



**VENTURO**  
TRUCK MOUNTED CRANES

**ET18KX**

*EJAAAB-\*\**

**INSTALLATION & OWNER'S MANUAL**



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VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
TABLE OF CONTENTS	08-04-15G	-
ET18KX (EJAAAB-*0)	SUPERSEDES 10-08-14F	<b>21798</b>

**SECTION 100**

**DESCRIPTION**

**&**

**SPECIFICATIONS**



# SPECIFICATIONS AND OPERATING FEATURES

ET18KX-8/16

## SPECIFICATIONS

12 VOLT BATTERY OPERATED

18,000 FT-LBS OVERTURNING MOMENT (Or as limited by truck stability)

MOMENT OVERLOAD SYSTEM

TELESCOPIC BOOM	8 / 16
BOOM HYD ELEVATION	-8° TO 75°
BOOM HYD EXT	8 - 12 FT OR 12 - 16 FT
BOOM MANUAL EXT	4 FT
CAPACITY	1125 LBS @ 16 FT REACH
	4500 LBS @ 3 TO 4 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 - 4 FT STROKE

CONTINUOUS POWER ROTATION

REMOTE CONTROL PENDANT

25 ft Straight Cord with Four Environmentally Sealed Toggle Switches Protected by a Guard

MASTER DISCONNECT SWITCH

OUTRIGGERS AVAILABLE

Side Bracket Type Outriggers

Fold Away Type Outriggers

Pullout Type Outrigger System



TITLE  
**INSTALLATION DWG**

DATE  
**7-29-03**

SECTION  
**C120**

**ET18KX-8/16**

SUPERCEDES  
-

**21301**

# 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.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

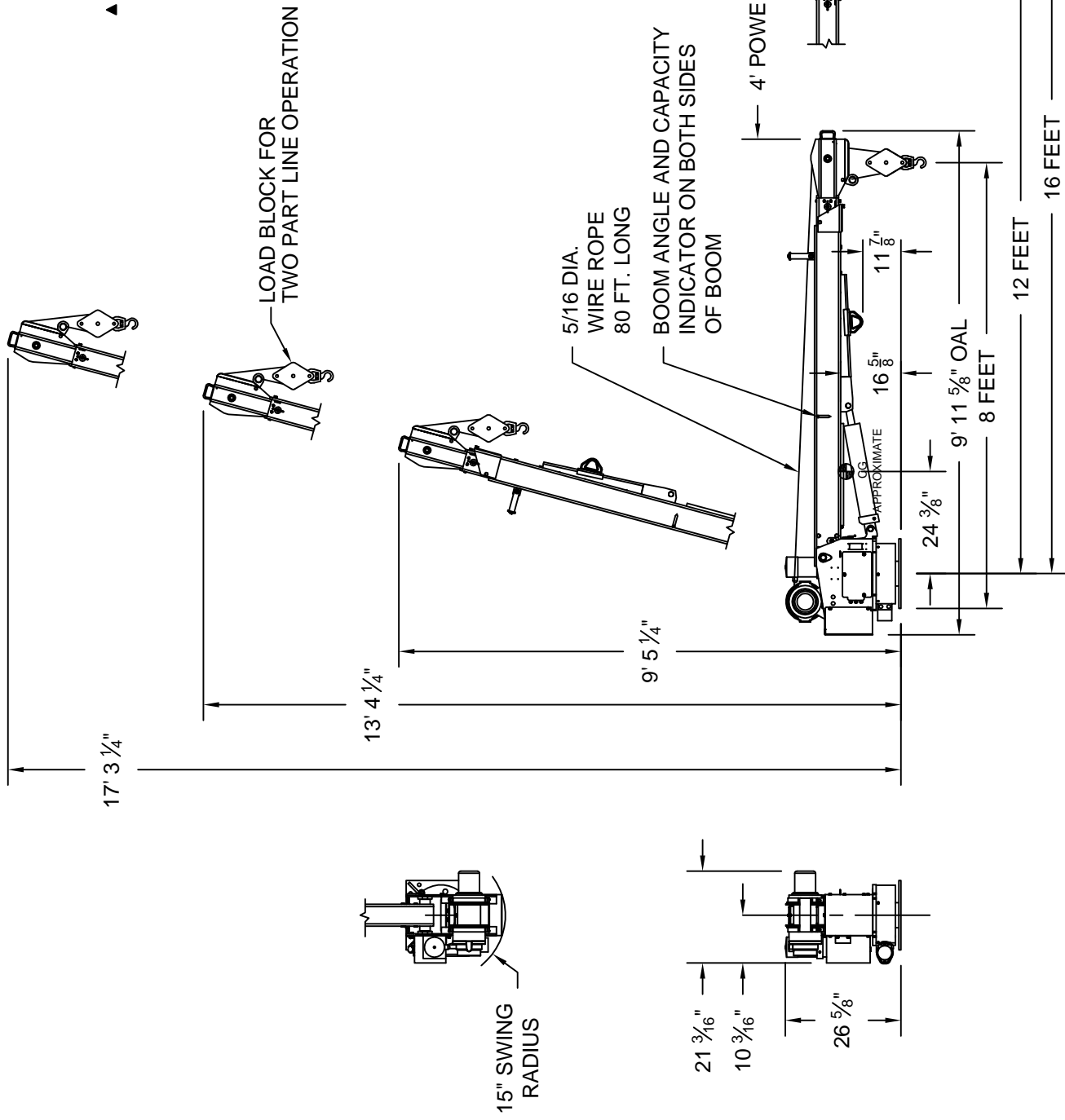
TITLE	DATE	SECTION
SPECS & OP. FEATURES	10-22-14A	C100
ET16/18KX	SUPERSEDES 07-29-03	21302

# WARNING



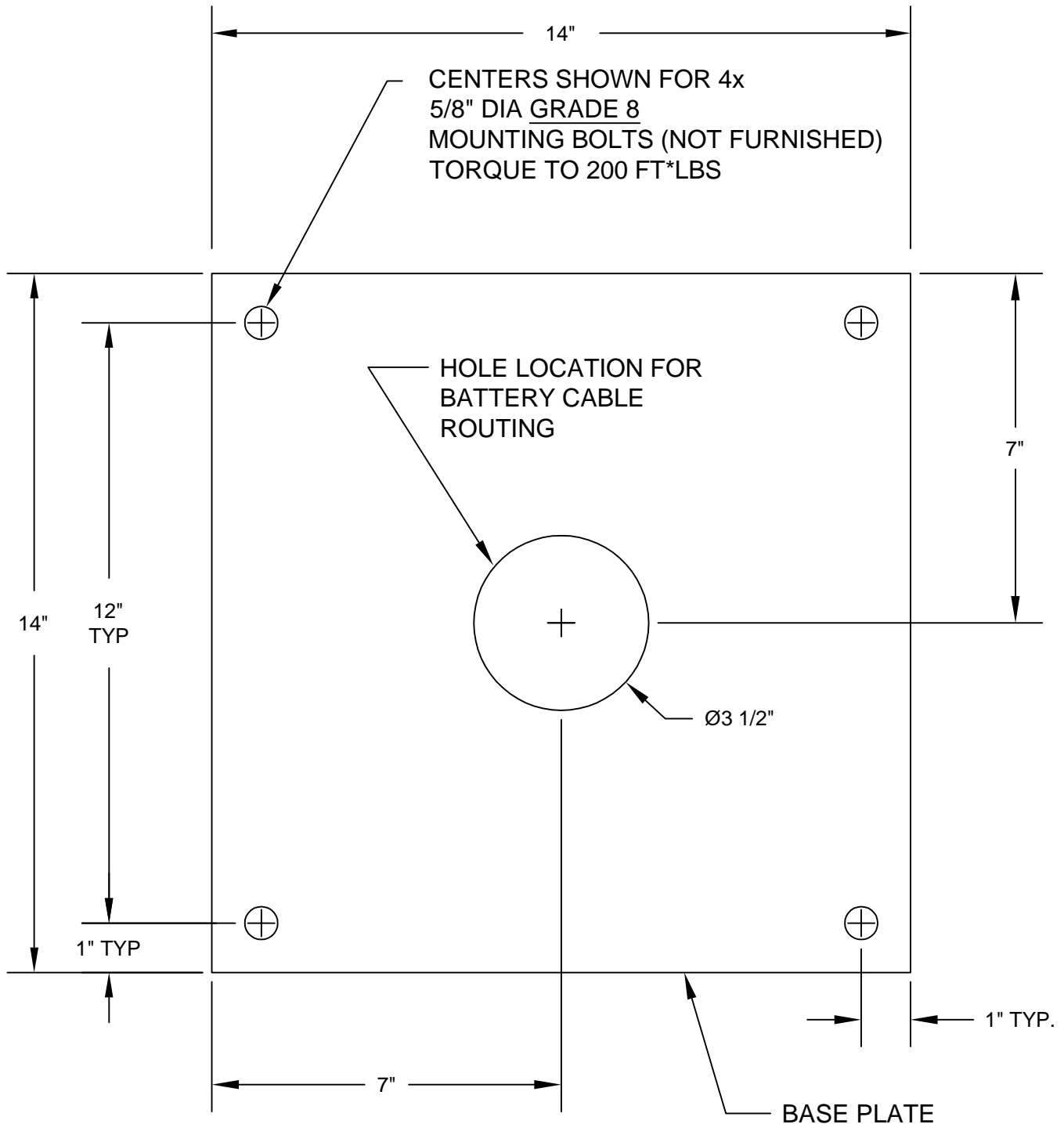
- THESE PRODUCTS ARE NOT PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT OR OTHERWISE TRANSPORT PERSONNEL.

TOTAL INSTALLED WEIGHT 1020 LBS.



	VENCRO INDUSTRIES LLC CINCINNATI, OHIO		TITLE <b>INSTALLATION DIMENSIONS</b>	
	DATE 10-22-14A SUPERSEDES 07-17-12	SECTION C100	23045	

# 21571 MOUNTING HOLE TEMPLATE



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CINCINNATI, OHIO

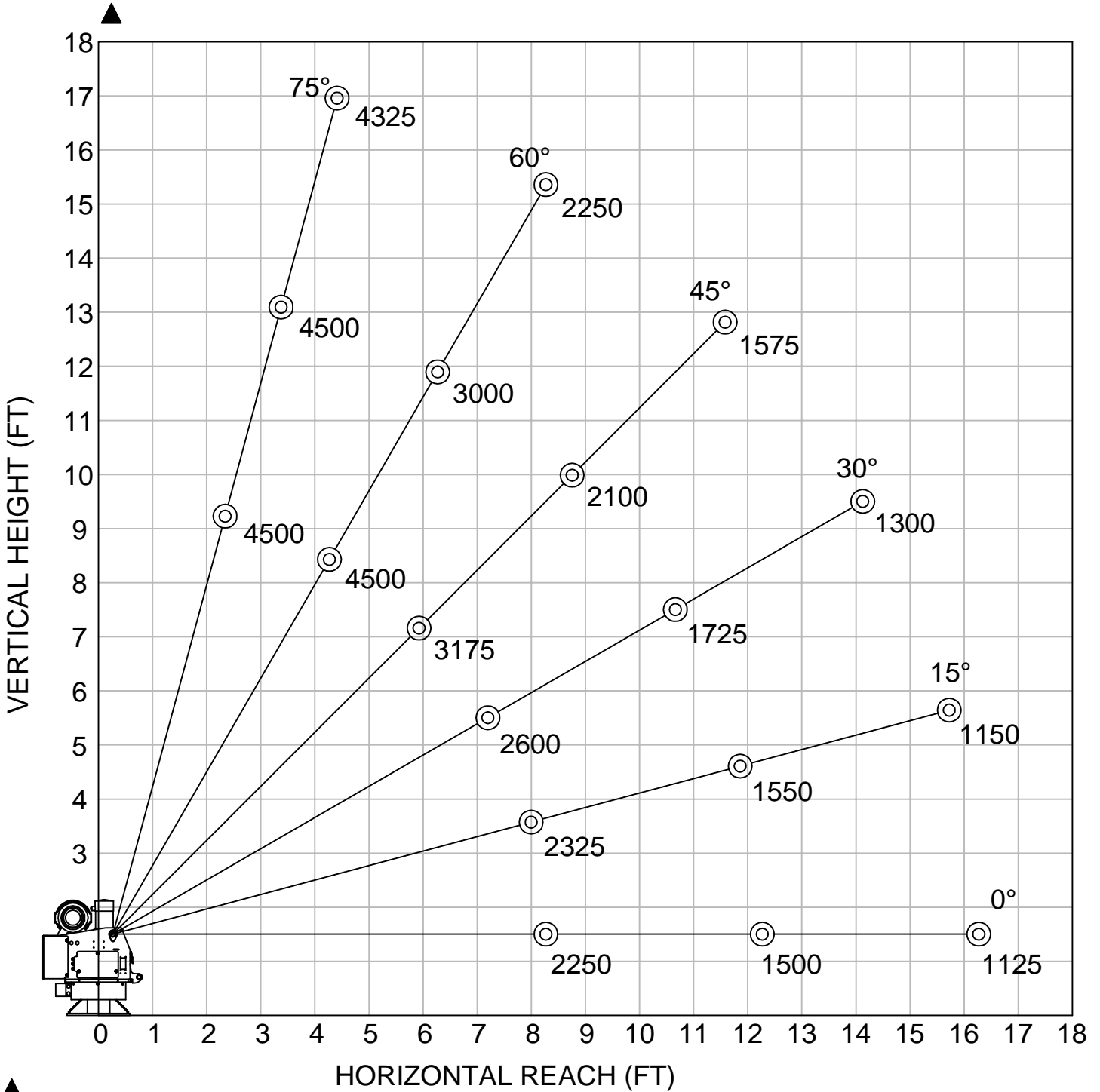
TITLE	21571 BASE MNTNG DIMS
	ET8/12/16/18 CRANES

DATE	10-22-14F
SUPERSEDES	12-20-13E

SECTION	C100
	21592



# ET18K(X) - 8-12-16 FT. BOOM MAXIMUM 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 2250 lbs.

2 part line for loads of 2250 lbs. and greater.

Weight of Load Block = 28 lbs.



