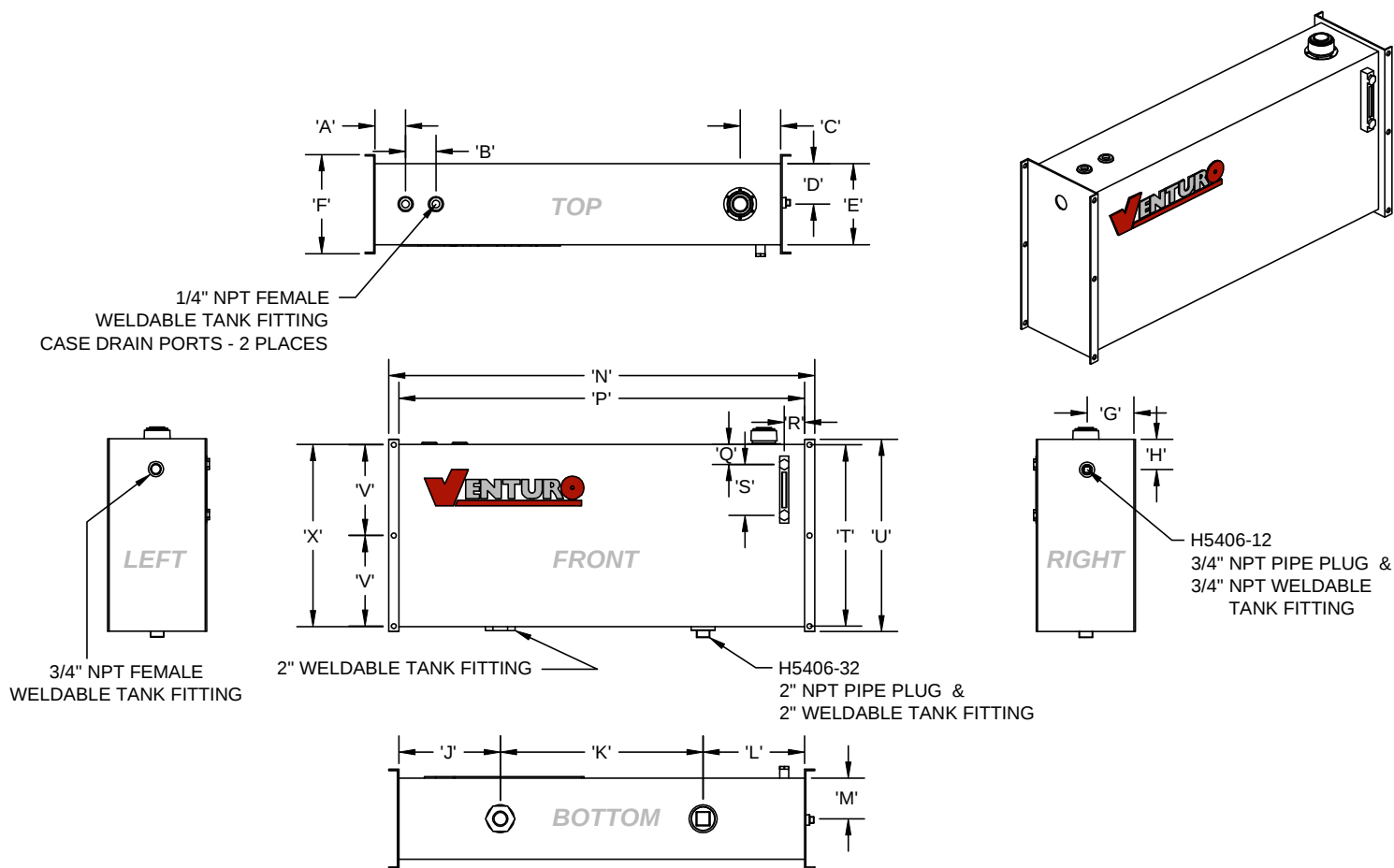
VENTURO CRANES

DATE
05-11-17F

SUPERSEDES
02-21-14E

SECTION
C200

20907



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

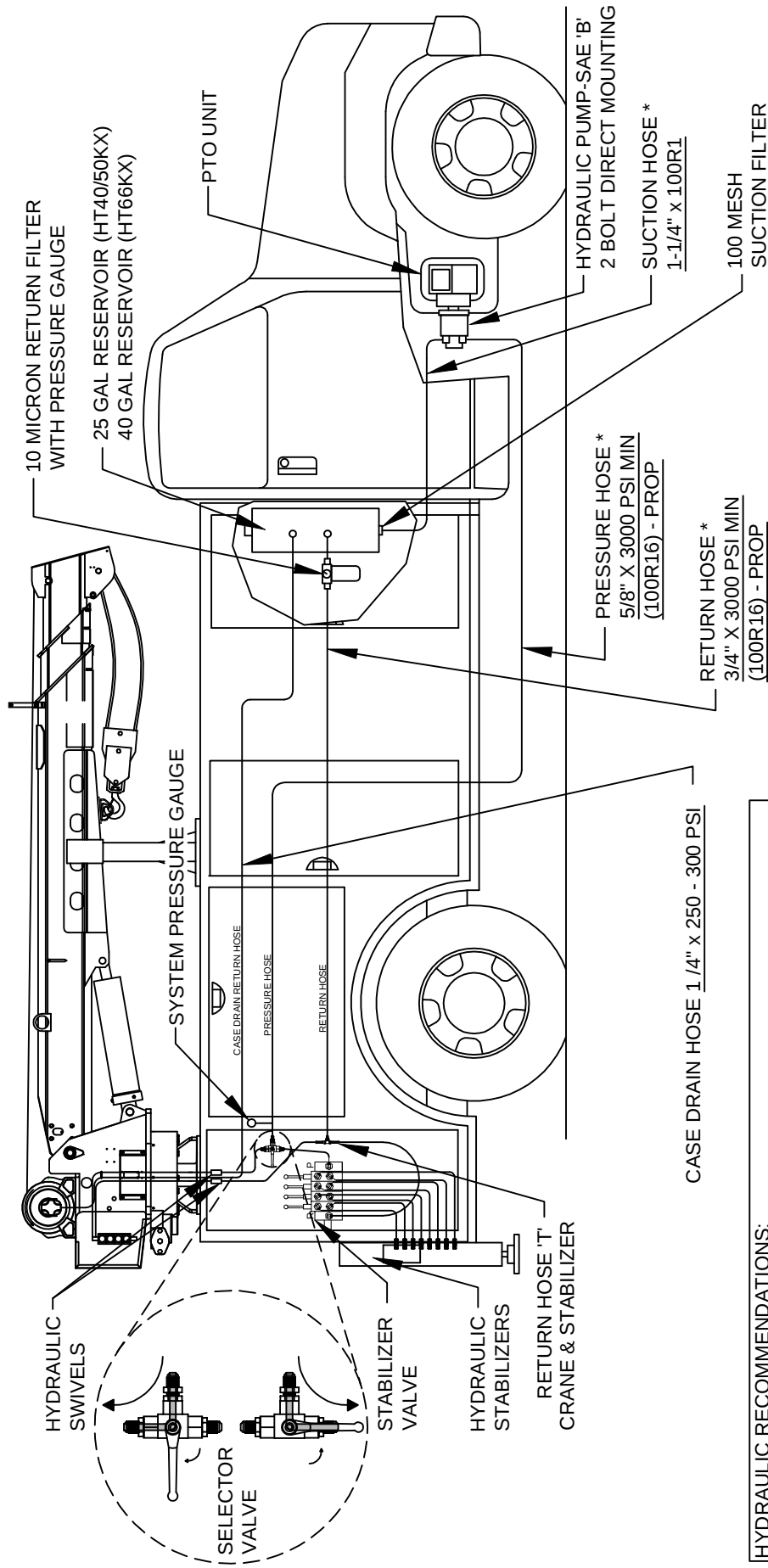


VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
RESERVOIR DIMENSIONS
HYD. TANKS (25/40 GAL.)

DATE
02-21-14E
SUPERSEDES
06-04-13D

SECTION
C200
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.



VENCO VENTURO INDUSTRIES LLC
 CINCINNATI, OHIO

TITLE
 HYDRAULIC COMPONENT INSTALLATION

DATE
 05-07-14E

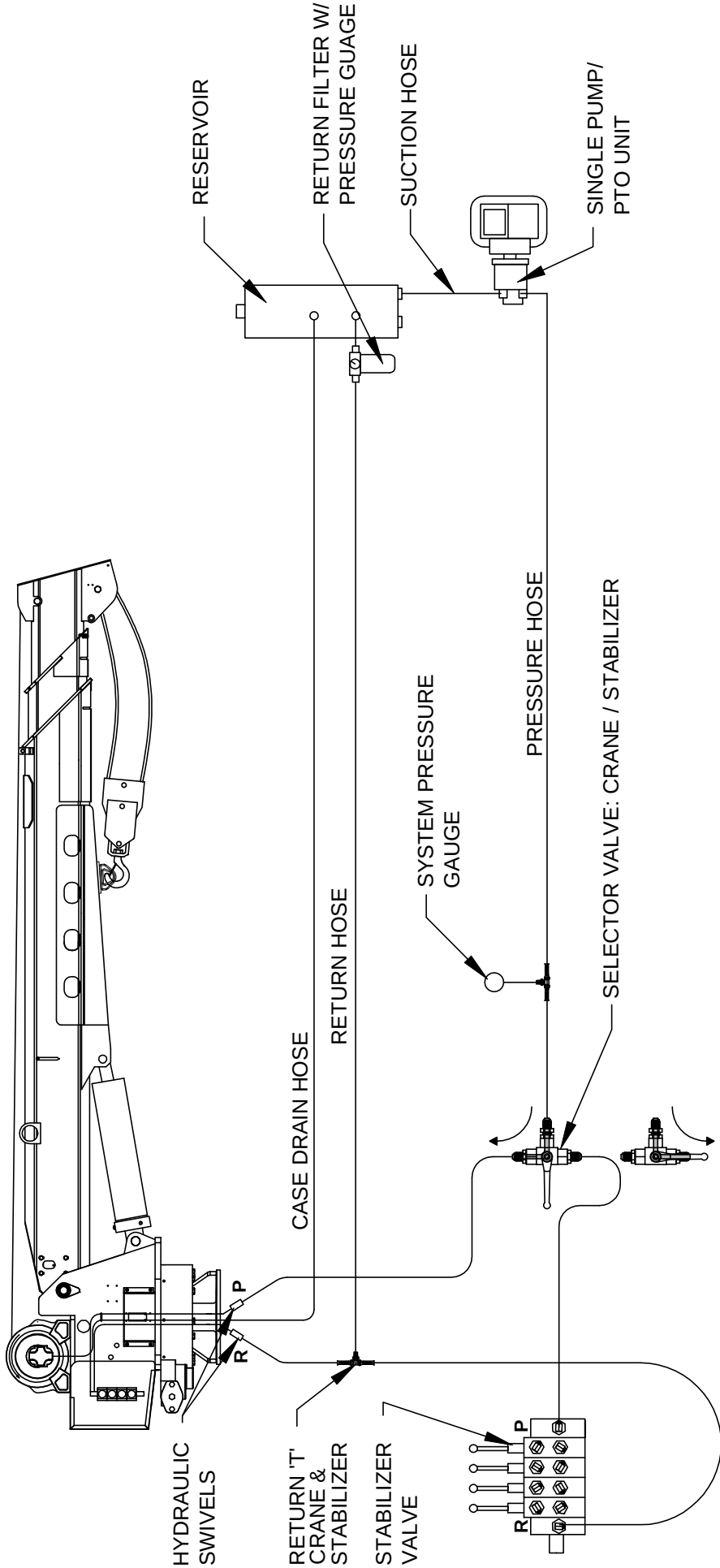
SECTION
 C200

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

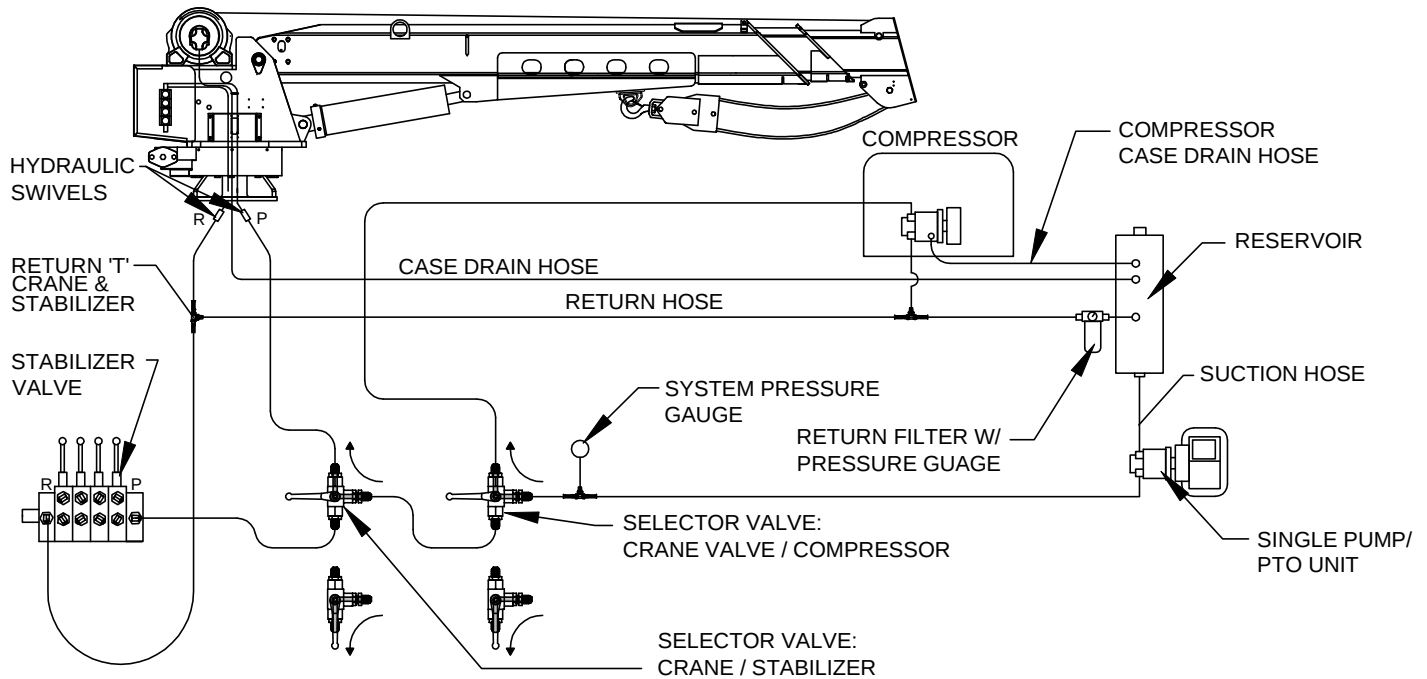
- SELECTOR VALVE MUST BE 'NON-CLOSED CENTER TRANSITION' TYPE.

