



**HT50KX**

**HSBBD-PB**

**INSTALLATION & OWNER'S MANUAL**



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## HT50KX / Prop Ctrl / W/ Eng Ctrls (HSBABD-PB\*\*)

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CINCINNATI, OHIO

TITLE  
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**HT50KX (HSBABD-PB\*\*)**

DATE  
**9-24-09**

SUPERCEDES  
-

SECTION  
-

**22997**



# **SECTION 100**

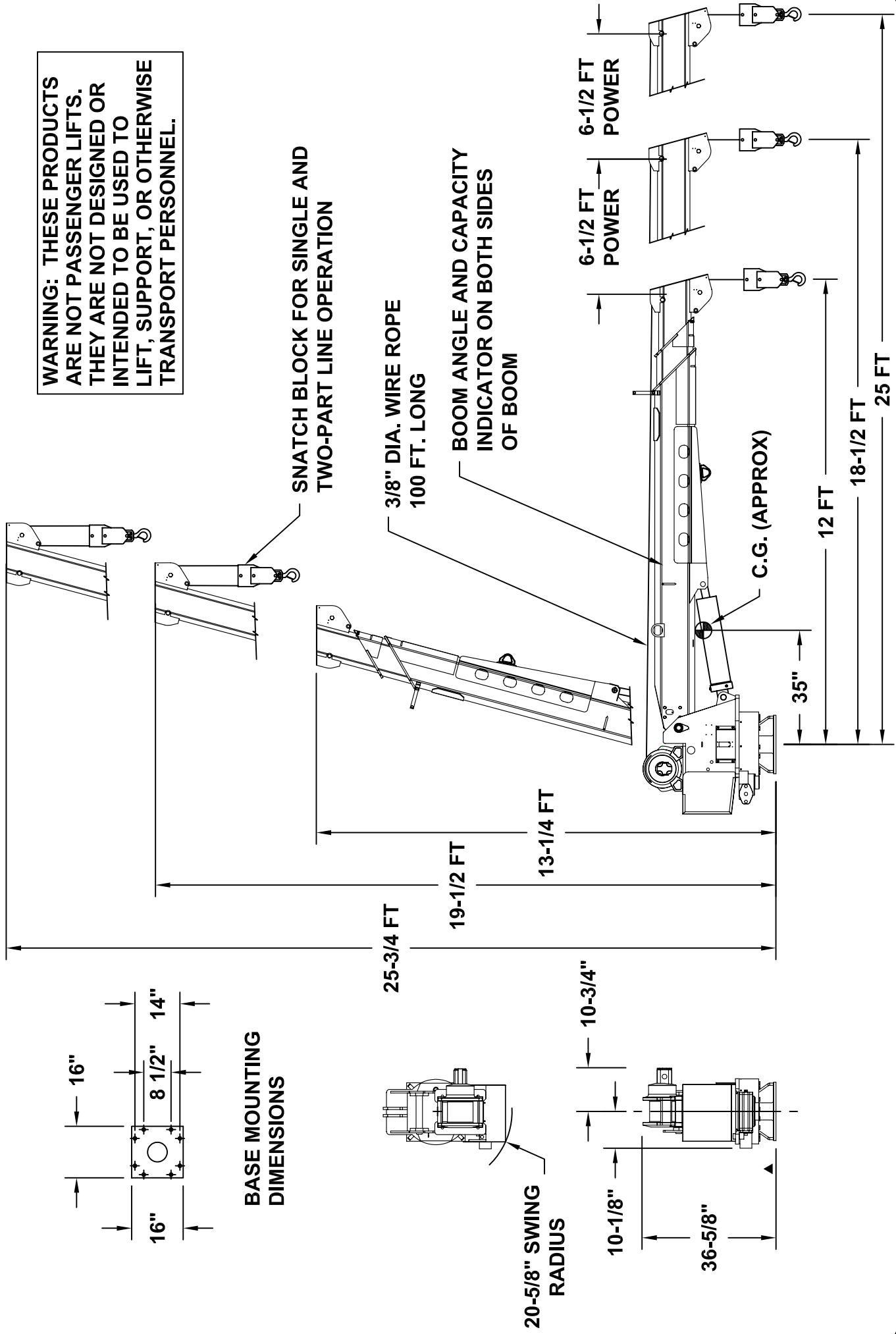
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### **&**

## **SPECIFICATIONS**

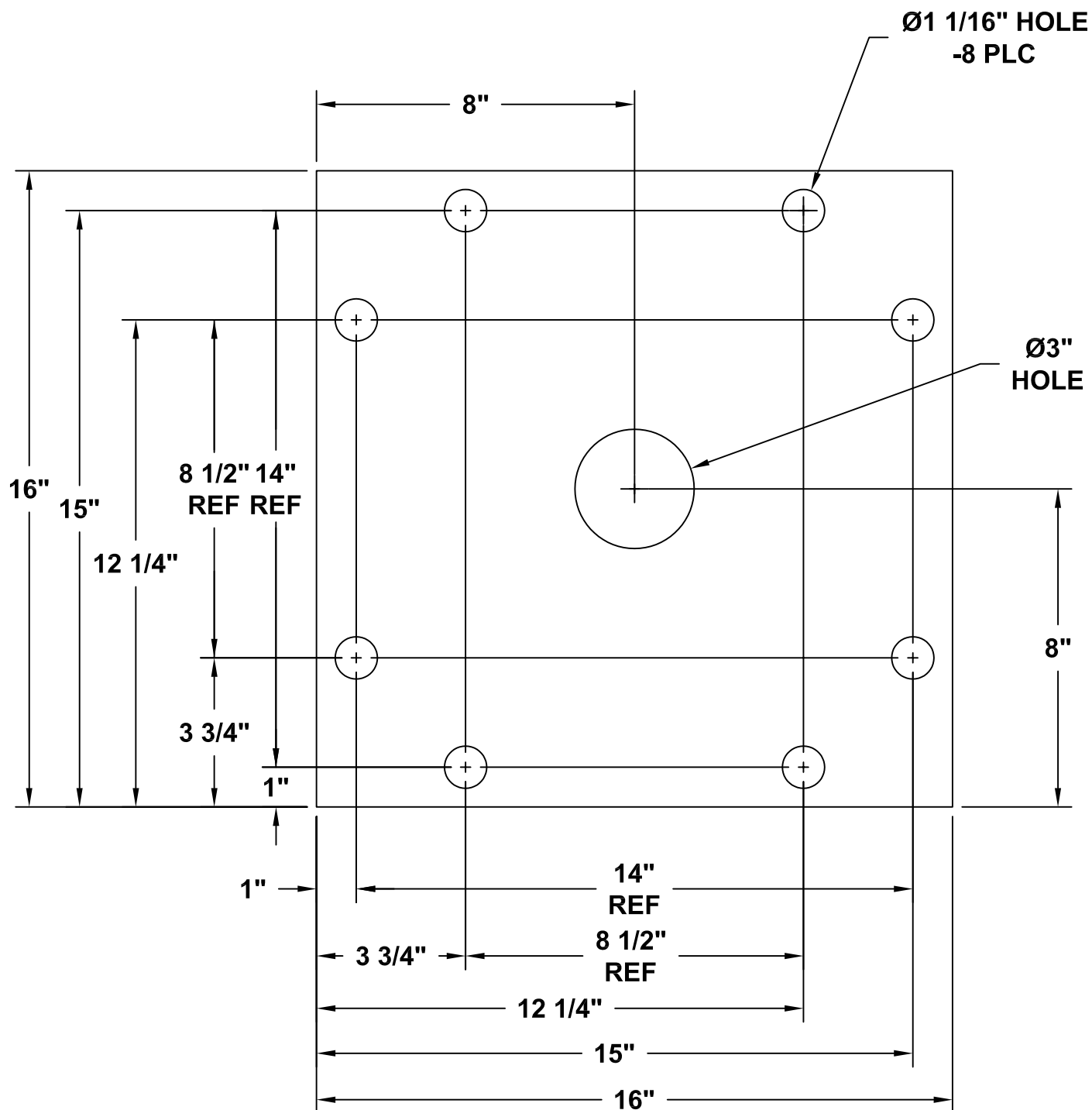


**WARNING: THESE PRODUCTS ARE NOT PASSENGER LIFTS. THEY ARE NOT DESIGNED OR INTENDED TO BE USED TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.**



<b>TITLE</b> <b>INSTALLATION DWG</b>	<b>DATE</b> <b>12-28-06</b>	<b>SECTION</b> <b>C100</b>
<b>HT50KX</b>	<b>SUPERSEDES</b> <b>-</b>	<b>22878</b>

# ▲ HT40/50KX BASE MOUNTING DIMENSIONS



MFG., INC.  
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TITLE  
▲ BASE MOUNTING DIM

HT40/50KX

DATE  
3-3-05F

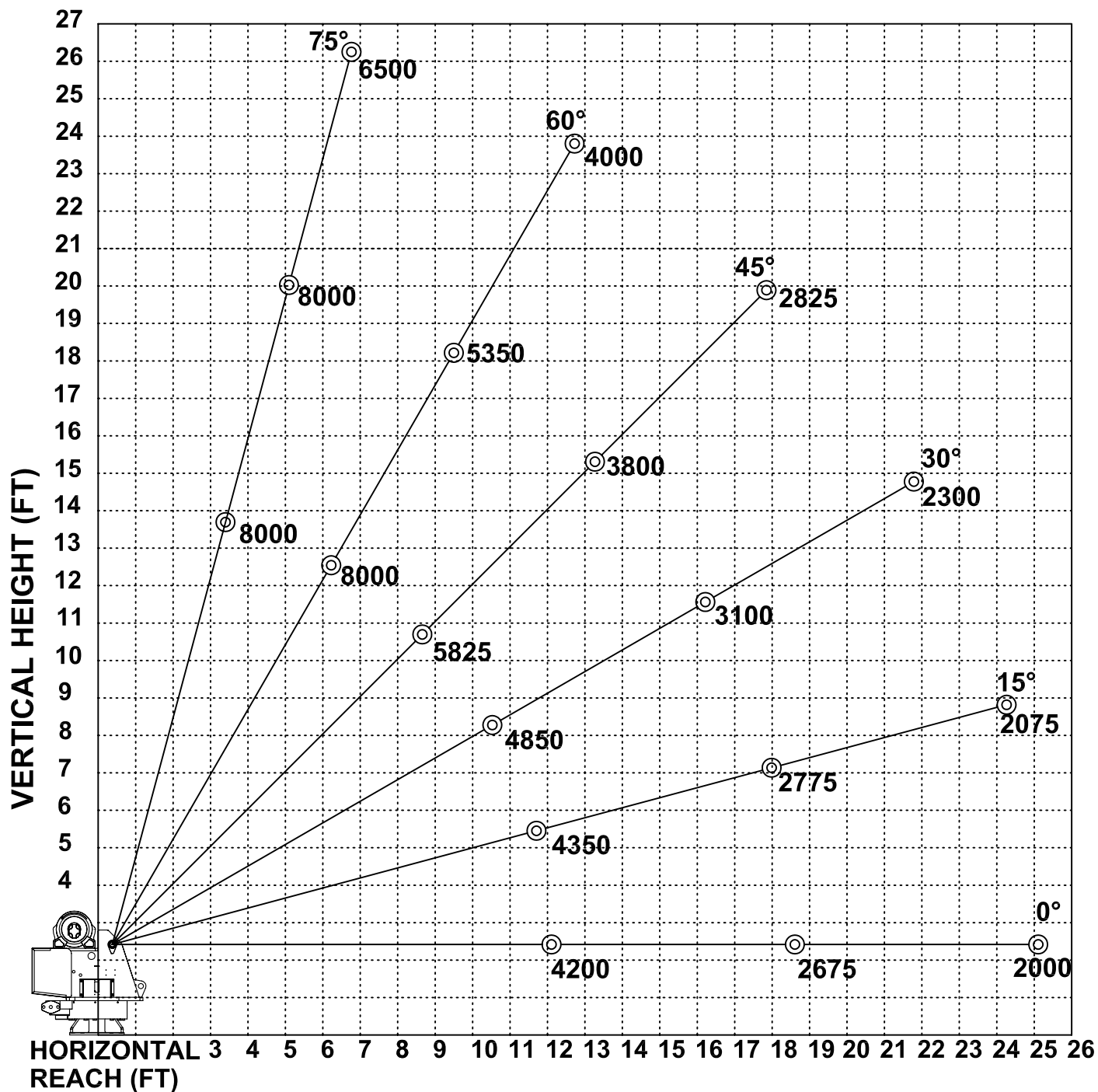
SUPERSEDES  
5-20-03E

SECTION  
C100

**18353**



# HT50KX - 12-18.5-25 BOOM MAXIMUM CAPACITY CHART



**MUST USE SNATCH BLOCK  
FOR LOADS OF 4000 LBS.  
AND GREATER**

# **SECTION 150**

## **SAFETY**

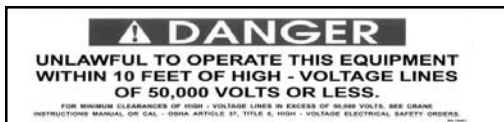


# VEHICLE & CRANE MOUNTED ELECTRICAL HAZARD SIGN APPLICATION & INFORMATION

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.



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TITLE  
**INSTALLATION DWG**

**HYDRAULIC CRANES**

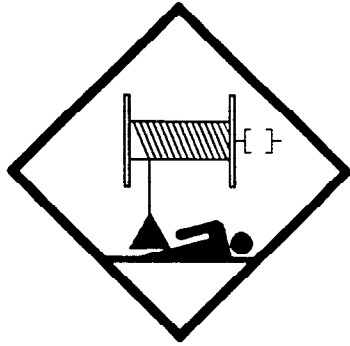
DATE  
**5-13-97A**

SUPERCEDES  
**6-12-92**

SECTION  
**C150**

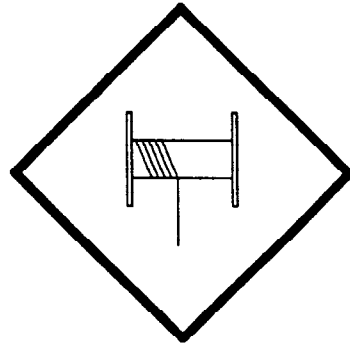
**920612**

# 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**

**I19217**

15581

ATTACHMENT

15398

UNPLUG  
REMOTE

15401

UNLAWFUL  
TO OPERATE

22499

KNOW  
YOUR  
SIGNALS

RIGHT

14473-1

OIL

15391

DANGER  
(NOT  
PASSENGER  
LIFT)

20834

VERRIDE  
INST  
INSIDE

15392

DANGER  
ELEC.  
HAZARD

14473-2

GREASE  
2 PLACES

15390

CAUTION

LEFT

MANUAL OVERRIDE

19314-2

NON-PROP

22768-2

PROP

MANUAL OVERRIDE

19314-1

NON-PROP

22768-1

PROP

SHUT OFF DECAL

19315-1

MANUAL

19315-2

PROPORTIONAL

INSIDE OF REAR COVER

MODEL NO.

