TEKEDGE

MODELS:
ELITE FLOW 1.5 A2L/A3
ELITE FLOW 5 A2L/A3
ELITE FLOW 9 A2L/A3

ELITE FLOW SERIES A2L/A3
DUAL VOLTAGE VACUUM PUMPS

Safety Instructions & Operation Manual

C&D

USA EST. 1967

ELITE FLOW SERIES
A2L/A3 VACUUM PUMPS

Thank you for purchasing this **TEKEDGE** product.

Please read this operation manual carefully before use.
Only suitably qualified personnel should operate this equipment.

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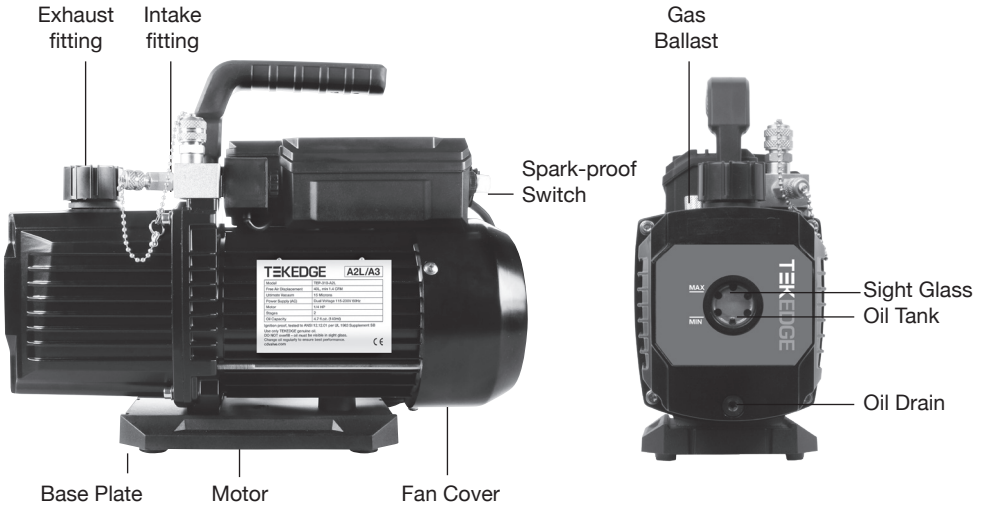
1.0 APPLICATION

EliteFlow Series A2L/A3 two-stage oil sealed rotary vane vacuum pumps are basic equipment to evacuate domestic, automotive and light commercial refrigeration and AC equipment.
They are suitable for use with A2L, HFC, HCFC, CFC, HC and compatible refrigerants.

WARNING: This product can expose you to chemicals including lead which are known to the state of California to cause cancer and birth defects or other reproductive harm. For more information go to **www.p65warnings.ca.gov**

This vacuum pump was reviewed for ignition proof construction under the standard for Refrigerant. Recovery/Recycling UL 1963:2011 Ed4, Supplement SB, which references one of the test methods per ANSI/ISA 12.12.01

2.0 PUMP COMPONENTS



MODEL	ELITE FLOW 1.5 A2L/A3	ELITE FLOW 5 A2L/A3	ELITE FLOW 9 A2L/A3
VOLTAGE	115-230V, 60Hz		
FREE AIR DISPLACEMENT (L/M / CFM)	40 / 1.4	151 / 5.3	251 / 8.9
ULTIMATE VACUUM	15 Microns	15 Microns	15 Microns
MOTOR	1/4 HP	1/2 HP	2/3 HP
MOTOR SPEED (RPM)	3440	3440	3440
OIL CAPACITY	4.7 fl.oz. (140 ml)	18.2 fl.oz. (540 ml)	20.9 fl.oz. (620 ml)
DIMENSIONS	10 x 4 1/8" x 8 3/4" (265 x 105 x 220 mm)	14" x 5 1/2"x 11" (348 ×140 × 272 mm)	15" x 6 1/4" x 11 1/4" (380 × 160 × 285 mm)
NET WEIGHT	9.9 lb (4.5 kg)	24.2 lb (11 kg)	32.6 lb (14.8 kg)