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE	DESCRIPTION LINE 1
	ET18KX, 8'-12'-16' BOOM

DATE	04-30-13A
SUPERSEDES	03-15-07

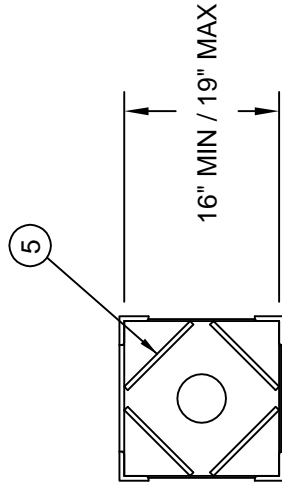
SECTION	C100
	<b>21392</b>

# TYPICAL SERVICE BODY REINFORCEMENT

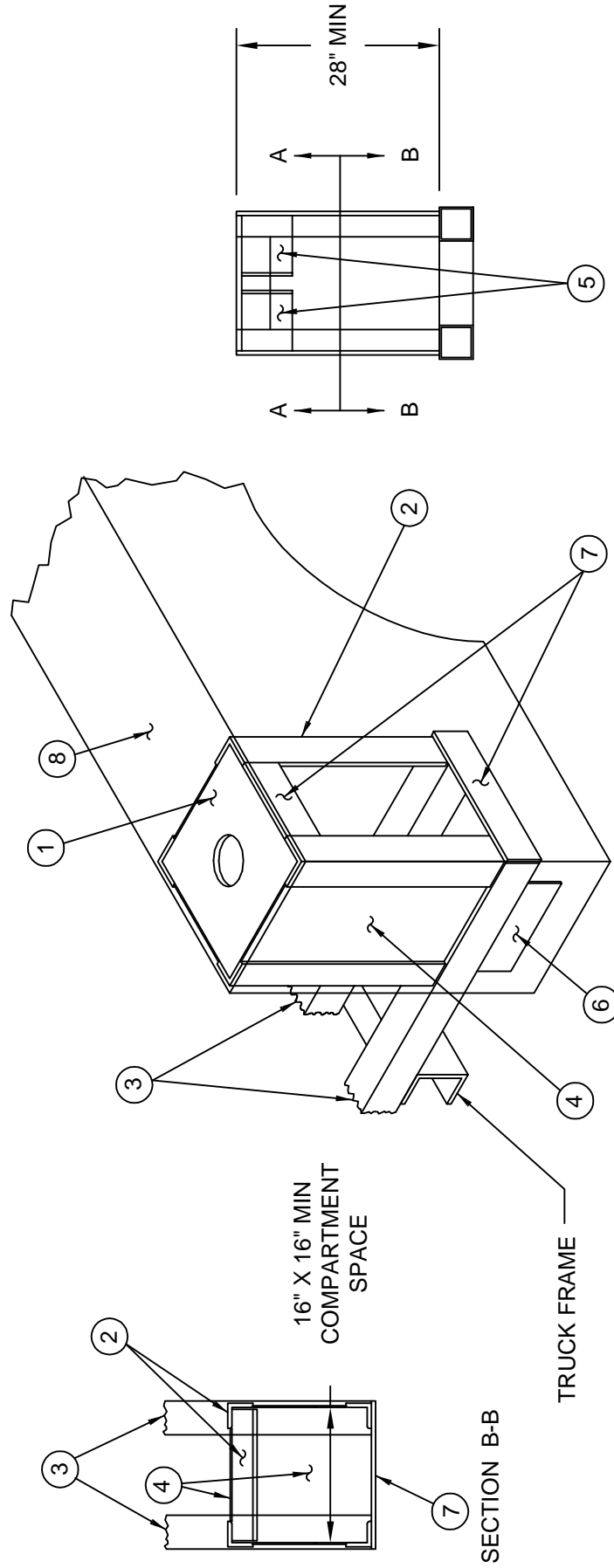
**NOTE:**

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

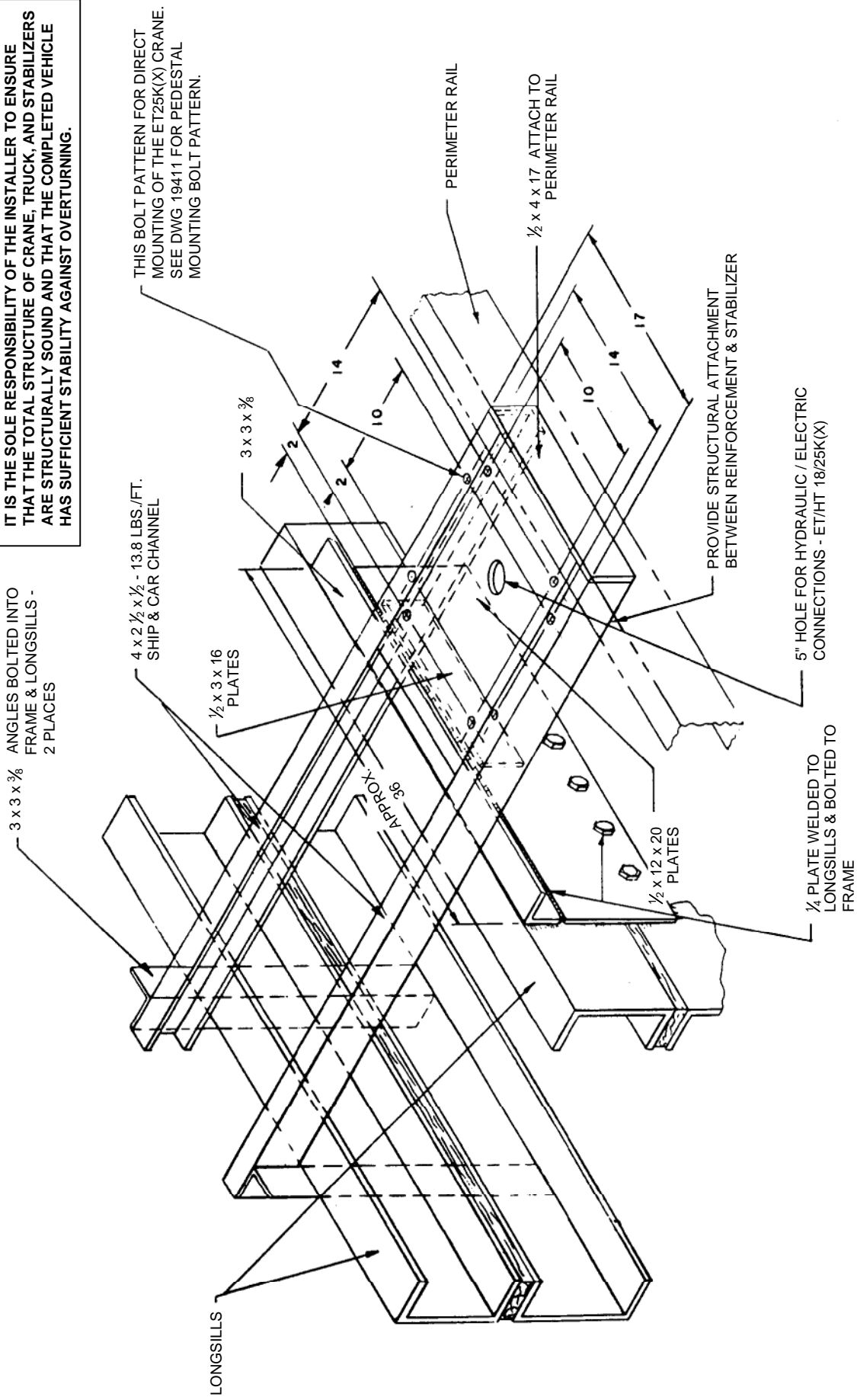
SECTION  
C100


SUPERSIDES  
12-20-10G

19288

# 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

# 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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SAFETY & HAZARDS

DATE

01-29-15K

SECTION

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

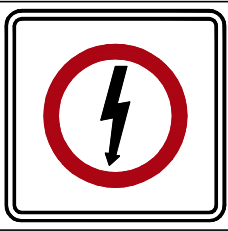
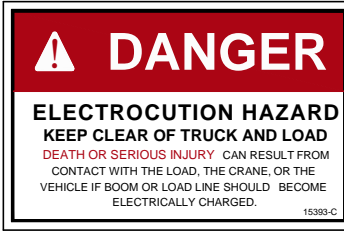
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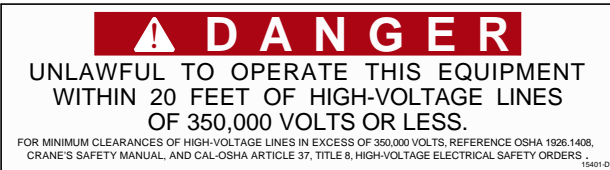
VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
SAFETY & HZRDS, CONT.	01-29-15	C150
ELECTRIC CRANES	SUPERSEDES -	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

PART NO.: 15390

DECAL: CAUTION - INSPECT VEHICLE & CRANE

FUNCTION: To inform the operator of key operating requirements.

QUANTITY: 1

PLACEMENT: Rear cover.



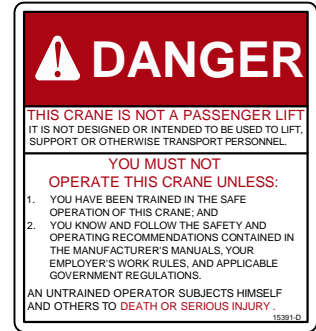
PART NO.: 15391

DECAL: DANGER - NOT PASSENGER LIFT

FUNCTION: To inform the operator not to lift, support or transport personnel, and to ensure that crane operator is adequately trained.

QUANTITY: 1

PLACEMENT: Rear cover.



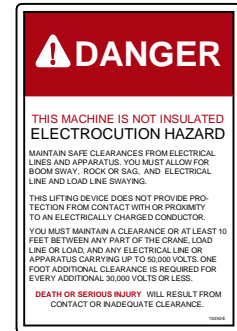
PART NO.: 15392

DECAL: DANGER - ELECTROCUTION HAZARD

FUNCTION: To inform the operator that the machine (crane) represents an electrocution hazard should it come close to or in contact with electrical voltage source.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 15401

DECAL: UNLAWFUL TO OPERATE

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

QUANTITY: 1

PLACEMENT: Right side of housing.



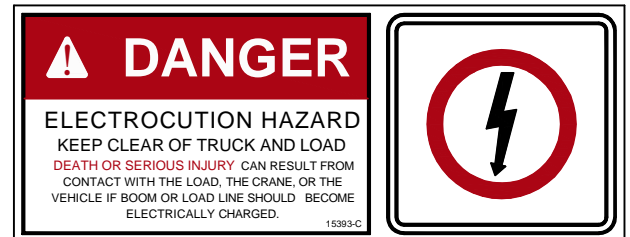
PART NO.: 15393A

DECAL: DANGER - ELECTROCUTION HAZARD

FUNCTION: Warns of danger from electrically charged vehicle, crane or lead.

QUANTITY: 4

PLACEMENT: One on each side and each end of vehicle.



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
**SAFETY DECALS**

**CRANES**

DATE  
**04-02-13C**

SUPERSEDES  
**08-10-09B**

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.



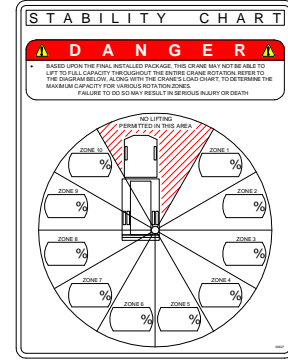
PART NO.: 20927

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: GREASE

FUNCTION: To show the operator where to apply grease.

QUANTITY: Varies

PLACEMENT: Near grease fittings.



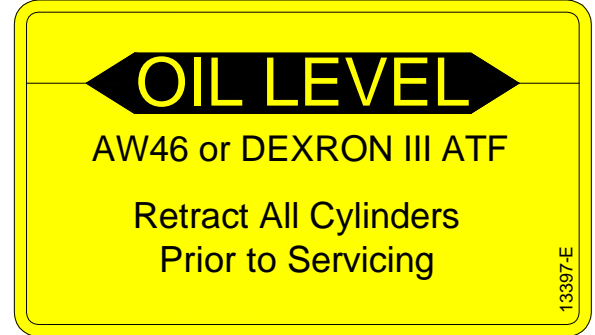
PART NO.: 13397

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.



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
DECALS  
ET CRANES

DATE  
12-23-13D  
SUPERSEDES  
04-19-13C

SECTION  
C150  
21354

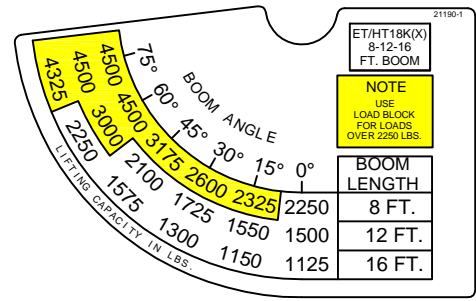
PART NO.: 21190-1 & 21190-2 (OPPOSITE)

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.: 21192

DECAL: MODEL NUMBER (ET18KX)

FUNCTION: To show the model of the crane.

QUANTITY: 2

PLACEMENT: One on each side of boom.



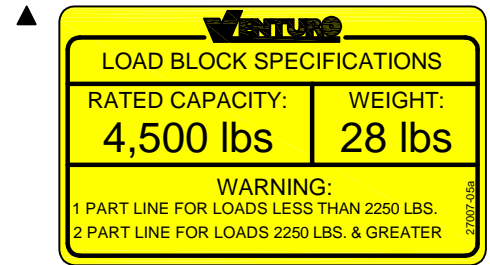
PART NO.: 27007-05a ▲


DECAL: LOAD BLOCK CAPACITY

FUNCTION: To show the capacity of the load block.

QUANTITY: 2

PLACEMENT: One on each side of load block.



 VENCIO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE	DATE	SECTION
	MODEL/CAPCTY DECALS	10-20-14B	-
	ET18KX	SUPERSEDES 04-22-13A	<b>21356</b>

# SECTION 200

## INSTALLATION



# !! 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 BATTERY SIZE

MODEL	TOTAL LENGTH OF CABLE (FT) *								12 VOLT BATTERY REQUIREMENTS	
	0-20	21-25	26-30	31-40	41-50	51-60	61-70	71-80	CCA (A) **	RC (MIN) ***
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	#2	#2	#1	#0	#00	NOT RECOMMENDED			550	150
ET18K(X) ET25K(X) ET30KX ET36KX	SEE DRAWING 19947 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.