CAUTION

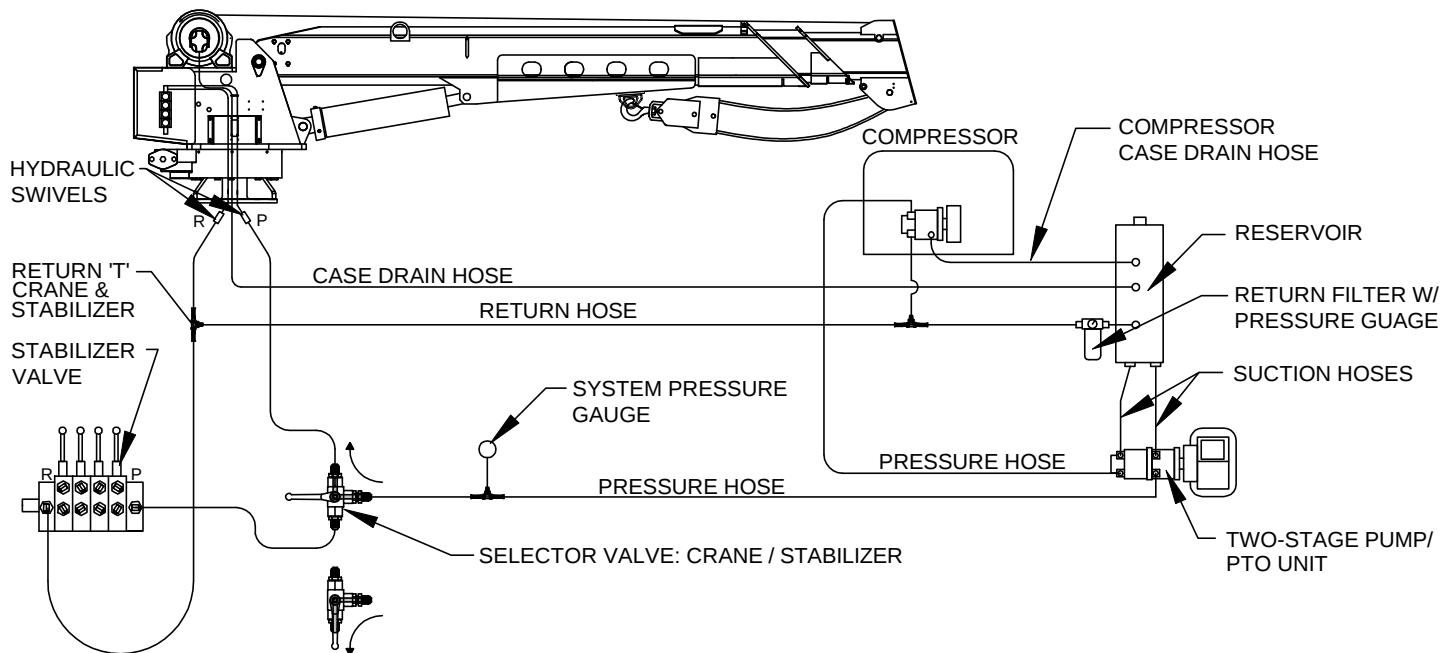
- THE CASE DRAIN LINE FROM THE WINCH MUST HAVE AN UNRESTRICTED PATH TO TANK/ RESERVOIR.

 VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE		SECTION
	CONNECTION GUIDE, PAGE 1 / 2		C200
	DATE		SUPERSEDES
	02-21-14B		04-19-12A
HT CRANES		23015	

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.



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CINCINNATI, OHIO

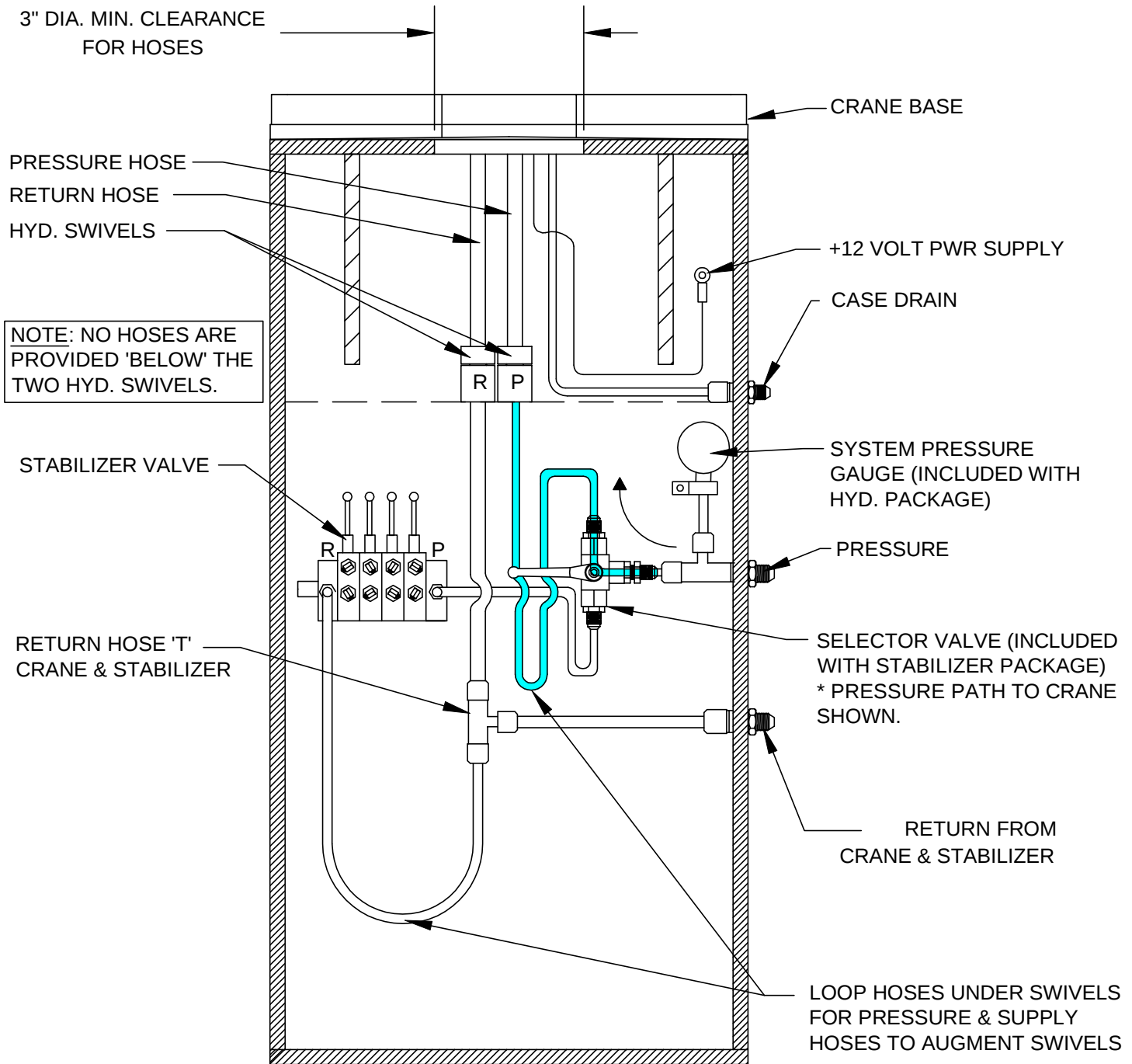
TITLE	CNNCTN GDE, PAGE 2/2
	HT CRANES

DATE	02-21-14B
SUPERSEDES	04-19-12A

SECTION
C200

23014

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.



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CINCINNATI, OHIO

TITLE
CONNECTIONS GUIDE

HT CRANES

DATE
02-21-14F

SUPERSEDES
10-24-12E

SECTION
C200

22913

WIRE ROPE INSTALLATION

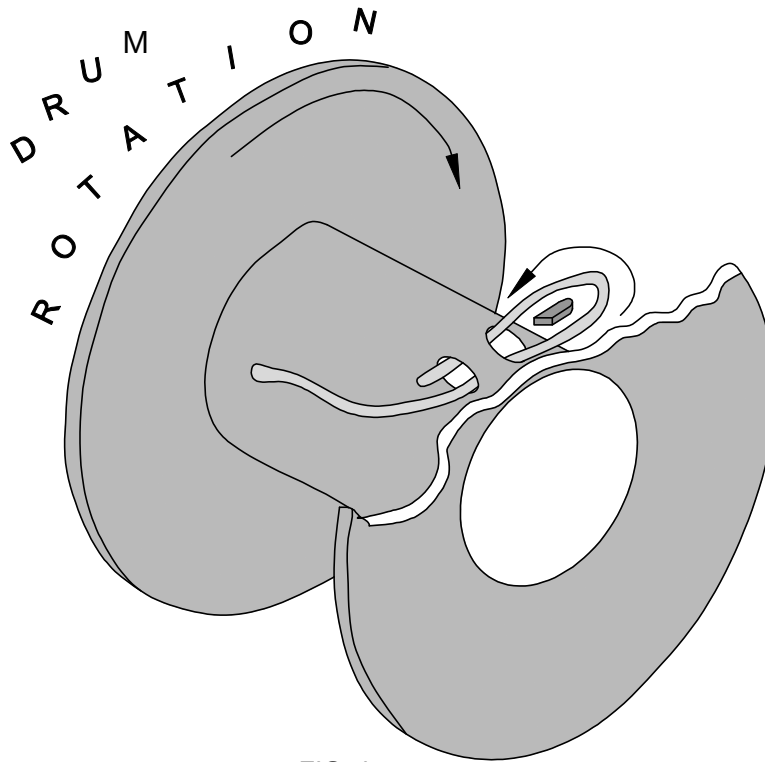


FIG. 1

- 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



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:

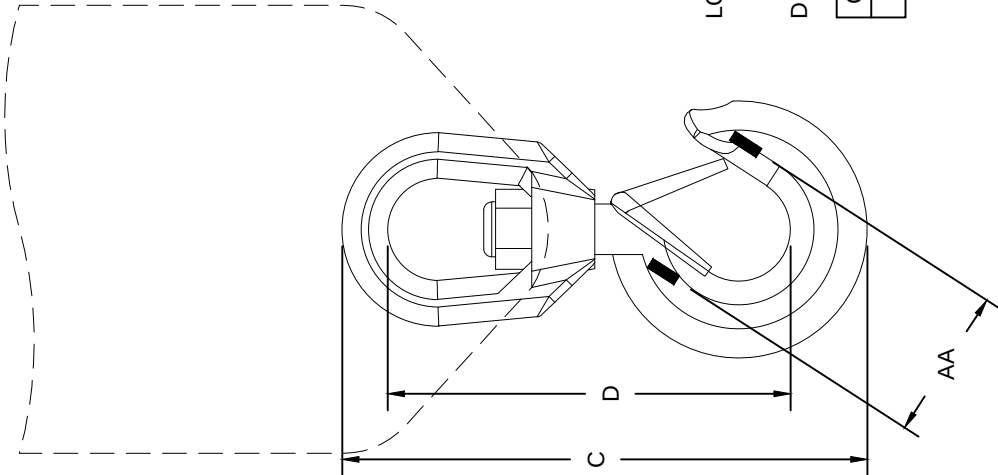
Initial Change - after the initial 100 hours of operation or two months.

Periodic Change - after every 1000 hours of operation or two years .



