Switch Operation Demo

Expected Number of Operations

* Table compiled with reference to actual contact life tests on several selected ratings

KVA	VOLTS	AMP	LIFE	INSPECT	SWITCH SIZE
100	2500	400	1950000	1450000	HC
100	5000	200	2000000	1500000	MC
100	19920	50	2000000	1500000	HV
114.3	7620	150	600000	450000	LC
125	2500	500	1100000	840000	HC
125	5000	250	2000000	1500000	MC
138	13800	100	1250000	960000	LC
144	14400	100	2000000	1500000	HV
167	2500	668	620000	460000	HC
167	5000	334	1300000	1000000	HC
167	7620	219	1100000	830000	MC
200	19920	100	2000000	1500000	HV
207	13800	150	2000000	1500000	HC
250	5000	500	560000	420000	HC
250	7620	328	930000	700000	HC
276	13800	200	1350000	1000000	HC
288	14400	200	1100000	830000	HV
333	5000	668	310000	230000	HC
333	7620	437	550000	410000	HC
333	14400	230	740000	560000	HV
333	19920	167	1150000	870000	HV
400	19920	200	850000	640000	HV
414	138000	300	660000	490000	HC
416	7620	546	310000	230000	HC
416	14400	289	540000	410000	HV
432	14400	300	510000	380000	HV
500	14400	347	230000	170000	HV
509	7620	668	180000	130000	HC
576	14400	400	230000	170000	HV

The above table is compiled with reference to actual contact life tests of several selected ratings.

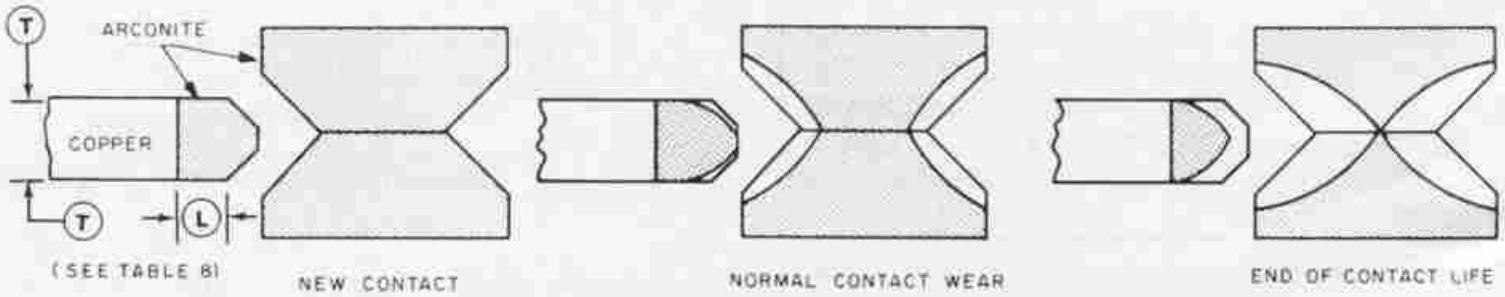
LC = Low Current Switch
MC = Mid Current Switch
HC = High Current Switch
HV = High Voltage Switch

Contact Life

ARCONITE DIMENSIONS IN INCHES (AND MILLIMETERS)
ON STATIONARY CONTACTS

Reference Number R2033

SWITCH	T	L
LOW CURRENT	0.188 (4.8)	0.125 (3.2)
MID CURRENT	0.250 (6.4)	0.156 (4)
HIGH CURRENT	0.250 (6.4)	0.188 (4.8)
HIGH VOLTAGE	0.250 (6.4)	0.188 (4.8



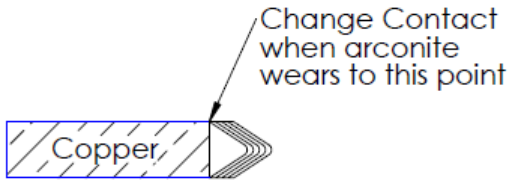
Sketch A Sketch B Sketch C

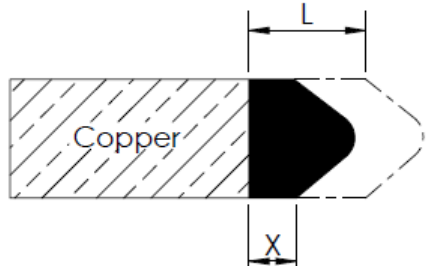
Contact Life

ARCONITE DIMENSIONS IN INCHES (AND MILLIMETERS)
ON STATIONARY CONTACTS

Reference Number R2033

SWITCH	T	L
LOW CURRENT	0.188 (4.8)	0.125 (3.2)
MID CURRENT	0.250 (6.4)	0.156 (4)
HIGH CURRENT	0.250 (6.4)	0.188 (4.8)
HIGH VOLTAGE	0.250 (6.4)	0.188 (4.8

