



VENTURO
TRUCK MOUNTED CRANES

ET25KX

INSTALLATION & OWNER'S MANUAL

Sold and Serviced by:

TABLE OF CONTENTS

ET25KX INSTRUCTION MANUAL

SECTION 100	DESCRIPTION & SPECIFICATIONS
19399a	ET25KX SPECIFICATIONS & OPERATING FEATURES
19399b	ET25KX SPECIFICATIONS & OPERATING FEATURES
19397	INSTALLATION DIMENSIONS - ET25KX
119233	CAPACITY CHART - ET/HT25K(X) 10-16-20 FT
17089	TYPICAL REINFORCEMENT FOR MOUNTING CRANE ON TOP OF SERVICE BODY
123960	INSTALLATION DIMENSIONS - 23960 MANUAL OUTRIGGER FOLD AWAY TYPE
123961	INSTALLATION DIMENSIONS - 23961 MANUAL OUTRIGGER SIDE BRACKET
123962	INSTALLATION DRAWING - 23962 OUTRIGGER SERIES
22458	INSTALLATION DIMENSIONS - 23962-P-II & 23962-PM-II MANUAL OUTRIGGER
22459	INSTALLATION DIMENSIONS - 23962-CD-II CRANKDOWN OUTRIGGERS
22429	INSTALLATION DIMENSIONS - 23962-PH-II HYDRAULIC OUTRIGGERS
19411	INSTALLATION DRAWING - 17350 MOUNTING PEDESTAL
14510	INSTALLATION DRAWING - 17350 MOUNTING PEDESTAL
SECTION 150	SAFETY
15394	VEHICLE & CRANE ELECTRICAL HAZARD INFORMATION
850711	SAFETY & HAZARDS - GENERAL
SECTION 200	INSTALLATION
711105	CABLE & BATTERY REQUIREMENTS - ET AND HT CRANES
15660	BATTERY CABLE INSTALLATION DRAWING
124600	ET25K(X) ELECTRICAL INSTALLATION
125600	INSTALLATION DRAWING - 25600 WIRING KIT
125618	INSTALLATION DRAWING - PENDANT CORD SUPPORT
711006	WIRE ROPE SPECIFICATIONS
20420	INSTALLATION DRAWING - 20381 ADJUSTABLE BOOM REST - ET/HT25 HT40/50
SECTION 300	MAINTENANCE & SERVICE
16510	ET25K(X) LUBRICATION CHART
780906	MINIMUM VOLTAGE TEST
24499-8	ET25K(X) WINCH GEARBOX ASSEMBLY & SERVICE INSTRUCTIONS
24499-1	ET25K(X) WINCH GEARBOX ASSEMBLY & SERVICE INSTRUCTIONS
24499-9	ET25K(X) ROTATION GEARBOX ASSEMBLY & SERVICE INSTRUCTIONS
24499-2	ET25K(X) ROTATION GEARBOX ASSEMBLY & SERVICE INSTRUCTIONS
780607	ET25K(X) MOTOR INSTALLATION
SECTION 400	REPLACEMENT PARTS
19934	ET25KX REPLACEMENT PARTS DRAWING
19935	ET25KX REPLACEMENT PARTS LIST
19931	19893 - 10-20 FT BOOM ASSEMBLY
20197-2	19197-2 ANTI-TWO-BLOCK SYSTEM REPLACEMENT PARTS
119095	ET25KX WIRING DIAGRAM WITH ANTI-TWO-BLOCK
17533	BATTERY & MOTOR CABLE DIAGRAM
19392	HYDRAULIC SYSTEM SCHEMATIC - ET25KX
19368	16780 SWIVEL TERMINAL ASSEMBLY REPLACEMENT PARTS
20161	REPLACEMENT PARTS - 4 FUNCTION PENDANT CONTROL
17383	REPLACEMENT PARTS - 4 FUNCTION PENDANT CONTROL
117530	17530 WINCH POWER UNIT REPLACEMENT PARTS DRAWING
900617	17530 WINCH POWER UNIT REPLACEMENT PARTS LIST
17472	17471 ROTATION POWER UNIT REPLACEMENT PARTS DRAWING
900319	17471 ROTATION POWER UNIT REPLACEMENT PARTS LIST
19362	18440 HYDRAULIC POWER UNIT ASSEMBLY
19908	19886-1 EXTENSION CYLINDER
22434	REPLACEMENT PARTS - 23962-P-II MANUAL OUTRIGGER
22441	REPLACEMENT PARTS - 23962-CD-II CRANKDOWN OUTRIGGER
23962-2	INSTALLATION & REPLACEMENT PARTS - STUB OUTRIGGER



MFG., INC.
CINCINNATI, OHIO

TITLE
TABLE OF CONTENTS

ET25KX

DATE
7-23-01

SUPERCEDES
-

SECTION
-

19932

SPECIFICATIONS AND OPERATING FEATURES

ET25KX-10/20

SPECIFICATIONS

12 VOLT BATTERY OPERATED

20,000 / 25,000 FT-LBS OVERTURNING MOMENT (Or as limited by truck stability)

MOMENT OVERLOAD ALARM SYSTEM

TELESCOPIC BOOM	10 / 20
BOOM HYD ELEVATION	-8° TO 75°
BOOM HYD EXT	10 - 16 FT OR 14 - 20 FT
BOOM MANUAL EXT	4 FT
CAPACITY	1050 LBS @ 20 FT REACH
	5000 LBS @ 3 TO 5 FT REACH
WIRE ROPE	5/16" DIA x 80 FT
PENDANT CORD LENGTH	25 FT

WINCH - 2500 LBS SINGLE LINE CAPACITY
With Automatic Load Brake

ELECTRIC HYDRAULIC BOOM ELEVATION

ELECTRIC HYDRAULIC BOOM EXTENSION & RETRACTION - 6 FT STROKE

CONTINUOUS POWER ROTATION - With Coast Limiting Brake

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



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

ET25KX-10/20

DATE
10-13-99A

SUPERCEDES
10-28-97

SECTION
C120

19399a

OVERLOAD ALARM SYSTEM

THIS CRANE IS EQUIPPED WITH AN OVERLOAD ALARM SYSTEM.

- A. Overload alarm horn sounds if rated load is exceeded at any reach.
- B. If alarm sounds, RAISE Boom or LOWER Winch to remove overload.
- C. Always RAISE Boom slightly before lifting load - Warning system INOPERATIVE when cylinder is completely bottomed.
- D. Alarm can be tested by tying down Boom with winch cable and operating Boom UP or by raising Boom against UP limit stop.

NOTICE: ANSI Standards provide that rated load at any reach must not exceed 85% of the load that will overturn vehicle and must not exceed the load governed by structural and hydraulic competence. This alarm system has been installed as a safety feature to protect both the equipment and the operator.

WARRANTY VOID IF ALARM IS DISCONNECTED, READJUSTED, OR TAMPERED WITH.

CONTROL PRIORITY SYSTEM

As a built in safety feature the operator can perform only one major and one minor function at any one time. Major functions are rotation, winching up of a load, and elevating the boom. Minor functions are winching down, and lowering boom.

A. ORDER OF PRIORITIES

WINCH UP - First priority

BOOM IN AND OUT - Second priority

BOOM UP - Third priority

ROTATION LEFT AND RIGHT - Fourth priority

- B. BOOM DOWN and WINCH DOWN can be operated with any other function.

CABLE DRUM AND SHEAVE DIAMETERS

The drum on the ET20KX/25KX is 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

A. WINCH BRAKE

Exclusive with the VENTURO Winch is the automatic thrust brake which adjusts to the load when lowering ("winch down") and offers no resistance when raising ("winch up").

B. ROTATION BRAKE

Rotation Motor brake limits Rotation coast after switch is turned off.

C. CAPACITY INDICATOR

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

D. BATTERY HOOKUP

A parallel auxiliary battery should be installed near the crane as shown on Dwg. I24600 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.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

ET25KX-10/20

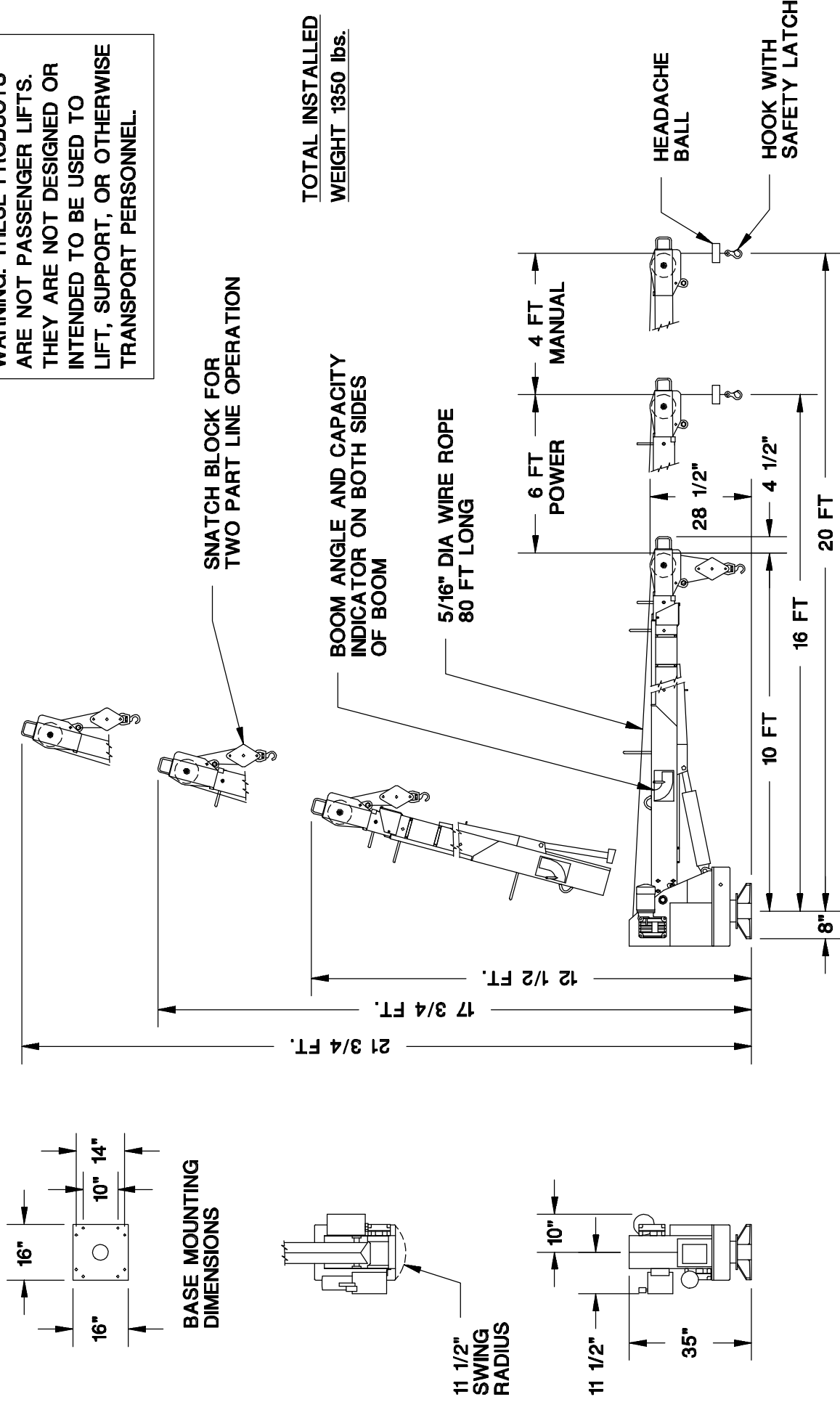
DATE
11-24-97A

SUPERCEDES
10-28-97

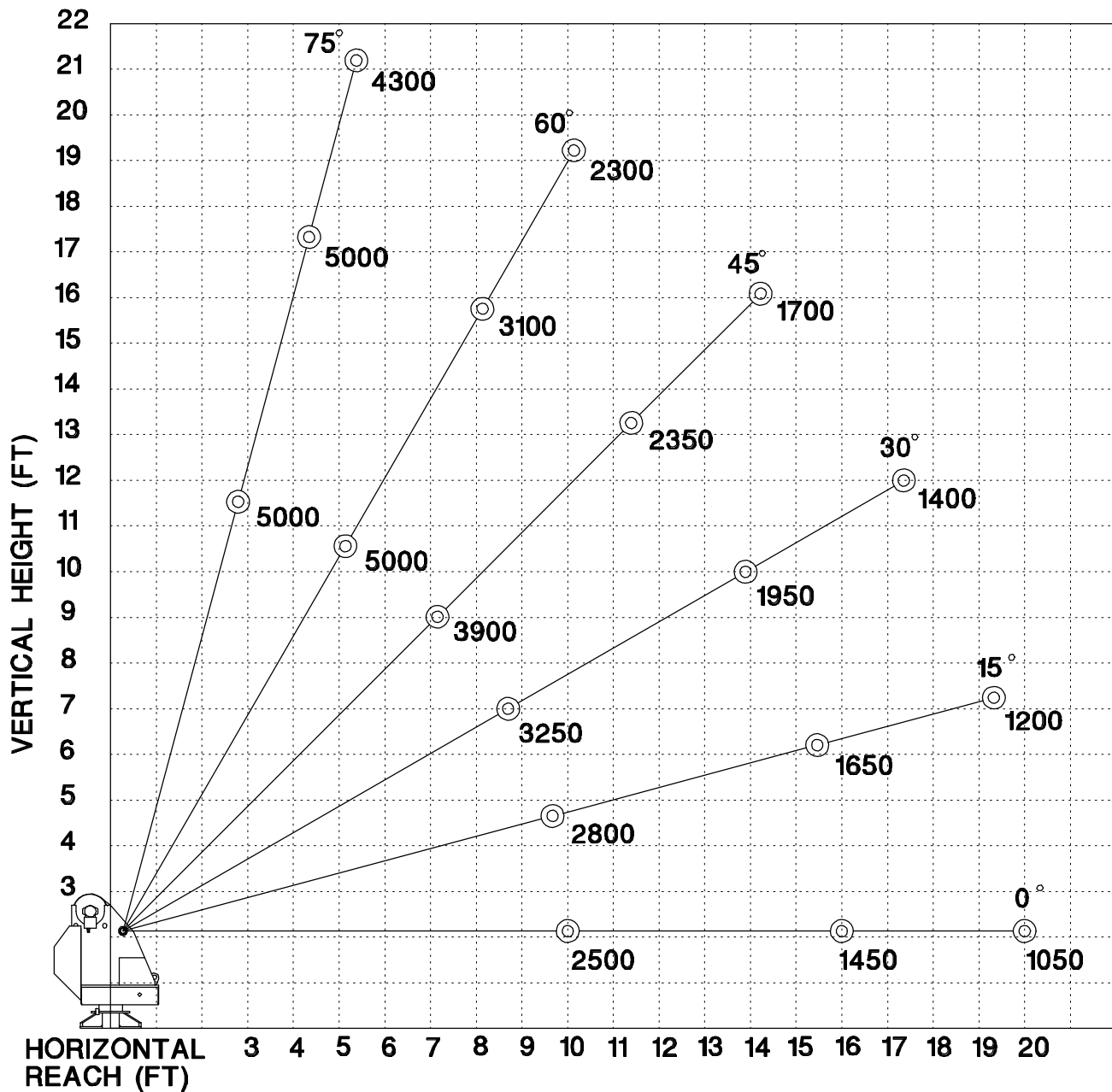
SECTION
C120

19399b

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



ET/HT25K(X) - 10-16-20 BOOM MAXIMUM CAPACITY CHART



**MUST USE SNATCH BLOCK
FOR LOADS OF 2500 LBS.
AND GREATER**



MFG., INC.
CINCINNATI, OHIO

TITLE
CAPACITY CHART

DATE
10-16-97A

SECTION
C100

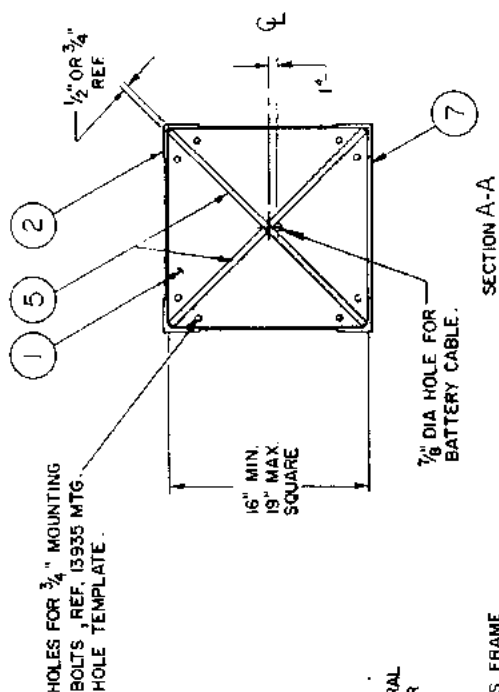
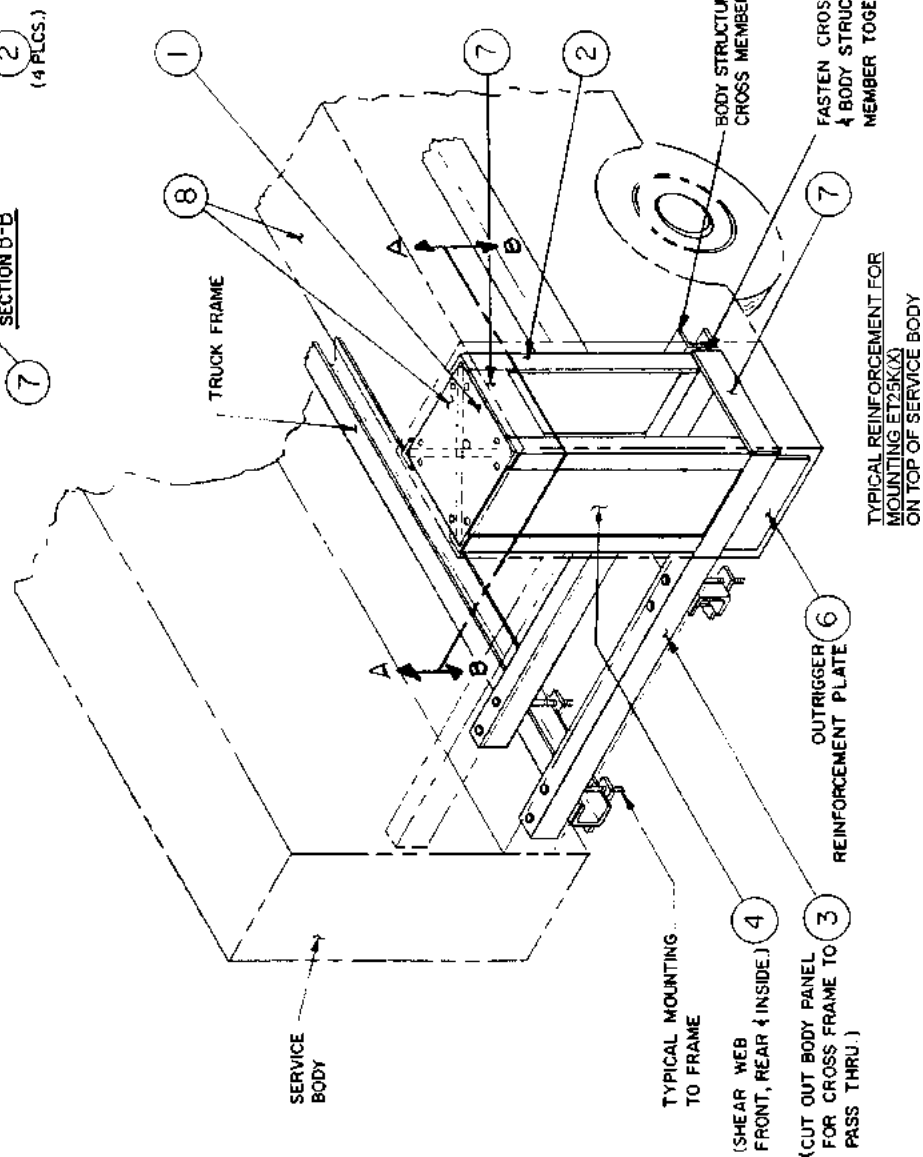
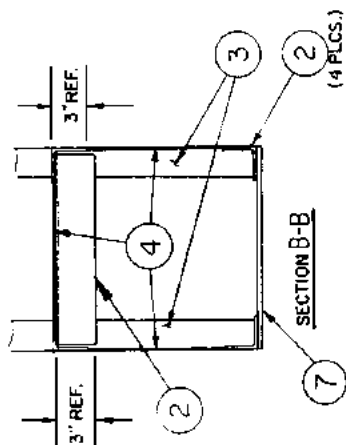
ET/HT25K(X) - 10-16-20

SUPERSEDES
8-17-96

119233

PART	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 3/16" SQUARE TUBING
4	SHEAR WEB	3/16" STEEL PLATE
5	TOP PLATE REINFORCEMENT	1/2" x 6" or 3/4" x 5" STEEL BAR
6	OUTRIGGER REINFORCEMENT PLATE	1/4" THICK STEEL PLATE
7	GUSSET	1/2" x 4" H.R. STEEL
8	BODY TOP REINFORCEMENT	10 Ga. SMOOTH or DIAMOND PLATE WITH 1" LIP OVER SIDE OF BODY

