



# DUPLEX STACK MOUNTED LUBRICATED ROTARY VANE (EXPANDABLE TO A TRIPLEX) MEDICAL VACUUM SYSTEM 5 - 10 HP

The EMSE CORPORATION Medical vacuum system is a completely packaged NFPA 99 and NEC compliant assembly featuring oil-lubricated rotary vane vacuum pumps, U.L. listed control cabinet, an ASME receiver and the accessories required to meet and exceed the current code requirements.

All components are piped and wired to single-point service connections. The only field connections are air intake, air discharge and power at the control panel. All interconnecting piping and wiring is complete and operationally tested prior to shipment. Liquid tight conduit, fittings and junction boxes are provided for all control and power wiring.

## **VACUUM PUMPS**

The Medical vacuum pumps are continuous duty, rotary vane, air-cooled, equipped with non-asbestos vanes, having a minimum life of 40,000 hours. The pumps are provided with a full recirculated oil supply. The oil separation consists of four stages of oil and smoke eliminators, capable of removing 99.9+% of oil and smoke particles from the exhaust. Each vacuum pump is driven by a 3 phase, 60 cycle, TEFC NEMA C-face, motor.

Each vacuum pump is supplied with an inlet check valve, inlet isolation valve, built-in anti-suck-back valve, inlet filter screen, oil sight gauge, oil drain valve, exhaust pressure gauge, vacuum switch, high discharge temperature switch, inlet and discharge flexible connectors and a shut-off cock for gauge and vacuum switches.

## **RECEIVER**

The system includes a vacuum receiver of ASME construction rated for 200 PSI MWP. The tank includes a vacuum gauge, valved by-pass and manual tank drain.

## **CONTROL PANEL**

The UL listed control panel is supplied in a NEMA 12 enclosure and includes short circuit, single phase and thermal overload protection. Externally operable circuit breakers with a door interlock, control circuit transformers with fused primary and secondary coils, HOA switches, magnetic starters with 3 leg overload protection and reset switches are standard.

The programmable logic controller provides automatic alternation and lead-lag control with the option to select either one of the pumps as a permanent lead for periods of pump maintenance. It includes minimum run timers to prevent short cycle operation. Human machine interface (HMI) display includes pump run indication, accumulated run time and alarm conditions.

Local "Backup in use" audible and visual alarms are provided per NFPA 99. The audible alarm can be acknowledged with the "Silence" button. The visual alarm will stay on until manually reset. All controls and alarms will function even if one of the pumps is shut down for maintenance or repairs. The panel includes a set of dry contacts for connection to the master alarm.

Vacuum pumps are controlled via a vacuum transducer. Lead / Lag back-up vacuum switches are included in the event of PLC or transducer failure.

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## **EMSE Standard Control Panel: 4.3” Touchscreen HMI**

The control system provides automatic lead/lag sequencing and automatic alternation of all vacuum pumps based on first-on/first-off principle with provision for simultaneous operation if required.

The control panel features:

- A 4.3” Touchscreen with screen displays inclusive of:
  - Service alerts, runtime hour meters, system status, system vacuum level
  - Visual/audible alarm indications with isolated contacts for all standard remote alarms
  - Event log recording alarms and system activity
- NEMA 12 control panel enclosure
- Circuit breaker disconnects for each motor with external operators
- Full voltage motor starters with overload protection
- Vacuum level controlled by a vacuum transducer
- Vacuum switches are provided as a back-up to the vacuum transducer in the event of failure
  - **Options:**
    - 24V Control Circuit
    - VFD
    - Ethernet connectivity and embedded web page for remote monitoring of alarms and system status
    - BacNet Gateway
    - Modbus

## **OPTIONAL:**

### **EMSE Premium Control Panel, 7” Touchscreen HMI:**

The control system provides automatic lead/lag sequencing and automatic alternation of all vacuum pumps based on first-on/first-off principle with provision for simultaneous operation if required.

The control panel features:

- A 7” Touchscreen HMI with screen displays inclusive of:
  - Service alerts, runtime hour meters, system status, system vacuum level
  - Visual/audible alarm indications with isolated contacts for all standard remote alarms
  - Event log recording alarms and system activity
- NEMA 12 control panel enclosure
- Circuit breaker disconnects for each motor with external operators
- Full voltage motor starters with overload protection
- Vacuum level controlled by vacuum transducer.
- Vacuum switches provided as a back-up to the vacuum transducer in the event of failure
  - **Options:**
    - 24V Control Circuit
    - VFD
    - Ethernet connectivity and embedded web page for remote monitoring of alarms and system status
    - BacNet Gateway
    - Modbus