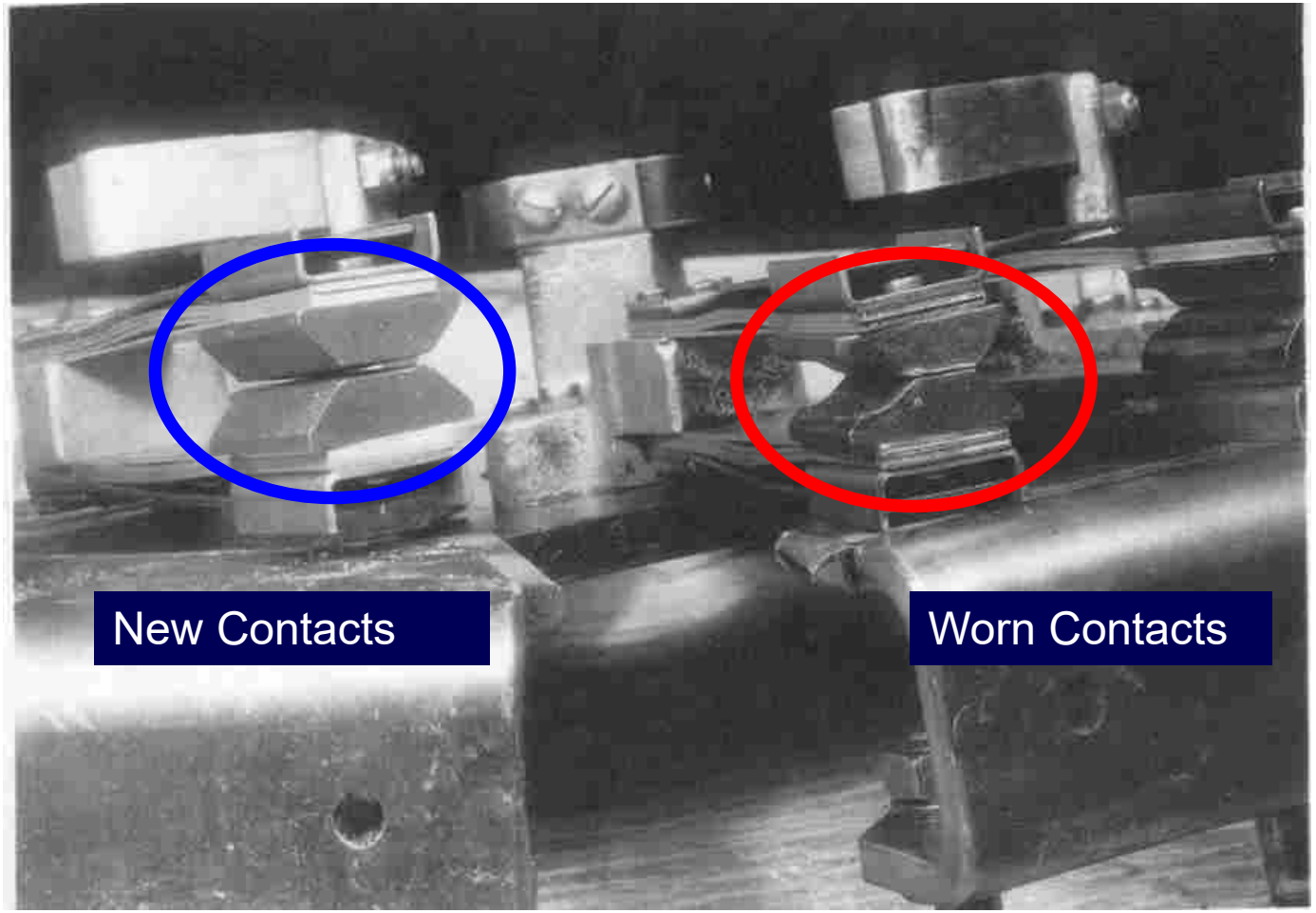




$$Total\ Life = \frac{Distance\ L}{(Distance\ L - Distance\ X)} \times Operations\ Counter$$

$$1'000.000 = \frac{0.188"}{(0.188" - 0.094")} \times 500.000$$

New vs Old Contacts



Changing A Contact

1. Remove mechanism from regulator (see operation/maintenance manual)
2. Run to Neutral
3. Remove shelf
4. Separate panels
5. Replace shelves
6. Check alignment
7. Re-assemble tap changer

Regulator Load Tap Changing Switch (LTC)

