

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



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

CT310KX(P)

INST-25561 - 9/4/2025 (Rev: NEW5)

7607100A	DESCRIPTION & SPECIFICATIONS
20553	INTRODUCTION & LIMITS OF USE
27410	DIMENSIONS DRAWING
20714	BASE MOUNTING DIMENSIONS
23054	MAXIMUM LOAD CAPACITY CHART
20569	SETUP & TRAVEL PREP
20729	TWO PART LINE CONFIGURATION
26002	MOUNTING PEDESTAL
7607150A	SAFETY - GENERAL
20556	GENERAL SAFETY
20557	ELECTROCUTION HAZARD, CRANE SAFETY NEAR POWER LINES, & MINIMUM CLEARANCE
20558	SAFETY WARNINGS - AN EXPLANATION
20559	ELECTROCUTION HAZARD DECALS
20560	SAFETY SIGNS & DECALS
21353	SAFETY DECALS (PAGE 1 OF 2)
21384	SAFETY DECALS (PAGE 2 OF 2)
21377	DECAL DRAWINGS & LIST (PAGE 1 OF 3)
21378	DECAL DRAWINGS & LIST (PAGE 2 OF 3)
26075	DECAL DRAWINGS & LIST (PAGE 3 OF 3)
7607200A	INSTALLATION INSTRUCTIONS
20563	INSTALLATION PROCEDURE
28263	ADJUSTABLE 360° ROTATION STOP INSTALLATION
15660	BATTERY CABLE INSTALLATION DRAWING
20574	WIRE ROPE REPLACEMENT
20566	FINAL PREPARATION PRIOR TO USE
7607300A	MAINTENANCE AND SERVICE
20571	PREVENTATIVE MAINTENANCE OVERVIEW & PERIODIC INSPECTION SCHEDULE
21982	LUBRICATION SCHEDULE
20573	MINIMUM VOLTAGE TEST
711006	WIRE ROPE SPECIFICATIONS
7607400A	REPLACEMENT PARTS
25552	REPLACEMENT PARTS DRAWING, MECHANISM
25553	REPLACEMENT PARTS LIST, MECHANISM
25554	REPLACEMENT HARDWARE DRAWING, MECHANISM
25556	REPLACEMENT HARDWARE LIST, MECHANISM
25544	REPLACEMENT PARTS DRAWING, BOOM
25545	REPLACEMENT PARTS LIST, BOOM
25546	REPLACEMENT HARDWARE DRAWING, BOOM
25547	REPLACEMENT HARDWARE LIST, BOOM
25558	HYDRAULIC SYSTEM PARTS DRAWING
25559	HYDRAULIC SYSTEM PARTS LIST
20575	HYDRAULIC SYSTEM SCHEMATIC
26518	WIRING DIAGRAM, NON-PROPORTIONAL
26517	WIRING DIAGRAM, PROPORTIONAL
32021	21515-1 ELECTRICAL COMPONENT PANEL ASSEMBLY
20837	WINCH REPLACEMENT PARTS LIST
27041	SLEW DRIVE REPLACEMENT PARTS
23075	21990 PENDANT; REPLACEMENT PARTS DRAWING / LIST (4 FUNCTION)
23073	REPLACEMENT PARTS DWG & LIST; 21988 PENDANT
23786	REPLACEMENT PARTS DRAWING; 22158 RADIO
20561	DECAL PLACEMENT DRAWING
20585	FIELD SERVICE LABEL KIT LIST

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



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

INTRODUCTION & LIMITS

CT310KX

DATE

02-06-18C

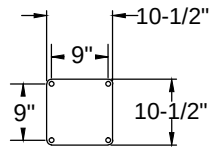
SUPERSEDES

10-24-13B

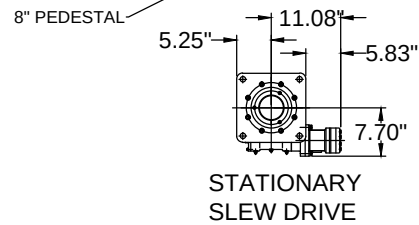
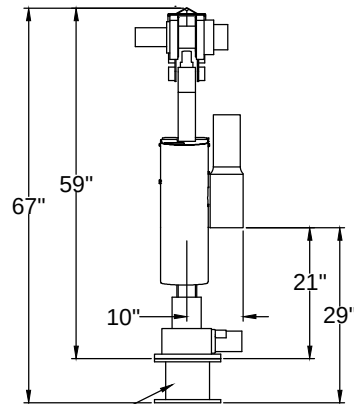
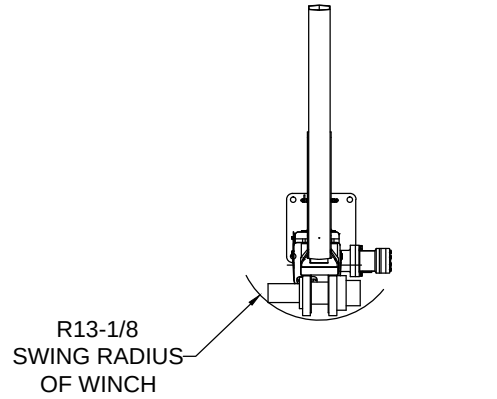
SECTION

C100

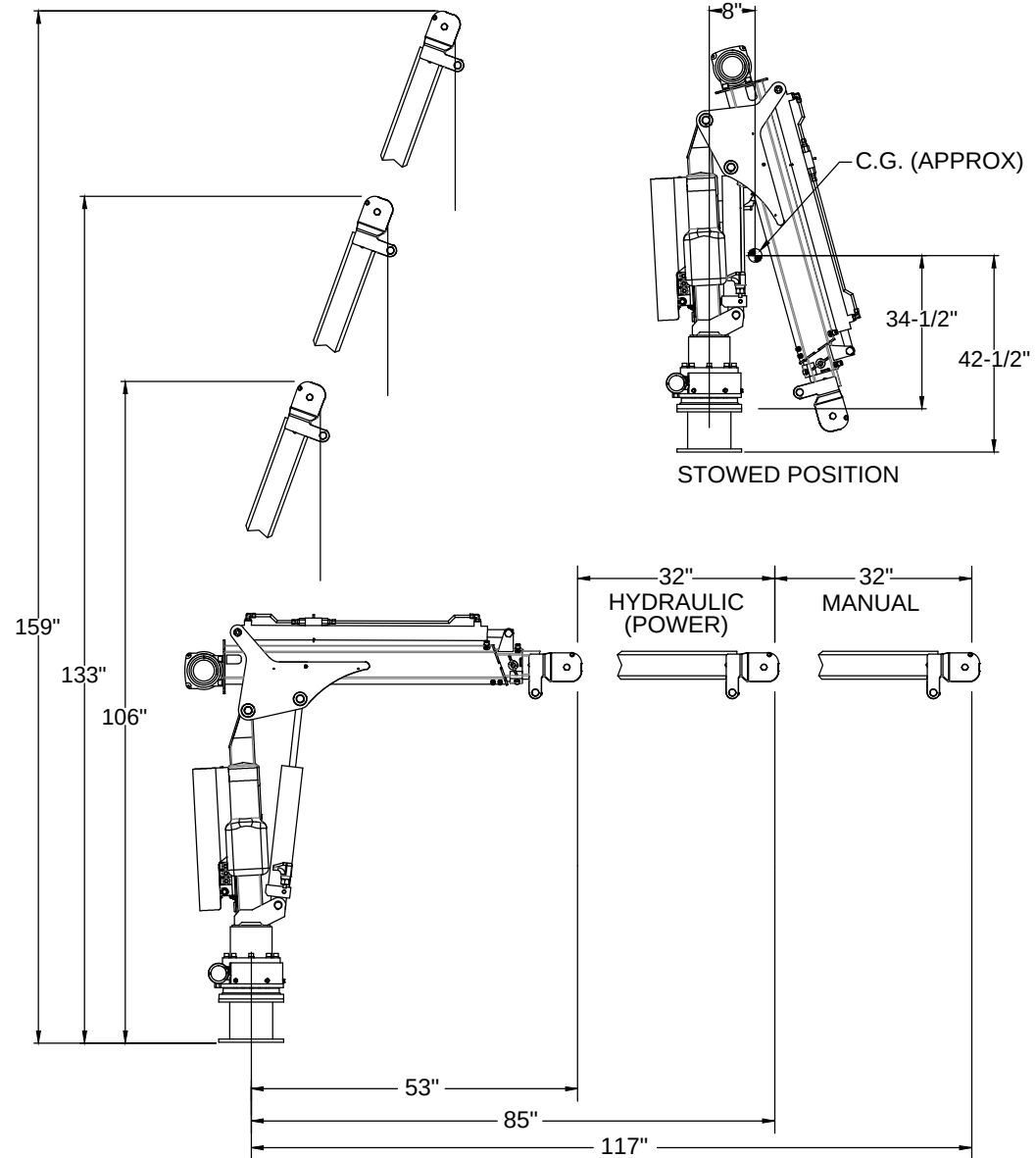
20553



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



STATIONARY
SLEW DRIVE



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

DIMENSION DRAWING

CT310KX(P) W/ ADJ. LIMITED ROTATION

DATE

03-30-20B

SUPERSEDES

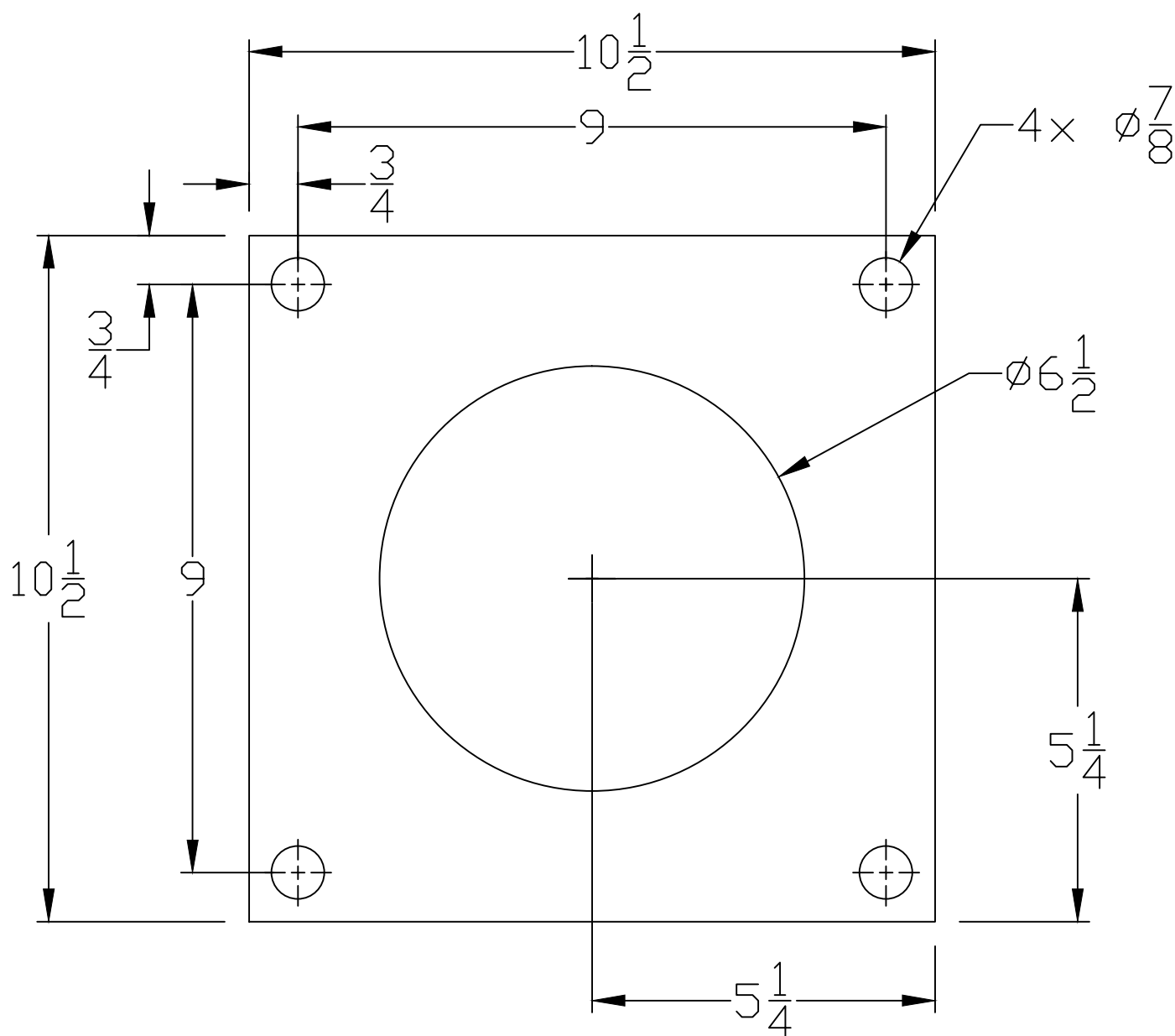
12-4-14A

SECTION

C200

27410

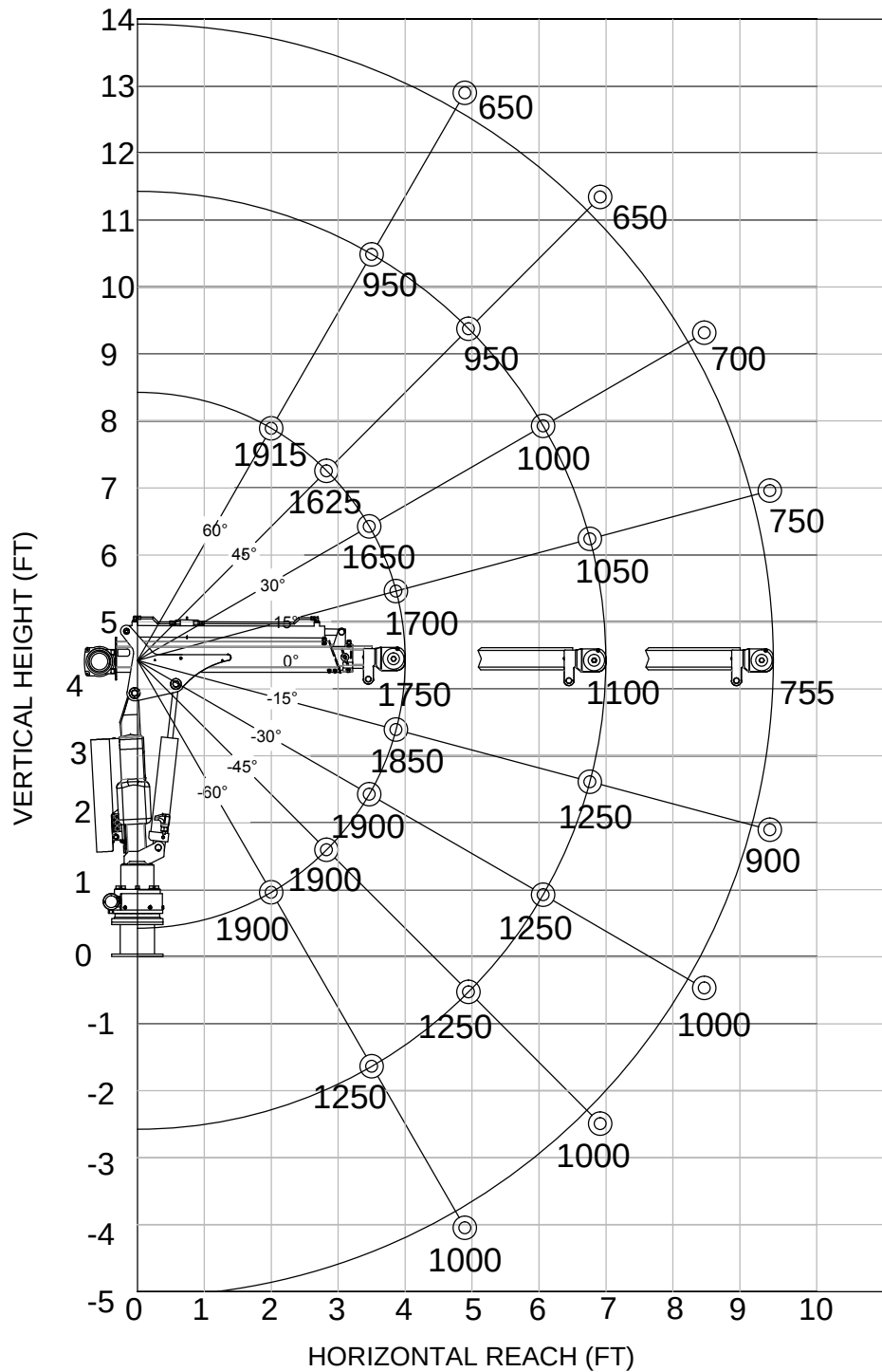
REFERENCE INSTALLATION DWG 20563 FOR
MOUNTING BOLT SIZE AND TORQUE SPECIFICATIONS.



