

LIMIT SWITCH REPLACEMENT - PHASE III

Aberdeen Chemical Plant

July 22, 1986

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LIMIT SWITCH REPLACEMENT PHASE III

Aberdeen Chemical Plant

TABLE OF CONTENTS

- I. PURPOSE AND PROCESS DESCRIPTION
- II. VALVE LOCATION
- III. INSTRUMENT SPECIFICATIONS
- IV. DRAWINGS

LIMIT SWITCH REPLACEMENT PHASE III

Aberdeen Chemical Plant

I. Purpose and Process Description

Lack of positive valve position indication in the control room has the potential to cause safety, operational and environmental problems. The existing limit switches indicate actuator position and not the actual valve stem position. If the coupling fails or is spread, the valve could be open or partially open and still give a closed signal.

This design will provide each of the designated valves in section A of the following table with a new limit switch that indicates valve stem position. These new limit switches will provide accurate indication of valve position to the control room or the Modicon. The limit switches will be mounted on the bracket between the valve and the actuator. Drawings of several different type valves with the new limit switches are attached. Limit switches will be replaced on 80 valves.

II. Valve Location

A. Valves that would cause quality, safety or environmental problems without proper indication.

<u>General Location</u>	<u>Valve #</u>	<u>Valve Description</u>	<u>Reason</u>
1. Reactors 741, 742 743, 744, 745 & 700	1-6	Rinse Supply	*2-valve leak, VCM enter rinse. Rinse supply valve leak, water dilute chem wash.
	7-12	Chem Wash (CW) Supply	2-valve leak, VCM enter chem wash. Chem wash supply valve leak, CW in rinse.
	13-18	Clean Reactor	2-valve leak, VCM enter rinse or CW. 2-valve leak, rinse or CW in reactor.
	19-24	Clean Condenser	2-valve leak, VCM enter rinse or CW 2-valve leak, rinse or CW in reactor
	25-30	Steam stripping	1-valve leak, steam in reactor or VCM in steam.
	31-36	Emergency AMS Injection	1-valve leak, AMS in reactor
* Two valves would have to leak in order for this to happen. Such as rinse supply and reactor cleaning valve failure would cause VCM to enter rinse water.			
2. Reactors 300, 400 500 and 600	37-40	Chem wash to Reactor	2-valve leak, VCM in chem was or chem wash in reactor
	41-44	Chem wash to Condenser	2-valve leak, VCM in chem wash or chem wash in reactor
	45-48	Rinse to Reactor	2-valve leak, VCM in rinse or rinse in reactor
	49-52	Rinse to Condenser	2-valve leak, VCM in rinse or rinse in reactor
	53-56	Steam Stripping	1-valve leak, steam in reactor or VCM in steam
	57-60	Emergency AMS Injection	1-valve leak, AMS in reactor

	<u>General Location</u>	<u>Valve No.</u>	<u>Valve Description</u>	<u>Reason</u>
3.	Batch Water Strippers (North & South)	61-64	To Sewer, To Centrate	1-valve leak, VCM contaminated water to sewer.
		65-66	Fill Line	2-valve leak, contaminate vessel in stripping mode
		67-68	VCM Bleed	2-valve leak, contaminate vessel in stripping mode.
		69-70	Recovery	2-valve leak, contaminate vessel in stripping mode.
		71-74	To ERS	2-valve leak, contaminate vessel in stripping mode.
		75	VCM Double Block and Bleed venting to BWS's.	Three way valve-if not in correct position, contaminate vessel in stripping mode.
		76-77	Steam Pressurization	1-valve leak, contaminate vessel in stripping mode.
4.	Chem Wash Tank	78	To Reactors (New Module)	1-valve leak, safety hazzard when a reactor is blanked out.
		79	To Reactor (Old Module)	1-valve leak, safety hazzard when a reactor is blanked out.
5.	Blowdown Tank	80	To Batch Water Strippers	1-valve failure, lead to tank overpressuring and discharging to sewer.

B. Remaining valves that are indicated on the panel or that are tied into the Modicon that will not have limit switches replaced.

<u>General Location</u>	<u>Valve No.</u>	<u>Valve Description</u>
1. New Module		
a. Chem Wash Tank	1	Tank Outlet
	2	Tank Bypass
	3	Tank Inlet
	4	Recirculation
b. Blowdown Tank	5	Recirculation
	6	To Emission Recovery System
	7	To Recovery System
	8	To Recovery System
c. Reactors 741-745	9-13	Inert Vent
	14-18	Steam to Jacket
d. Recovery System	19	*Compressor suction manifold
	20	*Compressor suction manifold
	21	*Suction north compressor
	22	*Suction middle compressor
	23	*Suction south compressor
	24	Pressure equalization valve
	25	*Suction north vacuum pump
	26	*Suction south vacuum pump
	27	*Discharge north vacuum pump
	28	*Discharge south vacuum pump
* These valves have indication for the open position only.		
e. Evacuation	29	EE-200 first stage steam
	30	Evacuation valve to EE-200

<u>General Location</u>	<u>Valve No.</u>	<u>Valve Description</u>
f. Colloid charge	31	PVA pump discharge
	32	PVA makeup tank outlet
	33	PVA charge tank inlet
	34	Methocel pump discharge
	35	Methocel makeup tank outlet
	36	Methocel charge tank inlet
g. Hot water charge	37	Pump suction
	38	Primary pump discharge
	39	Secondary pump discharge
	40	Hot water tank make-up
h. Rinse water	41	Rinse water supply
	42	Rinse pump bypass
	43	To top of reactors
	44	Cold water swirl
i. RVCM charge	45	Pump discharge
2. Old Module		
a. Chem Wash	1	Tank outlet
	2	Tank inlet
	3	Tank bypass
	4	Chem wash from EA-357 to FA-776
b. Batch water strippers	5-6	Steam stripping
c. Reactors	7-11	Inert vent
	12-16	Steam to jacket
d. Recovery system	7	Suction east compressor
	8	Suction west compressor
	19	To ERS
	20	From batch water strippers

<u>General Location</u>	<u>Valve No.</u>	<u>Valve Description</u>
e. Emission Recovery System	21	VCM Tank farm recovery
	22	Batch water stripper recovery
f. Evacuation	23	EE-100 first stage steam
	24	Evacuation valve to EE-100
g. Colloid Charge	25	Pump discharge
h. Hot water charge	26	Primary pump discharge
	27	Secondary pump discharge
	28	Pump suction
	29	Hot water tank make-up
i. Rinse water	30	Hot water rinse
	31	Rinse supply
	32	Rinse pump bypass
j. RVCM charge	33	Pump discharge

Limit Switch Replacement - Phase III

Aberdeen Chemical Plant

III. Instrument Specification

<u>Item</u>	<u>Description</u>
PLS-101 through 180	Proximity Limit Switches



VISTA CHEMICAL COMPANY
GENERAL ENGINEERING
HOUSTON, TEXAS

SPECIFICATION SHEET

SPECIFICATION DATA SHEET

PROJECT NO. _____

A.F.E. NO. _____

P.O. NO. _____

MADE BY E.G. Jeanson

DATE 5-28-86 APP'D BY EC

PLANT Aberdeen Chemical PROJECT Limit Switch Replacement - Phase III

ITEM NO. PLS-101-180 SERVICE Proximity Limit switches

Quantity: 80 sets (There are two limit switches per set - one for OPEN, one for CLOSE)

Service: Valve Indication

Location: On bracket between valve and actuator

Manufacturer: GO, No equal

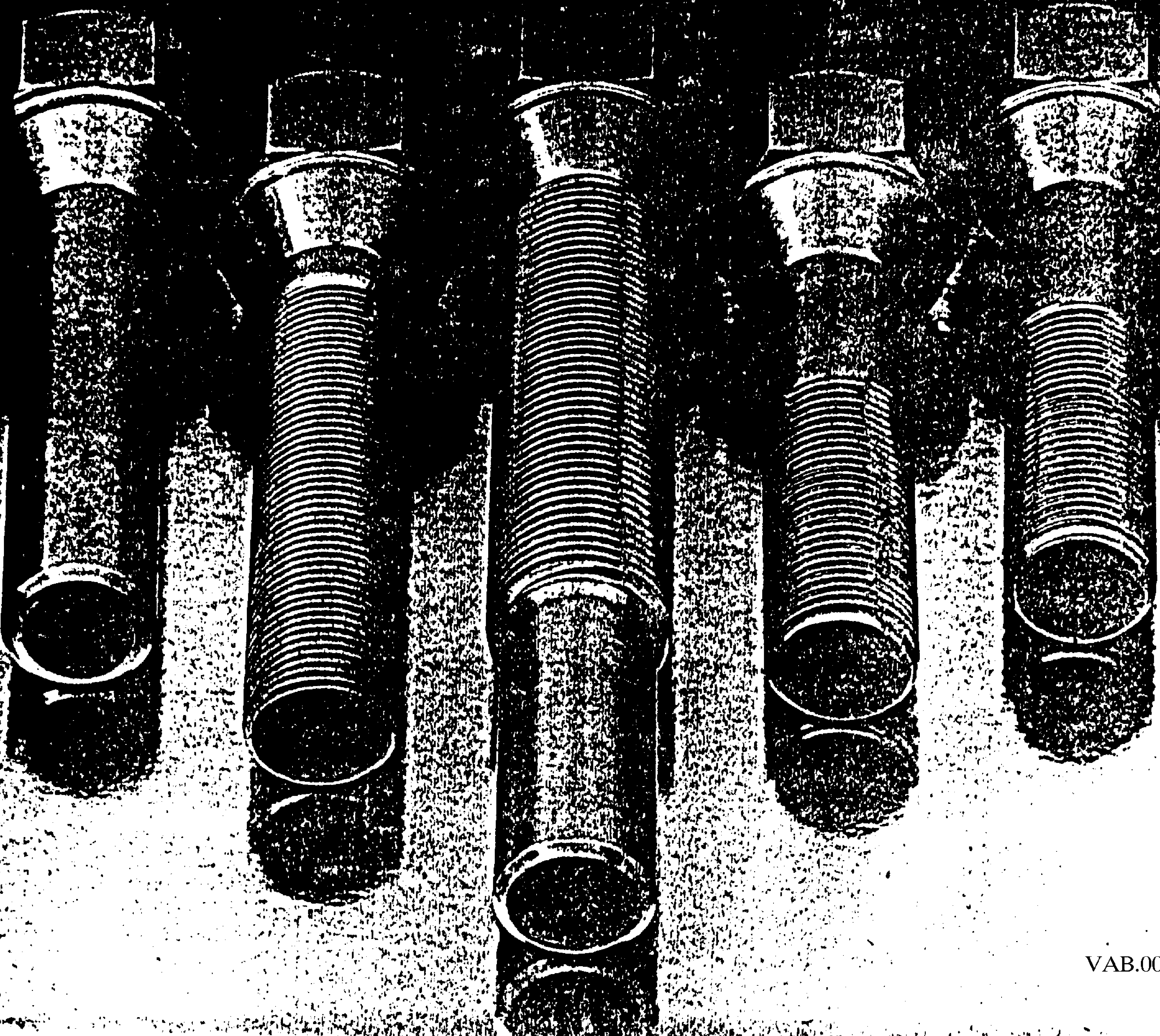
Model: 713774

Description: 1/2" NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing with 5/8-18 NF x 2.813" threads.

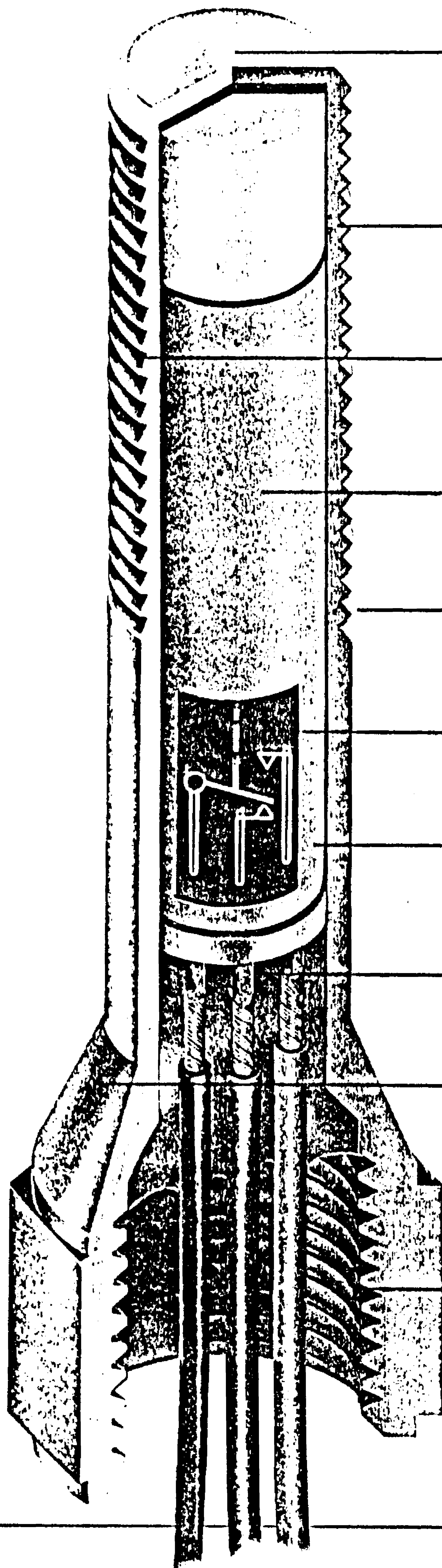
GO[®]

Series 70 Switch

A Rugged and Dependable Line of Totally Enclosed Proximity Limit Switches
from General Equipment & Manufacturing Company, Inc.



VAB.0001098892



End Cap: .050" Stainless Steel (304) End Cap, available with thicker End Caps for higher pressure.

Pressure Options: Normally the standard 5/8" diameter will withstand 2000 PSI. Larger cases with thicker walls and front End Caps will allow the switch to function at much higher pressures (up to 10,000 PSI). Certification available as factory option.

Case: 300 Series Stainless Steel case, plain or threaded body (5/8-18 NF). Different body lengths available, SEE options on MODELS AVAILABLE.

Magnets: Made with a high energy product magnet. An excellent coercive force which converts into grams of Contact Pressure for reliable operation. Meets MMPA Specifications.

External Threads: Machines to meet SAE 5/8-18 UNF Specifications. Units available with or without threads.

Contacts: Type Silver, Cadmium Oxide, resists welding and is some of the most widely used Contact Material in the industry. Sized to withstand approved ratings. Hermetically Sealed Contact Chamber.

