VENTURO

OWNER'S MANUAL

INST-25561

*MEABAC-*****

PARTS & INSTALLATION MANUAL

CT310KX(P)

Included in this manual:

CT310KX(P)

- 1,900 lb Electric Hydraulic Telescopic Service Crane
- Optional Proportional Control
- 32-inch Hydraulic Extension
- 32-Inch Manual Pullout Extension

VENCO VENTURO INDUSTRIES LLC
12110 BEST PLACE | CINCINNATI, OHIO 45241
800-226-2238

VENCO VENTURO INDUSTRIES LLC

This manual also available online at www.venturo.com.

CT310KX(P)

INST-25561 - 10/28/2026 (Rev: NEW12)

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12-00073_VNT1 WARRANTY PAGE

SECTION 100

DESCRIPTION

&

SPECIFICATIONS

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CT310KX DESCRIPTION & SPECIFICATIONS

INTRODUCTION

This manual is prepared for the truck-mounted crane Model series CT310KX.

▲

The CT310KX crane series are electric / hydraulic powered, limited or Continuous Rotation units manufactured by Venco Venturo Industries LLC of Cincinnati, Ohio.

The boom on this crane extends 32 inches hydraulically with an additional 32 inch manual extension. In the retracted position, the boom is 4 ½ feet long. When fully extended, the boom is 9 ½ feet long.

ABOUT THIS MANUAL

The sections included in this manual are:

Descriptions & Specifications

The introduction section provides an overview of the use of the crane.

Safety

Safe operating and maintenance procedures are introduced in this section. Also included is an explanation of the safety warnings and signs used on the crane.

Installation Instructions

The installation section provides instructions for installing the crane on your truck.

Maintenance & Service

Preventive maintenance inspections and crane lubrication schedules are listed in this section. Replacement and adjustment procedures are provided.

Replacement Parts

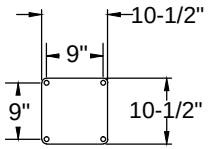
Replacement part numbers and ordering procedures are provided in this section.

LIMITS OF USE

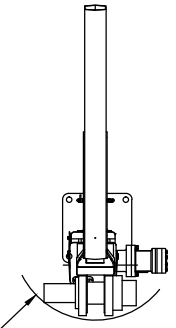
The CT310KX crane is designed to lift loads up to the limits as shown on the capacity chart (DWG. 23054).

- Lifting of personnel is **NEVER** permitted.
- Lifting loads exceeding the capacity chart (DWG. 23054) voids the warranty agreement.

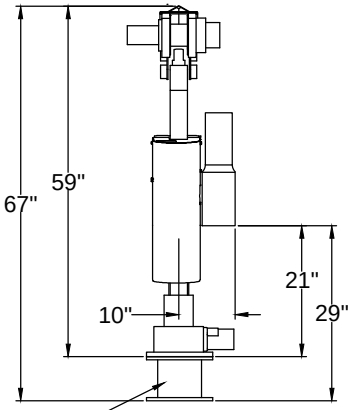
NOTES

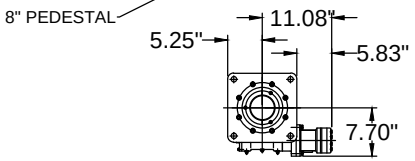


MOUNTING PLATE & HOLE
CENTER-TO-CENTER DIM'S.

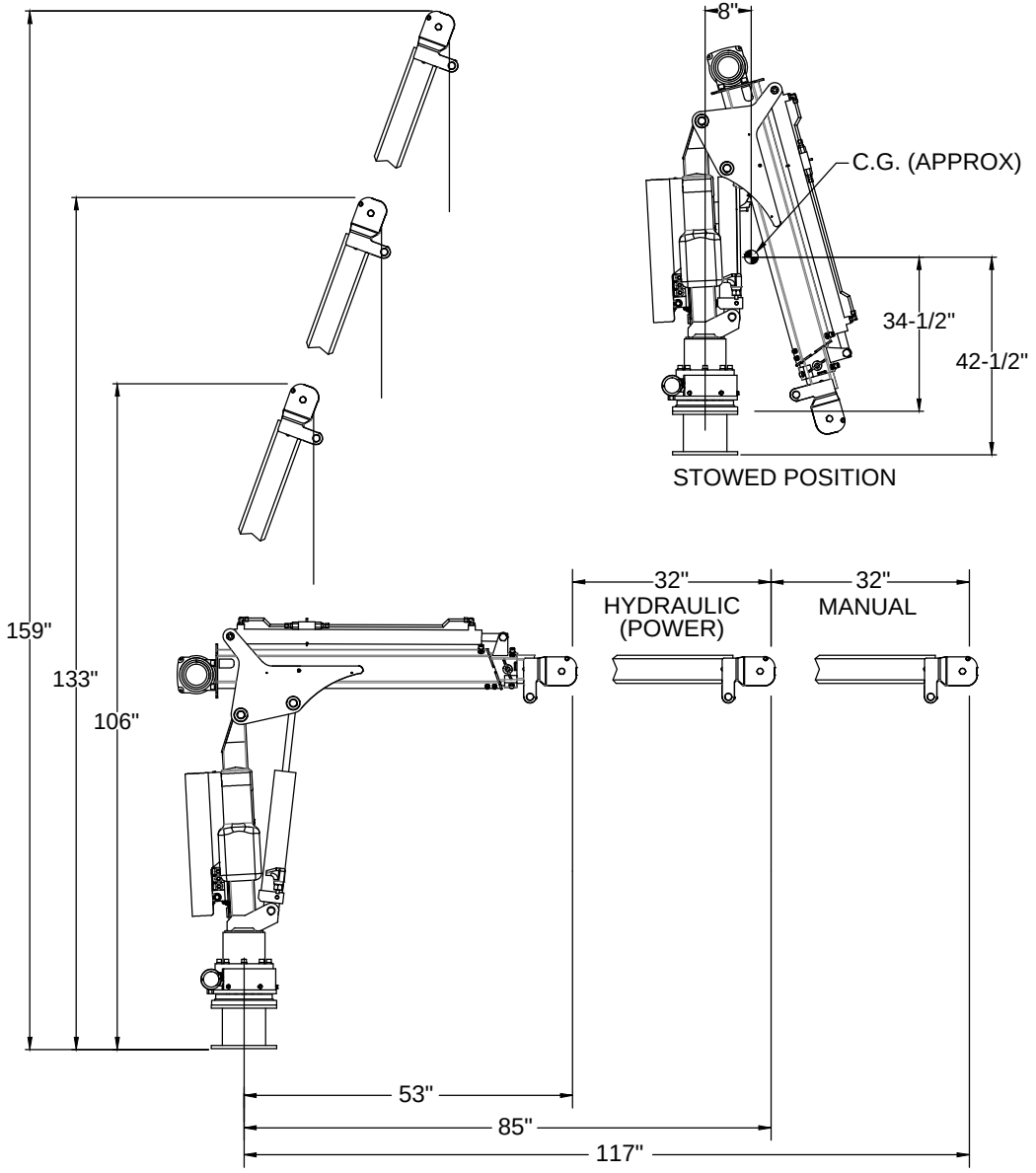


R13-1/8
SWING RADIUS
OF WINCH





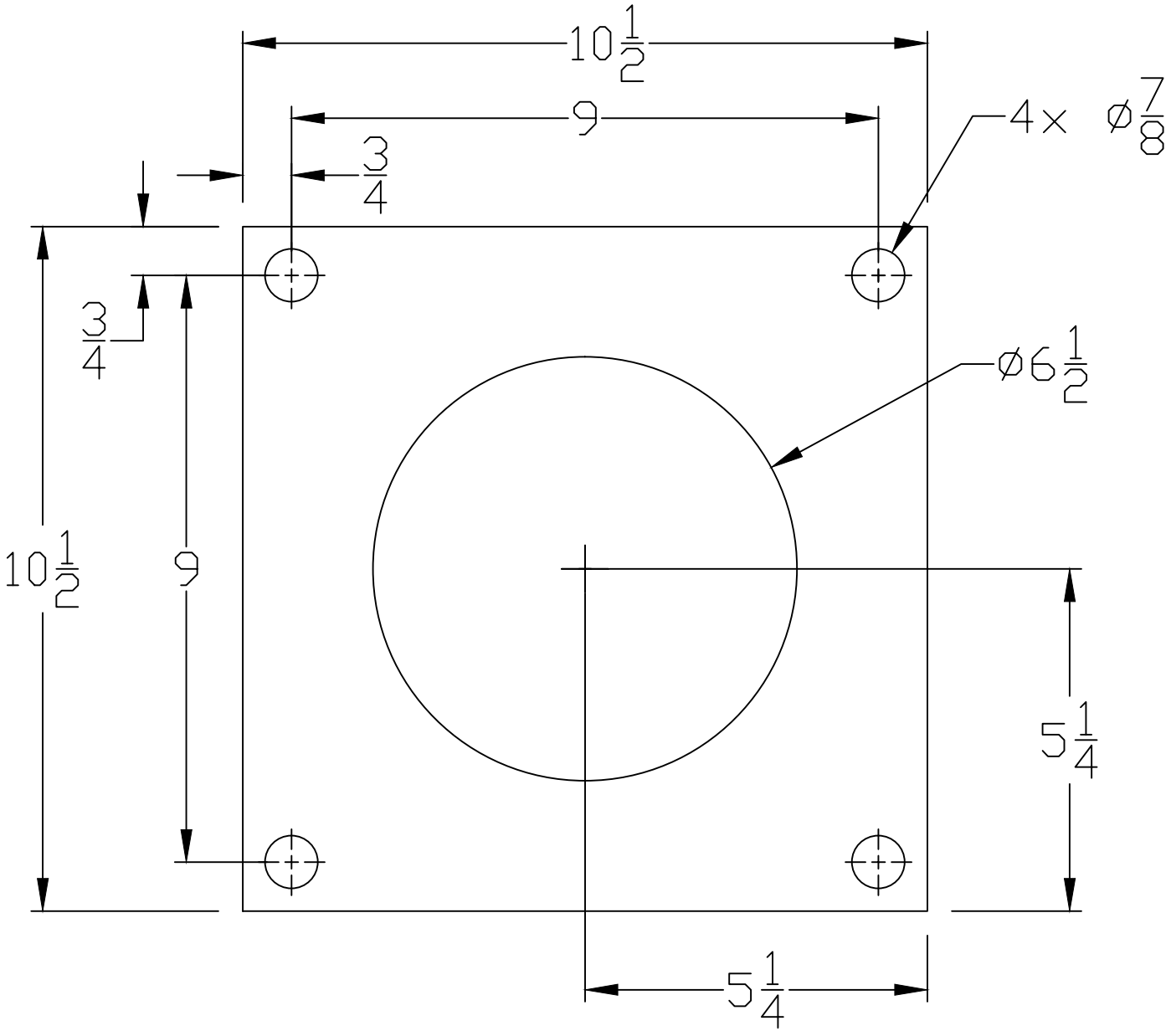
STATIONARY
SLEW DRIVE



STOWED POSITION

VENTURO® MANUFACTURING, INC. CINCINNATI, OHIO	TITLE: DIMENSION DRAWING	DATE: 03-30-20B	SECTION: C200
	CT310KX(P) W/ ADJ. LIMITED ROTATION	SUPERSEDES: 12-4-14A	27410

CT310KX MOUNTING DIMENSION



REFERENCE INSTALLATION DWG 20563 FOR MOUNTING BOLT SIZE AND TORQUE SPECIFICATIONS.

VENTURO®

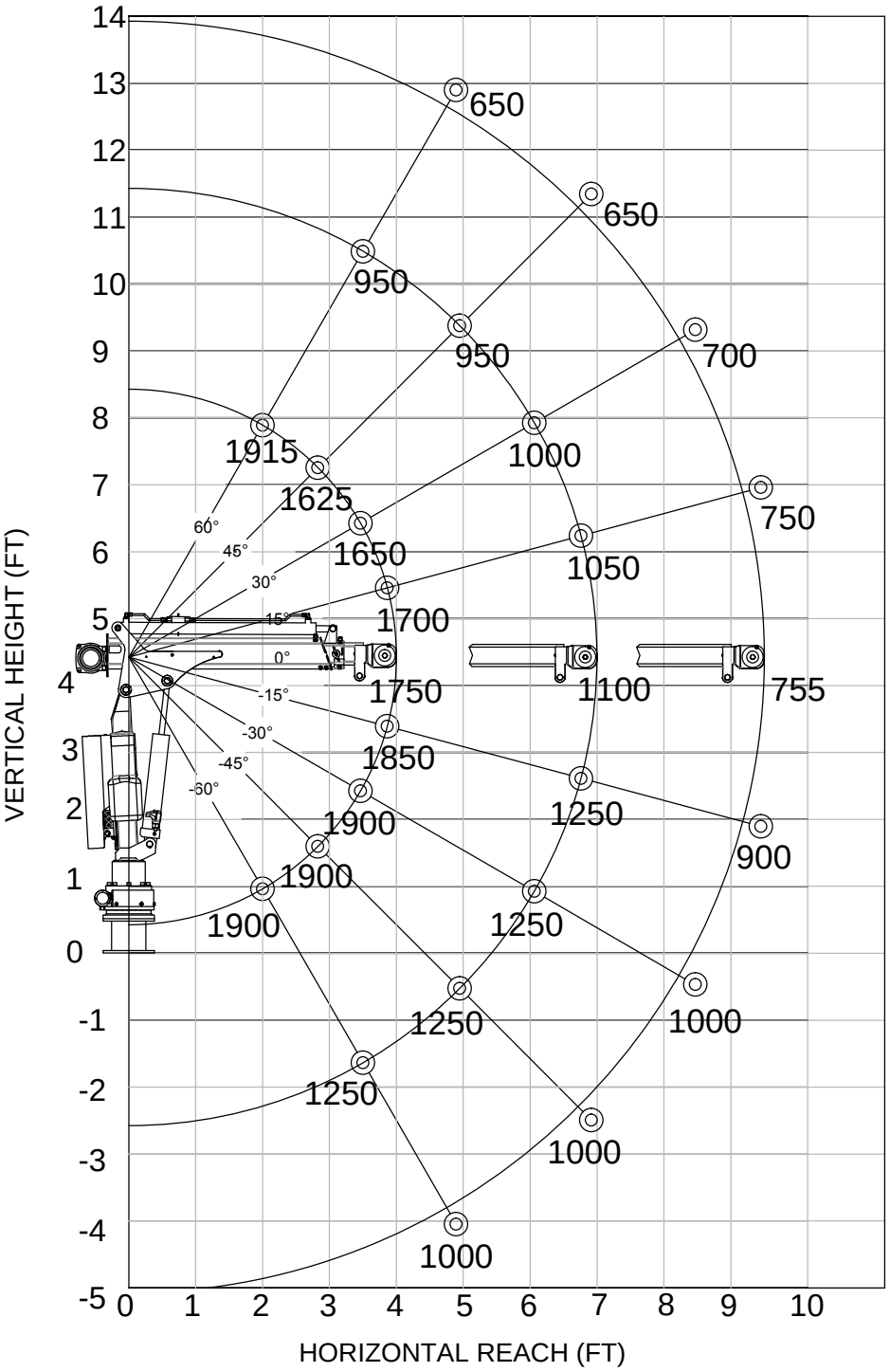
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE	DATE	SECTION
BASE MOUNTING DIM	03-05-19E	C100
CT310KX	SUPERSEDES 03-20-14D	20714

CT310KX(P)

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 1000 LBS

2 PART LINE FOR LOADS OF 1000 LBS AND GREATER

WEIGHT OF LOAD BLOCK = 5 LBS

VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: MAXIMUM LOAD CAPACITY	DATE: 03-30-20B	SECTION: C100
	VENTURO CT310KX(P)	SUPERSEDES: 05-03-16A	23054

TRUCK SETUP FOR OPERATION

1. The truck should be parked on **firm, level ground** when using the crane.
2. The crane should be positioned close to the job so that it can operate within its capacity limits.
3. Set the truck parking brake.
4. Put the truck's transmission in Neutral (Park if it has an automatic transmission).
5. Remove the pendant from its stowed location and plug it into its socket.
6. Turn on the master disconnect switch.
7. Set the stabilizers (when provided) to help stabilize the truck to prevent rocking or overturning of the truck when using the crane.

USING THE SWIVEL LOAD BLOCK

The swivel load block must be used for loads 1000 pounds and greater. It may be used for all loads to prevent twisting and turning of the load.

PREPARATION FOR TRAVEL

1. Return the stabilizers (if used) to the stowed position. Install and secure all pins.
2. Run the BOOM IN to fully retract the boom.
3. Manually retract the boom's manual extension (if used).
   - 3.1. Pull the pin from the boom and push the extension into the fully retracted position.
   - 3.2. Insert the pin in the hole in the boom.
4. Run the BOOM DOWN to lower the boom to the stowed position.
5. Unplug the pendant control cord and stow in a body compartment or the truck cab.
6. Turn off the master disconnect switch.

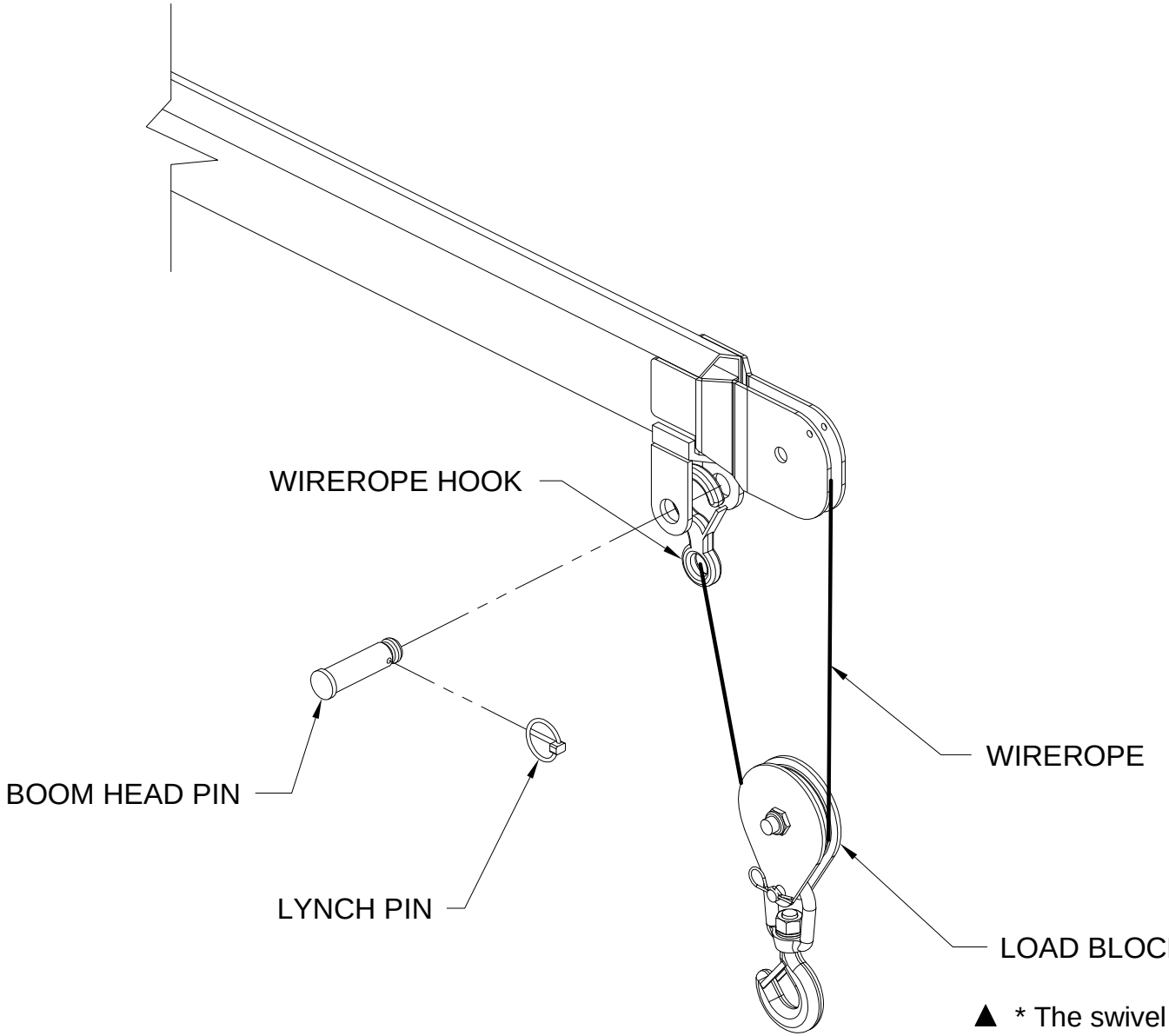
Overload Sensing System

If the capacity of the crane is exceeded, the overload system will sound an alarm. Do not exceed the load capacity. When alarm is activated, reduce the load before continuing.

⚠ WARNING

- Always follow the load chart when lifting heavy loads
- Failure to follow the load chart could result in death or serious injury.

