HANCO International

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INSTRUCTION MANUAL

FLUX POWER
SCREEN HEATING EQUIPMENT

HANCO FLUX POWER SCREEN HEATING INSTALLATION INSTRUCTIONS

Reference Drawing:_____ Transformer:_____

Screen Cloth Specifications

Width: Width or distance between inside of screen cloth hooks should be 2" less than the inside width of screen box. Arch Deck: The width is determined by measuring distance along contour of arch.

Length: Length of cloth panel must be reduced to allow ½" clearance between each panel.

Hooks: Material for these hooks should be stainless steel. Do not weld, rivet, bolt or use any other mechanical fastener to retain screen cloth in hooks. Every wire in the cloth must come in contact with the cloth hook. This prohibits the use of paper, felt, or any other material to be placed within the hook assembly.

1. Remove all existing screen cloth on deck to be heated.
2. Re-drill tension bolt holes in the side plate of the screen if necessary. The height of these new holes in the screen side plate is determined by using the ledge angle or screen cloth support as reference.
3. If heating is applied to a deck other than the top deck, there must be holes cut in the side plate of the screen for terminal plates to extend.
4. Mount feeder bar support.
5. Wire brush and clean screen cloth hooks, also ledge angle or support extending along inside of screen box side plate.
6. Fasten insulating strip material to the top of the ledge angle, also vertically on the side plate. This insulation is fastened with adhesive and extends complete length of screen box.
7. When two or more screen cloth panels are to be heated, these panels must be separated by at least 3/8" to ½". Also, the ends of the screens must be separated from the frame.
8. The screen cloth panels are ready to be placed in the screen box if all of the above operations have been performed. The cloth panels must not come in contact with the screen frame at any point; this will cause a ground. Certain models of heating systems do require tension rails to be grounded to the side plate. For these systems, specific instructions are located on prints supplied with the system. Some screen boxes are equipped with feed chutes or discharge chutes that will cause a ground if not properly insulated. If the manufacturer is aware of this, the installation drawing will indicate how to insulate these places. There is enough extra insulation and adhesive with each heating kit for this purpose.
9. After the screen cloth is in place, the tension rails may be placed in position and tightened to tension the cloth panels.
10. The HANCO Flux Power Transformer is mounted to permit the feeder bar to pass directly through the center of the transformer. The transformer must be mounted at the same angle or plane as the feeder bar passing through the center of the transformer. The unit may be suspended by 3/8" wire rope or base mounted.
11. The primary of the HANCO Flux Power Transformer is wired as per instructions located within each transformer control box.

HANCO SCREEN HEATING SERVICE PROCEDURE

The following has been prepared to assist you in locating any malfunctions in your heating system.

A heated screen is generally considered simple to maintain and service. There are a few things to keep in mind. The secondary screen voltage never exceeds 15 volts, and theoretically tissue paper will insulate the circuit. Likewise, contamination between contacts is the largest source of trouble. Contamination can generally be overcome by proper installation and maintenance in making sure all connections are clean and tight. An electrical joint compound is also recommended when cleaning electrical connections. It is important to clean the cloth hook strip and wedge conductor hook when installing cloths and make sure tensioning bolts are tight. It is a good practice when a cloth has been re-installed in the screen frame to re-tighten the tension bolts after about 4 hours of operation. The cloth should be re-tightened with heat applied to allow for expansion in the cloth.

With today's new systems, there is virtually no maintenance. Keeping all electrical connections in good condition is the key. Should you need assistance in sizing or installation, engineers are available for consultation over the phone or on site.

