



ADVANCED FLUID TECHNOLOGY

INSTALLATION AND SERVICE MANUAL

FOR

VRTX™ WATER TREATMENT SYSTEM

Part Number 85-1448-125 (125 GPM)

SPECIFICATIONS

ELECTRICAL:

230/460 VAC, 20A/10A (FACTORY WIRED 460)

NOTE:

230V REQUIRES CHANGING MOTOR OVERLOAD, 24 VOLT CONTROL TRANSFORMER JUMPER, AND MOTOR ELECTRICAL CONNECTIONS

CONDUIT CONNECTION:

3/4", LOCATED AT BOTTOM CORNER

WATER CONNECTION (SEE NOTES BELOW):

INLET: 3" 150 POUND FLANGE

OUTLET: 4" 150 POUND FLANGE

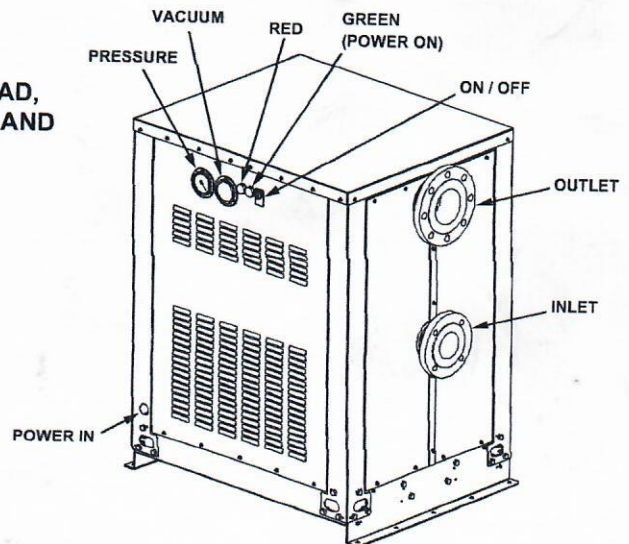
DIMENSIONS OVERALL:

WIDTH: 26.83 INCHES (68.15 CM)

DEPTH: 32.34 INCHES (82.14 CM)

HEIGHT: 41.92 INCHES (106.48 CM)

WEIGHT: 490.0 POUNDS (222.26 KG)



NOTES:

Inlet Pipe needs a minimum 30" straight pipe section to suction flange, or a flow straightening (vane) device must be installed. Inlet pipe must be 4" diameter or larger. Verify all valves on intake side are fully opened.

This manual is an initial issue.

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P.N. 28-0525

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RECEIVING

CAUTION

INSPECT THE UNIT FOR DAMAGE! IF DAMAGE IS EVIDENT, NOTIFY THE FREIGHT COMPANY IMMEDIATELY AND FILE A DAMAGE CLAIM REPORT.

Each unit is tested and inspected before shipment. At the time of shipment, the carrier accepts the unit and any claim for damage must be made with the carrier. Upon receiving units from the delivering carrier, carefully inspect the carton for visible indication of damage. If damage exists, have the carrier note same on the bill of lading and file a claim with the carrier.

WARNING

THIS UNIT MUST BE PROPERLY ELECTRICALLY GROUNDED TO AVOID POSSIBLE FATAL ELECTRICAL SHOCK OR SERIOUS INJURY TO THE OPERATOR.

CAUTION

BE SURE TO FOLLOW LOCAL ELECTRICAL CODES WHEN MAKING ALL CONNECTIONS.

CAUTION

BE SURE TO FOLLOW LOCAL PLUMBING CODES WHEN MAKING ALL CONNECTIONS.

FIELD SERVICE TROUBLESHOOTING TIPS

VRTX UNIT

1. Pressure gauge reads low.
 - Clean strainer.
 - If low on start-up, check pump rotation.
 - If running backwards, have electrician change two of the three black wires.
2. Vacuum gauge reads low.
 - See pressure gauge.
 - Make sure liquid filled pressure gauges are vented (see installation instructions).
 - Check vacuum gauge line to make sure it is not plugged.
3. Gauges fluctuating.
 - Check suction for leaks - starved for water.
 - Check for pump cavitation (minimum submergence).
 - Check for air bubbles at pump suction inlet.

NOTE: On older units, the vacuum gauge was not rated for any pressure. On units with 0-30 in Hg (inches of mercury), disconnect the vacuum gauge before building up back pressure.

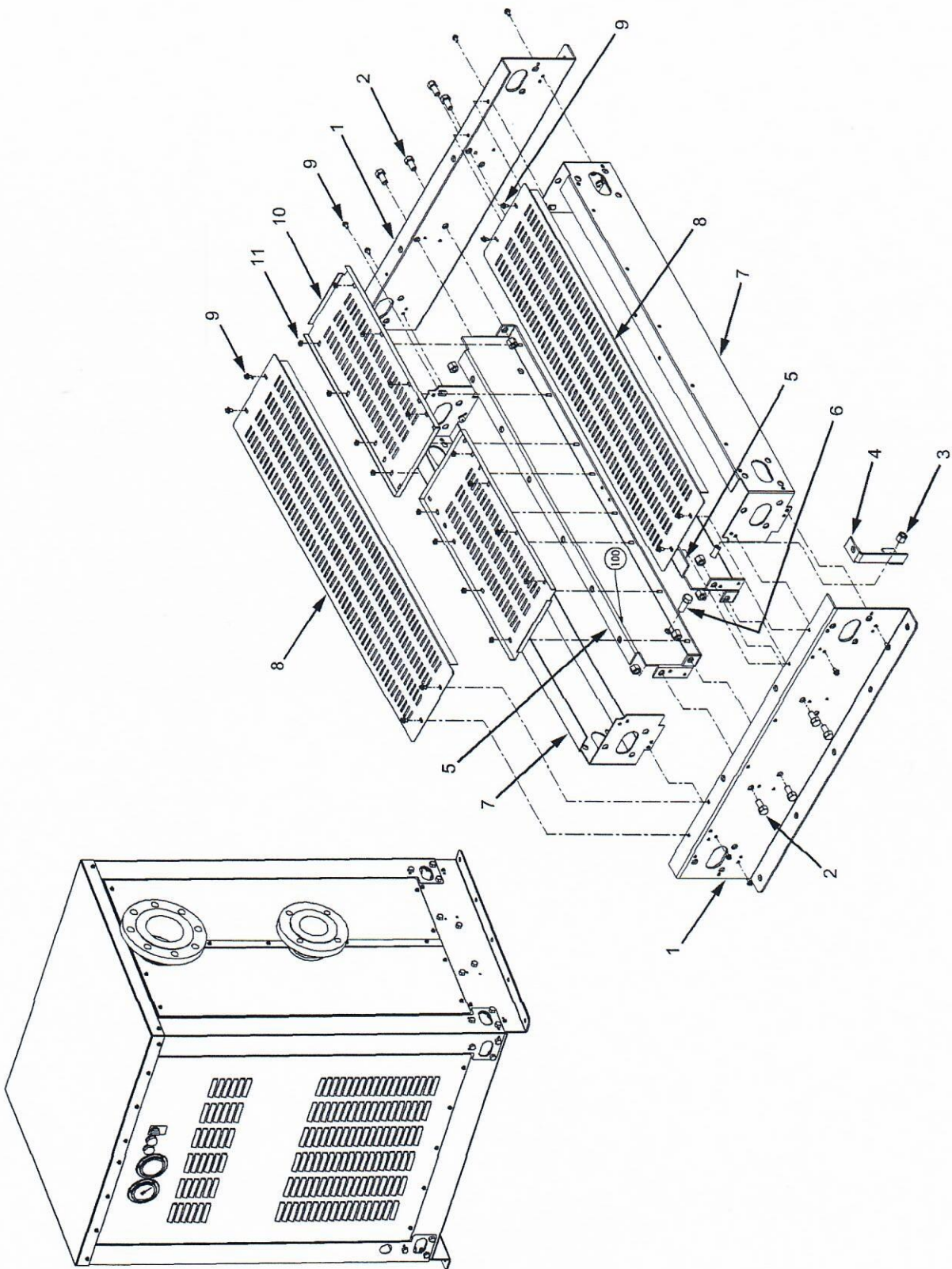
5. If there is still a problem, shut down the VRTX unit. Wait for two-three (2-3) minutes and re-start.