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
MAINTENANCE INFO	02-21-14C	C300
HT25/30/40/50/66K(X)	SUPERSEDES 04-12-12B	23203

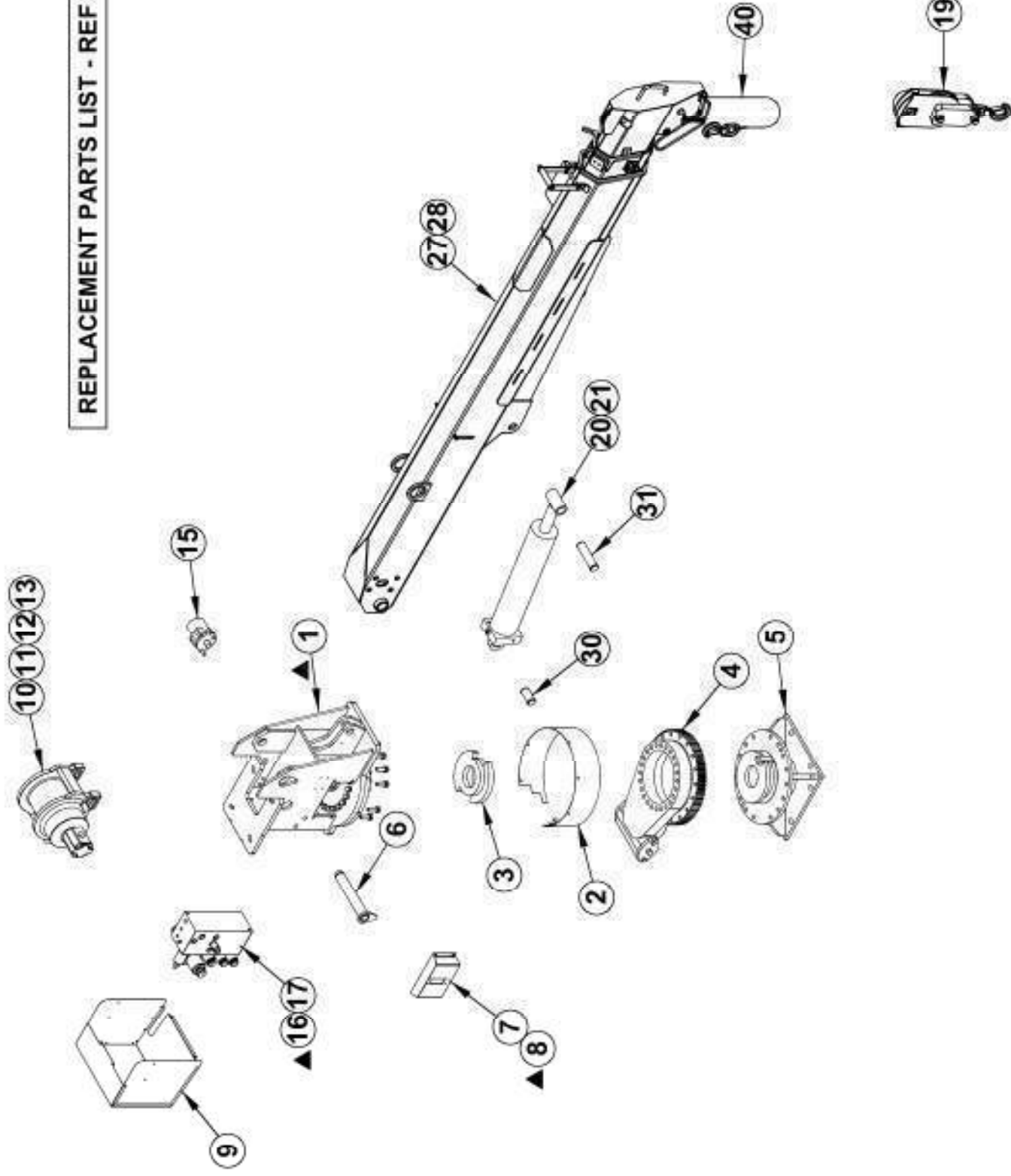
WIRE ROPE ASSEMBLY		LOAD BLOCK ASSEMBLY											
WIRE ROPE: 3/8" DIA, 100' LONG ▲ GAC 7X19 XIP-RHRL-IWRC, SB 14,400 LBS  TERMINATES IN THIMBLE NO HOOK		 LOAD BLOCK HOOK: RATING: 5 TONNE (11,023 LBS) DIMENSIONS: <table><tr><td>COLOR</td><td>BRAND</td><td>AA</td><td>C</td><td>D</td></tr><tr><td>GOLD</td><td>CROSBY</td><td>2.50"</td><td>9.69"</td><td>7.50"</td></tr></table>		COLOR	BRAND	AA	C	D	GOLD	CROSBY	2.50"	9.69"	7.50"
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

PARTS



REPLACEMENT PARTS LIST - REF 22988



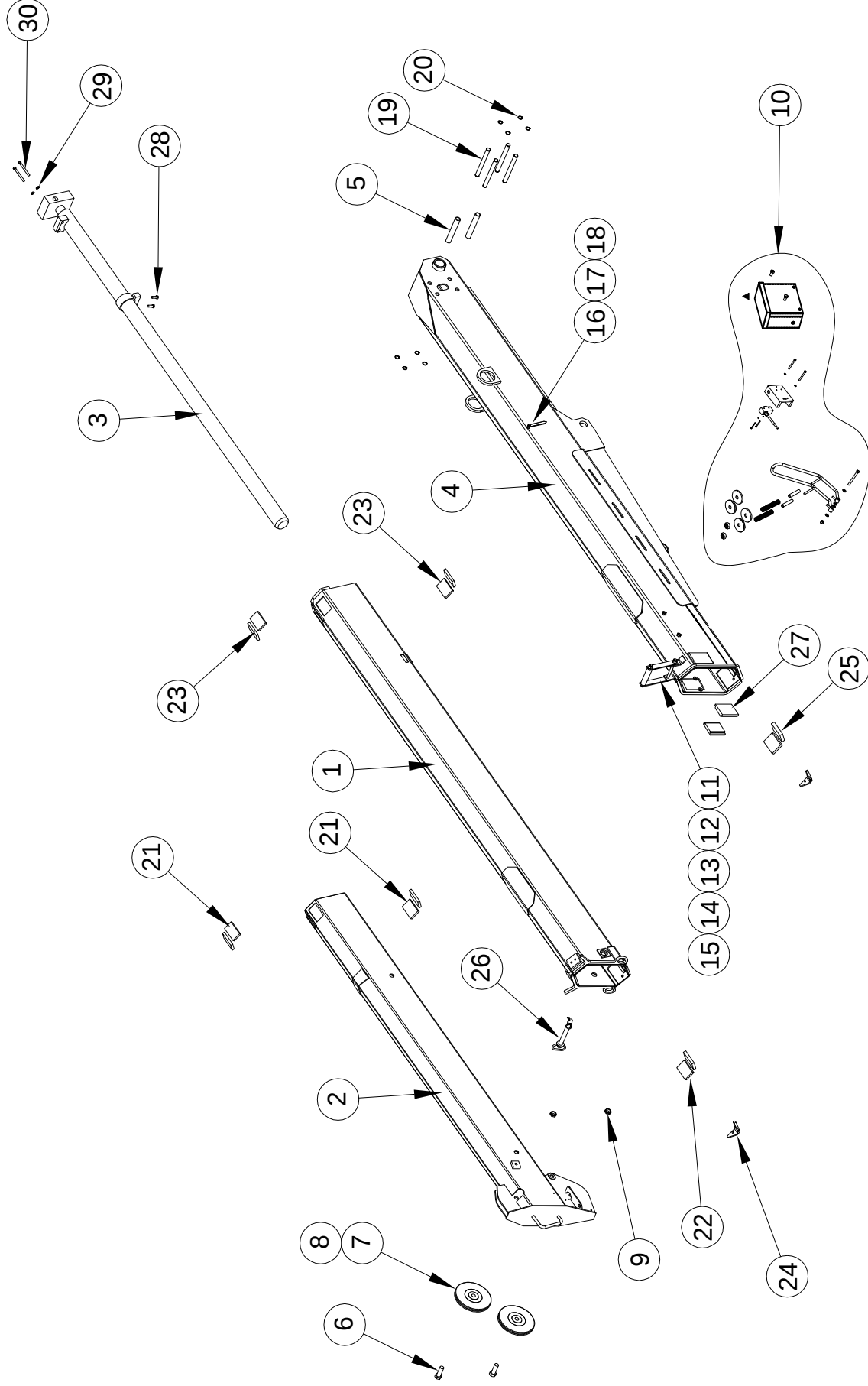
ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	27033	HOUSING WELDED ASSEMBLY	41	-	
2	22726	OUTER RING	42	-	
3	22702	ROTATION STOP RING WELDED ASSEMBLY	43	-	
4	22704	SLEWING RING	44	-	
5	22710	PEDESTAL WELDED ASSEMBLY	45	-	
6	22721	PIVOT PIN MAIN BOOM PIVOT	46	-	
7	22715-2	SIDE COVER W/ PENDANT 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	FIELD SERVICE LABEL KIT - HT40KX NON-PROP.
12	22909	WINCH - 4000 LB (SINGLE LINE) - HT50KX-NON-PROP	52	22921	FIELD SERVICE LABEL KIT - HT40KX PROPORTIONAL
13	22830	WINCH - 4000 LB (SINGLE LINE) - HT50KX-PROP	53	22924	FIELD SERVICE LABEL KIT - HT50KX NON-PROP.
14	-		54	22925	FIELD SERVICE LABEL KIT - HT50KX PROPORTIONAL
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	-		62	-	
23	-		63	-	
24	-		64	-	
25	-		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	-		73	-	
34	-		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

	TITLE			SECTION
	MANUFACTURING, INC. CINCINNATI, OHIO	REPLACEMENT PARTS LIST		C400
		HT40/50KX		22988
		DATE		
		06-20-13G		
		SUPERSEDES		
		03-08-13F		

21420 BOOM PARTS DRAWING (POWER / MANUAL)



REF PARTS LIST 22917



TITLE
21420 BOOM PARTS DRAWING

DATE
12-07-18F

SECTION
C400

HT40/50KX - HEX BOOM

SUPERSEDES
06-13-18E

22916

21420 BOOM PARTS LIST

▲
▲
▲

30	2	!SHCS05013200	SOCKET HEAD CAP SCREW; 1/2-13 X 2" LG
29	2	!LWSH-050-HC	LOCK WASHER; 1/2" HI-COLLAR
28	2	!HHC03816100	HEX HEAD CAP SCREW 3/8-16 X 1" LG
27	2	23217-2	UHMW GUIDE PAD
26	1	14600	HITCH PIN ASSEMBLY
25	2	23217-4	UHMW GUIDE PAD
24	2	23183	V-BLOCK SLIDER
23	4	23217-2	UHMW GUIDE PAD
22	2	23217-5	UHMW GUIDE PAD
21	4	23217-1	UHMW GUIDE PAD
20	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
19	4	22255	EXTENSION CYLINDER THRUST PIN
18	2	!ANUT-02520S	ACORN NUT 1/4-20 STAINLESS
17	2	13459-2	BOOM ARROW 4-7/16 LONG
16	2	22490	SPACER; BOOM ARROW 1/2" O.D.
15	2	!LNUT-04414	NYLON INSERT LOCK NUT - 7/16-14
14	1	!HHC04414550	HEX HEAD CAP SCREW - 7/16-14 X 5-1/2 LG
13	1	21560	ROLLER,UHMW GUIDE
12	1	21936	FLAT,MOUNT;WIRE ROPE GUIDE
11	1	21935	WIRE-ROPE GUIDE WELDED
10	1	27038	ANTI2 BLOCK CORD REEL ASSEMBLY
9	2	!LNUT-07510	LOCKNUT 3/4-10
8	2	23929	SPACER - 23927 & 23928 POLY SHEAVES
7	2	23928	BOOM SHEAVE WITH BUSHING
6	2	17059-1	SHEAVE AXLE
5	2	24535	THRUST ROLLER
4	1	27207	PRIMARY BOOM WELDED ASSEMBLY
3	1	22032-H	EXTENSION CYLINDER
2	1	27214	TERTIARY BOOM ASSEMBLY
1	1	27212	SECONDARY BOOM TUBE WELDED ASSEMBLY
ITEM NO.	QTY.	PART NUMBER	DESCRIPTION

