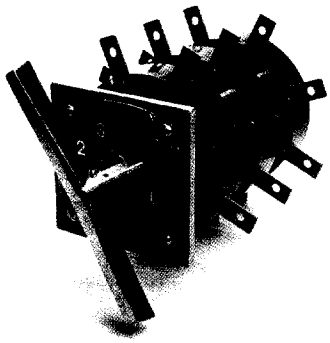
Effective March 1997

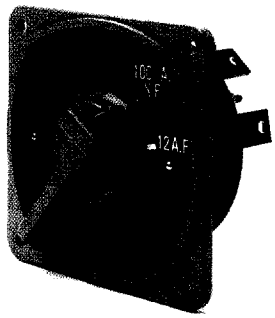
Tap and Knife Switches

Perform testing and service safely

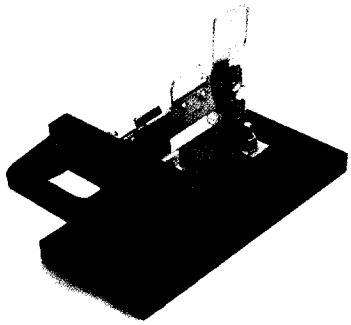
Tap Switches



Welder Type Tap Switches



Knife Switches



ELECTROSWITCH • SWITCHES & RELAYS

UNIT OF ELECTRO SWITCH CORP.

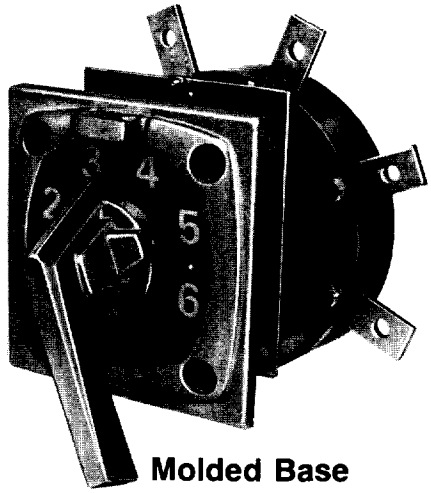
Tap Switches

Non-Load Break 600 Volt Switches

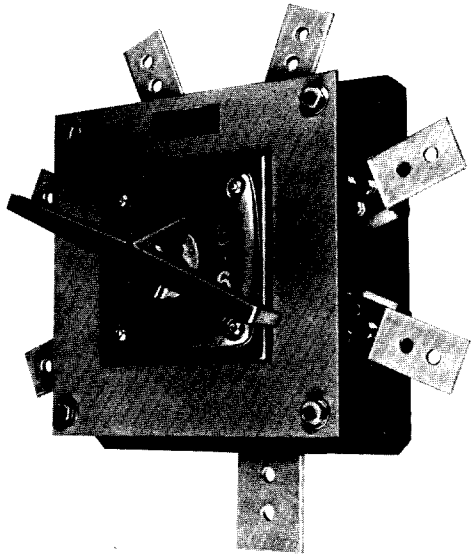
Table of Contents

Also Available...

Electroswitch now has 800 & 1000 amp Molded Base Rotary Tap Switches available. Consult Factory.



Molded Base



Fabricated Base

Electroswitch is a long time supplier of Tap Switches and Knife Switches. We have proven ourselves as a dependable source of reliable products.

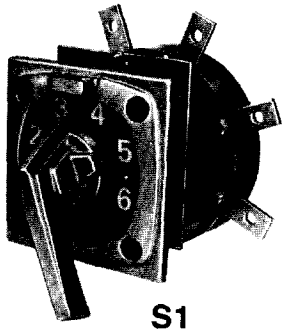
We have one of the broadest lines of special and standard NON-LOAD BREAK switches in the industry.

Contact your local representative, or Electroswitch for more detailed information.

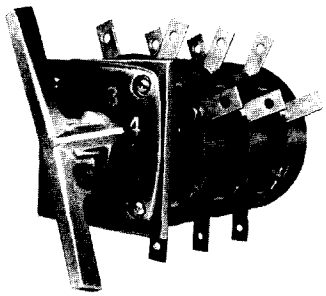
ELECTROSWITCH
• SWITCHES & RELAYS
UNIT OF ELECTRO SWITCH CORP.
180 King Avenue • Weymouth, MA 02188
(617) 335-5200 • Fax: (617) 335-4253

Type S1, T2 & T3

Heavy-Duty 1, 2 & 3 Phase Rotary Tap Switches
Power Switches for Industry



S1



T3

100 Thru 5000 Ampere, Single Phase
100 Thru 2500 Ampere, Two or Three Phase
NON-LOAD-BREAK 600 Volt, 60 Hertz AC 600 Volt DC

Types S1, T2 & T3 Heavy-duty rotary Tap Switches are complete units with escutcheon plates and appropriate safety handles. They are long operating life, low maintenance switching devices, specifically designed for the severe conditions of industrial use. They feature low operating torque; high pressure line contact; flame retardant, non-tracking insulation; and precision made non-ferrous parts. All current carrying parts of 200-ampere switches and larger are heavy silver plated. Switches up to the 1000 ampere size feature glass fibre reinforced molded bases for high strength, precision contact alignment, and light weight.