NOTE: If air leaks into the suction piping, the VRTX will not work (i.e., cavitate). The suction piping **must** be air-tight.

VRTX PANEL INDICATOR LIGHTS - STATUS		
GREEN	OFF	
RED	OFF	
GREEN	ON	INDICATES POWER "ON" TO VRTX AND VRTX OPERATING
RED	OFF	
GREEN	OFF	INDICATES POWER "ON" TO VRTX AND MOTOR THERMAL OVERLOAD TRIPPED
RED	ON	

ILLUSTRATIONS, PARTS LISTINGS, AND WIRING DIAGRAMS

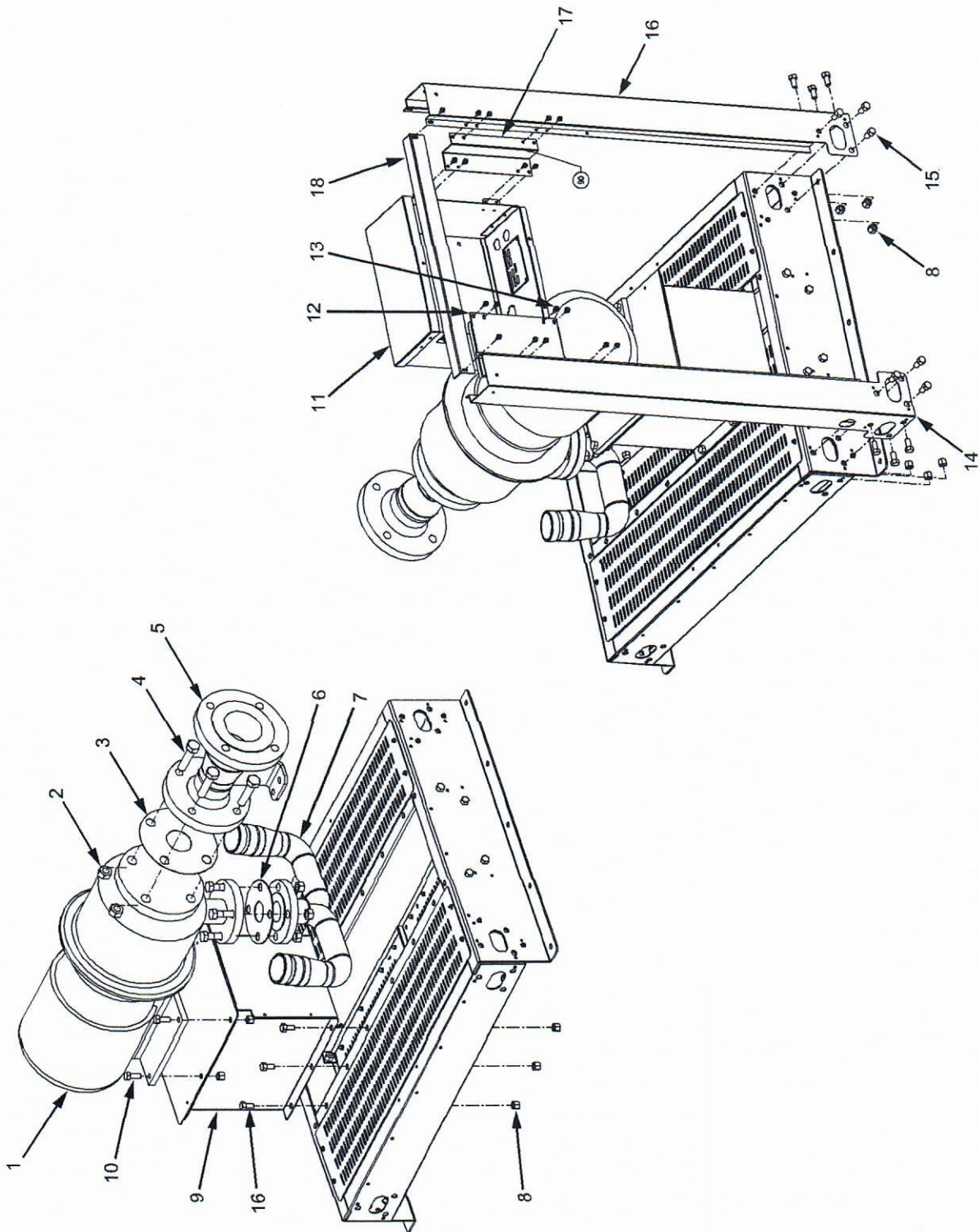
BASE PLATE ASSEMBLY



BASE PLATE ASSEMBLY (CONTINUED)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	30-8667	Rail, Side, Short
2	04-1282	Screw, 3/8 - 16 x 3/4, HH, SS
3	04-1272	Nut, Lock, 3/8 - 16, SS, Nylok
4	30-8713	Support, Rail, Ladder
5	30-8665	Rail, Cross, Long
6	04-1258	Screw, 3/8 - 16 x 1.000, HH, SS
7	30-8666	Rail, Side, Long
8	30-8710	Floor Plate, Outer
9	04-1375	Screw, 8 - 32 x 3/8, Hex, Washer
10	30-8709	Floor Plate, CMT, Pump, End
11	04-0231	Nut, Hex, 8 - 32, SS Nylon