REF PARTS DRAWING 22916



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST

HT40/50KX

DATE

06-13-18K

SUPERSEDES

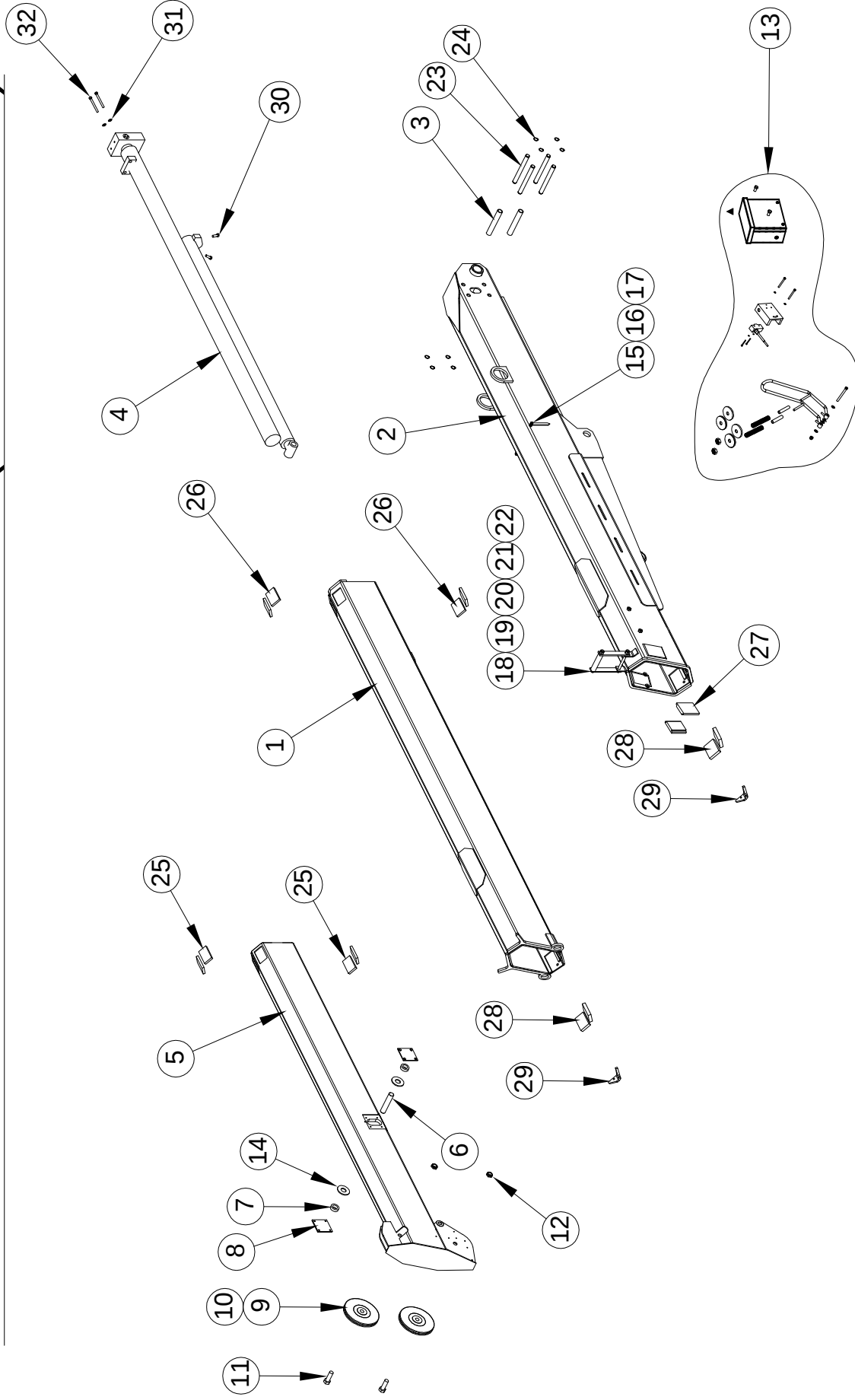
01-23-13J

SECTION

C400

22917

21410 BOOM PARTS DRAWING (FULL POWER)



REF. PARTS LIST 22931



TITLE
21410 BOOM PARTS DRAWING

DATE
12-07-18G

SECTION
C400

HT40/50KXX BOOM

SUPERSEDES
06-13-18F

22930

21410 BOOM PARTS LIST

▲	32	2	ISHCS05013200	SOCKET HEAD CAP SCREW; 1/2-13 X 2" LG
▲	31	2	ILWSH-050-HC	LOCK WASHER; 1/2" HI-COLLAR
▲	30	2	IHHCS03816100	HEX HEAD CAP SCREW; 3/8-16 X 1" LG
	29	2	23183	V-BLOCK SLIDER
▲	28	4	23217-3	UHMW GUIDE PAD
	27	2	23217-13	UHMW GUIDE PAD
	26	4	23217-2	UHMW GUIDE PAD
	25	4	23217-1	UHMW GUIDE PAD
	24	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
	23	4	22255	EXTENSION CYLINDER THRUST PIN
	22	2	!LNUT-04414	NYLON INSERT LOCK NUT - 7/16-14
	21	1	21560	ROLLER,UHMW GUIDE
	20	1	IHHCS04414550	HHCS - 7/16-14 X 5-1/2 LG
	19	1	21936	FLAT,MOUNT,WIRE ROPE GUIDE
	18	1	21935	WIRE-ROPE GUIDE WELDED
	17	2	!ANUT-02520S	ACORN NUT 1/4-20 STAINLESS
	16	2	13459-2	BOOM ARROW 4-7/16 LONG
	15	2	22490	SPACER, BOOM ARROW 1/2" O.D.
	14	2	!FWSH-100	FLAT WASHER - 1"
	13	1	27038	A2B CORD REEL MECHANICAL ASSY.
	12	2	!JNUT-07510N	NYLON LOCK-JAMNUT 3/4-10
	11	2	17059-1	SHEAVE AXLE
	10	2	23929	SPACER - 23927 & 23928 POLY SHEAVES
	9	2	23928	BOOM SHEAVE WITH BUSHING
	8	2	23116	PIN BLOCK REINFORCING
	7	2	21428	BUSHING
	6	1	21405	PIN - CYLINDER
	5	1	21416	TERTIARY BOOM ASSEMBLY
	4	1	21744	EXTENSION CYLINDER
	3	2	24535	THRUST ROLLER
	2	1	27207	PRIMARY BOOM WELDED ASSEMBLY
	1	1	27209	SECONDARY BOOM WELDED ASSEMBLY
	ITEM NO.	EXPLODED/QTY.	PART NUMBER	DESCRIPTION

REF PARTS DRAWING 22930



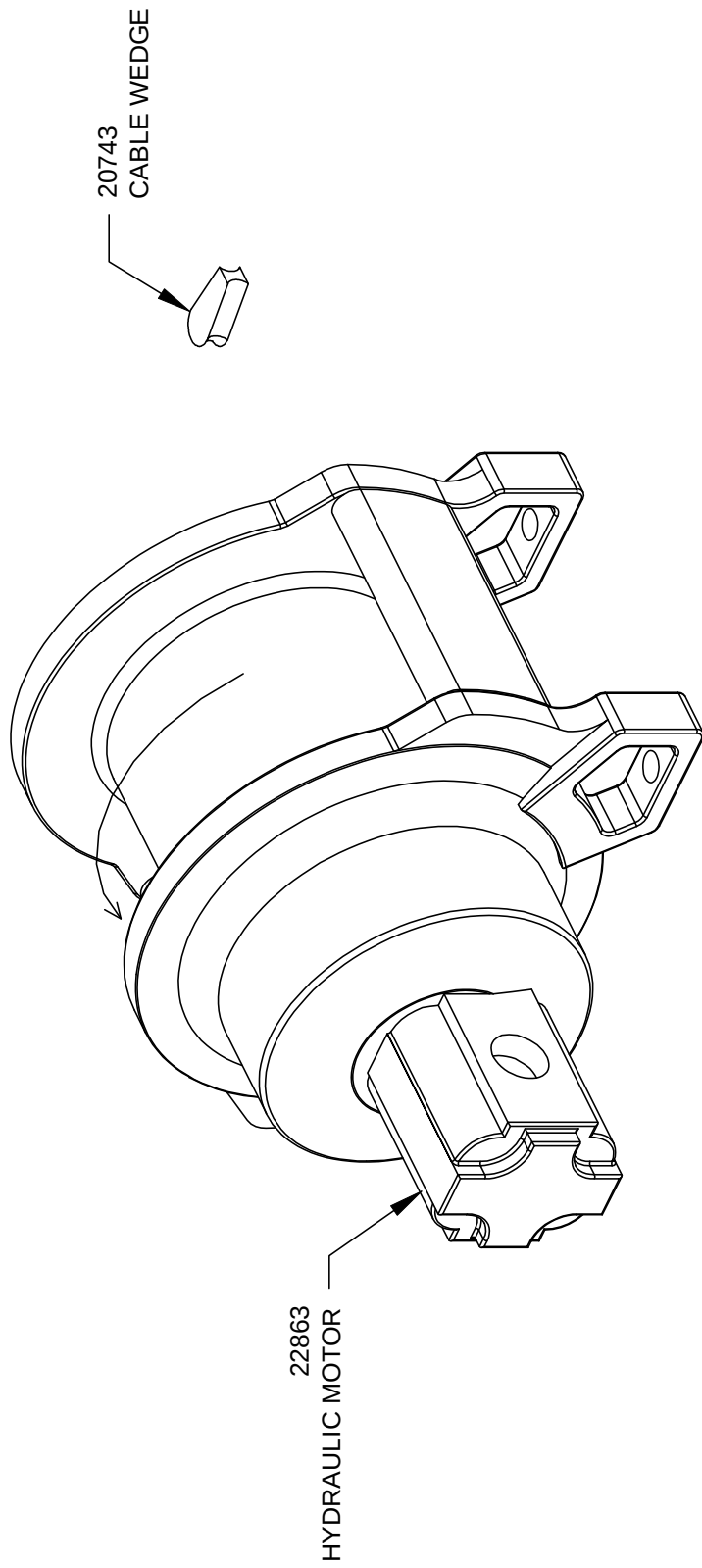
TITLE
REPLACEMENT PARTS LIST

DATE
06-13-18J
SUPERSEDES
12-28-12H

SECTION
C400

22931

REPLACEMENT PARTS; 22829 WINCH, PROPORTIONAL



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

WINCH SERVICE KIT P/N: 21381

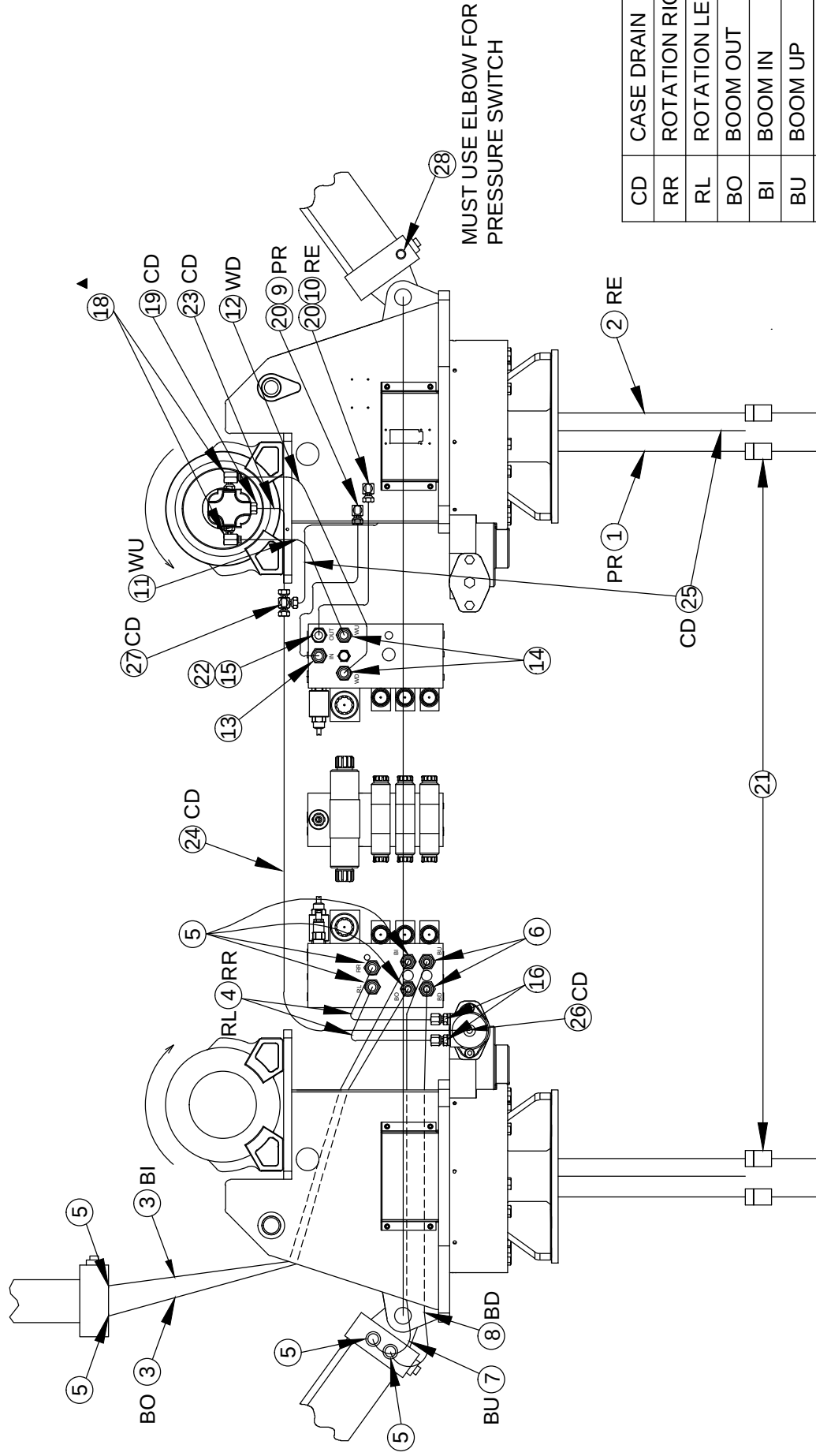
MOTOR SERVICE KIT P/N: 22902



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
	SUPERSEDES	
22829 WINCH; REPLACEMENT PARTS DWG	03-03-14B	C400
HT40KX PROPORTIONAL	09-13-11A	23030

HYDRAULIC COMPONENTS; HT40/50KX PROPORTIONAL



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

REFERENCE REPLACEMENT PARTS LIST 22979



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE HYD. COMPONENTS REPLCMNT PARTS DWG

HT40/50KX; PROPORTIONAL

DATE 10-22-20E

SECTION C400

SUPERSEDES 12-20-17D

22978

REPLACEMENT PARTS LIST; HYDRAULIC SYSTEM COMPONENTS
HT40/50 PROPORTIONAL SERIES CRANES

ITEM	QTY	PART NUMBER	DESCRIPTION	INSTALLATION
1	1	22760	HOSE ASSY; PRESSURE SUPPLY	SOURCE TO BULKHEAD
2	1	22761	HOSE ASSY; RETURN SUPPLY	BULKHEAD TO RESERVOIR
3	2	27592	HOSE ASSY; BOOM IN / BOOM OUT	VALVE BANK TO EXTENSION CYLINDER
4	2	27598	HOSE ASSY; ROTATION LEFT / RIGHT	VALVE BANK TO ROTATION MOTOR
5	8	FF6400-0606	FITTING; ADAPTER, STRAIGHT, 6OFS-6MO	† SEE BELOW
6	2	FF6801-0606	FITTING; ADAPTER, 90° ELBOW, 6OFS-6MO	VALVE BANK BU/BD PORTS
7	1	27026	HOSE ASSY; BOOM UP	VALVE BANK TO ELEVATION CYL.
8	1	27027	HOSE ASSY; BOOM DOWN	VALVE BANK TO ELEVATION CYL.
9	1	22758	HOSE ASSY; PRESSURE	VALVE BANK TO BULKHEAD FITTING
10	1	22759	HOSE ASSY; RETURN	VALVE BANK TO BULKHEAD FITTING
11	1	27024	HOSE ASSY; WINCH UP	VALVE BANK TO WINCH MOTOR
12	1	27025	HOSE ASSY; WINCH DOWN	VALVE BANK TO WINCH MOTOR
13	1	H6400-0810	FITTING; ADAPTER, STRAIGHT, 8MJ-10MO	VALVE BANK "IN" PORT
14	2	FF6400-0810	FITTING; ADAPTER, STRAIGHT, 8OFS-10MO	VALVE BANK WU/WD PORTS
15	1	H6801-LL-1212	FITTING; 90° LONG DROP ELB., 12MO-12MJ	VALVE BANK "OUT" PORT
16	2	FF6400-0610	FITTING; ADAPTER, STRAIGHT, 6OFS-10MO	ROTATION MOTOR PORTS
17	-	-	-	-
18	2	FF3801-8-12	FITTING; ADPTR, 90° ELBOW, 8OFS-04MBP	WINCH MOTOR PORTS
19	1	3800-0404	FITTING; ADPTR, 45° ELBOW, 04MJ-04MBP	WINCH MOTOR CASE DRAIN
20	2	H2701LN-0808	FITTING; BULKHEAD, 90° ELBOW, 8MJ-8MJ	MECHANISM HOUSING, RIGHT SIDE
21	2	22764	LIVE CONTINUOUS HYDRAULIC SWIVEL	PRESSURE/RETURN SUPPLIES TO MAINS
22	1	H2406-1210	FITTING; ADAPTER, STRAIGHT, 12FJ-10MJ	ATTACHES TO H6801-LL-1212
23	1	22952	HOSE ASSY; CASE DRAN, 13" LONG	ROTATION MTR CASE DRAIN TO H2603-040404
24	1	22953	HOSE ASSY; CASE DRAIN, 30" LONG	WINCH MOTOR CASE DRAIN TO H2603-040404
25	1	22903	HOSE ASSY; CASE DRAIN, 96" LONG	H2603-040404 TO RESERVOIR
26	1	H6801-0404	FITTING; ADAPTER, 90° ELBOW, 4MJ-4MO	ROTATION MOTOR CASE DRAIN
27	1	H2603-040404	FITTING; T-SHAPE JUNCTION, 4MJ-4MJ-4MJ	T-SHAPE JUNCTION FOR CASE DRAIN HOSES
* 28	1	22733	FITTING; ADPTR, 90° ELBW, 4MORB-4FORB	ELEVATION CYLINDER TO PRESSURE SWITCH
29	-	-	-	-
30	-	-	-	-

