

# PARTS & INSTALLATION MANUAL

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## 4520E/4516E

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Included in this manual:

### 4520E

- 4,500 lbs. Electric Telescopic Service Crane.
- 10 – 16 – 20 ft Powered, Dual-Stage, Boom Extension.
- Proportional Controls & Non-Proportional Controls.

### 4516E

- 4,500 lbs. Electric Telescopic Service Crane.
- 8 – 12 ft Powered, Single-Stage, Boom Extension.
- 12 – 16 ft Manual, Pullout, Boom Extension
- Proportional Controls & Non-Proportional Controls.

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# **SECTION 100**

## **DESCRIPTION**

### **&**

## **SPECIFICATIONS**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO



## SPECIFICATIONS

12-volt battery operated

18,000 ft-lb overturning moment (or as limited by truck stability)

Moment overload shut-off system

Electric winch - 2,250 lb single-line capacity with automatic load brake

Electric-hydraulic boom elevation

Electric-hydraulic boom extension - 10 ft stroke

Electric-hydraulic continuous power rotation

Corded remote control pendant

Radio remote control pendant (optional)

Master disconnect switch

Accessories (optional):

Stabilizers: 24962, 13500, 11822-2

Pedestal: 26027

Boom Rest: 20381-2

TELESCOPIC BOOM	10.5 - 20.5 ft
BOOM ELEVATION	-5° TO 75°
BOOM HYD EXTENSION	10 ft
BOOM MANUAL EXT	-
CAPACITY	700 lb @ 20.5 ft
	4500 lb @ 2.5 ft
WIRE ROPE	$\frac{5}{16}$ " x 80 ft
PENDANT CORD LENGTH	25 ft



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SPECS & OP. FEATURES

DATE

02-19-25A

SECTION

C100

4520E

SUPERSEDES

02-16-24

28811

## SPECIFICATIONS

12-volt battery operated

18,000 ft-lb overturning moment (or as limited by truck stability)

Moment overload shut-off system

Electric winch - 2,250 lb single-line capacity with automatic load brake

Electric-hydraulic boom elevation

Electric-hydraulic boom extension - 4 ft stroke

Electric-hydraulic continuous power rotation

Corded remote control pendant

Radio remote control pendant (optional)

Master disconnect switch

Accessories (optional):

Stabilizers: 24962, 13500, 11822-2

Pedestal: 26027

Boom Rest: 20381-2

TELESCOPIC BOOM	8 - 16 ft
BOOM ELEVATION	-5° TO 75°
BOOM HYD EXTENSION	4 ft
BOOM MANUAL EXT	4 ft
CAPACITY	1125 lb @ 16 ft
	4500 lb @ 4 ft
WIRE ROPE	$\frac{5}{16}$ " x 80 ft
PENDANT CORD LENGTH	25 ft



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SPECS & OP. FEATURES

DATE

02-19-25A

SECTION

C100

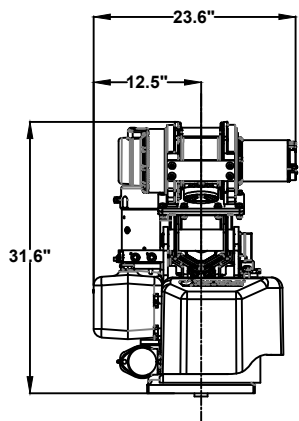
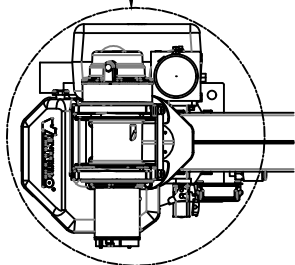
4516E

SUPERSEDES

07-30-24

28891

14.5" SWING  
RADIUS



21' 5"

17' 6-1/2"

11' 8-1/2"

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

43-1/2" C/G  
APPROX

10' 5-3/4"

16' 5-3/4"

20' 5-3/4"

OVERALL LENGTH: 21' 8"

LOAD BLOCK  
WITH SAFETY  
HOOK



## WARNING

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



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CINCINNATI, OHIO

TITLE

INSTALLATION DRAWING

4020E/4520E

DATE

02-16-24

SUPERSEDES

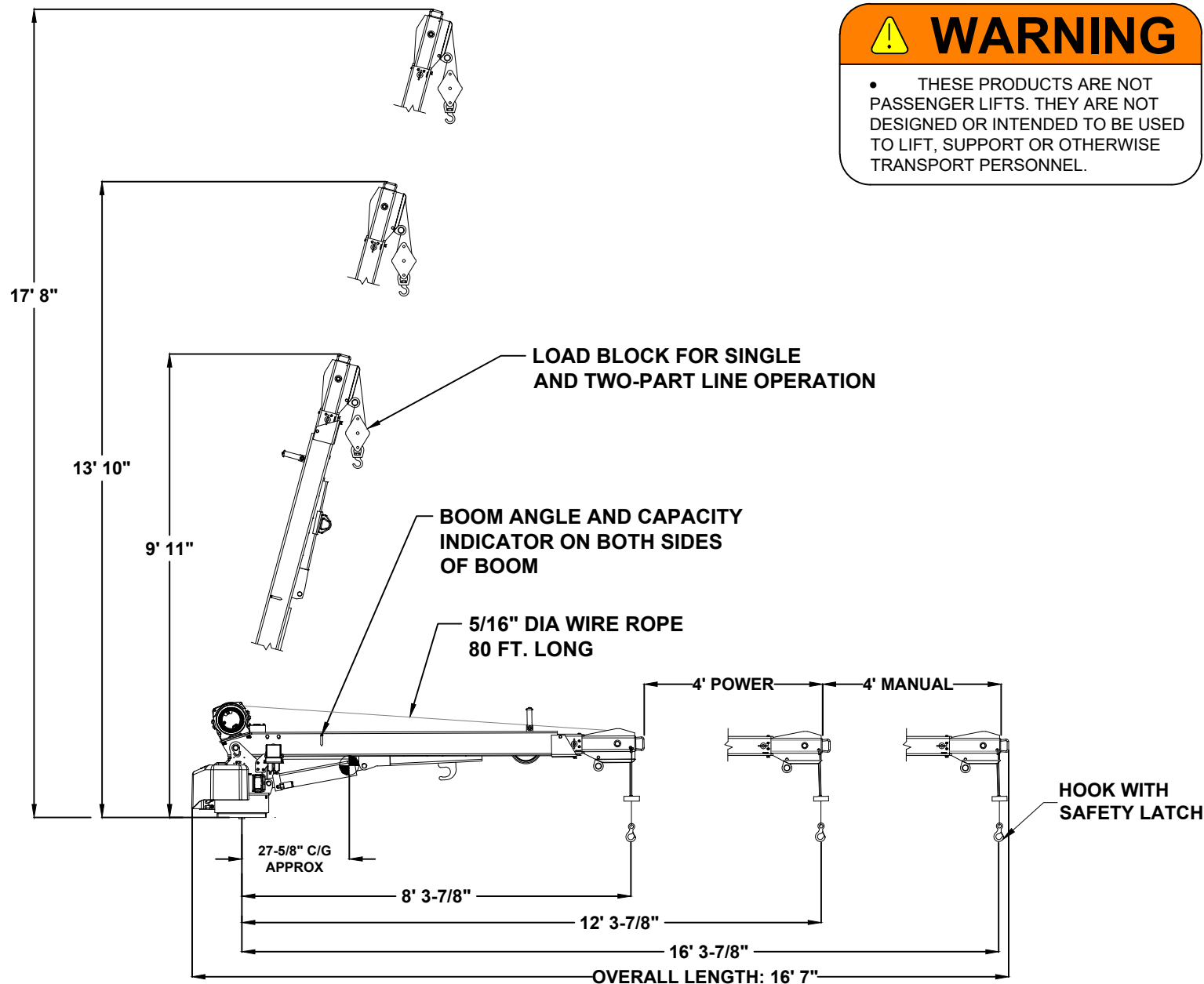
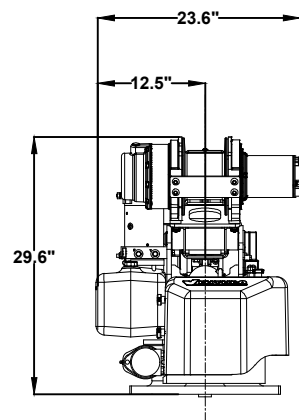
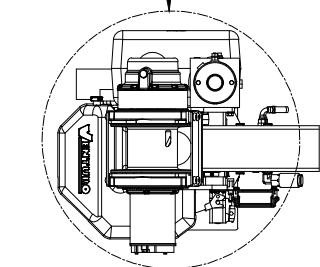
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SECTION

C100

28813

14.5" SWING  
RADIUS



## WARNING

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



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
**INSTALLATION DRAWING**

**4016E/4516E**

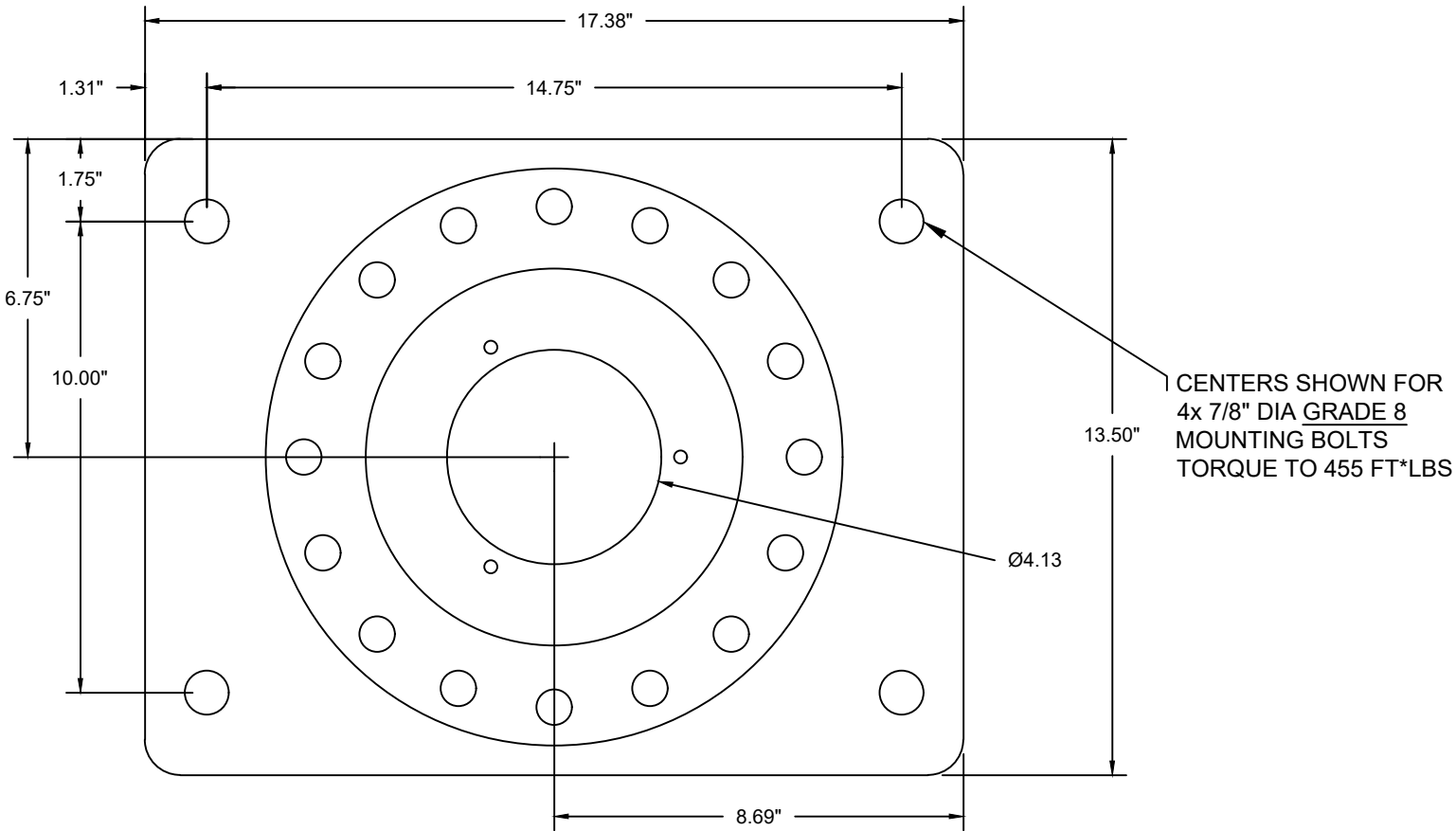
DATE  
**07-30-24**

SUPERSEDES  
-

SECTION  
**C100**

**28892**

21735-WRB/CRB - RECTANGULAR



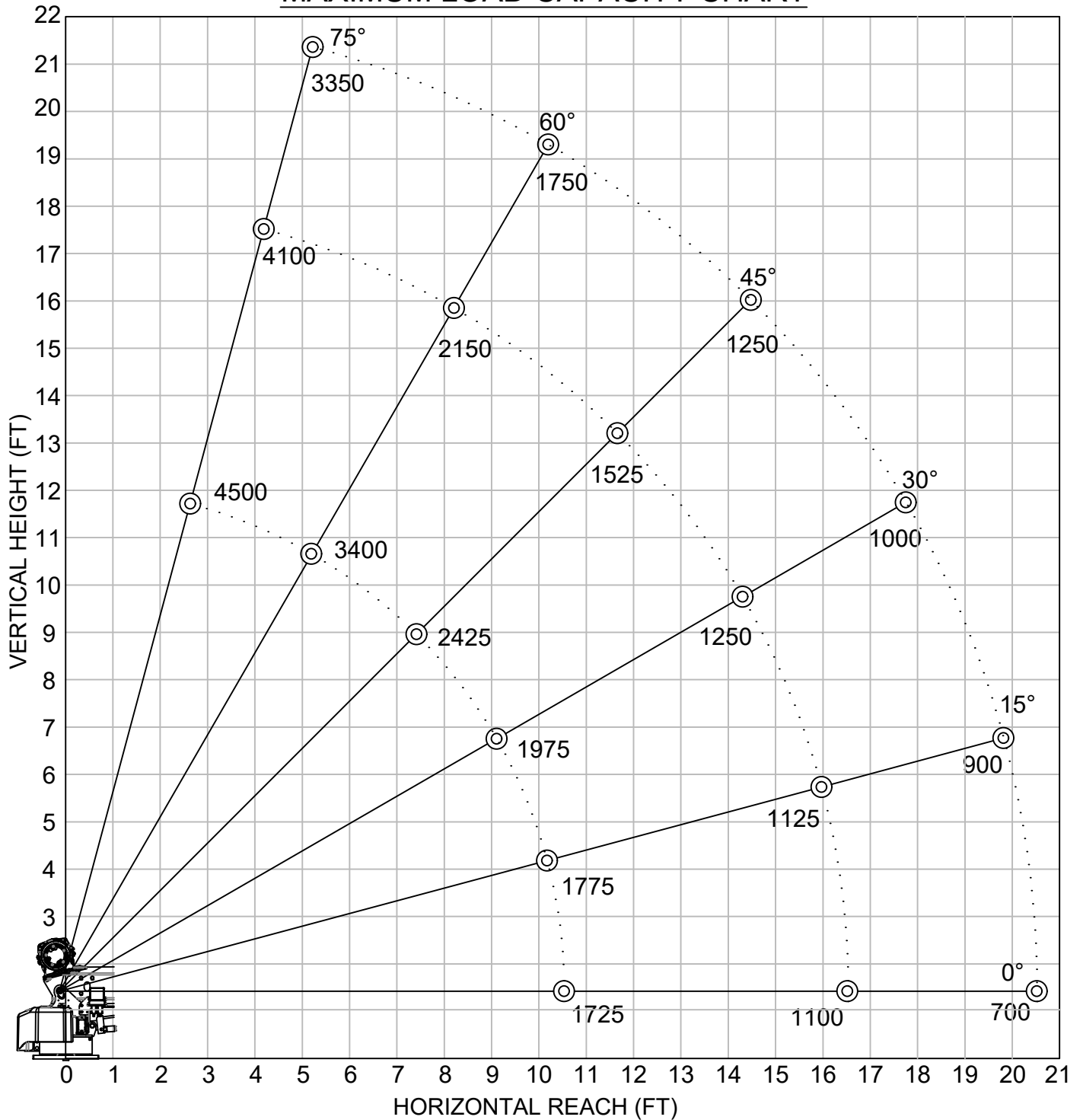
VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
21735 BASE MOUNTING DIMENSIONS	11-12-24A	C100
3215E/351*E/40**E/45**E	SUPERSEDES 04-05-24	28814

4520E

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 2250 LBS

2 PART LINE FOR LOADS OF 2250 LBS AND GREATER

WEIGHT OF LOAD BLOCK = 34 LBS



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
MAXIMUM LOAD CAPACITY

4520E

DATE  
02-16-24

SUPERSEDES  
-

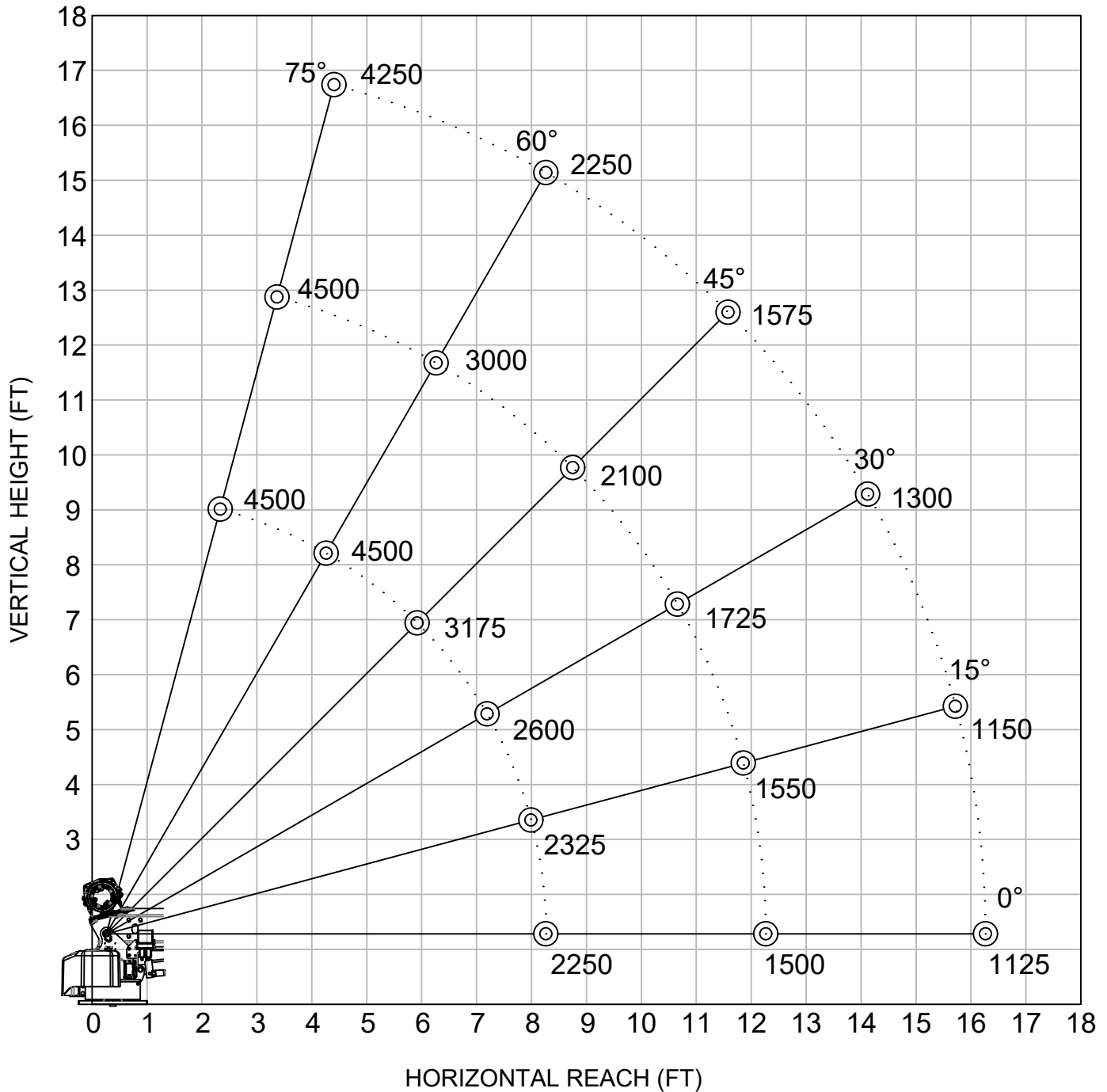
SECTION  
C100

28815

4516E

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 2250 LBS

2 PART LINE FOR LOADS OF 2250 LBS AND GREATER

WEIGHT OF LOAD BLOCK = 28 LBS



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
MAXIMUM LOAD CAPACITY

4516E

DATE  
07-10-24

SUPERSEDES  
-

SECTION  
C100

28894





# 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



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

INTENTIONALLY LEFT BLANK



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SAFETY & HZRDS, CONT.

DATE

01-29-15

SECTION

C150

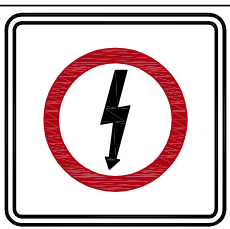
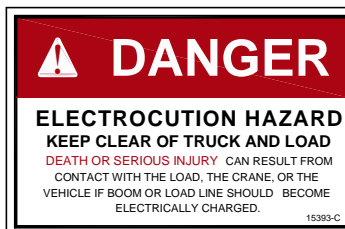
ELECTRIC CRANES

SUPERSEDES

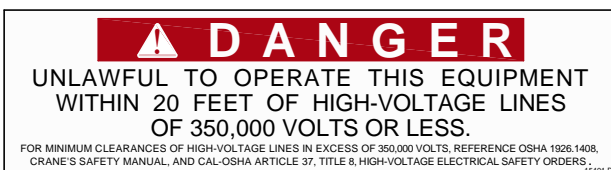
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850712

# 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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

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

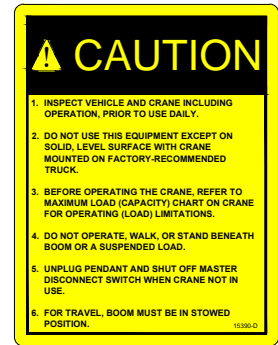
DECAL #: 15390

DESCRIPTION: CAUTION, INSPECT VEHICLE & CRANE...

PURPOSE: TO INFORM THE OPERATOR OF KEY OPERATING REQUIREMENTS.

QUANTITY: 1

PLACEMENT: REAR COVER OR SIDE OF CRANE



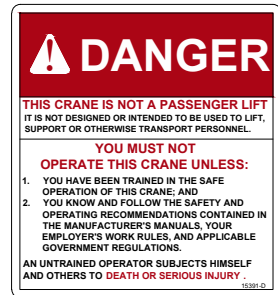
DECAL #: 15391

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



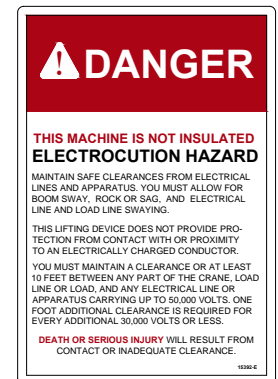
DECAL #: 15392

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



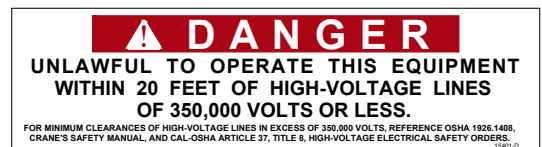
DECAL #: 15401

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



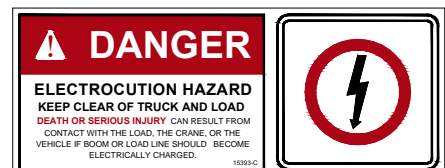
DECAL #: 15393

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.



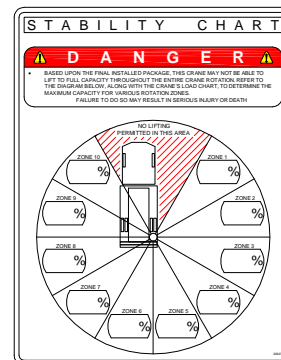
PART NO.: 20927

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.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**SAFETY DECALS**  
  
CRANES

DATE  
06-06-14C  
  
SUPERSEDES  
04-02-13B

SECTION  
C150  
  
**21384**

PART NO.: 14473-2

DECAL: CONDUCTIVE GREASE

FUNCTION: To show the operator where to apply grease.

QUANTITY: Varies

PLACEMENT: Near grease fittings.



