

# **PARTS & INSTALLATION MANUAL**

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## **ET16KXX(P)-20'**

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Included in this manual:

### **ET16KXX-20'**

- 4,000 lbs Electric Telescopic Service Crane
- 10 – 16 – 20 ft Powered, Dual-Stage, Boom Extension

### **ET16KXXP-20'**

- 4,000 lbs Electric Telescopic Service Crane
- 10 – 16 – 20 ft Powered, Dual-Stage, Boom Extension
- Proportional Controls

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12-00073_VNT1	WARRANTY PAGE



**SECTION 100**

**DESCRIPTION**

**&**

**SPECIFICATIONS**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

**SPECIFICATIONS & OPERATING FEATURES**  
**ET16KXX-20' (EEBAAB-\*0)**

**SPECIFICATIONS**

12 VOLT BATTERY OPERATED

16,000 FT-LBS OVERTURNING MOMENT (or as limited by truck stability)

MOMENT OVERLOAD SYSTEM

TELESCOPIC BOOM	10/16/20
BOOM HYD ELEVATION	-8° TO 75°
BOOM HYD EXTENSION	10 - 16 - 20 FT
BOOM MANUAL EXT	-
CAPACITY	800 LBS @ 20 FT REACH
	4000 LBS @ 2 - 3 FT REACH
WIRE ROPE	5/16" DIA X 80 FT
PENDANT CORD LENGTH	25 FT

WINCH -- 2250 LBS SINGLE LINE CAPACITY WITH AUTOMATIC LOAD BRAKE

ELECTRIC HYDRAULIC BOOM ELEVATION

ELECTRIC HYDRAULIC BOOM EXTENSION & RETRACTION -- 10 FT. STROKE

CONTINUOUS POWER ROTATION

REMOTE CONTROL PENDANT

25 FT straight cord with four [4] environmentally-sealed toggle switches protected by a guard

MASTER DISCONNECT SWITCH

OUTRIGGERS AVAILABLE

Side bracket type outriggers

Fold-away type outriggers

Pullout type outriggers



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TITLE  
**SPECS & OP. FEATURES**  
 ET16KXX-20' (EEBAAB-\*0)

DATE  
 06-19-20A  
 SUPERSEDES  
 03-02-20

SECTION  
 C100

**24058**

# SPECIFICATIONS & OPERATING FEATURES

ET16/18KX

## OVERLOAD SENSING SYSTEM

This crane is equipped with an overload sensing system. If the capacity of the crane is exceeded, the "Winch Up", "Boom Out", and "Boom Out" functions will shut down. The "Winch Down", "Boom Up", and "Boom In" functions will continue to operate and can be used to relieve the overload condition. The "Rotation" function also will continue to operate.

## CONTROL PRIORITY SYSTEM

The design intent of the electrical and hydraulic systems are such that some functions can be operated simultaneously, while others are meant to be operated individually. To summarize the control system, see the explanations below:

- Winch Up takes priority over all functions
- Winch Down can be operated with any other single function
- Hydraulic functions (Rotate Right, Rotate Left, Boom Up, Boom Down, Boom Out, and Boom In) are designed to function one at a time

## CABLE DRUM AND SHEAVE DIAMETERS

The drums on the ET16/18KX cranes are 5 1/4" in diameter, which is 18 times the 5/16" wire rope diameter as required by ANSI B30.15 Hydraulic Crane standards. The cable sheaves are either 16 or 18 times the cable diameter, which likewise conforms.

## MISCELLANEOUS

### CAPACITY INDICATOR

Select boom reach and angle allowable for load by using capacity indicator arrow and chart on either side of boom.

### BATTERY HOOKUP

A parallel auxiliary battery should be installed near the crane as shown on DWG 19947 under "RECOMMENDED INSTALLATION." The parallel auxiliary battery minimum rating should be 450 Cold Cranking Amps (at 0° F) and 100 reserve capacity, or 78 plates and 70 amp hours.



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TITLE	DATE	SECTION
SPECS & OP. FEATURES	10-22-14A	C100
ET16/18KX	SUPERSEDES 07-29-03	21302



# WARNING

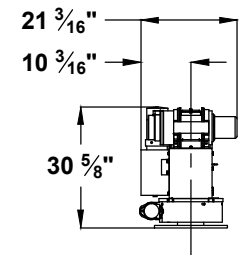
- THESE PRODUCTS ARE NOT PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT OR OTHERWISE TRANSPORT PERSONNEL.

15" SWING RADIUS

21' 8"

17' 9-1/2"

11' 11-2/3"



LOAD BLOCK FOR SINGLE AND TWO-PART LINE OPERATION

BOOM ANGLE AND CAPACITY INDICATOR ON BOTH SIDES OF BOOM

5/16" DIA WIRE ROPE  
80 FT. LONG

39-1/4" C/G APPROX

10' 10-3/4"

16' 11-1/4"

20' 11-1/4"

OVERALL LENGTH: 22' 4"

LOAD BLOCK WITH SAFETY HOOK



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
**INSTALLATION DRAWING**

**ET16/18KXX(P) - DUAL-STAGE**

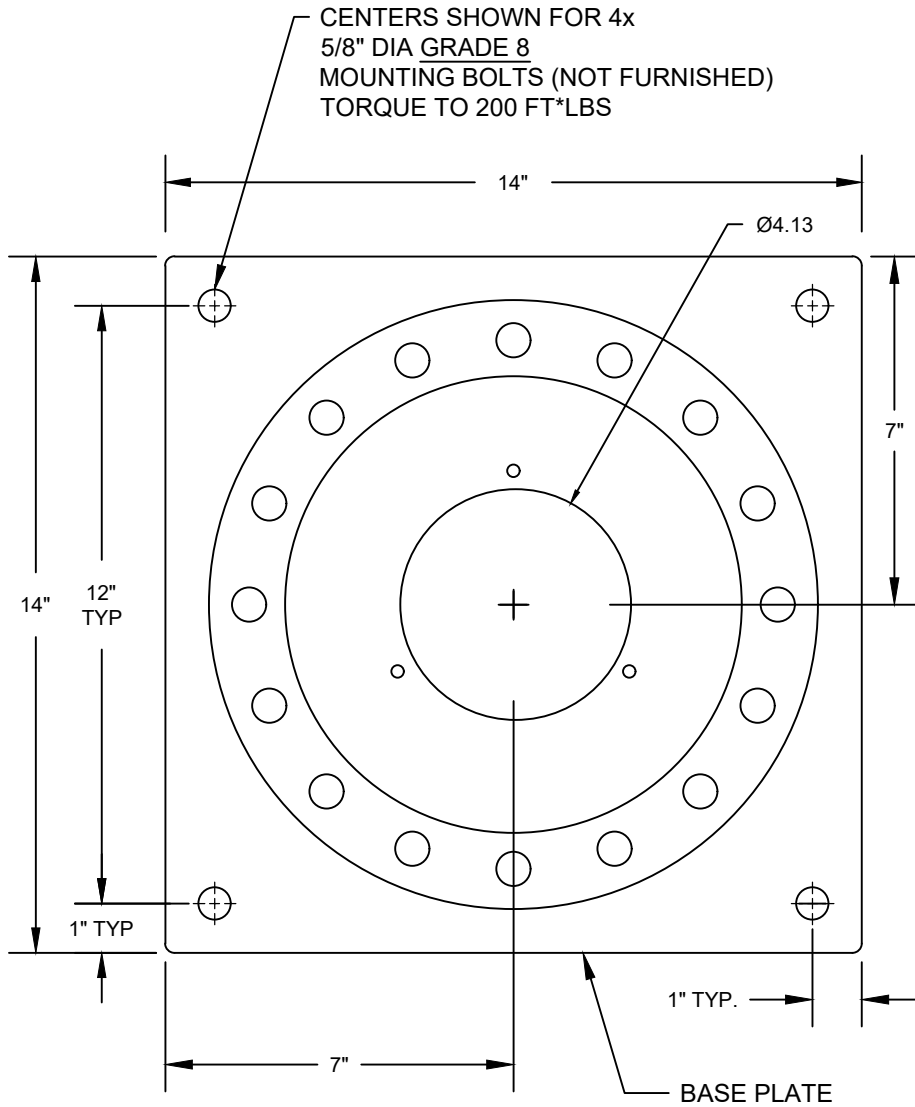
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**10-05-20A**

SUPERSEDES  
**03-02-20**

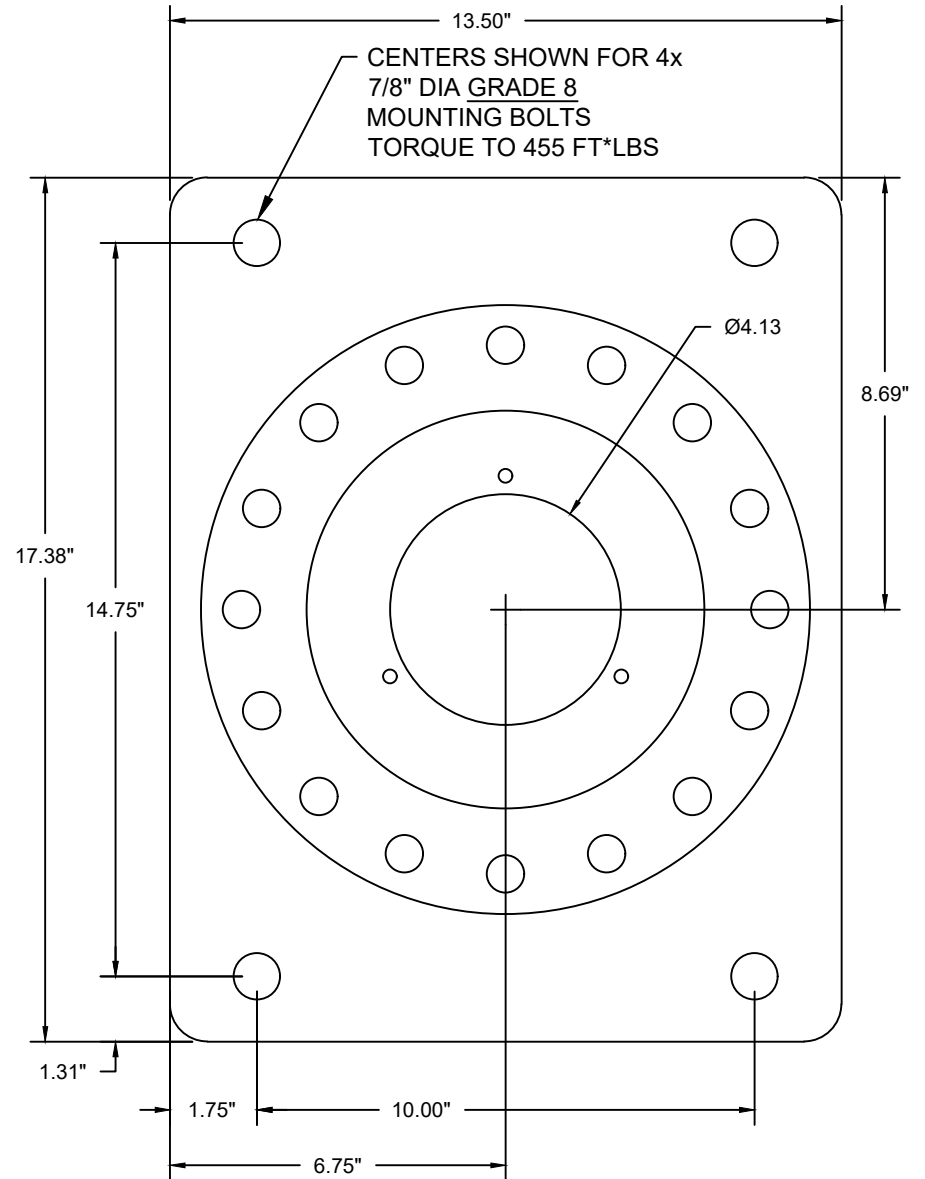
SECTION  
**C100**

**23993**

# 21735 - SQUARE



# 21735-WRB/CRB - RECTANGULAR



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CINCINNATI, OHIO

TITLE  
21735 BASE MOUNTING DIMENSIONS

ET8/12/16/18 CRANES

DATE  
11-12-24H

SUPERSEDES  
03-06-23G

SECTION  
C100

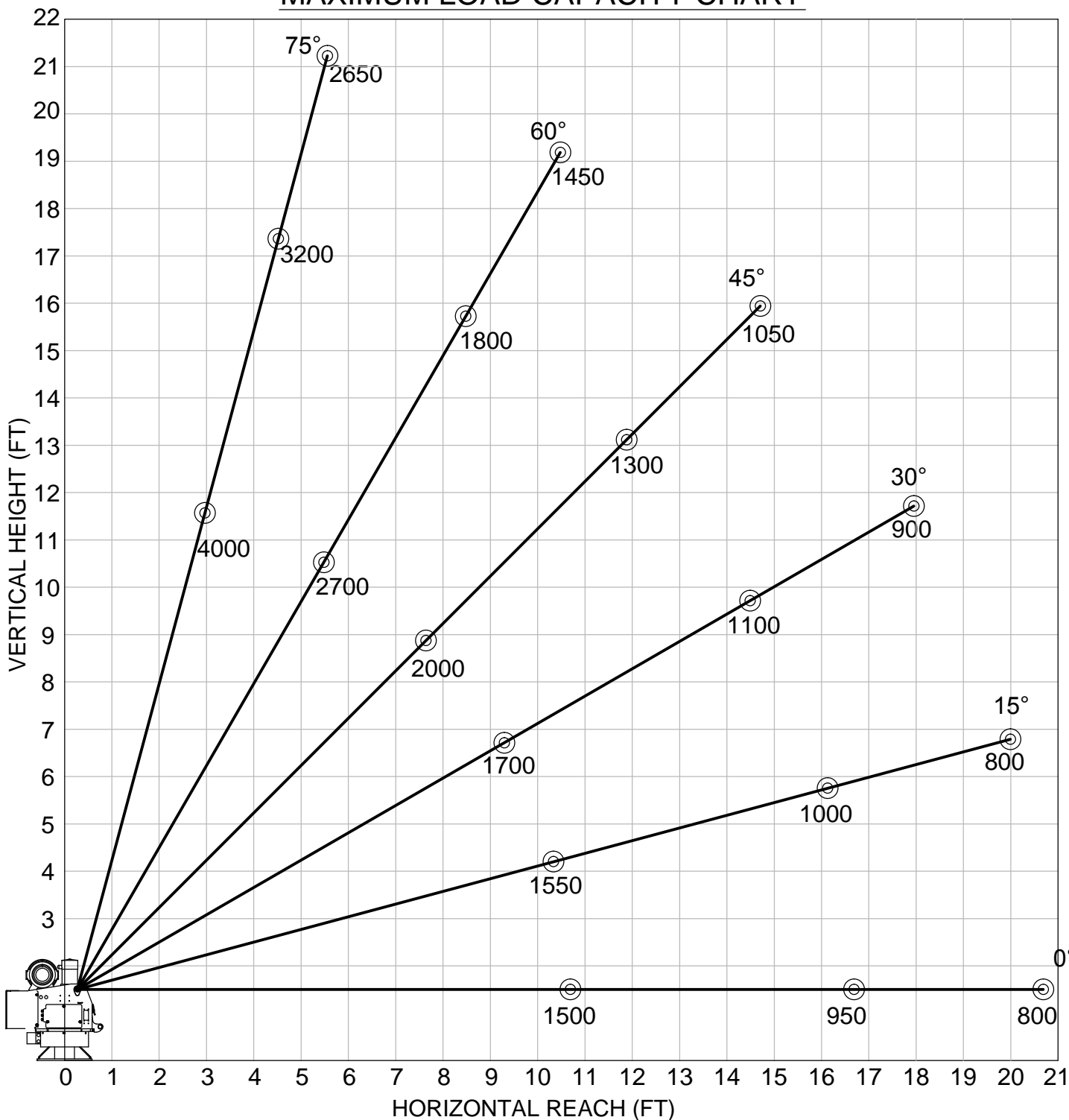
21592



ET16KXX(P), 10'-16'-20' BOOM

CRANE SERIAL NUMBER: \_\_\_\_\_

**MAXIMUM LOAD CAPACITY CHART**



WEIGHT OF LOAD HANDLING DEVICES ARE PART OF THE LOAD AND MUST BE DEDUCTED FROM THE GROSS CAPACITY.

**LOAD BLOCK USAGE**

- 1 PART LINE FOR LOADS LESS THAN 2000 LBS
- 2 PART LINE FOR LOADS OF 2000 LBS AND GREATER

WEIGHT OF LOAD BLOCK = 34 LBS



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TITLE  
**MAXIMUM LOAD CAPACITY**  
ET16KXX(P), 10'-16'-20' BOOM

DATE  
**04-20-20B**  
SUPERSEDES  
03-12-20A

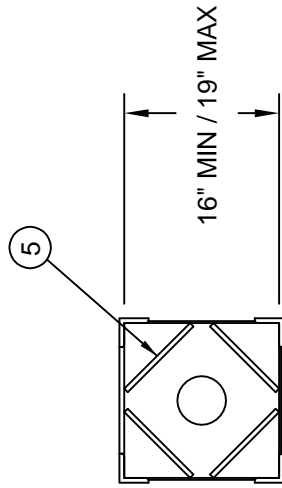
SECTION  
**C100**  
**24052**

# TYPICAL SERVICE BODY REINFORCEMENT

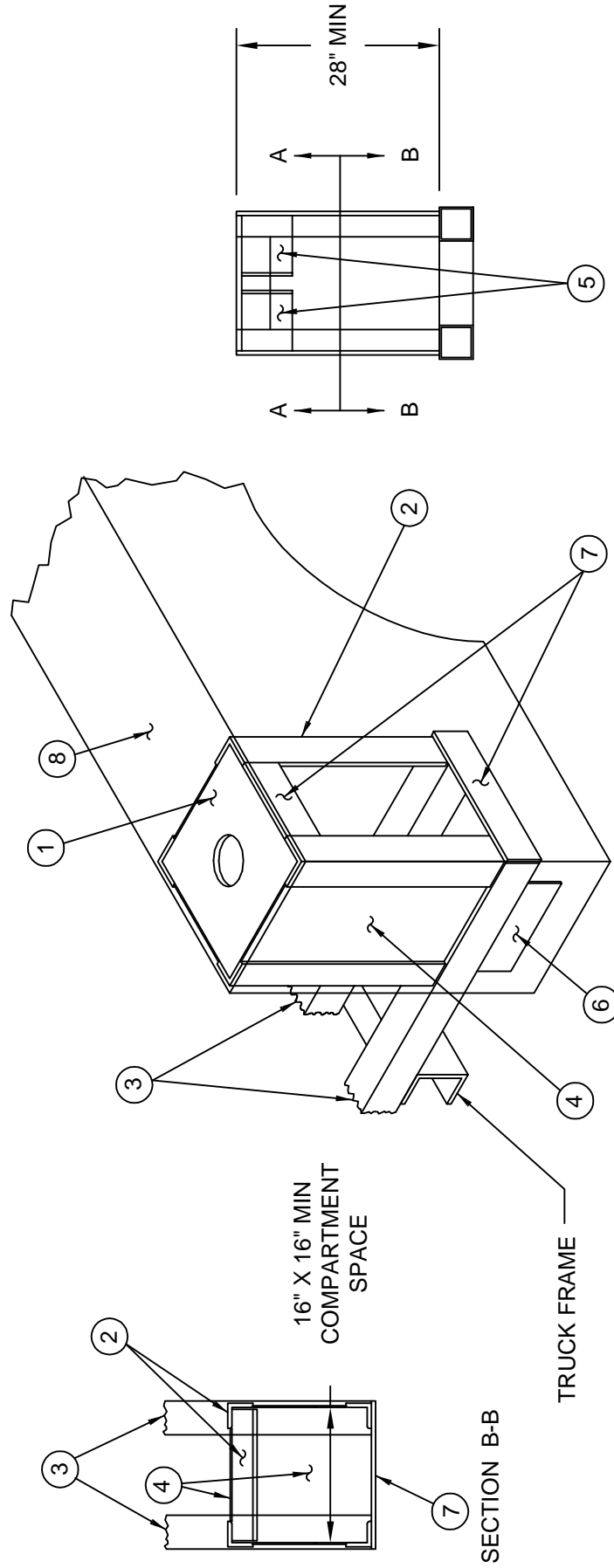
**NOTE:**

IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE TOTAL STRUCTURE OF CRANE, TRUCK, AND STABILIZERS ARE STRUCTURALLY SOUND AND THAT THE COMPLETED VEHICLE HAS SUFFICIENT STABILITY AGAINST OVERTURNING.

ITEM	DESCRIPTION	MINIMUM RECOMMENDED MATERIAL SIZE
1	TOP PLATE	1/2" STEEL
2	CORNER POST	3" X 3" X 1/2" STEEL ANGLE
3	CROSS FRAME	4" X 4" X 5/16" SQUARE TUBING, SPAN FULL WIDTH
4	SHEAR WEB	3/16" STEEL PLATE
5	TOP PLT REINFORCEMENT	1/2" X 6" OR 3/4" X 5" STEEL BAR
6	OUTRIGGER RNFRCMNT PLT	1/4" THICK STEEL PLATE
7	GUSSET	1/2" X 4" H.R. STEEL
8	BODY TOP REINFORCEMENT	10 GA SMOOTH OR DIAMOND PLATE W/ 1" LIP OVER SIDE OF BODY



SECTION A-A



SECTION B-B



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
TYPICAL SERVICE BODY REINFORCEMENT

DATE  
10-22-14H

SECTION  
C100

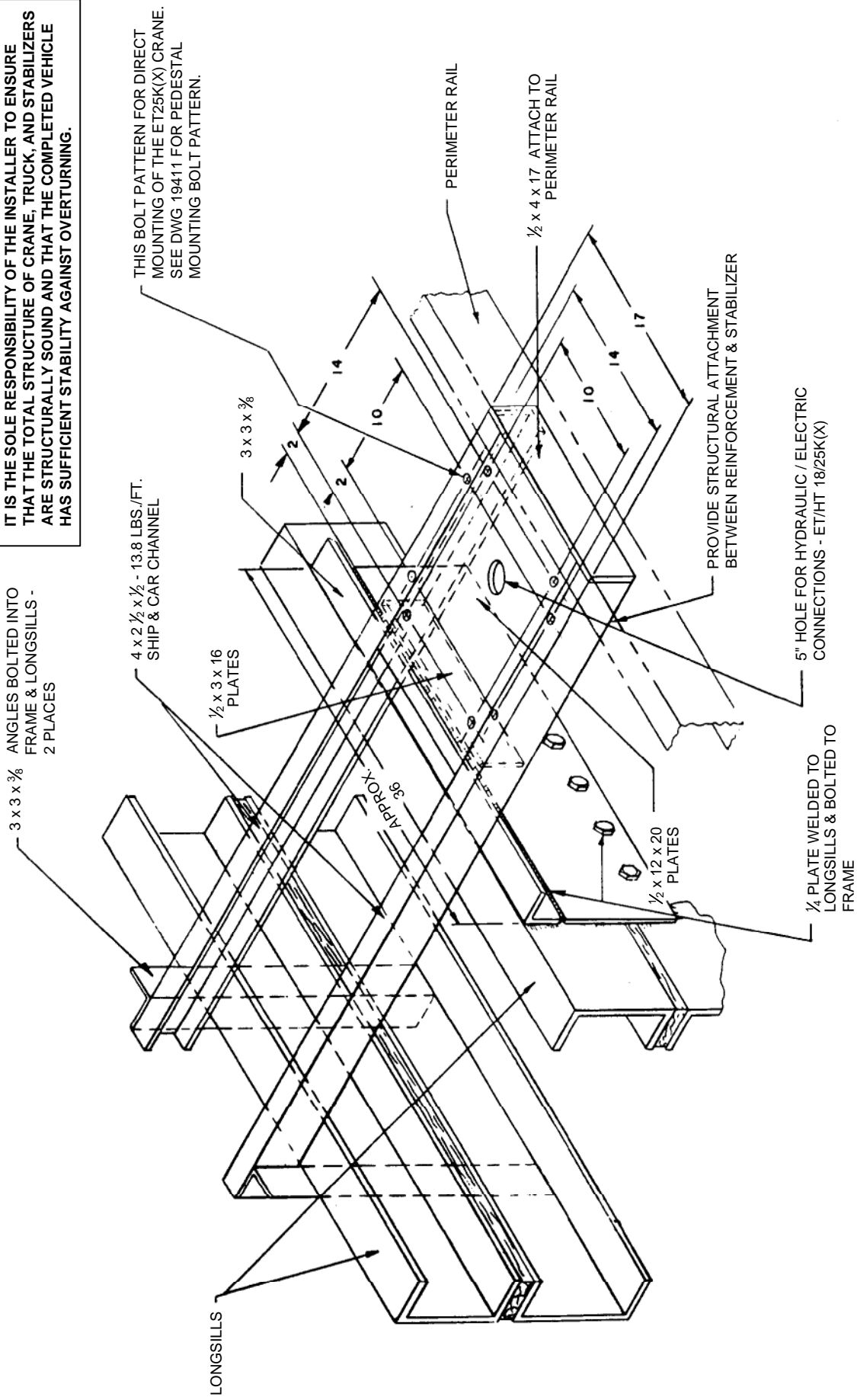
SUPERSIDES  
12-20-10G


19288

ET16/18KX

# TYPICAL FLATBED MOUNTING REINFORCEMENT

**NOTE:**  
IT IS THE SOLE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE TOTAL STRUCTURE OF CRANE, TRUCK, AND STABILIZERS ARE STRUCTURALLY SOUND AND THAT THE COMPLETED VEHICLE HAS SUFFICIENT STABILITY AGAINST OVERTURNING.