* MUST USE ELBOW FOR PRESSURE SWITCH

† FF6400-0606 LOCATIONS:
EXTENSION CYLINDER PORTS
ELEVATION CYLINDER PORTS
VALVE BLOCK PORTS:
ROTATION LEFT
ROTATION RIGHT
BOOM IN
BOOM OUT

REFERENCE REPLACEMENT PARTS DWG 22978



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
RPLCMNT PARTS LIST

HT40/50 SERIES, PROP

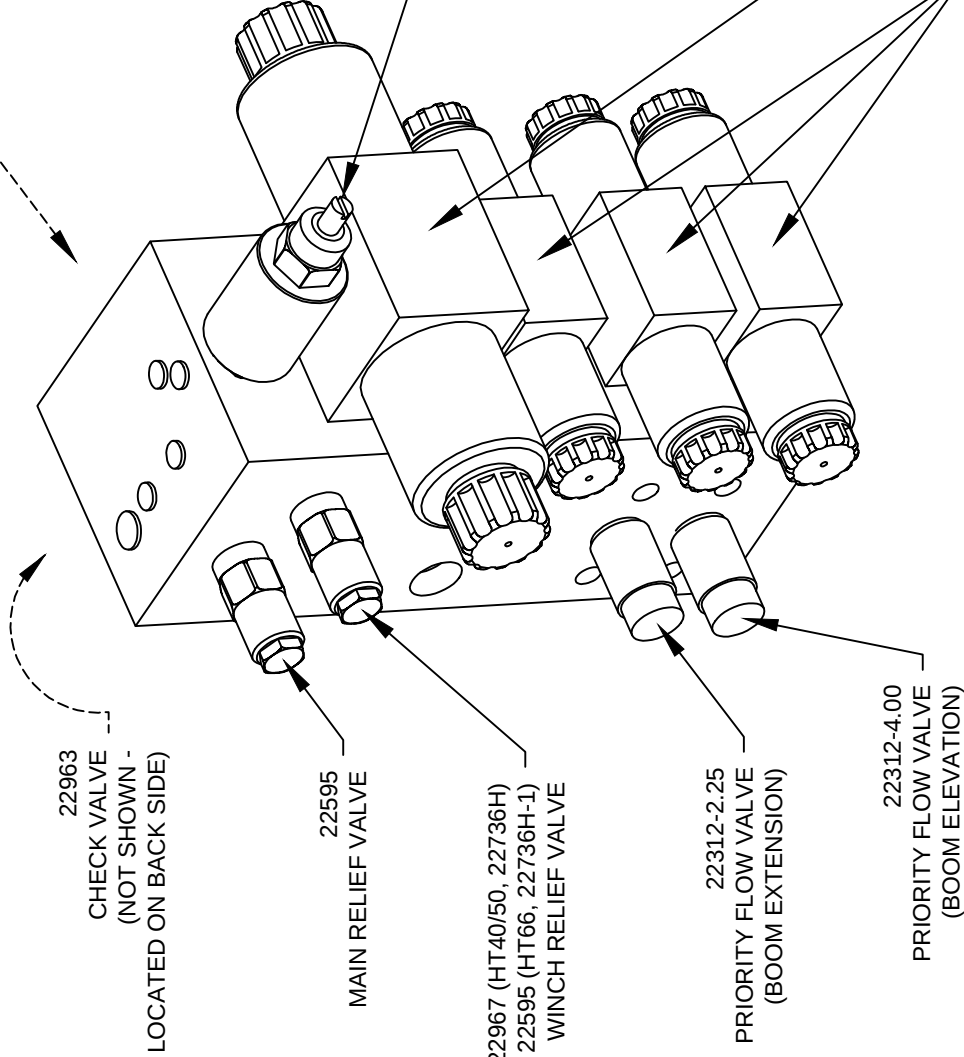
DATE
10-22-20D

SUPERSEDES
12-19-16C

SECTION
C400

22979

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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
22736 REPLACEMENT PARTS

HT40/50/66KX PROPORTIONAL

DATE
11-13-17F

SUPERSEDES
02-21-14E

SECTION
C400

22940



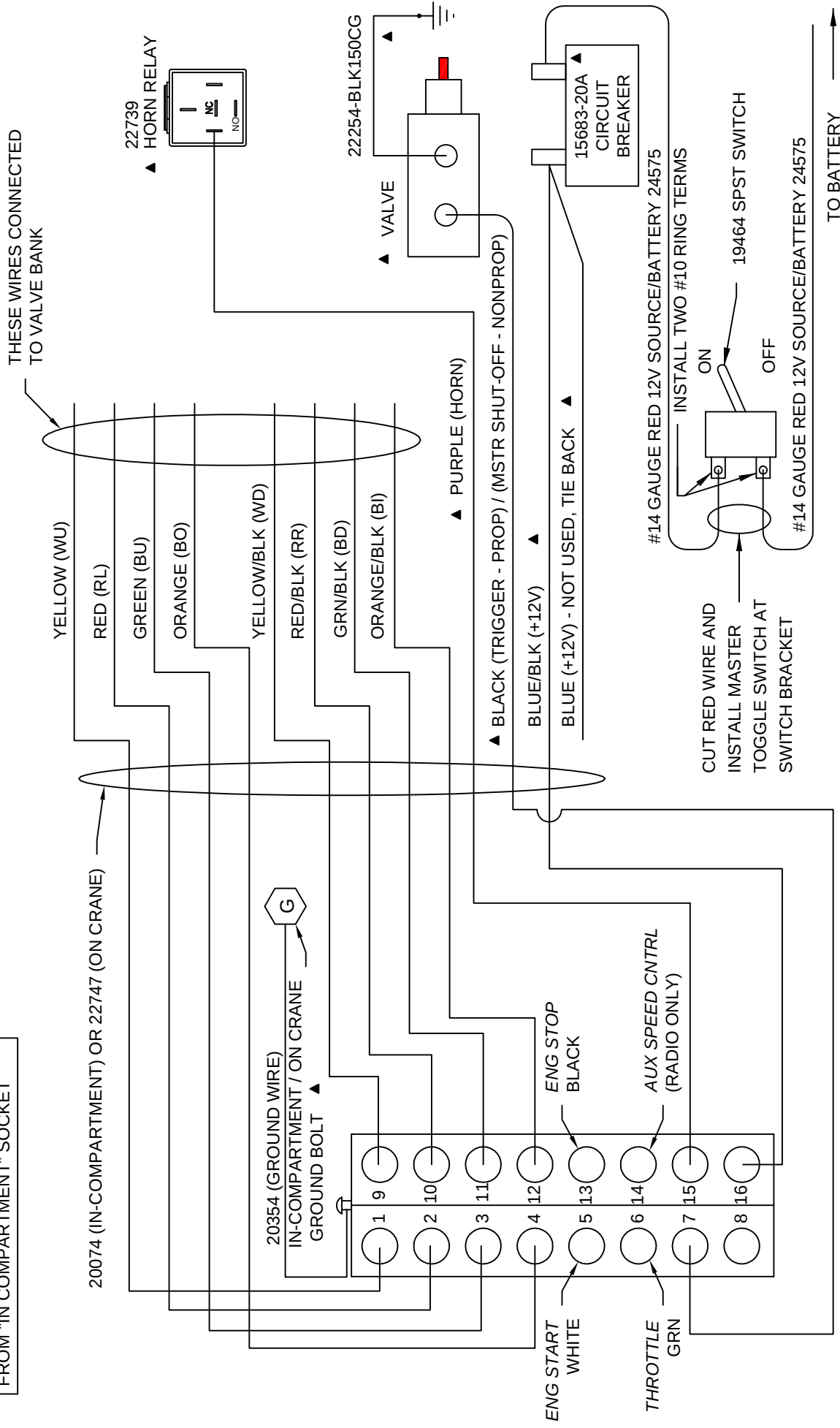
HT40/50KX: PROPORTIONAL

DATE	06-27-14J
SUPERSEDES	4-22-14H

22185

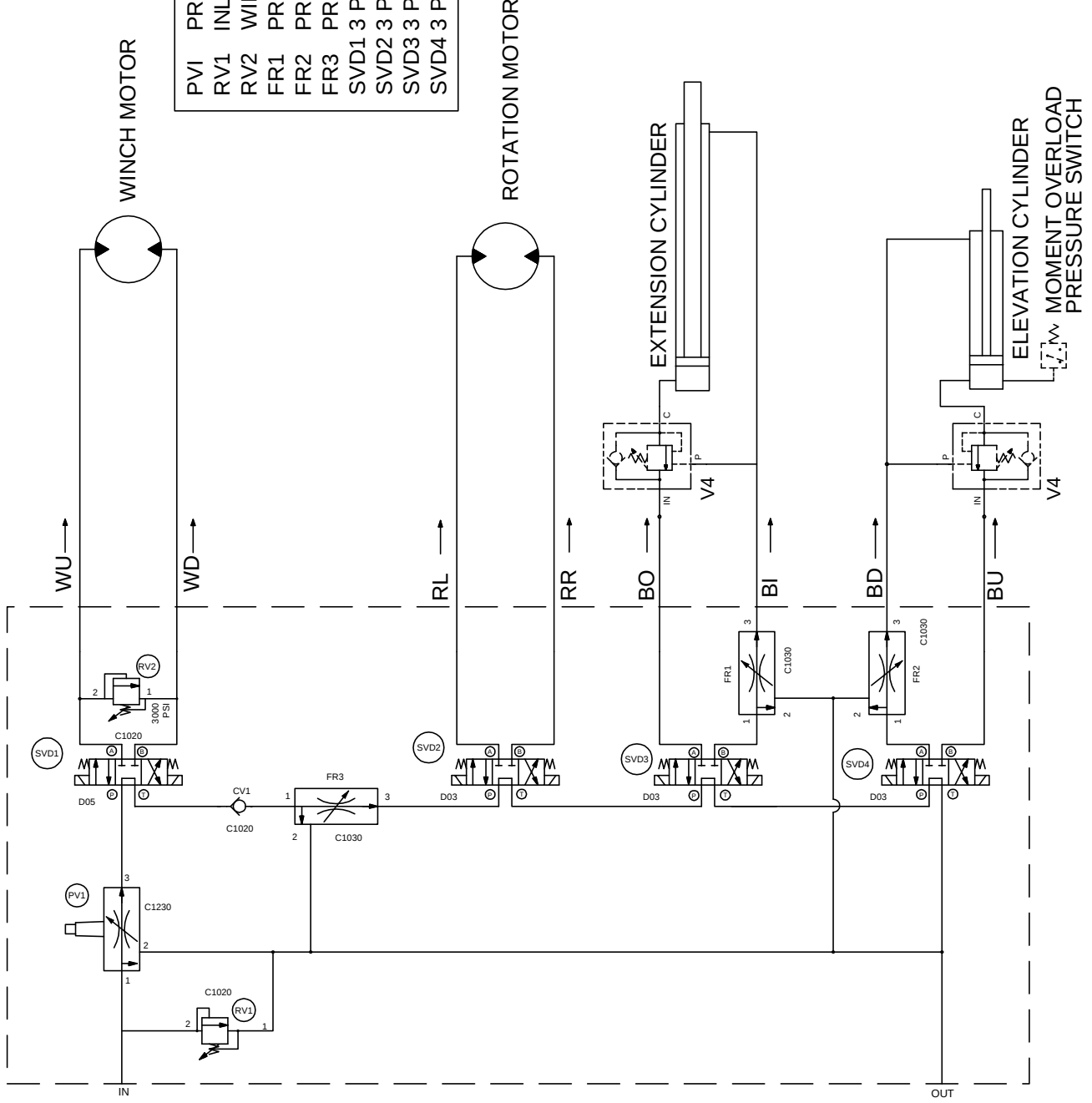
• SOCKET WIRING; 16-PIN, W/ OPTIONAL ENG CONTROLS