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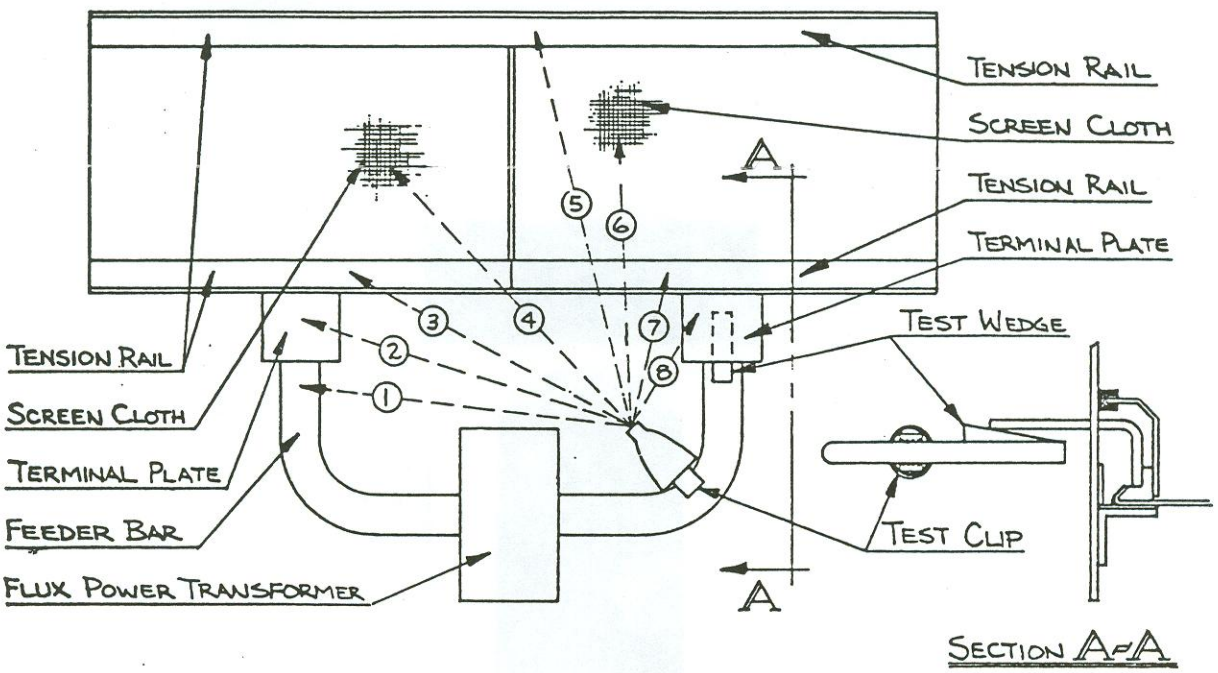
OPEN CIRCUIT TEST PROCEDURE



(A) Remove bolts attaching feeder bar or cables to teminal plate and insert Hanco test wedge to produce open circuit.

(B) Attach clip end of Hanco tester to feeder bar.

(C) Operate transformer on normal tap position.

(D) Using probe of Hanco tester, momentarily strike points 1 through 8 in sequence.

(E) Open circuit appears where there is no spark between probe and point checked. If no spark appears at Test #1, transformer is not putting out voltage. (Refer to "Transformer Test Procedure.")

NOTE: Most heating systems have one transformer per each two sections of screen cloth as shown in sketch.

In the event there are three cloth panels and two transformers with their primary connected open delta to a 3 phase line, the open circuit test is same as for a two panel screen and one transformer, except apply the open circuit test to each transformer individually.

CAUTION: Do not apply spark test in an explosive atmosphere.

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TRANSFORMER TEST PROCEDURE

1. Remove bolts attaching feeder bar or cables to terminanl plate. Insert test wedge between feeder bar and terminal plate, thus producing an open circuit in secondary circuit of transformer.

   Illustration of test wedge in position is shown on "Open Circuit Test Procedure".

2. Set tap switch on #1 position.

3. Turn primary power on and with a voltmeter read primary voltage at transformer terminals. Transformer operates, only, on 1 phase, 50/60 cycle power.

INCOMING VOLTAGE MUST NEVER BE CONNECTED BETWEEN TERMINALS "A" AND "B".