 <p>VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO</p>	TITLE	SECTION
	<p>TYPICAL FLATBED MNTNG REINFORCEMENT</p> <p>ET16/18KX</p>	<p>C100</p>
	DATE	
	<p>10-22-14N</p> <p>SUPERSEDES</p> <p>07-29-03M</p>	<p>14510</p>



# SECTION 150

## SAFETY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

# CRANE SAFETY AND HAZARDS

## CAUTIONS

1. INSPECT VEHICLE AND CRANE, INCLUDING OPERATION, PRIOR TO USE DAILY.
2. DO NOT USE THIS EQUIPMENT EXCEPT ON FIRM LEVEL GROUND WITH CRANE MOUNTED ON FACTORY-RECOMMENDED TRUCK.
3. BEFORE OPERATING THE CRANE, REFER TO MAXIMUM LOAD (CAPACITY) CHART ON CRANE FOR OPERATING (LOAD) LIMITATIONS.
4. DO NOT OPERATE, WALK, OR STAND BENEATH BOOM OR A SUSPENDED LOAD.
5. ATTACH PENDANT CORD SUPPORT SNAP TO ATTACHMENT POINT BEFORE PLUGGING IN PENDANT, IF SO EQUIPPED.
6. UNPLUG PENDANT AND SHUT OFF MASTER DISCONNECT SWITCH WHEN CRANE IS NOT IN USE.
7. FOR TRAVEL, BOOM MUST BE IN STOWED POSITION.

## DANGER

- THIS CRANE IS NOT A PASSENGER LIFT
- IT IS NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.

## YOU MUST NOT OPERATE THIS CRANE, UNLESS:

1. YOU HAVE BEEN TRAINED IN THE SAFE OPERATION OF THIS CRANE, AND
2. YOU KNOW AND FOLLOW THE SAFETY AND OPERATING RECOMMENDATIONS CONTAINED IN THE MANUFACTURER'S MANUALS, YOUR EMPLOYER'S WORK RULES, AND APPLICABLE GOVERNMENT REGULATIONS. AN UNTRAINED OPERATOR SUBJECTS HIMSELF AND OTHERS TO DEATH OR SERIOUS INJURY.

## ELECTROCUTION HAZARD

- THIS MACHINE IS NOT INSULATED.
- MAINTAIN SAFE CLEARANCES FROM ELECTRICAL LINES AND APPARATUSES.
- YOU MUST ALLOW FOR BOOM SWAY, ROCK, OR SAG, AND ELECTRICAL LINE AND LOAD-LINE SWAYING
- THIS LIFTING DEVICE DOES NOT PROVIDE PROTECTION FROM CONTACT WITH OR PROXIMITY TO AN ELECTRICALLY CHARGED CONDUCTOR.
- YOU MUST MAINTAIN A CLEARANCE OF AT LEAST 10 FEET BETWEEN ANY PART OF THE CRANE, LOAD-LINE, OR LOAD, AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. REFER TO DRAWING 15394 FOR ADDITIONAL INFORMATION.
- **DEATH OR SERIOUS INJURY** WILL RESULT FROM CONTACT OR INADEQUATE CLEARANCES.

## OVERLOAD SENSING SYSTEM - STANDARD ON ALL CRANES

1. IF OVERLOADED, THE WINCH UP, BOOM DOWN, AND (OPTIONAL) BOOM OUT FUNCTIONS WILL AUTOMATICALLY, SHUT OFF TO PREVENT INCREASED OVERLOAD.
2. ON CRANES EQUIPPED WITH AN OPTIONAL OVERLOAD ALARM, IT WILL ALSO SOUND.
3. IF AN OVERLOAD OCCURS, USE THE WINCH DOWN, BOOM UP OR BOOM IN FUNCTIONS TO RELIEVE THE OVERLOAD.
4. THE OVERLOAD SENSING SYSTEM IS INOPERATIVE IF THE BOOM ELEVATION IS AT THE BOTTOM OR TOP LIMIT OF TRAVEL. TO RELIEVE THIS CONDITION, RAISE OR LOWER THE BOOM SLIGHTLY BEFORE LIFTING THE LOAD.
5. SEE MANUAL FOR TESTING THE OVERLOAD SYSTEM.

## NOTICE - WARRANTY VOID IF DISCONNECTED

THE OVERLOAD SENSING SYSTEM HAS BEEN INSTALLED AS A SAFETY FEATURE TO PROTECT THE EQUIPMENT AND THE OPERATOR.

DO NOT DISCONNECT THIS SYSTEM



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CINCINNATI, OHIO

TITLE	DATE	SECTION
SAFETY & HAZARDS	01-29-15K	C150
ELECTRIC CRANES	SUPERSEDES 12-20-13J	850711

# CRANE SAFETY AND HAZARDS - CONT'D

## OVERLOAD ALARM SYSTEM - OPTIONAL

1. OVERLOAD ALARM HORN SOUNDS IF RATED LOAD IS EXCEEDED AT ANY REACH.
2. IF ALARM SOUNDS, RAISE BOOM OR LOWER WINCH TO REMOVE OVERLOAD.
3. ALWAYS RAISE BOOM SLIGHTLY BEFORE LIFTING LOAD. WARNING SYSTEM INOPERATIVE WHEN CYLINDER IS COMPLETED BOTTOMED.
4. ALARM CAN BE TESTED BY TYING DOWN BOOM WITH WINCH CABLE AND OPERATING BOOM UP OR BY RAISING BOOM AGAINST UP LIMIT STOP.

NOTICE - WARRANTY VOID IF DISCONNECTED

THIS ALARM SYSTEM HAS BEEN INSTALLED AS A SAFETY FEATURE TO PROTECT BOTH THE EQUIPMENT AND THE OPERATOR.

DO NOT DISCONNECT THIS SYSTEM

INTENTIONALLY LEFT BLANK



VENCO VENTURO INDUSTRIES LLC  
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TITLE

SAFETY & HZRDS, CONT.

DATE

01-29-15

SECTION

C150

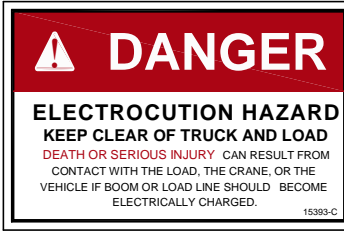
ELECTRIC CRANES

SUPERSEDES

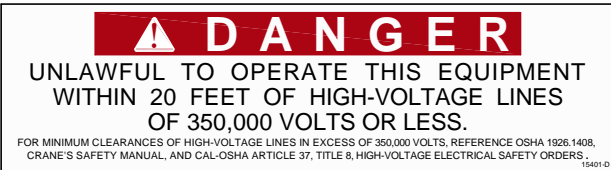
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850712

# VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION



SIGN NO. 15393 DISPLAYS THE INTERNATIONAL SYMBOL FOR ELECTRICITY AND WARNS OF DANGER FROM AN ELECTRICALLY CHARGED VEHICLE, CRANE, OR LOAD. FOUR ARE RECOMMENDED (ONE FOR EACH SIDE AND ONE FOR EACH END OF VEHICLE) TO BE APPLIED IN LOCATIONS WHICH ARE READILY VISIBLE TO GROUND PERSONNEL.



SIGN NO. 15401 PROVIDES ADDITIONAL WARNING OF LEGAL REQUIREMENTS WHEN OPERATING NEAR HIGH VOLTAGE LINES. THIS SIGN IS PLACED ON THE CONTROL PENDANT SIDE OF BOOM.

Table A - Minimum Clearance Distances

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet) *
Up to 50.....	10
over 50 - 200.....	15
over 200 - 350.....	20
over 350 - 500.....	25
over 500 - 750.....	35
over 750 - 1000.....	45
Over 1000.....	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Table T - Minimum Clearance Distances While Traveling With No Load

Voltage (nominal, kV, alternating current)	While traveling - minimum clearance distance (feet) *
0 - 0.75.....	4
over 0.75 - 50.....	6
over 50 - 345.....	10
over 345 - 750.....	16
over 750 - 1000.....	20
Over 1000.....	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

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

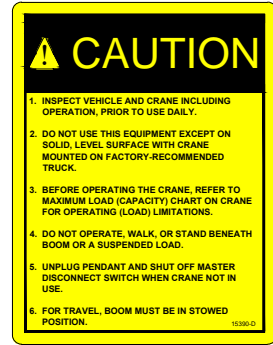


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CINCINNATI, OHIO

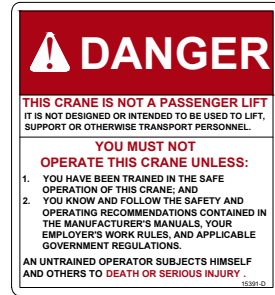
TITLE	DATE	SECTION
HAZARD APPS & INFO	02-21-14M	C150
ET/HT CRANES	SUPERSEDES 12-20-13L	15394



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



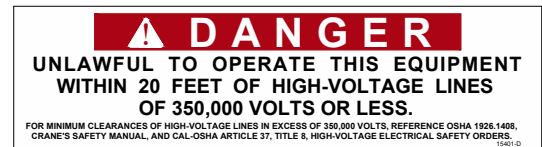
DECAL #: 15391  
 DESCRIPTION: DANGER, NOT A PASSENGER LIFT  
 PURPOSE: TO INFORM OPERATOR NOT TO LIFT, SUPPORT, OR TRANSPORT PERSONNEL, AND TO ENSURE OPERATOR IS ADEQUATELY TRAINED.  
 QUANTITY: 1  
 PLACEMENT: REAR COVER OR SIDE OF CRANE



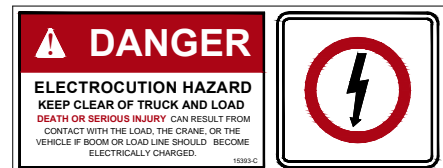
DECAL #: 15392  
 DESCRIPTION: DANGER, ELECTROCUTION HAZARD, MACHINE (CRANE)  
 PURPOSE: TO INFORM OPERATOR THAT MACHINE (CRANE) REPRESENTS AN ELECTROCUTION HAZARD SHOULD IT COME CLOSE TO OR IN CONTACT WITH AN ELECTRICAL VOLTAGE SOURCE.  
 QUANTITY: 1  
 PLACEMENT: REAR COVER OR SIDE OF CRANE



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.



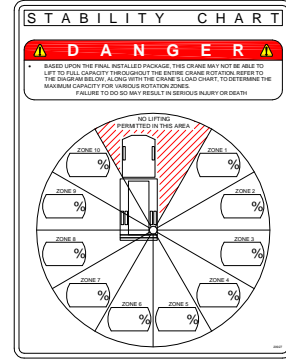
PART NO.: 20927

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.



▲



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CINCINNATI, OHIO

TITLE	DATE	SECTION
SAFETY DECALS	06-06-14C	C150
CRANES	SUPERSEDES 04-02-13B	21384

PART NO.: 14473-2

DECAL: CONDUCTIVE GREASE

FUNCTION: To show the operator where to apply grease.

QUANTITY: Varies

PLACEMENT: Near grease fittings.



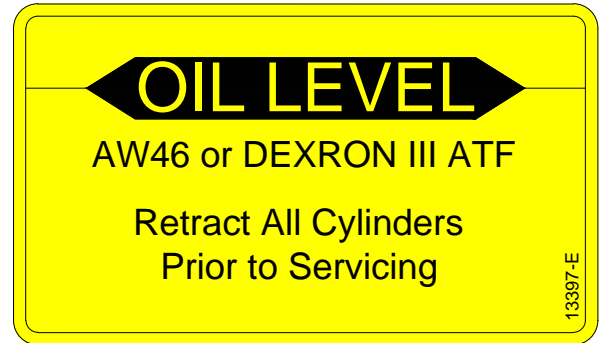
PART NO.: 13397

DECAL: OIL LEVEL

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

QUANTITY: 1

PLACEMENT: Side of hydraulic power unit.



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.



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TITLE  
DECALS

ET CRANES

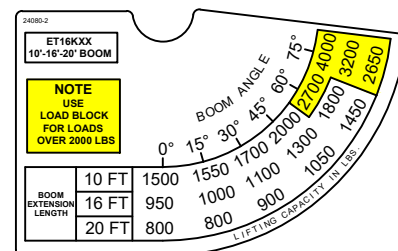
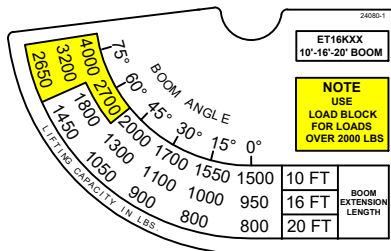
DATE  
11-12-19E

SUPERSEDES  
12-23-13D

SECTION  
C150

21354

PART NO.: 24080-1 & 24080-2  
 DECAL: CRANE CAPACITY  
 FUNCTION: To show the operator the operating capacities of crane.  
 QUANTITY: 1 each  
 PLACEMENT: One on each side of boom.



PART NO.: 28570  
 DECAL: MODEL NUMBER (ET18KX)  
 FUNCTION: To show the model of the crane.  
 QUANTITY: 2  
 PLACEMENT: One on each side of boom.



PART NO.: 27007-16a  
 DECAL: LOAD BLOCK CAPACITY  
 FUNCTION: To show the capacity of the load block.  
 QUANTITY: 2  
 PLACEMENT: One on each side of load block.

LOAD BLOCK SPECIFICATIONS	
RATED CAPACITY:	WEIGHT:
<b>4,000 lbs</b>	<b>34 lbs</b>
WARNING:	
1 PART LINE FOR LOADS LESS THAN 2000 LBS.	
2 PART LINE FOR LOADS 2000 LBS. & GREATER	

PART NO.: 19788-1  
 DECAL: PROPORTIONAL Decal (ET16/18KXXP)  
 FUNCTION: To show the crane has proportional feature.  
 QUANTITY: 2  
 PLACEMENT: One on each side of boom.



INTENTIONALLY LEFT BLANK



VENCO VENTURO INDUSTRIES LLC  
 CINCINNATI, OHIO

TITLE  
**MODEL/CAPCTY DECALS**  
 ET16KX(P)-20'

DATE  
 11-28-23  
 SUPERSEDES  
 -

SECTION  
 C150  
**28572**

PART NO.: 17813  
 DECAL: OVERLOAD SENSING SYSTEM DECAL  
 FUNCTION: To advise operator of overload sensing system.  
 QUANTITY: 1  
 PLACEMENT: Location may vary.

**CRANE IS EQUIPPED WITH AN OVERLOAD SENSING SYSTEM**

- IF OVERLOADED, THE WINCH UP, BOOM DOWN, AND (OPTIONAL) BOOM OUT FUNCTIONS WILL AUTOMATICALLY SHUT OFF TO PREVENT INCREASED OVERLOAD.
- ON CRANES EQUIPPED WITH AN OPTIONAL OVERLOAD ALARM, IT WILL ALSO SOUND.
- IF AN OVERLOAD OCCURS, USE THE WINCH DOWN, BOOM UP OR BOOM IN FUNCTIONS TO RELIEVE THE OVERLOAD.
- THE OVERLOAD SENSING SYSTEM IS INOPERATIVE IF THE BOOM ELEVATION IS AT THE BOTTOM OR TOP LIMIT OF TRAVEL. TO RELIEVE THIS CONDITION, RAISE OR LOWER THE BOOM SLIGHTLY BEFORE LIFTING THE LOAD.
- SEE MANUAL FOR TESTING OVERLOAD SYSTEM.

**NOTICE - WARRANTY VOID IF DISCONNECTED**  
 THE OVERLOAD SENSING SYSTEM HAS BEEN INSTALLED AS A SAFETY FEATURE TO PROTECT THE EQUIPMENT AND THE OPERATOR.

DO NOT DISCONNECT THIS SYSTEM

PART NO.: 14459 (WITH OPTIONAL ALARM)  
 DECAL: OVERLOAD ALARM SYSTEM DECAL  
 FUNCTION: To advise operator of overload alarm system.  
 QUANTITY: 1  
 PLACEMENT: Location may vary.

**THIS CRANE IS EQUIPPED WITH AN OVERLOAD ALARM SYSTEM**

- OVERLOAD ALARM HORN SOUNDS IF RATED LOAD IS EXCEEDED AT ANY REACH.
- IF ALARM SOUNDS, RAISE BOOM OR LOWER WINCH TO REMOVE OVERLOAD.
- ALWAYS RAISE BOOM SLIGHTLY BEFORE LIFTING LOAD. WARNING SYSTEM INOPERATIVE WHEN CYLINDER IS COMPLETELY BOTTOMED.
- ALARM CAN BE TESTED BY TYING DOWN BOOM WITH WINCH CABLE AND OPERATING BOOM UP OR BY RAISING BOOM AGAINST UP LIMIT STOP.

**NOTICE - WARRANTY VOID IF DISCONNECTED**  
 THIS ALARM SYSTEM HAS BEEN INSTALLED AS A SAFETY FEATURE TO PROTECT BOTH THE EQUIPMENT AND THE OPERATOR.

DO NOT DISCONNECT THIS SYSTEM

PART NO.: 23188 (RIGHT) & 23191 (LEFT)  
 DECAL: MANUAL OVERRIDE DECAL (ET16/18KX)  
 FUNCTION: To show the manual override ports.  
 QUANTITY: 1  
 PLACEMENT: Right & Left side of housing.

2 3 1 9 1

**MANUAL OVERRIDE**

RL                      BD                      BI

2 3 1 8 8

**MANUAL OVERRIDE**

RR                      BU                      BO



VENCO VENTURO INDUSTRIES LLC  
 CINCINNATI, OHIO

TITLE  
**ADDITIONAL DECALS**

DATE  
 11-12-19

SECTION  
 C150

ET16KX(P)

SUPERSEDES  
 -

**23986**

# SECTION 200

# INSTALLATION



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

# !! IMPORTANT !!

## ADEQUATE WIRING IMPERATIVE FOR PROPER OPERATION

1. PROPER GROUND PATH - SEE DWG 15660
2. CURRENT DRAW IS SEVERAL HUNDRED AMPERES - ADEQUATE WIRE SIZE AND BATTERY CAPACITY IS ABSOLUTELY ESSENTIAL (SEE CHART BELOW).

### ▲ MINIMUM WIRE GAUGE AND AUXILIARY BATTERY SIZE

MODEL	TOTAL LENGTH OF CABLE (FT) *								▲ 12 VOLT AUXILIARY BATTERY REQUIREMENTS	
	0-20	21-25	26-30	31-40	41-50	51-60	61-70	71-80	CCA (A) **	RC (MIN) ***
▲ CE1500 CE6K CT2000 CT2003/4/5 DT7K	#4	#4	#2	#2	#1	#0	#0	#00	350	100
ET5500MPB ET5500R ET6KMPB ET6KR ET6K ET8K ET10K ET12K	#2	#2	#1	#0	#00	NOT RECOMMENDED			450	100
ET8KX ET10KX ET12KX ▲ ET12KXP	#2	#2	#1	#0	#00	NOT RECOMMENDED			550	150
ET18K(X) ET25K(X) ET30KX ET36KX	SEE DRAWING 15660 FOR CABLE AND BATTERY REQUIREMENTS									

\* INCLUDES GROUND CABLE

\*\* CCA = COLD CRANKING AMPS AT 0° (F).

\*\*\* RC = RESERVE CAPACITY IN MINUTES AT 25 AMPS AND 80° (F).  
THE RC RATING IS A MEASURE OF THE PERIOD OF TIME THE BATTERY CAN SUPPLY A GIVEN CURRENT WITHOUT RECHARGING.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
CABLE & BATTERY

DATE  
07-30-18X

SECTION  
C200

ELECTRIC CRANES

SUPERSEDES  
09-27-17W

711105

**RECOMMENDED CIRCUIT BREAKER TABLE**

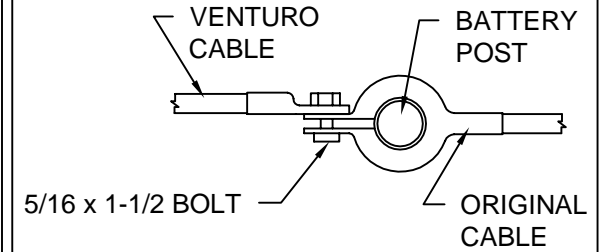
CRANE	DESCRIPTION	PART NO.
CT310KX	250 AMP, MAN RESET	22946-250
DT7	250 AMP, MAN RESET	22946-250
CE-1500-FB	150 AMP, MAN RESET	22946-150
CE6K	150 AMP, MAN RESET	22946-150
CT200X	250 AMP, MAN RESET	22946-250
ET6K	250 AMP, MAN RESET	22946-250
ET8/12K(X)	250 AMP, MAN RESET	22946-250
ET12KXP	300 AMP, MAN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

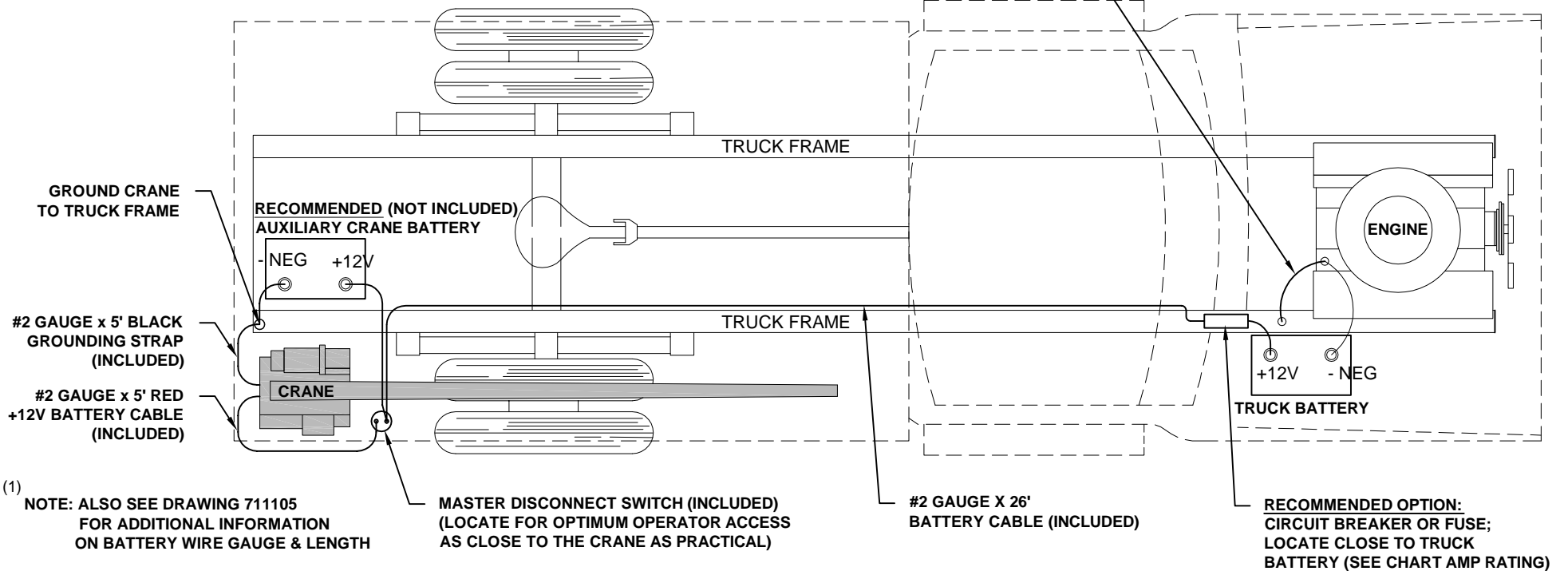
- 12 VOLT VEHICLE BATTERY REQUIREMENTS
  - 625 COLD CRANKING AMPS (AT 0° F)
  - 160 MINUTES RESERVE CAPACITY
  - 102 PLATES, 105 AMP-HR
- (1) 12 VOLT AUXILIARY BATTERY REQUIREMENTS
  - SEE MINIMUM WIRE GAUGE AND BATTERY SIZE

**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

SUPSEDES

07-30-18L

SECTION

**C200**

**15660**



# STABILITY TEST - ET16-20' SERIES

## Overview

Venturo follows the guidelines of ANSI B30.5 in defining stability. Generally speaking, a truck is considered stable as long as it is not on the verge of tipping - i.e. with the truck level, at least one tire on each corner of the truck must remain in contact with the ground.

