

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Description

The Powerex medical tankmount compressor is designed to provide medical breathing air for hospital and medical institutes. This system meets NFPA 99 requirements for Level 1 breathing air.

OILLESS OPT/OPS COMPRESSOR

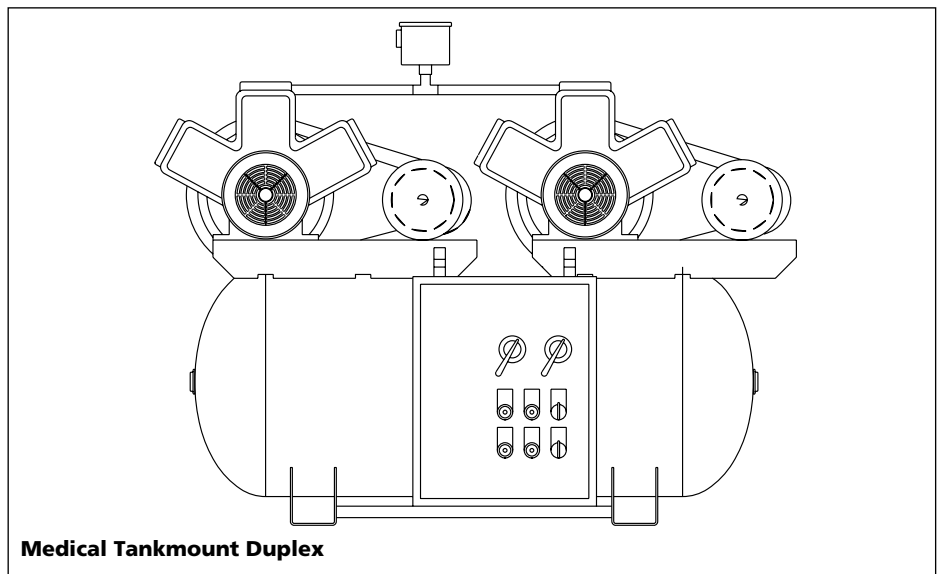
The Powerex oilless reciprocating air compressor has advanced compressor technology through the development of a completely oilless compressor. The Powerex reciprocating compressor is provided in duplex or triplex configurations with head unloaders to provide start-stop or continuous operation. Composite piston technology and continuously lubricating bearings provide oil-free air for years to come.

RECEIVER TANK

The ASME, National Board registered vertical air receiver is provided in sizes from 80 to 240 gallons. Each receiver is rated at 200 PSIG working pressure. Receivers are provided with sight glass and electric moisture drain.

CONTROL PANEL

The NEMA 12 control panel is provided in duplex or triplex configurations and meets NFPA 99 requirements for medical air. Primary voltage is protected by fusing or circuit breaker. Control transformer power is 110 volts and protected by secondary fusing. Pressure control switches signal the compressor's on and off cycle and signal lag compressor(s) to come on if air pressure demand increases. A lag / lag pressure switch signals a light and audible alarm warning of a low pressure condition which is factory set at 55 PSIG. An acknowledge button is provided for start condition and



Medical Tankmount Duplex

maintenance. The adjustable timer alternator cycles each compressor so equal run time is maintained. This alternator is factory set to alternate the compressors every 10 minutes. The exterior of the control panel is provided with through-the-door disconnects, on/off/auto switches run lights, power on lights, run hourmeters, lag pressure light, high temperature light and overload reset. This control panel is UL listed.

ELECTRIC MOTORS

The electric motors are NEMA rated by horsepower. Open drip proof construction is standard. Operating speed of 1725 RPM. Tri-voltage arrangement of 208-230 / 460 volt 60 Hertz. Class B rated insulation. Ambient temperatures to 40°C (104°F). Service factor of 1.15 or higher. Continuous duty rated.

AIR COOLED AFTERCOOLER

There are four models of beltguard aftercoolers sized to provide an

approach of 20°F. Each is constructed of copper tubing and metal headers for a rugged construction.

CONDENSATE DRAIN

The electric condensate drain is located at the bottom of the receiver tank. Drain is equipped with various time settings. Drain dwell time is from 1 to 30 seconds and the closed drain function is from 1 to 30 minutes. The electric drain is factory set at 1 second open drain and 30 minutes closed drain. In case of high humidity, it may be necessary to increase drain time or decrease the closed time.

SAFETY VALVES

Tank mounted compressors are shipped from the factory with ASME safety valves installed in the tank manifold. The flow capacity of the safety valve is equal to or greater than the capacity of the compressor.

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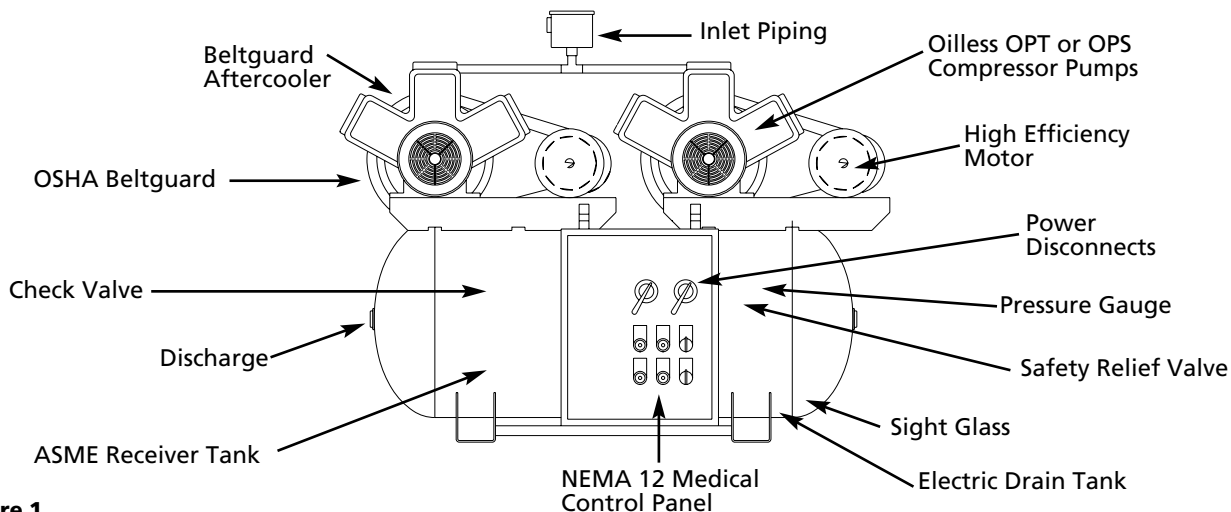


Figure 1

Installation

INSTALLATION SITE

1. The oilless compressor must be located in a clean, well lit and **well ventilated area**.
2. The area should be free of excessive dust, toxic or flammable gases and moisture.
3. Never install the compressor where the ambient temperature is higher than 104° F or where humidity is high.
4. Clearance must allow for safe, effective inspection and maintenance.

