

Series 55 Explosion Proof Rotary Limit Switch



INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

For use in Class I, Groups C, & D, Class II, Groups E, F & G and Class III Hazardous Locations, as defined by the Canadian Electrical Code and the National Electric Code.

INSTALLATION INSTRUCTIONS

IMPORTANT: This limit switch must be installed by trained, qualified and competent personnel. Installation must comply with local, state and national regulations, as well as safety practices for this type of equipment.



WARNING: Electrical power must be OFF during installation. Disconnect primary power source and lock out.

The mounting location must be flat and provide proper clearance, rigidity and strength to support the enclosure and all contained devices. Securely fasten the enclosure to the mounting location, using ¼" diameter steel mounting bolts and washers, or washer head bolts

Inspect and clean the machined flange flame joint surfaces of both the cover and box. Surfaces must be smooth, free of nicks, scratches, dirt or any foreign particle build-up that would prevent a proper seal. Surfaces must seat fully against each other to provide a proper explosion-proof joint. Clean surfaces by wiping with a clean, lint-free cloth.

Apply a light coat of "LUBG" lubricant to flange surfaces and close the cover. Also apply a light coat of "LUBG" to the cover bolts. Then install and tighten all 1/4-20 x 1" lg. stainless steel hex head cap screw cover bolts to 5-8 ft. lbs. Make certain no cover bolts are omitted. Use only those bolts supplied with the enclosure. Check the bolted joint with a .0015" thick feeler gauge. The gauge **must not enter** the joint more than 1/8" at any point.

NOTE: Missing bolts or an improper joint can result in an explosion, thereby creating a potential for physical injury or property damage.



WARNING: To reduce the risk of ignition of hazardous atmospheres, conduit seals must be installed within 18" of this enclosure. Be sure power supply is OFF before opening cover. Keep assembly tight during operation. The flat joints of this enclosure must be thoroughly cleaned each time the enclosure is opened to insure that there are no metallic particles which could be expelled.

MAINTENANCE INSTRUCTIONS

After installation, the limit switch should be inspected at regular intervals. A visual inspection should ascertain that all cover bolts are installed and still tight; that all conduit connections are intact and free of corrosion, and that the enclosure mounting bolts are tight and in good condition.

If the enclosure must be opened for servicing, to check or replace internal devices and apparatus, the following procedures should be followed.



WARNING: Before servicing the enclosure, be certain the electrical power is OFF. Disconnect the enclosure from primary power source and lock out.

Remove all cover bolts. Clean and inspect. Replace any corroded, bent or otherwise damaged bolts with new, factory authorized bolts. Open enclosure. Do not use hammer, screwdriver or any prying tool to open cover.

Inspect machined, flame joint flange surfaces. Surfaces must be smooth, free of nicks, scratches, dirt or any foreign particle build-up that would prevent a proper seal. Should surface be damaged contact factory. Never attempt to rework surfaces by sanding, grinding, etc.



Surfaces must seat fully against each other to provide a proper explosion-proof joint.

Clean flange surfaces by wiping with a clean, lint-free cloth. Apply a light coating of "LUBG" lubricant to flange surfaces and close cover. Also apply a light coat of "LUBG" to the cover bolts. Then install and tighten all 1/4-20 x 1" lg. stainless steel hex head cap screw cover bolts to 5-8 ft. lbs. Make certain no cover bolts are omitted. Use only factory authorized bolts. Check the flame joint with a .0015" thick feeler gauge. The gauge must not enter the flame joint more than 1/8 inch at any point. Missing bolts or an improper flame joint can result in an explosion, thereby creating a potential for physical injury and property damage.

Technical information, advice and recommendations contained in these documents are based on information that Gleason Reel believes to be reliable. All the information and advice contained in the documents is intended only for use by persons having been trained and possessing the requisite skill and know-how and to be used by such persons only at their own discretion and risk. The nature of these instructions is informative only and does not cover all of the details, variations or combinations in which this equipment may be used, its storage, delivery, installation, check out, safe operation, and maintenance. Since conditions of use of the product are outside of the care, custody and control of Gleason Reel, the purchaser should determine the suitability of the product for his intended use, and assumes all risk and liability whatsoever in connection therewith.

OPERATION

Rotation of drive shaft (D) in either direction causes all cam gear assemblies (I) to turn, actuating the contact blocks (K). A timing line appears in the notch (J) when the corresponding contact block is actuated. Cam for each contact block is independently adjustable. Each contact block contains one normally open and one normally closed contact set.

