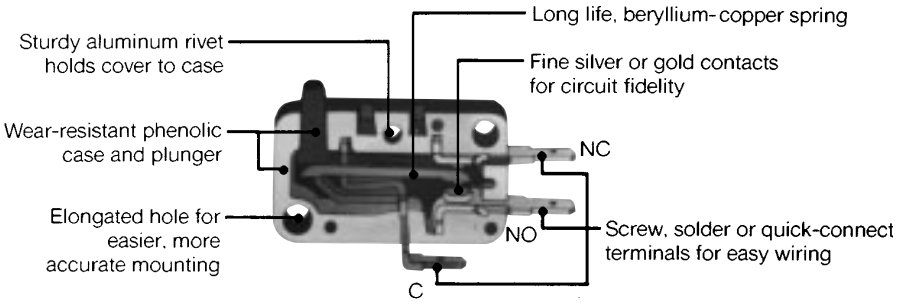
Basic Switches
Miniature

V3 Series

CUT-A-WAY V3 MINIATURE BASIC SWITCH



GENERAL INFORMATION

V3 miniature basic switches feature high electrical capacity and long life. Their size and shape meet design requirements in all types of applications.

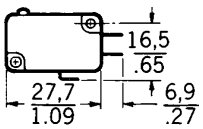
There is a choice of SPDT, SPNC, and SPNO circuitry. Many lever styles, contact materials, and terminal variations can be furnished. Contact the 800 number for ordering information.

FEATURES

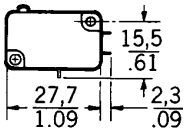
- Low operating force to .53 ounce maximum
- Sensitive differential travel as low as .006 inch maximum
- Power load switching capability up to 25 amperes–silver contacts
- Gold alloy crosspoint, silver cadmium, and other contact material for special applications
- Long mechanical life of 10,000,000 cycles—95% survival for V3-100, V3-1100, V3-2100, V3-3000 Series
- Temperature tolerance up to +180°F (82°C) on standard construction
- High temperature construction for use up to +600°F (316°C)
- 3,1 mm mounting holes available
- UL recognized File #E12252, CSA certified File #LR41370

AVAILABLE TERMINALS

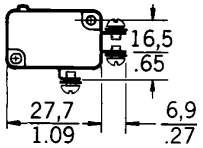
SOLDER



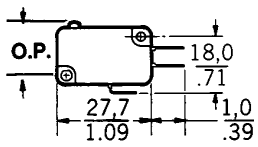
SHORT SOLDER



SCREW

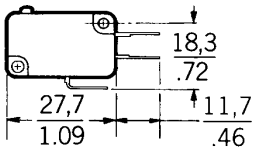


D8 QUICK CONNECT



.188 wide × .020 thick terminals

D9



.250 wide × .032 thick terminals

Dimensions shown are for reference only

Key: 0,0 = mm / 0.00 = inches

Mounting torque:
2 inch pounds min.
5 inch pounds max.

This section covers only **60** of our most popular V3 Series catalog listings. If you don't find what you're looking for, it's likely one of the approximately **850** other active V3 listings will meet your needs. Contact the 800 number.

Characteristics: O.F. – Operating Force; R.F. – Release Force; P.T. – Pretravel; O.T. – Overtravel; D.T. – Differential Travel; O.P. – Operating Position.