Minimum Clearances

Above	24"
Other sides	36"

5. If necessary, use metal shims or leveling pads to level the compressor. Never use wood to shim the compressor.

VENTILATION

1. If the oilless compressor is located in a totally enclosed room, an exhaust fan with access to outside air must be installed.
2. Never restrict the cooling fan exhaust air. Maintain a minimum of 3 feet clearance around entire unit.
3. Never locate the compressor where hot exhaust air from other heat generating units may be pulled into the unit.

Operation

Powerex Medical Tankmount Compressor operates at a maximum pressure of 100 PSIG. Compressor RPMs are established by Powerex based on horsepower and operating pressure(s).

DUPLEX MEDICAL TANKMOUNT

Unit alternates between compressors to share the air usage. The alternation of compressors is done by the means of a timer alternator in the control panel. The On cycle of the Lead compressor is 80 PSIG and OFF at 100 PSIG. A lag pressure switch will activate the lag

compressor if the pressure falls below 55 PSIG. The lag pressure switch operates between 55/75 PSIG. If the ON cycle of the lead compressor is more than 10 minutes, the alternator will switch to the lag compressor, making it the lead compressor. At any time the pressure falls below 55 PSIG, both compressors will operate. If the lag compressor comes on during normal operations, a low pressure alarm will sound.

TRIPLEX MEDICAL TANKMOUNT

Unit operates the same as the duplex except a lag switch is activated when pressure falls below 70 PSIG. This switch turns on the lag compressor. If the lag/lag compressor comes on during normal operations, a low pressure alarm will sound.