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



TITLE

INSTALLATION DRAWING

SECTION

C100

DATE

11-2-98B

SUPERCEDES

6-24-98A

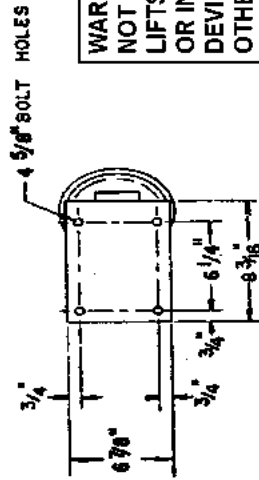
17089

MANUFACTURING, INC.
CINCINNATI, OHIO

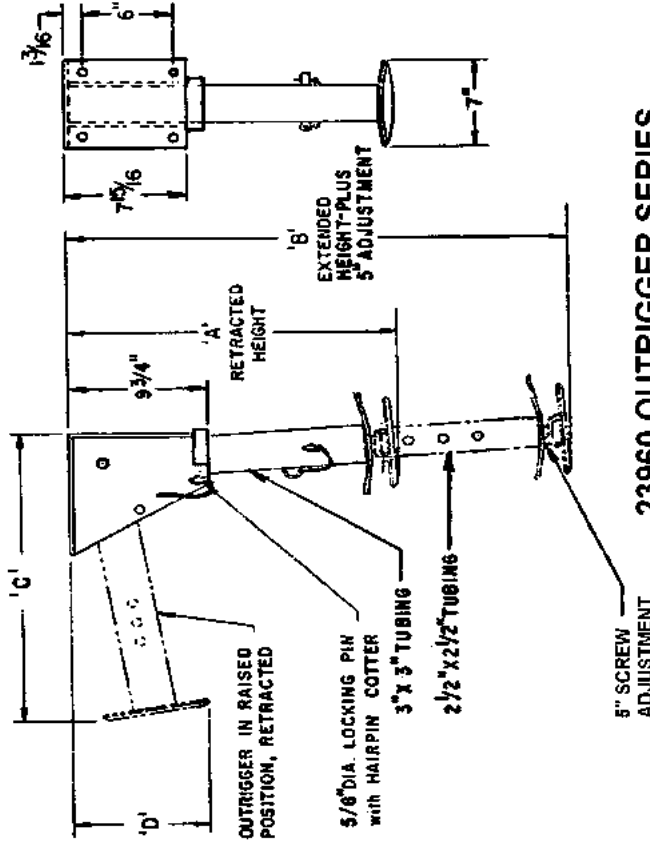
VENTURO

ET25K(X)

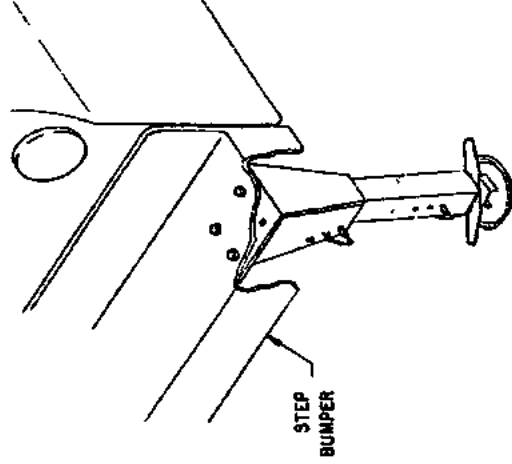
PART NO.	DESCRIPTION	'A'	'B'	'C'	'D'
23960-1	SHORT OUTRIGGER	20 1/2"	28 1/2"	21"	7 1/4"
23960-2	LONG OUTRIGGER	28 1/2"	44 1/2"	29"	10 1/2"



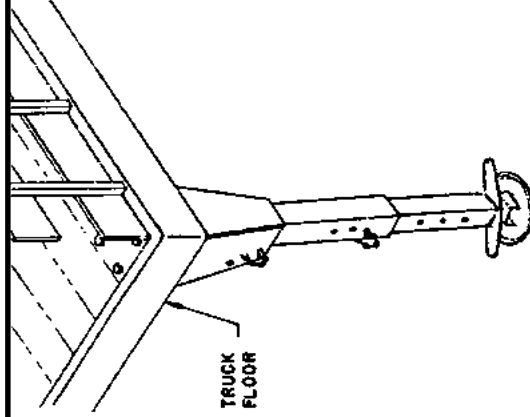
WARNING: THESE PRODUCTS ARE NOT FOR USE WITH PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED WITH DEVICES THAT LIFT, SUPPORT OR OTHERWISE TRANSPORT PERSONNEL



23960 OUTRIGGER SERIES ET/HT25 SERIES CRANES



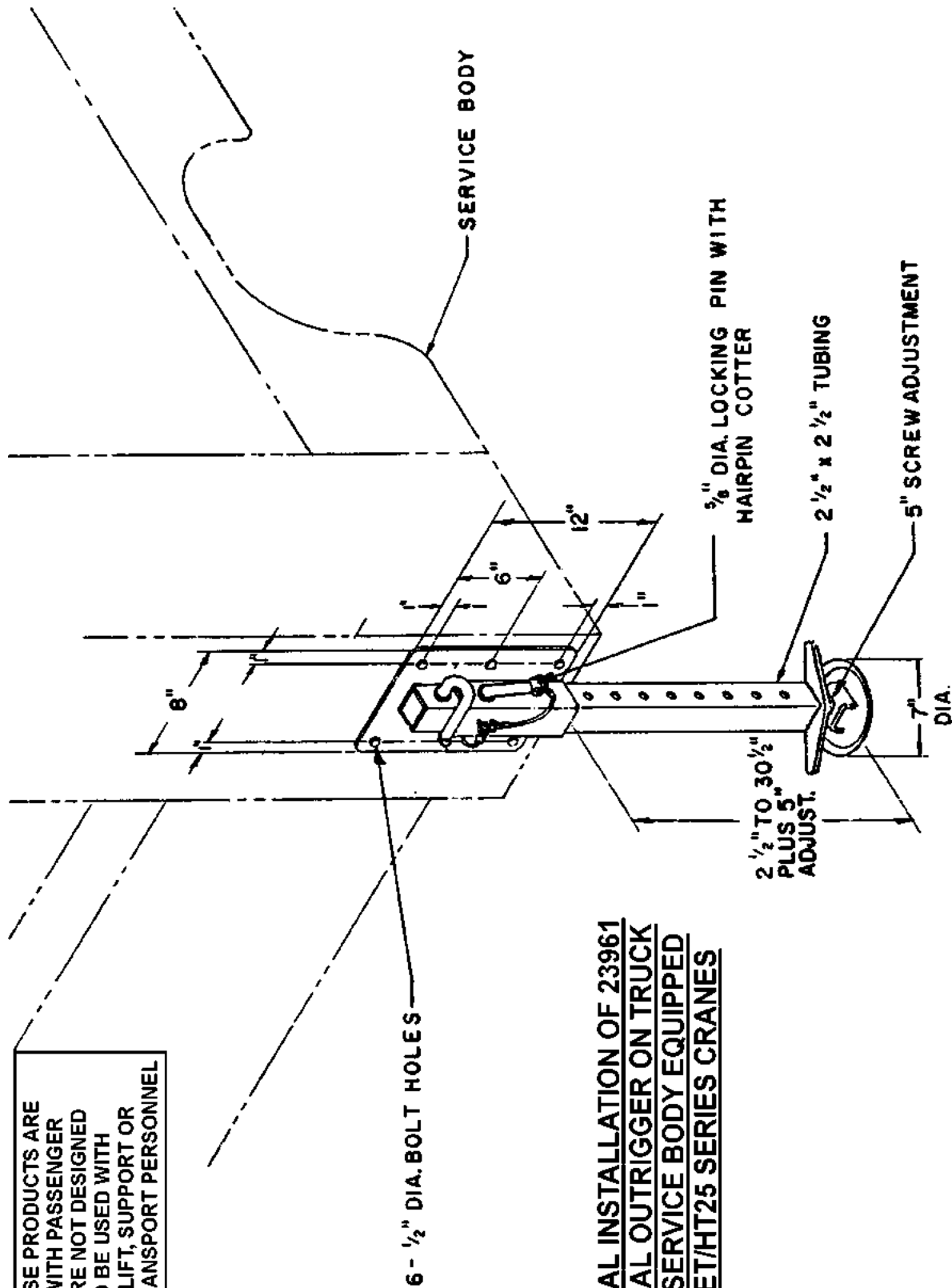
TYPICAL SHORT
OUTRIGGER INSTALLATION



TYPICAL LONG
OUTRIGGER INSTALLATION

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE INSTALLATION DRAWING		SECTION C100
	ET10K(X), ET25K(X), HT25KX		DATE 4-29-98C SUPERCEDES 7-27-83B I23960

WARNING: THESE PRODUCTS ARE NOT FOR USE WITH PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED WITH DEVICES THAT LIFT, SUPPORT OR OTHERWISE TRANSPORT PERSONNEL



**TYPICAL INSTALLATION OF 23961
MANUAL OUTRIGGER ON TRUCK
WITH SERVICE BODY EQUIPPED
WITH ET/HT25 SERIES CRANES**

VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DRAWING

DATE
4-29-98D

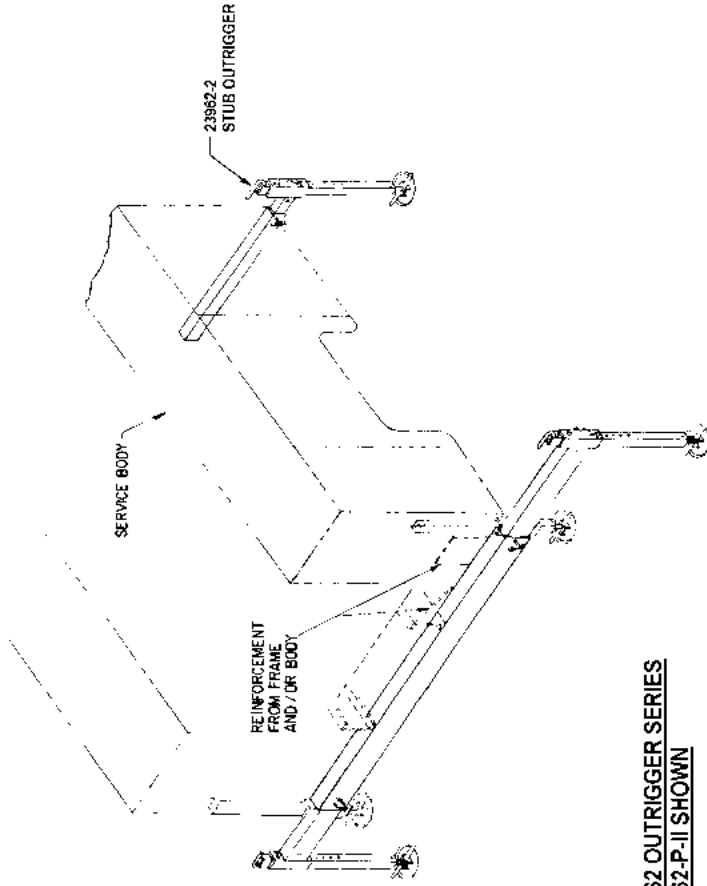
SECTION
C100

ET10K(X), ET25K(X), HT25KX

SUPERCEDES
7-27-83C

I23961

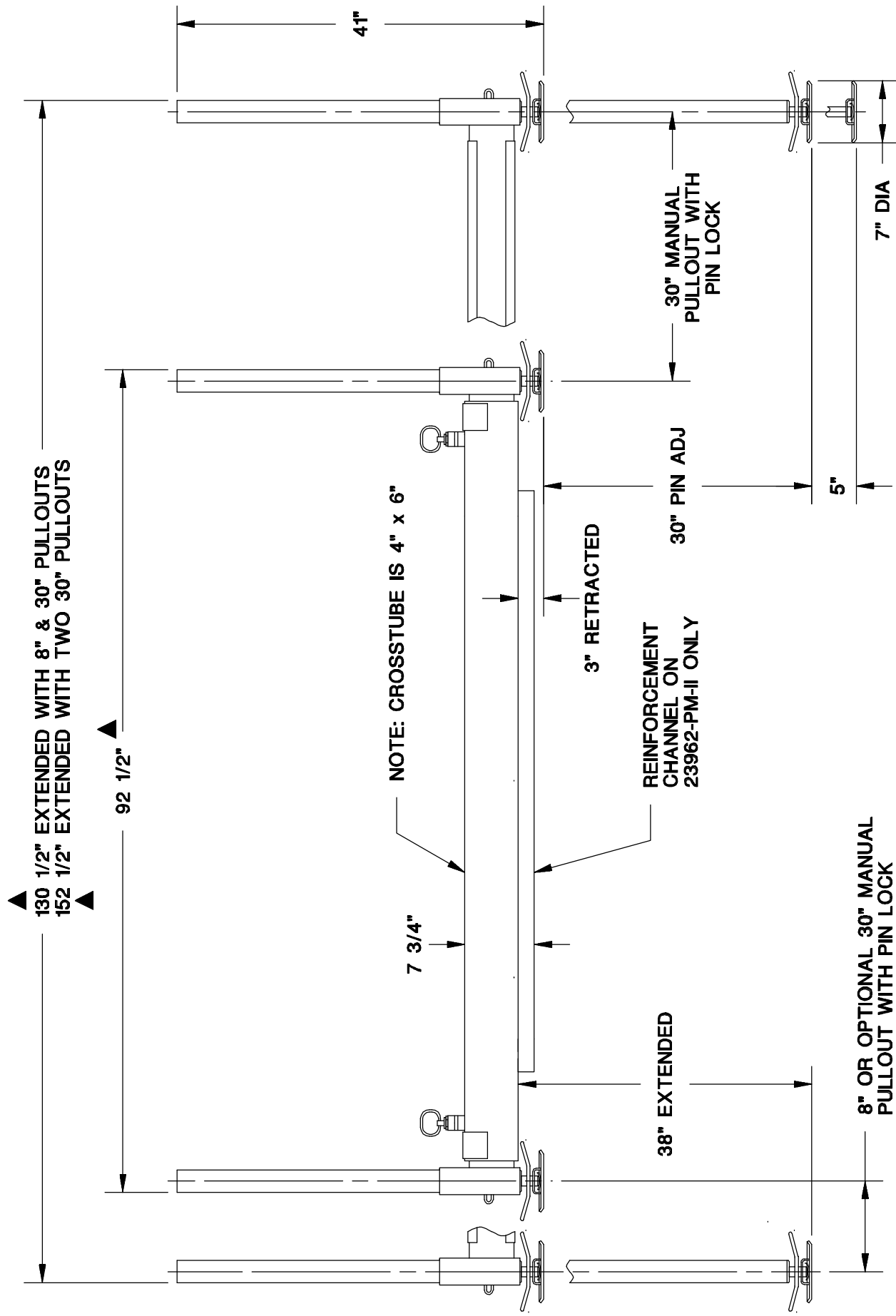
WARNING: THESE PRODUCTS ARE NOT FOR USE WITH PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED WITH DEVICES THAT LIFT, SUPPORT OR OTHERWISE TRANSPORT PERSONNEL.

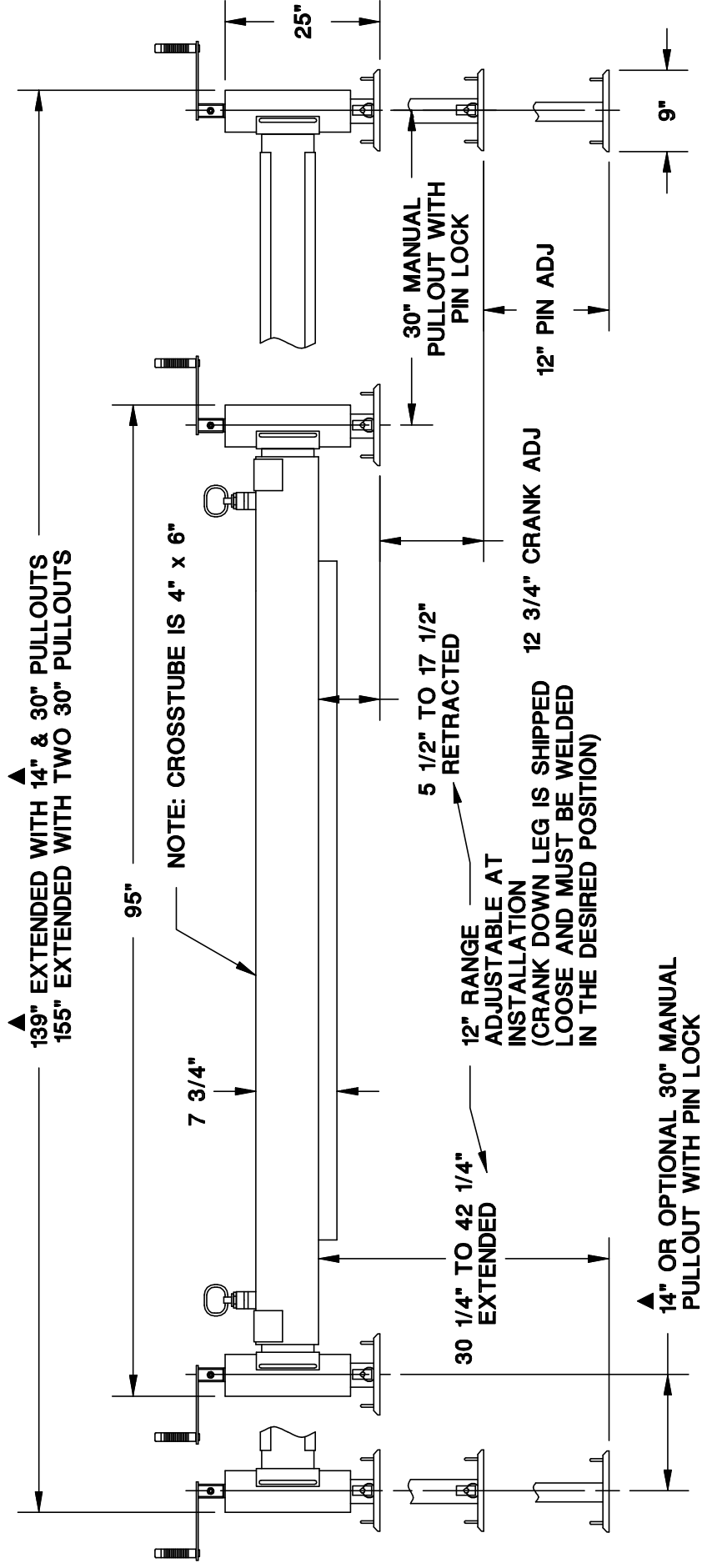


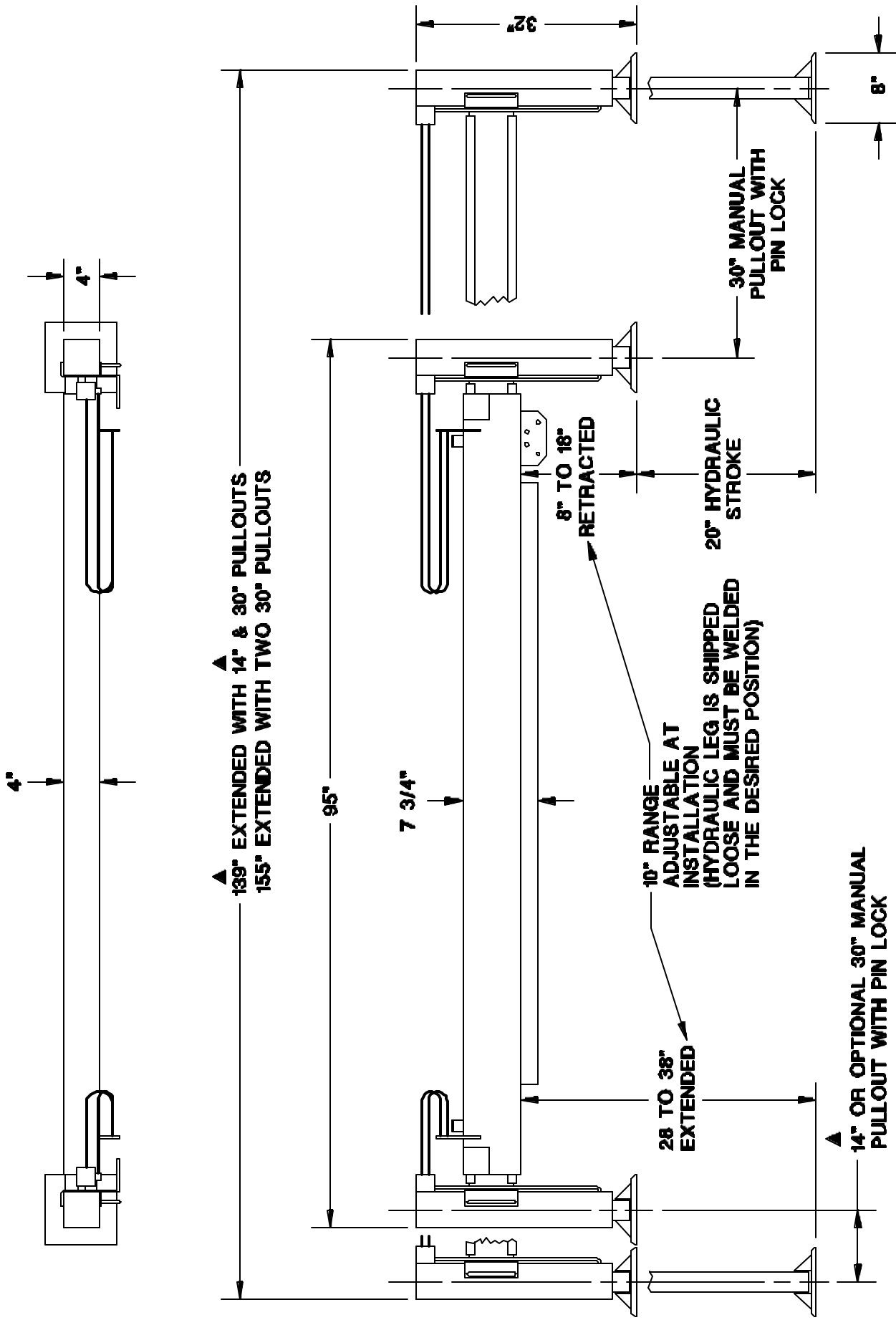
23962 OUTRIGGER SERIES
23962-P-II SHOWN

OUTRIGGER	IN/OUT	UP/DOWN	DUTY	USED ON
23962-P	MANUAL	MANUAL	STANDARD	ET/HT25K(X)
23962-PM	MANUAL	MANUAL	HEAVY	HT40/50KX
23962-CD	MANUAL	CRANK-DOWN	HEAVY	ET/HT25K(X), HT40/50KX
23962-PH	MANUAL	HYDRAULIC	HEAVY	HT25K(X), HT40/50KX
23962-PHX	HYDRAULIC	HYDRAULIC	HEAVY	HT25K(X), HT40/50KX
23962-PHE	MANUAL	ELECTRIC/HYDRAULIC	HEAVY	ET25K(X)
23962-PHXE	ELECTRIC/HYDRAULIC	ELECTRIC/HYDRAULIC	HEAVY	ET25K(X)

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	DATE	SECTION
	INSTALLATION DRAWING ET25K(X), HT25K(X), HT40/50KX	4-12-99E 4-27-92D	C120 I23962