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CINCINNATI, OHIO

TITLE  
**CABLE & BATTERY**

DATE  
01-27-15U

SECTION  
**C200**

ELECTRIC CRANES

SUPERSEDES  
12-23-13T

711105

**RECOMMENDED CIRCUIT BREAKER TABLE**

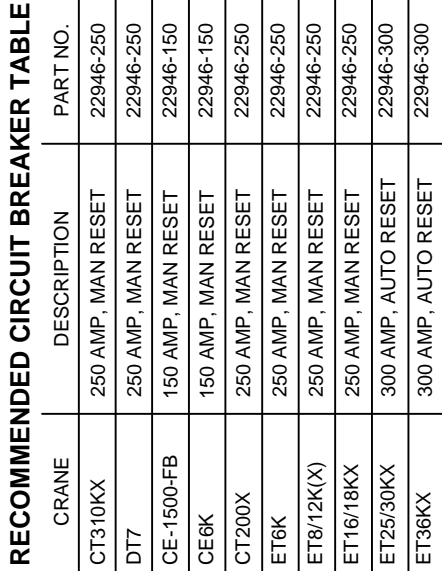
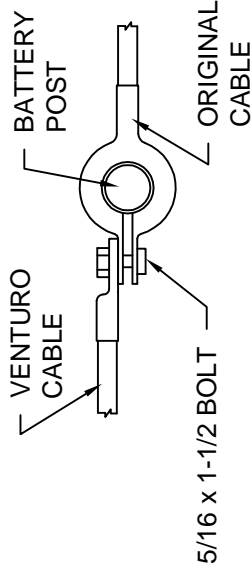
CRANE	DESCRIPTION	PART NO.
CT310KX	250 AMP, MAN RESET	22946-250
DT7	250 AMP, MAN RESET	22946-250
CE-1500-FB	150 AMP, MAN RESET	22946-150
CE6K	150 AMP, MAN RESET	22946-150
CT200X	250 AMP, MAN RESET	22946-250
ET6K	250 AMP, MAN RESET	22946-250
ET8/12K(X)	250 AMP, MAN RESET	22946-250
ET16/18KX	250 AMP, MAN RESET	22946-250
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
- 12 VOLT AUXILIARY BATTERY REQUIREMENTS
- 450 COLD CRANKING AMPS (AT 0° F)
- 100 MINUTES RESERVE CAPACITY
- 78 PLATES, 70 AMP-HR

**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)

GROUND CRANE TO TRUCK FRAME

RECOMMENDED (NOT INCLUDED) AUXILIARY CRANE BATTERY

-NEG +12V

#2 GAUGE x 5' BLACK GROUNDING STRAP (INCLUDED)

#2 GAUGE x 5' RED +12V BATTERY CABLE (INCLUDED)

NOTE: ALSO SEE DRAWING 711105 FOR ADDITIONAL INFORMATION ON BATTERY WIRE GAUGE & LENGTH

MASTER DISCONNECT SWITCH (INCLUDED) (LOCATE FOR OPTIMUM OPERATOR ACCESS AS CLOSE TO THE CRANE AS PRACTICAL)

#2 GAUGE X 26' BATTERY CABLE (INCLUDED)

RECOMMENDED OPTION: CIRCUIT BREAKER OR FUSE; LOCATE CLOSE TO TRUCK BATTERY (SEE CHART AMP RATING)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**BATTERY CABLE & COMPONENT INSTALL**

DATE  
07-31-15K

SECTION  
C200

ET CRANES

SUPPERSEDES  
10-17-14J

15660

# STABILITY TESTING – ET18KX

## 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.

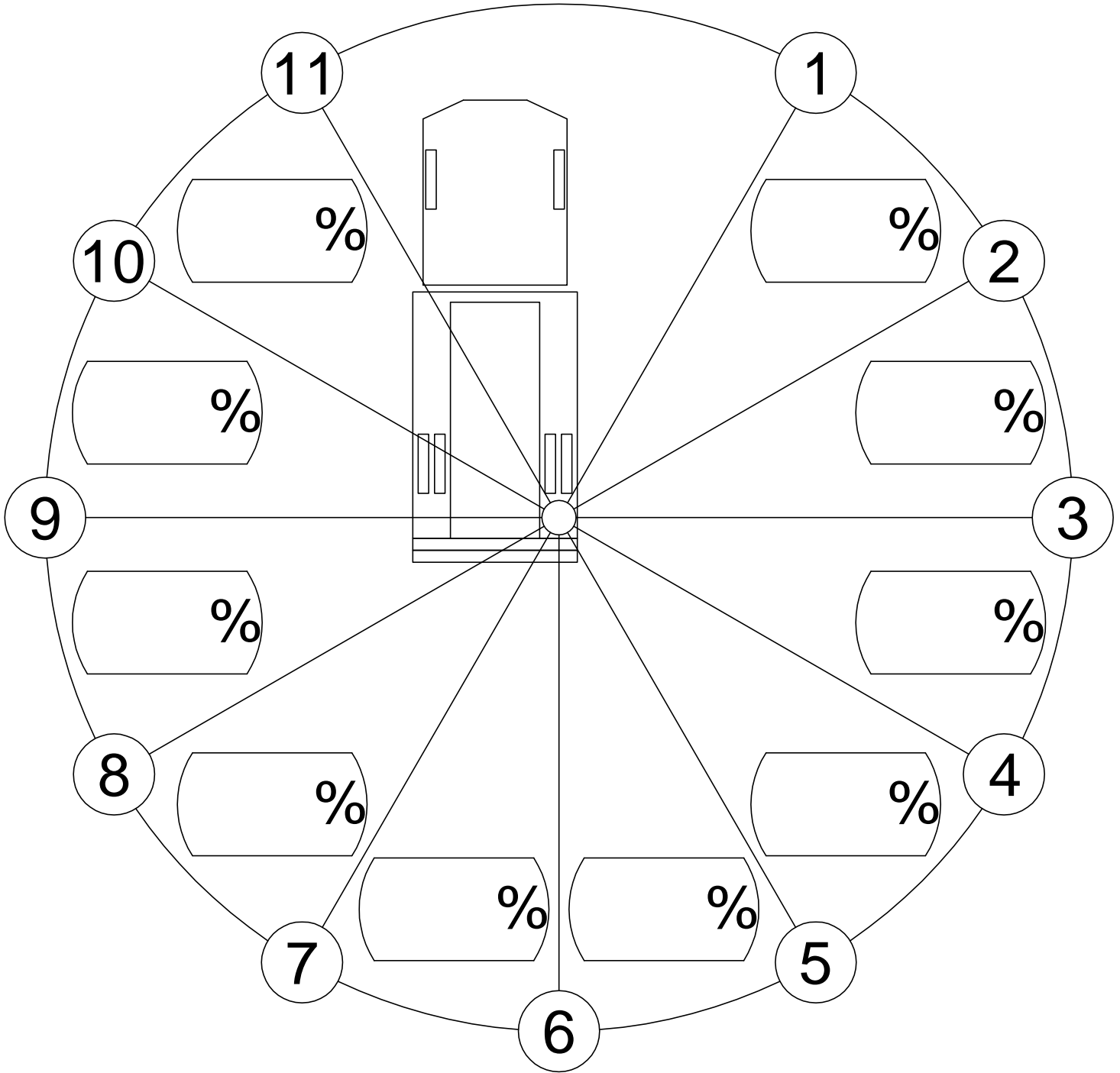
It is important to note that nearly every installation is unique and will, therefore, typically require stability testing.

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

## Testing Procedure

1. Locate the truck on level ground and set the parking brake.
2. Deploy outriggers, making sure they are firmly in contact with supportive ground; use outrigger pads as required. The tires of the truck should remain in full contact with the ground.
3. Inspect the wire rope and other key components of crane (consult owners manual for more information).
4. Conduct an operational check of all crane functions.
5. Use a test weight of 1300 lbs in conjunction with the ET18KX's snatch block (weight = 30 lb).
6. Do NOT allow the weight to be more than 6 inches from the ground at any time during testing – this insures that if the truck does become unstable and tip, it will not tip far.
7. Rotate the crane to a position between 1 and 2 o'clock (the truck cab is facing 12 o'clock).
8. Be sure that the boom is horizontal (0° elevation) with the hydraulic section fully retracted and the manual section fully extended; the boom should begin at a length of 12 feet.
9. Use the winch to lift the test weight, keeping it within 6 inches of the ground.
10. Extend the boom slowly until the boom reaches full extension (192 inches) or until the truck becomes unstable. As you extend, use the winch to keep the weight within 6 inches of the ground.
  - a. If the boom reaches full extension, the % of Rated Capacity is 100% for the tested region.
  - b. If, however, the truck becomes unstable (both tires leave the ground) prior to full extension, record (in inches) the horizontal distance from the center of rotation to the wire rope at this point (e.g. 180 inches). This is the Maximum Stable Reach. Determine the % of Rated Capacity using the following formula:  
$$\% \text{ Rated Capacity} = \frac{\text{"Max. Stable Reach" in inches}}{192} \times 100$$
11. Record the % of Rated Capacity in the appropriate blank on the Crane Stability chart and/or decal.
12. Repeat Steps 7–11 for each of the remaining regions (2–3 o'clock, 3–4 o'clock, etc.).

# 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  
02-21-14E  
SUPERSEDES  
12-26-13D

SECTION  
C200  
**20907**



# WIRE ROPE INSTALLATION

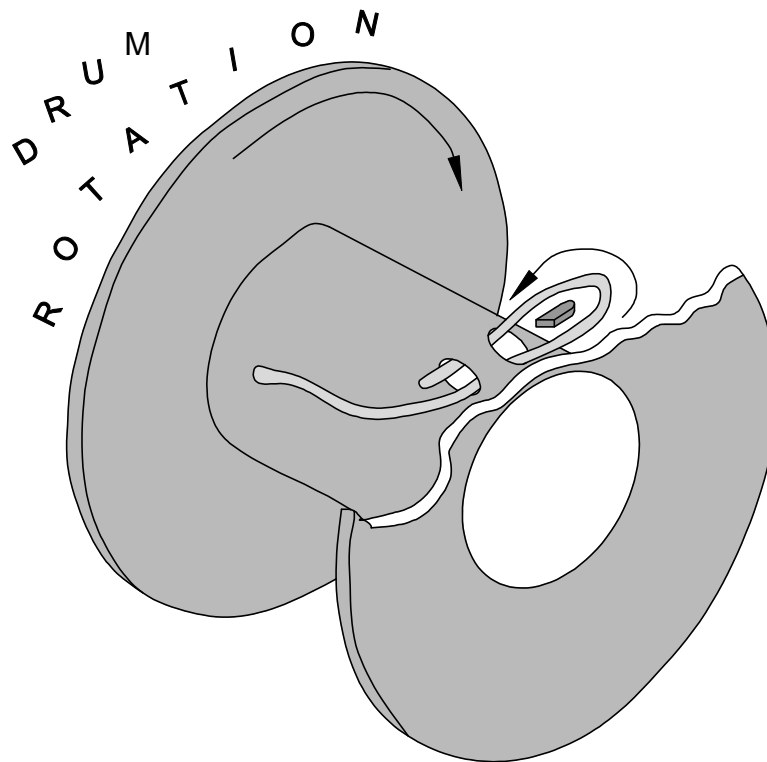


FIG. 1

- 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

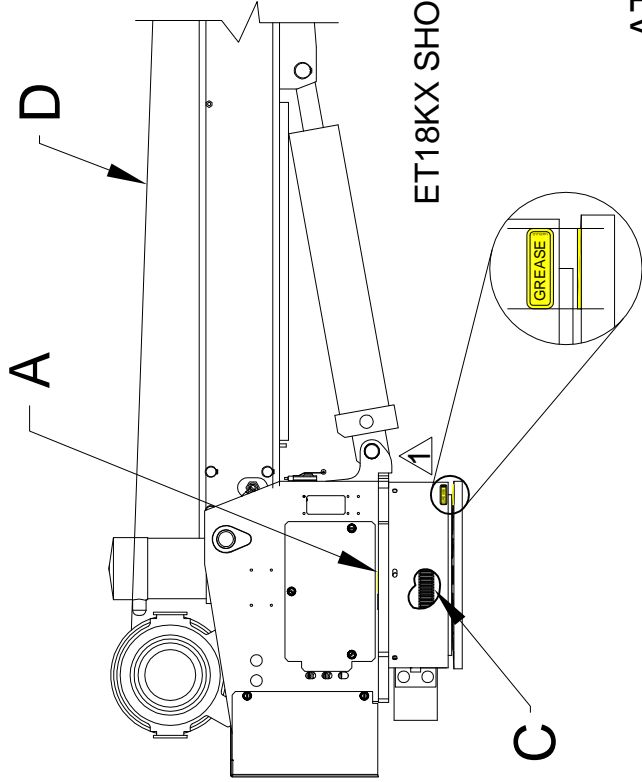
22245

# **SECTION 300**

**MAINTENANCE**

**&**

**SERVICE**



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 ▲ <b>ALIGNMENT:</b> 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 bolts	Bolts should be torqued to 200 ft-lbs	Time of Truck Service



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**LUBRICATION & MAINTENANCE CHART**

ET8/12K(X) AND ET16/18KX ▲

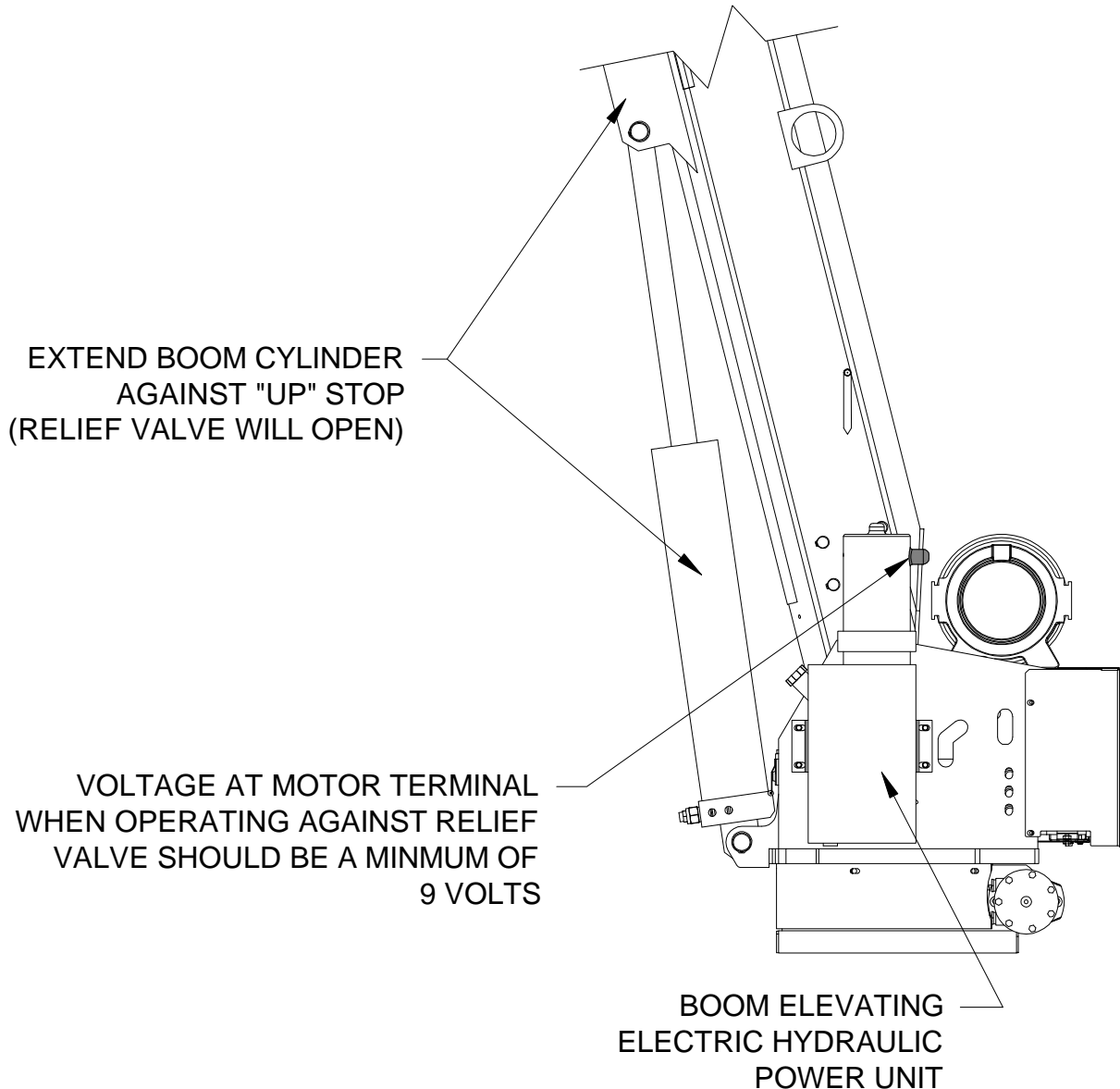
DATE  
11-18-14H  
SUPERSEDES  
10-22-14G