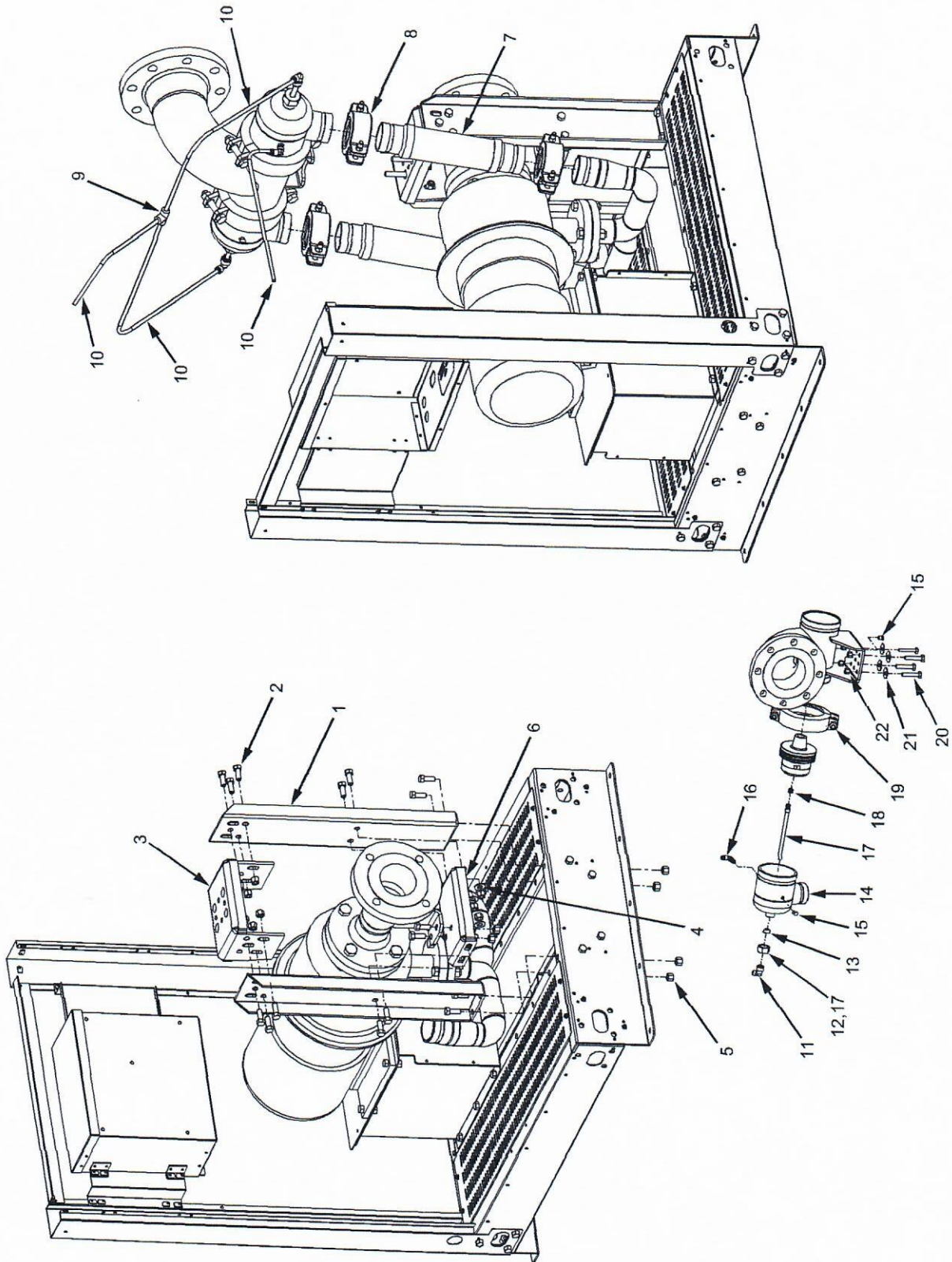
PUMP MOUNTING



PUMP MOUNTING (CONTINUED)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	86-0126	Pump, 480V, 60 Hz
2	04-0252	Nut, Hex, 5/8 - 11, SS
3	02-0527	Gasket, Fullface, N/A, 150 Pounds, 2 1/2
4	04-1278	Screw, 5/8 - 11 x 2 1/2, HH, SS
5	51-5873	Weldment, Inlet
6	02-0546	Gasket, 1 1/2", 150 Pounds, Fiber
7	51-5914	Weldment, Tree
8	04-1272	Nut, Lock, 3/8 - 16, SS, Nylok
9	51-5917	Weldment, Base, Pump
10	04-1258	Screw, 3/8 - 16 x 1.000, HH, SS
11	51-5694	Weldment, Control Box
12	30-8725	Support, Control Box
13	04-1375	Screw, 8 - 32 x 3/8, Hex Washer
14	30-8354	Corner, Pump End, Right
15	04-1282	Screw, 3/8 - 16 x 3/4, HH, SS
16	30-8355	Corner, Pump End, Left
17	30-8368	Support Control Box, Vertical
18	30-8691	Member, Cross Top, Short