Bearing: Consists of a finely ground Stainless Steel Pin and durable plastic housing. Sized to withstand a wide temperature range. Resists seizing and gives millions of free operations.

Potting: Terminal cavity filled with epoxy resin compound for sealing and mechanical support of wire/cable connections.

Body Tube: Made of Free Mechanical Stainless Steel. Resists most all harsh environments and withstands high working pressures. Impervious to water, oils and gases.

Internal Threads: 1/2-14 NPT. complies with CSA requirements for Explosion Proof Applications. Wire or cable leads available to meet Customer's Specifications.

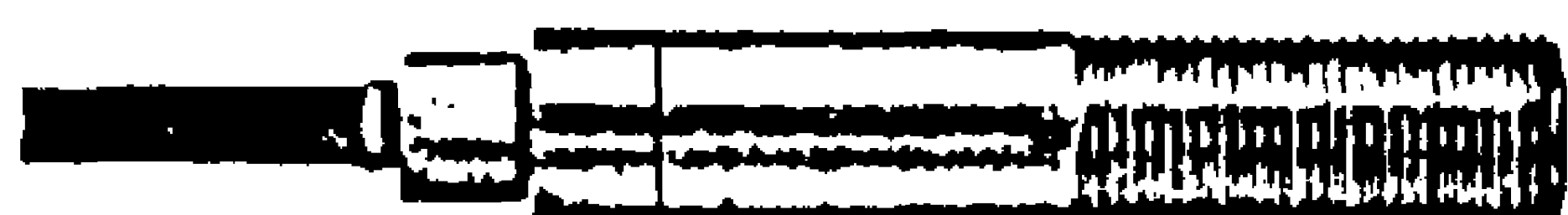
When time, accuracy, and dependability count . . . you can count on the 70 Series GO® Switch.
Maintenance free; engineered for precision, performance and reliability.

The standard 70 Series GO® Proximity Limit Switch has been designed and built to rugged specifications for use in most industrial and environmental applications. Each switch is totally enclosed, hermetically sealed and capable of operating in hostile environments.

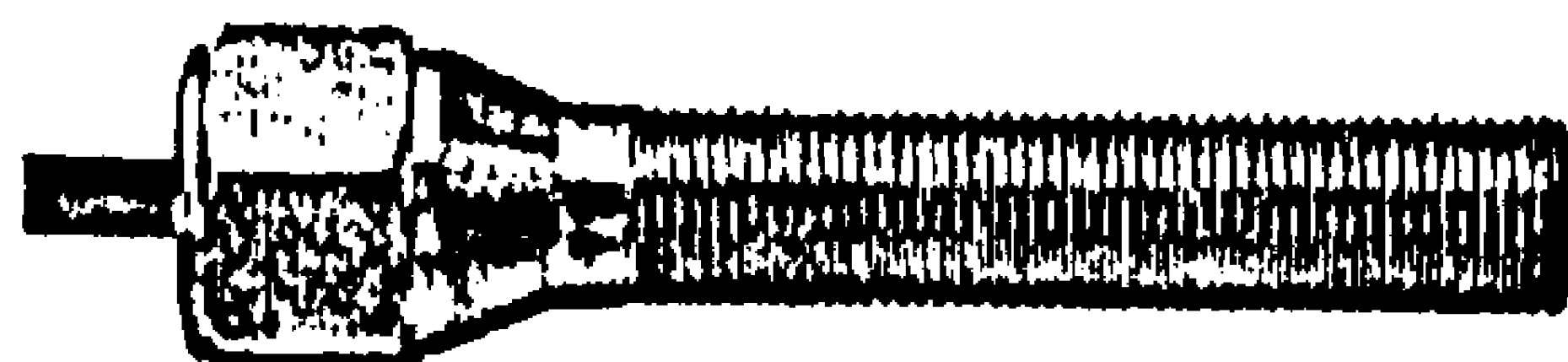
The standard stainless steel housing is impervious to oils, caustic acids, water laden areas and most

atmospheric conditions, with a broad operating temperature range. (See specification) Many different models of the switch are available for your design needs. (See ordering information for specifications, detail and options.)

Standard Models



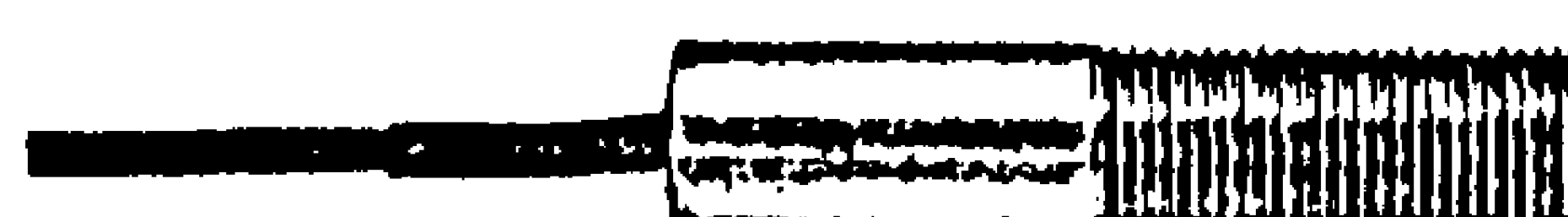
Model 713360
 No conduit connection, 18" 3 conductor cable with water resistant squeeze connection, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.



Model 713570
 1/2 NPT conduit outlet, 18" 3 conductor cable, type 300 stainless steel housing with 1/8-18 NF x 2.813" threads with 2 lock nuts.



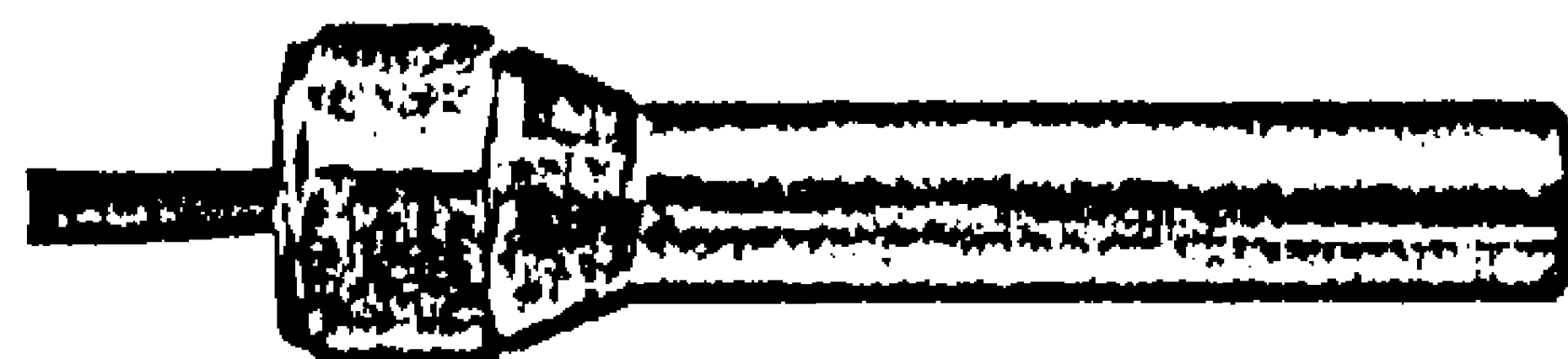
Model 713420
 No conduit outlet, 18" potted, 3 conductor cable, type 300 stainless steel housing; no threads.



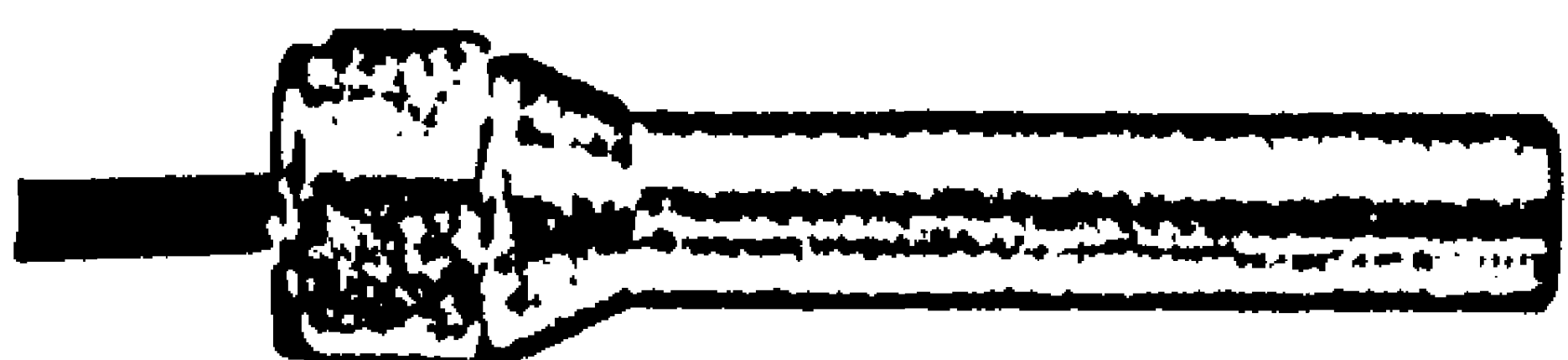
Model 713660
 No conduit outlet, 18" potted, 3 wire leads, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.



Model 713460
 No conduit outlet, 18" potted, 3 conductor cable, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.



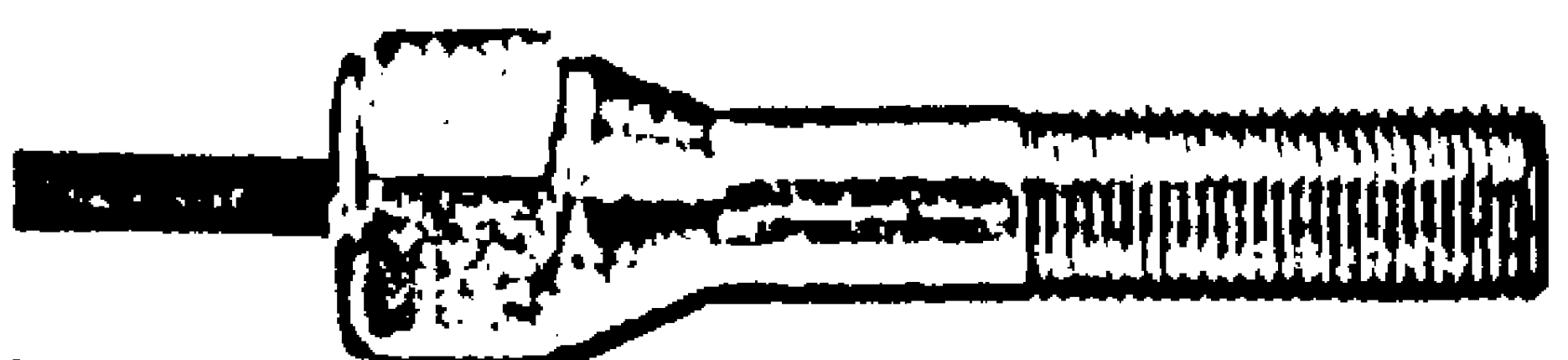
Model 713720
 1/2 NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing, no threads.



Model 713520
 1/2 NPT conduit outlet, 18" 3 conductor cable, type 300 stainless steel housing, no threads.



Model 713760
 1/2 NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.

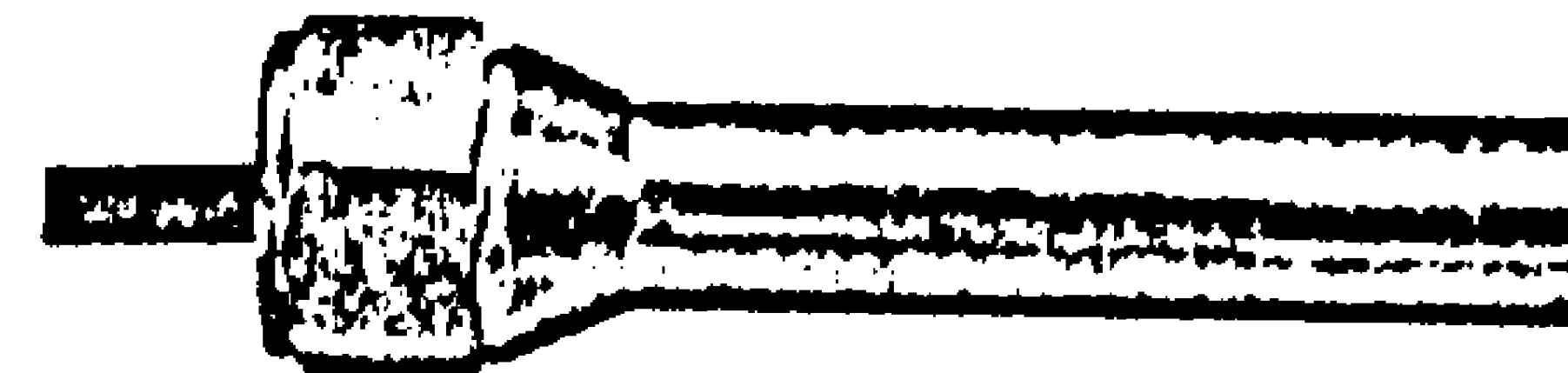


Model 713560
 1/2 NPT conduit outlet with 18" 3 conductor cable, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.

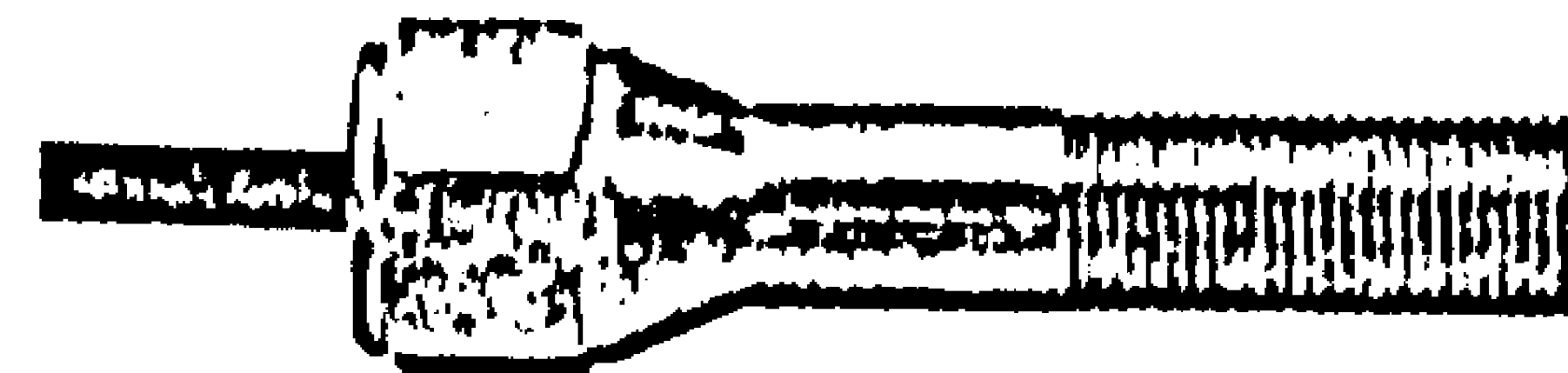


Model 713770
 1/2 NPT conduit outlet, 18" potted 3 wire leads, type 300 stainless steel housing with 1/8-18 NF x 2.813" threads with 2 lock nuts.