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

MAXIMUM LOAD CAPACITY

DATE

03-30-20B

SECTION

C100

VENTURO CT310KX(P)

SUPERSEDES

05-03-16A

23054

CT310KX(P) DESCRIPTION & SPECIFICATIONS

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.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

SETUP & TRAVEL PREP

CT310KX(P)

DATE

03-24-20D

SUPERSEDES

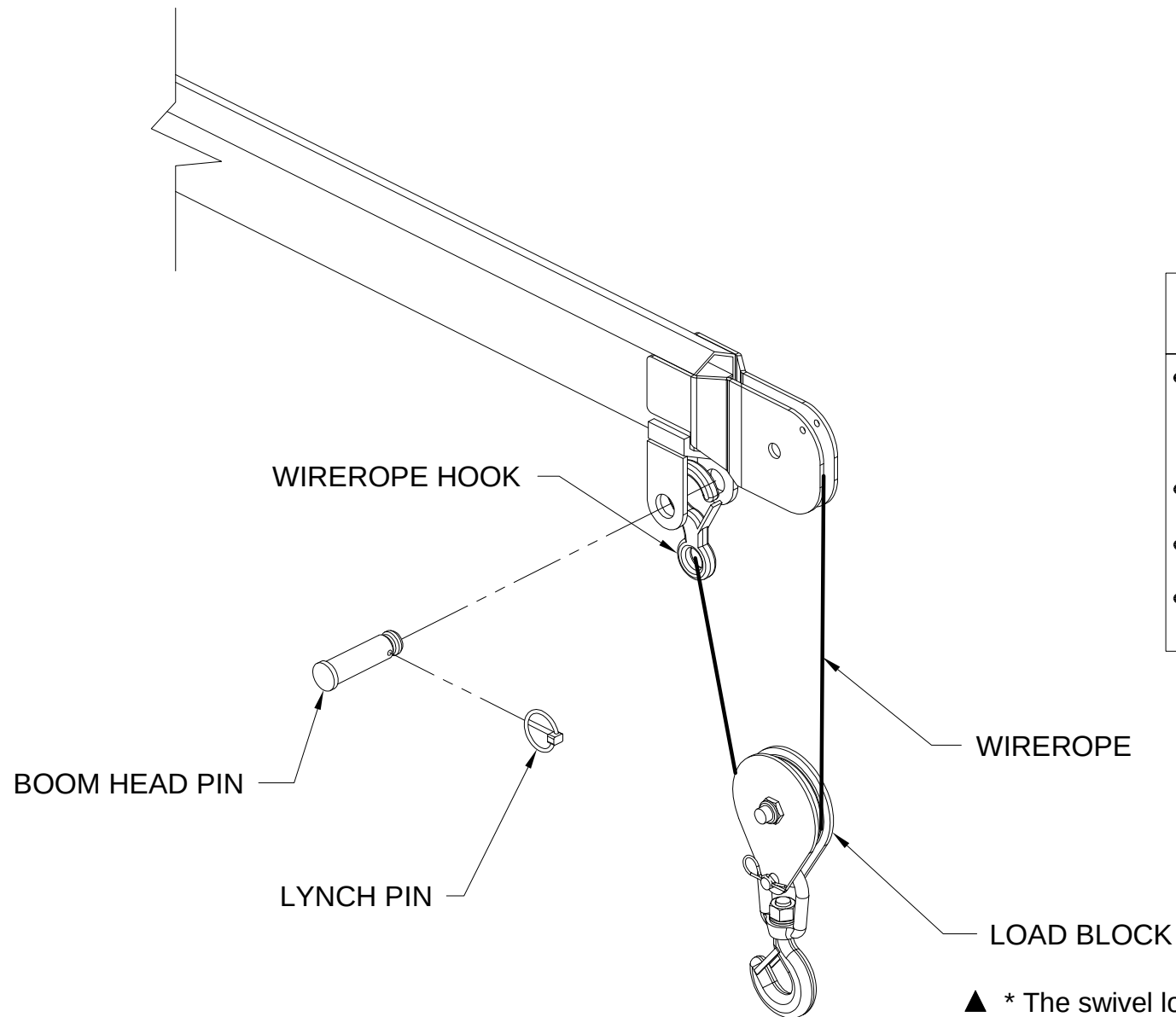
03-04-14C

SECTION

C100

20569

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.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

TWO-PART LINE CONFIGURATION

CT310KX

DATE

10-24-13B

SUPERSEDES

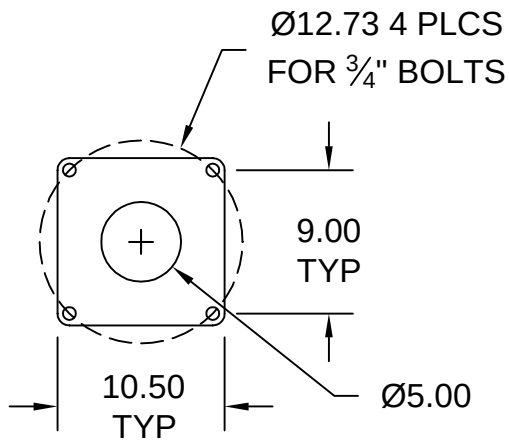
08-12-13A

SECTION

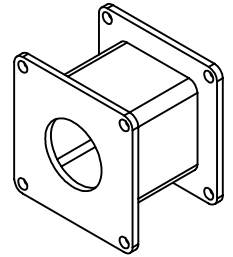
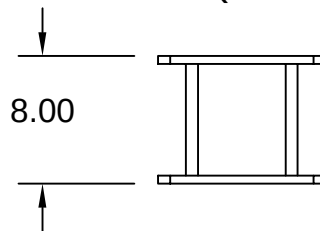
C100

20729

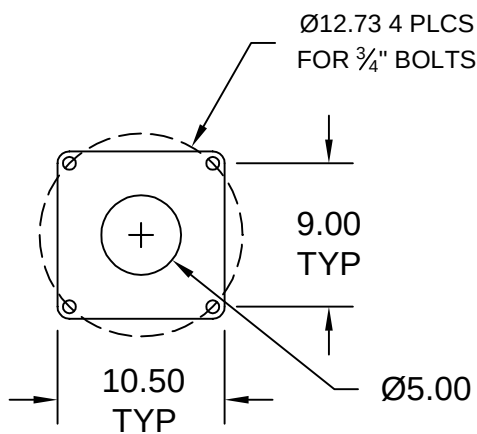
20480-XX MOUNTING PEDESTAL



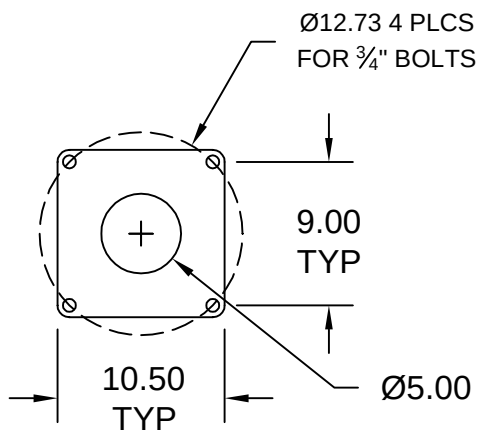
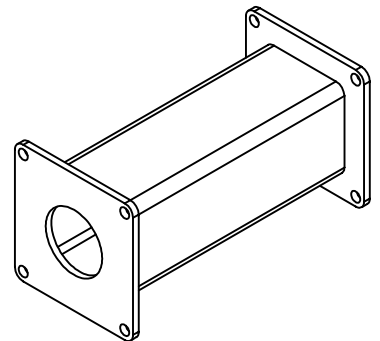
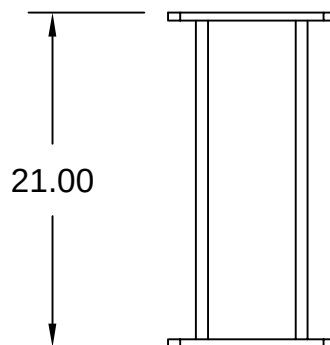
20480 (NO DASH)



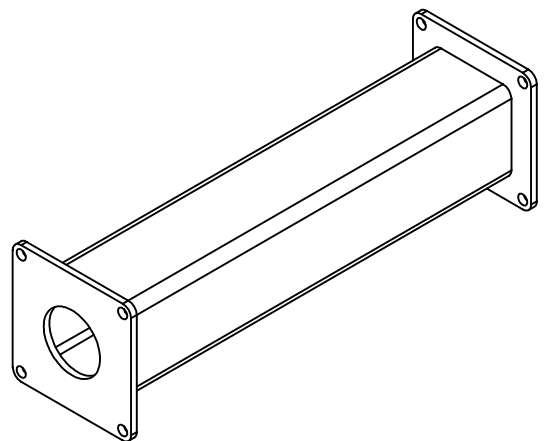
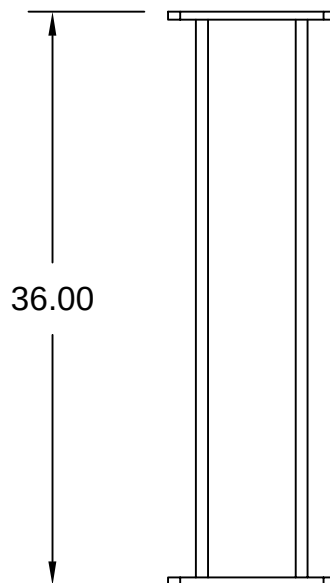
NOTE: INCLUDED WITH CT310KX CRANES



20480-21



20480-36



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
MOUNTING PEDESTAL OPTIONS

DATE
06-16-21A

SECTION
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 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



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
GENERAL SAFETY
CT310KX

DATE
08-12-13A
SUPERSEDES
11-04-02

SECTION
C150
20556

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!

NOTES

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	†

* 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.

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	†



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
HZRDS & CLEARANCES
CT310KX

DATE
08-12-13A
SUPERSEDES
11-04-02

SECTION
C150
20557

CT310KX SAFETY - GENERAL

SAFETY WARNINGS

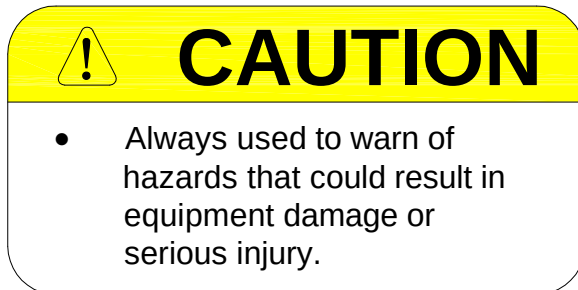
Safety warnings have been included in this manual to alert you to the need for care in specific procedures. These warnings include the use of three [3] terms; DANGER, WARNING, and CAUTION. Their uses are defined as follows:



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



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



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

NOTES



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

WARNING EXPLANATION

CT310KX

DATE

08-12-13A

SUPERSEDES

11-04-02

SECTION

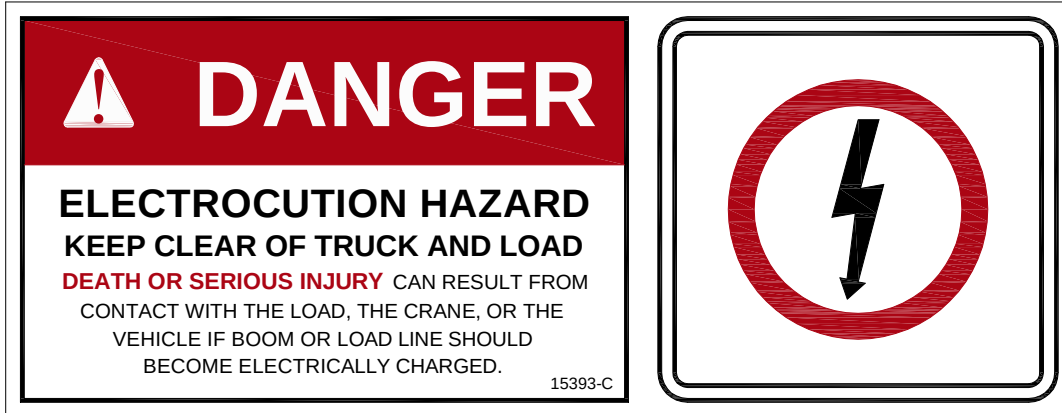
C150

20558

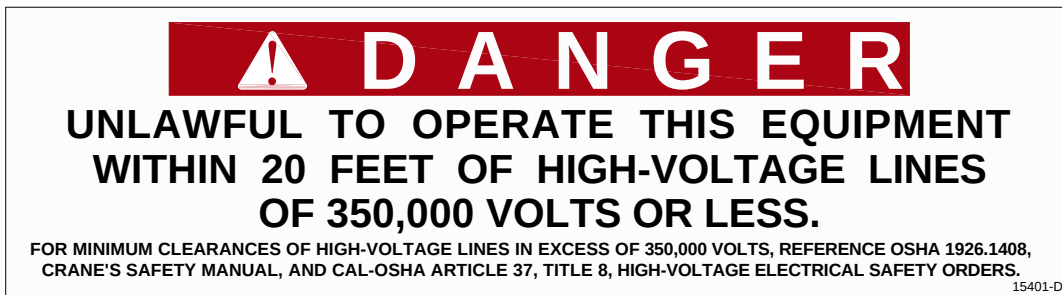
CT310KX SAFETY - GENERAL

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



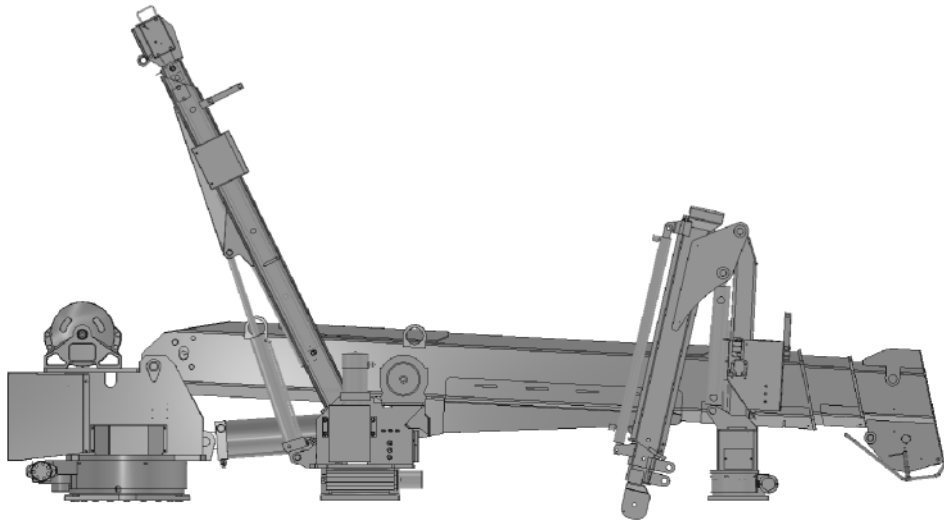
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
ELECT. HAZARD SIGNS
CT310KX

DATE
10-24-13B
SUPERSEDES
08-12-13A

SECTION
C150
20559

CT310KX SAFETY - GENERAL



SEE THE NEXT
PAGE FOR
ADDITIONAL
INFORMATION!