PIN PLUNGERS

ORDER GUIDE by ascending electrical capability


Dim. Dwg. Fig. 1

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	O.F. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. mm inches	O.P.** mm inches
V3-343-D8	General use. Gold alloy crosspoint contacts.	1 Amp **X**	2,22 **8 max.**	0,56 **2**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-2451-D8	Lowest force.	3 Amps **VV**	0,15 **.53**	—	1,2 **.047**	1,27 **.050**	0,051-0,25 **.002-.010**	14,7 **.578**
V3-2401-D8	Lower force.	5 Amps **YY**	0,24 **.9**	—	1,2 **.047**	1,27 **.050**	0,051-0,25 **.002-.010**	14,7 **.578**
V3-70101-D8	Most 5 amp applications.	5 Amps **ZZ**	2,22 **8**	0,56 **2**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-1101-D8	General use.	10 Amps **TT**	0,72 max. **2.6**	0,10 **.35**	1,2 **.047**	1,27 **.050**	0,051-0,25 **.002-.010**	14,7 **.578**
V3-2101-D8	Low force.	10 Amps **V**	0,50 max. **1.8**	0,05 **.18**	1,2 **.047**	1,27 **.050**	0,051-0,25 **.002-.010**	14,7 **.578**
V3-101-D8	Higher force. Most applications.	11 Amps **T**	2,22 **8 max.**	0,56 **2**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-1-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	1,67-3,89 **6-14**	1,11 **4**	1,21 **.047**	1,0 **.040**	0,15-0,4 **.006-.016**	14,7 **.578**
V3-3001-D8	High force. Up to 15.1 amps load handling.	15,1 Amps **U**	1,47 max. **5.3**	0,15 **.53**	1,2 **.047**	1,27 **.050**	0,051-0,25 **.002-.010**	14,7 **.578**
V3-2800-D9	Up to 20 amps load handling	20 Amps **AA**	0,63 - 1,22 **2.3 - 4.4**	0,20 **0.7**	1,2 **.047**	1,27 **.050**	0,25 **.010 max.**	14,7 **.578**
V3-2900-D9	Up to 25 amps load handling	25 Amps **BB**	1,22 - 2,20 **4.4 - 7.9**	0,31 **1.1**	1,2 **.047**	1,27 **.050**	0,25 **.010 max**	14,7 **.578**


Dim. Dwg. Fig. 2

V3-1001 (MS25253-1)	MIL-S-8805 application requirements (SPDT)	10 Amps **UU**	1,67-3,89 **6-14**	1,11 **4**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-1002 (MS25253-3)	MIL-S-8805 application requirements (SPNC)	10 Amps **UU**	1,67-3,89 **6-14**	1,11 **4**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-1003 (MS25253-2)	MIL-S-8805 application requirements (SPNO)	10 Amps **UU**	1,67-3,89 **6-14**	1,11 **4**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-129*	Operating in temperature to +302°F (150°C)	11 Amps **T**	2,22 **8 max.**	0,56 **2**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**
V3-245*	Operating in temperature to +400°F (204°C)	10 Amps **W**	2,78-6,95 **10-25**	1,67 **6**	1,2 **.047**	1,02 **.040**	0,15-0,41 **.006-.016**	14,7 **.578**

*For actuators, contact MICRO SWITCH Sales Office.

**Tolerances ±0.38 ±0.15

SIMULATED ROLLER

ORDER GUIDE


Dim. Dwg. Fig. 3

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	Length of Lever "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P.* mm inches
V3L-1123-D8	General use.	10 Amps **TT**	32,6 **1.285**	0,39 **1.4**	0,05 **.18**	2,54 **.100**	2,03 **.080**	0,76 **.030**	18,5 **.730**
V3L-2105-D8	Low force.	10 Amps **V**	32,6 **1.285**	0,33 **1.2**	0,02 **.07**	2,54 **.100**	2,03 **.080**	0,76 **.030**	18,5 **.730**
V3L-121-D8	High force. Most applications.	11 Amps **T**	32,6 **1.285**	1,11 **4**	0,14 **.5**	3,18 **.125**	1,57 **.062**	0,81 **.032**	18,5 **.730**
V3L-5-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	32,6 **1.285**	2,22 **8**	0,28 **1**	3,18 **.125**	1,57 **.062**	0,81 **.032**	18,5 **.730**
V3L-3014-D8	High force. Up to 15.1 amps load handling.	15.1 Amps **U**	32,6 **1.285**	0,94 **3.4**	0,07 **.25**	2,54 **.100**	1,90 **.075**	0,76 **.030**	18,5 **.730**

*±1.5 mm ±.060 in.

Characteristics: O.F. – Operating Force; R.F. – Release Force; P.T. – Pre-travel; O.T. – Overtravel; D.T. – Differential Travel; O.P. – Operating Position.