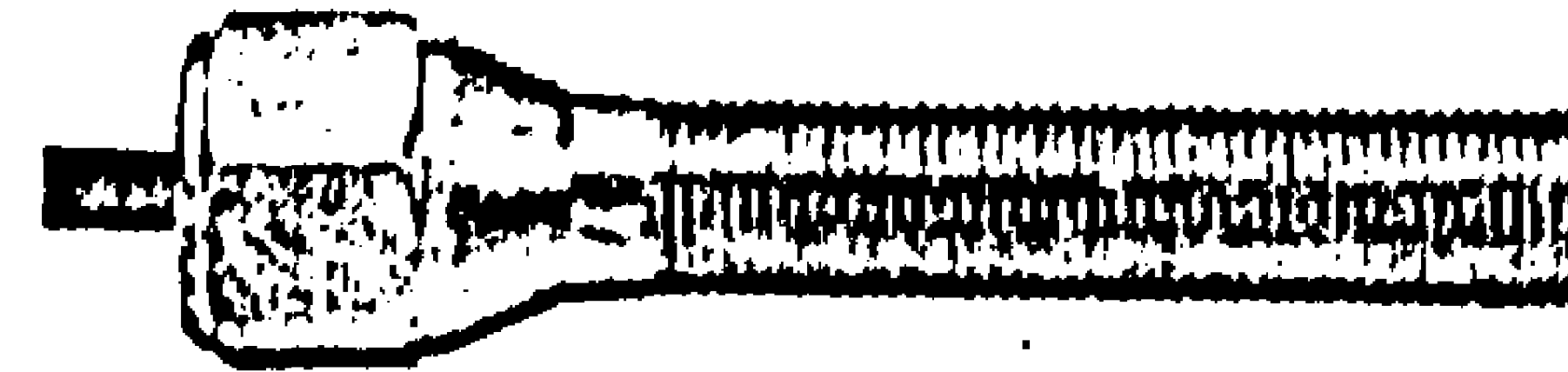
Hazardous Location approved models for Class I, Division 1, All Groups



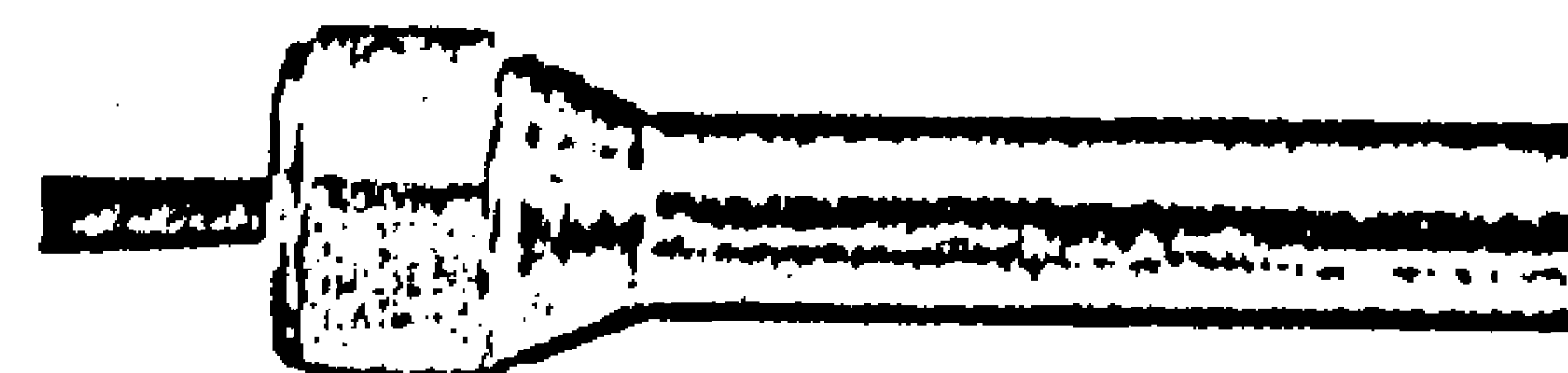
Model 713524
 1/2 NPT conduit outlet with 18" potted, 3 conductor cable, type 300 stainless steel housing, no threads.



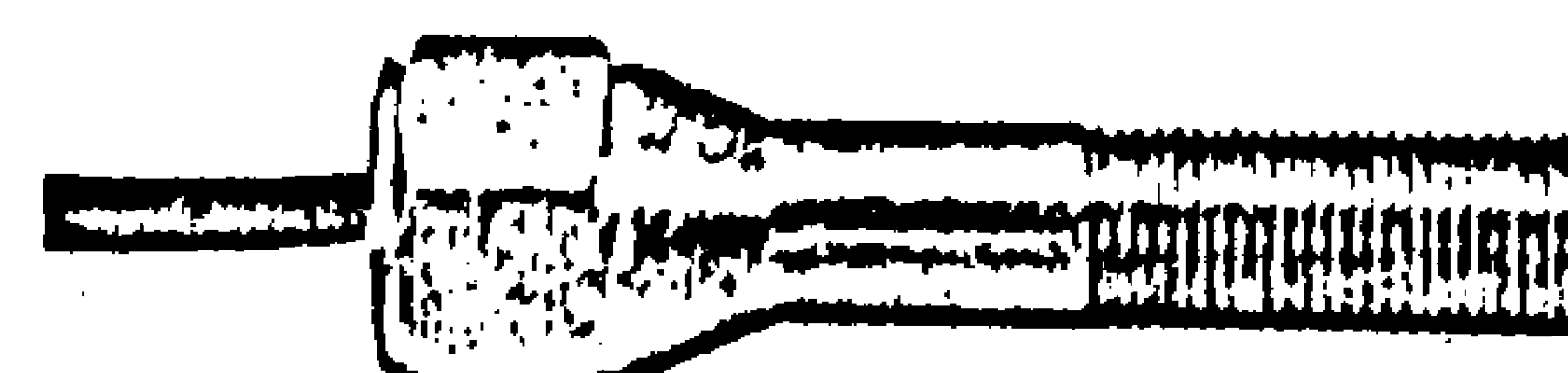
Model 713564
 1/2 NPT conduit outlet with 18" potted, 3 conductor cable, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.



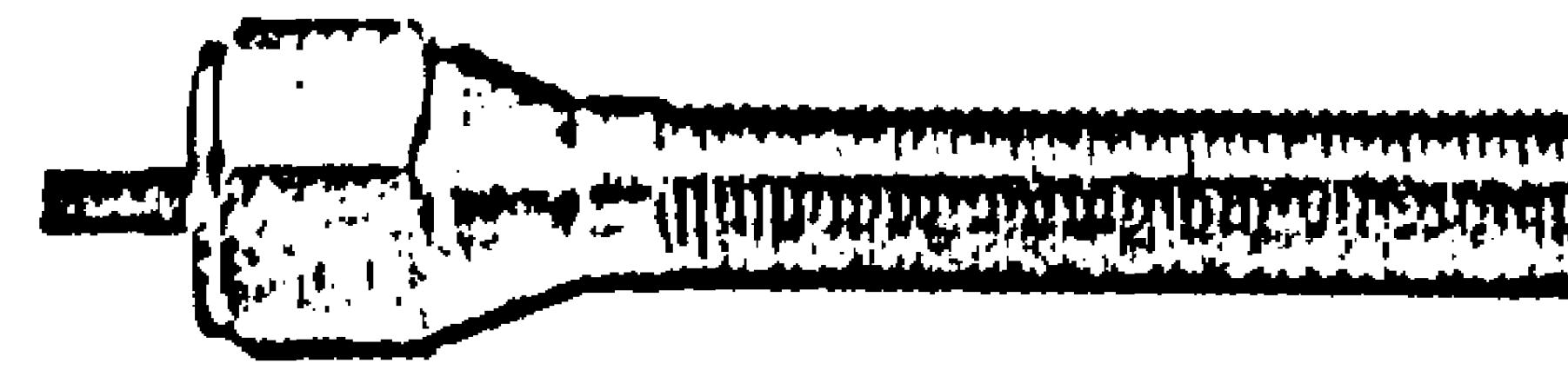
Model 713574
 1/2 NPT conduit outlet with 18" potted, 3 conductor cable, type 300 stainless steel housing with 1/8-18 NF x 2.813" threads with 2 lock nuts.



Model 713724
 1/2 NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing, no threads.



Model 713764
 1/2 NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing with 1/8-18 NF x 1.5" threads with 2 lock nuts.



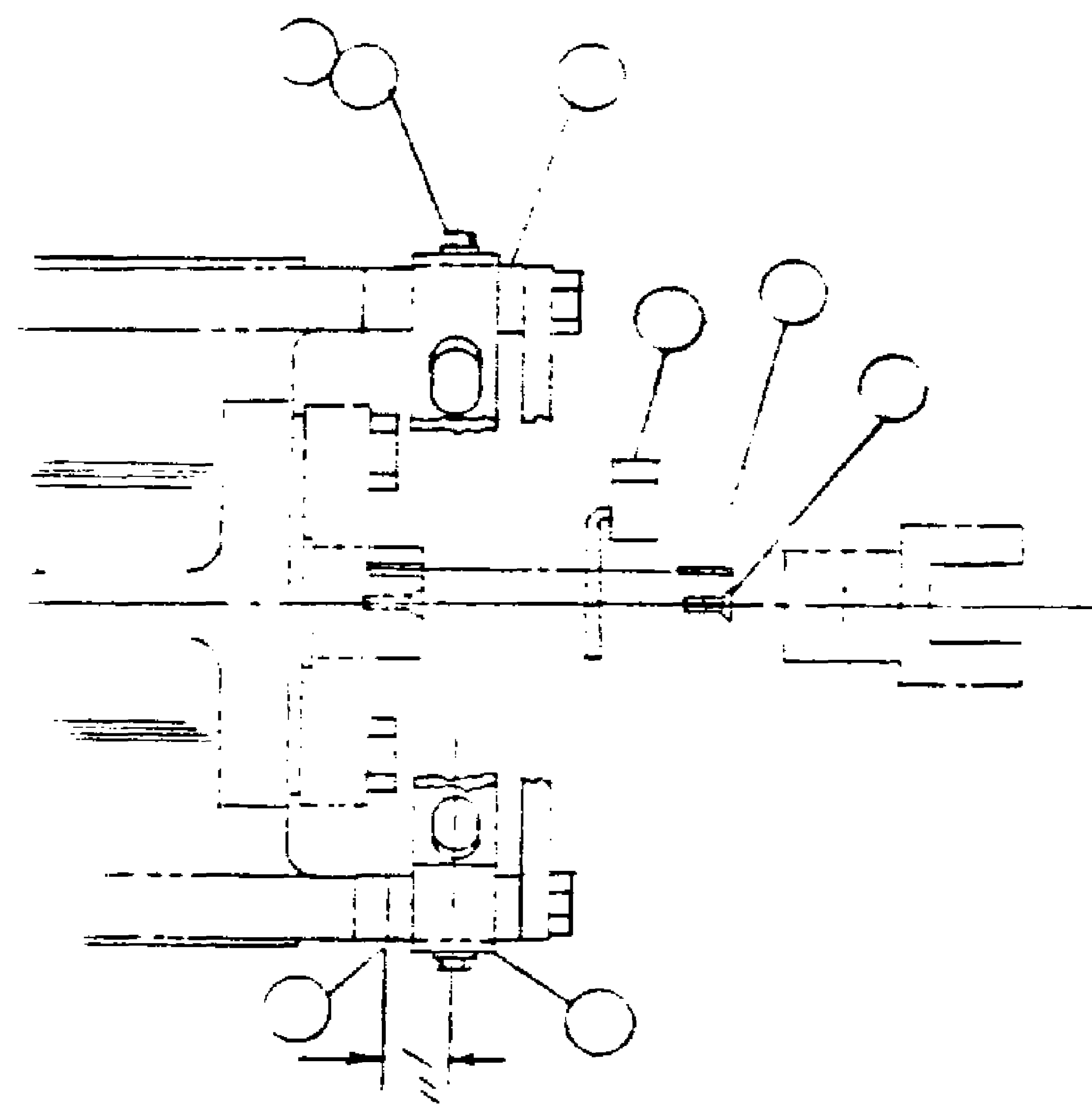
Model 713774
 1/2 NPT conduit outlet with 18" potted, 3 wire leads, type 300 stainless steel housing with 1/8-18 NF x 2.813" threads.