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

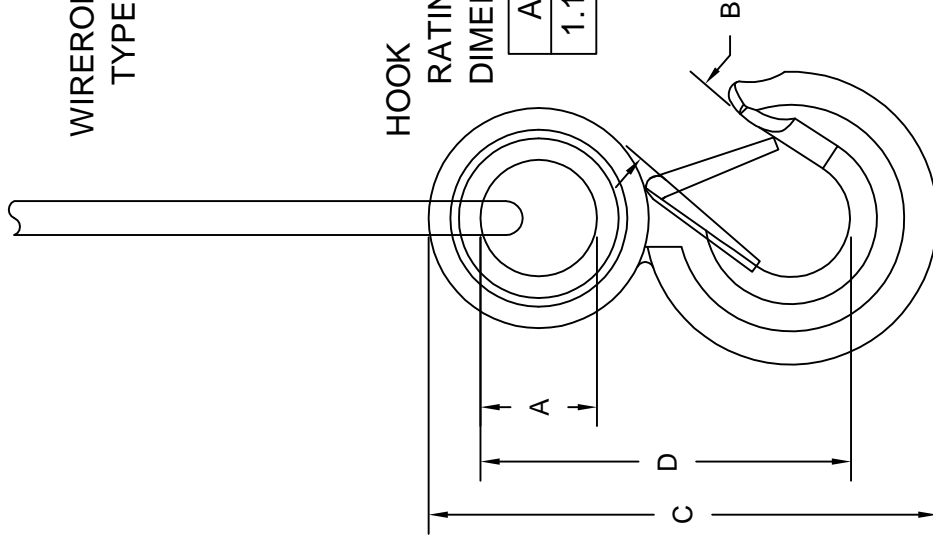
SECTION  
C300  
**19963**

# WIRE ROPE ASSEMBLY

WIRE ROPE  
TYPE: 5/16" DIA. 7 x 19  
GALVANIZED

HOOK  
RATING: 1.5 tonne (3310 LBS)  
DIMENSIONS:

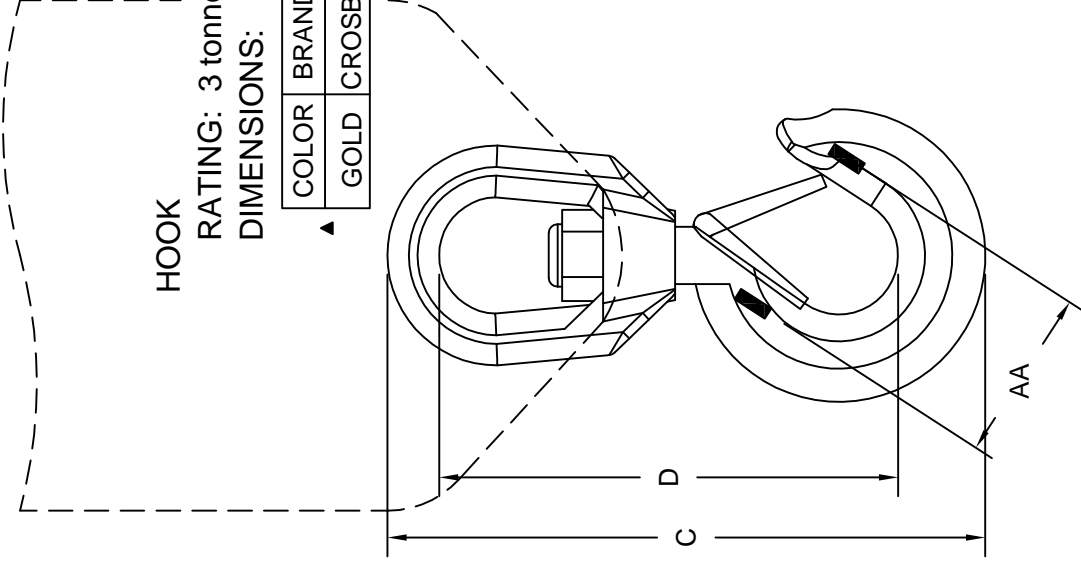
A	B	C	D
1.13	1.06	5.50	4.13



# LOAD BLOCK ASSEMBLY

HOOK  
RATING: 3 tonnes (6,615 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

ET16/18KX ▲

DATE  
10-22-14A

SUPERSEDES  
08-18-11

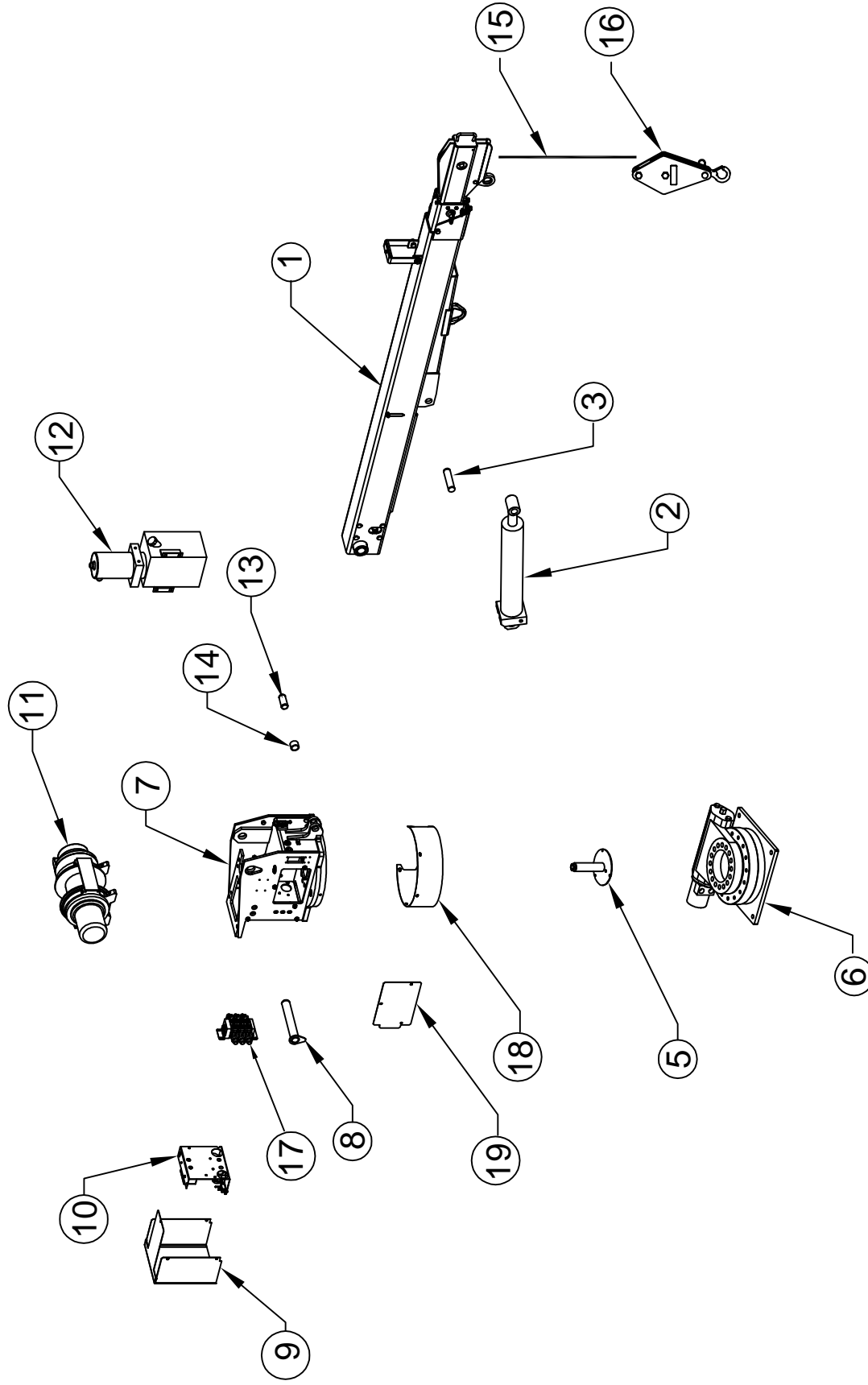
SECTION  
C300

23227

# SECTION 400

## PARTS





FOR REPLACEMENT PARTS LIST, SEE 21797

FOR FASTENER LIST, SEE 21389



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS DRAWING

DATE  
10-22-14A

SECTION  
C400

SUPERSEDES  
08-06-10

21796

ET16/18KX ▲

19	1	23155	HOUSING SIDE COVER
18	1	21185	LOWER COVER
17	1	21614	VALVE BLOCK
16	1	23169	SWIVEL SNATCH BLOCK
15	1	25810-5/16-80	WIRE ROPE ASSEMBLY - 5/16" x 80 FT
14	1	21124	BEARING - ELEVATION CYLINDER BASE
13	1	21172	PIN - ELEVATION CYLINDER BASE PIVOT
12	1	19820	HYDRAULIC POWER UNIT ASSEMBLY
11	1	21215	ELECTRIC WINCH
10	1	23154-1	ELECTRICAL COMPONENT ASSEMBLY
9	4	23173	REAR COVER ASSEMBLY
8	1	21160	PIN - MAIN BOOM PIVOT
7	1	23149	HOUSING WELDED ASSEMBLY
6	1	21735	ROTATION DRIVE SYSTEM
5	1	27568	SWIVEL PIGTAIL CANDLESTICK ASSEMBLY
4	1	-	-
3	1	21127	BOOM PIVOT PIN
2	1	21743	ELEVATION CYLINDER
1	1	21200	FINAL BOOM ASSEMBLY
ITEM NO.	QTY	PART NO.	DESCRIPTION

- ▲ ET16KX STARTING SERIAL NUMBER: 170000
- ET18KX STARTING SERIAL NUMBER: 95566

FOR REPLACEMENT PARTS DRAWING, SEE 21796



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS LIST  
ET16KX/18KX, (GEN. B, S/N: 95566 - CURRENT)

DATE  
10-23-14A  
SUPERSEDES  
08-06-10

SECTION  
C400

21797



# ET16/18KX REPLACEMENT FASTENER LIST

PART NUMBER	DESCRIPTION	QTY	LOCATION / FUNCTION
!HHCS03118063	HEX HEAD CAP SCREW; 5/16-18 X 5/8" LONG	1	GROUND STRAP - CANDLESTICK
!LWSH-031-STAR	LOCK WASHER; 5/16", EXTERNAL STAR	1	GROUND STRAP - CANDLESTICK
!HHCS02520063	HEX HEAD CAP SCREW; 1/4-20 X 5/8" LONG	3	CANDLESTICK TO BASE
!LWSH-025-STAR	LOCK WASHER; 1/4", EXTERNAL STAR	3	CANDLESTICK TO BASE
!HHCS06311200	HEX HEAD CAP SCREW; 5/8-11 X 2" LONG	16	LOWER BASE TO RING
!LWSH-063-STAR	LOCK WASHER; 5/8", EXTERNAL STAR	16	LOWER BASE TO RING
!HHCS06311300	HEX HEAD CAP SCREW; 5/8-11 X 3" LONG	14	UPPER HOUSING TO RING
!LWSH-063-STAR	LOCK WASHER; 5/8", EXTERNAL STAR	14	UPPER HOUSING TO RING
!LWSH-038	LOCK WASHER; 3/8", SPLIT	4	HYDRAULIC POWER UNIT
!HNUT-03816	HEX NUT; 3/8-16	4	HYDRAULIC POWER UNIT
!HHCS02520075	HEX HEAD CAP SCREW; 1/4-20 X 3/4" LONG	4	VALVE BLOCK
!FNUT02520	FLANGE NUT; 1/4-20	4	VALVE BLOCK
!HHCS03118075-F	HEX HEAD CAP SCREW; 5/16-18 X 3/4", SELF TAPPING	1	GROUND ON HOUSING
!HHCS02520075-F	HEX HEAD CAP SCREW; 1/4-20 X 3/4", SELF TAPPING	2	GROUND ON HOUSING
!HHCS02520050-F	HEX HEAD CAP SCREW; 1/4-20 X 1/2", SELF TAPPING	1	GROUND ON HOUSING
!PHMS#0832063	PHILLIPS HEAD MACHINE SCREW; #8-32 X 5/8"	1	PENDANT PLUG
!LWSH-#08	LOCK WASHER; #8	1	PENDANT PLUG
!PHMS#1024125	PHILLIPS HEAD MACHINE SCREW; #10-24 X 1 1/4"	2	TOP POSITION SWITCH
!LWSH#10	LOCK WASHER; #10	2	TOP POSITION SWITCH
!HNUT-#1024	HEX NUT; #10-24	1	TOP POSITION SWITCH
!HHCS02520063-F	HEX HEAD CAP SCREW; 1/4-20 X 5/8", SELF TAPPING	1	CABLE CLAMP (PRESS. SWITCH)
!SRNG-100	SNAP RING; 1"	2	ELEVATION CYLINDER ROD PIN
!UNUT-02520	U-NUT; 1/4-20	5	LOWER COVER
!HHCS02520075	HEX HEAD CAP SCREW; 1/4-20 X 3/4" LONG	5	LOWER COVER
!LWSH-025	LOCK WASHER; 1/4"	5	LOWER COVER
!FWSH-025	FLAT WASHER; 1/4"	5	LOWER COVER
!HHCS02520075-F	HEX HEAD CAP SCREW; 1/4-20 X 3/4", SELF TAPPING	5	REAR COVER
!HHCS02520050-F	HEX HEAD CAP SCREW; 1/4-20 X 1/2", SELF TAPPING	1	CORD REEL CABLE CLAMP
!HHCS03118075-F	HEX HEAD CAP SCREW; 5/16-18 X 3/4", SELF TAPPING	3	SIDE COVER
!SRNG-138	SNAP RING; 1 3/8"	1	BOOM PIN (MAIN)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