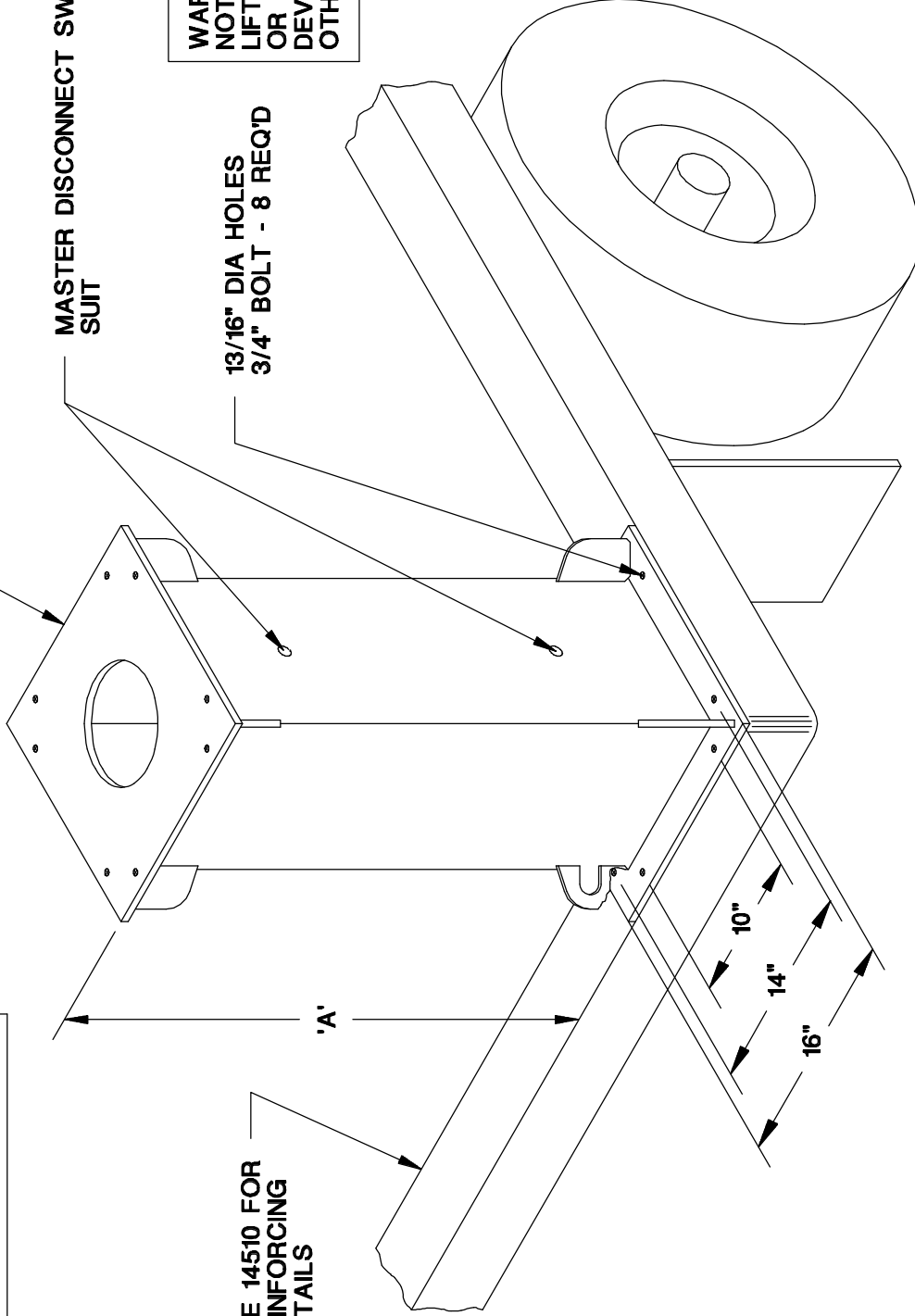






'A'	17350
DIM	DASH NO.
36"	-36
CONSULT VENTURO FOR OTHER (OPTIONAL) HEIGHTS	

17350 PEDESTAL SHOWN MOUNTED ON RIGHT REAR
CORNER OF FLAT BED AS TYPICAL OF POSSIBLE
MOUNTING POSITIONS; MAY ALSO BE MOUNTED
BEHIND CAB.



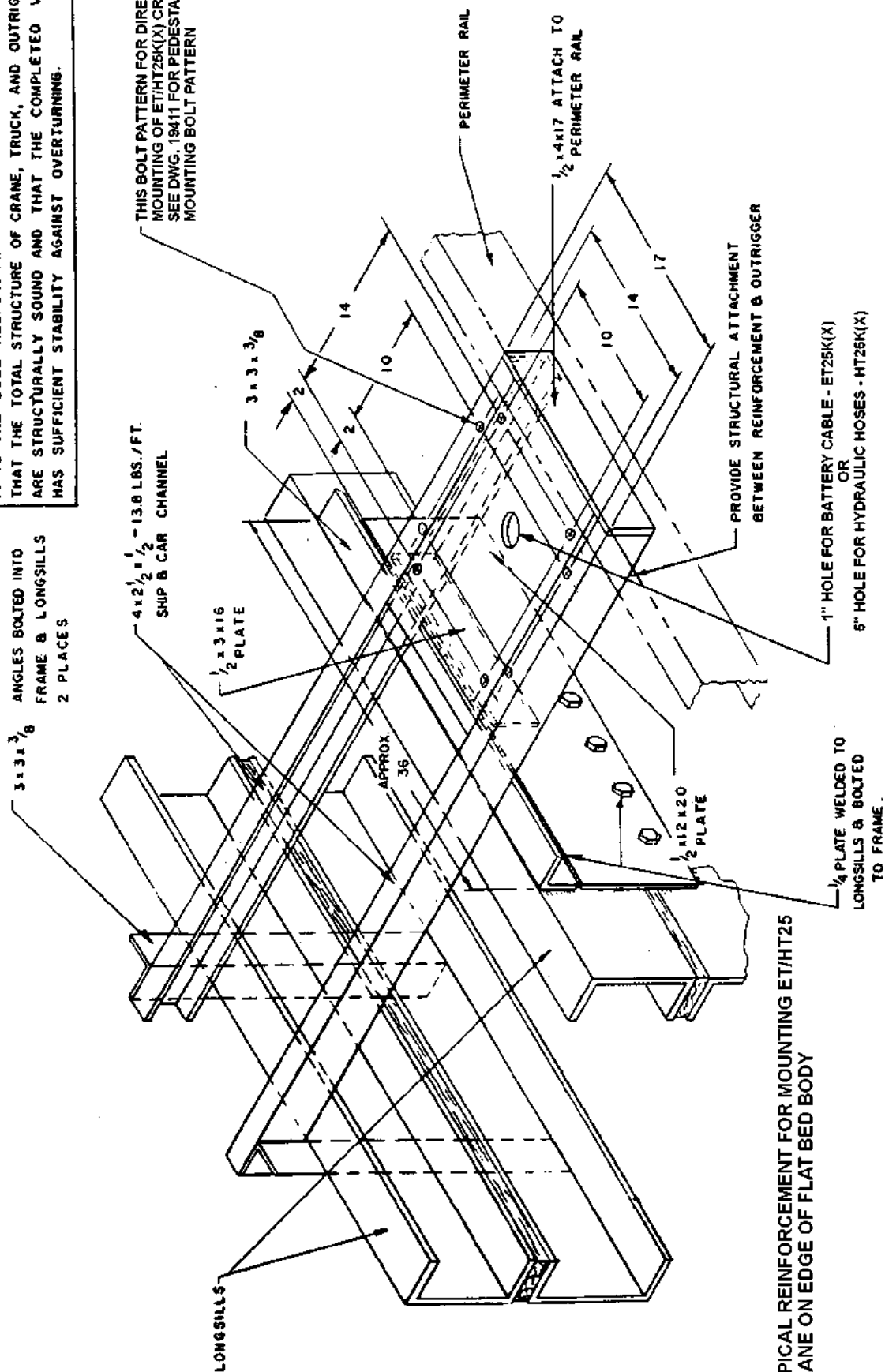
WARNING: THESE PRODUCTS ARE
NOT FOR USE WITH PASSENGER
LIFTS. THEY ARE NOT DESIGNED
OR INTENDED TO BE USED WITH
DEVICES THAT LIFT, SUPPORT OR
OTHERWISE TRANSPORT PERSONNEL.

17350
MOUNTING PEDESTAL

TITLE INSTALLATION DRAWING	DATE 11-5-97	SECTION C100
	SUPERSEDES -	19411
VENTURO MANUFACTURING, INC. CINCINNATI, OHIO		

ANGLES BOLTED INTO
FRAME & LONGSILLS
2 PLACES

THIS BOLT PATTERN FOR DIRECT
MOUNTING OF ET/HT25K(X) CRANE
SEE DWG. 19411 FOR PEDESTAL
MOUNTING BOLT PATTERN



**TYPICAL REINFORCEMENT FOR MOUNTING ET/HT25
CRANE ON EDGE OF FLAT BED BODY**

MANUFACTURING, INC.
CINCINNATI, OHIO

VENTURO

INSTALLATION DRAWING

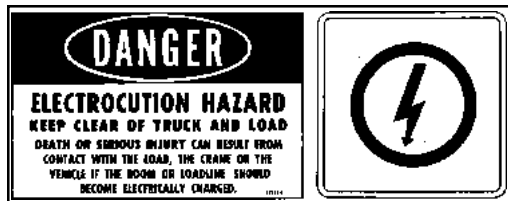
ET25K(X), HT25K(X)

DATE	4-8-99K
SECTION	C100

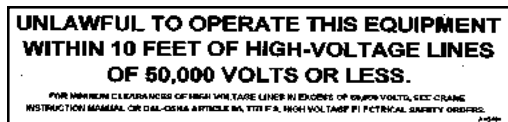
14510

VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION

ET & HT CRANE SERIES



SIGN NO. 15393A 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.

REQUIRED MINIMUM CLEARANCES REFERRED TO ON SIGN NO. 15401

REQUIRED CLEARANCES FROM OVERHEAD HIGH-VOLTAGE LINES

NOMINAL VOLTAGE (kV) (PHASE TO PHASE)	MINIMUM REQUIRED CLEARANCE (FEET) *
0 - 50	10
over 50 - 200	15
over 200 - 350	20
over 350 - 500	25
over 500 - 750	35
over 750 - 1000	45

REQUIRED CLEARANCES FROM ENERGIZED HIGH-VOLTAGE CONDUCTORS
(WHILE IN TRANSIT)

NOMINAL VOLTAGE (kV) (PHASE TO PHASE)	MINIMUM REQUIRED CLEARANCE (FEET) *
0 - 0.75	4
over 0.75 - 50	6
over 50 - 345	10
over 345 - 750	16
over 750 - 1000	20

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



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

ET & HT CRANE SERIES

DATE
5-13-97G

SUPERCEDES
7-15-96F

SECTION
C150

15394

CRANE SAFETY AND HAZARDS

ET5500MPB/R, ET6KMPB/R, ET8100R, ET10K(X), ET25K(X)

CAUTIONS

1. INSPECT VEHICLE AND CRANE, INCLUDING OPERATION, PRIOR TO USE DAILY.
2. DO NOT USE THIS EQUIPMENT EXCEPT ON SOLID, LEVEL SURFACE 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.
6. UNPLUG PENDANT AND SHUT OFF MASTER DISCONNECT SWITCH WHEN CRANE 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 APPARATUS.
- YOU MUST ALLOW FOR BOOM SWAY, ROCK OR SAG, AND ELECTRICAL LINE AND LOADLINE 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, LOADLINE, OR LOAD, AND ANY ELECTRICAL LINE OR APPARATUS CARRYING UP TO 50,000 VOLTS. ADDITIONAL CLEARANCE IS REQUIRED FOR VOLTAGES IN EXCESS OF 50,000 VOLTS. REFER TO DRAWING 15394 FOR ADDITIONAL INFORMATION.
- **DEATH OR SERIOUS INJURY** WILL RESULT FROM CONTACT OR INADEQUATE CLEARANCE.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

ET5500MPB-ET25KX

DATE
10-14-97F

SUPERCEDES
5-13-97E

SECTION
C150

850711

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 ET10K	#2	#2	#1	#0	#00	NOTRECOMMENDED			450	100
ET10KX	#2	#2	#1	#0	#00	NOTRECOMMENDED			550	150
ET25K ET25KX	SEE DRAWING I24600 FOR CABLE AND BATTERY REQUIREMENTS									

* INCLUDES GROUND CABLE

** CCA=COLD CRANKING AMPS AT 0° F.
THE CCA RATING IS A MEASURE OF THE ABILITY OF THE BATTERY TO DELIVER A HIGH CURRENT FOR A SHORT PERIOD OF TIME.

*** 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.



MFG., INC.
CINCINNATI, OHIO

TITLE

CABLE & BATTERY

CE, CT, DT, & ET

DATE

8-10-00R

SUPERCEDES

3-3-99Q

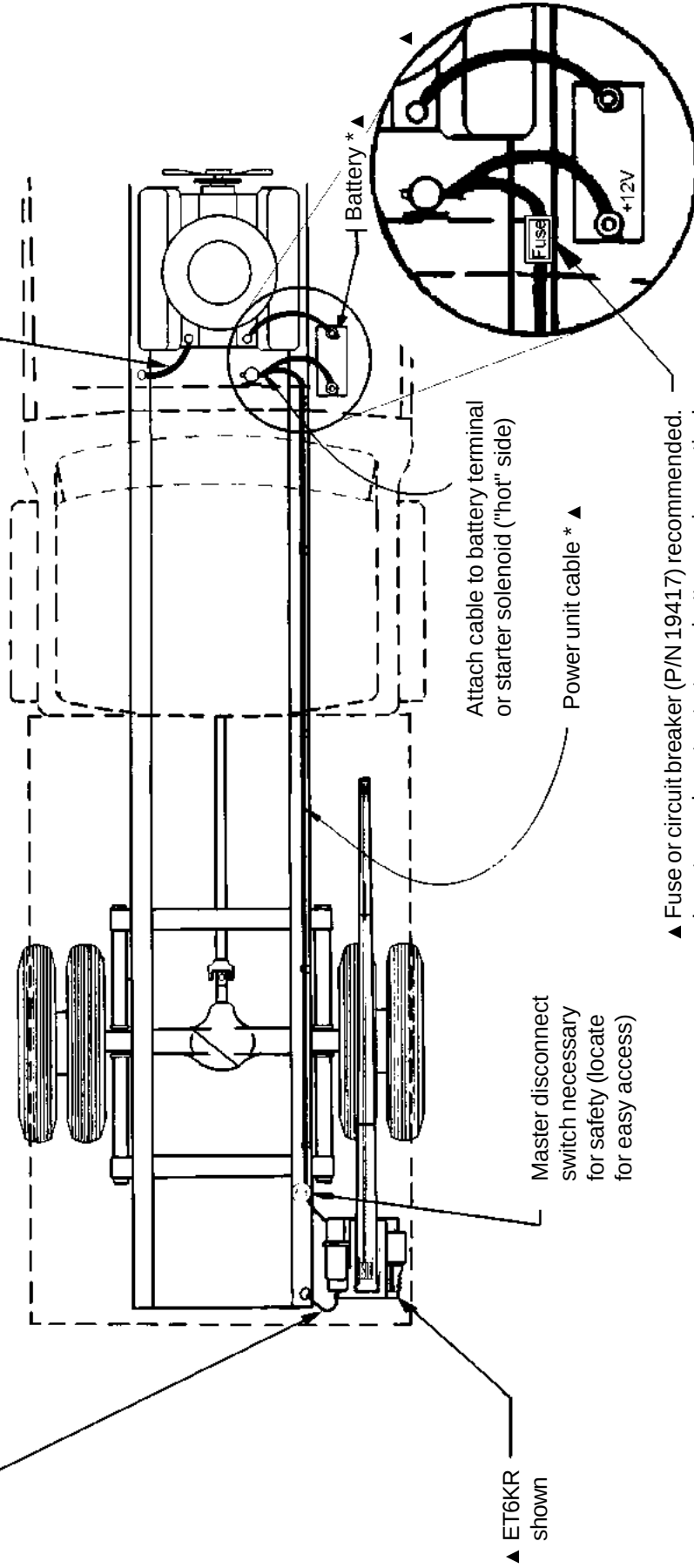
SECTION

C200

711105

Important: The crane must make connection with the negative of the battery. To insure this, install a #2 gauge grounding strap from the engine to the truck frame (required if negative from battery is connected to the engine.) Also, install a #2 gauge grounding strap from the crane base to the truck frame, included with ET6R, ET10K(X), ET25K, & ET25KK cranes.

Failure to accomplish the above mentioned steps may result in intermittent operation of electric crane.



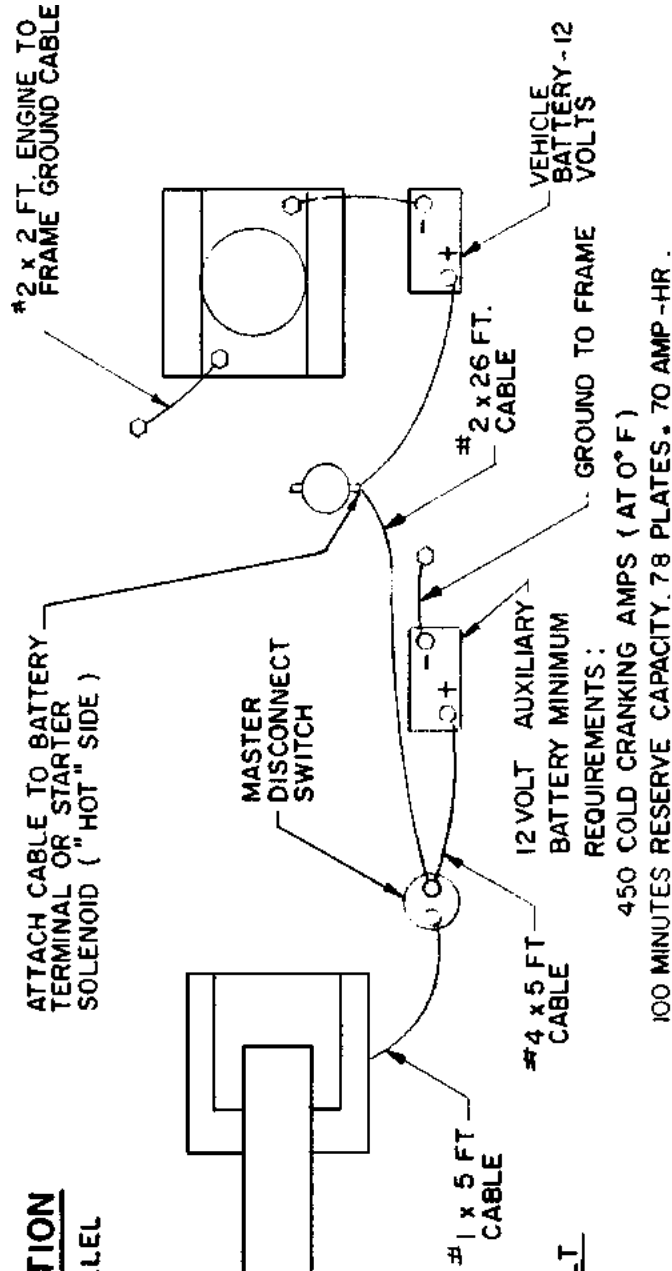
▲ Fuse or circuit breaker (P/N 19417) recommended.
Locate as close to starter or battery as is practical.

▲ * Note: See Dwg 711105
for recommended battery
and cable specifications

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	INSTALLATION - BATTERY CABLE	DATE	1-15-02E	SECTION	C200
		WINCH & CRANE	SUPERCEDES	11-7-01D		15660

RECOMMENDED INSTALLATION

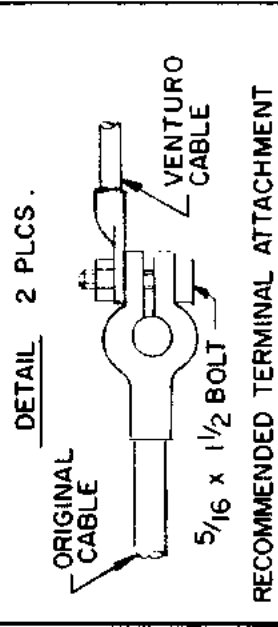
W/ AUXILIARY BATTERY IN PARALLEL
WITH VEHICLE BATTERY.



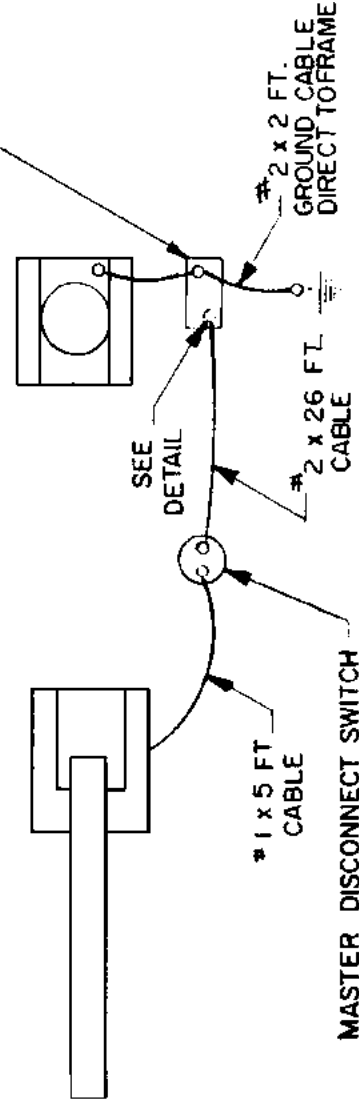
IF LONGER CABLE NECESSARY, CONSULT
VENTURO ENGINEERING DEPT.

LIMITED DUTY ALTERNATE INSTALLATION

NOTE: ALTERNATE INSTALLATION MAY BE USED ONLY IF
VEHICLE BATTERY MEETS MINIMUM REQUIREMENTS AND
A #2 X 26 FT CABLE WILL REACH FROM THE
MASTER DISCONNECT SWITCH DIRECTLY TO THE
BATTERY (NOT THE SOLENOID).



12 VOLT VEHICLE BATTERY MINIMUM REQUIREMENTS
625 COLD CRANKING AMPS (AT 0°F),
160 MINUTES RESERVE CAPACITY,
102 PLATES, 105 AMP-HR.