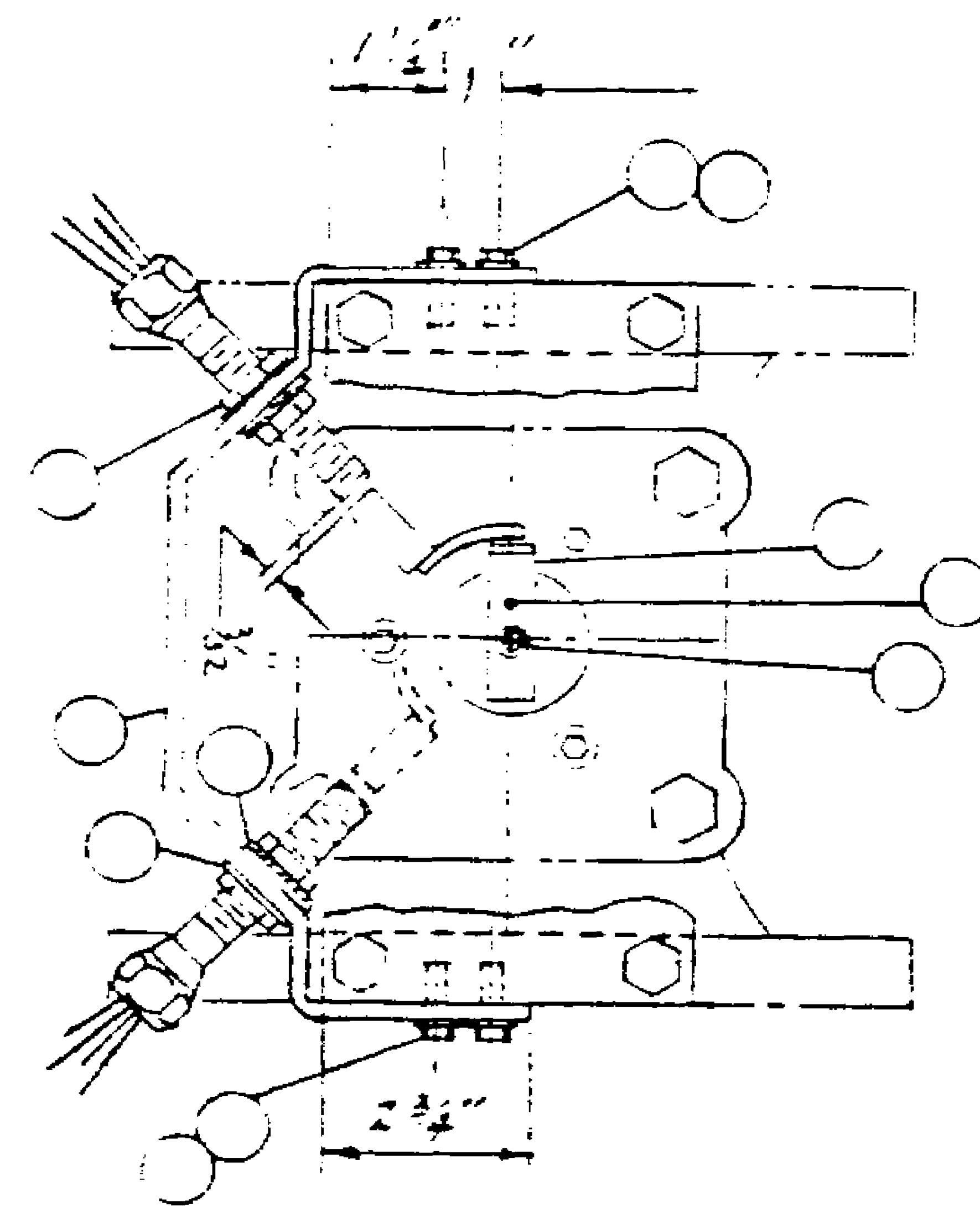
Approved switches are in compliance with current bulletins 1243, 1273 and 1308.

These switches are U/L and CSA approved for industrial control, general purpose use. See hazardous location approved models in Column 3, this page.

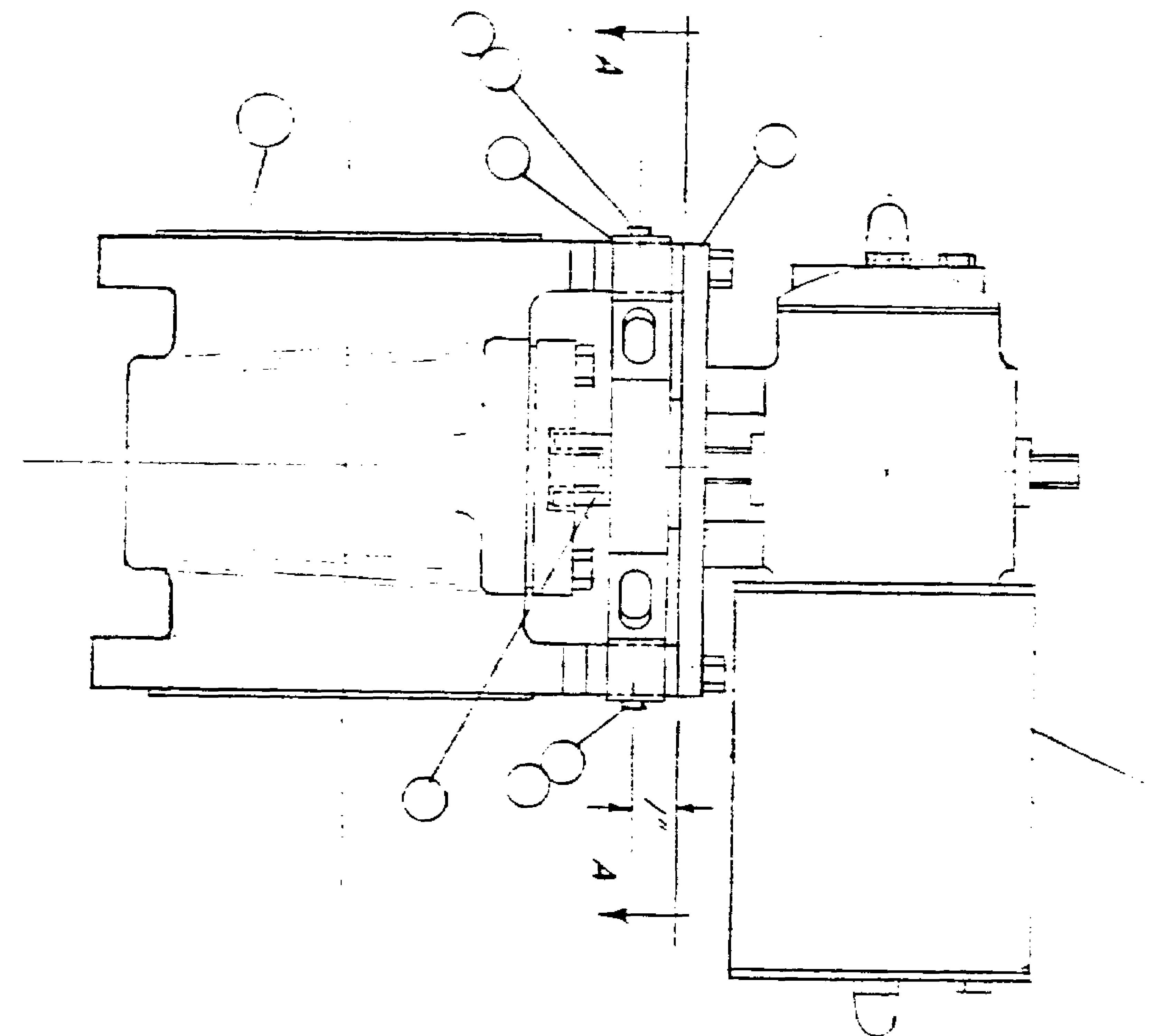
VAP 0001098894



VIEW "A-A"



ASSEMBLY



APPD: 6600

	ORIGINAL	REV			
DATE	DESCRIPTION	BY	CKD	APD	

VISTA Vista Polymers Inc.
Aberdeen, Mississippi

SECTION: MS NEW UNIT

TUFLINE PLUG VALVE
VINYL VALVE LIMIT SWITCHES

SCALE:

APPD:
DATE: No. MS-6666-57-1-D

VAB.0001098895

TOLERANCES Unless otherwise specified
 Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, XX $\pm .01"$, XXX $\pm .005"$
 Surfaces must be Concentric, Parallel, Flat & Square
 (as applicable) to each other within T.I.R.

NO

REVISION

DATE

BY

APPD.

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Switch Activator	V402800-1948
2	1	Mounting plate	V402800-1949
3	3	#10-24 x 1/2 Rd. Hd. Screw	
4	3	#10 Ext. Tooth L.W.	

INSTALLATION INSTRUCTIONS

1. With Valve Actuator removed slide Switch Activator (item 1) onto drive shaft as shown in figure 1.
2. To Mount Mounting Bracket (item 2) match drill and tap for three #10-24 UNC screws. Attach Mounting Plate to Actuator mounting bracket with items 4 & 5.
3. Screw GO Switches into threaded holes on Mounting Bracket (item 2) and secure with jam nuts included with switches.
4. Adjust Switches to sense triangular bars on Switch Activator when Valve is in full open or full closed positions.