This applies only to those transformers equipped with a "B" terminal.' Proper connection is "A" and "C" or "B" and "C" only.

After the above three tests have been performed, make the following tests:

CURRENT TEST

With primary power turned on, read primary amps. A good transformer will read O-10 amp primary current.

A shorted transformer will read in excess of 10 amps and probably will blow fuse.

VOLTAGE TEST

Fasten the clip end of Hanco tester to feeder bar. Illustration of clip in position is shown on "Open Circuit Test Procedure".

With the probe end of test wire, momentarily strike the far side of feeder bar at point where it attaches to the other terminal plate. A good transformer will produce a spark at probe end.

If the above voltage test produces no spark, there may be an open circuit in tap switch. Rotate tap switch to different positions and apply voltage test in each position. If there is still no spark, the transformer has an open circuit and must be replaced.

CAUTION: Do not apply spark test in an explosive atmosphere.

GROUND TEST PROCEDURE

1. By visual inspection make certain screen cloth is not touching screen deck or frame.
2. Attach clip end of Hanco tester to screen frame side plate where free of paint.
3. Operate transformer on normal tap position.
4. Momentarily strike probe end of Hanco tester to each tension rail where free of paint.
   (a) No spark at any of the tension rails indicates screen is clear of all grounds.
   (b) When some rails spark and others do not spark, grounds are located in all rails that do not spark.
5. After determining which rails are grounded, remove rails and repair grounds.

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TRANSFORMER BLOWS FUSES

A - Screen cloth, feeder bar or tension rail grounded to frame.	A - Remove grounds. (Refer to Ground Test Procedure.)
B - Wrong connection.	B - Correct wrong connection. Transformer equipped with 3 terminals (A,B,C) MUST NEVER BE CONNECTED TO 3 PHASE POWER, OR 1 PHASE CONNECTED TO "A" AND "B". Connect 1 phase power to either "A" and "C" or "B" and "C" only.
C - Improper fuse size.	C - Install proper size fuse.
D - Defective transformer.	D - Refer to "Transformer Test Procedure".

TRANSFORMER OPERATES EXCESSIVELY HOT

(Hot being uncomfortable to hold hand on or smoking.)

A - Screen cloth, feeder bar or tension rail grounded to frame.	A - Remove grounds. (Refer to "Ground Test Procedure".)
B - Wrong connection.	B - Correct wrong connection. Transformer equipped with 3 terminals (A,B,C) MUST NEVER BE CONNECTED TO 3 PHASE POWER, OR 1 PHASE CONNECTED TO "A" AND "B". Connect 1 phase power to either "A" and "C" or "B" and "C" only.
C - Operating beyond primary current rating.	C - Operate on a lower tap switch setting within the primary amp rating of transformer.

NO HEAT ON SCREEN CLOTH

A - Primary power off.	A - Turn power on.
B - Primary fuse blown.	B - Replace fuse.
C - Loose or faulty connection between feeder bar and terminal plates.	C - Clean contact surfaces and tighten bolts. Refer to "Open Circuit Test".
D - Screen cloth tension loose.	D - Tighten tension bolts.
E - Screen cloth, feeder bar or tension rail grounded to frame.	E - Remove grounds. Refer to "Ground Test Procedure".
F - Galvanized hook strips on screen cloth.	F - Replace with stainless or plain steel hook strips.
G - Felt or canvas between screen cloth and hook strip.	G - Remove felt or canvas.

H - Defective transformer.	H - See "Transformer Test Procedure".
I - Dirt and contamination between screen hook strip and copper or aluminum distribution bar.	I - Clean hook strip and copper or aluminum distribution bar with wire brush and sandpaper.

UNEQUAL HEAT ON SCREEN CLOTH

A - Galvanized hook strips on screen cloth.	A - Replace with plain or stainless steel hook strips.
B - Improper tensioning.	B - Tighten all tension bolts.
C - Rivets or welds between hook strip and screen cloth.	C - Replace with screen cloth having no rivets or welds.
D - Tension rail warped and not making good contact with screen hook strip.	D - Straighten or replace with new tension rails.
E - Dirt and contamination between screen hook strip and copper or aluminum distribution bar.	E - Clean hook strip and copper or aluminum distribution bar with wire brush and sandpaper.