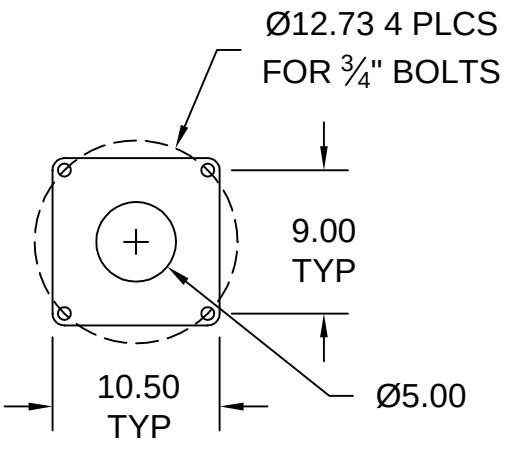
TWO-PART LINE CONFIGURATION (USING LOAD BLOCK)



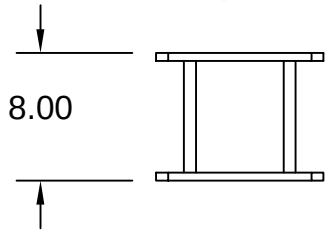
TO ENABLE TWO-PART LINE CONFIGURATION
• REMOVE LYNCH PIN FROM BOOM HEAD PIN AND REMOVE BOOM HEAD PIN FROM BOOM • ALIGN WIRE ROPE HOOK AS SHOWN • REINSERT BOOM HEAD PIN AND LYNCH PIN • INSTALL LOAD BLOCK ON WIRE ROPE

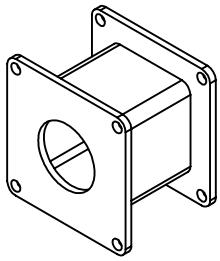
▲ * The swivel load block must be used for loads 1000 pounds and greater.

20480-XX MOUNTING PEDESTAL



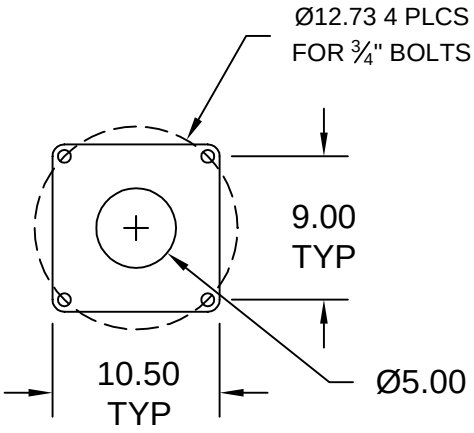
20480 (NO DASH)

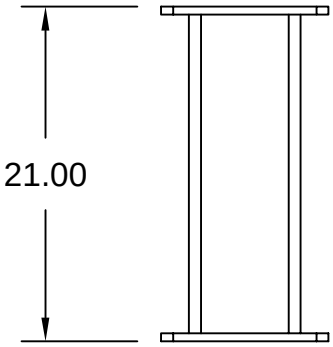


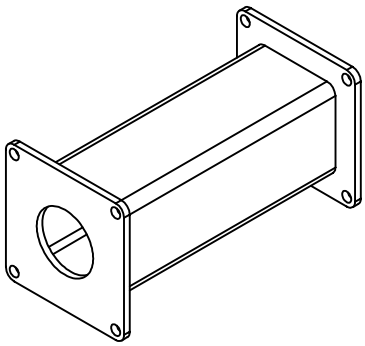


NOTE: INCLUDED WITH CT310KX CRANES

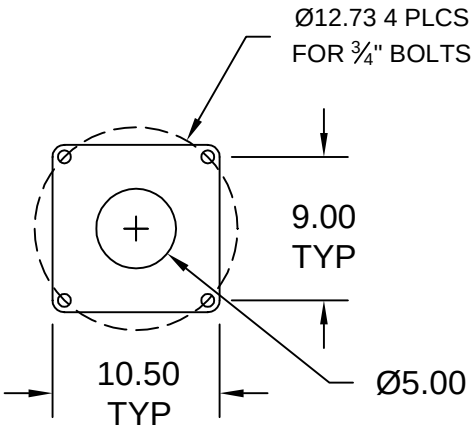
20480-21

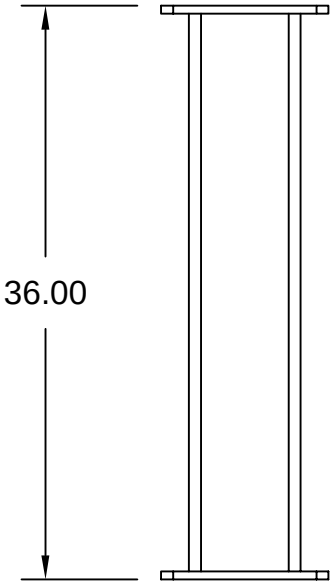


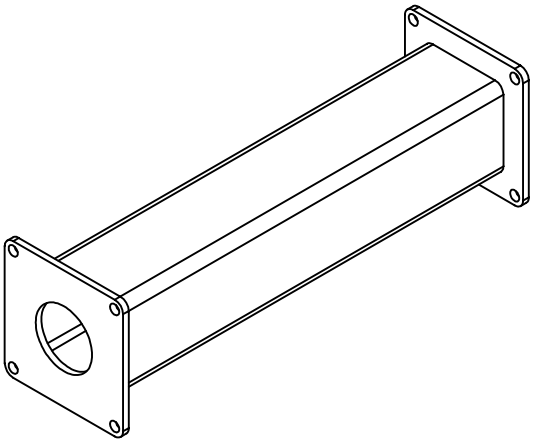




20480-36







VENTURO®
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
MOUNTING PEDESTAL OPTIONS	06-16-21A	C100
ET6K / CT310KX	SUPERSEDES 11-18-14	26002

SECTION 150

SAFETY

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CT310KX SAFETY - GENERAL

SAFETY - GENERAL

With the proper installation, cranes can be operated and maintained safely. By using common safety practices along with an awareness of potential hazards, the job can be done safely.

Each time a crane is used, there may be a new and different environment. Each time, there is a need to look at these situations for potential hazards. Where you park your truck is important for the work to be done, and done safely. Asking others to stop or move their activity away from your truck may be best. And, of course, there is the need to look for overhead power lines and other obstacles to avoid during the operation of the crane. Sometimes, the load itself can present a hazard; for example, loads may be damaged or broken, the load may contain hazardous material, or the load may come close to exceeding the maximum capacity of the crane.

Safety awareness is a continuing job. Below is a list of general points for safe crane operation. Read these points and add your own points. There may be unique safety needs for the use of your crane and the product or service you provide.

CRANE SAFETY

- Always turn off the truck ignition and master disconnect switch before performing any maintenance or repairs to the crane equipment.
- Never walk or stand under the boom or a suspended load.
- Never operate the crane with a frayed cable (wire rope).
- Never allow the crane to be used to lift, support, or otherwise transport personnel.
- Training by a knowledgeable crane operator is required before operating the crane.
- Read and understand this manual before operating the crane.
- Always warn others to stand clear of your operating area.
- Always inspect the crane each day before use for safe operating condition.
- Always refer to the load capacity chart before before using crane.
- Always attach pendant cord support snap to the attachment point before plugging in the pendant.
- Always unplug the pendant when the crane is not in use.
- Always turn off the master disconnect switch when the crane is not in use.
- Always place the crane in the stowed position before traveling.

NOTES

CT310KX SAFETY - GENERAL

ELECTROCUTION HAZARD

Cranes are capable of contacting overhead obstructions. Power lines create a special hazard. In addition to direct contact, just getting close to these lines is a hazard. The higher the voltage carried by those lines, the higher the danger. This hazard has its own set of special safety rules.

CRANE SAFETY NEAR POWER LINES

- Always remember, the truck and crane **are not** insulated!
- Always maintain a safe distance from power lines. Crane must remain at least 20' away from power lines at full extension including load and load line. Increased distance may be required due to boom deflection or windy conditions.
  - If you encroach closer than 20', voltage must be known; then follow the tables below.
  - **NEVER** make a lift under any power line.
- Failure to follow these rules can result in death or serious injury!

TABLE A - MINIMUM CLEARANCE DISTANCES

Voltage (Nominal,kV, alternating current)	Minimum Clearance Distance (Feet)*
0 - 50	10
Over 50 - 200	15
Over 200 - 350	20
Over 350 - 500	25
Over 500 - 750	35
Over 750 - 1000	40
Over 1000	†

TABLE T - MINIMUM CLEARANCE DISTANCES IN TRANSIT

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	†

NOTES

* Environmental conditions such as fog, smoke, or precipitation may require increased clearances.

† As established by the utility owner / operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

CT310KX SAFETY - GENERAL

SAFETY WARNINGS

Safety warnings have been included in this manual to alert you to the need for care in specific procedures. These warnings include the use of three [3] terms; DANGER, WARNING, and CAUTION. Their uses are defined as follows:

DANGER

- Always used to warn of hazards that could result in death or serious injury.

Any DANGER indicates that failure to follow this safe practice could result in death or serious injury.

WARNING

- Always used to warn of hazards that could result in injury.

Any WARNING indicates that failure to follow this safe practice could result in injury.

CAUTION

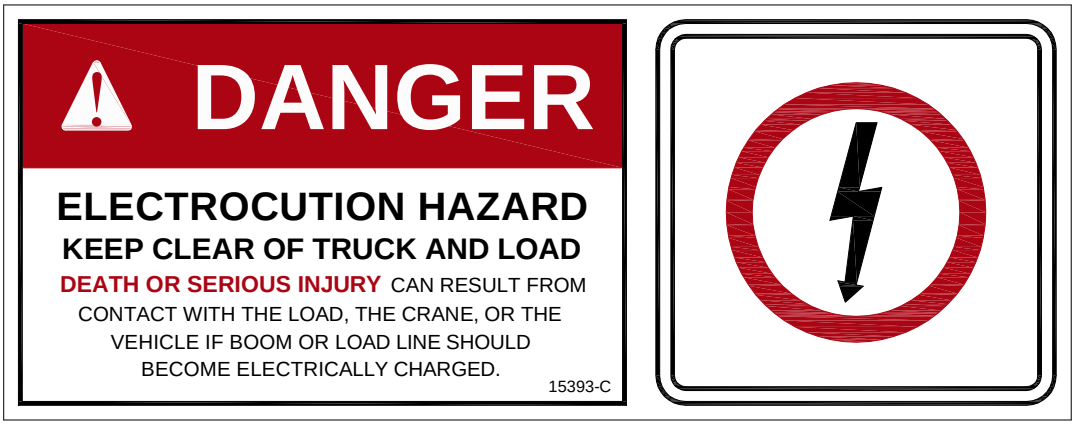
- Always used to warn of hazards that could result in equipment damage or serious injury.

Any CAUTION indicates that failure to follow this instruction could result in minor injury or damage to the equipment.

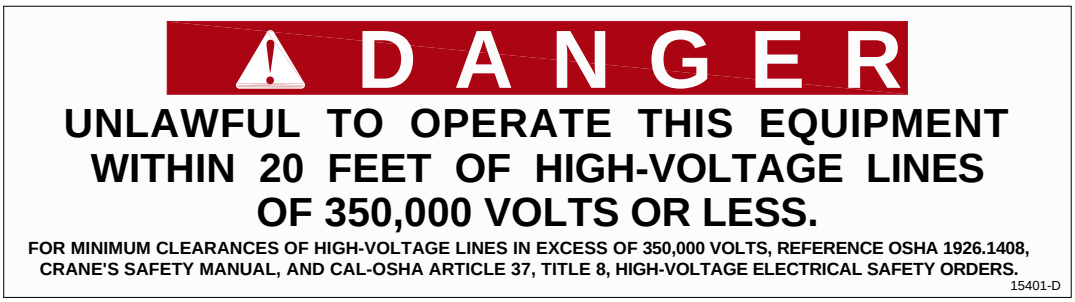
NOTES

ELECTROCUTION HAZARD SIGNS

Two [2] decals are provided with the crane:



This sign is to be placed on all four (4) sides of the truck. Each is to be placed in a readily visible location for all to see. This sign is provided with the crane. Additional signs are available from Venco Venturo Industries LLC. The sign part number is 15393. ▲

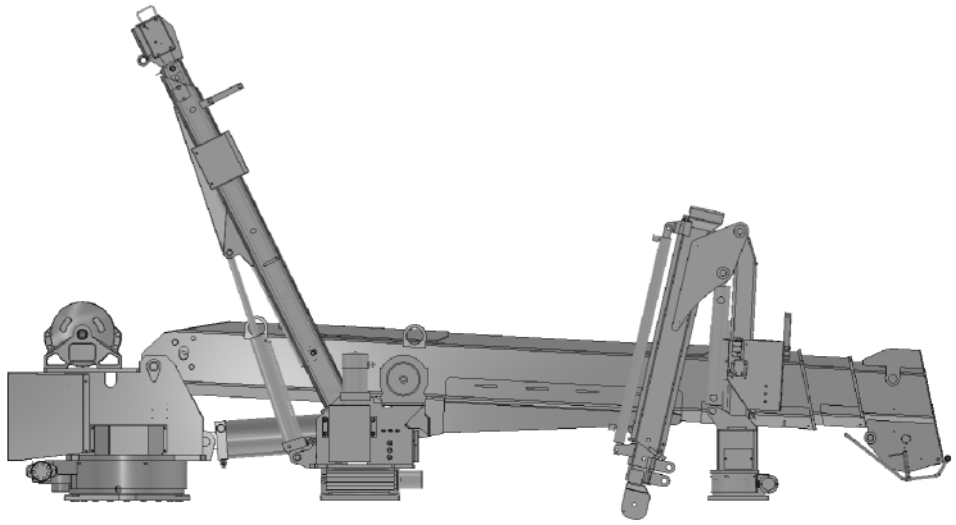


This sign is a reminder of the legal responsibility of any person operating the crane near high voltage lines. The sign is placed on the control pendant side of the crane. This sign is provided with the crane. Additional signs are available from Venco Venturo Industries LLC. The sign part number is 15401. ▲

Decals and signs have been placed on the crane as reminders of the care and precautions needed for safety. These items are to be inspected periodically for readability and need for replacement. The preventive maintenance information includes an inspection of these decals and signs (Reference DWG 20571). Any unreadable or missing decal or sign must be replaced. See Illustrated Parts List for ordering information. ▲

NOTES

CT310KX SAFETY - GENERAL



SEE THE NEXT PAGE FOR ADDITIONAL INFORMATION!

SAFETY SIGNS & DECALS

All cranes are equipped with warning and informational signs and decals. Each sign and decal is positioned to provide reminders for safe efficient operating and maintenance procedures for the crane. Below is a description of the winch safety warnings.

Unreadable or missing signs and decals must be replaced. The next page describes the location and part number for each. Refer to the Illustrated Parts Catalog section for parts ordering information.

WINCH SAFETY

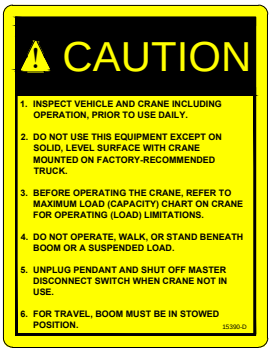
The use of the crane involves careful use of its winch. Below are three [3] danger reminders of very important rules.



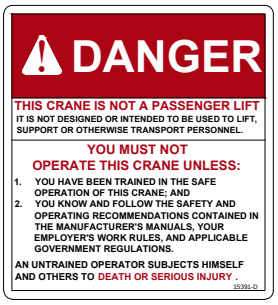




DECAL #: 15390
DESCRIPTION: CAUTION, INSPECT VEHICLE & CRANE...
PURPOSE: TO INFORM THE OPERATOR OF KEY OPERATING REQUIREMENTS.
QUANTITY: 1
PLACEMENT: REAR COVER OR SIDE OF CRANE



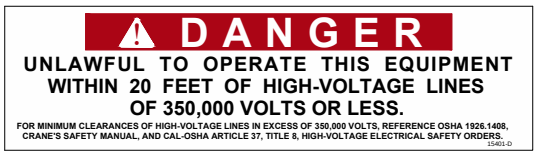
DECAL #: 15391
DESCRIPTION: DANGER, NOT A PASSENGER LIFT
PURPOSE: TO INFORM OPERATOR NOT TO LIFT, SUPPORT, OR TRANSPORT PERSONNEL, AND TO ENSURE OPERATOR IS ADEQUATELY TRAINED.
QUANTITY: 1
PLACEMENT: REAR COVER OR SIDE OF CRANE



DECAL #: 15392
DESCRIPTION: DANGER, ELECTROCUTION HAZARD, MACHINE (CRANE)
PURPOSE: TO INFORM OPERATOR THAT MACHINE (CRANE) REPRESENTS AN ELECTROCUTION HAZARD SHOULD IT COME CLOSE TO OR IN CONTACT WITH AN ELECTRICAL VOLTAGE SOURCE.
QUANTITY: 1
PLACEMENT: REAR COVER OR SIDE OF CRANE



DECAL #: 15401
DESCRIPTION: DANGER, UNLAWFUL TO OPERATE
PURPOSE: TO INFORM OPERATOR OF PROPER OPERATION IN VICINITY OF ELECTRICAL LINES.
QUANTITY: 1
PLACEMENT: RING COVER OR SIDE OF CRANE



DECAL #: 15393
DESCRIPTION: DANGER, ELECTROCUTION HAZARD, VEHICLE (TRUCK)
PURPOSE: WARNS OF DANGER FROM ELECTRICALLY CHARGED VEHICLE, CRANE, OR LOAD.
QUANTITY: 4
PLACEMENT: EACH SIDE & EACH END OF VEHICLE



PART NO.: 15513

DECAL: MASTER DISCONNECT SWITCH

FUNCTION: To inform the operator of location and operation of master disconnect switch.

QUANTITY: 1

PLACEMENT: On master disconnect switch bracket.



PART NO.: 20927

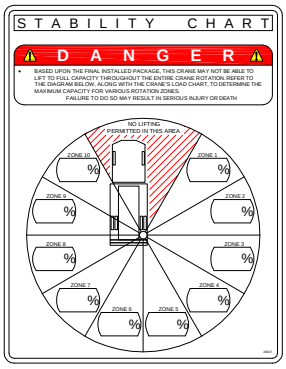
DECAL: CRANE STABILITY

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.

▲



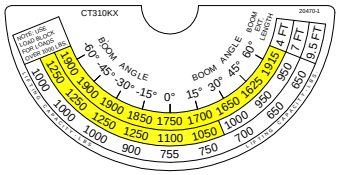
PART NO.: 20470-1 & 20470-2 (OPPOSITE)

DECAL: BOOM ANGLE

FUNCTION: To inform of the boom angle.

QUANTITY: 1 Each.

PLACEMENT: One on each side of boom..



PART NO.: 15398

DECAL: UNPLUG REMOTE CONTROL

FUNCTION: To inform the operator to unplug remote control when not in use.

QUANTITY: 1

PLACEMENT: Near pendant socket.



PART NO.: 573403

DECAL: WARNING - STOWING

FUNCTION: To inform the operator stay away from the boom when stowing.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 573402

DECAL: DANGER - TWO BLOCKING HAZARD

FUNCTION: To inform the operator to avoid two-blocking.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 16719

DECAL: UNLAWFUL TO OPERATE

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

QUANTITY: 1

PLACEMENT: Left side of boom.



PART NO.: 20504

DECAL: MODEL NUMBER

FUNCTION: To show the model of the crane.

QUANTITY: 1

PLACEMENT: Left side of boom..



▲

PART NO.: 13397

DECAL: OIL LEVEL

FUNCTION: To inform the operator of proper oil level to maintain.

QUANTITY: 1

PLACEMENT: Right side of power unit.



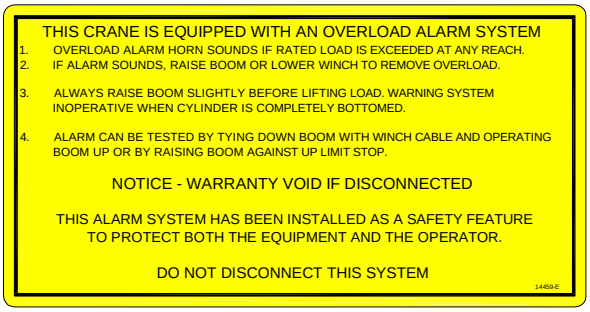
PART NO.: 14459

DECAL: OVERLOAD ALARM SYSTEM

FUNCTION: To inform the operator of the overlaod conditions & remedies.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 19788-1

DECAL: PROPORTIONAL Decal (ET12KXP)

FUNCTION: To show the crane has proportional feature.

QUANTITY: 2

PLACEMENT: One on each side of boom.



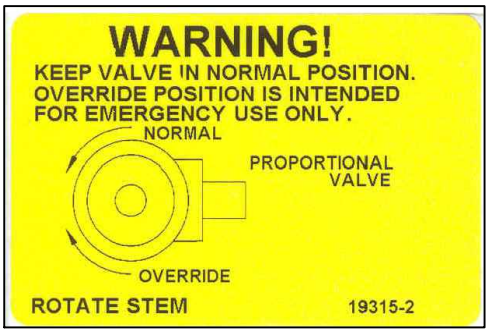
PART NO.: 19315-2

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To show operator how to override proportional valve.

QUANTITY: 1

PLACEMENT: Right side of Mechanism, near valve stem



▲ PART NO.: 28065

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION To show operator the manual override functions.

QUANTITY: 1

PLACEMENT: Right side of Mechanism, near the hydraulic manifold.



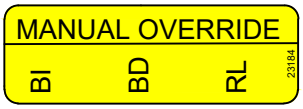
▲ PART NO.: 23184

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To show operator the manual override functions.

QUANTITY: 1

PLACEMENT: Left side of Mechanism, near the hydraulic manifold.



SECTION 200

INSTALLATION

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

7607200A

CT310KX INSTALLATION INSTRUCTIONS

INSTALLATION PROCEDURE

Your new crane is shipped in a ready-to-install condition. Follow the instructions in this section tp properly install the crane onto your truck.

