



VENTURO
TRUCK MOUNTED CRANES

HT18KX

HJAAAA-PO**

INSTALLATION & OWNER'S MANUAL

TABLE OF CONTENTS

HT18KX / Prop. No Eng Ctrls (HJAAAA-P0**)

SECTION 100 **DESCRIPTION & SPECIFICATIONS**

21304	INSTALLATION DIMENSIONS
19930	BASE MOUNTING DIMENSIONS
21303	CAPACITY CHART - HT25KX
119288	SERVICE BODY REINFORCEMENT
14510	FLAT BED REINFORCEMENT

SECTION 150 **SAFETY**

15394	VEHICLE & CRANE ELECTRICAL HAZARD INFORMATION
920612	SAFETY & HAZARDS - GENERAL
119217	WINCH SAFETY WARNINGS
21197	DECAL PLACEMENT
21353	SAFETY DECALS (PAGE 1 OF 2)
21384	SAFETY DECALS (PAGE 2 OF 2)
21355A	SHUTOFF AND OVERRIDE DECALS (PAGE 1 OF 2)
21355B	SHUTOFF AND OVERRIDE DECALS (PAGE 2 OF 2)
21357	MODEL AND CAPACITY DECALS - HT18KX

SECTION 200 **INSTALLATION**

21323	CRANE INSTALLATION (PAGE 1 OF 2)
21324	CRANE INSTALLATION (PAGE 2 OF 2)
21325A	CRANE OPERATION & MAINTENANCE INSTRUCTIONS (PAGE 1 OF 2)
21325B	CRANE OPERATION & MAINTENANCE INSTRUCTIONS (PAGE 2 OF 2)
22328	SAFETY SHUTOFF INSTRUCTIONS
22826	19295 HYDRAULIC TANK DIMENSIONS
119232	PTO INSTALLATION
20691	COMPARTMENT DRAWING
22245	WIRE ROPE INSTALLATION
20453	IN-COMPARTMENT CONTROLS INSTALLATION

SECTION 300 **MAINTENANCE & SERVICE**

21326	LUBRICATION & MAINTENANCE CHART
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SECTION 400 **REPLACEMENT PARTS**

21342	HT25KX CRANE REPLACEMENT PARTS DRAWING
21343	HT25KX CRANE REPLACEMENT PARTS LIST
21344	HT25KX CRANE FASTENER LIST
21310	21200 - 8 - 16FT. BOOM ASSEMBLY
▲ 21322	21200 BOOM REPLACEMENT PARTS LIST
21275	ANTI-TWO-BLOCK REPLACEMENT PARTS DRAWING
22120	ELECTRICAL SCHEMATIC - PROPORTIONAL WITHOUT ENGINE CONTROLS
22169	ELECTRICAL SCHEMATIC - W/-IN COMP. CONTROLS (NO ENGINE CONTROLS)
21331	HYDRAULIC SYSTEM COMPONENTS REPLACEMENT PARTS DRAWING
21339	HT25KX HYDRAULIC SYSTEM DIAGRAM W/ PROPORTIONAL CONTROLS
22166	22118 PENDANT REPLACEMENT PARTS DRAWING
22448	19294 PTO PACKAGE
20827	FIELD SERVICE LABEL KIT



MFG., INC.
CINCINNATI, OHIO

TITLE
TABLE OF CONTENTS

HT18KX (HJAAAA-P0)**

DATE
5-5-08E

SUPERCEDES
4-26-06D

SECTION
-

21350

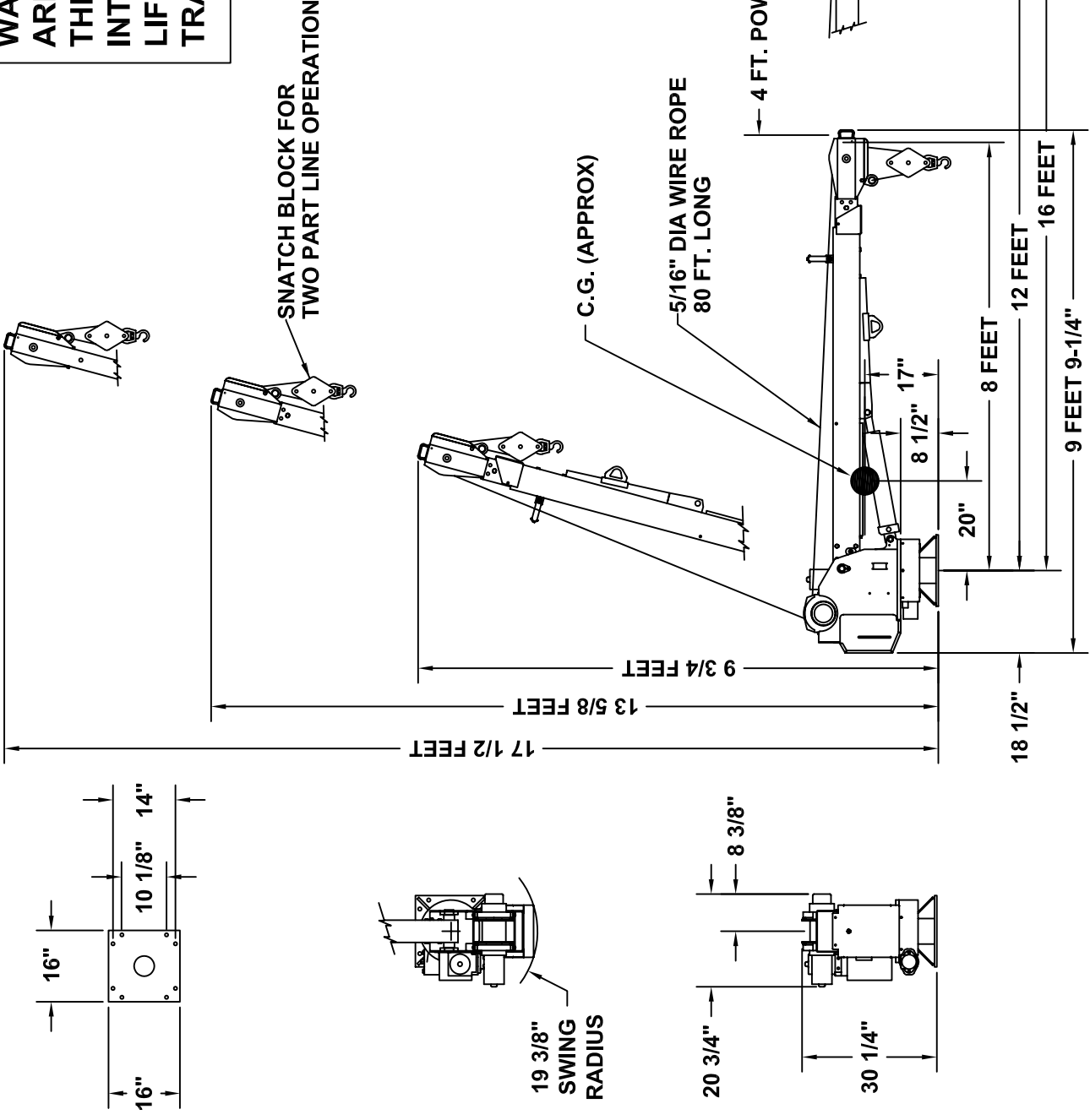
SECTION 100

DESCRIPTION

&

SPECIFICATIONS

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



**TOTAL INSTALLED
WEIGHT 950 LBS**

ENTRO

**MANUFACTURING, INC.
CINCINNATI, OHIO**

TLE INSTALLATION DRAWING

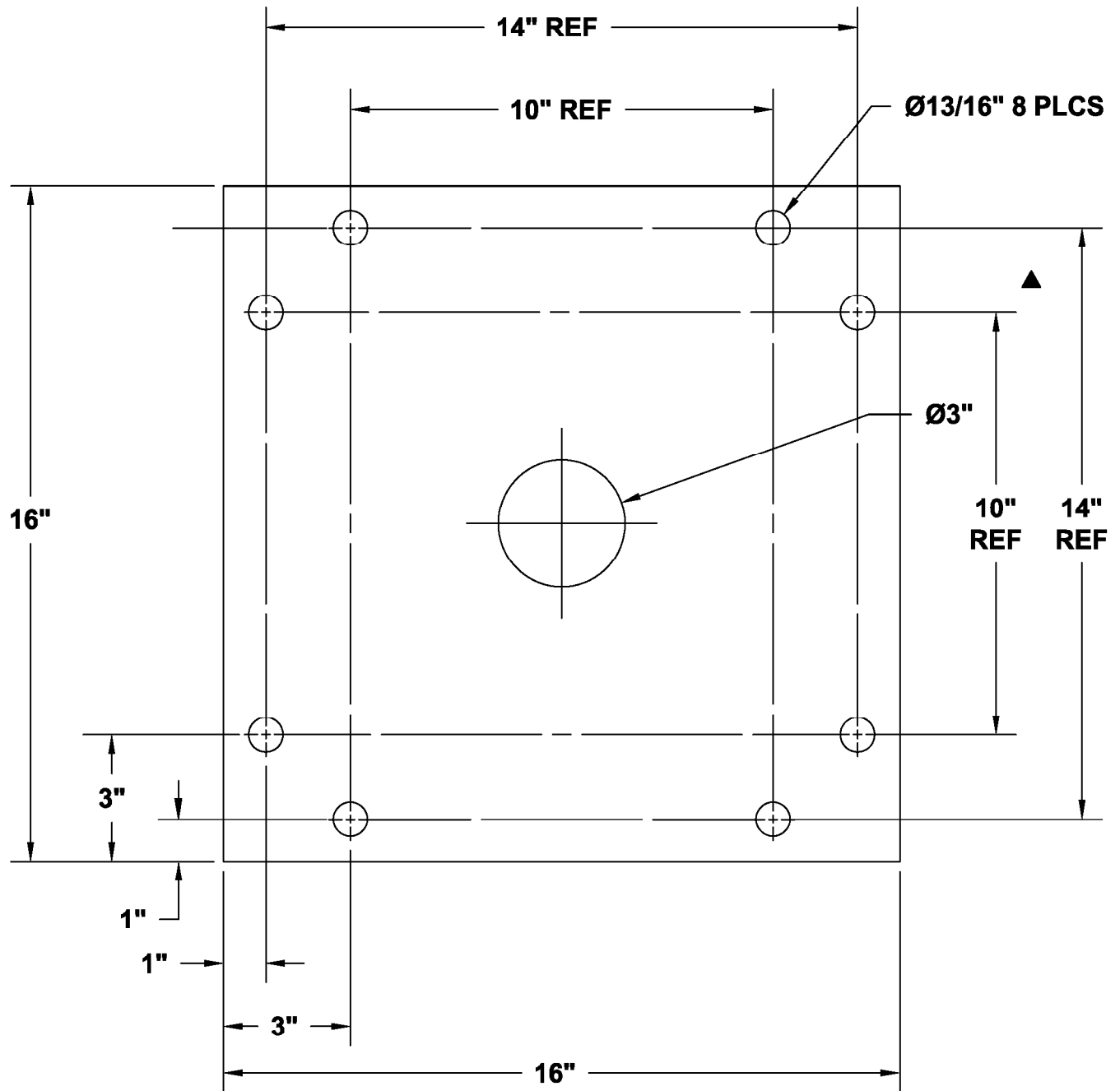
DATE
4-25-08C

SUPERSEDES
3-30-05B

ET/HT18K(X) - 8/12/16 BOOM

SECTION
-
21304

▲ ET/HT18K(X) & ET/HT25K(X) BASE MOUNTING DIMENSION



MFG., INC.
CINCINNATI, OHIO ▲

TITLE

BASE MOUNTING DIM

ET/HT18K(X) ET/HT25K(X)