1. Run tap changer to Neutral

2. Remove Locking String and Fiber Nut

3. Remove Snap Ring and Washer

4. Remove Lock Nuts

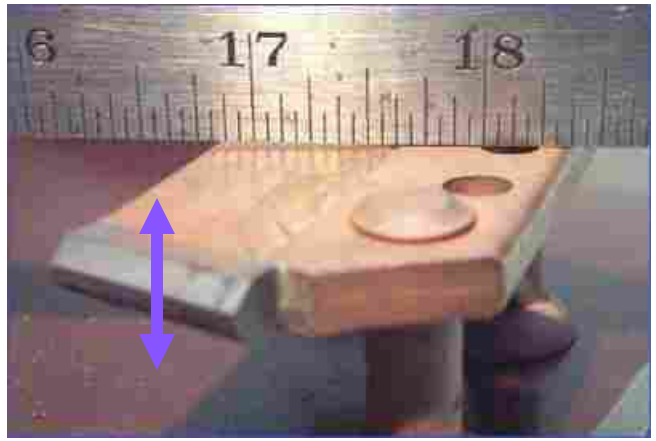
Regulator Load Tap Changing Switch (LTC)

Contact Change Out

5. Separate Panels

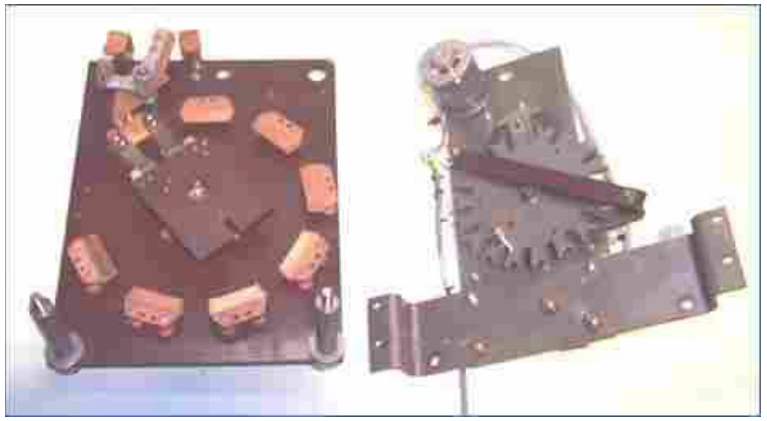
6. Remove Finger Carrier Replace Shelves

7A. Check shelf flatness with straight edge



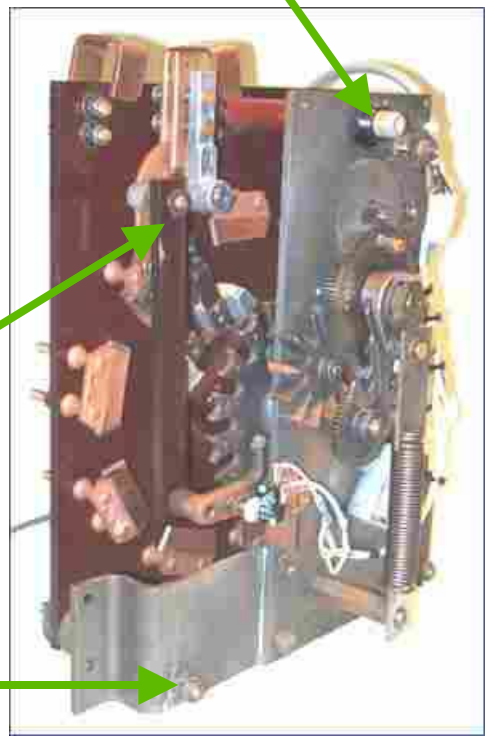
7B. Bend shelf to minimize gap between ruler and shelf.

Contact Change Out



8. Install new finger carrier and mount last shelf. Re-assemble panels.

9A. Tighten top fiber nut. Lock in place with string.



9B. Replace washer & snap ring.

9C. Tighten bottom nuts.

Voltage Regulator Switching Mechanism Hardware Torque Requirements

THREAD GAGE	MATERIAL	LOCATION	TORQUE
8-32	Sil Bronze	Steel Panel	14 to 16 in-lbs
10-32	Sil Bronze	Steel Panel	23 to 26 in-lbs
1/4-20	Steel	Steel Panel	5 to 5.5 ft-lbs
5/16-18	Steel	Steel Panel	9 to 11 ft-lbs
3/8-16	Steel	Steel Panel	17 to 19 ft-lbs
1/2-13	Steel	Steel & Compound Panel	40 to 44 ft-lbs
5/8-11	Steel	Steel Panel	80 to 85 ft-lbs
3/4-10	Steel	Steel Panel	115 to 120 ft-lbs
5/16-18	Copper	Compound Panel	60 to 80 in-lbs
3/8-16	Copper	Compound Panel	90 to 100 in-lbs
1/2-13	Copper	Compound Panel	28 to 30 ft-lbs
3/4-16	Fibre	Steel & Compound Panel	100 to 125 in-lbs