ORDER GUIDE

STRAIGHT LEVERS


Dim. Dwg. Fig. 4

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	Length of Lever "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches
V3L-1105-D8	General use.	10 Amps **TT**	21,3 **.860**	0,72 **2.6**	0,10 **.35**	1,5 **.060**	1,14 **.045**	0,33 **.013**	15,2±0,51 **.600±.020**
V3L-2101-D8	Low force. Added overtravel.	10 Amps **V**	21,3 **.860**	0,50 **1.8**	0,50 **.18**	1,5 **.060**	1,14 **.045**	0,33 **.013**	15,2±0,51 **.600±.020**
V3L-101-D8	Higher force. Most applications.	11 Amps **T**	21,3 **.860**	2,50 **9**	0,56 **2**	1,5 **.060**	1,02 **.040**	0,41 **.016**	15,2±0,51 **.600±.020**
V3L-1-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	21,3 **.860**	3,89 **14**	0,83 **3**	1,5 **.060**	1,02 **.040**	0,41 **.016**	15,2±0,51 **.600±.020**
V3L-3001-D8	High force. Up to 15.1 amps load handling.	15.1 Amps **U**	21,3 **.860**	1,47 **5.3**	0,15 **.53**	1,5 **.060**	1,02 **.040**	0,28 **.011**	15,2±0,51 **.600±.020**


Dim. Dwg. Fig. 4

V3L-1108-D8	General use.	10 Amps **TT**	35,6 **1.40**	0,39 **1.4**	0,04 **.14**	2,79 **.110**	2,29 **.090**	0,76 **.030**	15,2±1,5 **.600±.060**
V3L-2102-D8	Low force.	10 Amps **V**	35,6 **1.40**	0,31 **1.1**	0,02 **.07**	2,79 **.110**	2,29 **.090**	0,76 **.030**	15,2±1,5 **.600±.060**
V3L-104-D8	Higher force. Most applications.	11 Amps **T**	35,6 **1.40**	1,11 **4**	0,14 **.5**	3,18 **.125**	2,29 **.090**	1,27 **.050**	15,2±1,5 **.600±.060**
V3L-2-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	35,6 **1.40**	2,22 **8**	0,28 **1**	3,18 **.125**	2,29 **.090**	1,27 **.050**	15,2±1,5 **.600±.060**
V3L-3005-D8	High force. Up to 15.1 amps load handling.	15.1 Amps **U**	35,6 **1.40**	.86 **3.1**	0,06 **.21**	3,05 **.120**	2,29 **.090**	0,81 **.032**	15,2±1,5 **.600±.060**


Dim. Dwg. Fig. 4

V3L-2425-D8	Lower force.	5 Amps **YY**	59,4 **2.34**	0,07 **.25**	—	5,08 **.200**	4,06 **.160**	1,4 **.055**	15,2±2 **.600±.080**
V3L-1122-D8	General use.	10 Amps **TT**	59,4 **2.34**	0,22 **.81**	0,02 **.07**	5,08 **.200**	4,06 **.160**	1,4 **.055**	15,2±1,8 **.600±.070**
V3L-2106-D8	Low force.	10 Amps **V**	59,4 **2.34**	0,16 **.56**	0,01 **.04**	5,08 **.200**	4,06 **.160**	1,4 **.055**	15,2±1,8 **.600±.070**
V3L-131-D8	Higher force. Most applications.	11 Amps **T**	59,4 **2.34**	0,58 **2.1**	0,12 **.42**	6,6 **.260**	3,81 **.150**	2,29 **.090**	14,7±2 **.580±.080**
V3L-6-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	59,4 **2.34**	1,11 **4**	0,14 **.50**	6,95 **2.60**	3,81 **.150**	2,29 **.090**	14,35±1,5 **.565±.060**
V3L-3013-D8	High force. Up to 15.1 amps load handling.	15.1 Amps **U**	59,4 **2.34**	0,39 **1.4**	0,03 **.11**	5,33 **.210**	4,06 **.160**	1,52 **.060**	15,2±1,9 **.600±.075**