19747 - HT50

CAPACITY

DECAL

MODEL

PART NO.

RIGHT

HT50

22877-1

LEFT

HT50

22877-2

19788 PROPORTIONAL CONTROL

\* PROPORTIONAL ONLY

17389

MEDIUM  
VENTURO

BOOM

17389-4

SMALL  
VENTURO

14473-2

GREASE

BACK



PART NO.: 15398

DECAL: UNPLUG REMOTE CONTROL

FUNCTION: To inform the operator to unplug remote control when not being used.

QUANTITY: 1

PLACEMENT: Right side of housing.



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.



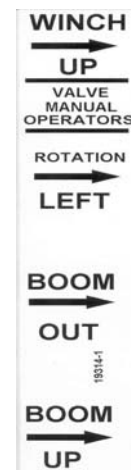
PART NO.: 19314-1

DECAL: MANUAL OVERRIDE (NON-PROP)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Left side of rear cover.



PART NO.: 19314-2

DECAL: MANUAL OVERRIDE (NON-PROP)

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Right side of rear cover.



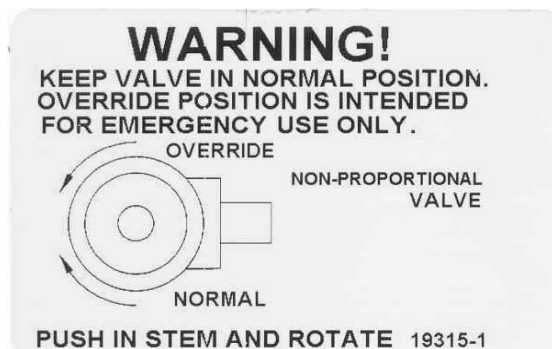
PART NO.: 19315-1

DECAL: SHUT OFF (NON-PROPORTIONAL)

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

QUANTITY: 1

PLACEMENT: Inside rear cover.



PART NO.: 19315-2

DECAL: MANUAL OVERRIDE (PROPORTIONAL)

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

QUANTITY: 1

PLACEMENT: Inside rear cover.



PART NO.: 22768-1

DECAL: MANUAL OVERRIDE

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Inside rear cover.



PART NO.: 22768-2

DECAL: MANUAL OVERRIDE

FUNCTION: To inform the operator of manual override locations.

QUANTITY: 1

PLACEMENT: Inside rear cover.



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TITLE  
**DECAL DRAWING & LIST**

HT40/50KX

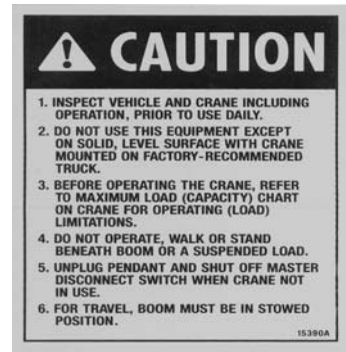
DATE  
**12-14-05B**

SUPERSEDES  
**9-9-05A**

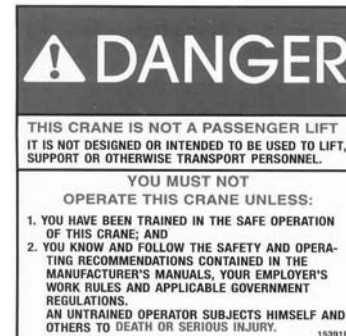
SECTION  
**C150**

**22181B**

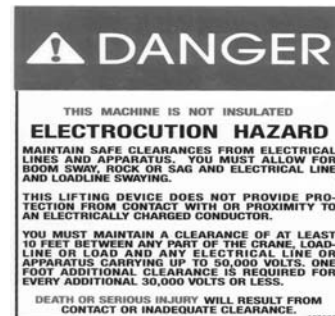
PART NO.: 15390  
DECAL: CAUTION - INSPECT VEHICLE & CRANE  
FUNCTION: To inform the operator of key operating requirements.  
QUANTITY: 1  
PLACEMENT: Left side of rear cover.



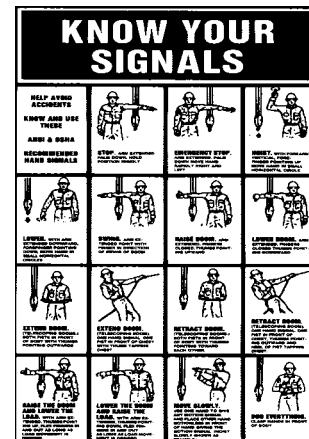
PART NO.: 15391  
DECAL: DANGER - NOT PASSENGER LIFT  
FUNCTION: To inform the operator not to lift, support or transport personnel, and to ensure that crane operator is adequately trained.  
QUANTITY: 1  
PLACEMENT: Left side of rear cover.



PART NO.: 15392  
DECAL: DANGER - ELECTROCUTION HAZARD  
FUNCTION: To inform the operator that the machine (crane) represents an electrocution hazard should it come too near or in contact with electrical voltage source.  
QUANTITY: 1  
PLACEMENT: Left side of rear cover.



PART NO.: 22499  
DECAL: KNOW YOUR SIGNALS  
FUNCTION: To inform the operator of proper signals.  
QUANTITY: 1  
PLACEMENT: Right side of rear cover.



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TITLE  
DECAL DRAWING & LIST

HT40/50KX

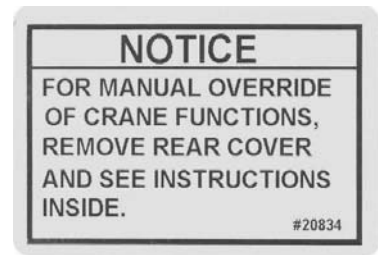
DATE  
9-11-06B

SUPERSEDES  
9-9-05A

SECTION  
C150

22181C

PART NO.: 20834  
DECAL: FOR MANUAL OVERRIDE  
FUNCTION: To inform the operator of locations  
of manual override instructions.  
QUANTITY: 1  
PLACEMENT: Left side of rear cover.



▲  
PART NO.: 17389-4  
DECAL: SMALL VENTURO  
FUNCTION: To show manufacturer of crane.  
QUANTITY: 1  
PLACEMENT: Rear cover.



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TITLE

DECAL DRAWING & LIST

DATE

9-11-06A

SECTION

C150

SUPERSEDES

HT40/50KX

12-15-05

**22181D**



# **SECTION 200**

## **INSTALLATION**

## CRANE INSTALLATION

HT40KX, HT50KX

### 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 HT40KX is 45,000 ft. lbs. and for the HT50KX is 55,000 ft. lbs.

The maximum vertical load for the HT40KX is 7100 lbs. and for the HT50KX is 9300 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 1" dia. with either coarse or fine threads. A 6" 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 as shown on drawing 20051. It can be in any position that pleases the user 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, return and a case drain 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 20698 (non-proportional), or 22913 (proportional) using the angle bulkhead fittings also furnished in the installation kit. The case drain hose must return to the tank unrestricted.

These hoses are to be connected in a relaxed position while the crane is at the midpoint of the 400 degree rotation range -- 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.

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.



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TITLE  
**INSTALLATION DWG**

**HT40KX, HT50KX**

DATE  
**11-4-08A**

SUPERCEDES  
**5-13-05**

SECTION  
**C200**

**22172**

## ELECTRICAL CONNECTIONS

A 25 ft. electrical power lead - intended for 12V DC only - also comes down through the center of the crane base plate 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:

	NON-PROP	PROP
PRESSURE	3/8"	1/2"
RETURN	1/2"	5/8"
SUCTION	3/4"	1-1/4"

## RESERVOIR

The PTO reservoir should have a capacity of 10 gallons (non-proportional) or 25 gallons (proportional) fitted with 100 mesh suction screen, 10 micron return line filter, and filler/breather cap.

## PTO PUMP

The PTO pump should be sized to allow an engine idle speed range that will deliver approximately 2.5 GPM for the HT40KX standard (non-proportional), 12.0 GPM for the HT40KX proportional, 3.0 GPM for the HT50KX standard or 12.0 GPM for the HT50KX proportional. The crane's relief pressure is set at 3000 psi.

## 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 (10 gallon reservoir 20 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.



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TITLE  
**INSTALLATION DWG**

**HT40KX, HT50KX**

DATE  
**11-4-08B**

SUPERCEDES  
**2-20-06A**

SECTION  
**C200**

**22173**



# CRANE OPERATION AND MAINTENANCE INSTRUCTIONS

HT40KX, HT50KX

## 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 3000 lbs.-HT40KX or 4000 lbs.-HT50KX or if 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.

Plug the pendant into the socket on the right side of the crane and snap the strain relief tether to the crane housing.

## PTO SYSTEM

Check the hydraulic fluid level in the PTO system reservoir. Engage PTO and set the engine idle speed to provide the desired 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.



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TITLE  
**INSTALLATION DWG**

**HT40KX, HT50KX**

DATE  
**8-12-99B**

SUPERCEDES  
**7-17-97**

SECTION  
**C200**

**22345a**

## 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 6 ft. or 10 ft. ▲

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) Energizes safety shutoff valve. See page 22328 for detailed operations 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.

For crane models HT25 serial numbers 80157, HT40 serial numbers 84092 and HT50 serial numbers 85086 and below, 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. Cranes with serial numbers above the aforementioned have been modified to allow the Overload system to remain active at the top of boom travel.

## 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 22449 for replacement parts and configuration information.

## TELESCOPIC HEXAGONAL BOOM

The hexagonal shaped boom shall telescope to provide a horizontal reach range of 10 ft. to 20 ft. using a hydraulic power extension cylinder with a 10 ft. stroke. See page 22930. A 6 ft. hydraulic ▲ power extension and a 4 ft. manual extension section is also available. See page 22917.

## 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.



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TITLE  
**INSTALLATION DWG**

**HT40KX, HT50KX**

DATE  
**11-4-08F**

SUPERCEDES  
**3-4-03E**

SECTION  
**C200**

**22345b**

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 a tie down point on the body or pedestal and apply tension.
4. Disengage the PTO pump and idle speed control.
5. Unplug the control pendant and store in a body compartment or the cab.

## MAINTENANCE

The crane requires only periodic lubrication. As a standard procedure, this can be done at the time the vehicle is serviced.

The winch planetary gearbox lube should be maintained at the level plug.

To ensure optimal winch performance, the following lube schedule and lube specifications should be followed:

Initial Change - after 6 weeks or 10 hours of operation.

Periodic Change - on an annual basis or every 50 hours of operation.

<u>Temp Range (°F)</u>	<u>Winch Hydraulic Oil</u>
120 to 10	SAE 50
40 to -25	75W90
30 to -50	Conoco DN600 or equivalent

Service grease fittings and rotation gear with molybdenum-disulfide graphite-filled lithium-based extreme pressure grease.

Grease fitting locations:

- Boom pivot at rear of boom
- Speed reducer (2 fittings)
- Elevation cylinder tail clevis
- Bottom of Swing Bearing (2 fittings)

Remove rear cover and check all hydraulic tube and hose fittings for tightness.

Check electrical connections for looseness and corrosion.



MFG., INC.  
CINCINNATI, OHIO

TITLE

INSTALLATION DWG

DATE

2-3-09A

SECTION

C200

HT40KX, HT50KX, HT66KX

SUPERCEDES

5-13-05

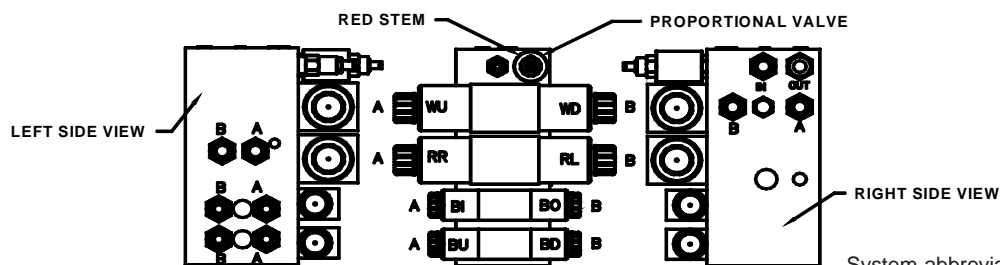
22174

## EXPLANATION OF HYDRAULIC VALVE SYSTEM

### OVERVIEW

This proportional crane utilizes a proportional valve, which controls the rate at which the hydraulic fluid flows through the valve bank. When the proportional valve is fully closed, hydraulic fluid bypasses the valve bank and returns directly to the tank. When the proportional valve is fully open, hydraulic fluid cycles through the valve bank and allows the crane to function at full speed. When the proportional valve is at any setting between, a portion of the fluid is allowed through the valve bank, with the remainder returning directly to the tank.

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").



System abbreviations are as follows:

WD – Winch Down	WU – Winch Up
RR – Rotation Right	RL – Rotation Left
BI – Boom In (Ext.)	BO – Boom Out (Ext.)
BD – Boom Down (Elev.)	BU – Boom Up (Elev.)

### 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:

- Override the proportional valve by turning the red stem on the valve as stated below.
  - 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.
- 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 up.

**Warning!** For normal crane operation, the proportional valve must be in the "normal" position (as described above). To verify "normal" operation, you may, you may set the pendant (or radio) control aside and actuate a single crane function by pushing "in" on any of the manual override pins, located at the ends of each function control valve. If that function operates, the proportional valve is still in manual override. Check the position of the proportional valve "red thumb screw" to insure that it is fully counterclockwise.

### EMERGENCY STOP

In the unlikely event that a function of the crane does not stop once the function's toggle switch is released, the Proportional crane can be stopped by releasing the trigger.