MEDICAL AIR SCHEMATIC

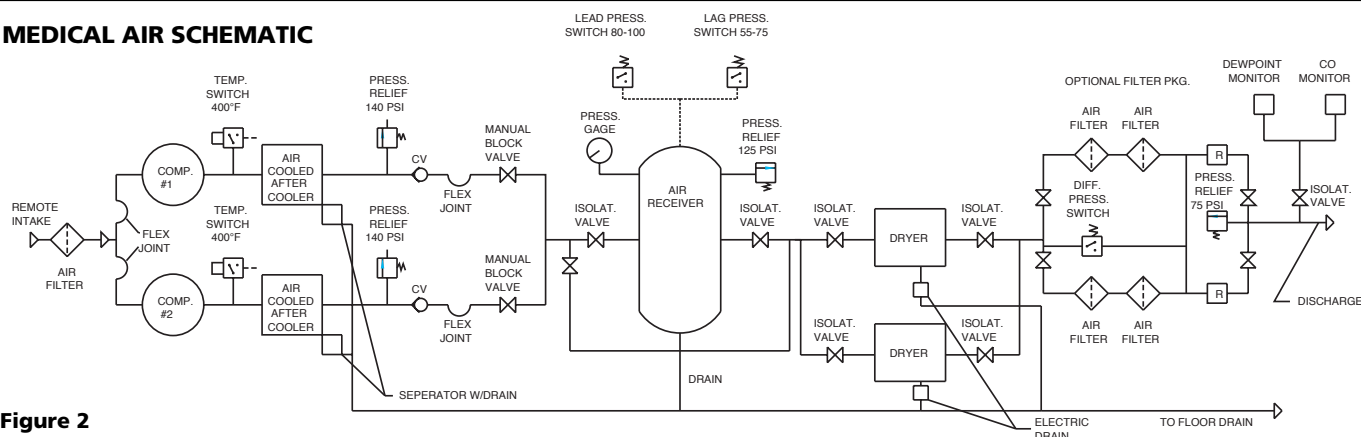


Figure 2

Model MTD

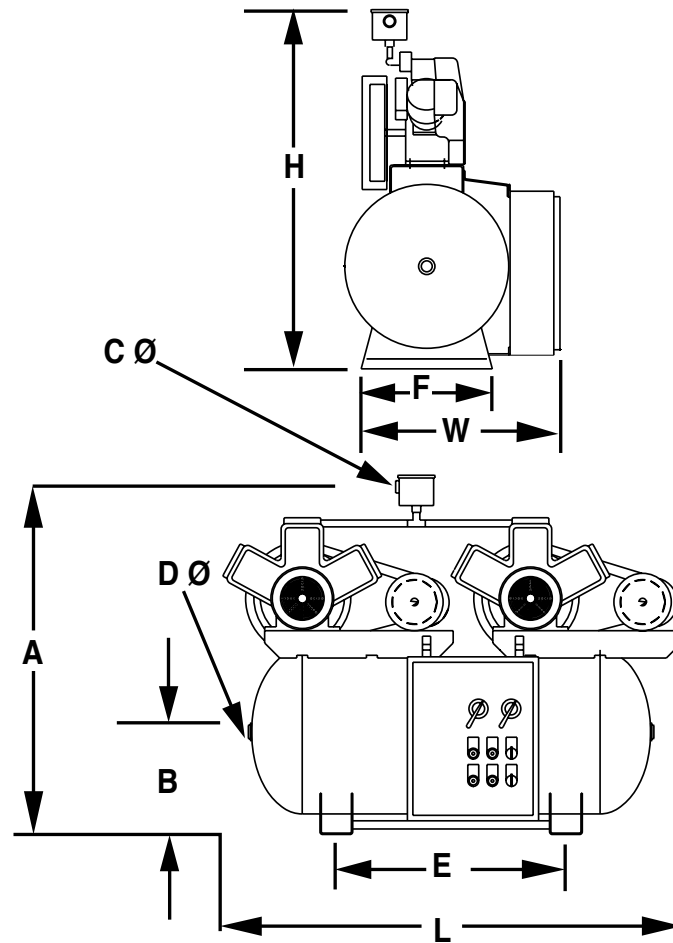


Figure 3A

Specifications

Medical Tankmount Duplex - Model MTD

MODEL	HP	PHASE	SCFM @ 100 PSIG	RPM	VOLTAGE	FULL LOAD AMP / MOTOR	GAL. TANK	DIMENSION (INCHES)				SHP. WT. (LBS.)					
								L	W	H	A B C D E F						
MTD010	1(2)	3	6.8	620	208 / 230 / 460	3.6 / 3.4 / 1.7	80	64	32	46	53	20	2 NPT	3/4 NPT	40	18.5	710
MTD020	2(2)	3	13.0	680	208 / 230 / 460	6.3 / 6.4 / 3.2	80	64	32	46	53	20	2 NPT	3/4 NPT	40	18.5	750
MTD030	3(2)	3	20.2	910	208 / 330 / 460	8.5 / 8.0 / 4.0	80 120	65 71	32 36	48 52	59 59	20 22	2 NPT	3/4 NPT	40 42	18.5 22	775
MTD050	5(2)	3	33.4	870	208 / 230 / 460	17.4 / 16.5 / 8.2	120 200	71 82	36 40	56 56	63 63	22 26	2 NPT	1 NPT	42	22	930
MTD075	7.5(2)	3	52.2	840	208 / 230 / 460	23.4 / 22 / 11	240	86	60	75	81	30	2 NPT	1 NPT	54	40	1350
MTD100	10(2)	3	70.0	1070	208 / 230 / 460	29 / 33 / 16.5	240	86	60	75	81	30	2 NPT	1 NPT	54	40	1490
MTD150	15(2)	3	108.4	1250	208 / 230 / 460	51 / 48 / 24	240	86	60	75	81	30	2 NPT	1 NPT	54	40	1530

Medical Tankmount Compressor

Model MTT

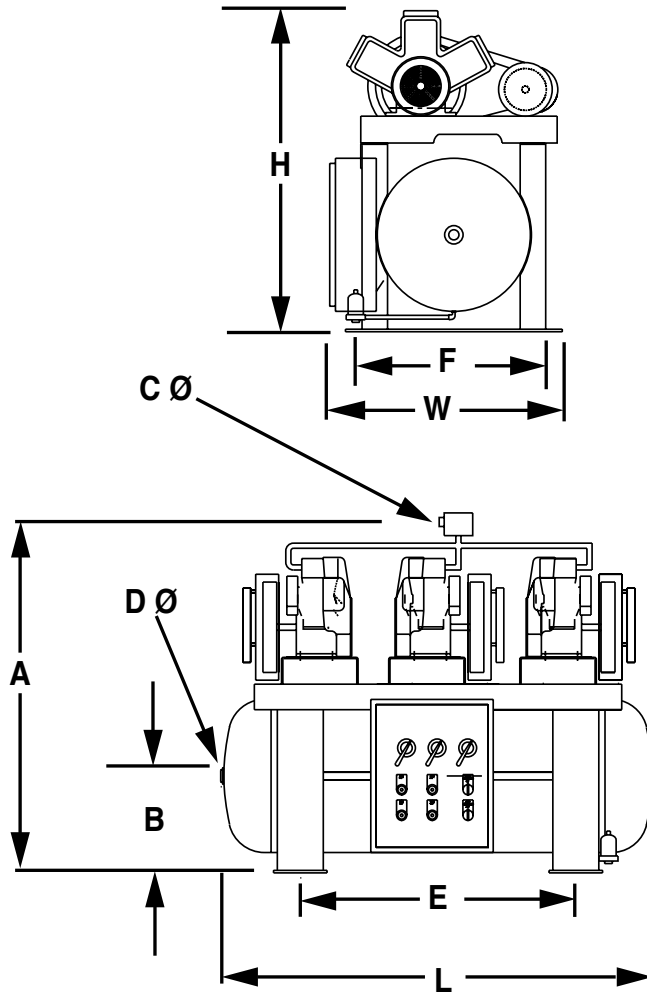


Figure 3B

Specifications

Medical Tankmount Triplex - Model MTT

MODEL	HP	PHASE	SCFM @ 100 PSIG	RPM	VOLTAGE	FULL LOAD AMP / MOTOR	GAL. TANK	DIMENSION (INCHES)								SHP. WT. (LBS.)	
								L	W	H	A	B	C	D	E		F
MTT050	5(3)	3	50.1	870	208 / 230 / 460	17.4 / 16.5 / 8.2	240	86	60	75	81	30	2 NPT	1 NPT	54	40	1395
MTT075	7.5(3)	3	78.8	840	208 / 230 / 460	23.4 / 22 / 11	240	86	60	75	81	30	2 NPT	1 NPT	54	40	2060
MTT100	10(3)	3	105.0	1070	208 / 230 / 460	29 / 33 / 16.5	240	86	60	75	81	30	2 NPT	1 NPT	54	40	2190
MTT150	15(3)	3	162.6	1250	208 / 230 / 460	45 / 42 / 21	240	86	60	75	81	30	2 NPT	1 NPT	54	40	2295

MAINTENANCE SCHEDULE

Item	Action needed	500	2500	Operating Hours				Remarks
				5000	10,000	15,000	20,000	
Compressor								
Tank	Drain moisture	Daily	2500					
Inlet air filter	Replace	●	▲	(Every 2,500 hrs or less)				
Blower fan	Clean			●	●	●	●	
Fan Duct	Clean			●	●	●	●	
Compressor Fins	Clean		●	(Every 2,500 hrs or less)				
Bearings	Replace				●	●	▲	
Compression rings	Replace			●	▲	●	▲	
Wrist pin bearing	Regrease			▲	▲	▲	▲	
Piston set	Replace			●	▲	●	▲	
V-belt	Inspect, replace	*Note 3	●	▲	▲	▲	▲	

Piping System

Safety valve	Confirm operation		●	(Every 2,500 hrs or less)				
Pressure gauge	Inspect		●	(Every 2,500 hrs or less)				
Air leaks	Inspect		●		●		●	
Filters	Replace		▲	▲	▲	▲	▲	▲ (View delta pressure indication)
Moisture drains traps	Inspect	●		●		●		