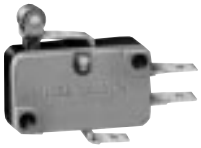

Dim. Dwg. Fig. 4

V3L-2472-D8	Lowest force.	3 Amps **VV**	69,45 **2.75**	0,03 **.11**	— **—**	5,97 **.235**	5,08 **.200**	1,60 **.063**	15,2±2,54 **.600±.100**
V3L-1124-D8	General use.	10 Amps **TT**	69,45 **2.75**	0,19 **.70**	0,01 **.04**	7,74 **.305**	3,68 **.145**	1,65 **.065**	15,31±2,54 **.603±.100**
V3L-145-D8	Most applications.	11 Amps **T**	69,45 **2.75**	0,54 **1.93**	0,10 **.36**	0,76 **.300**	4,57 **.180**	2,54 **.100**	14,48±2,03 **.570±.080**
V3L-14-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	69,45 **2.75**	0,83 **3**	0,14 **.50**	8,38 **.330**	4,32 **.170**	2,54 **.100**	13,72±2,03 **.540±.080**

ROLLER LEVERS

ORDER GUIDE

Catalog Listing	Recommended For	Electrical Data And UL Codes Page 20	Length of Lever "A" mm **inches**	O.F. max. newtons **ounces**	R.F. min. newtons **ounces**	P.T. max. mm **inches**	O.T. min. mm **inches**	D.T. max. mm **inches**	O.P. mm **inches**
V3L-1117-D8	General use.	10 Amps **TT**	20,6 **.81**	0,89 **3.2**	0,10 **.35**	1,2 **.047**	1,14 **.045**	0,33 **.013**	20,6±0,76 **.810±.030**
V3L-2103-D8	Low force.	10 Amps **V**	20,6 **.81**	0,58 **2.1**	0,03 **.11**	1,42 **.056**	0,86 **.034**	0,33 **.013**	20,6±0,76 **.810±.030**
V3L-139-D8	Higher force. Most applications.	11 Amps **T**	20,6 **.81**	2,22 **8**	0,56 **2**	1,5 **.060**	1,02 **.040**	0,41 **.016**	20,6±0,76 **.810±.030**
V3L-3-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	20,6 **.81**	3,89 **14**	0,83 **3**	1,52 **.060**	1,02 **.040**	0,41 **.016**	20,6±0,76 **.810±.030**
V3L-3003-D8	High force. Up to 15.1 amps load handling.	15.1 Amps **U**	20,6 **.81**	1,89 **6.8**	0,15 **.53**	1,2 **.047**	1,02 **.040**	0,05 - 0,25 **.002 - .010**	20,6±0,76 **.810±.030**


Dim. Dwg. Fig. 7

V3L-1101-D8	General use.	10 Amps **TT**	34 **1.34**	0,44 **1.6**	0,04 **.14**	3,18 **.125**	2,16 **.085**	0,76 **.030**	20,6±1,5 **.810±.060**
V3L-2104-D8	Low force.	10 Amps **V**	34 **1.34**	0,31 **1.1**	0,02 **.07**	3,18 **.125**	2,16 **.085**	0,76 **.030**	20,6±1,5 **.810±.060**
V3L-111-D8	Higher force. Most applications.	11 Amps **T**	34 **1.34**	1,11 **4**	0,14 **.5**	3,18 **.125**	2,16 **.085**	1,27 **.050**	20,6±1,5 **.810±.060**
V3L-4-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps **U**	34 **1.34**	2,22 **8**	0,28 **1**	3,18 **.125**	2,16 **.085**	1,27 **.050**	20,6±1,5 **.810±.060**
V3L-3004-D8	Higher force. Up to 15.1 amps load handling.	15.1 Amps **U**	34 **1.34**	0,89 **3.2**	0,14 **.5**	3,18 **.125**	2,16 **.085**	0,76 **.030**	20,6±1,5 **.810±.060**


Dim. Dwg. Fig. 7

Characteristics: O.F. — Operating Force; O.T. — Overtravel; D.T. — Differential Travel; R.F. — Release Force; P.T. — Pretravel; O.P. — Operating Position; F.P. — Free Position.

* Characteristics taken with actuator assembled on Catalog Listing V3-1 switch as shown.