It is important to note that nearly every installation is unique and will, therefore, typically require stability testing.

The procedure outlined below follows ANSI's (B30.5 - 5-1.1.1) specified "maximum load rating" of 85% of truck stability.

## Testing Procedure

1. Locate the truck on firm, level ground and set parking brake.
2. Fully deploy stabilizers, making sure they are firmly in contact with supportive ground; use stabilizer pads as required. The tires of the truck should remain in full contact with the ground.
3. Inspect wire rope and other key components of crane (consult owners manual for more information).
4. Conduct an operational check of all crane functions.
5. Locate the Overload Pressure Switch at the base of the elevation cylinder
  - 5.1. Disconnect the black & white wires from the housing and then connect the black & white wires together to by-pass the Overload Pressure Switch for the stability test. **Note: The black & white wires MUST be reconnected to the Overload Pressure Switch after the stability test has been completed.**
6. Use a **Test Weight** weighing a **minimum of 941 lbs**, (includes load block weight of 34 lbs.) to a **maximum of 1000 lbs**.
7. Position the boom level and fully retracted.
8. Referring to the Stability Chart (drawing 20907) rotate the crane to a position between 1 and 2 o'clock (truck cab is facing 12 o'clock) to begin testing.
9. Use the winch to lift the Test Weight; DO NOT allow the weight to be more than 6" off the ground at any time during testing (for safety).
10. Using the test weight, extend the boom slowly, until one of two conditions occur:
  - 10.1. Full extension is reached - Mark the ZONE in question **100%**
  - 10.2. The truck becomes unstable i.e. a tire lifts off the ground
    - 10.2.1. Retract the boom until at least one tire on each corner of the truck is making contact with the ground
    - 10.2.2. Use the formula below to determine the allowable **% of Rated Capacity** for the ZONE in question:
11. Note: The "**Max Stable Reach in inches**" is measured from the **center of rotation** of the crane housing to the **lifting load hook**.
$$\% \text{ Rated Capacity} = \frac{\text{"Max Stable Reach" in inches}}{251} \times 100$$
12. Record the **% of Rated Capacity** in the appropriate blank (region) on the Crane Stability page (ref. 20907) and decal.
13. Repeat Steps 7 through 12 for each ZONE on the stability page.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

STABILITY TEST

DATE

03-17-23D

SECTION

C200

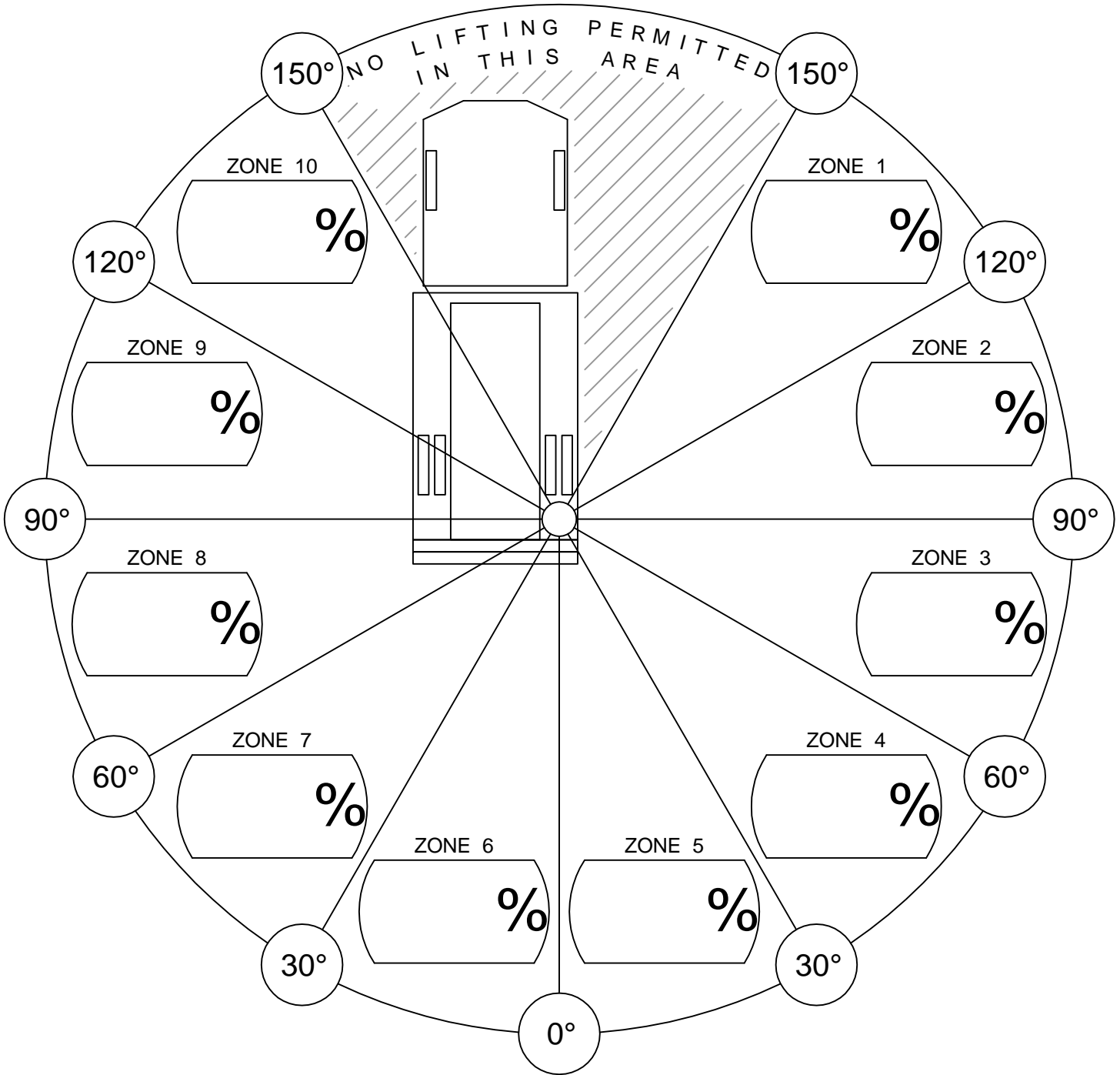
ET16-20' SERIES

SUPERSEDES

11-23-21C

20906-16B

# CRANE STABILITY



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

**CONDITIONS:**

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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
STABILITY CHART

VENTURO CRANES

DATE  
05-11-17F

SUPERSEDES  
02-21-14E

SECTION  
C200

20907

# WIRE ROPE INSTALLATION

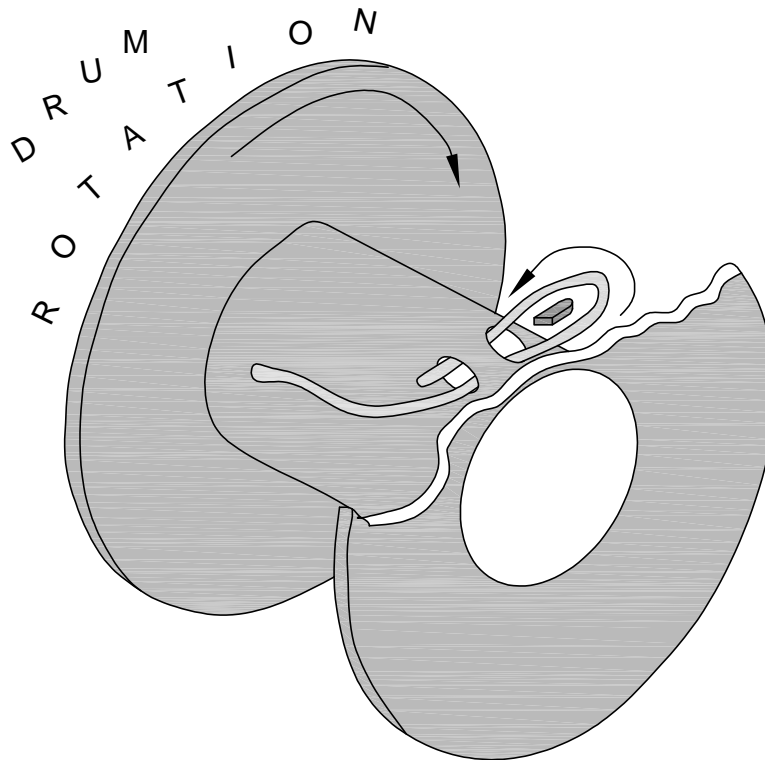


FIG. 1

- STEP 1: UNWIND COIL OF WIRE ROPE BY 'ROLLING' ALONG THE FLOOR. THIS WILL PREVENT 'KINKING'.
- STEP 2: INSERT WIRE ROPE END UP THROUGH ANTI-2-BLOCK (A2B) CAGE ASSEMBLY, BETWEEN CHEEK PLATES, OVER THE TOP SHEAVE, AND THROUGH WIRE ROPE GUIDE.
- STEP 3: INSERT WIRE ROPE END INTO POCKET OPENING ON WINCH, WRAP AROUND WEDGE, AND BACK THROUGH POCKET OPENING AS SHOWN IN FIGURE 1.



## CAUTION

- IF THE WIRE ROPE IS NOT INSTALLED FOR THE CORRECT DRUM ROTATION, THE WINCH BRAKE VALVE WILL NOT HOLD THE LOAD.



## CAUTION

- THERE MUST ALWAYS BE AT LEAST [5] DEAD WRAPS OF WIRE ROPE ON THE WINCH DRUM WHILE UNDER LOAD.

NOTE: SOME WINCHES MAY BE SUPPLIED WITH A HEX NUT IN LIEU OF A WEDGE FOR INSTALLING THE WIRE ROPE.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

WIRE ROPE INSTALLTN

DATE

02-21-14K

SECTION

C200

ET6K & LARGER CRANES

SUPERSEDES

12-26-13J

22245

**SECTION 300**

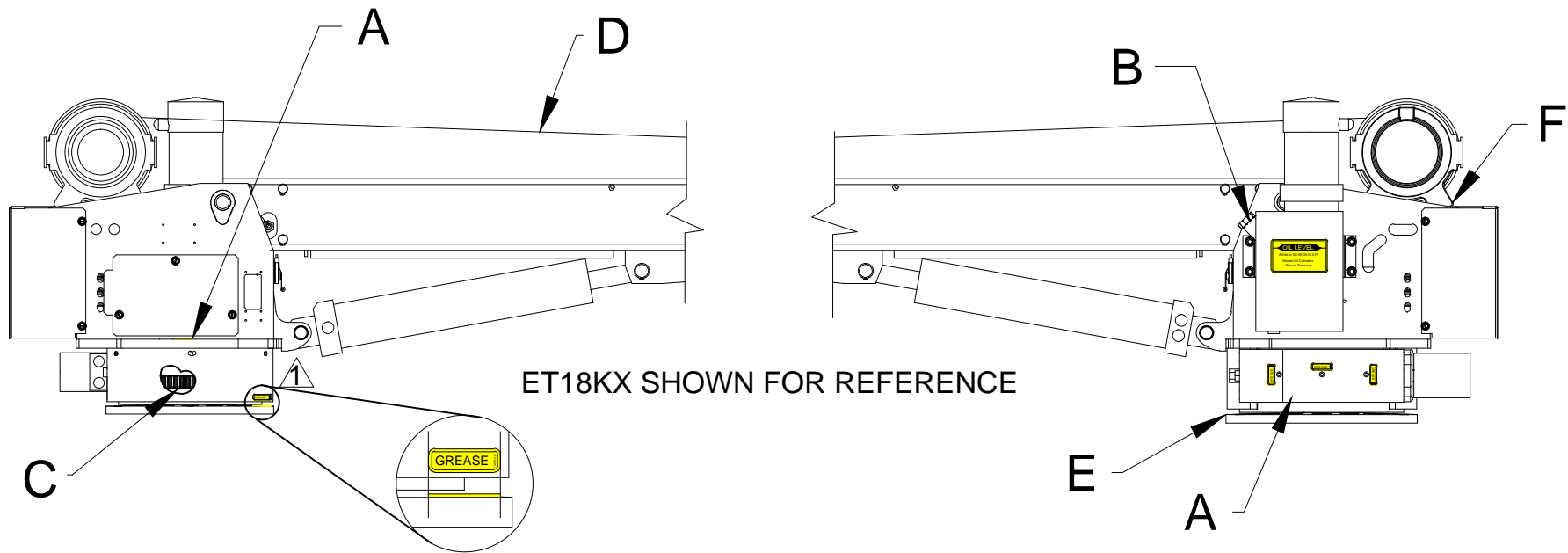
**MAINTENANCE**

**&**

**SERVICE**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO



ET18KX SHOWN FOR REFERENCE

**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 200 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 35 ft-lbs*		Time of Truck Service

\* 32 FT-LBS. FOR ET8/12 WITH GTD-2200 COMEUP WINCH. SEE PAGE 21741 FOR WINCH IDENTIFICATION.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

LUBRICATION & MAINTENACE CHART

ET8/12/16/18 SERIES CRANES

DATE

03-06-23L

SUPERSEDES

01-30-23K

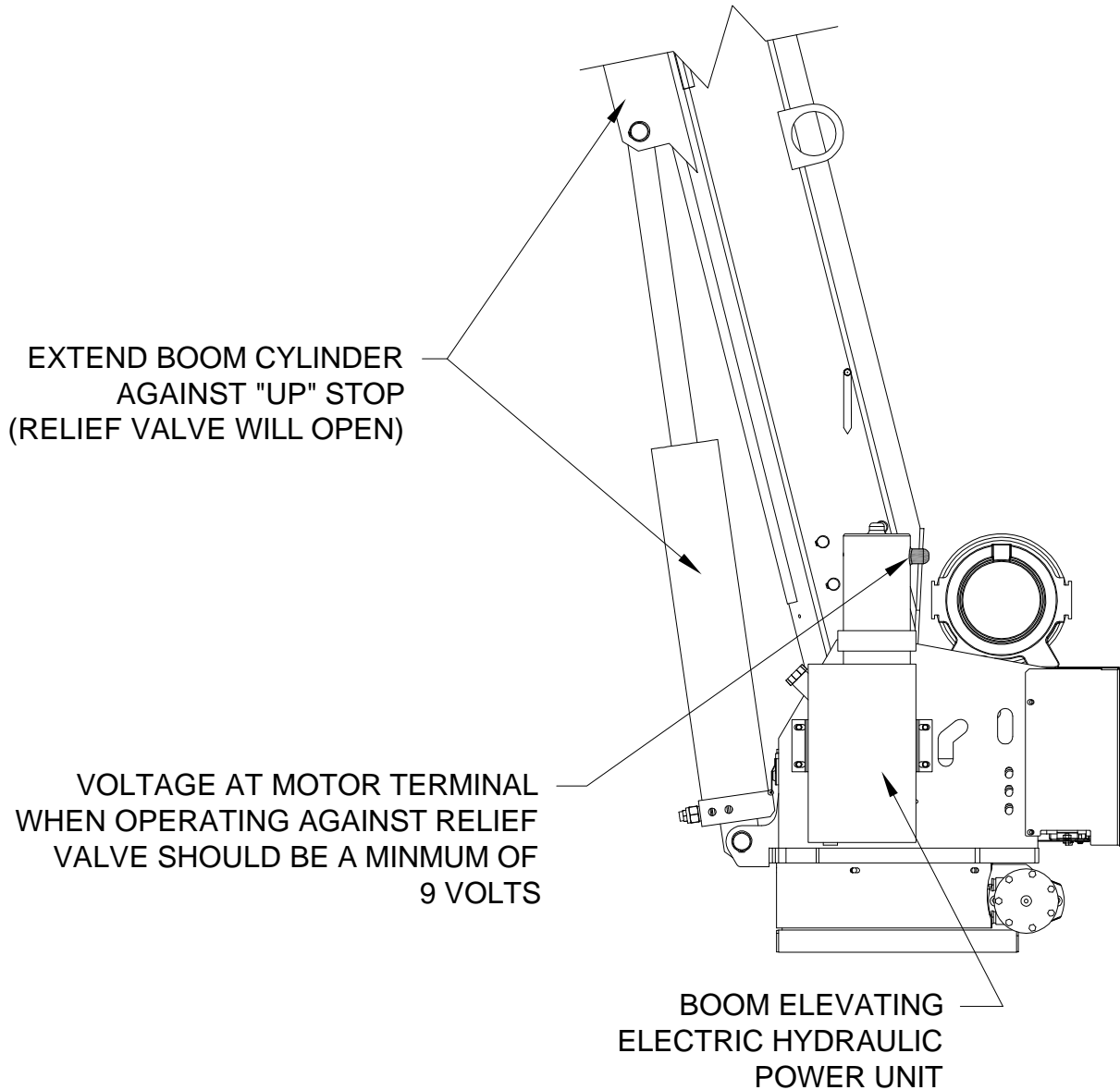
SECTION

C300

21306

# MINIMUM VOLTAGE TEST

ONE OF THE MOST COMMON ELECTRICAL PROBLEMS ENCOUNTERED ON 12 VOLT ELECTRICAL CRANES IS INSUFFICIENT VOLTAGE AT THE MOTOR WHEN DRAWING THE LARGE CURRENT THAT EXISTS AT FULL LOAD



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
**MINIMUM VOLTAGE TEST**  
ET SERIES CRANES

DATE  
12-26-13G  
SUPERSEDES  
10-05-09F

SECTION  
C300  
**19963**

# WIRE ROPE ASSEMBLY

# LOAD BLOCK ASSEMBLY

WIRE ROPE:

5/16" DIA, 80' LONG

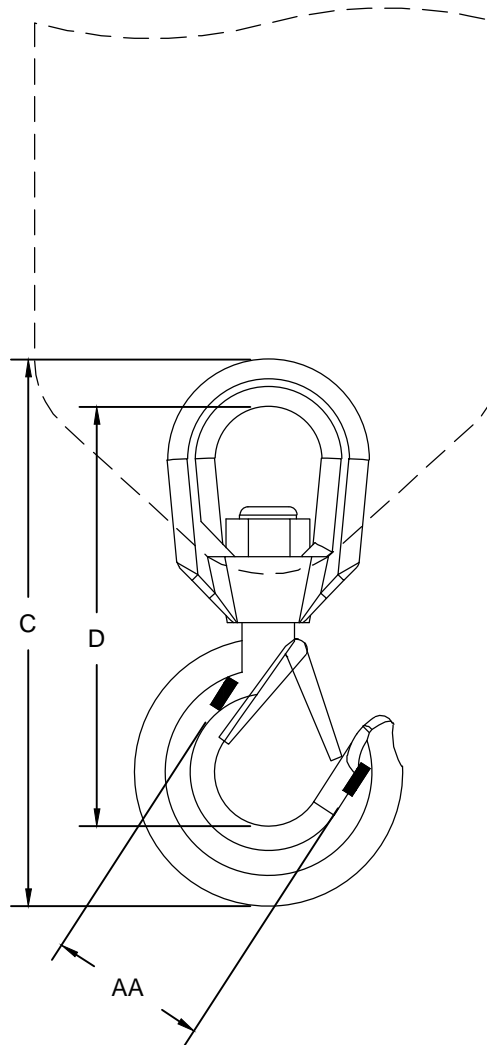
GAC 7X19 XIP-RHRL-IWRC, SB 9800 LBS

P/N: 27668-5/16-80



TERMINATES IN THIMBLE

NO HOOK



LOAD BLOCK HOOK:

RATING: 3 TONNE (6615 LBS)

DIMENSIONS:

COLOR	BRAND	AA	C	D
GOLD	CROSBY	2.00"	8.25"	6.50"



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

WIRE ROPE & HOOK SPECIFICATIONS

ET16/18KXX-20, ET/HT25/30KX

DATE

11-17-23D

SUPERSEDES

03-12-20C

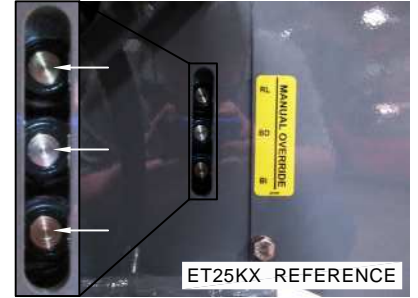
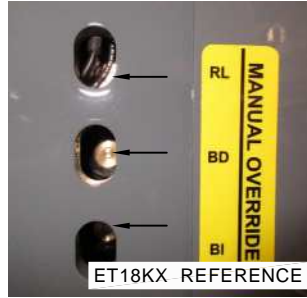
SECTION

C300

23228

MANUAL OVERRIDE INSTRUCTIONS  
ET NON-PROPRIONAL SERIES CRANES ▲

!! READ ALL INSTRUCTIONS BEFORE PERFORMING MANUAL OVERRIDE PROCEDURES !!



Each valve station incorporates [2] hydraulic ports and [2] coils. Manual override shafts are located in the center of the coils (see figure 1). Manual override decals are placed on each crane near the valve assembly. These decals provide a visual aid that helps the operator determine the function designations (Reference figure 2).

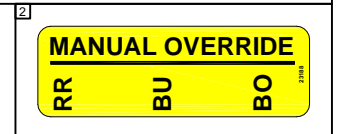
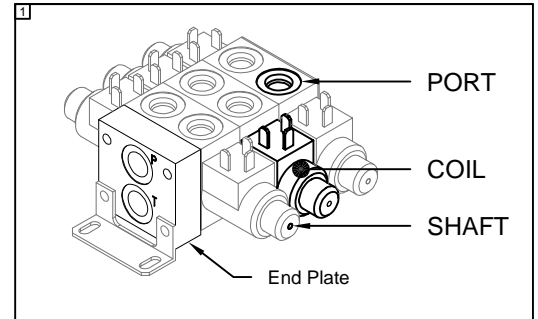
2-STATION FUNCTIONS:

RR = Rot. Right    RL = Rot. Left  
BU = Boom Up      BD = Boom Down

3-STATION FUNCTIONS include previous functions, plus:

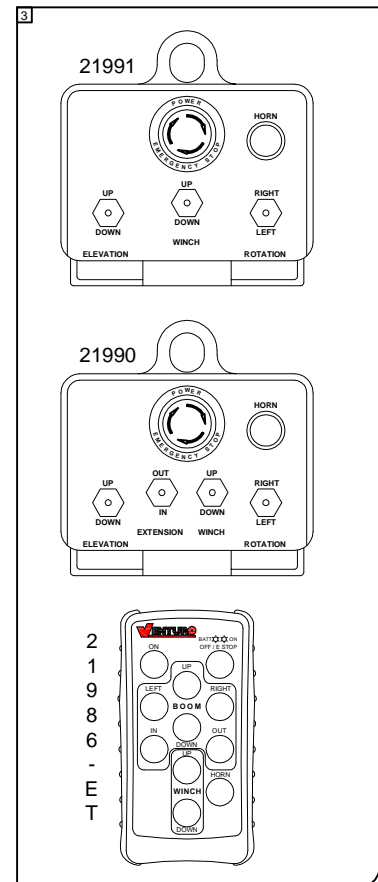
BI = Boom In      BO = Boom Out

**ALWAYS BE SURE TO CHECK HYDRAULIC OIL LEVEL BEFORE PROCEEDING. IT IS RECOMMENDED TO REMOVE ANY ITEM(S) THAT MAY INTERFERE WITH OPERATING THE CRANE MANUALLY. IF POSSIBLE, STRAPS AND/OR HARNESSSES SHOULD BE REMOVED BEFORE OPERATING A CRANE IN MANUAL OVERRIDE !!**



Procedure:

1. Turn Master disconnect switch to "ON"
2. Power up the pendant / radio
  - 2.1. PENDANT - twist EMERGENCY STOP button clockwise
  - 2.2. RADIO - Press green ON button
3. On the crane, reference the function you wish to perform using the manual override decal
4. Using a tool with a diameter of 1/8" or smaller, press the shaft inward and hold
5. Reference the functions listed on your pendant or radio (see figure 3)
6. Press the switch or button for the same function
7. If you need to change function,
  - 7.1. Release switch or button
  - 7.2. Remove tool from shaft
  - 7.3. Go to step 3



For assistance, please feel free to contact Technical Support at 800-226-2238.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
MAN. OVERRIDE INSTR.  
ET NON-PROP CRANES

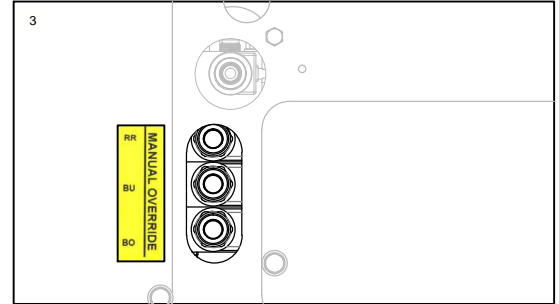
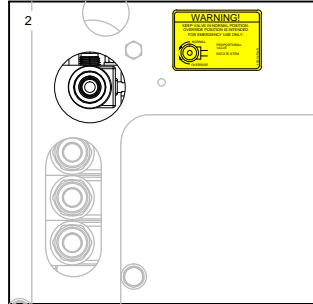
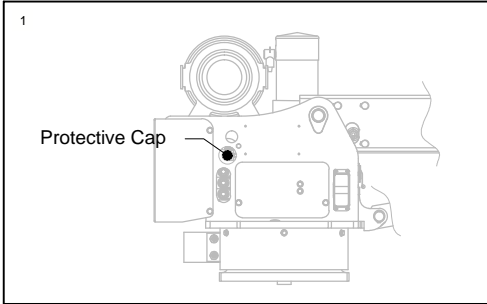
DATE  
03-08-19A  
SUPERSEDES  
02-09-17

SECTION  
C200  
23084



MANUAL OVERRIDE INSTRUCTIONS  
ET PROPRTIONAL SERIES CRANES

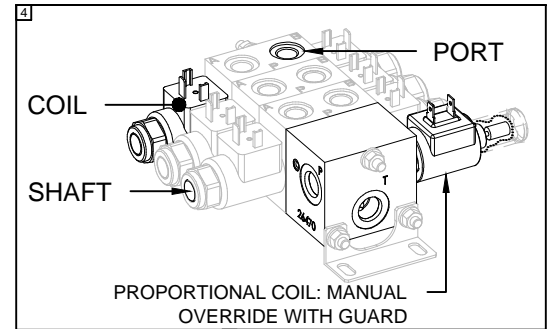
**!! READ ALL INSTRUCTIONS BEFORE PERFORMING MANUAL OVERRIDE PROCEDURES !!**



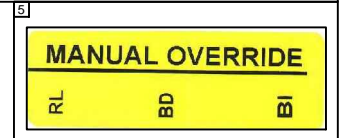
Each valve station incorporates [2] hydraulic ports and [2] coils. Manual override shafts are located in the center of the coils (see figure 4). Manual override decals are placed on each crane near the valve assembly. These decals provide a visual aid that helps the operator determine the function designations (Reference figure 3 & 5).