Air Dryers

Suction pressure (refrigerated)		●	●	●	●	●		
Heat exchanger		●	●	●	●	●		

● Inspect

▲ Replace

NOTES:

1. Inspect and perform maintenance periodically according to maintenance schedule.
2. The maintenance schedule relates to the normal operating conditions. If the circumstances and load condition are adverse, shorten the cycle time and do maintenance accordingly.
3. * The tension of the V-belt should be adjusted during the initial stage and inspected every 1,500 hours afterwards. Proper belt tension for 1 to 3 HP units is 12 lbs./1.5" deflection; for 5 to 15 HP units, 16 lbs./1.5" deflection

Medical Tankmount Compressor

ELECTRICAL WIRING DIAGRAM - DUPLEX

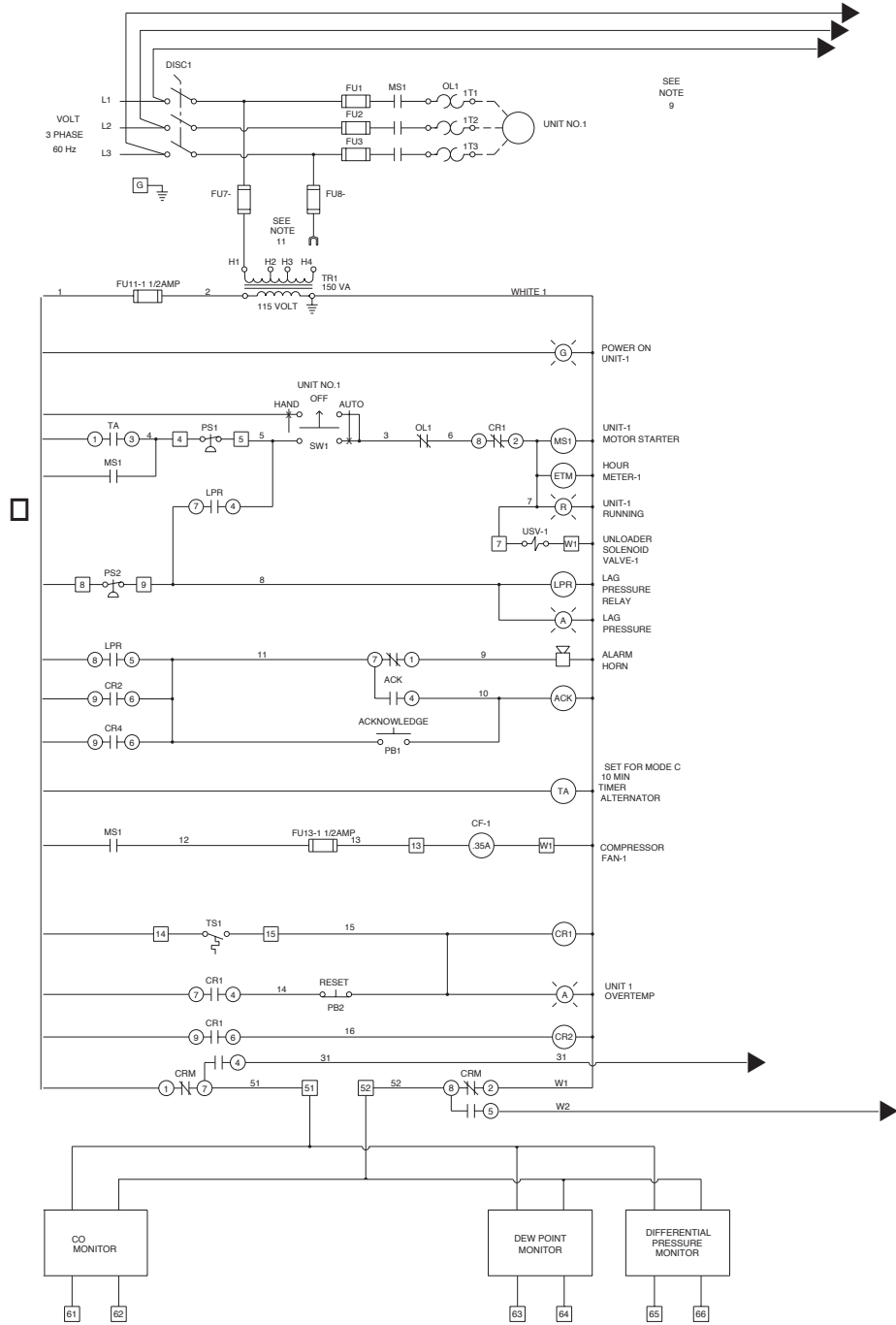
NOTES:

- 1.) PRESSURE SWITCH SETTINGS ARE AS FOLLOWS
 PS-1 CUT IN AT 80 P.S.I.G.
 CUT OUT AT 100 P.S.I.G.
 PS-2 CUT IN AT 55 P.S.I.G.
 CUT OUT AT 75 P.S.I.G.
- 2.) DRYER FUSES AND CONTROL CIRCUIT PROTECTION BUSS FNM TYPE DUAL ELEMENT FUSES, SUBSTITUTE ONLY EQUIVALENT TYPE DUAL ELEMENT FUSES.
- 3.) TRANSFORMER PRIMARY FUSES SHALL BE BUSS FNQR STYLE
- 4.) [] REMOTE FROM PANEL
- 5.) ALL CONTROL WIRE 14 GA
- 6.) TRANSFORMERS ARE SIZED FOR LOADS SHOWN ON DRAWING ONLY. DO NOT CONNECT ANY OTHER DEVICES.
- 7.) USE ONLY CLOSE ON RISE SENSORS
- 8.) THIS DRAWING IS FOR REPRESENTATION PURPOSES ONLY. CONSULT ACTUAL PANEL AS-BUILT DIAGRAM WHEN WORKING WITH ACTUAL PANEL.
- 9.) JUMPERS ARE FACTORY INSTALLED. IF 2 SEPARATE FEEDS ARE REQUIRED, REMOVE JUMPERS AND CONNECT ACCORDINGLY.
- 10.) HASP AND STAPLE PROVIDED ON OUTER DOOR OF ENCLOSURE FOR PADLOCK.
- 11.) TRANSFORMERS ARE FACTORY CONNECTED FOR EACH APPLICATION IF VOLTAGE IS DIFFERENT, RECONNECT AS FOLLOWS:
 FOR 208 VOLT, CONNECT TO H1 AND H2
 FOR 230 VOLT, CONNECT TO H1 AND H3
 FOR 460 VOLT, CONNECT TO H1 AND H4
- 12.) ACTUAL CONNECTION DIAGRAM MAY BE DIFFERENT THAN SHOWN HERE DUE TO CHANGES OR UPGRADES ON ACTUALLY USED COMPONENTS.
- 13.) READJUST OVERLOAD RELAY AND REPLACE FUSES AS INDICATED ON TABLE ABOVE
- 14.) FOR SINGLE PHASE APPLICATION, REMOVE THE FACTORY INSTALLED JUMPER LEAD (L3) BETWEEN DISC1 AND DISC2, CONNECT INCOMING SINGLE PHASE TO DISCONNECT SWITCH (DISC1) LUGS L1 AND L2, THEN INSTALL A 10 AWG BLACK JUMPER WIRE FROM T2 OF EACH STARTER TO L3 OF ITS RESPECTIVE DISCONNECT SWITCH. (SEE DASHED LINES IN ABOVE CIRCUIT)