DUAL CURRENT RATING

Types S1, T2 & T3 Heavy-Duty Rotary Tap Switches are dual rated for both continuous and intermittent duty: Continuous/intermittent.

Continuous Current Rating is based upon a 40 degree C temperature rise and a 40 degree ambient.
Intermittent Current Rating is based upon a 40 degree C temperature rise, a 40 degree C ambient, a 50 percent duty cycle, and a one minute integrating time.

Single, Two or Three Phase

Molded Base Switch	Fabricated Base Switch
Dual Ampere Rating	**Dual Ampere Rating**
100/150	800/1200
200/300	1200/1800
400/600	1600/2400
600/900	**Ampere Rating**
800/1200	2000
1000/1500	3000
	5000 - Single Phase Only

2000, 3000 and 5000 ampere Heavy-Duty Rotary Tap Switches are custom designed and manufactured for each specific application. They provide the same fine materials, workmanship and quality as the lower ampere switches and feature custom design, low operating torque, high pressure line contact, fabricated insulated bases, precision made non-ferrous silver plated parts. Along with the 800, 1200 and 1600 ampere switches, they have built-in rotor lubrication systems.

All switches are supplied with escutcheon and handles. The handles have provision for two padlocks as standard feature.

Ordering Information

Ordering Information

STEP 1. Select the required number of phases: S1-single phase, T2-two phase, T3-three phase.

STEP 2. Select the continuous/intermittent current suitable for application.

STEP 3. Select the number of contact positions required for application.

STEP 4. Select options for applications.

STEP 5. Select catalog number and appropriate suffixes.

STEP 6. Order by catalog number and description.

S1 - 10 6 - X45S

Option Suffixes
EXAMPLE: "X" for "OFF" position
"45" for 45 degree angled terminals
"S" for auxiliary switch

Number of Active Contact Positions
EXAMPLE: "6" equals six electrical contact positions. Combined total of electrical and "OFF" is limited to eight on molded base. "I" specifies series/parallel.

Continuous Current Rating
EXAMPLE: "10" equals 100 amperes continuous.

Basic Switch Model
EXAMPLE: "S1" means single phase, handle operated.
"T2" means two phase
"T3" means three phase
"W1" means single phase with welder handle. No name plate.
"SW1" means single phase with welder handle and nameplate.

See drawings next section S1, T2 & T3 for dimensions, mounting information, contact arrangements and escutcheon layouts.

Standard Optional Features

Designated Code

X "OFF" Position

An "OFF" position is available in place of one contact position. Add the suffix "X" to catalog number. Eight total switch positions, "OFF" included, is the maximum on molded base.

8HV Increased Operating Voltage to 800 volts

12HV Increased to 1200 volts.

45 or 90 Angled Terminals

All switches are supplied with straight clips and rotor strap as standard. To obtain 45 degree or 90 degree clips and rotor strap, add the suffix "-45" or "-90" to the catalog number.

S Auxiliary Switch

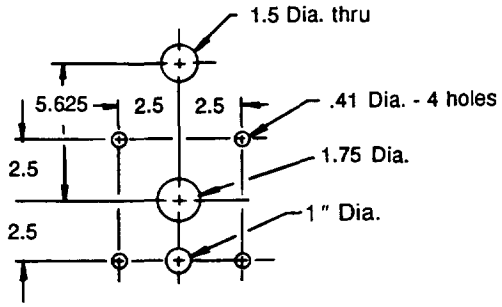
A single pole-double throw 15 amp at 480VAC auxiliary switch actuated by the rotary tap switch mechanism is available for remote indication purposes. Add the suffix "-S" to the catalog number

MR Mechanical Release

Provides a separate spring loaded handle which must be withdrawn to permit operation on main handle of switch to the next tap position. Actuation of the mechanical release operates an auxiliary switch (SPDT - 15 amp at 480VAC) which can be wired into the control circuit to assure the tap switch is operated in a NO-LOAD condition. To obtain mechanical release option, add the suffix "-MR" to the catalog number.

L Key Interlock Provision

Provisions can be provided for customer addition of a Type F, 1-inch bolt-projection when withdrawn, ¾-inch travel, Key Interlock to prevent unauthorized switch operation on all types of switches. Add the suffix "L" to the catalog number.



Panel Drilling

Special Optional Features

Dial Plate

Standard switches are supplied with numbers. We can supply letters, different numbers, etc.

Handles

Type S1, single phase, are supplied with pistol grip handles. Type T2 & T3, tandem 2 or 3 phase switches, are supplied with "T" Handles. Type S1 could be supplied with "T" Handle, low profile. Type T2 & T3 could be supplied with pistol grip handle.

Terminals

All switches are supplied with straight clips and rotor straps as standard. We can supply straight clips and angled rotor strap.

Increased Operating Voltage

Standard switches are rated 600 volt. We can supply 1200, 2400, 4160, 4800, etc.

There are no designated codes for special optional features other than "-Z". Special features must be written on purchase order.

Combinations

Switches can be supplied with:

More than one Auxiliary Switch
More than one Mechanical Release
More than one Key Interlock Provision

Combination of Mechanical Release with Key Interlock, Mechanical Release with extra Auxiliary Switches, etc. To obtain these options, add suffix "-MR", "-2S", "-2MR", "-2L", etc.