MANUFACTURING, INC.
CINCINNATI, OHIO

VENTURO

TITLE
ELECTRICAL INSTALLATION

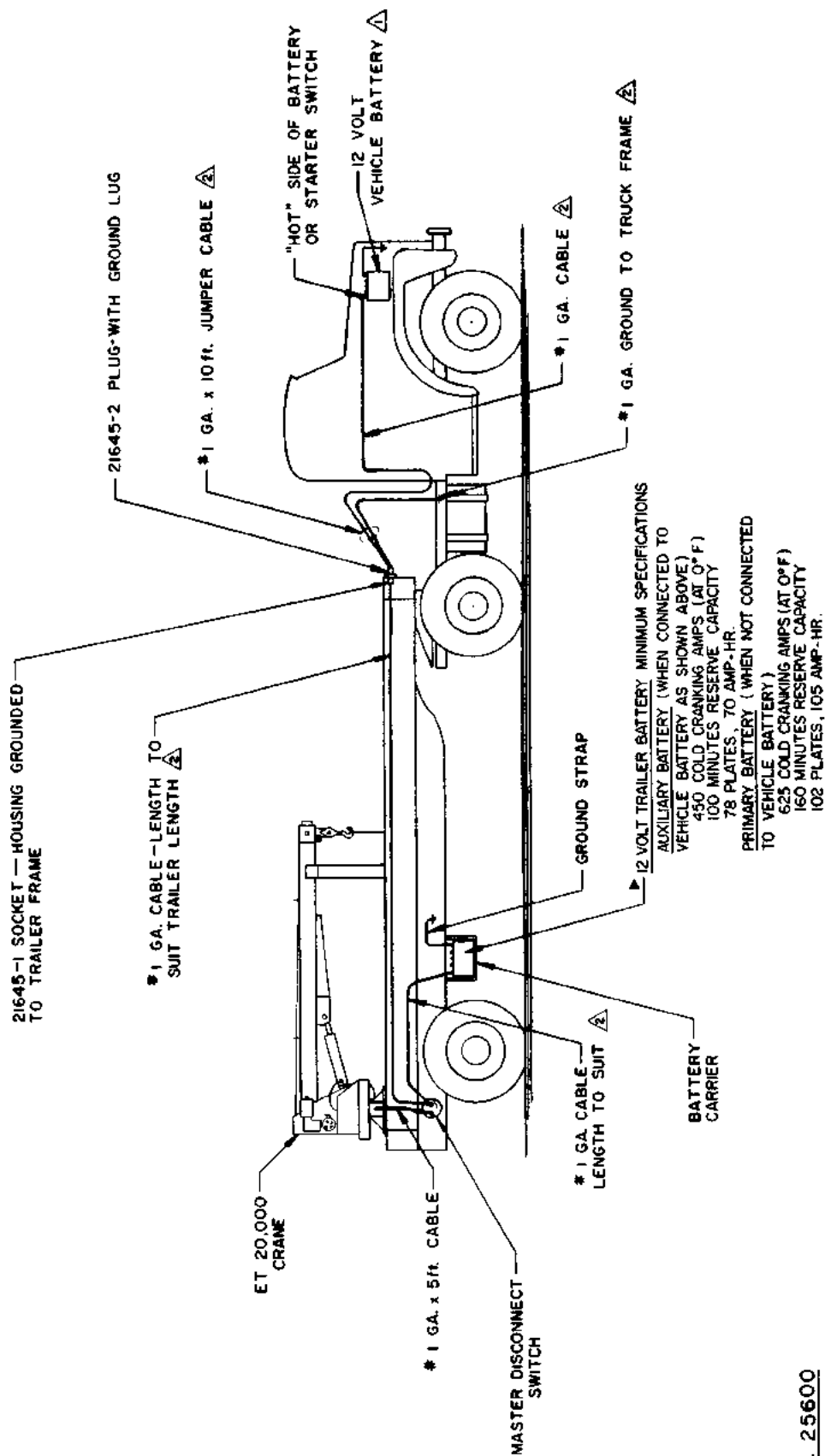
DATE
6-24-98E

SECTION
C200

ET20K, ET25K(X)

SUPERCEDES
6-10-83D

I24600



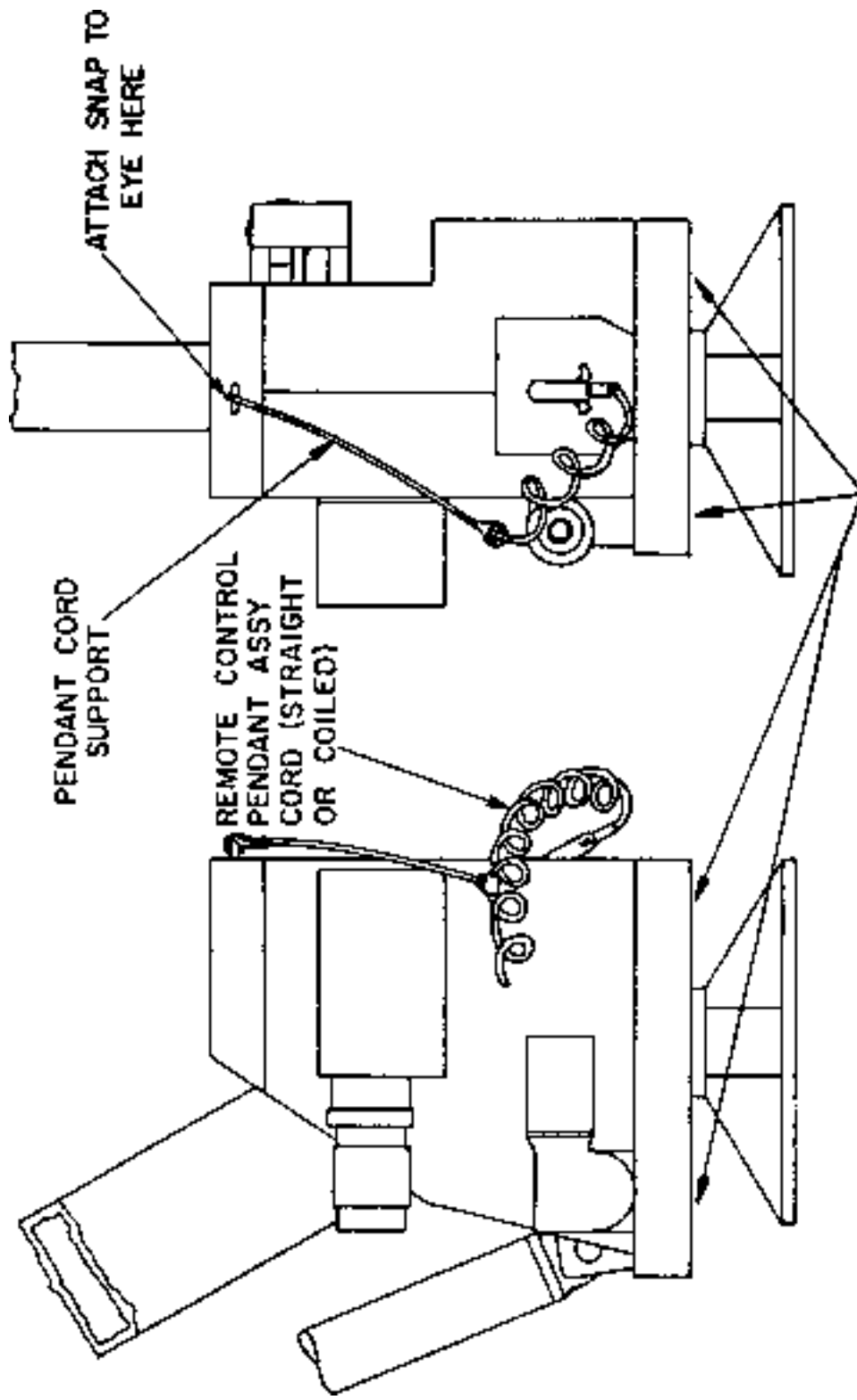
KIT No. 25600

⚠ KIT INCLUDES ALL ELECTRICAL COMPONENTS SHOWN EXCEPT BATTERIES.

⚠ KIT INCLUDES A TOTAL OF 75ft. OF #1 GA. CABLE FOR TRACTOR AND TRAILER.

RECOMMENDED TRAILER INSTALLATION
WITH AUXILIARY 12 VOLT BATTERY IN
TRAILER IN PARALLEL WITH TRACTOR BATTERY

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	INSTALLATION DRAWING		SECTION	C200
		DATE	6-24-98D	SUPERCEDES	8-30-82C
	ET20K, ET25K(X)		I25600		



CAUTION: KEEP PENDANT CORD AWAY FROM THIS AREA

PENDANT CORD SUPPORT REDUCES STRAIN ON PLUG & HELPS KEEP THE CORD AWAY FROM THE AREA BETWEEN CRANE LOWER HOUSING & BASE

VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

PENDANT CORD SUPPORT

DATE

5-26-98C

SECTION

C200

SUPERCEDES

7-13-92B

ET & HT CRANE SERIES

I25618

SELECTION

The chart below shows the maximum working load and breaking strength of 7 X 19 Galvanized AIRCRAFT Grade Wire Rope in various diameters. The breaking strength is 3-1/2 times the maximum working load. Do not use wire rope with a Maximum Working Load rating less than the single line capacity of the crane. Use of wire rope diameter larger than the size furnished with the crane will reduce the fatigue life of the wire rope.

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

INSTALLATION

1. Unwind coil of rope by rolling it along floor. This will prevent kinking.
2. Most VENTURO Cranes are provided with a slot in the winch drum side plate for attaching the end of the wire rope with a stop collar. A hole in the housing allows access for the end of the wire rope when inserted thru the slot.

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

3. THERE MUST ALWAYS BE AT LEAST (3) TURNS OF WIRE ROPE ON THE DRUM WHEN UNDER LOAD.



MFG., INC.
CINCINNATI, OHIO

TITLE
WIRE ROPE SPECS

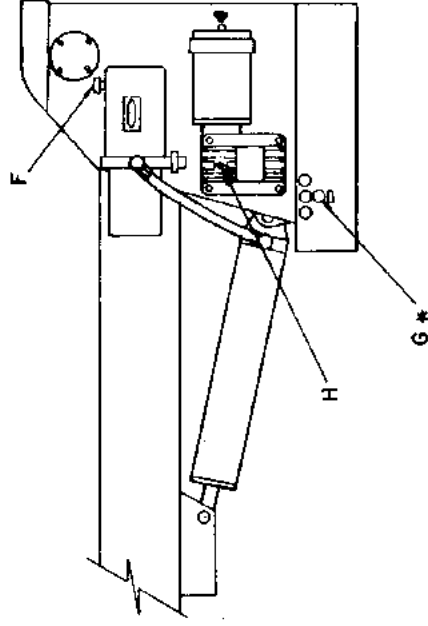
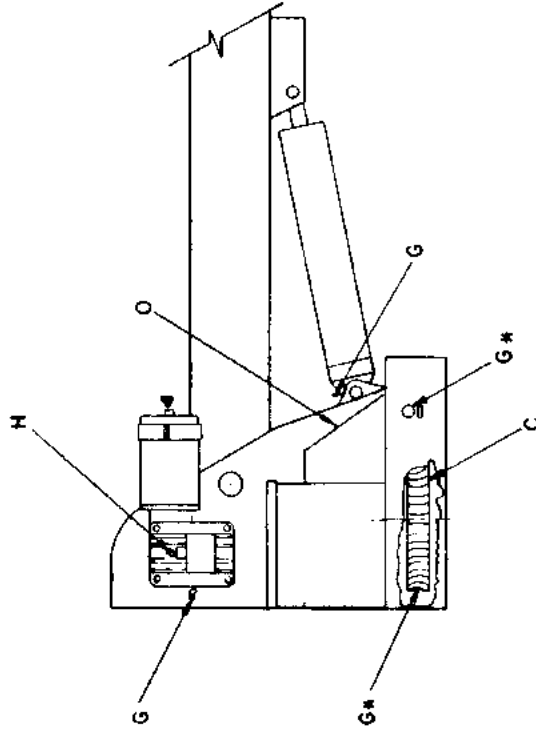
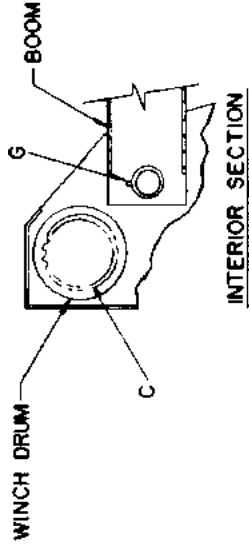
VENTURO WINCH & CRANE

DATE
10-23-97G

SUPERCEDES
4-27-92F

SECTION
WC 200

711006



AMBIENT TEMPERATURE RANGE		TIME OF TRUCK SERVICE AND AS REQUIRED BY CHANGES IN THE AMBIENT TEMPERATURE RANGE.	
-22°F TO 30°F		10W-40 MOTOR OIL	TIME OF TRUCK SERVICE
DEXRON ATF		85W-140	TIME OF TRUCK SERVICE
75W-90 ARTIC		EP OR HYPOID GEAR OIL	TIME OF TRUCK SERVICE
LIGHT OIL			TIME OF TRUCK SERVICE
CHASSIS GREASE			TIME OF TRUCK SERVICE
CHASSIS GREASE			TIME OF TRUCK SERVICE
CHASSIS GREASE			TIME OF TRUCK SERVICE
LUBRICANT USED			SERVICE
FILL OIL RESERVOIR TO OIL LEVEL WITH BOOM DOWN			
FILL GEAR CASE TO BOTTOM EDGE OF HOLE			
OIL CHAIN			
APPLY EXCESSIVE GREASE TO REPLENISH PACKED GREASE (C)			
GREASE FITTING WITH PRESSURE GREASE GUN			
FILL GEAR TEETH			
LUBRICATION REQUIRED			



MANUFACTURING, INC.
CINCINNATI, OHIO

LUBRICATION CHART

ET20K(X), ET25K(X), ET30K, ET36KX

SECTION

C300

DATE

6-24-98D

SUPERCEDES

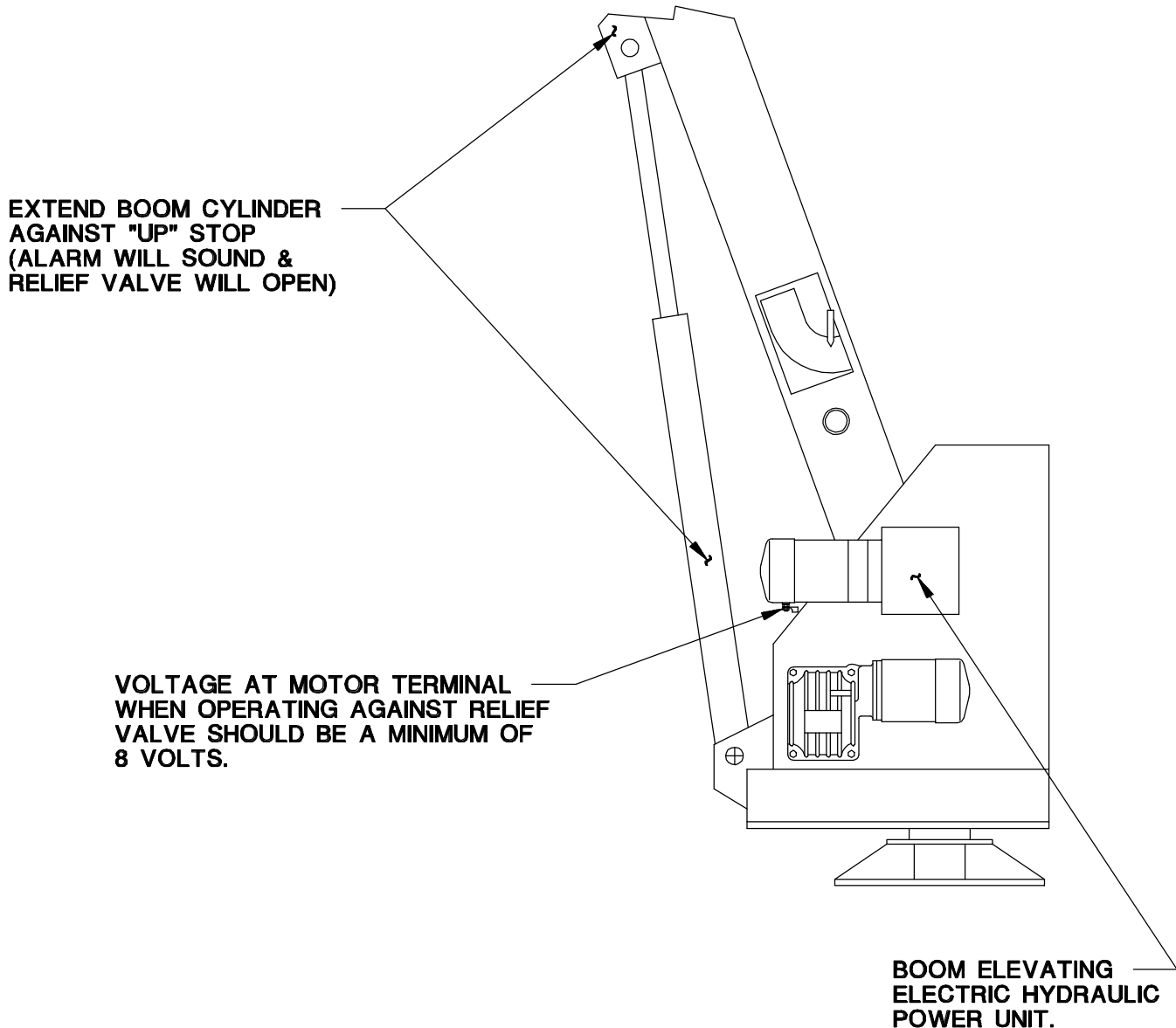
6-1-92C

16510

MINIMUM VOTAGE TEST
ET20K, ET25K, ET25KX, ET30K, ET36KX

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

TO ISOLATE THIS PROBLEM PERFORM THE MINIMUM VOLTAGE TEST BELOW:



(SEE 24499-I FOR SECTION A-A ON BACK OF PAGE I)

**INSTALL WAVE WASHERS
AFTER SHIMMING BRAKE DISC
TO POSITION.**

SHIM HERE AS REQ'D TO POSITION
BRAKE DISC. .000 to .005 BELOW
LEVEL OF FLANGE WITHOUT WAVE
WASHERS INSTALLED

CLUTCH HOUSING

BRAKE ROTOR:

BRAKE DISC

WORM & SHAFT SHOULDER

CLUTCH
STAMPED FACE THIS END)
TO AVOID DAMAGE TO
CLUTCH, PRESS IN FROM
THIS END. USE 14783
CLUTCH INSTALLATION
TOOL TO AUTOMATICALLY
OBTAIN 1/16" CLEARANCE
AT OPPOSITE END.

SHIM HERE AS REQ'D TO POSITION WORM & SHAFT SHOULDER .020 TO .025 BELOW LEVEL OF FLANGE.

STEP 4

FILL GEAR CASE W/22 OZ.
OF 85W - 140 E.O. OR
HYPOID GEAR OIL BEFORE
ATTACHING MOTOR

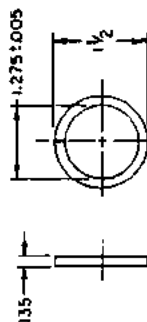
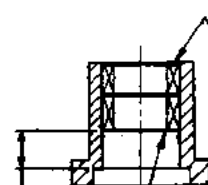
ALTERNATE 2 PIECE CLUTCH & BEARING COMBINATION

 $39/64'' + 1/32'' -$

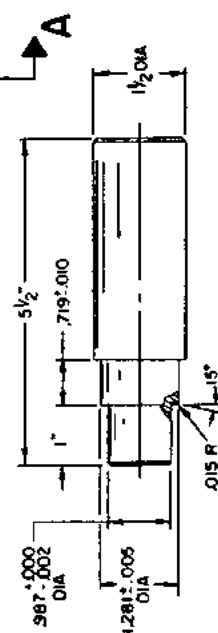
CLUTCH STAMPED
FACE - PRESS IN
FROM THIS END

NEEDLE BEARING STAMPED FACE
PRESS IN FROM END FLUSH
TO 1/32" BELOW SURFACE.

USE 14704 ADAPTOR RING WITH
14783 CLUTCH INSTALLATION
TOOL TO AUTOMATICALLY OBTAIN
39/64" POSITION.



#14794 ADAPTER RING
STEEL RING, 1 1/2" O.D.X.
1.275" I.D.X .135" THK.
WITH 1/32" - 3/32" SPLIT



#14783 CLUTCH INST, TOOL

VENTURO

MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

FILE ASSEMBLY & SERVICE INSTRUCTIONS

SECTION

DATE
6-24-98B

SUPERCEDES
6-15-92A

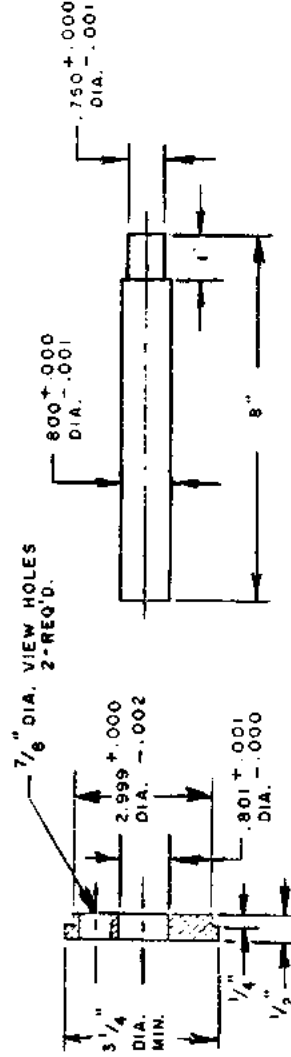
24499-8

CENTERING WORM GEAR WITH WORM $\cancel{Z}$

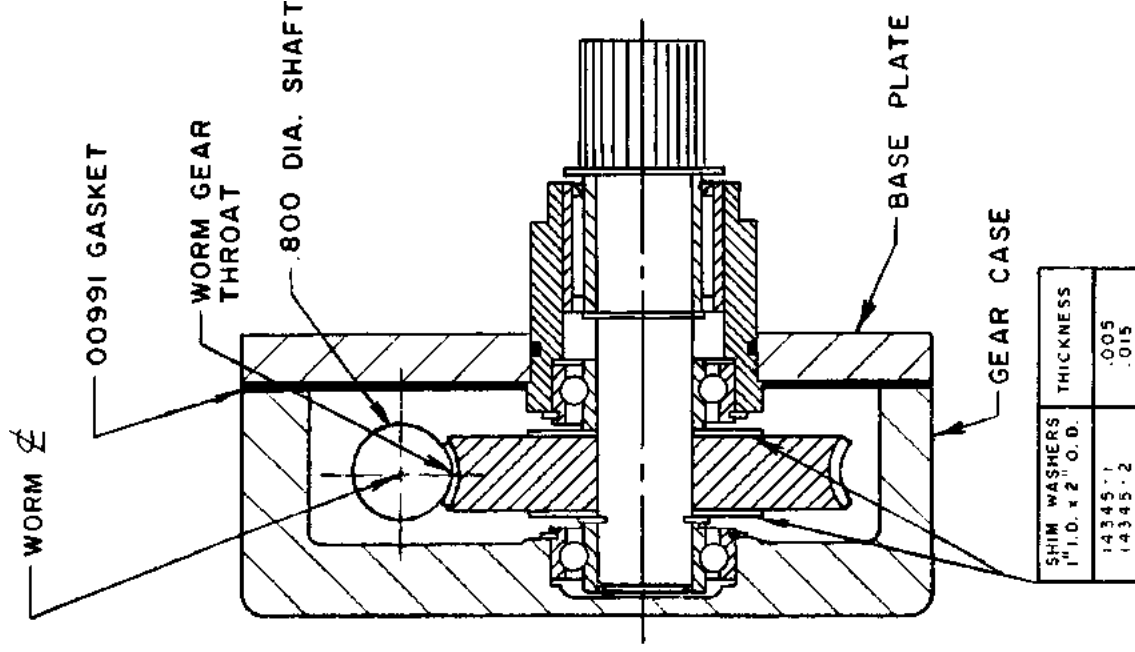
STEP 1 Assemble worm gear into gear case & base plate with .015 shim on each side of worm gear.