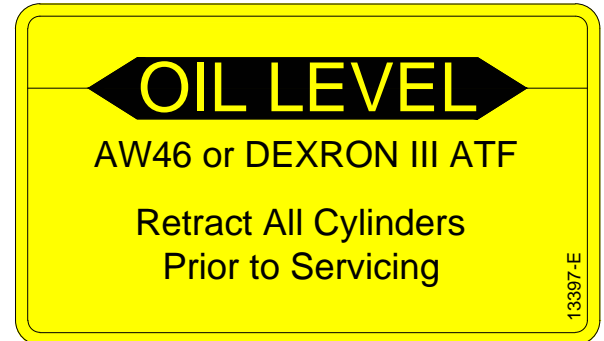
PART NO.: 13397

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.



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
DECALS

ET CRANES

DATE  
11-12-19E

SUPERSEDES  
12-23-13D

SECTION  
C150

21354

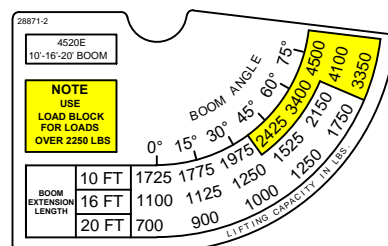
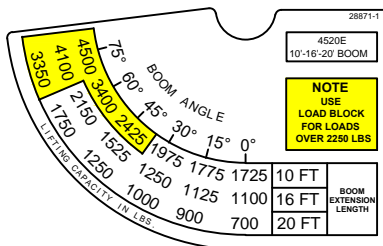
PART NO.: 28871-1 & 28871-2

DECAL: CRANE CAPACITY (4520E) ▲

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

QUANTITY: 1 each

PLACEMENT: One on each side of boom.



PART NO.: 28873

DECAL: MODEL NUMBER (4520E)

FUNCTION: To show the model of the crane.

QUANTITY: 2

PLACEMENT: One on each side of boom.



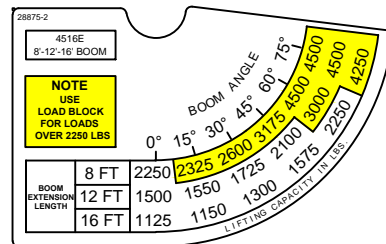
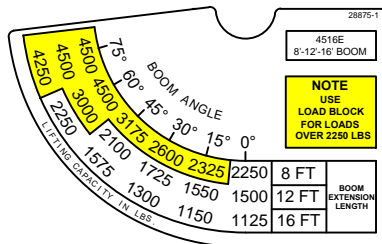
PART NO.: 28875-1 & 28875-2

DECAL: CRANE CAPACITY (4516E) ▲

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

QUANTITY: 1 each

PLACEMENT: One on each side of boom.



PART NO.: 28876

DECAL: MODEL NUMBER (4516E)

FUNCTION: To show the model of the crane.

QUANTITY: 2

PLACEMENT: One on each side of boom.



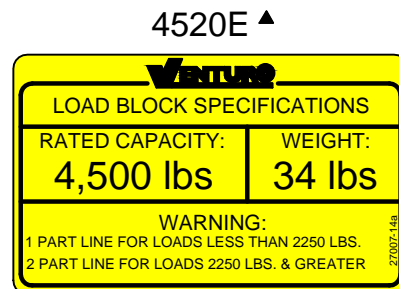
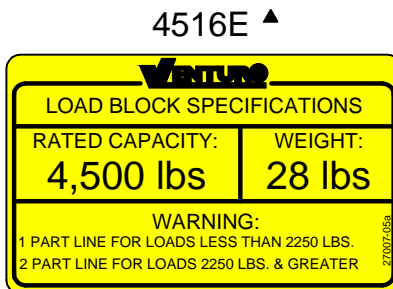
PART NO.: 27007-05a & 27007-14a

DECAL: LOAD BLOCK CAPACITY

FUNCTION: To show the capacity of the load block.

QUANTITY: 2

PLACEMENT: One on each side of load block.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
MODEL/CAPCTY DECALS

4516E/4520E

DATE  
02-19-25A

SUPERSEDES  
02-16-24

SECTION  
C150

28818



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

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 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

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 COMPLETELY 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

PART NO.: 28870-1 (RIGHT) & 28870-2 (LEFT)  
DECAL: MANUAL OVERRIDE DECAL  
FUNCTION: To show the manual override ports.  
QUANTITY: 1  
PLACEMENT: Inside rear cover.

28870-2

VALVE  
MANUAL  
OVERRIDE

BOOM  
←  
IN

BOOM  
←  
DOWN

ROTATION  
←  
LEFT

28870-2

28870-1

VALVE  
MANUAL  
OVERRIDE

BOOM  
→  
OUT

BOOM  
→  
UP

ROTATION  
→  
RIGHT

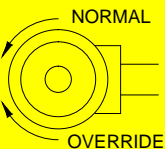
28870-1

PART NO.: 19315-2  
DECAL: MANUAL OVERRIDE (PROPORTIONAL)  
FUNCTION: To show operator how to override proportional valve.  
QUANTITY: 1  
PLACEMENT: Location may vary.

**WARNING!**

KEEP VALVE IN NORMAL POSITION.  
OVERRIDE POSITION IS INTENDED  
FOR EMERGENCY USE ONLY.

NORMAL



OVERRIDE

PROPORTIONAL  
VALVE

ROTATE STEM

19315-2 Rev B

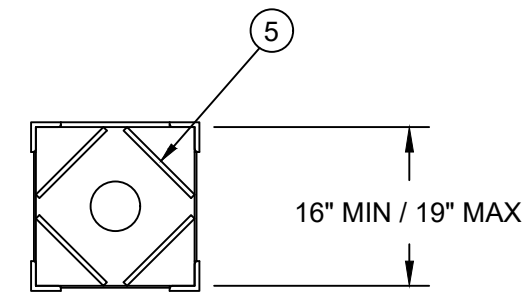
# SECTION 200

# INSTALLATION



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

# TYPICAL SERVICE BODY REINFORCEMENT

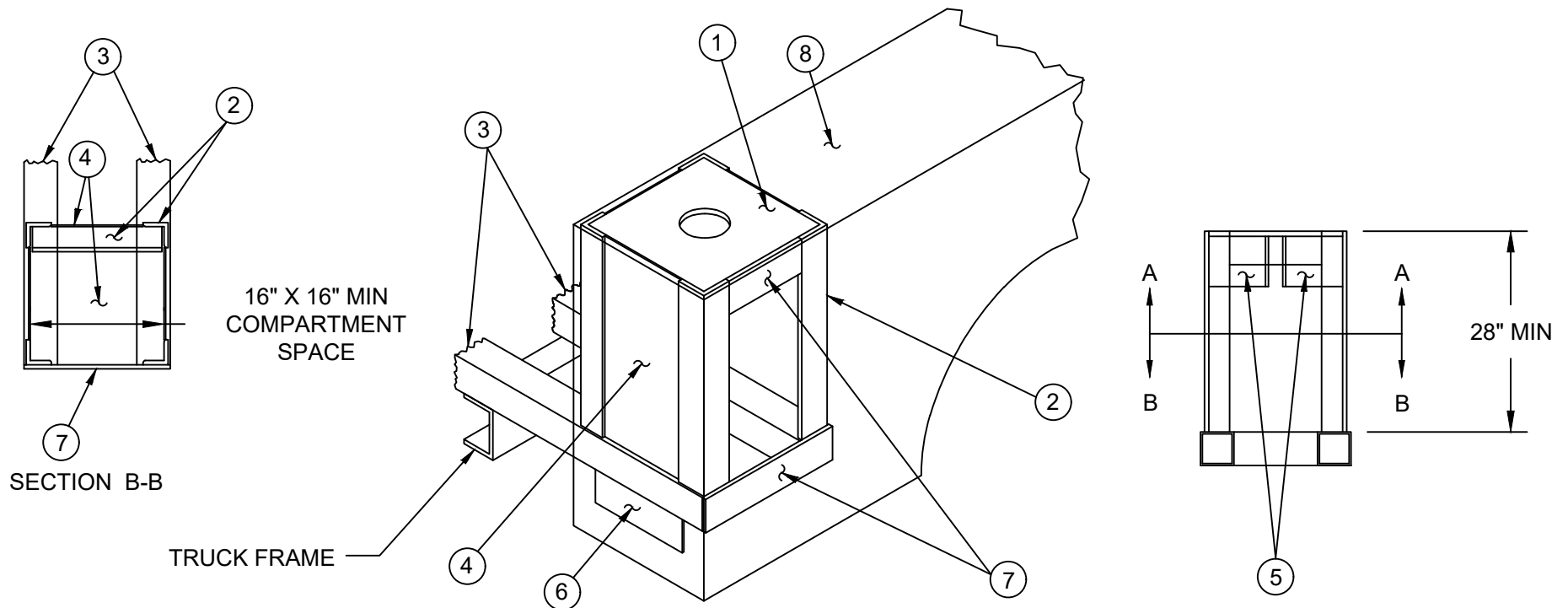


SECTION A-A

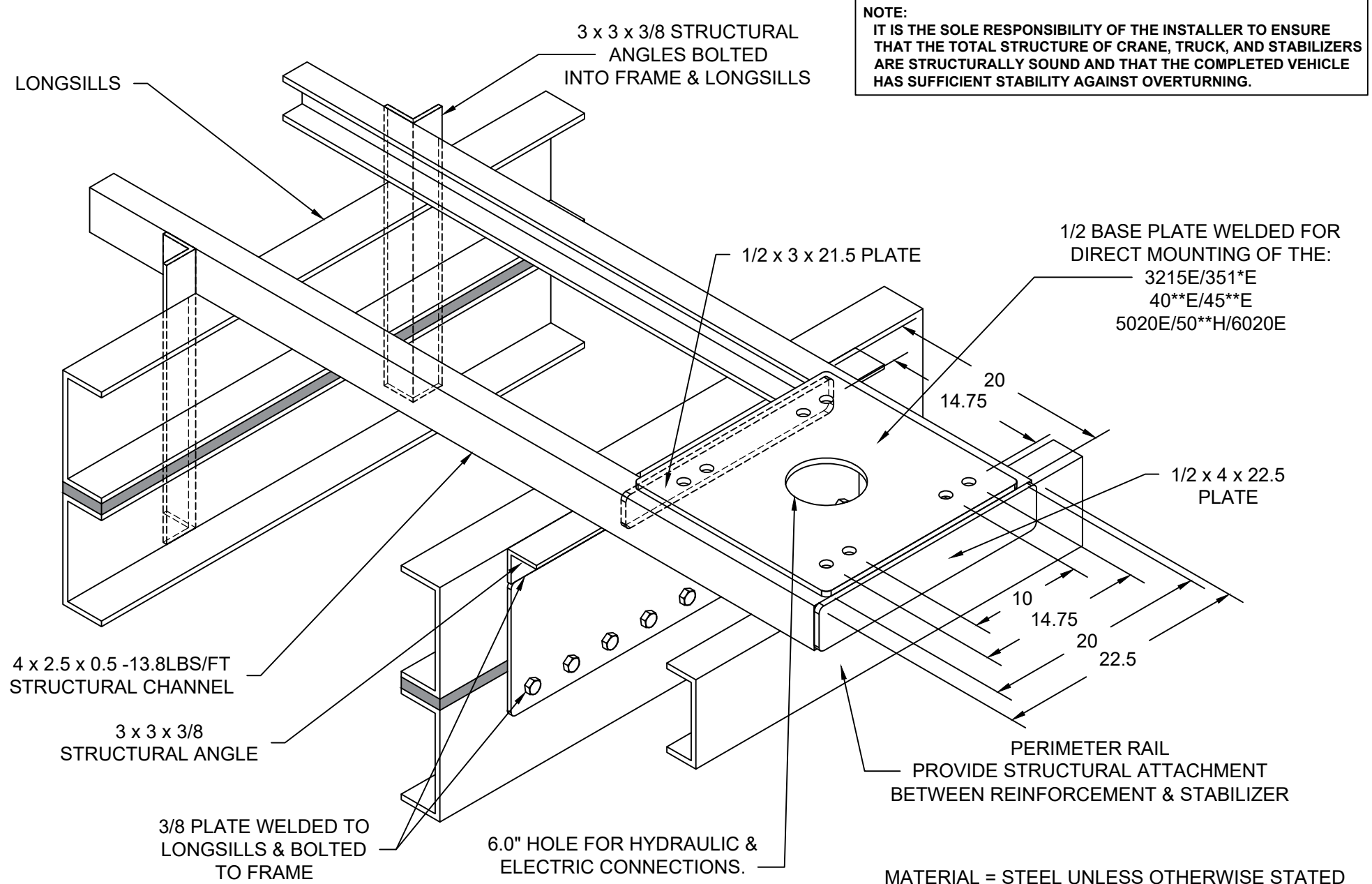
## NOTE:

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



# TYPICAL FLATBED MOUNTING REINFORCEMENT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

TYPICAL FLATBED MNTNG REINFORECMENT

3215E/351\*E/40\*\*E/45\*\*E/5020E/50\*\*H/6020E

DATE

02-16-24

SUPERSEDES

-

SECTION

C100

28817

# !! IMPORTANT !!

## ADEQUATE WIRING IMPERATIVE FOR PROPER OPERATION

1. PROPER GROUND PATH - SEE DWG 28821
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

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) ***
2010E	#2	#2	#1	#0	#00	NOT RECOMMENDED			450	100
3215E 3515E 3516E	#2	#2	#1	#0	#00	NOT RECOMMENDED			550	150
4016E 4020E 4516E 4520E 5020E 6020E	SEE DRAWING 28821 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  
ELECTRIC CRANES

DATE  
02-19-24  
SUPERSEDES  
-

SECTION  
C200

28820

# RECOMMENDED CIRCUIT BREAKER TABLE

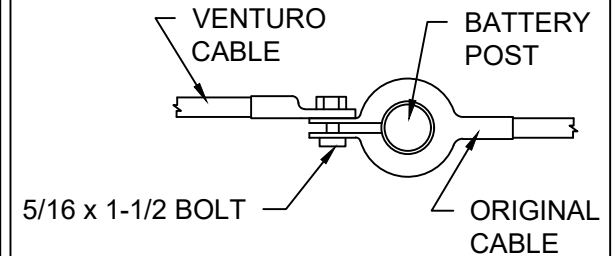
CRANE	DESCRIPTION	PART NO.
2010E	300 AMP, MAN RESET	22946-300
3215E	300 AMP, MAN RESET	22946-300
3515E/3516E	300 AMP, MAN RESET	22946-300
4016E/4020E	300 AMP, MAN RESET	22946-300
4516E/4520E	300 AMP, MAN RESET	22946-300
5020E	300 AMP, AUTO RESET	22946-300
6020E	300 AMP, AUTO RESET	22946-300

# BATTERY REQUIREMENTS

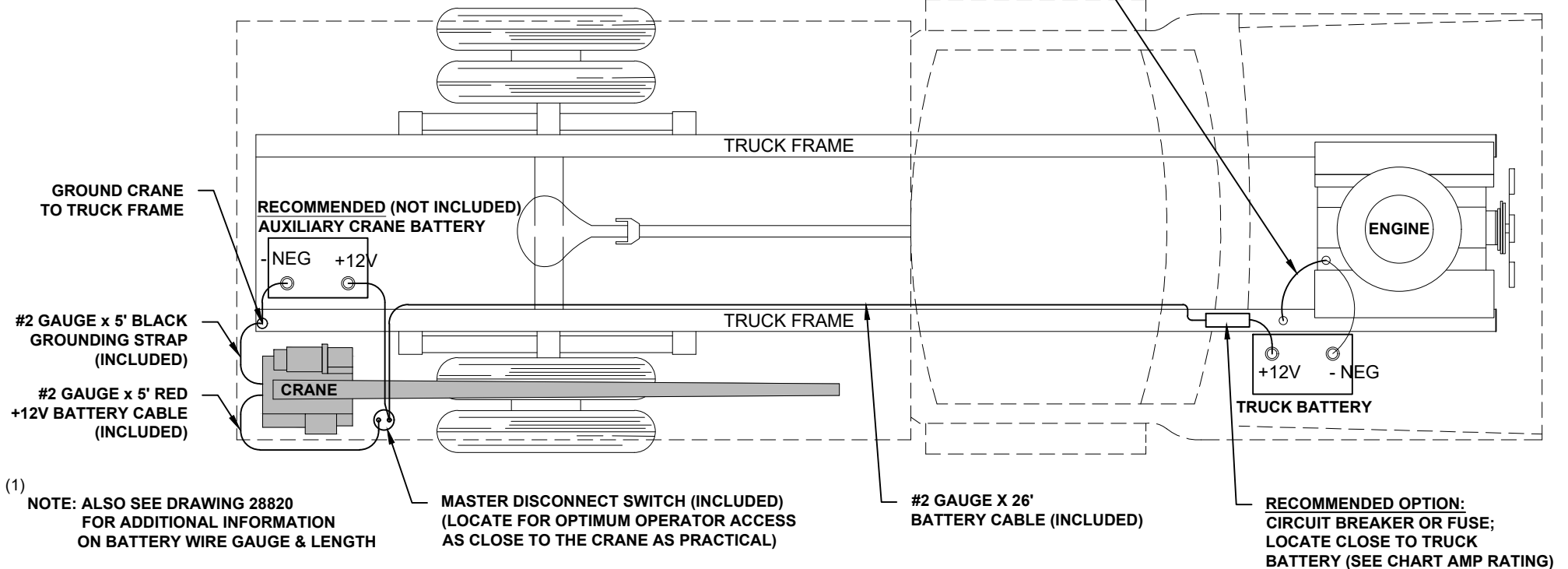
- 12 VOLT VEHICLE BATTERY REQUIREMENTS
  - 625 COLD CRANKING AMPS (AT 0° F)
  - 160 MINUTES RESERVE CAPACITY
  - 102 PLATES, 105 AMP-HR
- (1) 12 VOLT AUXILIARY BATTERY REQUIREMENTS
  - SEE MINIMUM WIRE GAUGE AND BATTERY SIZE

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

02-19-24

SUPERSEDES

-

SECTION

C200

28821

# STABILITY TEST - 4520E 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 1000 lbs.** (includes load block weight of 34 lbs.) to a **maximum of 1050 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**.

$$\% \text{ Rated Capacity} = \frac{\text{"Max Stable Reach" in inches}}{245} \times 100$$

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

4520E

DATE  
02-19-24

SUPERSEDES  
-

SECTION  
C200

20906-4520E

# STABILITY TEST - 4516E 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 be completed.***
6. Use a **Test Weight** weighing a **minimum of 1321 lbs.** (includes load block weight of 28 lbs.) to a **maximum of 1400 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 contract with the gound
    - 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**.

$$\% \text{ Rated Capacity} = \frac{\text{"Max Stable Reach" in inches}}{196} \times 100$$

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

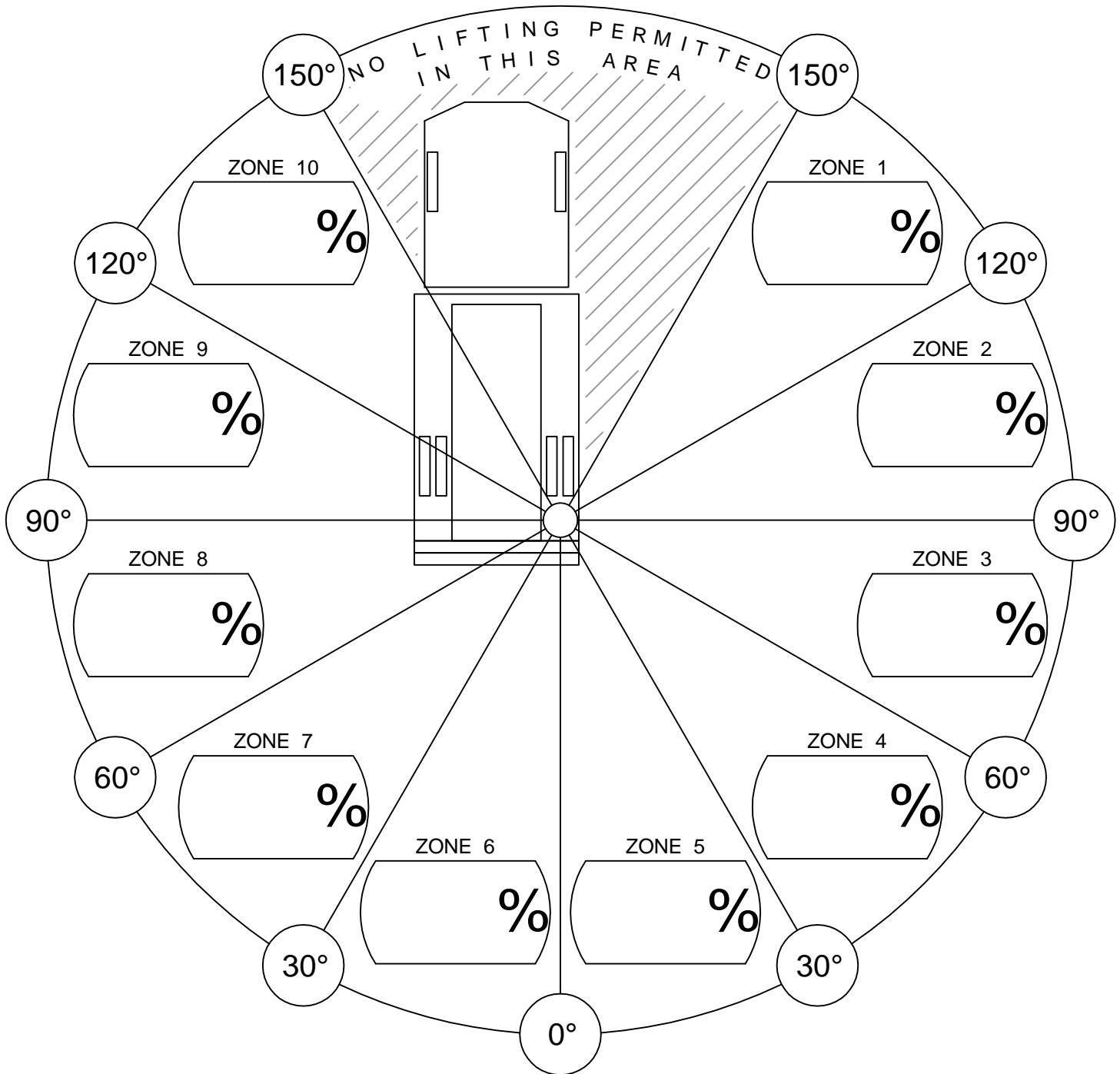
TITLE  
**STABILITY TEST**  
  
4516E

DATE  
**08-14-24**  
  
SUPERSEDES  
-

SECTION  
**C200**  
  
**20906-4516E**



# 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

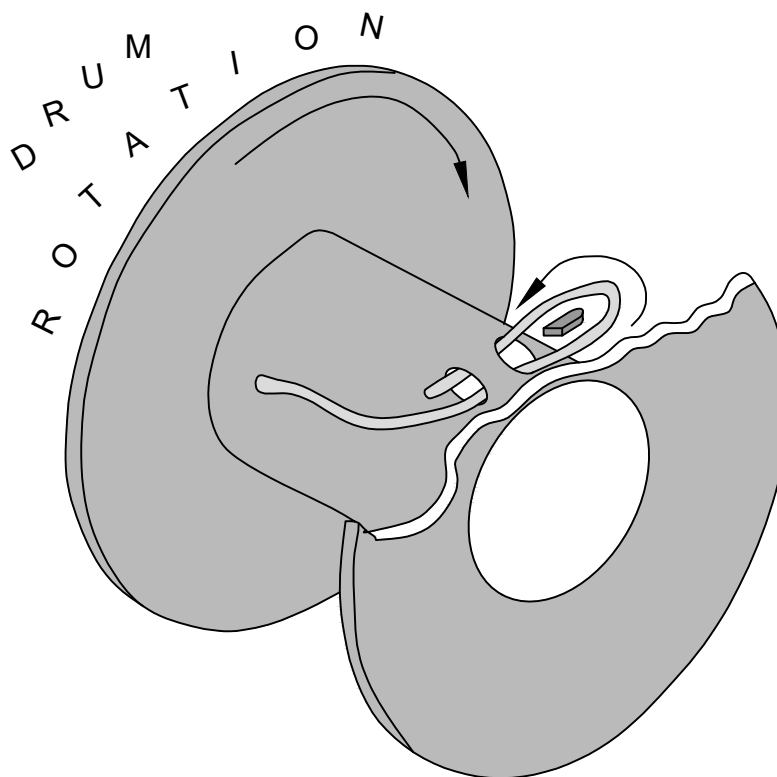


FIG. 1

- 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) 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.