	 WARNING
	<p>Hazardous Voltage. Can cause death, serious personal injury, or property damage.</p> <p>Disconnect power before working on this equipment.</p>

CAUTION
<p>When mounting Rotary Limit Switch, align drive shaft (D) with coupling to minimize stress on shaft and bushings.</p> <p>DO NOT USE HAMMER OR SIMILAR TOOL TO FORCE COUPLING OR SPROCKET ONTO DRIVE SHAFT.</p> <p>Excessive stress on shaft may result in damage to rotary limit switch and could invalidate warranty.</p>

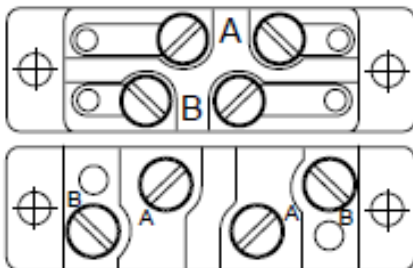
ADJUSTMENT

1. Operate the equipment until the desired travel limit is reached, taking into account coasting or braking distance.
2. Loosen the screw (C) for the cam wheel which actuates the contact block you wish to adjust.
3. Insert the adjustment tool (G) into the guide hole (H) closest to the cam wheel being adjusted. Engage teeth on adjustment tool with teeth on cam wheel.
4. Rotate adjusting tool, either direction, until the black line (E) appears in the notch (J). This will be the approximate position at which the contact block will be actuated.
5. Tighten the cam screw (C). Avoid over-tightening which could damage screw and screw threads.

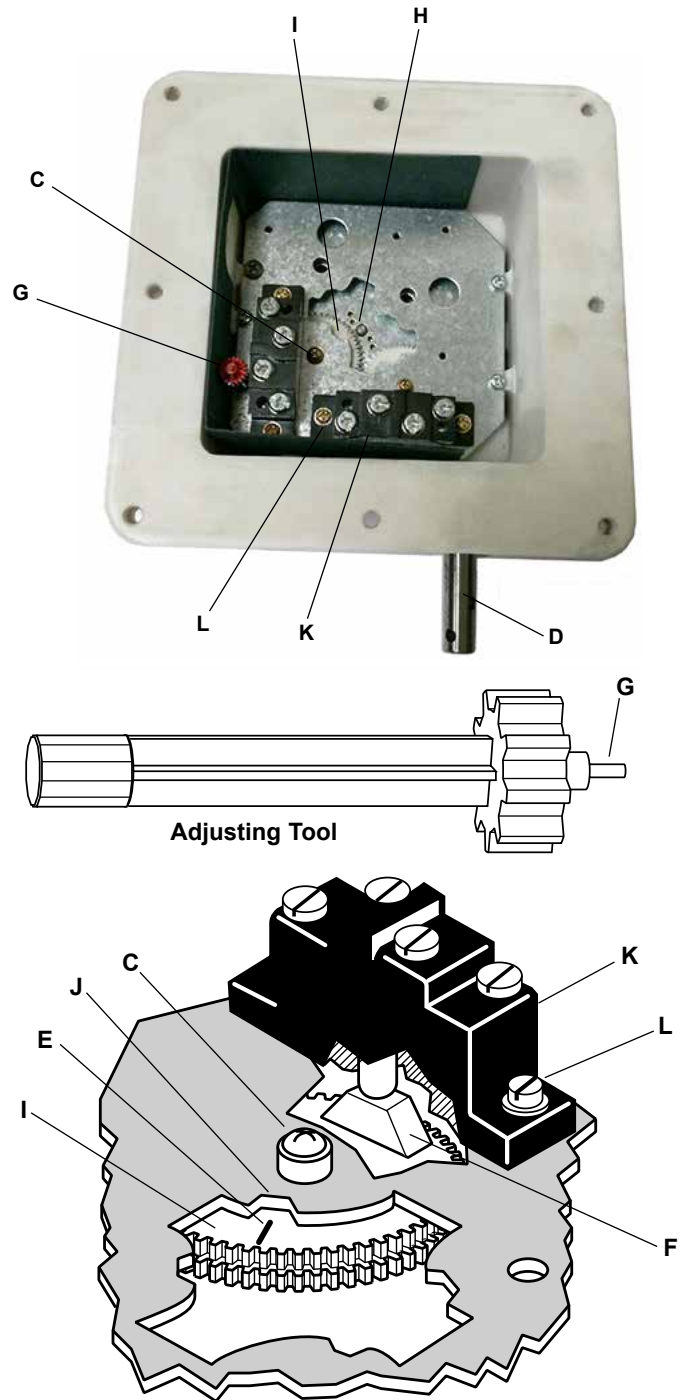
CAUTION
<p>Terminal of individual snap switch must be wired same polarity.</p>

Contact Block Terminals Viewed from Top

A: Terminals N.C. B: Terminals N.O.