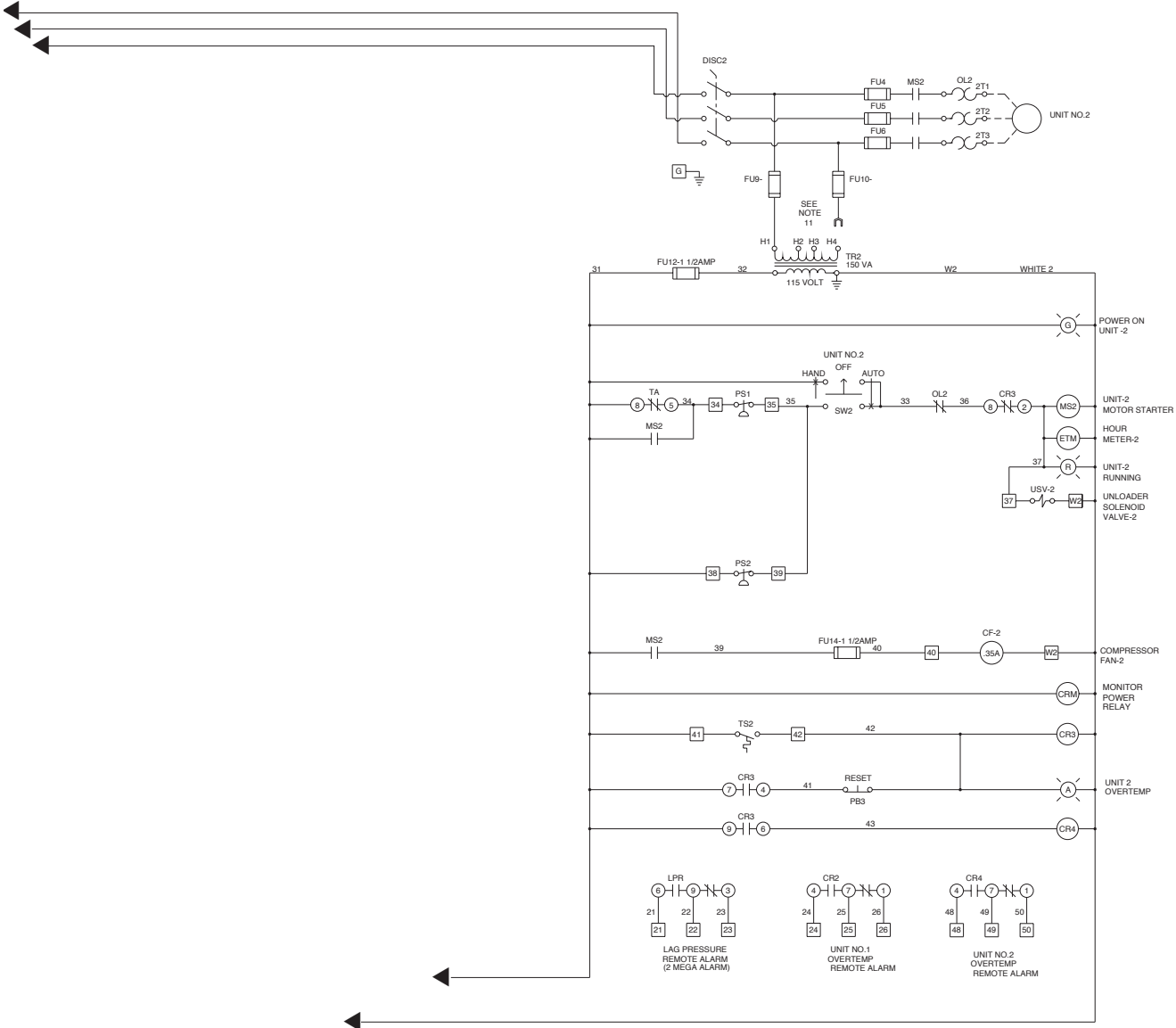
SYMBOL LEGEND = MINUS DRAFT = PLUS DRAFT = ADDITIONAL CONTROL REQ'D = BRINELL HARDNESS		Drawings to conform to the current revision of the following ANSI standards. Y14.3 Multi and sectional view dwgs. Y14.5M Dimensioning and tolerancing	
TOLERANCES UNLESS SPECIFIED .XX Å) .XXX Å) (DEG.) Å)		AUTOCAD 2000i INCH	
DO NOT SCALE DRAWING FOR DIMENSIONS		SCALE 1:1	
CONFIDENTIAL DISCLOSURE This drawing is the property of the CAMPBELL GROUP of the SCOTT FETZER COMPANY and subject to return on demand. Its contents are confidential and must not be copied or submitted to outside parties for use or dissemination.		DRAWN BY REP	CHECKED BY TDU
MATERIAL		APPROVED BY ENGINEERING TDU	MFG/MR TDU
PART NAME DUPLEX COMPRESSOR CONTROL PANEL		150 PRODUCTION DRIVE, HARRISON, OHIO 45030 Ph: 888-769-7979 FAX: (513) 367-3125	
DWG NO		SIZE D	