MFG., INC.  
CINCINNATI, OHIO

TITLE  
**HYDRAULIC SYSTEM**

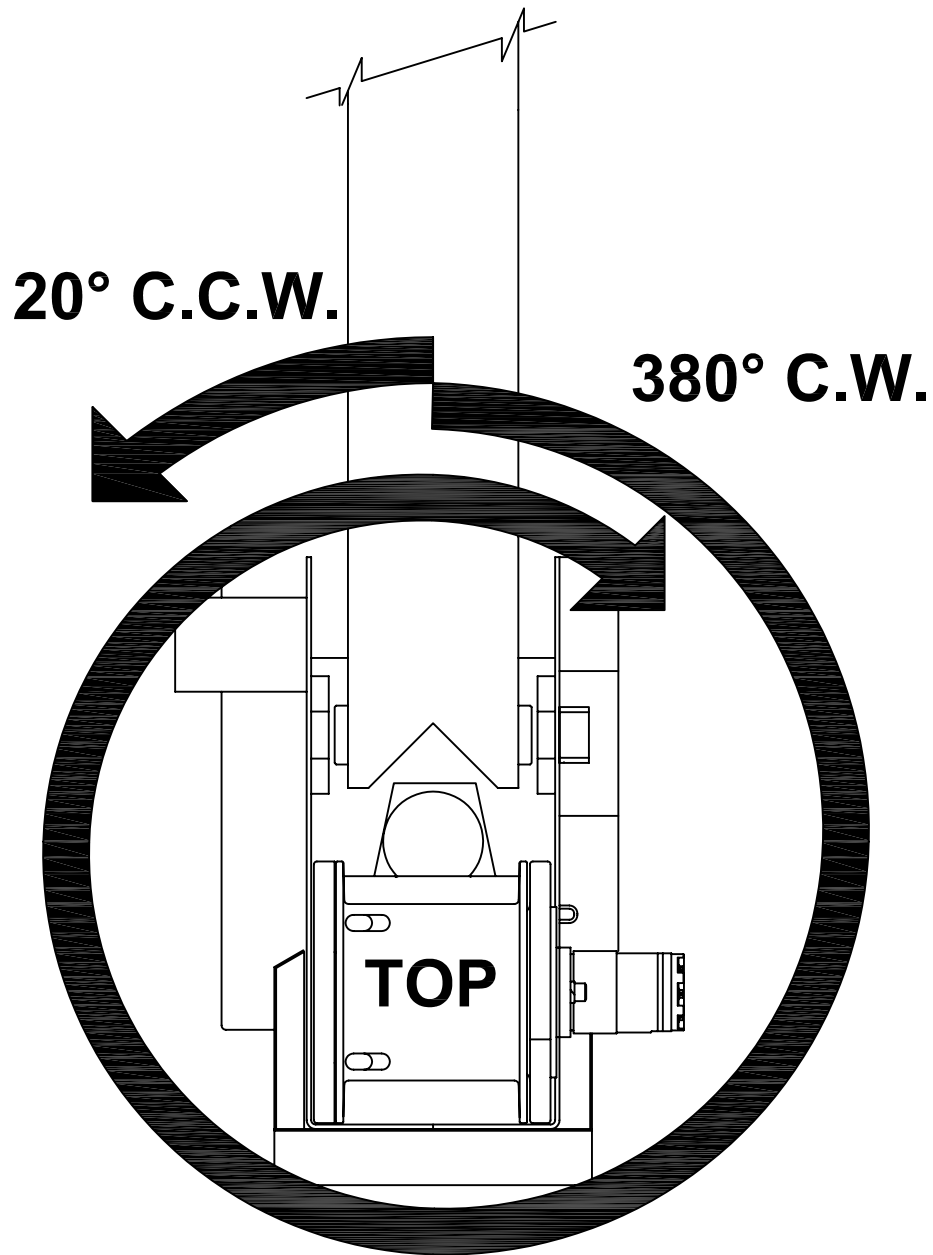
**HT40/50 - PROP**

DATE  
**5-26-05**

SUPERCEDES  
**-**

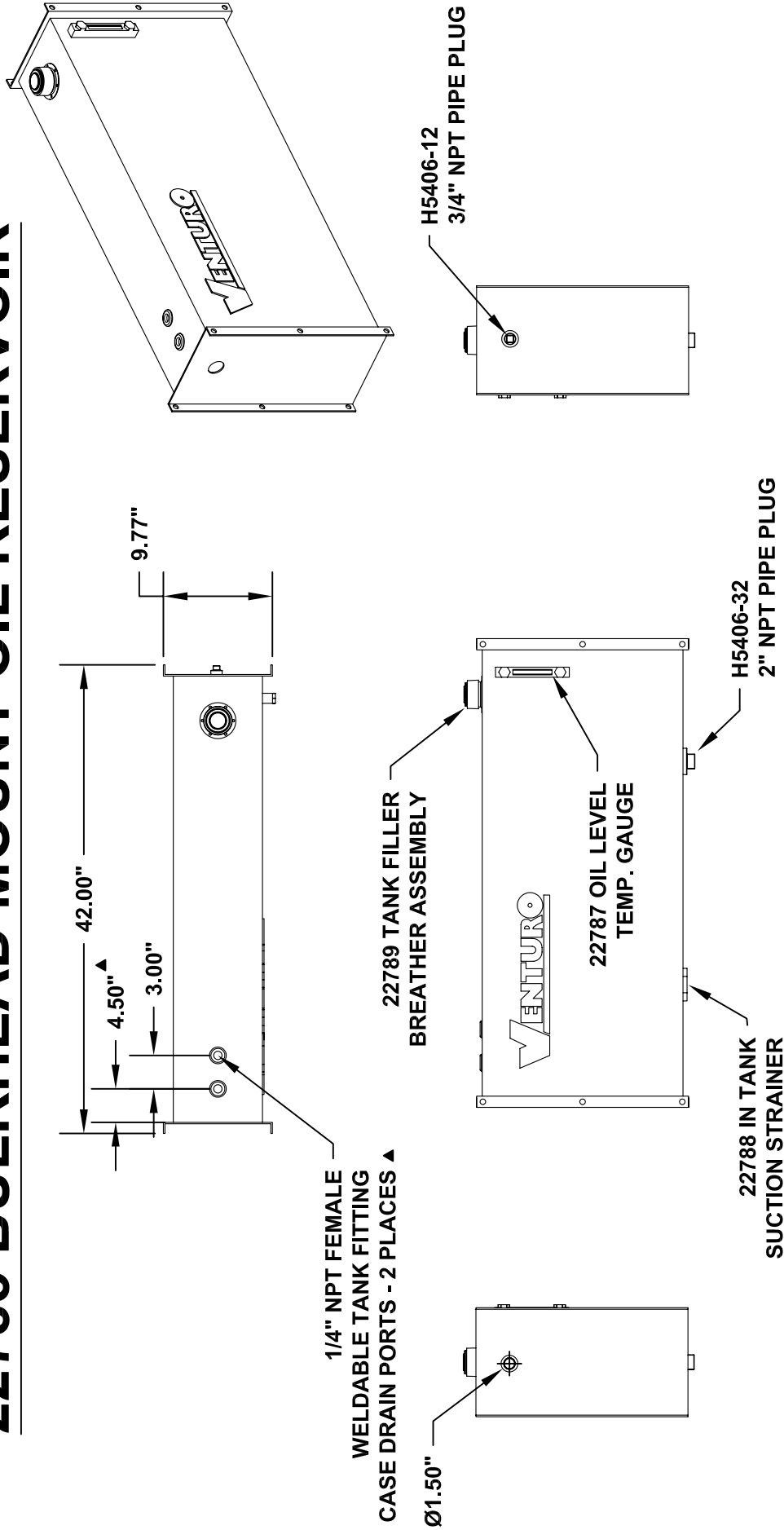
SECTION  
**C200**

**22168**



**This Venturo crane is shipped with the rotation orientation as shown above. To change the orientation rotate crane base prior to mounting to suit your application.**

# 22785 BULKHEAD MOUNT OIL RESERVOIR

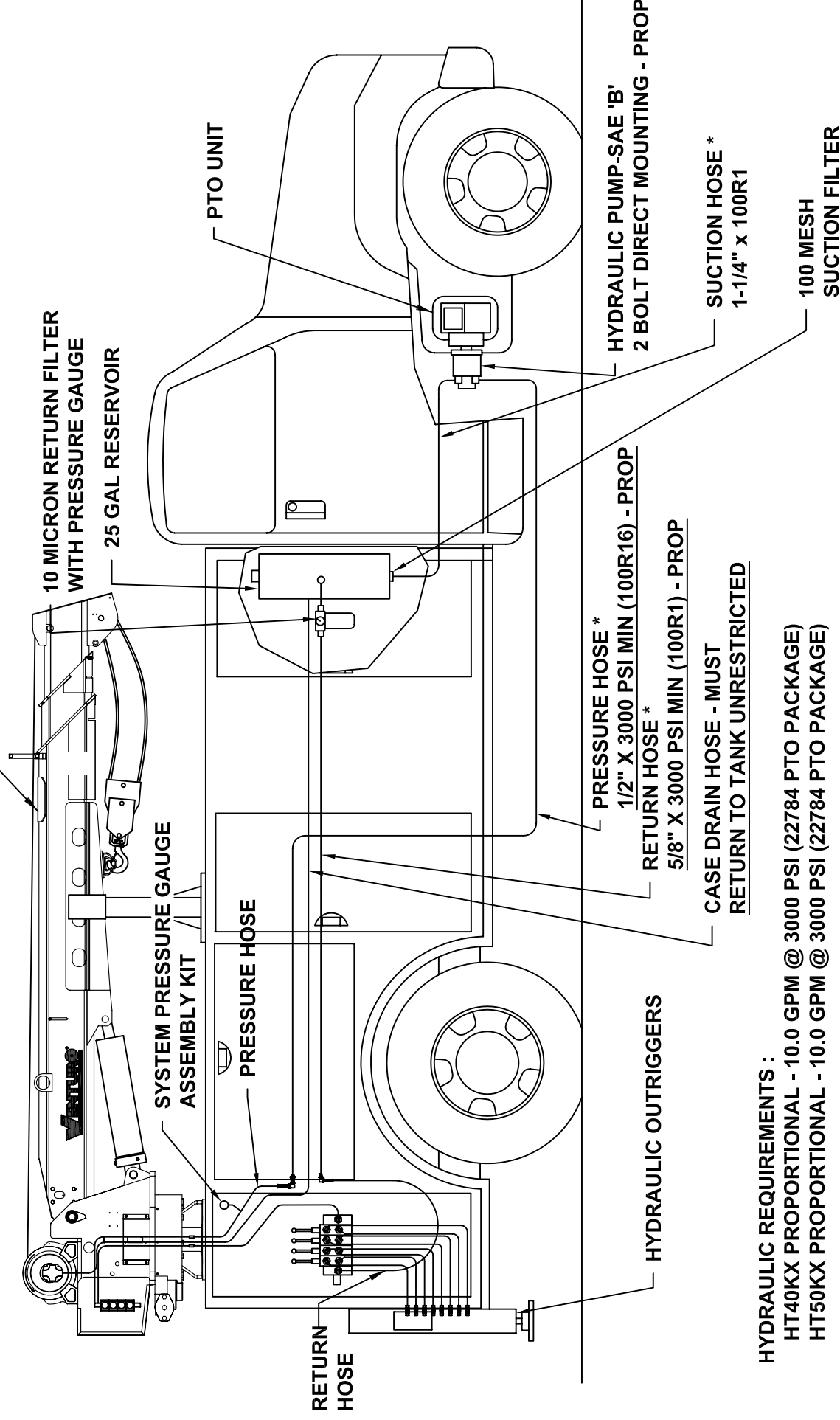


 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE <b>25 GALLON HYDRAULIC TANK</b>		DATE <b>8-26-09C</b>	SECTION <b>-</b>
	-		SUPERSEDES <b>11-5-08B</b>	<b>22825</b>

 CAUTION: THE CASE DRAIN LINE FROM THE WINCH MUST HAVE AN UNRESTRICTED PATH TO TANK/RESERVOIR.

HT40/50KX PROPORTIONAL CRANE

FOR INFORMATION ON OUR  
PTO PACKAGES REFERENCE 22448



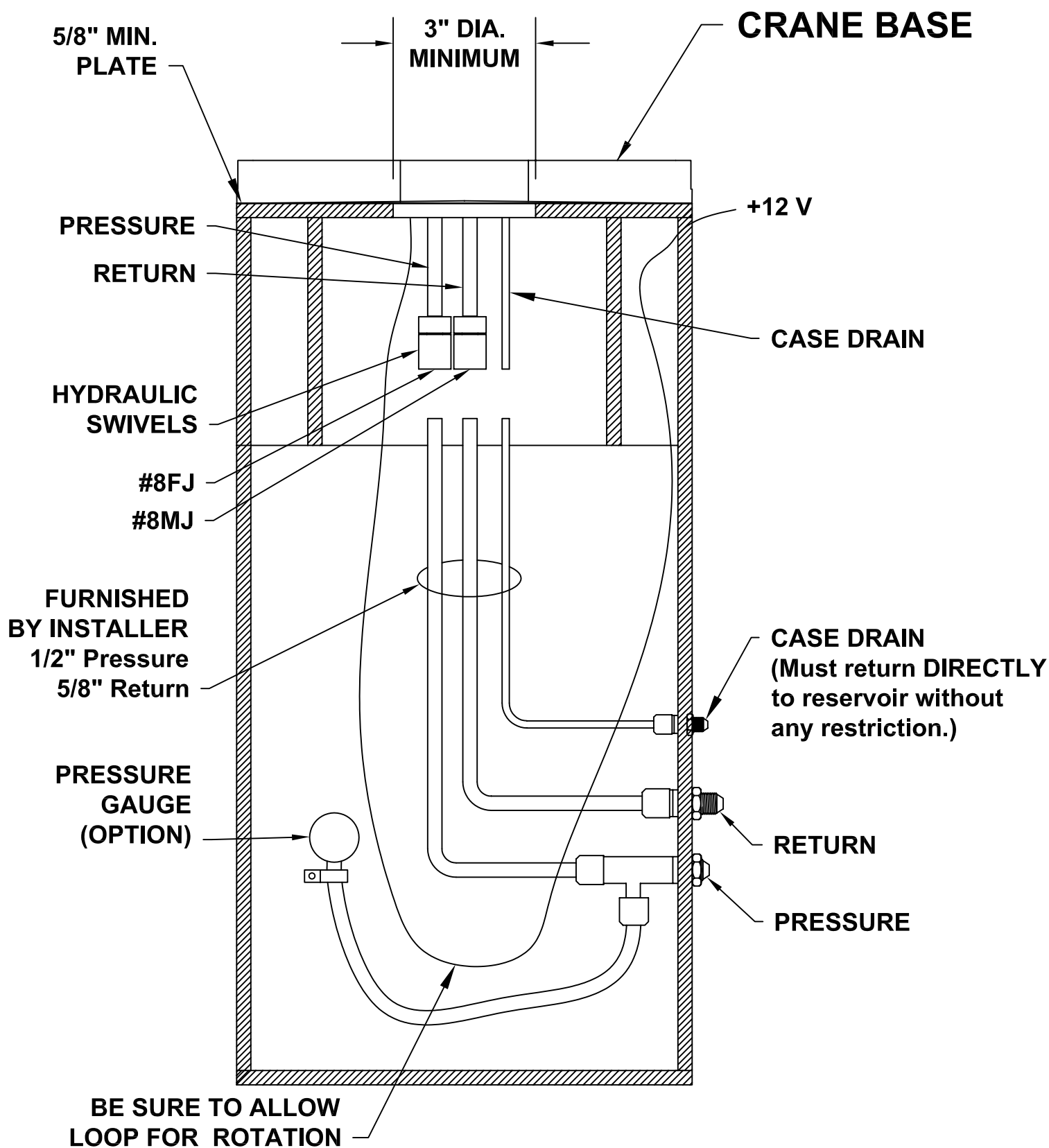
**HYDRAULIC REQUIREMENTS :**

- HT40KX PROPORTIONAL - 10.0 GPM @ 3000 PSI (22784 PTO PACKAGE)
- HT50KX PROPORTIONAL - 10.0 GPM @ 3000 PSI (22784 PTO PACKAGE)

SEE INSTALLATION INSTRUCTIONS 22344 (2 PAGES).