CLOTH BURN OFF AT HOOK STRIP

A - Improper cloth tension.	A - Tighten all tension bolts.
B - Rivets or welds between hook strip and screen cloth.	B - Replace with screen cloth having no rivets or welds.
C - Galvanize hook strip.	C - Replace with plain or stainless steel hook strips.
D - Excessive tramp iron or metallic objects building up along screen cloth and tension rail.	D - Remove tramp iron or metallic objects. If this continues, advise factory for recommendations.

ONE CLOTH OPERATES NORMAL OR EXCESSIVELY HOT WHILE SECOND CLOTH PANEL OPERATES COLD

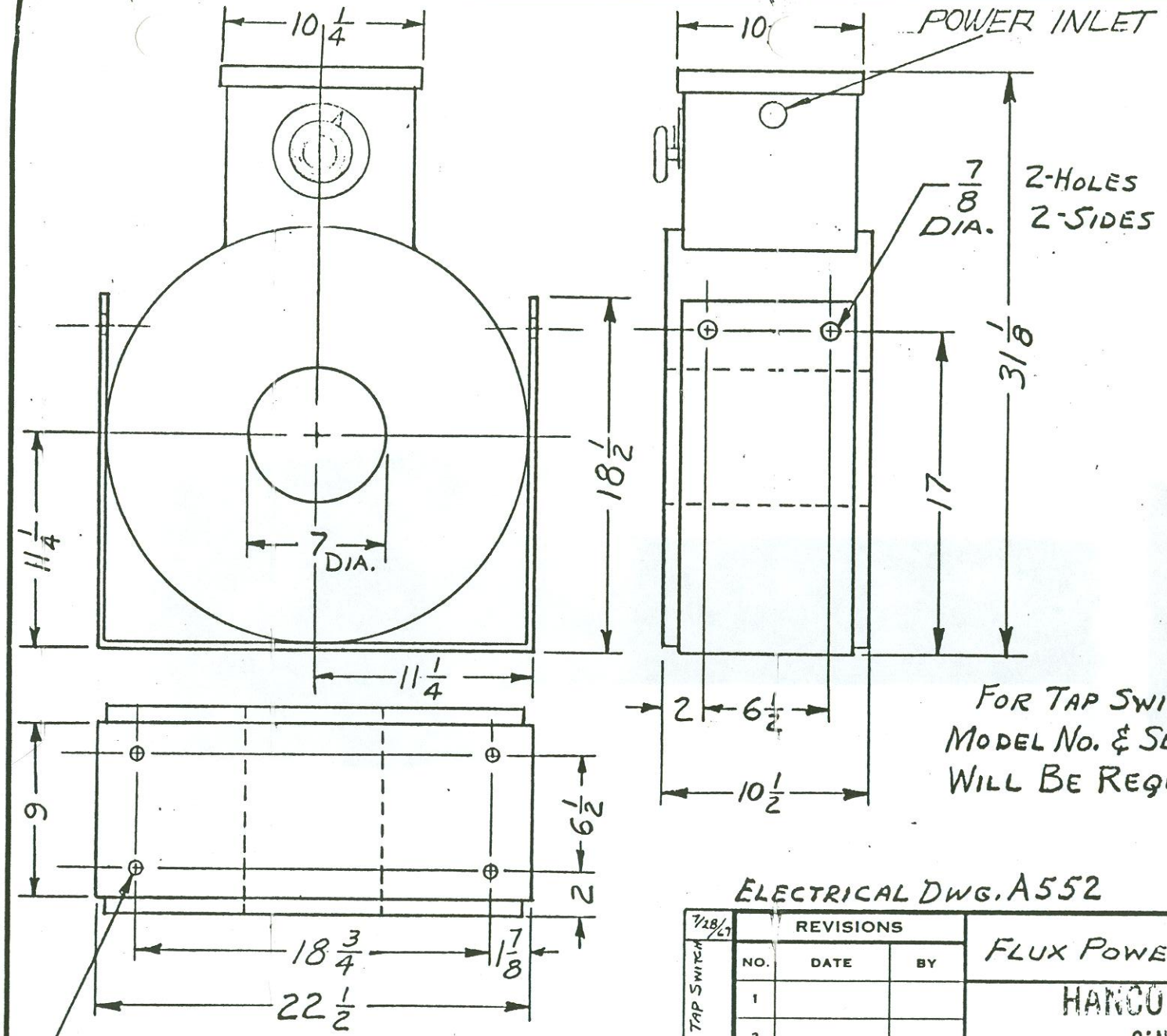
(This applies only on series heating systems.)