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CINCINNATI, OHIO

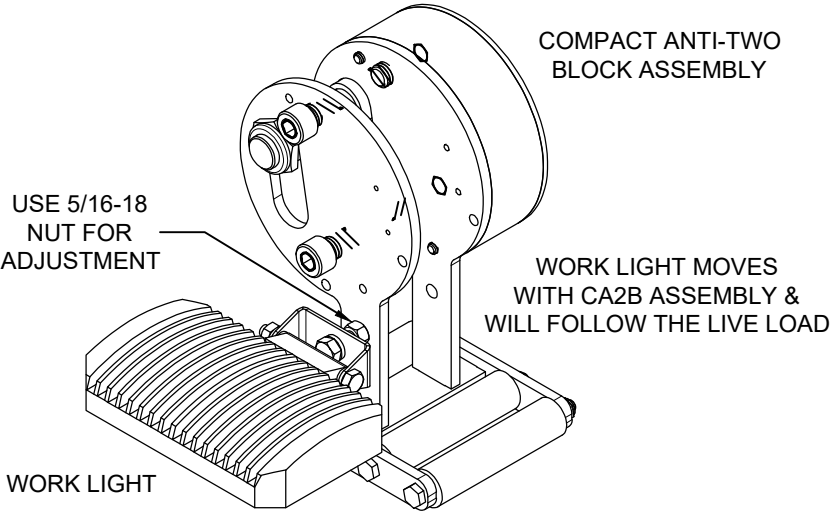
TITLE  
WIRE ROPE INSTALLTN  
2010E & LARGER CRANES

DATE  
02-20-24  
SUPERSEDES  
-

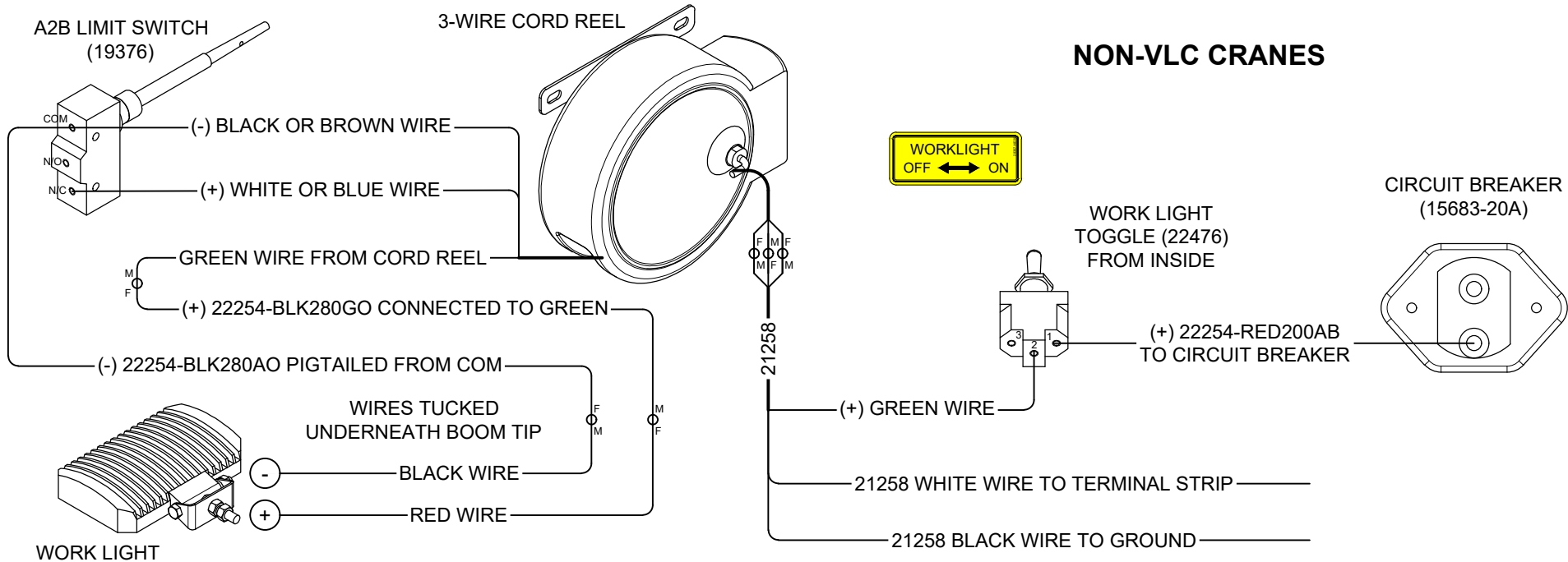
SECTION  
C200

28822

# 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	!TERM16G250QCFI
4	TERMINAL; 16G, MALE, QUICK-CONNECT	4	!TERM16G250QCM
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	!TERM16G#6RG



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

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

DATE  
09-13-24  
SUPERSEDES  
-

SECTION  
C400  
28855

# **SECTION 300**

## **OPERATION**

### **&**

## **MAINTENANCE**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

## SAFETY

Before operating this crane, read and understand these instructions, the "CRANE SAFETY AND HAZARDS" pages, and review all safety and instruction decals on the crane.

## CRANE INSPECTION

Before operating this crane, inspect for wear, damage, and oil leakage. After the wire rope has been run out, check for wear, kinks, and broken strands. Check the hook and safety latch for damage. Correct problems before using the crane.

## CAPACITY

Before operating this crane, review the capacity charts on the sides of the boom to relate the load to be lifted to the boom length and angle. The boom angle is indicated by a gravity arrow.

## LOAD BLOCK

If the load exceeds the one-part line rating as shown on the "MAXIMUM LOAD CAPACITY" page in this manual \*or\* if reduced winch line speed for better control of loads is desired, use the load block to rig the crane for two-part line operation.

## CONTROLS

This crane is operated by either a corded or radio remote control pendant. If corded, the pendant should be unplugged and stored in a compartment or the cab when the crane is not in use.

With the Master Disconnect Switch in the OFF position, inspect pendant head and switches for damage; for corded remote controls also inspect the plug, socket, and cord. Actuate all switches or buttons in both directions to verify that they all have the same feel and sound, and that they return to the center or resting position.

Plug the pendant into the socket on the right side of the crane.

Turn ON the Master Disconnect Switch. Use "WINCH DOWN" to release tension on the wire rope and unhook it from the storage tie-down position.

Use "BOOM UP" to elevate the boom from the boom rest position.

Check all control functions to see that they are working correctly.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

OP & MAINT INSTR 1/3

DATE

02-18-25

SECTION

C300

3200E - 4500E SERIES

SUPERSEDES

-

28852

## CONTROL FUNCTIONS

WINCH - "WINCH UP" raises the wire rope and "WINCH DOWN" lowers the wire rope. An integrated brake holds the load in place when the winch is not in operation and controls the lowering speed of the load.

ELEVATION - "BOOM UP" raises the boom (increases the boom angle) and "BOOM DOWN" lowers the boom (decreases the boom angle). A counterbalance valve on the cylinder prevents the boom from coming down if a hose breaks and controls the rate at which the boom lowers.

EXTENSION - "BOOM OUT" extends the boom and "BOOM IN" retracts the boom. A counterbalance valve on the cylinder prevents the boom from retracting if a hose breaks and controls the rate at which the boom retracts.

ROTATION - "ROTATE LEFT" and "ROTATE RIGHT" control the direction of rotation. The crane can be rotated continuously. The rotation system is self-locking when not in operation.

TRIGGER (Proportional Only) - Varies the flow rate delivered to the hydraulic functions (elevation, extension, and rotation). The farther the trigger is pulled, the faster the selected hydraulic function operates.

CONTROL PRIORITY SYSTEM - When operating "Winch Up", all hydraulic functions (elevation, extension, and rotation) will be disabled to limit the total current (amp) draw.

## OVERLOAD SENSING SYSTEM

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

The warning system is INOPERATIVE when the elevation cylinder is fully retracted ("bottomed out"). Use "BOOM UP" to extend the elevation cylinder and ensure that the overload system is active.

## TWO-BLOCK SENSING SYSTEM

This crane is equipped with an anti two-block device that is mounted at the tip of the boom. If the load block / overhaul weight contacts the device, the "Winch Up", "Boom Down", and "Boom Out" functions will be disabled. The "Winch Down", "Boom Up", and "Boom In" functions will continue to operate and can be used to relieve the two-block condition.

## CRANE OPERATION

Avoid rapid reversal of the winch switch. The high in-rush current to the motor during reversal can reduce the life of electrical components.

When operating "WINCH UP", "BOOM DOWN", or "BOOM OUT," always maintain clearance between the boom head and the load block or hook.

Never lift or drag a load sideways ("side load") using any of the crane functions; it could cause permanent damage to the crane.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

OP & MAINT INSTR 2/3

DATE

02-18-25

SECTION

C300

3200E - 4500E SERIES

SUPERSEDES

-

28853

## OVERLOAD ALARM (Optional)

This crane may be equipped with an optional overload alarm system.

1. Overload alarm horn sounds if rated load is exceeded at any reach.
2. If alarm sounds, use "WINCH DOWN", "BOOM UP", or "BOOM IN" to remove the overload.
3. The warning system is INOPERATIVE when the elevation cylinder is fully retracted ("bottomed out"). Use "BOOM UP" to extend the elevation cylinder and ensure that the overload system is active.
4. Overload alarm can be tested by raising boom to full elevation.

## MANUAL TELESCOPIC BOOM

If your crane has a manual telescoping section, use toggle pin to position the boom in either the extended or retracted position. Never operate the crane without the toggle pin secured in place.

## TRUCK SETUP & STABILIZERS

1. The truck should be parked on firm, level ground when using the crane.
2. The center of the crane should be positioned close enough to the job so that it can be operated at a reach that puts the load within the rated capacity of the crane.
3. Set the vehicle parking brake and put the vehicle transmission in "park" (automatic transmission).
4. Deploy the stabilizers to stabilize the vehicle against rocking or overturning when lifting with the crane.

## PREPARATION FOR TRAVEL

1. Return the stabilizers to the stowed position. Install and secure all pins.
2. Stow the crane boom in the boom rest.
3. Hook the winch line to a tie-down point on the body or pedestal and apply light tension.
4. Turn OFF Master Disconnect Switch.
5. If using corded control pendant, unplug pendant and store in body compartment or cab.



### WARNING

Master Disconnect Switch (power) must be turned "OFF" when the crane is not in use! If corded, the pendant must be unplugged from the crane socket. Failure to follow these steps may result in dangerous, unintentional activation of the crane functions.



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE  
OP & MAINT INSTR 3/3

3200E - 4500E SERIES

DATE  
02-18-25

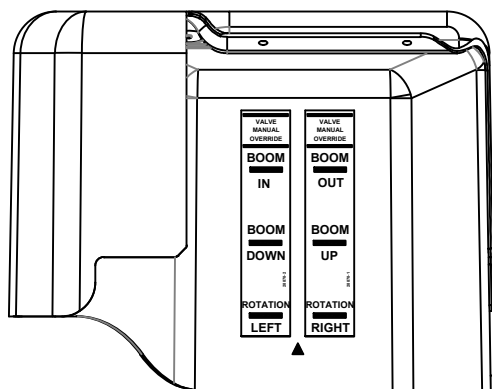
SUPERSEDES  
-

SECTION  
C300

28854

MANUAL OVERRIDE INSTRUCTIONS  
3215E/351\*E/40\*\*E/45\*\*E NON-PROPORTIONAL SERIES CRANES

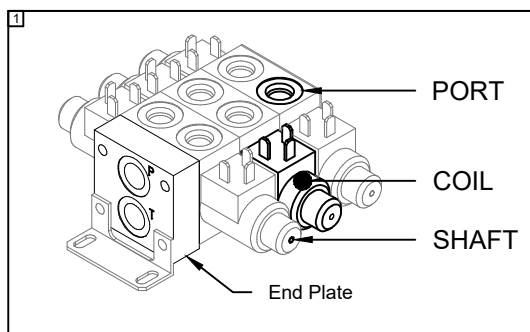
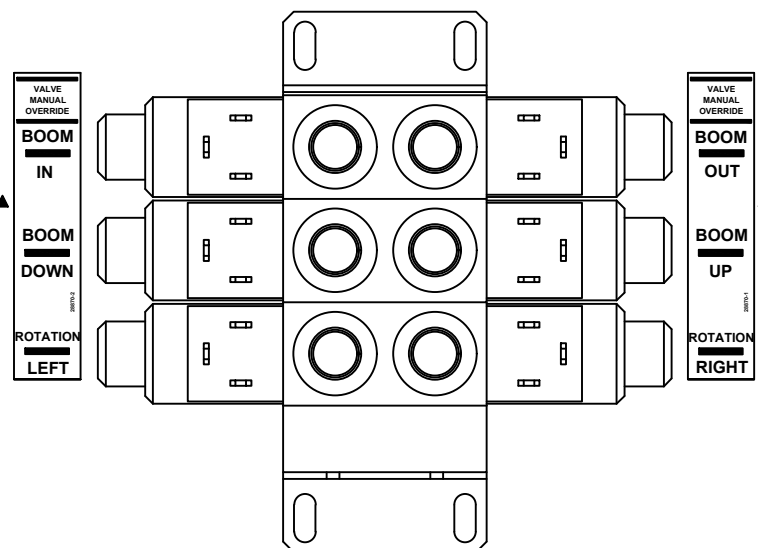
!! READ ALL INSTRUCTIONS BEFORE PERFORMING MANUAL OVERRIDE PROCEDURES !!



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 inside the plastic cover near the valve assembly. These decals provide a visual aid that helps the operator determine the function designations.

2-STATION FUNCTIONS:

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

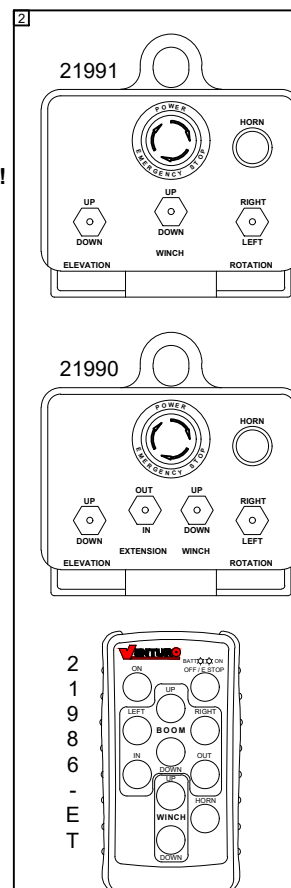


**ALWAYS BE SURE TO CHECK HYDRAULIC OIL LEVEL BEFORE PROCEEDING. IT IS RECOMMENDED TO REMOVE ANY ITEM(S) THAT MAY INTERFERE WITH OPERATING THE CRANE MANUALLY. IF POSSIBLE, STRAPS AND/OR HARNESSSES SHOULD BE REMOVED BEFORE OPERATING A CRANE IN MANUAL OVERRIDE !!**

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. Inside the plastic cover, 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 2)
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.

3215E/351\*E/40\*\*E/45\*\*E  
NON-PROPORTIONAL VALVE

DATE  
04-03-25A

SUPERSEDES  
02-21-24

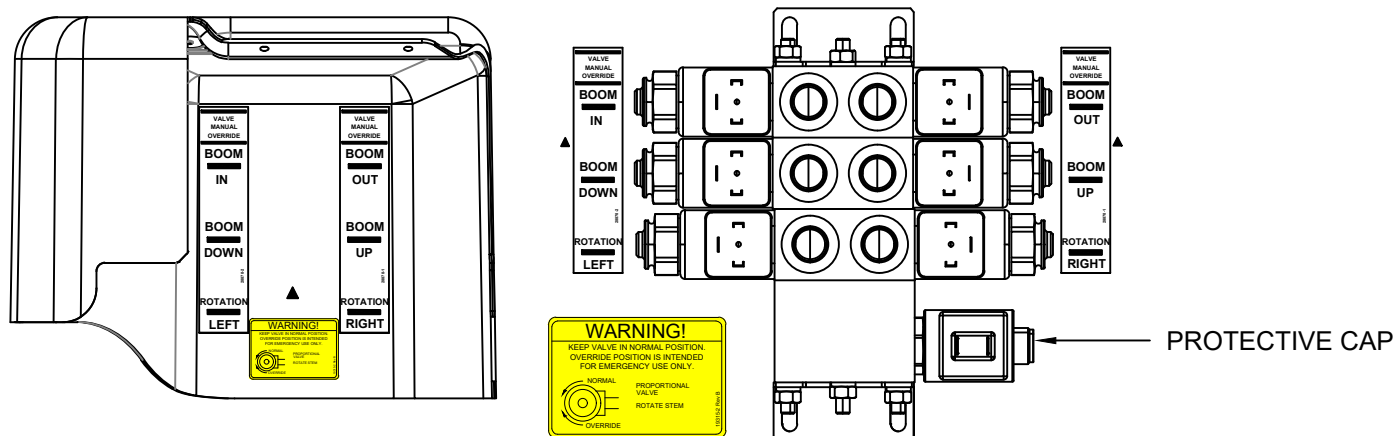
SECTION  
C200

28826



MANUAL OVERRIDE INSTRUCTIONS  
3215E/351\*E/40\*\*E/45\*\*E PROPORTIONAL 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 inside the plastic cover near the valve assembly. These decals provide a visual aid that helps the operator determine the function designations.

### 3-STATION FUNCTIONS:

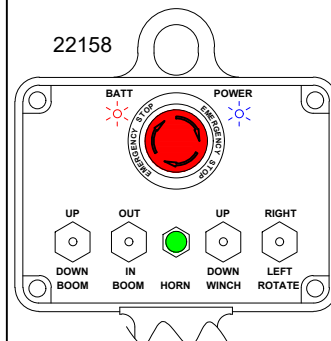
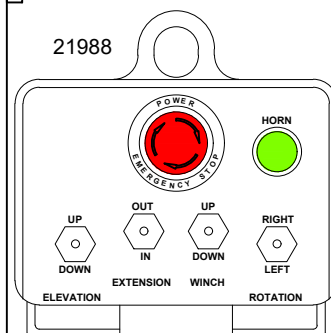
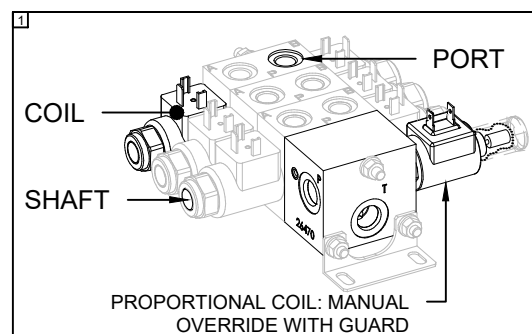
RR = Rot. Right RL = Rot. Left  
BU = Boom Up BD = Boom Down  
BI = Boom In BO = Boom Out

**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 HARNESSES SHOULD BE REMOVED BEFORE OPERATING A CRANE IN MANUAL OVERRIDE !!**

### Procedure:

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

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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
MAN. OVERRIDE INSTR.

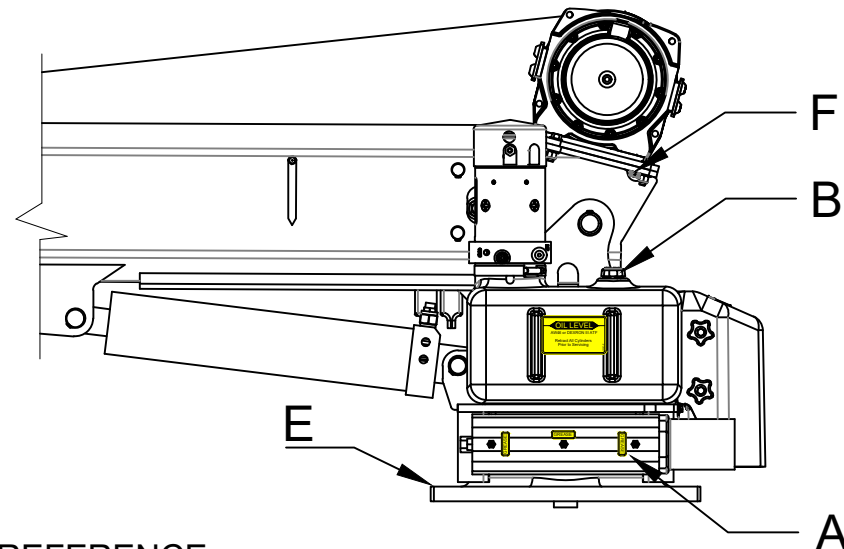
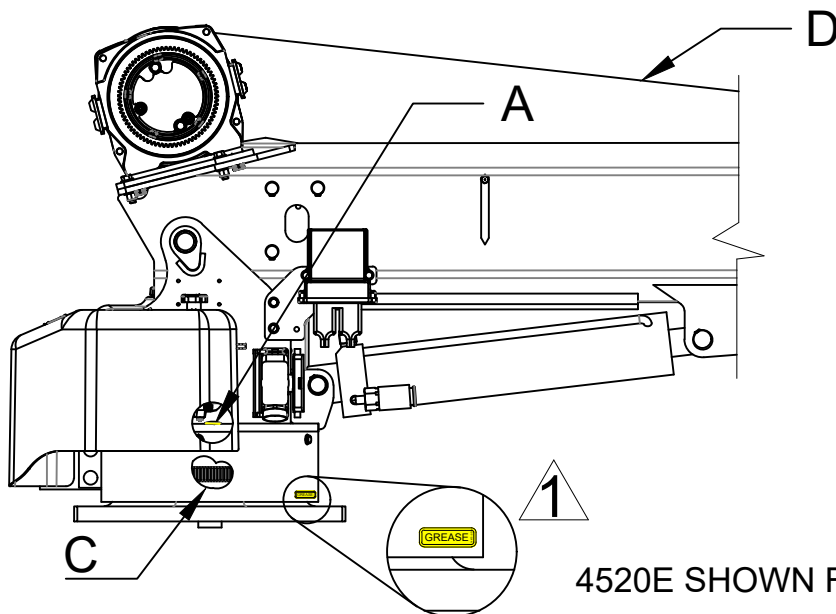
3215E/351\*E/40\*\*E/45\*\*E  
PROPORTIONAL VALVE

DATE  
04-03-25A

SUPERSEDES  
02-21-24

SECTION  
C200

28827



4520E 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, remove Cover, 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 3215E/351XE WITH GTD-2200 COMEUP WINCH. SEE PAGE 28846 FOR WINCH IDENTIFICATION.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