3.0 GENERAL SAFETY INSTRUCTIONS

ADDITIONAL SAFETY INSTRUCTIONS FOR REFRIGERATION SYSTEMS CONTAINING CLASS A2, A2L & A3 REFRIGERANTS:

The following are additional safety recommendations when servicing refrigeration equipment that contain Class A2L, A2 or A3 refrigerants. These instructions do not replace existing occupational hazard procedures or other regulations that may be required by local, state or federal agencies. Please read carefully before any servicing.

Technicians working on Class A2L, A2 and A3 systems should have detailed knowledge of and skills in handling flammable refrigerants, personal protective equipment, refrigerant leakage prevention, handling of cylinders, charging, leak detection and proper disposal. Additional knowledge of legislation, regulations and standards relating to flammable refrigerants may also be required. **Special Certification or licensing may be required on Class A2L, A2, and A3 and refrigerant handling. Check your local occupational safety codes.**

FAILURE TO THOROUGHLY FOLLOW THESE SAFETY INSTRUCTIONS CAN LEAD TO SERIOUS BODILY INJURY, INCLUDING DEATH.

The area of service should be marked as **Temporary Flammable Zone**. This will be 9 foot (3 meter) perimeter around the refrigeration equipment being serviced and should have NO SMOKING and other hazardous signs posted. Local supervisor should be notified of the zone's existence.

- A flammable gas detector should be used to monitor air in the **Temporary Flammable Zone**
- A dry powder or CO^2 fire extinguisher must be available at service location
- Vacuum pump exhaust may contain harmful vapors. Failure to provide adequate ventilation may lead to serious injury, including death.
- A suitable ventilation fan should be used to maintain in the work space at a minimum of 5 air changeovers per hour
- Ensure the refrigeration equipment's power has been discontinued
- All potential ignition sources within temporary flammable zone must be disabled
- When connecting service equipment (such as vacuum pumps, scales, recovery units) to a power source, the connection must be made outside the **Temporary Hazardous Zone**
- Check the system to ensure the refrigerant has been properly removed from the refrigeration system being serviced
- Before evacuating a Class A2 or A3 system, the system should be purged with 100% Nitrogen. **DO NOT USE AIR**

DANGER-EXPLOSION RISK: Do not mix Class A2L, A2 or A3 refrigerants with air. All precautions must be taken to eliminate mixing of air with flammable refrigerants including monitoring Recovery Cylinder for air content. Failure to do so may result in serious bodily injury, including death.

4.0 BEFORE STARTING (1 OF 2)

Add vacuum pump oil and always check the oil level before use. Low oil level or poor quality oil will result in premature wear and poor performance.

Install on a flat surface with adequate ventilation; allow 2" (5cm) on all sides of the pump.

Connect via a suitable hose to a manifold or suitable circuit.

Connect to a suitable safe power source using earth leakage devices when using extension cords.

CAUTION:

- Do not use with combustible, explosive, poisonous or reactive/corrosive gases.
- Do not allow dust particles to enter the pump.
- Do not allow the pump to run to open air / atmosphere for more than 3 minutes. If run open for longer than 3 minutes the oil burns off/evaporates and the pump cartridge will seize up, as it will run dry.
- Do not allow the inlet temperature of gases to exceed 176°F (80°C). Do not use in environments over 122°F (50°C).
- Not suitable for use as a compressor, transfer pump or recovery pump.
- Do not operate without oil.
- Pump surface may be hot.
- Do not block air outlet when pump is in use.