FROM "IN COMPARTMENT" SOCKET



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

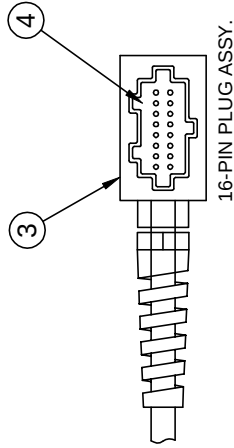
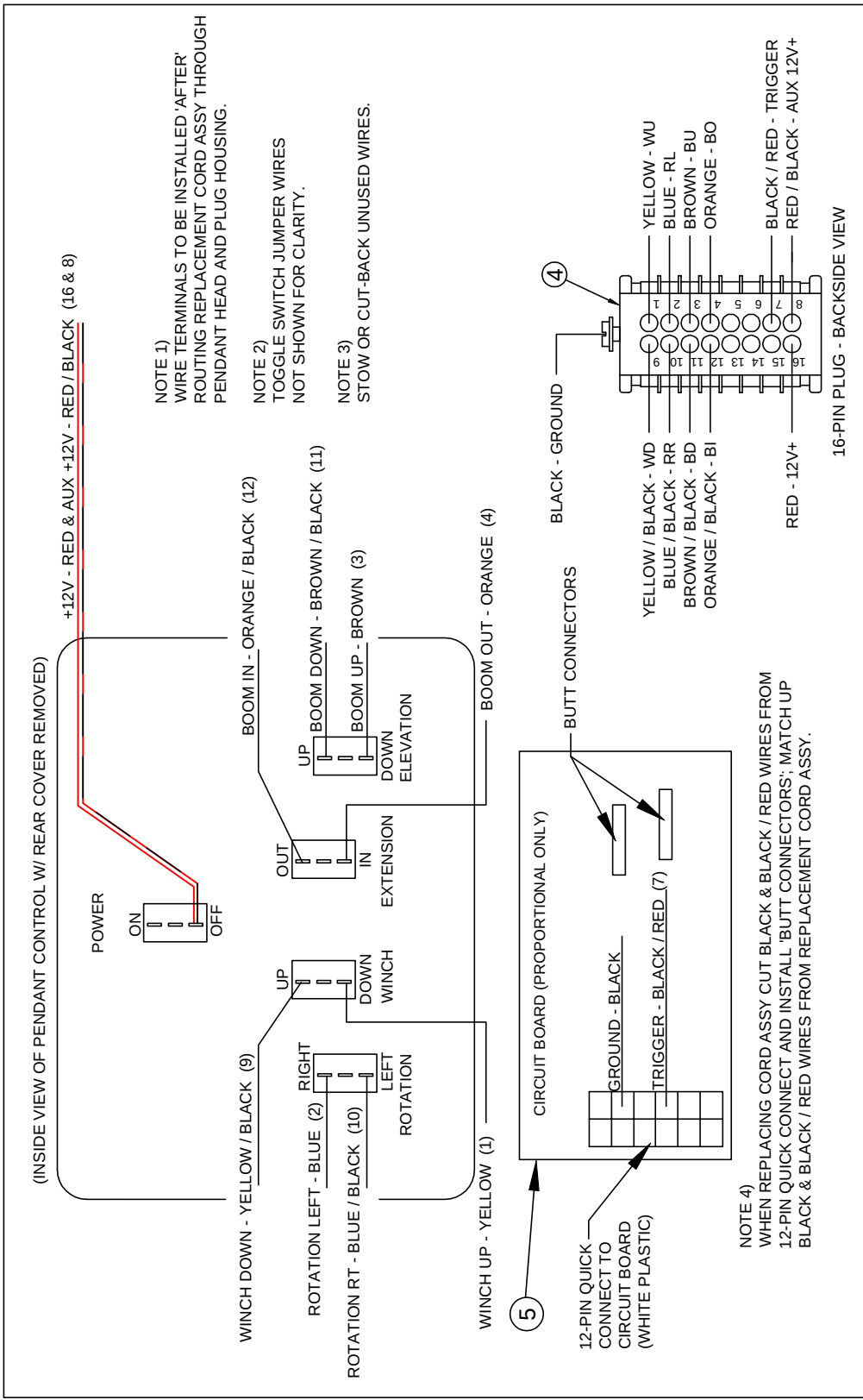
	VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO		TITLE	SOCKET WIRING; 16 PIN		DATE	SECTION
	HT CRANES			02-17-15G		C400	
				SUPERSEDES		02-21-14F	22125



- PV1 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 - 6.00 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

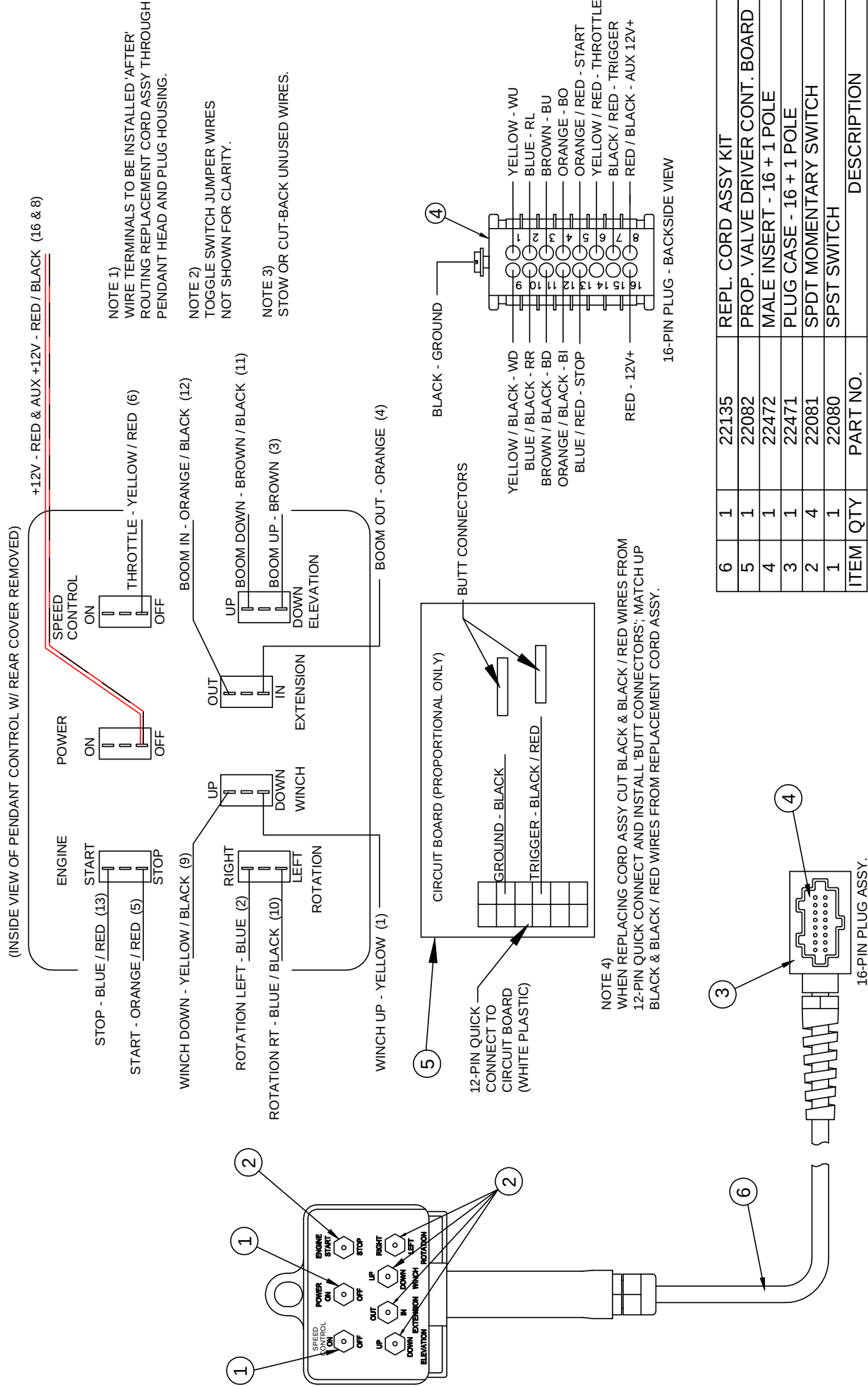
	VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO		TITLE	HYDRAULIC SYSTEM DIAGRAM	
	HT40/50/66KX; PROPORTIONAL		DATE	02-21-14B	SECTION C400
			SUPERSEDES	11-17-09A	27352

CORD REPLACEMENT INSTRUCTIONS; 22118 PENDANT



ITEM	QTY	PART NO.	DESCRIPTION
6	1	22135	REPL. CORD ASSY. KIT
5	1	22082	PROP. VALVE DRIVER CONT. BOARD
4	1	22472	MALE INSERT - 16 + 1 POLE
3	1	22471	PLUG CASE - 16 + 1 POLE
2	4	22081	SPDT MOMENTARY SWITCH
1	1	22080	SPST SWITCH

CORD REPLACEMENT INSTRUCTIONS



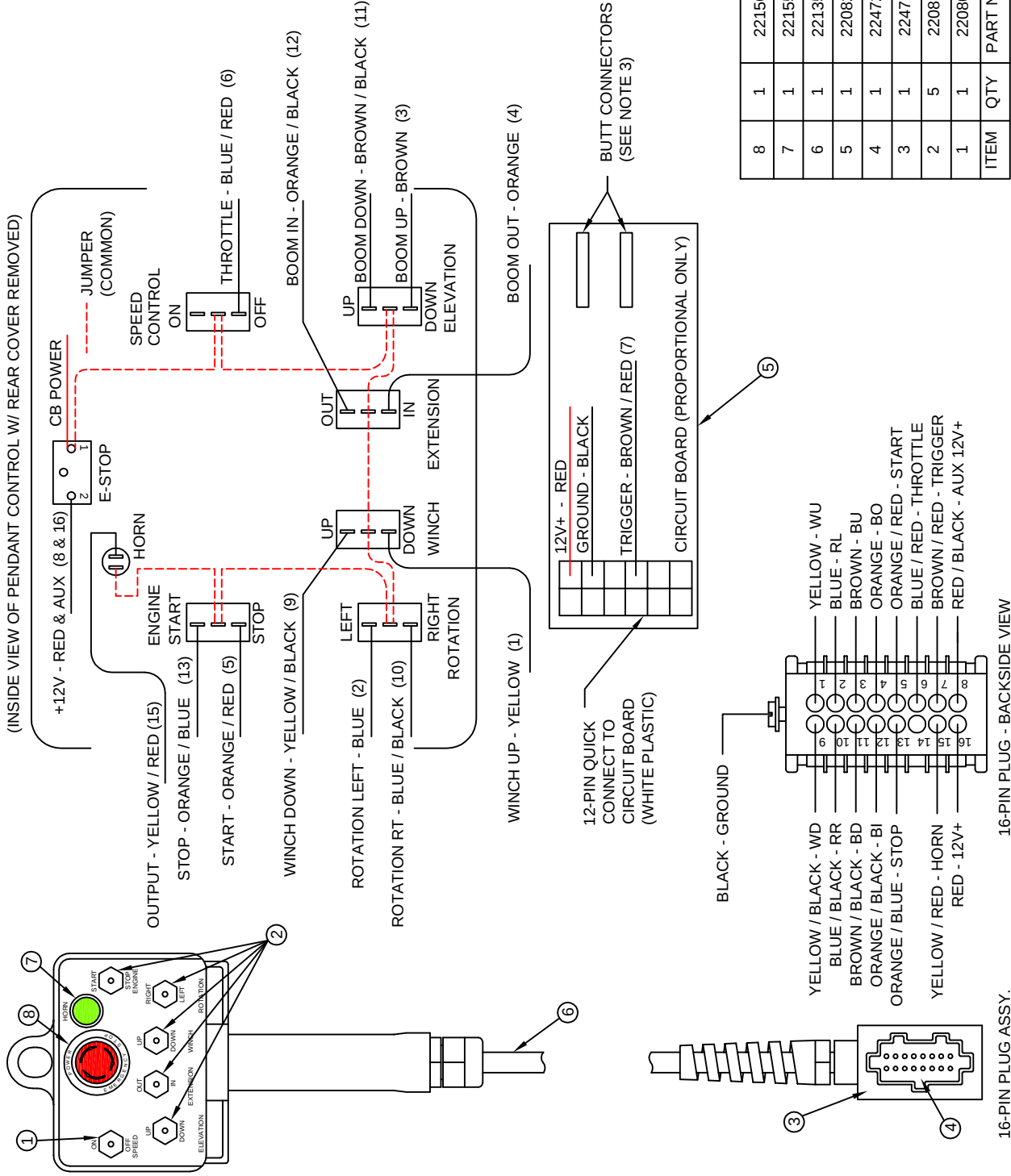
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CORD REPLACEMENT INSTRUCTIONS

TITLE	DATE	SECTION
CORD REPLACEMENT INSTRUCTIONS	02-21-14C	C400
22065 PENDANT; PROP, ENGINE CONTROLS	SUPERSEDES	08-15-11B

22073

21987 PENDANT; PROP, ENG CNTRL, E-STOP / HORN



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.

NOTE 3:

WHEN REPLACING CORD ASSY, CUT BLACK AND BLACK / RED WIRES FROM 12-PIN QUICK CONNECT AND INSTALL 'BUTT CONNECTORS'; MATCH UP BLACK TO BLACK WIRES AND BLACK / RED TO BLACK / RED WIRES FROM REPLACEMENT CORD ASSY.