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

 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE <b>INSTALLATION DWG</b>		DATE <b>7-21-08A</b>	SECTION <b>C200</b>
	PTO INST - HT40/50 (PROPORTIONAL)		SUPERSEDES <b>1-4-07</b>	<b>22883</b>



MFG., INC.  
CINCINNATI, OHIO

TITLE  
**CRANE & HOSE INST.**

**HT40/50/66 - PROP**

DATE  
**9-10-09B**

SUPERSEDES  
**2-3-09A**

SECTION  
**C200**

**22913**



# 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.

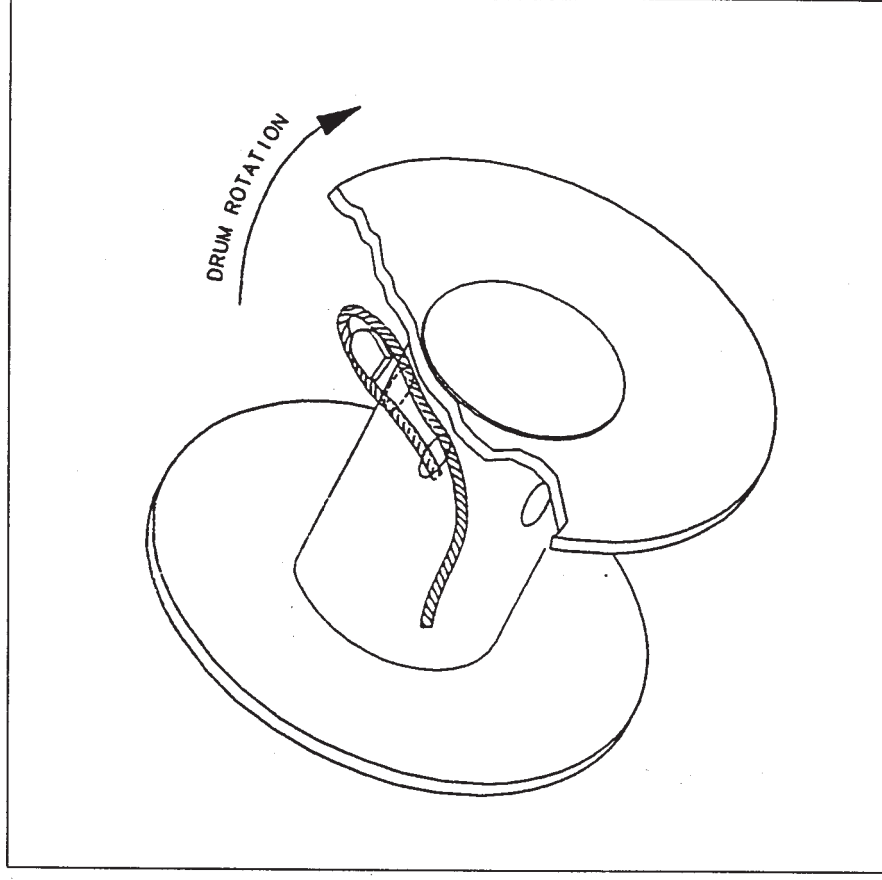


FIG 1

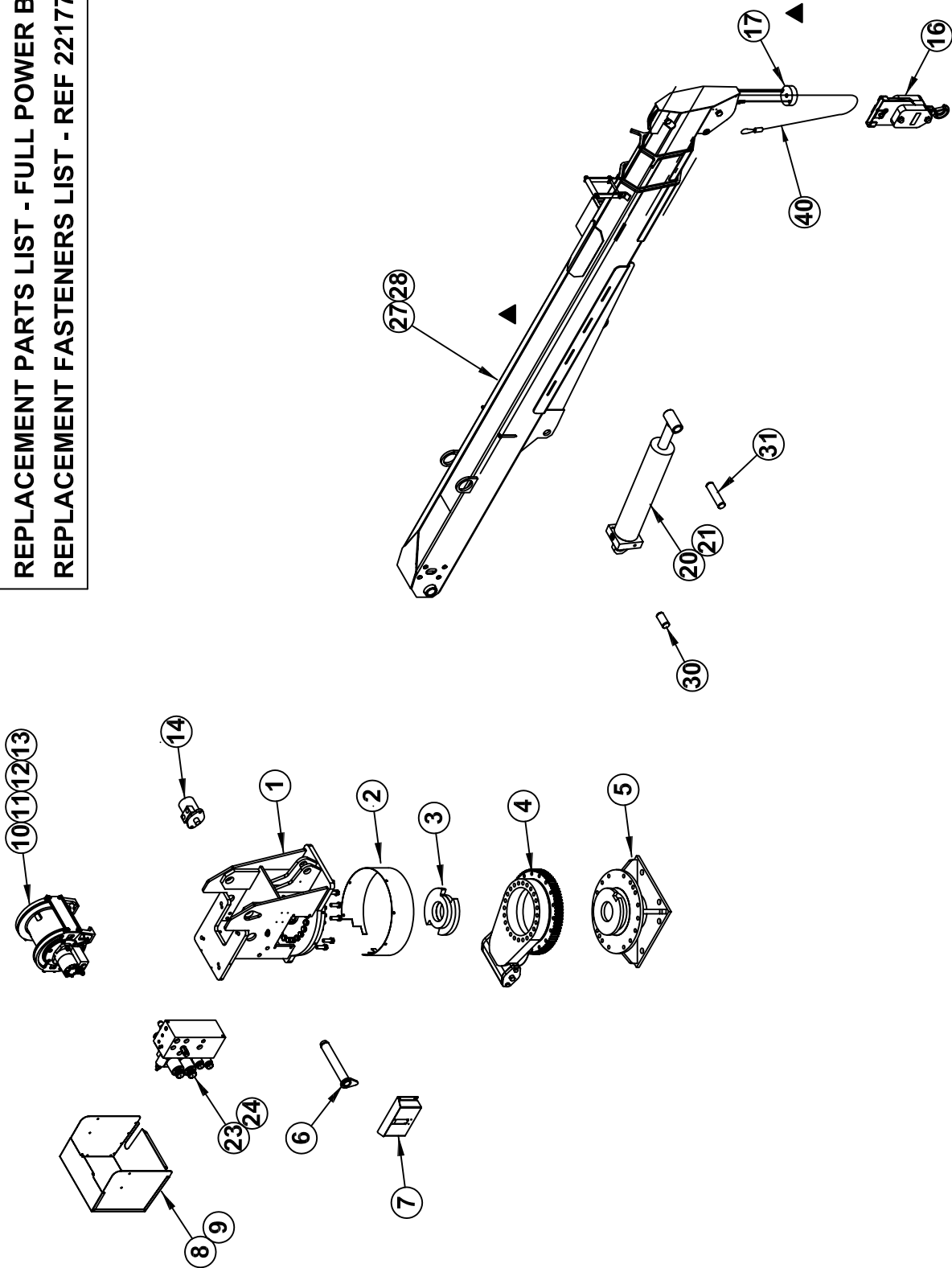


# SECTION 400

## PARTS




REPLACEMENT PARTS LIST - REF 22985  
REPLACEMENT PARTS LIST - FULL POWER BOOM 22882  
REPLACEMENT FASTENERS LIST - REF 22177



<div> <div>VENTURO</div> <div>MANUFACTURING, INC.</div> <div>CINCINNATI, OHIO</div> </div>	TITLE		SECTION	DATE	SUPERSEDES
	REPLACEMENT PARTS		C400		
	HT50KX		22984	11-24-09	-

ITEM #		PART #	DESCRIPTION	ITEM #	PART #	DESCRIPTION
1	▲	27033	HOUSING WELDED ASSEMBLY	41	-	-
2		22726	OUTER RING	42	-	-
3		22702	ROTATION STOP RING WELDED ASSEMBLY	43	-	-
4		22704	SLEWING RING	44	-	-
5		22710	PEDESTAL WELDED ASSEMBLY	45	-	-
6		22721	PIVOT PIN MAIN BOOM PIVOT	46	-	-
7		22715	SIDE COVER	47	-	-
8		22841	REAR HYD. VALVE COVER - STD.	48	-	-
9		22842	REAR HYD. VALVE COVER - PROP.	49	-	-
10		22828	WINCH - 3000 LB (SINGLE LINE) - HT40KX - NON-PROP	50	-	-
11		22829	WINCH - 3000 LB (SINGLE LINE) - HT40KX - PROP	51	22766	FIELD SERVICE LABEL KIT - HT40KX NON-PROP.
12		22909	WINCH - 4000 LB (SINGLE LINE) - HT50KX-NON-PROP	52	22766-1	FIELD SERVICE LABEL KIT - HT40KX PROPOR-
13		22830	WINCH - 4000 LB (SINGLE LINE) - HT50KX-PROP	TIONAL		
14		19177	HYDRAULIC ROTATION MOTOR	53	22767	FIELD SERVICE LABEL KIT - HT50KX NON-PROP.
15		-	-	54	22767-1	FIELD SERVICE LABEL KIT - HT50KX PROPOR-
16		17770	HEADACHE BALL ASSEMBLY	TIONAL		
17		19377-3	ANTI-2-BLOCK WEIGHT ASSEMBLY	55	-	-
18		-	-	56	-	-
19		-	-	57	-	-
20		-	-	58	-	-
21		22021-1	ELEV. CYL. 4.5" BORE x 2" ROD x 19.63" STROKE	59	-	-
22		22022-1	ELEV. CYL. 5" BORE x 2" ROD x 19.63" STROKE	60	-	-
23		-	-	61	-	-
24		22501	HYDRAULIC VALVE BLOCK - NON-PROP	62	-	-
25		22736L	HYDRAULIC VALVE BLOCK - PROP.	63	-	-
26		-	-	64	-	-
27		-	-	65	-	-
28		23107	BOOM ASSEMBLY - HT50KXX	66	-	-
29		21939	BOOM ASSEMBLY - HT40KXX	67	-	-
30		-	-	68	-	-
31		22256	ELEVATION CYLINDER PIN - INBOARD	69	-	-
32		22257	ELEVATION CYLINDER PIN - OUTBOARD	70	-	-
33		-	-	71	-	-
34		-	-	72	-	-
35		-	-	73	-	-
36		-	-	74	-	-
37		-	-	75	-	-
38		-	-	76	-	-
39		-	-	77	-	-
40		17094-3/8-100	WIRE ROPE ASSEMBLY - 3/8" x 100 FT	78	-	-
				79	-	-
				80	-	-
			⚠ ITEM NOT SHOWN ON REPLACEMENT PARTS DRAWING			
			REPLACEMENT PARTS DWG REF 22984			

	TITLE		REPLACEMENT PARTS		SECTION
	MANUFACTURING, INC. CINCINNATI, OHIO		DATE	12-21-09A	C400
			SUPERCEDES	11-24-09	22985

## FASTENER LIST FOR HT40/50KX

Part Number	Description	Qty	Location/Function
!HHCS06311200	HEX HEAD CAP SCREW - 5/8-11 X 2	16	LOWER BASE TO SLEWING RING
!HHCS06311450	HEX HEAD CAP SCREW - 5/8-11 X 4-1/2	24	SLEWING RING TO UPPER HOUSING
!LWSH-063	LOCK WASHER - 5/8	40	LOWER BASE / UPPER HOUSING TO SLEWING RING
!SHCS05013200	SOCKET HEAD CAP SCREW - 1/2-13 X 2	2	ROTATION MOTOR
!LWSH-050-HC	LOCK WASHER - 1/2 HI COLLAR	2	ROTATION MOTOR
!SHCS03816350	SOCKET HEAD CAP SCREW - 3/8-16 X 3-1/2	2	VALVE BLOCK (NON-PROPORTIONAL ONLY)
!FWSH-038	FLAT WASHER - 3/8	2	VALVE BLOCK (NON-PROPORTIONAL ONLY)
!LWSH-038-HC	LOCK WASHER - 3/8 HI COLLAR	2	VALVE BLOCK (NON-PROPORTIONAL ONLY)
!HNUT-03816	HEX NUT - 3/8-16	2	VALVE BLOCK (NON-PROPORTIONAL ONLY)
!HHCS03816100	HEX HEAD CAP SCREW - 3/8-16 X 1	2	VALVE BLOCK (PROPORTIONAL ONLY)
!FWSH-038	FLAT WASHER - 3/8	2	VALVE BLOCK (PROPORTIONAL ONLY)
!LWSH-038	LOCK WASHER - 3/8	2	VALVE BLOCK (PROPORTIONAL ONLY)
!HHCS05013225	HEX HEAD CAP SCREW - 1/2-13 X 2-1/4	4	WINCH - HT40KX
!FWSH-050	FLAT WASHER - 1/2	4	WINCH - HT40KX
!LWSH-050	LOCK WASHER - 1/2	4	WINCH - HT40KX
!HNUT-05013	HEX NUT - 1/2-13	4	WINCH - HT40KX
!HHCS06311225 ▲	HEX HEAD CAP SCREW - 5/8-11 X 2-1/4	4	WINCH - HT50KX
!FWSH-063 ▲	FLAT WASHER - 5/8	4	WINCH - HT50KX
!LWSH-063 ▲	LOCK WASHER - 5/8	4	WINCH - HT50KX
!HNUT-06311 ▲	HEX NUT - 5/8-11	4	WINCH - HT50KX
!HHCS03816100	HEX HEAD CAP SCREW - 3/8-16 X 1	4	WINCH (BACK SIDE)
!FWSH-038	FLAT WASHER - 3/8	4	WINCH (BACK SIDE)
!LWSH-038	LOCK WASHER - 3/8	4	WINCH (BACK SIDE)
!HHCS03816100	HEX HEAD CAP SCREW - 3/8-16 X 1	1	BOOM PIVOT PIN
!FWSH-038	FLAT WASHER - 3/8	1	BOOM PIVOT PIN
!LWSH-038	LOCK WASHER - 3/8	1	BOOM PIVOT PIN
!PHCS#0632100	PAN HEAD CAP SCREW #6-32 X 1	2	TERMINAL BLOCK
!PHCS#1024050	PAN HEAD CAP SCREW #10-24 X 1/2	2	CIRCUIT BREAKER
!LWSH-#10	LOCK WASHER - #10	2	CIRCUIT BREAKER
!HHCS02520050	HEX HEAD CAP SCREW - 1/4-20 X 1/2	1	TOP POSITION SWITCH
!FWSH-025	FLAT WASHER - 1/4	1	TOP POSITION SWITCH
!LWSH-025	LOCK WASHER - 1/4	1	TOP POSITION SWITCH
19269	CABLE CLAMP - 1/4	1	PRESSURE SWITCH HARNESS
!HHCS02520063-5	HEX HEAD CAP SCREW - 1/4-20 X 5/8	1	PRESSURE SWITCH HARNESS
!LWSH-025	LOCK WASHER - 1/4	1	PRESSURE SWITCH HARNESS
!HHCS03118125	HEX HEAD CAP SCREW - 5/16-18 X 1-1/4	1	GROUND SCREW
!FWSH-031	FLAT WASHER - 5/16	1	GROUND SCREW
!LWSH-031-STAR	STAR LOCK WASHER - 5/16 - EXTERNAL	2	GROUND SCREW
!HHCS02520063-5	HEX HEAD CAP SCREW - 1/4-20 X 5/8	4	REAR COVER
!LWSH-025	LOCK WASHER - 1/4	4	REAR COVER
!UNUT-02520-LKG	U-NUT - 1/4-20 - LOCKING TYPE	7	LOWER COVER
!HHCS02520063-5	HEX HEAD CAP SCREW - 1/4-20 X 5/8	7	LOWER COVER
!FWSH-025	FLAT WASHER - 1/4	7	LOWER COVER
!SRNG-150	SNAP RING - 1-1/2 SHAFT DIAMETER	4	ELEVATION CYLINDER PINS - ROD AND BASE ENDS
!PHMS03816050	PAN HEAD MACHINE SCREW - 3/8-16 X 1/2	1	COUPLING FOR MASTER BYPASS VALVE
19122	HOLE PLUG	5	WINCH ACCESS HOLES
19271-1	2-1/8 DIAMETER HOLE PLUG	2	WINCH ACCESS HOLES