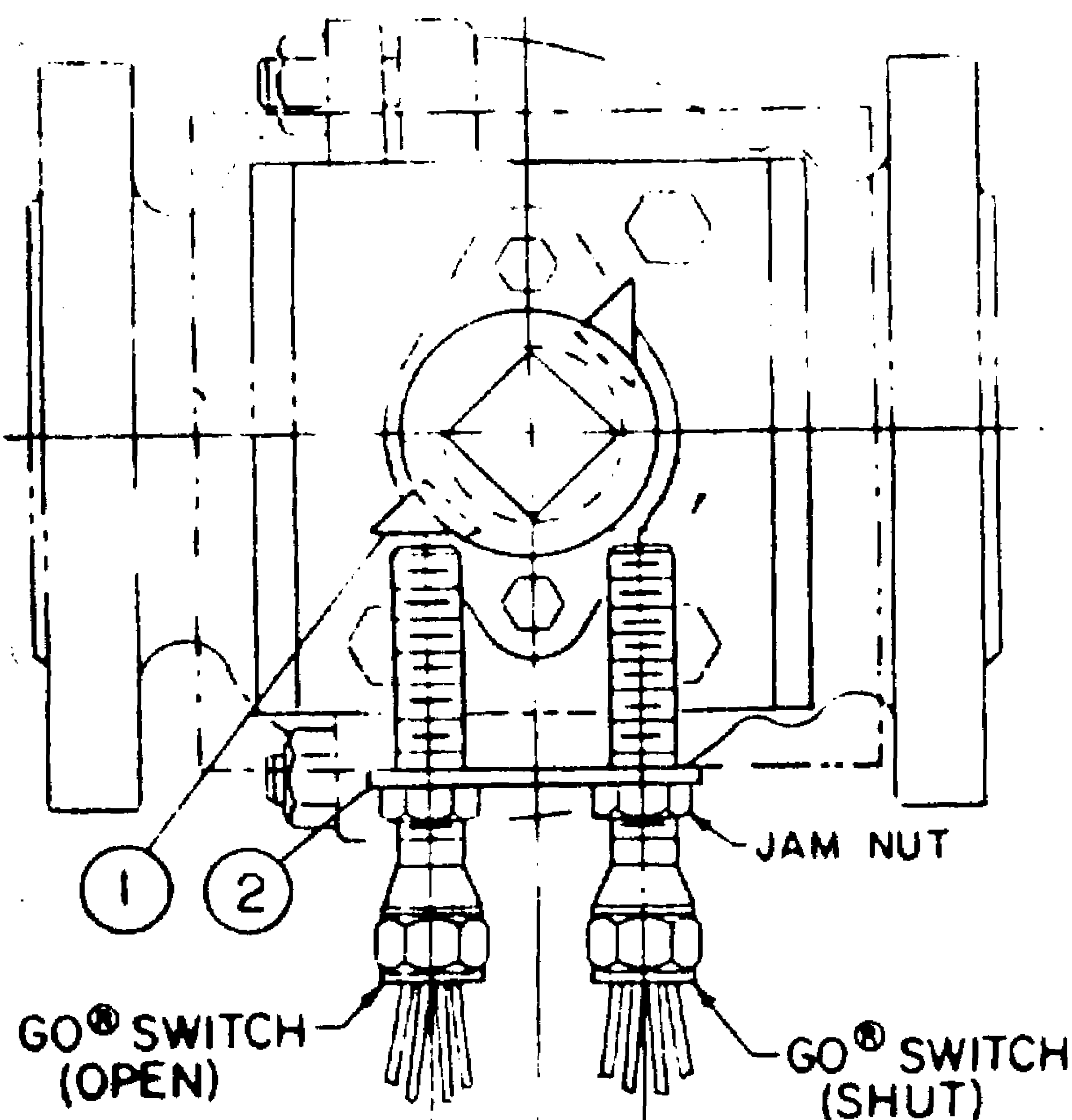


FIG. 1

MATCH DRILL FOR THREE
 10-24 UNC-2B THREADED
 HOLES

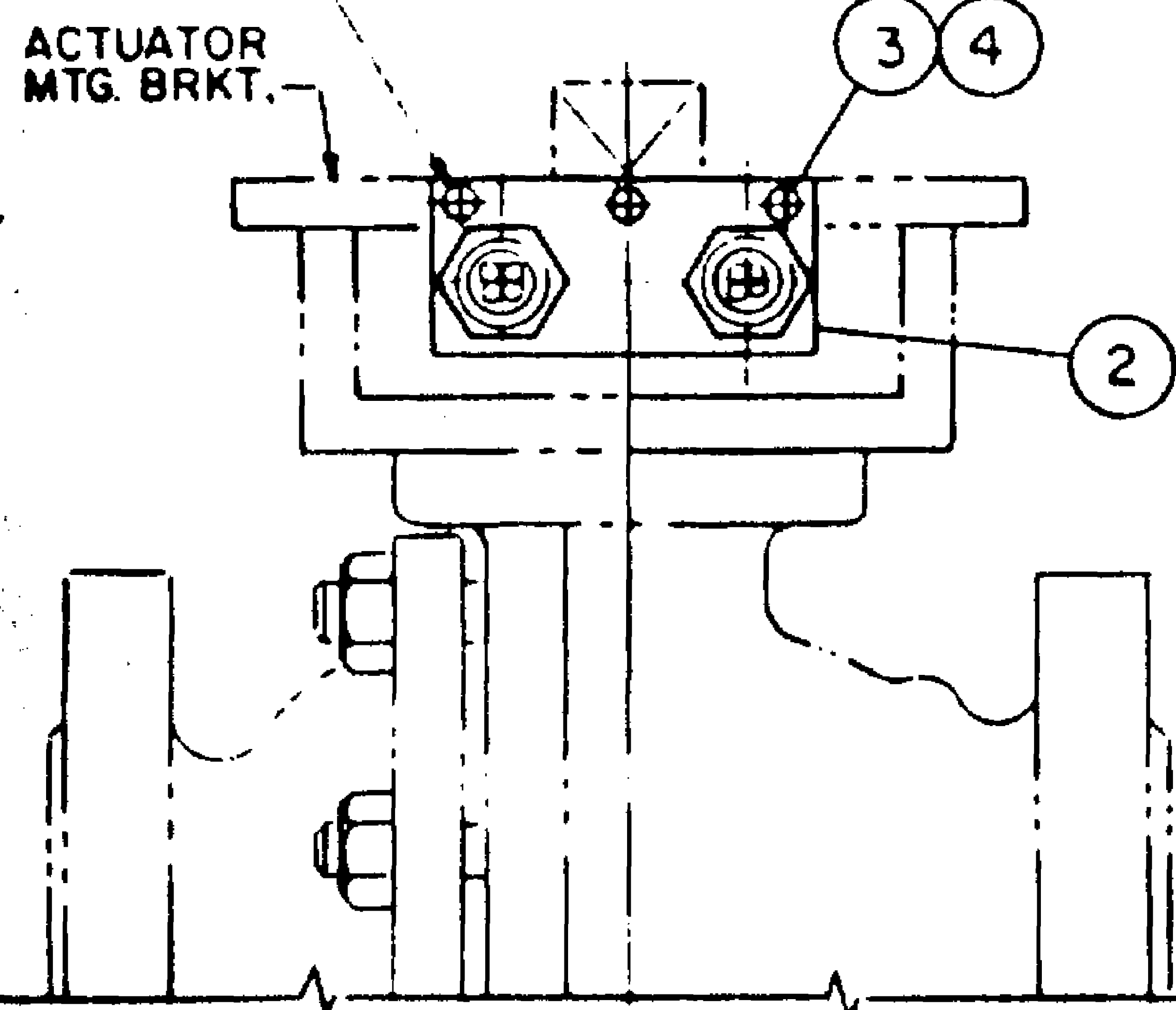


FIG. 2

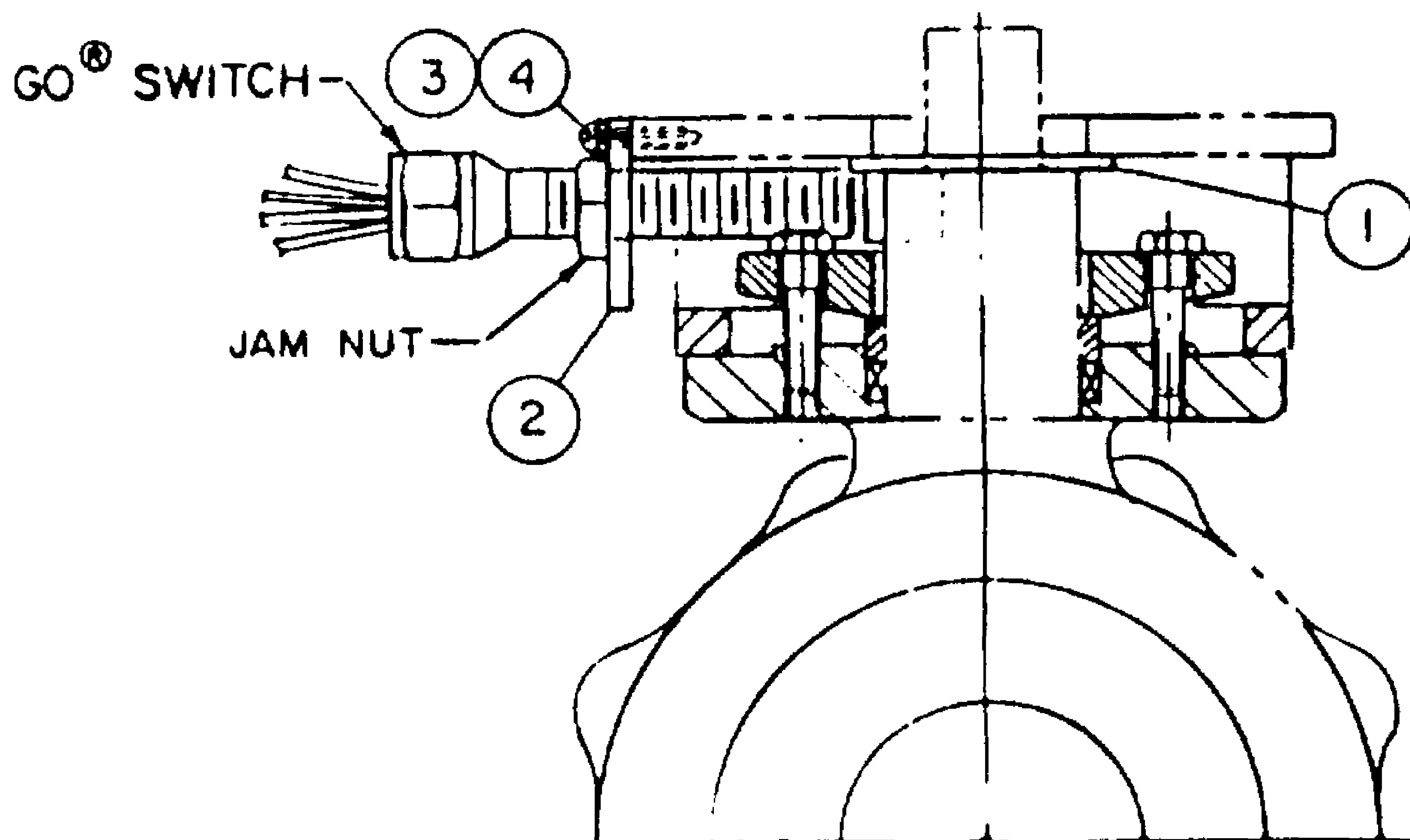


FIG. 3

DWN. BY
 RON S.

DATE
 10-3-85

CHK. BY

APPD.

70 SERIES GO® SWITCH V.I.P.
 ON 6600 JAMASBURY VALVE
 WITH BETTIS ACTUATOR
 FOR VISTA POLYMER

GENERAL EQUIPMENT
 & MANUFACTURING CO., INC.
 3300 FERN VALLEY ROAD
 P.O. BOX 37200
 LOUISVILLE, KENTUCKY, USA, 40233
 (502) 960-2386, TWX 810-535-2786

GO.
SYSTEMS

DWG. NO.

V402800-1947B

REV.

VAB.0001098896

NOTICE: Drawing contains
 confidential & proprietary material
 and is furnished upon request
 and it will not be used in any way
 detrimental to the interest of
 General Equipment & Mfg. Co. Inc.

TOLERANCES Unless otherwise specified
 Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, $.XX \pm .01"$, $.XXX \pm .005"$
 Surfaces must be Concentric, Parallel, Flat & Square
 (as applicable) to each other within _____ T.I.R.

NO.

REVISION

DATE

BY

APPD.

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Mounting Bracket	V782067-1935
2	1	Switch Activator	V782067-1936
3	1	Rollpin 1/8 x 1/2" long	
4	1	1/4-20 x 5/8 Flat Hd. Screw	
5	4	1/4-20 x 3/4 Hex Hd. Screw	
6	4	1/4 L.W.	
7	2	5/8 Ext. Tooth L.W.	
8	4	5/8 F.W. (1-5/16 O.D.)	

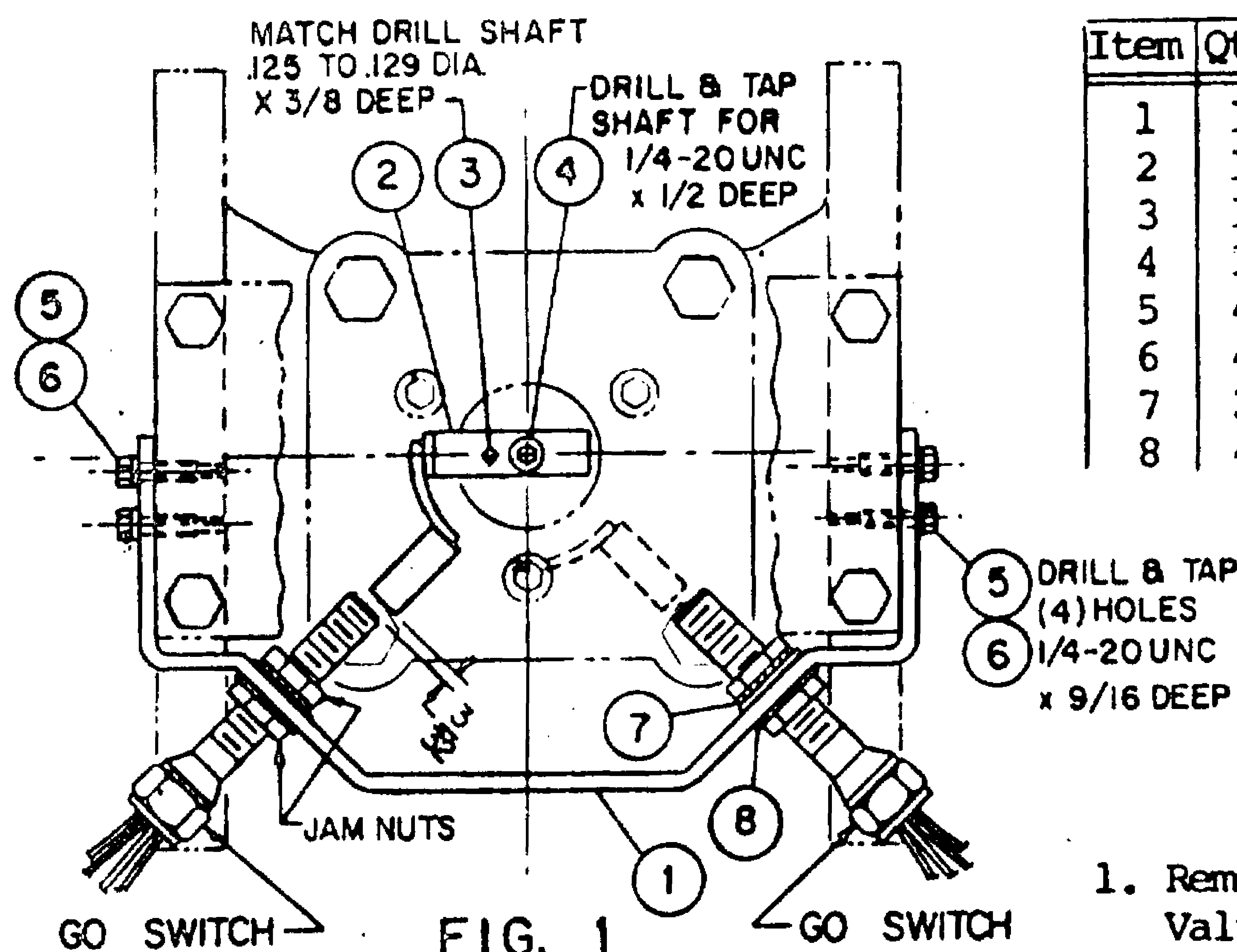


FIG. 1

INSTALLATION INSTRUCTIONS

1. Remove Valve Actuator and Coupling from Valve.
2. Machine notch in coupling to 7/8" depth as indicated in view A-A.
3. Drill & tap top of shaft for 1/4-20UNC x 1/2" deep hole.
4. Place Switch Activator (item 2) on shaft and secure with flat head screw (item 4). Then orient Switch Activator as shown in figure 1. Match drill shaft with hole in Switch Activator and drive rollpin (item 3) into hole to prevent rotation.
5. Fit Mounting Bracket (item 1) to sides of Actuator mounting plate support and mark location of four mounting holes, drill and tap four 1/4-20UNC x 9/16 dp. Then secure Mounting bracket (item 1) with items 5 & 6.
6. Insert GO Switches into slots on Mtg. Bracket (item 1) and secure with two jam nuts that come with switches and washers items 7 & 8.
7. Adjust Switches to sense Activator (item 2) in full open and full closed positions.

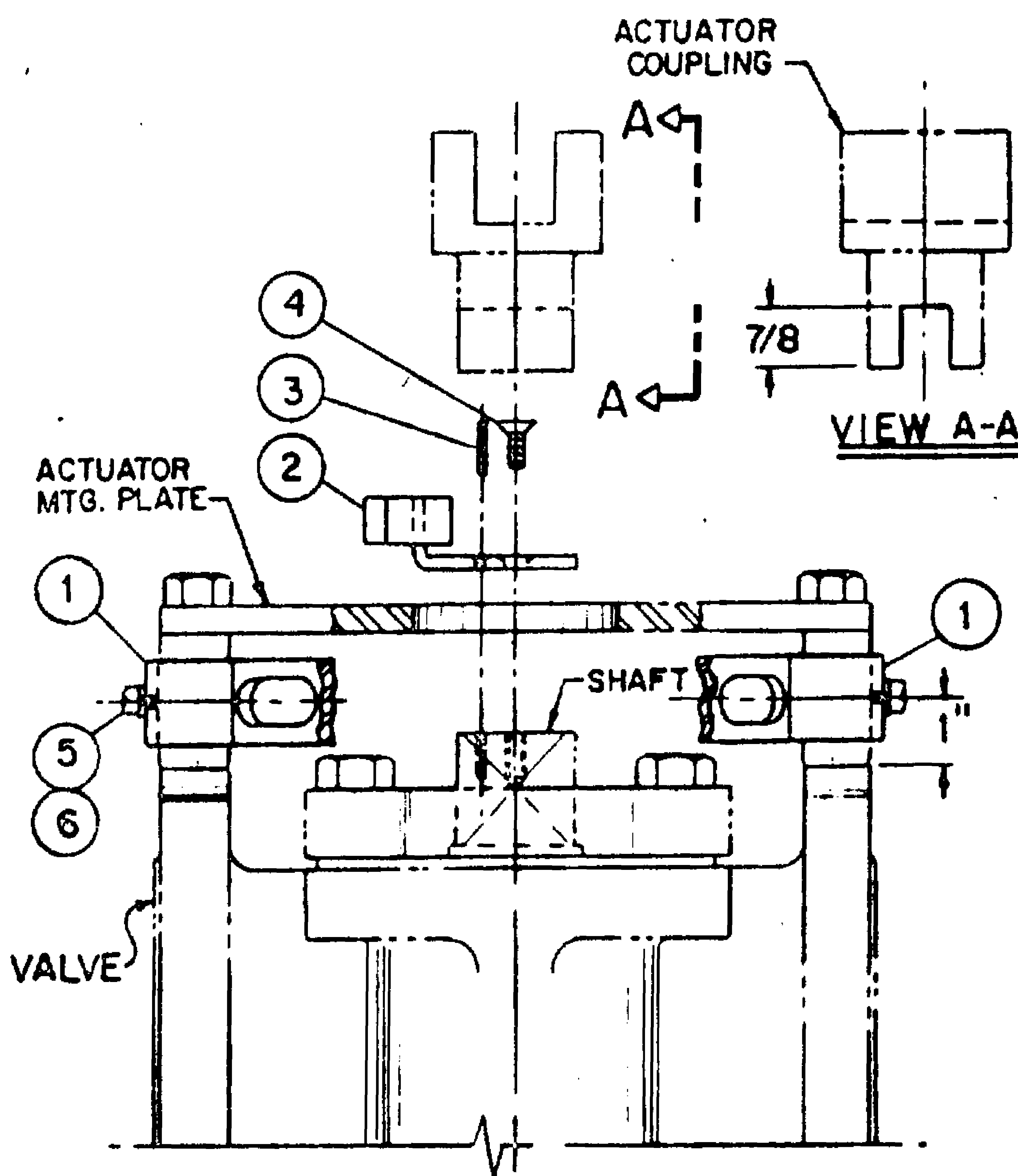


FIG. 2

DWN. BY RON S.	DATE 9-12-83
CHK. BY	
APPD.	
NOTICE: Drawing contains confidential & proprietary material and is furnished upon condition that it will not be used in any way detrimental to the interest of General Equipment & Mfg. Co., Inc.	

