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Encoder Instructions

K740 Hand Held
Series
INACTIVE DESIGN
Contact Help Desk

Model K740 Series Pulse Generators are hand-held, reluctance-type units, which measure linear or shaft speeds when used with standard electronic counters or with Avtron digital equipment.

I. CONNECTION

Connect in accordance with the wiring diagram at the end of these instructions.

II. OPERATION

CAUTION

Follow common sense rules and all applicable safety regulations when working near moving machinery. Be careful!

A. Surface Speed Measurement

1. Place the K740's measuring wheels on the moving surface being monitored. The wheels should be carefully aligned to point in the direction of surface motion. Contact should be just firm enough to prevent the wheels from slipping.
2. Observe two consecutive matched readings on the readout of the instrument being used to ensure that a proper measurement has been made.

B. Shaft Speed (R.P.M.) Measurement

1. Install the K740's extension shaft. Push it into the bore in the end of the K740's measuring wheel shaft. Make sure the extension shaft's slotted end engages the roll pin in the shaft bore of the K740.
2. Hold the K740 so that the friction tip of the extension shaft is firmly seated in the center mark of the shaft being monitored. Make sure the shaft extension is lined up as close as possible with the axis of the shaft being monitored.
3. Observe two consecutive matched readings on the instrument readout to ensure that a proper measurement has been made.

III. SERVICE INSTRUCTIONS

A. Transducer Replacement and Adjustment

1. The transducer should be replaced if its chisel-shaped tip has been damaged.
2. Remove the screws from the base of the K740's handle, then pull back the handle to expose the transducer.
3. Loosen the two set screws on the wheel located on the end plate side of the K740 housing. Remove the wheel.
4. Remove the two screws holding the small transducer tip cover plate and remove the plate.

5. Loosen the two transducer-retaining set screws located on the other side of the K740 housing and remove the transducer.
6. When replacing a faulty transducer, cut its wire leads about two inches from the solder terminals. Splice the leads of the new transducer to the leads remaining in the handle, using crimp-type connections or rosin-core solder. The polarity doesn't matter. Insulate the splices.
7. Carefully insert the transducer into the housing.

CAUTION

Do not allow the transducer tip to strike the rotor. Insert a 0.004 inch feeler gage between the transducer tip and the rotor. Gently holding the transducer against the feeler gage, rotate the transducer until its two terminals are in line with the shaft of the K740, thereby correctly lining up the transducer tip with the rotor teeth. Apply a small amount of Grade H. Loctite on screw threads and tighten transducer retaining set screws.

8. Install the handle and transducer cover plate with the original hardware using Loctite on the screw threads.
 9. Slide wheel onto shaft and install retaining ring. Hold wheel against retaining ring. Apply Loctite to set screw threads and tighten set screws onto respective flats on shaft. NOTE: The wheel assembly should rotate freely by hand.
- #### B. Inspection and Replacement of Bearings and Rotor
1. The K740's bearings are sealed and permanently lubricated. Inspection and replacement schedule should be the same as for other sealed bearings in similar service at the same location.
 2. The bearings should be replaced when worn or rough, or upon loss of grease.
 3. The rotor wheel should be replaced if the teeth are severely nicked or gouged.
 4. Avtron recommends that the entire rotor assembly (consisting of bearings, rotor, and shaft) be removed and returned to the factory if any repairs are necessary.
 5. To remove the rotor assembly from the pulse generator.

CAUTION

To avoid damaging transducer or rotor teeth remove transducer in accordance with Section III A. before proceeding.

- a. Remove both measuring wheels as in III. A-3.
- b. Remove the three screws retaining the end plate. Remove the plate and the circular bearing preload spring.

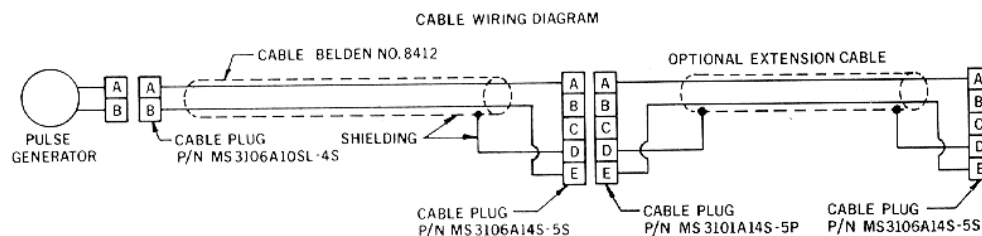
- c. Lift the rotor assembly out of the housing. Be careful not to damage the rotor teeth.
6. If adequate facilities are available, the user can replace the bearings as follows:
 - a. Pull off the old bearings, being careful not to score the shaft.
 - b. Press the new bearings onto the shaft, applying pressure only on the inner bearing races, until they make contact with the shoulder on the shaft.

CAUTION

Do not press on outer bearing races.

7. If the rotor teeth have been slightly scored or damaged, the rotor can be repaired as follows:
 - a. Do not disassemble the rotor assembly.
 - b. Grind the teeth (while supporting the assembly by the bearings) until radial runout measured at the toothed edge of the rotor is 0.0005 inches T.I.R. or less. The ground surface should have a 63 micro finish.
 - c. Clean off the rotor with a mild solvent, being careful not to get any solvent into the bearings. Apply a small amount of light machine oil to the rotor, covering the previously ground surfaces.

8. To re-install the rotor assembly, proceed as follows:
 - a. Set the rotor assembly into the housing with the shaft end having the larger bore (for extension shaft) projecting through the closed side of the housing.
 - b. Remove the bearing retainer plate from the end plate.
 - c. Use Grade H Loctite on screw threads in all succeeding steps.
 - d. Install the end plate by means of its three retaining screws.
 - e. Install the bearing preload spring, then re-install the bearing retainer. NOTE: The preload spring should contact only the outer bearing race. It should not touch the inner (rotating) race.
 - f. Install and adjust the transducer as instructed in Section III. A-7.
 - g. Reassemble handle, transducer cover plate and wheels as in Section III. A-8., Section III. A-9.



PART NO.	DESCRIPTION	RECM'D. SPARES
*	Rotor Assembly (includes bearings)	1
*	• Shaft and Rotor	
403309	• Bearings (two per pulse generator) (New Departure #77R8XRIC)	
473006	Bearing Preload Spring (New Departure #R8)	
B9535	Transducer (Magnetic Pickup)	1
B5723	Measuring Wheel (two per pulse generator)	2
467313	Retaining Ring (Waldes-Kohinoor #5100-50-PP)	2
A5485	Extension Shaft	1
469202	Friction Tip (Tru Line #60A)	2
MS3101A10SL-4P	Connector, receptacle	
MS3106A10SL-4S	Connector, plug > (On standard cable)	
MS3106A14S-5S	Connector, plug >	
B3372	Extension Cable, 50 Ft. > (Optional accessories)	
B4764	Extension Cable, 100 Ft. >	
MS3101A14S-5P	• Connector, plug > (On extension cables)	
MS3106A14S-5S	• Connector, plug >	
*Order by supplying pulse generator part number and serial number to factory.		