REPLACEMENT PARTS DWG REF 22175



MFG., INC.  
CINCINNATI, OHIO

TITLE  
**REPL. FASTENERS LIST**

**HT40KX, HT50KX**

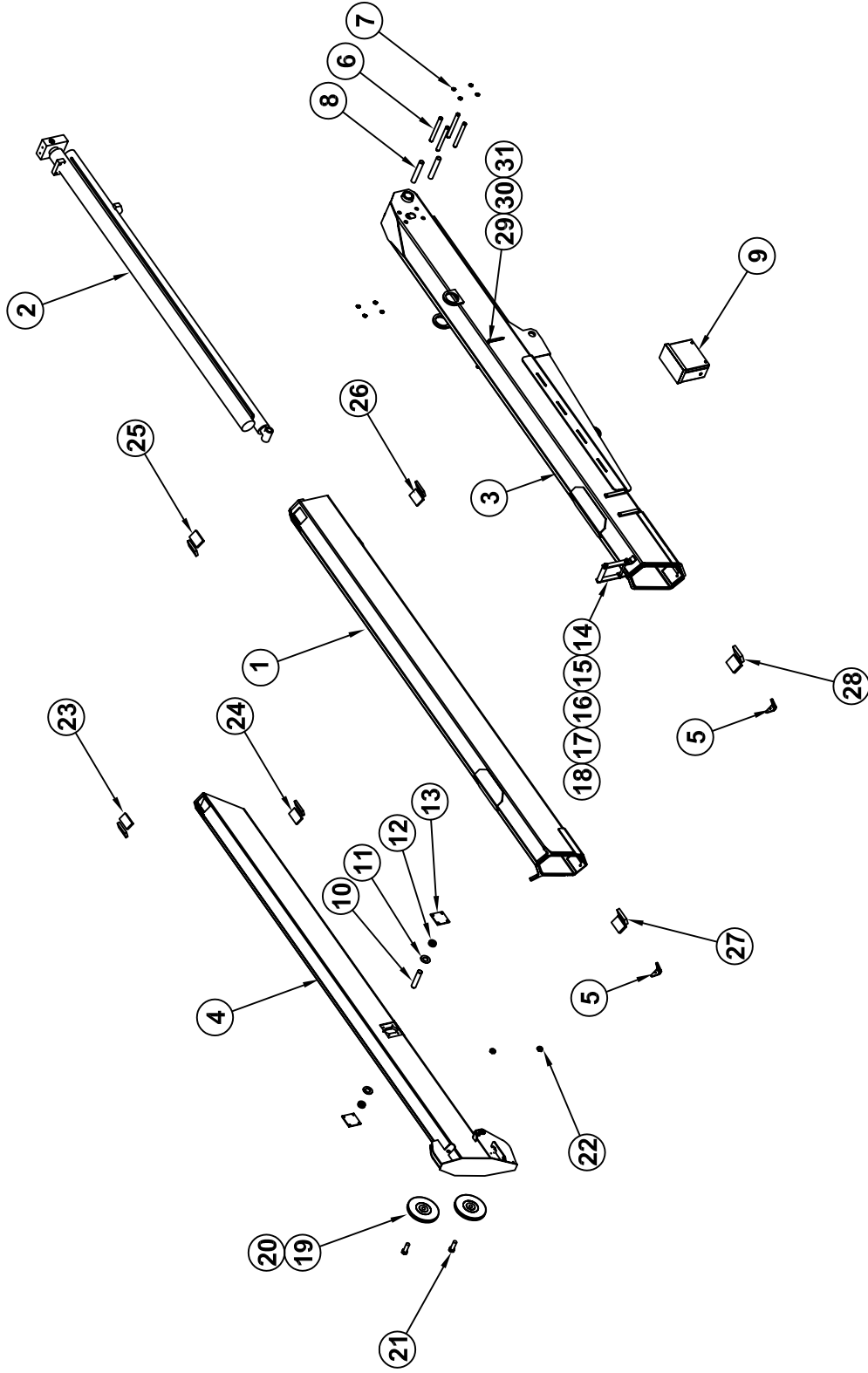
DATE  
**10-2-06A**

SUPERCEDES  
**5-16-05**

SECTION  
**C400**

**22177**

# 23107 BOOM PARTS DRAWING



REF. REPLACEMENT PARTS LIST 22886

<b>VENTURO</b> <sup>®</sup> MANUFACTURING, INC. CINCINNATI, OHIO	TITLE <b>23107 BOOM PARTS DRAWING</b>	DATE <b>10-1-08B</b>	SECTION <b>C400</b>
	HT50KXX	SUPERSEDES <b>10-25-07A</b>	<b>22885</b>

31	2	!ANUT-02520S	ACORN NUT 1/4-20 STAINLESS
30	2	13459-2	BOOM ARROW 4-7/16 LONG
29	2	22490	SPACER, BOOM ARROW 1/2" O.D.
28	2	U063X2.50	UHM W 063X2.50
27	2	U063X2.13	UHM W 063X2.13
26	2	U044X2.13	UHM W 044X2.13
25	2	U050X2.13	UHM W 050X2.13
24	2	U044X1.88	UHM W 044X1.88
23	2	U050X1.88	UHM W 050X1.88
22	2	!LNUT-07510	LOCKNUT 3/4-10
21	2	17059-1	SHEAVE AXLE
20	2	23929	SPACER - 23927 & 23928 POLY SHEAVES
19	2	23928	BOOM SHEAVE WITH BUSHING
18	2	!LNUT-04414	NYLON INSERT LOCK NUT - 7/16-14
17	1	21560	ROLLER,UHM W GUIDE
16	1	21936	FLAT,MOUNT;WIRE ROPE GUIDE
15	1	21935	WIRE-ROPE GUIDE WELDED
14	1	!HHCS04414550	HHCS - 7/16-14 X 5-1/2 LG
13	2	23116	PIN BLOCK REINFORCING
12	2	21428	BUSHING
11	2	!FWSH-100SAE	FLAT WASHER - 1-1/8 X 2-1/8 X 1/8 THICK
10	1	21405	PIN - CYLINDER
9	1	22685	ANTI 2 BLOCK CORD REEL ASSEMBLY
8	2	24535	THRUST ROLLER
7	8	!SRNG-075	RETAINING RING - 3/4" SHAFT DIA.
6	4	22255	EXTENSION CYLINDER THRUST PIN
5	2	23183	V-BLOCK SLIDER
4	1	23105	TERTIARY BOOM WELDED ASSEMBLY
3	1	27172	PRIMARY BOOM TUBE WELDED ASSEMBLY
2	1	23108	EXTENSION CYLINDER
1	1	27175	SECONDARY BOOM TUBE WELD ASSY
ITEM NO.	EXPLODED/QTY.	PART NUMBER	DESCRIPTION

REF. REPLACEMENT DRAWING NO. 22885



TITLE  
**23107 BOOM REPLACEMENT PARTS LIST**

DATE  
**10-1-08B**

SECTION  
**C400**

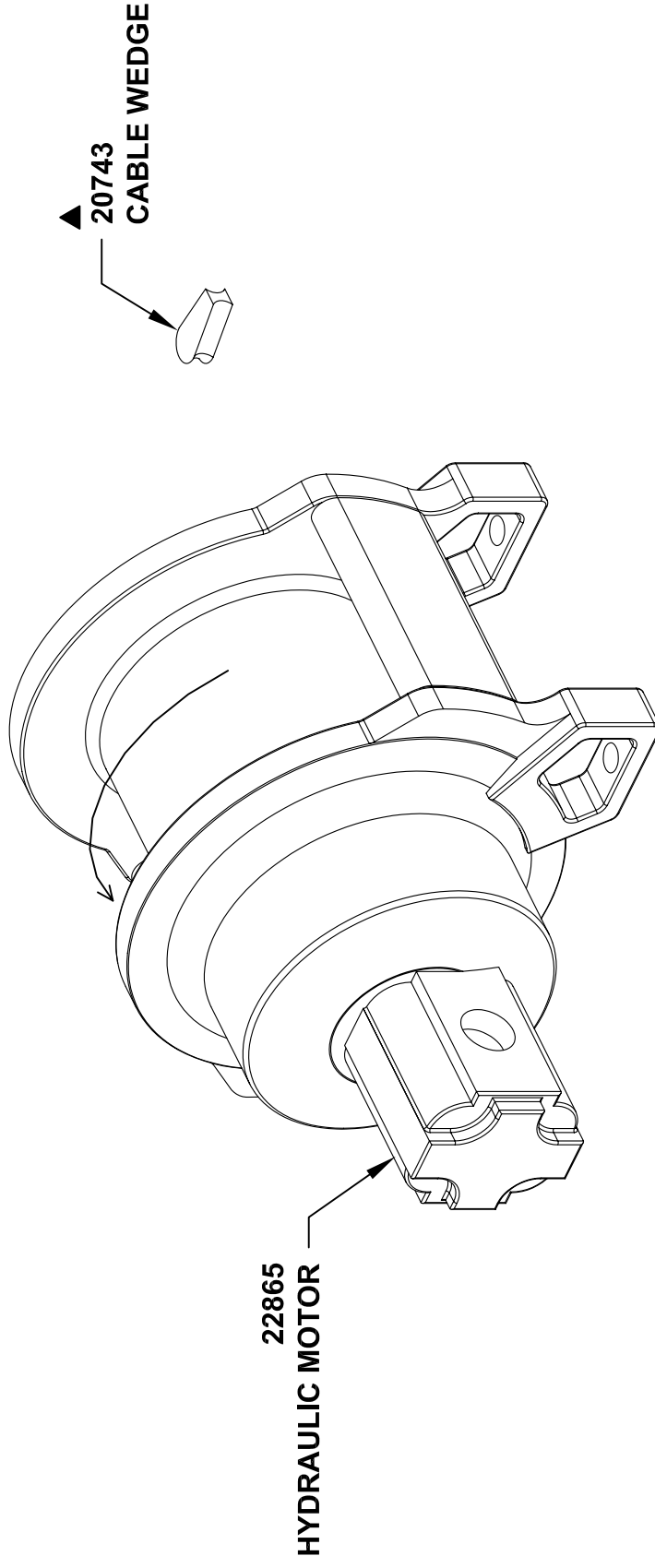
HT50KXX

SUPERSEDES  
**10-25-07A**

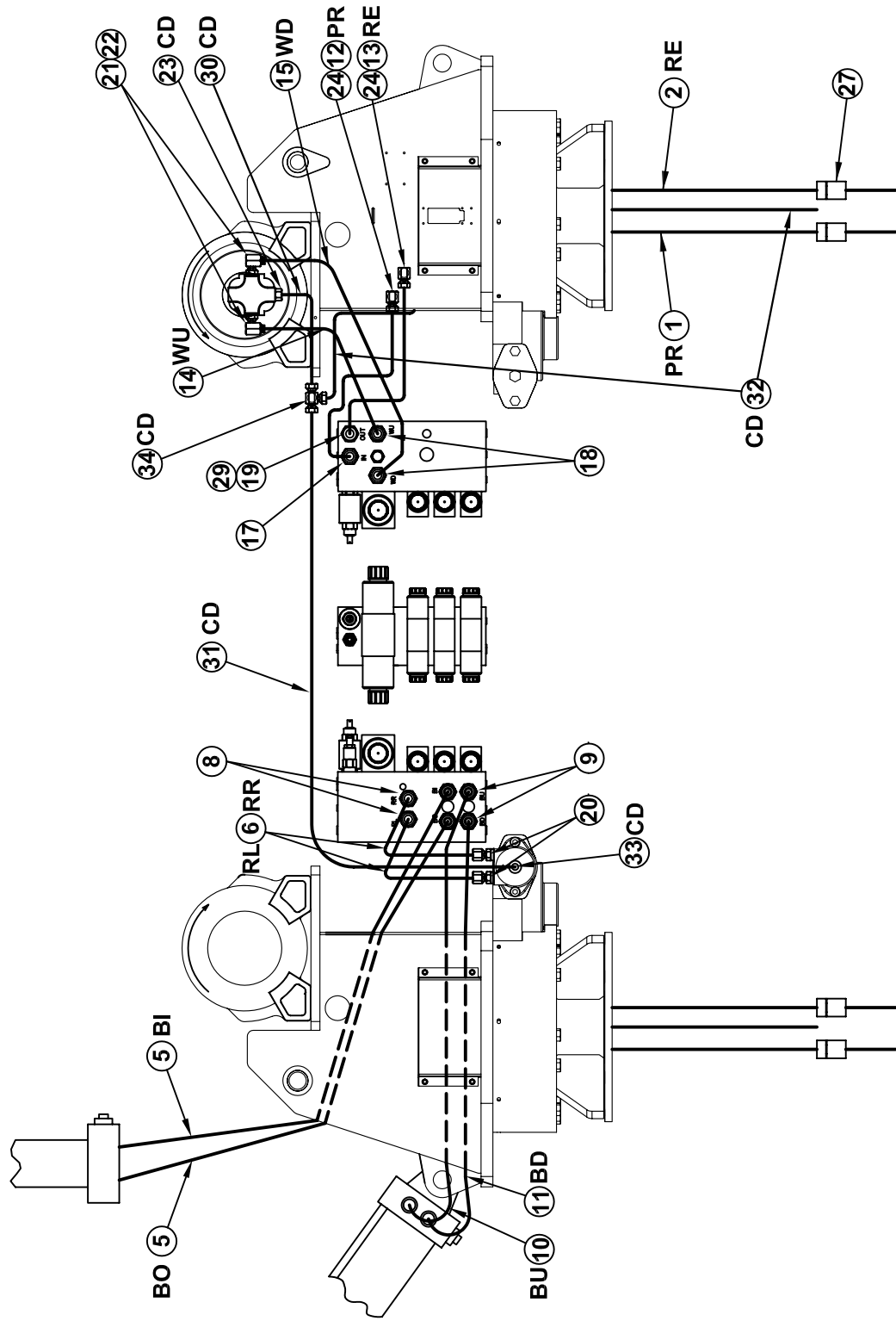
**22886**



# REPLACEMENT PARTS 22830 WINCH




<b>VENTURO</b> MANUFACTURING, INC. CINCINNATI, OHIO	TITLE		DATE	SECTION
	REPLACEMENT PARTS DRAWING		7-21-08A	-
	22830 ROTZLER WINCH - HT50KX PROP		SUPSEDES 12-18-06	22876