RPLCMNT FSTENER LIST

ET16/18KX

DATE

10-23-14A

SUPERSEDES

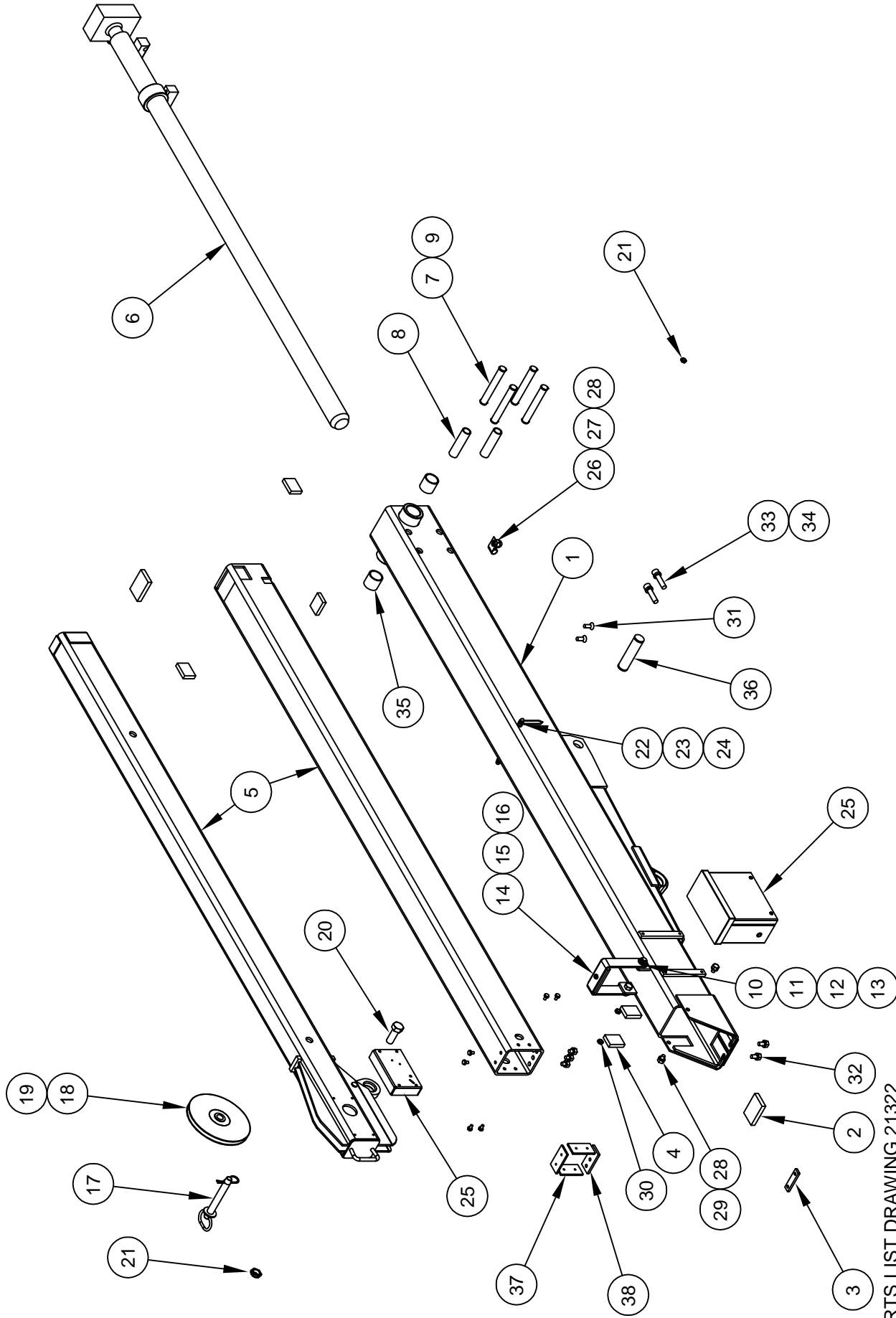
02-15-07

SECTION

C400

21389

# 21200 BOOM PARTS DRAWING



REF PARTS LIST DRAWING 21322



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
21200 BOOM PARTS DRAWING

DATE  
10-23-14C

SUPERSEDES  
04-21-08B

SECTION  
C400

ET16/18KX

21310

# 21200 BOOM PARTS LIST

ITEM NO.	EXPLODED/QTY.	PART NUMBER	DESCRIPTION
38	1	22145	LOWER STOP BLOCK
37	3	22146	TOP SHIM
36	1	21127	BOOM PIVOT PIN
35	2	21206	POLY BEARING - PRIMARY BOOM PIVOT
34	2	ILWSH-050-HC	LOCK WASHER 1/2" HI COLLAR
33	2	ISHCS05013200	SOCKET HEAD CAP SCREW 1/2-13 X 2" LONG
32	2	IHCOS03816075	HEX HEAD CAP SCREW - 3/8-16 X 3/4 LONG
31	2	ICACS03816100	CNTRSNK ALLEN HEAD CAP SCREW 3/8-16 X 1" LG
30	2	IJNUT-03816	JAM NUT - 3/8-16 GRADE 5
29	4	ILWSH-038	LOCK WASHER 3/8"
28	2	IHCOS03816050	HEX HEAD CAP SCREW 3/8-16 X 1/2" LG - GR 5
27	1	ILWSH-025	LOCK WASHER - 1/4"
26	1	19269	CABLE CLAMP - 1/4"
25	1	21276	ANTI-TWO BLOCK ASSEMBLY - L.H.
24	3	IJNUT-02520S	ACORN NUT 1/4-20 STAINLESS
23	2	22490	SPACER, BOOM ARROW 1/2" O.D.
22	2	13459-1	BOOM ARROW 3-3/16 LONG
21	1	ILNUT-07510	LOCKNUT 3/4-10
20	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK
19	1	23924	SPACER - 23925 SHEAVE
18	1	23925	BOOM SHEAVE WITH BUSHING
17	1	19258-1	BOOM PIN
16	1	IJNUT-02520N	NYLON INSERT JAM NUT - 1/4-20
15	1	IPHCS02520063	PAN HEAD CAP SCREW - 1/4-20 X 5/8 LONG
14	1	19881	CABLE GUIDE WEAR STRIP
13	2	IJNUT-05013N	1/2-13 NYLON INSERT JAM NUT
12	2	IFWSH-050	FLAT WASHER 1/2"
11	2	IHCOS05013100	HEX HEAD CAP SCREW 1/2-13NC X 1 LG
10	1	19880	CABLE GUIDE STRUCTURE
9	8	ISRNG-075	RETAINING RING - 3/4" SHAFT DIA.
8	2	19885	EXTENSION CYLINDER ROLLER
7	4	21211	THRUST PIN - EXTENSION CYLINDER
6	1	21217-1	EXTENSION CYLINDER
5	1	21203	SECONDARY / TERTIARY WELDED ASSEMBLY
4	5	21209	BOOM BEARING - 1-1/2 X 2 X 7/16
3	1	21207	PRIMARY BEARING RETAINING BAR
2	2	21208	BOOM BEARING - 2 X 3 X 1/2
1	1	21202	PRIMARY BOOM WELDED ASSEMBLY

REF PARTS DRAWING 21310



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
21200 BOOM PARTS LIST

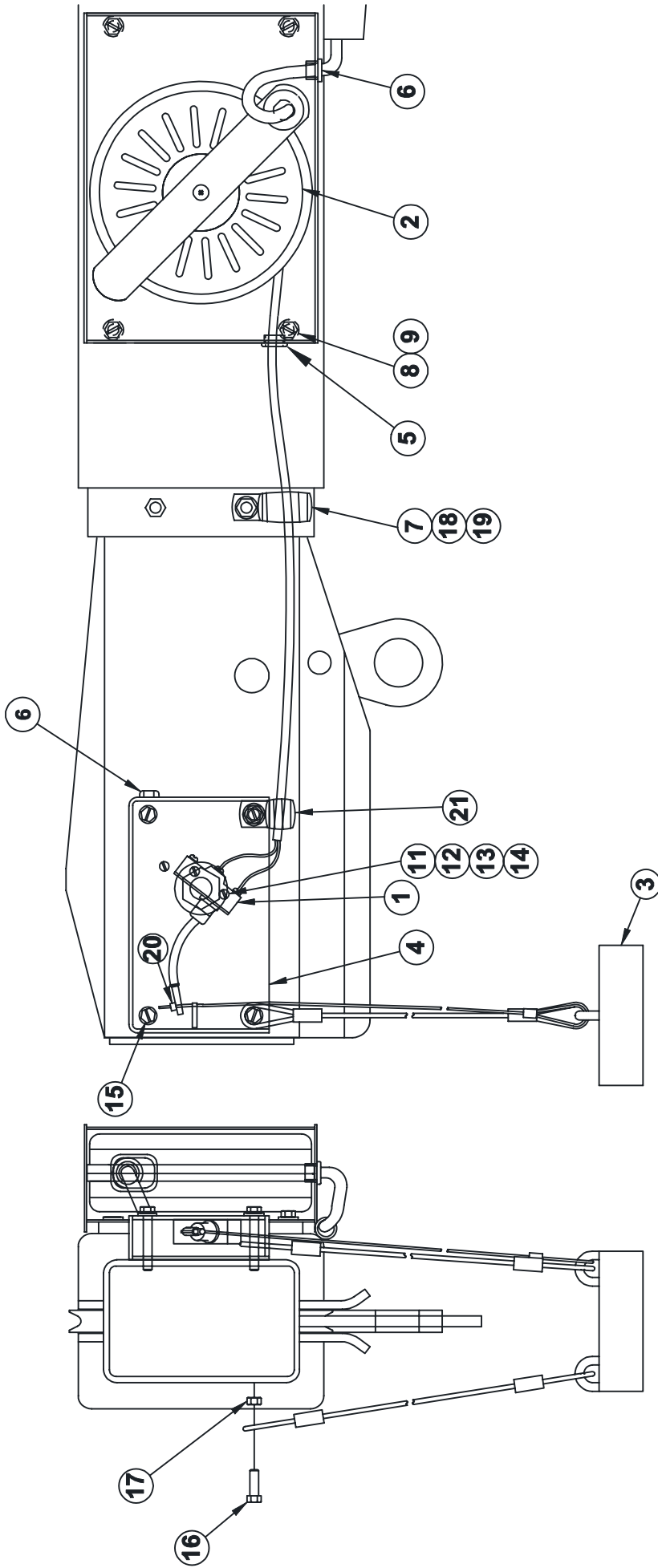
ET16/18KX

DATE  
10-23-14B

SUPPERSEDES  
12-11-13A

SECTION  
C400

21322



ITEM	QTY	DESCRIPTION
21	1	CABLE CLAMP - SMALL
20	1	SET COLLAR - 3/32"
19	1	LOCK WASHER - 1/4"
18	1	ACORN NUT - 1/4-20
17	1	HEX NUT - 1/4-20
16	1	HEX HEAD CAP SCREW - 1/4-20 x 3/4" GR. 5
15	4	HEX HEAD CAP SCREW - 1/4-20 x 1 3/4"
14	2	LOCK WASHER - #6
13	2	FLAT WASHER - #6
12	2	HEX NUT - #6-32
11	2	PAN HEAD MACHINE SCREW - #6-32 x 1 1/4"
10	1	CABLE COLLAR - SMALL
9	4	LOCK WASHER - 5/16"
8	4	SOCKET HEAD CAP SCREW - 5/16-18 x 1 1/2"
7	1	CABLE CLAMP - LARGE
6	2	SNAP BUSHING - 3/8" I.D.
5	1	SNAP BUSHING - 1/2" I.D.
4	1	ANTI TWO-BLOCK HOUSING ASSEMBLY
3	1	CABLE REEL ASSY
2	1	CORD REEL ASSY
1	1	LIMIT SWITCH

**VENTURO** MANUFACTURING, INC.  
CINCINNATI, OHIO

**TITLE**  
REPLACEMENT PARTS DWG

**DATE**  
10-17-11E

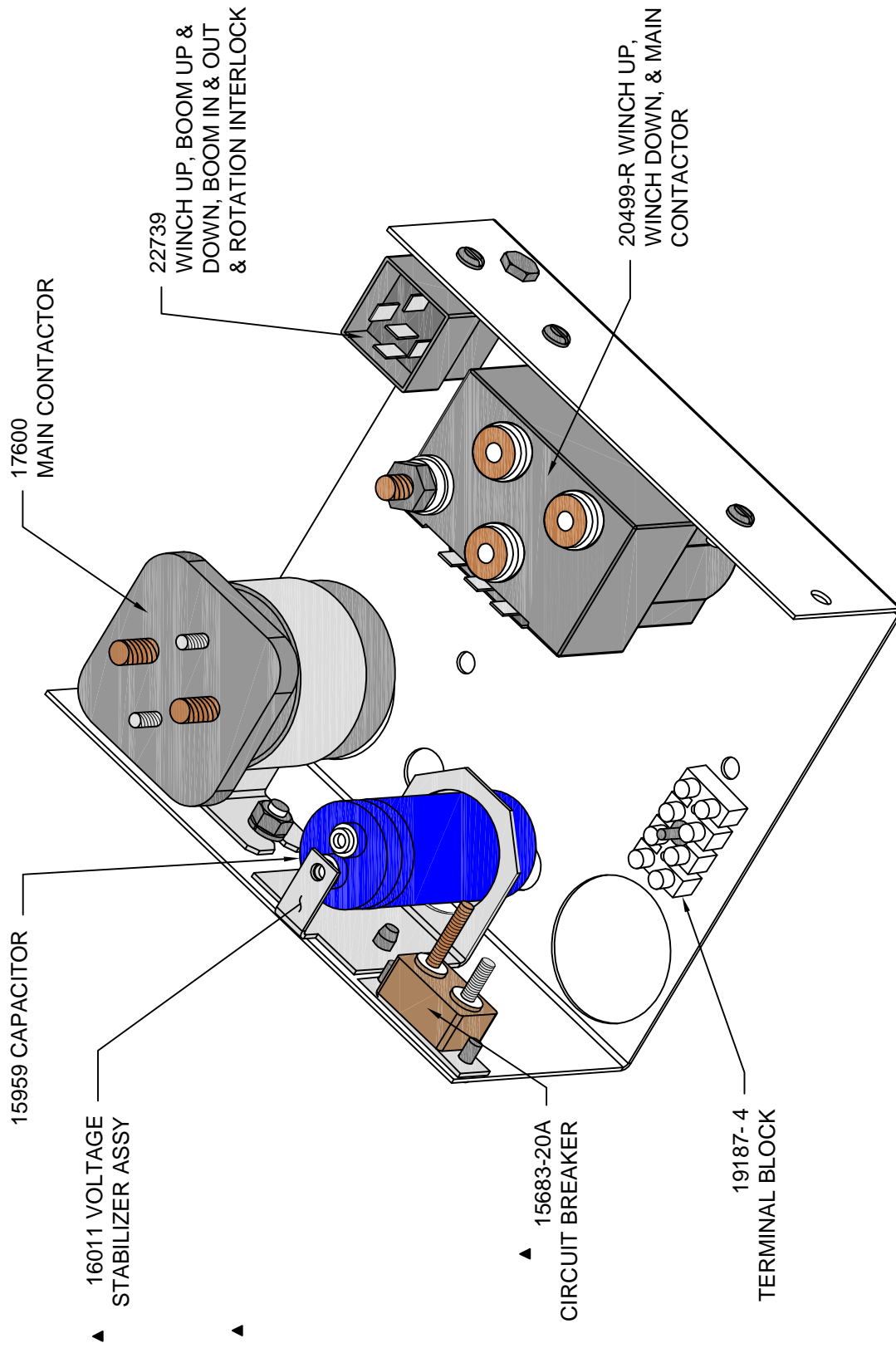
**SECTION**  
C400

**SUPERSEDES**  
10-7-09D

**21276 ANTI-TWO-BLOCK SYSTEM**

**21275**

# 23154-1 ELECTRICAL COMPONENT ASSEMBLY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
ELECTRICAL COMPONENT ASSEMBLY