STEP 2 Check for excessive tightness or looseness of output shaft in bearings. Shaft should spin free but not have noticeable play. Add or remove shims equally from both sides as required.

STEP 3 Check centering of worm gear throat on worm $\cancel{Z}$ with 14781 inspection shaft & 14782 inspection flange. Worm gear should spin free with shaft & flange in place. If worm gear does not spin free, determine which way it must be shifted by viewing contact between shaft & worm throat thru view hole in flange. Remove shims from one side & add same amount to other side to center worm gear.



14782 INSPECTION FLANGE 14781 INSPECTION SHAFT



SECTION A-A

STEP 2

SHIM HERE TO $\frac{3}{16}^{+.005}_{-.000}$ DIMENSION.

STEP 1

SHIM HERE AS REQ'D. TO POSITION WORM & SHAFT SHOULDER .005 TO .010 BELOW LEVEL OF FLANGE.

SHIM WASHERS $\frac{3}{4}$ " I.D. x $1\frac{1}{2}$ " O.D.	THICKNESS
PART NO.	
12943-1	.005
12943-2	.015

FLANGE

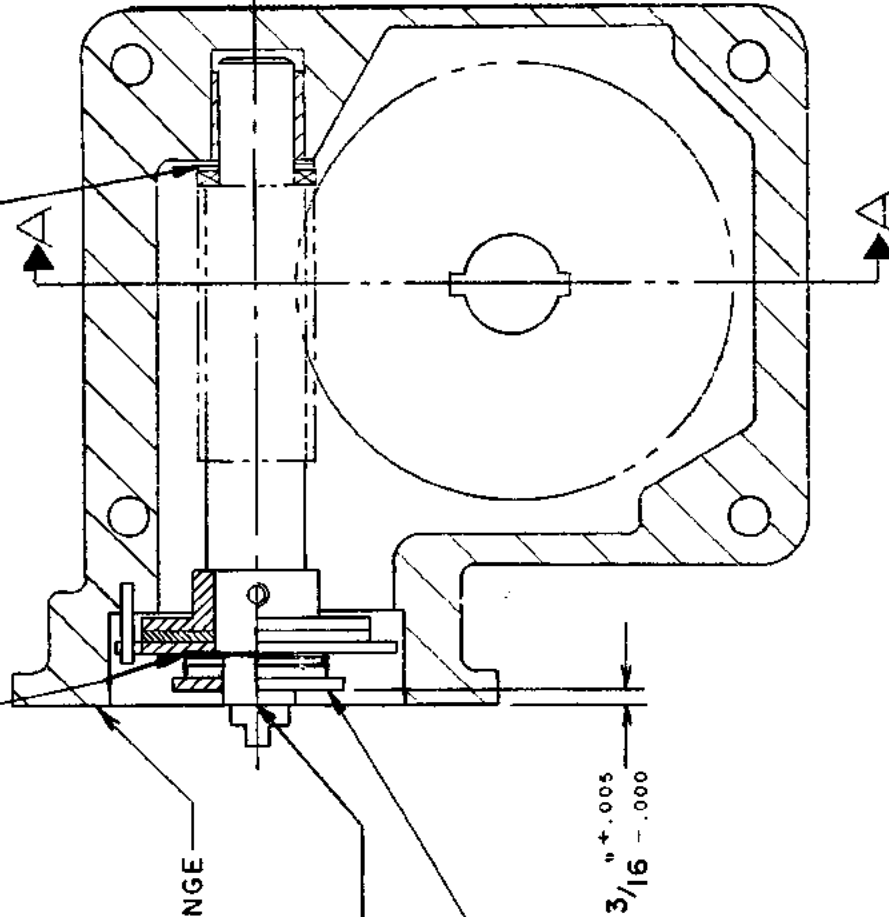
WORM & SHAFT
SHOULDER

$1\frac{5}{8}$ O.D. BEARING RACE

OIL LEVEL

STEP 3

FILL GEAR CASE WITH 22 OZ. OF 85W-140 E.P. OR HYPOID GEAR OIL BEFORE ATTACHING MOTOR.



ROTATION POWER UNIT WITH HIGH OIL LEVEL
26439, 24409, 14407, 14409 & 17471

(SEE 24499-2 FOR SECTION A-A ON BACK OF PAGE)

VENTURO

MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE

ASSEMBLY & SERVICE INSTRUCTIONS

DATE

6-24-98B

SECTION

C300

SUPERCEDES

6-16-92A

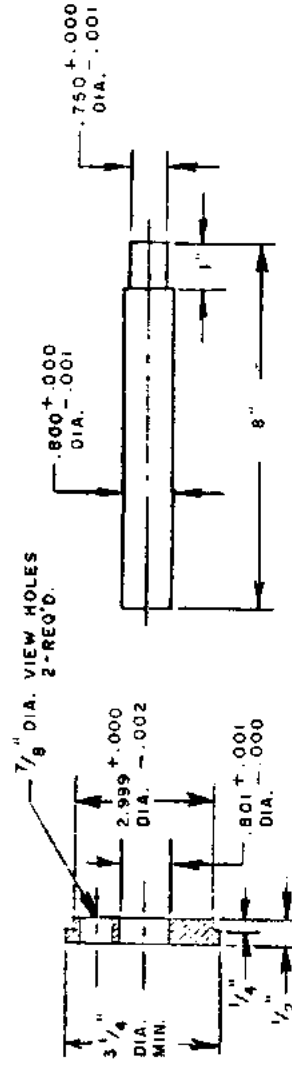
24499-9

CENTERING WORM GEAR WITH WORM ϕ

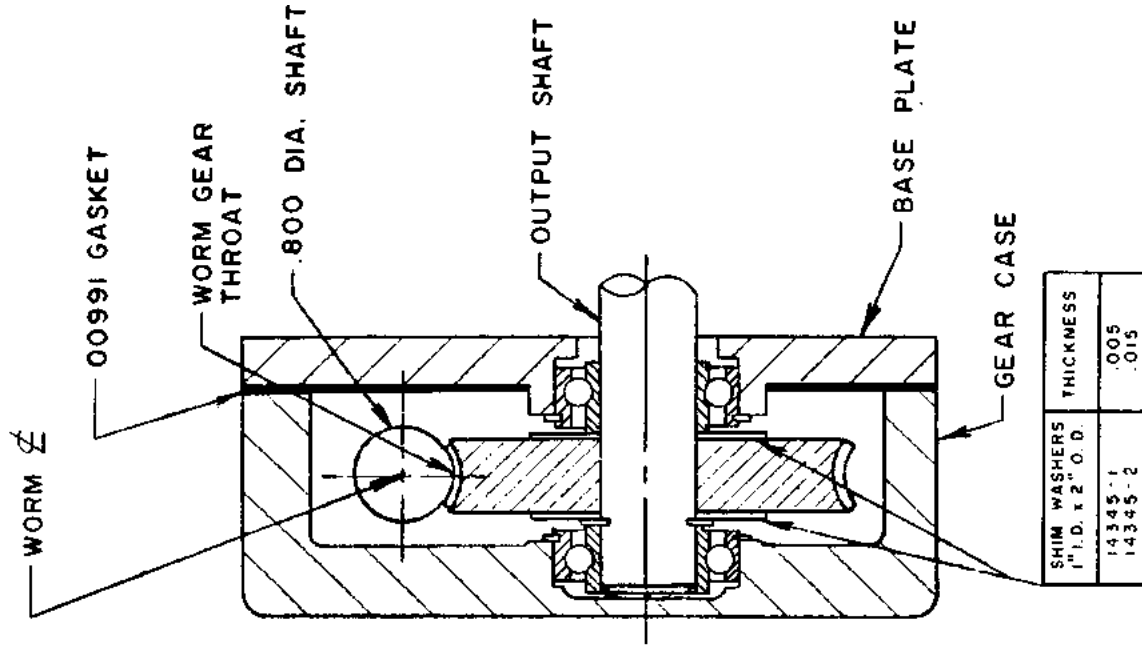
STEP 1 Assemble worm gear into gear case & base plate with .015 shim on each side of worm gear.

STEP 2 Check for excessive tightness or looseness of output shaft in bearings. Shaft should spin free but not have noticeable play. Add or remove shims equally from both sides as required.

STEP 3 Check centering of worm gear throat on worm ϕ with 14781 inspection shaft & 14782 inspection flange. Worm gear should spin free with shaft & flange in place. If worm gear does not spin free, determine which way it must be shifted by viewing contact between shaft & worm throat thru view hole in flange. Remove shims from one side & add same amount to other side to center worm gear.



14782 INSPECTION FLANGE 14781 INSPECTION SHAFT



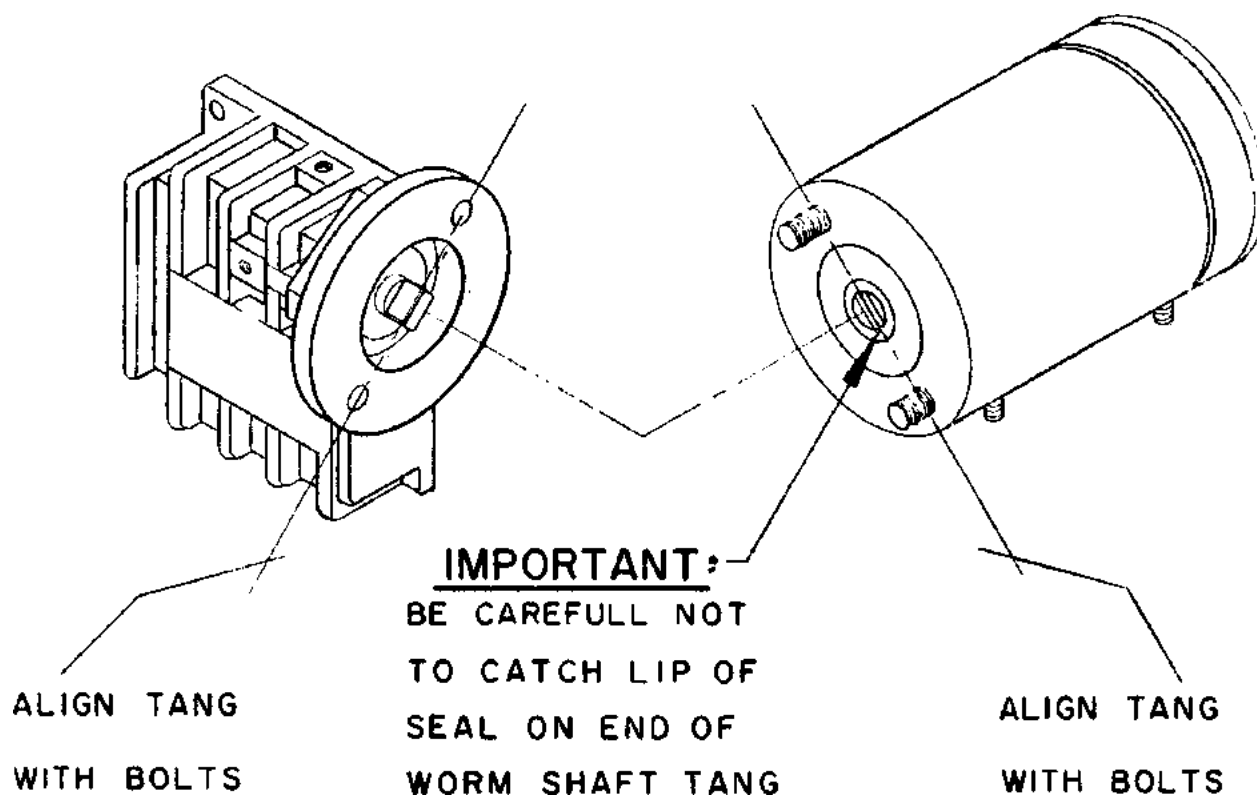
SECTION A-A

FIELD SERVICE BULLETIN

INSTALLATION OF 16115 & 17532 MOTORS ON ROTATION & WINCH POWER UNITS

PROCEDURE:

1. REFER TO DRAWING 760302/14501 FOR REPLACEMENT PARTS
2. CHECK WORM & SHAFT SHOULDER POSITION PER DRAWING 14499-6 & READJUST SHIMS AS REQUIRED. THIS IS MANDATORY IF GEAR HEAD COMPONENT PARTS HAVE BEEN REPLACED.
3. CAREFULLY ALIGN TANG ON GEAR HEAD INPUT SHAFT WITH HOLES IN FLANGE & TANG SLOT IN MOTOR WITH MOTOR MOUNTING STUDS.
4. PRESTRETCH LIP OF 00992 MOTOR SHAFT SEAL OPEN WITH FINGER TIPS AND LUBRICATE SEAL LIP WITH GEAR OIL.
5. WHEN INSTALLING MOTOR, BE CAREFUL NOT TO CATCH LIP OF SEAL ON END OF SHAFT TANG OR SHOULDER AS SEALING LIP MAY BE DAMAGED OR THE SPRING KNOCKED OUT OF THE SEAL.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DRAWING

ET25K(X)

DATE
6-24-98C

SUPERCEDES
10-2-80B

SECTION
C300

780607

SERVICE INSTRUCTIONS

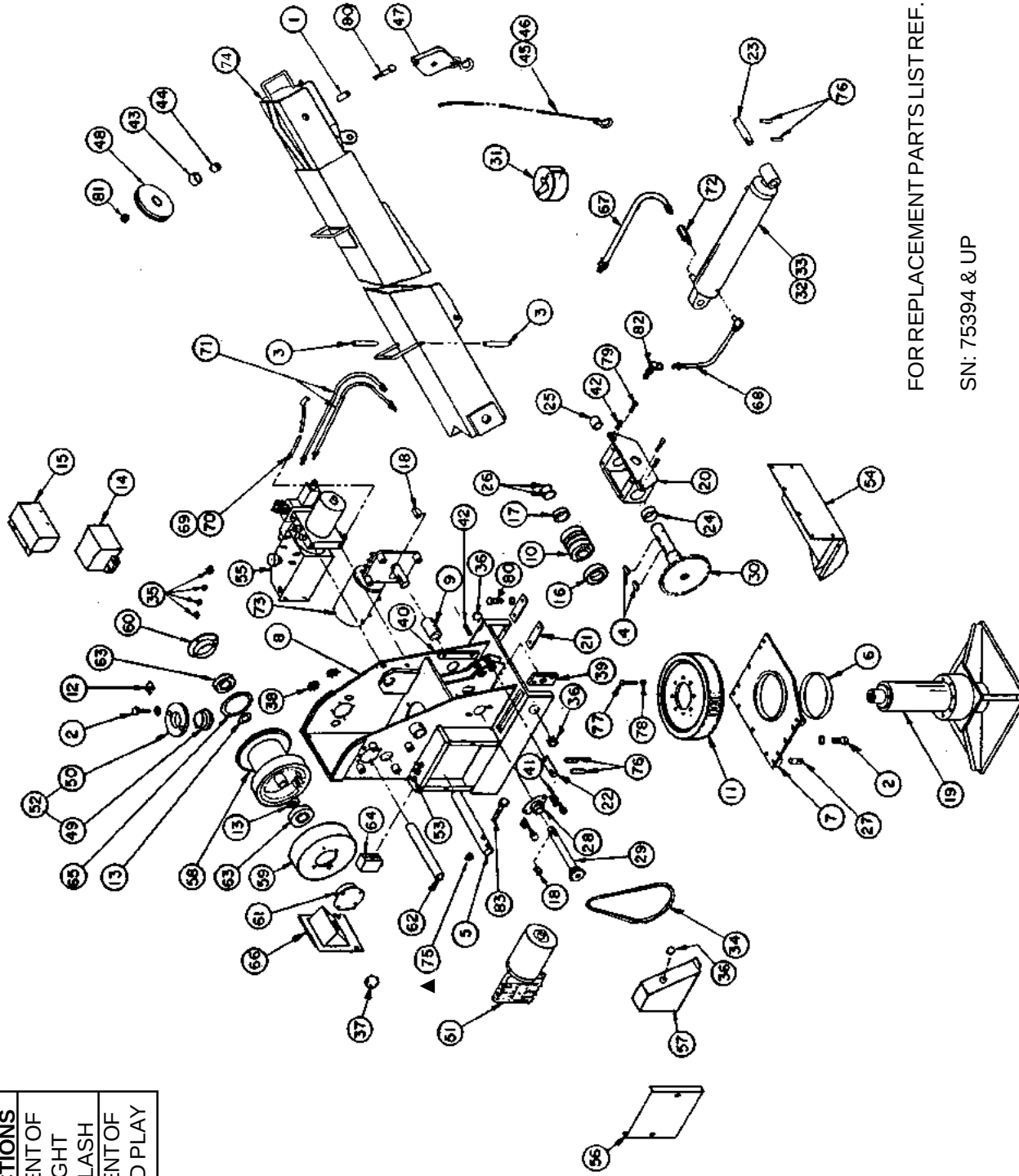
14544 ADJUSTMENT OF

WORM HEIGHT

AND BACKLASH

14553 ADJUSTMENT OF

WORM END PLAY



FOR REPLACEMENT PARTS LIST REF. 19935

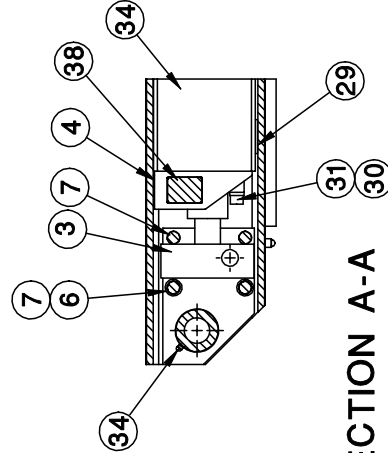
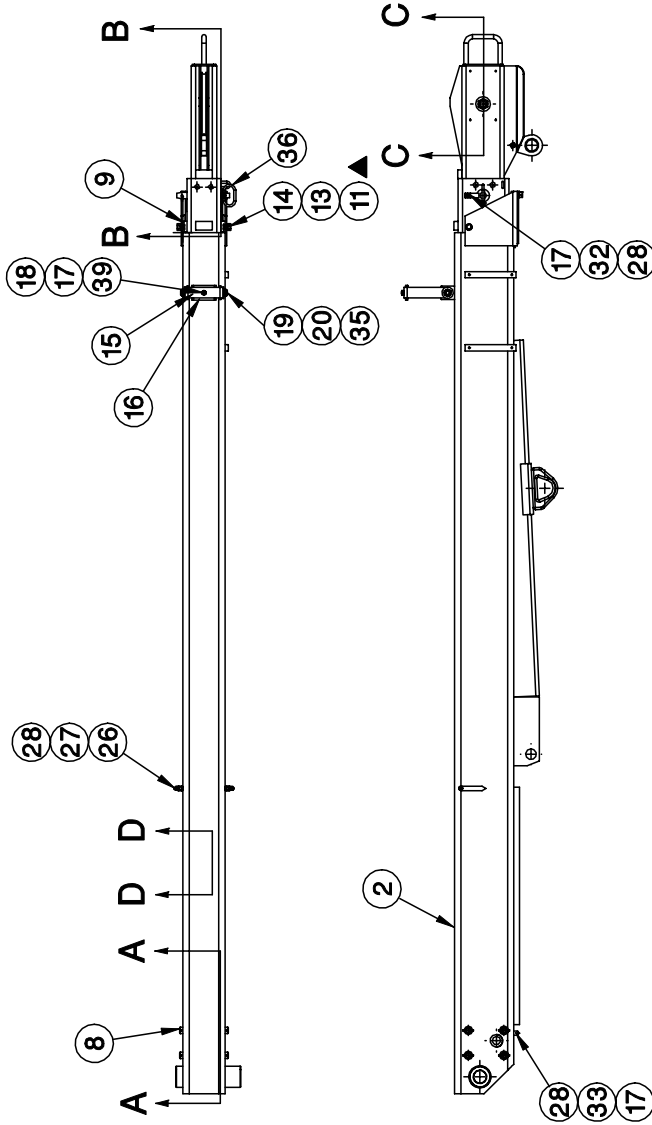
SN: 75394 & UP

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	REPLACEMENT PARTS	DATE	7-24-01	SECTION	C420
		ET25KX	SUPPLIES			19934