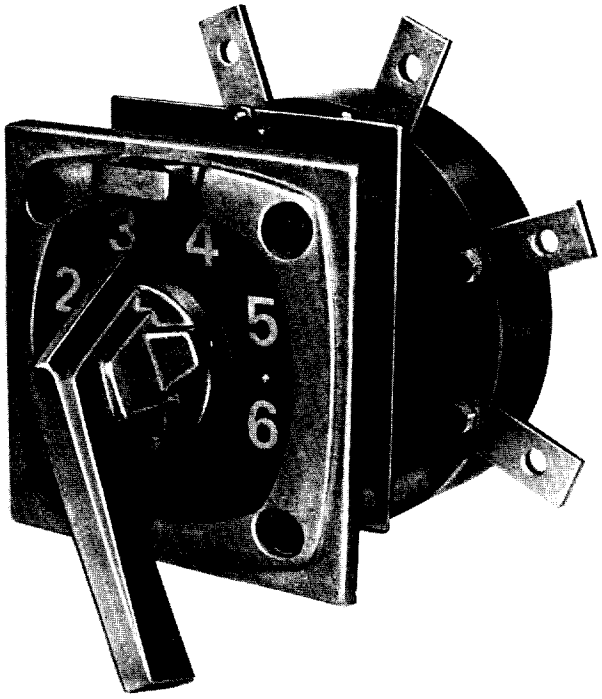
In addition, our switches feature manual operators or motor operators. Standard motor operators are uni-directional controlled. Reversing control is available.

Special Applications

The basic design of Heavy-Duty Rotary Tap Switches lends itself to numerous special modifications and arrangements; increased operating voltages, series/parallel switching, wye-delta switching, generator winding controls, high frequency switching, motor reversing, polarity reversing, etc.

Consult the factory for your particular application. Our staff of engineering and marketing specialists are at your service.

Molded Base Switches

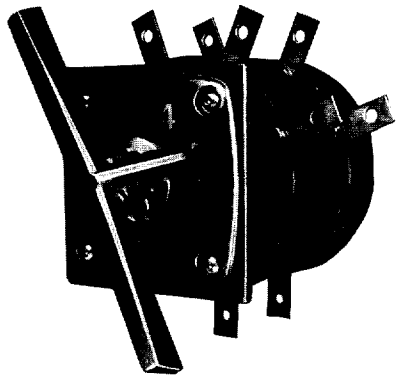


Type S1 Molded Base Switches

Single Phase Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° Terminals, 90° Terminals or any combination of Auxiliary Switch, 45° & 90° terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° & 90° Terminals.

Provision for Key Interlock with 45° or 90° Terminals.

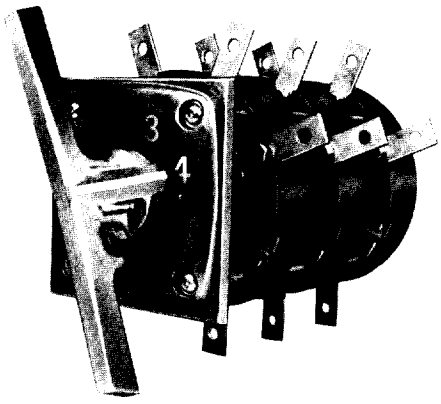


Type T2 Molded Base

Two Phase, Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° Terminals, 90° terminals or any combination of Auxiliary Switch, 45° & 90° Terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° & 90° terminals.

Provision for Key Interlock with 45° or 90° Terminals.



Type T3 Molded Base

Three Phase, Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° terminals, 90° terminals, or any combination of Auxiliary Switch, 45° or 90° terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° or 90° Terminals.

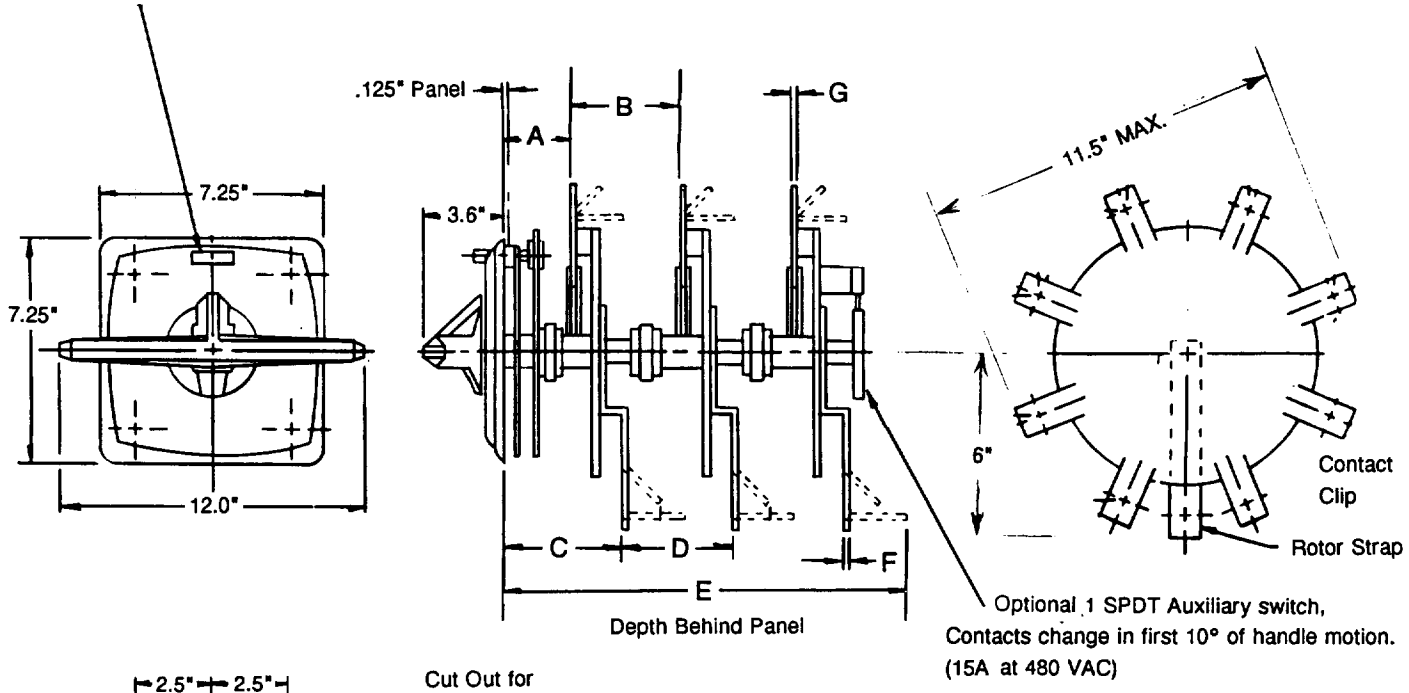
Provision for Key Interlock with 45° or 90° Terminals.