LUBRICATION & MAINTENANCE CHART

3215E/351\*E/40\*\*E/45\*\*E

DATE

02-20-24

SUPERSEDES

-

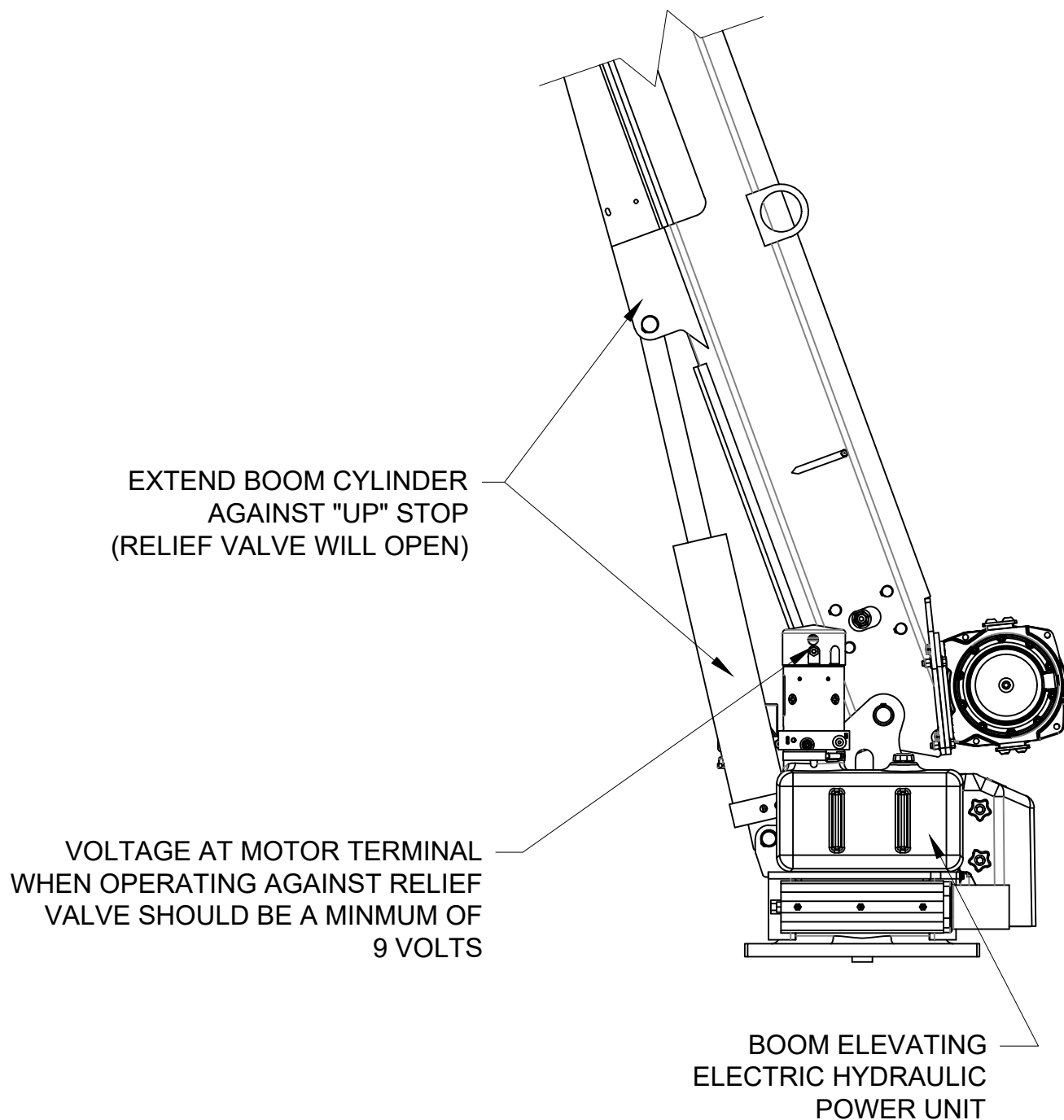
SECTION

C300

28823

# 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	

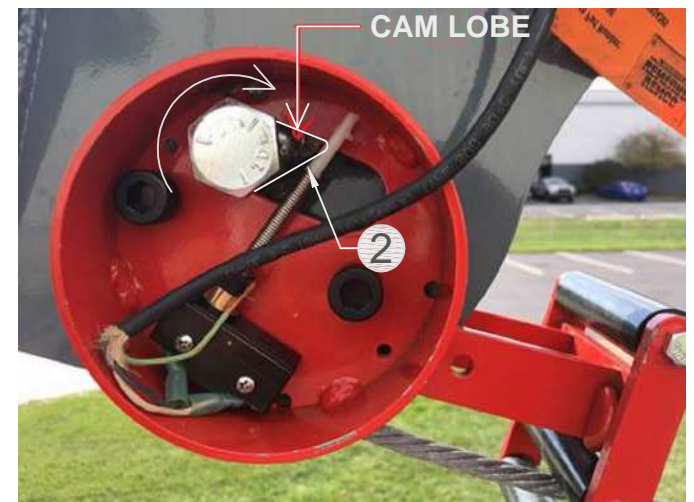
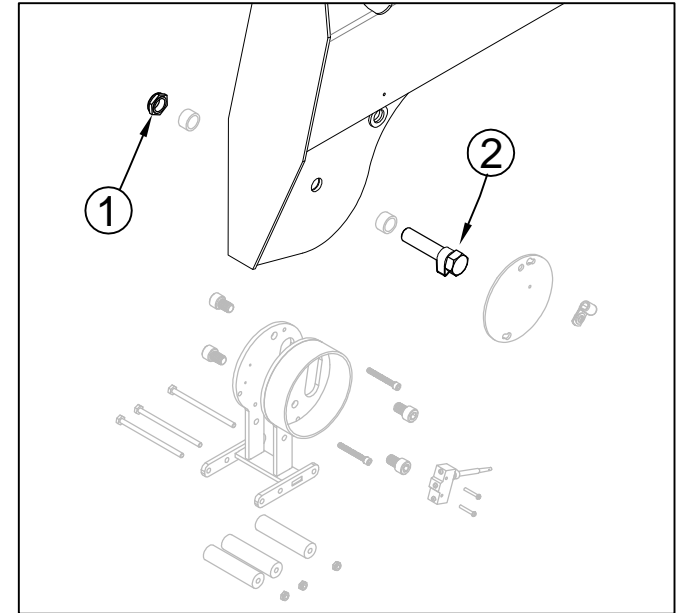
DATE	02-20-24
SUPERSEDES	-

SECTION	C300
	28824

# 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 Ventura Tech Support for assistance. 1-800-226-2238 ext. 124



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

A2B Stowage Cut-out

ET/HT Cranes w/ Comp. A2B

DATE

10-04-21B

SUPERSEDES

08-03-21A

SECTION

C400

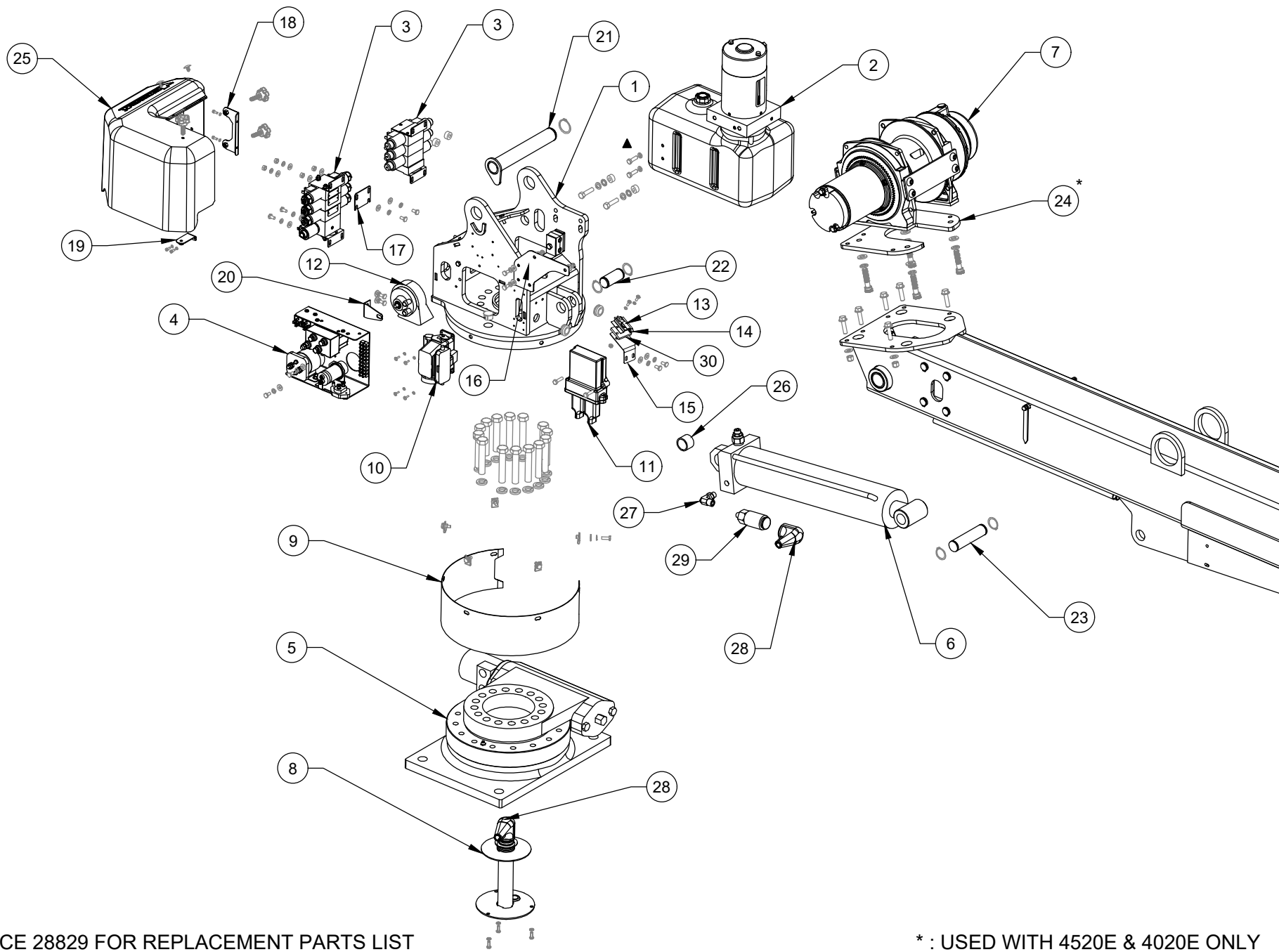
28239

# **SECTION 400**

## **REPLACEMENT PARTS**



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO



REFERENCE 28829 FOR REPLACEMENT PARTS LIST

\* : USED WITH 4520E & 4020E ONLY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS DWG - MECH  
40\*\*E/45\*\*E

DATE  
06-20-25B  
SUPERSEDES  
06-17-25A

SECTION  
C400  
28828

ITEM NO.	NON-PROP	PROP	PART NUMBER	DESCRIPTION
	QTY.			
1	1	1	28637	HOUSING WELDMENT ASSEMBLY
2	1	1	28720	HYDRAULIC POWER UNIT
3	-	1	28800	VALVE BLOCK ASSY; 3-SPOOL W/ PROP VALVE.
	1	-	28801	VALVE BLOCK ASSY; 3-SPOOL W/ NON-PROP V.
4	1	1	28700	ELECTRICAL COMPONENT PANEL
5	1	1	21735-1	SLEWDRIVE W/ CAST RECTANGULAR BASE
6	1	1	28675	ELEVATION CYLINDER
7	1	1	21215	ELECTRIC WINCH
8	1	1	16780-2P8	ASSY; 2-POLE SLIP-RING
9	1	1	21185	ROTATION GEAR GUARD
10	1	1	22480	SOCKET ASSY; 16 + 1 POLE
11	-	1	22158	RADIO, ET, PROPORTIONAL
	1	-	21986-ET	RADIO, ET, NON-PROPORTIONAL
12	1	1	21948	HORN
13	1	1	19918	BOOM SHUT OFF SWITCH
14	1	1	19917	BOOM SHUT OFF SWITCH BRACKET
15	1	1	28641	SHUT OFF SWITCH ADJUSTABLE BRACKET
16	1	1	28642	BRACKET; RADIO RECEIVER.
17	-	1	28803	ADAPTER PLATE, PROP VALVE ASSY
18	1	1	28646	PLASTIC COVER BACK BRACKET WELDMENT
19	1	1	28647	PLASTIC COVER SIDE BRACKET WELDMENT
20	1	1	22000	BRACKET; HORN
21	1	1	28690	BOOM PIVOT PIN - WELDMENT
22	1	1	21172	ELEVATION CYLINDER INBOARD PIN
23	1	1	21127	ELEVATION CYLINDER OUTBOARD PIN
24*	1	1	28657	WINCH SPACER
25	1	1	28740	PLASTIC COVER
26	1	1	21124	POLY BEARING - ELEVATION CYLINDER BASE
27	1	1	FF6801-0606	FITTING, ADAPTER, 90°, 6MOFS-6MORB
28	1	1	17012	BOOT: PRESSURE SWITCH
29	1	1	SEE TABLE	PRESSURE SWITCH
30	1	1	20896	TOP ANGLE SWITCH BLOCK

ITEM NO.	4520E	4516E	4020E	4016E	PART NUMBER
	QTY.				
29	1	-	-	-	17460-2900-21
	-	1	1	-	17460-2700-21
	-	-	-	1	17460-2200-21

REFERENCE 28828 FOR REPLACEMENT PARTS DRAWING

\* : USED WITH 4520E & 4020E ONLY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST - MECH

40\*\*E/45\*\*E

DATE

06-17-25A

SUPERSEDES

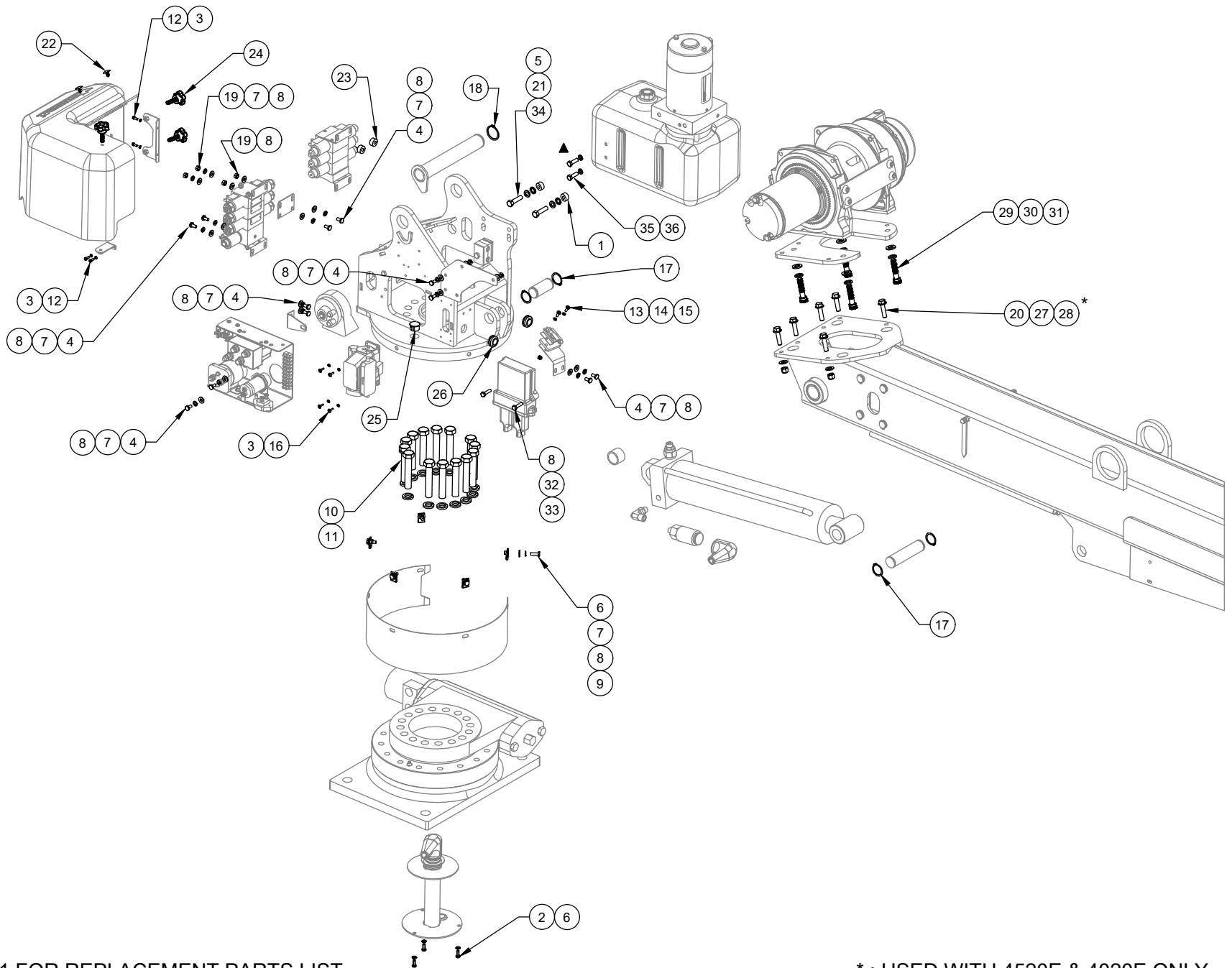
02-23-24

SECTION

C400

28829





REFERENCE 28831 FOR REPLACEMENT PARTS LIST

\* : USED WITH 4520E & 4020E ONLY

TITLE		DATE	SECTION
REPLACEMENT FASTENERS DWG - MECH		06-20-25A	C400
40**E/45**E		SUPERSEDES 07-30-24	28830



ITEM NO.	NON-PROP	PROP	PART NUMBER	DESCRIPTION
	QTY.			
1*	2	2	28804	ALUMINUM SPACER
2	3	3	!LWSH-025-STAR-SS	LOCK WASHER, 1/4" STAR, SS
3	8	8	!LWSH-08S	LOCK WASHER; #08, SS
4	10	12	!HHCS02520050S	HEX HEAD CAP SCREW 1/4-20 X 1/2 LG, SS
5	2	2	!LWSH-038-STAR	LOCK WASHER, 3/8" STAR, ZINC
6	8	8	!HHCS02520075S	HEX HEAD CAP SCREW 1/4-20 X 3/4 LG, SS
7	16	18	!LWSH-025S	LOCK WASHER; 1/4", SS
8	17	21	!FWSH-025S	FLAT WASHER; 1/4", SS
9	5	5	!UNUT-02520-LKG	U-NUT; 1/4-20, LOCKING TYPE, ZINC
10	14	14	!HHCS06311350-5	!HHCS; 5/8-11 X 3-1/2 LG, GR 5, ZINC
11	14	14	!LWSH-063	LOCK WSHR; 5/8, ZINC
12	4	4	!SHCS#0832038S	SHCS, #8-32 X 0.38" LG, SS
13	2	2	!PHPMS#1024050S	PHILLIPS HEAD PAN, #10-24 X 1/2LG, SS
14	2	2	!HNUT-#1024S	HEX NUT, 10-24, SS
15	2	2	!LWSH-#10S	LOCK WASHER - #10, SS
16	4	4	!SHPMS#0832050S	SLOT HEAD, #8-32 X 1/2 LG, SS
17	2	2	!SRNG-113	SNAP RING - 1-1/8" IN - PLATED
18	1	1	!SRNG-138	SNAP RING - 1-3/8 IN - PLATED
19	2	4	!HNUT-02520S	HEX NUT 1/4-20, SS
20	6	6	!HHCS03816150-8	HEX HEAD CAP SCREW 3/8-16 X 1-1/2 LG GR 8, ZINC
21	2	2	!LWSH-038	LOCK WASHER; 3/8", ZINC
22	2	2	28741	PUSH-IN RIVETS WITH RIBBED SHANK, 0.25"
23	2	2	28802	NYLON SPACER
24	3	3	28742	KNOB, HAND, 5-POINT
25	2	2	25019	HOLE PLUG - 7/8 OD
26	2	2	20889	GROMMET: RUBBER, BLACK
27	12	12	!FWSH-038	FLAT WASHER; 3/8", ZINC
28	6	6	!LNUT-03816	LOCK NUT 3/8-16, ZINC
29	4	4	25921	SHCS M12-175x50mm Gr.12.9, ZINC
30	4	4	!LWSH-M12-8.8	M12 LOCK WASHER, ZINC
31	4	4	!FWSH-M12	M12 FLAT WASHER, ZINC
32	2	2	!JNUT-02520NS	JNUT, NYLON INSERT, 1/4-20, SS
33	2	2	!HHCS02520100S	HEX HEAD CAP SCREW 1/4-20 X 1.0 LG, SS
34	2	2	!HHCS03816150-8	HHCS 3/8-16 X 1-1/2 LG GR 8, ZINC (KTI HPU)
	2	2	!HHCS03816125-8	HHCS 3/8-16 X 1-1/4 LG GR 8, ZINC (BUCHER HPU)
35**	2	2	!LWSH-031S	LOCK WASHER; 5/16", S/S
36**	2	2	!HHCS3118100S	HEX HEAD CAP SCREW 5/16-18 X 1.0 LG, S/S

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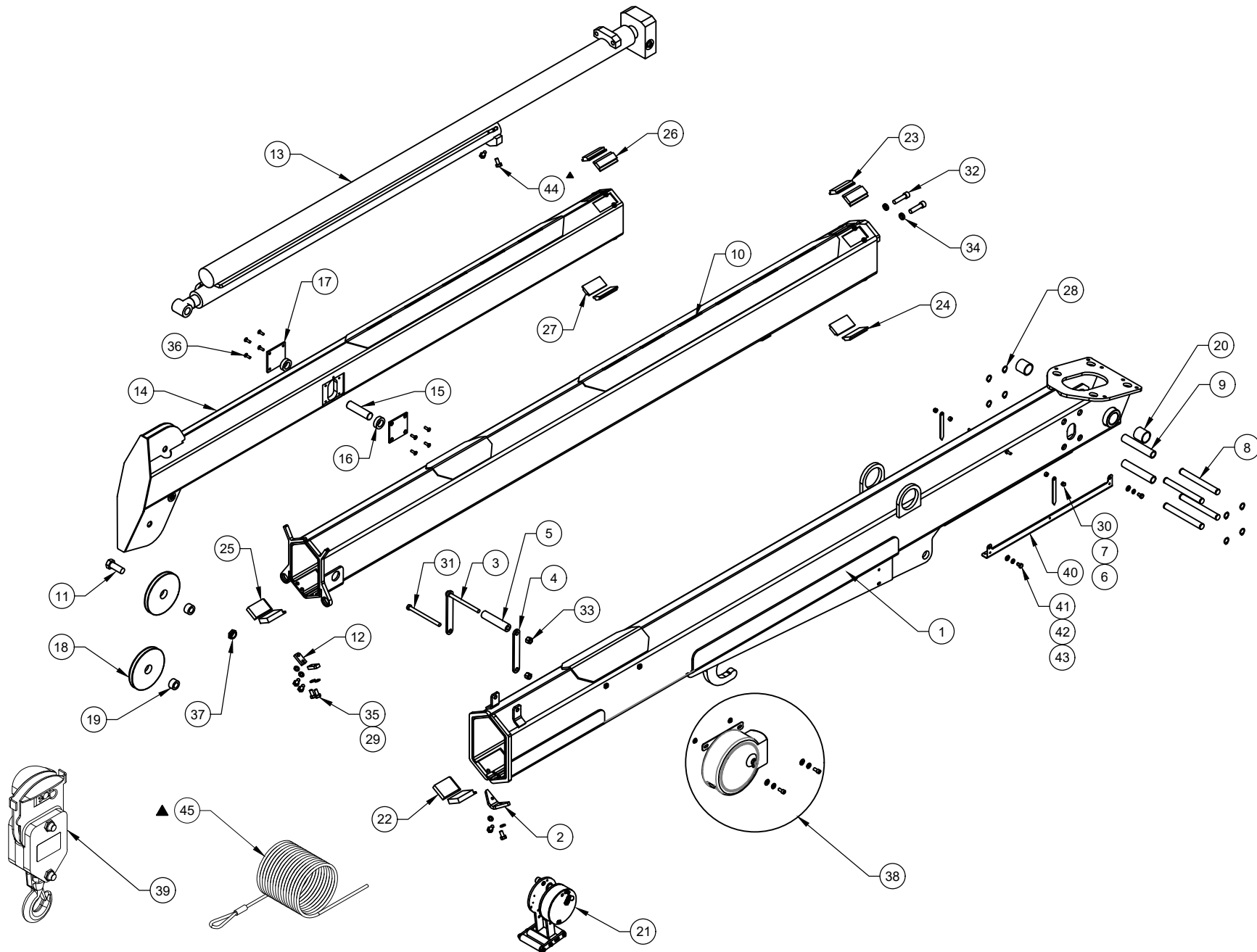
\* : USED WITH KTI HPU ONLY  
 \*\* : USED WITH BUCHER HPU ONLY

REFERENCE 28830 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC  
 CINCINNATI, OHIO

TITLE	DATE	SECTION
REPLACEMENT FASTENERS LIST - MECH	06-20-25B	C400
40**E/45**E	SUPERSEDES 02-25-25A	28831



REFERENCE 28833 FOR REPLACEMENT PARTS LIST



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPL PARTS & FASTENERS DWG - 28656 BOOM	02-26-25B	C400
4020E/4520E	SUPERSEDES 11-19-24A	28832