ADDITIONAL INSTRUCTIONS WHEN WORKING ON SYSTEMS WHICH USE A2L/A3 REFRIGERANTS:

Any engineer who carries out an evacuation on a system, which utilises A2L/A3 refrigerants, must be a qualified Refrigeration/Air Conditioning Technician. In addition, they must have had training in the safe handling of flammable refrigerants, personal protective equipment, leak prevention, handling of cylinders, charging, leak detection and the proper disposal of refrigerants.

When working with systems which utilise flammable A2L/A3 refrigerants, there must be a 9.8 ft (3m) exclusion zone around the equipment, during the evacuation.

Signs specifying "NO SMOKING" and other hazards should be displayed and light/electrical switches taped over, within the exclusion zone, to prevent accidental sparks being produced. The person who is responsible for the building, should be notified of the zone's existence.

When servicing any equipment, the power must be isolated and switched off completely to the unit.

All equipment used during the evacuation process must be in good order, including hoses, connectors, the vacuum gauge and the **EliteFlow Series A2L/A3 Vacuum Pump**.

4.0 BEFORE STARTING (2 OF 2)

DANGER: RISK OF EXPLOSION

It is believed that using a Vacuum Pump, with an A2L system, has a lower risk than carrying out a refrigerant recovery. This assumption is based on the premise that a system shouldn't have any refrigerant in it, because it is either new, and it is yet to be charged, or the gas has been removed, using a suitable Refrigerant Recovery Unit (TekEdge Velo-X A2L/A3). Care should still be taken however, as trace quantities of flammable refrigerant, may remain in the system (e.g. refrigerant off-gassing from the oil).

EliteFlow Series A2L/A3 Vacuum Pumps are designed to safely evacuate systems which utilise A2L/A3 refrigerants. However, the operating environment, must be FREE of high concentrations of hazardous or flammable gas, prior to use. Therefore please ensure that an appropriate combustible gas leak detector, is used to ensure the working environment is safe, prior to starting any work.

EliteFlow Series A2L/A3 Vacuum Pump should only be plugged in to a power outlet, outside of the 9.8 ft (3m) exclusion area.

During the evacuation process, a combustible gas leak detector should be used to ensure that none of the refrigerant is leaking into the local environment. If it is, safely stop the process and ensure adequate ventilation to the area to dissipate the gas.

A dry powder or CO^2 fire extinguisher must be available at the service location and in close proximity to the unit which is being worked on.

Failure to follow these instructions may lead to serious bodily injury, including death.

5.0 TROUBLE SHOOTING

PROBLEM	CAUSE	ACTION
POOR VACUUM	**4.1** Oil insufficient	Add oil to centre line of oil scale
	4.2 Pump oil emulsified, not clean	Replace with new oil
	4.3 Oil inlet blocked or oil feeding inadequate	Clean oil inlet and filtering screen
	4.4 Pump hose or vessel leak	Check hose and vessel for leakage and repair
	4.5 Improper pump chosen	Pump too small - use larger pump
	4.6 Worn components	Repair or replace with a new pump
OIL LEAKAGE	**4.7** Oil seal damaged	Replace with a new oil seal
	4.8 Oil casing gasket loose or damaged	Tighten screws or replace O-type ring
OIL DISCHARGE	**4.9** Too much oil	Drain oil to oil base line on sight glass
	4.10 Inlet pressure too high	Use recovery pump to remove pressure
OVER-HEATING	**4.11** Temperature below +41°F (+5C)	Allow temperature to rise
	4.12 Motor overloaded	Wait 5 minutes, re start, or press motor reset if installed
	4.13 Foreign matter falling in the pump	Check and eliminate the foreign matter
DIFFICULT STARTING	**4.14** Low voltage	Avoid long extension leads
	4.15 Overheated	Check fan, ventilation and repair
	4.16 Safety if in any doubt	Consult C&D

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6.0 WARRANTY

If your C&D product incurs a fault or a warranty issue, please register your claim directly on the C&D website www.C&D.com. Our technical service team will then issue next steps pending the outcome of the claim review.

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