MODEL	STARTING S/N
HT25K(X)	120300
HT30K(X)	115300
HT40K(X)(X)	100900
HT50K(X)(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	1	22082	CIRCUIT BOARD; PROP VALVE CONTROLLER
4	1	22472	INSERT; MALE, 16 + 1 POLE
3	1	22471	PLUG CASE; 16 + 1 POLE
2	5	22081	SWITCH; SPDT, MOMENTARY
1	1	22080	SWITCH; SPST



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

REPLACEMENT PARTS DWG & LIST

21987 PENDANT; PROP, ENG CNTRL, ESTP/HRN

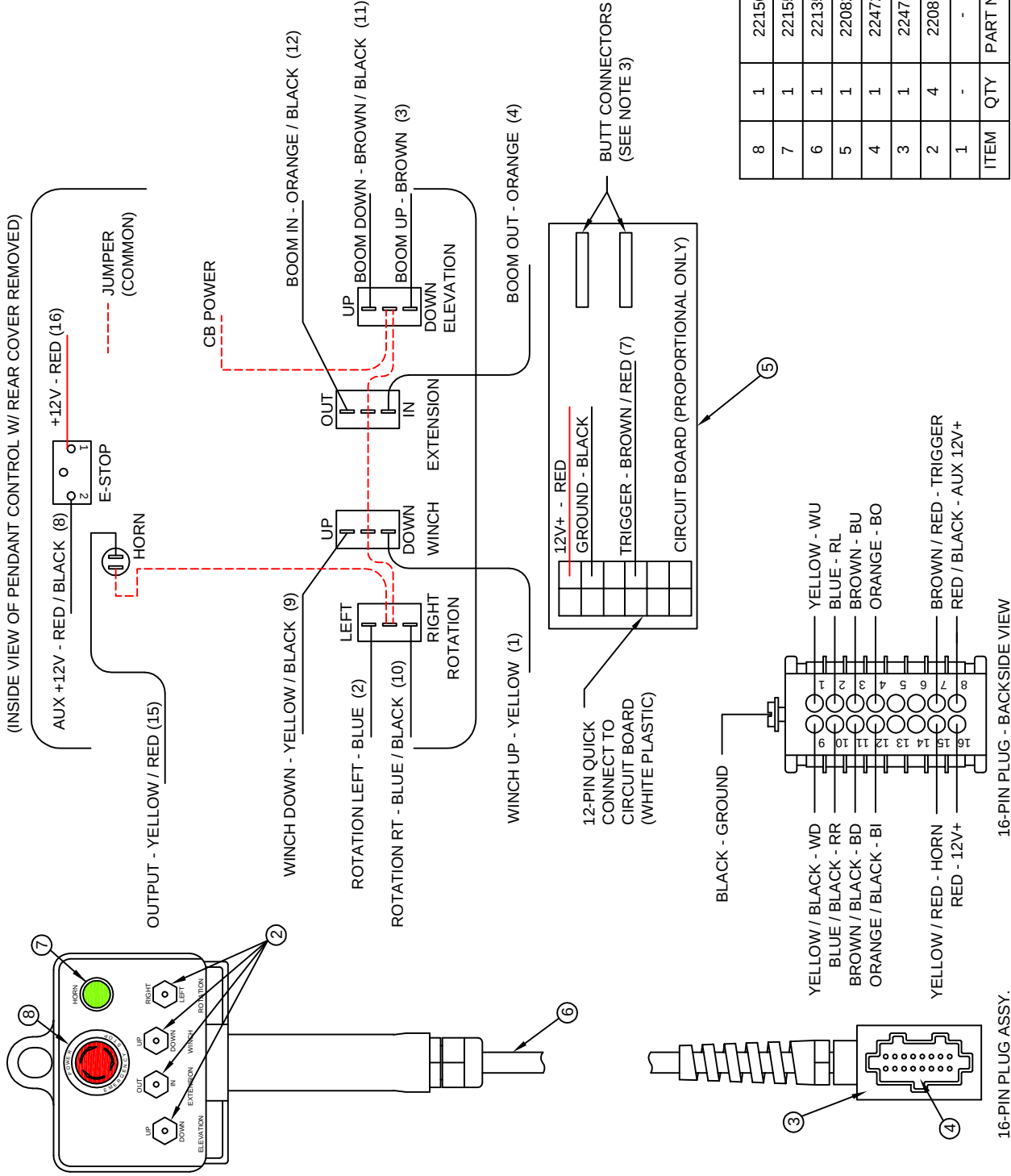
DATE
10-03-14

SECTION
C400

SUPSEDES

23072

21988 PENDANT; PROP, NO ENG CNTRL, E-STOP / HORN



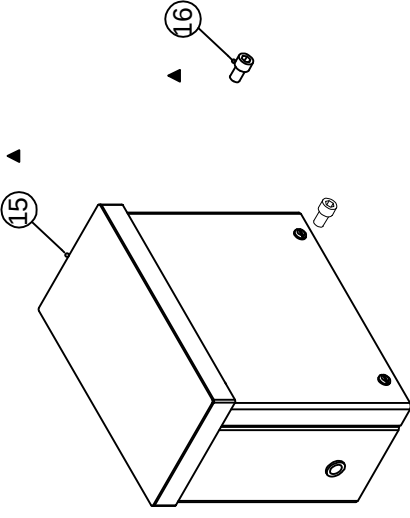
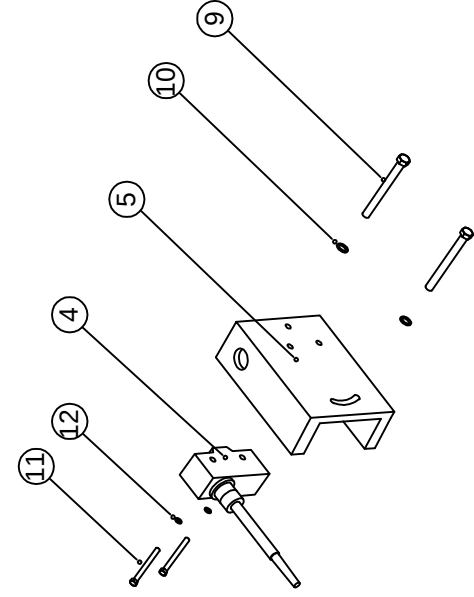
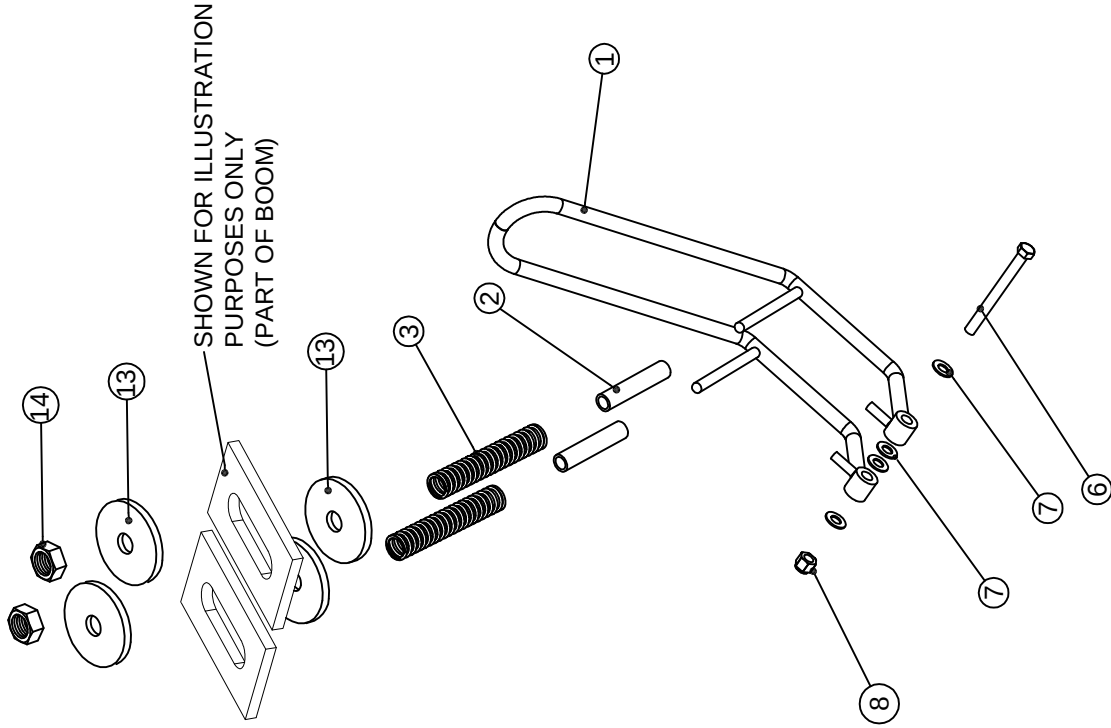
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

REPLACEMENT PARTS DWG & LIST

21988 PNDNT; PROP, NO ENG CNT, ESTP/HRN

DATE	10-03-14	SECTION	C400
SUPERSEDES	-		

23073



FOR RT-HAND MNGT. USE CORD REEL P/N 22683-1

17	-	-	-	SHCS; 5/16-18 X 1/2", S/S
16	2	!SHCS03118050-SS	22683	CORD REEL W/MOUNTING BRACKET
15	1	!LNUT-04414	!FWSH-050	LOCKNUT W/NYLON INSERT - 7/16-14
14	2	!LNUT-04414	!FWSH-050	FLAT WASHER -1/2 USS
13	4	!LWSH-#6-STAR	!PHCS#632100	EXTERNAL STAR LOCK - #6
12	2	!PHCS#632100	!LWSH-#10	PAN CAP SCREW - #6-32 X 1
11	2	!PHCS#632100	!PHCS#1024125	LOCK WASHER - #10
10	2	!LWSH-#10	!LNUTM12X175	PAN HD CAP SCREW - #10-24 X 1-1/2"
9	2	!PHCS#1024125	!FWSH-044SAE	NYLOK NUT12MM-1.75
8	1	!LNUTM12X175	!HHCSM12M120	FLAT WASHER - 7/16 SAE
7	4	!FWSH-044SAE	21237	HEX HEAD CAP SCREW 12MM X 120MM LONG
6	1	!HHCSM12M120	19376	SWITCH HOUSING (BLACK CAST NYLON)
5	1	21237	27586	ANTI-TWO BLOCK SWITCH
4	1	19376	27579b	SPRING
3	2	27586	27762	SPRING LOCATING TUBE
2	2	27579b		ANTI TWO BLOCK CAGE ASSEMBLY
1	1	27762		DESCRIPTION
ITEM NO.	QTY.	PART NUMBER		



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
A2B SYSTEM REPLACEMENT PARTS

DATE
12-07-18D
SUPERSEDES
02-21-14C

SECTION
C400

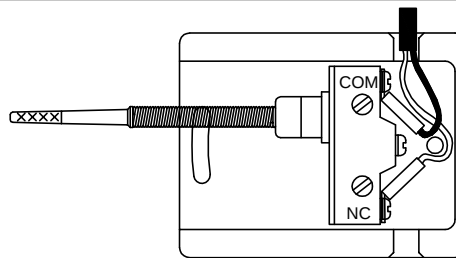
HT40/50KX

23024

STEP 1

ANTI-TWO BLOCK (A2B) SWITCH WIRING

Connect the Black wire to the 'COM' (Common) terminal and the White wire to the 'NC' (Normally Closed) terminal. The center terminal is not used.



CUT-AWAY VIEW

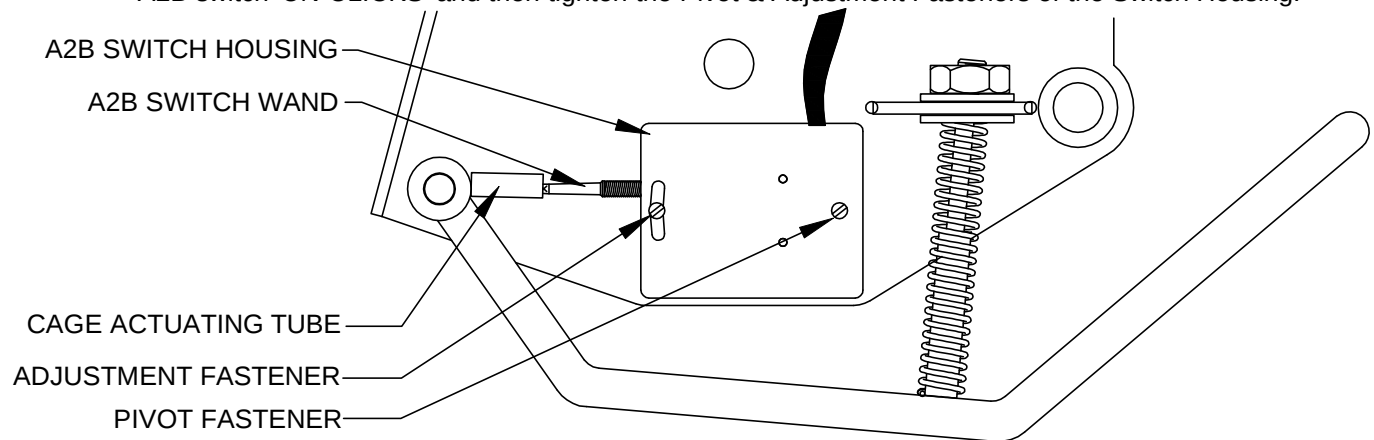
STEP 2

ANTI-TWO BLOCK (A2B) SWITCH ADJUSTMENT

The A2B switch is adjusted by loosening the Pivot & Adjustment Fasteners of the A2B switch housing.

Once loosened the A2B switch and housing move freely pivoting on the 'Pivot Fastener' allowing the 'Switch Wand' to be adjusted to the 'Cage Actuating Tube'.

With the A2B Switch Wand inserted into the Cage Actuating Tube rotate the A2B switch housing Counter-Clockwise until you hear the 'click' of the A2B switch then rotate Clockwise 'just until' the A2B switch 'UN-CLICKS' and then tighten the Pivot & Adjustment Fasteners of the Switch Housing.