# REPLACEMENT PARTS & FASTENERS LIST - 28656 BOOM

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	28650	PRIMARY BOOM WELDED ASSEMBLY
2	1	23183	V-BLOCK SLIDER
3	1	21935	WIRE-ROPE GUIDE WELDED
4	1	21936	FLAT,MOUNT;WIRE ROPE GUIDE
5	1	21560	ROLLER,UHMW GUIDE
6	2	22490	SPACER, BOOM ARROW 1/2" O.D.
7	2	13459-2	BOOM ARROW 4-7/16 LONG
8	4	21497	THRUST PIN - EXTENSION CYLINDER
9	2	21498	EXTENSION CYLINDER ROLLER
10	1	27165	SECONDARY BOOM WELDED ASSEMBLY
11	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK
12	2	23119	BEARING RETAINING BLOCK
13	1	21753	EXTENSION CYLINDER
14	1	27167	TERTIARY BOOM WELDED ASSEMBLY
15	1	21941	EXTENSION CYLINDER PIN
16	2	21428	BUSHING
17	2	23116	PIN BLOCK REINFORCING
18	2	27001	SHEAVE - BOOM
19	2	23924	BUSHING
20	2	21206	POLY BEARING - PRIMARY BOOM PIVOT
21	1	27469-L-C-00	COMPACT A2B
22	2	23217-3	UHMW, B, 3.19, 2.13, 0.63
23	2	23217-8	UHMW, A, 3.19, 1.75, 0.50
24	2	23217-9	UHMW, A, 3.19, 1.75, 0.44
25	2	23217-10	UHMW, B, 3.19, 1.75, 0.63
26	2	23217-6	UHMW, A, 3.19, 1.50, 0.50
27	2	23217-7	UHMW, A, 3.19, 1.50, 0.44
28	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
29	6	!LWSH-038	LOCK WASHER; 3/8", ZINC
30	2	!ANUT-02520S	ACORN NUT 1/4-20, SS
31	1	!HHCS04414550	HHCS - 7/16-14 X 5-1/2 LG, ZINC
32	2	!SHCS05013200	SOCKET HEAD CAP SCREW 1/2-13 X 2", ZINC
33	2	!LNUT-04414	NYLON INSERT LOCK NUT - 7/16-14, ZINC
34	2	!LWSH-050-HC	LOCK WASHER 1/2" HI COLLAR, ZINC
35	6	!HHCS03816075	HEX HEAD CAP SCREW - 3/8-16 X 3/4, ZINC
36	8	!CACCS02520063-N	ALLEN HEAD CAP SCREW 1/4-20 X 5/8 LG W/ PATCH
37	1	!LNUT-07510	LOCKNUT 3/4-10, ZINC
38	1	26577-1-20	CORD REEL ASSEMBLY
39	1	27667-3	LOAD BLOCK ASSEMBLY FOR 4520E
	1	27667-4	LOAD BLOCK ASSEMBLY FOR 4020E
40	1	26940-2	HEX BOOM CABLE GUARD BRACKET
41	2	!HHCS03118050S	HEX HEAD CAP SCREW - 5/16 X 1/2 LONG S/S
42	2	!LWSH-031S	LOCK WASHER; 5/16", S/S
43	2	!FWSH-031S	FLAT WASHER; 5/16", S/S
44	2	!HHCS03816100N	HHCS; NYLON PATCH 3/8-16 X 1, GR. 5
45	1	27668-5/16-80	WIRE ROPE, 5/16" x 80'

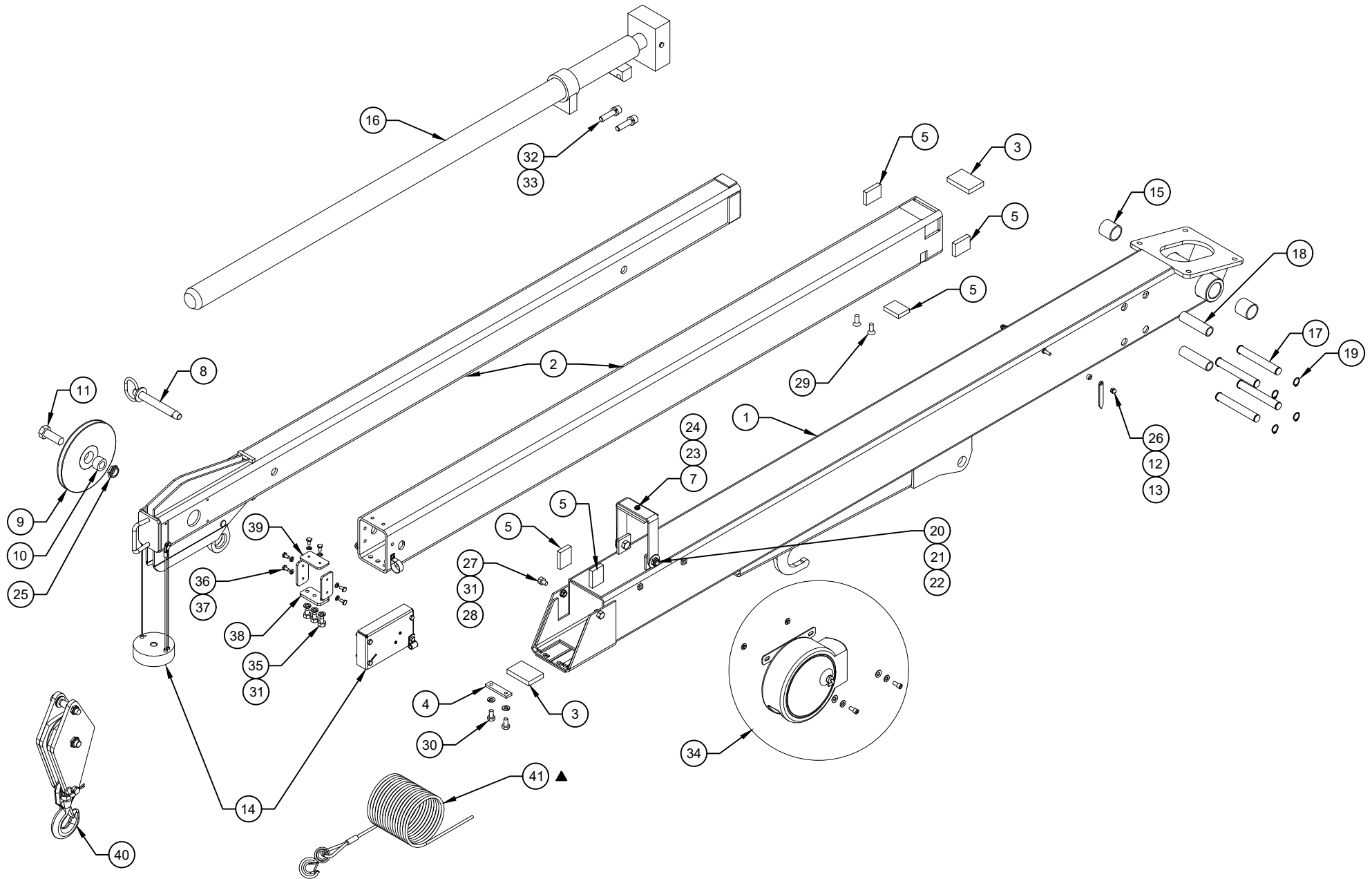
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REFERENCE 28832 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE	DATE	SECTION
REPL PART & FAS LIST - 28656	02-26-25B	C400
4020E/4520E	SUPERSEDES 11-19-24A	28833



REFERENCE 28896 FOR REPLACEMENT PARTS LIST



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

REPL PARTS & FASTENERS DWG - 28662 BOOM

4016E/4516E

DATE

02-26-25A

SUPERSEDES

08-01-24

SECTION

C400

28895

# REPLACEMENT PARTS & FASTENERS LIST - 28662 BOOM

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	28658	PRIMARY BOOM WELDED ASSEMBLY
2	1	21203	SECONDARY / TERTIARY WELDED ASSEMBLY
3	2	21208	BOOM BEARING - 2 X 3 X 1/2
4	1	21207	PRIMARY BEARING RETAINING BAR
5	5	21209	BOOM BEARING - 1-1/2 X 2 X 7/16
6	1	19880	CABLE GUIDE STRUCTURE
7	1	19881	CABLE GUIDE WEAR STRIP
8	1	23042-B-14-14	ASSY; PIN / LANYARD
9	1	23925	BOOM SHEAVE WITH BUSHING
10	1	23924	BUSHING
11	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK
12	2	13459-1	BOOM ARROW 3-3/16 LONG
13	2	22490	SPACER, BOOM ARROW 1/2" O.D.
14	1	28860	ANTI-TWO-BLOCK ASSEMBLY- LEFT HAND
15	2	21206	POLY BEARING - PRIMARY BOOM PIVOT
16	1	21217	EXTENSION CYLINDER
17	4	21211	THRUST PIN - EXTENSION CYLINDER
18	2	19885	EXTENSION CYLINDER ROLLER
19	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
20	2	!HHCS05013100-5	HEX HEAD CAP SCREW 1/2-13NC X 1 LG GR5
21	2	!FWSH-050	FLAT WASHER 1/2"
22	2	!JNUT-05013N	1/2-13 NYLON INSERT JAM NUT
23	1	!PHCS02520063	PAN HEAD CAP SCREW - 1/4-20 X 5/8 LONG
24	1	!JNUT-02520N	NYLON INSERT JAM NUT - 1/4-20
25	1	!LNUT-07510	LOCKNUT 3/4-10
26	2	!ANUT-02520S	ACORN NUT 1/4-20 SS
27	2	!HHCS03816050	HEX HEAD CAP SCREW 3/8-16 X 1/2" LG - GR 5
28	2	!JNUT-03816	JAM NUT - 3/8-16 GRADE 5
29	2	!CACS03816100	CNTRSNK ALLEN HEAD CAP SCREW 3/8-16 X 1" LG
30	2	!HHCS03816075	HEX HEAD CAP SCREW - 3/8-16 X 3/4 LG - GR 5
31	4	!LWSH-038	LOCK WASHER 3/8"
32	2	!SHCS05013200	SOCKET HEAD CAP SCREW - 1/2-13 X 2 LG,
33	2	!LWSH-050-HC	LOCK WASHER; 1/2", HI-COLLAR
34	1	26577-1-20	CORD REEL ASSY
35	3	!HHCS03824050	HEX HEAD CAP SCREW - 3/8-24 X 1/2 LG - GR 5, ZINC
36	6	!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2 LG - GR 5, ZINC
37	6	!LWSH-025	LOCK WASHER 1/4"
38	1	22145	LOWER STOP BLOCK
39	3	22146	SIDE SHIM
40	1	23169	LOAD BLOCK ASSEMBLY FOR 4516E
	1	23169-2	LOAD BLOCK ASSEMBLY FOR 4016E
41	1	25810-5/16-80	WIRE ROPE, 5/16" x 80'

REFERENCE 28895 FOR REPLACEMENT PARTS DRAWING



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPL PART & FAS LIST - 28662

4016E/4516E

DATE  
02-26-25A

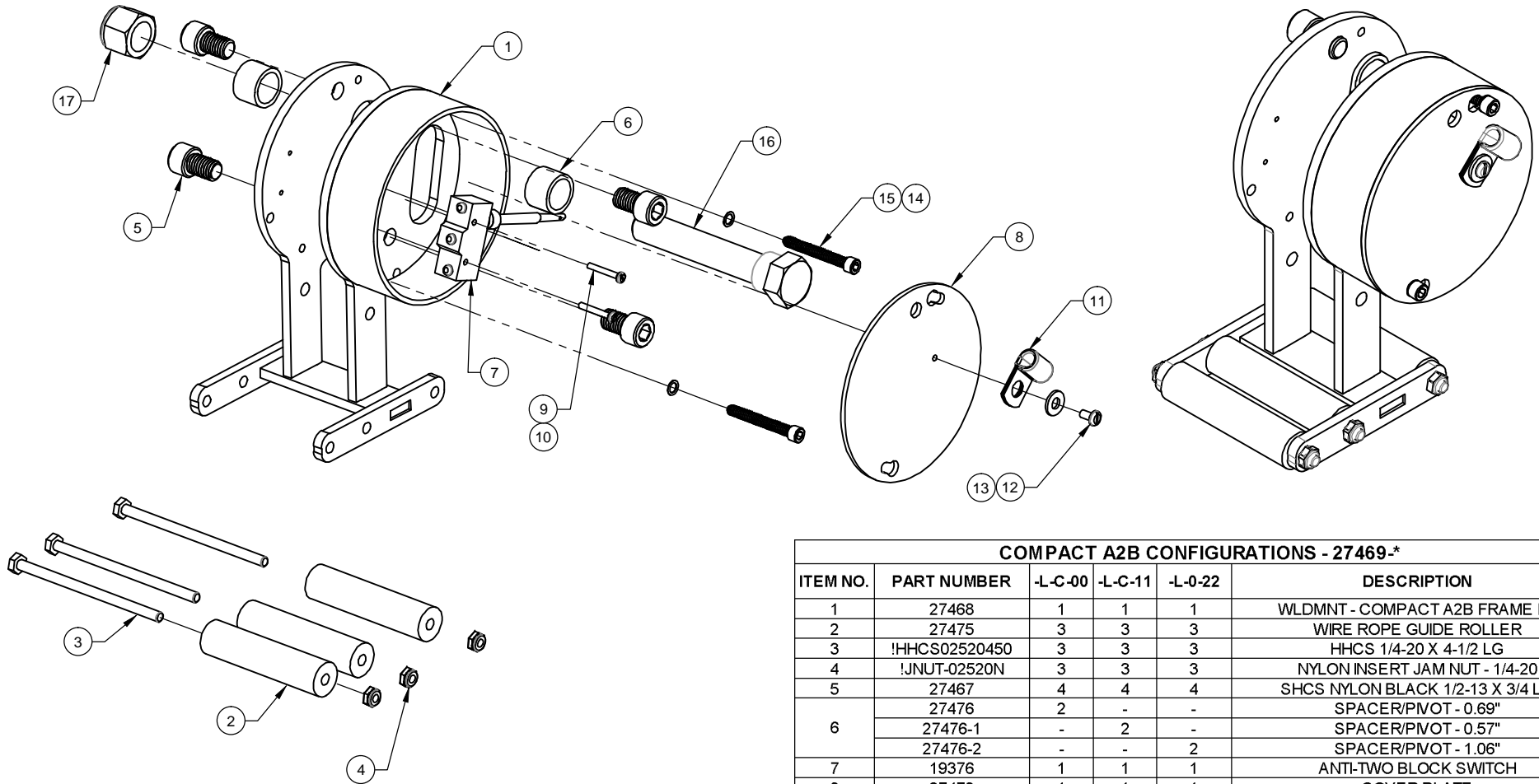
SUPERSEDES  
08-01-24

SECTION  
C400

28896



# COMPACT A2B - 27469-\* - REPLACEMENT PARTS LIST



COMPACT A2B CONFIGURATIONS - 27469-\*

ITEM NO.	PART NUMBER	-L-C-00	-L-C-11	-L-0-22	DESCRIPTION
1	27468	1	1	1	WLDMNT - COMPACT A2B FRAME LH
2	27475	3	3	3	WIRE ROPE GUIDE ROLLER
3	!HHCS02520450	3	3	3	HHCS 1/4-20 X 4-1/2 LG
4	!JNUT-02520N	3	3	3	NYLON INSERT JAM NUT - 1/4-20
5	27467	4	4	4	SHCS NYLON BLACK 1/2-13 X 3/4 LG
6	27476	2	-	-	SPACER/PIVOT - 0.69"
	27476-1	-	2	-	SPACER/PIVOT - 0.57"
	27476-2	-	-	2	SPACER/PIVOT - 1.06"
7	19376	1	1	1	ANTI-TWO BLOCK SWITCH
8	27473	1	1	1	COVER PLATE
9	!PHCS#0632100	2	2	2	PHILLIPS HEAD CAP SCREW 6-32 X 1 LONG
10	!LWSH#06	2	2	2	LOCK WASHER - 6
11	19269	1	1	1	WIRE CLAMP, 3/8 ID VIBRATION DAMPING
12	!PHCS#1032038	1	1	1	PAN HEAD CAP SCREW 10-32 X 3/8 LONG
13	!FWSH-025	1	1	1	FLAT WASHER - 1/4
14	!SHCS02520200SS	2	2	2	SHCS, 1/4-20 X 2.00 LONG, STAINLESS STEEL
15	23379	2	2	2	WASHER, NYLON, BLACK, .375" O.D. X .25" I.D.
16	28362	1	1	-	COMPACT A2B CUT-OUT CAM WELDED ASSY.
	!HHCS07510450	-	-	1	HHCS, 3/4-10 X 4.50 LONG, GR.5
17	LNUT-07510	1	1	1	NYLON INSERT LOCK NUT - 3/4-10



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS LIST

COMPACT A2B - 27469-\*

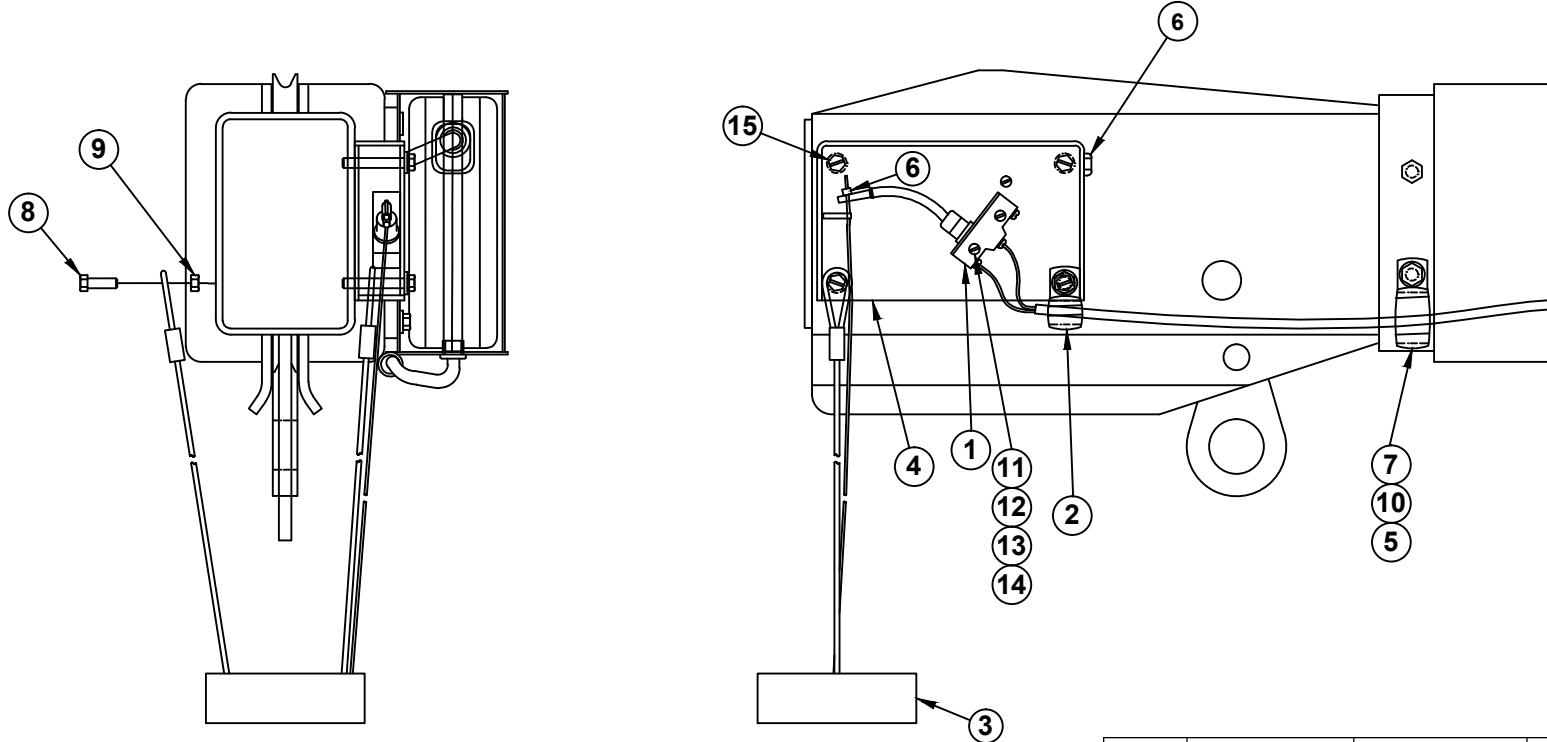
DATE  
7-10-24A

SUPERSEDES  
06-11-24

SECTION  
C400

26942

# ANTI-TWO-BLOCK ASSY



NO DASH: 4016E & 4516E

-1: 3215E & 3515E

ITEM	QTY		PART NO.	DESCRIPTION
	NO DASH	-1		
1	1	1	19376	LIMIT SWITCH
2	1	1	19269	CABLE CLAMP - SMALL
3	-	1	19377-1	CABLE WEIGHT ASSY
	1	-	19377-2	CABLE WEIGHT ASSY
4	1	1	21291	ANTI TWO-BLOCK HOUSING ASSEMBLY
5	1	-	!LWSH-025	LOCK WASHER - 1/4"
6	1	1	19302	SET COLLAR - 3/32"
7	1	-	19275	CABLE CLAMP - LARGE
8	1	1	!HHCS02520075-5	HEX HEAD CAP SCREW - 1/4-20 x 3/4" GR. 5
9	1	1	!HNUT-02520	HEX NUT - 1/4-20
10	1	-	!ANUT-02520	ACORN NUT - 1/4-20
11	2	2	!PHMS#632125	PAN HEAD MACHINE SCREW - #6-32 x 1 1/4"
12	2	2	!HNUT-#0632	HEX NUT - #6-32
13	2	2	!FWSH-#06	FLAT WASHER - #6
14	2	2	!LWSH-#06	LOCK WASHER - #6
15	4	4	!HHCS02520175	HEX HEAD CAP SCREW - 1/4-20 x 1 3/4"



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

ANTI-2-BLOCK REPL PARTS DWG & LIST

3215E, 3515E, 4016E, 4516E

DATE

04-16-25

SUPERSEDES

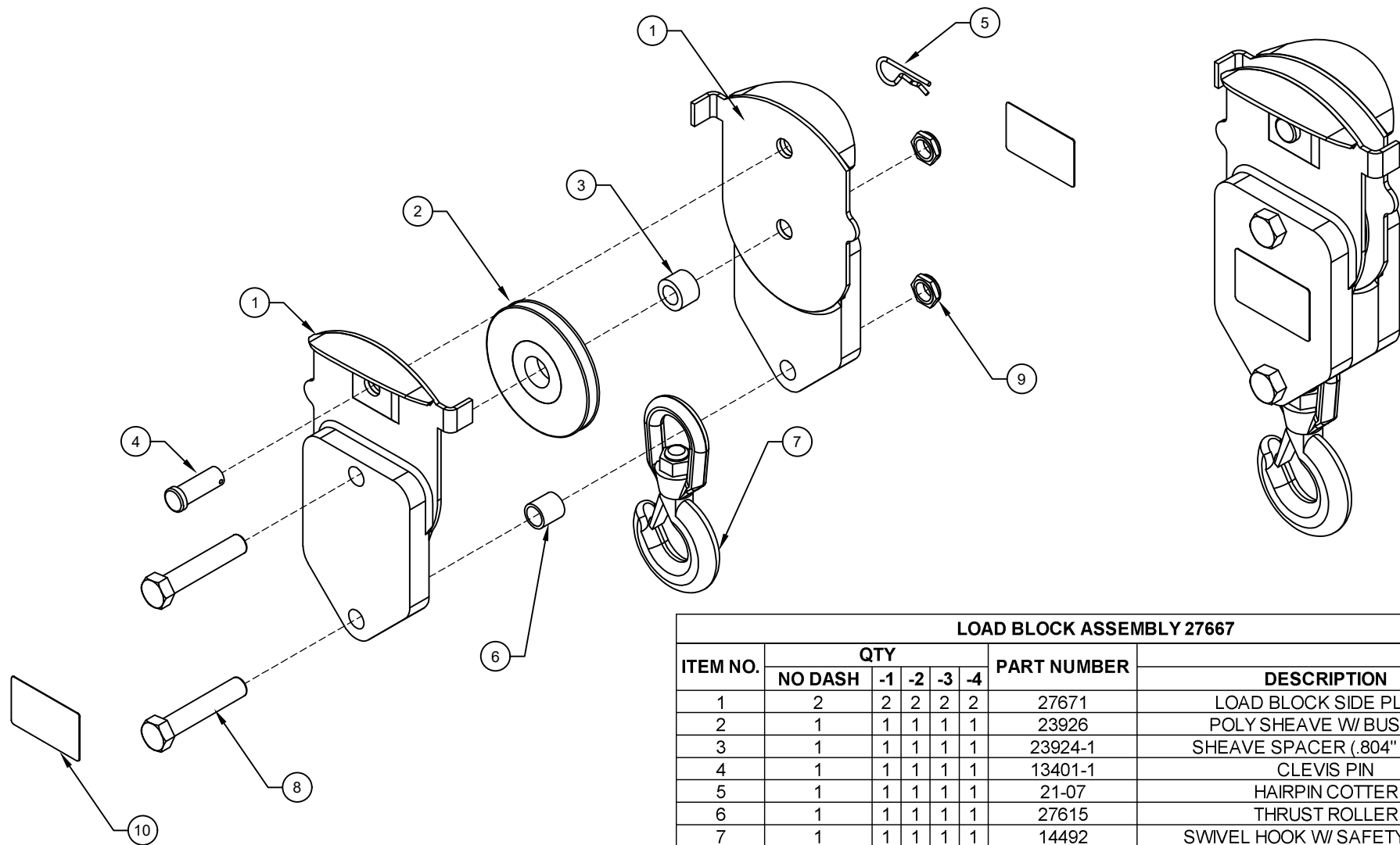
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SECTION