AUXILIARY ACTUATORS

ORDER GUIDE - SWITCHES ARE NOT INCLUDED WITH ACTUATORS

Catalog Listing	Description	Actuator Length "A" mm **inches**	O.F. max newtons **ounces**	R.F. min. newtons **ounces**	P.T. max. mm **inches**	O.T. min. mm **inches**	D.T. max. mm **inches**	O.P. mm **inches**	F.P. max. mm **inches**
JV-1	Leaf type	21,3 **.84**	3,34 **12**	1,11 **4**	1,19 **.047**	0,79 **.031**	0,41 **.016**	15±0,38 **.590±.015**	16,4 **.645**


Dim. Dwg. Fig. 11

JV-7	Long leaf	32,3 **1.27**	2,50 **9**	1,11 **4**	1,57 **.062**	1,27 **.050**	0,64 **.025**	14,5±0,76 **.570±.030**	17,4 **.685**


Dim. Dwg. Fig. 11

JV-5	Roller leaf	20,6 **.81**	3,34 **12**	1,11 **4**	1,52 **.060**	0,79 **.031**	0,41 **.016**	20,3±0,64 **.800±.025**	22,1 **.870**


Dim. Dwg. Fig. 11

NOTE: Contact a MICRO SWITCH Sales Office for application assistance when actuators will be used at temperatures above 300°F (149°C).

Characteristics: O.F. — Operating Force;
R.F. — Release Force; P.T. — Pretravel;
O.T. — Overtravel; D.T. — Differential Travel;
O.P. — Operating Positon; F.P. — Free Position
* Characteristics taken with actuator assembled on Catalog Listing V3-100 switch as shown.

AUXILIARY ACTUATORS

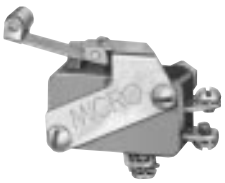
Switches are not included with actuators

ORDER GUIDE - SWITCHES ARE NOT INCLUDED WITH ACTUATORS

Catalog Listing	Description	Actuator Length "A" mm **inches**	O.F. max. newtons **ounces**	R.F. min. newtons **ounces**	P.T. max. mm **inches**	O.T. min. mm **inches**	D.T. max. mm **inches**	O.P. mm **inches**	F.P. max. mm **inches**
JV-26	Long lever	44,5† **1.75**	0,39 **1.4**	0,06 **.21**	8,33 **.328**	3,58 **.141**	4,75 **.187**	12,7±3,18 **.500±.125**	—
JV-20	Roller lever	19,1† **.750**	0,83 **3**	0,14 **.5**	4,78 **.188**	1,57 **.062**	1,98 **.078**	19,5±1,4 **.766±.055**	23,8 **.936**
JV-220	Roller lever	17,7† **.695**	0,83 **3**	0,14 **.5**	4,78 **.188**	1,57 **.062**	1,98 **.078**	19,5±1,1 **.766±.045**	23,8 **.936**
JV-30	One-way roller lever	20,6 **.81**	3,34 **12**	1,11 **4**	2,03 **.080**	0,51 **.020**	0,38 **.015**	25,7±0,76 **1.010±.030**	27,7 **1.09**
JV-91**	Tandem leaf	20,6 **.81**	5,00 **18**	1,67 **6**	1,57 **.062**	0,89 **.035**	–	14,9±0,76 **.588±.030**	16,5 **.650**
JV-82**	Tandem roller leaf	20,6 **.81**	5,00 **18**	1,67 **6**	1,57 **.062**	0,89 **.035**	–	20,5±0,76 **.806±.030**	21,8 **.860**

Dim. Dwg. Fig. 14

Dim. Dwg. Fig. 14



Dim. Dwg. Fig. 14

Dim. Dwg. Fig. 11

Dim. Dwg. Fig. 17

Dim. Dwg. Fig. 17

NOTE: Contact the 800 number for application assistance when actuators will be used at temperatures above 300°F (149°C).
** Travel characteristics on tandem actuators vary with actual basic switch characteristics. These shown are typical for the assembly.
† "A" measurement is from the pivot point of lever to the point indicated on drawing.