**3-STATION FUNCTIONS:**

- RR = Rot. Right    RL = Rot. Left
- BU = Boom Up    BD = Boom Down
- BI = Boom In    BO = Boom Out

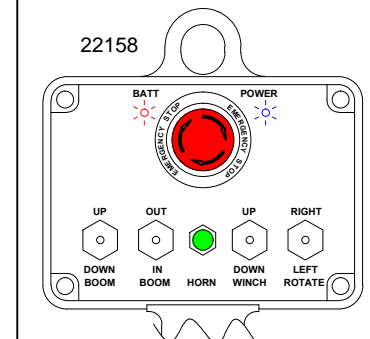
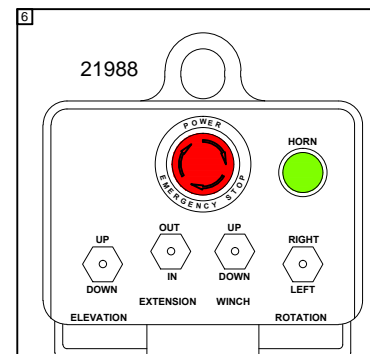


**ALWAYS BE SURE TO CHECK HYDRAULIC OIL LEVEL BEFORE PROCEEDING. IT IS RECOMMENDED TO REMOVE ANY ITEM(S) THAT MAY INTERFERE WITH OPERATING THE CRANE MANUALLY. IF POSSIBLE, STRAPS AND/OR HARNESES SHOULD BE REMOVED BEFORE OPERATING A CRANE IN MANUAL OVERRIDE !!**



**Procedure:**

1. Turn Master disconnect switch to "ON"
2. Remove Protective cap (see figure 1)
3. Rotate Valve Stem Clockwise to close (see figure 2)
4. Power up the pendant / radio
  - 4.1. Twist EMERGENCY STOP button clockwise
5. On the crane, reference the function you wish to perform using the manual override decal (see figure 3)
6. Using a tool with a diameter of 1/8" or smaller, press the shaft inward and hold
7. Reference the functions listed on your pendant or radio (see figure 6)
8. Press the switch or button for the same function
9. If you need to change function,
  - 9.1. Release switch or button
  - 9.2. Remove tool from shaft
  - 9.3. Go to step 5



For assistance, please feel free to contact Technical Support at 800-226-2238.

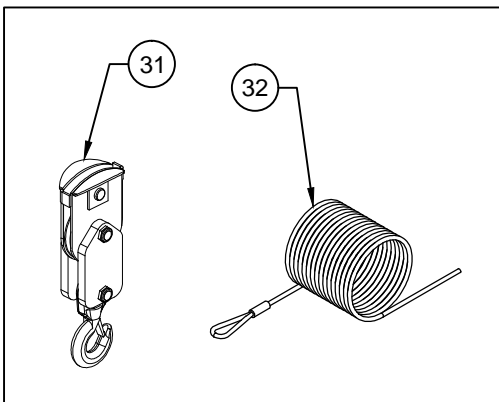
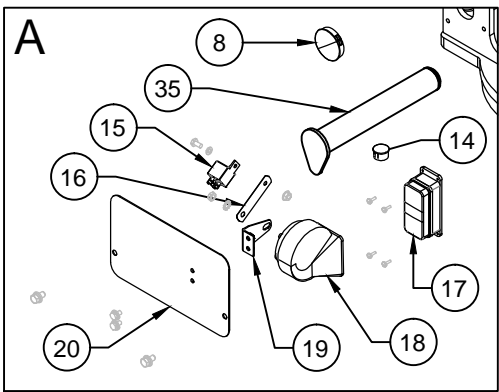
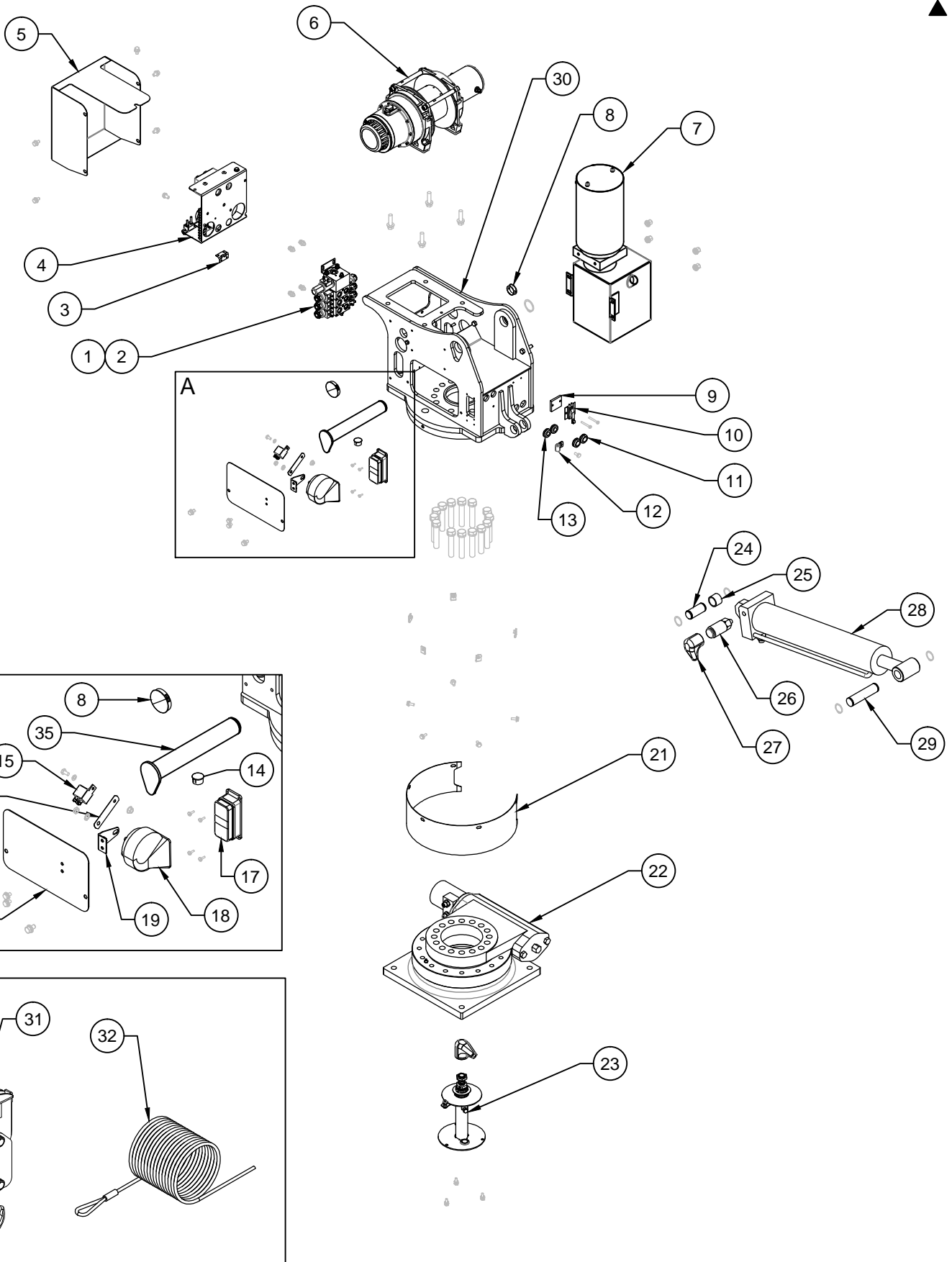


# SECTION 400

# REPLACEMENT PARTS



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
RPLCMNT PARTS DWG - MECH  
ET16/18KXX(P)-20'

DATE  
07-22-24D  
SUPERSEDES  
05-26-21C

SECTION  
C400  
25210

# ET16KXX(P)-20' - REPLACEMENT PARTS LIST- MECH

ITEM NO.	KX(X)	KX(X)P	PART NO.	DESCRIPTION	
1	1	-	21614	VALVE BLOCK; 3-SPOOL	
2	-	1	26479	VALVE BLOCK; 3-SPOOL PROP VALVE	
3	1	1	1586A22	HINGE	
4	1	1	23154	ELECTRICAL PANEL	
5	1	1	23173	REAR COVER, MECHANISM	
6	1	1	21215	WINCH, PERMANENT MOTOR	
7	1	1	26489	HYDRAULIC POWER UNIT	
8	2	1	26492	PLUG; Ø2", LOCKING	
9	1	1	20896	UHMW SPACER - TOP POSITION SWITCH	
10	1	1	19904	BOOM SHUT OFF SWITCH ASSEMBLY	
11	2	2	20889	GROMMET 5/8" ID	
12	1	1	19269	CLAMP, CABLE - 1/4 IN.	
13	2	2	14775	GROMMET 1/2" ID	
14	1	1	25019	PLUG; HOLE, 7/8", PLASTIC	
15	1	1	22739	RELAY. 12VDC	
16	1	1	-	RELAY BRACKET (INCLUDED WITH 21948)	
17	1	1	22480	SOCKET ASSY-16+1 POLE	
18	1	1	21948	HORN, OPERATOR CONTROLLED 12V	
19	1	1	22000	BRACKET; HORN	
20	1	1	23155	PLATE; COVER, RIGHT SIDE	
21	1	1	21185	ROTATION GEAR GUARD	
22*	1	1	21735	SLEW DRIVE; SQUARE BASE	
			21735-1	SLEW DRIVE; RECTANGULAR BASE	
23	1	1	16780-2P8	ASSY; SWIVEL TERMINAL, 2-POLE	
24	1	1	21172	PIN; ELEV CYLINDER BASE	
25	3	3	21124	MRP COMPOSITE BEARING	
26	1	1	17460-2900-21	OVERLOAD PRESSURE SWITCH	
27	2	2	17012	BOOT COVER	
28	1	1	21743	ELEVATION CYLINDER	
29	1	1	21127	PIN; ELEV CYLINDER ROD	
30	1	1	23149	HOUSING; WELDED ASSEMBLY	
31	1	1	27667	LOAD BLOCK ASSEMBLY	
32	1	1	27668-5/16-80	WIRE ROPE, 5/16" x 80'	
▲	33	-	-	-	
▲	34	-	-	-	
	35	1	1	21160	PIN; BOOM, MAIN PIVOT

\* EITHER 21735 OR 2175-1 DEPENDING ON CONFIGURATION

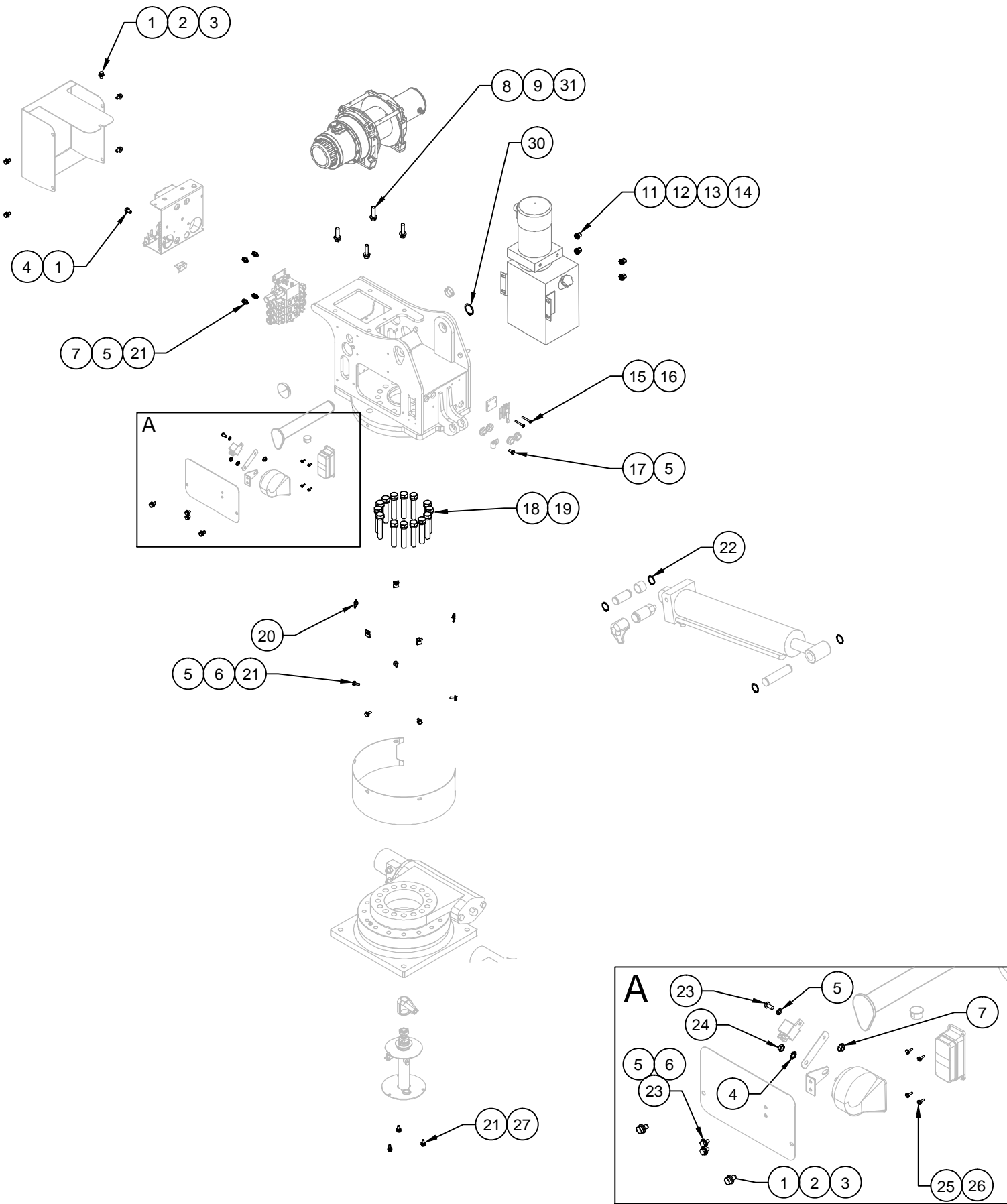


VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS LIST  
ET16KXX(P)-20' - MECH

DATE  
07-22-24F  
SUPERSEDES  
08-03-23E

SECTION  
C400  
25212



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
RPLCMNT HW DWG - MECH  
ET16/18KX(P), GEN. B

DATE  
05-11-23E  
SUPERSEDES  
09-28-22D

SECTION  
C400  
23991

# REPLACEMENT H/W LIST - ET16/18KX(P) MECH

ITEM NO.	QTY	PART NO.	DESCRIPTION
1	8	!HHCS03118063S	HEX HEAD CAP SCREW, 5/16-18 X 5/8 LG, STAINLESS
2	7	!LWSH-031S	LOCK WASHER 5/16 S/S
3	7	!FWSH-031S	FLAT WASHER 5/16 S/S
4	2	!LWSH-031-STAR-SS	LOCK WSHR, 5/16 EXT STAR , STAINLESS STEEL
5	12	!LWSH-025S	LOCK WASHER 1/4 S/S
6	7	!FWSH-025	FLAT WASHER 1/4 S/S
7	5	!FNUT-02520-SS	FLANGE NUT; 1/4-20, STAINLESS STEEL
8	4	25921	SHCS; M12-175x50mm Gr. 12.9
9	4	!FWSH-M12	FLAT WASHER; M12
10	4	!LWSH-050	LOCK WSHR; 1/2, GR. 5, ZINC
11	4	!LNUT-03816	LOCK NUT; 3/8-16, GR. 5, ZINC, NYL-NSRT
12	4	!LWSH-038	LOCK WSHR; 3/8, GR. 5, ZINC
13	4	!FWSH-038	FLAT WSHR; 3/8, GR. 5, ZINC
14	5	!LWSH-038-STAR	LOCK WSHR; 3/8, GR. 5, ZINC, X-TOOTH
15	2	!PHPMS#1024150S	PHILLIPS HEAD PAN, MACH SCREW, # 10-24 X 1-1/2LG, S/S
16	2	!LWSH-#10	LOCK WSHR; #10, GR. 5, ZINC
17	1	!HHCS02520063S	HEX HEAD CAP SCREW, 1/4-20 X 5/8LG, STAINLESS
18	14	!HHCS06311350	HHCS 5/8-11 X 3-1/2 GR.2
19	14	!LWSH-063	LOCK WSHR; 5/8, GR. 5, ZINC
20	5	!UNUT-02520-LKG	U-NUT; 1/4-20, LOCKING TYPE
21	12	!HHCS02520075S	HEX HEAD CAP SCREW, 1/4-20 X .75 LG, STAINLESS
22	4	!SRNG-113	EXT. RET. RING, 1-1/8 ZINC PLATED
23	3	!HHCS02520050	HHCS; 1/4-20 X 1/2, GR. 5, ZINC
24	1	!HNUT-03124	HEX NUT; 5/16-24, GR. 5, ZINC
25	4	!SHPMS#0832050S	SLOT HEAD, PAN, MACH SCREW #8-32 X 1/2 LG STAINLESS
26	4	!LWSH-#08	LOCK WSHR; #08, GR. 5, ZINC
27	6	!LWSH-025-STAR	LOCK WSHR; 1/4, GR. 5, ZINC, X-TOOTH
28	-	-	-
29	-	-	-
30	1	!SRNG-138	SNAP RING 1-3/8 IN - PLATED
31	4	!LWSH-M12-8.8	LOCK WASHER; M12, GRADE 8.8



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

RPLCMNT HW LIST- MECH

DATE

05-11-23E

SECTION

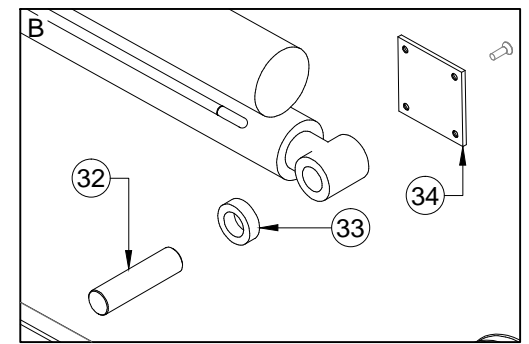
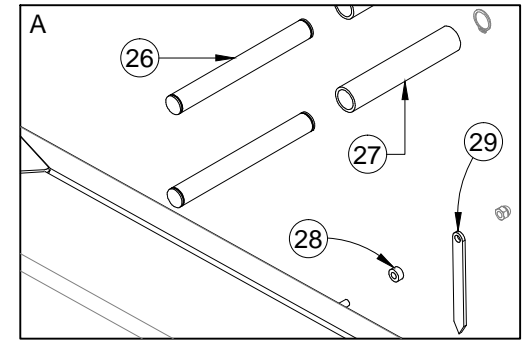
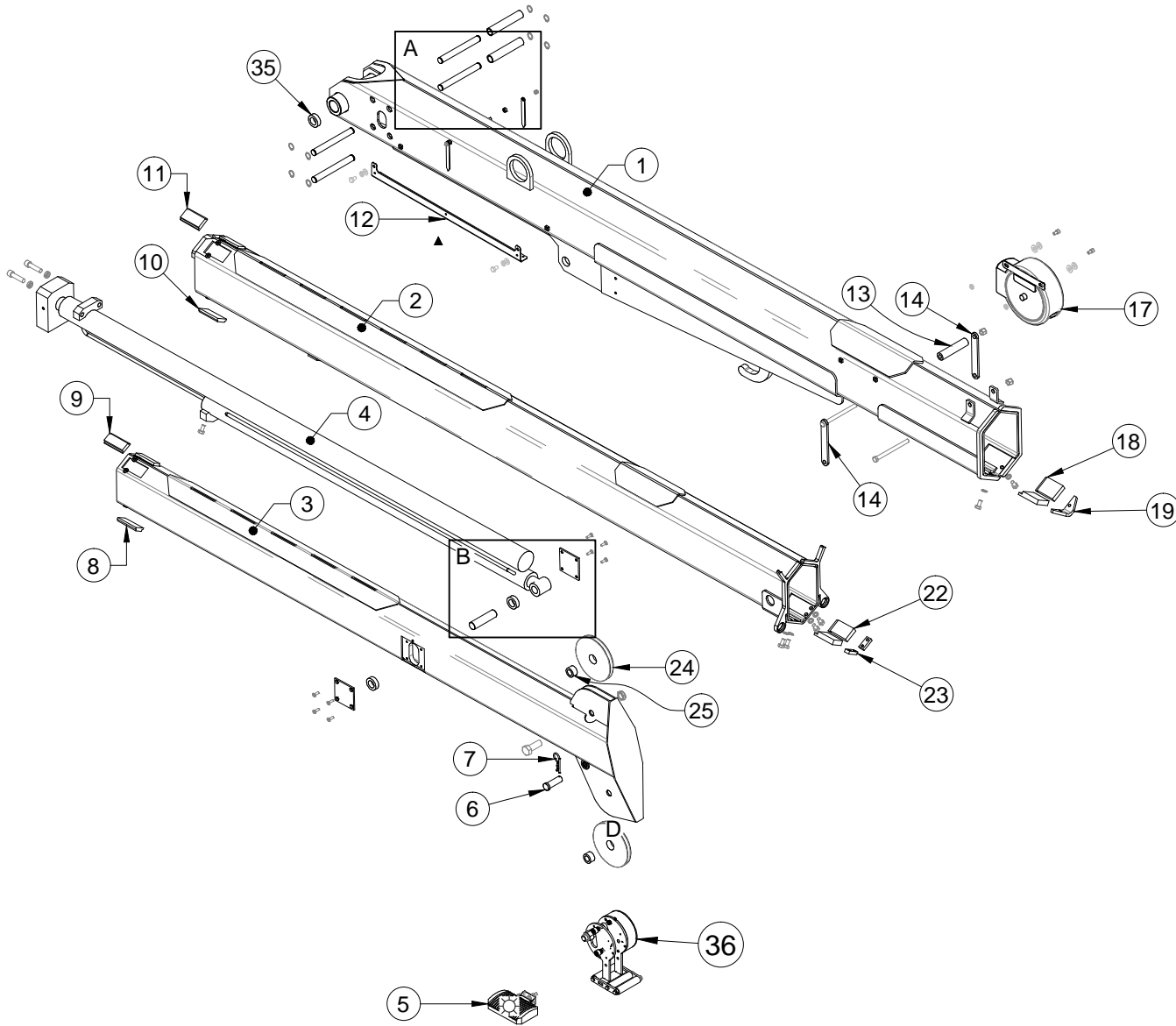
C400

ET16/18KX(P) SERIES

SUPERSEDES

10-17-22D

23992



REFERENCE 26985 FOR REPLACEMENT PARTS LIST

☼ ITEM 5 IS OPTIONAL EQUIPMENT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS DWG - 26570-1 BOOM  
ET16/18-20'

DATE  
07-19-24  
SUPERSEDES  
-

SECTION  
C400  
26984



# REPLACEMENT PARTS LIST - 26570-1 BOOM

ITEM	PART NO.	QTY	DESCRIPTION
1	26576	1	WELDED ASSY; PRIMARY BOOM
2	27165	1	WELDED ASSY; SECONDARY BOOM
3	27167	1	WELDED ASSY; TERTIARY BOOM
4	21753	1	EXTENSION CYLINDER
☼ 5	27483	1	ASSY; WORK LIGHT, LED
6	13401-1	1	CLEVIS PIN
7	21-07	1	HAIRPIN COTTER
8	23217-7	2	BOOM PAD; UHMW, 'A', 3.19 x 1.50 x 0.44
9	23217-6	2	BOOM PAD; UHMW, 'A', 3.19 x 1.50 x 0.50
10	23217-9	2	BOOM PAD; UHMW, 'A', 3.19 x 1.75 x 0.44
11	23217-8	2	BOOM PAD; UHMW, 'A', 3.19 x 1.75 x 0.50
12	26940-2	1	HEX BOOM CABLE GUIDE
13	21560	1	ROLLER; UHMW, WIRE ROPE GUIDE
14	21936	2	FLAT MOUNT; WIRE ROPE GUIDE
15	-	-	-
16	-	-	-
17	26577-1-20	1	COMPLETE CORD REEL
18	23217-3	2	BOOM PAD; UHMW, 'B', 3.19 x 2.13 x 0.63
19	23183	1	V-BLOCK SLIDER; W/ CHAMFER
20	-	-	-
21	-	-	-

ITEM	PART NO	QTY	DESCRIPTION
22	23217-10	2	BOOM PAD; UHMW, 'B', 3.19 x 1.75 x 0.63
23	23119	2	RETAINING BLOCK; BEARING
24	27001	2	SHEAVE; POLY CABLE
25	23924-1	2	SPACER; 27001 SHEAVE
26	21497	4	THRUST PIN; EXTENSION CYLINDER
27	21498	2	ROLLER; EXTENSION CYLINDER
28	22490	2	SPACER; BOOM ARROW
29	13459-2	2	BOOM ARROW; 4" LONG
30	-	-	-
31	-	-	-
32	21941	1	PIN; EXTENSION CYLINDER
33	21428	2	BUSHING; 1" BORE x 1-5/8" OD, 1/2"
34	23116	2	PIN BLOCK; REINFORCING
35	21206	2	COMPOSITE BEARING - BOOM PIVOT
36	27469-L-C-00	1	COMPACT A2B ASS'Y
37	-	-	-
38	-	-	-
39	-	-	-
40	-	-	-
41	-	-	-
42	-	-	-

\* DOES NOT INCLUDE VLC-SPECIFIC COMPONENTS. PLEASE REFERENCE VLC MANUAL.