A - The cold cloth panel is shorted. This being (2) two grounds, one on each side of cloth panel, causing current to flow through screen frame by-passing the cold panel.	A - Remove grounds. Refer to "Ground Test Procedure".
B - Cloth panels different size, mesh, wire and opening or one panel stainless steel and the second plain steel.	B - Replace cloth panels with same physical and electrical characteristics.

HANCO FLUX POWER TRANSFORMER RATING FOR SWITCHING DEVICES

KVA	PRIMARY VOLTS	SAFETY SWITCH	FUSE	WIRE TYPE R, T	CONTACTOR SIZE	FULL LOAD
15 KVA	220V	200	150	2	4	68
	440V	100	80	6	3	34
	550V	100	60	8	3	27
20 KVA	220V	200	200	0	5	91
	440V	200	110	6	4	45
	550V	200	80	6	3	36
30 KVA	220V	400	300	3/0	5	136
	440V	200	150	2	4	68
	550V	200	125	4	4	55
40 KVA						
	440V	200	200	0	5	91
	550V	200	150	2	4	73

FUSE 2-1/4 X FULL LOAD AMPS



MODEL NO.	VA	WT.
FL50-4	15	465
FL50-4A	15	345
FL50-4B	15	465
FL50-4C	15	400
FL60-4	20	465
FL60-4A	20	465
FL60-4B	20	465
FL60-4C	20	400
FL60-4D	20	627
FL70-4	30	570
FL70-4A	30	570
FL70-4F	30	570
FL80-4	40	600
FL80-4B	40	600
FL80-4C	40	600
FL80-4F	40	600
FL100-4	60	600

FOR TAP SWITCH REPLACEMENT HANCO MODEL NO. & SERIAL NO. OF TRANSFORMER WILL BE REQUIRED.