## **WARRANTY**

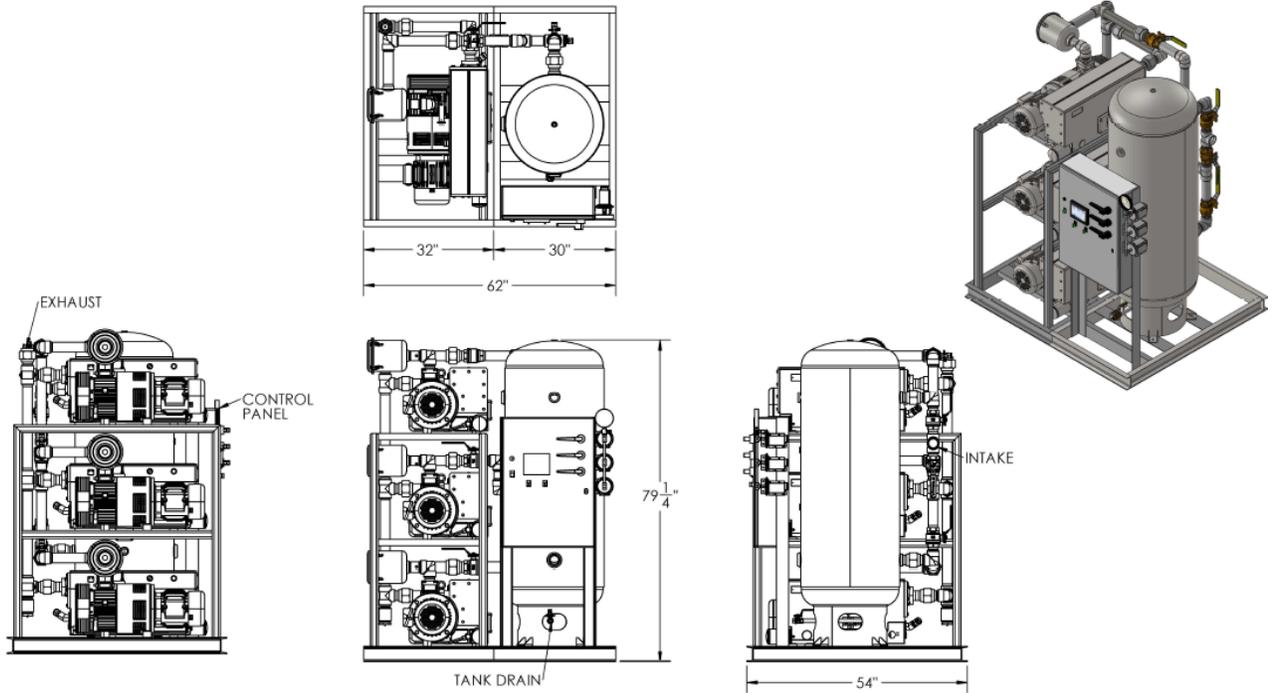
The Medical Vacuum system is guaranteed by the manufacturer for a period of 30 months from date of shipment from the factory or 24 months from date of start-up, (whichever comes first) against defects in design, materials, or construction.

### **Optional System Accessories**

- |  |   |
|--|---|
| <input type="checkbox"/> Oxygen Assured Vacuum Pumps     | <input type="checkbox"/> Exhaust Muffler                  |
| <input type="checkbox"/> Rust protection receiver lining | <input type="checkbox"/> Receiver gauge glass             |
| <input type="checkbox"/> Galvanized receiver             | <input type="checkbox"/> Bacteria inlet filter with flask |

# DUPLEX STACK MOUNTED LUBRICATED ROTARY VANE (EXPANDABLE TO A TRIPLEX) MEDICAL VACUUM SYSTEM

5 - 10 HP



System Model Number	HP Each	Capacity (SCFM) at 19" Hg		Suction Conn.	Exhaust Conn.	Tank (Gallon)	Dimensions (inches)			Weight Lbs.	Sound Level dB(A)	System FLA		
		Pump	System				L	W	H			208V	230V	460V
1DRB5S120E	5.0	26	26	1 1/4"	1 1/4"	120	See above			2050	70	54	50	25
1DRB5HS120E	5.0	37	26	2"	2"	120	See above			2150	72	54	50	25
1DRB7.5S120E	7.5	52	52	2"	2"	120	See above			2250	74	81	82.5	42
1DRB7.5HS120E	7.5	52	52	2"	2"	200	See above			2300	74	81	82.5	42
1DRB10S120E	10	77	154	2"	2"	120	See above			2525	76	98	96	48
1DRB10HS120E	10	77	154	2"	2"	200	See above			2600	76	112	109	54.5
1DRB 10HSR120SE	10	77	154	2"	2"	120	See above			2525	76	112	109	54.5

**Notes:**

1. Capacities shown is with reserve pump on stand-by, per NFPA 99
2. To convert Free Air Capacity (SCFM) to Expanded Air Capacity (ACFM): At 19" Hg multiply SCFM by 2.74
3. Maximum ambient temperature: 100° F for standard systems.
4. Weights & amperage is based on three pumps
5. Allow 36" clearance in front of control panel and 24" clearance on all other sides
6. Dimensions are subject to change