70 SERIES GO® SWITCH V.I.P.
 ON TUFLINE 067 6" PLUG VALVE
 VALVE SHAFT
 INDICATION

GENERAL EQUIPMENT
 & MANUFACTURING CO., INC.
 3300 FERN VALLEY ROAD
 P.O. BOX 37290
 LOUISVILLE, KENTUCKY, USA, 40233
 (502) 899-2388, TWX 810-535-2786

GO
SYSTEMS

DWG. NO.
 V782067-1934

REV
 VAB.0001098897

TOLERANCES Unless otherwise specified
 Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, XX $\pm .01"$, XXX $\pm .005"$
 Surfaces must be Concentric, Parallel, Flat & Square
 (as applicable) to each other within T.I.R.

NO.	REVISION	DATE	BY	APPD.

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Switch Activator	V126411-1943
2	2	Mounting Bracket	V126411-1944
3	4	1/4-20 x 1/2 Hex Hd. Screw	
4	4	1/4 L.W.	
5	2	5/8 Shakeproof L.W.	
6	4	5/8 F.W. (1-5/16" O.D.)	

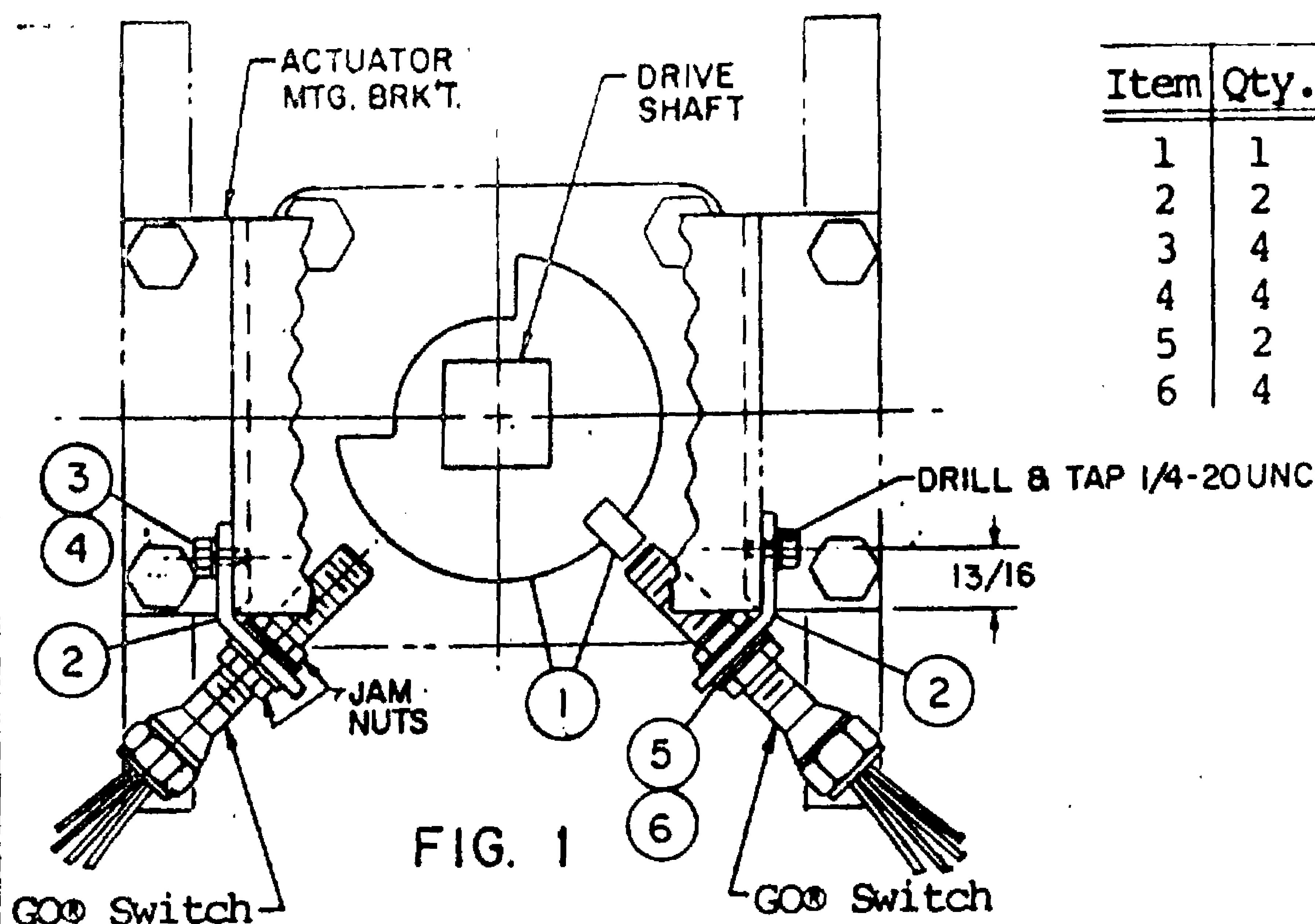


FIG. 1

INSTALLATION INSTRUCTIONS

1. Disassemble Actuator and Coupling from Valve and remove existing pointer.
2. Slide Switch Activator (item 1) onto drive shaft.
3. Drill and Tap Actuator Mtg. Brk't. for 1/4-20UNC screws and attach Mounting Bracket (item 2) with items 3 & 4.
4. Mount GOO Switches in Mounting Bracket (item 2) with two jam nuts supplied with switch and washers items 5 & 6.
5. Adjust Switches in slots on Mounting BRacket (item 2) to sense Switch Activator (item 1) in full open and full closed positions.

Note: 1. GOO Switches are not included in V.I.P. (Valve Indication Package) and should be ordered separately.
 2. Use Model 713774 GOO Switches.

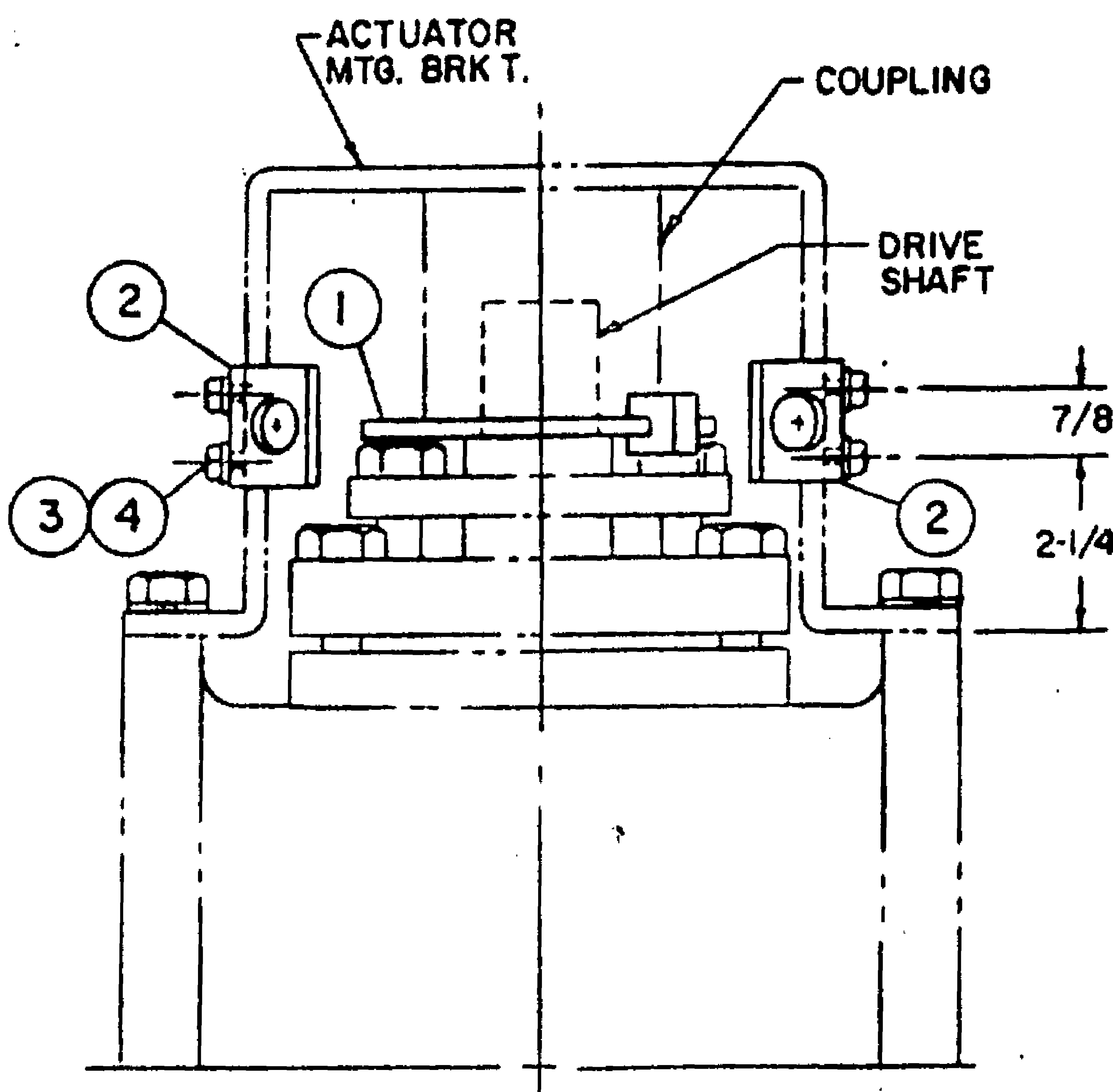


FIG. 2

Tag # 769 BVC

DWN. BY RON S.	DATE 9-28-83
CHK. BY	
APPD.	
NOTICE: Drawing contains confidential & proprietary material and is furnished upon condition that it will not be used in any way detrimental to the interest of General Equipment & Mfg. Co., Inc.	

70 SERIES GOO SWITCH V.I.P.
 ON DURCO 6" 150# G411 Valve
 WITH BETTIS ACTUATOR
 FOR CONOCO

GENERAL EQUIPMENT & MANUFACTURING CO., INC.
 3300 FERN VALLEY ROAD
 P.O. BOX 37290
 LOUISVILLE, KENTUCKY, USA, 40233
 (502) 969-2386, TWX 810-535-2786

GO.
SYSTEMS

DWG. NO. V126411-1942	REV. VAB.0001098898
--------------------------	------------------------

TOLERANCES Unless otherwise specified
 Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, XX $\pm .01"$, XXX $\pm .005"$
 Surfaces must be Concentric, Parallel, Flat & Square
 (as applicable) to each other within _____ T.I.R.

NO.	REVISION	DATE	BY	APPD.

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Switch Activator	V402800-1948
2	1	Mounting plate	V402800-1949
3	3	#10-24 x 1/2 Rd. Hd. Screw	
4	3	#10 Ext. Tooth L.W.	

INSTALLATION INSTRUCTIONS

1. With Valve Actuator removed slide Switch Activator (item 1) onto drive shaft as shown in figure 1.
2. To Mount Mounting Bracket (item 2) match drill and tap for three #10-24 UNC screws and attach item 2 to Actuator mounting bracket with items 4 & 5.
3. Screw GO Switches into threaded holes on Mounting Bracket (item 2) and secure with jam nuts included with switches.
4. Adjust Switches to sense triangular bars on Switch Activator when Valve is in full open or full closed positions.

