



High Temperature Extract Fans Workhorse Centrifugal Fan

1.1. General

A. Provide a high temperature centrifugal extract fan unit to meet the performance and configuration as indicated in the schedule and detail drawings. The high temperature centrifugal extract fan unit shall conform to AMCA standard 211 and 311. The unit shall be of the Workhorse high temperature centrifugal fan type as manufactured by VES Andover Ltd a company accredited with BS EN ISO 9001:2008.

1.2. Unit Construction

A. The unit shall be provided pre-assembled comprising of a rigidly constructed heavy gauge steel support frame, galvanised sheet steel weatherproof drive guard, adjustable steel fan scroll, centrifugal backward curved impeller, and belt driven motor mounted out of air stream.

B. The fan scroll shall be rotatable to any of the eight standard discharge configurations as indicated in the schedule and detail drawings.

C. The fan scroll shall include a removable service panel & integrated drain connection to allow access for impeller maintenance & cleaning.

D. The unit shall be supplied with a weatherproof drive guard case as standard for safety and belt protection.

E. The drive guard case shall include a removable service panel. The service panel shall be of sufficient size to permit easy access to all interior components.

F. The unit casework shall incorporate high quality leak resistant gaskets on all service doors and panels.

G. The unit shall be fitted as standard with high temperature flexible connections. The connections shall be silicone coated glass fabric type, suitable for temperatures up to 250°C. The connections shall be fire rated to BS476 Part 7 Class 1, and BS 476 Part 20 for 150 minutes.

H. The unit shall be finished as standard Agate Grey to RAL7038. Colour to be in accordance with schedule.

1.3. Fan

A. The fan impeller shall be a centrifugal backward curved, constructed of aluminum and shall include a wheel cone carefully matched to the inlet eye for precise running tolerances. The impeller shall be statically and dynamically balanced to AMCA Standard 204-05, and be tested to ANSI/AMCA Standard 210-99 and AMCA Standard 300-96

1.4. Motor

A. The motor shall be a heavy-duty ball bearing type carefully matched to the fan load and supplied at the specified voltage & phase, as indicated in the schedule and detail drawings.

B. Motors shall be readily accessible for maintenance without disturbing the duct-mounted fan scroll.

C. Optional two speed motors shall be available on request as indicated in the schedule and detail drawings.

D. Optional run & standby motors shall be available on request as indicated in the schedule and detail drawings.



1.5. Drives

- A. Motors and drives shall be mounted out of the air stream and be suitable for servicing without disturbing the duct mounted housing.
- B. Precision ground and polished fan shafts shall be mounted in permanently sealed, lubricated pillow block ball bearings.
- C. Bearings shall be selected for a minimum L10 life in excess of 100,000 hours (L50 average life in excess of 500,000 hours) at maximum cataloged operating speed.
- D. Drives shall be sized for a minimum of 150 percent of driven power.
- E. Pulleys shall be of the fully machined cast iron type, keyed and securely attached to the wheel and motor shafts.
- F. Motor pulleys shall be adjustable for final system balancing.

1.6. Operating Environment

- A. The unit shall be designed to operate continuously in ambient temperatures from 0°C up to 190°C as standard, and can run continuously at up to 100% humidity level.

1.7. Controls

- A. The units shall be fully compatible with inverter speed control for single and three phase motors.
- B. VES supplied inverters shall be provided with a pre-programmed remote fan speed controller.
- C. The unit shall be fully compatible with two speed controllers for three phase two speed motors.
- D. The unit shall be supplied with a pre-wired motor isolator as standard. The isolator shall be externally mounted as indicated in the schedule and detail drawings.

1.8. Ancillaries

- A. The unit shall be fully compatible with a standard range of duct-mounted inlet & outlet silencers.
- B. The inlet silencers shall be a rigidly constructed single skinned cylindrical galvanised sheet steel case incorporating internal splitting pod with mineral wool infill, Melinex lining & perforated galvanised sheet steel retainers for high temperature resistance.
- C. The outlet silencers shall be a rigidly constructed single skinned galvanised sheet steel case incorporating internal splitting vanes lined with resin bonded mineral wool infill and heat shrink polythene faces within a perforated galvanised sheet steel retainer for high temperature resistance.
- D. The outlet silencers shall incorporate removable interior splitters via a sealed service panel for ease of inspection & maintenance.
- E. The silencer casework shall be provided naturally finished in high quality galvanised steel as standard. Optional powdercoated finish as standard Signal Grey to RAL7004. Colour to be in accordance with schedule.
- F. The unit shall be available with optional Anti-vibration mounting feet and pressed galvanised steel channel base finished as standard to match the unit in accordance with the schedule & detail drawings.
- G. Ancillaries shall be of the Workhorse type as manufactured by VES Andover Ltd.

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