C400

28861

# REPLACEMENT PARTS LIST - 27667 LOAD BLOCK



**LOAD BLOCK ASSEMBLY 27667**

ITEM NO.	QTY					PART NUMBER	DESCRIPTION
	NO DASH	-1	-2	-3	-4		
1	2	2	2	2	2	27671	LOAD BLOCK SIDE PLATE
2	1	1	1	1	1	23926	POLY SHEAVE W/ BUSHING
3	1	1	1	1	1	23924-1	SHEAVE SPACER (.804" THICK)
4	1	1	1	1	1	13401-1	CLEVIS PIN
5	1	1	1	1	1	21-07	HAIRPIN COTTER
6	1	1	1	1	1	27615	THRUST ROLLER
7	1	1	1	1	1	14492	SWIVEL HOOK W/ SAFETY LATCH
8	2	2	2	2	2	!HHCS07510400	HEX HEAD CAP SCREW; 3/4-10 X 4", GR. 5
9	2	2	2	2	2	!JNUT-07510N	LOCK NUT; 3/4-10, GR. 5, NYLON
10	-	-	2	-	-	27007-06a	DECAL; LOAD BLOCK, 5000 LBS MAX
11	-	2	-	-	-	27007-07a	DECAL; LOAD BLOCK, 6000 LBS MAX
12	-	-	-	2	-	27007-14a	DECAL; LOAD BLOCK, 4500 LBS MAX
13	-	-	-	-	2	27007-16a	DECAL; LOAD BLOCK, 4000 LBS MAX



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST -27667 LOAD BLOCK

DATE

09-13-24

SECTION

C400

SUPERSEDES

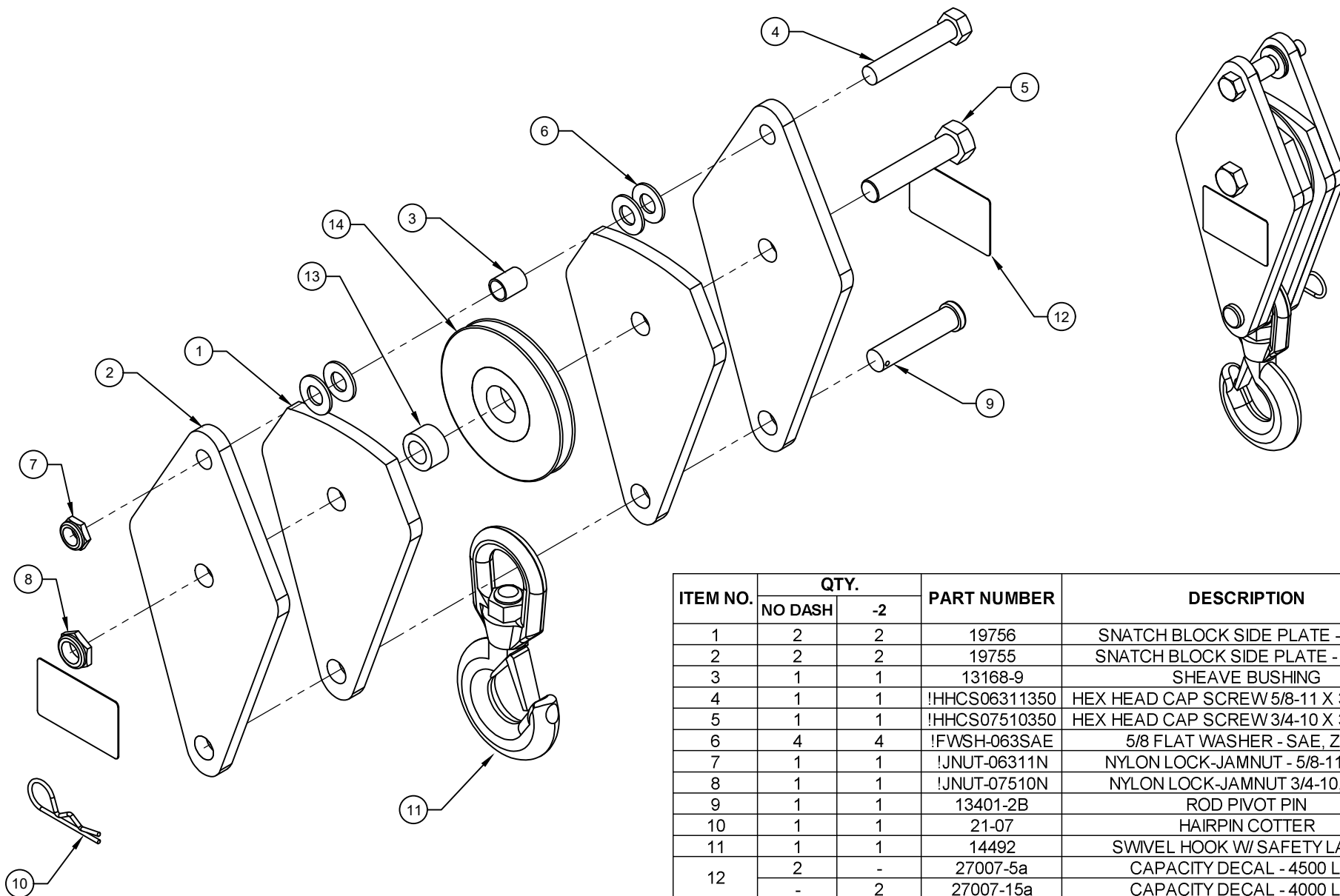
-

4020E/4520E/5020\*/5025H/6020E

28856



# REPLACEMENT PARTS LIST - 23169 LOAD BLOCK



ITEM NO.	QTY.		PART NUMBER	DESCRIPTION
	NO DASH	-2		
1	2	2	19756	SNATCH BLOCK SIDE PLATE - INNER
2	2	2	19755	SNATCH BLOCK SIDE PLATE - OUTER
3	1	1	13168-9	SHEAVE BUSHING
4	1	1	!HHCS06311350	HEX HEAD CAP SCREW 5/8-11 X 3-1/2, ZINC
5	1	1	!HHCS07510350	HEX HEAD CAP SCREW 3/4-10 X 3-1/2, ZINC
6	4	4	!FWSH-063SAE	5/8 FLAT WASHER - SAE, ZINC
7	1	1	!JNUT-06311N	NYLON LOCK-JAMNUT - 5/8-11, ZINC
8	1	1	!JNUT-07510N	NYLON LOCK-JAMNUT 3/4-10, ZINC
9	1	1	13401-2B	ROD PIVOT PIN
10	1	1	21-07	HAIRPIN COTTER
11	1	1	14492	SWIVEL HOOK W/ SAFETY LATCH
12	2	-	27007-5a	CAPACITY DECAL - 4500 LBS
	-	2	27007-15a	CAPACITY DECAL - 4000 LBS
13	1	1	23924-1	BUSHING
14	1	1	23926	BOOM SHEAVE WITH BUSHING



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

REPLACEMENT PARTS LIST -23169 LOAD BLOCK

4016E/4516E

DATE

09-16-24

SUPERSEDES

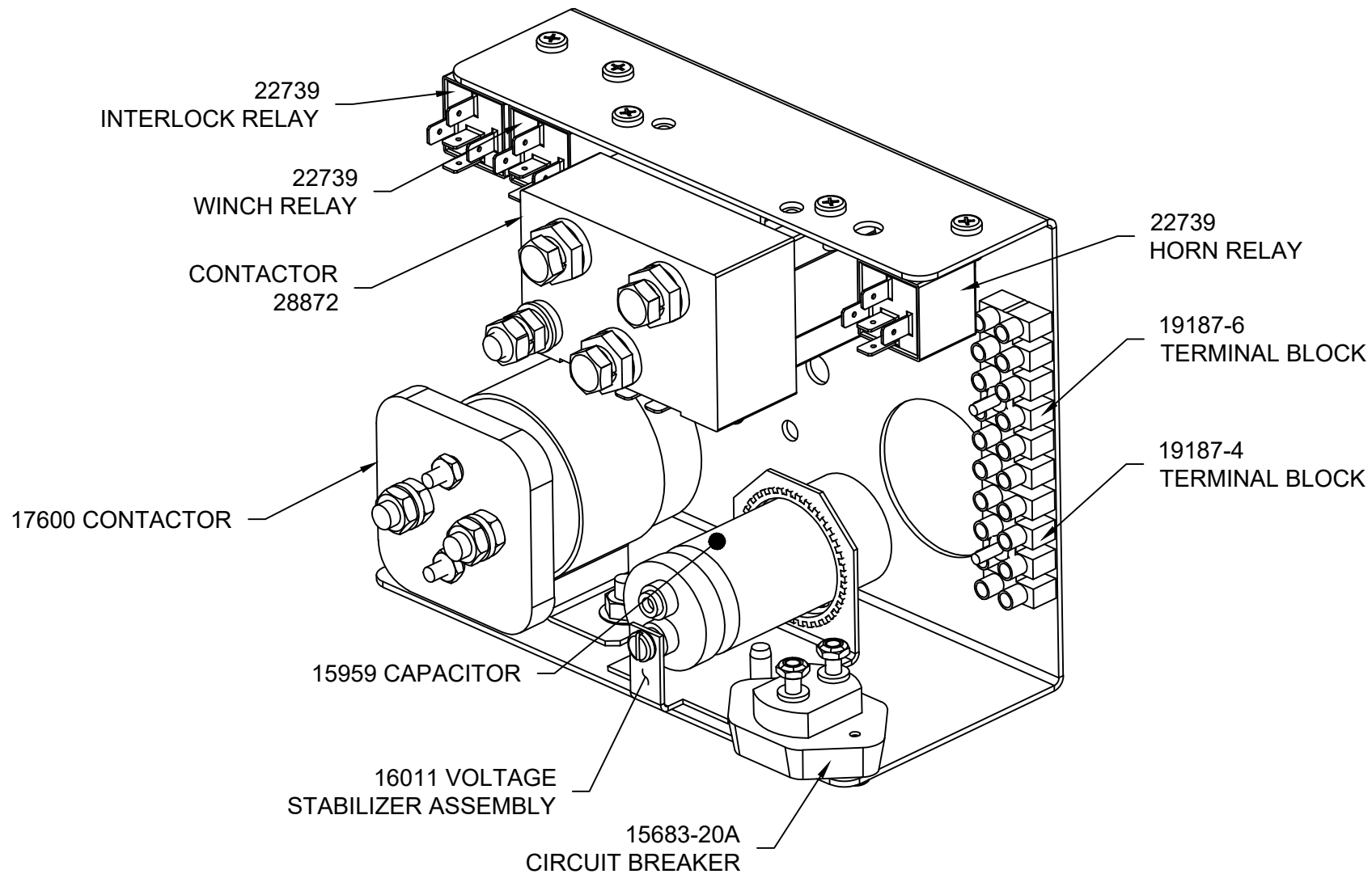
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SECTION

C400

28950

# 28700 ELECTRICAL COMPONENT ASSEMBLY



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

ELECTRICAL COMPONENT ASSEMBLY

3215E/351\*E/40\*\*E/45\*\*E

DATE

04-09-24

SUPERSEDES

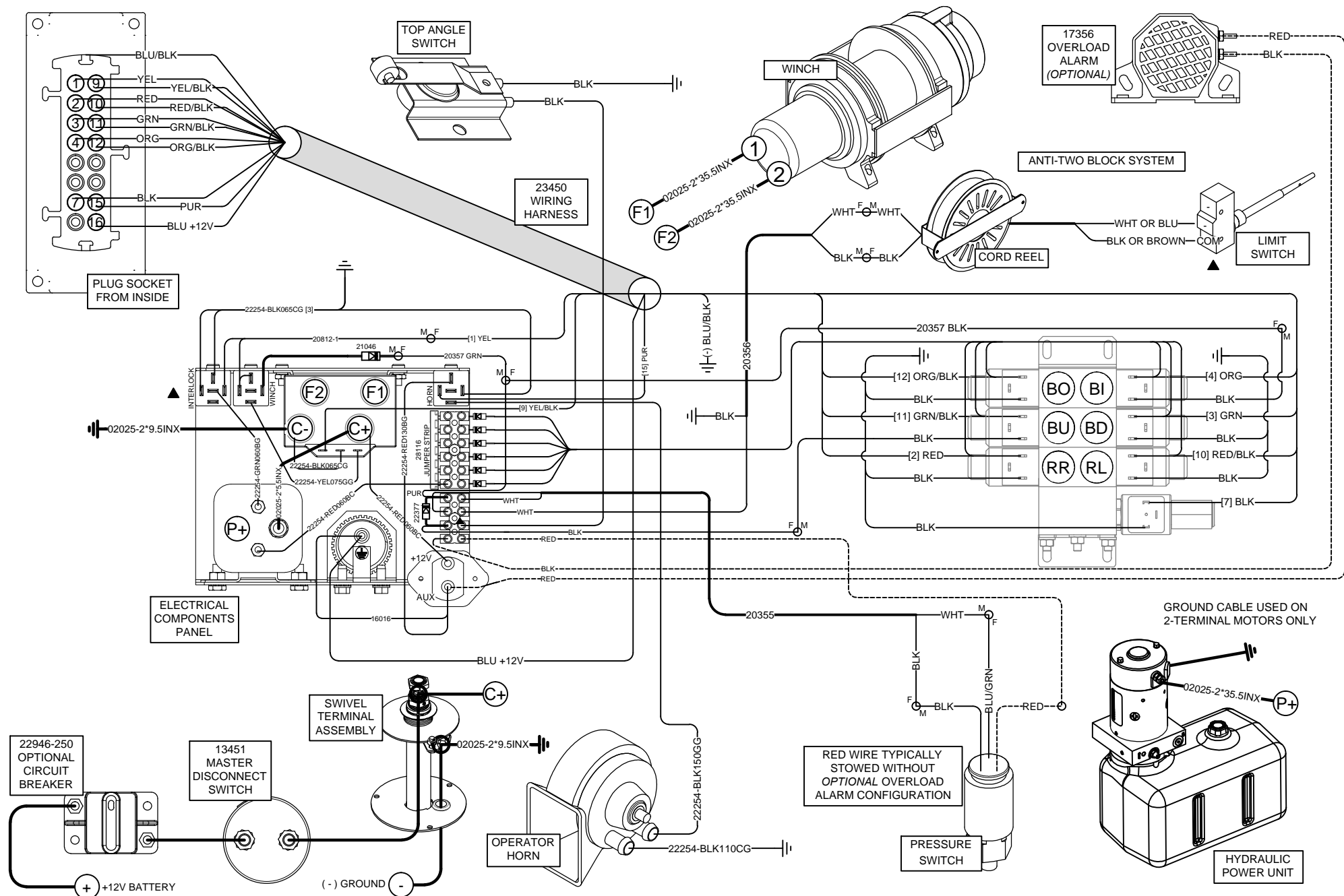
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SECTION

C400

28835



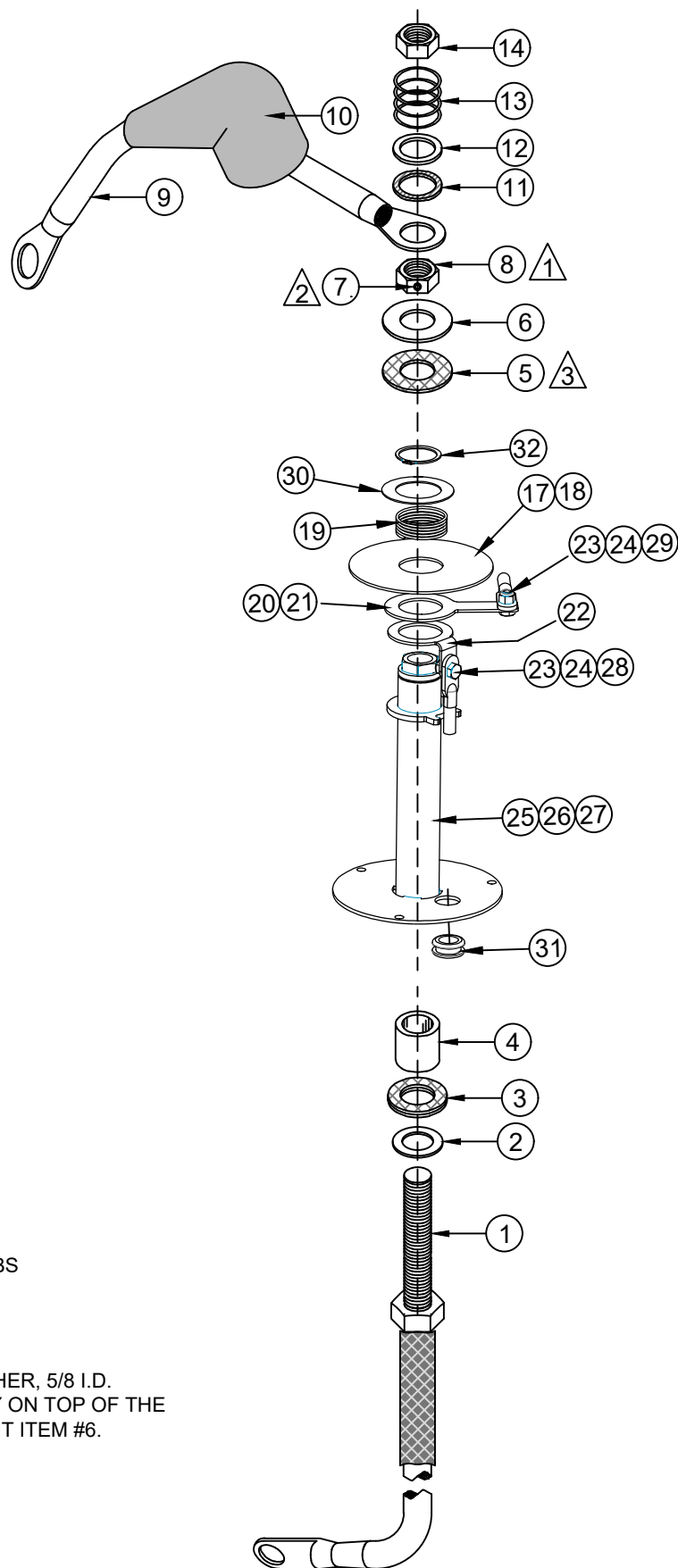


VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**WIRING DIAGRAM**  
45\*\*E/40\*\*E/351\*\*E/3215E  
PROPORTIONAL

DATE 04-17-25B	SECTION C400
SUPERSEDES 03-06-25A	28837

# 2-Pole Slip-ring Replacement Parts



TORQUE TO 15 FT-LBS



LOCTITE 242 BLUE



ITEM #8, FIBER WASHER, 5/8 I.D.  
'MUST' SIT DIRECTLY ON TOP OF THE  
INVERTED FLARE NUT ITEM #6.



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

REPL. PARTS ILLUSTRATION

ET CRANES

DATE

04-23-24

SUPERSEDES

-

SECTION

C400

28843

# 2-Pole Slip-ring Replacement Parts

Slew Rotation 2-Pole Slip-Ring (2010E ONLY)	Slew Rotation 2-Pole Slip-Ring (3215E/351*E/40**E/45**E)	Slew Rotation 2-Pole Slip-Ring (5020E/6020E)	ALL CRANES	16780 BILLS OF MATERIALS		
16780 - 2P6	16780 - 2P8	16780 - 2P25	16780 - KIT			
				#	PART	DESCRIPTION
1	1	1	-	1	16783	PIGTAIL AND STUD ASSEMBLY
1	1	1	1	2	12534-5	ZINC BUSHING; 5/8" I.D. X 1" O.D. X 14 GAUGE
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	4	14233	INSULATING BUSHING; 5/8" I.D. X 7/8" O.D. X 7/8"
1	1	1	1	5	14357-2	FIBER WASHER; 5/8" I.D. X 1 1/4" O.D. X 1/16"
1	1	1	1	6	!FWSH-063SAE	FLAT WASHER; 5/8" SAE
1	1	1	1	7	!SHCS02528025KC	SET SCREW W/ KNULED CUP; 1/4"-28 X 1/4"
1	1	1	1	8	21273	BRASS JAM NUT; 5/8"-11
-	-	-	-	9	26035-2	PIGTAIL; SWIVEL TERMINAL
-	-	-	-	10	17012	RUBBER BOOT; SWIVEL TERMINAL
1	1	1	1	11	5612-162-62	TEFLON WASHER
1	1	1	1	12	5714-113-62	BRASS WASHER
1	1	1	1	13	LC-098K-00	SPRING; 0.845" O.D. X 0.098" WIRE X 1.00 F.L.
1	1	1	1	14	!JNUT-06311N	JAM NUT; 5/8"-11, NYLON NUT
1	1	1	1	15	LOCTITE-24205	REMOVABLE THREAD LOCKER; 0.5ML
1	1	1	1	16	19368	IDWG; 16780 SWIVEL TERMINAL
1	-	-	-	17	27456	UHMW WATER SHIELD, (ET6K ONLY)
-	1	1	-	18	27456-1	UHMW WATER SHIELD, (ET8 - ET36)
1	1	1	-	19	27461	SPRING, (-) SLIP-RING ASSY.
-	1	1	-	20	27441-1	COPPER SLIP-RING, (ET8 - ET36)
1	-	-	-	21	27441	COPPER SLIP-RING, (ET6K ONLY)
1	1	1	-	22	27449-1	BRASS SLIP-RING (ET6 - ET36)
1	1	1	-	23	!HHCS03118075-B	BRASS HHCS
1	1	1	-	24	!HNUT-03118-B	BRASS NYLOC NUT
1	-	-	-	25	23255	SLIP-RING, WELDED ASSY, ET6K
-	1	-	-	26	23255-1	SLIP-RING, WELDED ASSY, ET8 - 18K(X)
-	-	1	-	27	23255-2	SLIP-RING, WELDED ASSY, ET25 - 36K(X)
1	1	1	-	28	02025-2*96.5INX	(-) WELDING CABLE ASSY, BRASS SLIP-RING
1	1	1	-	29	02025-2*22.5INX	(-) WELDING CABLE ASSY, COPPER SLIP-RING
1	1	1	-	30	27463	SHIM, WIDE RIM, 18GA, 2-1/4 O.D. X 1-1/2 I.D.
1	1	1	-	31	20889	RUBBER GROMMET
1	1	1	-	32	!SRNG-150	SNAP-RING, EXTERNAL, 1-1/2"



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

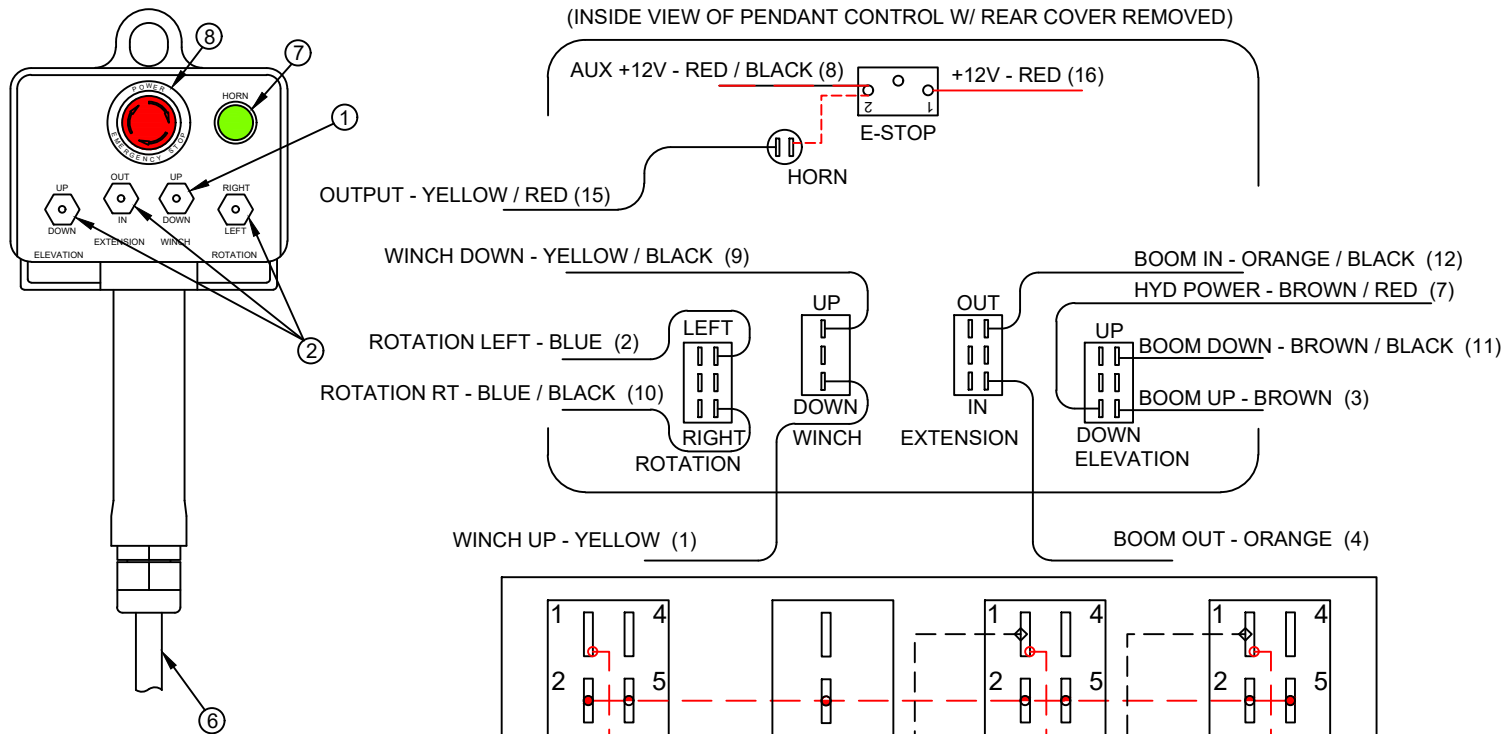
TITLE  
16780 REPLACEMENT PARTS  
ET CRANES

DATE  
04-23-24  
SUPERSEDES  
-

SECTION  
C400  
28842



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



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

STOW OR CUT BACK UNUSED WIRES.