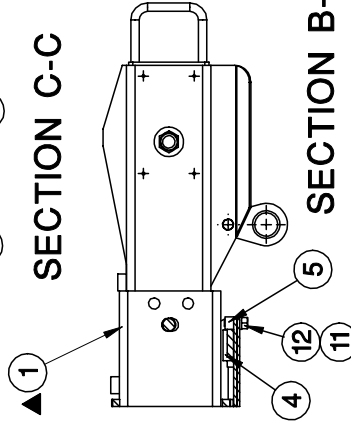
ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	13168-2	SLEEVE - 3/4" OD x 5/8" ID x 1 1/16" LONG	40	15252	NUTBAR
2	!HHCS05013125-5	HEX HEAD CAP SCREW - 1/2"-13 x 1 1/4" GRADE 5	41	-	OBSOLETE
3	13459-2	ARROW	42	25593	SET SCREW - 1/2"-20 x 1"
4*	15245	WOODRUFF KEY - 5/16" x 1 1/8" (MODIFIED)	43	15808	BEARING - 1 1/4" ID x 1 5/8" OD x 11/16" LONG
5	13918	PIVOT PIN, BOOM - 1 1/2" OD x 11 3/4"	44	15809	SPACER - 3/4" ID x 1 1/4" OD x 21/32" LONG
6	13978	LOWER BEARING	45	25810-5/16-80	WIRE ROPE ASSY - 5/16" x 80 FT (10/20 FT BOOM)
7	26361-2	BEARING PLATE	46	-	-
8	18713	WELDED HOUSING ASSY	47	23169	SWIVEL SNATCH BLOCK ASSEMBLY
9	14084	COUPLING	48	23911	SHEAVE (INCLUDES ITEMS 1, 43, 44, 80, & 81)
10	14142-4	WORM - SINGLE THREAD RH	49	24342	FLANGED BEARING - 2" BORE x 3" OD FLANGE
11	14143-4	WORM GEAR - 48T, 4 PITCH	50	24383	BEARING HOUSING - 1 1/8" LONG
12*	14159	SHIM - 1 1/2" SQ x .015", .042", .105"	51	17530	WINCH POWER UNIT
13*	15675	SHIM - 1 1/4" ID x .015", .031"	52	25570	BEARING AND HOUSING ASSY (ITEMS 49, 50)
14	17356	OVERLOAD ALARM	53	-	OBSOLETE
15	-	OBSOLETE	54	26272-2/-3	FRONT COVER (-2) AND LOWER COVER (-3)
16	14191-1	BALL THRUST BEARING - 2" ID x 3 11/32" OD	55	18440	ELECTRIC HYDRAULIC POWER UNIT
17	14191-2	BALL THRUST BEARING - 1 1/2" ID x 2 19/32" OD	56	26362	SIDE COVER
18*	26404	WOODRUFF KEY - 1/4" x 1" (MODIFIED)	57	26363	CHAIN COVER
19	14237	QUILL ASSEMBLY	58	26365	CABLE DRUM
20	14242	HOUSING, WORM GEAR	59	26370	WINCH DRUM COVER
21	14245	WASHER PLATE	60	26372-1	BEARING CUP - LH
22	18727	PIVOT PIN, CYL TAIL - 1 1/4" OD x 3 3/16" LONG	61	26372-2	BEARING CUP - RH
23	18728	PIVOT PIN, CYL ROD - 1 1/4" OD x 5 3/16" LONG	62	26373	DRUM SHAFT
24	14341-1	BUSHING - 2" ID x 2 1/4" OD x 1" LONG	63	26374	BALL BEARING - 1 1/4" BORE x 2 9/16" OD
25	14341-2	BUSHING - 1 1/2" ID x 1 3/4" OD x 1" LONG	64	-	OBSOLETE
26*	14344	SHIM WASHER - 1 1/2" ID x 2 1/8" OD x .005", .015", .031" THK	65	26379	NUTRING
27*	14353	COIL PIN - 1/2" OD x 1 1/2" LONG	66	26390	REAR COVER
28	14356	FLANGE MOUNTED BALL BEARING - 1" BORE	67	-	OBSOLETE
29	14377	SPROCKET AND SHAFT ASSEMBLY (10T SPROCKET)	68	26396	CYLINDER HOSE, PRESSURE SWITCH - 3/16" x 13"
30	14384	SPROCKET AND SHAFT ASSEMBLY (40T SPROCKET)	69	26397-33.5	CYL RETURN HOSE - 3/8" x 33.5"
31	14426	HEADACHE BALL ASSEMBLY - 9 LBS; NOT REQ. WITH 29 LBS	70	-	-
32	18700-2	SNATCH BLOCK	71	19329/19330	BOOM EXTENSION HOSES
33	-	ELEVATION CYLINDER	72	26415	SWIVEL JOINT
34	14481	ROTATION DRIVE CHAIN	73	17471	ROTATION POWER UNIT
35	14776	GROMMET - 5/8" ID x 7/8" OD x 3/16" GROOVE	74	19893	BOOM ASSY - 10/20 FT (COMPLETE ASSY)
36	14858-1	SNAP IN PLUG - 7/8"	75	!LNUT-03816	LOCKNUT - 3/8"-16
37	RL-644	SNAP IN PLUG - 1" (SAME AS ITEM 38)	76	!RPIN-025175	ROLL PIN - 1/4" DIA x 1 3/4"
38	RL-644	SNAP IN PLUG - 1" (SAME AS ITEM 37)	77	18927	SOCKET HEAD CAP SCREW - 1/2"-13 x 3" LONG
39	15251	NUTBAR	78	!HWSH-050-LOCK	HI-COLLAR LOCK WASHER - 1/2"
			79	!SHCS05020125	SOCKET HEAD CAP SCREW - 1/2"-20 x 1 1/4" LONG
			80	!HHCS06311175	HEX HEAD CAP SCREW - 5/8"-11 x 1 3/4"
			81	!JNUT-06311N	SELF LOCKING JAM NUT - 5/8"-11
			82	HELB4MP-4FX-90	SWIVEL ADAPTER - 90 DEG ELBOW - 1/4 NPT
			83	!HHCS03816275	HEX HEAD CAP SCREW - 3/8"-16 x 2 3/4"
			*	16476	SHIM, PIN, & KEY KIT (INCLUDES * ITEMS)
				22600-1	FIELD SERVICE LABEL KIT - ET25KX
					SN: 75394

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	REPLACEMENT PARTS	
		DATE	SECTION
		7-24-01	C420
	ET25KX - 10/20	SUPERCEDES	19935
		-	

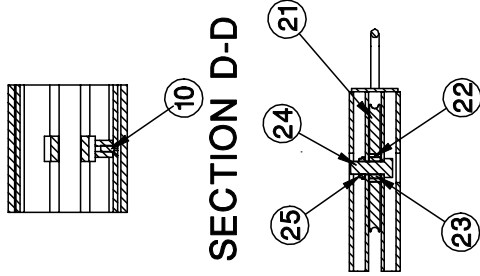
19893 BOOM PARTS DRAWING



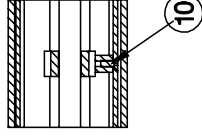
SECTION A-A



SECTION B-B



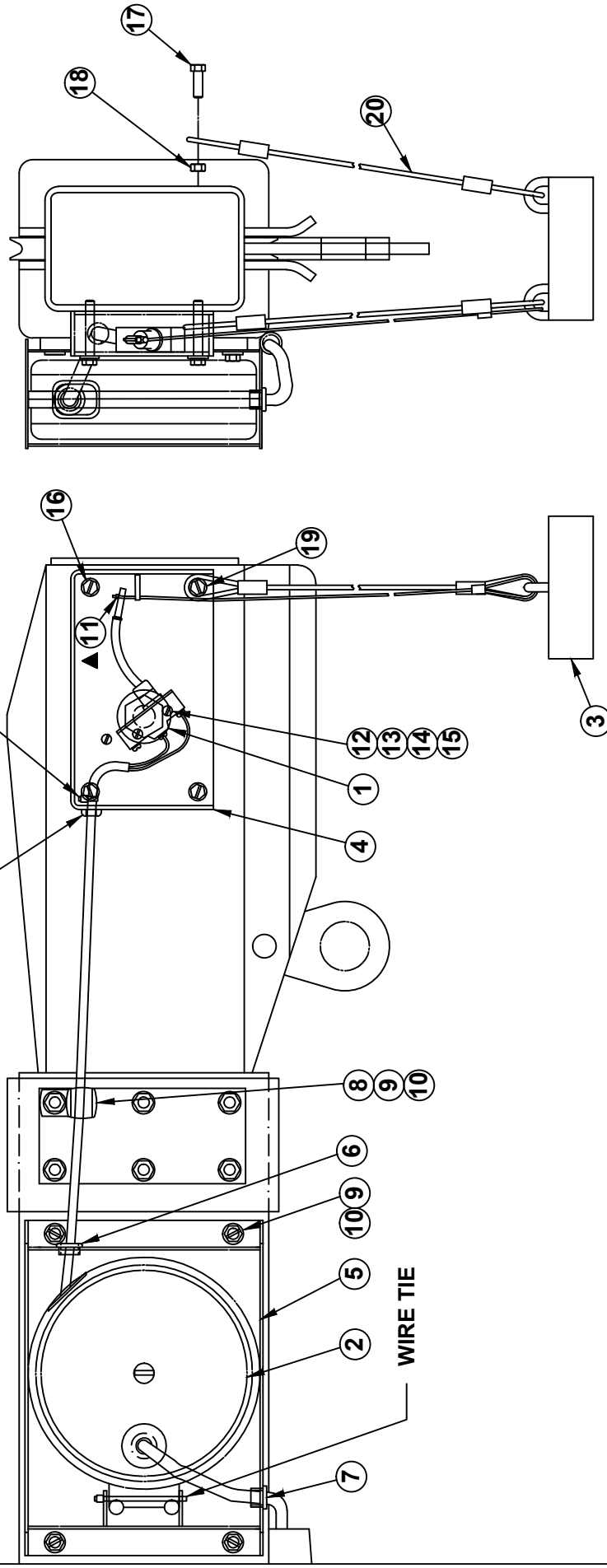
SECTION C-C



SECTION D-D

ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
20	2	IFWSH-050	FLAT WASHER 1/2"	-	-	-	-
19	2	IHCOS05013100	HEX HEAD CAP SCREW 1/2-13 X 1" LG GR 5	39	1	IHCOS02520075	HEX HEAD CAP SCREW - 1/4-20 X 3/4" LG. GR 5
18	1	ILNUT-02520	HEX NUT 1/4-20	38	2	19888	SIDE BEARING PAD
17	3	ILWSH-025	LOCK WASHER 1/4"	37	1	19197-2	ANTI-TWO BLOCK SYSTEM
16	1	19881	CABLE GUIDE WEAR STRIP	36	1	19258-1	BOOM PIN 19/5/7-3/4
15	1	19880	CABLE GUIDE STRUCTURE	35	2	ILNUT-05013N	1/2-13 NYLON INSERT JAM NUT
14	2	IHCOS03816050	HEX HEAD CAP SCREW 3/8-16 X 1/2" LG GR 5	34	1	IZERK-02528	ZERK FITTING - 1/4-28
13	2	ILNUT-03816	JAM NUT - 3/8-16 GRADE 5	33	1	19269	CABLE CLAMP - 1/4"
12	2	IHCOS03816100	HEX HEAD CAP SCREW - 3/8-16 X 1" LG GR. 5	32	1	19275	CABLE CLAMP - 3/4"
11	4	ILWSH-038	LOCK WASHER 3/8"	31	2	IHCOS05013200	SOCKET HEAD CAP SCREW 1/2-13 X 2" LONG
10	2	ICACS03816100	CONTRSK ALLEN HEAD CAP SCREW 3/8-16 X 1" LG	30	2	ILWSH-050-HC	LOCK WASHER 1/2" HIGH COLLAR
9	2	18957	BEARING PAD - SIDE FRONT	29	1	26216-3	BEARING PAD 2 X 3/8" LOWER REAR
8	8	IRPIN-019125	ROLL PIN 3/16"DIA. X 1-1/4" LONG	28	4	IANUT-02520S	ACORN NUT 1/4-20 STAINLESS
7	4	19884	EXTENSION CYLINDER THRUST PIN	27	2	22490	SPACER, BOOM ARROW 1/2" O.D.
6	2	19885	EXTENSION CYLINDER ROLLER	26	2	13459-1	BOOM ARROW 3-3/16 LONG
5	1	18955	BEARING RETAINING BAR	25	1	ILNUT-07510	LOCKNUT 3/4-10
4	2	19865	UPPER REAR BEARING PAD	24	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK
3	1	19886-1	EXTENSION CYLINDER - HOLLOW ROD	23	1	15809	SPACER 1.25 O.D. X 2 1/32 LONG
2	1	19889	PRIMARY BOOM ASSEMBLY	22	1	15808	BRONZE BEARING 1.63 O.D.
1	1	19892	TERTIARY & SECONDARY BOOM ASSEMBLY	21	1	23911	SHEAVE - BOOM

WIRE TIE
CABLE & CUT
OFF STEM

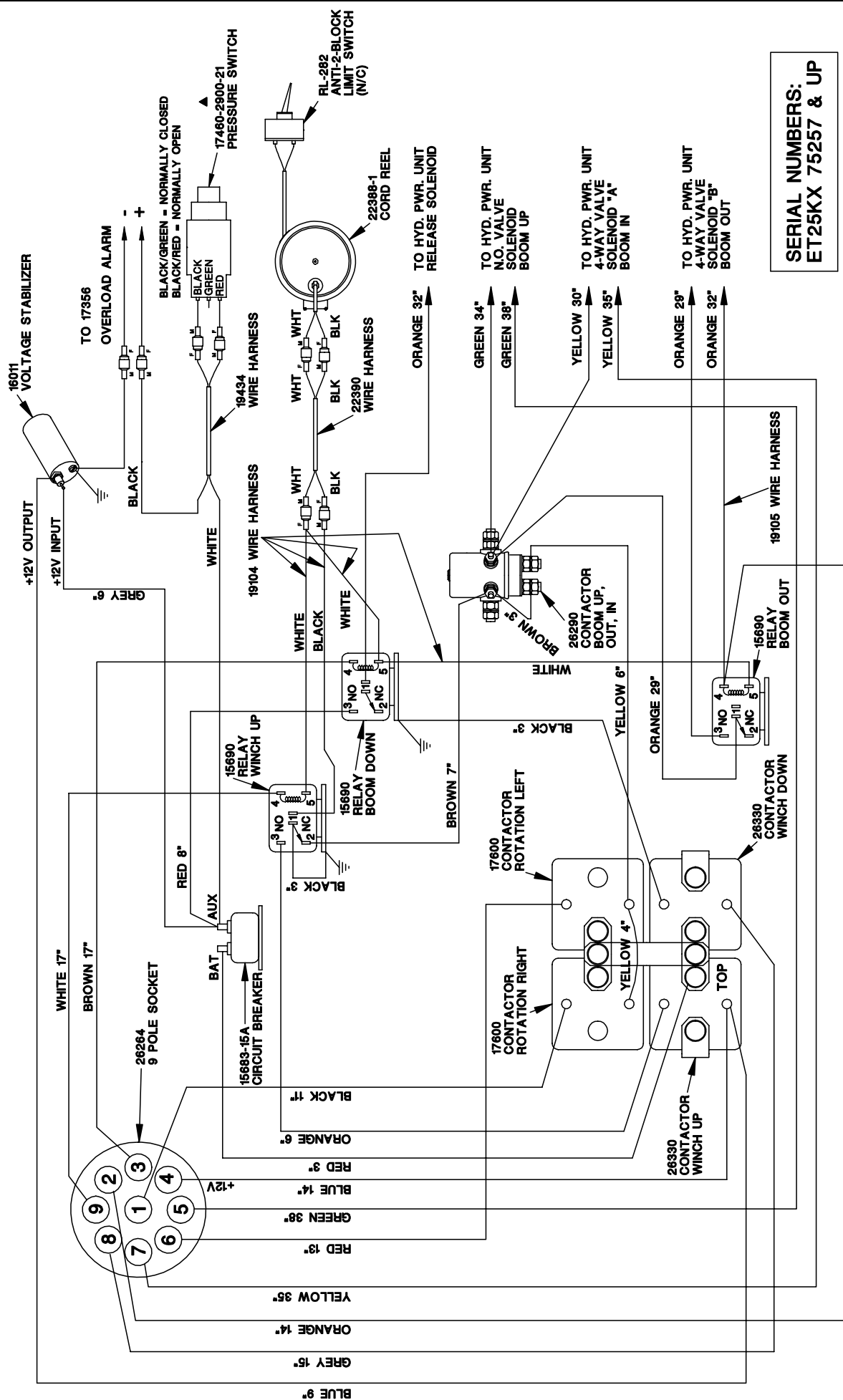


ITEM	QTY	PART NO.	DESCRIPTION
11	1	19302	SET COLLAR - 3/32"
10	5	ILWSH-031	LOCK WASHER - 5/16"
9	5	IHHCS03118050	HEX HEAD CAP SCREW - 5/16-18 x 1/2"
8	1	19275	CABLE CLAMP - 3/4" x 13/32" HOLE
7	2	19270	SNAP BUSHING - 3/8" I.D.
6	1	19063	SNAP BUSHING - 1/2" I.D.
5	1	19058	COVER - CORD REEL
4	1	20839	ANTI TWO-BLOCK HOUSING ASSEMBLY
3	1	19377-2	CABLE WEIGHT ASSY
2	1	22388-1	CORD REEL ASSY
1	1	19376	LIMIT SWITCH
12	2	IPHMS#632125	PAN HEAD MACHINE SCREW - #6-32 x 1 1/4"
13	2	IHNUT-#0632	HEX NUT - #6-32
14	2	IFWSH-#06	FLAT WASHER - #6
15	2	ILWSH-#06	LOCK WASHER - #6
16	3	IHHCS02520175	HEX HEAD CAP SCREW - 1/4-20 x 1 3/4"
17	1	IHHCS02520075	HEX HEAD CAP SCREW - 1/4-20 x 3/4"
18	1	IHNUT-02520	HEX NUT - 1/4-20
19	1	IHHCS02520150	HEX HEAD CAP SCREW - 1/4-20 x 1 1/2"
20	2	20951-2	HANGER CABLE

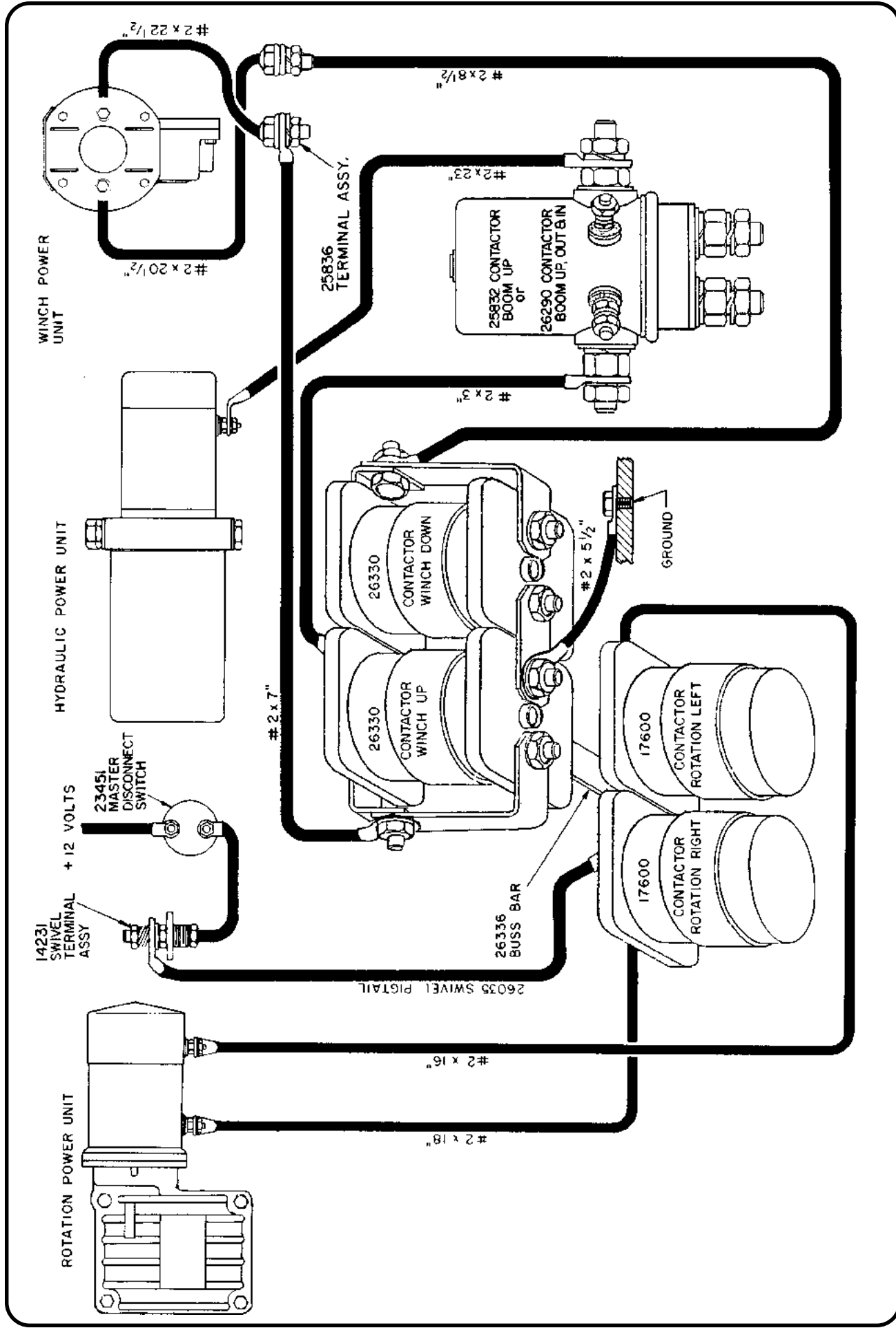
TITLE		DATE	SECTION
REPLACEMENT PARTS DRAWING		08-01-16G	C400
19197-2 ANTI-TWO-BLOCK SYSTEM		SUPERSEDES 06-03-08F	20197-2



MANUFACTURING, INC.
CINCINNATI, OHIO



VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE WIRING DIAGRAM		DATE 11-19-01D	SECTION C400
	ET25KX W/ANTI-TWO-BLOCK		SUPERSEDES 12-16-97C	I19095



VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE BATTERY & MOTOR CABLE DIAGRAM		DATE 6-24-98B	SECTION C400
	ET20K(X), ET25K(X), ET30K, ET36KX		SUPERCEDES 5-20-92A	17533

16780 SWIVEL TERMINAL ASSY.

17012 RUBBER BOOT - REF

26035 SWIVEL
PIGTAIL - REF

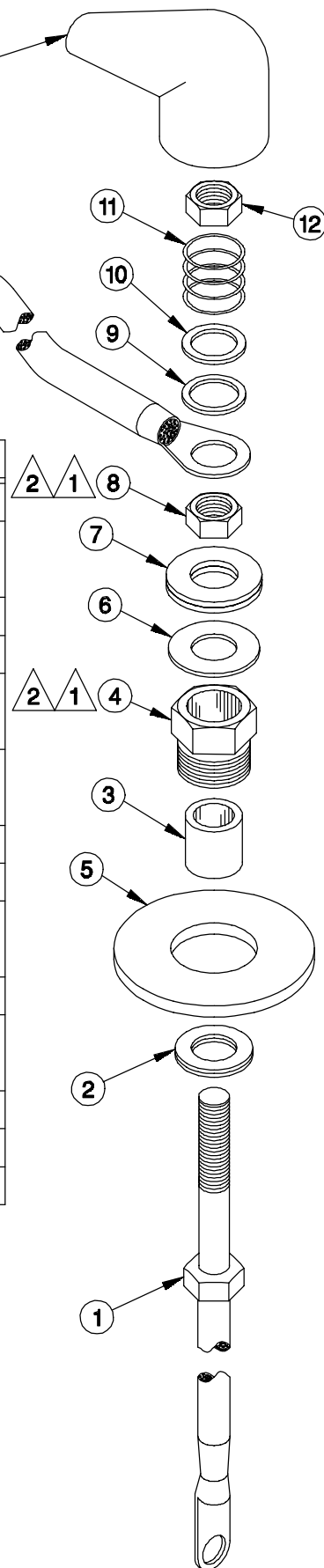
ITEM	QTY	PART NO.	DESCRIPTION
1	1	16783	PIGTAIL & STUD ASSY
*2	2	14357-1	FIBER WASHER 5/8" I.D. x 1 1/16" O.D. x 1/16" THK
*3	1	14233	INSULATING BUSHING
4	1	14232-R	7/8" INVERTED FLARE NUT
5	1	IFWSH-113SAE	FLAT WASHER 1 3/16" I.D. x 2 3/4" O.D. x 3/16" THK
*6	1	14357-2	FIBER WASHER 5/8" I.D. x 1 1/4" O.D. x 1/16" THK
*7	2	IFWSH-063SAE	FLAT WASHER - 5/8" SAE
*8	1	IJNUT-06311B	BRASS JAM NUT - 5/8"-11
*9	1	5612-162-62	TEFLON WASHER .657" I.D. x .875" O.D. x .062" THK
*10	1	5714-113-62	BRASS WASHER
*11	1	LC-098K-00	SPRING .845" O.D. x .098" W x 1.00" F.L.
*12	1	IJNUT-06311N	NYLON LOCK-JAMNUT - 5/8"-11
*13	1	LOCTITE-24205	LOCTITE CAPSULE GRADE 242 BLUE
*14	1	19368	16780 REPLACEMENT PARTS DWG

*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.