DATE

1-18-05C

SUPERSEDES

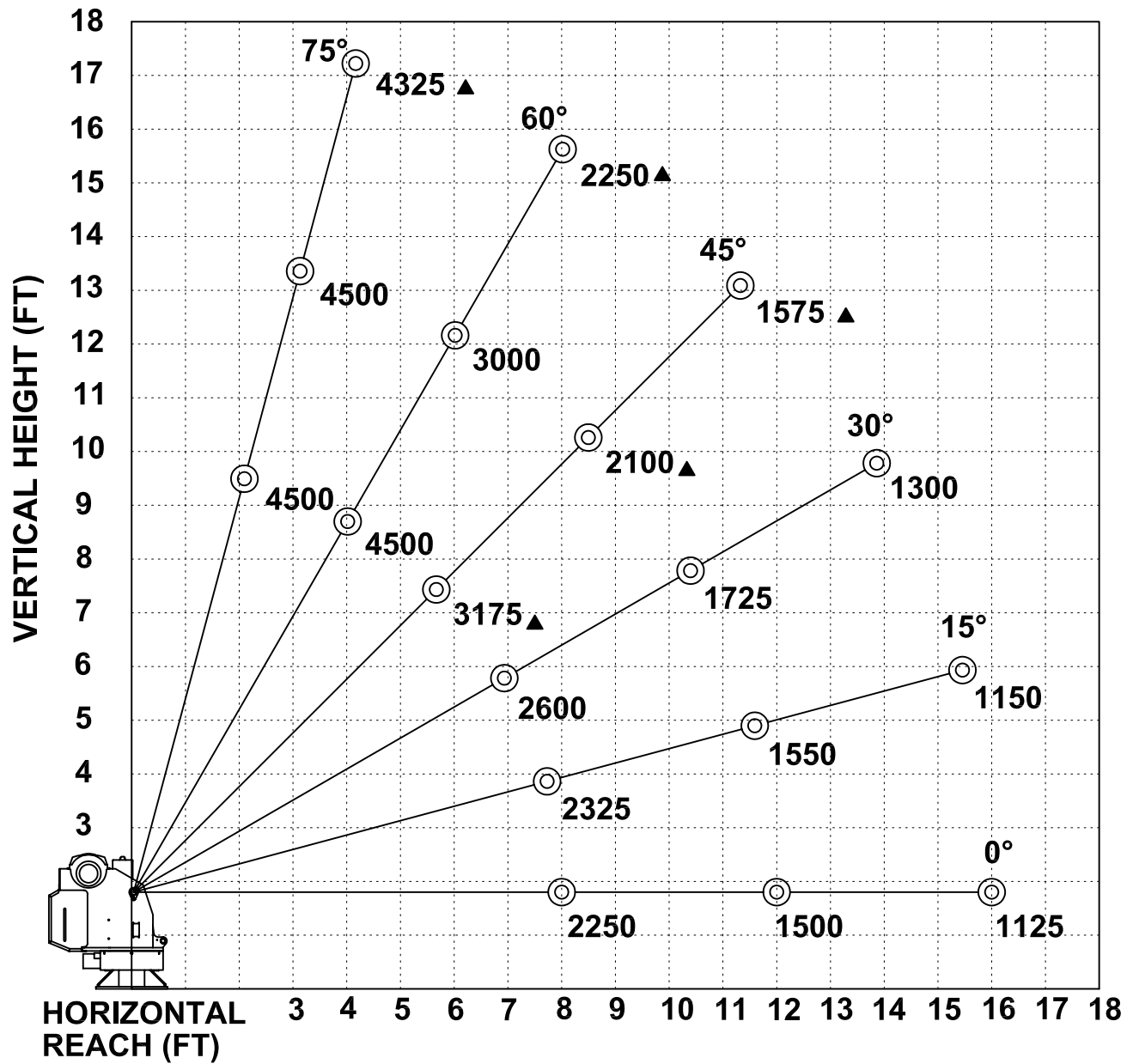
7-29-03B

SECTION

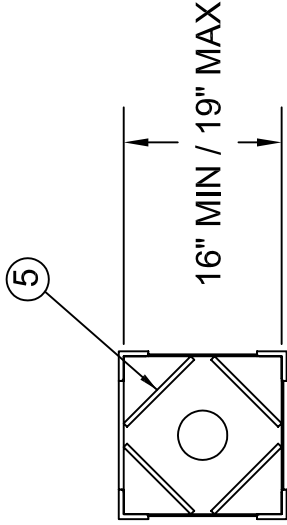
C200

19930

ET/HT18K(X) - 8-12-16 BOOM MAXIMUM CAPACITY CHART

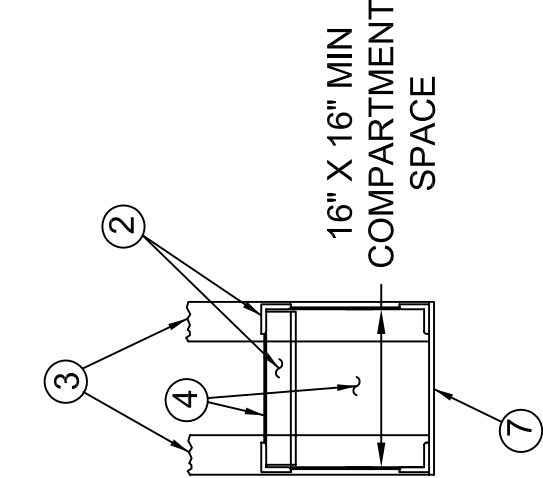


**MUST USE SNATCH BLOCK
FOR LOADS OF 2250 LBS.
AND GREATER**

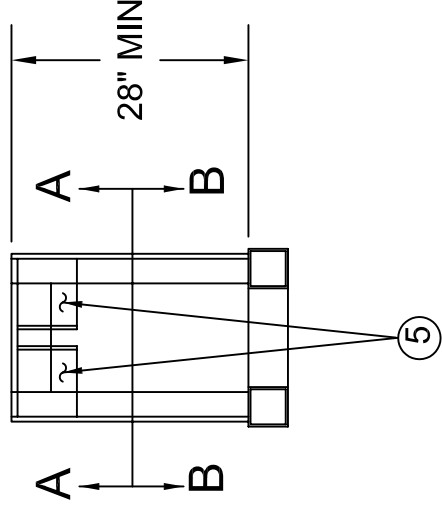
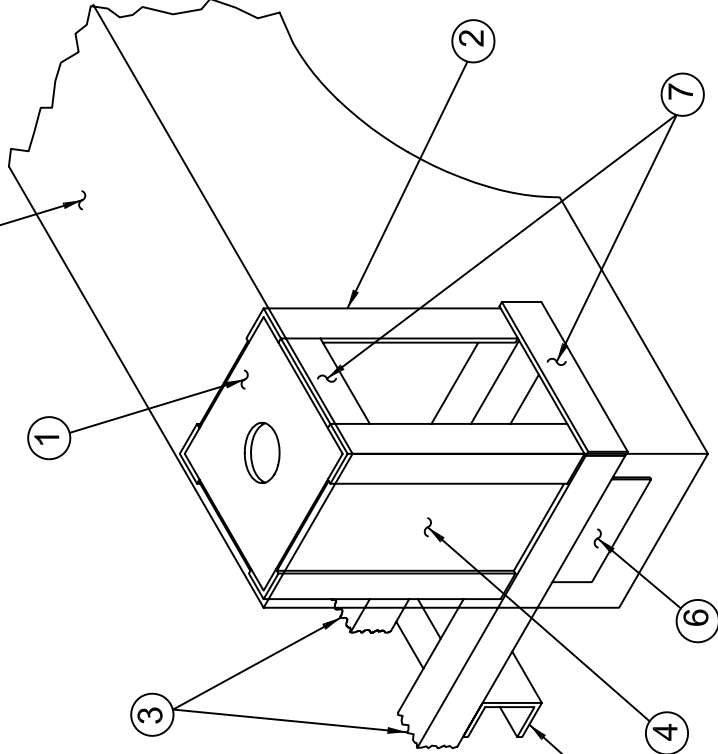


SECTION A-A

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.



SECTION B-B



TYPICAL SERVICE BODY REINFORCEMENT

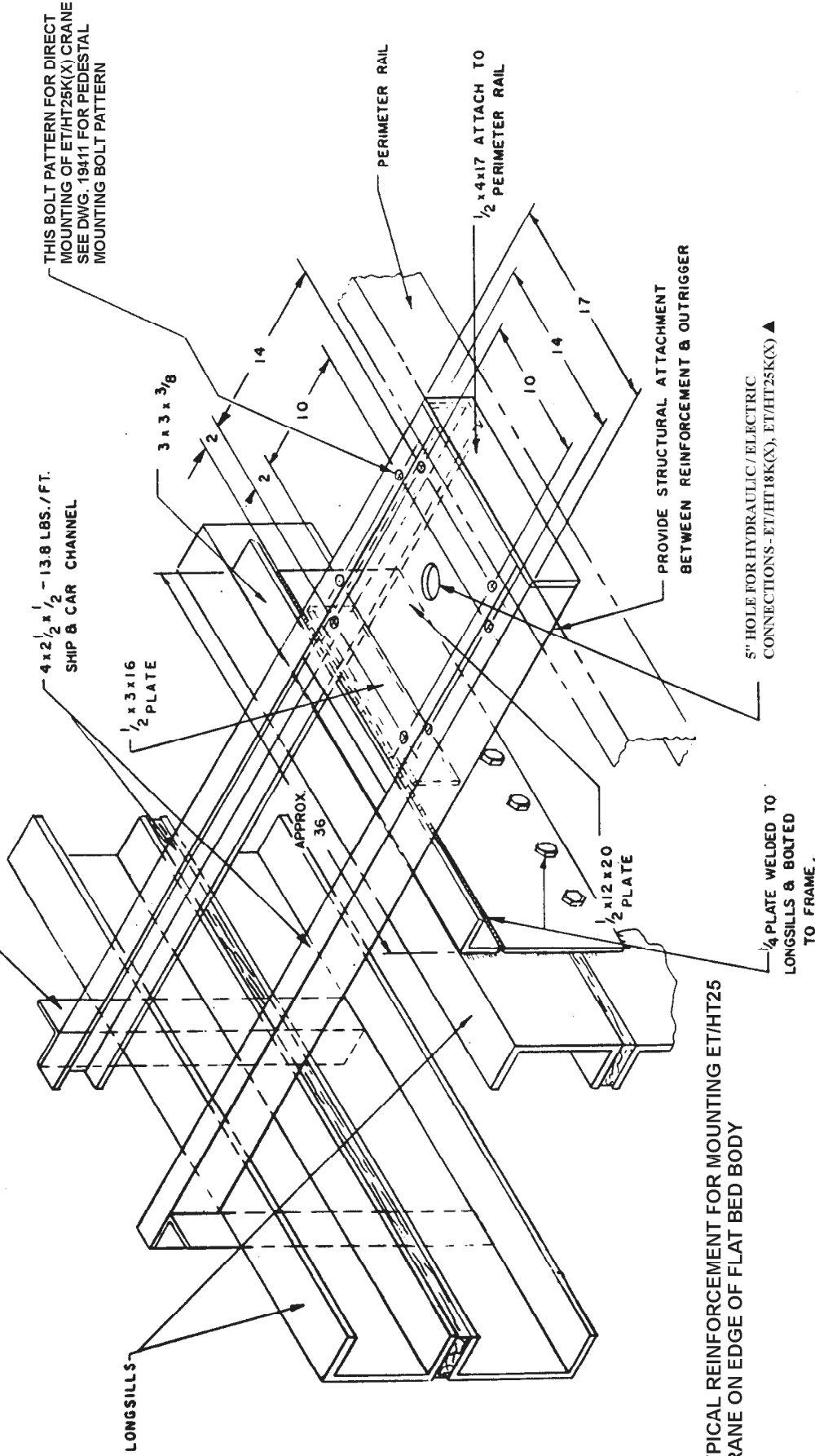
PART	DESCRIPTION	MINIMUM RECOMMENDED MATERIAL SIZE
1	TOP PLATE	1/2" STEEL ▲
2	CORNER POST	3" x 3" x 1/2" STEEL ANGLE
3	CROSS FRAME	4" x 4" x 5/16" SQUARE TUBING - SPAN FULL WIDTH
4	SHEAR WEB	3/16" STEEL PLATE
5	TOP PLATE REINFORCEMENT	1/2" x 6" OR 3/4" x 5" STEEL BAR
6	OUTRIGGER REINFORCEMENT PLATE	1/4" 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

 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	DATE	SECTION
	INSTALLATION DWG	12-20-10G	C100
ET/HT25K(X) & ET/HT18K(X)		SUPERSEDES	19288
		4-25-08F	

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.

ANGLES BOLTED INTO
FRAME & LONGSILLS
2 PLACES

$3 \times 3 \times \frac{3}{8}$



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

VENTURO
MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DRAWING

ET/HT18K(X), ET/HT25K(X) ▲

SECTION

C100

DATE

7-29-03M

SUPERCEDES

10-11-02L

14510

SECTION 150

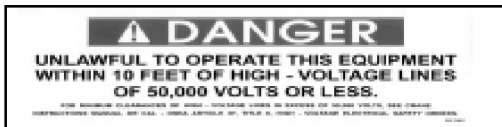
SAFETY

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.
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TITLE
INSTALLATION DWG

ET & HT CRANE SERIES

DATE
5-15-02H

SUPERCEDES
5-13-97G

SECTION
C150

15394

CRANE SAFETY AND HAZARDS

HT25KX, HT40KX, HT50KX

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 DISENGAGE PTO SYSTEM 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