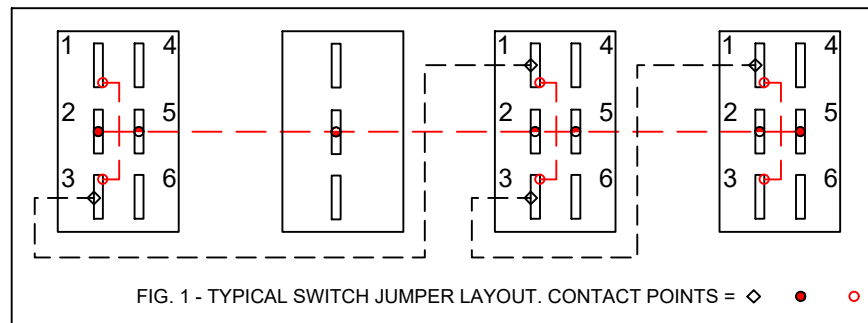
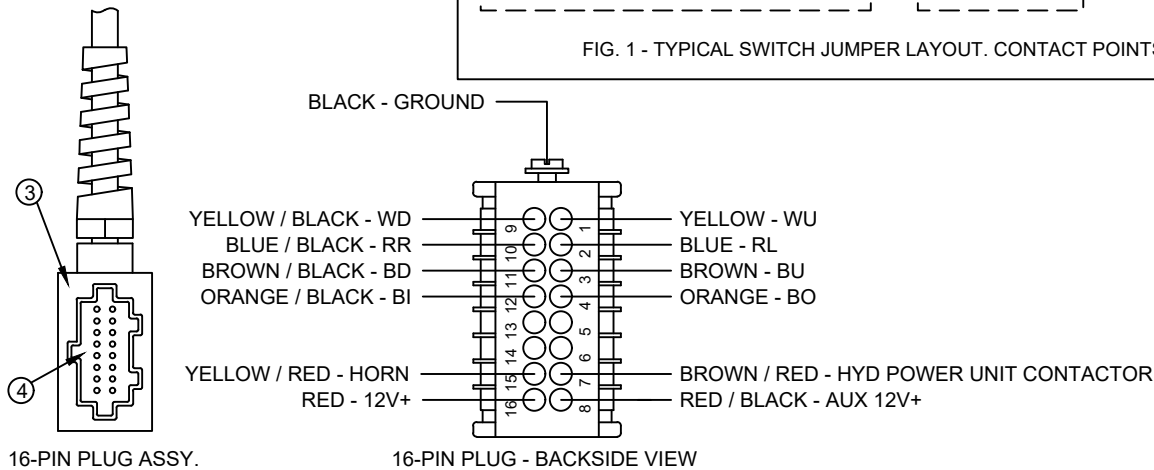


FIG. 1 - TYPICAL SWITCH JUMPER LAYOUT. CONTACT POINTS = ◇ ●



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



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

## REPLACEMENT PARTS DWG & LIST

21990 PNDNT; 4 FNCTN ET CRNS, ESTP/HRN

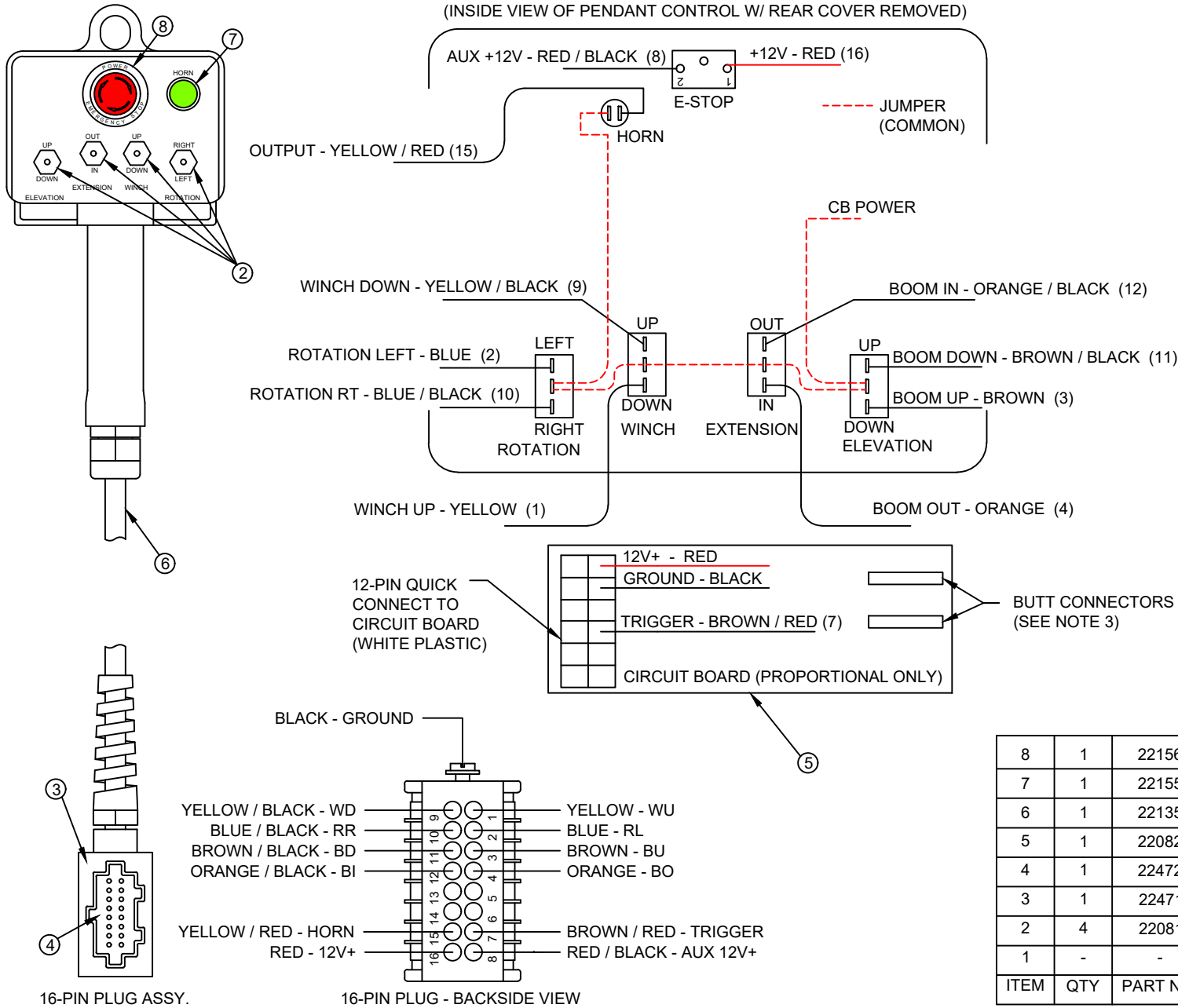
04-22-24

SUPERSEDES

C400

28840

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



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	-	-	-
ITEM	QTY	PART NO.	DESCRIPTION



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
REPLACEMENT PARTS DWG & LIST

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

DATE  
04-22-24

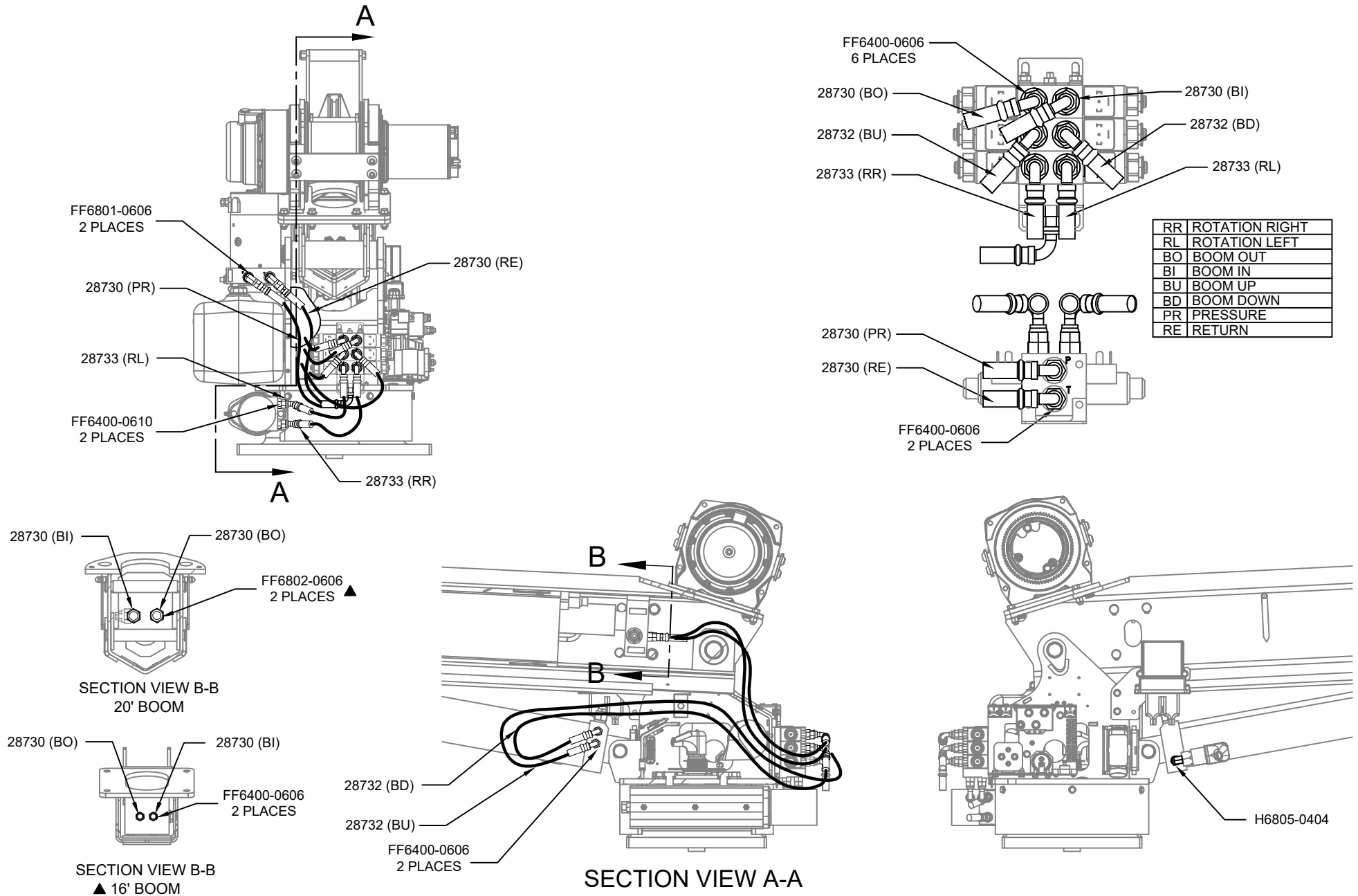
SUPERSEDES

SECTION  
C400

28841



# HYDRAULIC COMPONENTS DRAWING



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

HYDRAULIC COMPONENTS DRAWING

45\*\*E/40\*\*E/3516E, NON-PROPORTIONAL

DATE

03-06-25A

SUPERSEDES

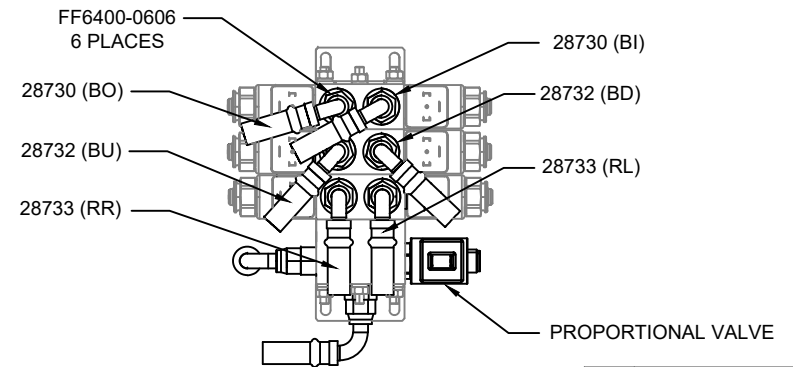
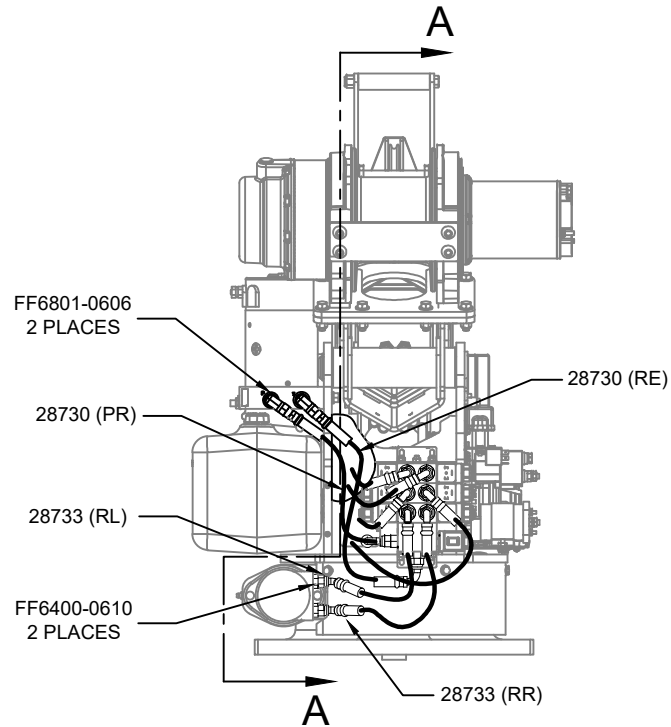
04-16-24

SECTION

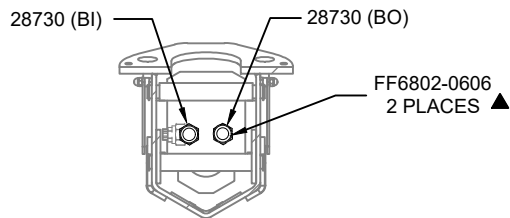
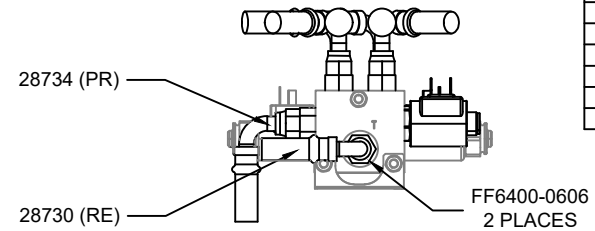
C400

28838

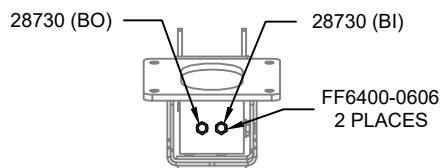
# HYDRAULIC COMPONENTS DRAWING



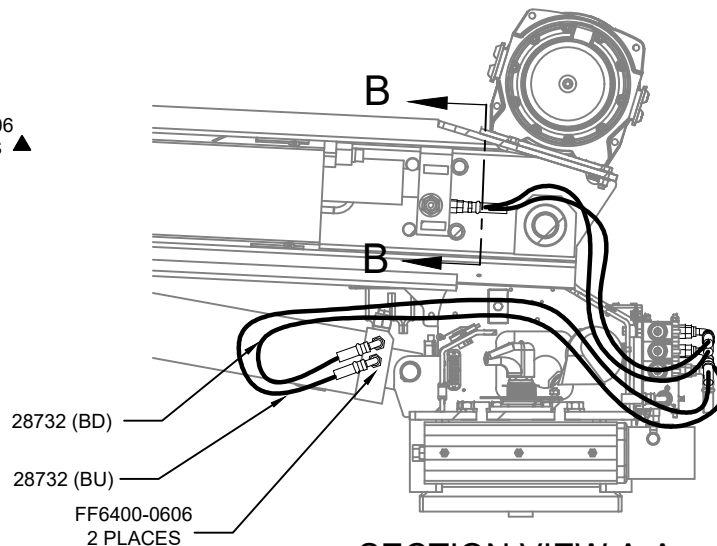
RR	ROTATION RIGHT
RL	ROTATION LEFT
BO	BOOM OUT
BI	BOOM IN
BU	BOOM UP
BD	BOOM DOWN
PR	PRESSURE
RE	RETURN



SECTION VIEW B-B  
20' BOOM



SECTION VIEW B-B  
▲ 16' BOOM



SECTION VIEW A-A



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

HYDRAULIC COMPONENTS DRAWING

45\*\*E/40\*\*E/3516E, PROPORTIONAL

DATE

03-06-25A

SUPERSEDES

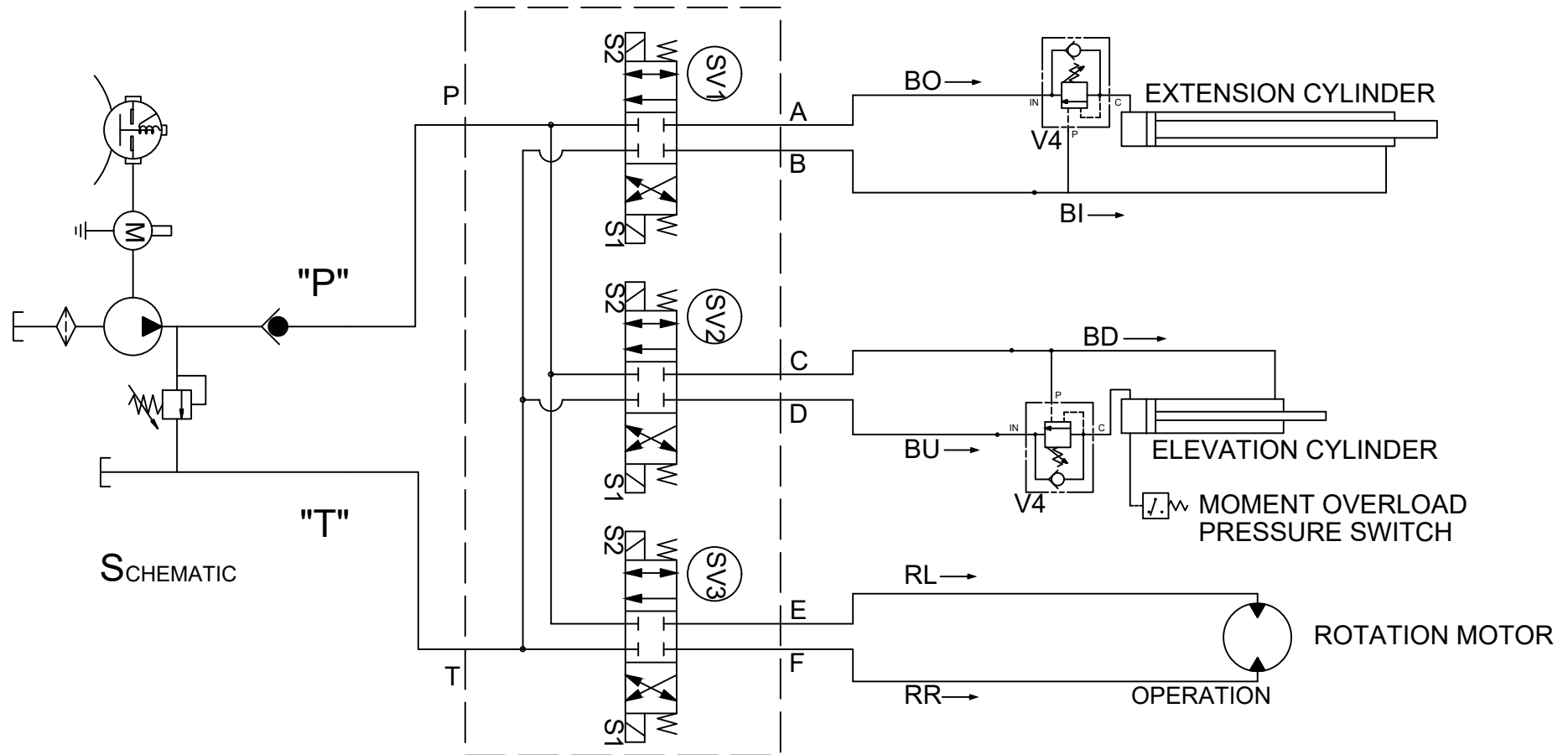
04-22-24

SECTION

C400

28839

# HYDRAULIC COMPONENT DIAGRAM



(SV1)

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

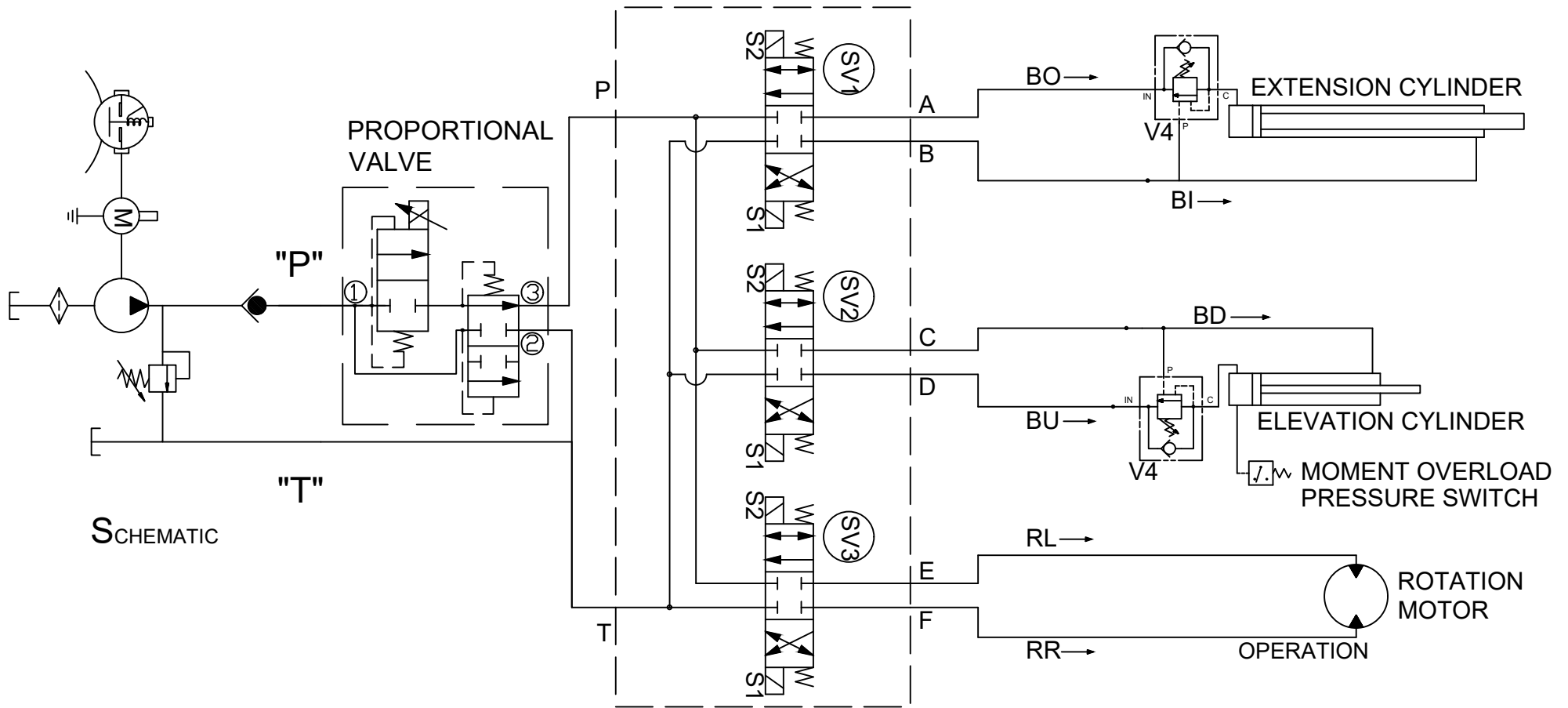
(SV2)