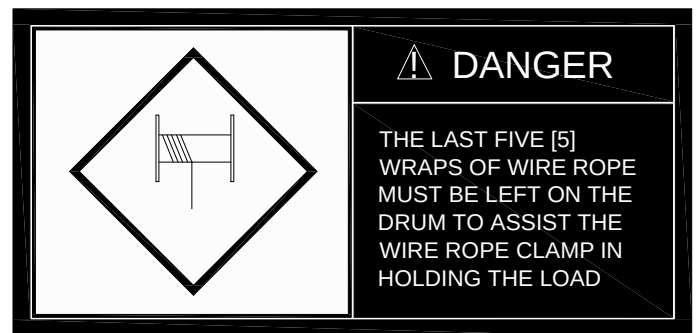
SAFETY SIGNS & DECALS

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.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
SAFETY SIGNS & DECALS
CT310KX

DATE
10-24-13B
SUPERSEDES
08-12-13A

SECTION
C150
20560

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



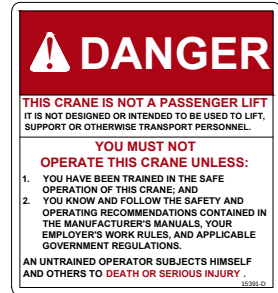
DECAL #: 15391

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



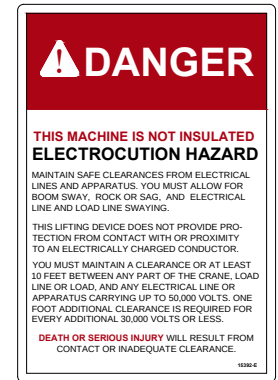
DECAL #: 15392

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



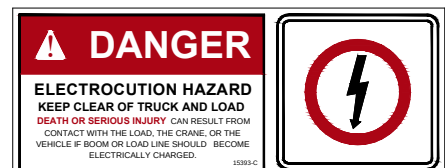
DECAL #: 15393

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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

SAFETY DECALS

VENTURO CRANES

DATE

04-29-16E

SUPERSEDES

10-24-13D

SECTION

C150

21353

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.



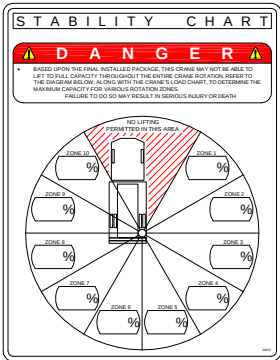
PART NO.: 20927

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.



▲



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
SAFETY DECALS

CRANES

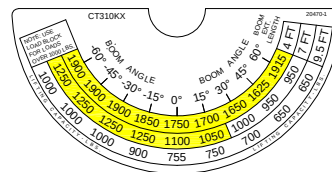
DATE
06-06-14C

SUPERSEDES
04-02-13B

SECTION
C150

21384

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.

UNLAWFUL TO OPERATE THIS EQUIPMENT
 WITHIN 10 FEET OF HIGH - VOLTAGE LINES



MANUFACTURING, INC.
 CINCINNATI, OHIO

TITLE
 DECAL DRAWING & LIST
 VENTURO CT310KX

DATE
 10-24-13B
 SUPERSEDES
 08-12-13A

SECTION
 C150
 21377

PART NO.: 20504

DECAL: MODEL NUMBER

FUNCTION: To show the model of the crane.

QUANTITY: 1

PLACEMENT: Left side of boom..



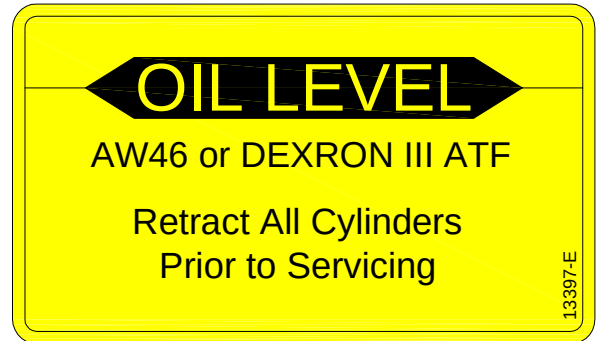
PART NO.: 13397

DECAL: OIL LEVEL

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

QUANTITY: 1

PLACEMENT: Right side of power unit.



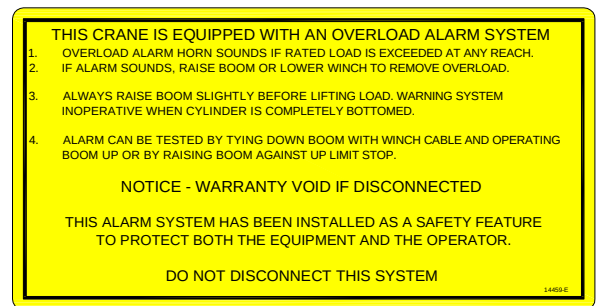
PART NO.: 14459

DECAL: OVERLOAD ALARM SYSTEM

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

QUANTITY: 1

PLACEMENT: Rear cover.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
DECAL DRAWING & LIST

CT310KX

DATE
10-24-13D

SUPERSEDES
08-12-13C

SECTION
C150

21378

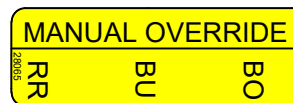
PART NO.: 19788-1
 DECAL: PROPORTIONAL Decal (ET12KXP)
 FUNCTION: To show the crane has proportional feature.
 QUANTITY: 2
 PLACEMENT: One on each side of boom.

PROPORTIONAL CONTROL

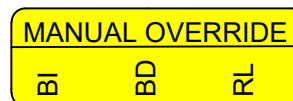
PART NO.: 19315-2
 DECAL: MANUAL OVERRIDE (PROPORTIONAL)
 FUNCTION: To show operator how to override proportional valve.
 QUANTITY: 1
 PLACEMENT: Right side of Mechanism, near valve stem



▲ 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.



MANUFACTURING, INC.
 CINCINNATI, OHIO

TITLE
 DECAL DRAWING & LIST
 CT310KXP

DATE
 04-21-25A
 SUPERSEDES
 3-24-20

SECTION
 C150

26075

SECTION 200

INSTALLATION



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

CT310KX INSTALLATION INSTRUCTIONS

INSTALLATION PROCEDURE

Your new crane is shipped in a ready-to-install condition. Follow the instructions in this section to 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 3/4" (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 torque 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 crane 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



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

INSTALL INSTRUCTIONS

CT310KX

DATE

4-25-14J

SUPERSEDES

2-18-14G

SECTION

C200

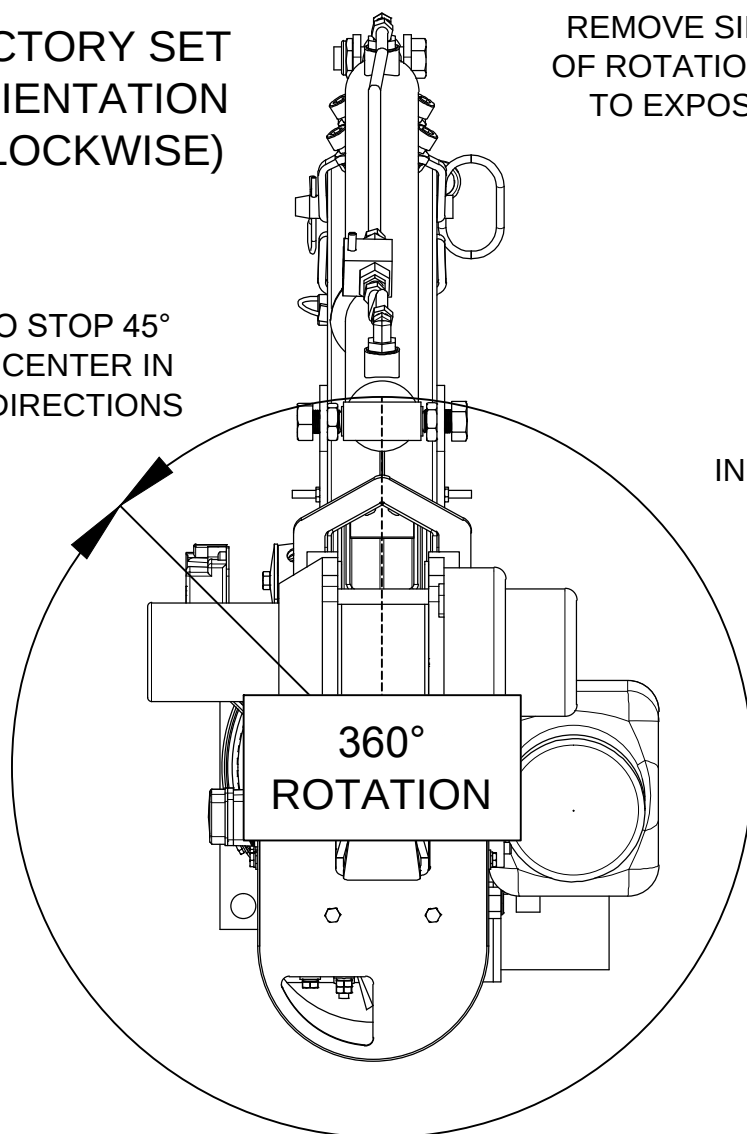
20563

ADJUSTABLE 360° ROTATION STOPS INSTALLATION

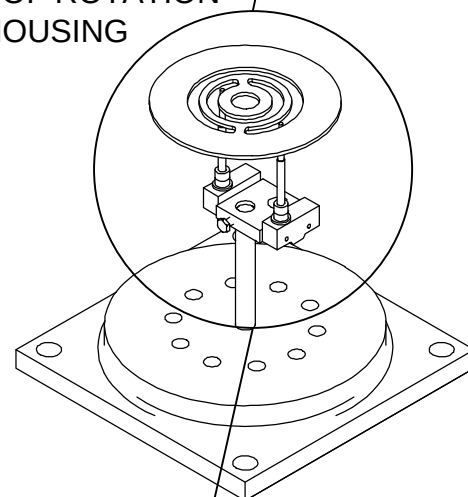
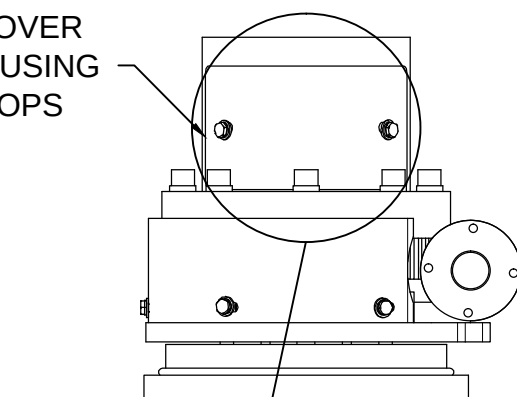
FACTORY SET
ORIENTATION
(CLOCKWISE)

REMOVE SIDE COVER
OF ROTATION HOUSING
TO EXPOSE STOPS

SET TO STOP 45°
FROM CENTER IN
BOTH DIRECTIONS

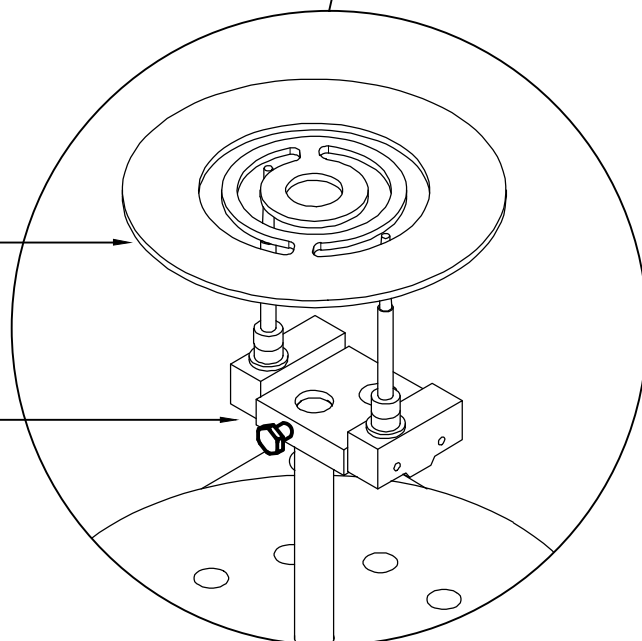


INSIDE OF ROTATION
HOUSING



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
ADJUSTABLE ROTATION
CT310KX(P), GEN 'C'

DATE
04-06-21
SUPERSEDES
-

SECTION
C200

28263

RECOMMENDED CIRCUIT BREAKER TABLE

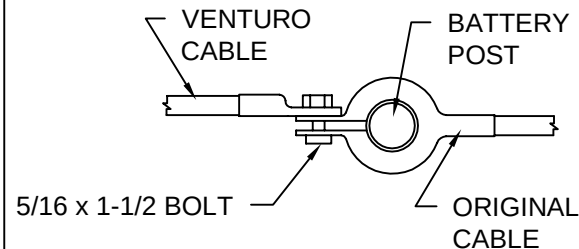
CRANE	DESCRIPTION	PART NO.
CT310KX	250 AMP, MAN RESET	22946-250
DT7	250 AMP, MAN RESET	22946-250
CE-1500-FB	150 AMP, MAN RESET	22946-150
CE6K	150 AMP, MAN RESET	22946-150
CT200X	250 AMP, MAN RESET	22946-250
ET6K	250 AMP, MAN RESET	22946-250
ET8/12K(X)	250 AMP, MAN RESET	22946-250
ET12KXP	300 AMP, MAN 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