DATE

5-13-97A

SECTION

C150

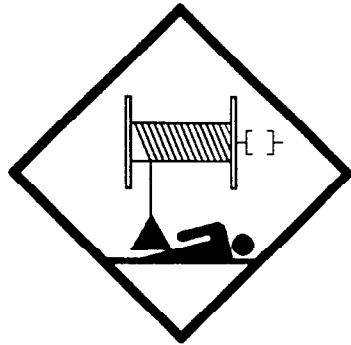
HYDRAULIC CRANES

SUPERCEDES

6-12-92

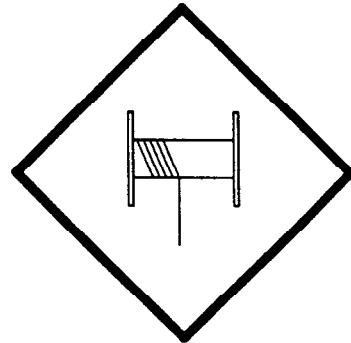
920612

WINCH SAFETY WARNINGS



DANGER

**DO NOT DISENGAGE
WINCH UNDER LOAD**



DANGER

**THE LAST FIVE
WRAPS OF WIRE ROPE
MUST BE LEFT ON
THE DRUM TO ASSIST
THE WIRE ROPE CLAMP IN
HOLDING THE LOAD**



WARNING

**WINCHES ARE NOT
TO BE USED FOR
THE LIFTING OR
MOVING OF
PERSONS**



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TITLE
INSTALLATION DWG

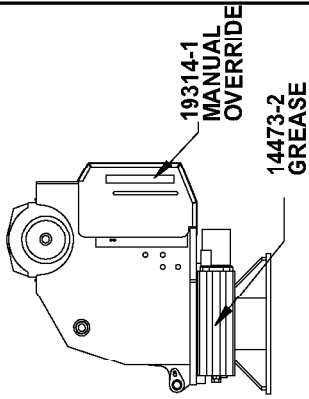
HT CRANES

DATE
5-26-98B

SUPERCEDES
10-17-97A

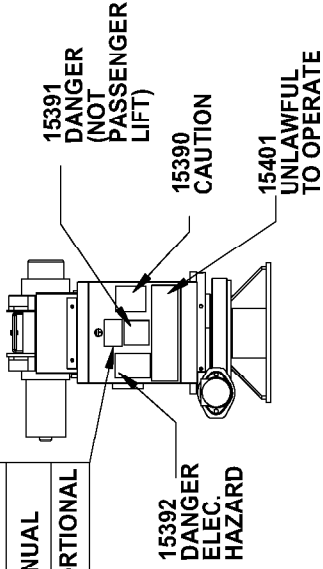
SECTION
C150

119217

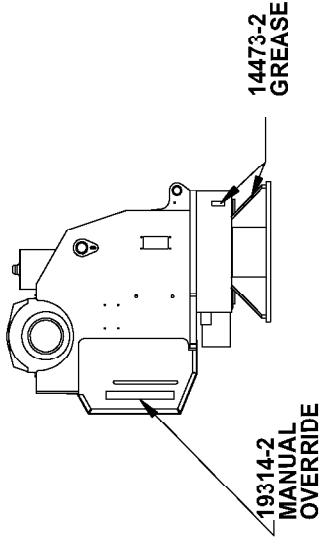


LEFT

SHUT OFF DECAL	
19315-1	MANUAL
19315-2	PROPORTIONAL

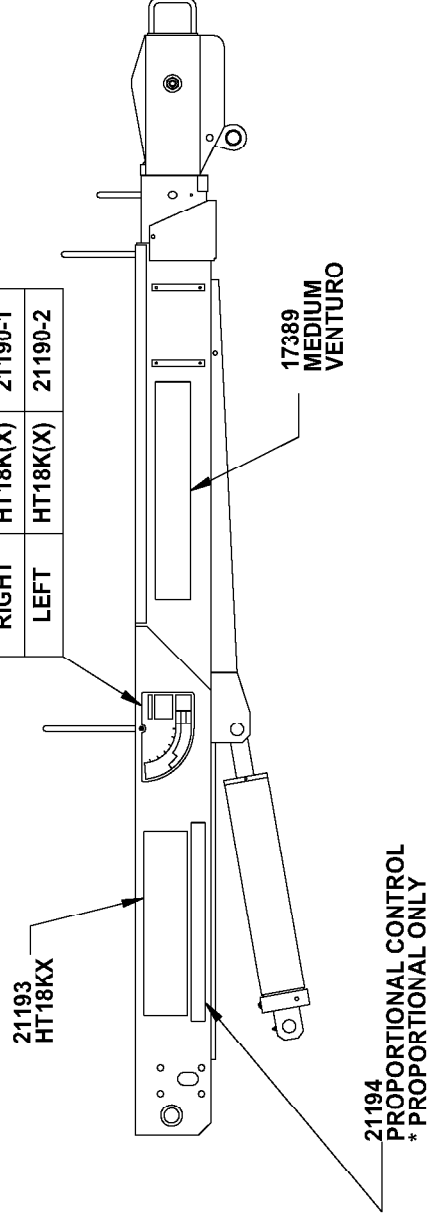


BACK



RIGHT

CAPACITY	
DECAL	MODEL
RIGHT	HT18K(X)
LEFT	HT18K(X)



BOOM

VENTURO MANUFACTURING, INC.
CINCINNATI, OHIO

TITLE
DECAL PLACEMENT

HT18KX

DATE
9-24-03

SUPERSEDES
.

SECTION
C150

21197

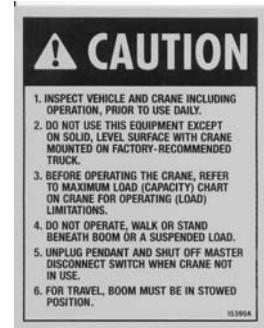
PART NO.: 15390

DECAL: CAUTION - INSPECT VEHICLE & CRANE

FUNCTION: To inform the operator of key operating requirements.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 15391

DECAL: DANGER - NOT PASSENGER LIFT

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

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 15392

DECAL: DANGER - ELECTROCUTION HAZARD

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

QUANTITY: 1

PLACEMENT: Rear cover.



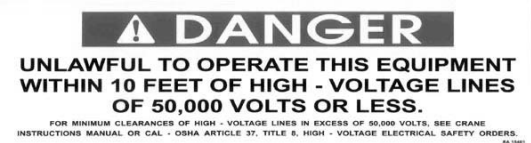
PART NO.: 15401

DECAL: UNLAWFUL TO OPERATE

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

QUANTITY: 1

PLACEMENT: Right side of housing.



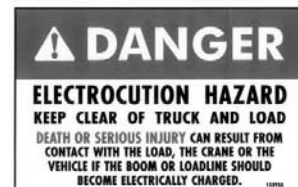
PART NO.: 15393A

DECAL: DANGER - ELECTROCUTION HAZARD

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

QUANTITY: 4

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



MFG., INC.
CINCINNATI, OHIO

TITLE

SAFETY DECALS

CRANES

DATE

8-10-09B

SUPERSEDES

5-6-08A

SECTION

C150

21353

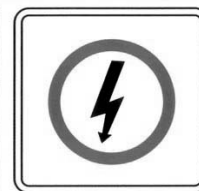
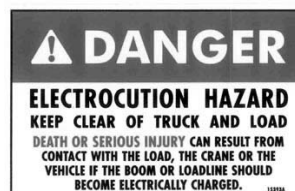
PART NO.: 15393A

DECAL: DANGER - ELECTROCUTION HAZARD

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

QUANTITY: 4

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



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.



MFG., INC.
CINCINNATI, OHIO

TITLE

SAFETY DECALS

CRANES

DATE

8-10-09A

SUPERSEDES

4-26-06

SECTION

C150

21384

PART NO.: 14473-2

DECAL: GREASE

FUNCTION: To show the operator where to apply grease.

QUANTITY: Varies

PLACEMENT: Near grease fittings.



PART NO.: 19314-1

DECAL: MANUAL OVERRIDE

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Left side of rear cover.



PART NO.: 19314-2

DECAL: MANUAL OVERRIDE

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Right side of rear cover.



MFG., INC.
CINCINNATI, OHIO

TITLE

SHUT OFF & OVERRIDE DECALS

DATE

3-9-11A

SECTION

C150

HT CRANES

SUPERSEDES

9-6-05

21355A

PART NO.: 19315-1

DECAL: MANUAL OVERRIDE (NON-PROPORTIONAL)

FUNCTION: To show the operator how to override master shut off valve.

QUANTITY: 1

PLACEMENT: Rear cover.



PART NO.: 19315-2

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

FUNCTION: To show the operator how to override proportional valve.

QUANTITY: 1

PLACEMENT: Rear cover.



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TITLE
SHUT OFF & OVERRIDE DECALS

DATE
9-6-05

SECTION
C150

HT CRANES

SUPERSEDES
-

21355B

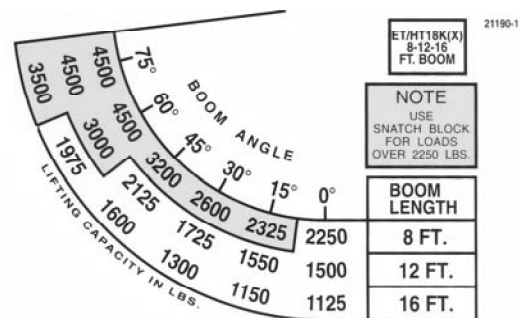
PART NO.: 21190-1 & 21190-2 (OPPOSITE)

DECAL: CRANE CAPACITY

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

QUANTITY: 1 each

PLACEMENT: One on each side of boom.



PART NO.: 21193

DECAL: MODEL NUMBER

FUNCTION: To show the model of the crane.

QUANTITY: 2

PLACEMENT: One on each side of boom.

HT18KX



MFG., INC.
CINCINNATI, OHIO

TITLE	DATE	SECTION
MODEL & CAPACITY DECALS	9-6-05	C150
HT18KX	SUPERSEDES -	21357

SECTION 200

INSTALLATION



CRANE INSTALLATION

HT18KX

BODY REINFORCEMENT

The truck body must be reinforced and outriggers provided to withstand the combined loads resulting from lifting and the weight of the crane and boom.

The maximum combined overturning moment for the HT18KX is 20,000 ft. lbs.

The maximum vertical load is 5500 lbs.

CRANE MOUNTING

The crane base plate or mounting pedestal must be bolted to the body reinforcing plate with eight (8) grade five (5) bolts of 3/4" dia. with either coarse or fine threads. A 4.5" dia. hose clearance hole must be cut in this plate to allow the hoses to swing and coil freely.

ROTATION POSITIONING

The HT cranes are shipped with the boom rotated to the middle of the 400 degree rotation travel limit. The location of this middle position relative to the center line of the truck must be decided prior to mounting. It can be in any position that pleases the users since the boom can always reach the storage and travel position by rotating one way or the other.

HYDRAULIC CONNECTIONS

The crane is furnished with a pressure and a return hose that come down through the center of the housing. Included in the installation kit are two hydraulic swivels and two more hoses.

These hoses and swivels are to be arranged in the compartment or pedestal below the crane as shown on drawing 20691 using the angle bulkhead fittings furnished in the installation kit.

These hoses are to be connected in a relaxed position as shown on 20691, while the crane is at the midpoint of the 400 degree rotation range as received -- regardless of the final position of the boom during storage/travel.

The bulkhead fittings may be located on any side of the compartment relative to the middle of rotation position.

The crane pressure and return hoses have different sizes of SAE 37 degree flare swivel fittings. The smaller swivel is on the pressure hose which has a 3/8" flare. The larger swivel is on the return hose which has a 1/2" flare.

- ▲ **NOTE:** If you purchased one of Venturo's hydraulic packages (P/N 19294-X.XXX), you will have received our pressure gauge kit. This kit includes a gauge, hose and bulkhead "T" fitting and should be installed on the pressure hose as shown on drawing 20691.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

HT18KX

DATE
12-22-04A

SUPERCEDES
9-24-03

SECTION
C200

21323

ELECTRICAL CONNECTIONS

A 25 ft. electrical power lead - intended for 12V DC only - also comes down through the center of the housing with the hoses. This lead should be looped in the compartment so that it remains relaxed throughout the 400 degree rotation of the crane.

A 15amp circuit breaker is mounted on the crane and protects the crane's internal wiring and solenoid coils. The 15amp circuit breaker does not protect the 25 foot electrical power lead. For added protection, the 25 ft. lead can be connected to a 15-20 amp protected circuit that, if possible, is powered only when the vehicle engine is running

HYDRAULIC FLUID

<u>Average Climate</u>	<u>Type of Oil</u>
Cold to Moderate	ISO Grade AW 46
Warm to Hot	ISO Grade AW 68

The fluid should have the highest anti-wear characteristics and treated to inhibit rust and oxidation.

HYDRAULIC HOSES & LINES

The minimum sizes for lines and hoses are as follows:

PRESSURE	1/4"
RETURN	3/8"
SUCTION	3/4"

RESERVOIR

The PTO reservoir should have a capacity of 8 gallons fitted with 100 mesh suction screen, 10 micron return line filter, and filler/breather cap.

PTO PUMP

For standard (non-proportional) cranes, the PTO pump should be sized to provide 1.75 gpm (or 1.5 gpm for more delicate control of loads) at 3000 psi when engine is at desired idle speed.

For proportional cranes, the PTO pump should be sized to provide 3.5 gpm at 3000 psi when engine is at desired idle speed.

PTO START-UP

Before connecting the PTO system to the crane pressure and return hoses, connect the PTO pressure and return lines together at the bulkhead. Operate the PTO system for about two (2) minutes per gallon of reservoir capacity (in this case 16 minutes) to flush out the lines and filter all the fluid several times.

ENGINE START/STOP & THROTTLE CONTROL

If your crane was purchased with optional engine start/stop and throttle control, refer to drawing 22615 in the replacement parts section for further information.



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

HT18KX

DATE
9-24-03

SUPERCEDES
-

SECTION
C200

21324

CRANE OPERATION AND MAINTENANCE INSTRUCTIONS

HT18KX

SAFETY

Before operating this crane, read and understand these instructions, the 920612 Crane Safety and Hazards Information Sheet, and review all safety & instruction labels on the crane.

CRANE INSPECTION

Before operating this crane, inspect for wear, damage, or 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 any 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 shown by a gravity arrow.

SNATCH BLOCK

If the load exceeds 2250 lbs. or reduced winching speed for better control of smaller loads is required, use the snatch block to rig the crane for two part line operation.

CONTROLS

This crane is operated by a remote control pendant. The pendant should be unplugged and stored in a compartment when the crane is not in use.

Before plugging the pendant in, inspect the plug, socket, cord, pendant head, and switches for damage. Actuate all four switches both ways to verify that they all have the same feel and sound and that they return to the center position.

PTO SYSTEM

Check the hydraulic fluid level in the PTO system reservoir. Engage PTO and set the engine idle speed to provide a hydraulic flow rate per the PTO system instructions. A lower idle setting may be used for more delicate spotting of loads if required.

CRANE OPERATION

Use "Winch Down" to release tension on the wire rope to unhook it from the storage tie down position.

Use "Boom Up" to elevate the boom from the boom rest position.

Avoid repeated rapid reversals of the control switches. This can cause the load to swing.

Check all control functions to see that they are working as described in the following section

CONTROL FUNCTIONS

WINCH "UP" and "DOWN" - Raises and lowers the load with the winch.

BOOM "UP" and "DOWN" - Raises and lowers the boom elevation angle. The boom elevates from 8 degrees below horizontal to 75 degrees above horizontal.