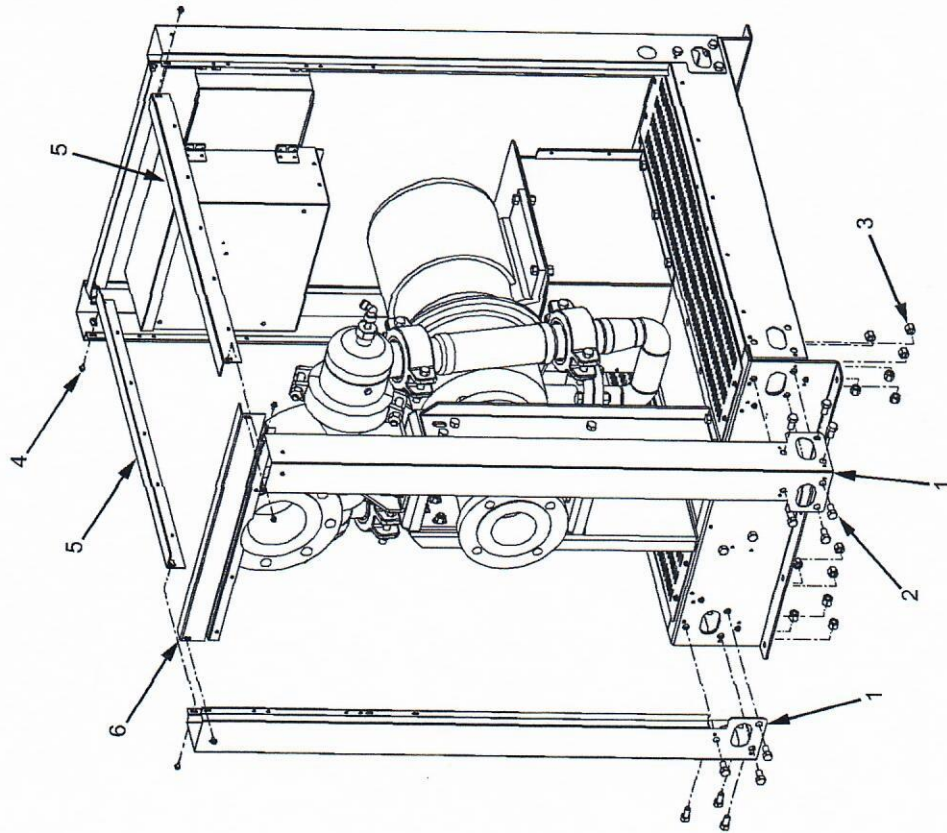
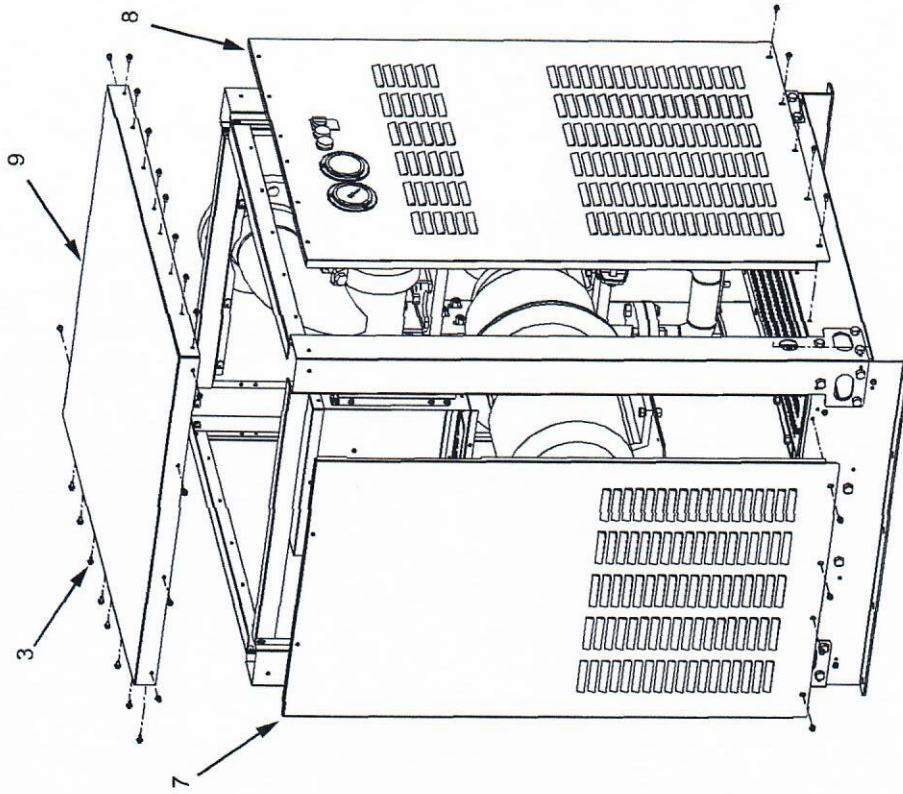
PUMP INTERCONNECTION



PUMP INTERCONNECTION (CONTINUED)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	30-8668	Rail, Ladder
2	04-1278	Screw, 5/8 - 11 x 2 1/2, HH, SS
3	30-8670	Bracket, Bridge, Center
4	04-1103	Washer, 3/8 ID x 7/8 OD, SS
5	04-1272	Nut, Lock, 3/8 - 16, SS Nylok
6	30-8672	Bracket, Bridge, Inlet
7	01-2187	Pump, Saver, 2"
8	03-0337	Clamp, Rigidlite, 7400
9	01-2107	Fitting, Union Tee, 1/4 JG
10	08-0372	Tubing, Nylon, 1/4 OD x - 035W, OWP
11	01-2215	Elbow, Reducing, 3/8 x 1/4, JG
12	10-0488	Nut, Vacuum, Well, VRTX
13	02-0539	Seal, Compression, 3/8 Tube
14	51-5806	Weldment, Outer
15	07-0571	Plug, Hole, 1 1/4"
16	01-1984	Fitting, Elbow, 1/8 NPT to 1/4 Tube
17	48-1979	Tube Assy, Vacuum
18	02-0089	O-Ring, 2-012
19	03-0334	Clamp, Rigidlite, 7400, 4"
20	04-1342	Screw, 3/8 - 16 x 2, SS
21	04-1343	Washer, Fender, 1.250 x 0.406, SS
22	04-1272	Nut, Lock, 3/8 - 16, SS, Nylok