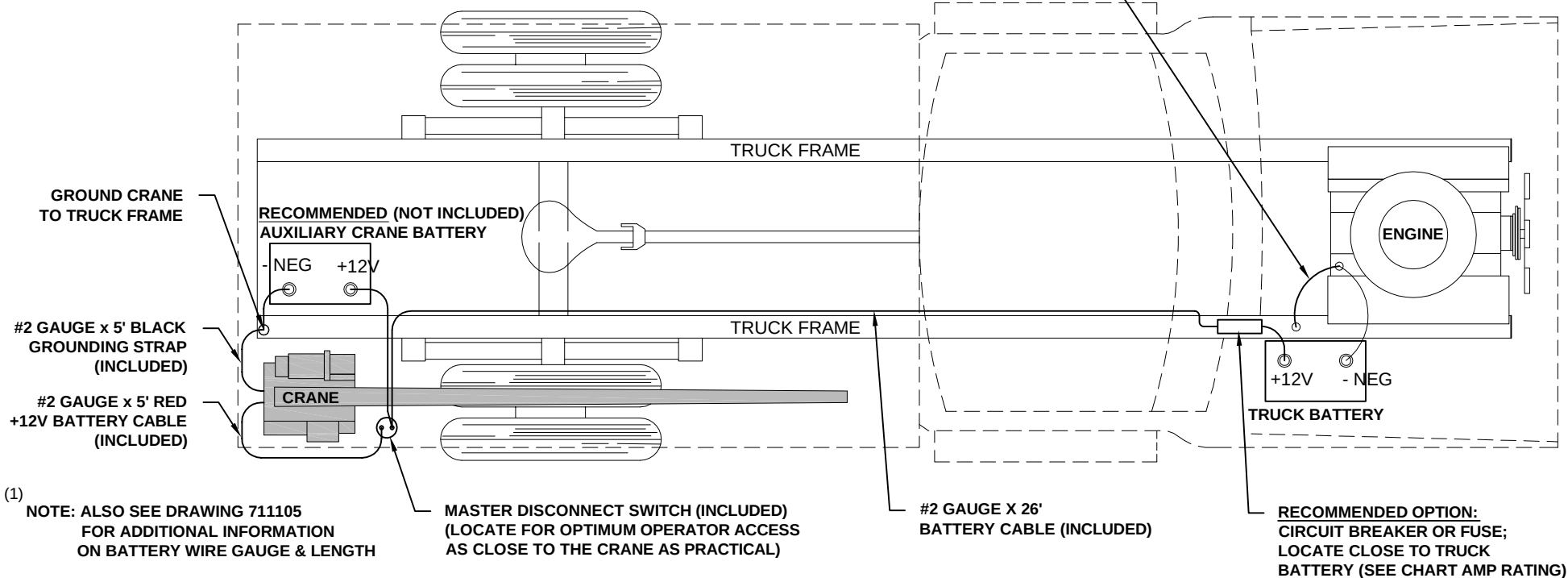
- 12 VOLT VEHICLE BATTERY REQUIREMENTS
 - 625 COLD CRANKING AMPS (AT 0° F)
 - 160 MINUTES RESERVE CAPACITY
 - 102 PLATES, 105 AMP-HR
- (1) • 12 VOLT AUXILIARY BATTERY REQUIREMENTS
 - SEE MINIMUM WIRE GAUGE AND BATTERY SIZE

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

RECOMMENDED BATTERY TERMINAL ATTACHMENT



INSTALL #2 GAUGE GROUND STRAP FROM ENGINE TO TRUCK FRAME (REQUIRED IF NEGATIVE FROM BATTERY IS CONNECTED TO ENGINE)



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

BATTERY CABLE & COMPONENT INSTALL

ET CRANES

DATE

09-03-20M

SUPERSEDES

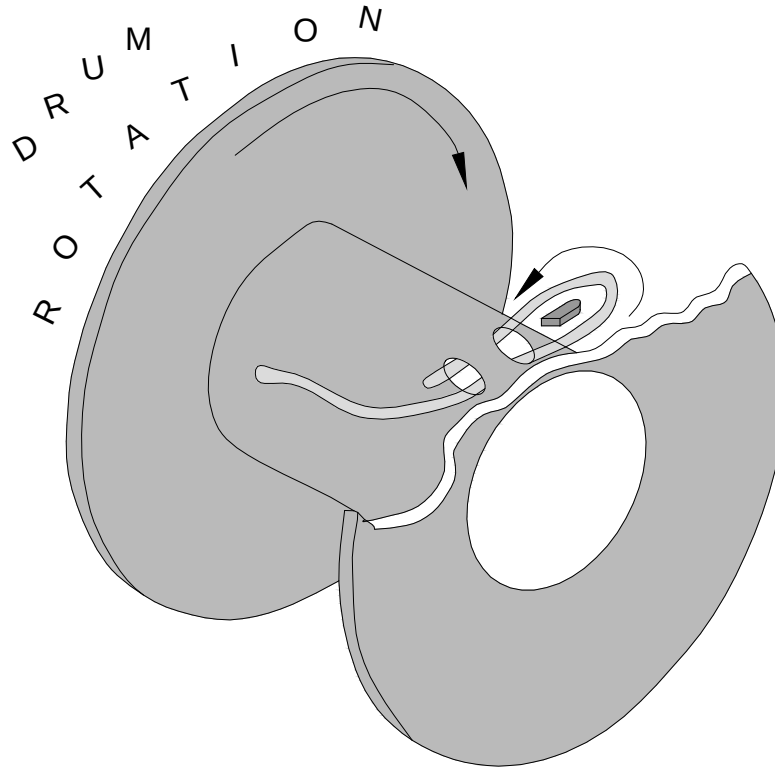
07-30-18L

SECTION

C200

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.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
WIRE ROPE REPLCMNT

CT310KX

DATE
03-05-19B

SUPERSEDES
08-12-13A

SECTION
C200

20574

CT310KX INSTALLATION INSTRUCTIONS

FINAL PREPARATION FOR USE

NOTES

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.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
FINAL PREP FOR USE
CT310KX

DATE
08-12-13A
SUPERSEDES
11-04-02

SECTION
C200
20566

SECTION 300

MAINTENANCE

&

SERVICE



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

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

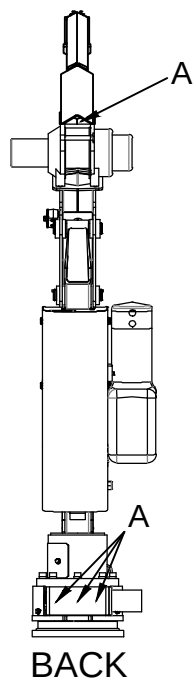


MANUFACTURING, INC.
CINCINNATI, OHIO

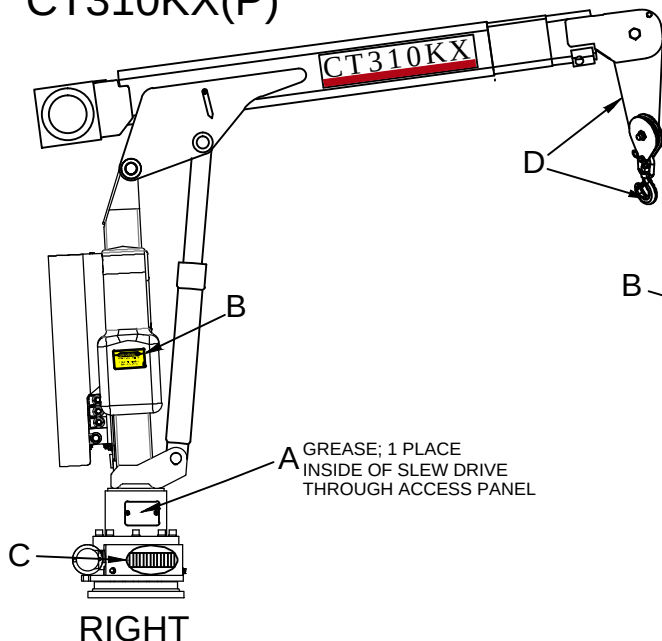
TITLE
PRVNTV MAINTENANCE
CT310KX

DATE
08-12-13A
SUPERSEDES
11-04-02

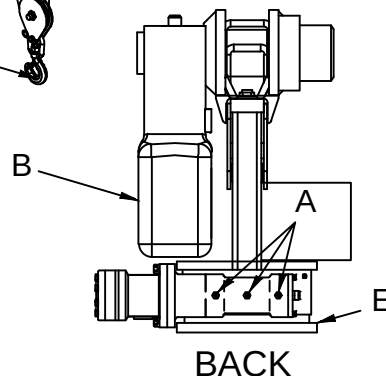
SECTION
C300
20571



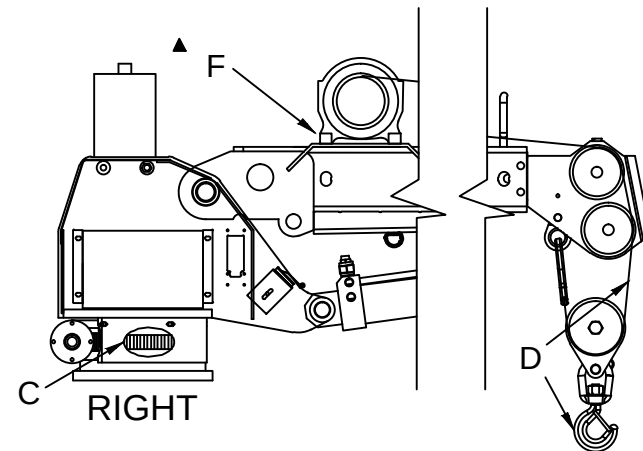
CT310KX(P)



GREASE; 1 PLACE
INSIDE OF SLEW DRIVE
THROUGH ACCESS PANEL



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 ⚠️ 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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

LUBRICATION & MAINTENACE CHART

ET6K & CT310KX(P)

DATE

03-06-23E

SUPERSEDES

01-30-23D

SECTION

C300

21982

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.

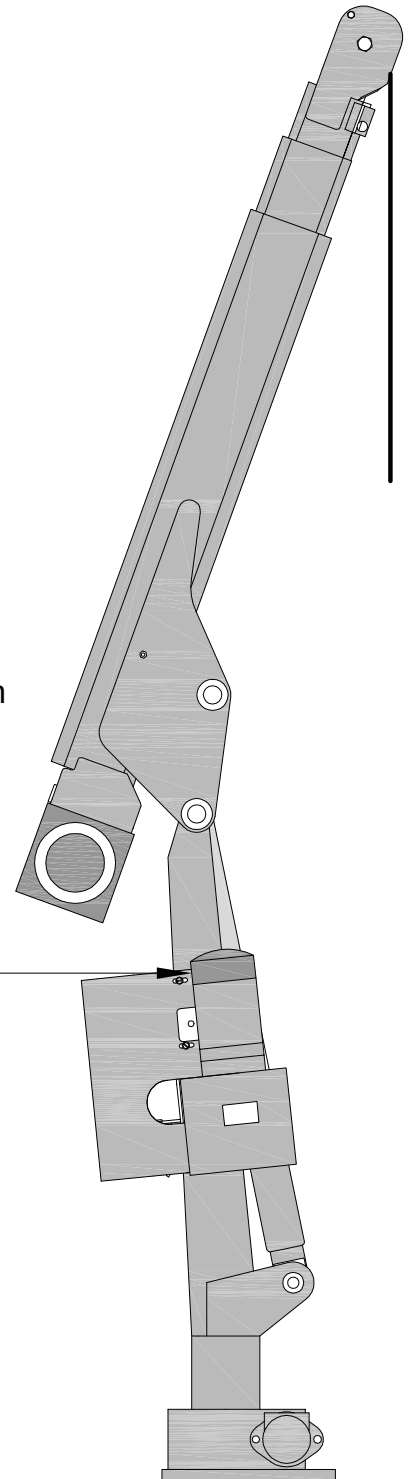


DANGER

- 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.

Pull back rubber boot and put positive lead of multi-meter (voltmeter) here.



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
VOLTAGE TEST

CT310KX

DATE
10-24-13B

SUPERSEDES
08-12-13A

SECTION
C300

20573



WIRE ROPE SPECIFICATIONS

SELECTION

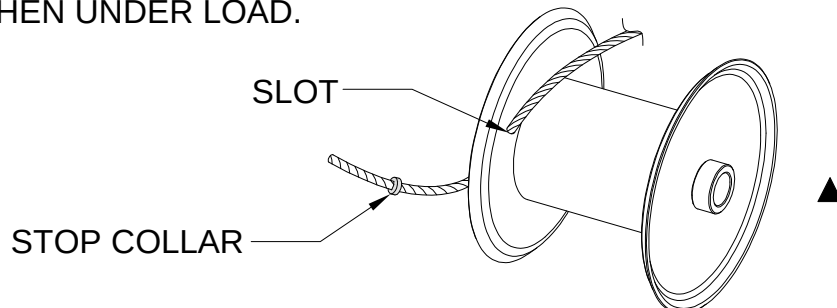
The chart below shows the maximum working load and breaking strength of 7 x 19 Galvanized AIRCRAFT Grade Wire Rope in various diameters. The breaking strength is 3 ½ times the maximum working load. Do not use wire rope with a maximum working load rating less than the single line capacity of the crane.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



MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
WIRE ROPE SPECS
WINCH & CRANE