BOOM "OUT" and "IN" - Extends and retracts the boom. The boom hydraulic extension stroke is 4 ft.



MFG., INC.
CINCINNATI, OHIO

TITLE

INSTALLATION DWG

HT18KX

DATE

9-24-03

SUPERCEDES

-

SECTION

C200

21325A

ROTATION "L" and "R" - Controls the left and right direction of the crane rotation. The crane rotation is limited to 400 degrees.

POWER (Non Proportional Systems with Engine Controls) - Energizes safety shutoff valve. See page 22328 for detailed operating instructions and warnings.

TRIGGER (Proportional Systems Only) - Varies the flow rate delivered to the crane valve. The farther the trigger is pulled, the faster the selected crane function operates.

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" function also will continue to operate.

The Overload 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.

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 snatch block/overhaul weight contacts the device the "Winch Up", "Boom Down", and "Boom Out" functions are disabled. The "Winch Down", "Boom Up", and "Boom In" functions will continue to operate and can be used to relieve the two-block condition. Refer to Drawing 21275 for parts breakdown and configuration information.

MANUAL TELESCOPIC BOOM

The 8 to 16 ft. boom has a 4 ft. manual telescoping section in addition to the 4 ft. power extension. A pin locks the manual extension into either the extended or retracted position.

TRUCK SETUP & OUTRIGGERS

1. The truck should be parked on ground that is as level and as firm as possible 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" if it is an automatic.
4. Deploy the outriggers to help stabilize the vehicle against rocking or overturning when lifting with the crane.

PREPARATION FOR TRAVEL

1. Return the outriggers to the stowed position. Install and secure all pins.
2. Stow the crane boom in the boom support.
3. Hook the winch line to the tie down point on the boom and apply light tension.
4. Disengage the PTO pump and idle speed control.
5. Unplug the control pendant and store in a body compartment or the cab.



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TITLE
INSTALLATION DWG

HT18KX

DATE
9-24-03

SUPERCEDES
-

SECTION
C200

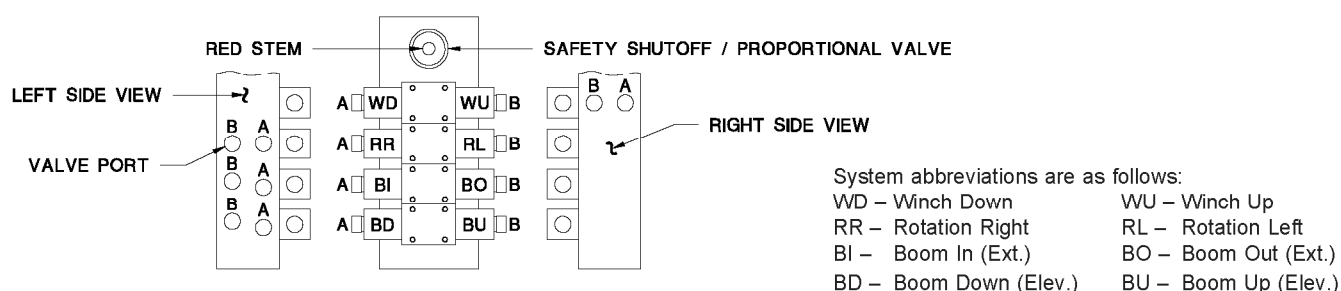
21325B

EXPLANATION OF HYDRAULIC VALVE SYSTEM

OVERVIEW

Venturo's hydraulic cranes are available in two general configurations: Proportional and Non-proportional. The **Non-proportional** configuration utilizes a safety shutoff valve which, when **not** actuated, allows hydraulic fluid to bypass the valve bank and return to tank; the crane will not function when the safety shutoff valve is not actuated. When the safety shutoff valve is actuated (control pendant energizes the coil or the coil is manually overridden), hydraulic fluid cycles through the valve bank and allows the crane to function. The **Proportional** configuration utilizes a proportional valve which in its fully closed and fully opened positions functions similarly to the safety shutoff valve, but adds the ability to operate the crane at any speed in between these two extremes.

In both the Non-proportional and Proportional configurations, the four crane functions (winch, rotation, boom elevation, and boom extension) are controlled by four separate valve sections. Each valve section has two solenoid coils (and two manual overrides) which control the direction that the function operates (e.g. winch up vs. winch down). For a given crane function and direction (e.g. winch up) the solenoid coil and the associated manual override lie on the same side of the valve bank (both "push").



MANUAL OVERRIDE SYSTEM

Should an electrical failure occur, your Venturo crane can be operated manually. **The manual overrides are intended for emergency use only and should not be used for normal operation.**

To operate in manual override mode:

- (1) Override the safety shutoff or proportional valve by turning the red stem on the valve as stated below.

Non-proportional system:

For override operation, press stem in and rotate counterclockwise until it stops.

To return to normal operation, press stem in and rotate clockwise until it stops.

Proportional system:

For override operation, rotate stem clockwise (the farther the stem is turned the faster the crane will operate).

To return to normal operation, rotate the stem counterclockwise until it stops.

- (2) Determine the coil/override associated with the function you wish to operate, then insert a small diameter object (an allen wrench works well) into the detent on the end of the valve stem and press firmly inward. For example, pushing the stem labeled A on the first bank (refer to the illustration) will actuate winch down.

WARNING! For normal crane operation, the safety shutoff or proportional valve must be in the "normal" position (as described above). Test the crane before each use by placing the power toggle switch or trigger in the "OFF" position and testing each crane function *using the manual overrides*. If any crane function operates, verify that the red stem on the safety shutoff or proportional valve is in the normal position then retest.

EMERGENCY STOP

In the unlikely event that a function of the crane does not stop once the function's toggle switch is released, the **Non-proportional** crane can be stopped by simply toggling the power switch to the off (emergency stop) position and the **Proportional** crane can be stopped by releasing the trigger.



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TITLE
HYDRAULIC SYSTEM

▲HT18, HT25, HT40/50

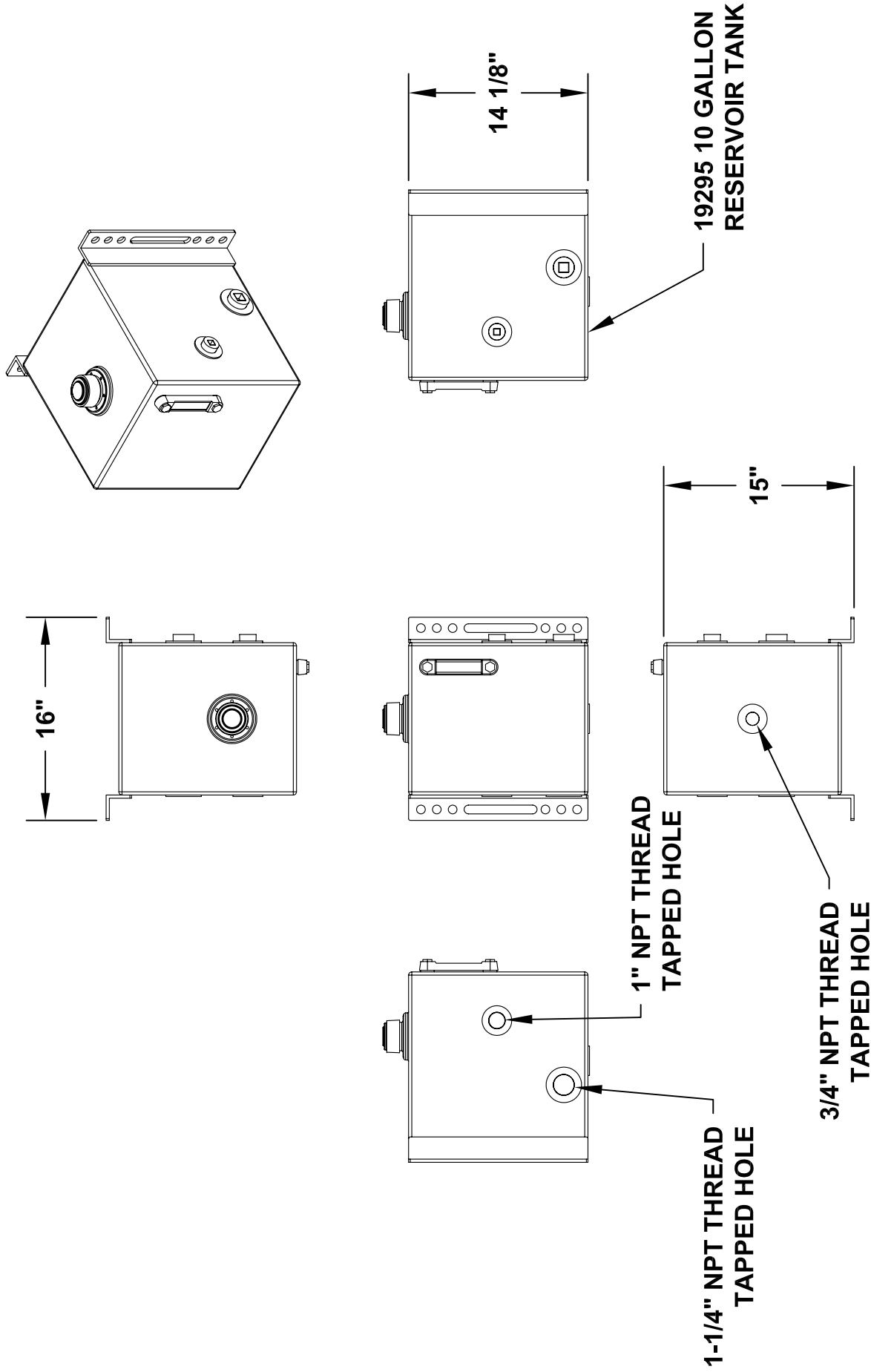
DATE
9-24-03B

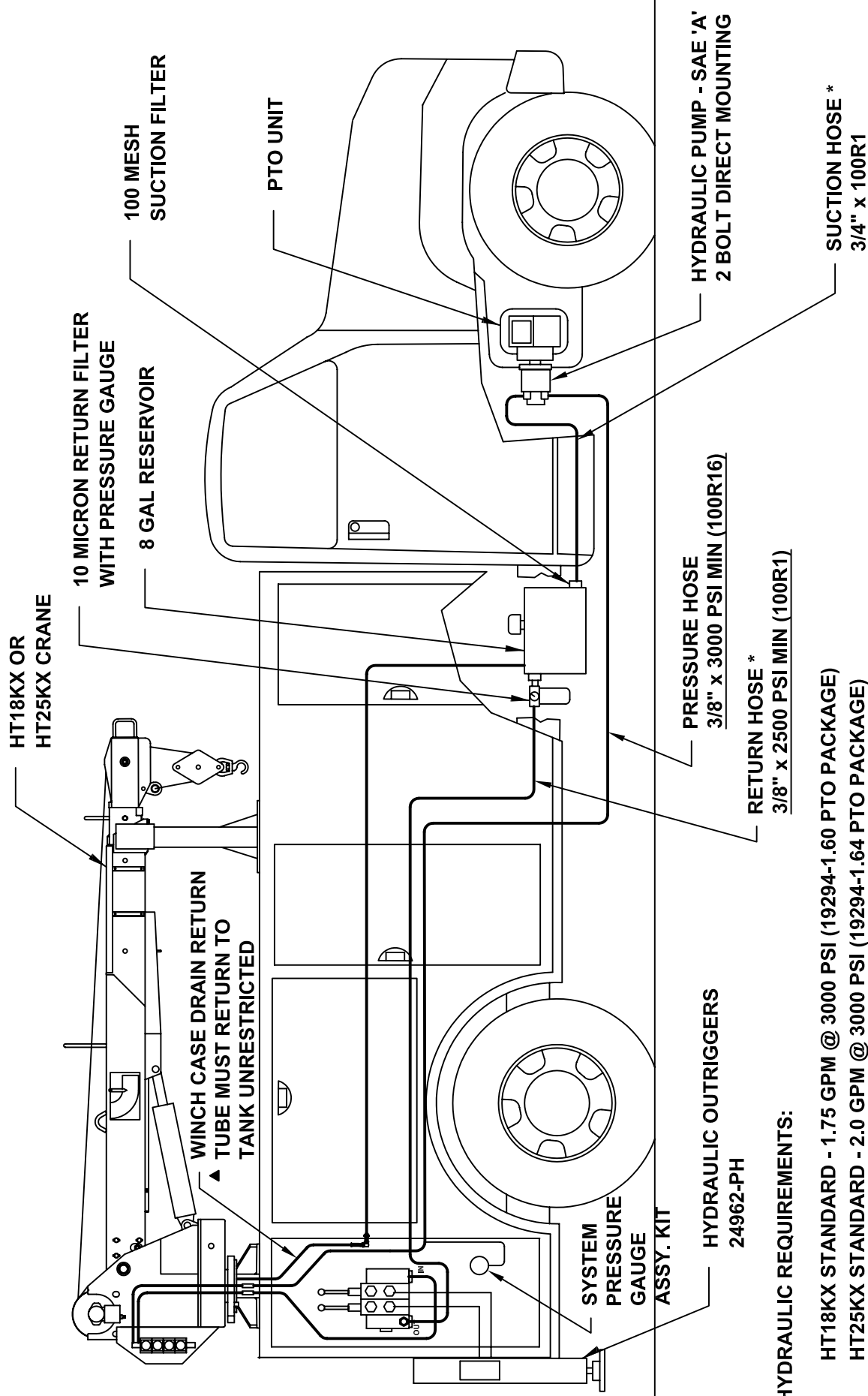
SUPERCEDES
5-1-98A

SECTION
C200

22328

19295 10 GALLON HYDRAULIC TANK





HYDRAULIC REQUIREMENTS:

HT18KX STANDARD - 1.75 GPM @ 3000 PSI (19294-1.60 PTO PACKAGE)

HT25KX STANDARD - 2.0 GPM @ 3000 PSI (19294-1.64 PTO PACKAGE)

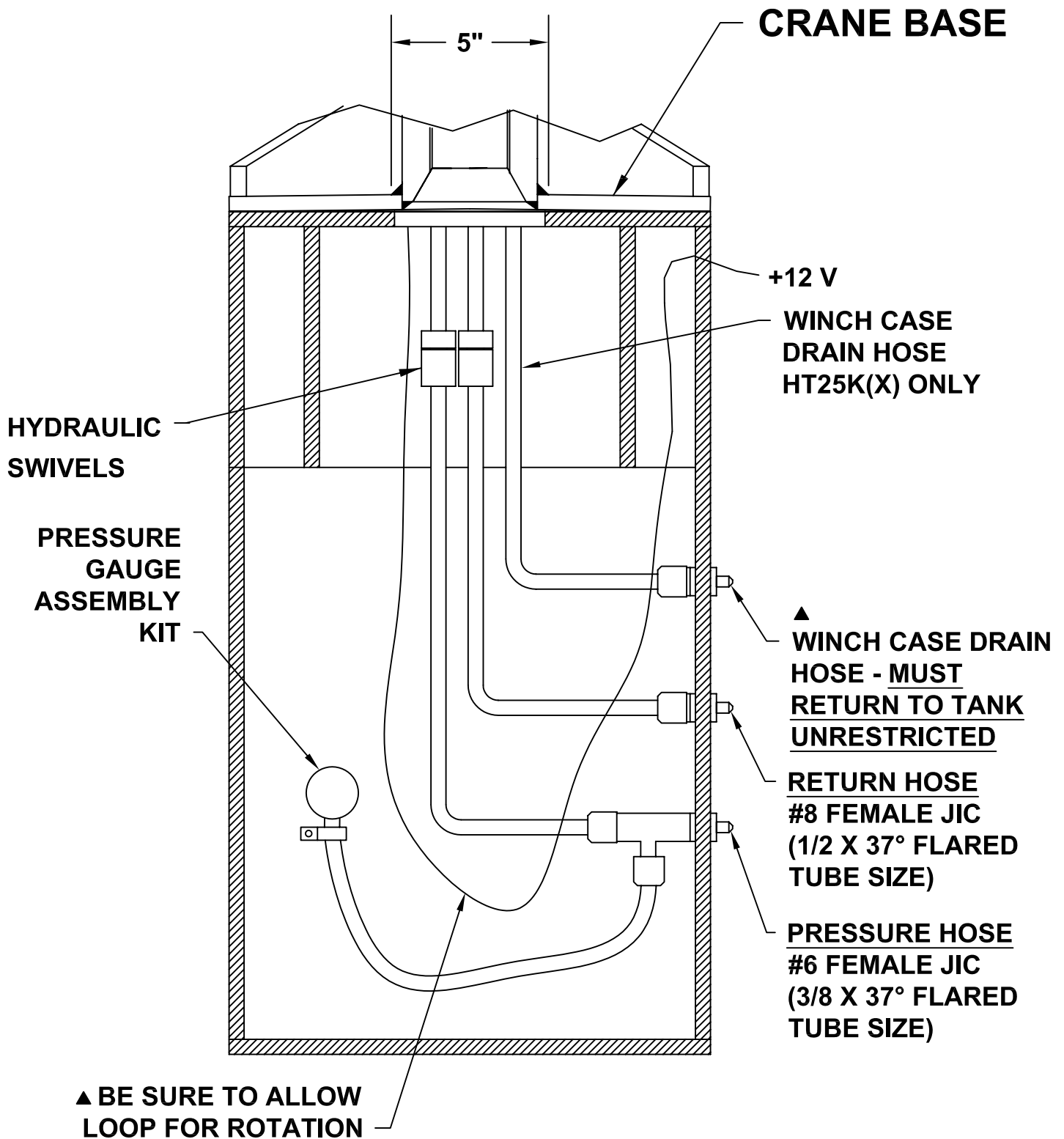
HT18KX PROPORTIONAL - 3.5 GPM @ 3000 PSI (19294-3.68 PTO PACKAGE)

HT25KX PROPORTIONAL - 4.0 GPM @ 3000 PSI (19294-3.68 PTO PACKAGE)

SEE INSTALLATION INSTRUCTIONS I19212 (2 PAGES).

* HOSES OR FITTINGS BETWEEN PUMP, RESERVOIR, AND CRANE NOT INCLUDED.

CRANE AND HOSE INSTALLATION HT18KX / HT25KX



WIRE ROPE INSTALLATION

STEP 1: UNWIND COIL OF WIRE ROPE BY 'ROLLING' ALONG THE FLOOR. THIS WILL PREVENT 'KINKING'.

STEP 2: INSERT WIRE ROPE END THROUGH ANTI-TWO-BLOCK WEIGHT.

STEP 3: INSERT WIRE ROPE END INTO POCKET OPENING ON WINCH AND THROUGH WEDGE POCKET AS SHOWN IN (FIG 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 (3) TURNS OF WIRE ROPE ON THE WINCH DRUM WHILE UNDER LOAD.

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

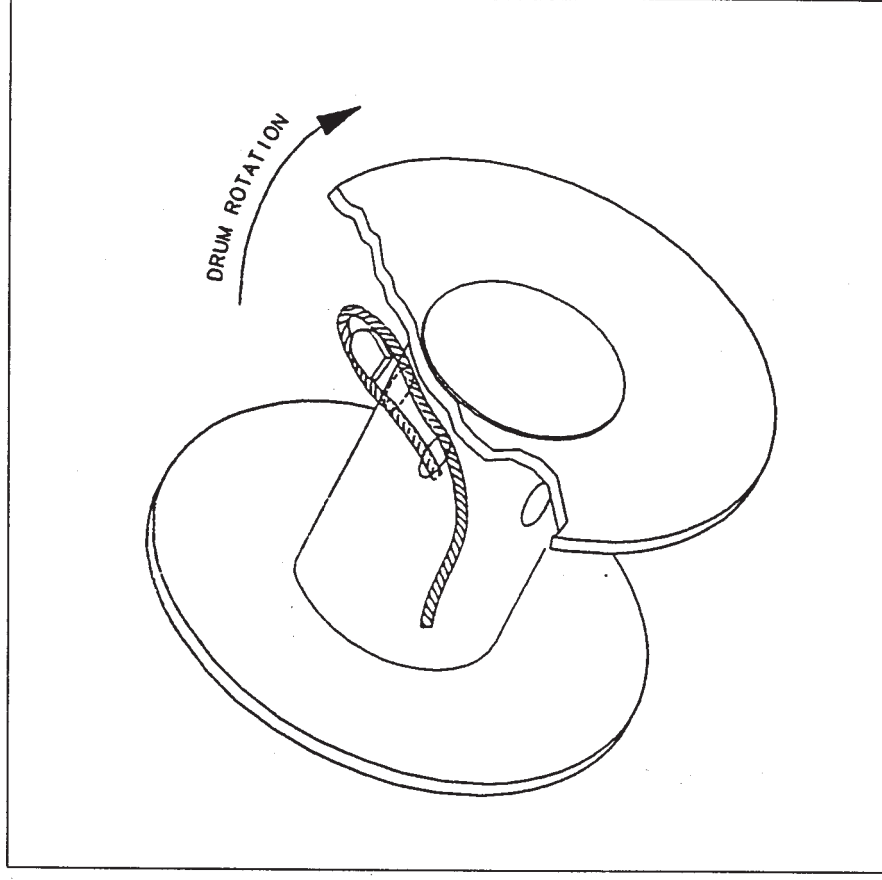
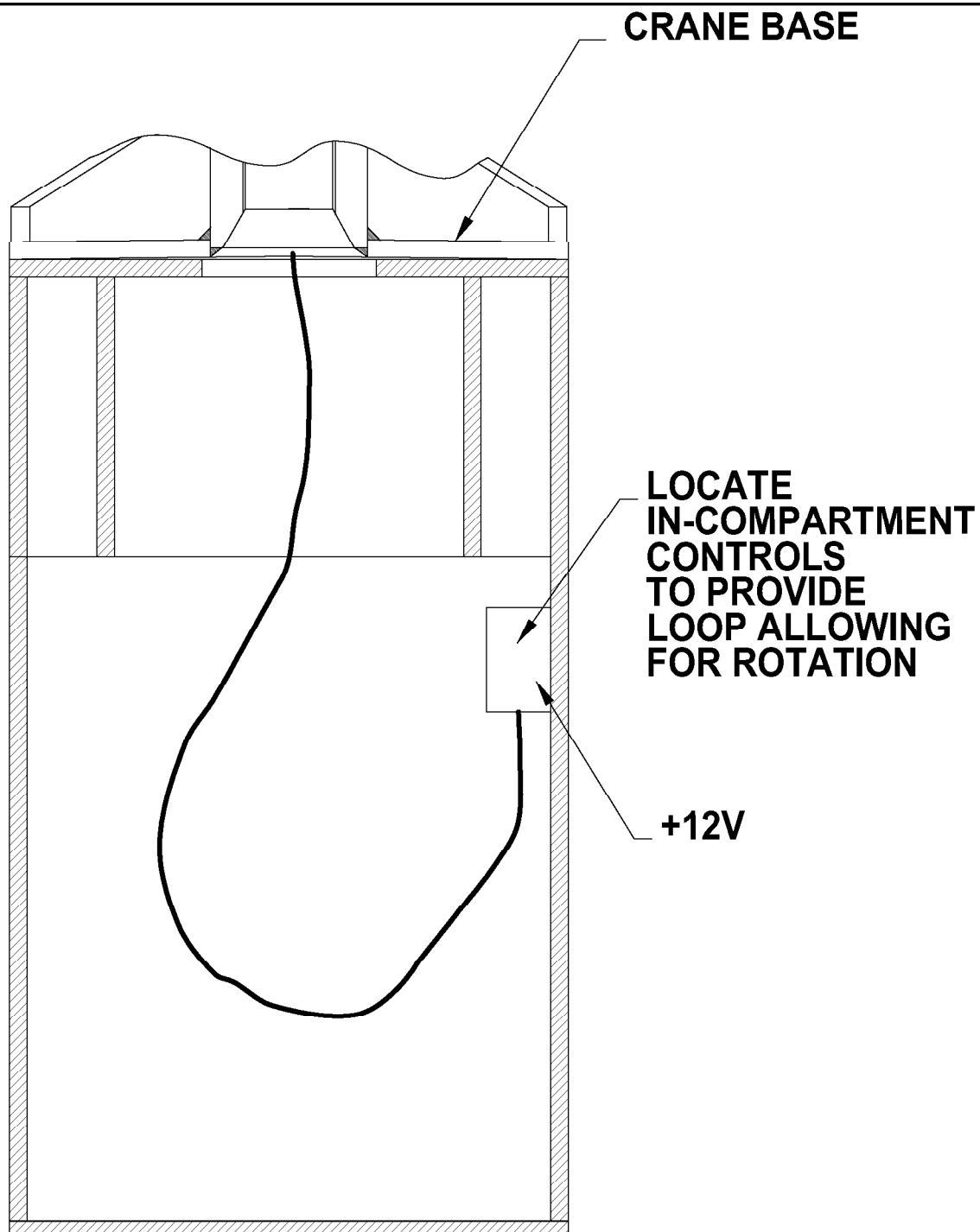


FIG 1

IN-COMPARTMENT CONTROLS INSTALLATION HT18KX / HT25KX ▲



MFG., INC.
CINCINNATI, OHIO

TITLE
INSTALLATION DWG

HT18KX / HT25KX ▲

DATE
9-26-03A

SUPERSEDES
6-17-02

SECTION
-

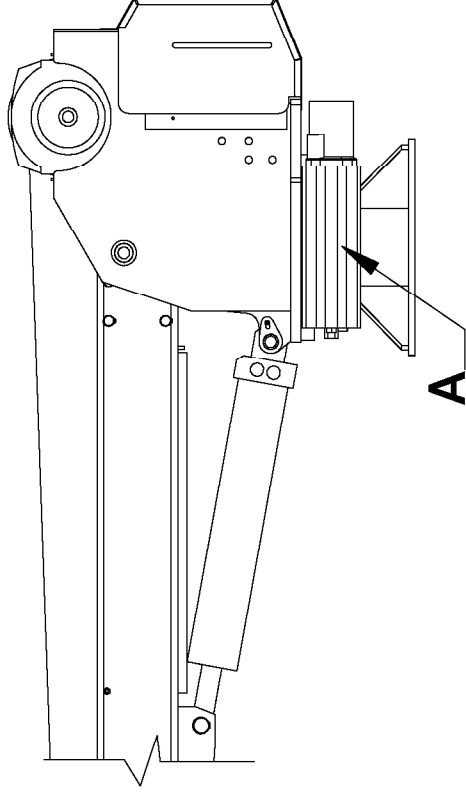
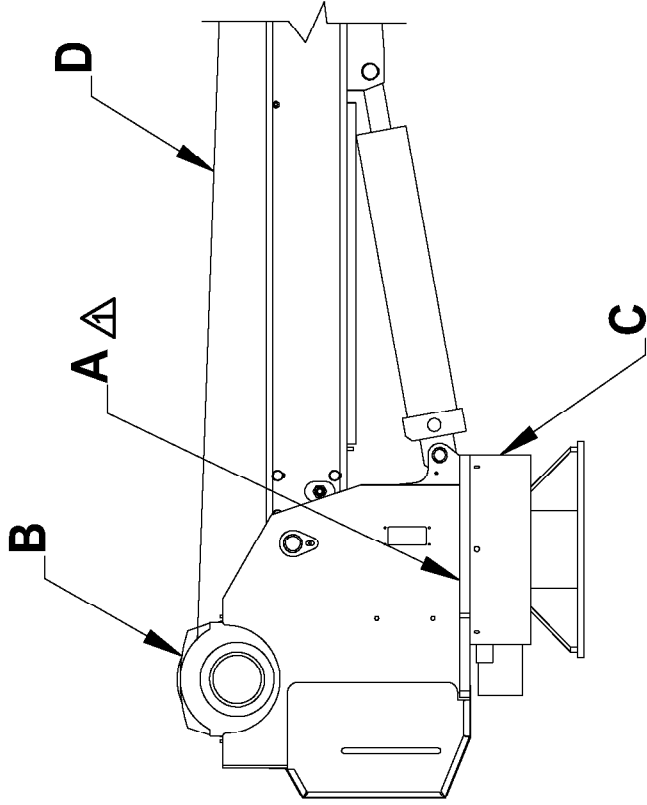
20453