REFERENCE 26984 FOR REPLACEMENT PARTS DRAWING

☼ OPTIONAL EQUIPMENT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS LIST - 26570-1 BOOM

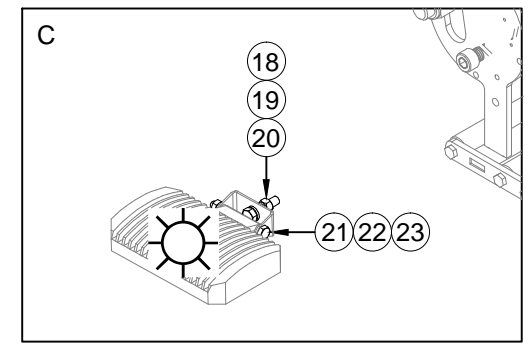
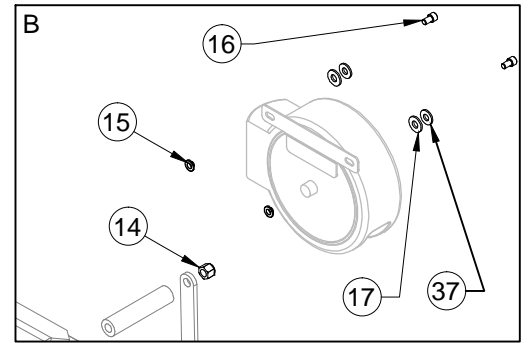
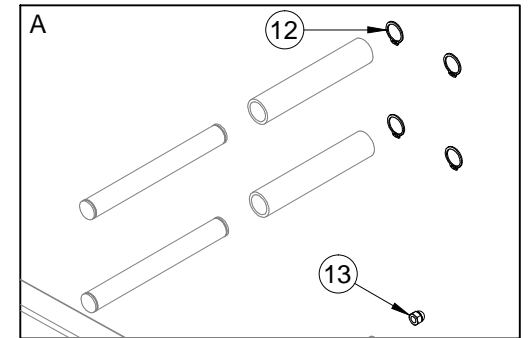
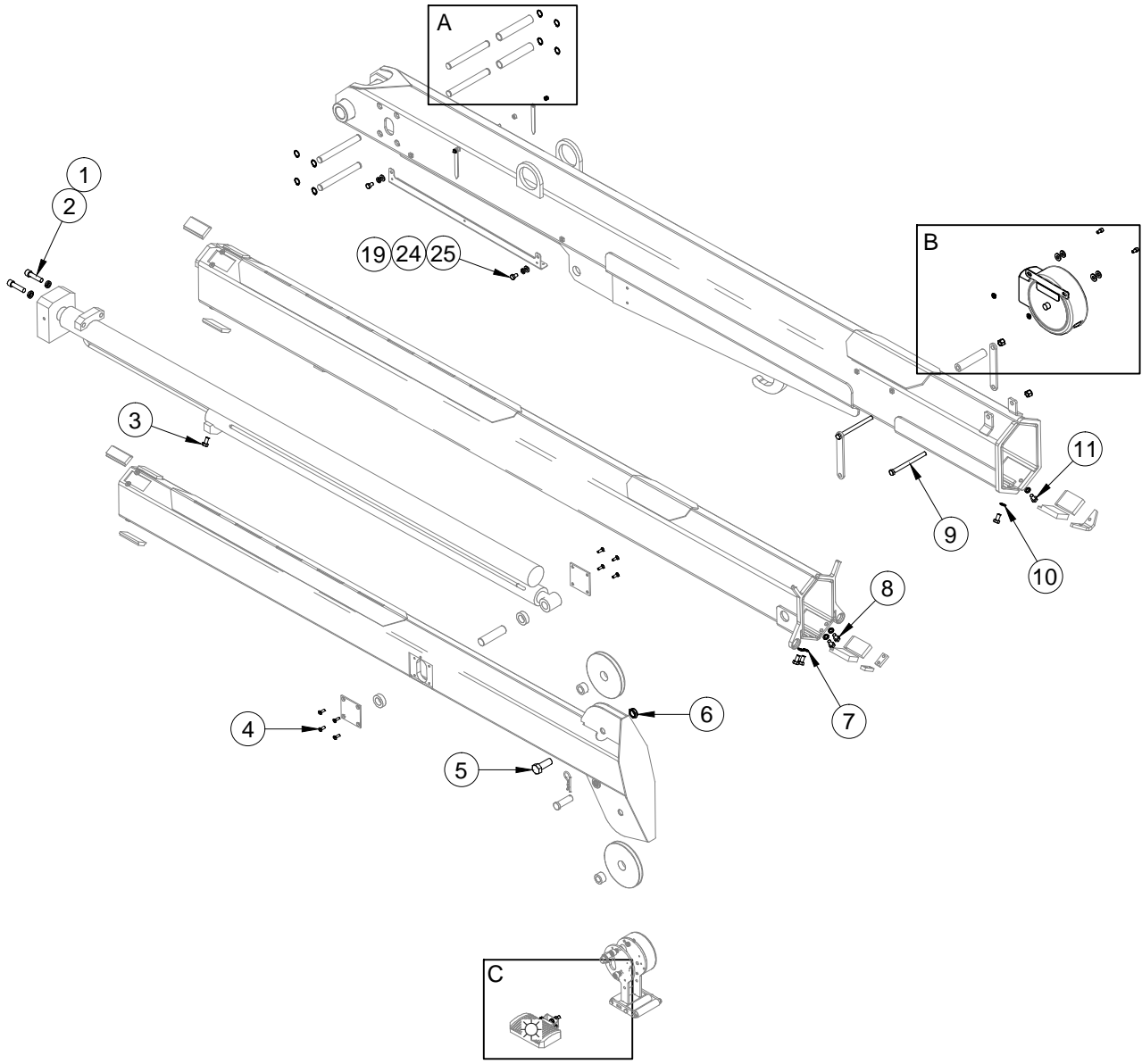
DATE  
07-19-24

SECTION  
C400

ET16/18-20'

SUPERSEDES  
-

26985



REFERENCE 26987 FOR REPLACEMENT FASTENERS LIST

☼ OPTIONAL EQUIPMENT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
RPLCMNT FASTENERS DWG - 26570-1 BOOM

DATE  
07-19-24

SECTION  
C400

ET16/18-20'

SUPERSEDES  
-

26986

# REPLACEMENT FASTENERS LIST - 26570-1 BOOM

ITEM #	PART #	QTY	DESCRIPTION	WHERE-USED
1	!SHCS05013200	2	SHCS; 1/2-13 X 2", GR. 5 ZINC	EXTENSION CYLINDER
2	!LWSH-050-HC	2	LOCK WASHER; 1/2", HI-COLLAR	EXTENSION CYLINDER
▲ 3	!HHCS03816100N	2	HHCS; NYLON PATCH 3/8-16 X 1", GR. 5 ZINC	EXTENSION CYLINDER V-BLOCK
4	!CAC02520063-N	8	CACS; 1/4-20 X 5/8", NYLON PATCH	PIN BLOCK, REINFORCING
5	17059-6	1	SHEAVE AXLE; 1" SHOULDER, S/S	TOP SHEAVE
6	!LNUT-07510	1	LOCK NUT; NYLOC, 3/4-10, GR. 5 ZINC	TOP SHEAVE
7	!LWSH-038	4	LOCK WASHER; 3/8", GR. 5 ZINC	SECONDARY BOOM, PAD BLOCKS
8	!HHCS03816075-5	4	HHCS; 3/8-16 X 3/4", GR. 5 ZINC	SECONDARY BOOM, PAD BLOCKS
9	!HHCS04414550	2	HHCS; 7/16-14 X 5-1/2", GR. 5 ZINC	WIRE ROPE GUIDE
10	!LWSH-038	2	LOCK WASHER; 3/8", GR. 5 ZINC	PRIMARY BOOM, V-BLOCK
11	!HHCS03816075-5	2	HHCS; 3/8-16 X 3/4", GR. 5 ZINC	PRIMARY BOOM, V-BLOCK
12	!SRNG-075	8	SNAP RING; 3/4", PLATED	EXTENSION CYL. THRUST PINS
13	!ANUT02520S	2	ACORN NUT; 1/4-20, S/S	PRIMARY BOOM ARROWS
14	!LNUT-04414	2	LOCK NUT; 7/16-14, NYLON, GR. 5 ZINC	WIRE ROPE GUIDE
15	28198	2	INSULATING SLEEVE WASHER - 5/16"	CORD REEL TO PRIMARY BOOM
16	!SHCS03118063S	2	SHCS; 5/16-18 X 5/8" LG, S/S	CORD REEL TO PRIMARY BOOM
17	01016	2	FIBER WASHER	CORD REEL TO PRIMARY BOOM
☼ 18	!HHCS03118125S	1	HHCS; 5/16-18 X 1-1/4", S/S	LED WORK LIGHT
☼ 19	!LWSH-031S	3	LOCK WASHER; 5/16", S/S	LED WORK LIGHT & CABLE GUIDE
☼ 20	!HNUT-03118S	2	HEX NUT; 5/16-18, S/S	LED WORK LIGHT
☼ 21	!HHCS02520250S	1	HHCS; 1/4-20 X 2-1/2", S/S	LED WORK LIGHT
☼ 22	!LWSH-025S	1	LOCK WASHER; 1/2", S/S	LED WORK LIGHT
☼ 23	!HNUT-02520S	1	HEX NUT; 1/4-20, S/S	LED WORK LIGHT
24	!FWSH-031S	4	FLAT WASHER; 5/16", S/S	CORD REEL & CABLE GUIDE
25	!HHCS003118050S	-	HHCS; 5/16-18 X1/2", S/S	CABLE GUIDE

\* DOES NOT INCLUDE VLC-SPECIFIC COMPONENTS. PLEASE REFERENCE VLC MANUAL.

☼ ITEMS 23-28 ARE FOR OPTIONAL COMPONENTS

REFERENCE 26986 FOR REPLACEMENT FASTENERS DRAWING

HHCS =HEX HEAD CAP SCREW, PHMS = PHILIPS-HEAD PAN MACHINE SCREW,  
SHPMS = SLOT-HEAD PAN MACHINE SCREW, S/S = STAINLESS STEEL



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

RPLCMNT FASTENERS LIST - 26570-1 BOOM

ET16/18-20'

DATE

11-18-24A

SUPERSEDES

07-19-24

SECTION

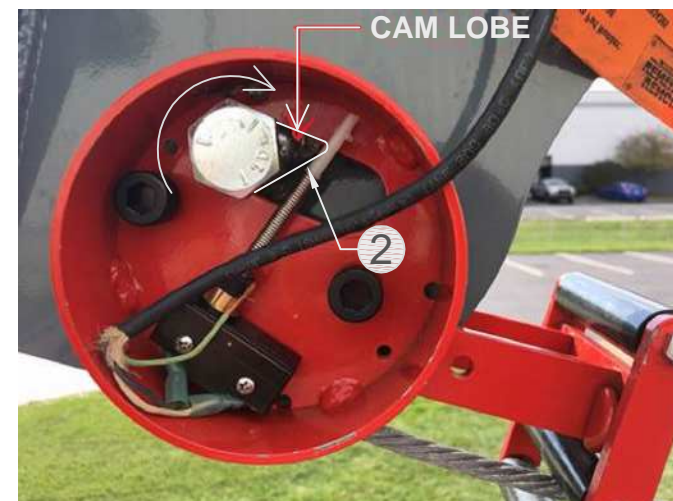
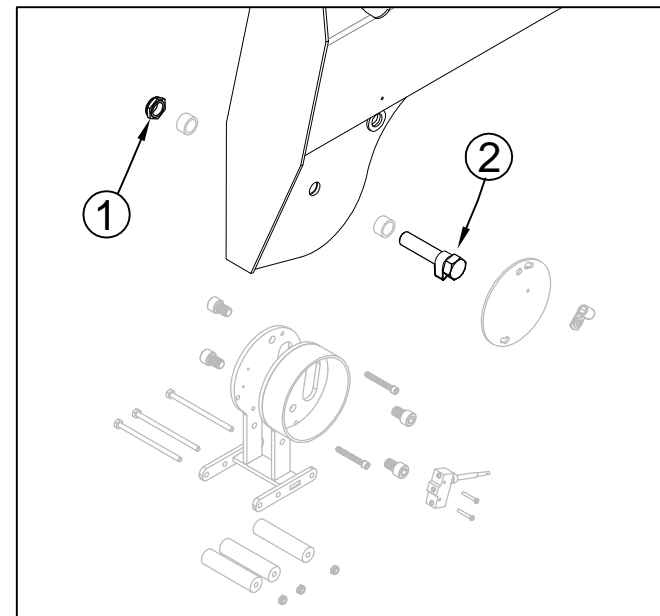
C400

26987

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

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

1. Initially, apply a light torque to the nyloc full nut Item #1 (P/N !LNUT-07510), such that the axle bolt & cam welded assembly can be rotated / adjusted in the steps below.
2. Position the cam **lobe** Item #2 (P/N 28362) so that it is pointing towards the housing / mechanism
3. Hang the load block on the open stowage hook under the primary boom.
4. Thread the wire rope through the load block in a two-line configuration; the wire rope end / eyelet is pinned in the standard position on the tertiary boom tip
5. Actuate the Winch Up function until the load block and wire rope are **taut** enough to prevent the load block from bouncing during transit, **but do not tighten excessively so as to prevent damage to the wire rope.**
6. Rotate the axle bolt & cam welded assembly towards the housing (clockwise in standard configuration) until the cam lobe makes contact with and trips the wobble micro switch and actuates the A2B function.
7. Once adjusted, torque the nyloc full nut (Item #1) to 100 ft\*lbs to prevent further rotational movement of the axle bolt & cam welded assembly.
8. Test the A2B trip-point by slackening and tightening the wire rope / load block assembly by actuating Winch Up/Down. **NOTE: The point at which the A2B trips WILL vary to some degree, depending upon the winch up speed. It is recommended to actuate the winch up function slowly, which will yield a consistent and repeatable result, in terms of wire rope tension when stowed.**



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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

A2B Stowage Cut-out

DATE

10-04-21B

SECTION

C400

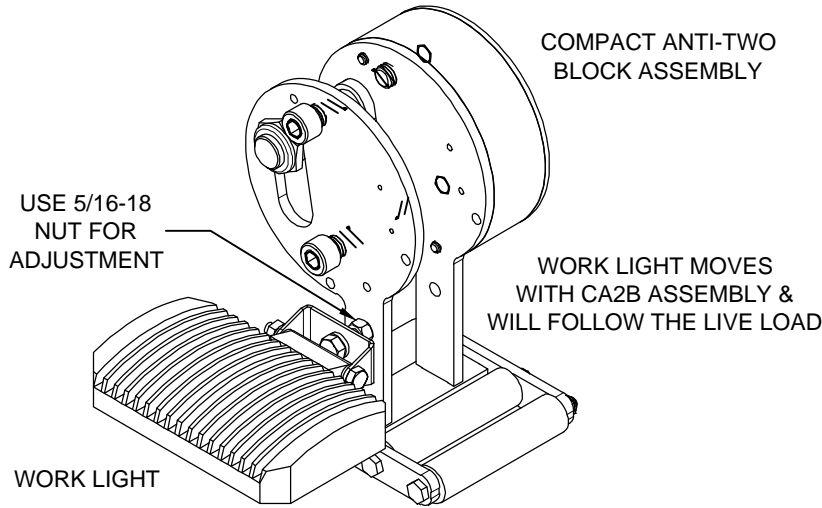
ET/HT Cranes w/ Comp. A2B

SUPERSEDES

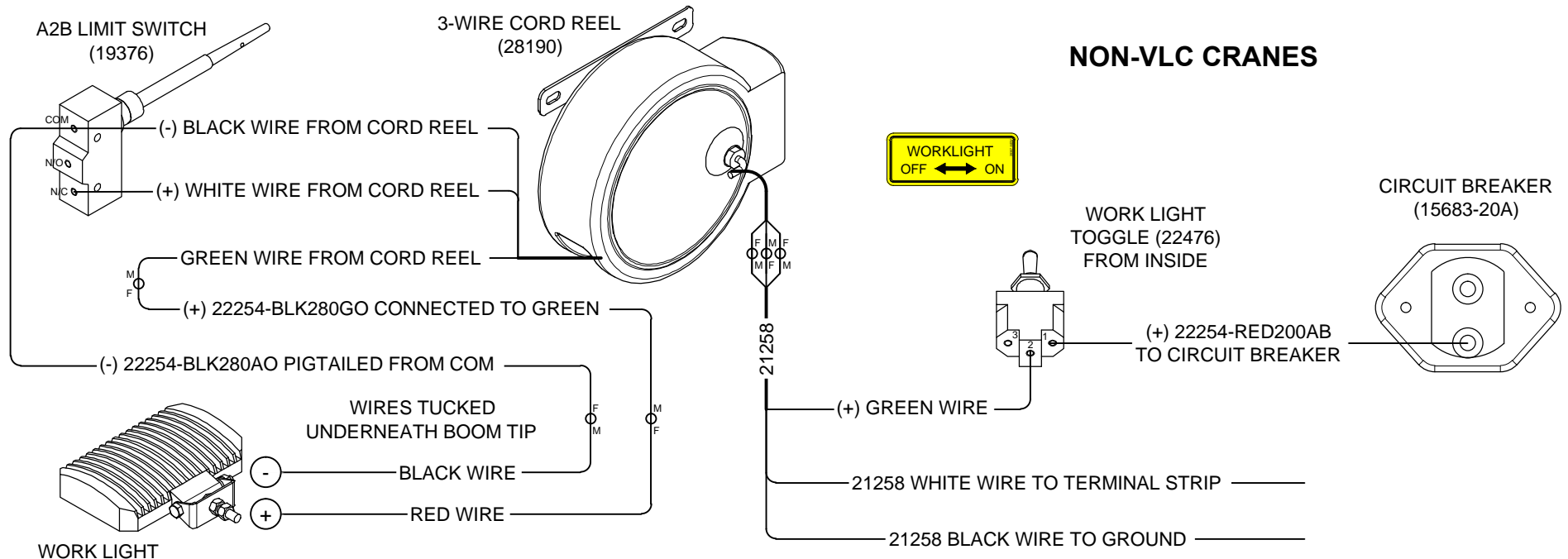
08-03-21A

28239

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



BILL OF MATERIALS		-1	28240
#	DESCRIPTION		PART NUMBER
1	IDWG; WORK LIGHT INSTALLATION, NON-VLC CRANES	1	28199
2	LED WORK LIGHT	1	27483
3	TERMINAL; 16G, FEMALE, QUICK-CONNECT	3	ITERM16G250QCFI
4	TERMINAL; 16G, MALE, QUICK-CONNECT	4	ITERM16G250QCM
5	WIRE ASS'Y; 16G, BLACK, 28", #6 RING - STRIPPED END	1	22254-BLK280AO
6	WIRE ASS'Y; 16G, BLACK, 28", QCF - STRIPPED END	1	22254-BLK280GO
7	TOGGLE SWITCH; ON / OFF, IP-RATED	1	22476
8	HALF-BOOT, FOR IP-RATED TOGGLE SWITCH	1	19793
9	DECAL; ON/OFF, OPTIONAL WORK LIGHT W/ TOGGLE	1	28307
10	WIRE ASS'Y; 16G, RED, 20", #6 RING - #10 RING	1	22254-RED200AB
11	TERMINAL; 16G, #6 RING, CLOSED-END	1	ITERM16G#6RG



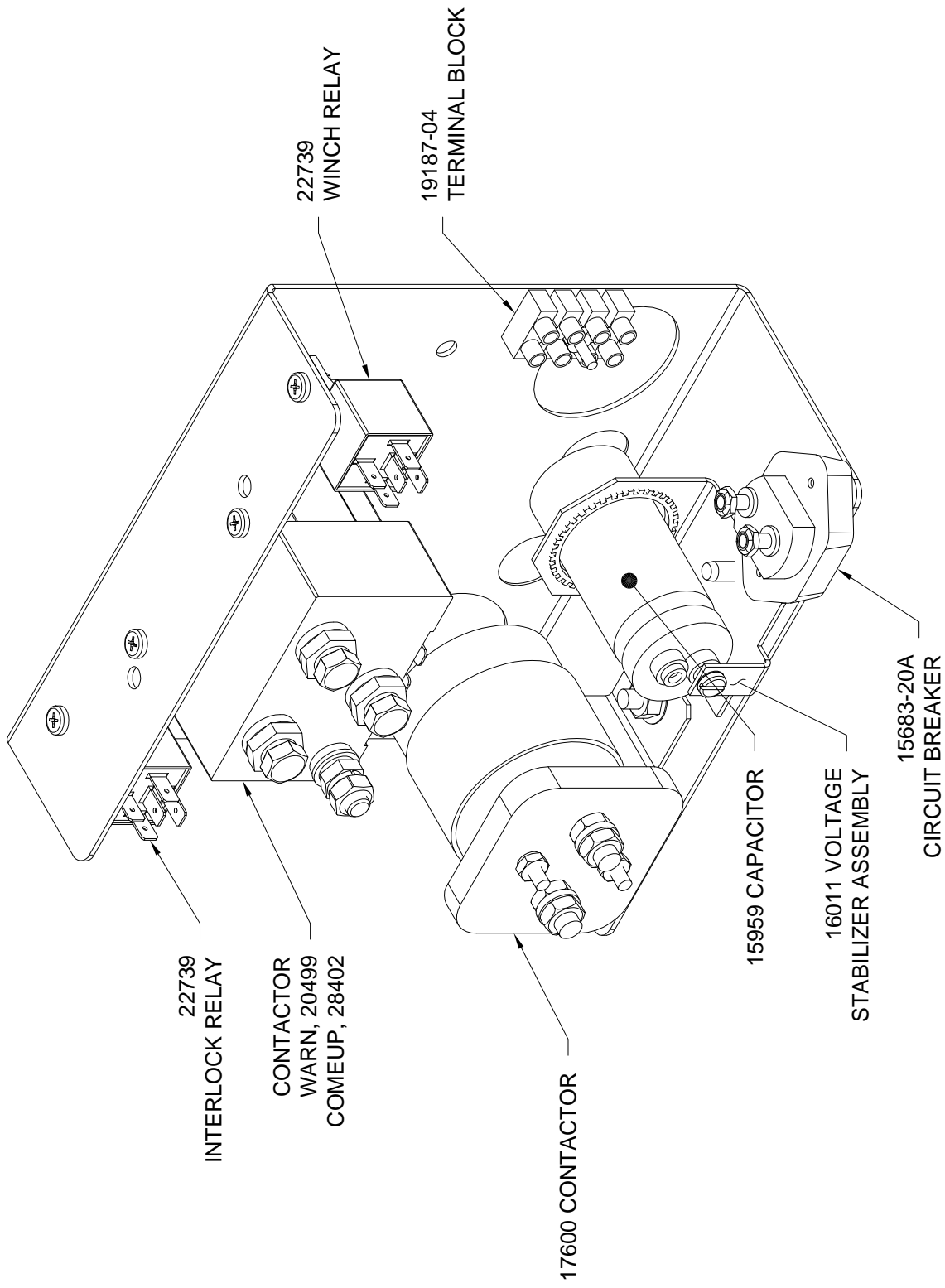
VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**WORK LIGHT INSTALLATION, 3-WIRE CORD REEL**  
**NON-VLC CRANES**