DATE
12-05-13K
SUPERSEDES
11-10-08J

SECTION
WC 200
711006

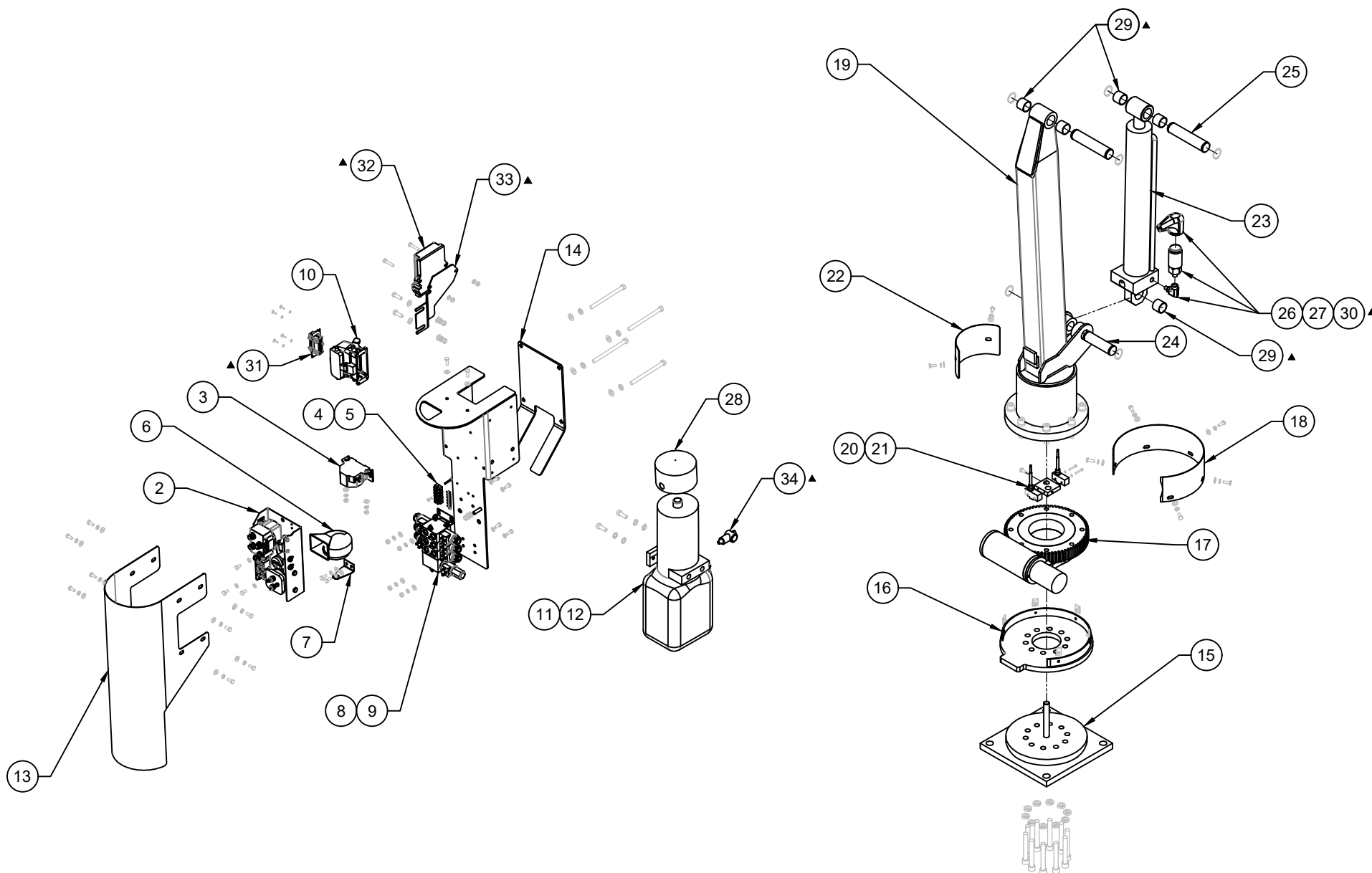
SECTION 400

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
CT310KX(P)

DATE
04-24-25B
SUPERSEDES
02-16-22A

SECTION
C400
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	1	22158-RX	RECEIVER; ET PROP CRANES, BASE ENG
33	1	1	20840	BRACKET; RADIO RECEIVER
34	1	1	18542	BOOT; MOTOR TERMINAL

REFERENCE 25552 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE

REPL PARTS LIST, MECH

CT310KX(P)

DATE

07-03-25D

SUPERSEDES

04-23-25C

SECTION

C400

25553

This diagram illustrates the exploded view of a robotic arm assembly. The components are identified by numbered callouts:

- 1, 3, 5:** Screws used for mounting the base plate.
- 2, 3, 5:** Screws used for the upper arm joint.
- 4:** A large L-shaped mounting bracket.
- 6, 3:** Screws for the upper arm joint.
- 7, 8:** A curved protective guard.
- 9, 8:** A small cylindrical component.
- 10, 11:** A vertical support structure.
- 12, 13, 14:** A horizontal support structure.
- 15, 17:** A small rectangular component.
- 16, 18:** A small rectangular component.
- 19, 17, 32:** A small rectangular component.
- 20, 21:** A small rectangular component.
- 22:** A small rectangular component.
- 23:** A small rectangular component.
- 24, 25:** A small rectangular component.
- 26, 27:** A small rectangular component.
- 28:** A small rectangular component.
- 29:** A small rectangular component.
- 30, 31:** A small rectangular component.



VENTURO®

DATE	03-04-25B
SUPERSEDES	07-23-20A

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	!SHPMS#0832050S	SLOT HEAD 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

REFERENCE 25554 REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPL HW LIST, MECH

CT310KX(P)

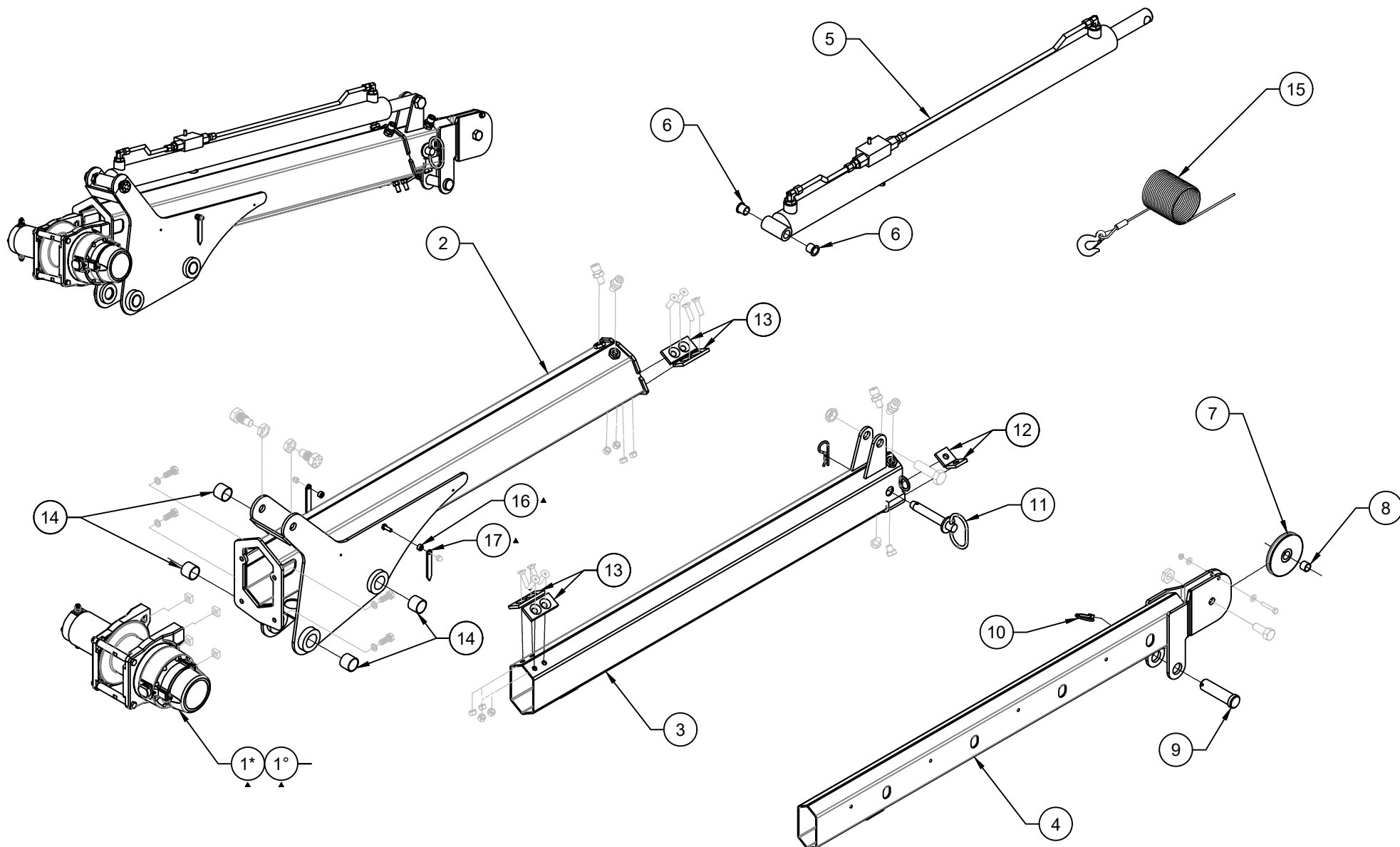
DATE
03-05-25B

SUPERSEDES
07-23-20A

SECTION
C400

25556

CT310KX(P) REPLACEMENT PARTS DRAWING; 27221 BOOM



ITEM# 1° WARN WINCH NOT SHOWN

REFERENCE 25545 FOR REPLACEMENT PARTS LIST



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE	REPLACEMENT PARTS DWG, 27221 BOOM
CT310KX(P)	

DATE	02-18-25C	SECTION	C400
SUPERSEDES	02-17-22B		

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; TERTIARY BOOM
5	1	27238	EXTENSION CYLINDER ASSEMBLY
6	2	27370	BUSHING; EXTENSION CYLINDER BASE END
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

REFERENCE 25544 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
RPLCMNT PART LIST, BOOM

CT310KX(P)

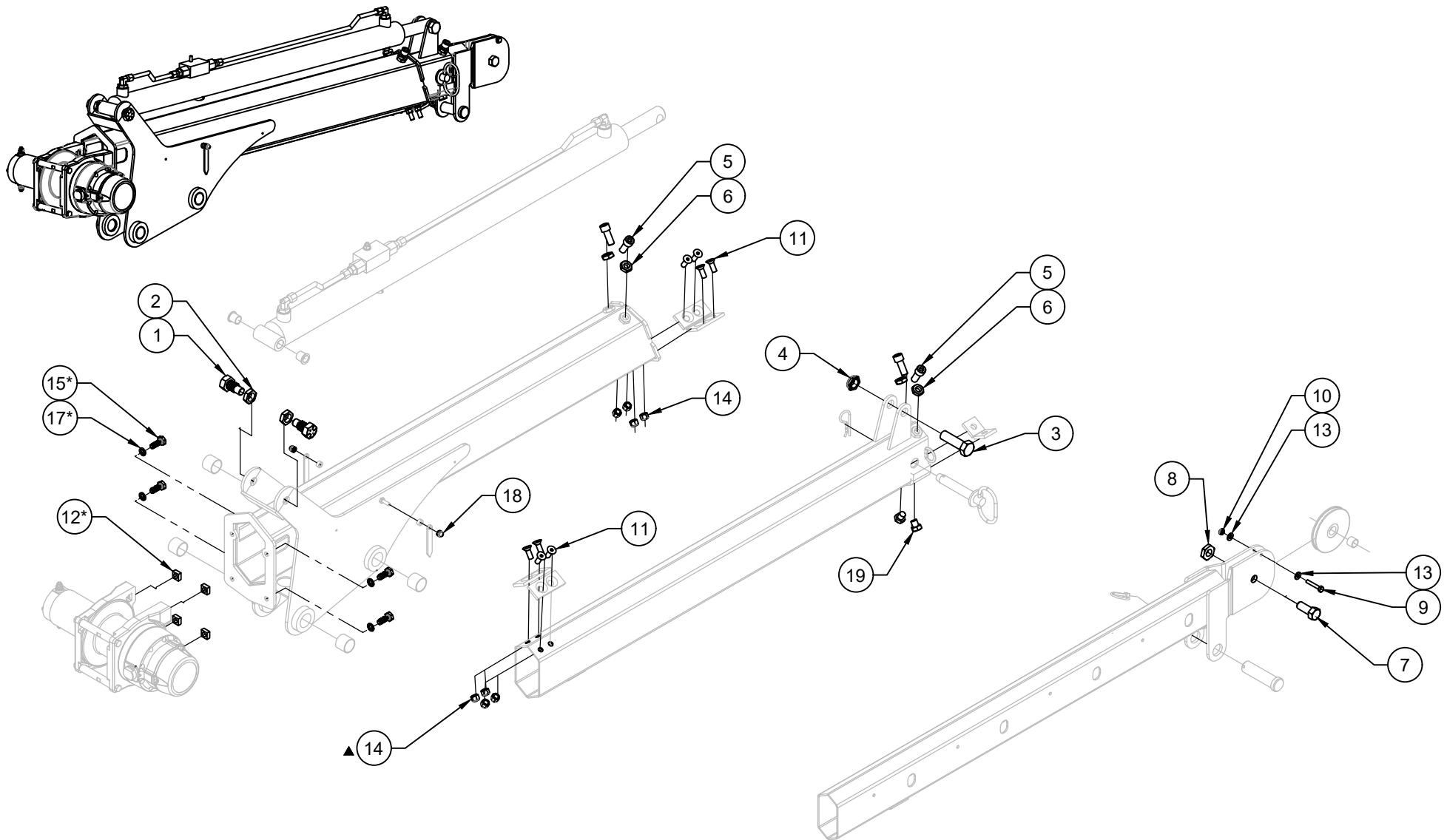
DATE
02-18-25D

SUPERSEDES
12-31-24C

SECTION
C400

25545

CT310KX(P) REPLACEMENT HARDWARE DRAWING; 27221 BOOM



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPLACEMENT H/W DWG, 27221 BOOM
CT310KX(P)

DATE
04-25-25A
SUPERSEDES
03-31-20

SECTION
C400
25546

REPLACEMENT HARDWARE LIST, 27221 BOOM

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	2	17487	PIVOT BOLT, EXT CYLINDER
2	2	!JNUT-07516	3/4-16 FIN HEX JAM NUT; ZINC
3	1	17059-2	SHEAVE AXLE
4	1	!JNUT-07510N	JAM NUT; 3/4-10, GR. 5, ZINC, THIN NYL-NSRT
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	HHCS; 5/8-11 X 1-1/2, GR. 5, ZINC
8	1	!JNUT-06311N	JAM NUT; 5/8-11, GR. 5, ZINC, THIN NYL-NSRT
9	1	!HHCS02520150S	HEX HEAD CAP SCREW 1/4-20 X 1.50LG, STAINLESS
10	1	!JNUT-02520NS	JAM NUT, NYLON INSERT, 1/4-20, STAINLESS
11	4	!FHCS03816100	FLAT HEAD CAP SCREW 3/8-16 X 1.00 LONG PLATED
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" S/S
▲ 14	4	!LNUT-03816	LOCK NUT; 3/8-16, GR. 5, ZINC, NYL-NSRT
15*	4	!HHCSM10150030-8.8	HEAD CAP SCREW; M10-1.50 X 30MM, GR. 8.8, ZINC
15°	4	!HHCS03816125	HEX HEAD CAP SCREW 3/8-16 X 1-1/4 LG, GR5, PLATED
16°	4	!FWSH-038	FLAT WASHER; 3/8"
17*	4	!LWSH-M10-8.8	LOCK WASHER; M10, GRADE 8.8, ZINC
17°	4	!LWSH-038	LOCK WSHR; 3/8"
18	2	!ANUT-02520S	ACORN NUT; 1/4-20, S/S
19	2	!HHCS05013050	HHCS 1/2-13 X 1/2 GR.5, ZINC