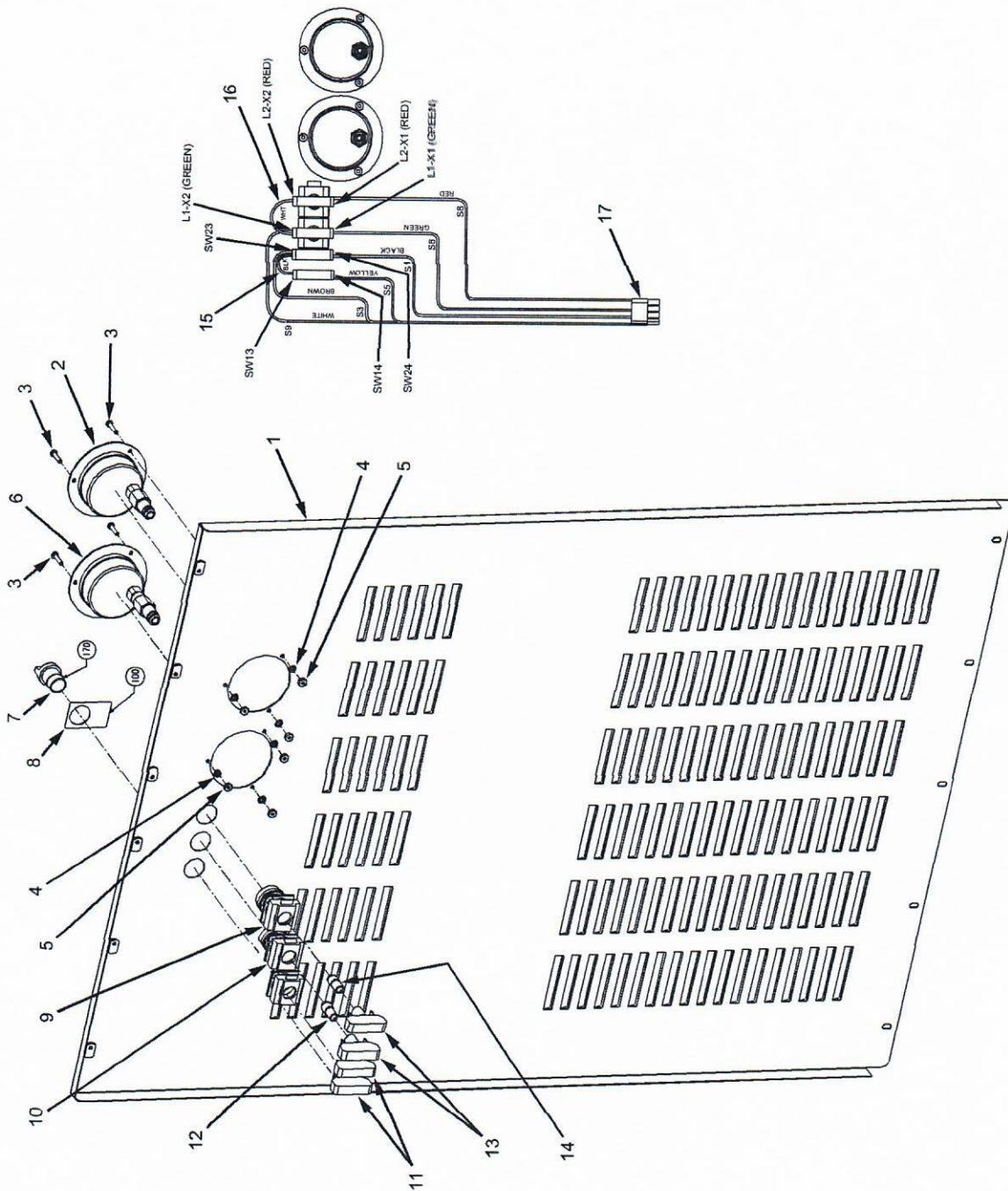
EXTERIOR PANELS



EXTERIOR PANELS (CONTINUED)

<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	30-8353	Corner, Fluid End
2	04-1282	Screw, 3/8 - 16 x 3/4, HH, SS
3	04-1272	Nut, Lock, 3/8 - 16, SS, Nylok
4	04-1375	Screw, 8 - 32 x 3/8, Hex Washer
5	30-8690	Member, Cross, Top, LHG
6	30-8697	Member, Cross, Fluid End
7	51-5940	Weldment, Panel, Pump End
8	82-3236	Panel, Control Assy
9	51-5918	Weldment, Top Cover Assy

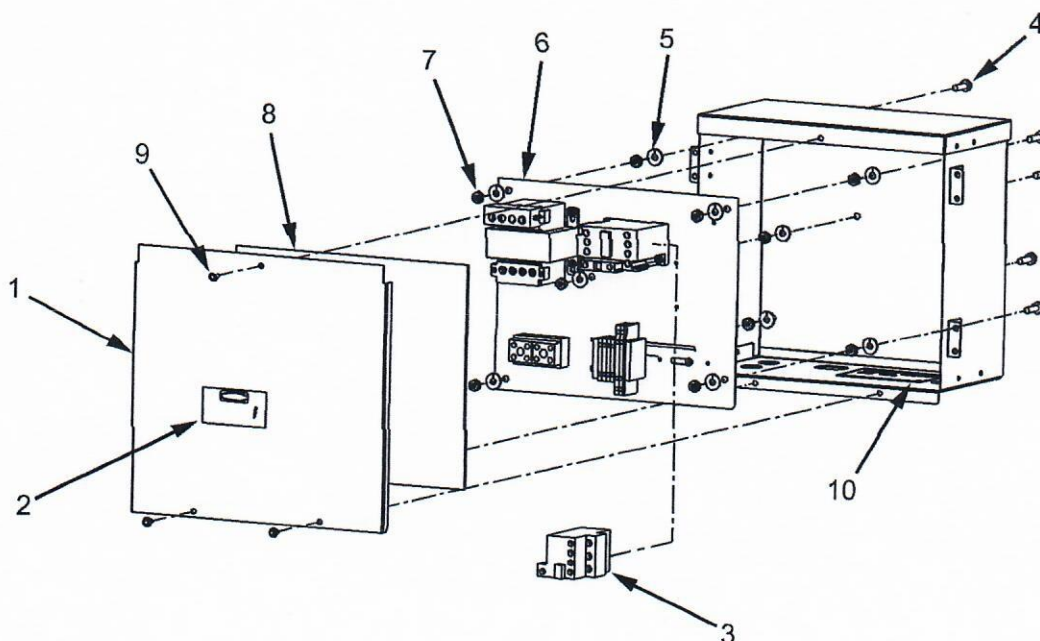
CONTROL PANEL ASSEMBLY



CONTROL PANEL ASSEMBLY (CONTINUED)

