

TT-100

Tach Tape

INSTRUCTIONS

SPECIFICATIONS

Temperature range: -30 F to +160 F. (-35 C to +70 C)

Gear pitch equivalent: approximately 7 diametral pitch.

Maximum continuous length: 100 feet (30 meters)

Caution: Do not expose tape to strong AC or DC magnetic fields and use only with Dynalco magnetic pickups.

FUNCTION:

Provides a convenient, simple and low-cost means to activate Dynalco magnetic pickups in speed and frequency measurements.

USE:

An inexpensive substitute for large split gears, slots in shafts, drilled holes in flywheels, etc., for magnetic pickup speed sensing.

DESCRIPTION & CHARACTERISTICS:

Dynalco Tach Tape is a strip of flexible magnetic polymer. On one side it has a pressure-sensitive adhesive protected by a peel-away backing. This adhesive will adhere to a wide variety of surfaces, including most plastics and metals.

Because of its unique magnetization and arrangement of slots, a series of alternate magnetic poles are generated along the length of the tape. A Dynalco magnetic pickup becomes activated when placed perpendicular to the tape surface.

Figure 1 demonstrates that the tape performance is better than an 8-pitch gear when the air gap is larger than .050 inch (1.2MM). This is especially welcome in cases where a small air gap is difficult to maintain or space is too restricted to install split gears because the Tach Tape-Dynalco pickup combination is so well suited to large air gaps.

Because of centrifugal forces acting upon the tape when rotating, a safe maximum speed should be observed (shown in Table 1). If greater speeds are required, a fiberglass reinforced plastic tape (such as one inch wide strapping tape #ST-40, Superior Insulating Tape Company) may be wrapped over the magnetic tape (two layers as shown in Figs. 2&3), which quadruples the maximum safe speed. (Pickup senses through reinforcing tape)

The tape should not be exposed to strong AC or DC magnetic fields and should only be used with Dynalco magnetic pickups to prevent possible de-magnetization.

TABLE 1, MAXIMUM SAFE SPEED

SHAFT DIAMETER	WITHOUT REINFORCED TAPE	WITH REINFORCED TAPE
3 IN (7.5 cm)	2500 RPM	10,000 RPM
6 IN (15 cm)	1800 RPM	7,200 RPM
9 IN (23 cm)	1500 RPM	6,000 RPM
12 IN (30 cm)	1200 RPM	4,800 RPM
24 IN (60 cm)	900 RPM	3,600 RPM
36 IN (90 cm)	700 RPM	2,800 RPM

This table assumes the Tach Tape has been applied according to the instructions which follow.