DATE  
**02-10-21**  
 SUPERSEDES  
 -

SECTION  
**C400**  
**28199**

# 23154-3 ELECTRICAL COMPONENT ASSEMBLY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

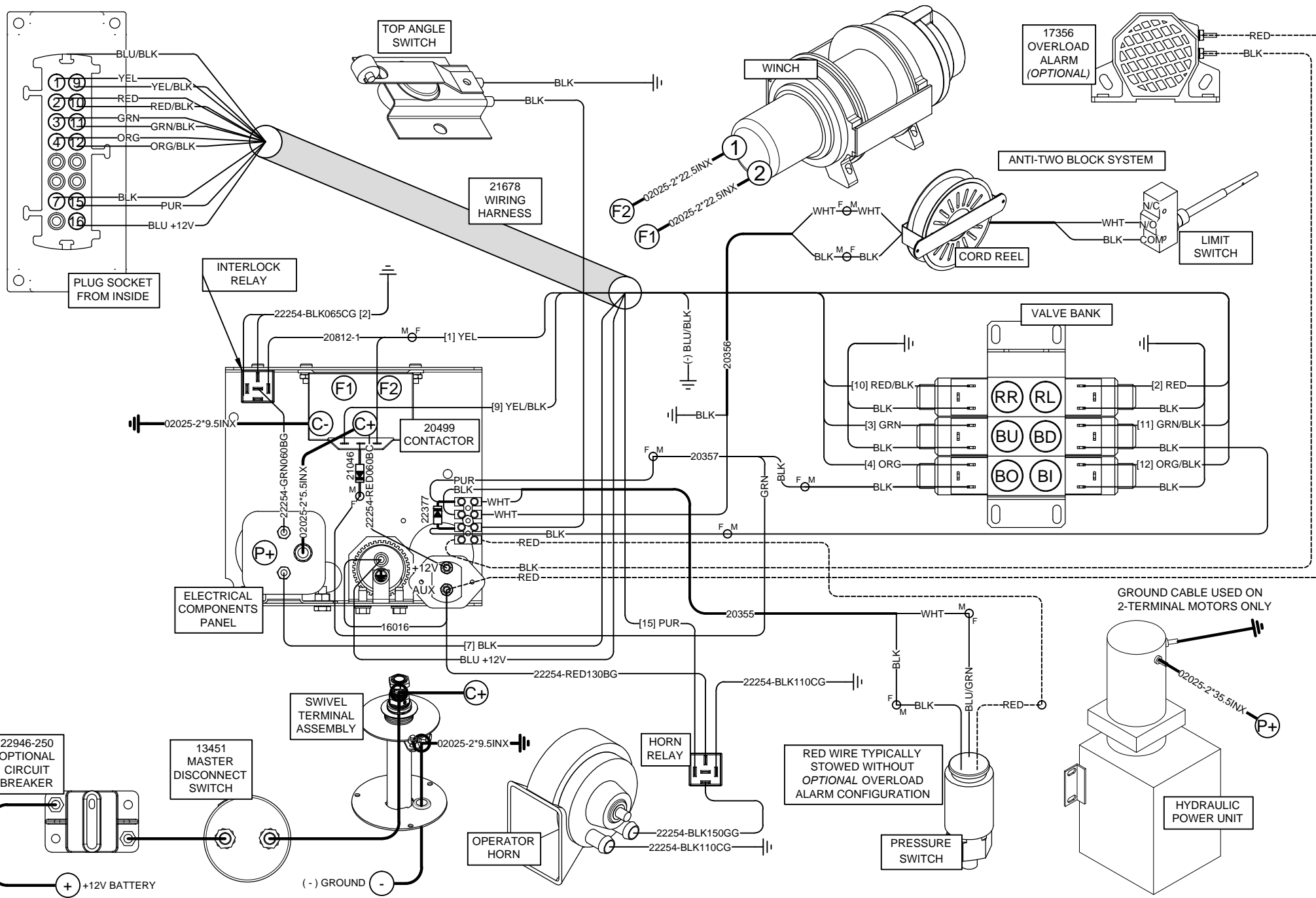
TITLE  
ELECTRICAL COMPONENT ASSEMBLY

ET16/18KX

DATE  
10-21-21  
SUPERSEDES  
-

SECTION  
C400

26533



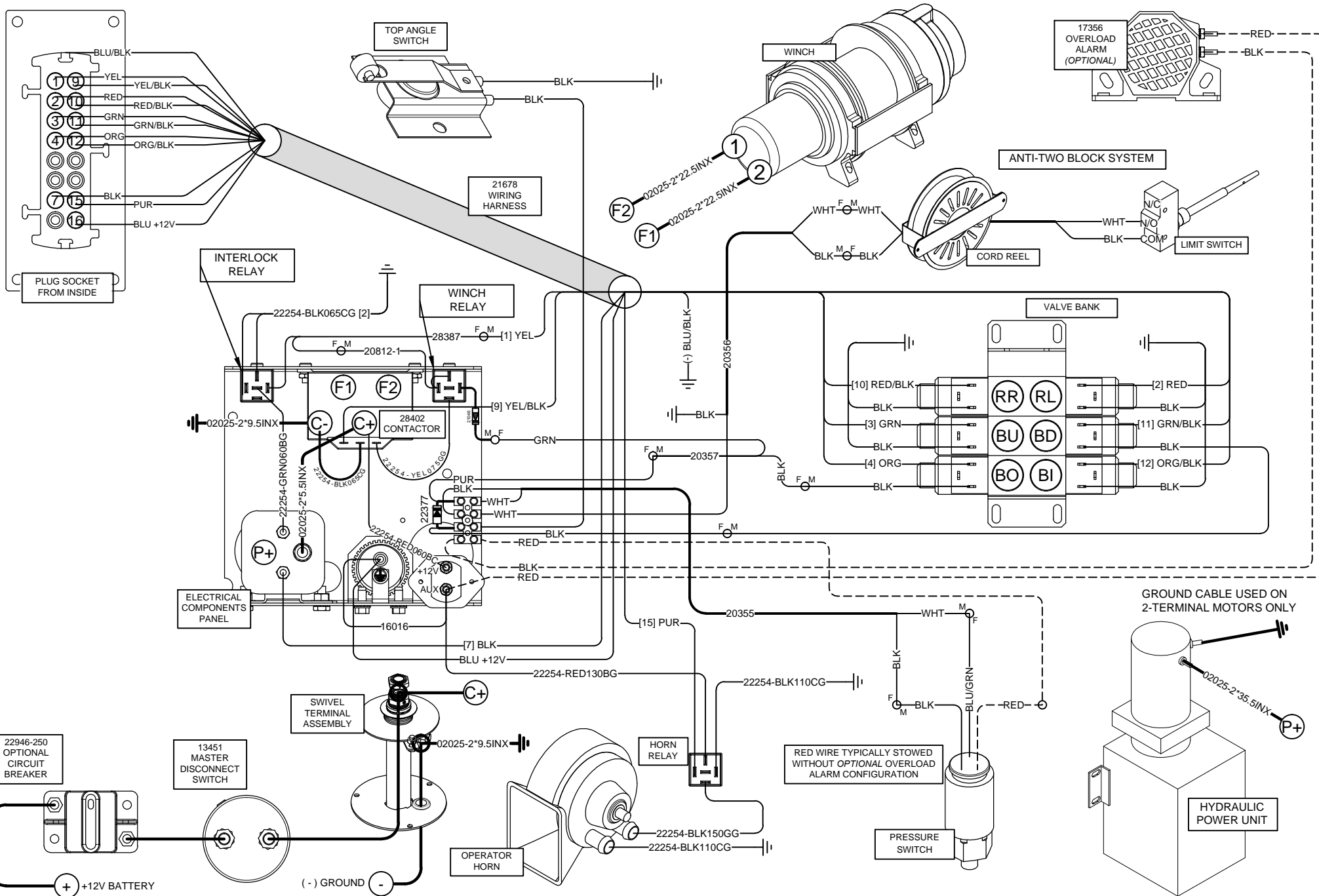
VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**WIRING DIAGRAM**

ET16/18 W/ 16' OR 20' BOOM  
NON-PROPORTIONAL

WINCH: COMEUP OR WARN  
CONTACTOR: 20499

DATE 05-11-23E	SECTION C400
SUPERSEDES 11-04-22D	<b>26525</b>



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

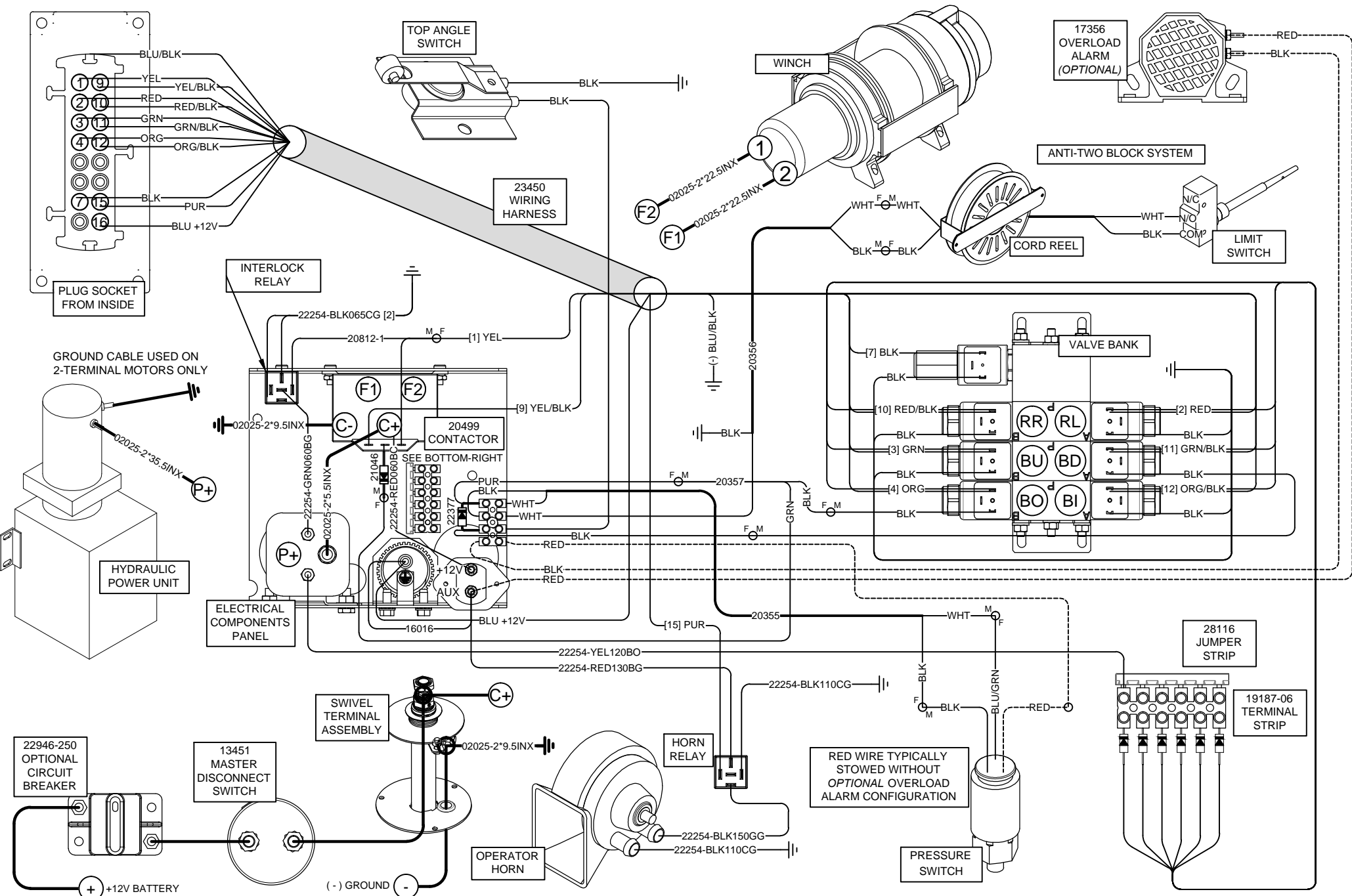
TITLE  
**WIRING DIAGRAM**  
ET16/18 W/ 16' OR 20' BOOM  
NON-PROP

WINCH: COMEUP OR WARN  
CONTACTOR: 28402 W/ RELAY

DATE  
**05-11-23C**  
SUPERSEDES  
**11-02-22B**

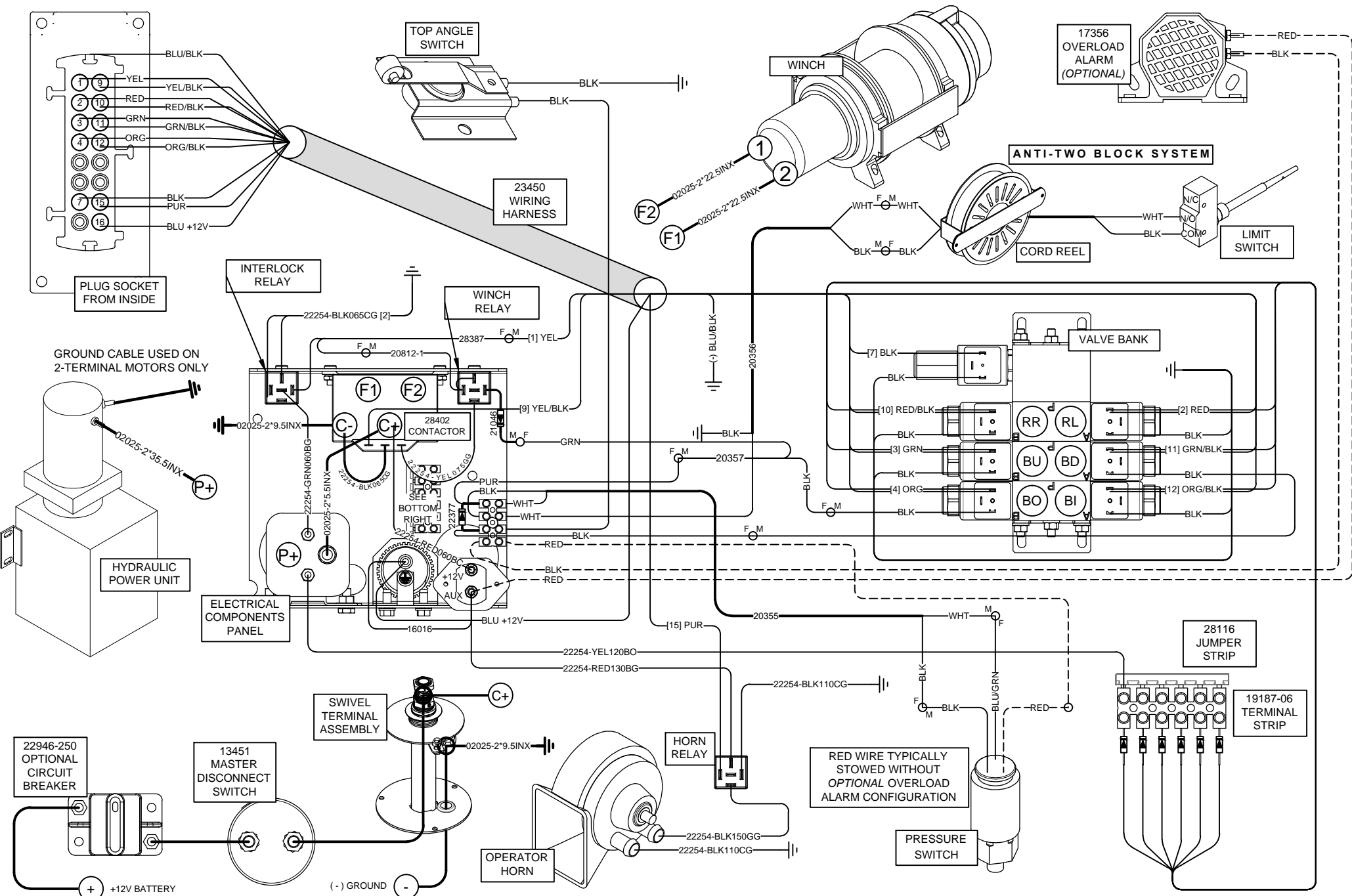
SECTION  
**C400**  
**26531**





VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE <b>WIRING DIAGRAM</b>		DATE <b>05-11-23E</b>	SECTION <b>C400</b>
ET16/18 W/ 16' OR 20' BOOM PROPORTIONAL		SUPERSEDES <b>11-02-22D</b>	<b>26527</b>
WINCH: COMEUP OR WARN CONTACTOR: 20499			



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**WIRING DIAGRAM**  
ET16/18 W/ 16' OR 20' BOOM  
PROPORTIONAL

WINCH: COMEUP OR WARN  
CONTACTOR: 28402 W/ RELAY

DATE  
**05-11-23C**  
SUPERSEDES  
**11-04-22B**

SECTION  
**C400**  
**26532**

# Single & 2-Pole Slip-ring Replacement Parts (1 of 2)

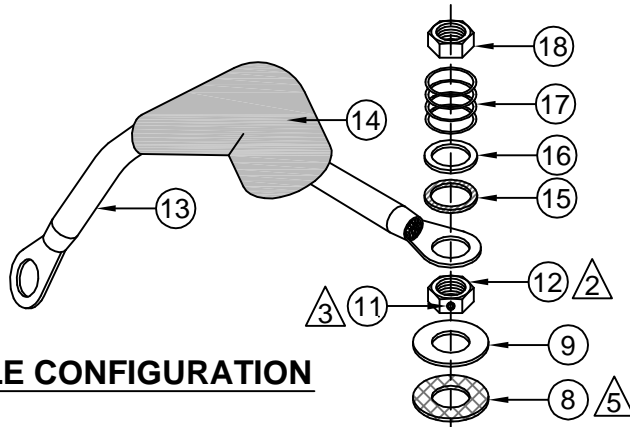
						<b>16780 BILLS OF MATERIALS</b>		
Quill Rotation	Slew Rotation Single Pole Slip-Ring	Slew Rotation 2-Pole Slip-Ring (ET6K ONLY)	Slew Rotation 2-Pole Slip-Ring (ET8-18KX)	Slew Rotation 2-Pole Slip-Ring (ET25-36KX)	ALL CRANES			
16780	16780 - 1	16780 - 2P6	16780 - 2P8	16780 - 2P25	16780 - KIT			
QTY						#	PART	DESCRIPTION
1	1	1	1	1	-	1	16783	PIGTAIL AND STUD ASSEMBLY
1	1	1	1	1	1	2	12534-5	ZINC BUSHING; 5/8" I.D. X 1" O.D. X 14 GAUGE
2	2	2	2	2	2	3	14357-1	FIBER WASHER; 5/8" I.D. X 1 1/16" O.D. X 1/16"
1	1	1	1	1	1	4	14233	INSULATING BUSHING; 5/8" I.D. X 7/8" O.D. X 7/8"
1	-	-	-	-	-	5	14318	FLAT WASHER; 1 3/16" I.D. X 2 3/4" O.D. X 3/16"
1	-	-	-	-	-	6	14232	INVERTED FLARE NUT; 1 3/16"-16
-	-	-	-	-	-	7	27568	WELDED ASSY. CANDLESTICK
1	1	1	1	1	1	8	14357-2	FIBER WASHER; 5/8" I.D. X 1 1/4" O.D. X 1/16"
1	1	1	1	1	1	9	IFWSH-063SAE	FLAT WASHER; 5/8" SAE
-	1	-	-	-	-	10	27156	RUBBER WATER SHIELD; 1/8" THICK
1	1	1	1	1	1	11	ISHCS02528025KC	SET SCREW W/ KNURLED CUP; 1/4"-28 X 1/4"
1	1	1	1	1	1	12	21273	BRASS JAM NUT; 5/8"-11
-	-	-	-	-	-	13	26035-2	PIGTAIL; SWIVEL TERMINAL
-	-	-	-	-	-	14	17012	RUBBER BOOT; SWIVEL TERMINAL
1	1	1	1	1	1	15	5612-162-62	TEFLON WASHER
1	1	1	1	1	1	16	5714-113-62	BRASS WASHER
1	1	1	1	1	1	17	LC-098K-00	SPRING; 0.845" O.D. X 0.098" WIRE X 1.00 F.L.
1	1	1	1	1	1	18	!JNUT-06311N	JAM NUT; 5/8"-11, NYLON NUT
1	1	1	1	1	1	19	LOCTITE-24205	REMOVABLE THREAD LOCKER; 0.5ML
1	1	1	1	1	1	20	19368	IDWG; 16780 SWIVEL TERMINAL
-	-	1	-	-	-	21	27456	UHMW WATER SHIELD, (ET6K ONLY)
-	-	-	1	1	-	22	27456-1	UHMW WATER SHIELD, (ET8 - ET36)
-	-	1	1	1	-	23	27461	SPRING, (-) SLIP-RING ASSY.
-	-	-	1	1	-	24	27441-1	COPPER SLIP-RING, (ET8 - ET36)
-	-	1	-	-	-	25	27441	COPPER SLIP-RING, (ET6K ONLY)
-	-	1	1	1	-	26	27449-1	BRASS SLIP-RING (ET6 - ET36)
-	-	1	1	1	-	27	!HHCS03118075-B	BRASS HHCS
-	-	1	1	1	-	28	!HNUT-03118-B	BRASS NYLOC NUT
-	-	1	-	-	-	29	23255	SLIP-RING, WELDED ASSY, ET6K
-	-	-	1	-	-	30	23255-1	SLIP-RING, WELDED ASSY, ET8 - 18K(X)
-	-	-	-	1	-	31	23255-2	SLIP-RING, WELDED ASSY, ET25 - 36K(X)
-	-	1	1	1	-	32	02025-2*96.5INX	(-) WELDING CABLE ASSY, BRASS SLIP-RING
-	-	1	1	1	-	33	02025-2*22.5INX	(-) WELDING CABLE ASSY, COPPER SLIP-RING
-	-	1	1	1	-	34	27463	SHIM, WIDE RIM, 18GA, 2-1/4 O.D. X 1-1/2 I.D.
-	-	1	1	1	-	35	20889	RUBBER GROMMET
-	-	1	1	1	-	36	!SRNG-150	SNAP-RING, EXTERNAL, 1-1/2"



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

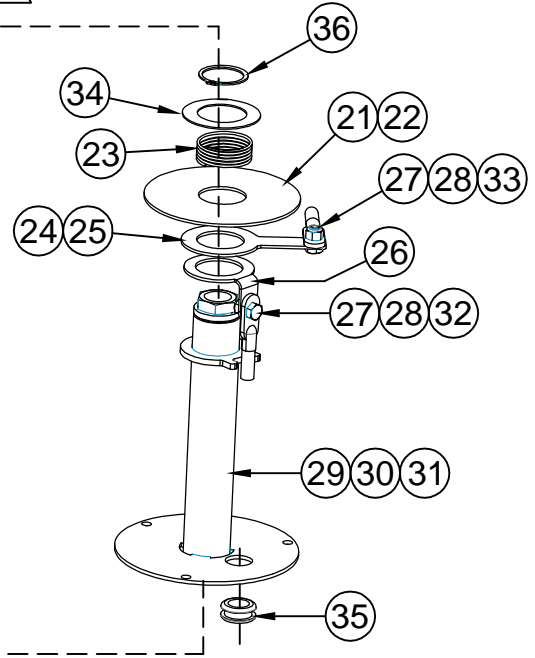
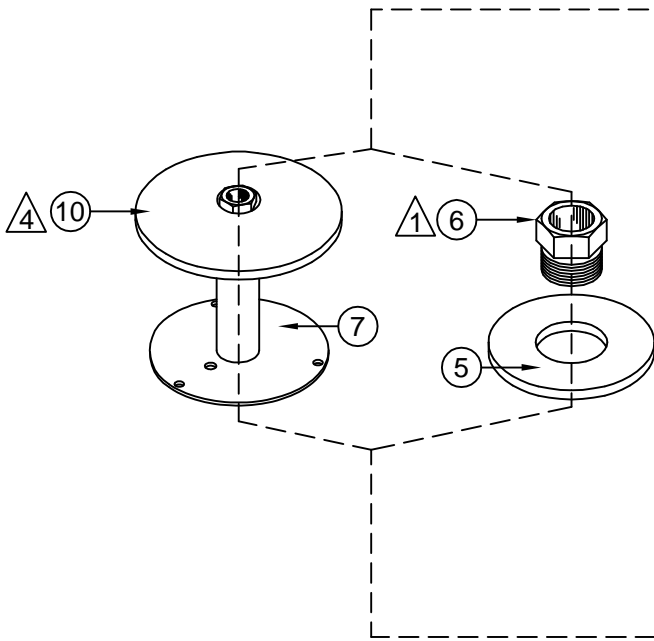
TITLE	DATE	SECTION
16780 REPLACEMENT PARTS	03-29-19A	C400
ET6/8/12/16/18/25/30/36K(X)	SUPERSEDES 04-27-18	21292

# Single & 2-Pole Slip-ring Replacement Parts (2 of 2)

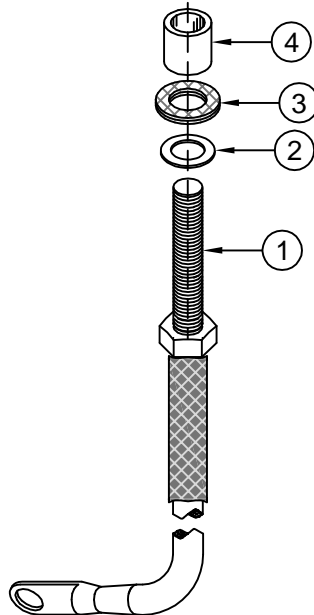


**SINGLE-POLE CONFIGURATION**

**2-POLE CONFIGURATION**



- 1 LOCTITE 242 BLUE & TORQUE TO 30 FT-LBS FOR QUILL APPLICATIONS
- 2 TORQUE TO 15 FT-LBS
- 3 LOCTITE 242 BLUE
- 4 STRETCH RUBBER WATER-SHED DISC P/N 27156 AROUND **'OUTSIDE'** OF THE INVERTED FLARE NUT OF CANDLESTICK, AS SHOWN
- 5 ITEM #8, FIBER WASHER, 5/8 I.D. **'MUST'** SIT DIRECTLY ON TOP OF THE INVERTED FLARE NUT ITEM #6.