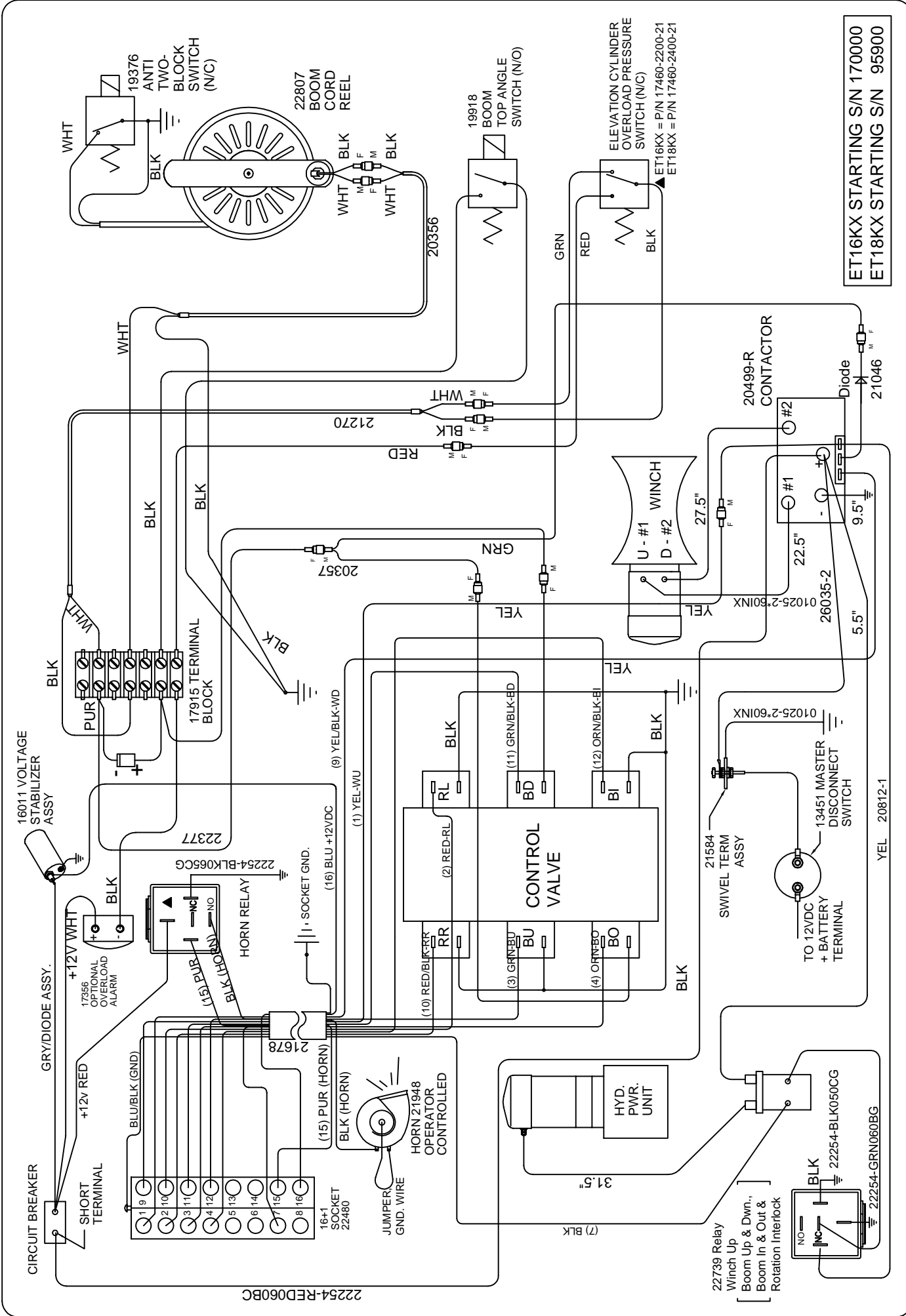
ET16/18KX

DATE  
02-10-15E

SUPERSEDES  
10-23-14D

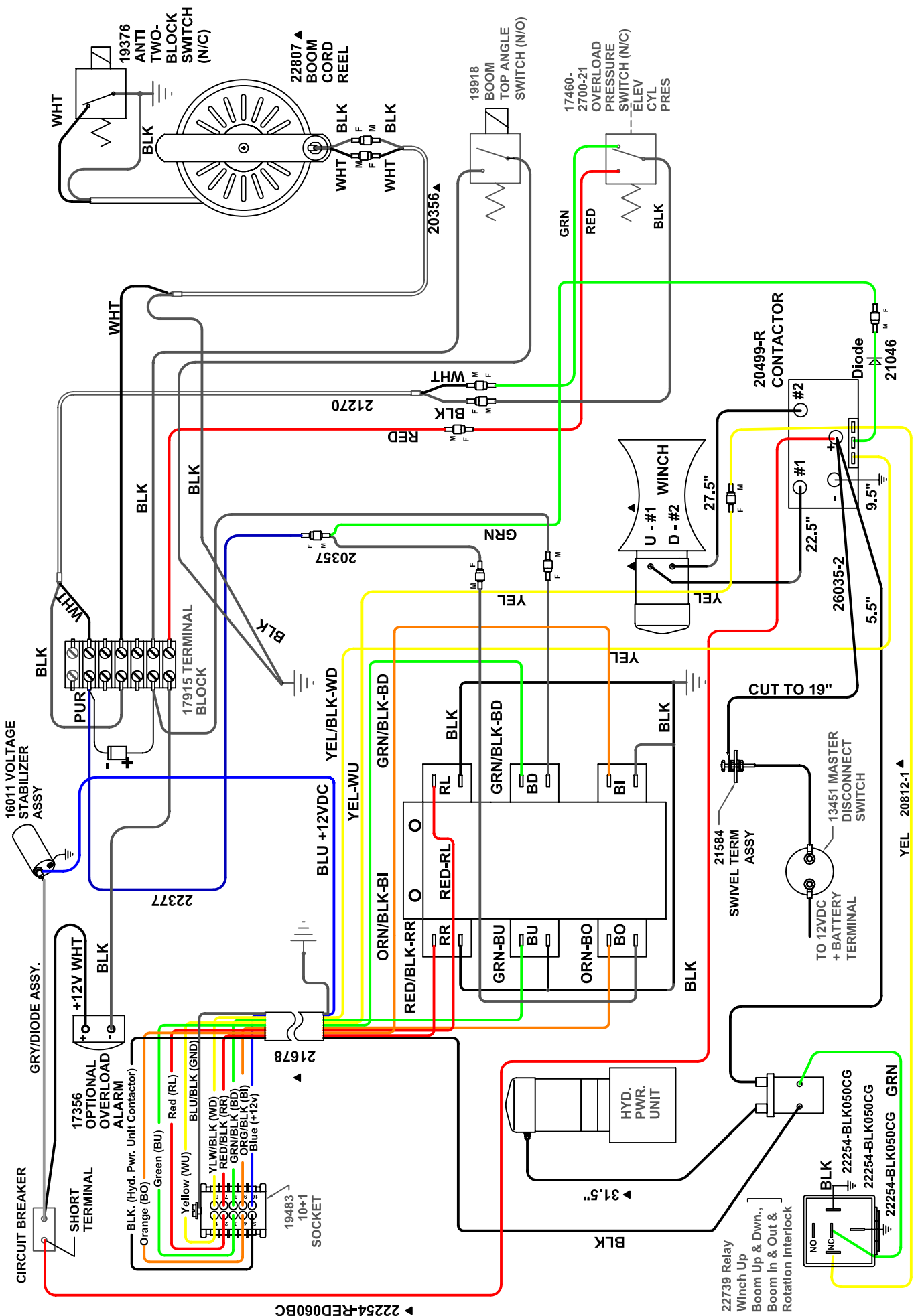
SECTION  
C400

21397



ET16KX STARTING S/N 170000  
 ET18KX STARTING S/N 95900

	TITLE <b>WIRING DIAGRAM</b>		SECTION -
	VENCIO VENTURO INDUSTRIES LLC CINCINNATI, OHIO		DATE 12-22-14F SUPERSEDES 10-27-14E
ET16/18KX W/ HORN		<b>21388</b>	

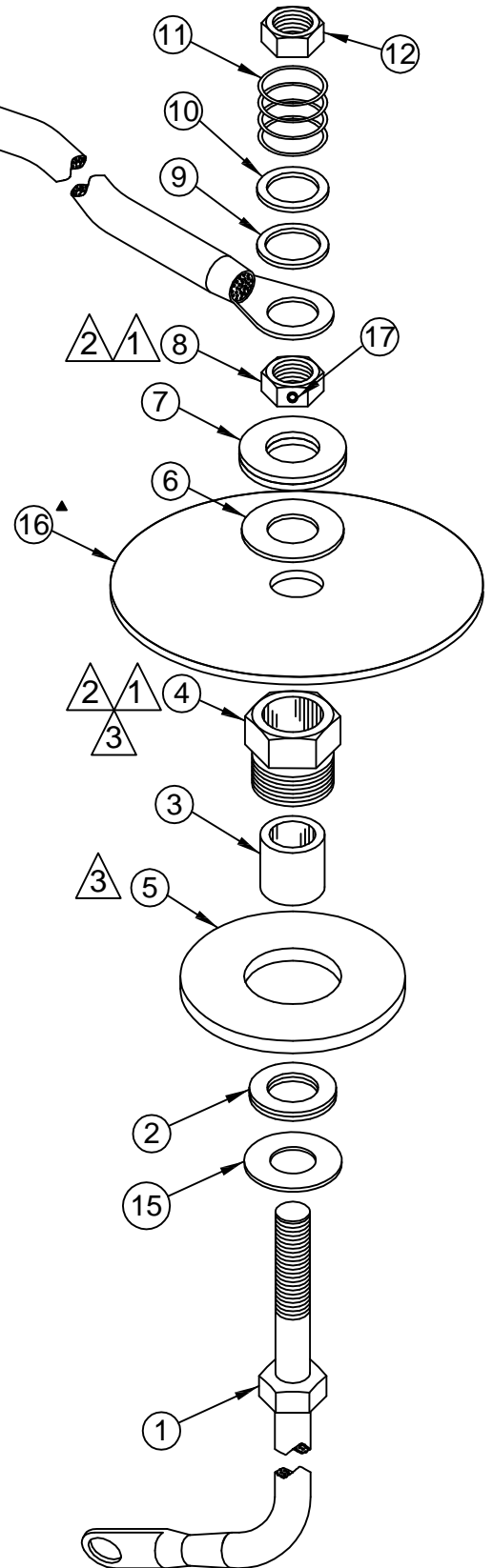


<b>VENTURO</b> MANUFACTURING, INC. CINCINNATI, OHIO		TITLE <b>WIRING DIAGRAM</b>	DATE <b>3-18-10B</b>	SECTION -
		SUPERSEDES <b>6-12-08A</b>	<b>21388</b>	
		<b>ET18KX</b>		

# 16780 / 16780-1 SWIVEL TERMINAL REPLACEMENT PARTS DRAWING / LIST

26035-1  
SWIVEL PIGTAIL - REF

ITEM	QTY	PART NO.	DESCRIPTION
1	1	16783	PIGTAIL & STUD ASSEMBLY
2	2	14357-1	FIBER WASHER; 5/8" I.D. X 1 1/16" O.D. X 1/16" THICK
3	1	14233	INSULATING BUSHING
4	1	14232	7/8" INVERTED FLARE NUT
5	1	!FWSH-113SAE	FLAT WASHER; 1 3/16" I.D. X 2 3/4" O.D. X 3/16" THICK
6	1	14357-2	FIBER WASHER; 5/8" I,D, X 1 1/4" O.D. X 1/16" THICK
7	2	!FWSH-063SAE	FLAT WASHER; 5/8" SAE
8	1	21273	BRASS JAM NUT; 5/8-11
9	1	5612-162-62	TEFLON WASHER; 0.657" I.D. X 0.875" O.D. X 0.062" THICK
10	1	5714-113-62	BRASS WASHER
11	1	LC-098K-00	SPRING; 0.845" O.D. X 0.098" WIRE X 1.00 F.L.
12	1	!JNUT-06311N	JAM NUT; 5/8-11, NYLON LOCK
13	1	LOCTITE-24205	LOCTITE; CAPSULE GRADE 242 BLUE
14	1	19368	16780 REPLACEMENT PARTS DRAWING
15	1	12534-5	BUSHING; 5/8" I.D. X 1" O.D. X 14 GA, ZINC
16	1	21756	SHIELD; HOUSING CENTER
17	1	!SHCS02528025KC	SET SCREW; 1/4-28 X 1/4", KNURLED CAP



\* ITEMS INCLUDED IN 16780-KIT (REPLACEMENT PARTS KIT)

16780 SWIVEL TERMINAL ASSY REPLACES & IS  
INTERCHANGEABLE WITH 14231 SWIVEL TERMINAL  
ASSY ON ET20000 & ET20K(X) CRANES