SECTION 300

MAINTENANCE

&

SERVICE



ATTENTION
NEVER WASH THIS CRANE WITH CHEMICAL PRODUCTS OR HIGH PRESSURE WATER JETS, AS THEY CAN CAUSE DETACHMENT OF STICKERS OR ENTRANCE OF WATER INTO ELECTRICAL OR SLEWING RING COMPONENTS

Location	Service Required	Note	Service Interval
A	Grease fitting With Pressure Grease Gun	Use Lithium Based Grease ⚠ To align hole w/ fitting, line up grease decals on lower cover and base gusset.	Time of Truck Service
B	Fill Oil Reservoir to Oil Level with Boom Down	Use SAE90 Gear Lubricant	Time of Truck Service
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



MANUFACTURING, INC.
 CINCINNATI, OHIO

TITLE

LUBRICATION & MAINTENANCE CHART

HT18KX

DATE

9-26-03

SUPERSEDES

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SECTION

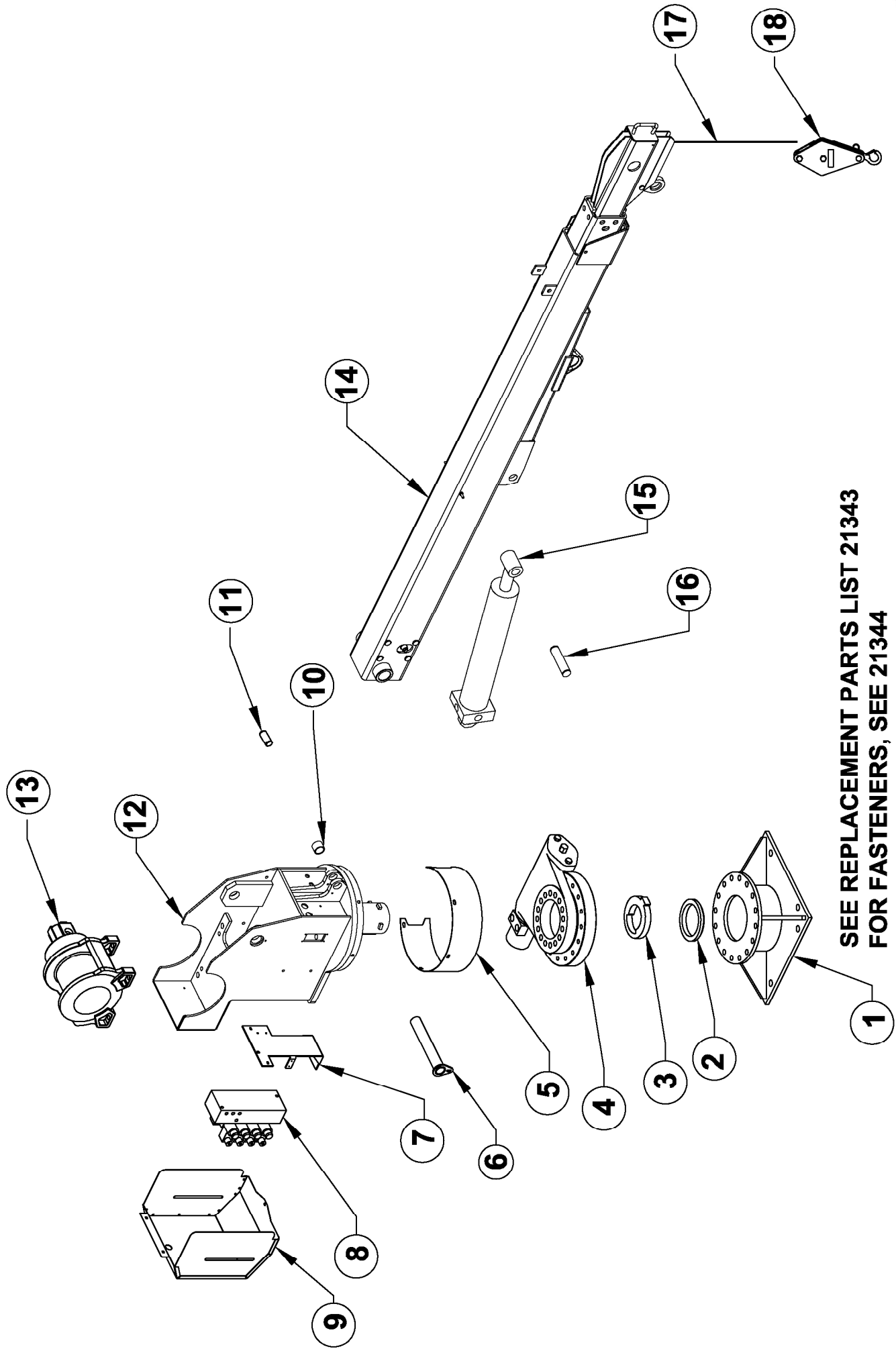
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21326

SECTION 400

PARTS





SEE REPLACEMENT PARTS LIST 21343
FOR FASTENERS, SEE 21344

 VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE REPLACEMENT PARTS DRAWING	DATE 3-28-05	SECTION -
	HT18KX	SUPERSEDES -	21342

ITEM #	PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	21115	BASE WELDED ASSEMBLY			
2	21141	BEARING-ROTATION LIMITING RING			
3	21139	ROTATION LIMITING RING			
4	21117	ROTATION DRIVE SYSTEM			
5	21185	ROTATION GEAR GUARD			
6	21160	PIVOT PIN - MAIN BOOM PIVOT			
7	21131	HYDRAULIC PANEL WELDED ASSEMBLY			
8	22501	VALVE MANIFOLD W/ 4 3-POS 4 WAY VALVES			
9	21128	CRANE COVER ASSEMBLY			
10	21124	POLY BEARING-ELEVATION CYLINDER BASE			
11	21172	PIVOT PIN-ELEVATION CYLINDER BASE			
12	21116	HOUSING WELDED ASSEMBLY			
13	21122	HYDRAULIC WINCH-HT18KX			
14	21200	FINAL BOOM ASSEMBLY			
15	21120	ELEVATION CYLINDER			
16	21127	BOOM PIVOT PIN			
17	25810-5/16-80	WIRE ROPE ASSEMBLY - 5/16" X 80FT (8/16 FT. BOOM)			
18	23169	SWIVEL SNATCH BLOCK ASSEMBLY			
		REPLACEMENT PARTS DWG REF 21342			
		REPLACEMENT PARTS LIST			
		HT18KX		DATE	SECTION
				3-28-05	-
				SUPERCEDES	21343
				-	



MANUFACTURING, INC.
CINCINNATI, OHIO

FASTENER LIST FOR HT18KX

PART NUMBER	DESCRIPTION	QTY	LOCATION/FUNCTION
!HHCS06311200	HEX HEAD CAP SCREW 5/8-11 X 2" LG	16	LOWER BASE TORING
!LWSH-063	LOCK WASHER - 5/8	16	LOWER BASE TORING
!PHCS02520200	PAN HEAD CAP SCREW - 1/4-20 X 2"	2	SPEED REDUCER TORING
!HHCS06311300	HEX HEAD CAP SCREW - 5/8-11 X 3"	14	UPPER HOUSING TORING
!LWSH-063	LOCK WASHER - 5/8"	14	UPPER HOUSING TORING
!HHCS02520075	HEX HEAD CAP SCREW - 1/4-20 X 3/4"	6	MOUNTING BLOCKS
!LWSH-025	LOCK WASHER - 1/4"	6	MOUNTING BLOCKS
!FWSH-025	FLAT WASHER - 1/4"	6	MOUNTING BLOCKS
!SHCS03816350	SOCKET HEAD CAP SCREW 3/8-16 X 3-1/2"	1	VALVE BLOCK
!LWSH-038-HC	LOCK WASHER - 3/8" - HI COLLAR	1	VALVE BLOCK
!HNUT-03816	HEX NUT 3/8-16	1	VALVE BLOCK
!HHCS05013175	HEX HEAD CAP SCREW - 1/2-13 X 1-3/4"	4	WMCH
!LWSH-050	LOCK WASHER - 1/2"	4	WMCH
!HNUT-05013	HEX NUT - 1/2-13	4	WMCH
!HHCS03816100	HEX HEAD CAP SCREW - 3/8-16 X 1"	1	GROUND (IN HOUSING)
!LWSH-038	LOCK WASHER - 3/8"	1	GROUND (IN HOUSING)
!FWSH-038	FLAT WASHER - 3/8"	1	GROUND (IN HOUSING)
!HHCS#0832063	HEX HEAD CAP SCREW - #8-32 X 5/8"	4	PENDANT PLUG COVER
!LWSH-#08	LOCK WASHER - #8	4	PENDANT PLUG COVER
!PHCS#1024050	PAN HEAD CAP SCREW - #10-24 X 1/2"	2	CIRCUIT BREAKER
!LWSH-#10	LOCK WASHER - #10	2	CIRCUIT BREAKER
!HNUT-#1024	HEX NUT - #10-24	2	CIRCUIT BREAKER
!PHCS#0632100	PAN HEAD CAP SCREW - #6-32 X 1"	2	BARRIER STRIP
!LWSH-0#06	LOCK WASHER - #6	2	BARRIER STRIP
!!HNUT-#0632	HEX NUT - #6-32	2	BARRIER STRIP
!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2"	1	BOOMPIN
!LWSH-025	LOCK WASHER - 1/4"	1	BOOMPIN
!HHCS#1024125	HEX HEAD CAP SCREW #10-24 X 1-1/4"	2	TOP POSITION SWITCH
!LWSH-#10	LOCK WASHER - #10	2	TOP POSITION SWITCH
!HHCS02520063	HEX HEAD CAP SCREW - 1/4-20 X 5/8"	1	CABLE CLAMP (PRESSURE SWITCH)
!LWSH-025	LOCK WASHER - 1/4"	1	CABLE CLAMP (PRESSURE SWITCH)
!SRNG-100	SNAP RING - 1"	4	ELEVATION CYLINDER PINS
!UNUT-02520	U NUT - 1/4-20	5	LOWER COVER
!HHCS02520063	HEX HEAD CAP SCREW - 1/4-20 X 5/8"	5	LOWER COVER
!FWSH-025	FLAT WASHER - 1/4"	5	LOWER COVER
!HHCS02520063	HEX HEAD CAP SCREW 1/4-20 X 5/8"	3	REAR COVER
!FWSH-025	FLAT WASHER - 1/4"	3	REAR COVER