THE 16780 SWIVEL TERMINAL CAN REPLACE & INTERCHANGE WITH THE 14231 SWIVEL TERMINAL, FOR ET20,000 & ET20K(X) CRANES.



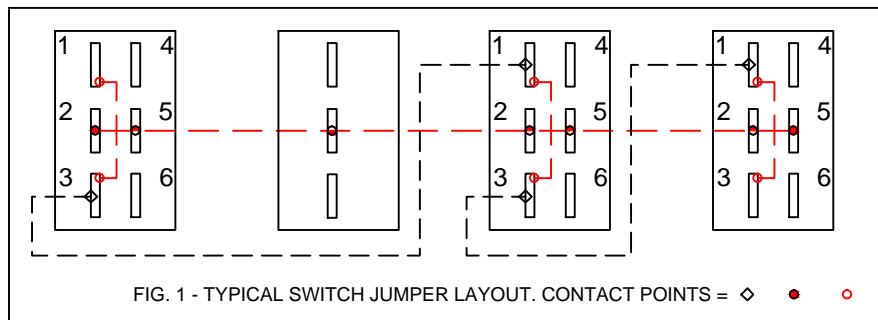
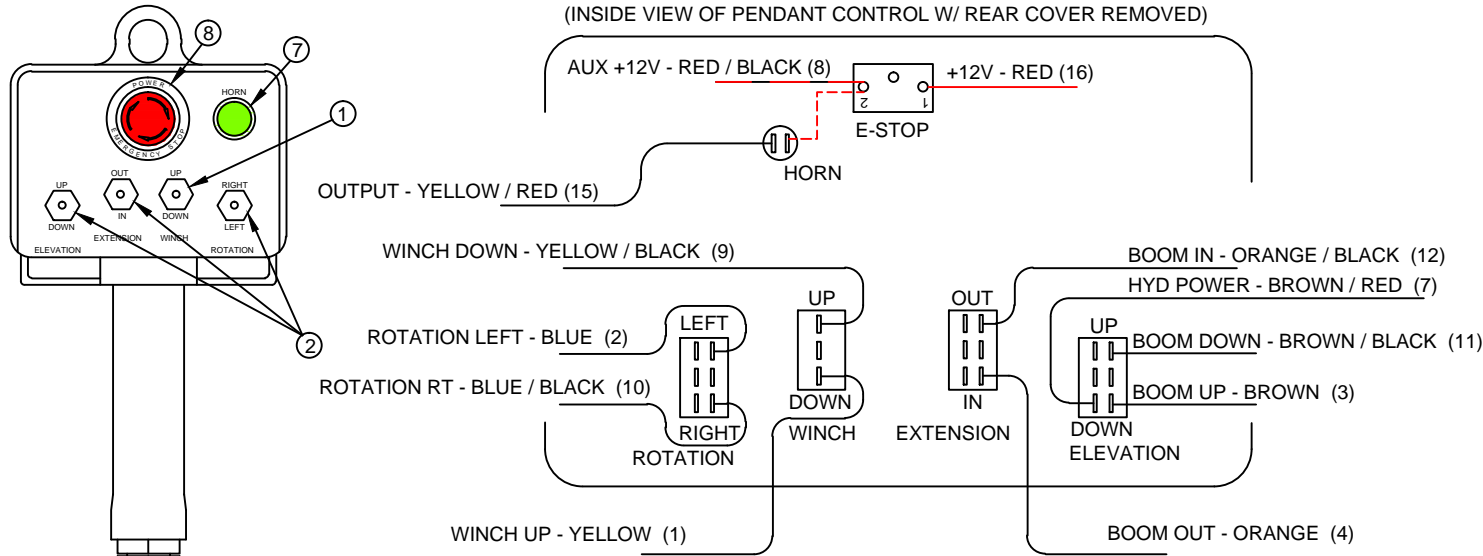
VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPL. PARTS ILLUSTRATION  
ET6/8/12/16/18/25/30/36K(X)

DATE  
04-27-18  
SUPERSEDES  
-

SECTION  
C400  
21293

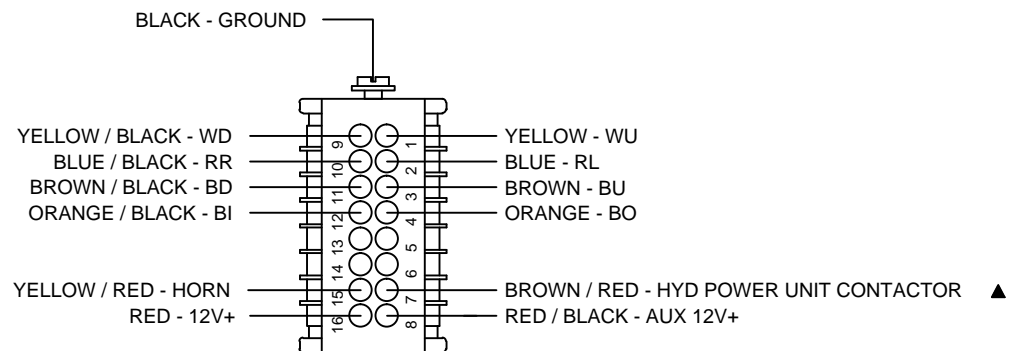
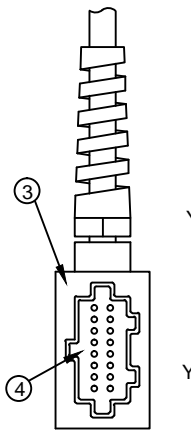
# 21990 PENDANT; 4 FUNCTION ET CRANES, E-STOP / HORN



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.

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



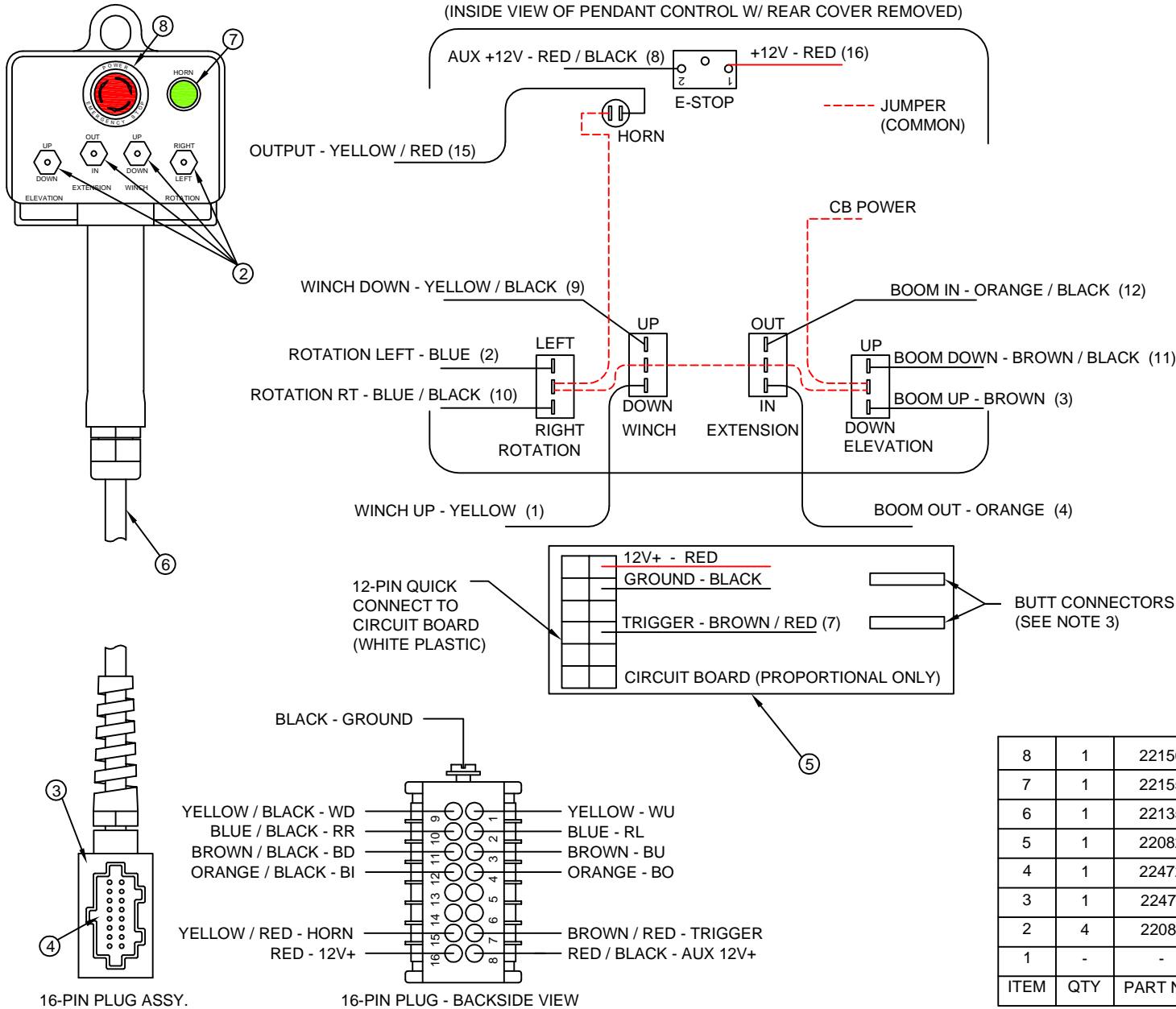
ITEM	QTY	PART NO.	DESCRIPTION
8	1	22156	SWITCH; E-STOP
7	1	22155	SWITCH; PUSHBUTTON, HORN
6	1	22135	KIT; REPLACEMENT CORD ASSY
5	-	-	-
4	1	22472	INSERT; MALE, 16 + 1 POLE
3	1	22471	PLUG CASE; 16 + 1 POLE
2	3	22152	SWITCH; DPDT, MOMENTARY
1	1	22081	SWITCH; SPDT, MOMENTARY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	01-12-17B	C400
21990 PNDNT; 4 FNCTN ET CRNS, ESTP/HRN	SUPSEDES 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

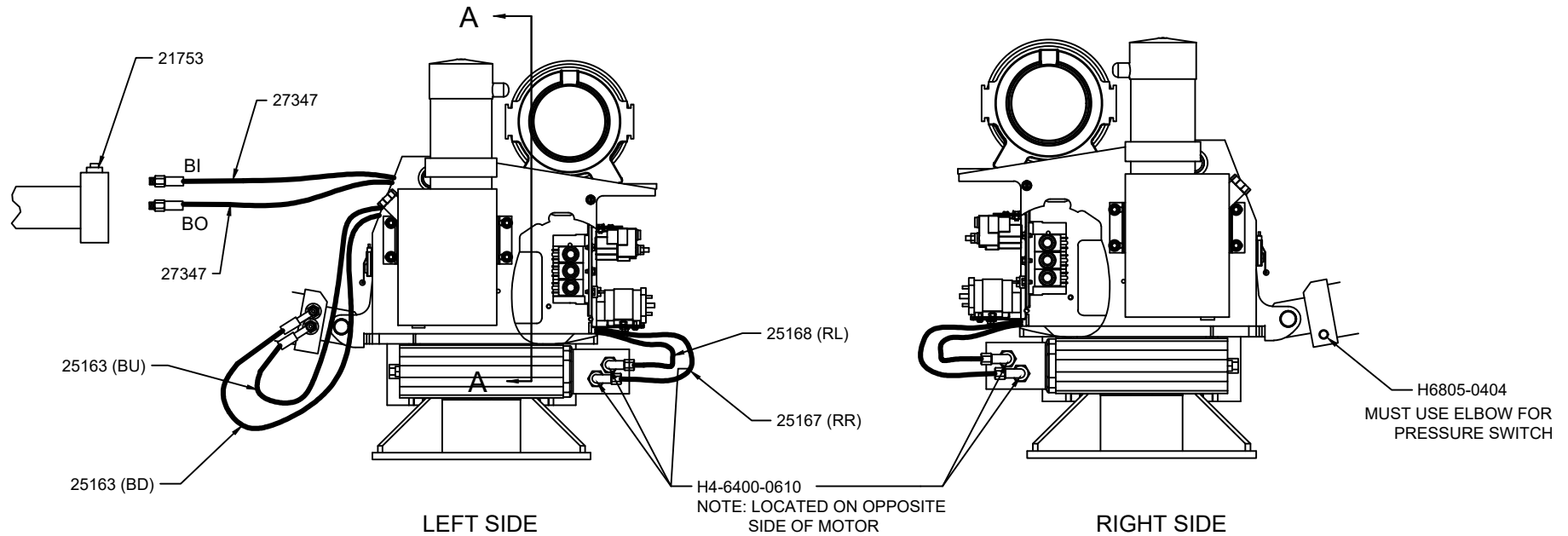
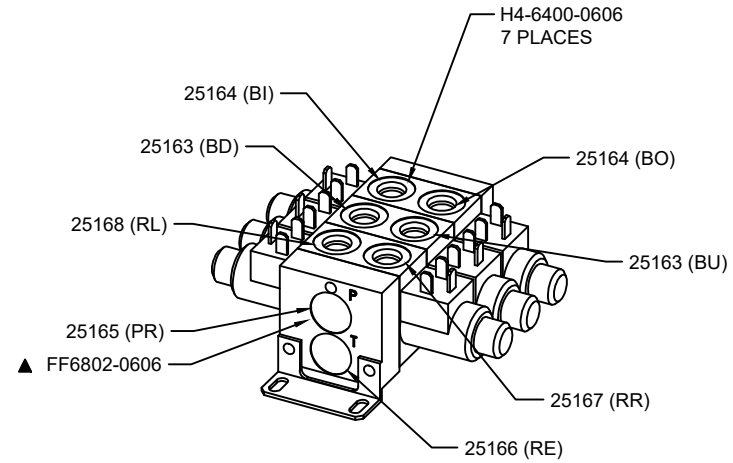
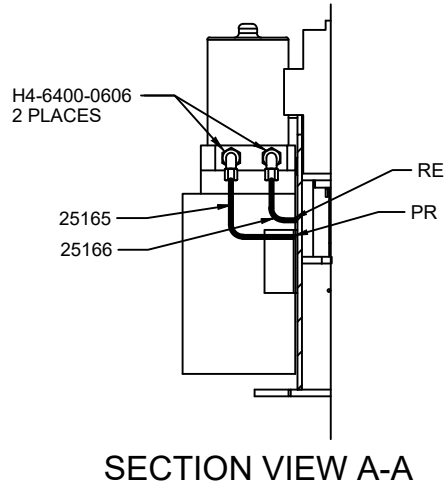
21988 PNDNT; PROP, NO ENG CNT, ESTP/HRN

SUPERSEDES

23073

# ET16/18KXX-20' HYDRAULIC COMPONENTS DRAWING

RR	ROTATION RIGHT
RL	ROTATION LEFT
BO	BOOM OUT
BI	BOOM IN
BU	BOOM UP
BD	BOOM DOWN
PR	PRESSURE
RE	RETURN



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

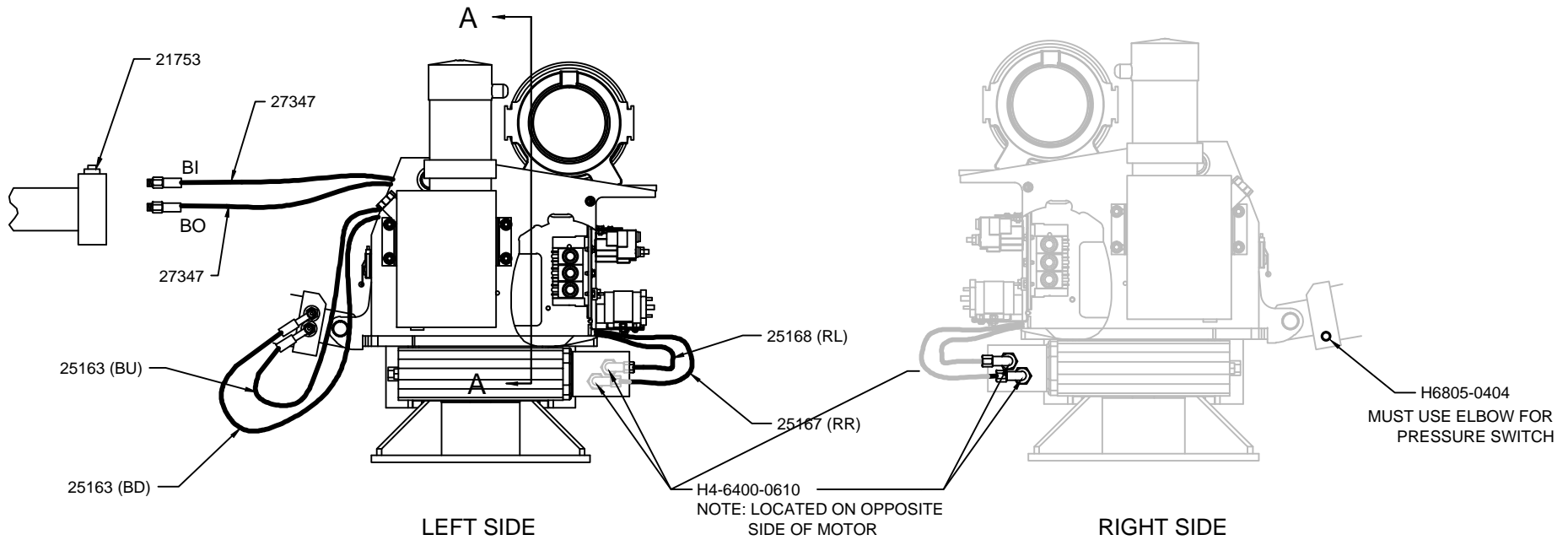
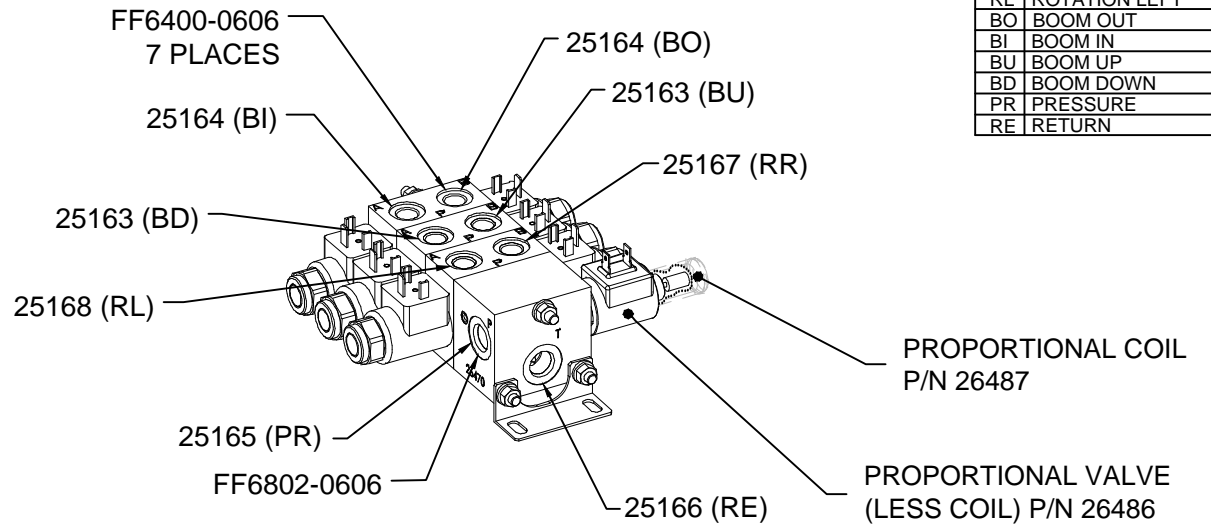
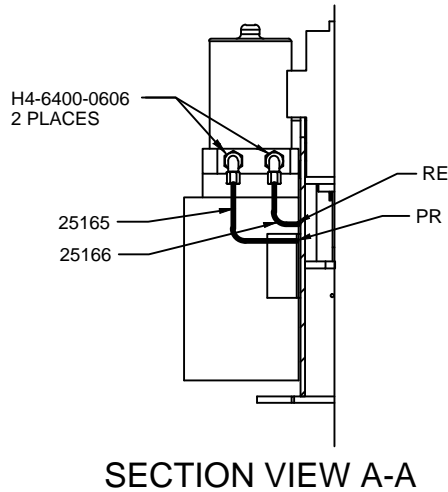
TITLE  
HYDRAULIC COMPONENTS DRAWING  
ET16/18KXX-20', NON-PROPORTIONAL

DATE  
03-05-24B  
SUPERSEDES  
12-22-22A

SECTION  
C400  
24071

# ET16/18KXXP-20' HYDRAULIC COMPONENTS DRAWING

RR	ROTATION RIGHT
RL	ROTATION LEFT
BO	BOOM OUT
BI	BOOM IN
BU	BOOM UP
BD	BOOM DOWN
PR	PRESSURE
RE	RETURN



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
HYDRAULIC COMPONENTS DRAWING