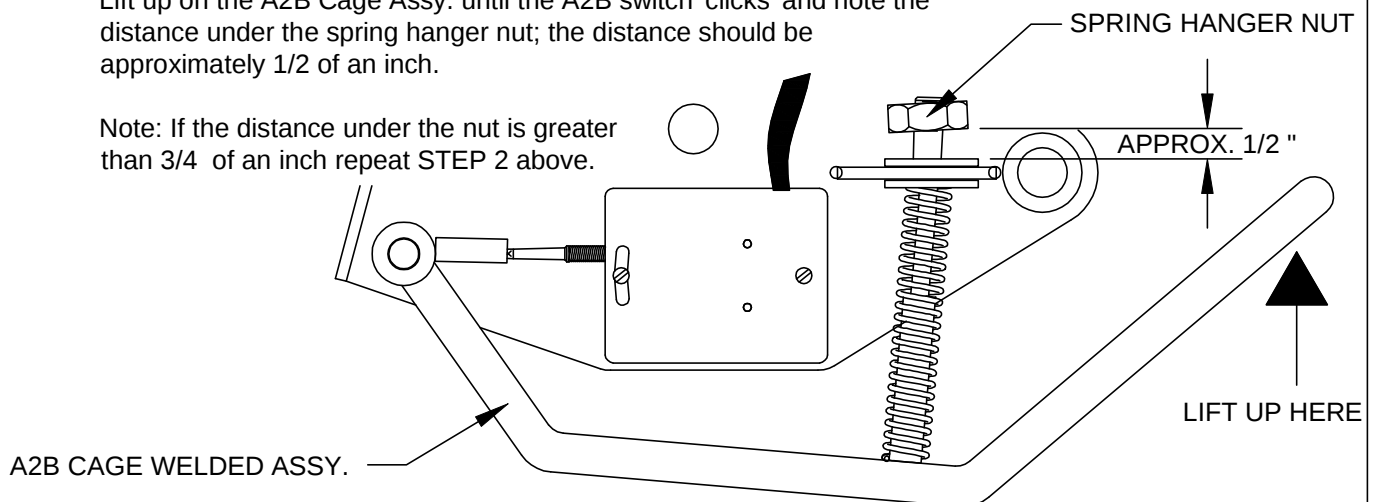


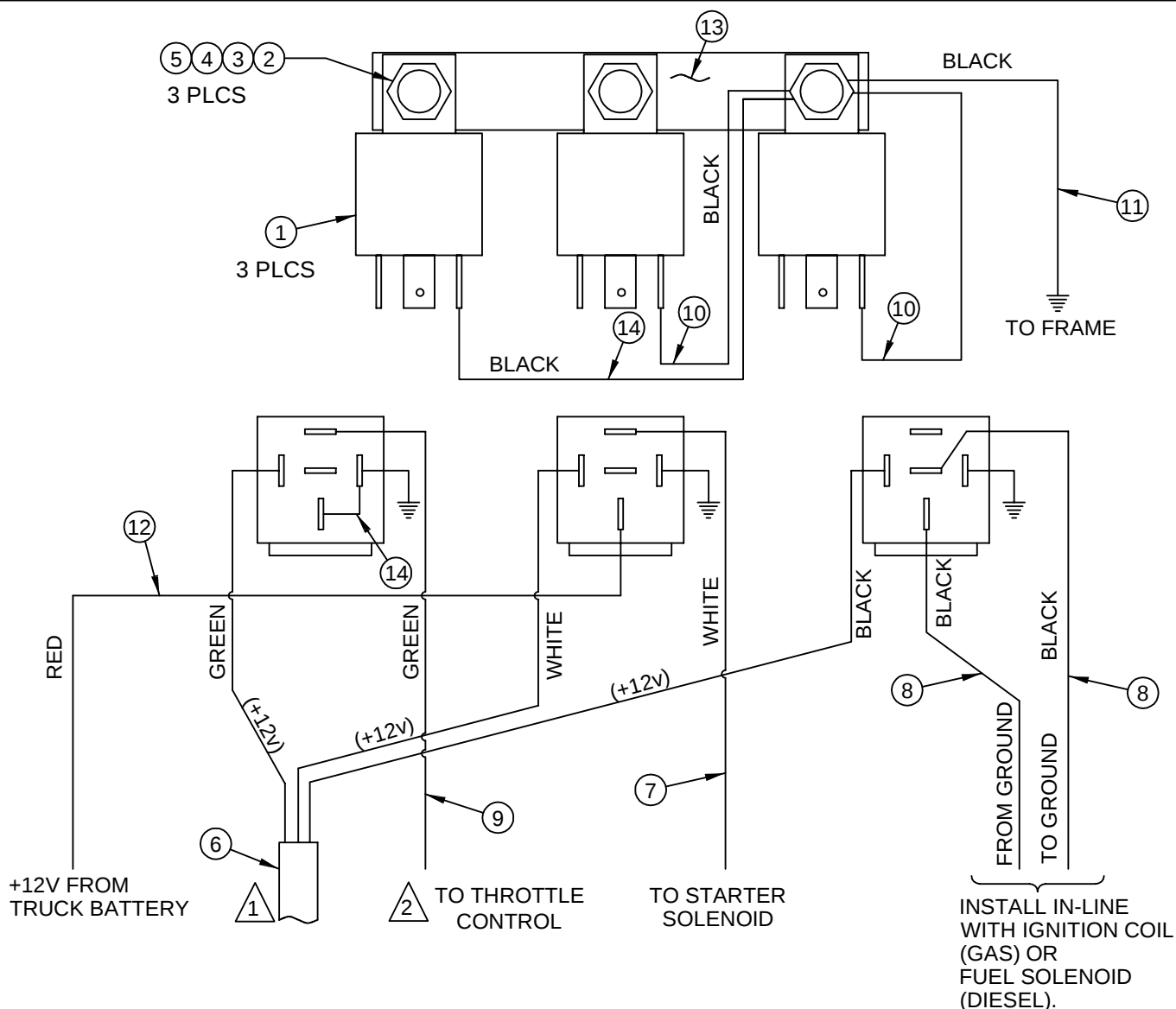
STEP 3

TESTING ADJUSTMENT

Lift up on the A2B Cage Assy. until the A2B switch 'clicks' and note the distance under the spring hanger nut; the distance should be approximately 1/2 of an inch.

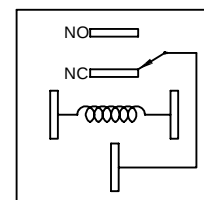
Note: If the distance under the nut is greater than 3/4 of an inch repeat STEP 2 above.





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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE ENGINE START / STOP
THROTTLE CONTROL

HT CRANES

DATE
06-09-20F

SUPERSEDES
02-21-14E

SECTION
C400

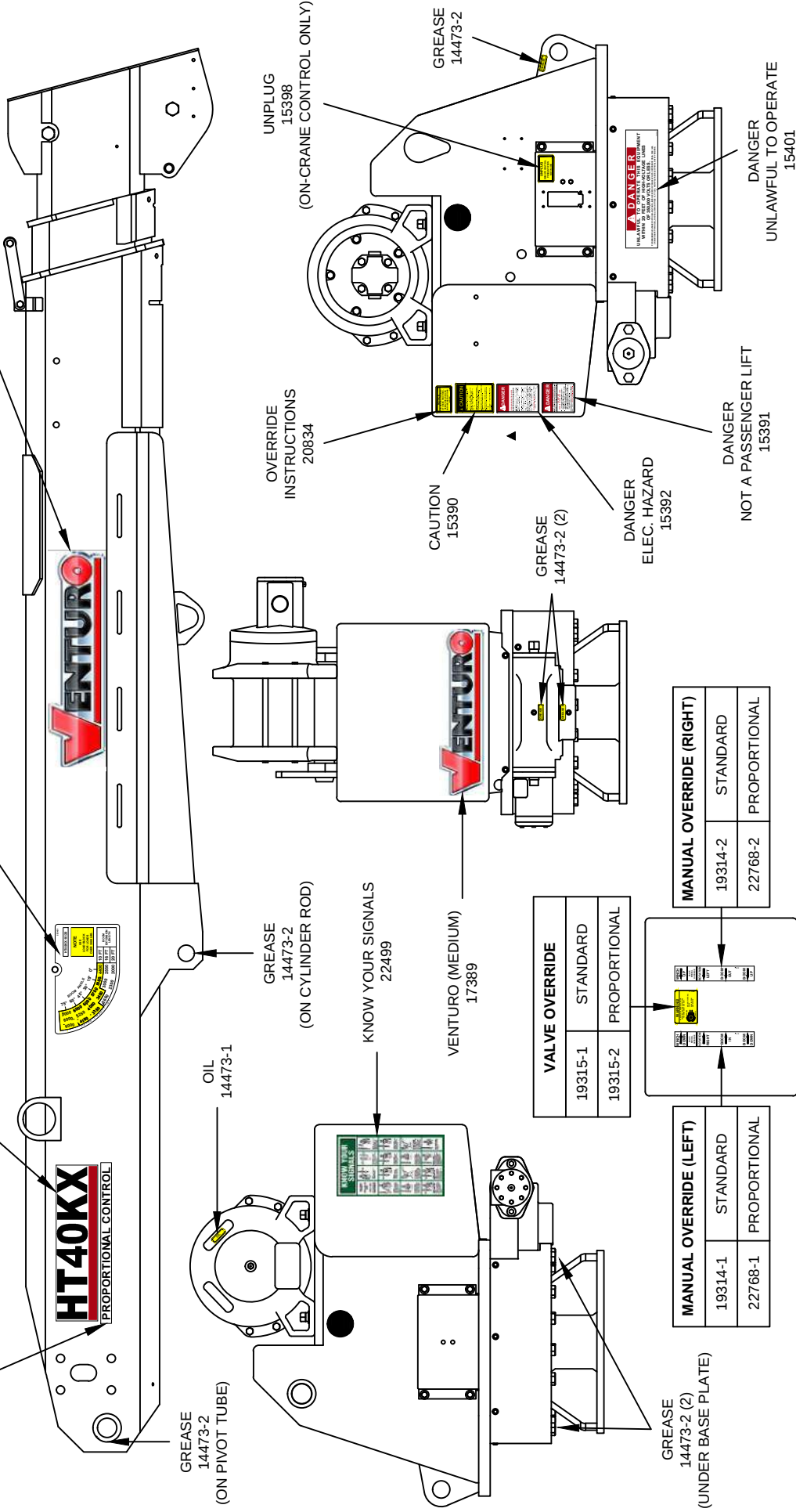
22615

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

MODEL NAME DECALS		
HT40KX	HT50KX	
19746 (2)	19747 (2)	

VENTURO (LARGE)
22496 (2)

PROPORTIONAL CONTROL
19788 (2)
(PROPORTIONAL ONLY)



DECAL PLACEMENTS

HT40/50KX, GENERATIONS B, C & D

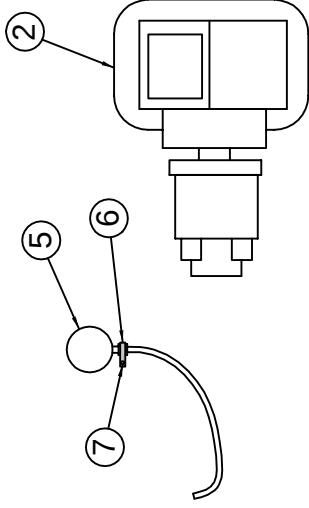
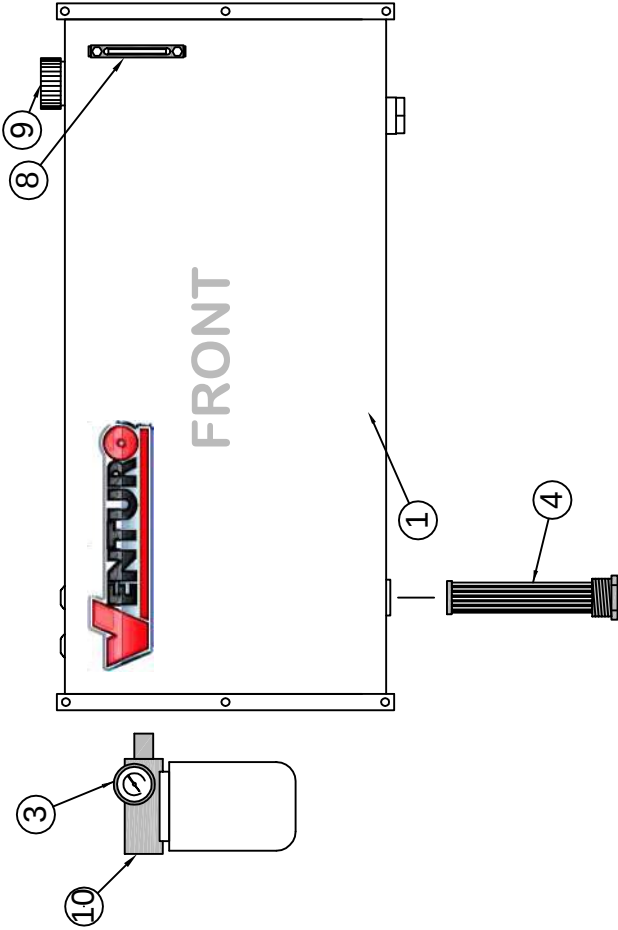
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO



DATE
12-01-16M
SUPERSEDES
08-10-15L

SECTION
C400

22171



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)	HT25/30 - PROP. - 4.0 GPM (1000 RPM)
- 4.00		HT40 - STD. - 2.6 GPM (1000 RPM)	HT50 - STD. - 3.0 GPM (1150 RPM)
- 2.64		HT40 - PROP. - 10.0 GPM (1000 RPM)	HT50 - PROP. - 12.0 GPM (1200 RPM)
- 10.0	SAE 'B' 13 TOOTH SPLINE SHAFT		

10	1	19298	FILTER ASSY, RETURN
9	1	22789	FILLER / BREATHER CAP ASSEMBLY
8	1	22787	SIGHT GLASS
7	1	IHWHS02520075-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
ITEM	QTY	PART NUMBERS	DESCRIPTION

* REFERENCE DWG #22825 IN SECTION 200



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

RPLCMNT PARTS DWG/LIST; RESERVIOR KITS

DATE

08-04-15C

SECTION

C400

HT CRANES; 25/40 GALLON APPLICATIONS

SUPERSEDES
02-21-14B

23224

HT40KX FIELD SERVICE LABEL KITS

HT40KX					
STANDARD 20'	PROPORTIONAL 20'	STANDARD 25'	PROPORTIONAL 25'		
				22920 FIELD SERVICE LABEL KITS (FOR HT40KX GENERATIONS B, C & D)	
QUANTITY				PART #	DESCRIPTION
2	2	2	2	22496	DECAL; VENTURO LOGO, LARGE
1	1	1	1	17389	DECAL; VENTURO LOGO, MEDIUM
2	2	2	2	19746	DECAL; MODEL NAME, HT40KX
	2		2	19788	DECAL; PROPORTIONAL CONTROL
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	14473-2	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	22171	IDWG; DECAL PLACEMENTS, HT40/50KX
1	1	1	1	INST-23233	SAFETY MANUAL, VENTURO CRANES
1	1	1	1	15397	KIT, ACCIDENT PREVENTION SIGNS

SERIAL NUMBER RANGES (FOR EACH GENERATION)

HT40KX GENERATION D: 100300 - CURRENT

HT40KX GENERATION C: 100000 - 100299

HT40KX GENERATION B: 84500 - 84999

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; DANGER, ELECTRICAL HAZARD
1	15394	IDWG; 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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
FIELD SERVICE LABEL KITS

HT40KX GEN. B, C & D

DATE
08-10-15D

SUPERSEDES
01-29-15C

SECTION
C400

22922



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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