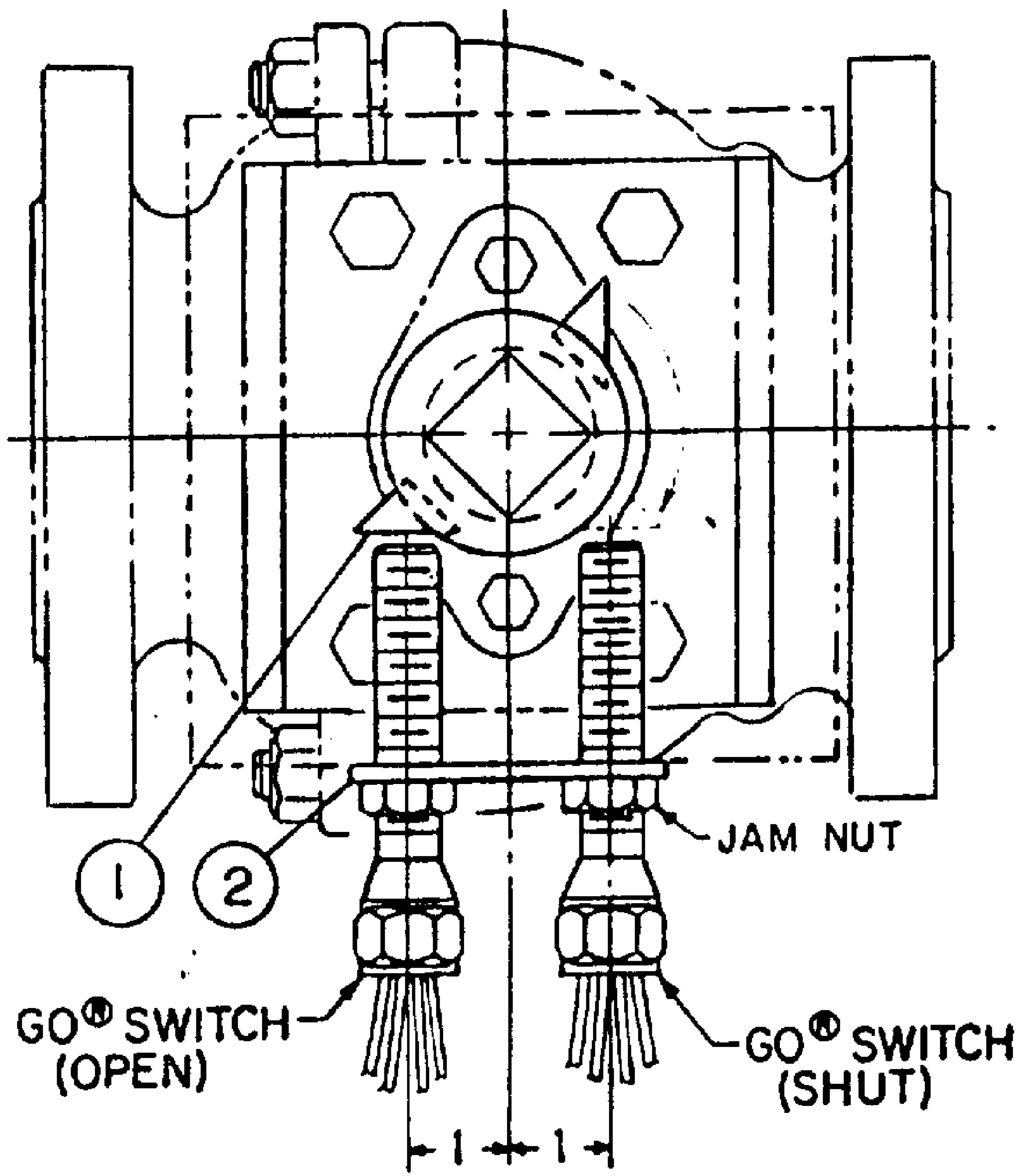


FIG. 1

MATCH DRILL FOR THREE
 10-24 UNC-2B THREADED
 HOLES

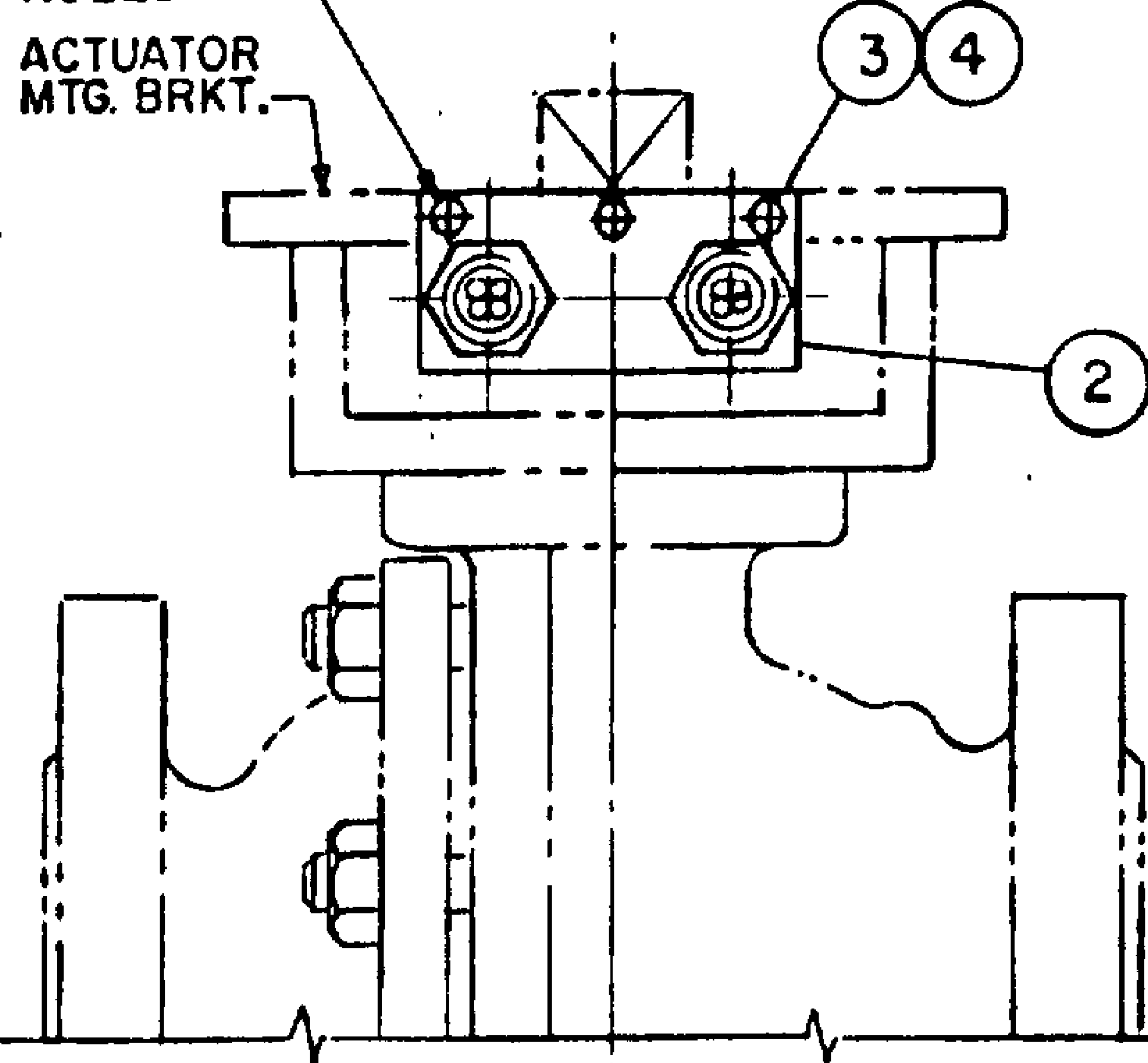


FIG. 2

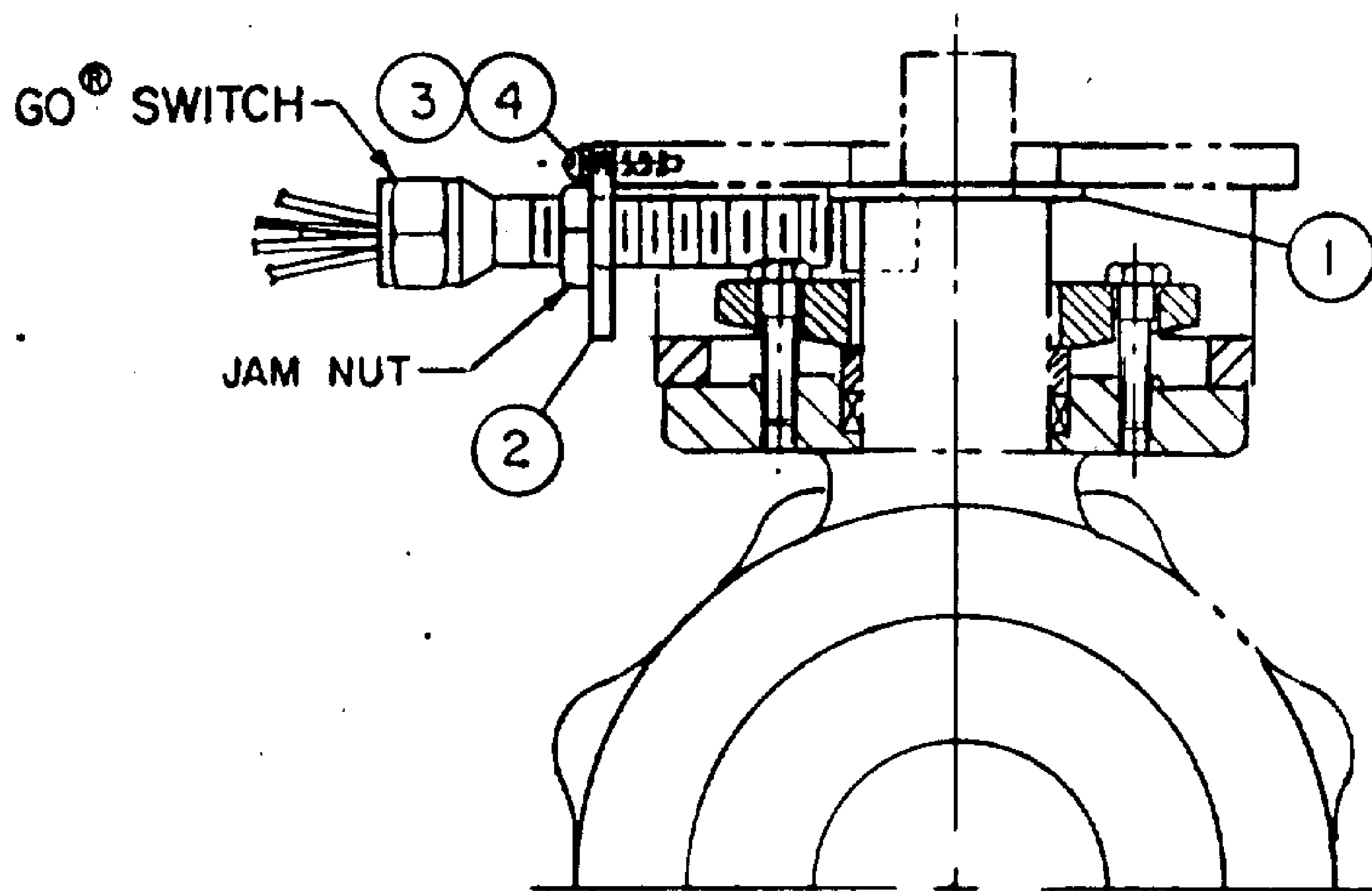


FIG. 3

DWN. BY
 RON S.

DATE
 10-3-83

CHK. BY

APPD.

NOTICE: Drawing contains
 confidential & proprietary material
 and is furnished upon condition
 that it will not be used in any way
 detrimental to the interest of
 General Equipment & Mfg. Co., Inc.

70 SERIES GO[®] SWITCH V.I.P.
 ON KTM 6" VALVE E0800
 WITH JAMESBURY ACTUATOR
 FOR CONOCO

GENERAL EQUIPMENT
 & MANUFACTURING CO., INC.
 3300 FERN VALLEY ROAD
 P.O. BOX 37290
 LOUISVILLE, KENTUCKY, USA, 40233
 (502) 969-2386, TWX 810-535-2786

GO.
SYSTEMS

DWG. NO.

V402800-1947

REV.

VAB.0001098899

TOLERANCES Unless otherwise specified
Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, XX $\pm .01"$, XXX $\pm .005"$
Surfaces must be Concentric, Parallel, Flat & Square
(as applicable) to each other within _____ T.I.R.

NO.	REVISION	DATE	BY	APPD.
				A

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Switch Activator	V907310-1955
2	1	Mounting Bracket	V907310-1954
3	1	Set Screw #12-24 x 1/4	
4	4	1/4-20 x 1/2 Hex Hd. Screw	
5	4	1/4- L.W.	
6	2	5/8 Ext. Tooth L.W.	
7	2	5/8 F.W.	