Medical Tankmount Compressor

ELECTRICAL WIRING DIAGRAM – DUPLEX



ELECTRICAL WIRING DIAGRAM – DUPLEX




Medical Tankmount Compressor

ELECTRICAL WIRING DIAGRAM - TRIPLEX

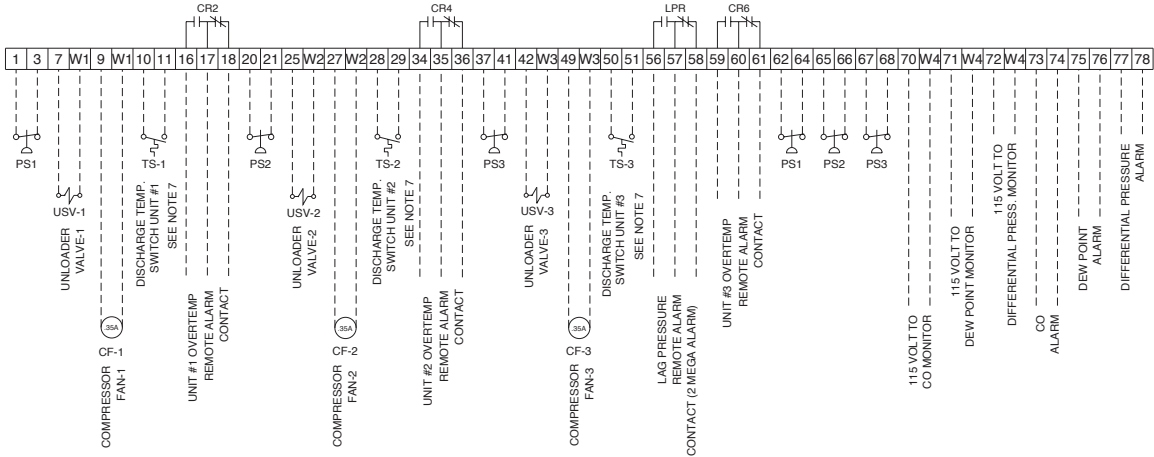
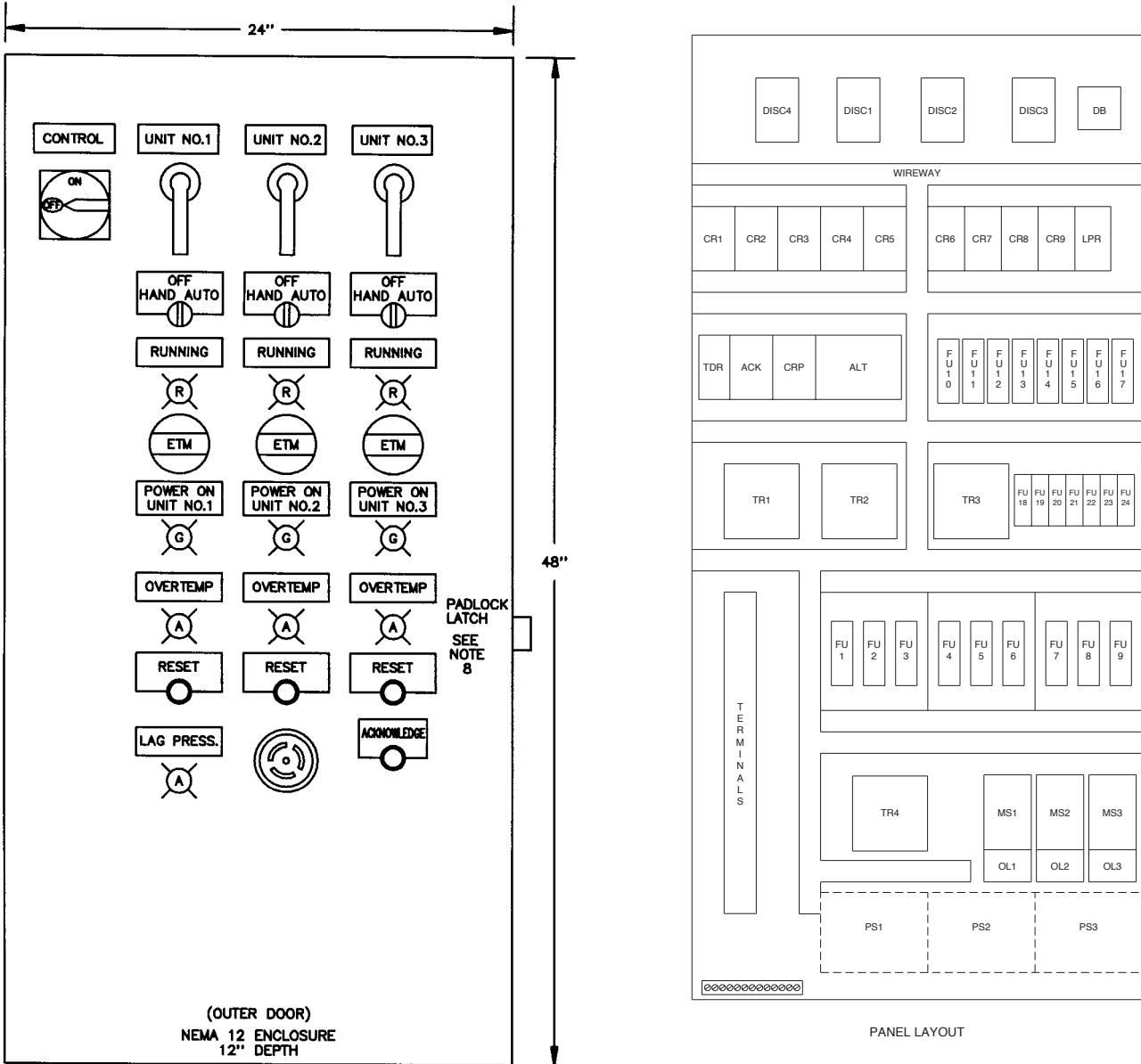
NOTES:

- 1.) PRESSURE SWITCH SETTINGS ARE AS FOLLOWS -

PS-1	PS-2	PS-3
CUT IN AT 80 P.S.I.G.	CUT IN AT 70 P.S.I.G.	CUT IN AT 55 P.S.I.G.
CUT OUT AT 100 P.S.I.G.	CUT OUT AT 90 P.S.I.G.	CUT OUT AT 70 P.S.I.G.
- 2.) DRYER FUSES AND CONTROL CIRCUIT PROTECTION BUSS FNM TYPE DUAL ELEMENT FUSES, SUBSTITUTE ONLY EQUIVALENT TYPE DUAL ELEMENT FUSES.
- 3.) TRANSFORMER PRIMARY FUSES SHALL BE BUSS FNQR STYLE.
- 4.) REMOTE FROM PANEL SHOWN AS -----
- 5.) ALL CONTROL WIRE 14 GA.
- 6.) TRANSFORMERS ARE SIZED FOR LOADS SHOWN ON DRAWING ONLY. DO NOT CONNECT ANY OTHER DEVICES.
- 7.) TEMP. SENSORS MUST BE "CLOSE ON RISE" TYPE ONLY
- 8.) HASP AND STAPLE PROVIDED ON OUTER DOOR OF ENCLOSURE FOR PADLOCK.
- 9.) TRANSFORMER ARE FACTORY CONNECTED FOR 460 VOLT APPLICATION IF VOLTAGE IS DIFFERENT, RECONNECT AS FOLLOWS:
 FOR 208 VOLT, CONNECT TO H1 AND H2
 FOR 230 VOLT, CONNECT TO H1 AND H3
 FOR 460 VOLT, CONNECT TO H1 AND H4
- 10.) THIS PANEL IS FACTORY ASSEMBLED FOR 460 VOLT 3 PHASE USE.
- 11.) THE FACTORY INSTALLED JUMPER BETWEEN TERMINALS 3 AND 4 ON THE TRIPLEX ALTERNATOR RELAY MUST BE REMOVED.

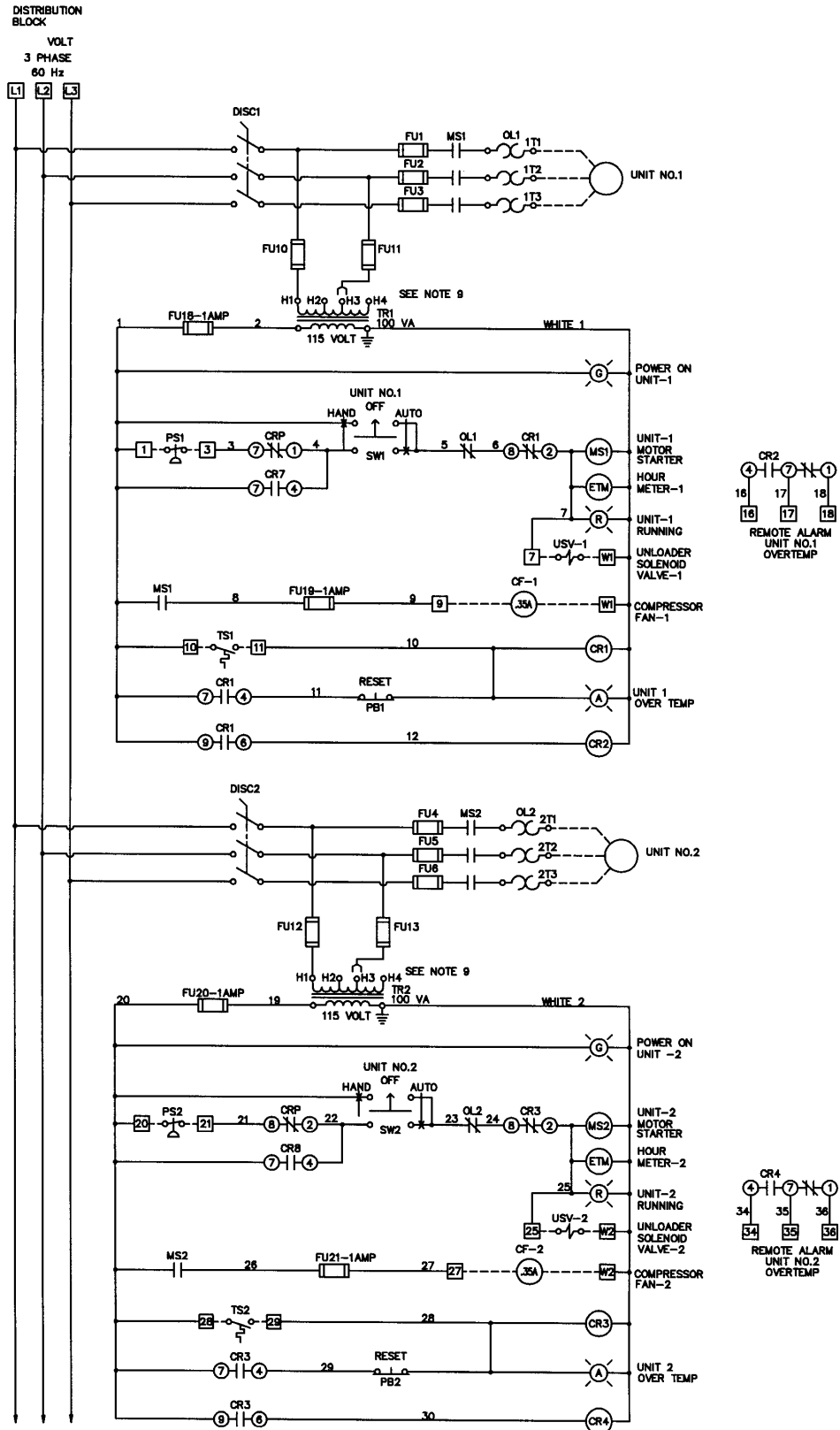
SYMBOL LEGEND ● = MINUS DRAFT ● = ADDITIONAL CONTROL REQ'D ○ = PLUS DRAFT ◆ = BRINELL HARDNESS		Drawings to conform to the current revision of the following ANSI standards. Y14.3 Multi and sectional view dwgs. Y14.5M Dimensioning and tolerancing	
TOLERANCES UNLESS OTHERWISE SPECIFIED .XX Å) .XXX Å) .4(DEC.) Å)	AUTOCAD 2000i INCH	DO NOT SCALE DRAWING FOR DIMENSIONS	
CONFIDENTIAL DISCLOSURE This drawing is the property of the CAMPBELL GROUP of the SCOTT FETZER COMPANY and subject to return on demand. Its contents are confidential and must not be copied or submitted to outside parties for use or examination.		DRAWN BY REP 4-26-96	CHECKED BY TDU 4-26-96
MATERIAL		APPROVED BY ENGINEERING MFG/MR	SCALE 1:1
PART NAME TRIPLEX COMPRESSOR CONTROL PANEL		 150 PRODUCTION DRIVE, HARRISON, OHIO 45030 Ph: 888-769-7979 FAX: (513) 367-3125	
DWG NO		SIZE D	