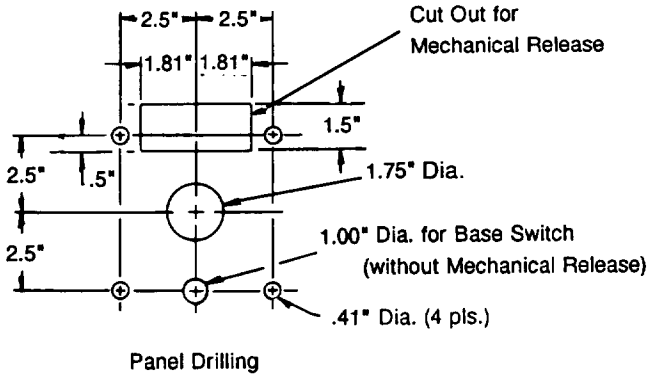
Dimensions

S1, T2, & T3 Molded Base Non Load Break Tap Switches

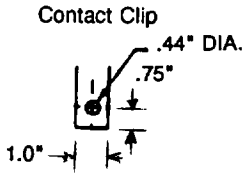
Shown as basic switch with options of: 45° or 90° terminals, Auxiliary Switch, Mechanical Release.

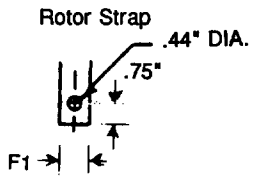
Optional Mechanical Release Feature, Pull Pin to allow operation of main handle.
(1 SPDT Auxiliary switch included with mechanism - 15A at 480 VAC)





Panel Drilling





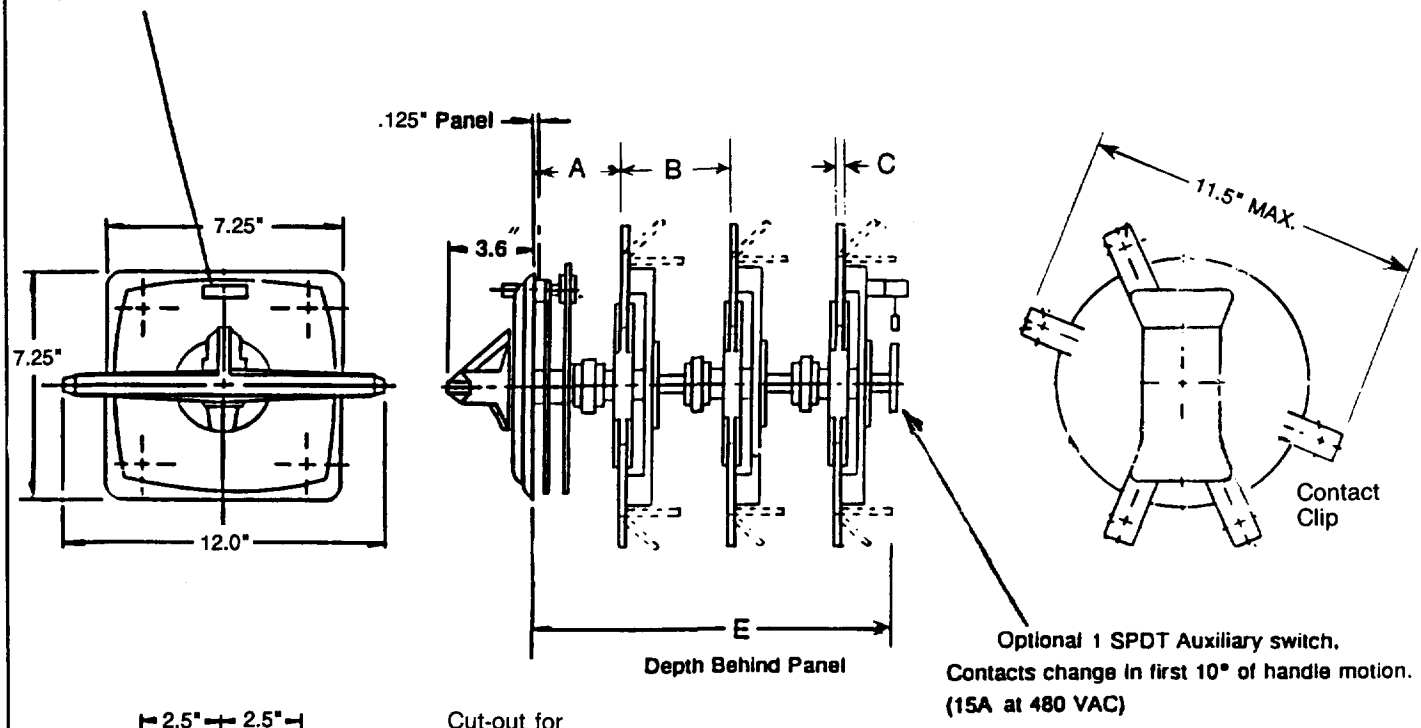
								E MAX ①		
AMPS	**A①**	**B**	**C**	**D**	**F**	**F1**	**G**	**S1**	**T2**	**T3**
100/200	2.06	3.63	3.88	3.63	0.13	1.0	0.13	5.00	8.63	12.30
400/600	2.06	4.13	4.00	4.13	0.19 ②	1.5	0.25	5.00	9.32	13.39
800	2.38	5.06	4.56	5.06	0.25	2.5	0.25	6.56	11.63	16.69
1000	2.38	4.63	4.44	4.63	0.38	2.5	0.38	6.25	11.31	16.38