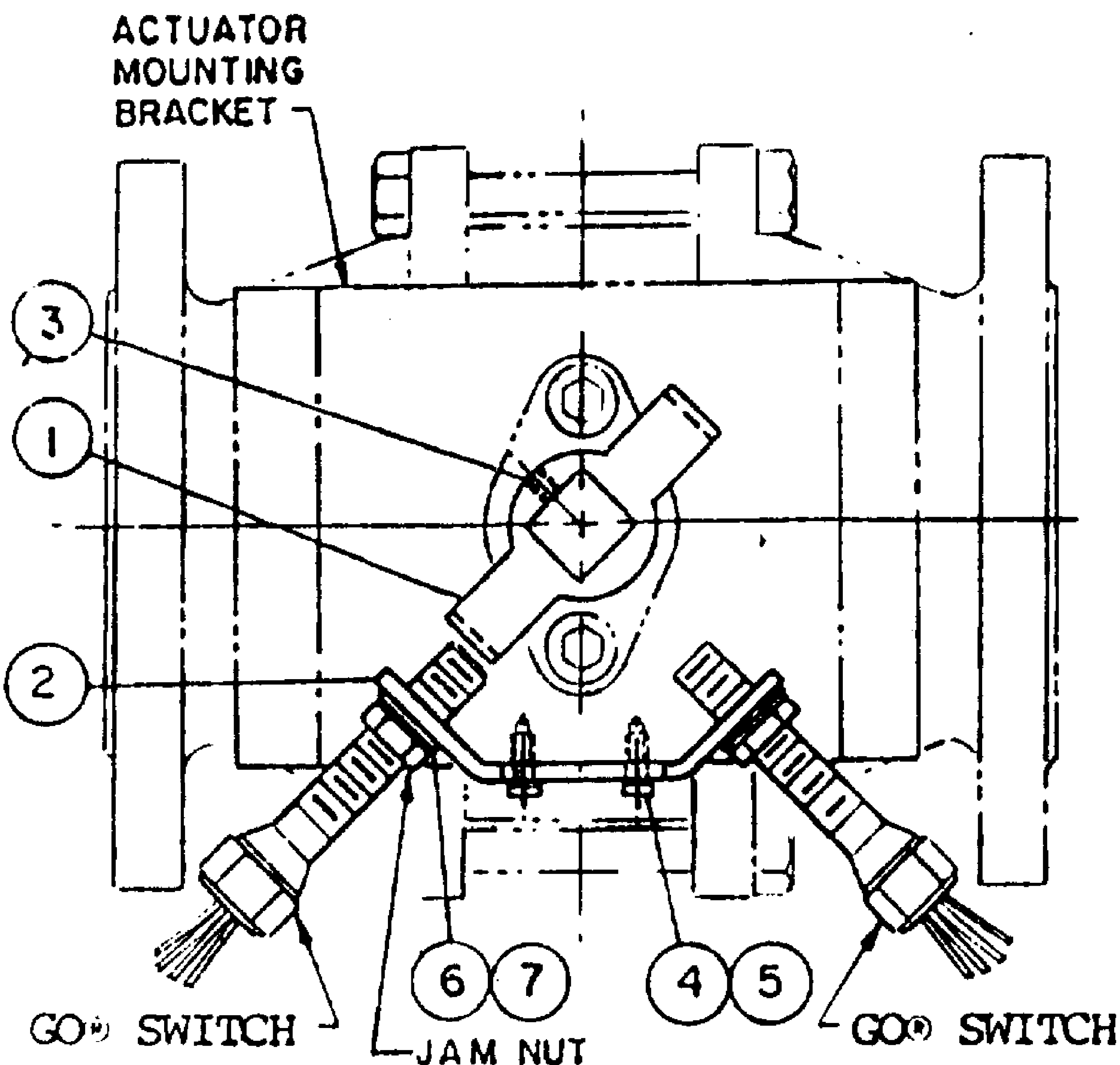


FIG. 1

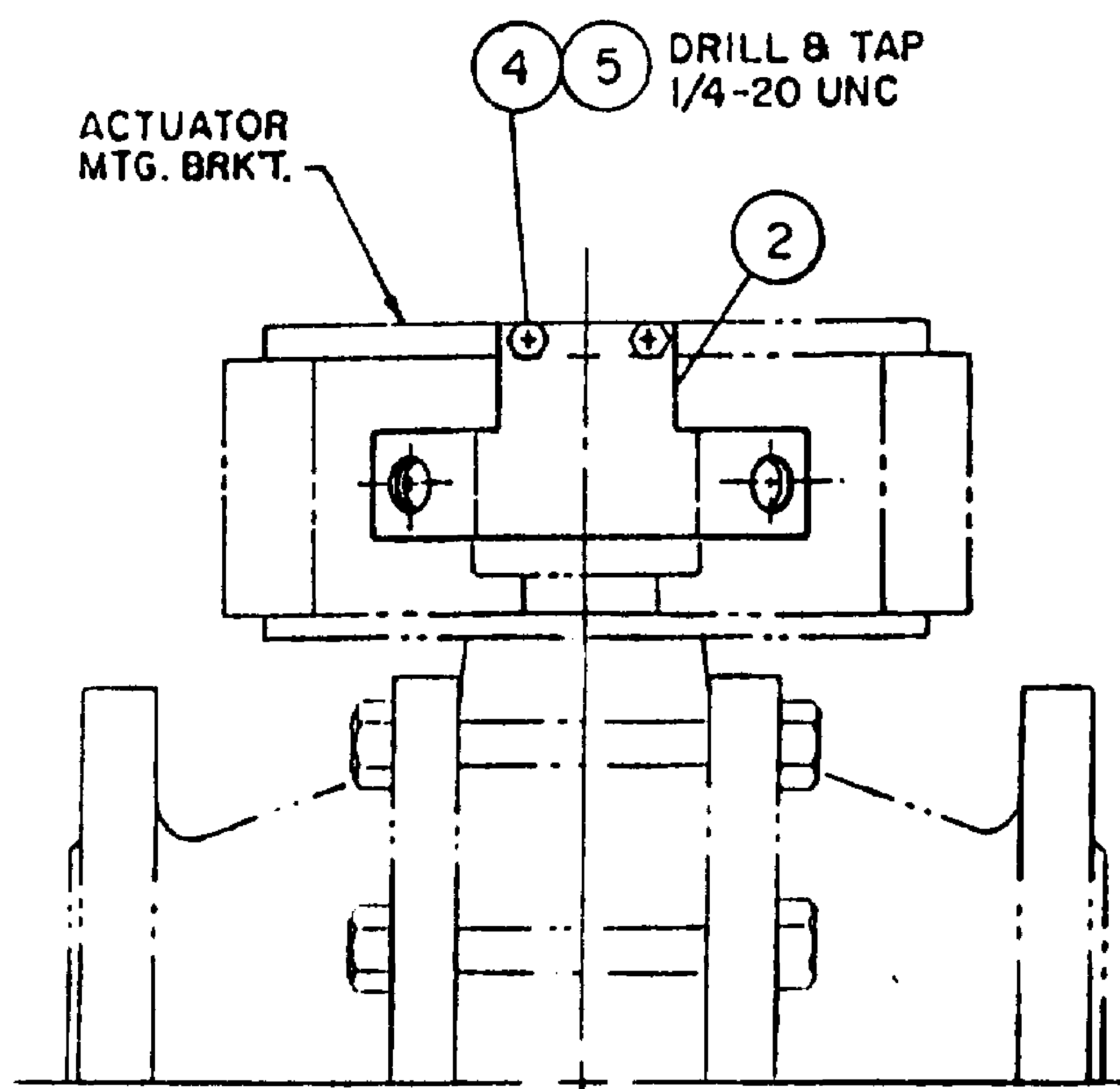


FIG. 2

INSTALLATION INSTRUCTIONS

1. Remove Actuator, Coupling and Existing position indication plate.
2. Slide Switch Activator (item 1) onto drive shaft and secure with set screw (item 3).
3. Place Mounting Bracket (item 2) onto Actuator Mtg. Brk't. and mark position of two holes. Drill and tap for 1/4-20 UNC holes. Secure Mounting Bracket (item 2) (item 2) with items 4 & 5.
4. Screw GO® Switches into Mounting Brk't. (item 2) till Gap between end of switch & Switch Activator (item 1) is approx. 1/16". Secure with Jam Nuts that are included with Switches and with washers (items 6 & 7).
5. Switches should sense Switch Activator when Valve is in full open and full closed positions.

NOTE: GO® Switches are not included in V.I.P. (Valve Indication Package) and should be ordered as a Separate item.

Tag # CV 758 & CV 760

DWN. BY RON S.	DATE 10-	70 SERIES GO® SWITCH V.I.P. ON W-K-M 310 BALL VALVE 6" FOR CONOCO	GENERAL EQUIPMENT & MANUFACTURING CO., INC. 3300 FERN VALLEY ROAD P.O. BOX 37290 LOUISVILLE, KENTUCKY, USA, 40233 (502) 989-2386, TWX 810-535-2786	GO SYSTEMS
CHK. BY				
APPD.				
NOTICE: Drawing contains confidential & proprietary material and is furnished upon condition that it will not be used in any way detrimental to the interest of General Equipment & Mfg. Co., Inc.			DWG. NO. V 907310-1953	VAB.0001098900 REV

TOLERANCES Unless otherwise specified
Angles: $\pm 1^\circ$, Fractions: $\pm 1/32"$, .XX $\pm .01"$, .XXX $\pm .005"$
Surfaces must be Concentric, Parallel, Flat & Square
(as applicable) to each other within _____ T.I.R.

NO.	REVISION	DATE	BY	APPD.

MATERIAL LIST

Item	Qty.	Description	Dwg. No.
1	1	Switch Activator	V907310-1951
2	1	Mounting Bracket	V907310-1952
3	1	Set Screw #12-24 x 1/4	
4	4	1/4-20 x 1/2 Hex Hd. Screw	
5	4	1/4- L.W.	
6	2	5/8 Ext. Tooth L.W.	
7	2	5/8 F.W.	

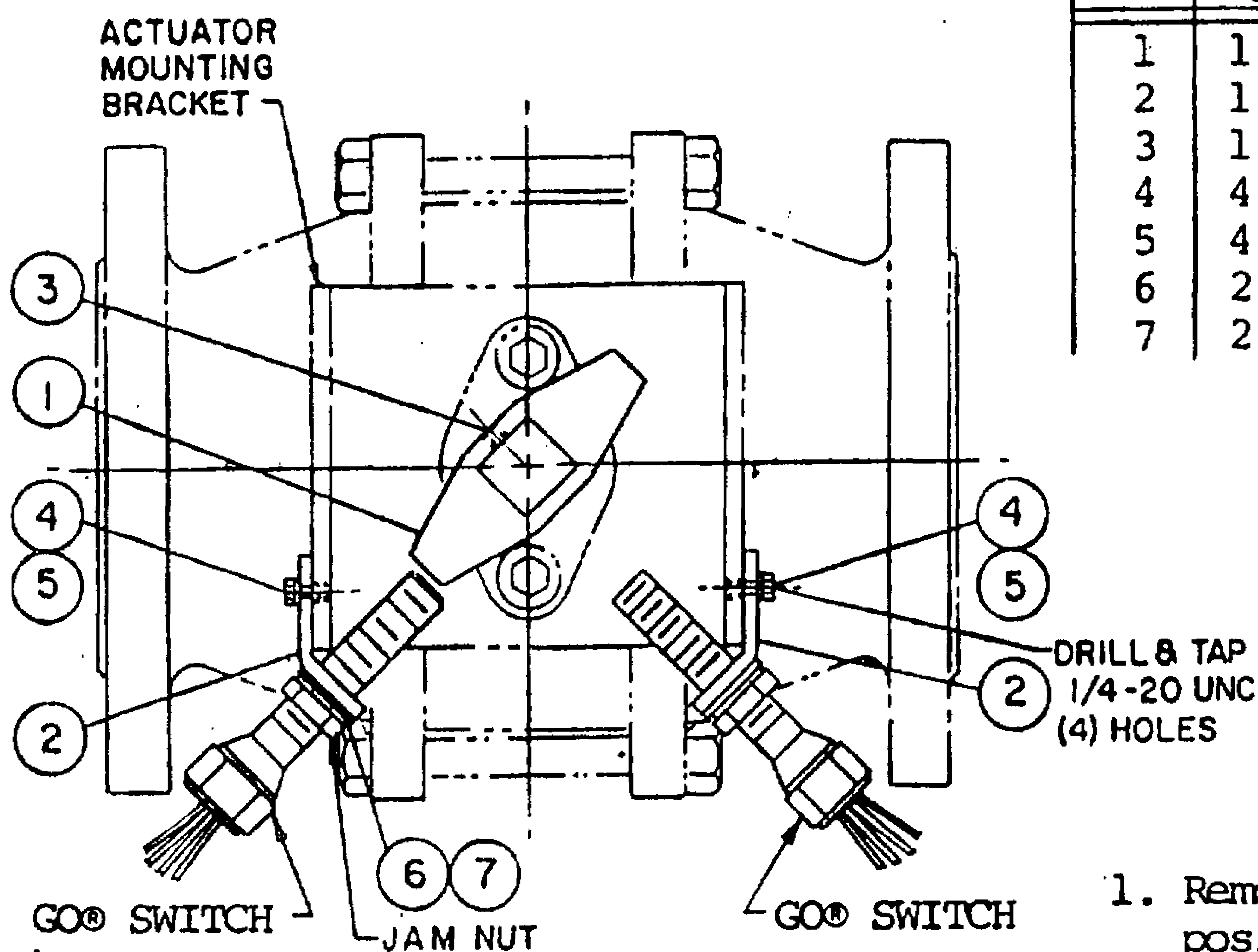


FIG. 1

INSTALLATION INSTRUCTIONS

1. Remove Actuator, Coupling and Existing position indication plate.
2. Slide Switch Activator (item 1) onto drive shaft and secure with set screw (item 3).
3. Assemble GO Switches to Mounting Bracket (item 2) with Jam Nuts supplied with switches and washers items 6 & 7.
4. Place Switch mounted on bracket on sides of Actuator mounting bracket and align switch with Activator (item 1) then match drill Actuator mounting bracket with holes in Mounting Bracket (item 2). Secure with items 4 & 5.
5. Switches should sense Switch Activator when Valve is in full open and full closed positions.

NOTE: GO Switches are not included in V.I.P. (Valve Indication Package) and should be ordered as a Separate item.

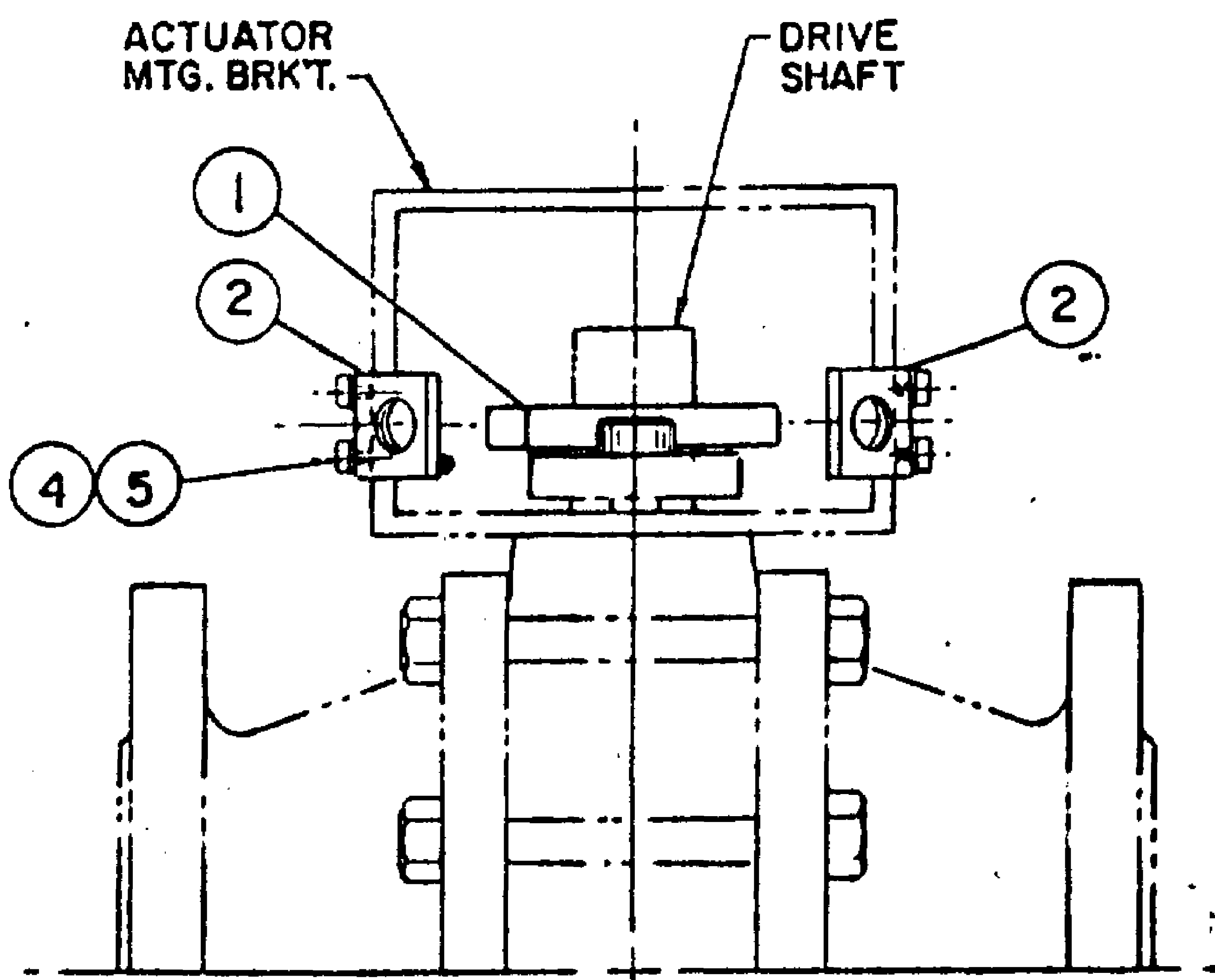


FIG. 2

OWN. BY RON S.	DATE 10-5-83
CHK. BY	
APPD.	

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70 SERIES GO SWITCH V.I.P.
ON
W-K-M 310 BALL VALVE 4"
FOR
CONOCO

GENERAL EQUIPMENT
& MANUFACTURING CO., INC.
3300 FERN VALLEY ROAD
P.O. BOX 37200
LOUISVILLE, KENTUCKY, USA, 40233
(502) 969-2386, TWX 810-535-2786

GO.
SYSTEMS

DWG. NO. V 907310-1950	REV. VAB.0001098901
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