MOUNTING DIMENSIONS (for reference only)

PIN PLUNGERS

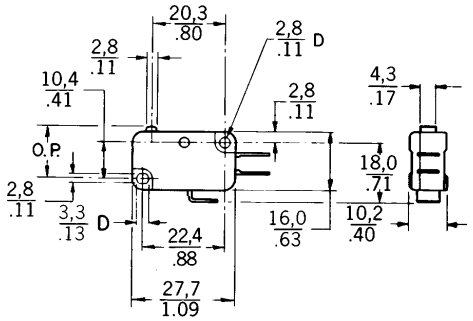


Fig. 1

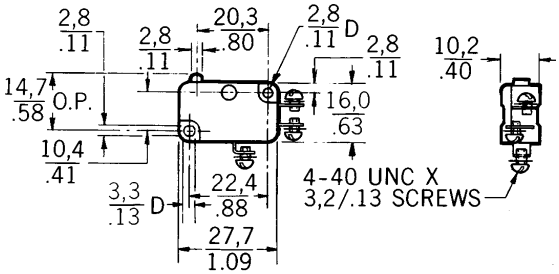


Fig. 2

SIMULATED ROLLER

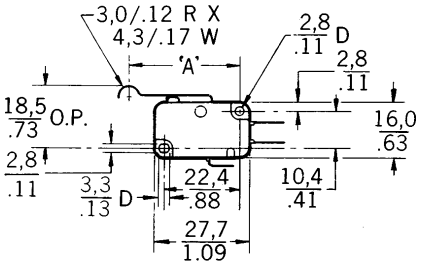


Fig. 3

STRAIGHT LEVER

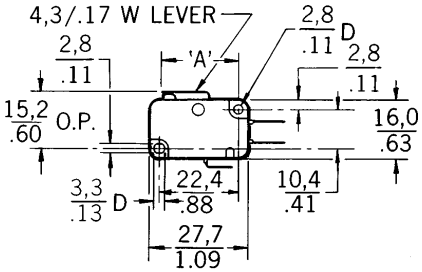


Fig. 4

ROLLER LEVER

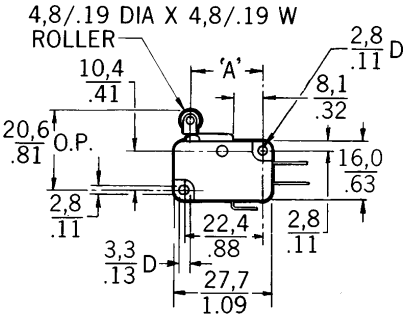


Fig. 7

AUXILIARY ACTUATORS

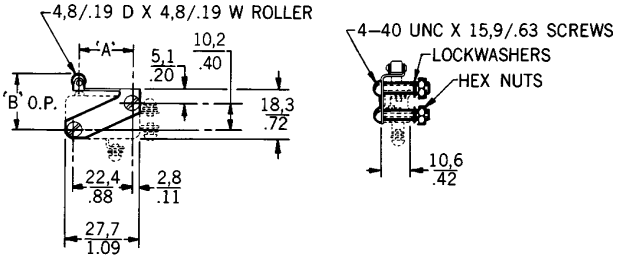


Fig. 11

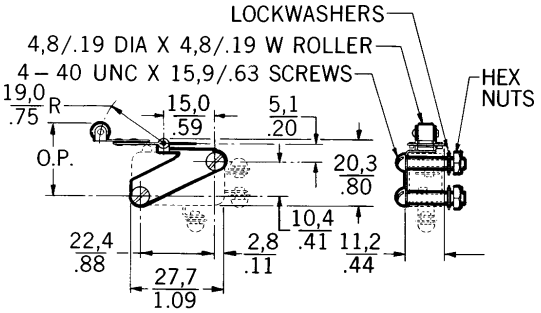


Fig. 14

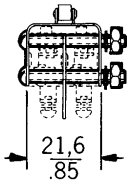


Fig. 17

NOTE: Operate point dimensions taken at top of lever/roller.

Key: 0,0 = mm / 0.00 = inches

Miniature/ Subminiature