 TORQUE TO 30 FT-LBS

 SECURE WITH LOCTITE 242 BLUE

 16780-1 ASSY DOESN'T INCLUDE ITEM 4 OR 5



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
RPL. PARTS DWG / LIST

ET16/18/25/30/36KX

DATE  
10-23-14J

SUPERSEDES  
08-10-12H

SECTION  
C400

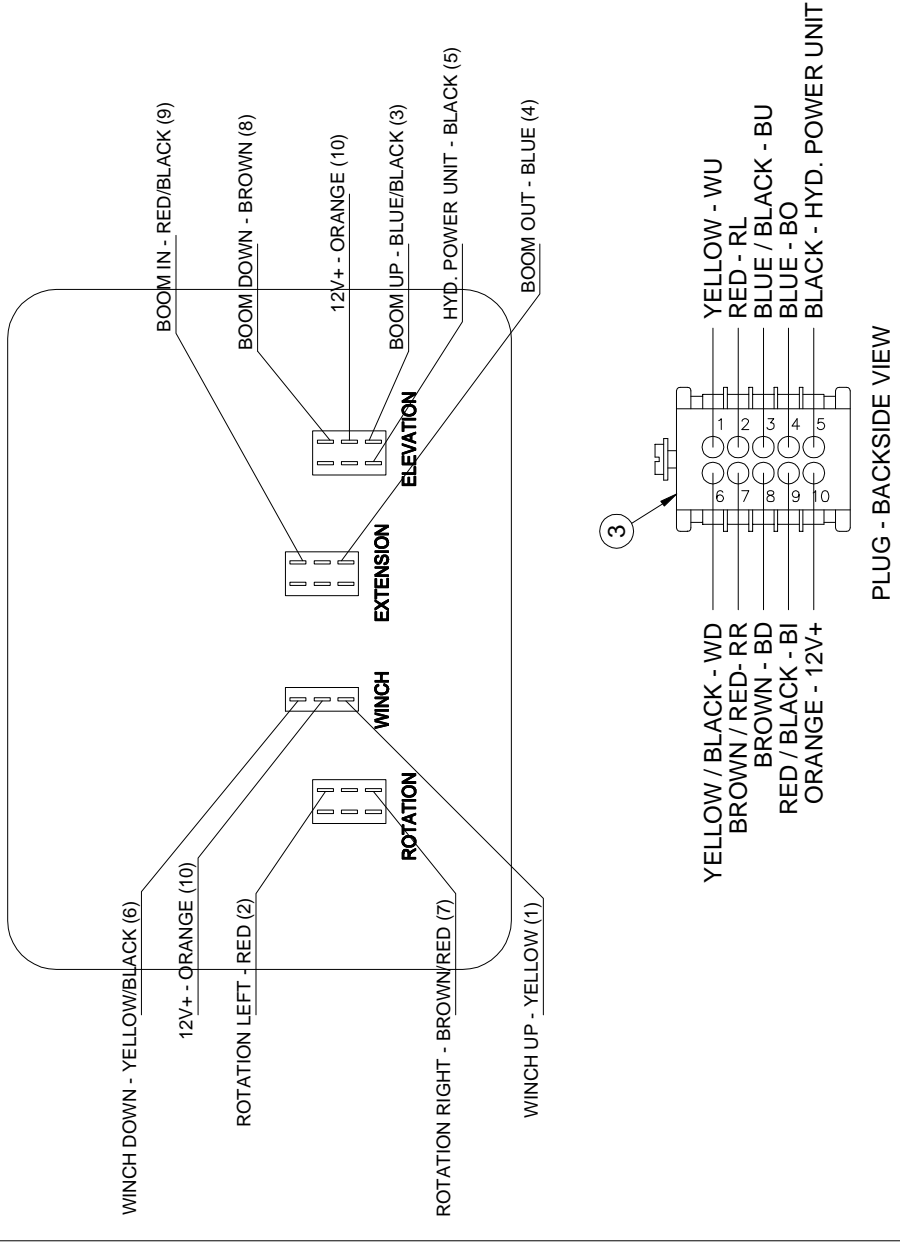
19368



# 22060 PENDANT (4 - SWITCH)

## CORD REPLACEMENT INSTRUCTIONS

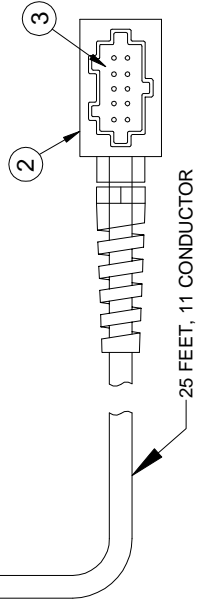
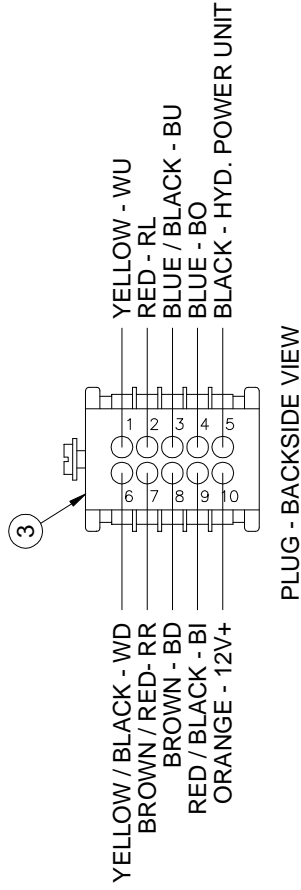
(INSIDE VIEW OF PENDANT CONTROL W/ REAR COVER REMOVED)



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

NOTE 2)  
TOGGLE SWITCH JUMPER  
WIRES NOT SHOWN FOR  
CLARITY.

NOTE 3)  
STOW OR CUT-BACK  
UNUSED WIRES.



ITEM	QTY	PART NO.	DESCRIPTION
4	3	22152	DPDT MOMENTARY TOGGLE SWITCH
3	1	19427	MALE INSERT - 10 + 1 POLE
2	1	19426	PLUG CASE - 10 + 1 POLE
1	1	22081	SPDT MOMENTARY TOGGLE SWITCH

TITLE  
**REPLACEMENT PARTS DRAWING & LIST**

22060 PENDANT (STANDARD CONTROL)

DATE  
12-10-13C

SUPERSEDES  
09-28-12B

SECTION  
C400

22076

**VENTURO**<sup>®</sup>  
MANUFACTURING, INC.  
CINCINNATI, OHIO

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

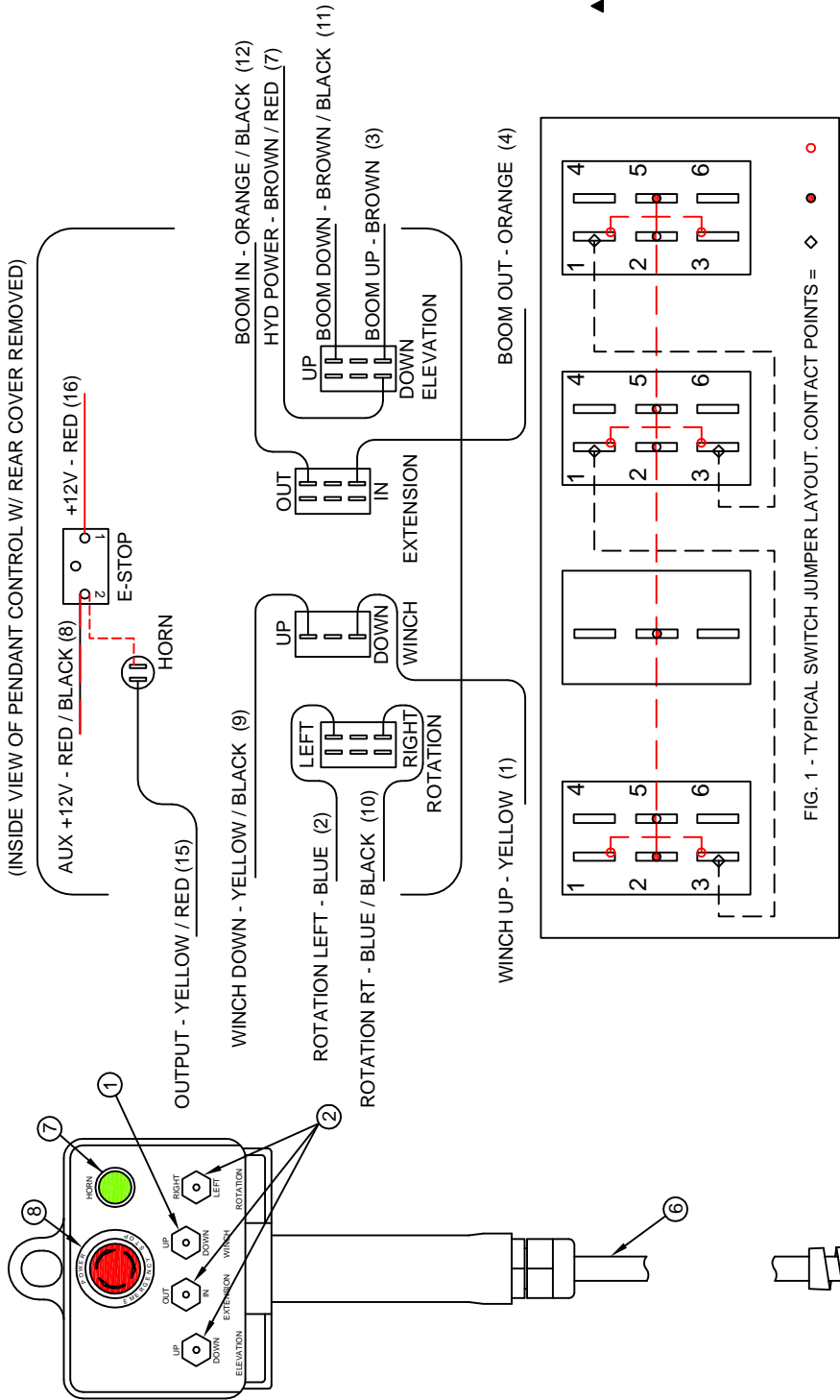
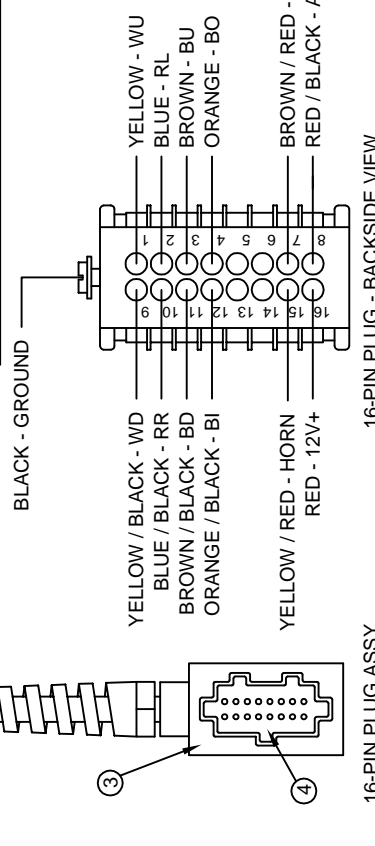


FIG. 1 - TYPICAL SWITCH JUMPER LAYOUT. CONTACT POINTS =  $\diamond$   $\bullet$   $\circ$



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  
**REPLACEMENT PARTS DWG & LIST**

DATE  
10-20-14A

SUPERSEDES  
10-03-14

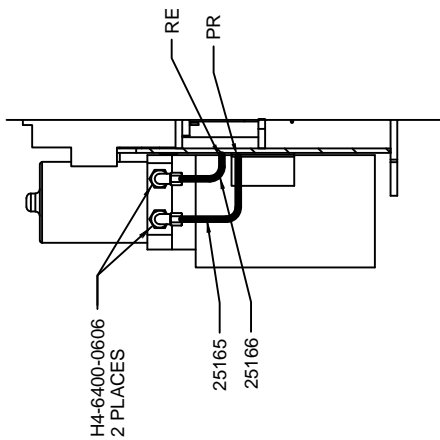
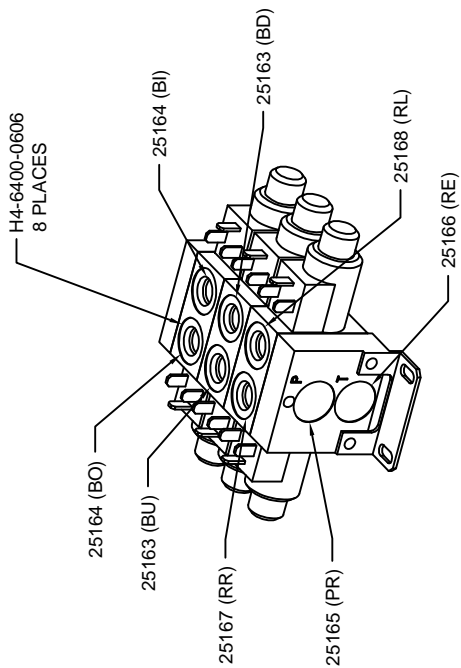
SECTION  
C400

21990 PNDNT; 4 FNCTN ET CRNS, ESTP/HRN

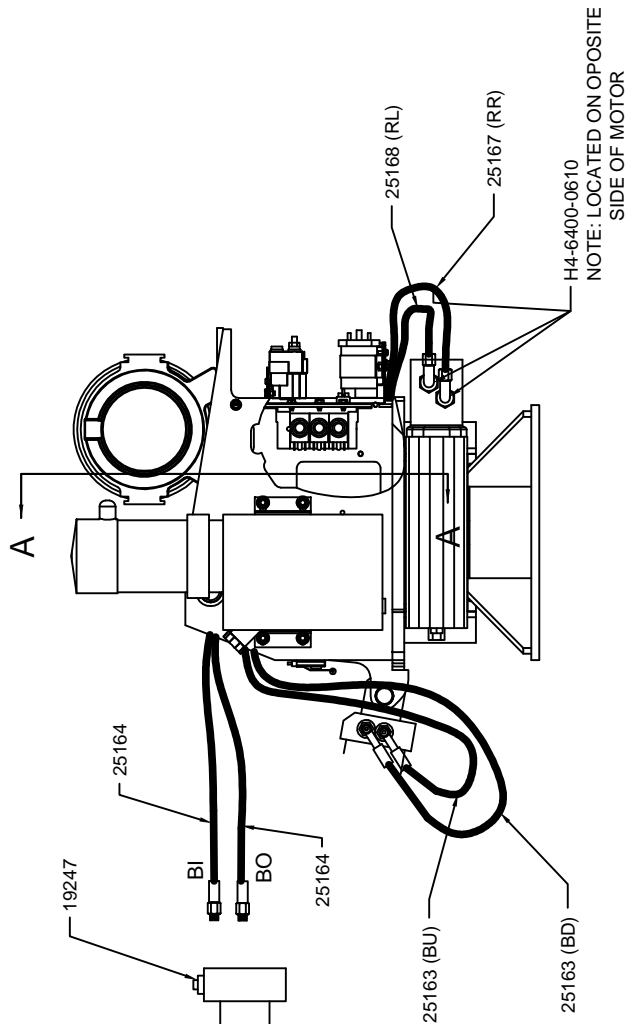
**23075**

# ET16/18KX 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



SECTION VIEW A-A



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
HYDRAULIC COMPONENTS DRAWING