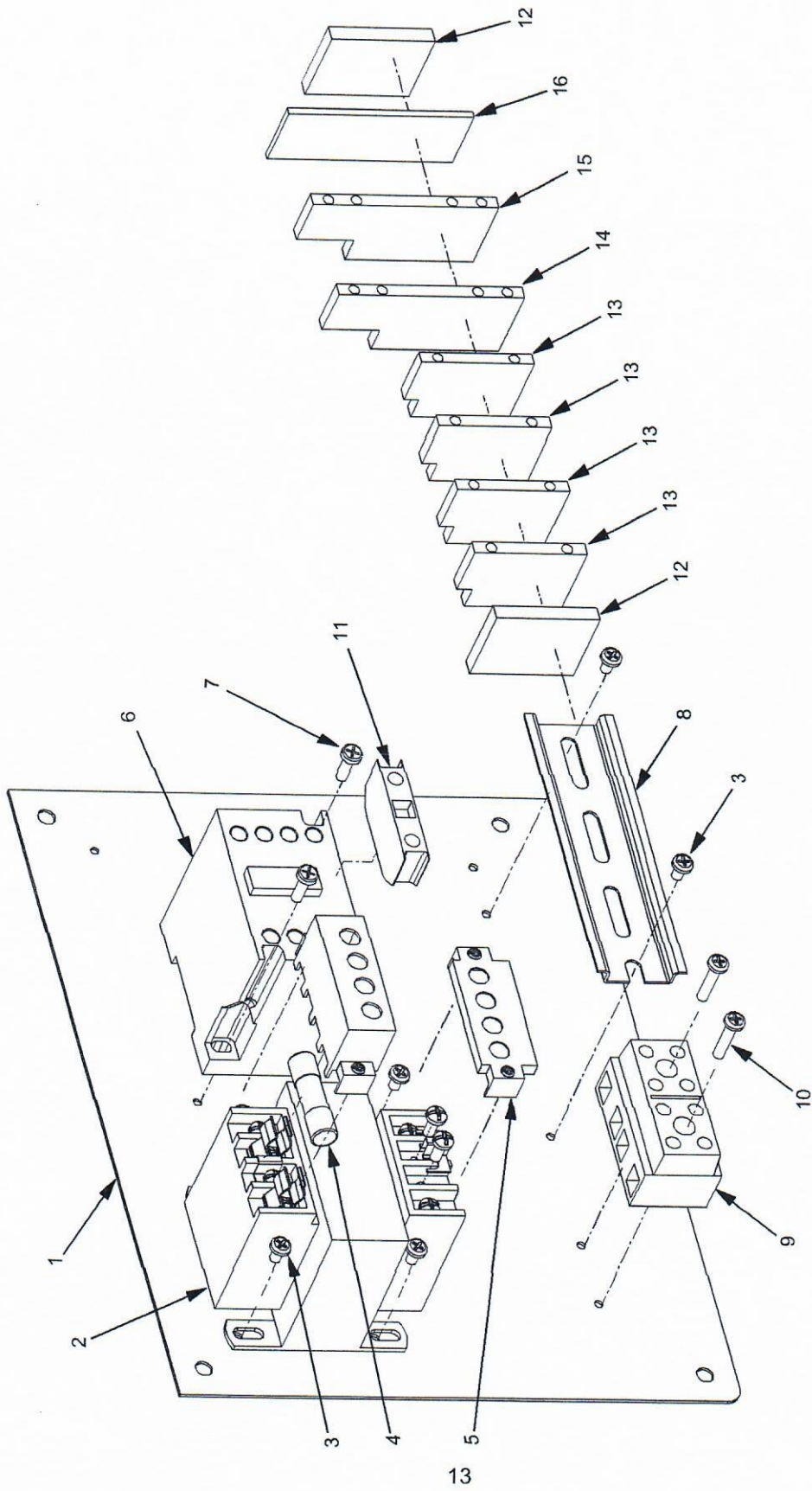
ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	30-8692	Panel, Control	11	12-0355	Contact Block (C10B)
2	16-0047	Gauge Assy, Pressure	12	12-0452	Lamp, LED, GREEN (BA9L24ACG)
3	04-0901	Screw, 6 - 32 x 0.625, SS	13	12-0357	Socket, Pilot Light (D22BL95B)
4	04-0124	Washer, Lock, Internal, #6, SS	14	12-0450	Lamp, LED, RED (BA9L24ACR)
5	04-0370	Nut, Hex, 6 - 32, SS	15	52-2602-02	Lead, Black
6	16-0046	Gauge Assy, Vacuum	16	52-2602-01	Lead, White
7	12-0459	Switch, Rotary, 3-Position	17	52-2430/02	Harness Assy
8	12-0460	Legend, Plate, Hand. Off, Auto			
9	12-0326	Lens, Indicator, RED (D22 L 464)			
10	12-0327	Lens, Indicator, GREEN (D22 L 461)			

CONTROL BOX ASSEMBLY



ITEM	PART NO.	DESCRIPTION
1	30-7875	Cover, Control Box
2	06-0986	Label, WARNING, High Voltage
3	12-0426	Overload, Thermal
4	04-1233	Screw, 1/4 - 20 x 7/8, Hex Head, SS
5	04-1170	Washer, Split, 1/4, SS
6	82-3110/01	Base Plate Assy, Control Box
7	04-0279	Nut, Hex, 1/4 - 20, SS
8	06-2405/01	Label, Electrical, Diagram, VRTX
9	04-1375	Screw, 8 - 32 x 3/8, Hex Washer
10	06-2174	Nameplate, Water, VRTX