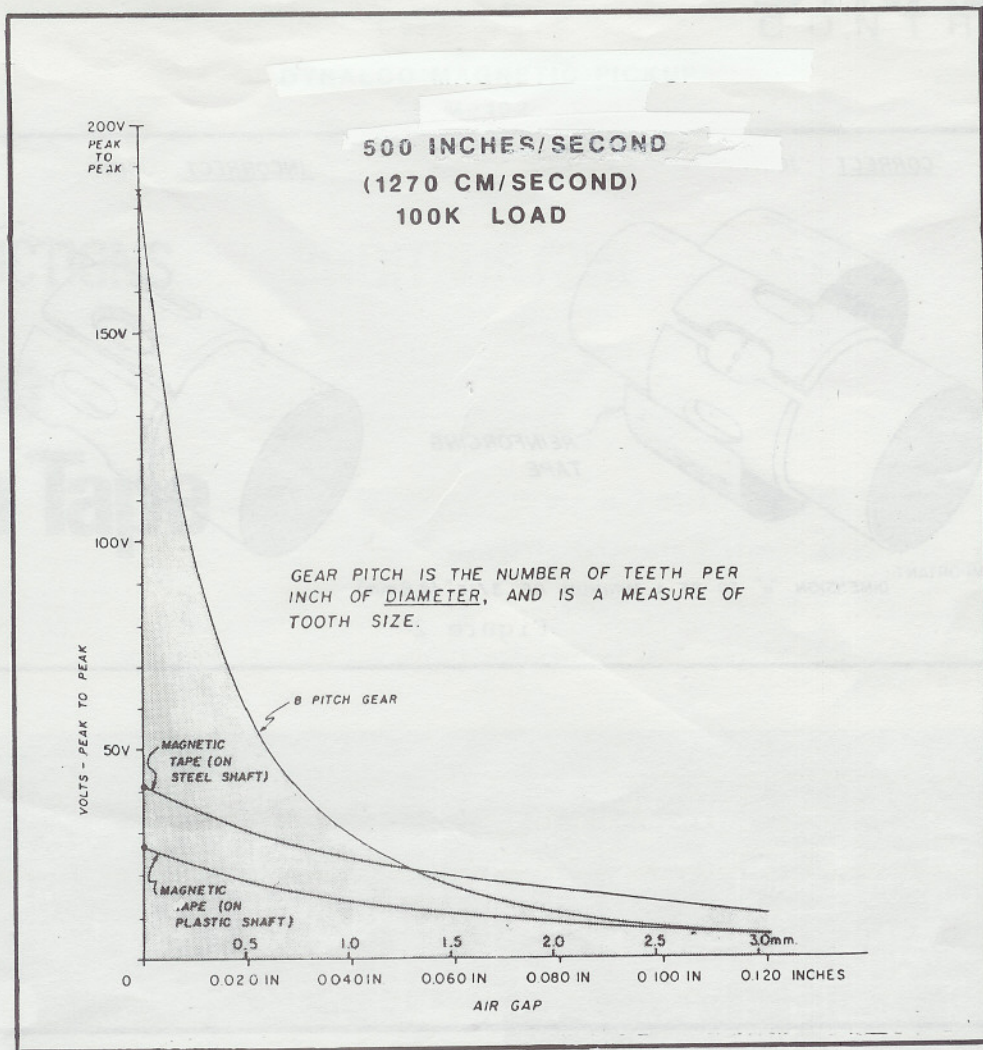


Figure 1

HOW TO APPLY AND USE TACH TAPE

The following procedure should be used:

1. Clean the surface area of the shaft, approximately 2 inches wide, to remove dust, dirt, oil, rust, etc. Use a cleaner such as MEK, TRICHLOR, paint thinner, etc.
2. Before removing peel-away backing from the tape, wrap the tape around the shaft to determine the length required.
3. Cut both ends of the tape squarely as shown in Figure 2. The tape must be cut through the slots.
4. Peel away the backing and wrap the adhesive side around the shaft as straight as possible.
5. After wrapping, press the tape to the shaft to ensure good adhesive.
6. If faster speeds are required, a reinforcing fiberglass tape may be wrapped around the Tach Tape (see Table 1).

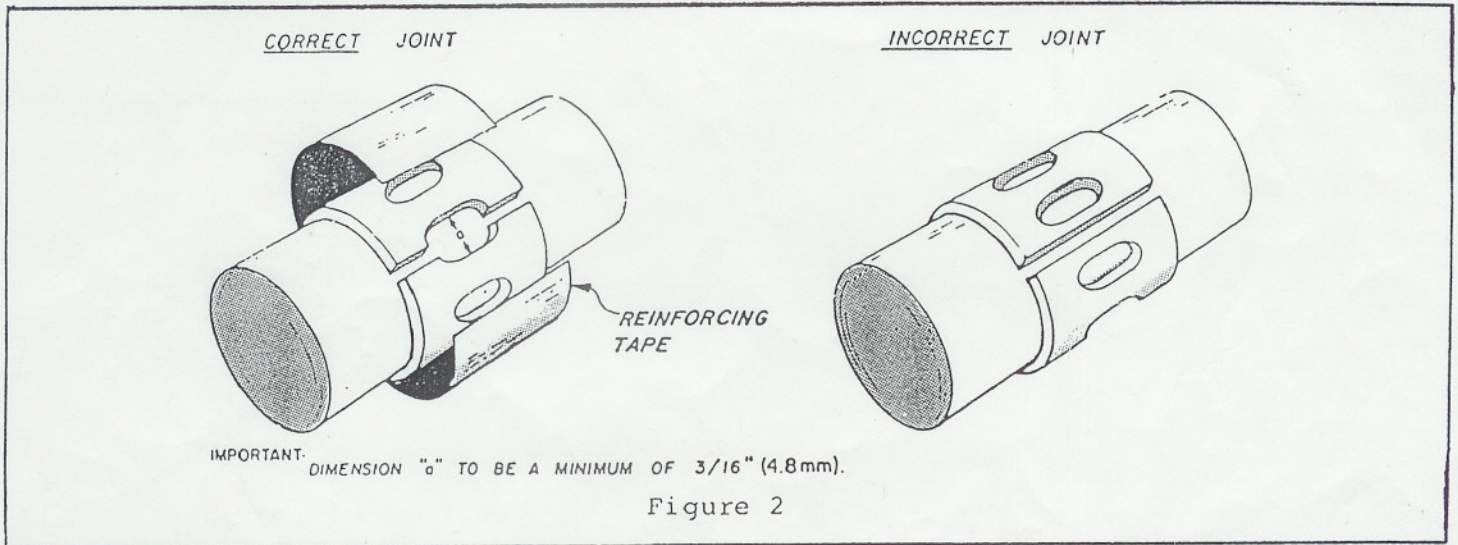
Starting at approximately the opposite end of the Tach Tape "joint", apply two full turns of reinforcing tape as shown in Figure 3.