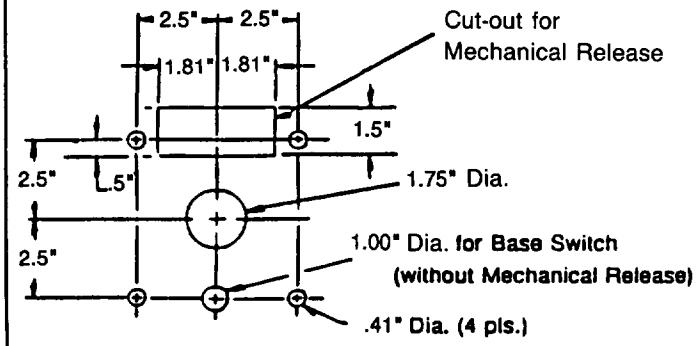
① *Add 2.00" for Mechanical Release*
② *0.13" for 400 Amp.*

Dimensions

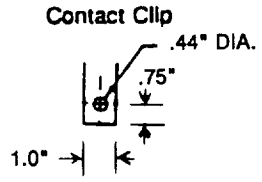
S1, T2 & T3 Molded Base Switches Series/Parallel - 1,2 & 3 Phase

Shown as basic switch with options of: 45° or 90° terminals, Auxiliary Switch, Mechanical Release.





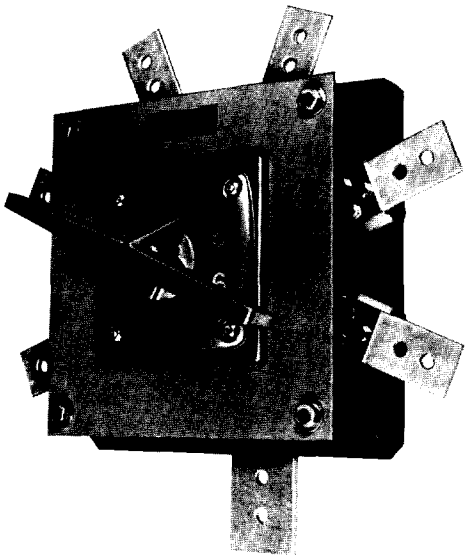
Panel Drilling



AMPS	A①	B	C	E MAX ① S1	E MAX ① T2	E MAX ① T3
100/200	2.06	3.63	0.13	5.00	8.63	12.25
400/600	2.06	3.75	0.25	5.00	9.00	12.75
800	2.69	5.06	0.25	6.31	11.38	16.44
1000	2.56	5.00	0.38	6.00	11.06	16.13

① *Add 2.00" for Mechanical Release*

Fabricated Base Switches



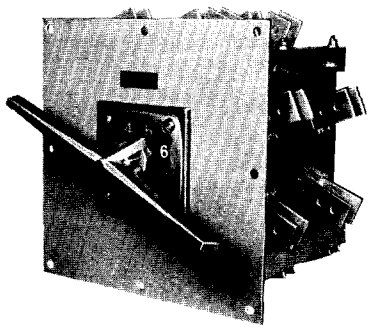
Type SF1 Fabricated Base

Single Phase Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° Terminals, 90° Terminals or any combination of Auxiliary Switch, 45° or 90° Terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° & 90° Terminals.

Provision for Key Interlock
Key Interlock - 1" bolt projection when withdrawn - Type "F" - 3/4 travel supplied by customer.

Note:
1. Key Interlock to lock switch in closed position.
2. Bolt extended - key free - cannot change positions.
3. Bolt withdrawn - key held - can change positions.