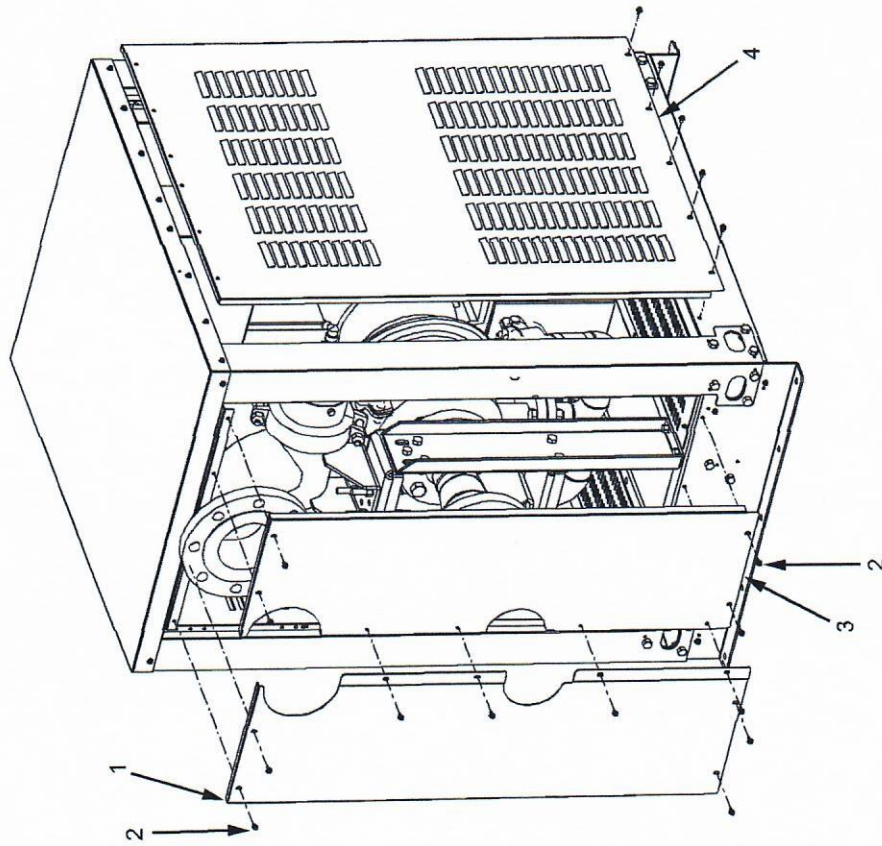
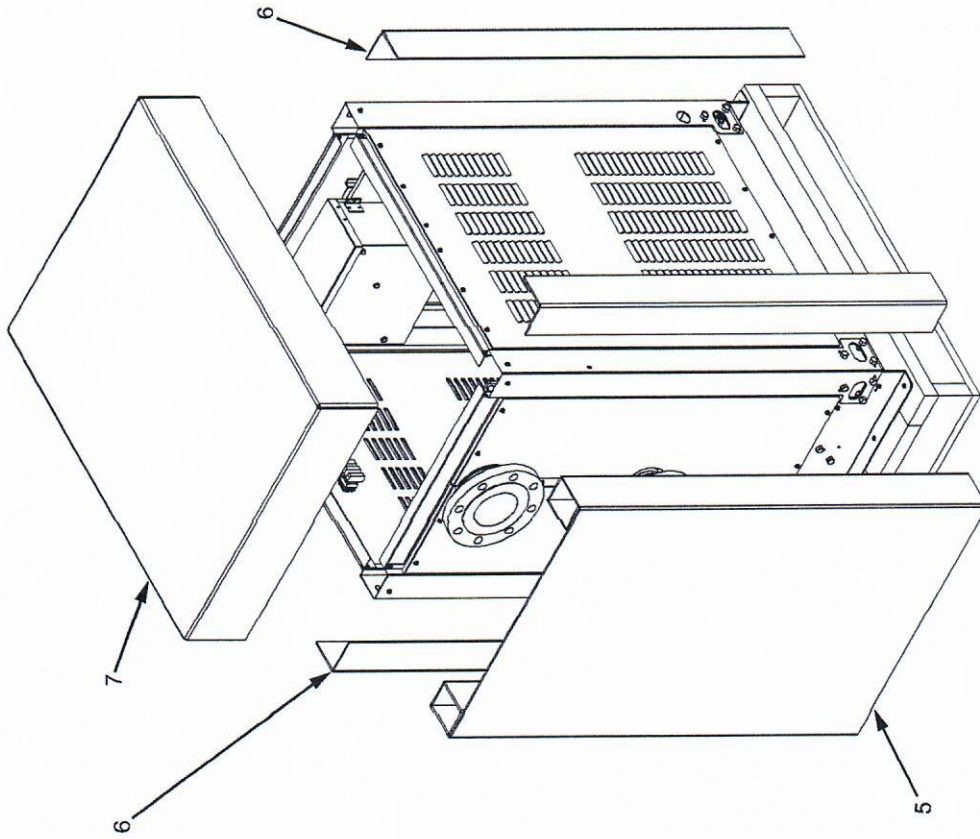
CONTROL BOX ASSEMBLY, DETAIL



CONTROL BOX ASSEMBLY, DETAIL (CONTINUED)

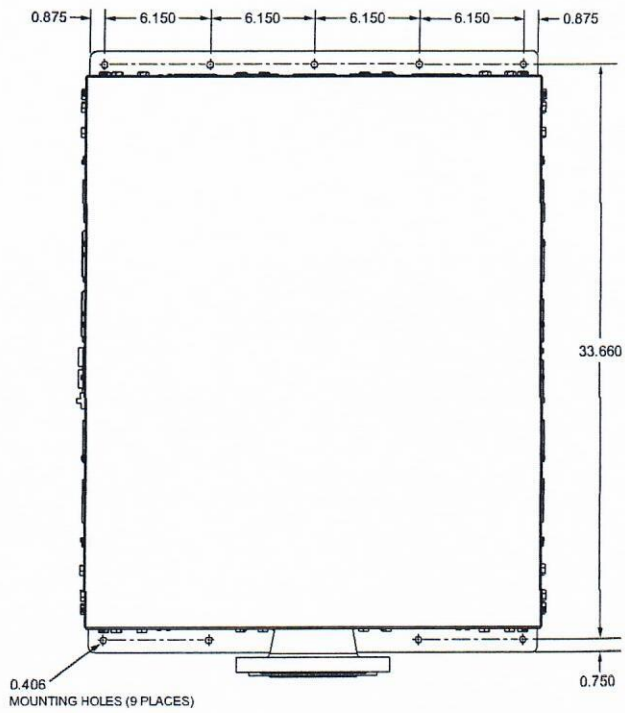
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	30-7853	Base Plate, Control Box
2	25-0080	Transformer, 220V/440-24V, 50VA
3	04-0237	Screw, 8 - 32 x 0.250, PH, MS, SS, PL
4	12-0352	Fuse (TRM-3-2/10), 250V
5	12-0425	Cover, Transformer (See Item 2)
6	12-0350	Starter (LS7.10E-G), 24V/60Hz, Coil
7	04-0372	Screw, 8 - 32 x 0.500, PH, MS, SS, PL
8	81-0549	Rail, Carrier, 4.900 LG
9	12-0461	Terminal, 4 CIR, GIO/4, 2716129
10	04-1361	Screw, 8 - 32 x 0.750, PH, MS, SS, PL
11	12-0467	Contact, Auxilliary
12	12-0393	End Stop, Terminal Block
13	12-0391	Terminal, Block 2, Cond
14	12-0392	Terminal Block, 4 Cond, Blue
15	12-0389	Terminal Block, 4 Cond, Tan
16	12-0395	End Plate, 4 Cond

FRONT PANELS AND PACKAGING

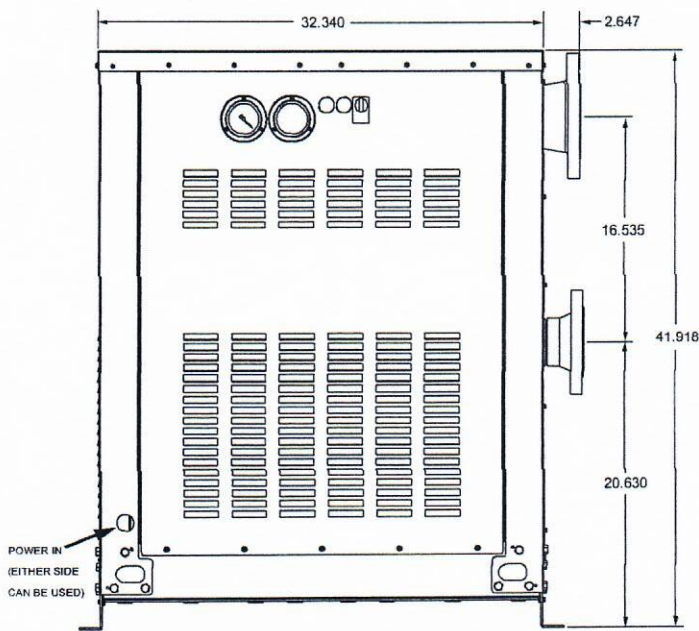


FRONT PANELS AND PACKAGING (CONTINUED)