°= WARN DC1200 WINCH MOUNTING

*= COMEUP GTD-1200 WINCH MOUNTING

REFERENCE 25546 FOR REPLACEMENT HARDWARE DRAWING



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
RPLCMNT H/W LIST, BOOM

CT310KX(P)

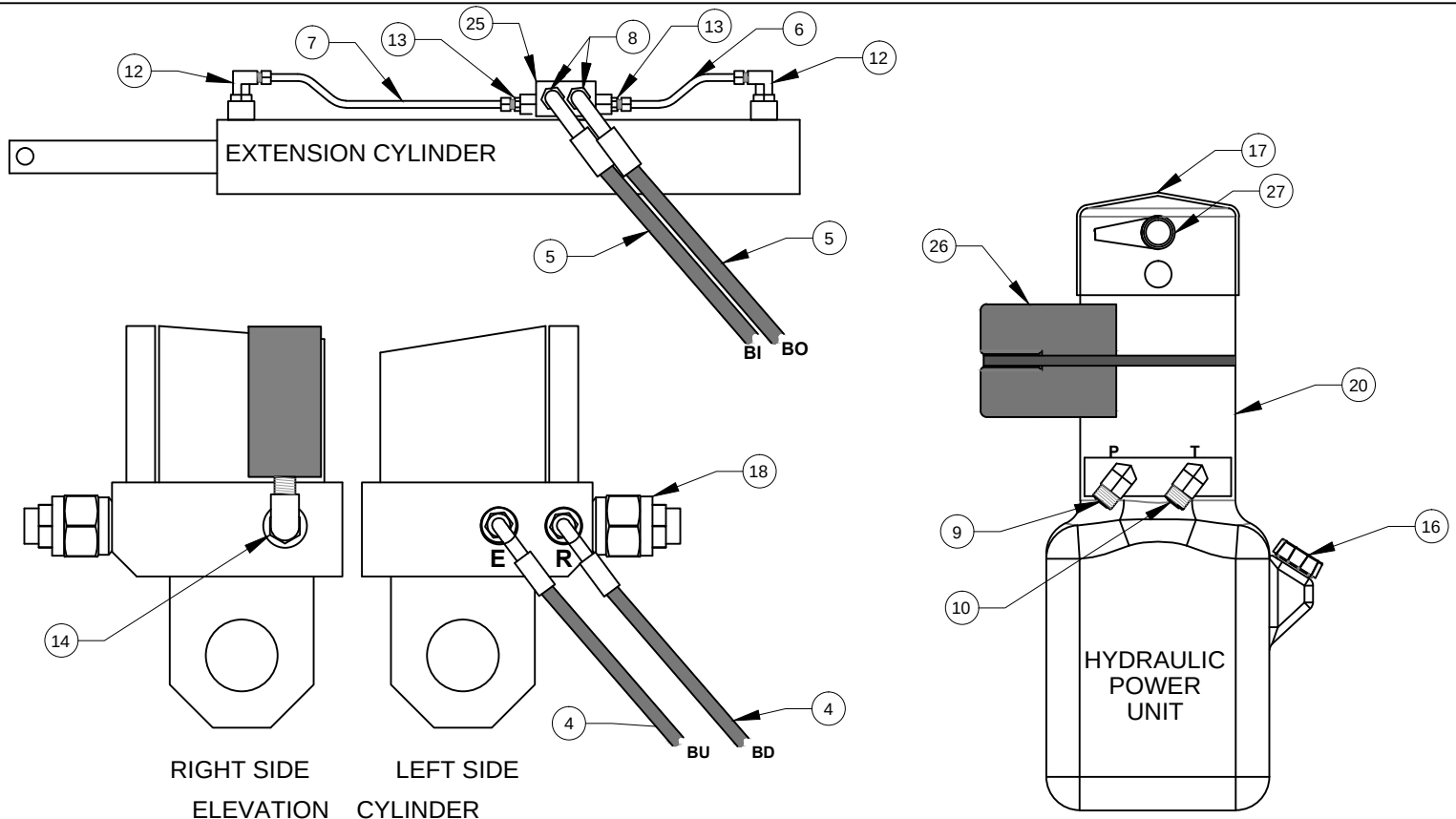
DATE
02-17-25A

SUPERSEDES
03-31-20

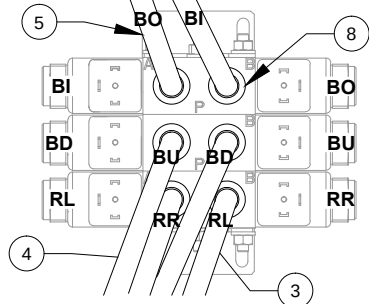
SECTION
C400

25547

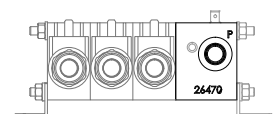
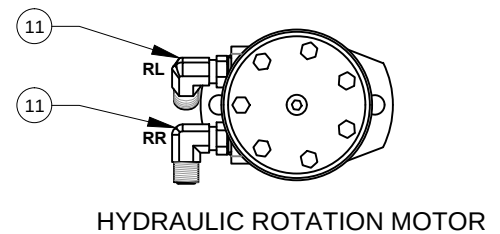
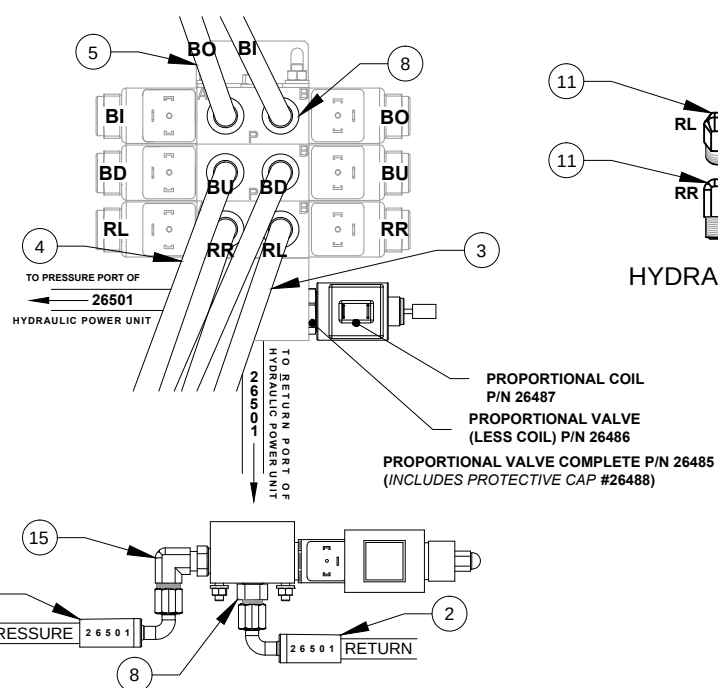
HYDRAULIC SYSTEM REPLACEMENT PARTS



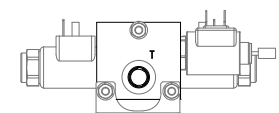
NON - PROPORTIONAL VALVE BLOCK



PROPORTIONAL VALVE BLOCK



P = PRESSURE



T = RETURN

REFERENCE 25559 HYDRAULIC PARTS LIST



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
HYD. SYSTEM REPL PARTS
CT310KX(P)

DATE
07-02-25C
SUPERSEDES
04-18-25B

SECTION
C400
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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
HYD SYS PARTS LIST

CT310KX(P)

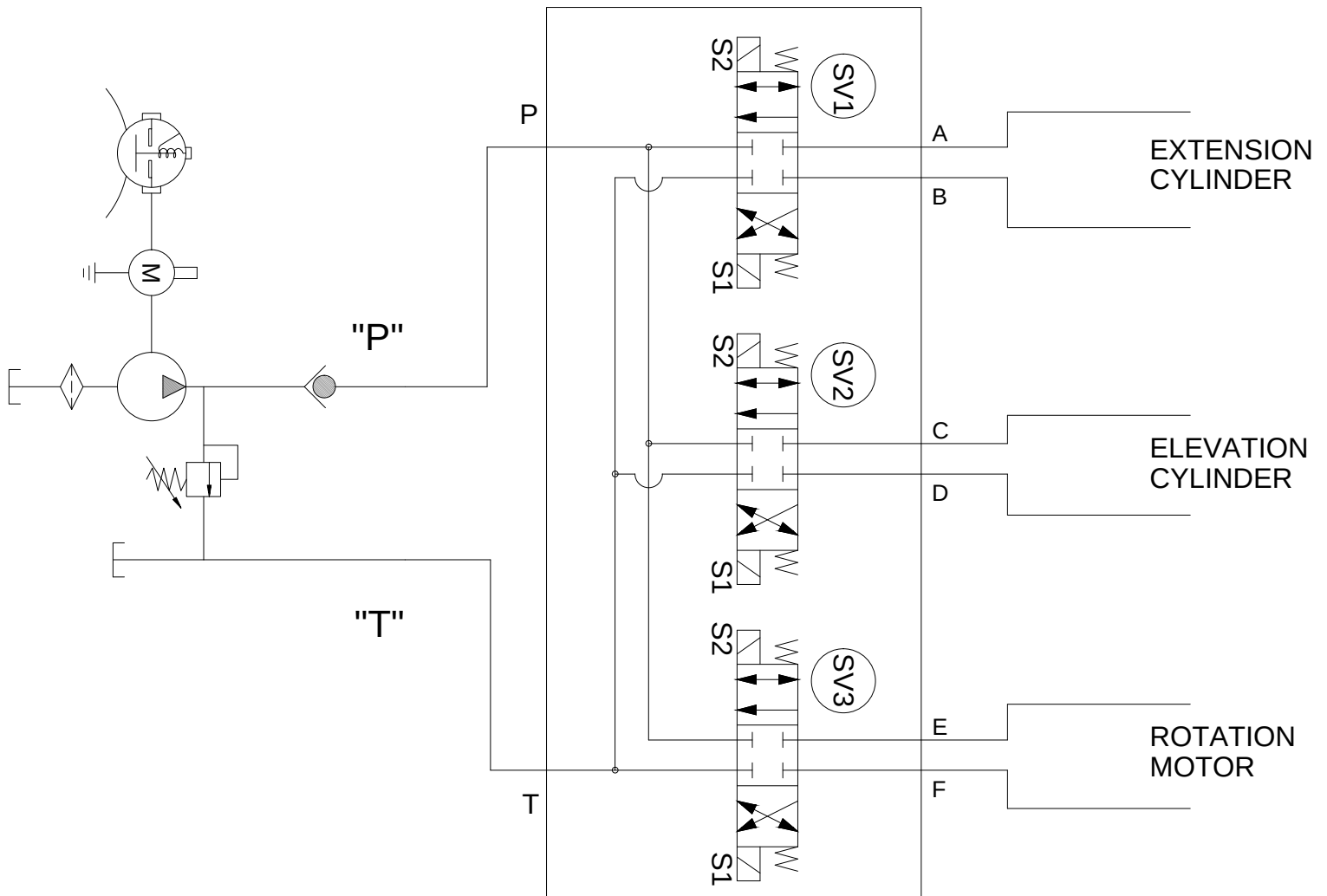
DATE
07-03-25B

SUPERSEDES
04-23-25A

SECTION
C400

25559

CT310KX MAINTENANCE & SERVICE



OPERATION

SV1

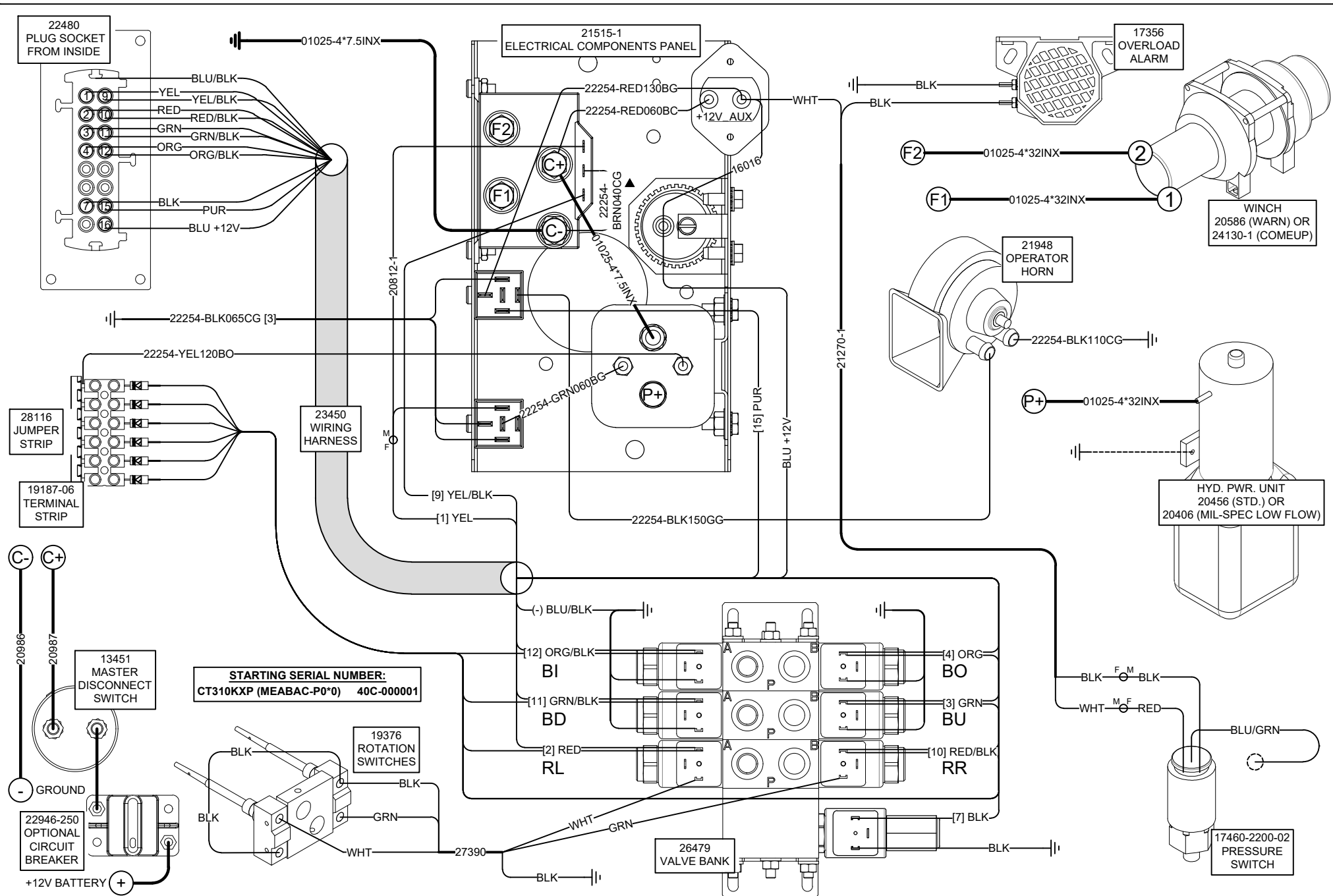
ENERGIZE "S2"
OPEN FLOW
'P' TO 'A'
'B' TO 'T'
ENERGIZE "S1"
OPEN FLOW
'P' TO 'B'
'A' TO 'T'