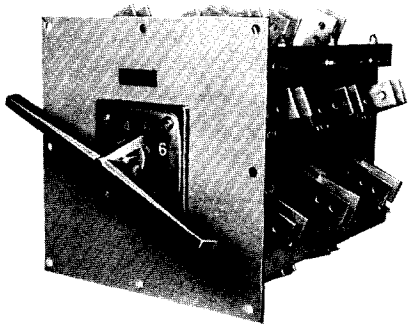


Type TF2 Fabricated Base

Two Phase, Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° terminals, or any combination of Auxiliary Switch, 45° terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° Terminals.

Provision for Key Interlock with 45° terminals.



Type TF3 Fabricated Base

Three Phase, Rotary Tap Switch or Series/Parallel Switch with an Auxiliary Switch, 45° Terminals, or any combination of Auxiliary Switch, 45° Terminals.

Mechanical Release, any combination of Auxiliary Switch, 45° Terminals.

Provision for Key Interlock with 45° Terminals.

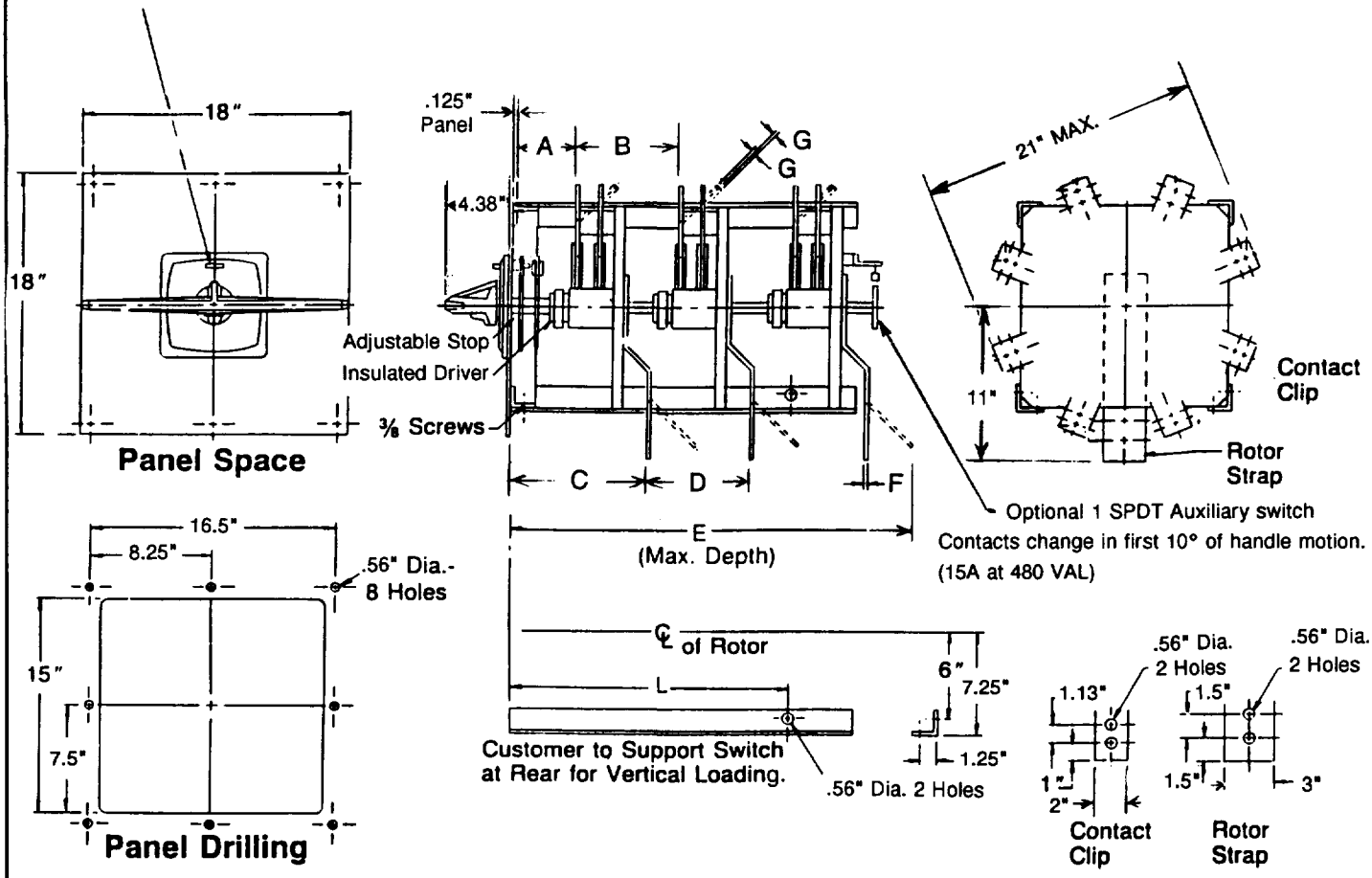
Dimensions

Type SF1, TF2 & TF3 Fabricated Base Switches - 1, 2 & 3 Phase

Shown as basic switch with options of: 45° terminals, Auxiliary Switch, Mechanical Release.

Optional Mechanical Release Feature, Pull Pin to allow operation of main handle.

