

INSTALLATION AND MAINTENANCE INSTRUCTIONS

ULTRA★KAM™ ROTATING CAM LIMIT SWITCH

DESCRIPTION

The **ULTRA★KAM™** rotating cam switch features a unique cam design which allows independent dwell and timing adjustments to be made with an ordinary screwdriver. We call the feature **ULTRA★ADJUST**. Dwells from 18° to 356° can be achieved with normally open (NO) switches, without the need to use normally closed (NC) switches to achieve short dwells. Standard models have 4, 6, 8, or 12 circuits with all cams mounted on a single shaft. Each cam operates the contacts of one snap switch.

The optional **ULTRA★CHECK** mounting base dampens shock and vibration and keeps constant tension on the drive chain or belt. It can also be used to detect a broken drive chain or belt. A single pole double throw switch mounted in the base is activated when such breakage occurs, cutting power to machinery or signalling the beginning of other safety procedures.

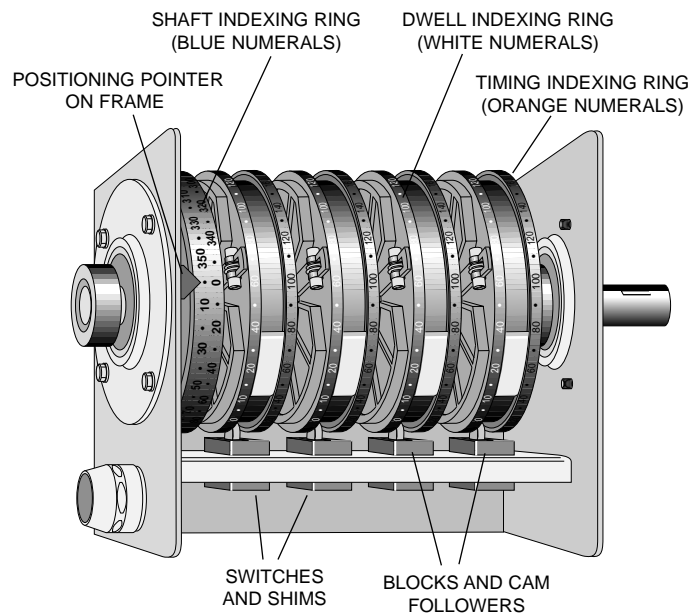


Figure 1. Internal Switch Mechanism

⚠ WARNING

Always disconnect power before installing or servicing.
Failure to do so could lead to product damage
or personal injury.

INSTALLATION

Remove all source of power.

Mount the limit switch in desired position using the four mounting holes provided in the enclosure. The switch is normally driven by a chain or belt. If the input shaft is to be driven directly by another shaft, a flexible coupling is recommended to eliminate stress on the shaft and bearings. The input shaft is provided with a slot for a #606 Woodruff key for ease in mounting any type of sprocket, pulley or coupling. Shaft speed greater than 300 rpm is not recommended.

If switch is mounted on an **ULTRA★CHECK** mounting base, secure base in desire position and complete electrical wiring to SPDT switch in base prior to operating equipment.

CAM ADJUSTMENT

Each cam must be adjusted separately to correlate the motion of the equipment that it is controlling. Two adjustments are required on each cam:

1. **DWELL** is adjusted for the proper degrees of shaft rotation. Dwell is defined as the number of degrees of shaft rotation that the cam follower is in contact with the cam.
2. Second, the cam is rotated on the shaft to set the **TIMING**...that point at which the switch is actuated.

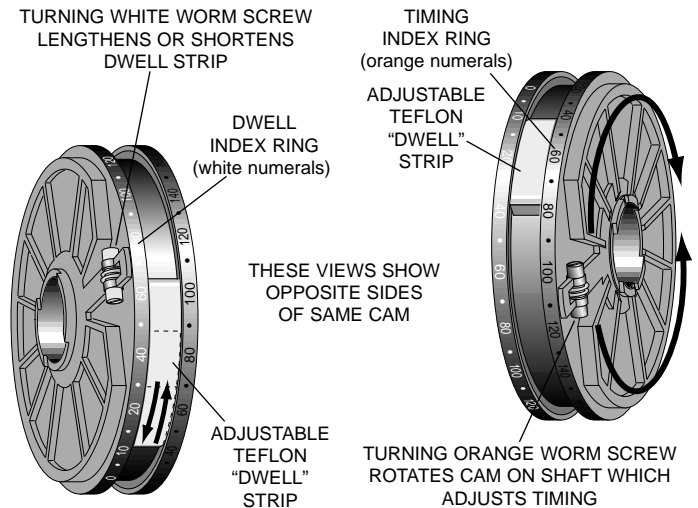


Figure 2. Adjusting Dwell

Figure 3. Adjusting Timing

To adjust cam of each switch unit:

1. Remove all power from the device.
2. Remove the enclosure cover.
3. Position shaft at "0" by aligning "0" on the shaft indexing ring (BLUE numerals) with the pointer on the frame (Fig 1).
4. Check to make sure that the ORANGE "0" on the cam to be adjusted is aligned with the pointer on the frame. If cam must be rotated, use a screwdriver to turn the ORANGE worm on the side of the cam (Fig 3).
5. Adjust **DWELL** by turning the **WHITE** worm on the cam until the desired number of degrees (**WHITE** numerals) is aligned with the pointer on the frame (Fig 2).
6. Adjust the **TIMING** by turning the **ORANGE** worm to rotate the cam until the desired marking on the scale (**ORANGE** numerals) aligns with the pointer.

NOTE: With shaft positioned at "0" (Blue numerals) the **ORANGE** scale can be used to read shaft position at which the switch will be activated. The **WHITE** scale can be used to read shaft position at which the switch will be deactivated.

The difference between the **WHITE** scale and the **ORANGE** scale is the **DWELL**.

7. Repeat for each cam.
8. Replace the enclosure cover.

MAINTENANCE

The device has been permanently lubricated at the factory and shaft bearings are sealed. Periodic lubrication is not required.

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SWITCH REPLACEMENT

To replace switch unit:

1. Remove all power from the device.
2. Remove the enclosure cover.
3. Turn cam so that cam lobe is away from cam follower on switch.
4. Remove two screws retaining switch, mounting block and shim. Remove old switch assembly (Fig 4).
5. Install new switch, shim and mounting block with cam follower. Be sure to insert shim between switch and mounting plate.
6. Tighten both mounting screws. **CAUTION:** Do not over-tighten. Excessive tightening can break mounting block.
7. Replace enclosure cover and restore power.

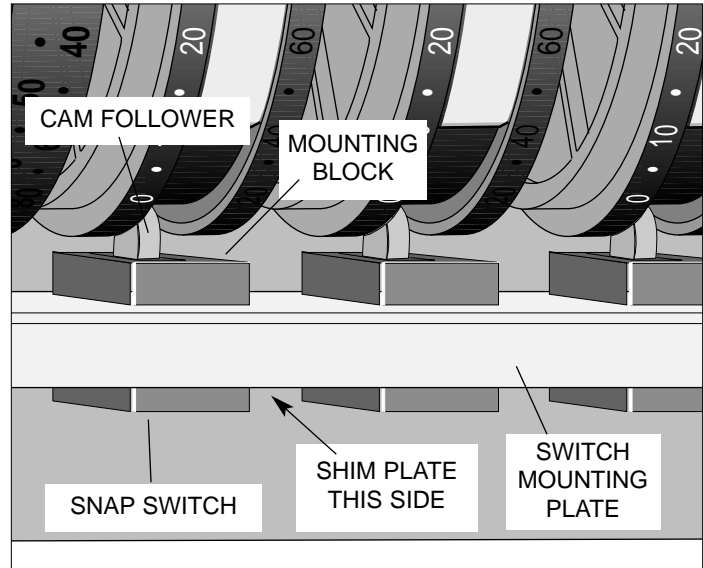


Figure 4. Switch Replacement

REPLACEMENT SWITCHES

Switch kits include switch shown, mounting block, cam follower, shim plate and two mounting screws.

KIT NUMBER	DESCRIPTION
EUK-SP	Single Pole Double Throw switch kit
EUK-DP	Double Pole Double Throw switch kit
SPDT	Single Pole Double Throw switch only
DPDT	Double Pole Double Throw switch only

CAM REPLACEMENT

Removal and/or replacement of individual cams is not a recommended field service procedure because of the requirement for specialized tools and large amount of labor. Contact factory for more information.



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