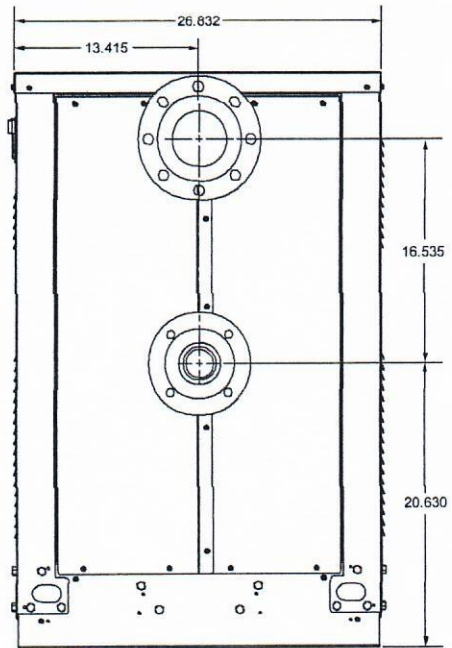
<u>ITEM</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>
1	30-8695	Panel, Left, Fluid End
2	04-1375	Screw, 8 - 32 x 3/8, Hex Washer
3	30-8694	Panel, Right, Fluid End
4	30-8693	Panel Side
5	90-1173	Pod, 125, VRTX
6	90-0703	Post, Corner, 125, VRTX
7	90-1174	Cap, 125, VRTX



**TOP VIEW
MOUNTING DETAIL**



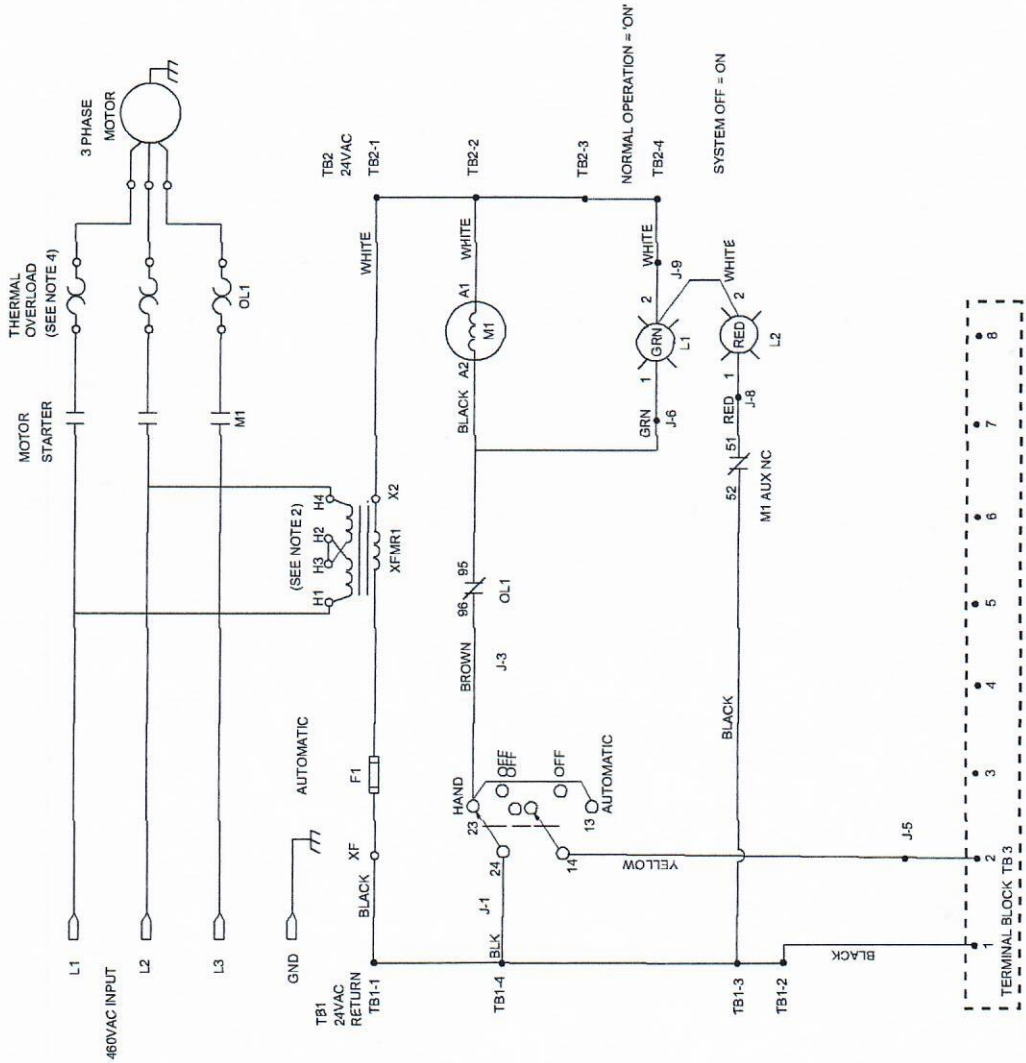
**LEFT SIDE VIEW
WITH PANEL INSTALLED**



FRONT VIEW

VRTX ELECTRICAL DIAGRAM, LABEL, PN 06-2405/02

WIRE COLOR	ELECTRICAL BOX INTERCONNECT	CONTROL BOX SIDE	CONTROL PANEL SIDE
BLACK	TO TB1-4	J-1	TO SWITCH S1-3
BROWN	OL-96	J-2	OPEN
YELLOW	TB3-2	J-3	OPEN
GREEN	OL-96	J-4	OPEN
RED	AUX B	J-5	SWITCH S2-4
WHITE	TB2-4	J-6	GREEN L1-X1
		J-7	OPEN
		J-8	RED L3-X1
		J-9	WHITE L2-X2
		J-10	OPEN
		J-11	OPEN
		J-12	OPEN



NOTE 1: 230VAC INPUT OPTIONAL
 NOTE 2: FOR 230VAC, CONNECT H1-H3 AND H2-H4
 NOTE 3: FOR 230VAC, WIRE MOTOR PER MOTOR DATA PLATE
 NOTE 4: FOR 230VAC, REPLACE THERMAL OVERLOAD

NOTES



For further Information:
e-mail: vrtx@vrtxtech.com
Or see our Web Site
www.vrtx-technologies.com