(1 SPDT Auxiliary switch included with mechanism - 15A at 480 VAC)



AMPS	A①	B	C	D	F	G	E MAX ① SF1	TF2	TF3
1200	2.56	5.69	7.38	7.19	0.25	0.25	10.88	18.38	25.63
1600	2.25	5.56	7.44	7.31	0.38	0.38	11.13	18.50	25.75
						L →	NONE	8.94	16.00

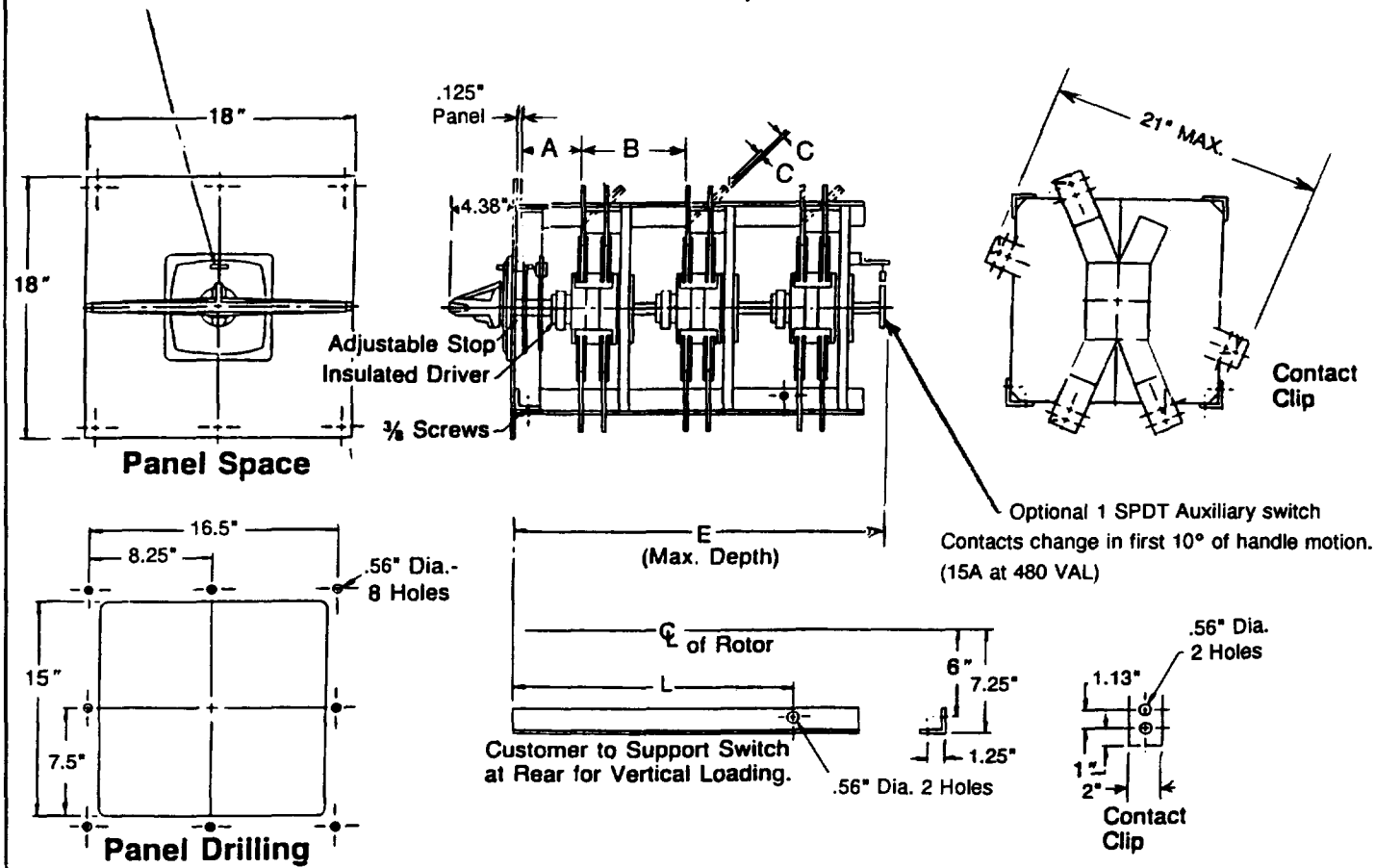
① *Add 2.00" for Mechanical Release*

Dimensions

Type SF1, TF2 & TF3 Fabricated Base Switches Series/Parallel - 1,2 & 3 Phase

Shown as basic switch with options of: 45° terminal, Auxiliary Switch, Mechanical Release.

Optional Mechanical Release Feature, Pull Pin to allow operation of main handle.
(1 SPDT Auxiliary switch included with mechanism - 15A at 480 VAC)



AMPS	A①	B	C	E MAX ① SF1	TF2	TF3
1200	2.44	5.88	0.25	8.56	15.88	23.25
1600	2.50	5.94	0.38	8.88	16.38	24.13
			L →	NONE	9.25	16.63

① *Add 2.00" for Mechanical Release*

Notes:

1. Mechanical Release - Pull pin before operating main handle (* 1-SPDT auxiliary switch included with mechanism - 15A at 480 VAC).

2. 1-SPDT Auxiliary Switch, contacts change in first 10° of handle motion. 15A at 480VAC.

3. **Customer Note:**
   To install switch, remove (8) 3/8-16 hex head cap screws from side of angle frame. Remove subplate assembly from angle frame, insulated driver should be removed from first deck rotor with subplate assembly (keep adjustable stops in proper position).