LEFT SIDE VIEW

RIGHT SIDE VIEW

CD	CASE DRAIN
RR	ROTATION RIGHT
RL	ROTATION LEFT
BO	BOOM OUT
BI	BOOM IN
BU	BOOM UP
BD	BOOM DOWN
PR	PRESSURE
RE	RETURN
WU	WINCH UP
WD	WINCH DOWN

 MANUFACTURING, INC. CINCINNATI, OHIO	TITLE <b>REPLACEMENT PARTS DRAWING</b>	DATE <b>11-12-09</b>	SECTION <b>C400</b>
	HT40/50KX PROP. HYD. COMPONENTS	SUPERSEDES <b>-</b>	<b>22978</b>

## HYDRAULIC SYSTEM COMPONENTS - HT40/50KX CRANES

### REPLACEMENT PARTS LIST

ITEM	PART NUMBER	DESCRIPTION
1	22760	HOSE ASSY. - PRESSURE (SOURCE TO BULKHEAD)
2	22761	HOSE ASSY. - RETURN (BULKHEAD TO RESERVOIR)
3	-	-
4	-	-
5	27592	HOSE ASSY. BOOM IN / OUT
6	27598	HOSE ASSY. - ROTATION
7	-	-
8	FF6400-0606	ADAPTER - 6OFS - 6MO (VALVE BLOCK: ROTATION LT / RT)
9	FF6801-0606	ELBOW - 6OFS - 6MO (BOOM UP / DOWN)
10	27026	HOSE ASSY - BOOM UP
11	27027	HOSE ASSY - BOOM DOWN
12	22758	HOSE ASSY - PRESSURE (BULKHEAD TO VALVE)
13	22759	HOSE ASSY - RETURN (BULKHEAD TO VALVE)
14	27024	HOSE ASSY - WINCH UP
15	27025	HOSE ASSY - WINCH DOWN
16	-	-
17	H6400-0810	ADAPTER - 8MJ - 10MO (VALVE BLOCK, PRESSURE / IN PORT)
18	FF6400-0810	ADAPTER - 8OFS - 10MO (VALVE BLOCK, WU/WD)
19	H6801-1212	HYD ELBOW FITTING 12MO - 12MJ - 90° - EXTRA LONG DROP (VALVE, RETURN/OUT)
20	FF6400-0610	REDUCER/EXPANDER - 6OFS - 10MO (ROTATION MOTOR)
21	FF6801-0808	ELBOW - 8OFS - 8MO (WINCH MOTOR)
22	H6410-1608	REDUCER - EXPANDER - 16MO-8FO (WINCH MOTOR)
23	H6801-0404	HYD ELBOW - 4MJ-4MO - 90° (WINCH MOTOR CASE DRAIN)
24	H2701LN-0808	HYD BULKHEAD UNION ELBOW W/ LOCK NUT 8MJ - 90° (MECHANISM, RT SIDE)
25	-	-
26	-	-
27	22764	LIVE CONTINUOUS HYDRAULIC SWIVEL
28	-	-
29	H2406-1210	HYD TUBE ADAPTER 12FJ - 10MJ (INSTALLS ON ITEM 19)
30	22952	CASE DRAIN HOSE 13" LONG
31	22953	CASE DRAIN HOSE 30" LONG
32	22903	CASE DRAIN HOSE 96" LONG
33	H6801-0404	ELBOW 4MJ-MO (ROTATION MOTOR)
34	H2603-040404	HYD. TEE - 4MJ-4MJ-4MJ (JOINS ROTATION & WINCH CASE DRAINS)
35	-	-