INSPECT FOR SHIPPING DAMAGE

Inspect the crane immediately upon receipt, even if installation will not occur immediately.

- Remove packaging materials as needed
- Inspect for crushed, bent, or otherwise damaged conditions
- Report any damage found to the carrier

CRANE MOUNTING ▲

Refer to drawing 27410.

Recommended Mounting Hardware:

The crane base is mounted using four [4] 3/4-10 x 2 ¾" (bolt length will vary per mounting application), zinc - plated (GR.5 or greater) hex head cap screw bolts, [8] flat washers, and [4] nylon - insert hex 'Full' lock nuts.

Note: This hardware is NOT supplied due to the varying bolt length requirements per application.

Torque hex nuts to standard toque value of 230 ft.-lbs.

INSTALL BATTERY CABLES

Refer to drawing 20565

1. Install #2 gauge wiring
   - 1.1. Be sure to install a circuit breaker into the wiring from the battery (P/N 22946 recommended).
2. Install grounding straps
   - 2.1. Install #2 gauge grounding strap from rane base to truck frame.
   - 2.2. If truck battery negative terminal is connected to engine, install a #2 gauge grounding strap from the engine to truck frame.

WIRE ROPE INSTALLATION

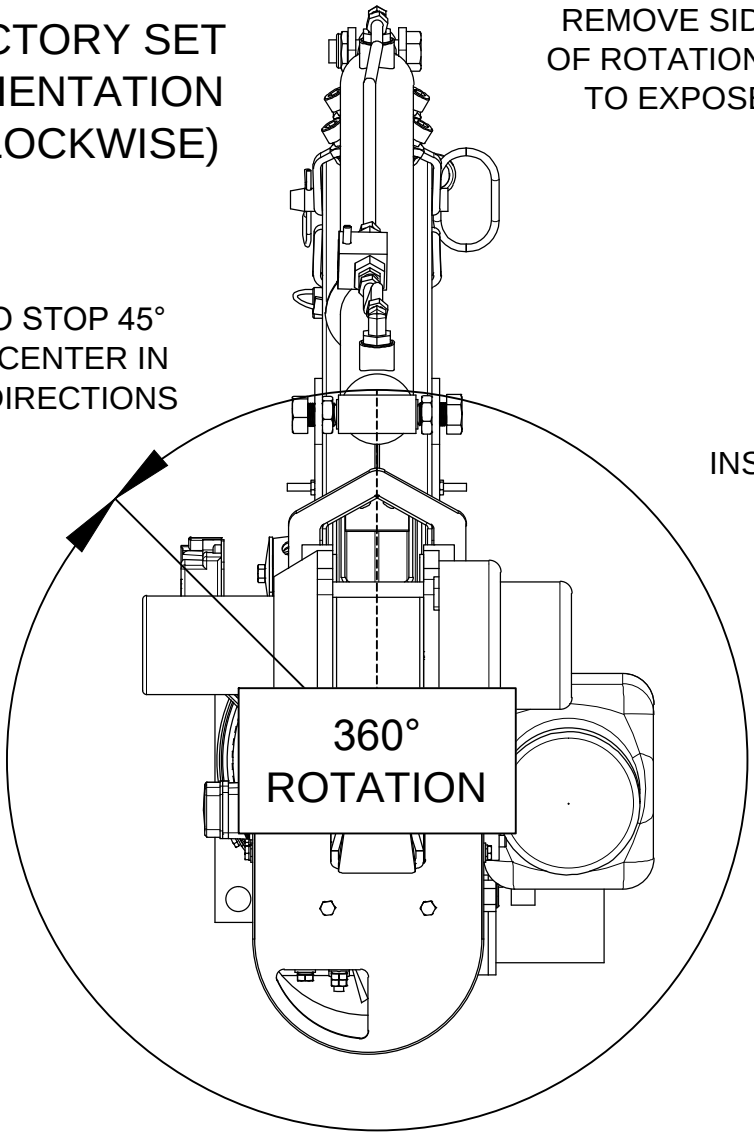
Refer to drawing 20574 (MAINTENANCE SECTION) for information on wire rope installation / replacement.

NOTES

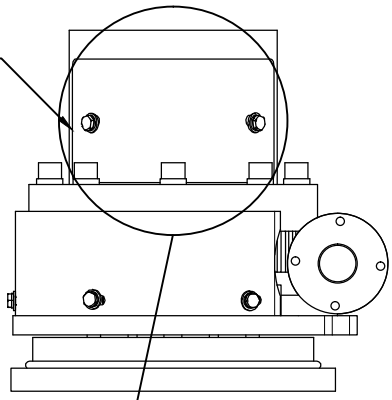
ADJUSTABLE 360° ROTATION STOPS INSTALLATION

FACTORY SET ORIENTATION (CLOCKWISE)

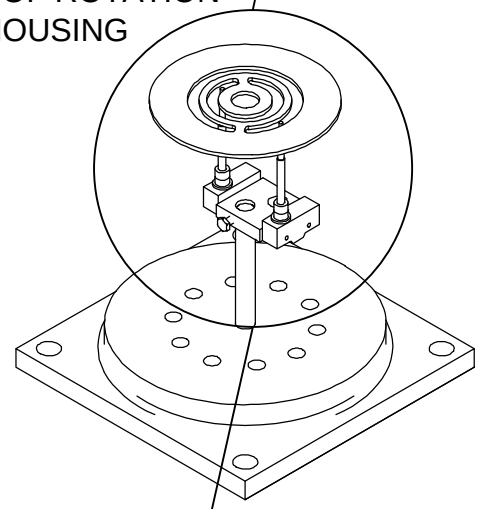
SET TO STOP 45° FROM CENTER IN BOTH DIRECTIONS

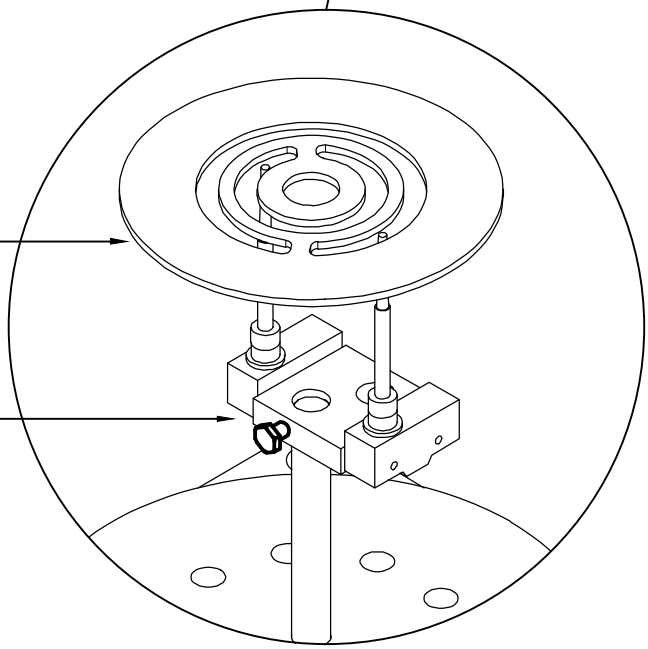


REMOVE SIDE COVER OF ROTATION HOUSING TO EXPOSE STOPS



INSIDE OF ROTATION HOUSING





ROTATION STOP INDEXING PLATE WITH CRANE SHOWN IN FACTORY SET POSITION (CLOCKWISE ORIENTATION W/ 45° OFFSET)

LOOSEN LOCKING BOLT TO BE ABLE TO ADJUST ROTATION LIMIT SWITCH HOUSING WITHIN 360° ORIENTATION

IF ABLE, USE CRANES ROTATION FUNCTIONS UNTIL DESIRED STOPPING POINTS HAVE BEEN REACHED WHILE MAINTAINING WIRING & HYDRAULIC ROTATION HOSES

VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: ADJUSTABLE ROTATION	DATE: 04-06-21	SECTION: C200
	CT310KX(P), GEN 'C'	SUPERSEDES: -	28263

RECOMMENDED CIRCUIT BREAKER TABLE

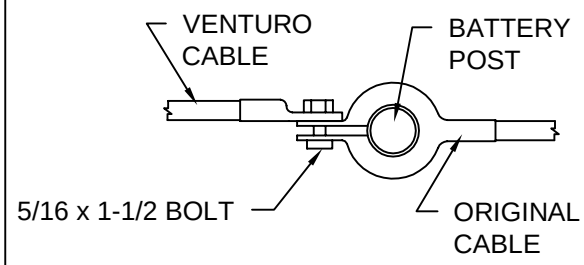
CRANE	DESCRIPTION	PART NO.
CT310KX	250 AMP, MAN RESET	22946-250
DT7	250 AMP, MAN RESET	22946-250
CE-1500-FB	150 AMP, MAN RESET	22946-150
CE6K	150 AMP, MAN RESET	22946-150
CT200X	250 AMP, MAN RESET	22946-250
ET6K	250 AMP, MAN RESET	22946-250
ET8/12K(X)	250 AMP, MAN RESET	22946-250
▲ ET12KXP	300 AMP, MAN RESET	22946-300
ET16/18KX-16'	250 AMP, MAN RESET	22946-250
▲ ET16/18KX-20'	300 AMP, MAN RESET	22946-300
ET25/30KX	300 AMP, AUTO RESET	22946-300
ET36KX	300 AMP, AUTO RESET	22946-300

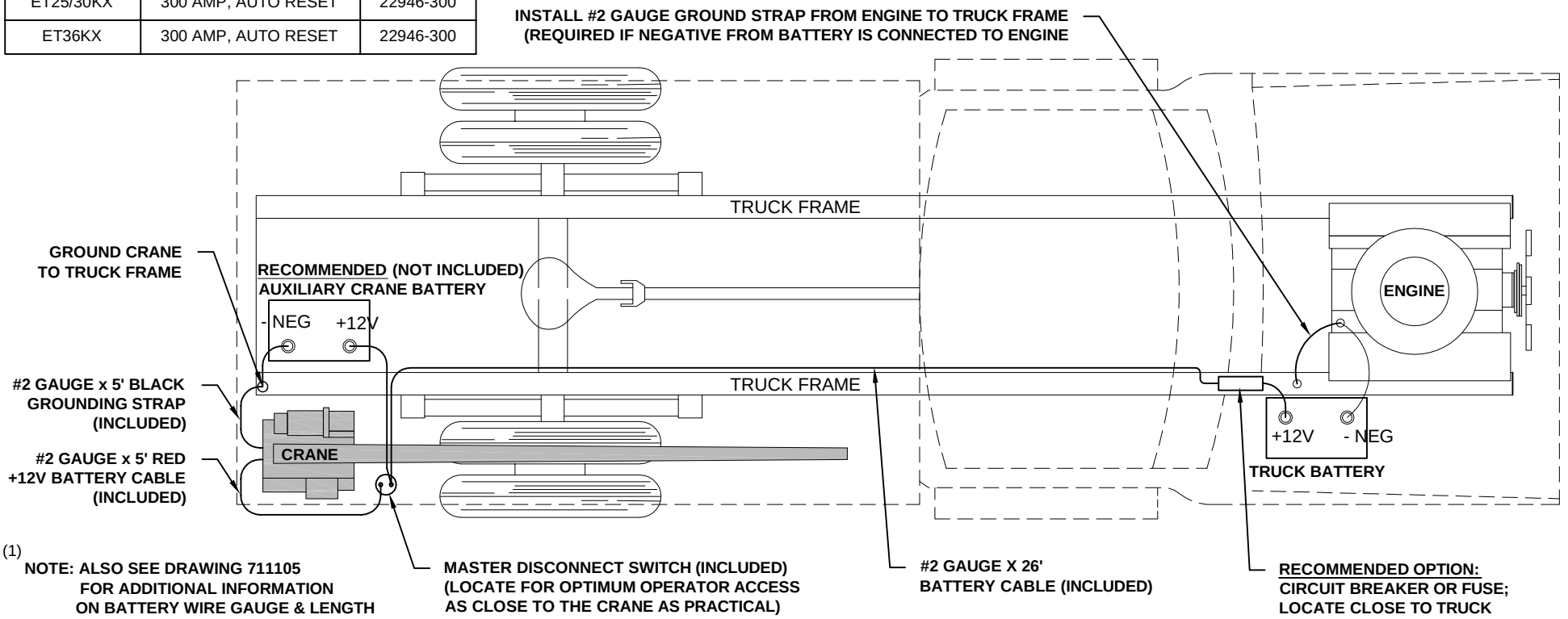
BATTERY REQUIREMENTS

- **12 VOLT *VEHICLE* BATTERY REQUIREMENTS**
  - **625 COLD CRANKING AMPS (AT 0º F)**
  - **160 MINUTES RESERVE CAPACITY**
  - **102 PLATES, 105 AMP-HR**
- (1) **12 VOLT *AUXILIARY* BATTERY REQUIREMENTS**
  - **SEE MINIMUM WIRE GAUGE AND BATTERY SIZE**

NOTE: OPERATING WITH THE VEHICLE BATTERY 'ONLY' IS PERMISSIBLE, BUT *NOT* RECOMMENDED.

RECOMMENDED BATTERY TERMINAL ATTACHMENT



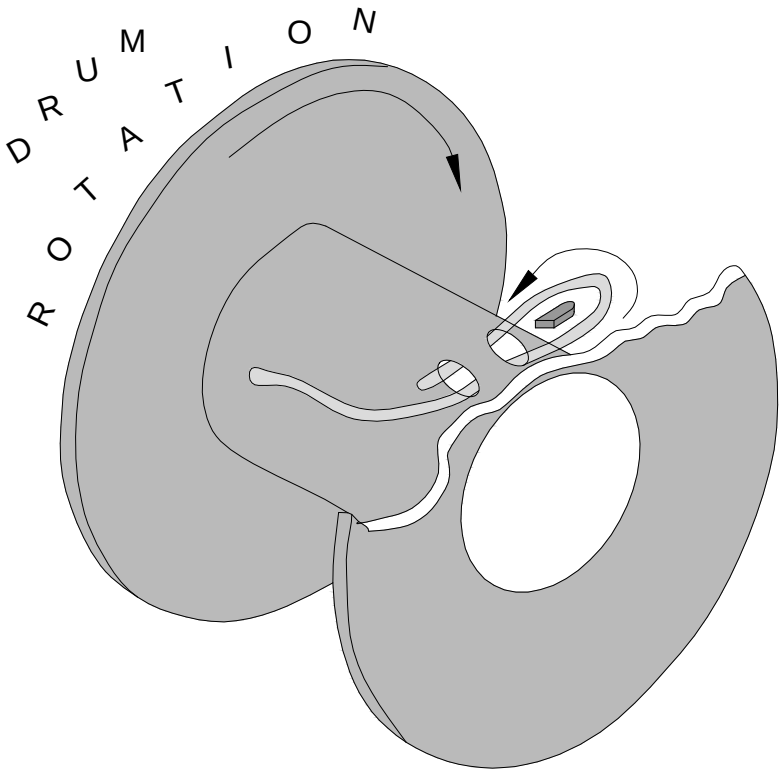


VENTURO®

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
BATTERY CABLE & COMPONENT INSTALL	09-03-20M	C200
ET CRANES	SUPERSEDES 07-30-18L	15660

CT310KX MAINTENANCE & SERVICE



WINCH LINE (WIRE ROPE) REPLACEMENT

1. Remove the wedge from the old winch line for use with the new line.
2. Remove the old winch line and clean the winch if needed.
3. Unroll the new winch line to prevent kinking.
4. Thread the new winch line through the slot in the drum.
5. Insert the new line through the slot in the drum.
6. Form a loop and insert the end of the line into the slot.
   - 6.1. Be sure the "live", or load carrying, end of the line is against the drum flange.
   - 6.2. Be sure the end of the rope extends out of the slot.
7. Insert the wedge into the loop.
   - 7.1. Seat the wedge into the slot.
8. Turn the truck engine ON.
9. Wind the line onto the drum by pressing the Winch Up switch.
   - 9.1. Maintain tension on the line at all times.
   - 9.2. Wind the line evenly onto the drum.

CT310KX INSTALLATION INSTRUCTIONS

FINAL PREPARATION FOR USE

1. Check all bolts and nuts for tightness.

2. Check all electrical connections for tightness.

3. Inspect the entire crane to be sure that it is ready for use.

4. Verify that the hydraulic reservoir is filled with hydraulic fluid (with both cylinders fully retracted).

5. Check the crane operation.

   5.1. Put the truck's transmission in Neutral (Park if it has an automatic transmission).

   5.2. Remove the pendant from its stowed location and plug it into its socket.

   5.3. Check each of the four operations by operating each switch in both directions:

      5.3.1. WINCH down / up
      5.3.2. BOOM up / down
      5.3.3. BOOM out / in
      5.3.4. ROTATION left / right

   NOTE: The crane is now ready for operation.

6. After 10 hours of operation, repeat steps 1 through 4.

NOTES

SECTION 300

MAINTENANCE

&

SERVICE

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

7607300A

CT310KX MAINTENANCE & SERVICE

PREVENTIVE MAINTENANCE

Overview

Your preventive maintenance program should include all of the following inspections and lubricant applications. Additional items can be added to meet your special needs. New cranes should be fully inspected and have the hydraulic fluid replaced after the first 10 hours of operation.

Periodic Inspection

Having scheduled inspections helps ensure your crane will stay in a ready to use condition. As parts become worn, replacement parts can be ordered in advance to allow timely repair. Downtime for the crane can be limited.

Table 4-1 suggests a monthly and annual inspection, but a general inspection should be performed daily and each time the crane is used.

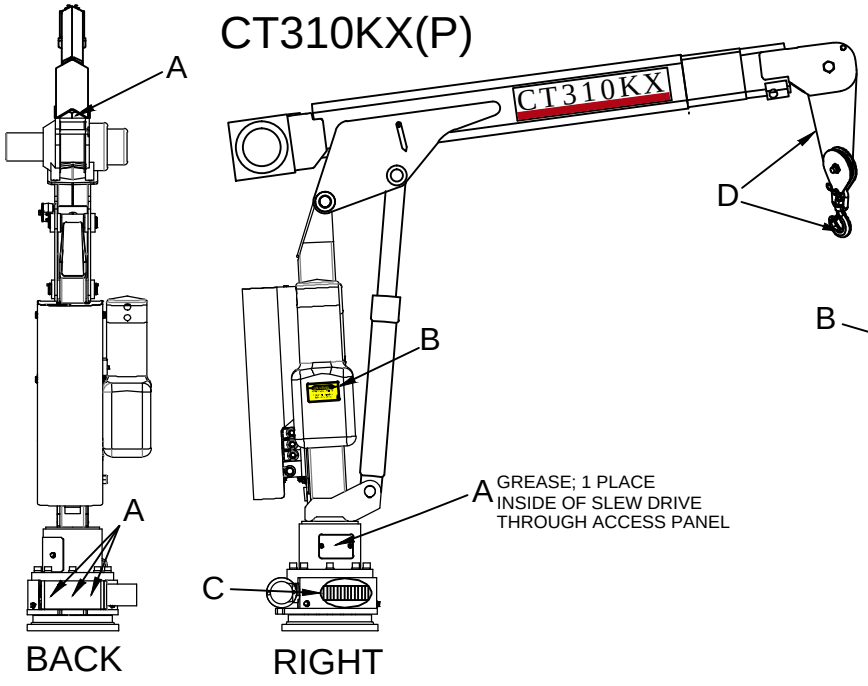
- Are there obvious wear or damage problems?
- Does the crane sound normal? Are there changes in the sounds of the winch motor or hydraulic pump and motor?
- Is the crane operating smoothly?

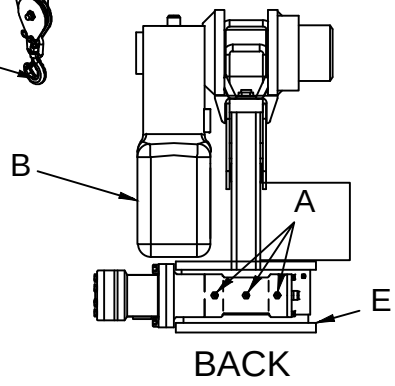
Table 4-1 Periodic Inspection Schedule

PERIODIC INSPECTION SCHEDULE		
Inspection Frequency	Inspection	Action
Monthly	Inspect all moving parts for wear or damage.	Repair or replace as needed.
	Check hydraulic hoses and fittings for leaks.	Repair or replace as needed.
	Check hydraulic cylinders for leaks.	Repair or replace as needed.
	Check all nuts and bolts for tightness.	Tighten as needed.
Annually	Check all decals and signs for readability.	Clean, repair, or replace as needed. (Refer to the decal drawing in the safety or parts section(s)).