ELECTRICAL DWG. A552 ASSEMBLY DWG. D551

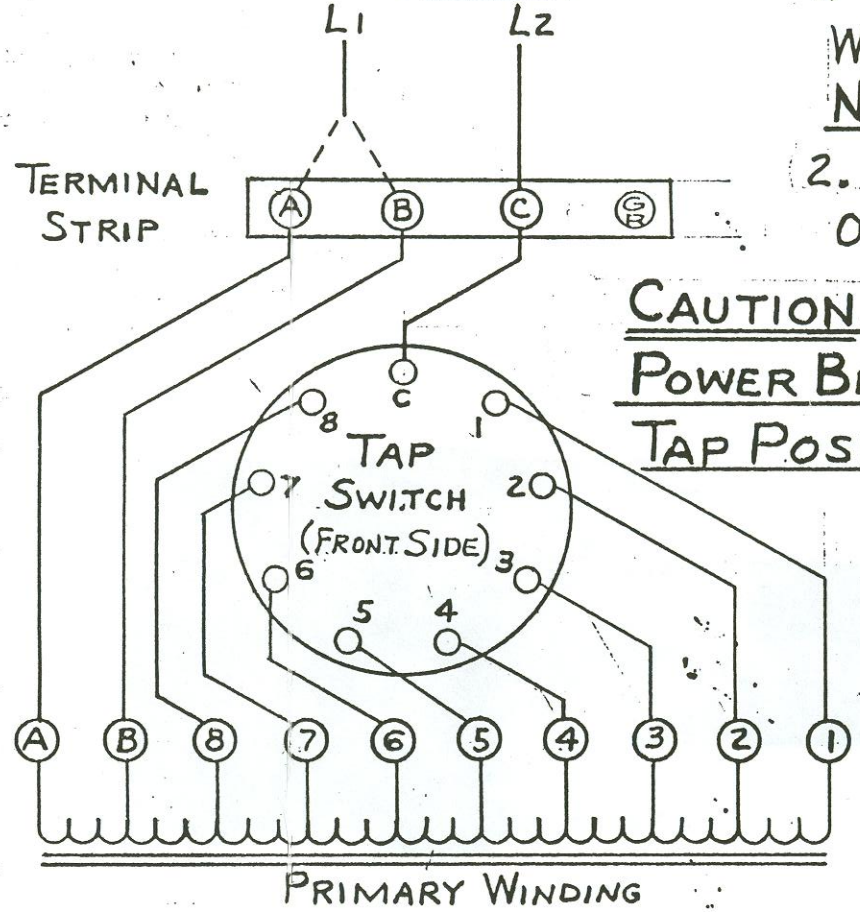
7/28/67 ROTATED TAP SWITCH 30°	REVISIONS		
	NO.	DATE	BY
	1		
	2		
	3		
	4		
A	5		

FLUX POWER TRANSFORMER

HANCO INTERNATIONAL
CANTON 7, OHIO, U.S.A.

DRAWN BY Roy Wilson	SCALE	MATERIAL
CHK'D	DATE 4-18-66	DRAWING NO. A547
TRACED	APP'D	

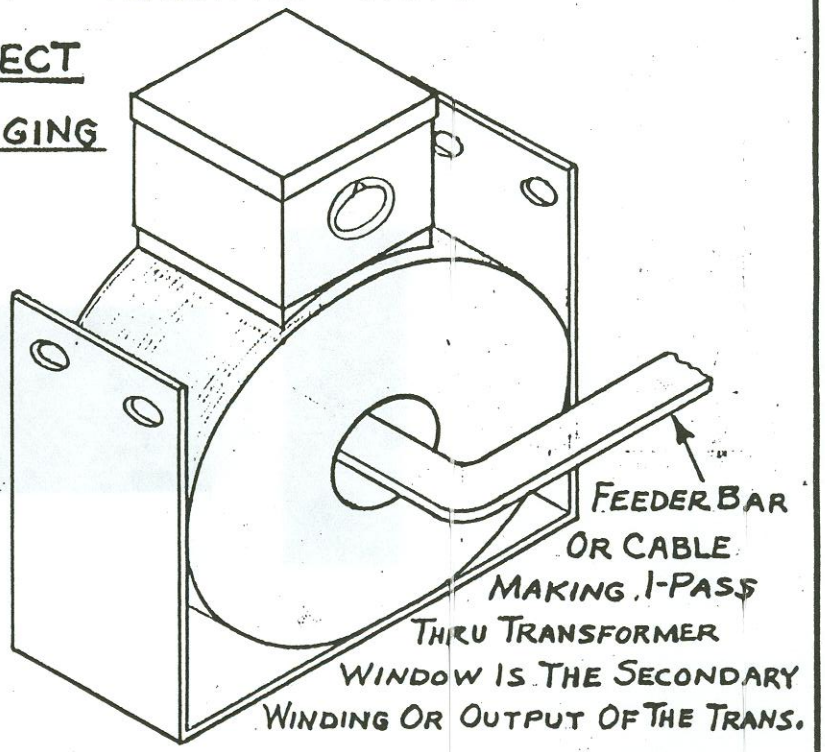
SINGLE PHASE POWER (ONLY)



~ NOTE ~

1. REFER TO CONNECTION ON NAMEPLATE TO DETERMINE WHETHER "L1" CONNECTS TO TERMINAL "A" OR "B" NEVER ATTACH "L1" TO BOTH "A & "B".
2. DISREGUARD NOTE 1 IF TERMINAL "B" IS OMITTED ON TRANSFORMER TERMINAL STRIP.

