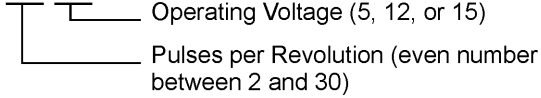


# Model PK21 Optical Encoder

## Part Number Description

PK21-xx-yyV



## Specifications

### Electrical Input

Voltage	
PK21-xx-5V	5 VDC
PK21-xx-12V	12 VDC
PK21-xx-15V	15 VDC
Current	25 mA
Regulation	±10%

### Electrical Output

Wave Shape	square wave
Rise Time	less than 10 microseconds
Sink Current	20 mA
Pulses Per Revolution (xx in part number)	even number between 2 and 30

### Mechanical

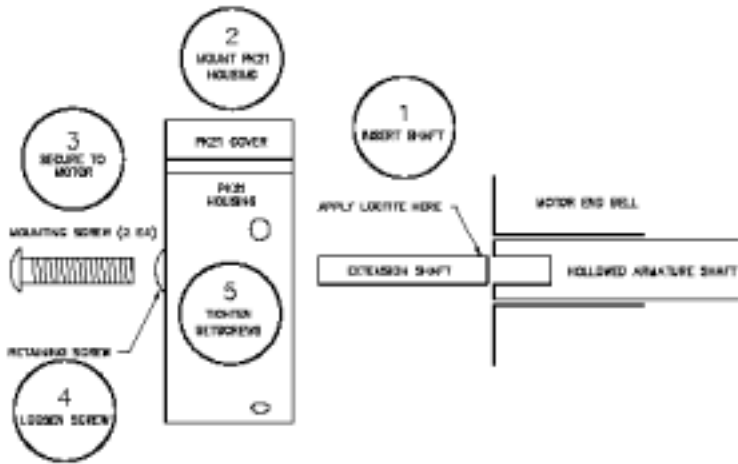
Maximum Shaft Speed	5000 RPM
Hub Bore	0.388 in. (+0.003 in., -0.000 in.)
Housing	black, glass-filled Noryl, 30%

This encoder mounts directly to the rear end bell of Bison gearmotors. With an adapter plate (Minarik Corporation Model 202-0050), the PK21 will mount to specially modified Bodine motors and gearmotors.

In the PK21 kit, the hub-and-disk assembly is secured against the wall of the housing by the screw that is located at the center of the housing rear surface.

**Warning:** Do not loosen this screw under any circumstances until you have reached Step 6 in the "Installing the encoder" procedure!

# Quick Connection Diagram



PIC1 LEADS	SHIELDING
PIC1 = + VDC	CONNECT TO CONTROL CIRCUIT
WHITE = OUTPUT	DO NOT CONNECT TO GROUND
BLACK = GROUND	

## Installing the armature extension shaft

1. Clean the opening of the hallowed armature shaft to remove any traces of paint or metal filings that might obstruct insertion of the extension shaft.
2. Start the 3/16 in. diameter by 7/8 in. long extension shaft into the hallowed motor armature shaft to verify that the armature shaft opening is not blocked in any way. If the extension shaft does not enter easily, clean the opening again.
3. Remove the extension shaft
4. Apply 1–2 drops of Loctite® 271 adhesive to the extension shaft surface near the end that is to fit into the armature shaft.
5. Insert the end of the shaft firmly into the motor armature shaft opening.

## **Installing the encoder**

1. Tack the gasket into place on the mating surface of the encoder housing assembly using the Loctite® 271 adhesive.
2. Insert the Allen wrench into one of the side holes in the housing. Stick the wrench into one of the two setscrews located on the encoder hub. If not aligned, loosen the retaining screw only slightly, so that the hub can be rotated.
3. Slide the gasketed encoder housing onto the extension shaft.
4. Align the encoder housing assembly mounting holes with those on the motor.
5. Insert and tighten the two mounting screws to secure the housing firmly to the motor.
6. Loosen the retaining screw less than one turn. Press the screw toward the housing. This will provide sufficient clearance between the encoder hub and the rear wall of the housing.
7. Tighten the two setscrews in the hub, using the small Allen wrench, to lock the hub in place on the shaft. Plug both access holes.
8. Remove the retaining screw. Plug the retaining screw hole.

## **Removing the encoder**

1. Insert the retaining screw. Turn clockwise to engage the tapped hub. Do not try to overtighten this screw at this time.
2. Remove both setscrew access hole plugs.
3. Loosen the setscrews with a small Allen wrench.
4. Tighten the retaining screw to bring the hub securely back against the inside surface of the encoder housing.
5. Remove the two mounting screws and pull the encoder housing very carefully off the extension shaft.

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