   Caution:
   Do not remove adjustable stops from subplate assembly when removing subplate assembly from switch. Place subplate assembly on front of customer mounting panel and bolt in place with 8 bolts. Place switch behind customer mounting panel and bolt (8) 3/8-16 hex head cap screws in angle frame. Care should be exerted to completely line switch up to prevent unnecessary binding of assembly. Install rear support to back of switch support angles.

Note 4 - Nameplate Drawing

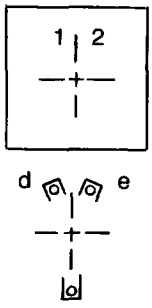


FIG. 1

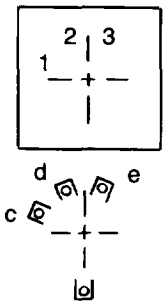


FIG. 2

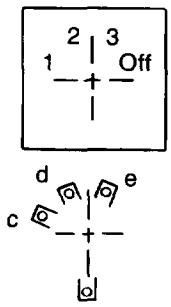


FIG. 3

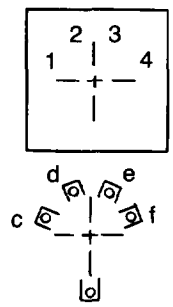


FIG. 4

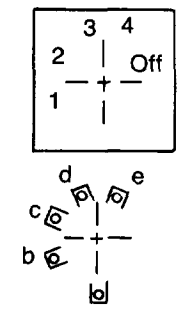


FIG. 5

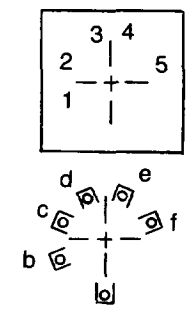


FIG. 6

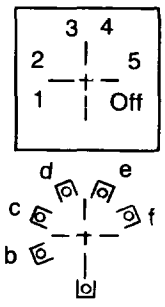


FIG. 7

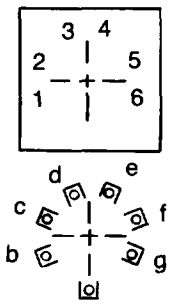


FIG. 8

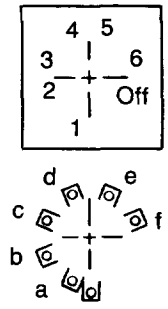


FIG. 9

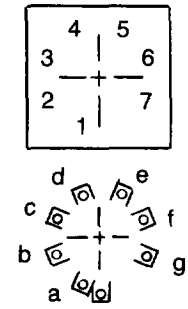


FIG. 10

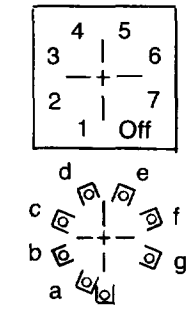


FIG. 11

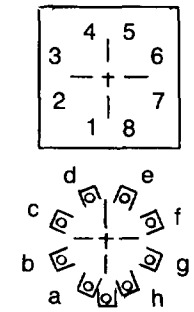
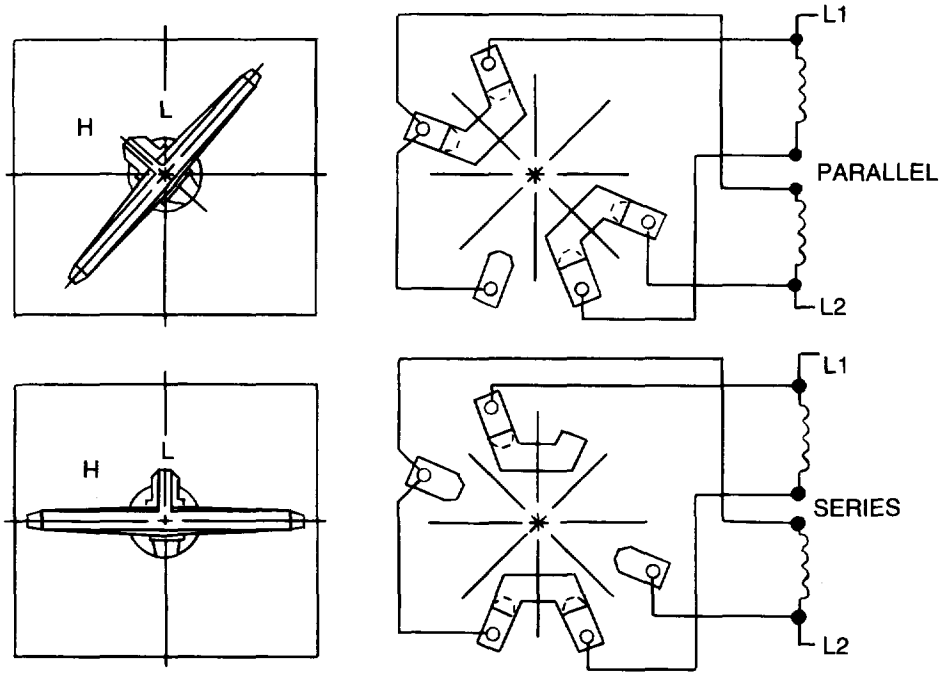


FIG. 12

Note 5 - Series/Parallel Connection Diagram



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