ET16/18KXXP-20', PROPORTIONAL

DATE  
12-22-22A

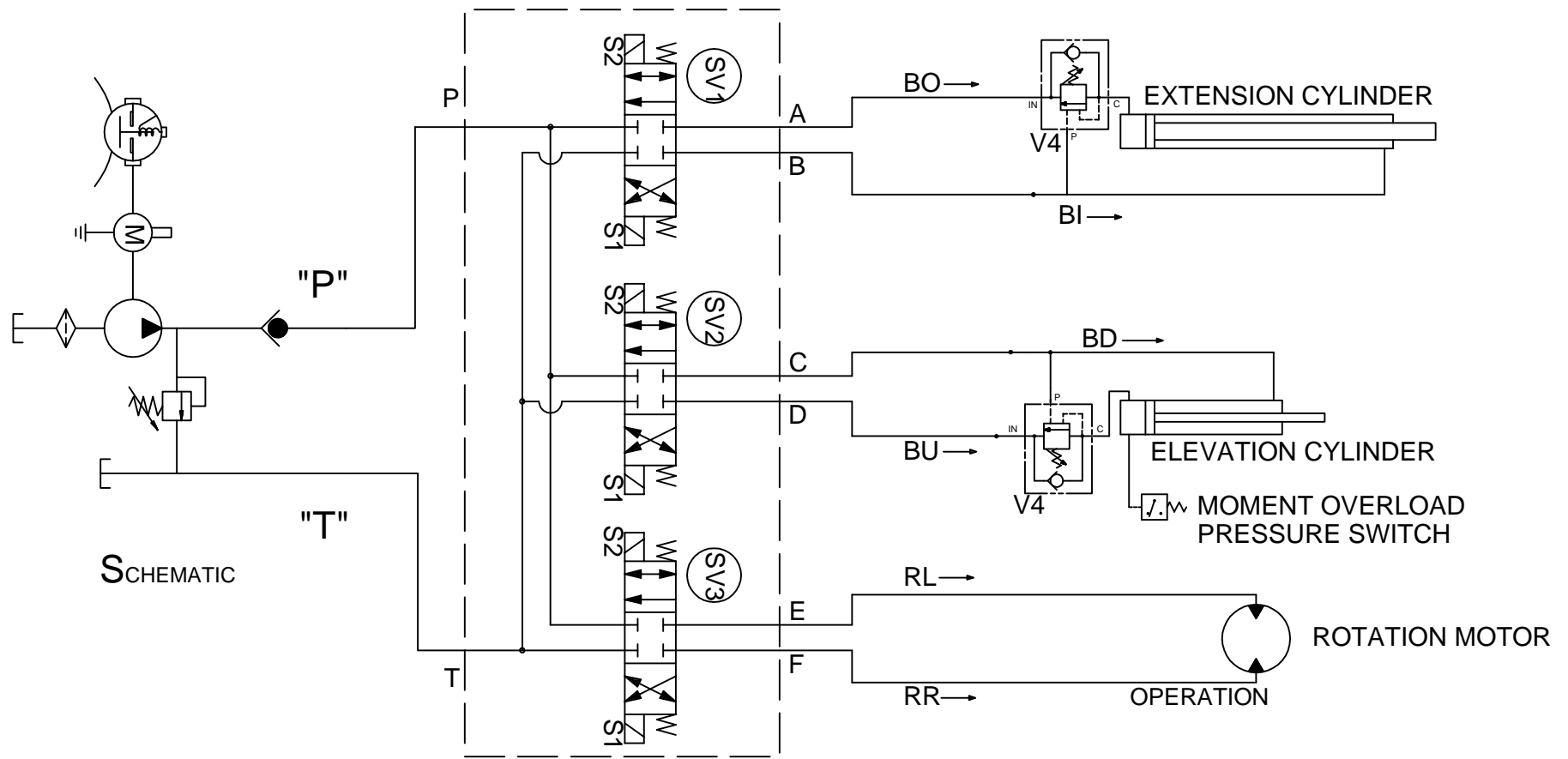
SUPERSEDES  
11-19-19

SECTION  
C400

24070



# ET16/18/25/30/36KX HYDRAULIC COMPONENT DIAGRAM



SV1	SV2	SV3
ENERGIZE "S2"	ENERGIZE "S2"	ENERGIZE "S2"
OPEN FLOW	OPEN FLOW	OPEN FLOW
'P' TO 'A'	'P' TO 'C'	'P' TO 'E'
'B' TO 'T'	'D' TO 'T'	'F' TO 'T'
ENERGIZE "S1"	ENERGIZE "S1"	ENERGIZE "S1"
OPEN FLOW	OPEN FLOW	OPEN FLOW
'P' TO 'B'	'P' TO 'D'	'P' TO 'F'
'A' TO 'T'	'C' TO 'T'	'E' TO 'T'



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
HYDRAULIC SYSTEM DIAGRAM

ET16/18/25/30/36KX ▲

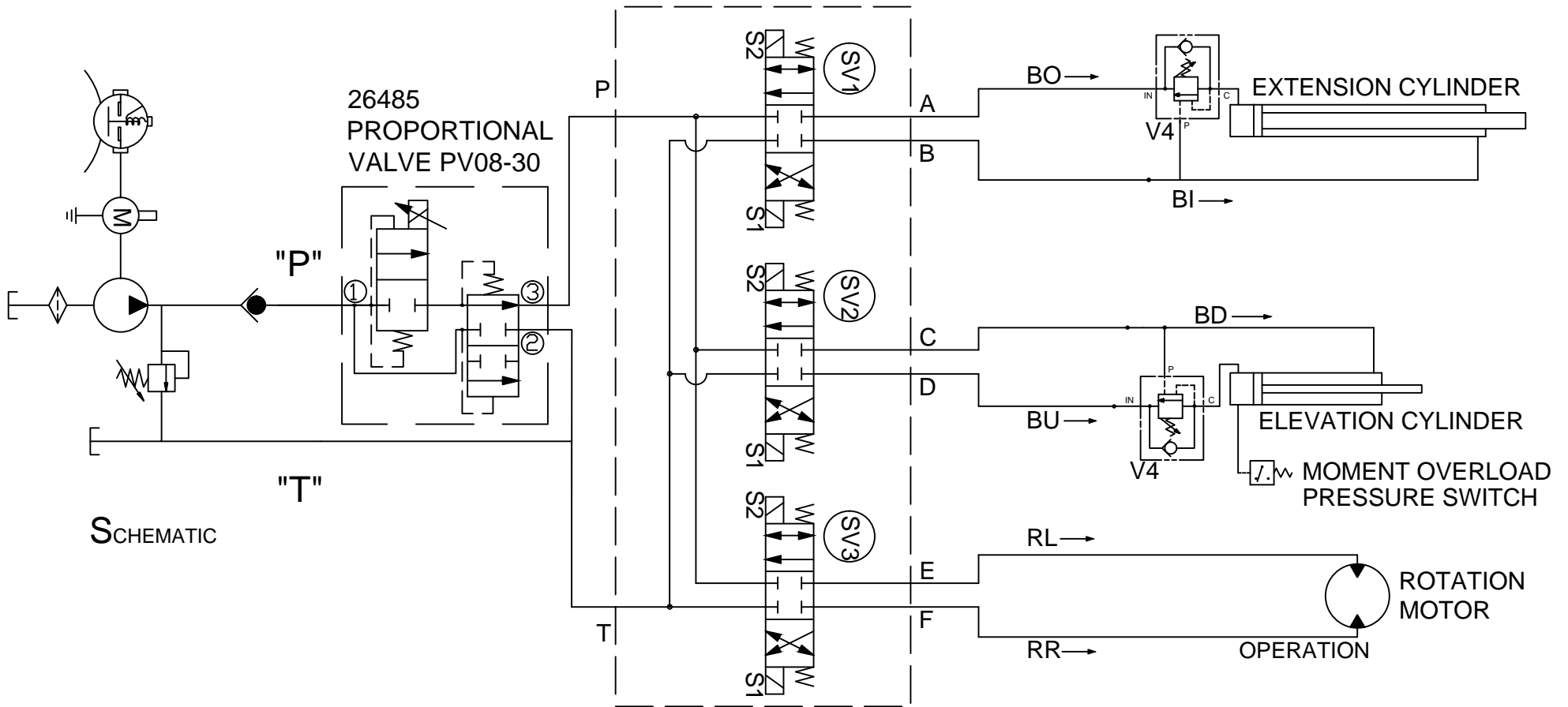
DATE  
10-23-14D

SUPERSEDES  
01-31-05C

SECTION  
C400

20156

# ET16/18/25/30/36KXP HYDRAULIC COMPONENT DIAGRAM



SCHEMATIC

- |  |  |  |
|--|--|--|
| (SV1)  | (SV2)  | (SV3)  |
| ENERGIZE "S2"<br>OPEN FLOW<br>'P' TO 'A'<br>'B' TO 'T' | ENERGIZE "S2"<br>OPEN FLOW<br>'P' TO 'C'<br>'D' TO 'T' | ENERGIZE "S2"<br>OPEN FLOW<br>'P' TO 'E'<br>'F' TO 'T' |
| ENERGIZE "S1"<br>OPEN FLOW<br>'P' TO 'B'<br>'A' TO 'T' | ENERGIZE "S1"<br>OPEN FLOW<br>'P' TO 'D'<br>'C' TO 'T' | ENERGIZE "S1"<br>OPEN FLOW<br>'P' TO 'F'<br>'E' TO 'T' |



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
HYDRAULIC SYSTEM DIAGRAM

ET16/18/25/30/36KXP

DATE  
10-14-19

SUPERSEDES

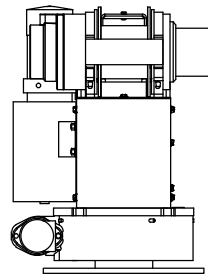
-

SECTION  
C400

24434

# 21215 WINCH REPLACEMENT PARTS

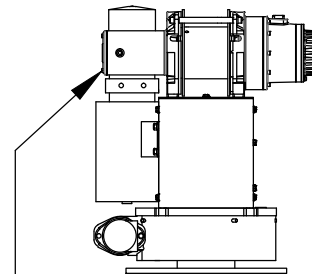
## WARN DC2500



(REAR VIEW)

MOTOR ON RIGHT  
WHEN VIEWED FROM REAR

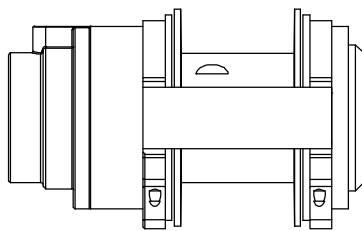
## COMEUP GTD-2800



(REAR VIEW)

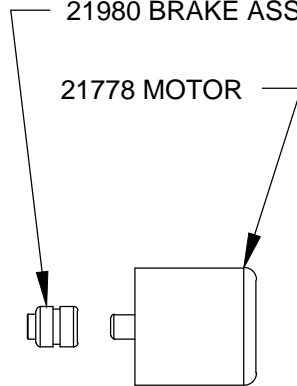
MOTOR ON LEFT  
WHEN VIEWED FROM REAR

!HNUT-04414 HEX NUT  
(WIRE ROPE ANCHOR)  
OR EQUIVALENT METRIC  
HEX NUT



21980 BRAKE ASSY

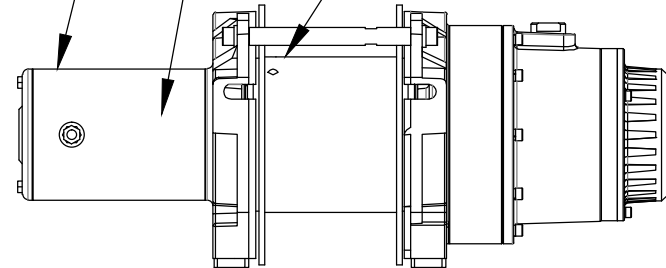
21778 MOTOR



23915 MOTOR

23918 BRAKE REPLACEMENT KIT

2X SET SCREW  
(INCL W/ WINCH)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

WINCH REPLACEMENT PARTS

ET16/18KX

DATE

03-19-21G

SUPERSEDES

10-23-14F

SECTION

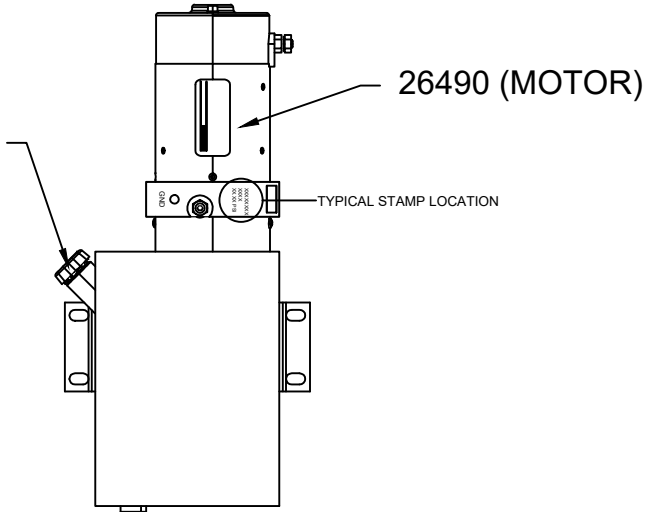
C400

21054

# 26489 HYD. POWER UNIT REPLACEMENT PARTS

**BUCHER**

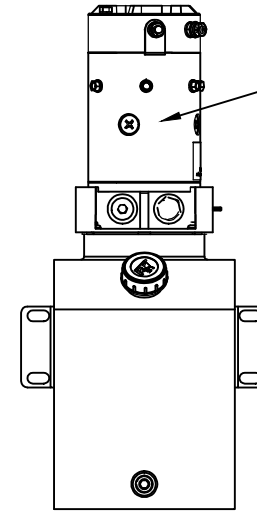
21025  
(BREATHING CAP)



(FRONT VIEW)

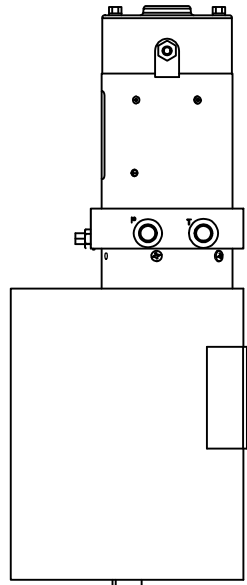
**KTI**

26490-1 (MOTOR)



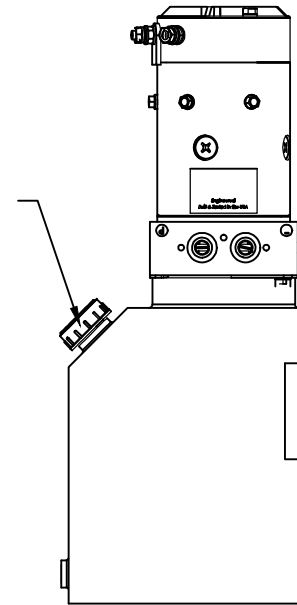
(FRONT VIEW)

NO GROUND  
CABLE NEEDED



**BUCHER**

21025-1  
(BREATHING CAP)



GROUND CABLE:  
01025-4\*23INX

**KTI**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

HYDRAULIC POWER UNIT REPLACEMENT PARTS

ET12KX-16' PROP, ET16/18/25/30/36

DATE

03-06-23 A

SUPERSEDES

07-31-18

SECTION

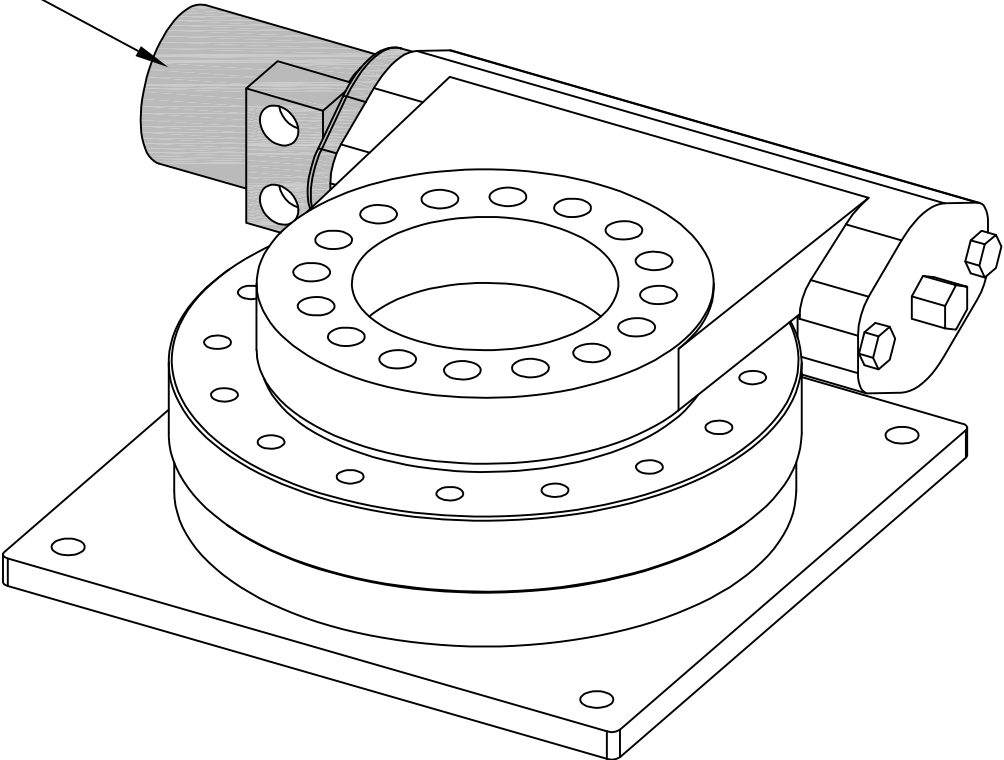
C400

**23787**

# 21735 SLEWING SYSTEM REPLACEMENT PARTS

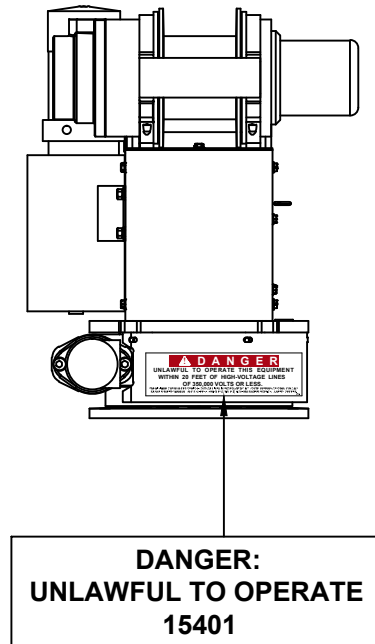
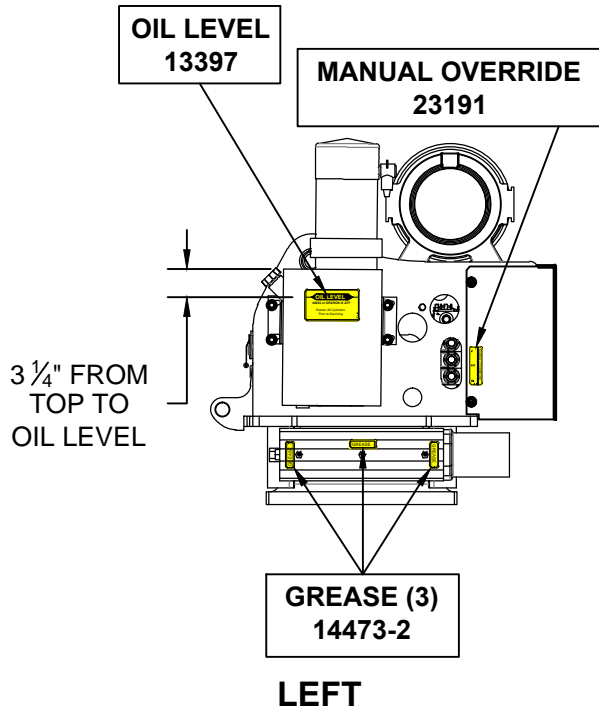
21123 MOTOR (ONLY)

21218 - MOTOR SEAL KIT

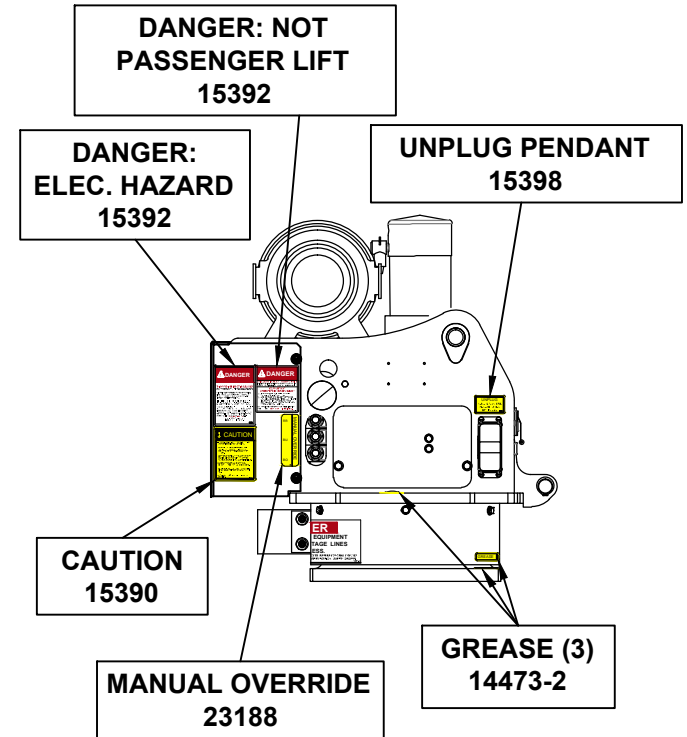


VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
SLEWING SYSTEM REPLACEMENT PARTS	10-23-14B	C400
ET8/12K & ET8/12/16/18KX ▲	SUPERSEDES 12-27-13A	21973



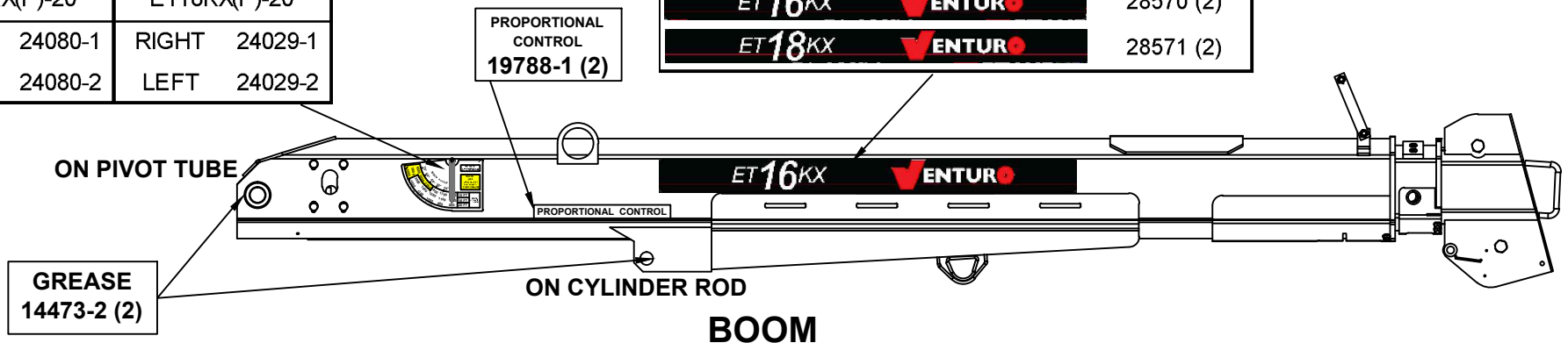
**BACK**



**RIGHT**

CAPACITY			
ET16KX(P)-20'	ET18KX(P)-20'		
RIGHT 24080-1	RIGHT 24029-1		
LEFT 24080-2	LEFT 24029-2		

MODEL		
ET16KX	VENTURO	28570 (2)
ET18KX	VENTURO	28571 (2)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**DECAL PLACEMENT**  
ET16/18KX(P)-20'

DATE  
12-03-24A  
SUPERSEDES  
11-28-23

SECTION  
C400  
**28574**

# ET16KXX(P) FIELD SERVICE LABEL KITS

## 24026; FSLK ET16KX-20'

PART NO.	QTY	DESCRIPTION
14473-2	6	DECAL; GREASE
28570	2	DECAL; MODEL ET16KX-20'
24080-1	1	DECAL; BOOM CAPACITY, RIGHT, ET16KXX(P)-20' BOOM
24080-2	1	DECAL; BOOM CAPACITY, LEFT, ET16KXX(P)-20' BOOM
13397	1	DECAL; OIL LEVEL
23188	1	DECAL; DIRECTIONAL VALVE, MANUAL OVERRIDE, RIGHT
23191	1	DECAL; DIRECTIONAL VALVE, MANUAL OVERRIDE, LEFT
16184-1	1	DECAL; HORN RELAY
28575	1	IDWG; FIELD SERVICE LABEL (ET16/18KXX(P) - 20' BOOM)
28574	1	IDWG; DECAL PLACEMENT (ET16/18KXX(P) - 20' BOOM)
INST-23233	1	SAFETY MANUAL; VENTURO CRANES
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM

## 24037; FSLK ET16KXP-20'

PART NO.	QTY	DESCRIPTION
14473-2	6	DECAL; GREASE
28570	2	DECAL; MODEL ET16KX-20'
24080-1	1	DECAL; BOOM CAPACITY, RIGHT, ET16KXX(P)-20' BOOM
24080-2	1	DECAL; BOOM CAPACITY, LEFT, ET16KXX(P)-20' BOOM
19788-1	2	DECAL; 'PROPORTIONAL' (INSTALL UNDER MODEL DECAL)
13397	1	DECAL; OIL LEVEL
23188	1	DECAL; DIRECTIONAL VALVE, MANUAL OVERRIDE, RIGHT
23191	1	DECAL; DIRECTIONAL VALVE, MANUAL OVERRIDE, LEFT
19315-2	1	DECAL; PROPORTIONAL VALVE MANUAL OVERRIDE
16184-1	1	DECAL; HORN RELAY
28575	1	IDWG; FIELD SERVICE LABEL (ET16/18KXXP - 20' BOOM)
28574	1	IDWG; DECAL PLACEMENT (ET16/18KXXP - 20' BOOM)
INST-23233	1	SAFETY MANUAL; VENTURO CRANES
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
FIELD SERVICE LABEL KITS

DATE  
11-28-23

SECTION  
C400

ET16KXX(P) - 20' BOOM

SUPERSEDES  
-

28575



## 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**  
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[www.venturo.com](http://www.venturo.com)