NOTE:
Limit switch may be equipped with contact blocks manufactured by Square D (top) or Micro Switch (bottom). Use drawings at left as guides when wiring.



Legend

- | | |
|---|---|
| *C - Cam Screw | H - Guide Hole |
| D - Drive Shaft | *I - Cam Gear Assembly
(White for Standard Dwell.
Black for Long Dwell) |
| E - Black Timing Line
(Black on white cam for
Standard Dwell. While on
black cam for Long Dwell) | J - Notch |
| *F - Cam | *K - Contact Block |
| *G - Adjustment Tool | *L - Contact Block Screws |


*Replacement parts available (consult factory).

CIRCUIT OPERATION


Switch Terminals	Position of Line* on Cam Gear	
	Not in Notch	In Notch
A - NC		
B - NO		

*Timing line is black on white standard dwell cam.
Line is white on black long dwell cam.

Replacement Parts Available (Consult Factory)

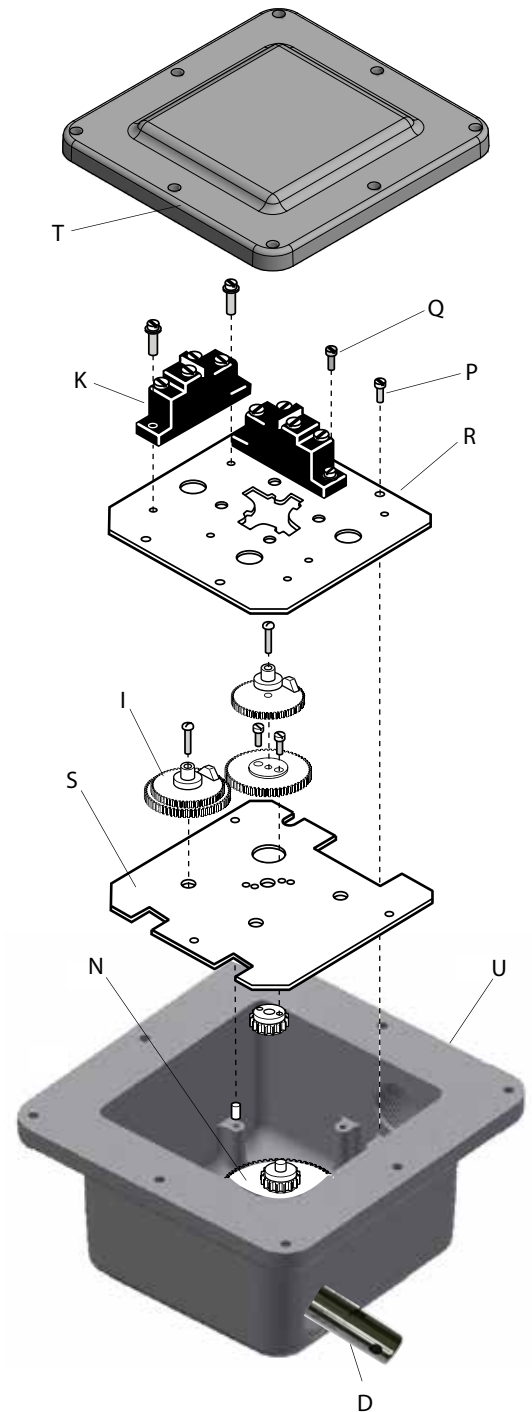
	Contact Block Kit*	Cat. No.
	Standard Cam	54BBGB
	Long Dwell Cam	54EBGB

*Includes contact block, cam & screws

	WARNING
	Hazardous Voltage. Can cause death, serious personal injury, or property damage. Disconnect power before working on this equipment.

CONTACT BLOCK KIT INSTALLATION

1. Remove switch cover (T) and disconnect wiring to contact blocks.
2. Remove switch mounting plate (R) which is secured by three regular screws (Q) and one green ground terminal screw (P).
3. Lift out old cam gear assembly (I) and replace with a new assembly.
4. Place switch mounting (R) into switch housing and secure with four screws (Q & P).
5. Identify the contact block which corresponds to new cam gear assembly. Remove two machine screws which secure that contact block to switch mounting plate.
6. Install new contact block and contact block screws.
7. Adjust cam gear assembly as outlined on page one (over).
8. Connect wiring to new contact block and replace switch cover.



Legend

D - Drive Shaft Assembly	Q - Top Plate Screws
I - Cam Gear Assembly	R - Switch Mounting Plate
K - Contact Block and (2) 6-32 x 1/2" screws	S - Cam Mounting Plate
N - Helical/Cam Drive Gear Assembly	T - Cover
P - Ground Screw	U - Threaded Outlet



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