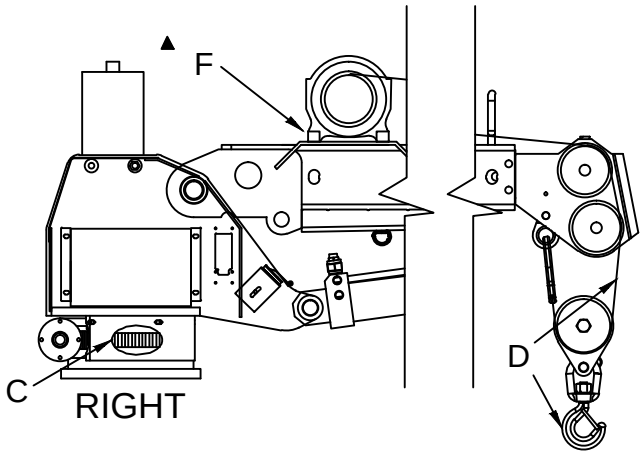
NOTES

CT310KX(P)





ET6K



ATTENTION:

NEVER WASH THIS CRANE WITH CHEMICAL PRODUCTS OR HIGH PRESSURE WATER JETS, AS THEY CAN CAUSE DETACHMENT OF DECALS OR ENTRANCE OF WATER INTO ELECTRICAL OR SLEWING RING COMPONENTS

Location	Service Required	Note		Service Interval
A	Grease fitting With Pressure Grease Gun	Use FUCHS Renolit Aluminum Complex Grease, or equivalent ⚠1 ALIGNMENT: To align hole w/ fitting, line up grease decals on lower cover and base gusset.		Time of Truck Service
B	Fill Oil Reservoir to Oil Level with Boom Down and Boom In.	Use Dextron ATF for Ambient Temperatures Between -22° F and 30° F	Use ISO Viscosity Grade 68 or Equivalent for Ambient Temperatures Between 10°F and 125°F	Time of Truck Service and as required by changes in the ambient temperature range
C	Lubricate Gear Teeth	Remove Cover & Use Chassis Grease		Time of Truck Service
D	Check Wire Rope and Hook	Rope should be free of kinks and fraying		Time of Truck Service
E	Check Torque of Base Mounting Bolts	Square base: torqued to 230 ft-lbs		Time of Truck Service
-	Check Torque of Base Mounting Bolts	Rectangular base: torqued to 455 ft-lbs		Time of Truck Service
F	Check Torque of Winch Mounting Bolts	Bolts should be torqued to 32 ft-lbs		Time of Truck Service

CT310KX MAINTENANCE & SERVICE

MINIMUM VOLTAGE TEST

This test checks the system voltage when under a full load condition. If a minimum of nine [9] volts is not read, the battery must be changed.

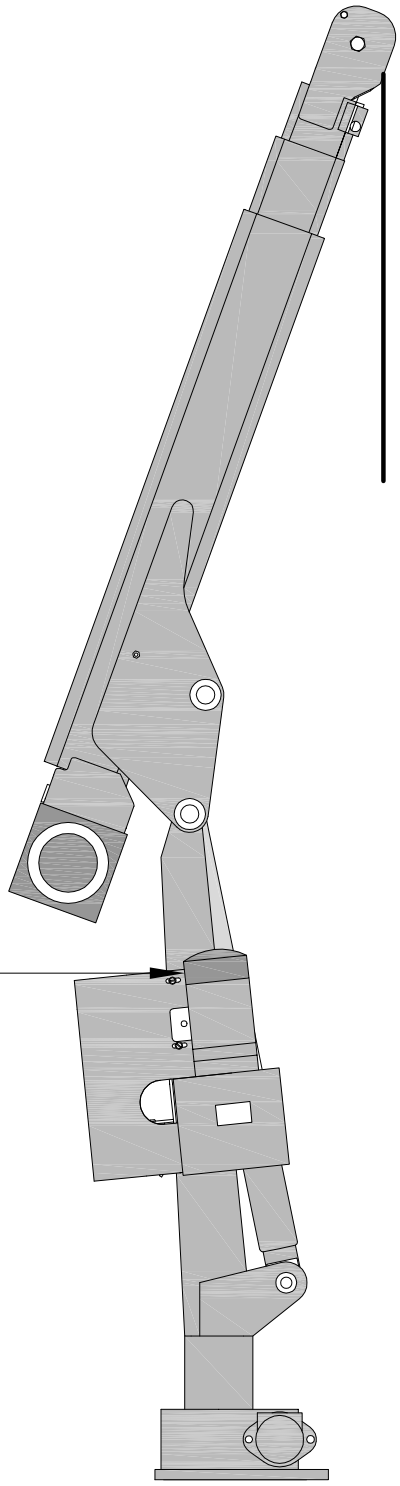
To check:

1. Start the truck engine.

DANGER

- Never touch moving parts
- Allow only trained personnel to perform this test.
- Failure to follow this could result in death or serious injury.

2. Operate the Boom Up switch until the boom is at full UP position.
3. Pull back the rubber boot which covers the motor terminal.
4. While holding the Boom Up switch on, measure the voltage at the HOT connection (at the hydraulic pump motor) across to ground (on the crane housing).
5. Operate the Boom Down switch to lower the boom.
6. Replace the battery if the reading is less than nine [9] volts.



WIRE ROPE SPECIFICATIONS

SELECTION

The chart below shows the maximum working load and breaking strength of 7 x 19 Galvanized AIRCRAFT Grade Wire Rope in various diameters. The breaking strength is 3 ½ times the maximum working load. Do not use wire rope with a maximum working load rating less than the single line capacity of the crane. Use wire rope diameter larger than the size furnished with the crane will reduce the fatigue life of the wire rope.

WIRE ROPE DIAMETER	MAXIMUM WORKING LOAD	BREAKING STRENGTH
1/8"	570 LBS.	2000 LBS.
5/32"	800 LBS.	2800 LBS.
3/16"	1200 LBS.	4200 LBS.
7/32"	1600 LBS.	5600 LBS.
1/4"	2000 LBS.	7000 LBS.
5/16"	2800 LBS.	9800 LBS.
3/8"	4114 LBS.	14400 LBS.

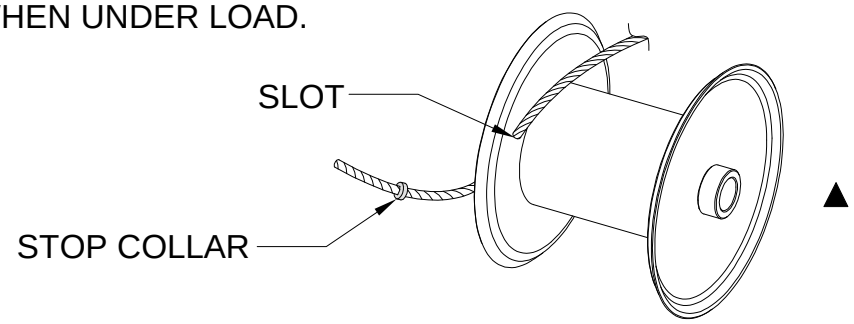
INSTALLATION

1. Unwind coil of rope by rolling it along the floor. This will prevent kinking

2. Most VENTURO cranes are provided with a slot in the winch side plate for attaching the end of the wire rope with a stop collar. A hole in the housing allows access for the end of the wire rope when inserted thru the slot.

   The ET20K(X) & ET25K(X) cranes have a clamp built into the winch drum and do not use a stop collar.

3. THERE MUST ALWAYS BE AT LEAST THREE [3] TURNS OF WIRE ROPE ON THE DRUM WHEN UNDER LOAD.



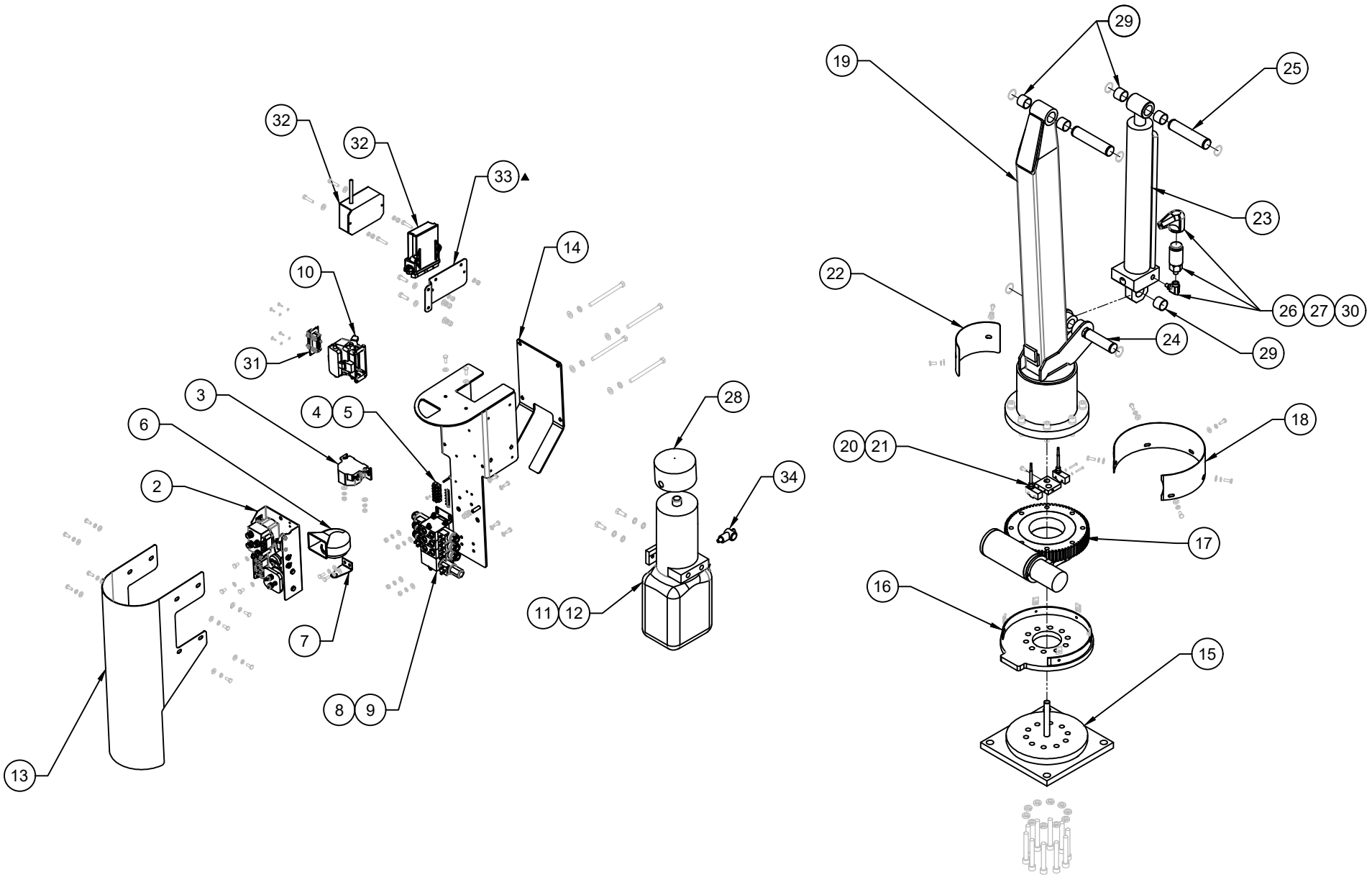
SECTION 400

REPLACEMENT

PARTS

VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CT310KX(P), REPLACEMENT PARTS DWG, MECHANISM



REFERENCE 25553 FOR REPLACEMENT PARTS LIST

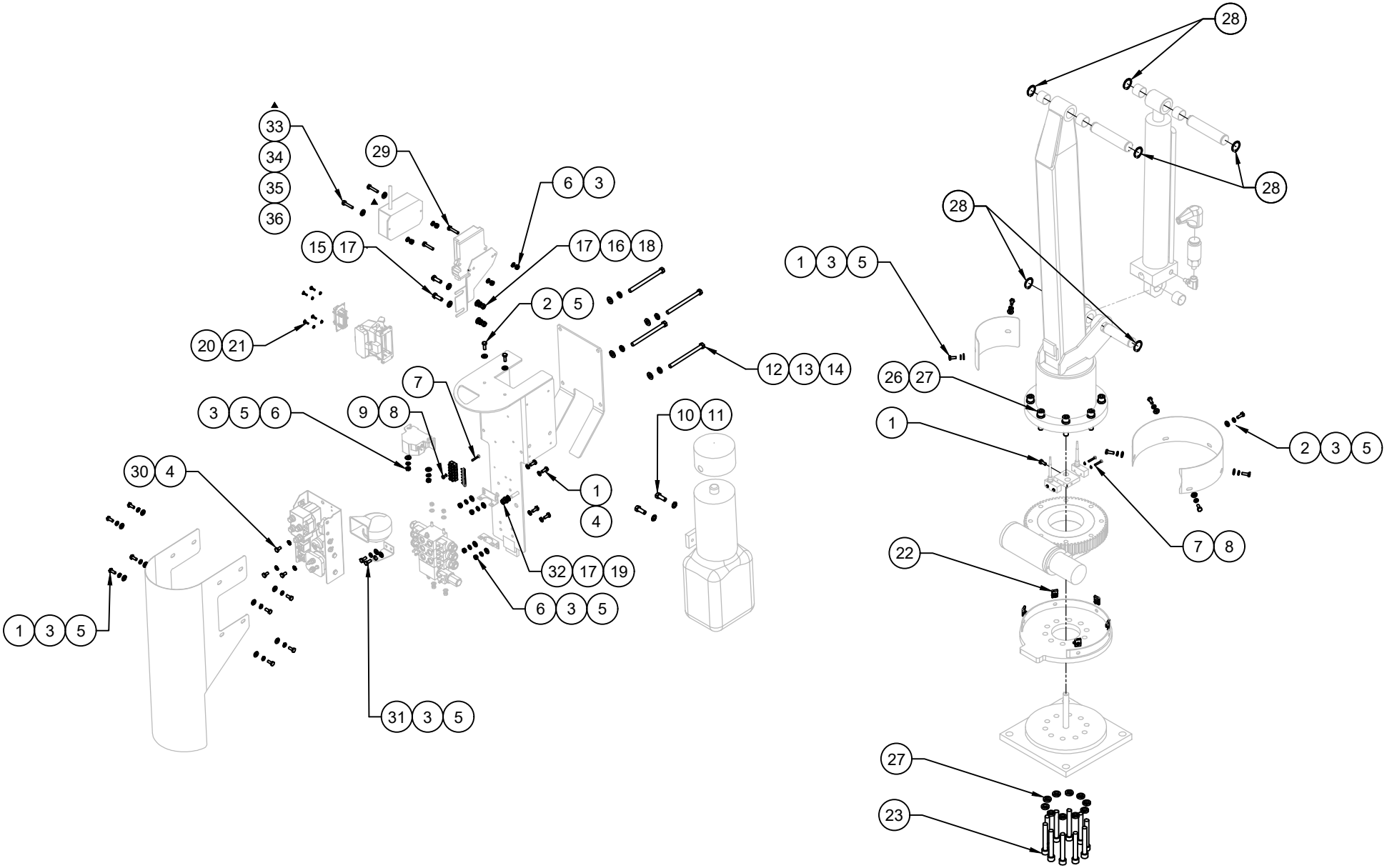
VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE REPLACEMENT PARTS DWG, MECHANISM	DATE 10-27-26D	SECTION C400
	CT310KX(P)	SUPERSEDES 10-23-26C	25552

REPLACEMENT PARTS LIST, CT310KX(P)

ITEM NO.	NON-PROP	PROP	PART NO.	DESCRIPTION
1	1	1	26512	WELDED ASSY.; PANEL, COMPONENTS, MECH, CT310KX(P)
2	1	1	21515-1	ELECTRICAL COMPONENT PANEL ASSEMBLY; CT310KX(P)
3	1	1	17356	OVERLOAD ALARM
4	1	1	28116	JUMPER STRIP (6-PIN)
5	1	1	19187-06	TERMINAL STRIP (6-SECTION)
6	1	1	21948	HORN; 12V, OPERATOR CONTROLLED
7	1	1	22000	BRACKET; HORN
8	1	-	28801	VALVE MANIFOLD; 3-SPOOL, NON-PROP
9	-	1	28800	VALVE MANIFOLD; 3-SPOOL, PROPORTIONAL
10	1	1	22481	SOCKET CASE W/HOOD; 16+1 POLE
11	1	1	20456	HYDRAULIC POWER UNIT (STANDARD)
12	1	1	20406	HYDRAULIC POWER UNIT (MIL-SPEC LOW FLOW)
13	1	1	26508	PLATE; COVER, PANEL, MECH., CT310KX(P)
14	1	1	26507	PLATE; MOUNTING, PANEL, MECHANISM, CT310KX(P)
15	1	1	27397	MOUNTING BASE WELDED ASSY.; CT310KX(P)
16	1	1	27398	GUARD SUPPORT PLATE; WELDED ASSY., CT310KX(P)
17	1	1	27243	ROTATION DRIVE SYSTEM; CT310KX(P)
18	1	1	27519	COVER; SLEWING RING; CT310KX(P)
19	1	1	26510	WELDED MAST ASSY.; CT310KX(P)
20	1	1	26509	HOUSING; LIMIT SWITCHES, ROTATION STOP, CT310KX(P)
21	2	2	19376	A2B SWITCH; ROTATION LIMIT SWITCH
22	1	1	27396	ACCESS PANEL; CURVED, CT310KX(P)
23	1	1	21788	ELEVATION CYL. ASSY. W/ COMP BEARINGS
24	1	1	21547	PIVOT PIN; ELEVATION CYL. BARRELL END, INBOARD
25	2	2	27515	PIVOT PIN; PRIMARY BOOM & ELEV. CYL. ROD END
26	1	1	17460-2200-02	PRESSURE SWITCH; 2200 PSI (LESS WIRING)
27	1	1	17012	BOOT COVER SWIVEL ASSY.
28	1	1	16143-3	MOTOR COVER W/ 2 HOLES
29	5	5	21789	COMPOSITE BEARING; 1.135" ID.
30	1	1	H6805-0404	HYD ELBOW 4MO-4FP, 90°
31	1	1	22482	FEMALE INSERT; 16+1 POLE
32	-	1	24471	RECEIVER; ET PROP CRANES, KARTECH
			22158	RECEIVER; ET PROP CRANES, BASE ENG
	1	-	24470-ET	RECEIVER; ET NON-PROP CRANES, KARTECH
			21986-ET	RECEIVER; ET NON-PROP CRANES, BASE ENG
▲ 33	1	1	25610	BRACKET; RADIO RECEIVER
34	1	1	18542	BOOT; MOTOR TERMINAL

REFERENCE 25552 FOR REPLACEMENT PARTS DRAWING

CT310KX(P), REPLACEMENT HARDWARE DWG, MECHANIISM



REFERENCE 25556 REPLACEMENT HARDWARE LIST

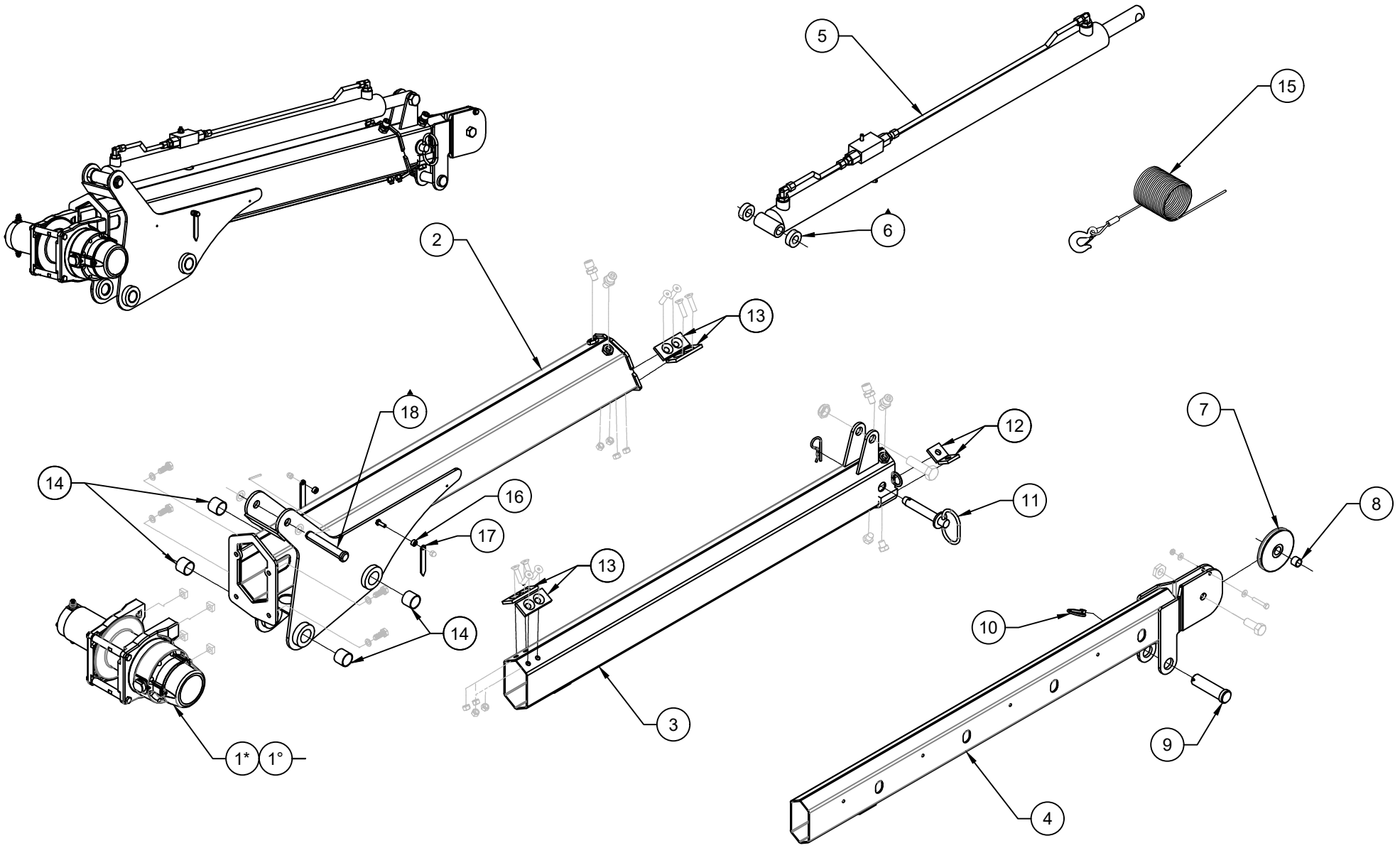
VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE REPLACEMENT HARDWARE DWG, MECH.	DATE 10-23-26D	SECTION C400
	CT310KX(P)	SUPERSEDES 10-13-25C	25554