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'

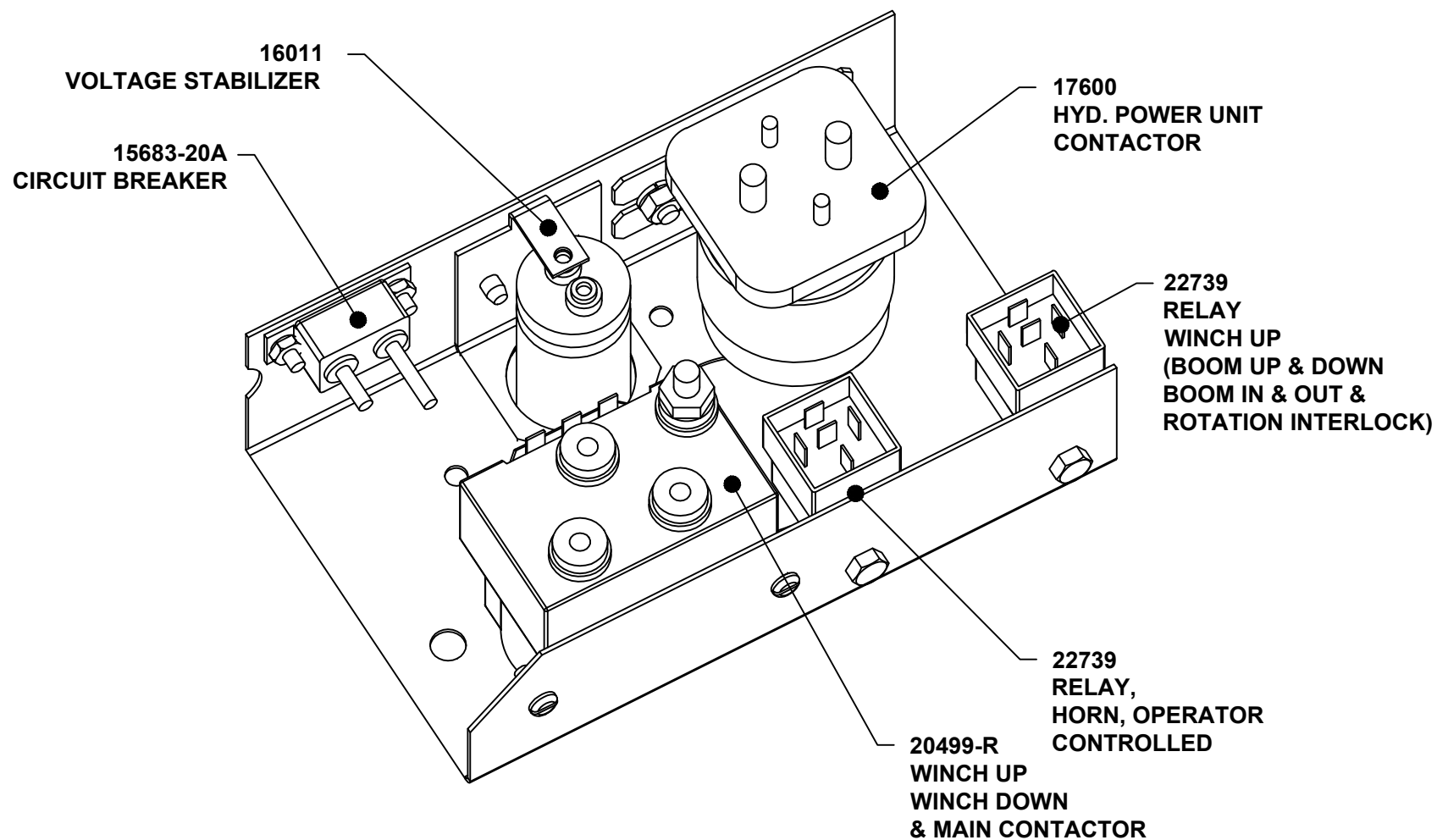


VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
WIRING DIAGRAM
CT310KXP

DATE 07-21-25G	SECTION C400
SUPERSEDES 04-25-25F	26517

21515-1 ELECTRICAL COMPONENT ASSEMBLY



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
ELECTRICAL COMPONENT ASSEMBLY
CT310KX(P)

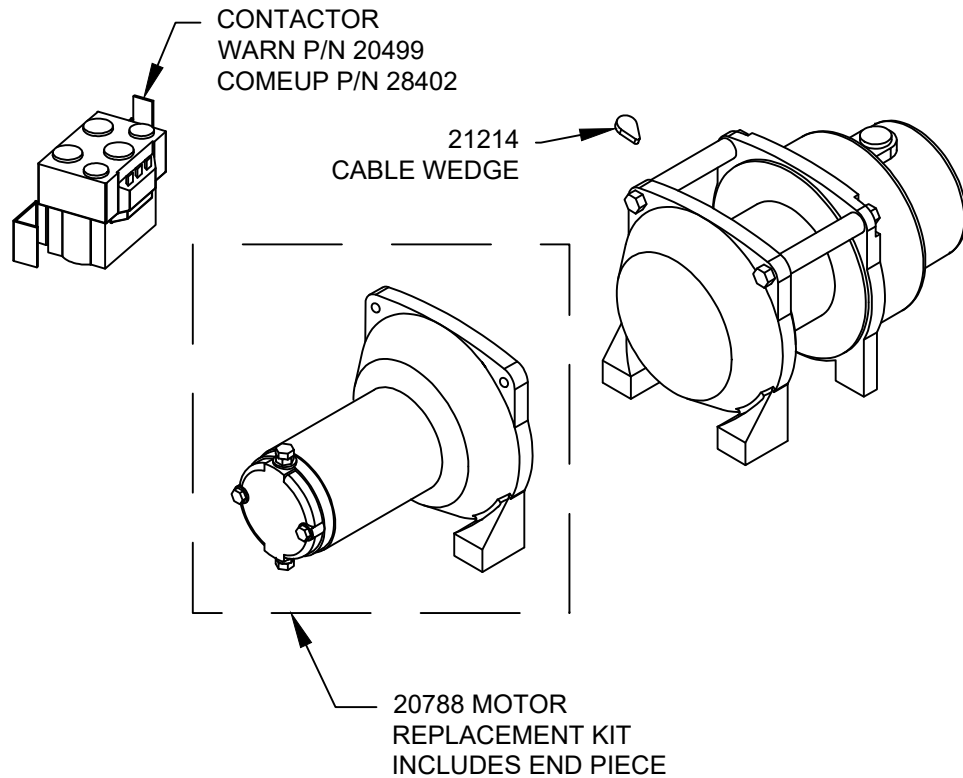
DATE
04-25-25
SUPERSEDES
-

SECTION
C400

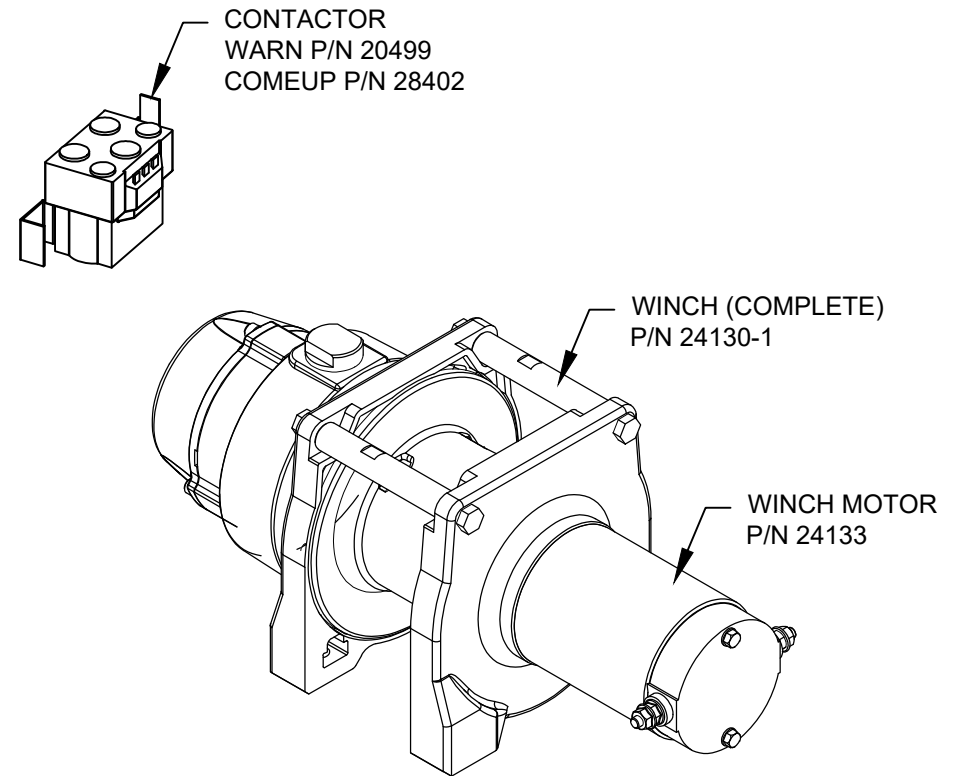
32021

WINCH REPLACEMENT PARTS

WARN DC1200 WINCH P/N 20586



COMEUP GTD-1200 WINCH P/N 24130-1



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS DRAWING

CT310KX & 2010E (ET6K) ▲

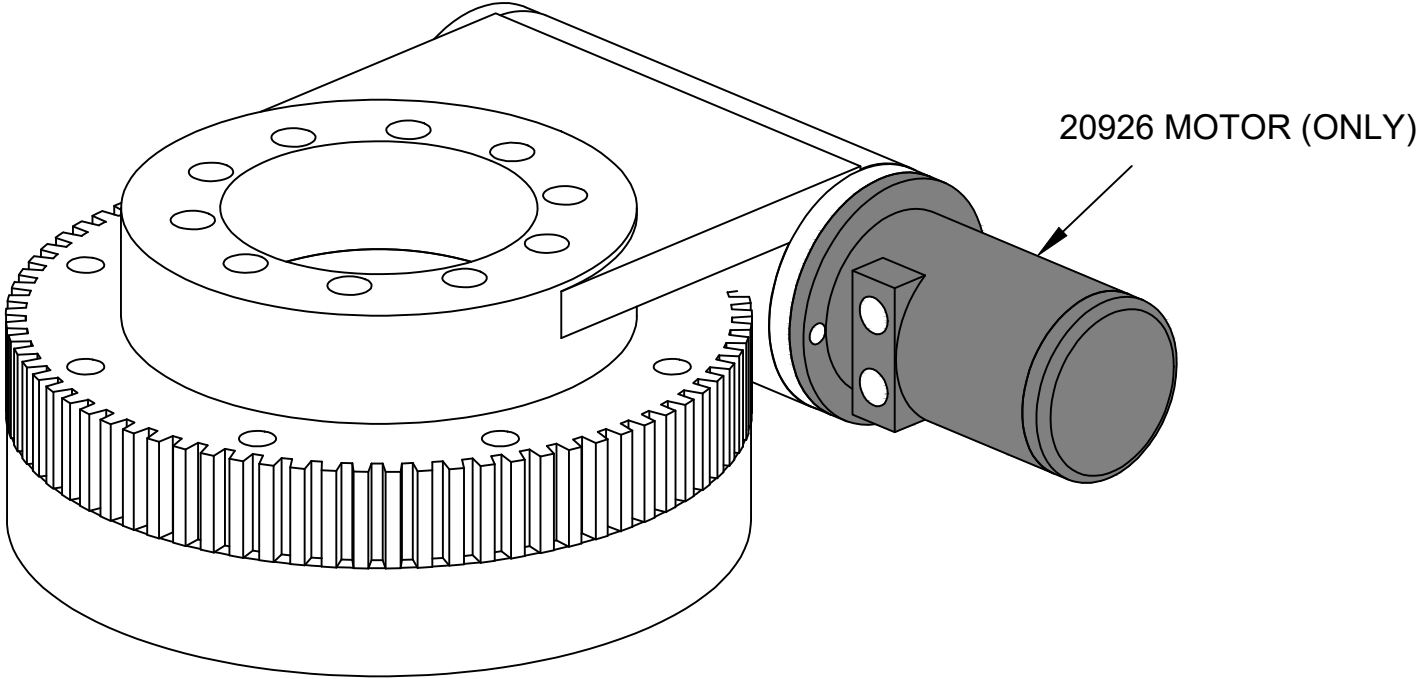
DATE
02-11-25F

SUPERSEDES
02-17-22E

SECTION
-

20837

27243 SLEWING SYSTEM REPLACEMENT PARTS



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
SLEWING SYSTEM REPLACEMENT PARTS
CT310KX & 2010E (ET6K) ▲

DATE
02-11-25C
SUPERSEDES
05-26-23B

SECTION
C400
27041

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

AUX +12V - RED / BLACK (8) +12V - RED (16)

E-STOP

HORN

OUTPUT - YELLOW / RED (15)

WINCH DOWN - YELLOW / BLACK (9)

BOOM IN - ORANGE / BLACK (12)

HYD POWER - BROWN / RED (7)

ROTATION LEFT - BLUE (2)

UP

DOWN

WINCH

EXTENSION

BOOM DOWN - BROWN / BLACK (11)

BOOM UP - BROWN (3)

DOWN

ELEVATION

ROTATION RT - BLUE / BLACK (10)

LEFT

RIGHT

ROTATION

WINCH UP - YELLOW (1)

BOOM OUT - ORANGE (4)

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

STOW OR CUT BACK UNUSED WIRES.

