HOSE ADAPTERS, Valves and Parts C

CHARGING Systems

HEATING

SYSTEM TOOLS



YELLOW JACKET®

BULLET[®] Vacuum Pump

A two-stage rotary vane oil-sealed pump that pulls down to 25 microns or better

YJ

BULLET X YELLOW

The BULLET[®] pulls down to 25 microns or better, protecting from contaminants and non-condensable gasses in the HVAC system, which can damage components, reduce efficiency and cause system failure.

- Wide mouth oil reservoir port for easier, cleaner filling. Doubles as pump exhaust; threaded to attach garden hose for exhausting to remote location
- Large oil sight glass for easy monitoring of oil level
- Large brass oil drain for easy access to fast oil changes
- Internal intake check valve to help prevent oil backup into the system during a power failure
- · Heavy-duty rotors and bearings

- Intake filter screen keeps damaging particles from entering the pump
- · Heavy-duty steel handle for well-balanced carrying
- Tethered port caps stay with the pump
- Stable base; wide-stance metal with rubber overlay
- Two year warranty
- Made in the USA

Domestic	Model 93603	Model 93605	Model 93600
Free air displacement	3.0 cfm	5.0 cfm	7.0 cfm
Number of stages	2-stage rotary vane	2-stage rotary vane	2-stage rotary vane
Field blankoff	25 microns	25 microns	25 microns
Intake	1/4" x 3/8" x 3/8"	1/4" x 3/8" x 3/8"	1/4" x 3/8" x 3/8"
Motor	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm	1/2 hp - 1725 rpm
Thermal overload protection	Yes	Yes	Yes
Voltage (single phase)	115V/60 Hz	115V/60 Hz	115V/60 Hz
Power cord	6' - motor mounted switch - U.S. plug	6' - motor mounted switch - U.S. plug	6' - motor mounted switch - U.S. plug
Oil capacity	33.5 oz. (0.991 L)	30 oz. (0.9 L)	28 oz. (0.828 L)
Dimensions	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)	16.25" L x 6.25" W x 8.25" H (41.3 cm x 15.9 cm x 21 cm)
Net weight	29.1 lbs. (13.2 kg)	30.0 lbs. (13.6 kg)	31.6 lbs. (14.3 kg)
Export	EU/UK 93613; AU/NZ 93623	EU/UK 93615; AU/NZ 93625	EU/UK 93610; AU/NZ 93620
Detachable IEC Cord type	EU/UK AU/NZ	EU/UK AU/NZ	EU/UK AU/NZ
Free air displacement	85/70 L/M	142/120 L/M	200/165 L/M
Motor CE	1/2 hp - 1725 rpm/1425 rpm	1/2 hp - 1725/1425 rpm	1/2 hp - 1725/1425 rpm
Voltage (dual phase)	115/230V / 50-60 Hz	115/230V / 50-60 Hz	115/230V / 50-60 Hz
Dimensions	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)	17" L x 6.25" W x 8.25" H (43.2 cm x 15.9 cm x 21 cm)
Net weight	32.1 lbs (14.6 kg)	33 lbs (15 kg)	34.5 lbs (15.7 kg)

HOW TO MEASURE AN "ADEQUATE" VACUUM

Many contractors pull the refrigerant out and think the work is done. In reality, when you get to 29 inches of vacuum (the green zone on your gauge), you are only half finished. Once the recovery machine has done its work, it's time to finish off the job with a vacuum pump.

Standard Lo-Side Gauge

Shows vacuum in inches. A \pm 1% gauge would be accurate to \pm 7600 microns when calibrated at a full vacuum (which is generally not the case with this type of gauge).



Only an electronic vacuum gauge can precisely measure the level at which non-condensable gas is removed from system.

Why a Vacuum Pump?

ASHRAE recommends evacuation to below 1000 microns for moisture removal and below 500 microns after replacing a compressor. Some equipment manufacturers call for evacuation to 400 microns to ensure that harmful water vapor is removed from the system.

When you have water vapor in your system, the risk of icing up capillary tubing and expansion valves becomes much higher. A high quality vacuum pump will be able to take you down to 200-500 microns. With the system almost completely free from water vapor, you are ready to put the refrigerant back in the system. A thorough approach to evacuation ensures longer equipment life and reduced risk of problems.

Use a Vacuum Gauge to Read Vacuum Down to 25 Microns

1000 microns equal only 0.039 inches of mercury, a measurement that cannot be made with a mechanical gauge, or determined by evacuation time or the sound of the pump. A popular tool that can measure vacuum at evacuation levels below 1000 microns is an electronic vacuum gauge.

The best place to measure vacuum is at the system, not at the pump. With a combination vacuum/charging valve, you can attach the electronic vacuum gauge directly to the system and isolate it from the pump, hoses and manifold for a true indication of the vacuum in the system. With a digital vacuum gauge, you can see the last evidence of moisture being removed and witness that the system has been dried out.