REPLACEMENT HARDWARE LIST, CT310KX(P)

ITEM NO	QTY	PART NO	DESCRIPTION
1	20	!HHCS02520063S	HEX HEAD CAP SCREW; 1/4-20 X 5/8", SS
2	7	!HHCS02520075S	HEX HEAD CAP SCREW; 1/4-20 X 3/4", SS
3	26	!LWSH-025S	LOCK WASHER; 1/4", SS
4	8	!LWSH-025-STAR-SS	LOCK WASHER; 1/4", EXTERNAL STAR, SS
5	26	!FWSH-025S	FLAT WASHER; 1/4", SS
6	6	!HNUT-02520S	HEX NUT; 1/4-20. SS
7	5	!PHPMS#0632100S	PHILLIPS MACHINE SCREW; #6-32 X 1", SS
8	5	!LWSH-#06S	LOCK WASHER; #6, SS
9	1	!HNUT-#0632S	HEX NUT; #6-32, SS
10	2	!HHCS03816100	HEX HEAD CAP SCREW; 3/8-16 X 1", GR. 5, ZINC
11	4	!LWSH-038-STAR	LOCK WASHER; 3/8", EXTERNAL STAR, GR. 5, ZINC, X-TOOTH
12	4	!HHCS03816500	HEX HEAD CAP SCREW; 3/8-16 X 5", GR. 5, PLATED
13	4	!LWSH-038	LOCK WASHER; 3/8", GR. 5, ZINC
14	4	!FWSH-038SAE	FLAT WASHER; 3/8" SAE, GR. 5, ZINC
15	2	!HHCS03118100S	HEX HEAD CAP SCREW; 5/16-18 X 1", SS
16	2	!LWSH-031S	LOCK WASHER; 5/16", SS
17	3	!FWSH-031S	FLAT WASHER; 5/16", SS
18	3	!HNUT-03118S	HEX NUT; 5/16-18, SS
19	1	!LWSH-031-STAR-SS	LOCK WASHER; 5/16", EXTERNAL STAR, SS
20	4	!PHPMS#0832050S	PAN HEAD PHILLIPS MACHINE SCREW; #08-32 X 1/2", SS
21	4	!LWSH-#08S	LOCK WASHER; #8, SS
22	5	!UNUT-02520-LKG	U-NUT; 1/4-20, LOCKING TYPE
23	10	!SHCS05013325	SHCS 1/2-13 X 3-1/4", ZINC
24	-	-	-
25	-	-	-
26	8	!SHCS05013200-Z	SHCS 1/2-13 X 2", ZINC
27	18	!LWSH-050-HC	LOCK WSHR; 1/2, GR. 5, ZINC, HI-COLLAR
28	6	!SRNG-113	EXT. RET. RING, 1-1/8 ZINC PLATED
29	2	!HHCS02520125	HHCS; 1/4-20 X 1-1/4, GR. 5, ZINC
30	3	!HHCS02520038	HHCS 1/4-20 X 3/8 GR. 5
31	2	!HHCS02520050	HHCS; 1/4-20 X 1/2, GR. 5, ZINC
32	1	!LNUT-03118NS	LOCK NUT, 5/16-18, NYLON INSERT, STAINLESS
▲ 33	2	!FWSH-#10S	FLAT WASHER; #10, S/S
▲ 34	2	!PHPMS#1024050S	PHILLIPS MACHINE SCREW; #10-24 X 1/2", SS
▲ 35	2	!HNUT-#1024S	HEX NUT; #10-24, S/S
▲ 36	2	!LWSH-#10S	LOCK WASHER; #10, S/S

REFERENCE 25554 REPLACEMENT PARTS DRAWING

CT310KX(P) REPLACEMENT PARTS DRAWING - 27221



ITEM# 1° WARN WINCH NOT SHOWN

REFERENCE REPLACEMENT PARTS LIST DRAWING 25545

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CINCINNATI, OHIO

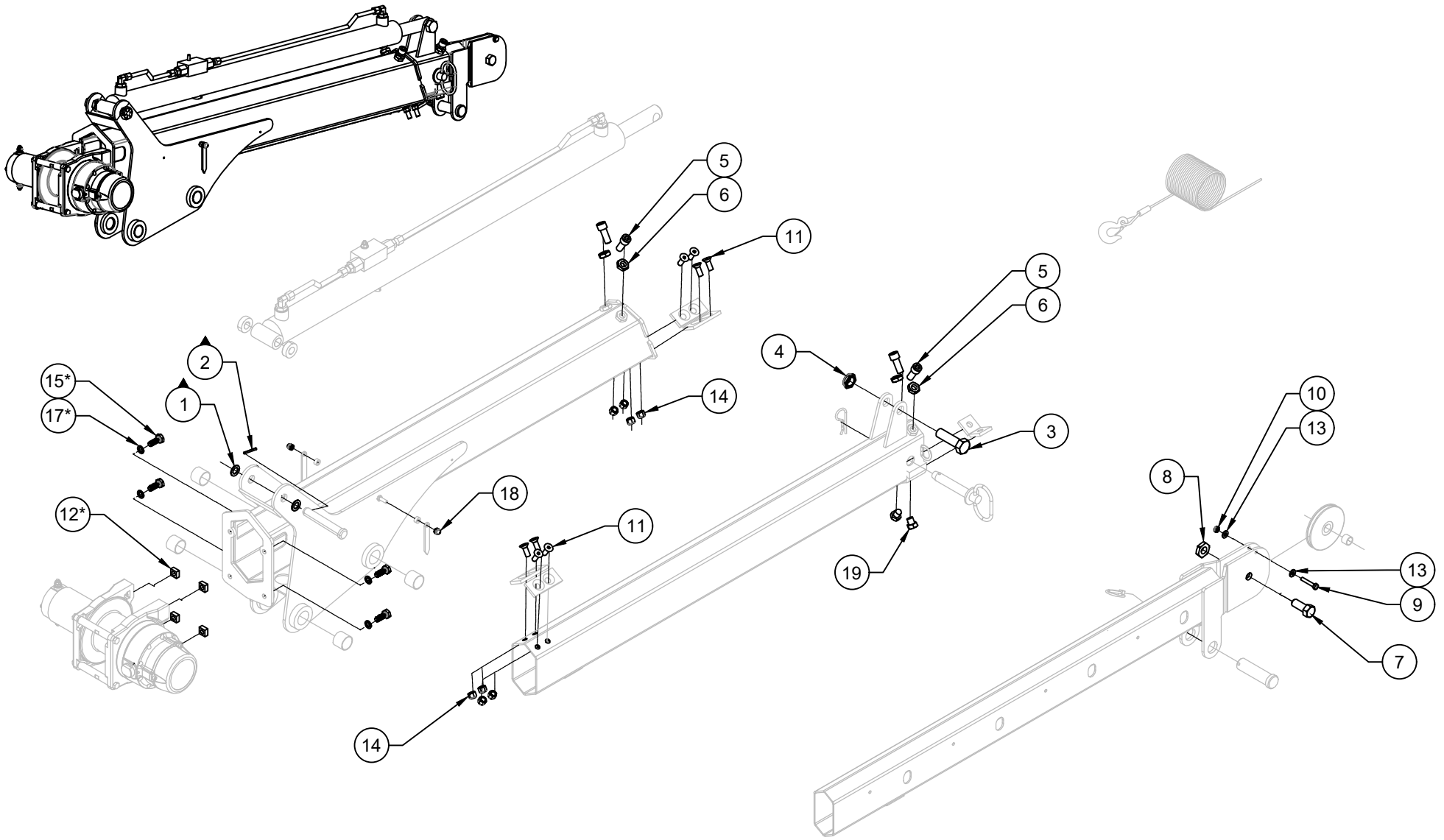
TITLE	DATE	SECTION
REPLACEMENT PARTS DWG - 27221 BOOM	08-27-26D	C400
CT310KX(P)	SUPERSEDES 02-18-25C	25544

REPLACEMENT PARTS LIST - 27221 BOOM

	ITEM NO.	QTY	PART NO.	DESCRIPTION
	1*	1	24130-1	WINCH; GTD-1200 (COMEUP)
	1°	1	20586	WINCH; DC1200 (WARN)
	2	1	27223	WELDED ASSY; PRIMARY BOOM
	3	1	27225	WELDED ASSY; SECONDARY BOOM
	4	1	27227	WELDED ASSY; TERITARY BOOM
	5	1	27804	EXTENSION CYLINDER ASSEMBLY
▲	6	2	23995	NYLON SPACER; EXTENSION CYLINDER BASE
	7	1	19646	SHEAVE
	8	1	13168-7	SPACER; AXLE, SHEAVE
	9	1	27364	CLEVIS PIN; TWO-LINE CONFIGURATION
	10	1	27365	LYNCH PIN; TWO-LINE CONFIGURATION
	11	1	23042-F-09-09	ASSY; HITCH PIN, 9" LANYARD, SECONDARY & TERTIARY BOOM EXTENSION
	12	2	23217-16	UHMW PAD; SQUARE, SECONDARY BOOM
	13	4	23217-15	UHMW PAD; RECTANGLE, PRIMARY & SECONDARY BOOMS
	14	4	21789	COMPOSITE BEARING; PRIMARY BOOM
	15	1	15810-3/16-50	WIRE ROPE ASS'Y, 3/16" X 50'
	16	2	22490	SPACER; BOOM ARROW-1/2 OD* 1/4 ID* 1/4 THICK (BLACK NYLON)
	17	2	13459-1	ARROW - 3 INCH
▲	18	1	23985	CLEVIS PIN; EXTENSION CYLINDER BASE

REFERENCE REPLACEMENT PARTS DRAWING 25544

CT310KX(P) REPLACEMENT HARDWARE DRAWING - 27221 BOOM



- COMEUP WINCH MOUNTING HARDWARE ITEMS 12*, 15*, 17* ARE SHOWN
- WARN WINCH MOUNTING HARDWARE ITEMS 12°, 15°, 16°, 17° NOT SHOWN
- REFERENCE REPLACEMENT HARDWARE LIST DRAWING 25547

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TITLE	DATE	SECTION
REPLACEMENT H/W DWG - 27221 BOOM	08-28-26B	C400
CT310KX(P)	SUPERSEDES 04-25-25A	25546

REPLACEMENT HARDWARE LIST - 27221 BOOM

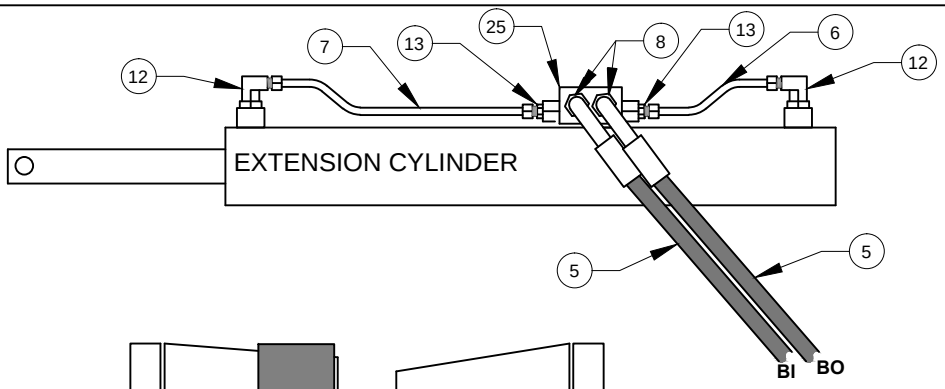
	ITEM NO.	QTY	PART NO.	DESCRIPTION
▲	1	2	27480	BUSHING; FLAT WASHER, SHIM, ZINC
▲	2	1	!RPIN014150	ROLL PIN; 9/64 X 1-1/2" LG., ZINC
	3	1	17059-2	SHEAVE AXLE
	4	1	!JNUT-07510N	JAM NUT; 3/4-10, GR. 5, ZINC, THIN NYLON-INSERT
	5	4	27368	SOCKET HEAD CAP SCREW; 1/2-13 X 1-1/4" LG., BLACK NYLON
	6	8	!JNUT-05013	JAM NUT; 1/2-13, GR. 5, ZINC
	7	1	!HHCS06311150	HEX HEAD CAP SCREW; 5/8-11 X 1-1/2" LG., GR. 5, ZINC
	8	1	!JNUT-06311N	JAM NUT; 5/8-11, GR. 5, ZINC, THIN NYLON-INSERT
	9	1	!HHCS02520150S	HEX HEAD CAP SCREW; 1/4-20 X 1-1/2" LG., STAINLESS
	10	1	!JNUT-02520NS	JAM NUT; NYLON-INSERT, 1/4-20, STAINLESS
	11	4	!FHCS03816100	FLAT HEAD CAP SCREW; 3/8-16 X 1" LG., ZINC
	12*	4	!QNUT-M10150	SQUARE NUT; M10 X 1.50, GR. 8.8, ZINC
	12°	8	!HNUT-03816	HEX NUT; 3/8-16, GR. 5, ZINC
	13	2	!FWSH-025S	FLAT WASHER; 1/4", STAINLESS
	14	4	!LNUT-03816	LOCK NUT; 3/8-16, GR. 5, ZINC, NYLON-INSERT
	15*	4	!HHCSM10150030-8.8	HEX HEAD CAP SCREW; M10-1.50 X 30 MM LG., GR. 8.8, ZINC
	15°	4	!HHCS03816125	HEX HEAD CAP SCREW; 3/8-16 X 1-1/4" LG., GR. 5, ZINC
	16°	4	!FWSH-038	FLAT WASHER; 3/8", GR. 5, ZINC
	17*	4	!LWSH-M10-8.8	LOCK WASHER; M10, GR. 8.8, ZINC
	17°	4	!LWSH-038	LOCK WASHER; 3/8", GR. 5, ZINC
	18	2	!ANUT-02520S	ACORN NUT; 1/4-20, STAINLESS
	19	2	!HHCS05013050	HEX HEAD CAP SCREW; 1/2-13 X 1/2" LG., GR. 5, ZINC

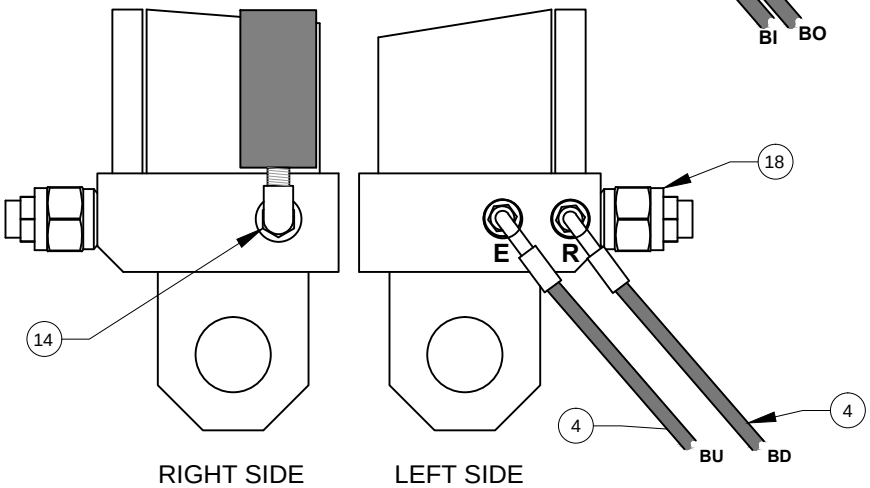
°= WARN DC1200 WINCH MOUNTING

*= COMEUP GTD-1200 WINCH MOUNTING

REFERENCE REPLACEMENT HARDWARE DRAWING 25546

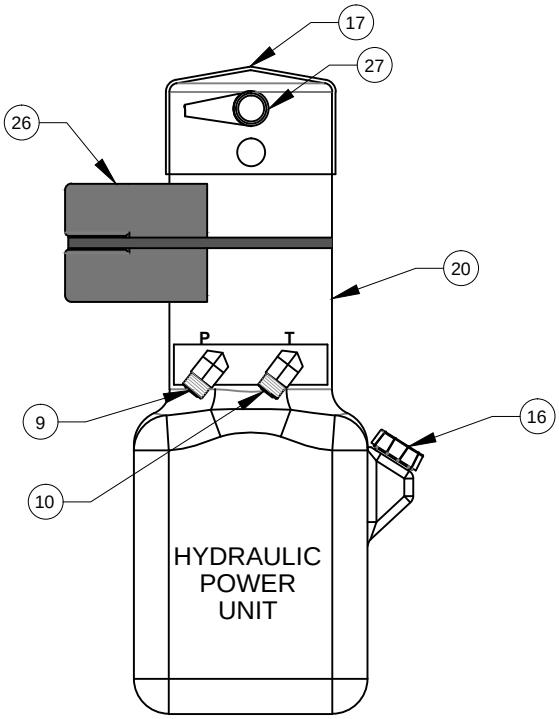
HYDRAULIC SYSTEM REPLACEMENT PARTS



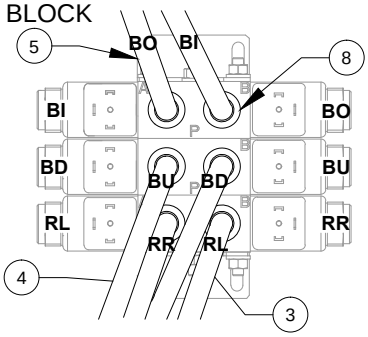


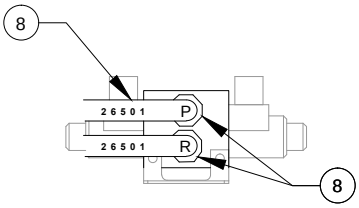
RIGHT SIDE ELEVATION

LEFT SIDE CYLINDER

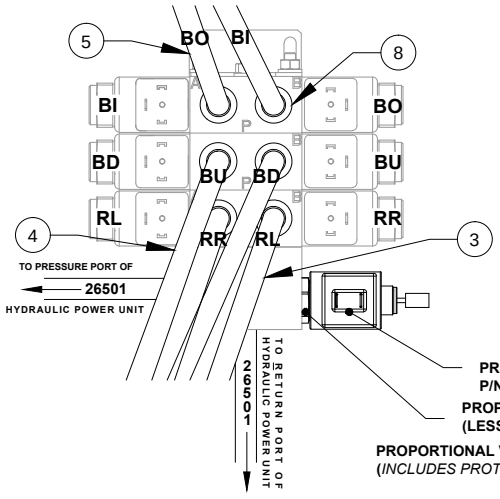


NON - PROPORTIONAL VALVE BLOCK





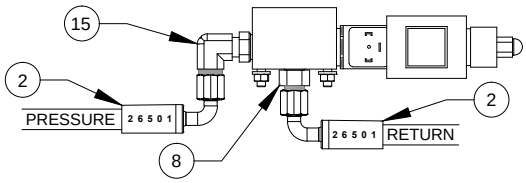
PROPORTIONAL VALVE BLOCK

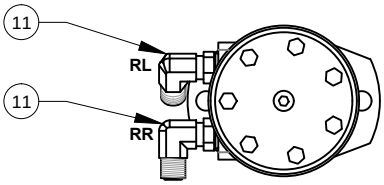


PROPORTIONAL COIL P/N 26487

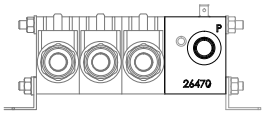
PROPORTIONAL VALVE (LESS COIL) P/N 26486

PROPORTIONAL VALVE COMPLETE P/N 26485 (*INCLUDES PROTECTIVE CAP* **#26488**)

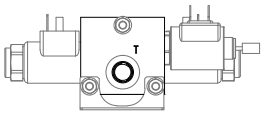




HYDRAULIC ROTATION MOTOR



P = PRESSURE



T = RETURN

REFERENCE 25559 HYDRAULIC PARTS LIST

VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: HYD. SYSTEM REPL PARTS	DATE: 07-02-25C	SECTION: C400
	CT310KX(P)	SUPERSEDES: 04-18-25B	25558