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

(SV3)

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

# HYDRAULIC COMPONENT DIAGRAM



SCHEMATIC

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

40\*\*E/45\*\*E, PROPORTIONAL

DATE  
04-23-24

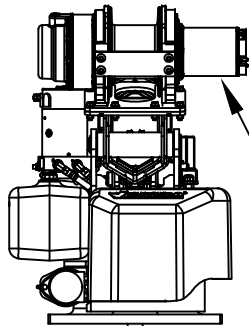
SUPERSEDES

SECTION  
C400

28845

# 21215 WINCH REPLACEMENT PARTS

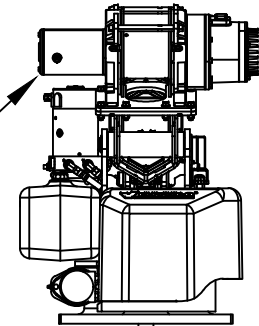
## WARN DC2500



(REAR VIEW)

MOTOR ON RIGHT  
WHEN VIEWED  
FROM REAR

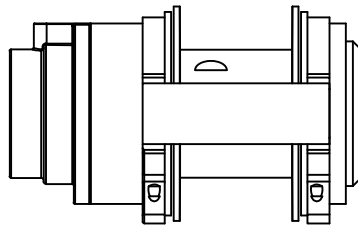
## COMEUP GTD-2800



(REAR VIEW)

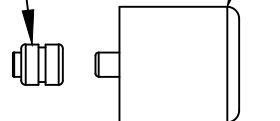
MOTOR ON LEFT  
WHEN VIEWED  
FROM REAR

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



21980 BRAKE ASSY

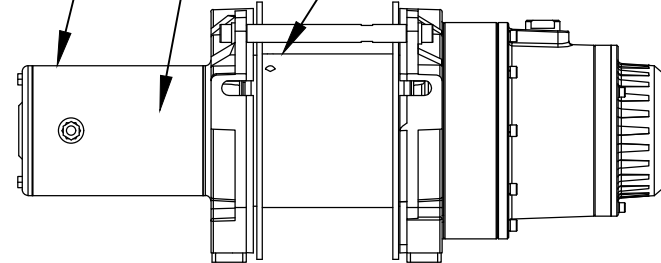
21778 MOTOR



23915-2800 MOTOR

23918 BRAKE REPLACEMENT KIT

2X SET SCREW  
(INCL W/ WINCH)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

WINCH REPLACEMENT PARTS

40\*\*E/45\*\*E

DATE

04-23-24

SUPERSEDES

-

SECTION

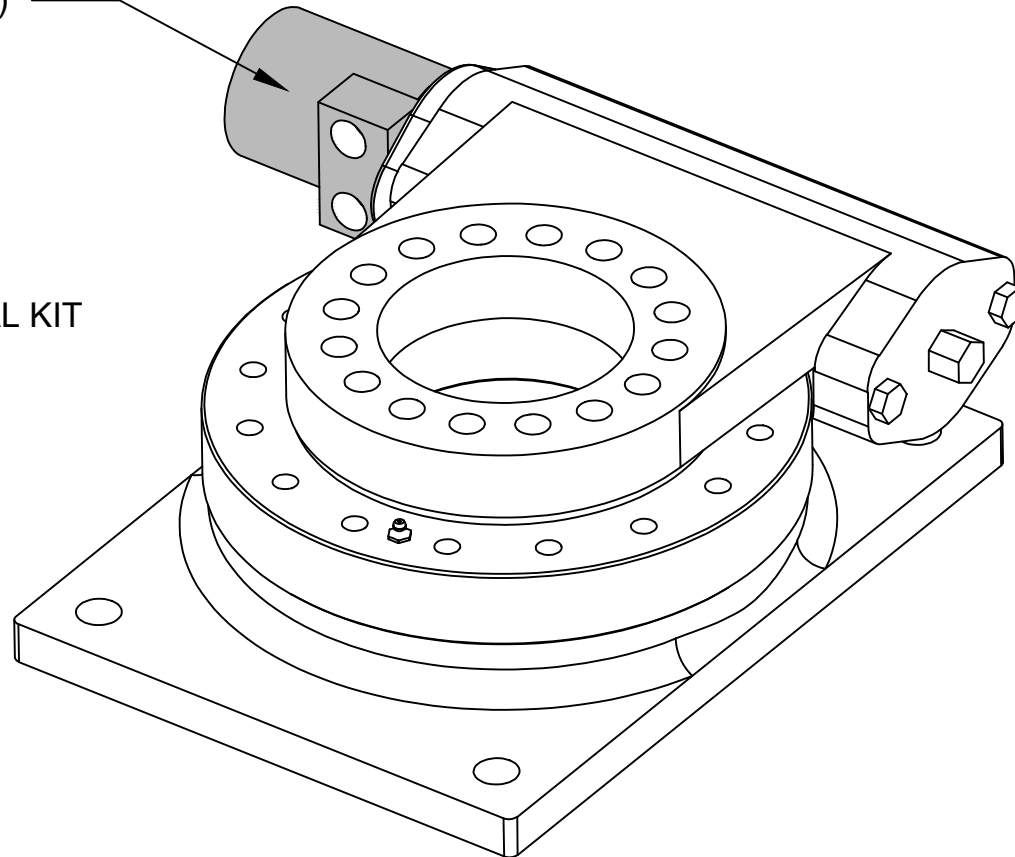
C400

28846

# 21735-1 SLEWING SYSTEM REPLACEMENT PARTS

21123 MOTOR (ONLY)

21218 - MOTOR SEAL KIT



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

SLEWING SYSTEM REPLACEMENT PARTS

3215E/351\*E/40\*\*E/45\*\*E

DATE

04-24-24

SUPERSEDES

-

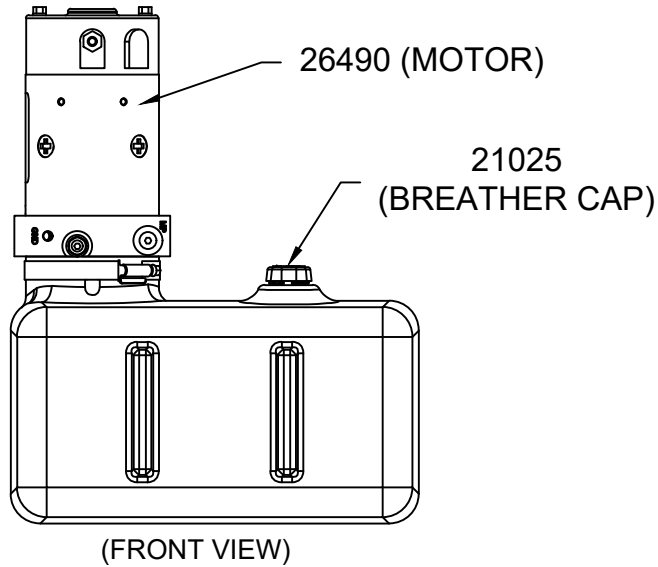
SECTION

C400

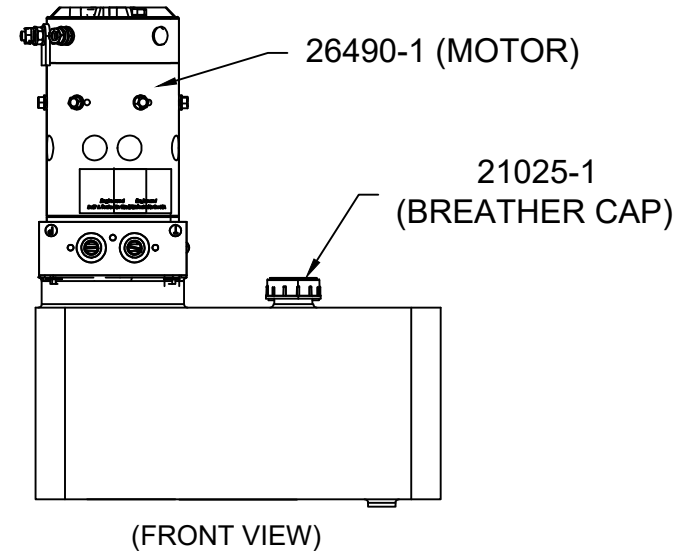
28847

# 28720 HYD. POWER UNIT REPLACEMENT PARTS

BUCHER

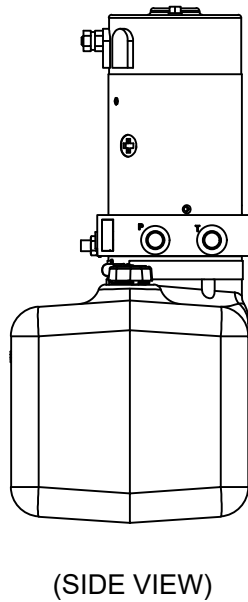


KTI



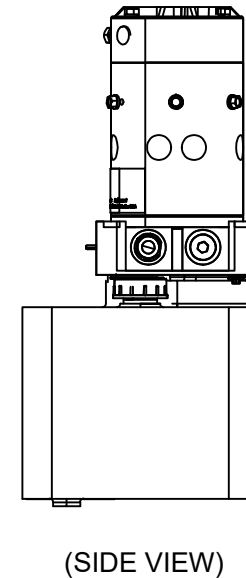
BUCHER

NO GROUND  
CABLE NEEDED



KTI

GROUND CABLE:  
01025-4\*23INX



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE

HYDRAULIC POWER UNIT REPLACEMENT PARTS

3215E/351\*E/40\*\*E/45\*\*E

DATE

04-24-24

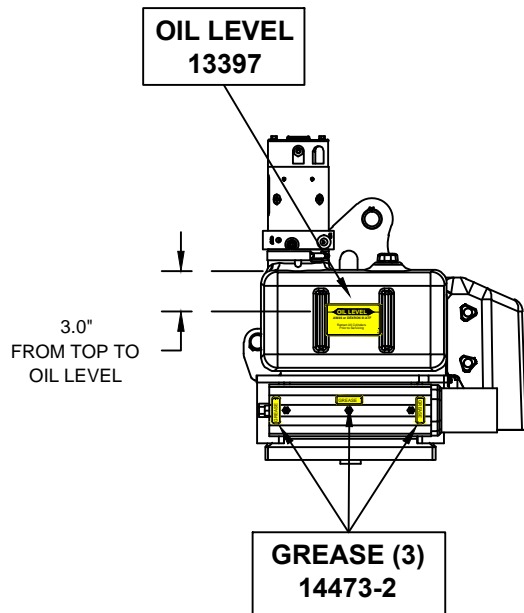
SUPSEDES

-

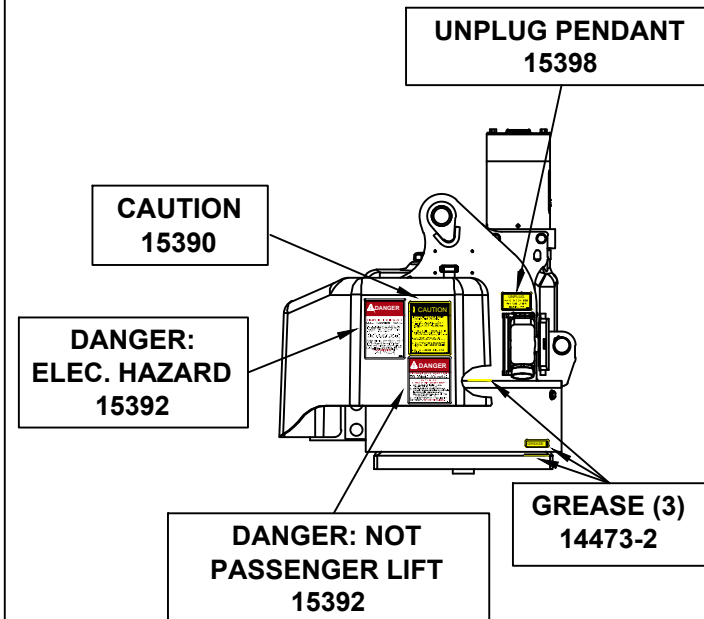
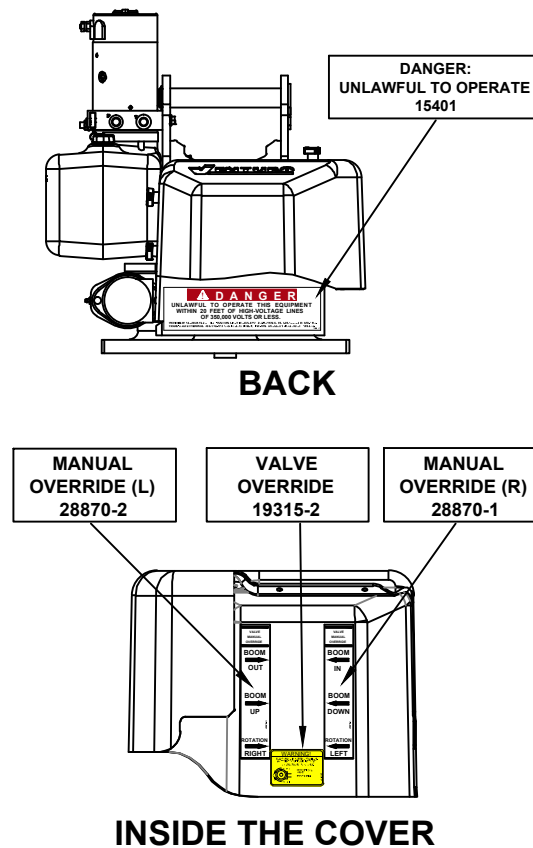
SECTION

C400

28848



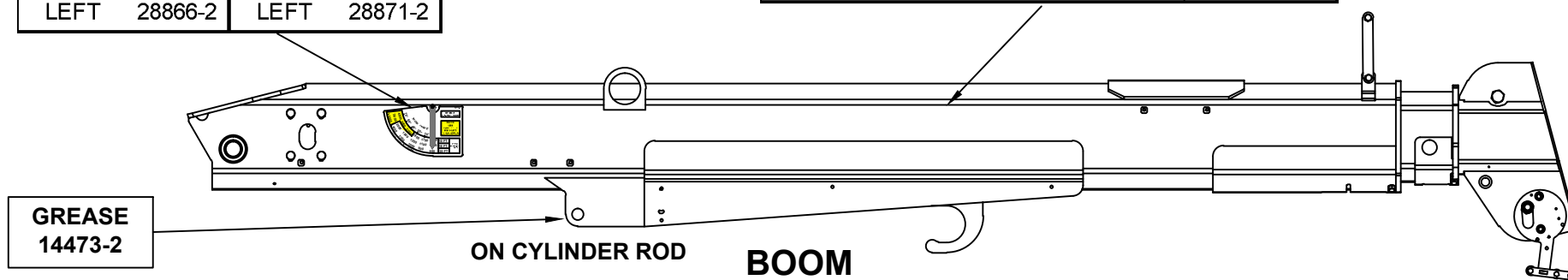
**LEFT**



**RIGHT**

CAPACITY DECALS			
4020E		4520E	
RIGHT	28866-1	RIGHT	28871-1
LEFT	28866-2	LEFT	28871-2

MODEL	
4520E	28873 (2)
4020E	28865 (2)

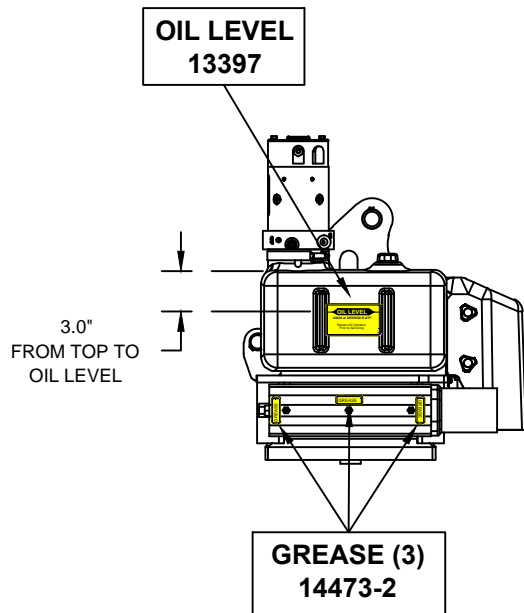


VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

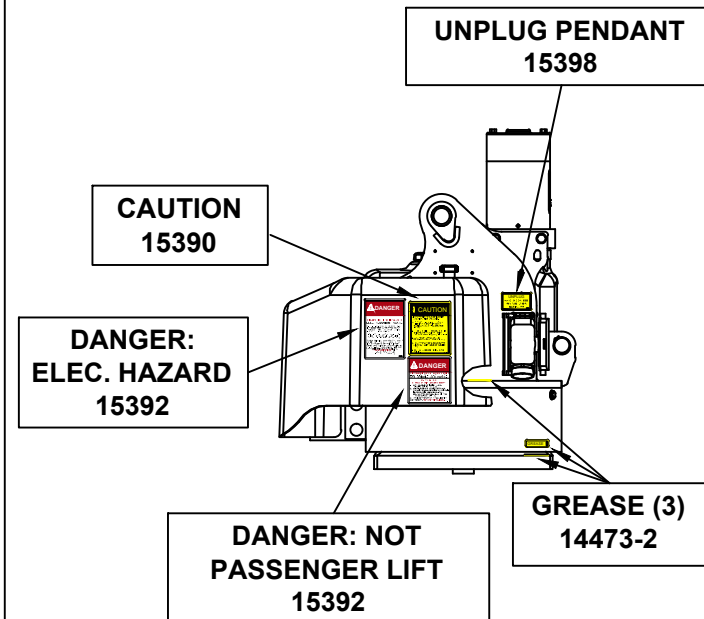
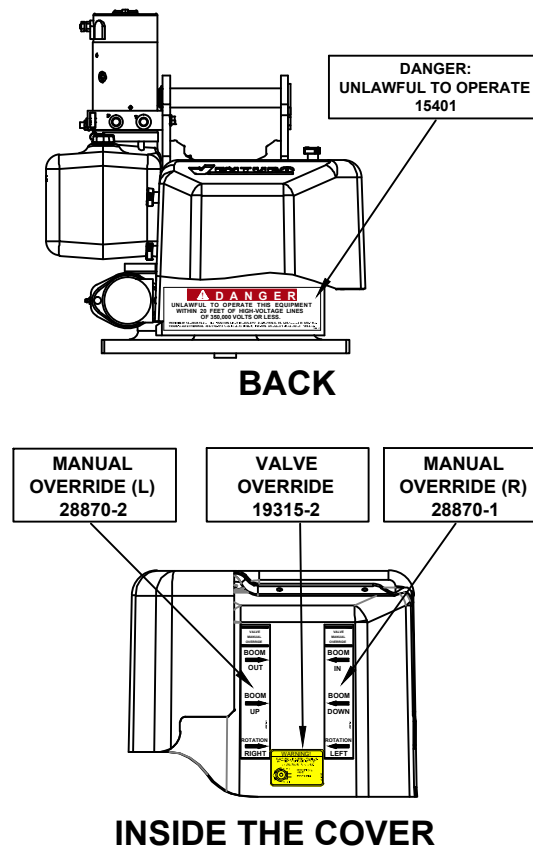
TITLE  
**DECAL PLACEMENT**  
  
4020E/4520E

DATE <b>05-19-24A</b>	SECTION <b>C400</b>
SUPERSEDES <b>09-04-24</b>	<b>28849</b>





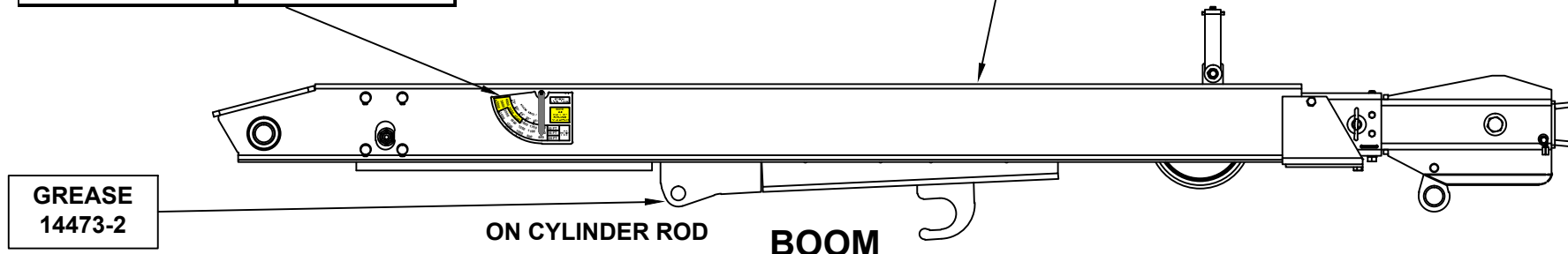
**LEFT**



**RIGHT**

CAPACITY DECALS			
4016E		4516E	
RIGHT	28881-1	RIGHT	28875-1
LEFT	28881-2	LEFT	28875-2

MODEL		
4516E		28876 (2)
4016E		28880 (2)



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
**DECAL PLACEMENT**

4016E/4516E

DATE 05-19-25A	SECTION C400
SUPERSEDES 09-04-24	<b>28898</b>

# 4520E FIELD SERVICE LABEL KITS

## 28850: FSLK 4520E NON PROP

PART NUMBER	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
28873	2	DECAL; MODEL 4520E
28871-1	1	DECAL; BOOM CAPAICTY - RIGHT, 4520E
28871-2	1	DECAL; BOOM CAPACITY - LEFT, 4520E
13397	1	DECAL; OIL LEVEL
28870-1	1	DECAL; MANUAL OVERRIDE, RIGHT
28870-2	1	DECAL; MANUAL OVERRIDE, LEFT
28851	1	IDWG; FIELD SERVICE LABEL KIT
28849	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
16184-1	1	DECAL: HORN RELAY
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM

## 28850-1: FSLK 4520E PROP

PART NUMBER	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
28873	2	DECAL; MODEL 4520E
28871-1	1	DECAL; BOOM CAPAICTY - RIGHT, 4520E
28871-2	1	DECAL; BOOM CAPACITY - LEFT, 4520E
13397	1	DECAL; OIL LEVEL
28870-1	1	DECAL; MANUAL OVERRIDE, RIGHT
28870-2	1	DECAL; MANUAL OVERRIDE, LEFT
28851	1	IDWG; FIELD SERVICE LABEL KIT
28849	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
16184-1	1	DECAL: HORN RELAY
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM
19315-2	1	DECAL; PROP MANUAL OVERRIDE



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
FIELD SERVICE LABEL KITS

4520E

DATE  
08-28-24

SUPERSEDES  
-

SECTION  
C400

28851

# 4516E FIELD SERVICE LABEL KITS

## 28899: FSLK 4516E NON PROP

PART NUMBER	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
28876	2	DECAL; MODEL 4516E
28875-1	1	DECAL; BOOM CAPAICTY - RIGHT, 4516E
28875-2	1	DECAL; BOOM CAPACITY - LEFT, 4516E
13397	1	DECAL; OIL LEVEL
28870-1	1	DECAL; MANUAL OVERRIDE, RIGHT
28870-2	1	DECAL; MANUAL OVERRIDE, LEFT
28900	1	IDWG; FIELD SERVICE LABEL KIT
28898	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
16184-1	1	DECAL: HORN RELAY
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM

## 28899-1: FSLK 4516E PROP

PART NUMBER	QTY.	DESCRIPTION
14473-2	6	DECAL; GREASE
28876	2	DECAL; MODEL 4516E
28875-1	1	DECAL; BOOM CAPAICTY - RIGHT, 4516E
28875-2	1	DECAL; BOOM CAPACITY - LEFT, 4516E
13397	1	DECAL; OIL LEVEL
28870-1	1	DECAL; MANUAL OVERRIDE, RIGHT
28870-2	1	DECAL; MANUAL OVERRIDE, LEFT
28900	1	IDWG; FIELD SERVICE LABEL KIT
28898	1	IDWG; DECAL PLACEMENT
INST-23233	1	SAFETY MANUAL, VENTURO CRANES
16184-1	1	DECAL: HORN RELAY
15397	1	KIT; ACCIDENT PREVENTION SIGNS
17813	1	DECAL; OVERLOAD SENSING SYSTEM
19315-2	1	DECAL; PROP MANUAL OVERRIDE



VENCO VENTURO INDUSTRIES LLC  
CINCINNATI, OHIO

TITLE  
FIELD SERVICE LABEL KITS

4516E

DATE  
08-28-24

SUPERSEDES  
-

SECTION  
C400

28900



# VENTURO CRANES LIMITED WARRANTY POLICY

Venturo products are built to last...we guarantee them.

As a purchaser of any new Venturo product covered by warranty, you will receive 1 year of the most complete coverage available...and, at no added cost to you.

## 1-Year Limited Warranty Policy

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

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

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

## Warranty Claims

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

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

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