1 TORQUE TO 30 FT-LBS.

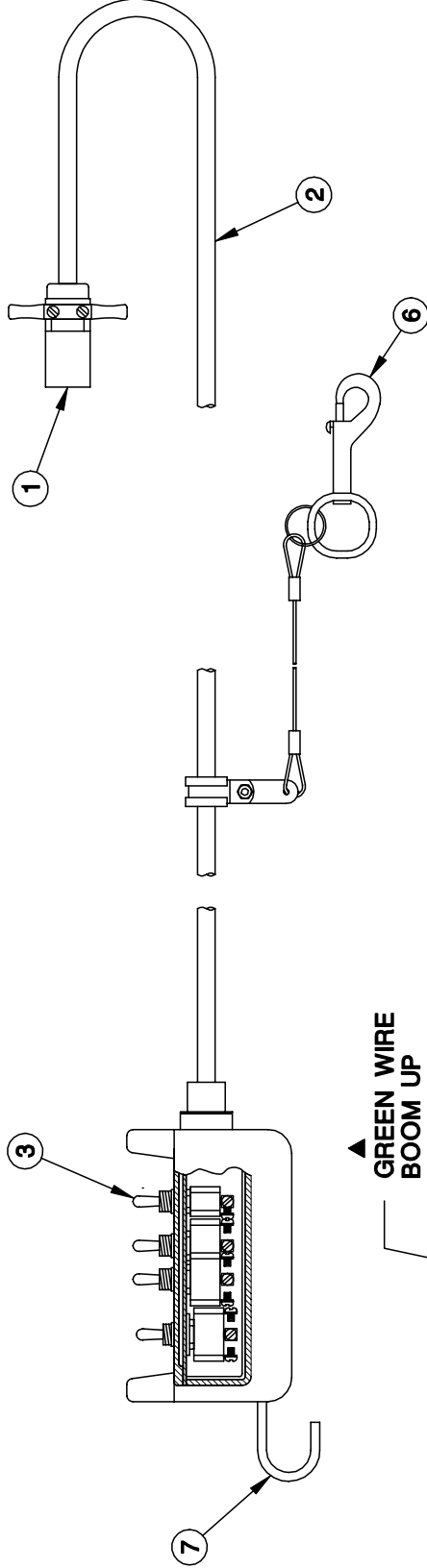
2 SECURE WITH LOCTITE 242 BLUE



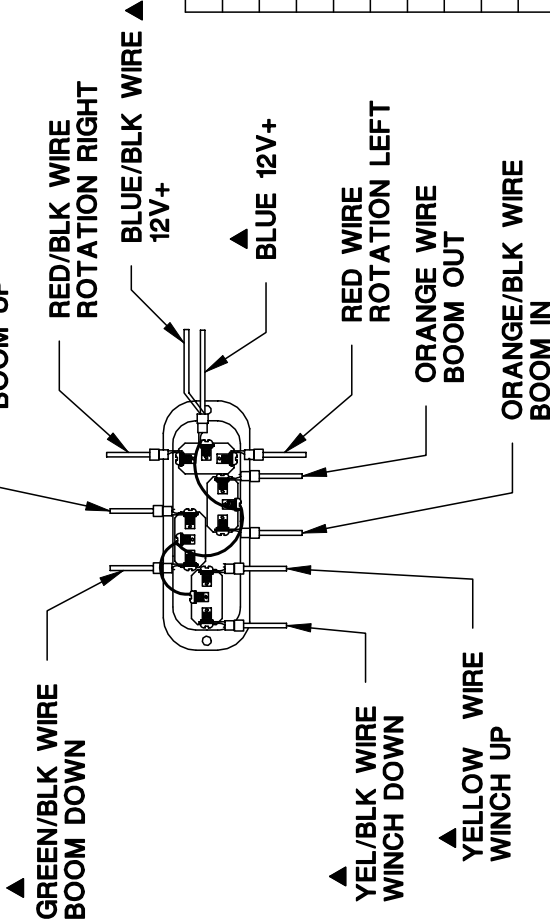
20160 4-SWITCH PENDANT



PLUG - BACKSIDE VIEW

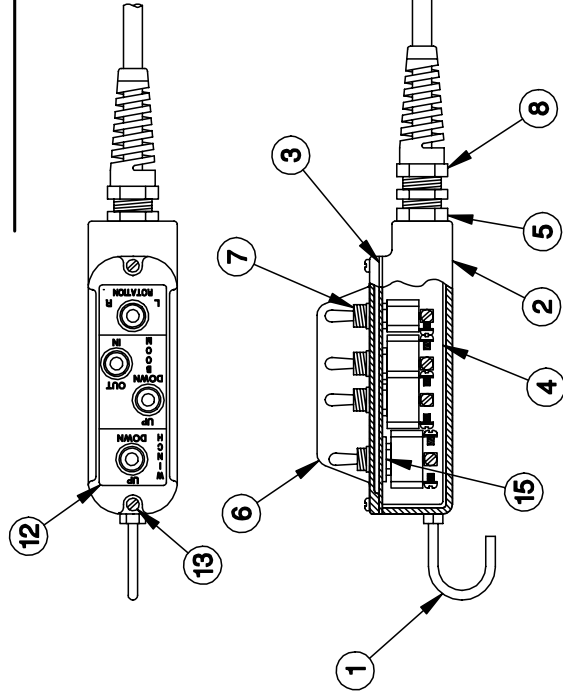


▲ NOTE: BLACK WIRE IS NOT USED



ITEM	QTY	PART NO.	DESCRIPTION
10	1	20165	GASKET / CORD RESTRAINT - PENDANT HEAD
9	1	20164	BASE - PENDANT HEAD
8	1	20163	COVER - PENDANT HEAD
7	1	11557	PENDANT HOOK
6	1	15913-2	PHAN, CLAMP AND TETHER ASSY
5	1	17363	DECAL
4	4	19793	TOGGLE BOOT
3	4	13763	TOGGLE SWITCH
2	1	26262-xx	CORD ASSY (xx = LENGTH IN FT.)
1	1	26263	PLUG - 9 POLE

▲ 17360 SERIES PENDANT CORD



WHT OR YEL - WU

GRN/BLK OR BLU/BLK - BD

BLU & BLK - 12V+

GRN OR BRN - BU

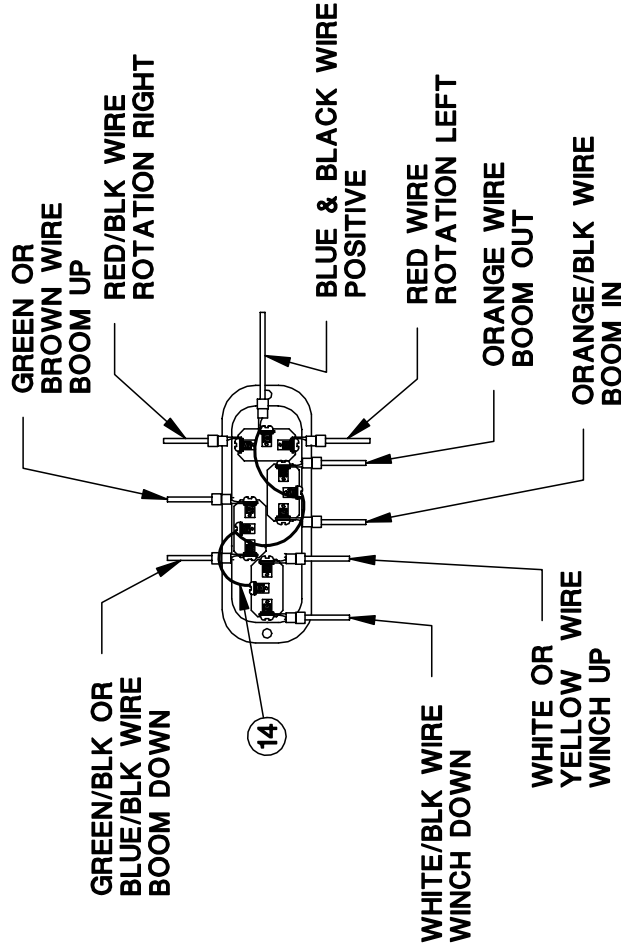
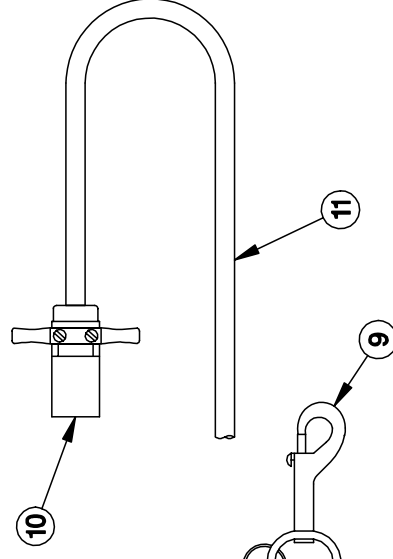
WHT/BLK OR YEL/BLK - WD

ORN/BLK - BI

RED - RL

RED/BLK - RR

PLUG - BACKSIDE VIEW



15	1	12534-4	MACHINERY BUSHING - 1/2" I.D. x 7/8" O.D. x 14 GA.
14	1	19307	4SW PENDANT CORD JUMPER
13	2	IPHCS#0832050	PHCS 8-32 x 1/2
12	1	17363	DECAL, CRANE CONTROL
11	1	26262-xx	CORD ASSY (xx = LENGTH IN FT.)
10	1	26263	PLUG - 9 POLE
9	1	15913-2	PHAN, CLAMP AND TETHER ASSY
8	1	25534	PLASTIC 3/4" STRAIN RELIEF
7	4	13763	TOGGLE SWITCH
6	1	17361	PENDANT COVER
5	1	HRDB16MP-12FP	HYD BUSHING
4	1	15629	INSULATOR FOR CONDULET
3	1	25625	GASKET 1"
2	1	25624	ENCLOSURE 1"
1	1	11557	PENDANT HOOK
ITEM	QTY	PART NO.	DESCRIPTION

TITLE

REPL. PARTS DWG.

SECTION

C400

DATE

4-10-00A

SUPERSEDES

1-21-00

4 FUNCTION CRANES

17383

SERVICE INSTRUCTIONS	24499-8	ASSY & SERVICE INSTRUCTIONS
	24499-1	



VENTURO

**MANUFACTURING, INC.
CINCINNATI, OHIO**

REPLACEMENT PARTS

ET20K(X), ET25K(X)

DATE **6-25-98A**

SECTION C400

I17530

REPLACEMENT PARTS LIST - 17530 WINCH POWER UNIT

MODEL: ET20K(X), ET25K(X)

PART NO.	DESCRIPTION
* 00991 * 00992 00994 * 12943-1 * 12943-2	GASKET SEAL WORM SHAFT BUSHING SHIM WASHER - 3/4" x 1 1/2" x .005" (AS REQUIRED) SHIM WASHER - 3/4" x 1 1/2" x .015" (AS REQUIRED)
* 12943-3 14082 14083 14088 14089	SHIM WASHER - 3/4" x 1 1/2" x .030" (AS REQUIRED) WORM GEAR BRAKE MOTOR CLUTCH HOUSING (INCLUDES 1/8" x 1/2" ROLL PIN) BRAKE DISC
14150-1 14335 14336 14337 14338	COVER ROLLER CLUTCH THRUST RACE - 1" NEEDLE THRUST BEARING - 1" I.D. THRUST RACE - 3/4"
14339 * 14343-1 * 14343-2 * 14343-4 * 14345-1	NEEDLE THRUST BEARING - 3/4" I.D. SHIM WASHER - 1" x 1 1/2" x .005" (AS REQUIRED) SHIM WASHER - 1" x 1 1/2" x .015" (AS REQUIRED) SHIM WASHER - 1" x 1 1/2" x .031" (AS REQUIRED) SHIM WASHER - 1" x 2" x .005" (AS REQUIRED)
* 14345-2 * 14351 14354-2 * 14455 14456-2 * 14478	SHIM WASHER - 1" x 2" x .015" (AS REQUIRED) WAVE WASHER BALL BEARING GASKET - MOTOR BREATHER CAP ASSEMBLY #91 WOODRUFF KEY - 1/4" x 3/4"
14487 16485 17531 24081 24151	MOTOR REPAIR KIT (INCLUDES 00992 SEAL & 14455 GASKET) SHIM, KEY, PIN & SEAL KIT (INCLUDES ITEMS MARKED *) MOTOR (INCLUDES 00992 SEAL) WORM & SHAFT GEAR CASE
25370-1 * 25370-3 25409 25410 25411	ROLLER BEARING (INCLUDES 25370-3 SEAL) SEAL BEARING & HOUSING ASSEMBLY (INCLUDES 25370-1, 25370-3, 25411 & 568-277-70N) PINION SHAFT & RACE ASSEMBLY BEARING HOUSING
* 3100-100 * 568-227-70N * - * -	RETAINING RING O-RING - 2 1/8" x 2 3/8" x 1/2" ROLL PIN - 1/8" x 1/2" ROLL PIN - 3/16" x 3/4"



17530 POWER UNIT INTERCHANGEABLE WITH & REPLACES 24408 ON ET20K(X) CRANE

SPECIFY POWER UNIT NUMBER & CRANE SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.



MFG., INC.
CINCINNATI, OHIO

TITLE

REPL. PARTS LIST

17530 WINCH PU

DATE

6-25-98A

SUPERCEDES
9-20-90

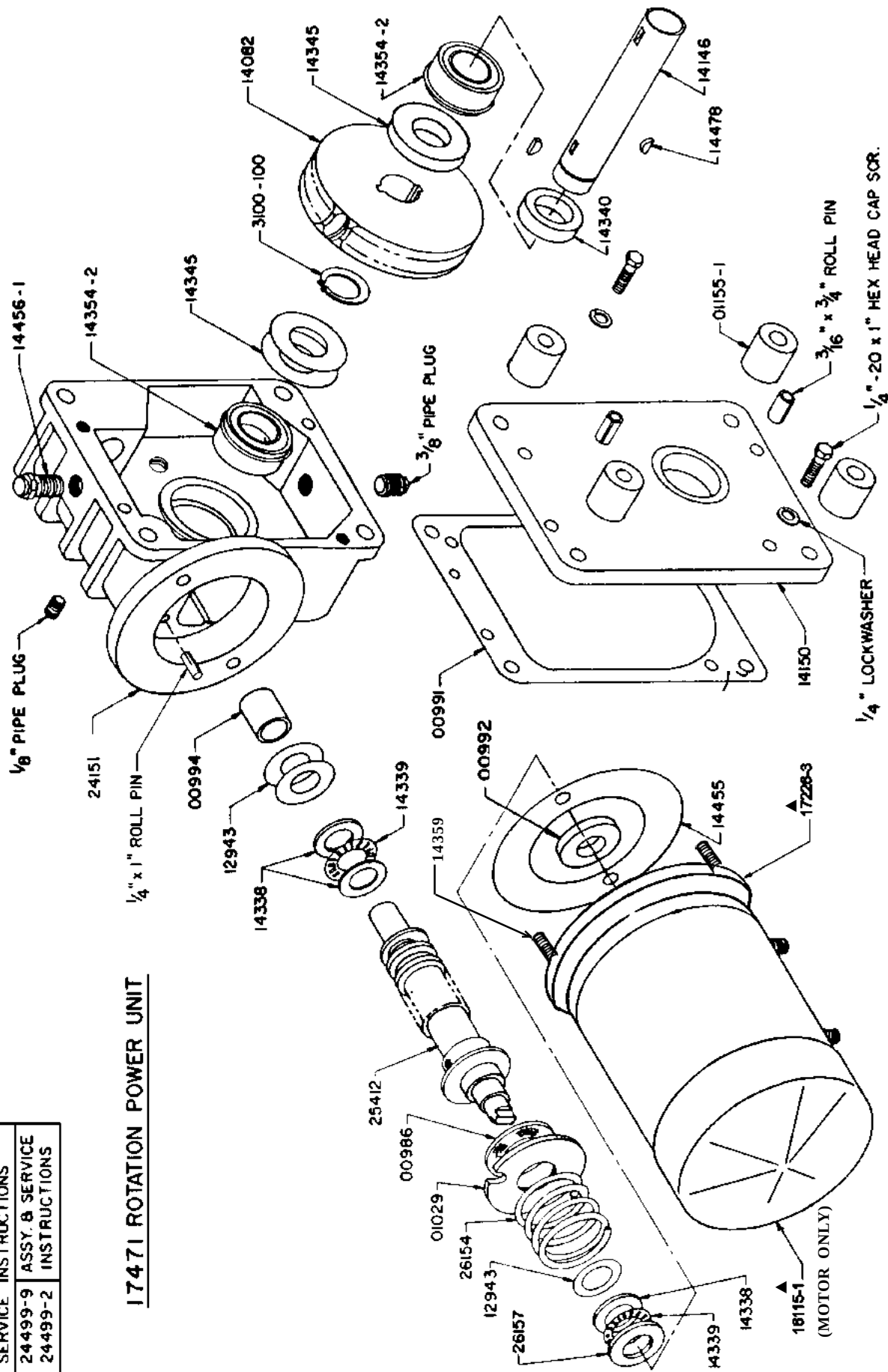
SECTION

C400

900617

SERVICE INSTRUCTIONS	
24499-9	ASSY. & SERVICE
24499-2	INSTRUCTIONS

17471 ROTATION POWER UNIT



VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
REPLACEMENT PARTS

DATE
1-4-01D

SECTION
C400

SUPERCEDES
6-25-98C

17472

REPLACEMENT PARTS LIST - 17471 ROTATION POWER UNIT

MODEL: ET20K(X), ET25K(X), ET30K, ET36KX 

PART NO.	DESCRIPTION
17471	ROTATION POWER UNIT
* 00986 * 00991 00994 01029 01155-1	BRAKE DISK GASKET WORM SHAFT BUSHING BRAKE PLATE SPACER
* 12943-1 * 12943-2 * 12943-3 14082 14146	SHIM WASHER - 3/4" x 1 1/2" x .005" (AS ERQUIRED) SHIM WASHER - 3/4" x 1 1/2" x .015" (AS ERQUIRED) SHIM WASHER - 3/4" x 1 1/2" x .030" (AS ERQUIRED) WORM GEAR OUTPUT SHAFT
14150 14338 14339 * 14340 * 14345-1	COVER THRUST RACE - 3/4" NEEDLE THRUST BEARING - 3/4" SHAFT SEAL - 1" SHIM WASHER - 1" x 2" x .005" (AS REQUIRED)
* 14345-2 14354-2 * 14455 19276 * 14478 24151	SHIM WASHER - 1" x 2" x .015" (AS ERQUIRED) BALL BEARING GASKET - MOTOR BREATHER CAP ASSEMBLY #91 WOODRUFF KEY - 1/4" x 3/4" GEAR CASE (INCLUDES 1/4" x 1" ROLL PIN)
16115  25412 26154 26157 * 3100-100 * IRPIN-025100 * IRPIN-019075	MOTOR - 12 VOLT, 2 TERMINAL WORM SHAFT & ROTOR ASSEMBLY BRAKE SPRING THRUST WASHER RETAINING RING ROLL PIN - 1/4" x 1" (BRAKE PLATE) ROLL PIN - 3/16" x 3/4" (BASE PLATE)
16485 17467	SHIM, KEY, PIN & SEAL KIT (INCLUDES ITEMS MARKED *) MOTOR REPAIR KIT (INCLUDES 14455 GASKET)

 17471 POWER UNIT INTERCHANGEABLE AS A COMPLETE UNIT WITH & REPLACES 14407, 14409, 24409 & 26439

SPECIFY POWER UNIT NUMBER & CRANE SERIAL NUMBER WHEN ORDERING REPLACEMENT PARTS.