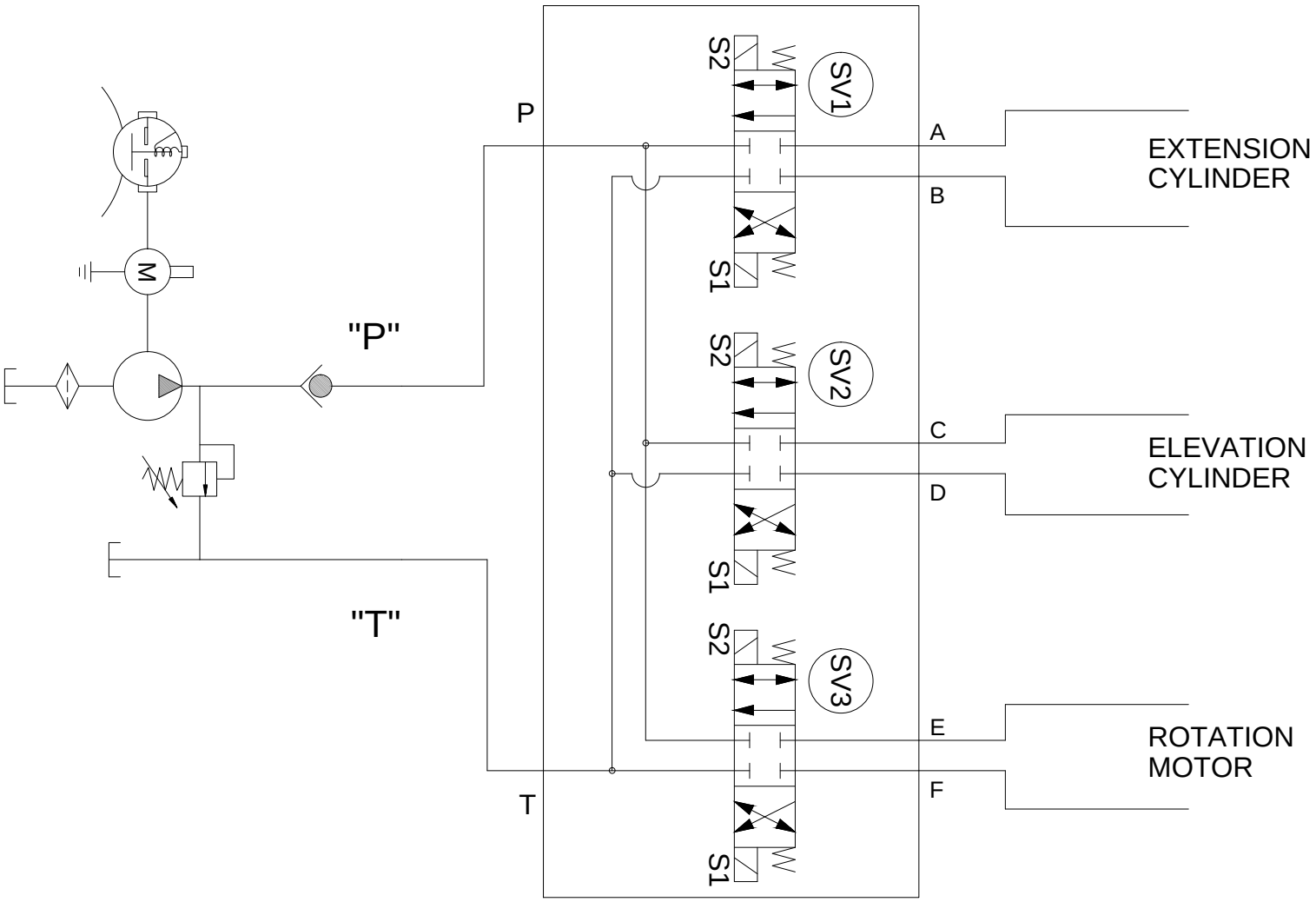
HYDRAULIC SYSTEM PARTS LIST

	ITEM#	Non-Prop	Prop	PART#	DESCRIPTION
▲	1	-	-	-	-
	2	2	2	26501	HOSE ASS'Y; PRESSURE & RETURN
	3	2	2	26502	HOSE ASS'Y; ROTATION RIGHT & LEFT
	4	2	2	26503	HOSE ASS'Y; BOOM UP & DOWN
	5	2	2	26504	HOSE ASS'Y; BOOM IN & OUT
	6	1	1	27099	HYD. TUBE ASS'Y; BOOM OUT, EXT. CYL.
	7	1	1	27100	HYD. TUBE ASS'Y; BOOM IN, EXT. CYL.
	8	12	12	FF6400-0606	ADAPTER FITTING; STRAIGHT, 6OFS-6MO
	9	1	1	FF2501-0606	ADAPTER FITTING; 90° ELBOW, 6OFS-6MP
	10	1	1	FF2501-0604	ADAPTER FITTING; 90° ELBOW, 6OFS-4MP
	11	2	2	FF6801-0610	ADAPTER FITTING; 90° ELBOW, 6OFS-10MO
	12	2	2	H6801-0608	ADAPTER FITTING; 90° ELBOW, 6MJ-8MO
	13	2	2	H6400-0606	ADAPTER FITTING; STRAIGHT, 6MJ-6MO
	14	1	1	H6805-0404	ADAPTER FITTING; 90° ELBOW, 4MO-4FP
	15	1	1	FF6801-0606	ADAPTER FITTING; 90° ELBOW; 6OFS-6MO
	16	1	1	20973	BREATHER CAP; MODIFIED, H.P.U.
	17	1	1	16143-3	COVER, MOTOR,HYD POWER UNIT
	18	1	1	20893	COUNTER BALANCE VALVE
▲	19	-	-	-	-
	20	1	1	16940	MOTOR, HYD PWR UNIT
	21	-	-	-	-
▲		-	-	-	-
▲	22	-	-	-	-
▲	23	-	-	-	-
▲	24	-	-	-	-
	25	1	1	27363	P.O. CHECK VALVE
	26	1	1	416705	COVER & STRAP KIT FOR SOLENOID
	27	1	1	18542	BOOT; MOTOR TERMINAL

NOTE: ITEMS 2 THROUGH 15 ARE INCLUDED IN THE HOSE & FITTING KIT P/N 26500.

REFERENCE 25558 HYDRAULIC PARTS DRAWING

CT310KX MAINTENANCE & SERVICE

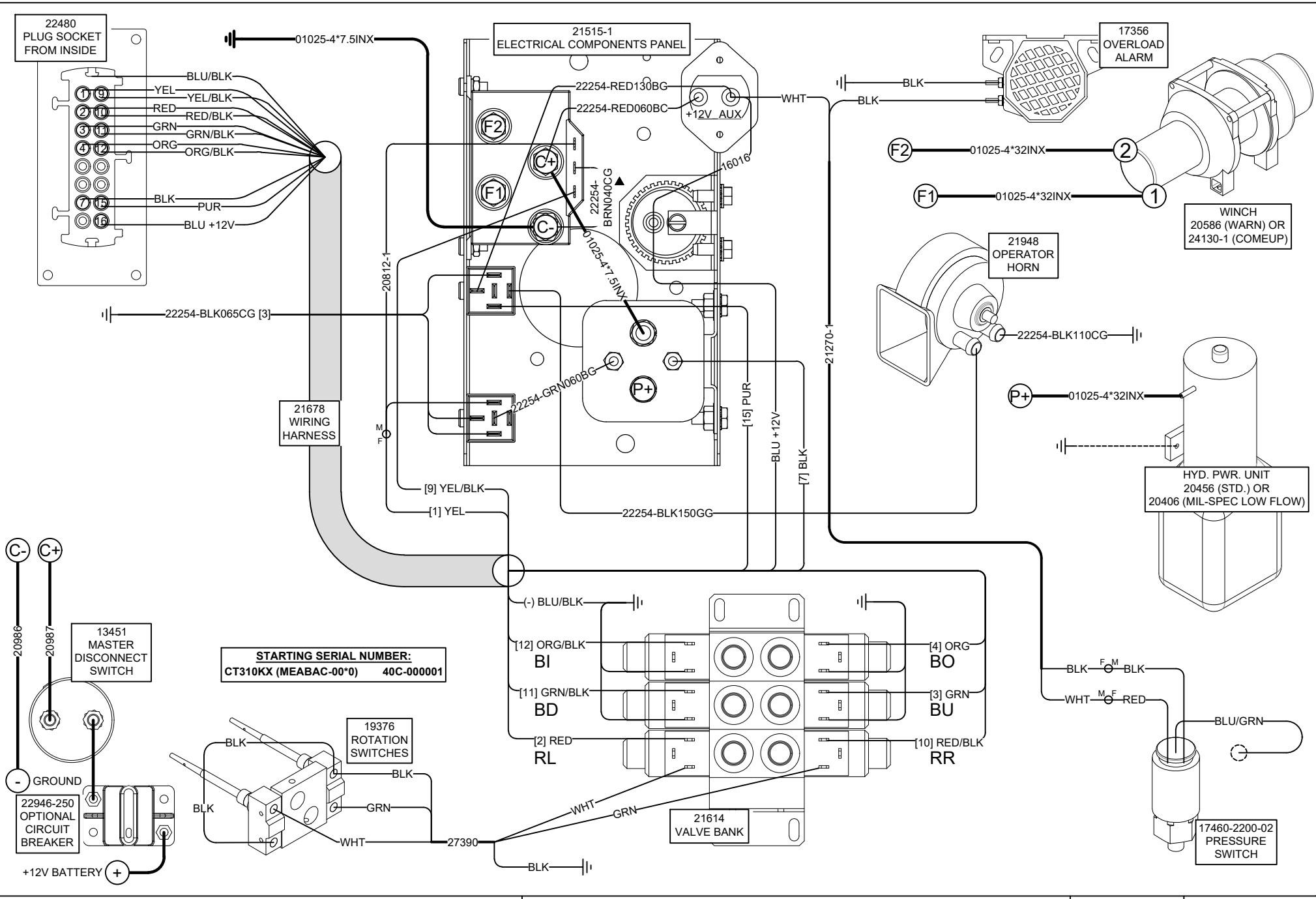


OPERATION

SV1
ENERGIZE "S2"
OPEN FLOW
'P' TO 'A'
'B' TO 'T'
ENERGIZE "S1"
OPEN FLOW
'P' TO 'B'
'A' TO 'T'

SV2
ENERGIZE "S2"
OPEN FLOW
'P' TO 'C'
'D' TO 'T'
ENERGIZE "S1"
OPEN FLOW
'P' TO 'D'
'C' TO 'T'

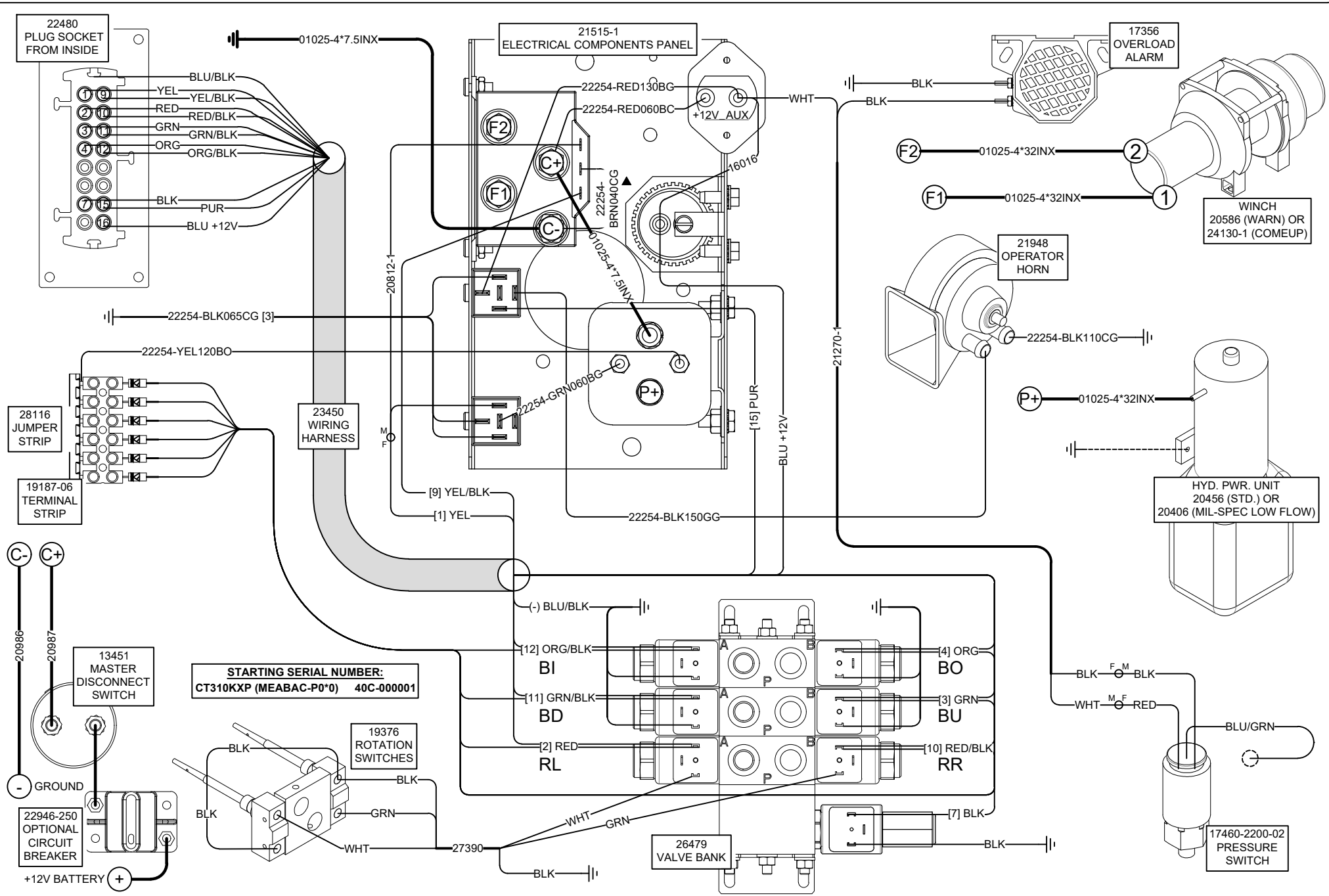
SV3
ENERGIZE "S2"
OPEN FLOW
'P' TO 'E'
'F' TO 'T'
ENERGIZE "S1"
OPEN FLOW
'P' TO 'F'
'E' TO 'T'



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VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
WIRING DIAGRAM	07-21-25G	C400
CT310KX	SUPERSEDES 04-25-25F	26518

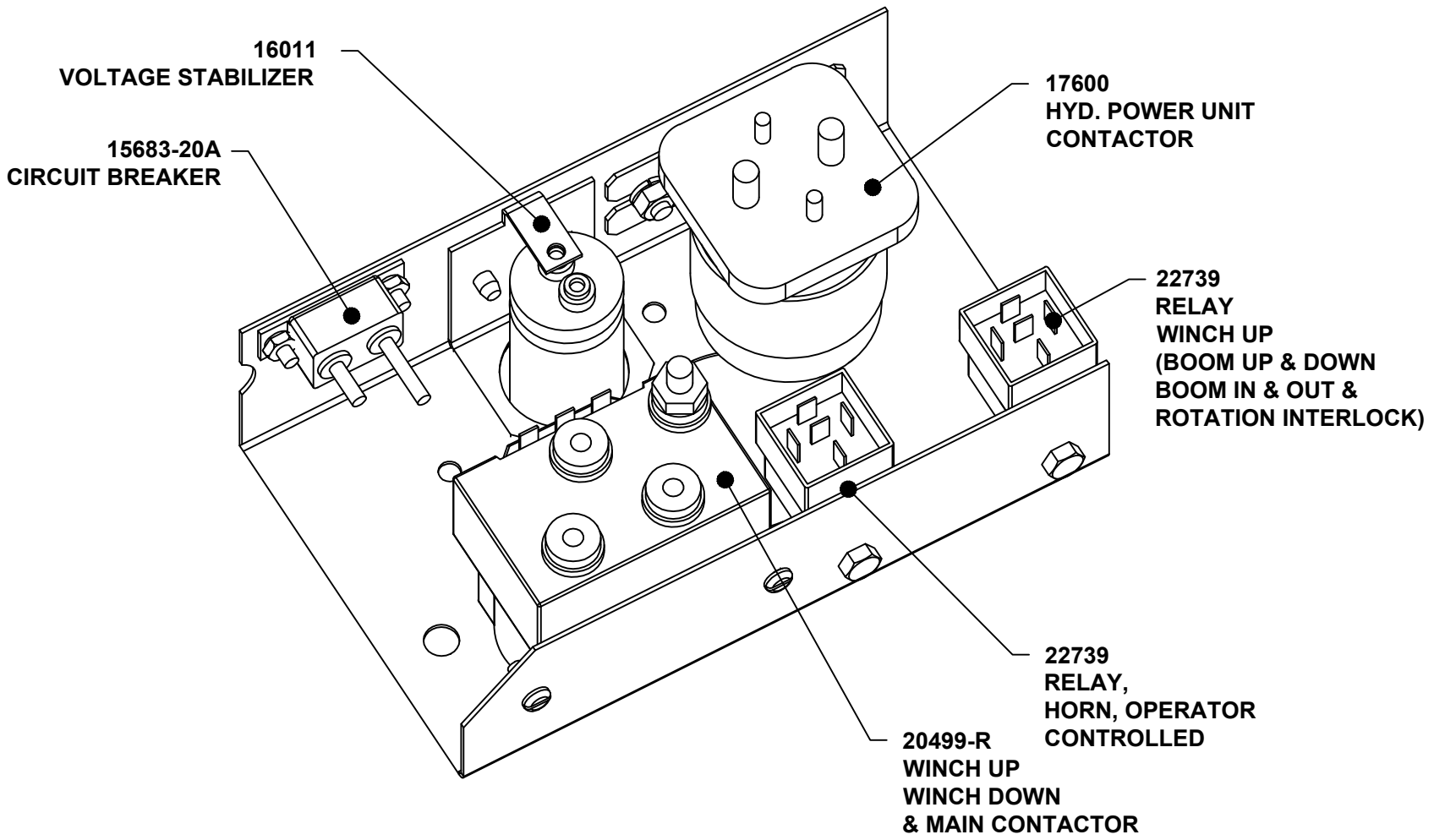


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CINCINNATI, OHIO

TITLE	DATE	SECTION
WIRING DIAGRAM	07-21-25G	C400
CT310KXP	SUPERSEDES 04-25-25F	26517

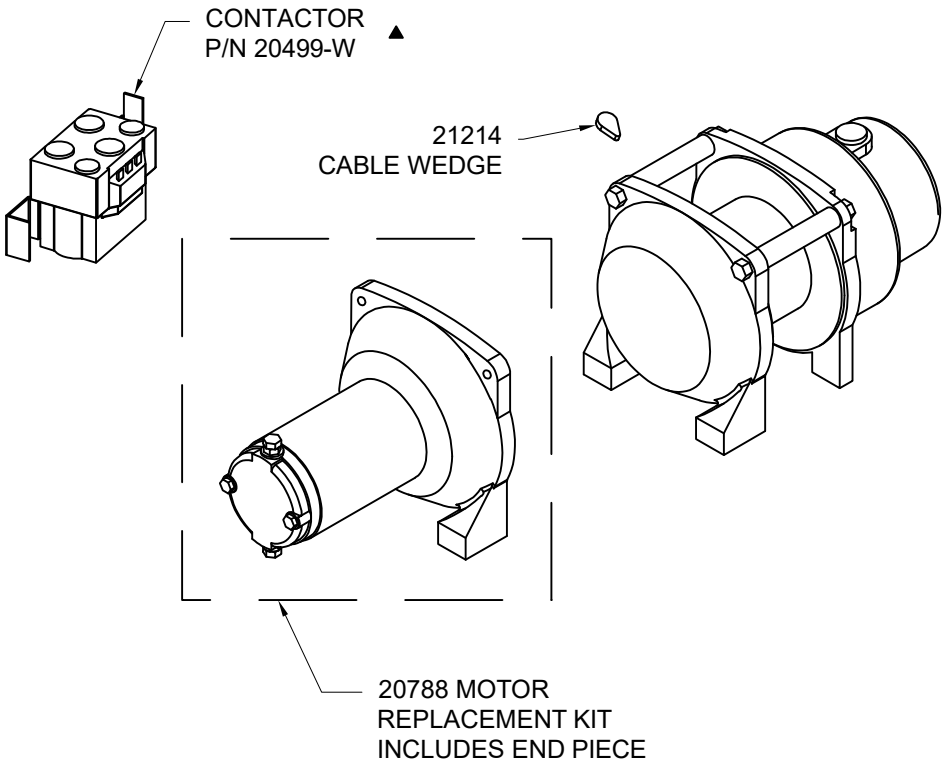
21515-1 ELECTRICAL COMPONENT ASSEMBLY



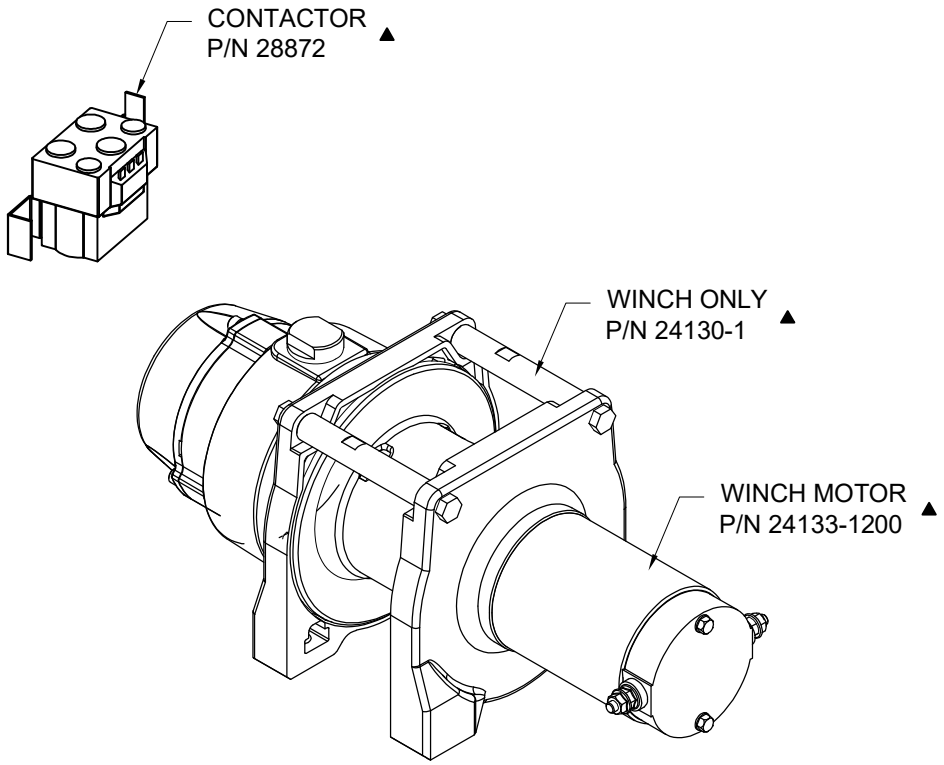
VENTURO® VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE: ELECTRICAL COMPONENT ASSEMBLY	DATE: 04-25-25	SECTION: C400
	CT310KX(P)	SUPERSEDES: -	32021