REPLACEMENT PARTS DWG REF 22978



MFG., INC.  
CINCINNATI, OHIO

TITLE  
**REPL. PARTS LIST**

**HT40/50KX - PROP**

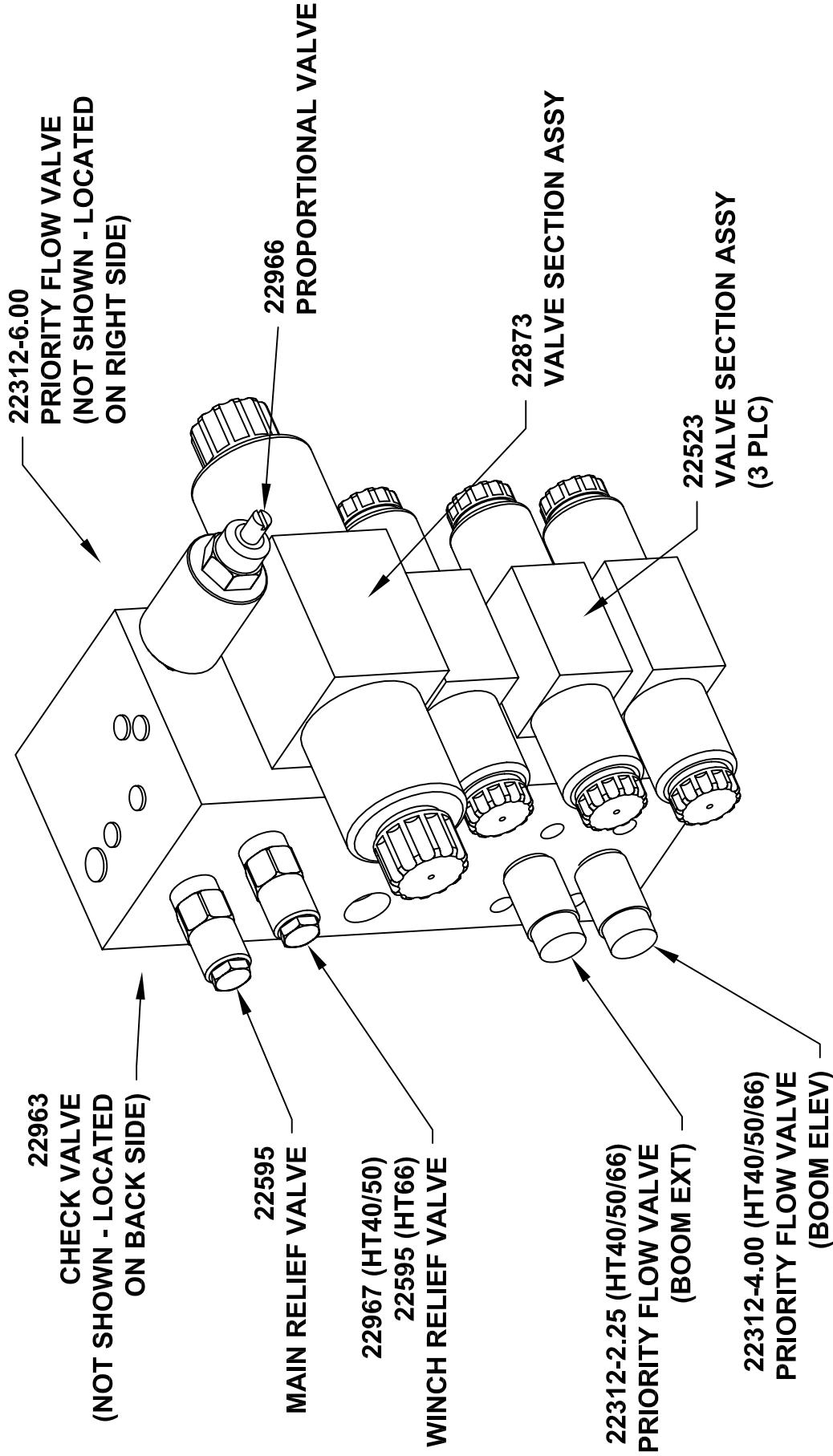
DATE  
**11-17-09**

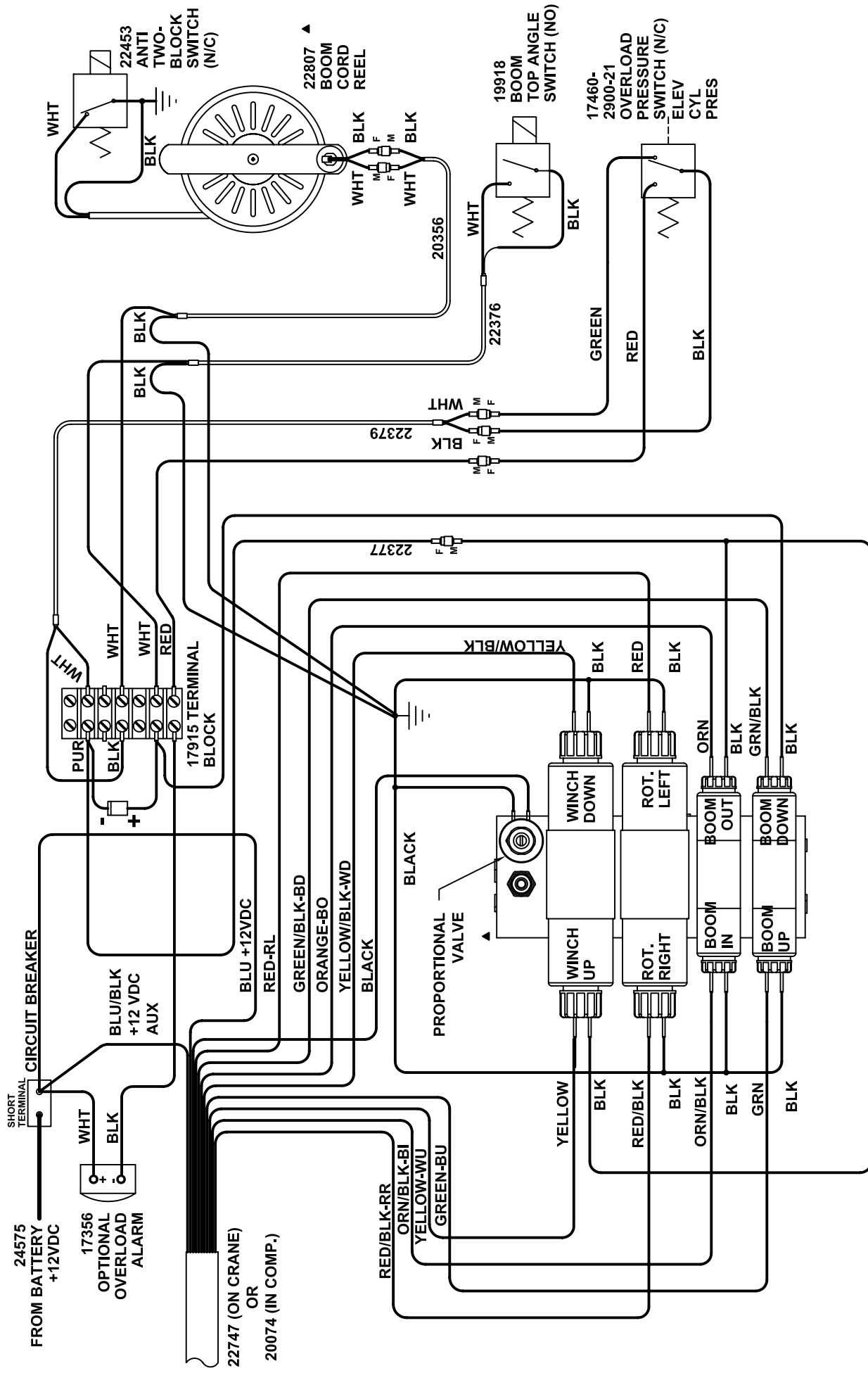
SUPERCEDES  
**-**

SECTION  
**C400**

**22979**

# 22736L HYDRAULIC VALVE MANIFOLD REPLACEMENT PARTS





MANUFACTURING, INC.  
CINCINNATI, OHIO

# TITLE **WIRING DIAGRAM**

DATE  
**9-27-07B**

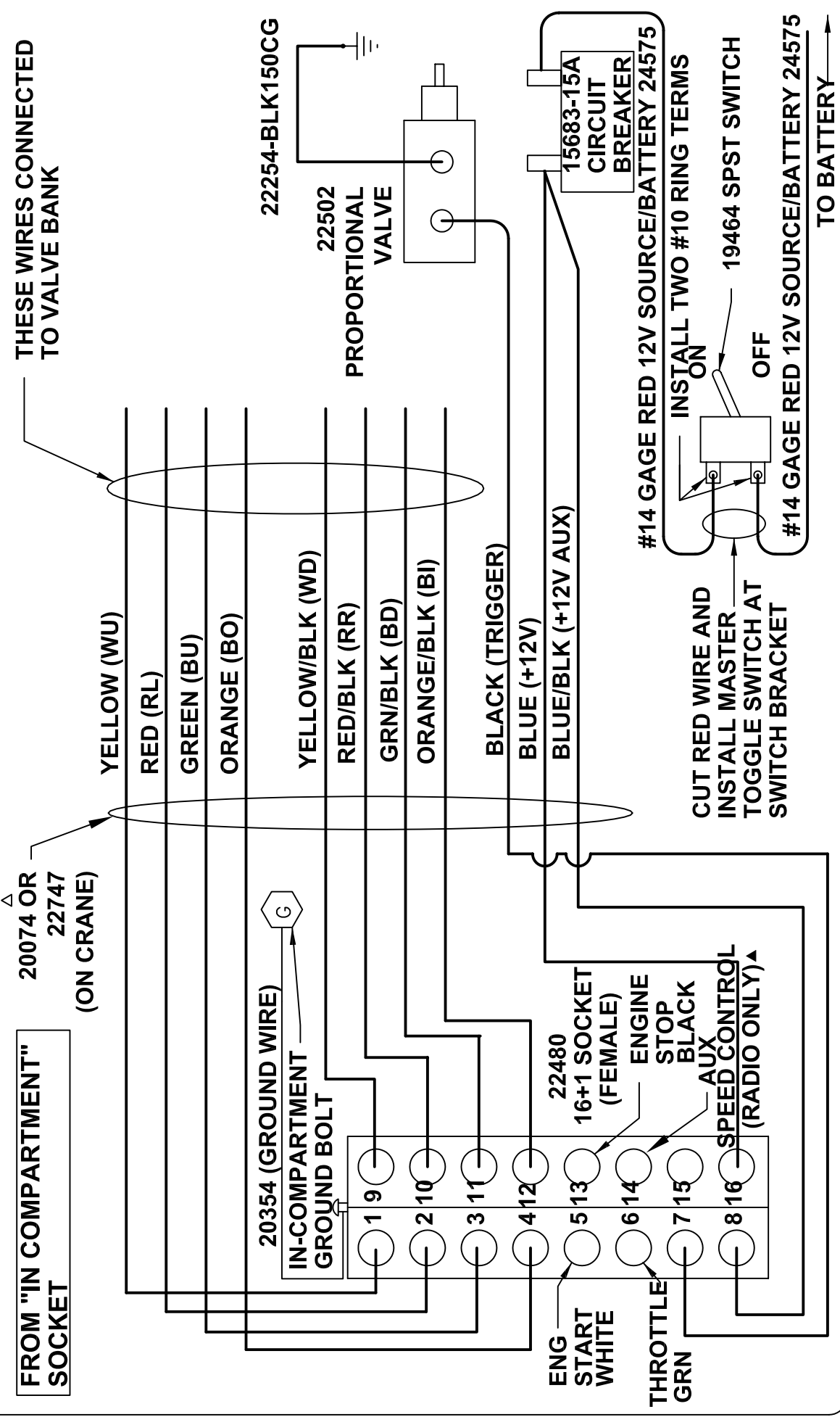
SUPERSEDES  
**5-11-06A**


SECTION  
**C400**

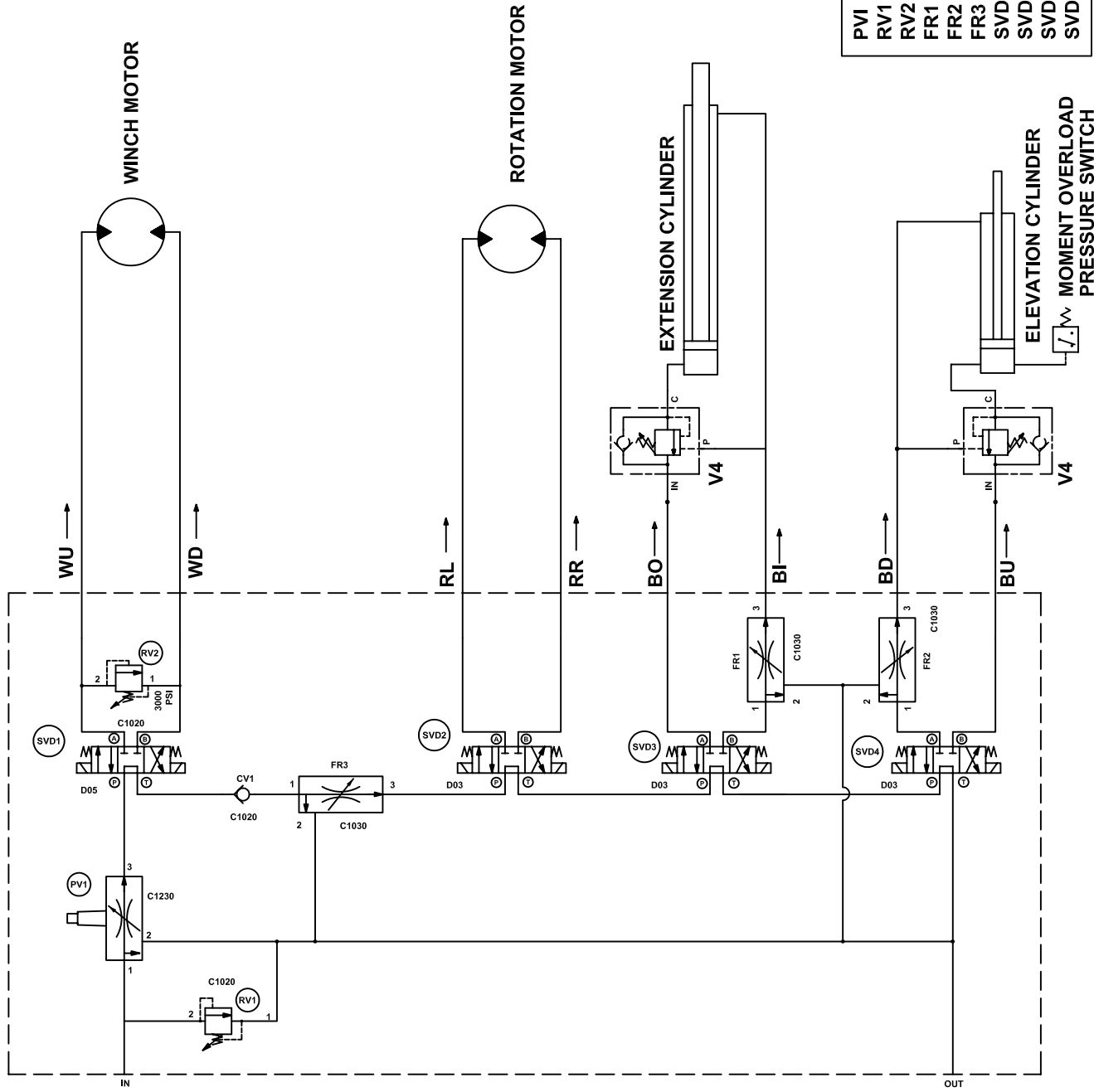
**22185**

**HT40/50KX - PROPORTIONAL**

# PROPORTIONAL IN-COMPARTMENT CONTROLS W/ ENG START/STOP AND/OR THROTTLE CONTROL



 <b>MANUFACTURING, INC.</b> CINCINNATI, OHIO	TITLE	DATE	SECTION
	<b>PROP W/ IN-COMP CTRLS &amp; ENG CTRL</b>  HT18/25/30/40/50 CRANES	<b>7-20-09C</b>  SUPERSEDES <b>5-11-06B</b>	<b>22125</b>



- PV1 PROPORTIONAL CONTROL VALVE (SIMPLIFIED REP)  
RV1 INLET RELIEF VALVE (3000 PSI)  
RV2 WINCH RELIEF VALVE  
FR1 PRIORITY FLOW REGULATOR - 2.25 GPM  
FR2 PRIORITY FLOW REGULATOR - 4.00 GPM  
FR3 PRIORITY FLOW REGULATOR - 6.00 GPM  
SVD1 3 POSITION - 4 WAY VALVE  
SVD2 3 POSITION - 4 WAY VALVE  
SVD3 3 POSITION - 4 WAY VALVE  
SVD4 3 POSITION - 4 WAY VALVE



MANUFACTURING, INC.  
CINCINNATI, OHIO

# HYDRAULIC SYSTEM DIAGRAM

HT40/50/66KX W/ PROP CONTROL

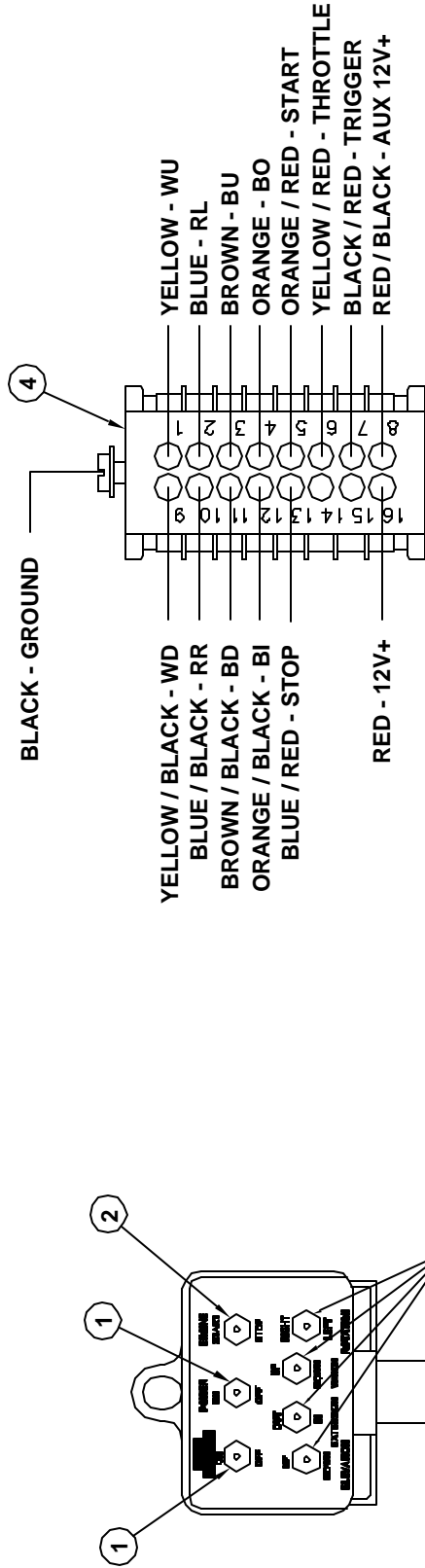
DATE  
11-17-09A

SUPERSEDES  
4-14-09

SECTION  
C400

27352

# 22065 PENDANT (PROP W/ ENG CTRLS)



PLUG - BACKSIDE VIEW



ITEM NOT SHOWN ON PRINT

ITEM	QTY	PART NO.	DESCRIPTION
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

TITLE  
**REPLACEMENT PARTS DRAWING**

DATE  
**7-30-04A**

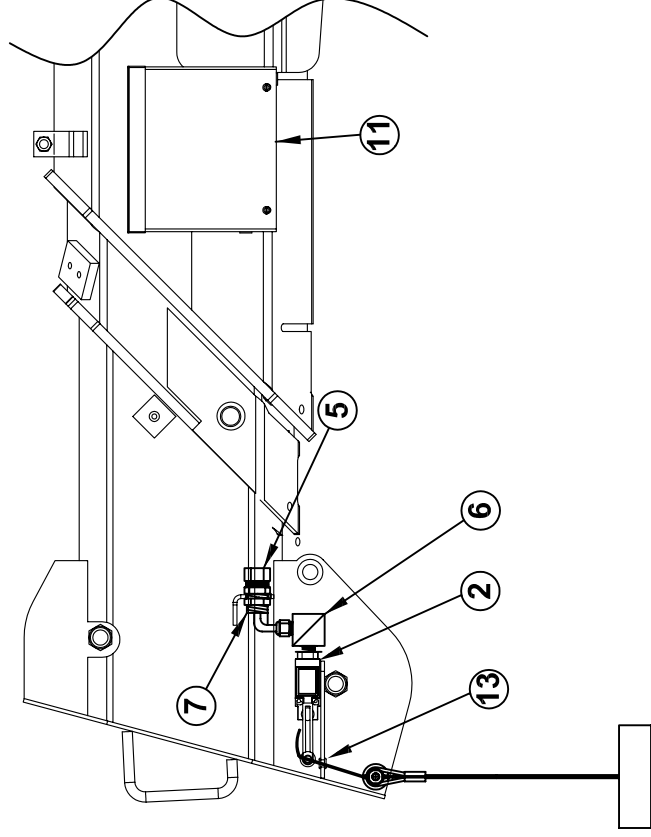
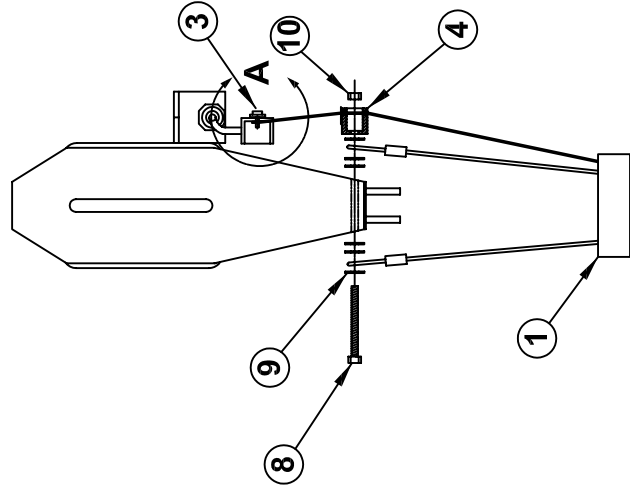
SECTION  
**C400**

**22065 PENDANT (PROP W/ ENG CTRLS)**

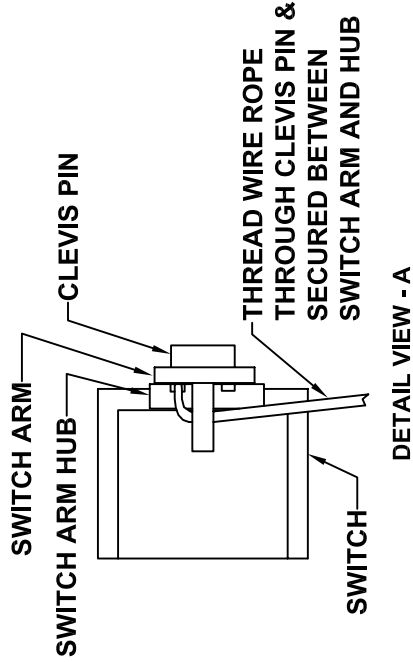
SUPSEDES  
**7-1-04**

**22073**



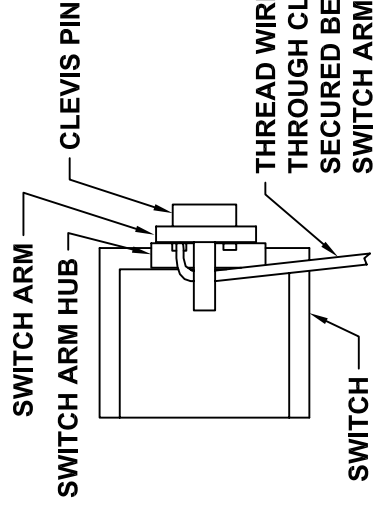
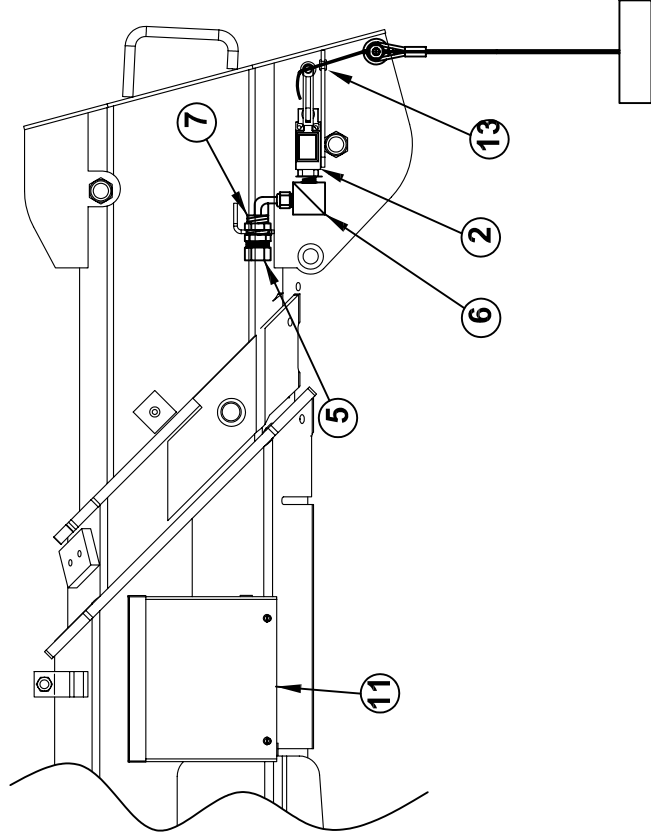