MFG., INC.
CINCINNATI, OHIO

TITLE
REPL. FASTENERS LIST

HT18KX

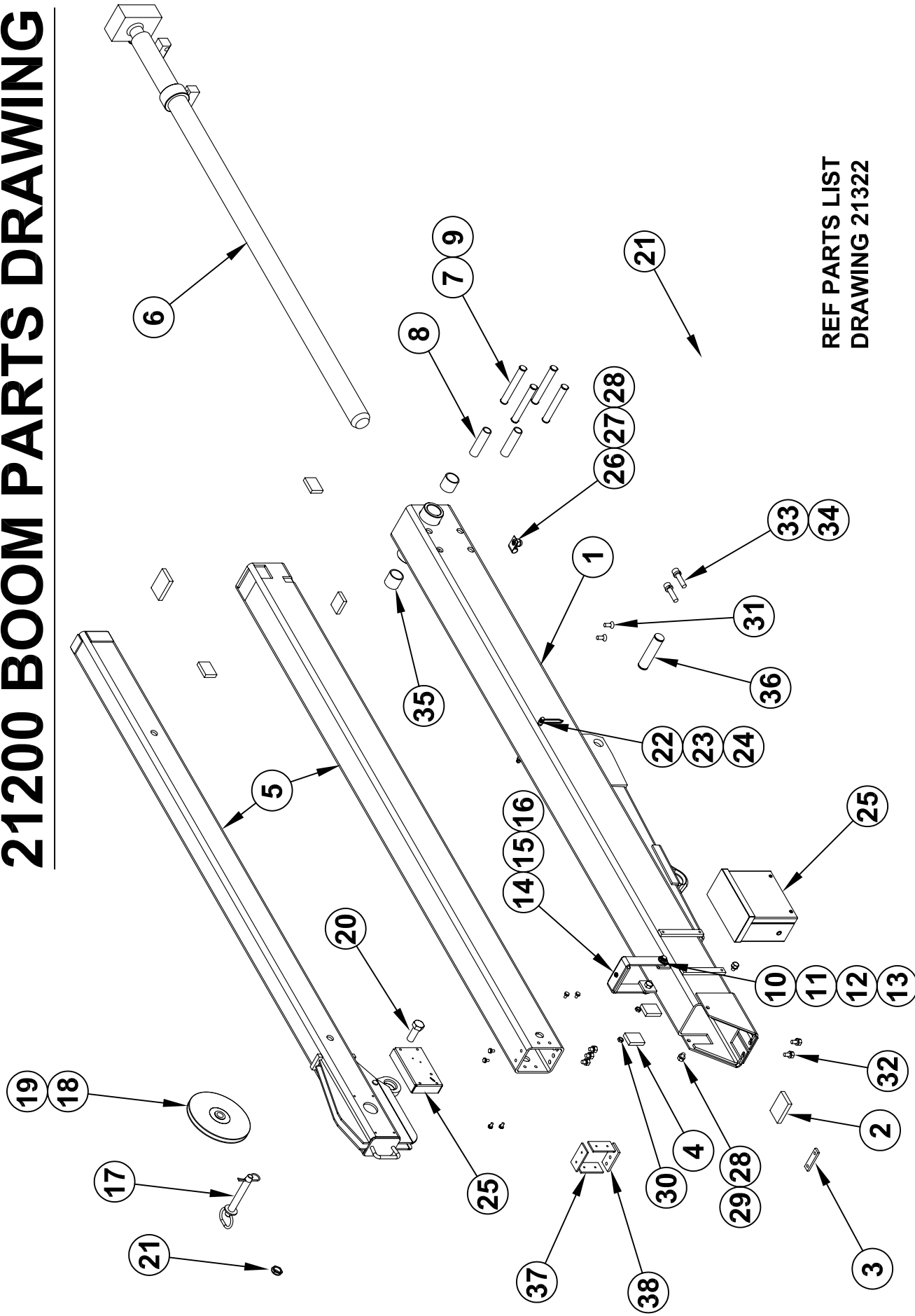
DATE
3-28-05

SUPERCEDES
-

SECTION
C400

21344

21200 BOOM PARTS DRAWING



REF PARTS LIST
DRAWING 21322

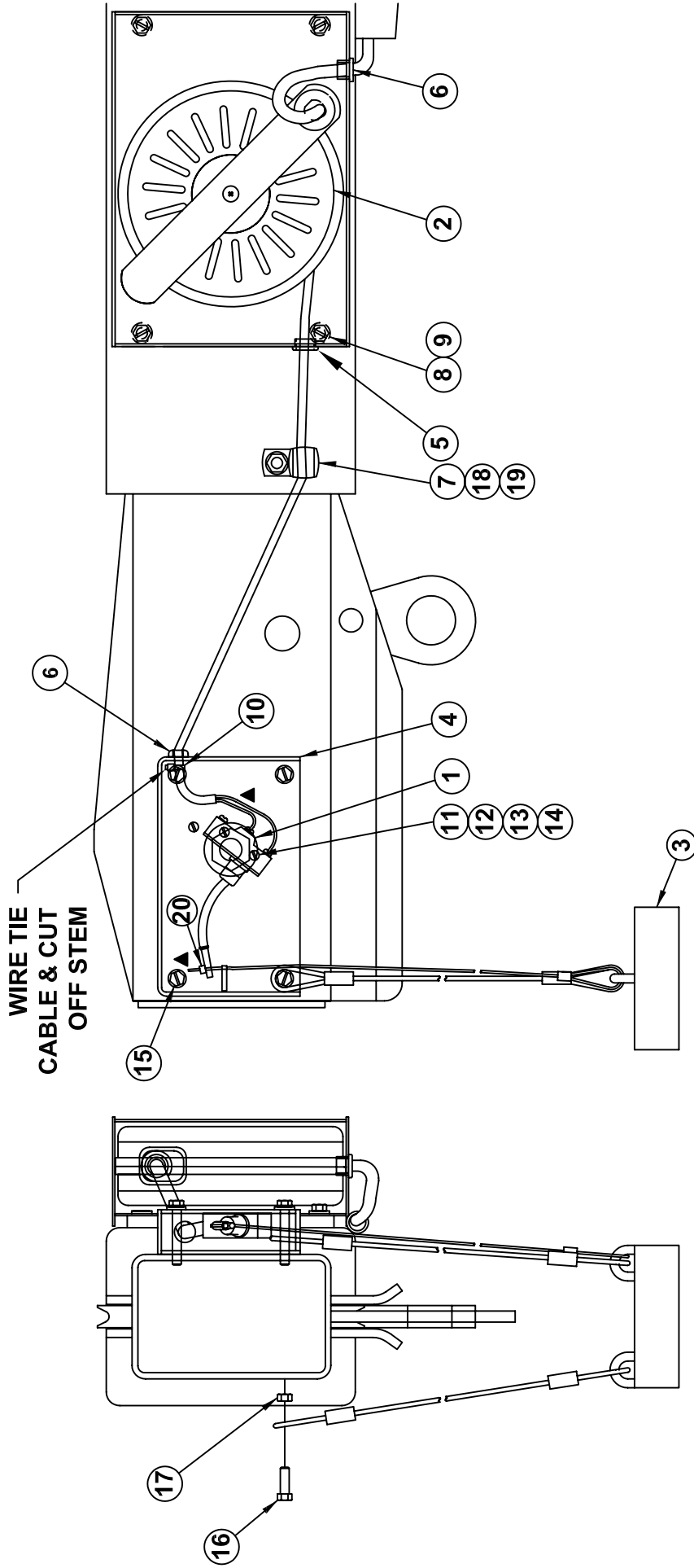
VENTURO® MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	21200 BOOM PARTS DRAWING	SECTION	-
	DATE	4-21-08B	SUPERSEDES	1-19-05A
		ET/HT18KX	21310	

21200 BOOM PARTS LIST

38	1	22145	LOWER STOP BLOCK
37	3	22146	TOP SHIM
36	1	21127	BOOM PIVOT PIN
35	2	21206	POLY BEARING - PRIMARY BOOM PIVOT
34	2	!LWSH-050-HC	LOCK WASHER 1/2" HI COLLAR
33	2	!SHCS05013200	SOCKET HEAD CAP SCREW 1/2-13 X 2" LONG
32	2	!HHC03816075	HEX HEAD CAP SCREW - 3/8-16 X 3/4 LONG
31	2	!CAC03816100	CNTRSNK ALLEN HEAD CAP SCREW 3/8-16 X 1" LG
30	2	!JNUT-03816	JAM NUT - 3/8-16 GRADE 5
29	4	!LWSH-038	LOCK WASHER 3/8"
28	2	!HHC03816050	HEX HEAD CAP SCREW 3/8-16 X 1/2" LG - GR 5
27	1	!LWSH-025	LOCK WASHER - 1/4"
26	1	19269	CABLE CLAMP - 1/4"
25	1	21276	ANTI-TWO BLOCK ASSEMBLY - L.H.
24	3	!ANUT-02520S	ACORN NUT 1/4-20 STAINLESS
23	2	22490	SPACER, BOOM ARROW 1/2" O.D.
22	2	13459-1	BOOM ARROW 3-3/16 LONG
21	1	!LNUT-07510	LOCKNUT 3/4-10
20	1	17059-6	SHEAVE AXLE 3/4 X 2 W/ 1" SHANK
19	1	23924	SPACER - 23925 SHEAVE
18	1	23925	BOOM SHEAVE WITH BUSHING
17	1	19258-1	BOOM PIN
16	1	!JNUT-02520N	NYLON INSERT JAM NUT - 1/4-20
15	1	!PHCS02520063	PAN HEAD CAP SCREW - 1/4-20 X 5/8 LONG
14	1	19881	CABLE GUIDE WEAR STRIP
13	2	!JNUT-05013N	1/2-13 NYLON INSERT JAM NUT
12	2	!FWSH-050	FLAT WASHER 1/2"
11	2	!HHC05013100	HEX HEAD CAP SCREW 1/2-13NC X 1 LG
10	1	19880	CABLE GUIDE STRUCTURE
9	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
8	2	19885	EXTENSION CYLINDER ROLLER
7	4	21211	THRUST PIN - EXTENSION CYLINDER
6	1	21201	EXTENSION CYLINDER
5	1	21203	SECONDARY / TERTIARY WELDED ASSEMBLY
4	5	21209	BOOM BEARING - 1-1/2 X 2 X 7/16
3	1	21207	PRIMARY BEARING RETAINING BAR
2	2	21208	BOOM BEARING - 2 X 3 X 1/2
1	1	21202	PRIMARY BOOM WELDED ASSEMBLY
ITEM NO.	EXPLODED/QTY.	PART NUMBER	DESCRIPTION

REF PARTS
DRAWING 21310

 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE		SECTION
	21200 BOOM PARTS LIST		C400
		DATE	SUPERSEDES
		4-21-08	-
ET/HT18KX		21322	



ITEM		QTY		PART NO.		DESCRIPTION	
20	1	19302	SET COLLAR - 3/32"	10	1	TIE-WRAP	9" TIE-WRAP
19	1	ILWSH-025	LOCK WASHER - 1/4"	9	4	ILWSH-031	LOCK WASHER - 5/16"
18	1	IANUT-02520	ACORN NUT - 1/4-20	8	4	ISHCS03118050-5	SOCKET HEAD CAP SCREW - 5/16-18 x 1 1/2"
17	1	!HNUT-02520	HEX NUT - 1/4-20	7	1	19275	CABLE CLAMP - 3/4" x 13/32" HOLE
16	1	!HHCS02520075-5	HEX HEAD CAP SCREW - 1/4-20 x 3/4" GR. 5	6	2	19270	SNAP BUSHING - 3/8" I.D.
15	4	!HHCS02520175	HEX HEAD CAP SCREW - 1/4-20 x 1 3/4"	5	1	19063	SNAP BUSHING - 1/2" I.D.
14	2	!LWSH-#06	LOCK WASHER - #6	4	1	21291	ANTI TWO-BLOCK HOUSING ASSEMBLY
13	2	!FWSH-#06	FLAT WASHER - #6	3	1	19377-2	CABLE WEIGHT ASSY
12	2	!HNUT-#0632	HEX NUT - #6-32	2	1	22683	CORD REEL ASSY
11	2	!PHMS#632125	PAN HEAD MACHINE SCREW - #6-32 x 1 1/4"	1	1	19376	LIMIT SWITCH