WINCH REPLACEMENT PARTS

WARN DC1200
WINCH P/N 20586



COMEUP GTD-1200
WINCH P/N 24130-1

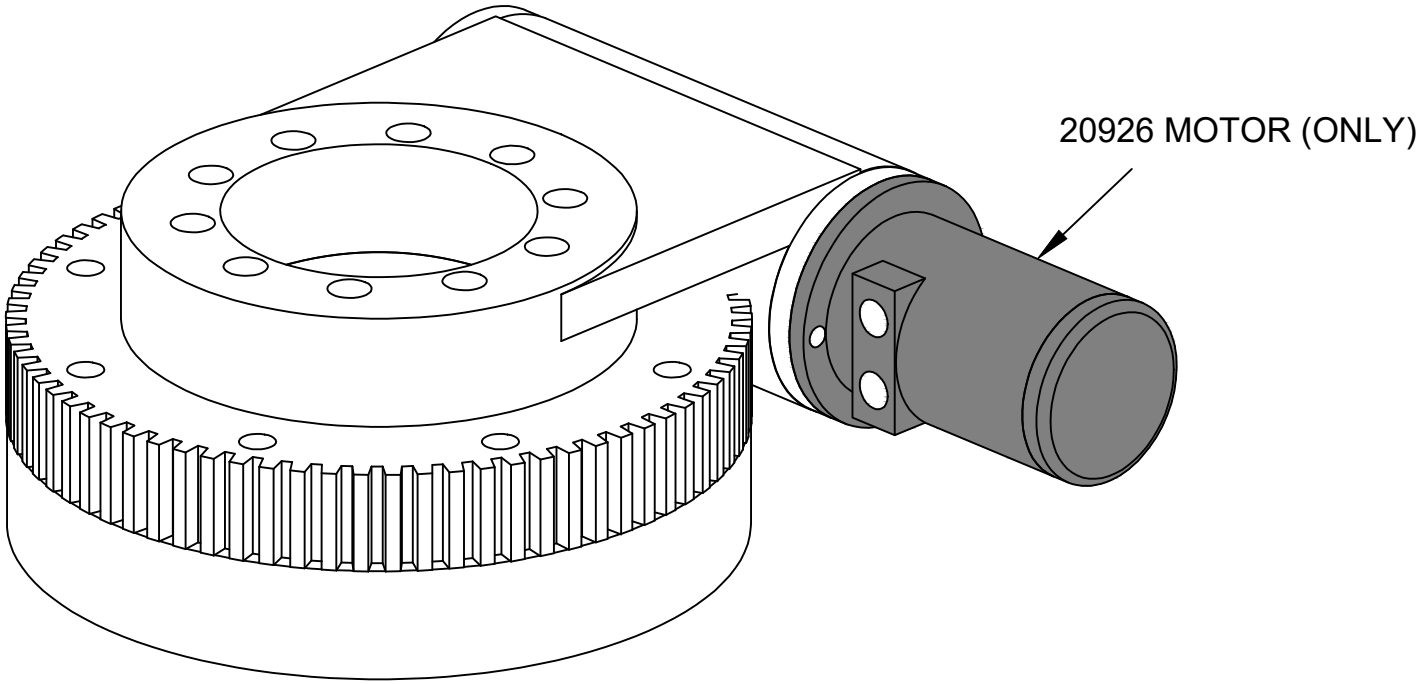


VENTURO®

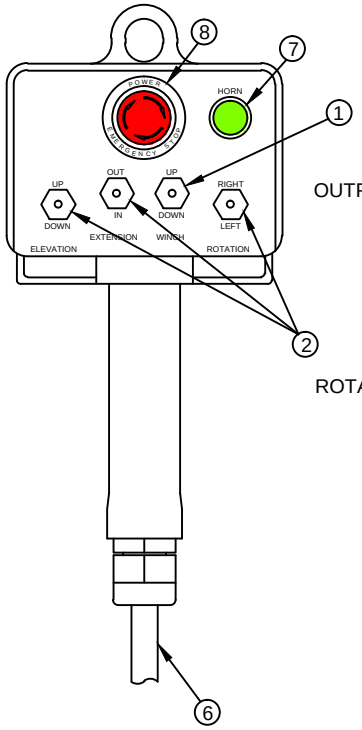
VENCO VENTURO LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
WINCH REPLACEMENT PARTS	04-23-26G	C400
CT310KX & 2010E (ET6K)	SUPERSEDES 02-11-25F	20837

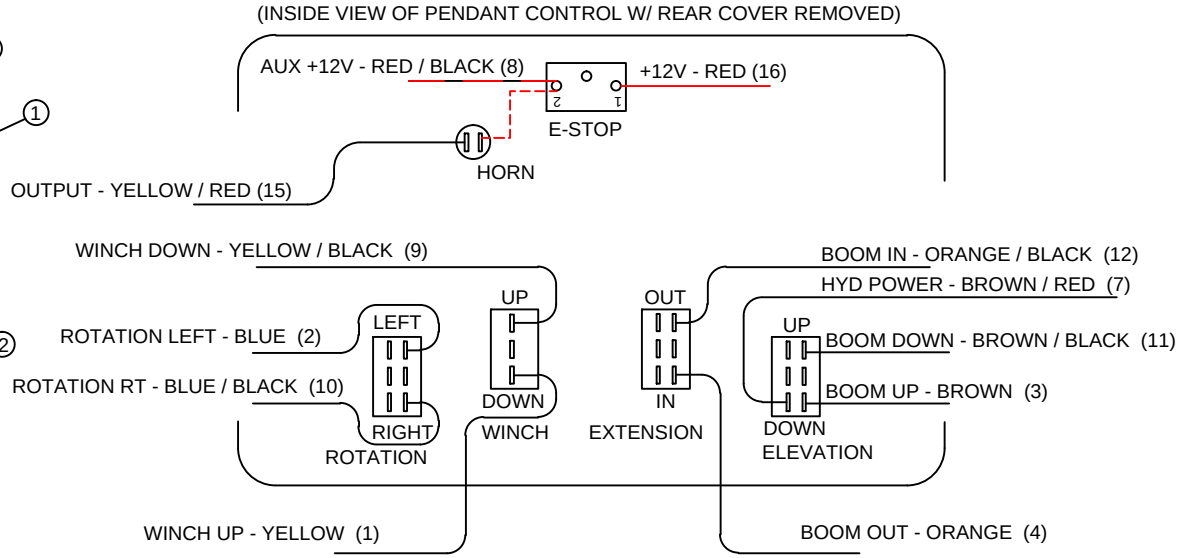
27243 SLEWING SYSTEM REPLACEMENT PARTS



21990 PENDANT; 4 FUNCTION ET CRANES, E-STOP / HORN



(INSIDE VIEW OF PENDANT CONTROL W/ REAR COVER REMOVED)



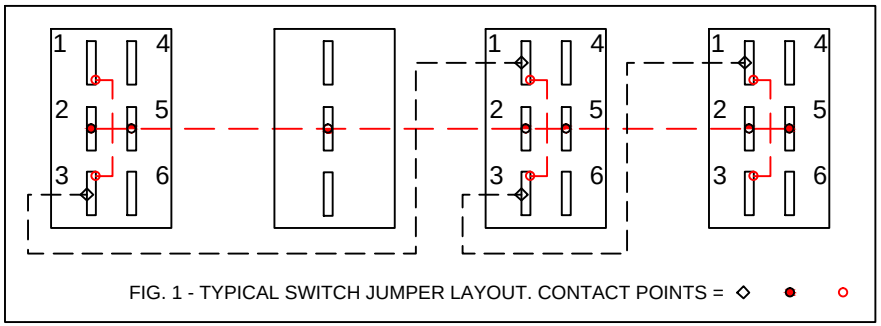
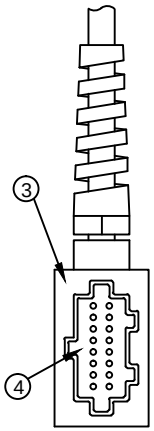


FIG. 1 - TYPICAL SWITCH JUMPER LAYOUT. CONTACT POINTS = ◇ ● ○

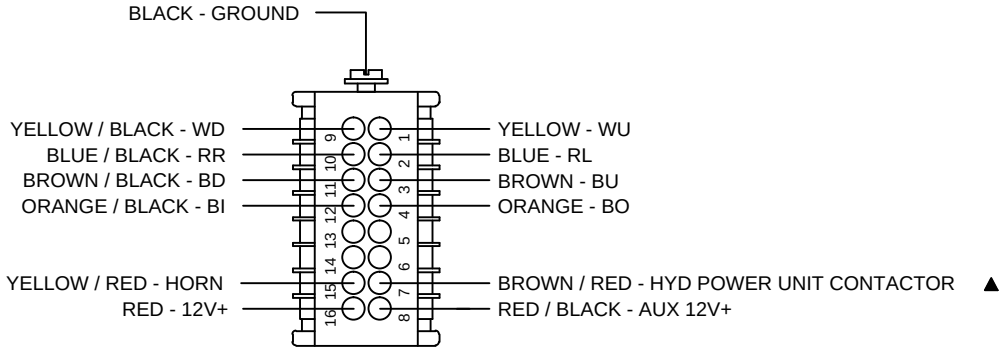
NOTE 1:
WIRE TERMINALS TO BE INSTALLED 'AFTER' ROUTING REPLACEMENT CORD ASSY THROUGH PENDANT HEAD AND PLUG HOUSING.

NOTE 2:
STOW OR CUT BACK UNUSED WIRES.

MODEL	STARTING S/N
ET8KX	73800
ET12KX	69800
ET16KX	170000
ET18KX	95900
ET25KX	125300
ET30KX	130300
ET36KXX	140300



16-PIN PLUG ASSY.



16-PIN PLUG - BACKSIDE VIEW

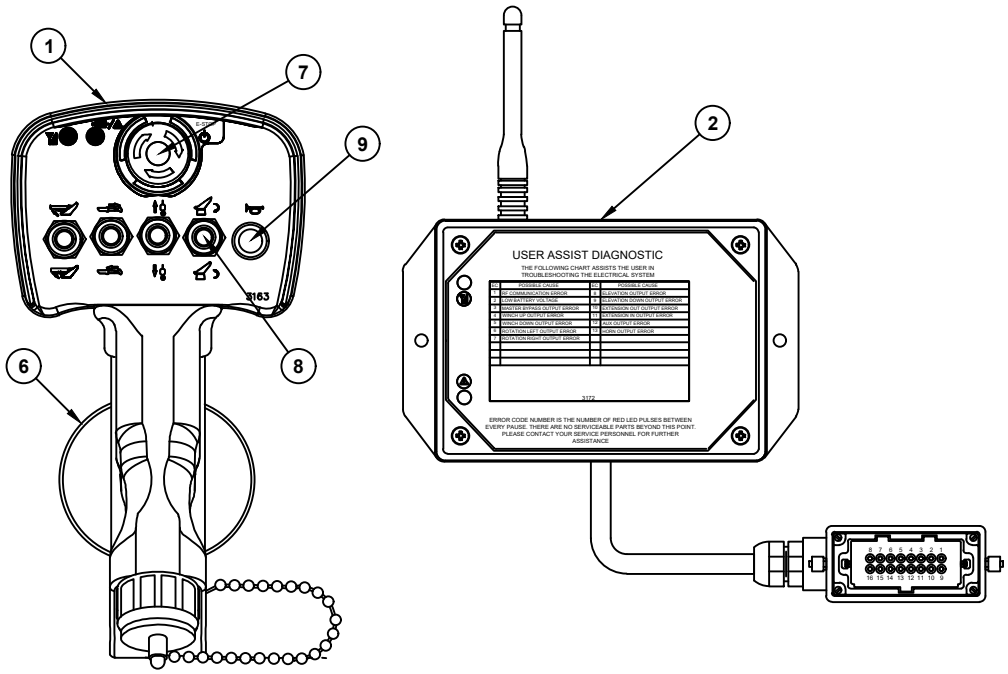
ITEM	QTY	PART NO.	DESCRIPTION
8	1	22156	SWITCH; E-STOP
7	1	22155	SWITCH; PUSHBUTTON, HORN
6	1	22135	KIT; REPLACEMENT CORD ASSY
5	-	-	-
4	1	22472	INSERT; MALE, 16 + 1 POLE
3	1	22471	PLUG CASE; 16 + 1 POLE
2	3	22152	SWITCH; DPDT, MOMENTARY
1	1	22081	SWITCH; SPDT, MOMENTARY

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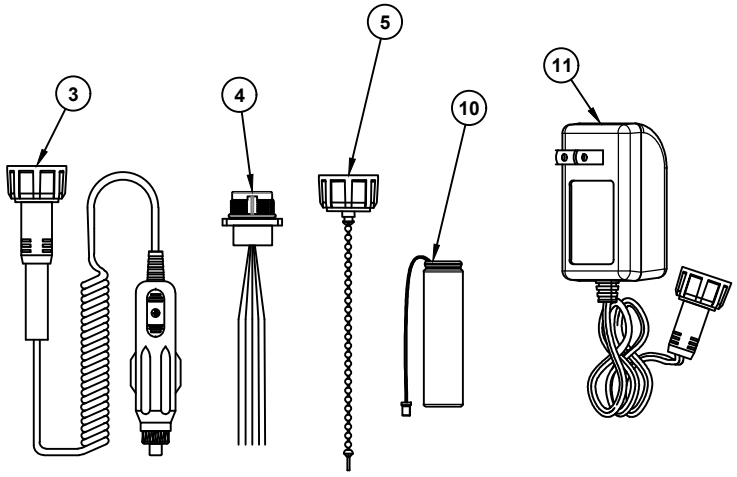
TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	01-12-17B	C400
21990 PNDNT; 4 FNCTN ET CRNS, ESTP/HRN	SUPERSEDES 10-20-14A	23075

24470 RADIO; NON PROP, NON-CAN, NO ENG CNTRLS, E-STOP/HORN

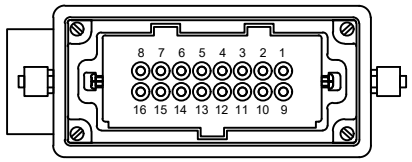


24470 RADIO SYSTEM REPLACEMENT PARTS		
ITEM#	PART#	DESCRIPTION
1	24470-TX	ET & HT NON PROP RADIO TRANSMITTER
2	24470-RX-HT	RADIO RECEIVER; HT PROGRAMMED, NON PROP
	24470-RX-ET	RADIO RECEIVER; ET PROGRAMMED, NON PROP
3	23908-CHG	CHARGER, TRANSMITTER, 12V CIG / AUX PLUG
4	24470-CCR	CAN CHARGER RECEPTACLE
5	24470-CRC	TRANSMITTER CAN PORT CAP
6	22089	MAGNET ASSEMBLY
7	24470-ESS	EMERGENCY STOP SWITCH
8	24470-TOG	TOGGLE SWITCH (ON)-OFF-(ON), SCREW CONNECT TERMS, W/BOOT
9	22155	PUSH BUTTON SWITCH, GREEN
10	23908-BAT	BATTERY; TX
*11	24470-ADP	110 VOLT A/C WALL CHARGER

* OPTIONAL ACCESSORY, NOT INCLUDED



VIEW FROM CONNECTING FACE



16 PIN CONNECTOR WIRING		
PIN#	WIRE COLOR	FUNCTION
1	YELLOW	WINCH UP OUTPUT
2	BLUE	ROTATION LEFT OUTPUT
3	BROWN	ELEVATION UP OUTPUT
4	ORANGE	EXTENSION OUT OUTPUT
5	-	-
6	-	-
7	BROWN / RED	MASTER BY PASS OUTPUT
8	RED / BLACK	AUX POWER +12V
9	YELLOW / BLACK	WINCH DOWN OUTPUT
10	BLUE / BLACK	ROTATION RIGHT OUTPUT
11	BROWN / BLACK	ELEVATION DOWN OUTPUT
12	ORANGE / BLACK	EXTENSION IN OUTPUT
13	-	-
14	-	-
15	YELLOW / RED	HORN OUTPUT
16	RED	SYSTEM POWER +12V
-	BLACK	SYSTEM GROUND (SHELL / HOUSING)

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CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS DWG & LIST

▲
NON-PROPORTIONAL CRANES

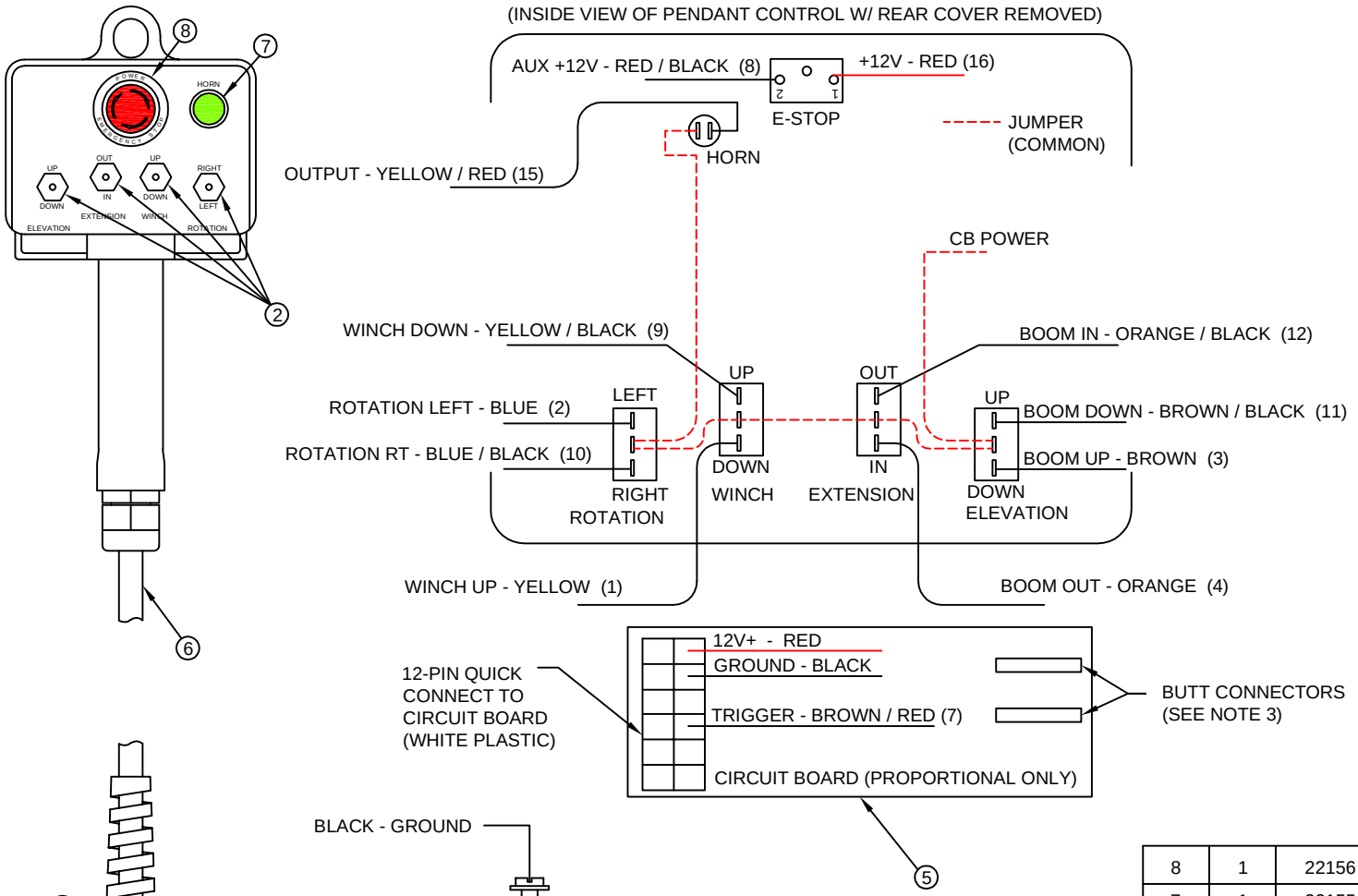
DATE
10-21-26A

SUPERSEDES
07-16-26

SECTION
C400

35310

21988 PENDANT; PROP, NO 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.

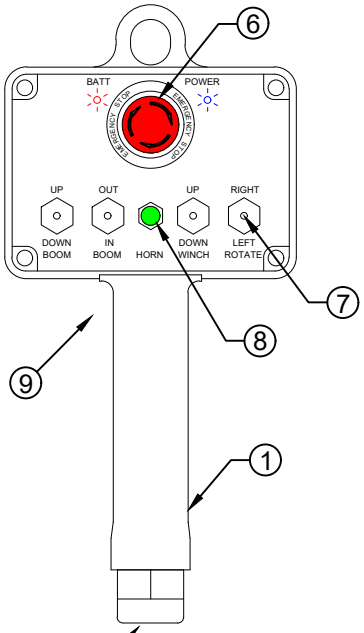
MODEL	STARTING S/N
HT25K(X)	120300
HT30K(X)	115300
HT40KX(X)	100900
HT50KX(X)	110600
HT66KXX	150300