NOTE: FOR STANDARD LEFT HAND CORD REEL



13	1	19063	SNAP BUSHING - 1/2 I.D.
12	1	20951-3	HANGER CABLE
11	1	22683	CORD REEL ASSEMBLY - LEFT HAND
10	1	!LNUT-02520	LOCK NUT, NYLON 1/4-20
9	6	!FWSH-025	FLAT WASHER 1/4
8	1	!HHCS02520275	HHCS 1/4-20 x 2-3/4" GR. 5
7	1	PL-20-469	LOCKNUT (1/2" PIPE)
6	1	19060	STRAIN RELIEF - 90DEG
5	1	22455	STRAIN RELIEF - STRAIGHT (1/2" PIPE)
4	1	22454	CABLE GUIDE - BLACK DELRIN
3	1	21269	CLEVIS PIN - 3/16 X 1/2
2	1	22453	MICROSWITCH
1	1	19377-3	WEIGHT ASSY.
ITEM	QTY	PART NO.	DESCRIPTION

<b>VENTURO</b> MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	REPLACEMENT PARTS DWG - LH CORD REEL	DATE	9-11-07	SECTION	C400
		22685 ANTI-TWO BLOCK SYSTEM	SUPERSEDES	-		
						<b>22918</b>




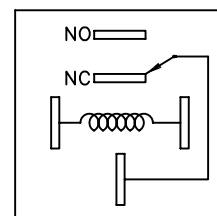
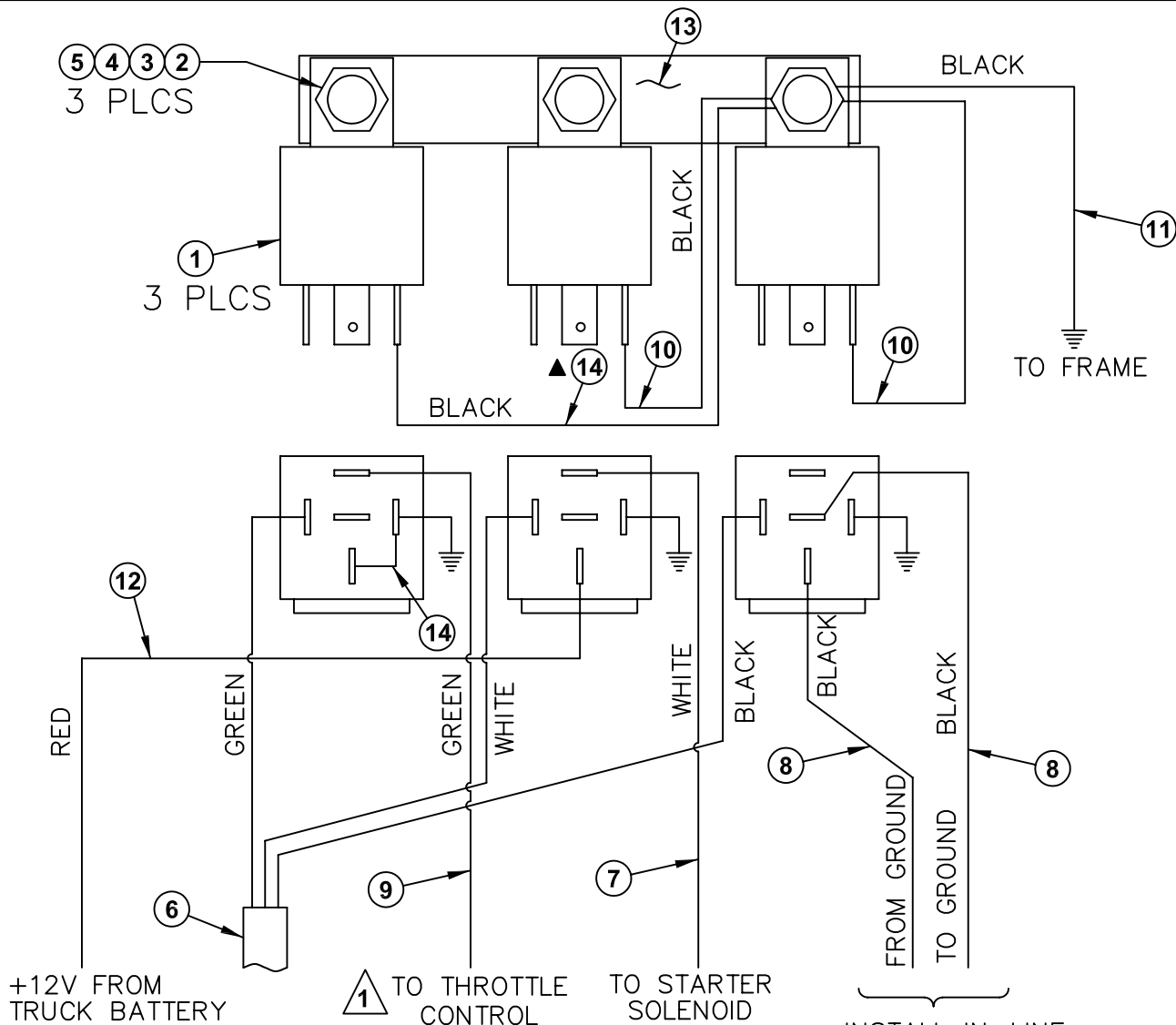
DETAIL VIEW - A

NOTE: FOR OPTIONAL RIGHT HAND CORD REEL.

13	2	19063	SNAP BUSHING 1/2 I.D.
12	1	20951-3	HANGER CABLE
11	1	22388	CORD REEL ASSEMBLY - RH
10	1	!LNUT-02520	LOCK NUT, NYLON 1/4-20
9	6	!FWSH-025	FLAT WASHER 1/4
8	1	!HHCS02520275	HHCS 1/4-20 x 2-3/4" GR. 5
7	1	PL-20-469	LOCKNUT (1/2" PIPE)
6	1	19060	STRAIN RELIEF - 90DEG
5	1	22455	STRAIN RELIEF - STRAIGHT (1/2" PIPE)
4	1	22454	CABLE GUIDE - BLACK DELRIN
3	1	21269	CLEVIS PIN - 3/16 X 1/2
2	1	22453	MICROSWITCH
1	1	19377-3	WEIGHT ASSY.

ITEM	QTY	PART NO.	DESCRIPTION
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 <b>VENTURO</b> MANUFACTURING, INC. CINCINNATI, OHIO	TITLE	DATE	SECTION
	REPLACEMENT PARTS DWG - RH CORD REEL	9-11-07	C400
	HT40KX, HT50KX	SUPERSEDES	22919



RELAY  
SCHEMATIC

ITEM	QTY	PART#	DESCRIPTION
1	3	22739 ▲	RELAY
2	3	!PHCS#1024075	#10-24 X 3/4 PHIL PAN HD BOLT
3	3	!LWSH-#10	#10 LOCKWASHER
4	3	!FWSH-025	#10 WASHER
5	3	!HNUT-#1024	#10 NUT
6	1	22607	WIRE HARNESS - 12/3 SJO
7	1	22609	WHITE - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
8	2	22610	BLACK - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
9	1	22611	GREEN - 16 GAGE ELECTRICAL WIRE - 15 FEET LONG
10	2	22612	BLACK - 16 GAGE ELECTRICAL WIRE - 6 INCHES LONG
11	1	22613	BLACK - 16 GAGE ELECTRICAL WIRE - 8 FEET LONG
12	1	22614	RED - 14 GAGE ELECTRICAL WIRE - 15 FEET LONG
13	1	01181	BUSS BAR
14	1	22619	BLACK - 16GA WIRE ASSY - 6" LONG W/ 3 INCH PIGTAIL



MFG., INC.  
CINCINNATI, OHIO

TITLE **ENGINE START/STOP  
THROTTLE CONTROL**

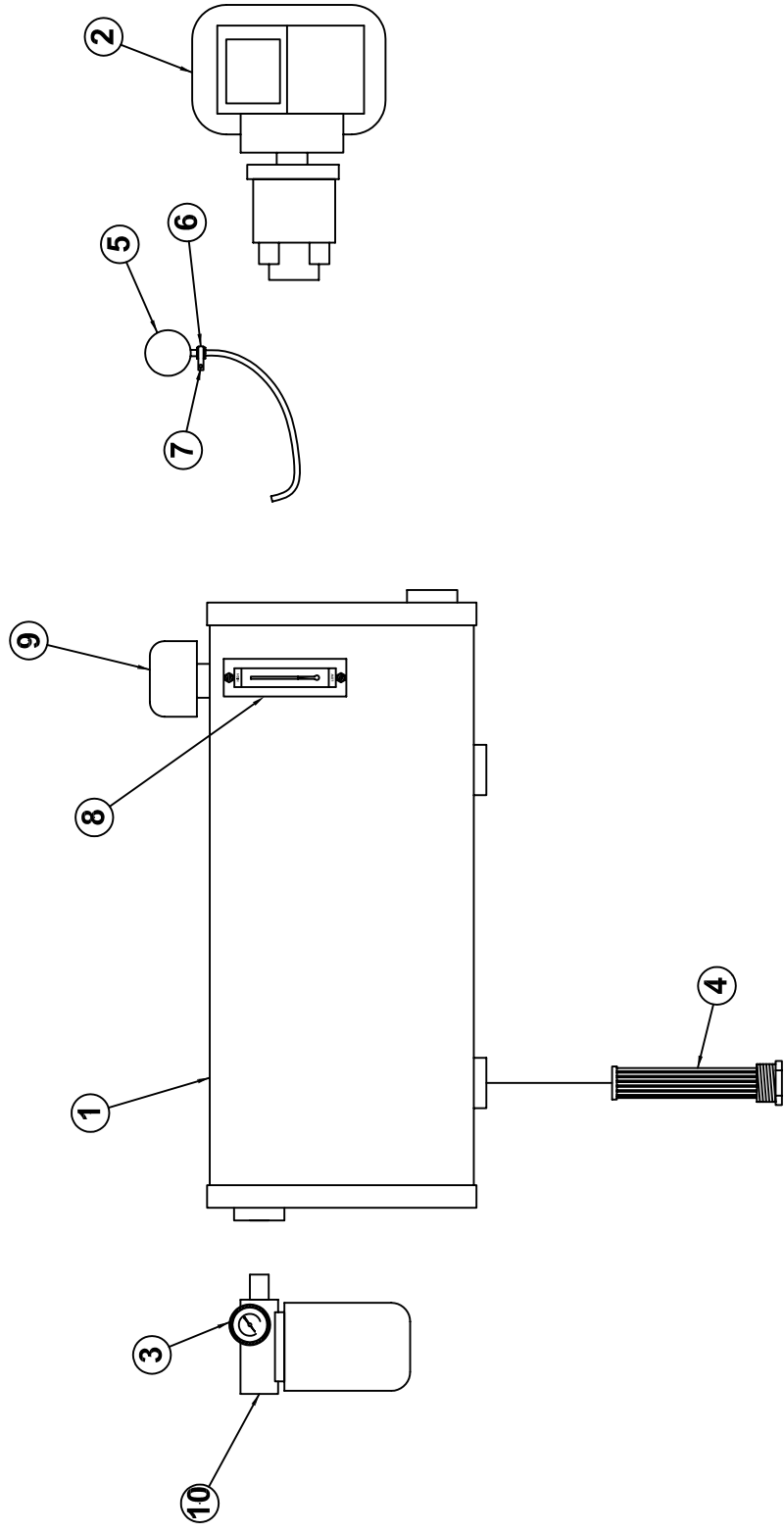
▲ HT18/25/40/50

DATE **5-26-05D**

SUPERSEDES  
**2-2-05C**

SECTION **C400**

**22615**



10	1	19298	FILTER ASSY, RETURN – 100 MESH
9	1	22789	FILLER / BREATHER CAP ASSEMBLY
8	1	22787	SIGHT GLASS
7	1	!HWH02520075-F	HEX WASHER HEAD 1/4-20 X 3/4 SELF TAPPING
6	1	19275	CLAMP
5	1	22730	PRESSURE GAUGE ASSEMBLY
4	1	22788	SUCTION SCREEN – 100 MESH
3	1	19297	PRESSURE GAUGE – RETURN
2	1	19296-10.0	PTO PUMP
1	1	22786	25 GAL. HYDRAULIC TANK



MANUFACTURING, INC.  
CINCINNATI, OHIO

TITLE

PTO REPLACEMENT PARTS DRAWING

DATE

6-29-05

SECTION

-

HT40/50KX - PROPORTIONAL

SUPERSEDES

-

22783

## HT50KX - PROPORTIONAL 22896 FIELD SERVICE LABEL KIT

ITEM	PARTNUMBER	QTY	DESCRIPTION
1	15581	1	ATTACHMENT DECAL
2	15398	1	UNPLUG PENDANT DECAL
3	22768-1	1	VALVE BANK DECAL - LEFT
4	22768-2	1	VALVE BANK DECAL - RIGHT
5	14473-1	1	OIL DECAL
6	14473-2	4	GREASE DECAL
7	22496	2	VENTURO DECAL (LARGE)
8	15401	1	UNLAWFUL TO OPERATE DECAL
9	22877-1	1	HT50KX BOOM CAPACITY DECAL (RIGHT)
10	22877-2	1	HT50KX BOOM CAPACITY DECAL (LEFT)
11	19747	2	HT50KX DECAL
12	15392	1	DANGER ELECTROCUTION HAZZARD DECAL
13	15391	1	CRANE NOT PASSENGER LIFT DECAL
14	19315-2	1	PROPORTIONAL OVERRIDE HYDRAULIC BANK DECAL
15	15390	1	CAUTION, INSTRUCTIONS DECAL
16	22499	1	KNOW YOUR SIGNALS DECAL
17	22489	1	DECAL PLACEMENT DRAWING
18	19788	2	PROPORTIONAL CONTROL DECAL
19	20834	1	MANUAL OVERRIDE INSTRUCTION LOCATION DECAL
20	-	-	-
21	-	-	-
22	-	-	-
23	-	-	-
24	-	-	-
25	-	-	-
26	-	-	-
27	-	-	-
28	-	-	-
29	-	-	-
30	-	-	-
31	-	-	-
32	-	-	-
33	-	-	-
34	-	-	-
35	-	-	-



MFG., INC.  
CINCINNATI, OHIO

TITLE	DATE	SECTION
FIELD SERV. LABEL KIT	2-9-07	-
HT50KX - PROP.	SUPERCEDES	22894-1
	-	







## ***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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513.772.8448  
[www.venturo.com](http://www.venturo.com)