ET16/18KX

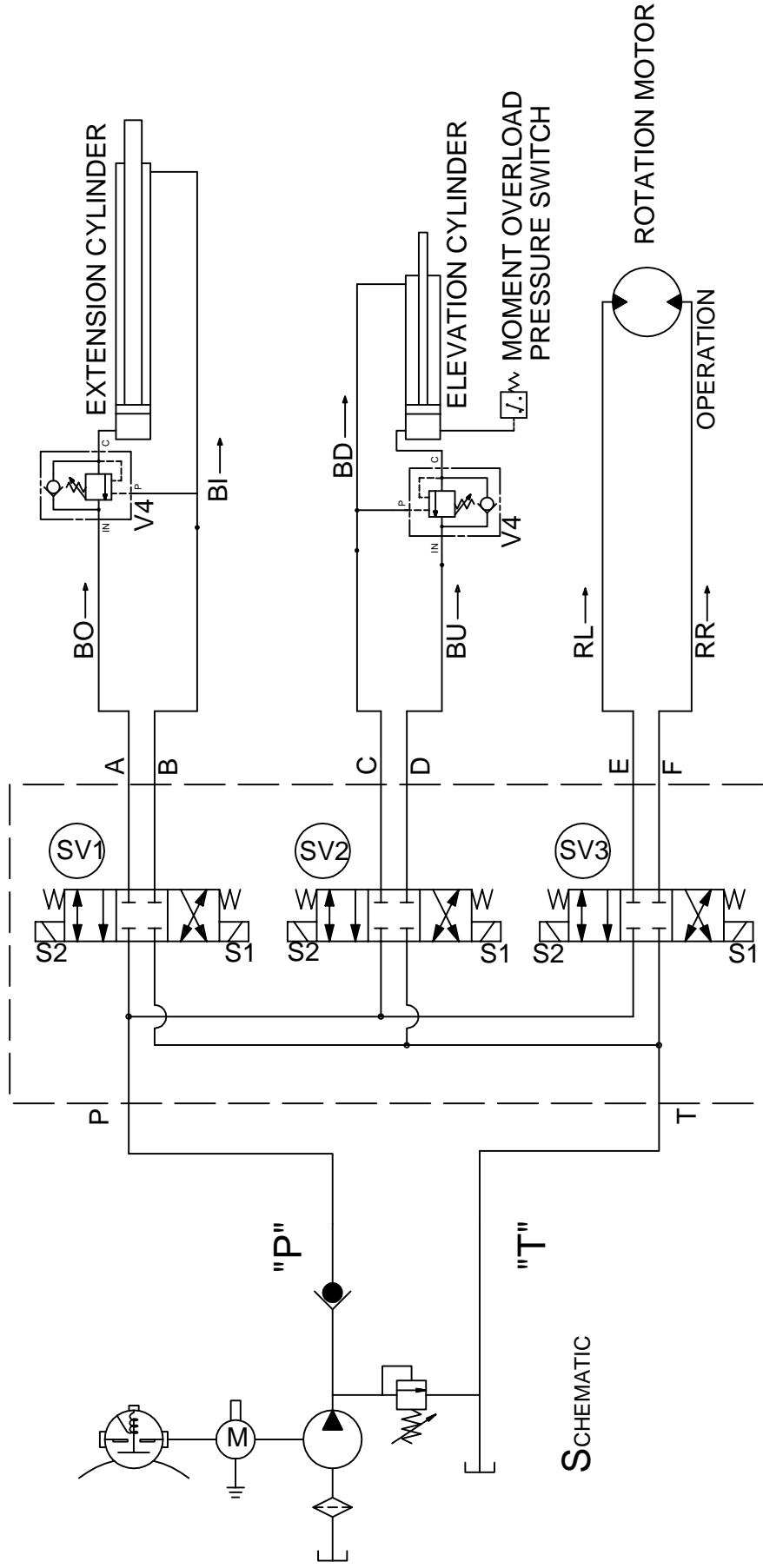
DATE  
10-23-14A

SUPERSEDES  
08-27-08

SECTION  
C400

21407

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



SCHMATIC

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

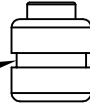
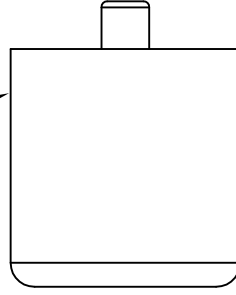
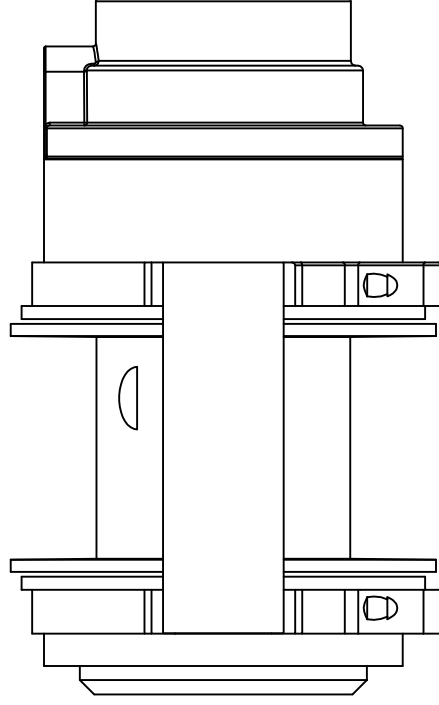
	VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE <b>HYDRAULIC SYSTEM DIAGRAM</b>	DATE 10-23-14D SUPERSEDES 01-31-05C	SECTION <b>C400</b>
ET16/18/25/30/36KX ▲			<b>20156</b>	

# 21215 WINCH (DC2500) REPLACEMENT PARTS

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

21980 BRAKE ASSY

21778 MOTOR



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
WINCH (DC2500) REPLACEMENT PARTS

ET16/18KX ▲

DATE  
10-23-14F

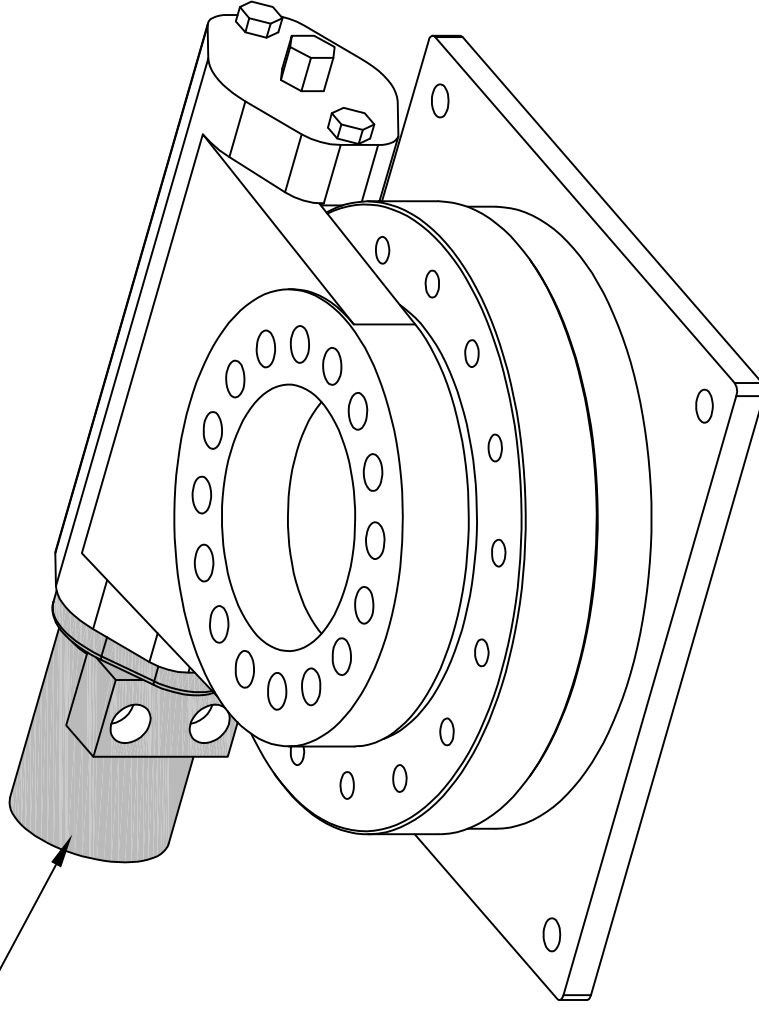
SUPERSEDES  
05-01-13E

SECTION  
C400

21054

# 21735 SLEWING SYSTEM REPLACEMENT PARTS

21123 MOTOR (ONLY)



21218 - MOTOR SEAL KIT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SLEWING SYSTEM REPLACEMENT PARTS

ET8/12K & ET8/12/16/18KX ▲

DATE

10-23-14B

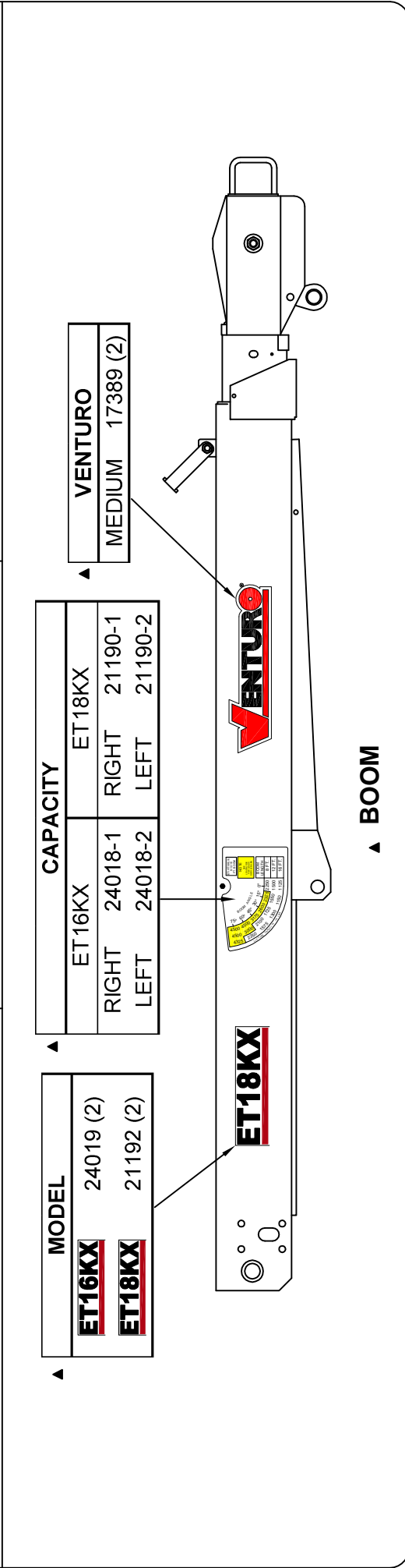
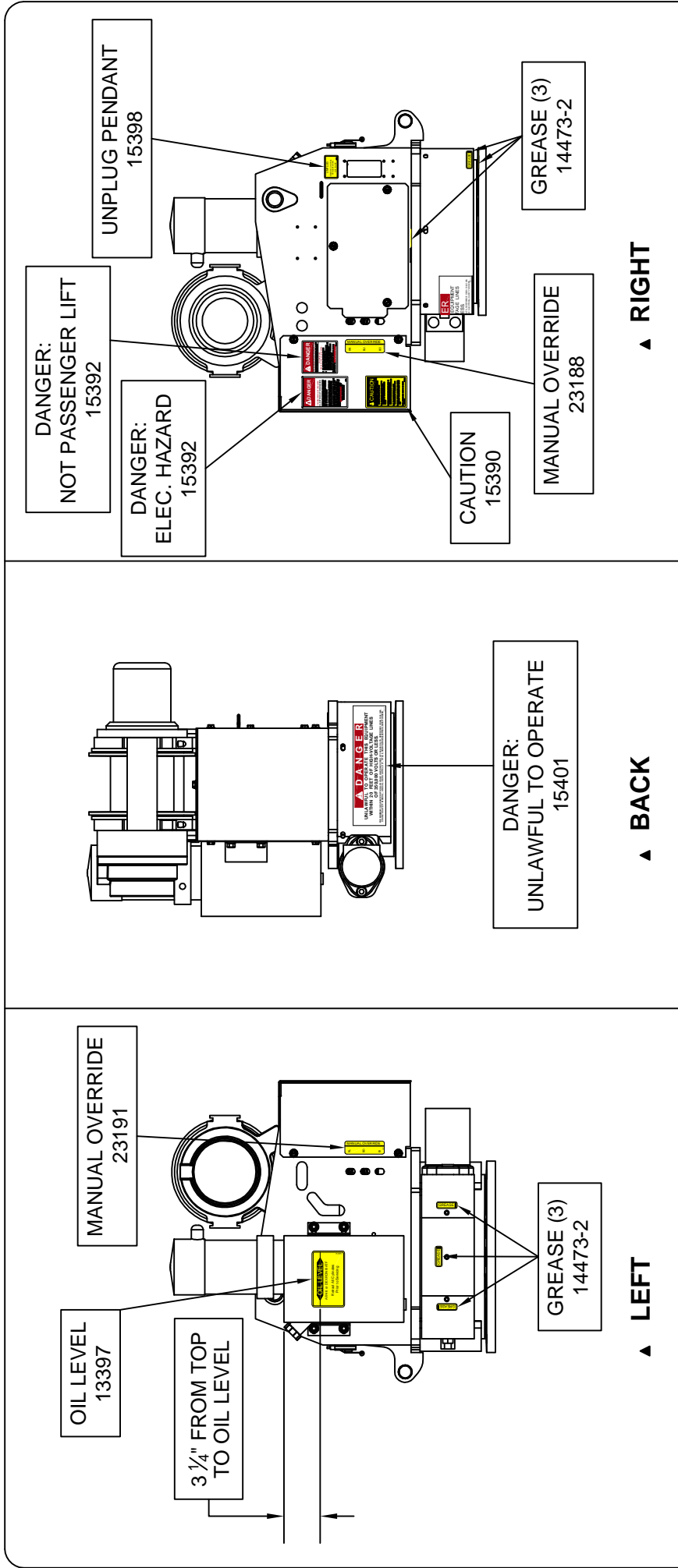
SUPERSEDES

12-27-13A

SECTION

C400

21973



	VENCO VENTURO INDUSTRIES LLC CINCINNATI, OHIO	TITLE	DECAL PLACEMENT	DATE	05-07-15B	SECTION	C400
		ET16/18KX		SUPPERSEDES	08-07-15A		21393

# ET16/18KX FIELD SERVICE LABEL KITS

## ▲ 24021; FIELD SERVICE LABEL KIT, ET16KX

PART NO.	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
17389	2	DECAL; VENTURO LOGO, MEDIUM
24018-1	1	DECAL; BOOM CAPACITY, RIGHT, ET16KX
24018-2	1	DECAL; BOOM CAPACITY, LEFT, ET16KX
24019	2	DECAL; MODEL NAME, ET16KX
13397	1	DECAL; OIL LEVEL
23188	1	DECAL; MANUAL OVERRIDE, RIGHT
23191	1	DECAL; MANUAL OVERRIDE, LEFT
17813	1	DECAL; OVERLOAD SENSING SYSTEM
20818	1	IDWG; FIELD SERVICE LABEL KIT
21393	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
15397	1	KIT; ACCIDENT PREVENTION SIGNS

NOTE:

APPLICABLE SERIAL NUMBERS: 170000 - CURRENT

## ▲ 21108; FIELD SERVICE LABEL KIT, ET18KX

PART NO.	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
17389	2	DECAL; VENTURO LOGO, MEDIUM
21190-1	1	DECAL; BOOM CAPACITY, RIGHT, ET18KX
21190-2	1	DECAL; BOOM CAPACITY, LEFT, ET18KX
21192	2	DECAL; MODEL NAME
13397	1	DECAL; OIL LEVEL
23188	1	DECAL; MANUAL OVERRIDE, RIGHT
23191	1	DECAL; MANUAL OVERRIDE, LEFT
17813	1	DECAL; OVERLOAD SENSING SYSTEM
20818	1	IDWG; FIELD SERVICE LABEL KIT
21393	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
15397	1	KIT; ACCIDENT PREVENTION SIGNS

NOTE:

APPLICABLE SERIAL NUMBERS: 95566 - CURRENT

▲ 15397 ACCIDENT PREVENTION SIGNS		
PART NO.	QTY.	DESCRIPTION
15390	1	DECAL; CAUTION, OPERATIONS
15391	1	DECAL; DANGER, NOT PASSENGER LIFT
15392	1	DECAL; DANGER, ELECTRICAL HAZARD SIGN
15393	4	DECAL; DANGER, ELECTRICAL HAZARD
15394	1	APPLICATION INSTRUCTIONS
15398	1	DECAL; UNPLUG PENDANT
15401	1	DECAL; UNLAWFUL TO OPERATE
15513	1	DECAL; MASTER DISCONNECT
22317	1	DECAL SHEET; VENTURO, COMPLEMENTARY
20927	1	DECAL; CRANE STABILITY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
FIELD SERVICE LABEL KIT  
ET16/18KX

DATE  
05-06-15D  
SUPERSEDES  
04-22-13C

SECTION  
C400  
20818











## 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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