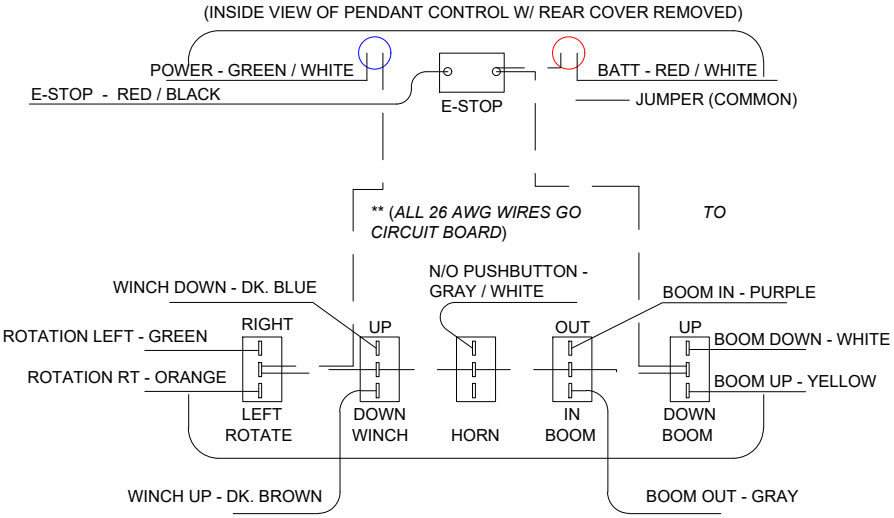
ITEM	QTY	PART NO.	DESCRIPTION
8	1	22156	SWITCH; E-STOP
7	1	22155	SWITCH; PUSHBUTTON, HORN
6	1	22135	KIT; REPLACEMENT CORD ASSY
5	1	22082	CIRCUIT BOARD; PROP VALVE CONTROLLER
4	1	22472	INSERT; MALE, 16 + 1 POLE
3	1	22471	PLUG CASE; 16 + 1 POLE
2	4	22081	SWITCH; SPDT, MOMENTARY
1	-	-	-

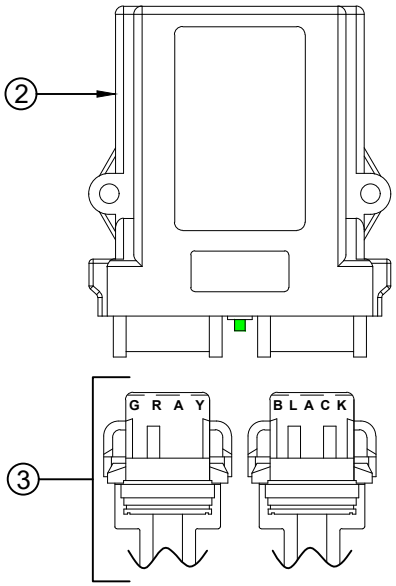
VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

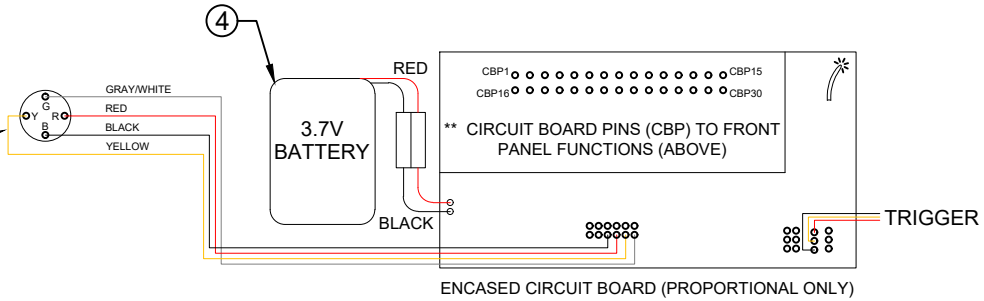
TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	10-03-14	C400
21988 PNDNT; PROP, NO ENG CNT, ESTP/HRN	SUPERSEDES -	23073

22158 RADIO; PROP, NON-CAN, NO ENG CNTRLS, E-STOP/HORN

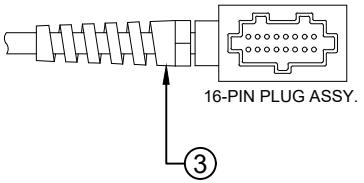




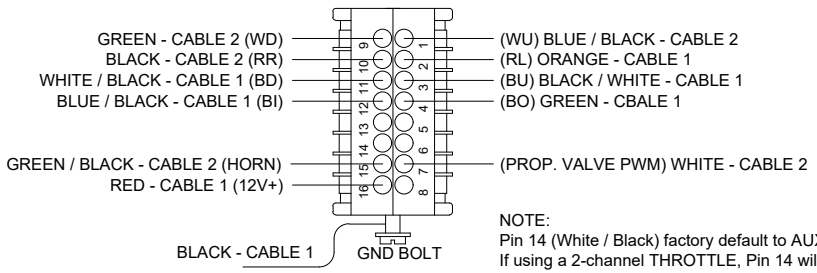




CABLE 1 = GRAY CONNECTOR
CABLE 2 = BLACK CONNECTOR



16-PIN PLUG - BACKSIDE VIEW



NOTE:
Pin 14 (White / Black) factory default to AUX. ON/OFF
If using a 2-channel THROTTLE, Pin 14 will be THROTTLE DOWN.

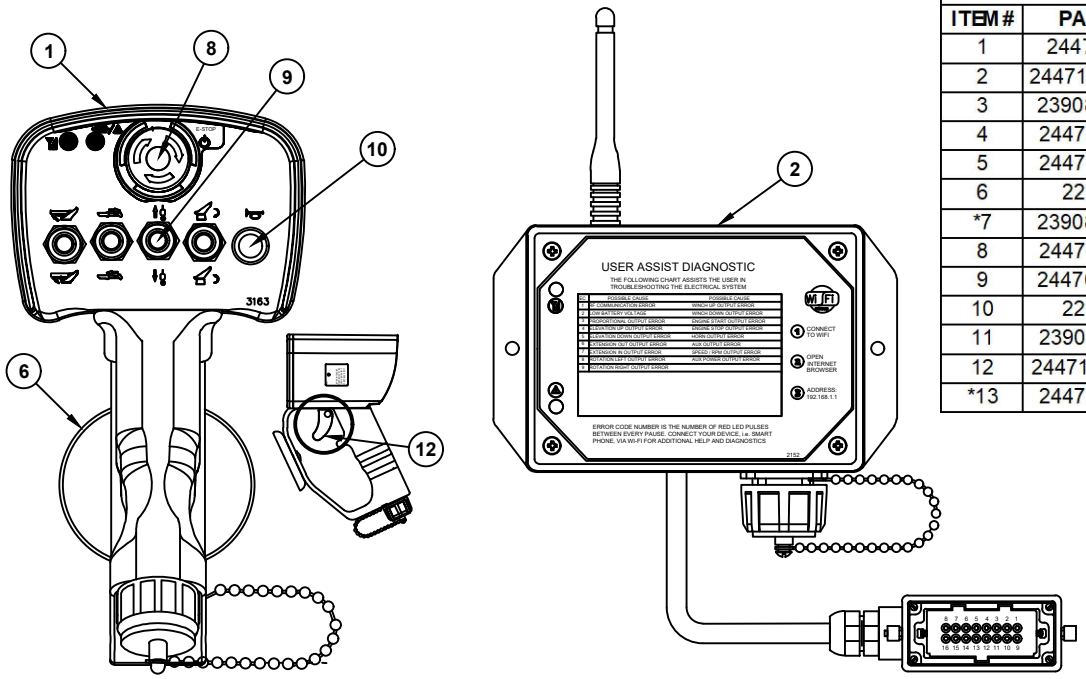
COMPONENTS		
ITEM NO.	PART NO.	DESCRIPTION
1	22158-TX	TRANSMITTER
2	22158-RX	RECEIVER
3	21983-HN	HARNESS
4	22965-BATT	BATTERY
5	22965-CHGR	CHARGER (NOT SHOWN)
6	21983-STP	E-STOP BUTTON
7	21983-TOG	FUNCTION TOGGLE
8	21983-HOR	HORN BUTTON & BOOT
9	23234	PROP TRIGGER (NOT SHOWN)
10	21983-CR	CHARGE RECEPTACLE ▲

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CINCINNATI, OHIO

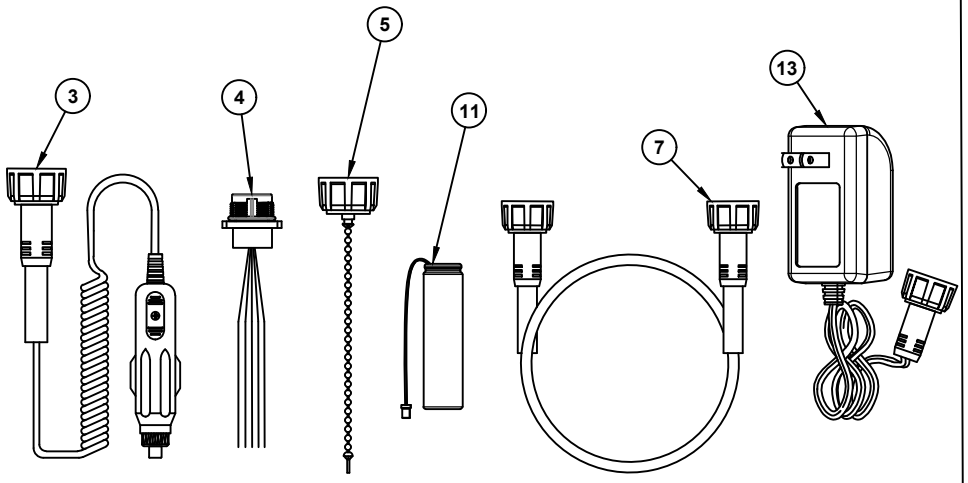
TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	09-22-26C	C400
ET PROPORTIONAL SERIES CRANES	SUPERSEDES 09-04-25B	23786

24471 RADIO; ET PROP, E-STOP, & HORN

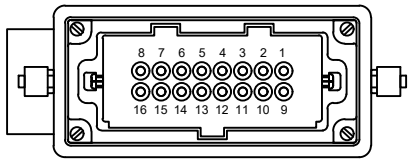


24471 RADIO SYSTEM REPLACEMENT PARTS		
ITEM #	PART#	DESCRIPTION
1	24471-TX	ET & HT NON PROP RADIO TRANSMITTER
2	24471-RX-ET	RADIO RECEIVER; ET PROGRAMMED, NON PROP
3	23908-CHG	CHARGER, TRANSMITTER, 12V CIG / AUX PLUG
4	24470-CCR	CAN CHARGER RECEPTACLE
5	24470-CRC	TRANSMITTER CAN PORT CAP
6	22089	MAGNET ASSEMBLY
*7	23908-CAN	CAN CABLE - 25 FT
8	24470-ESS	EMERGENCY STOP SWITCH
9	24470-TOG	TOGGLE SWITCH (ON)-OFF-(ON), SCREW CONNECT TERMS, W/BOOT & HARDWARE
10	22155	PUSH BUTTON SWITCH, GREEN
11	23908-BAT	BATTERY; TX
12	24471-TRGA	TRIGGER ASSEMBLY
*13	24470-ADP	110 VOLT A/C WALL CHARGER

*OPTIONAL ACCESSORY, NOT INCLUDED



VIEW FROM CONNECTING FACE



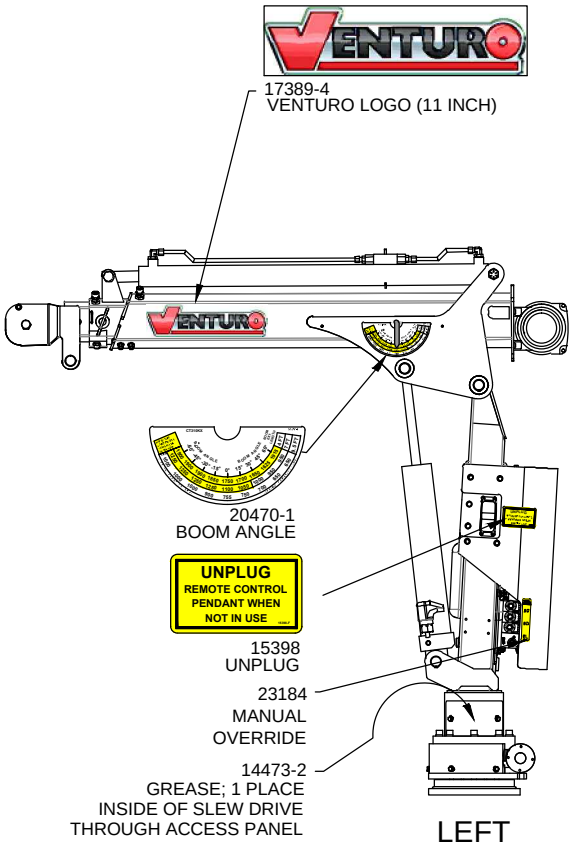
16 PIN CONNECTOR WIRING		
PIN#	WIRE COLOR	FUNCTION
1	YELLOW / BLACK	WINCH UP 12V OUTPUT
2	ORANGE / BLACK	BOOM CCW ROTATION 12V OUTPUT
3	ORANGE	BOOM ELEVATION UP 12V OUTPUT
4	BROWN	BOOM EXTENSION 12V OUTPUT
5	BLACK / RED	ENGINE START 12V OUTPUT
6	BROWN / RED	ENGINE RPM 12V OUTPUT
7	BLUE	PROPORTIONAL OUTPUT
8	RED / BLUE	AUX +12V OUTPUT
9	BROWN / BLACK	WINCH DOWN 12V OUTPUT
10	BLUE / BLACK	BOOM ROTATION RIGHT 12V OUTPUT
11	YELLOW	BOOM ELEVATION LOWER 12V OUTPUT
12	RED / BLACK	BOOM RETRACT 12V OUTPUT
13	BLUE / RED	ENGINE STOP 12V OUTPUT
14	YELLOW / RED	AUX POWER 12V OUTPUT
15	ORANGE / RED	HORN 12V OUTPUT
16	RED	SYSTEM POWER +9-30V
-	BLACK	SYSTEM GROUND (SHELL / HOUSING)

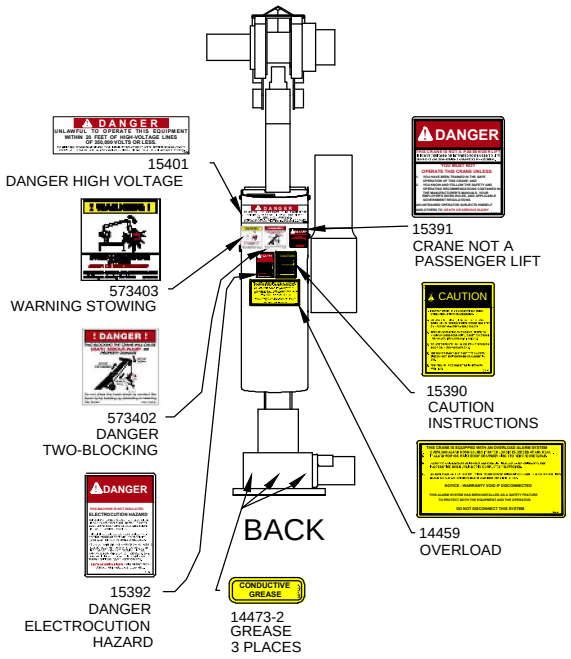
VENTURO®

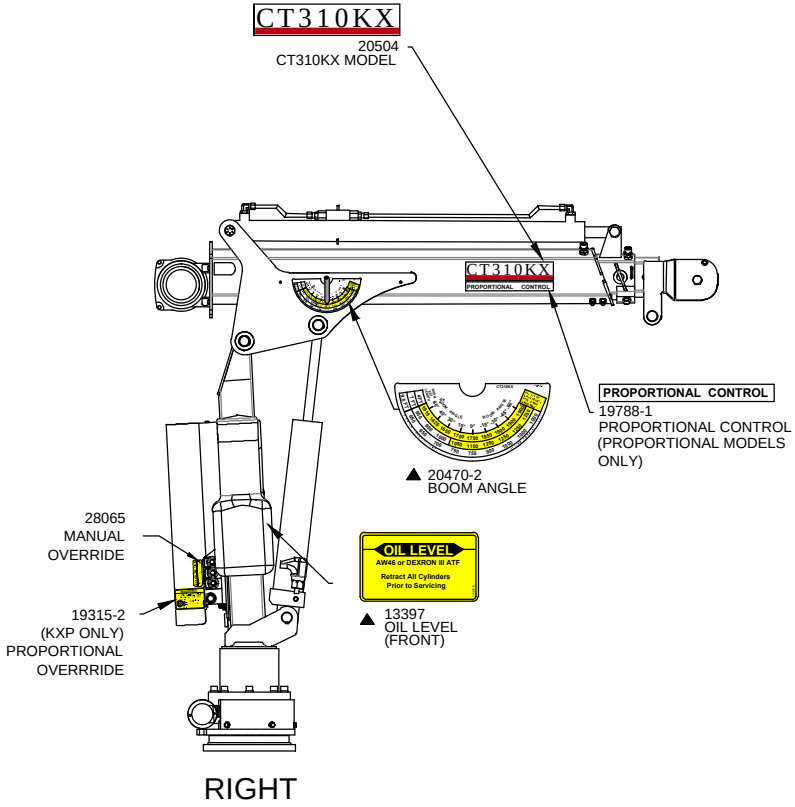
VENCO VENTURO LLC
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	07-16-26	C400
ET PROPORTIONAL SERIES CRANES	SUPERSEDES -	35320

DECAL PLACEMENT, CT310KX(P)







VENTURO® MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE	DATE	SECTION
DECAL LOCATIONS	10-01-20F	C400
CT310KX(P)	SUPERSEDES 04-13-20E	20561

CT310KX FIELD SERVICE LABEL KIT BILL OF MATERIALS	20503 - CT310KX (Non-Prop)	25560 - CT310KXP (Prop)	
DESCRIPTION	**QTY**	**QTY**	**PART #**
DECAL; VENTURO LOGO, SMALL	1	1	17389-4
DECAL; MODEL NAME, CT310KX	1	1	20504
DECAL; BOOM CAPACITY, CT310KX, LEFT	1	1	20470-1
DECAL; BOOM CAPACITY, CT310KX, RIGHT	1	1	20470-2
DECAL; CONDUCTIVE GREASE	4	4	14473-2
DECAL; OVERLOAD ALARM SYSTEM	1	1	14459
DECAL; MANUAL OVERRIDE, RIGHT	1	1	23185
DECAL; MANUAL OVERRIDE, LEFT	1	1	23186
DECAL; PROPORTIONAL VALVE MANUAL OVERRIDE	-	1	19315-2
DECAL; PROPORTIONAL CONTROL	-	1	19788-1
DECAL; OIL LEVEL	1	1	13397
DECAL; DANGER, TWO BLOCKING	1	1	573402
DECAL; WARNING, STOWING & UNFOLDING	1	1	573403
DECAL; UNLAWFUL TO OPERATE, SMALL	1	1	16719
DECAL; HORN RELAY	1	1	16184-1
KIT; ACCIDENT PREVENTION SIGNS	1	1	15397
IDWG; DECAL PLACEMENT, CT310KX	1	1	20561
IDWG; FIELD SERVICE LABEL KIT, CT310KX	1	1	20585
SAFETY MANUAL, VENTURO CRANES	1	1	INST-23233

VENTURO CRANES LIMITED WARRANTY POLICY

Venturo products are built to last…we guarantee them.
As a purchaser of any new Venturo product covered by warranty, you will receive 1 year of the most complete coverage available…and, at no added cost to you.

1-Year Limited Warranty Policy

This limited policy warrants new products of Venturo to be free from defects in material and workmanship for a period of one (1) year from date of original installation. OEM products or accessories purchased by Venturo as part of or offered with our product will carry the OEM manufacturer's respective warranty. Our warranty covers:

- ***Repair or replacement of product***
- ***Labor to repair or replace product***
- ***Freight to return and/or replace product***

We shall not be liable for any contingent liabilities arising out of the improper function of any products. Warranty shall become void if the product is improperly installed, modified, damaged, abused or used for application other than intended use. There is no warranty of merchantability, fitness for a particular purpose, warranty arising from course of dealing or usage of trade, or any other implied or expressed warranty, except as made specifically herein. This warranty supersedes all previous warranties, written or implied.

Warranty Claims

Venco Venturo Industries LLC will make a good faith effort for prompt correction or other adjustment with respect to any product, which proves to be defective after our inspection and within the warranty period. Before any repairs are attempted or before returning any product, your Venturo Distributor is required to obtain a warranty claim number. This number is necessary for any claim to be considered. To obtain a warranty claim number, Venturo requires the model and serial number. Only authorized Venturo Distributors can perform warranty. For the name and address of your local Venturo Distributor call the **Warranty Claim Department - 513-772-8448.**

WARNING - It is the responsibility of the installer to ensure the installation is completed according to the manufacturer's recommendations, ensure the ultimate user understands how to operate product in a safe manner, and understands the need for regular service and maintenance by an authorized Venturo Distributor. No modifications or alterations may be made to any Venturo product without the expressed written consent of Venco Venturo Industries LLC. Installation of any Venturo product must be done by an authorized Venturo Distributor, to the standards of the industry; including maintenance, service and affixing of all instruction, safety and warning decals. Users should be instructed as to the safe operation at time of delivery. Maintenance, service, operation and safety warning decals are available on request from Venco Venturo Industries LLC.

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Revised: January 2015 12-00073_VNT1-D