

EASY PAYBACK® SPECIFICATION GUIDE FOR:

Variable Speed FAN and PUMP Drives & Controls (BELT DRIVEN, Variable Torque Load Applications)

Furnish magnetic coupled variable speed drives, controllers, and/or motors of the type and size shown. Coyote Electronics, Inc. or an approved equal shall manufacture drives and controllers.

Drive Unit Description

The drive unit shall be self-contained and include the following; first a constant speed input drive member that is directly mounted to the motor shaft with a shrink disc shaft locking device; second a variable speed driven output member that rotates freely without any mechanical connection (other than its own support bearings). Output speed is accomplished by varying the amount of current applied to the drive's rotating coil, which changes the strength of the magnetic field across an air gap, controlling the amount of coupling between the two elements.

1. The AC motor shall be wired to operate continuously at full speed when the motor contactor is energized.
2. Torque shall be transmitted from the electric motor to the drive's output member via magnetic force across a single air gap. (Oversized, inefficient stationary coil designs with multiple air gaps will not be acceptable).
3. Only brushless electrical coupling to the rotating coil is permissible (brushes will not be acceptable).
4. The pulley/sheaves shall be located on the motor shaft-entry side of the drive nearest the motor face so as not to cause undue stress on the motor shaft and motor bearings.
5. All drive bearings must be located directly under the pulley grooves for uniform loading of the bearings.
6. All drives shall incorporate manual mechanical bypass for full speed emergency lockup capability.
7. The internal surface of the drive drum shall be copper lined for maximum energy efficiency.
8. Unit shall be capable of operating continuously at any output speed from 0 to 100% without causing any increase in motor heating.
9. The manufacturer prior to shipment shall test all units at full rated load and speed.
10. When both the Variable Speed Drive AND a new Motor are required, the Drive AND Motor shall be supplied by the same drive manufacturer, dynamically balanced and tested as a complete motor/drive unit assembly.

Speed Controller Description

The speed controller in conjunction with the drive shall meet or exceed FCC Part 15 Subpart J specifications on RFI/EMI disturbances with IEEE-519 standards for total harmonic current distortion. The speed controller shall not create objectionable PWM, six-step or other audible acoustical noise when operating throughout the entire speed range regardless of full-load or part-load conditions. The controller shall be immune to line noise generated by other electrical equipment.

Each speed controller shall operate on 115 volts AC, 50/60 Hz @ 3 amps, single phase power and provide adjustable voltage output to the drive. The controller shall accept current, voltage, or pressure transducer signal input and shall interface with any energy management system.

The controller shall be housed in a NEMA 1 enclosure, pre-wired with "Man-Off-Auto" selector switch, manual operator speed potentiometer on the front cover, and optional Speed Meter, if required. The controller shall also provide independent adjustable soft-start for preset ramp-up of the drive. In the event of power failure or momentary interrupt, the unit shall automatically restart with preset ramp-up when power is restored to the motor.

Qualifications

1. The magnetic coupled, variable speed drive shall be equal to Coyote Electronics, Inc.'s: Model Easy-PAYBACK® series brushless belt drives.
2. The enclosed, prewired controller shall accept any grounded or ungrounded current, voltage, or pressure to analog signal input and shall be equal to Coyote Electronics, Inc.'s:
 - a. ET-DC1 (Includes control transducer & primary fuses), or;
 - b. ETL-DC1 (Same as above and includes LCD RPM/Speed Meter option).

(Retrofit) Installation Specifications:

1. Mount the drive unit on the existing motor shaft in accordance with the manufacturer's instructions.
2. On existing (retrofit) belt-drive applications, remove the exiting fan sheaves on the fan shaft and install the new sheaves correctly sized so the maximum fan rpm will match the original fan rpm. The new fan sheaves should always be sized large enough so that in full speed emergency lock-up and at maximum running load, the motor's full load amps are never exceeded.
3. Align the new fan sheaves with the Motor/Drive sheaves and then properly tension the belts.
4. Mount the drive controllers at the location required by the engineer, observing all applicable codes.
5. Make all electrical and control signal connections to the drive and controller.
6. The complete drive and controller installation shall comply fully with the manufacturer's instructions.

(New) Installation Specifications

FANS / Air Handlers

The Drive Manufacturer shall provide the **motor and drive** as a complete, tested and dynamically balanced variable speed unit assembly, and ship the unit to the FAN / Air Handler O.E.M. for installation in the equipment.

PUMPS

The Drive Manufacturer shall provide the motor, drive, base, pump, covers and all other pertinent components as a complete variable speed pump unit assembly. The assembled, aligned, dynamically balanced and tested unit will then be shipped directly to the site.

Safety First

WHEN SERVICING, INSTALLING, OR REMOVING THE DRIVE:

- **ALL SERVICE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.**
- **ALWAYS TURN OFF (LOCKOUT/TAG-OUT) ALL POWER TO THE MOTOR AND CONTROLS.**
- **BE AWARE OF THE DRIVE'S WEIGHT AND USE PROPER LIFTING EQUIPMENT AND PROCEDURES TO AVOID INJURY. (REFER TO THE SECTION TITLED "EASY PAYBACK® TECHNICAL DATA" IN THIS MANUAL TO DETERMINE THE WEIGHT OF THE SPECIFIC DRIVE MODEL).**
- **OBSERVE ALL SAFETY PRECAUTIONS FOR THIS VARIABLE SPEED DRIVE AS YOU WOULD FOR ALL MOTORS AND OTHER ROTATING EQUIPMENT.**