MANUFACTURING, INC.
CINCINNATI, OHIO

REPLACEMENT PARTS DWG

21276 ANTI-TWO-BLOCK SYSTEM

DATE
10-7-09D

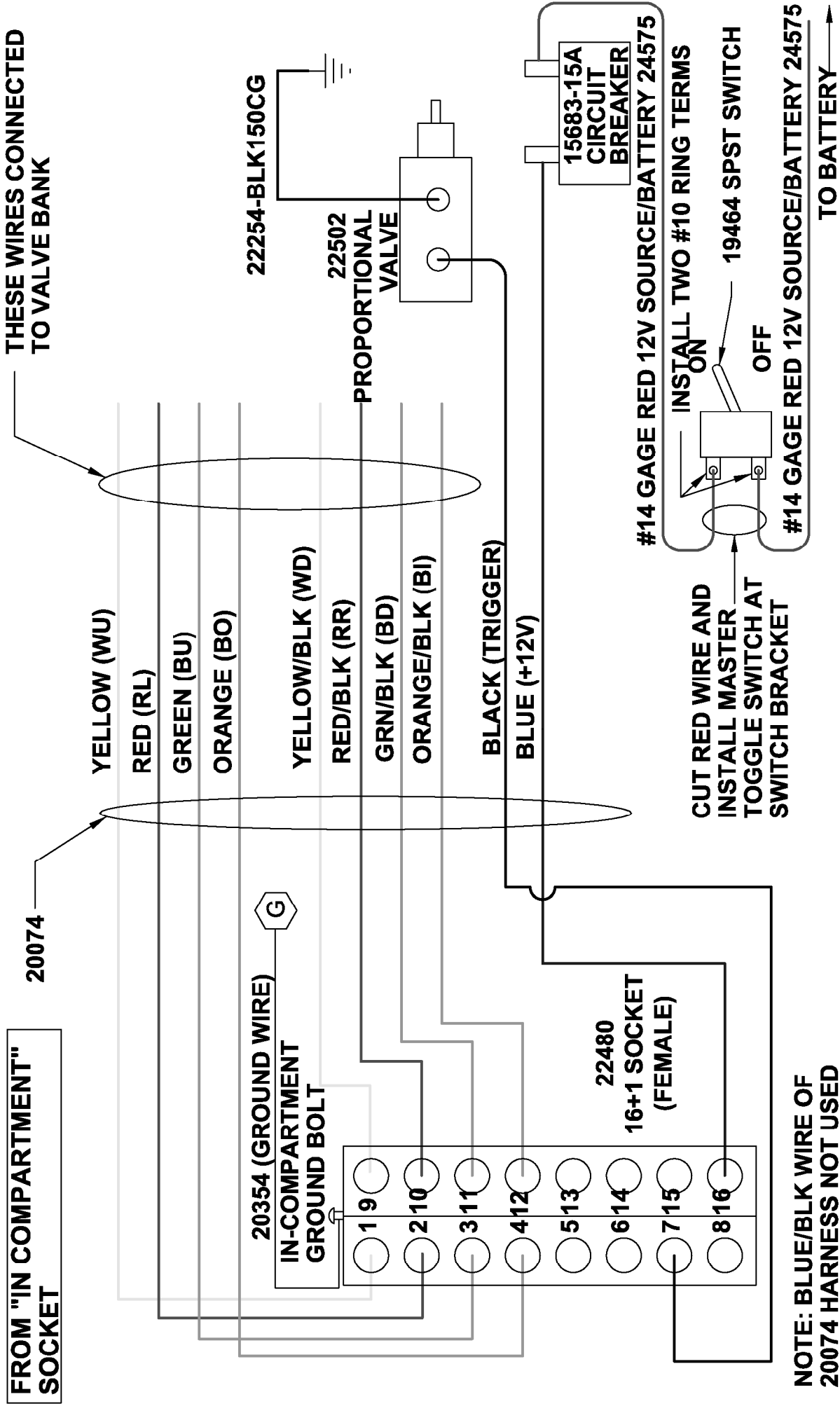
SUPERSEDES
4-23-08C

SECTION
C400

21275

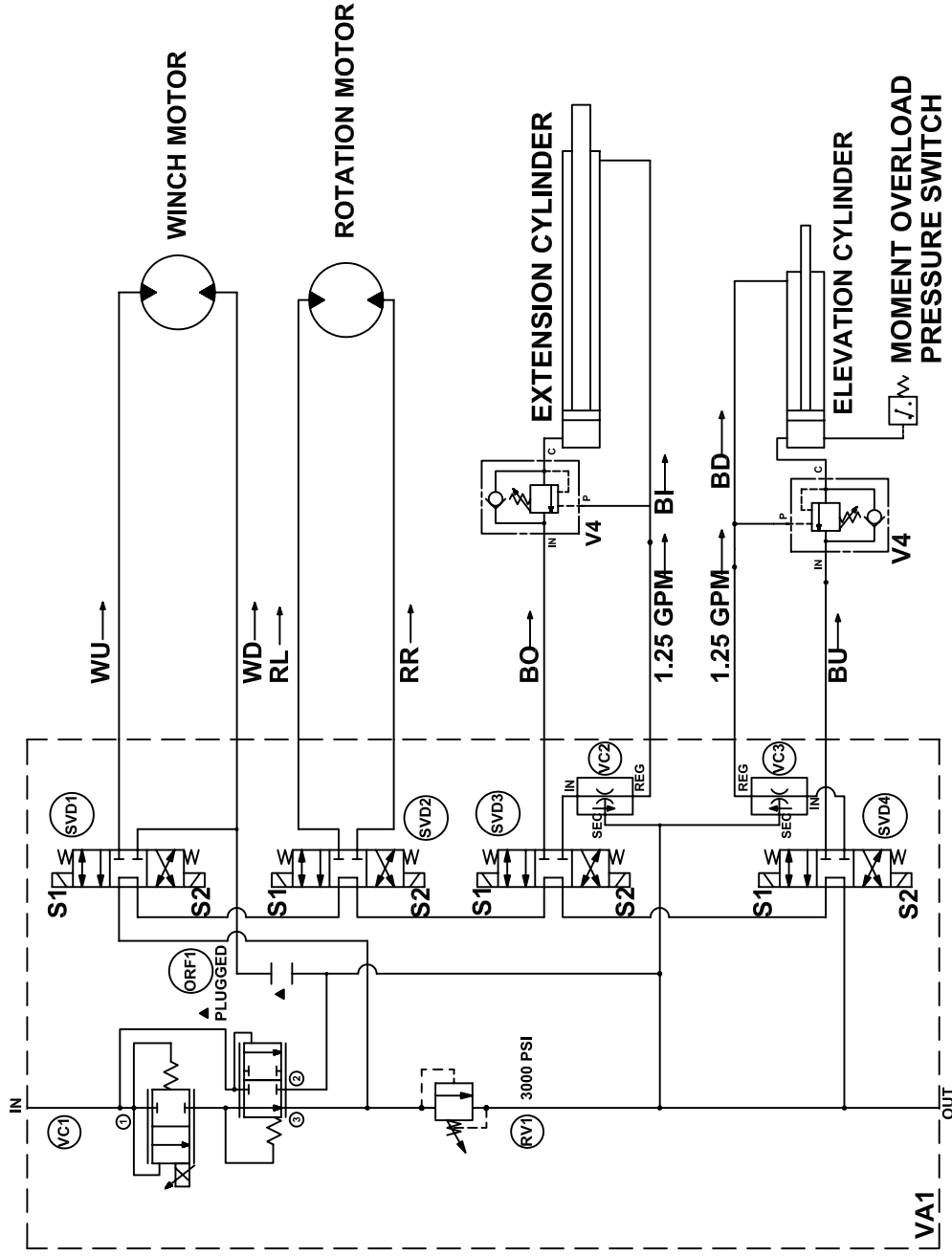


PROPORTIONAL IN-COMPARTMENT CONTROLS (NO ENGINE CONTROLS)



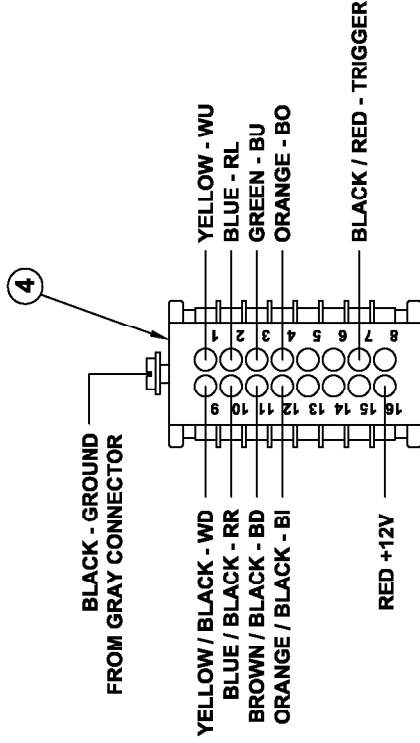
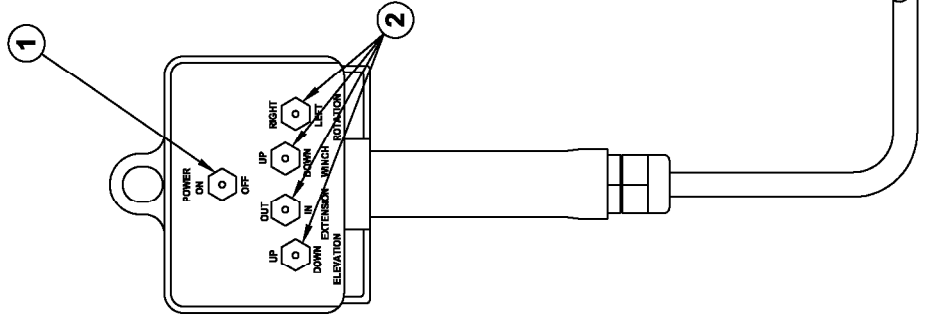
NOTE: BLUE/BLK WIRE OF 20074 HARNESS NOT USED

VENTURO MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	DATE	SECTION
	PROP W/ IN-COMP CTRLS (NO ENG CTRL)	6-6-05	-
	HT18/25 CRANES	SUPSEDES	-
22169			



- VA1 CONTROL VALVE ASSEMBLY
RV1 INLET RELIEF VALVE (3000 PSI)
SVD1 3 POSITION-4 WAY VALVE
SVD2 3 POSITION-4 WAY VALVE
SVD3 3 POSITION-4 WAY VALVE
SVD4 3 POSITION-4 WAY VALVE
V4 COUNTERBALANCE CARTRIDGE VALVE
VC1 PROPORTIONAL CONTROL VALVE (SIMPLIFIED REP)
VC2 PRIORITY FLOW REGULATOR VALVE
VC3 PRIORITY FLOW REGULATOR VALVE

22118 PENDANT (PROPORTIONAL CTRL)



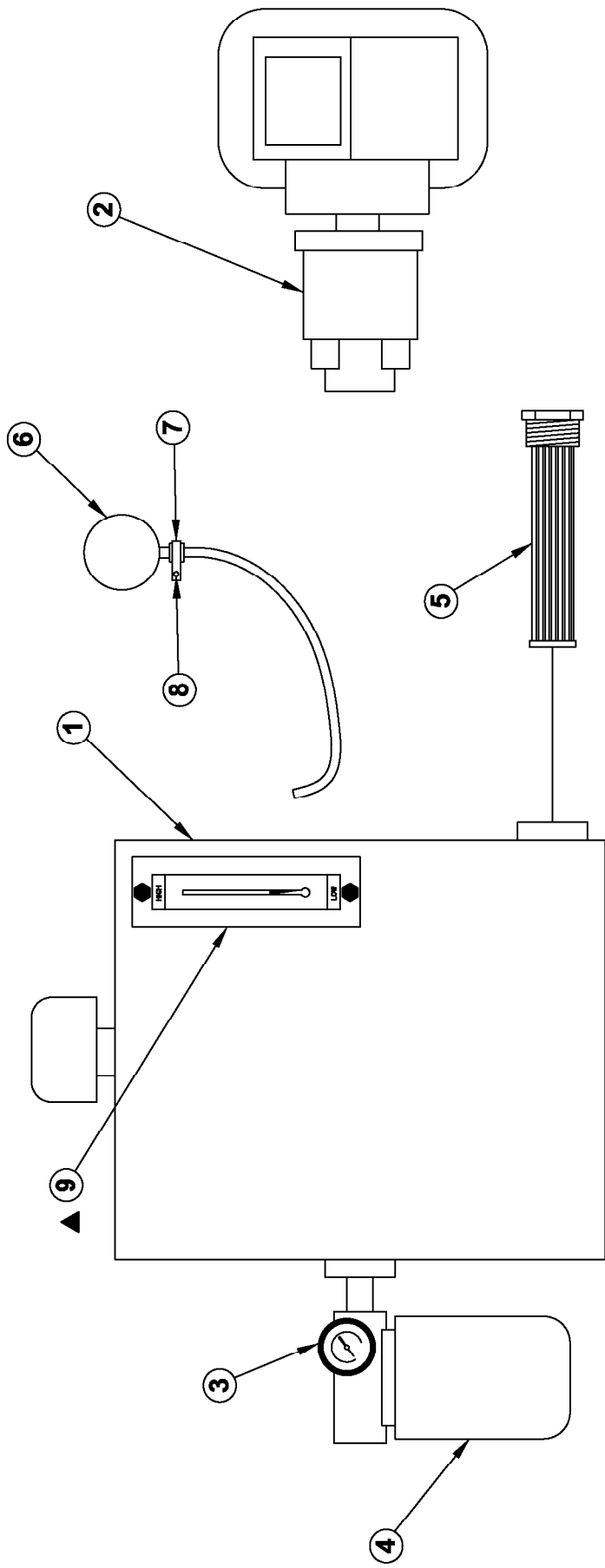
PLUG - BACKSIDE VIEW

⊗ NOT SHOWN ON PRINT

5	1	22082	PROP. VALVE DRIVER CONT. BOARD
4	1	22472	MALE INSERT - 16 + 1 POLE
3	1	22471	PLUG CASE - 16 + 1 POLE
2	4	22081	SPDT MOMENTARY SWITCH
1	1	22080	SPST SWITCH
ITEM	QTY	PART NO.	DESCRIPTION

	TITLE		REPLACEMENT PARTS DRAWING	DATE	5-26-05	SECTION	C400
	22118 PENDANT (PROPORTIONAL CTRL)			SUPERSEDES	-		22166
	MANUFACTURING, INC. CINCINNATI, OHIO						

19294 PTO PACKAGES



PUMP	MOUNTING	RECOMMENDED GPM (RPM)
19296-1.60	SAE "A" 9 TOOTH SPLINED SHAFT	HT18 - STD. - 1.75 GPM (1110 RPM)
19296-2.64		HT25 - STD. - 2.00 GPM (1250 RPM)
19296-4.00		HT40 - STD. - 2.6 GPM (1000 RPM)
19296-5.00		HT50 - STD. - 3.0 GPM (1150 RPM)
		HT18 - PROP. - 3.5 GPM (875 RPM)
		HT25 - PROP. - 4.0 GPM (1000 RPM)
		HT40 - PROP. - 5.0 GPM (1000 RPM)
		HT50 - PROP. - 6.0 GPM (1200 RPM)

9	1	22184	SIGHT GLASS
8	1	!HWHS02520075-F	HEX WASHER HEAD 1/4-20 X 3/4 SELF TAPPING CLAMP
7	1	19275	PRESSURE GAUGE ASSEMBLY
6	1	22730	SUCTION SCREEN - 100 MESH
5	1	19300	FILTER ASSY, RETURN - 10 MICRON
4	1	19298	PRESSURE GAUGE - RETURN
3	1	19297	PTO PUMP - HT18/25/40/50KX
2	1	SEE CHART	RESERVOIR TANK - 10 GALLON
1	1	19295	
ITEM	QTY	PART NO.	DESCRIPTION

21196 DECAL KIT

PART NO.	QTY.	DESCRIPTION
14473-2	3	DECAL, GREASE
19314-1	1	DECAL, VALVE BANK LEFT
19314-2	1	DECAL, VALVE BANK RIGHT
17389	2	DECAL, VENTURO - MEDIUM
15401	1	DECAL, UNLAWFUL TO OPERATE
21190-1	1	DECAL, BOOM CAPACITY ET/HT18K(X) RIGHT
21190-2	1	DECAL, BOOM CAPACITY ET/HT18K(X) LEFT
21193	2	DECAL, MODEL NAME DECAL
15392	1	DECAL, DANGER ELECTROCUTION HAZARD
15391	1	DECAL, CRANE NOT PASSENGER LIFT
19315-2	1	DECAL, SAFETY SHUT OFF HYD BANK
15390	1	DECAL, CAUTION, INSTRUCTIONS
21194	2	DECAL, PROPORTIONAL CONTROL - SMALL
21197	1	INST. DWG DECAL PLACEMENT
20051	1	DECAL, ROTATION STOP LOCATION
20174	1	DECAL, GROUND CABLE ATTACH TO TRUCK FRAME

TITLE
FIELD SERVICE LABEL KIT

DATE
10-11-05

SECTION
C400

HT18KX

SUPERSEDES
-

20827



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
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