ELECTRICAL WIRING DIAGRAM - TRIPLEX

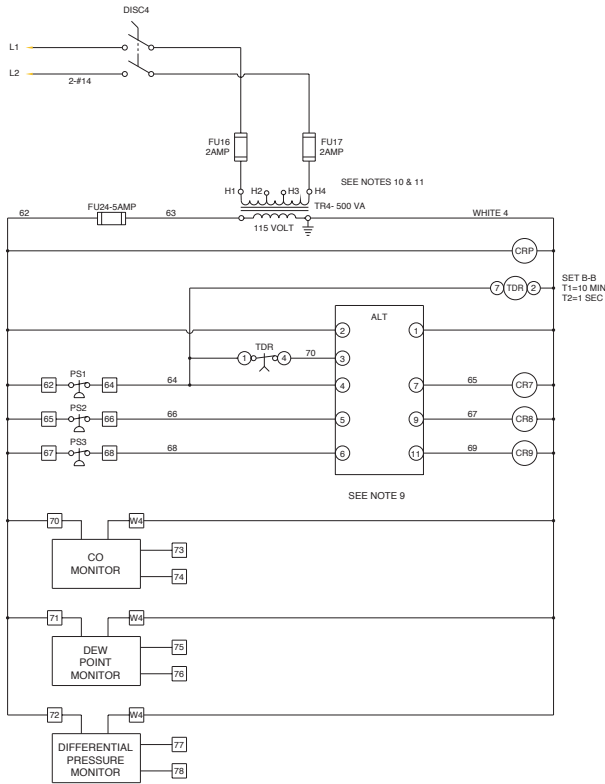
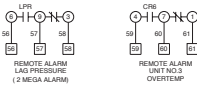
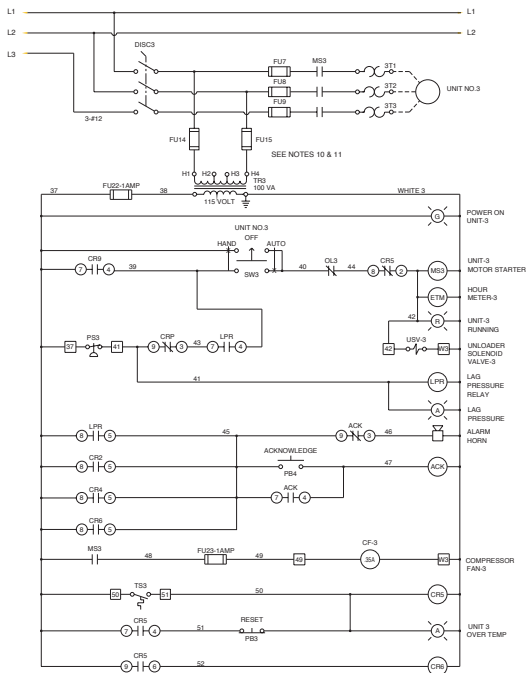


Medical Tankmount Compressor

ELECTRICAL WIRING DIAGRAM - TRIPLEX



ELECTRICAL WIRING DIAGRAM - TRIPLEX



Medical Tankmount Compressor

Powerex Limited Warranty

POWEREX 3 YEAR / 10,000 HOUR EXTENDED PARTS LIMITED WARRANTY - Powerex warrants each Compressor Pump or Scroll Air-End against defects in material or workmanship from the date of purchase for a period of **Three years or 10,000 hours**, whichever may occur first. This warranty applies to the exchange of part(s) of the compressor pump or air-end found to be defective by an Authorized Powerex Service Center.

POWEREX 1 YEAR / 5,000 HOUR INLET TO OUTLET LIMITED WARRANTY - Powerex warrants each Compressor Unit, System, Pump, or Air-End against defects in material or workmanship from the date of purchase for a period of **One Year or 5,000 Hours**, whichever may occur first. This warranty applies to the exchange of defective component part(s) and labor performed by an Authorized Powerex Service Center.

Coverage. The above mentioned warranty applies to Powerex manufactured units or systems only. Items listed in the operator's manual under routine maintenance are not covered by this or any other warranty. Failure to complete maintenance as stated in the maintenance schedule will void this warranty.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM THE DATE OF PURCHASE: AND TO THE EXTENT PERMITTED BY LAW, ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THIS IS THE EXCLUSIVE REMEDY AND LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES IS EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW.

Limitation of Liability. To the extent allowable under applicable law, Powerex's liability for consequential and incidental damages is expressly disclaimed. Powerex's liability in all events is limited to, and shall not exceed, the purchase price paid.

Warranty Disclaimer. Powerex has made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

Product Suitability. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Powerex attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, please review the product applications, and national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Claims. Claims pertaining to the merchandise in this schedule, with the exception of warranty claims, must be filed with POWEREX within 6 months of the invoice date, or they will not be honored. Prices, discounts and terms are subject to change without notice or as stipulated in specific product quotations. All agreements are contingent upon strikes, accidents, or other causes beyond our control. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of merchandise noting any discrepancy or damage on the carrier's freight bill at the time of delivery. Discrepancies or damage which obviously occurred in transit are the carrier's responsibility and related claims should be made promptly directly to the carrier. Returned merchandise will not be accepted without prior written authorization by POWEREX and deductions from invoices for shortage or damage claims will not be allowed. **UNLESS OTHERWISE AGREED TO IN WRITING, THESE TERMS AND CONDITIONS WILL CONTROL IN ANY TRANSACTION WITH POWEREX** any different or conflicting terms as may appear on any order form now or later submitted by the buyer. All orders are subject to acceptance by POWEREX.

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