7. Use only Dynalco magnetic pickups. Other pickups may have reversed magnetic flux direction that can demagnetize the tape.
8. Calculate frequency (Hz) or pulses per second as follows:
$$\text{Frequency} = \frac{\text{RPM} \times \text{No. of slots}}{60}$$

Note: The number of slots should include the one created at the joint.

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Model TT-100 Tach Tape

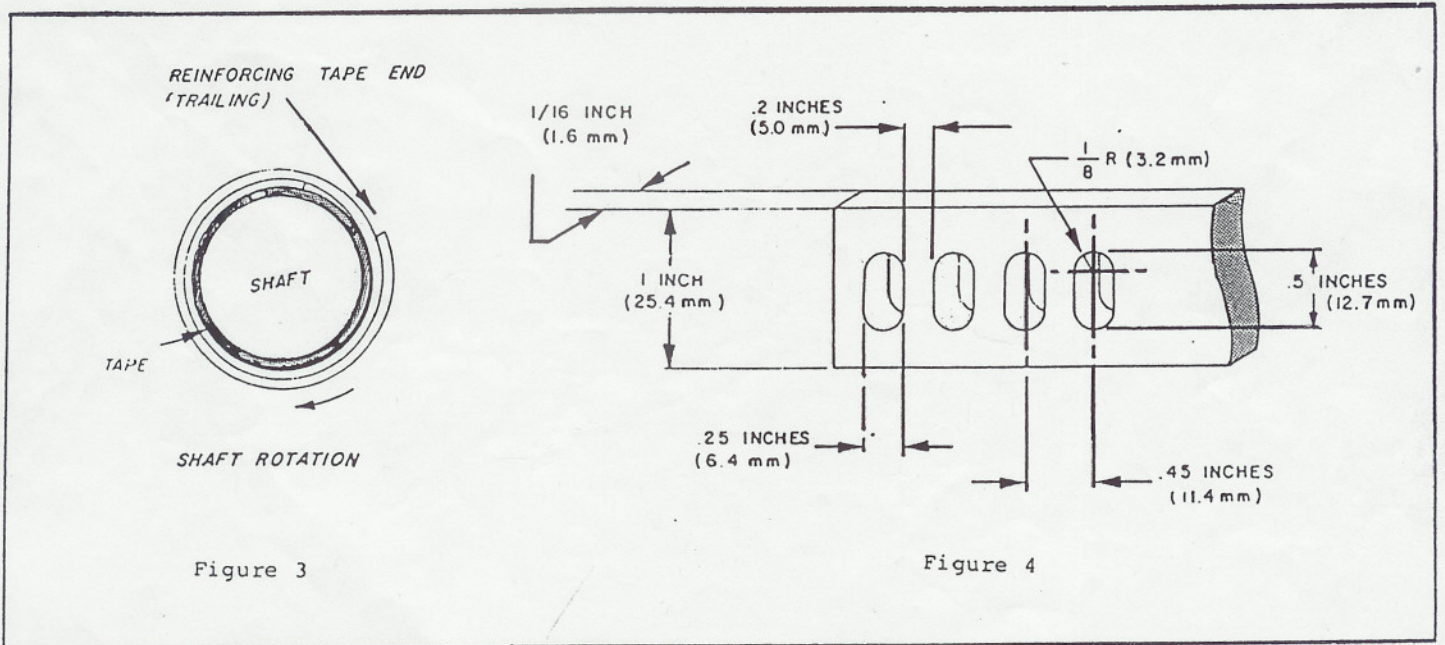


Figure 3

Figure 4