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

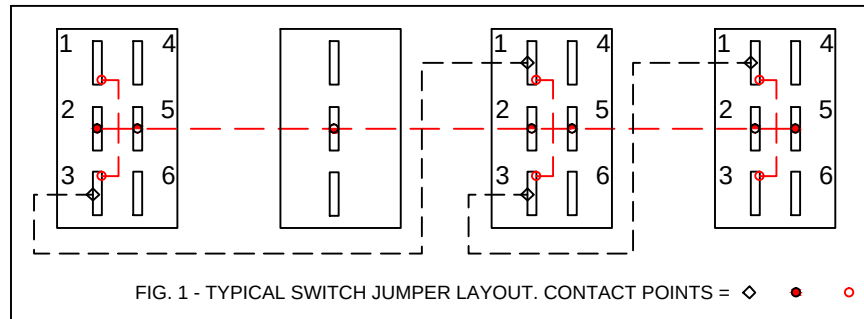
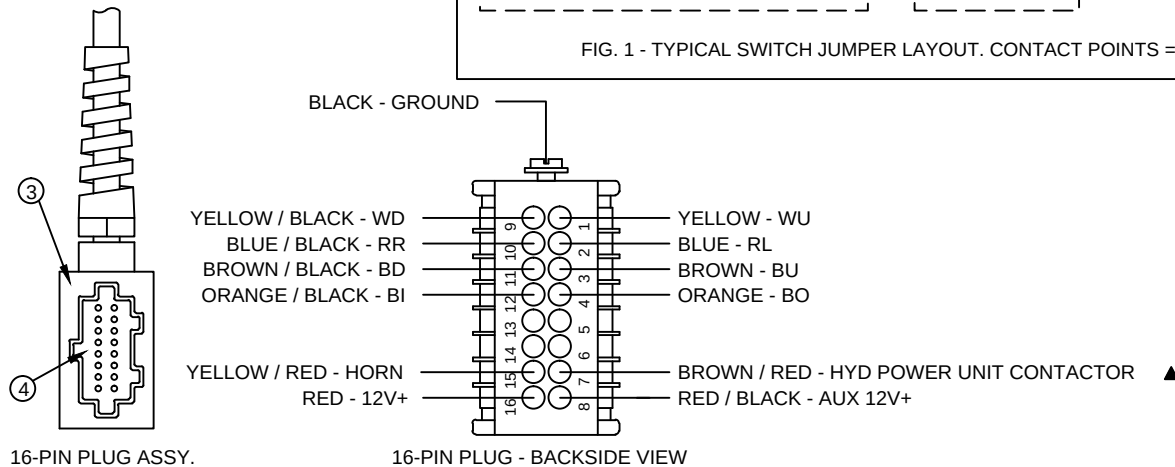


FIG. 1 - TYPICAL SWITCH JUMPER LAYOUT. CONTACT POINTS =



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
ITEM	QTY	PART NO.	DESCRIPTION



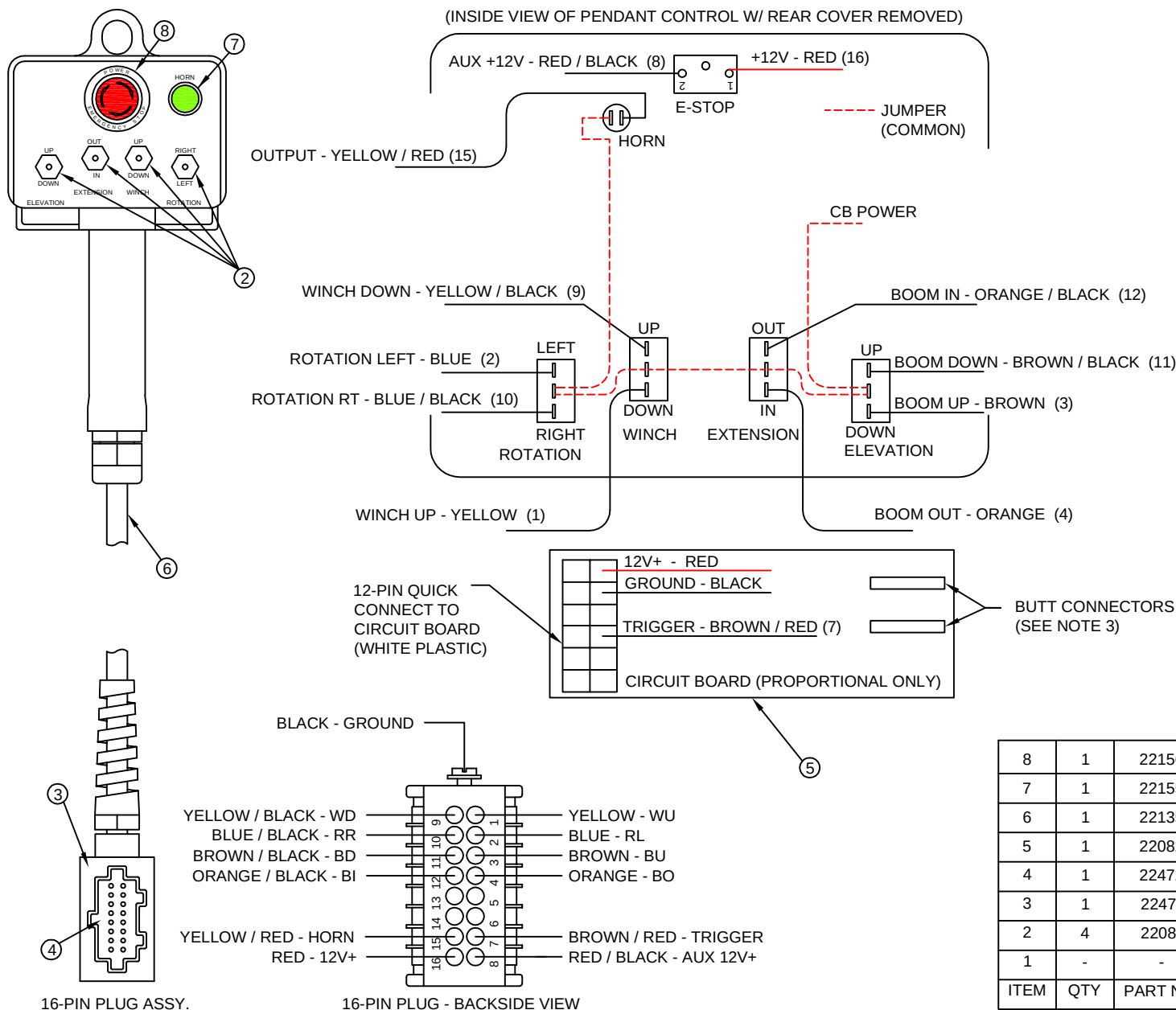
TITLE
REPLACEMENT PARTS DWG & LIST

SECTION
C400

10-20-14A

23075

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

REPLACEMENT PARTS DWG & LIST

DATE

10-03-14

SECTION

C400

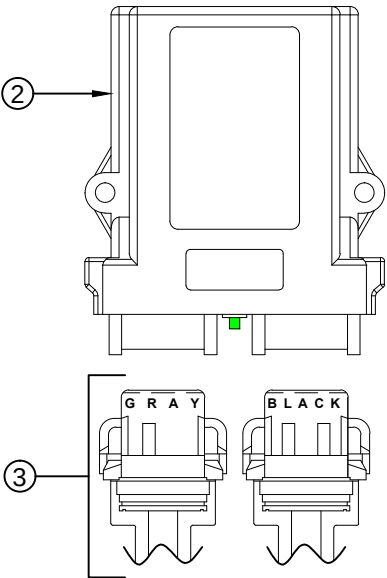
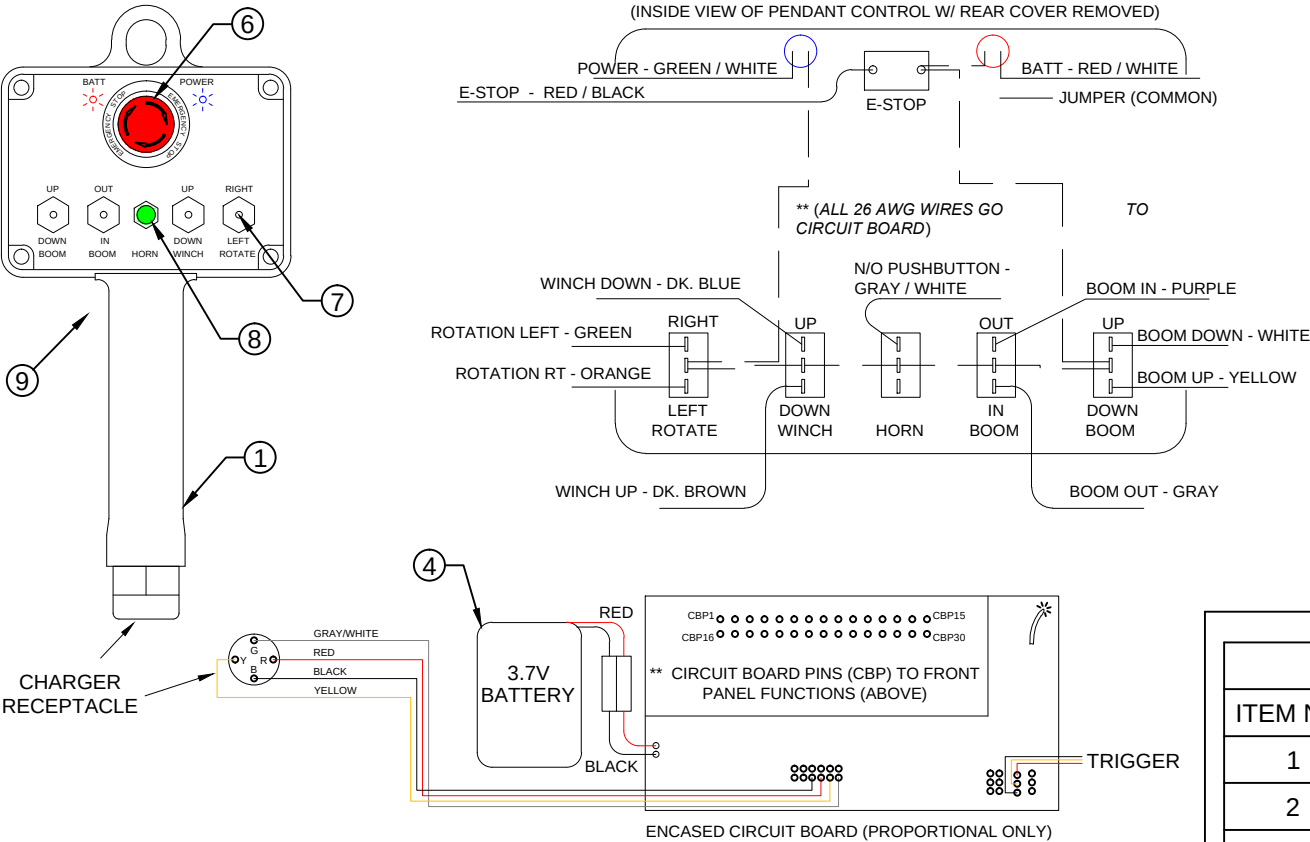
21988 PNDNT; PROP, NO ENG CNT, ESTP/HRN

SUPERSEDES

-

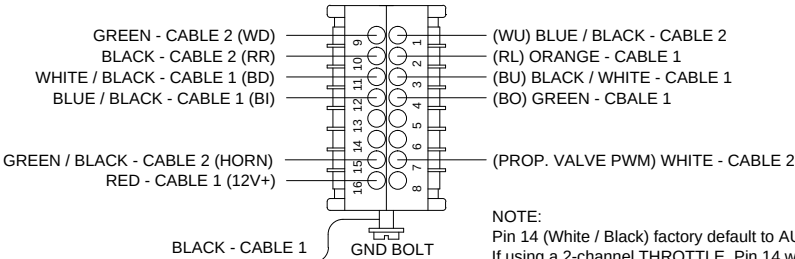
23073

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



CABLE 1 = GRAY CONNECTOR
CABLE 2 = BLACK CONNECTOR

16-PIN PLUG - BACKSIDE VIEW



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)



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS DWG & LIST

ET PROPORTIONAL SERIES CRANES

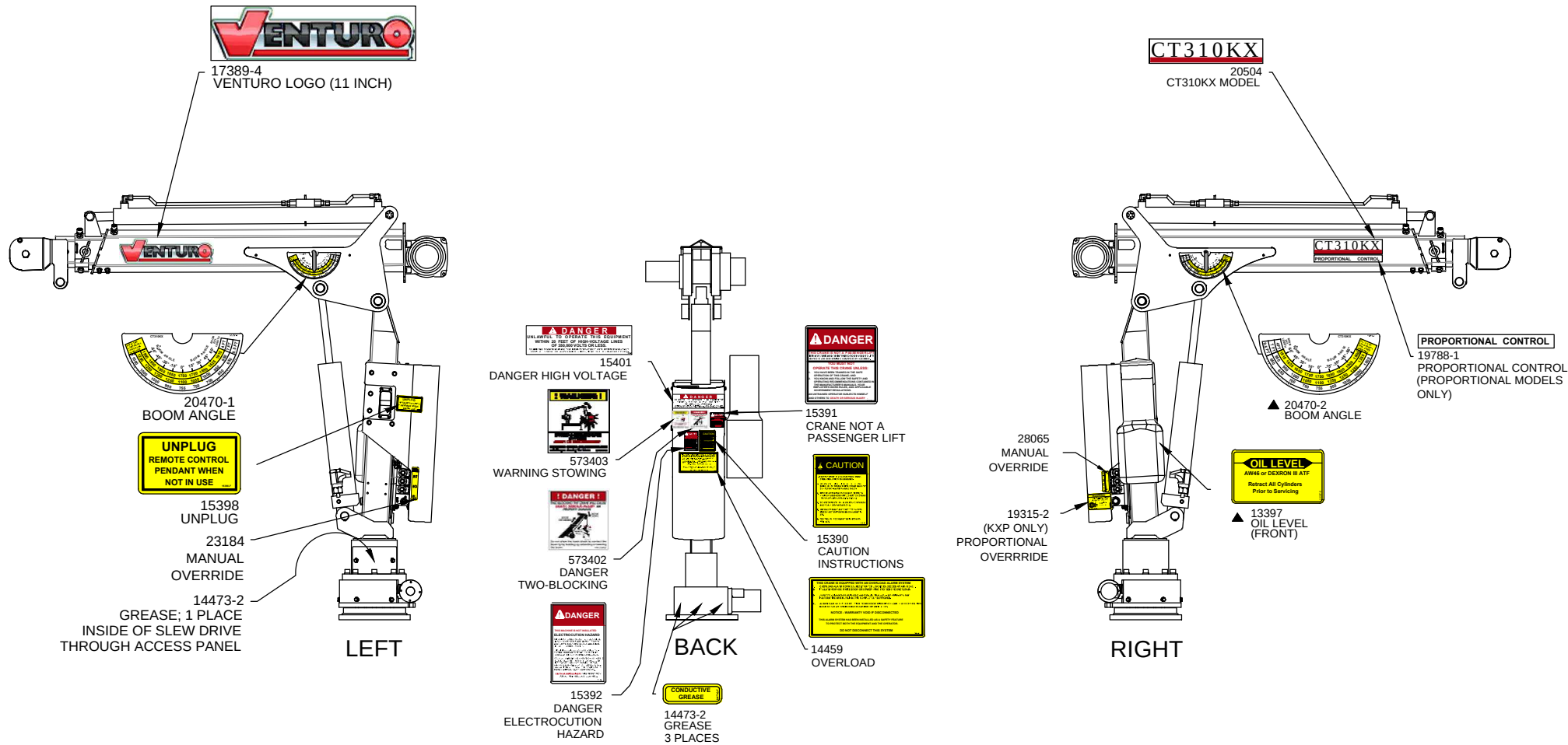
DATE
09-04-25B

SUPERSEDES
03-11-19A

SECTION
C400

23786

DECAL PLACEMENT, CT310KX(P)



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



VENCO VENTURO INDUSTRIES LLC
CINCINNATI, OHIO

TITLE
FIELD SERVICE LABEL KIT

CT310KX(P), ALL CONFIG.

DATE
03-13-23G

SUPERSEDES
08-04-20F

SECTION
C400

20585



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.

VENCO VENTURO INDUSTRIES LLC
12110 BEST PLACE | CINCINNATI, OHIO 45241
P: 800-226-2238 | F: 513-326-5427
www.venturo.com