 16115 MOTOR REPLACES 24364 MOTOR ON 24409 POWER UNITS.
16115 MOTOR REPLACES 14362 MOTOR ON 14407 & 14409 POWER UNITS.
16115 MOTOR REPLACES 24362 MOTOR ON 26439 POWER UNITS.



MFG., INC.
CINCINNATI, OHIO

TITLE
REPL. PARTS LIST

17471 WINCH PU

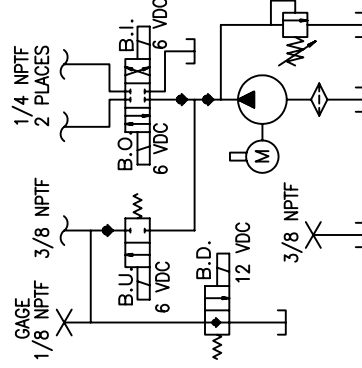
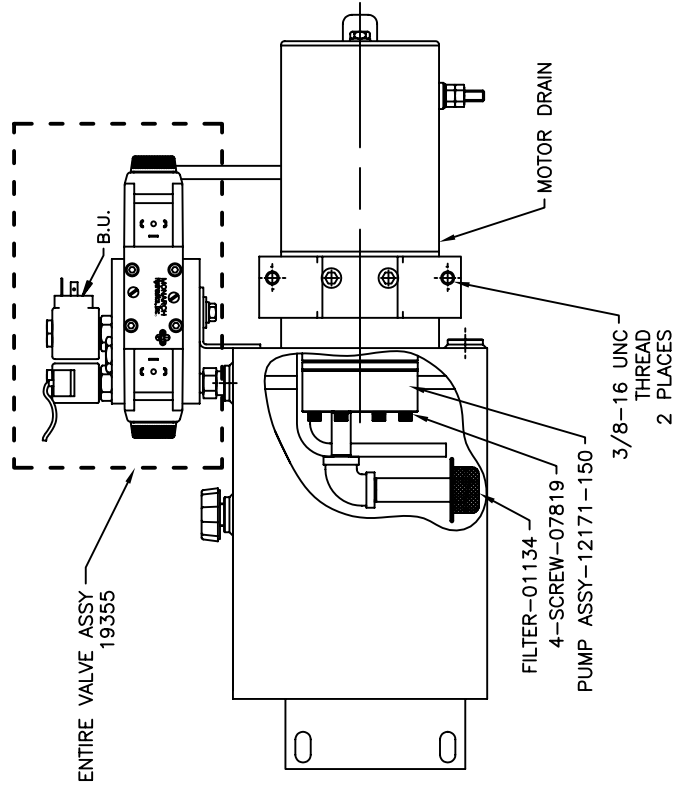
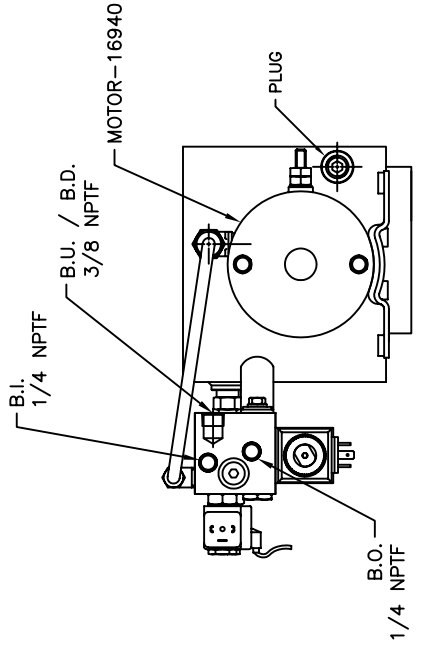
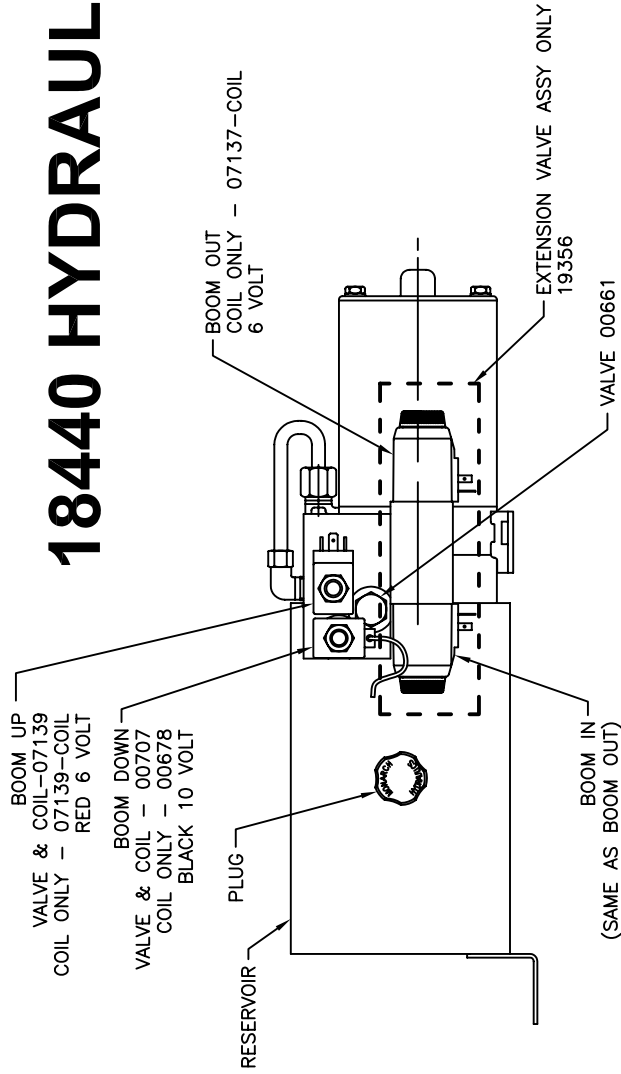
DATE
12-18-00D

SUPERCEDES
6-25-98C

SECTION
C400

900319

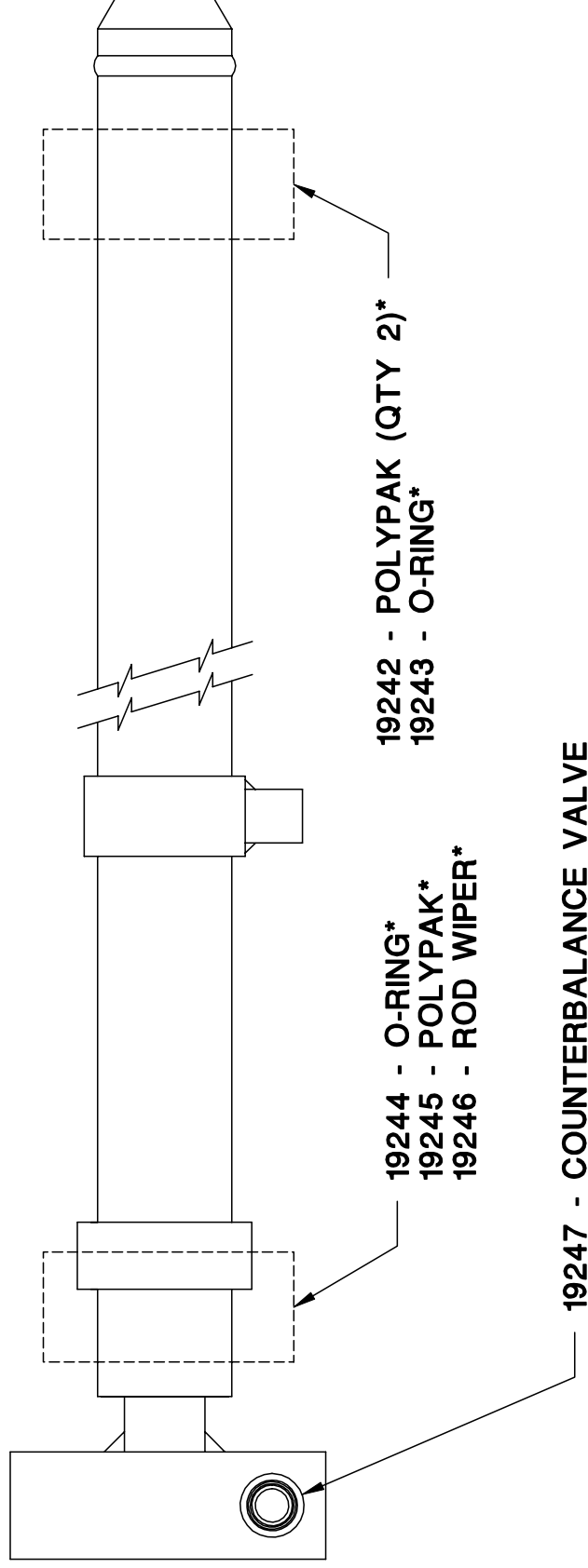
18440 HYDRAULIC POWER UNIT



SCHEMATIC

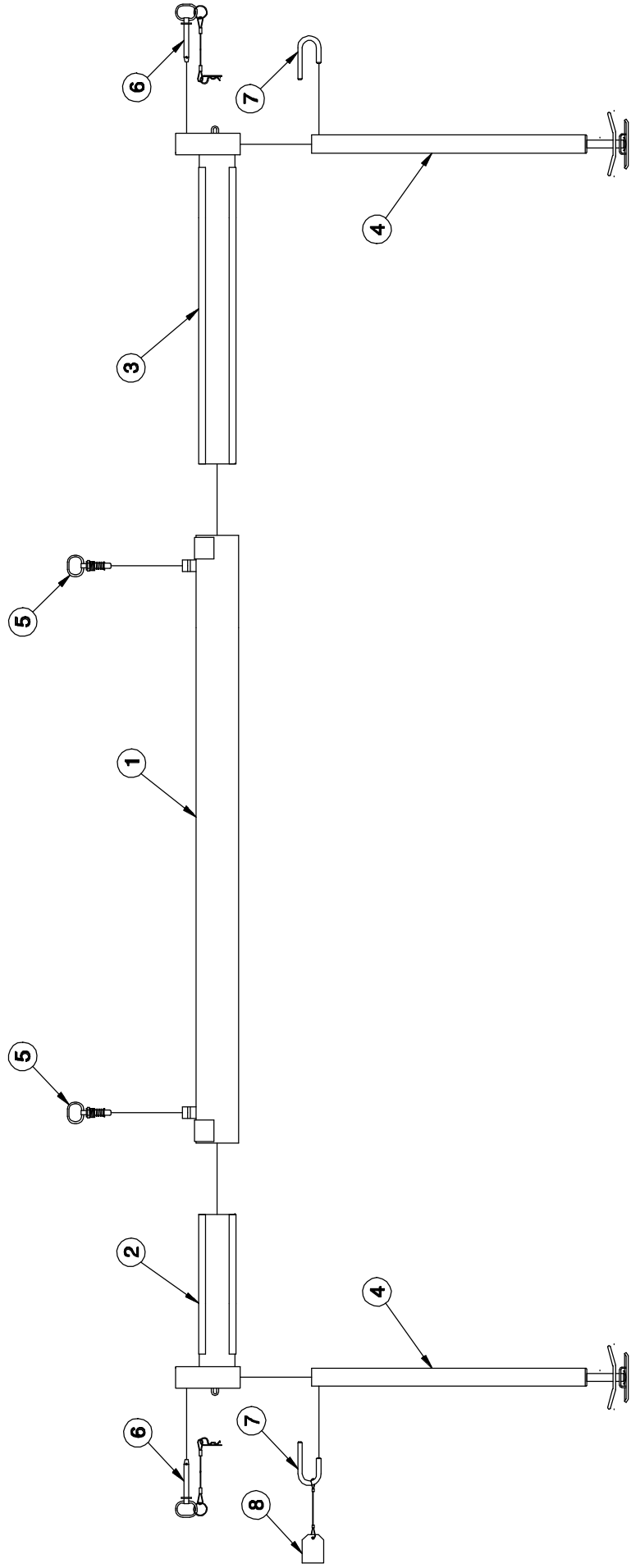
TITLE	DATE	SECTION
REPLACEMENT PARTS DRAWING	7-29-05C	C400
18440 POWER UNIT - ET25KX	11-22-99B	19362

19886-1 EXTENSION CYLINDER



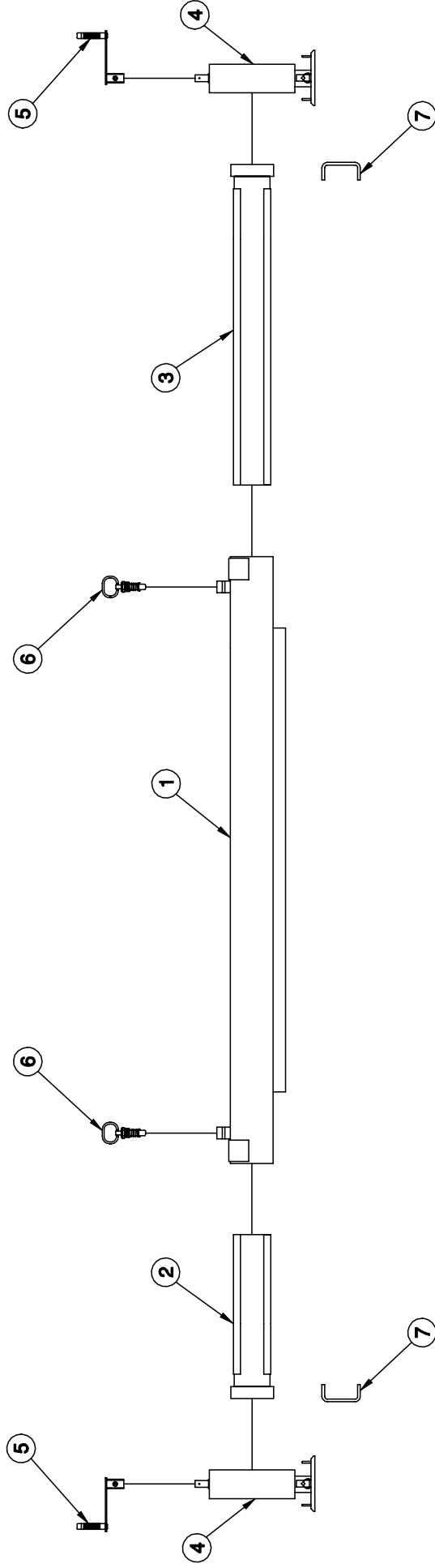
* ITEMS INCLUDED IN 19887 SEAL KIT

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE EXTENSION CYLINDER		DATE 7-6-01	SECTION C400
	ET/HT25KX		SUPERSEDES -	19908



ITEM	QTY	PART NO	DESCRIPTION
8	1	14517	TAG - HANDLE INSTALLATION
7	2	23980	OUTRIGER LEG HANDLE
6	2	23976	HITCH PIN WITH LANYARD
5	2	22433	SPRING LOADED PIN ASSY
4	2	24073-4	MANUAL DROP LEG
3	1	22420-2	PULLOUT - LONG
2	1	22420-1	PULLOUT - SHORT
1	1	22425	CROSS TUBE WELDED ASSY

TITLE	DATE	SECTION
REPLACEMENT PARTS DWG & LIST	10-14-97A	C400
23962-P-II MANUAL OUTRIGGERS	SUPERSEDES 7-8-97	22434



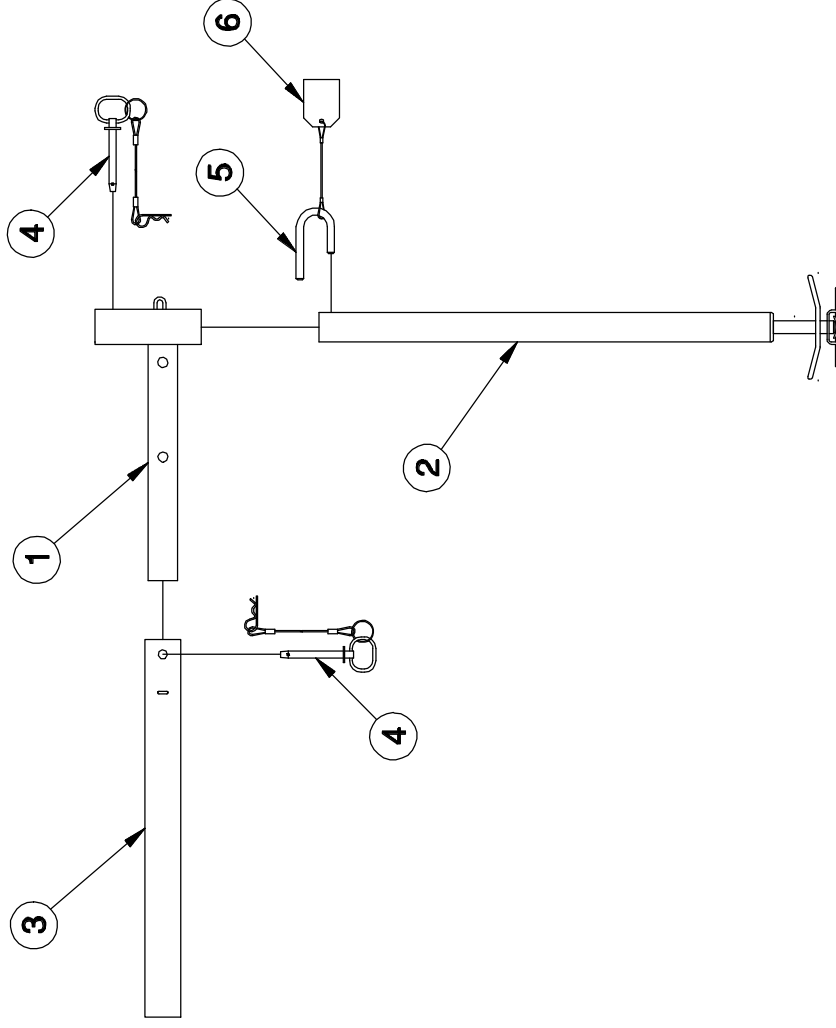
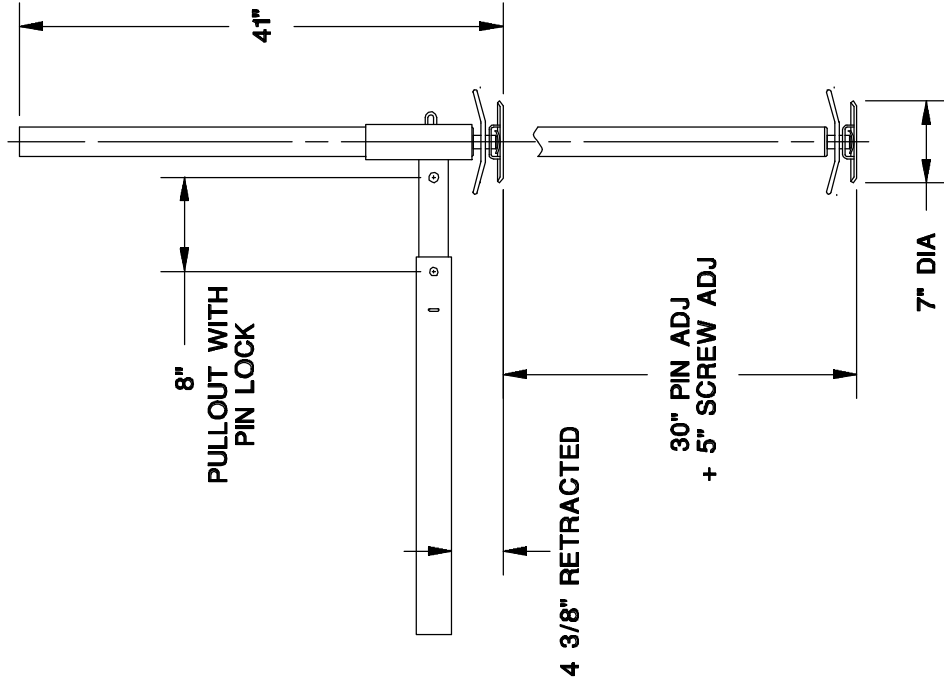
NOTE: CUSTOMER TO WELD (3/16" BEAD) ITEM 4 (CRANK DOWN LEG) IN PLACE AFTER ADJUSTING FOR PROPER GROUND CLEARANCE AND TRAVEL
CUSTOMER TO WELD (3/16" BEAD) ITEM 7 (HANDLE) IN PLACE IN A SUITABLE LOCATION

▲ IF USING CRANKDOWN OUTRIGGER LEGS (ITEM 4) WITH 4" X 4" TUBING YOU WILL NEED TO SPECIFY 22422 FOR ITEM 2 AND 22423 FOR ITEM 3.

7	2	19344	HANDLE
6	2	22433	SPRING LOADED PIN ASSY
5	2	19008	CRANK ASSY - OUTRIGGER
4	2	22440	CRANK DOWN LEG
3	1	▲ 22569	PULLOUT - LONG
2	1	▲ 22568	PULLOUT - SHORT
1	1	22426	CROSS TUBE WELDED ASSY

ITEM	QTY	PART NO	DESCRIPTION
------	-----	---------	-------------

TITLE			SECTION
REPLACEMENT PARTS DWG & LIST			C400
23962-CD-II HD CRANKDOWN O.R.			7-30-99A
			22441



ITEM	QTY	PART NO.	DESCRIPTION
6	1	14517	TAG - HANDLE INSTALLATION
5	1	23980	OUTRIGGER LEG HANDLE
4	2	23976	HITCH PIN WITH LANYARDS
3	1	23962-4	STUB MOUNTING TUBE
2	1	24073-4	SECONDARY LEG ASSEMBLY
1	1	23979	STUB OUTRIGGER

TITLE INSTALLATION DRAWING STUB OUTRIGGER	DATE 4-14-98D	SECTION C100
	SUPERSEDES 1-18-90C	
	23962-2	



LIMITED WARRANTY POLICY

This limited policy warrants new products of Venturo be free from defects in material and workmanship for a period of one (1) year from date of original installation. This 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.

WARRANTY CLAIMS

Venturo Manufacturing, Inc. 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 insure the installation is completed according to the manufacturer's recommendations, insure 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 products without the expressed written consent of the manufacturer. Reinstallation 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 again be instructed as to the safe operation at time of delivery. Maintenance, service, operation and safety warning decals are available on request from Venturo Manufacturing, Inc.

VENTURO MANUFACTURING, INC

DIVISION OF COLLINS ASSOCIATES, INC
12110 BEST PLACE • CINCINNATI, OHIO 45241
513.772.8448
www.venturo.com