CAUTION – DISCONNECT POWER BEFORE CHANGING TAP POSITION.



FOR TAP SWITCH REPLACEMENT – HANCO MODEL NO. & SERIAL NO. OF TRANSFORMER WILL BE REQUIRED.

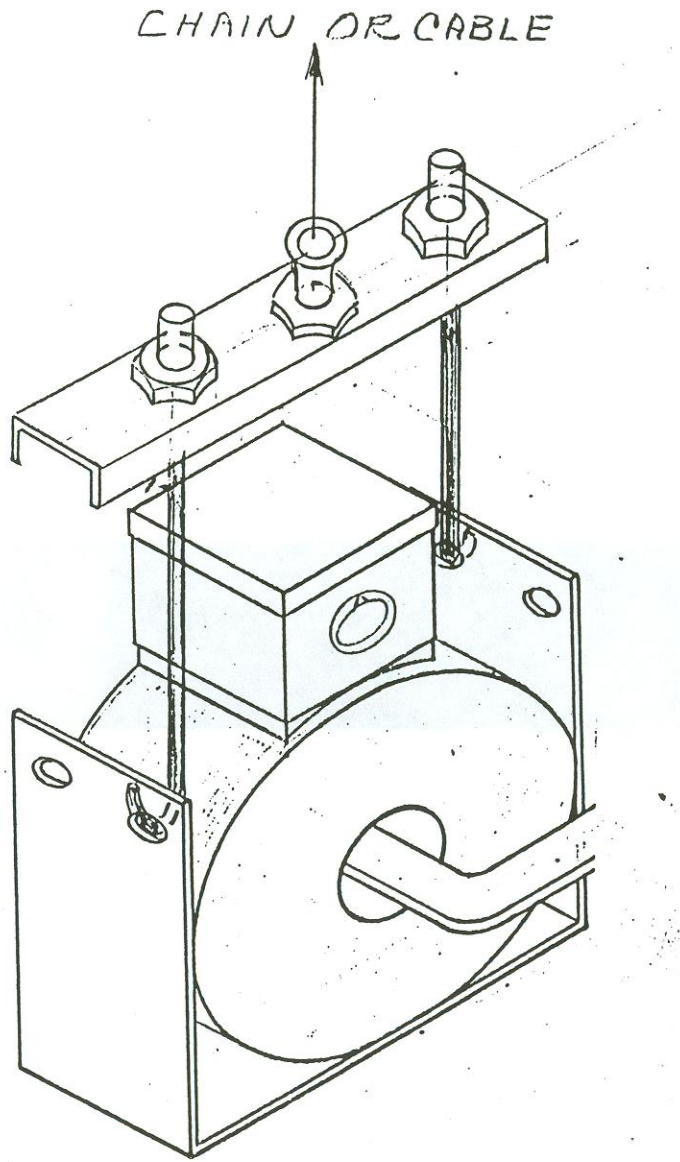
ADDED GR. ON TERMINAL STRIP. A

REVISIONS		
NO.	DATE	BY
1		
2		
3		
4		
5		

ELECTRICAL DRAWING FOR HANCO FLUX POWER TRANSFORMER

HANCO INTERNATIONAL
CANTON 7, OHIO, U.S.A.

DRAWN BY	SCALE	MATERIAL
ROY WILSON		
CHK'D	DATE 7-15-66	DRAWING NO. A552-1
TRACED	APP'D	


CHAIN OR CABLE