नाम
Name : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

अनुक्रमांक Roll No : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

प्राप्तांक Marks Awarded :

पाठ्यक्रम Course : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

दिनांक Date : _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

अनुदेशक के आद्यक्षर Instructor's Initial :

Failure and Wiring practice in Neale's Ball Token Block Instrument

I. Remove the SM key at Station 'A' and observe the following: -

i) Whether it is possible to insert a token? **Possible/Not possible**

ii) Whether it is possible to pull the bottom handle? **Possible/Not possible**

iii) Whether the Galvo needle deflects when bell plunger is pressed **Yes/No**

iv) Press Bell plunger, whether bell beat is transmitted? **Yes/No**

v) Press Bell plunger at Station 'B', whether the bell beat is received? **Yes/No**

vi) Removal of SM Key prevents _____ operation. **(Authorised, Unauthorised)**

II. Keep the instruments at one end say, Station 'A' in the following positions and observe the following: -

S.No.	**Position of Bottom Handle**	**Possible to extract LSS control Key**	**TGT contact**
1.	Line Closed	Possible/Not possible.	Closed/ Open
2.	TCF	Possible/Not possible.	Closed/ Open
3.	TGT	Possible/Not possible.	Closed/ Open

Inference:

a) LSS control key is released only in _____ position of the instrument for releasing the LSS lever in the lever frame to have mechanical block control over LSS. **(TCF, TGT)**

b) TGT contact is closed only in _____ position of the instrument and is included in LSS reverser feed circuit to have electrical block control over LSS. **(TCF, TGT)**

III. Study the Schematic diagram of Neale's Ball token Block Instrument and indicate the flow of circuit:-

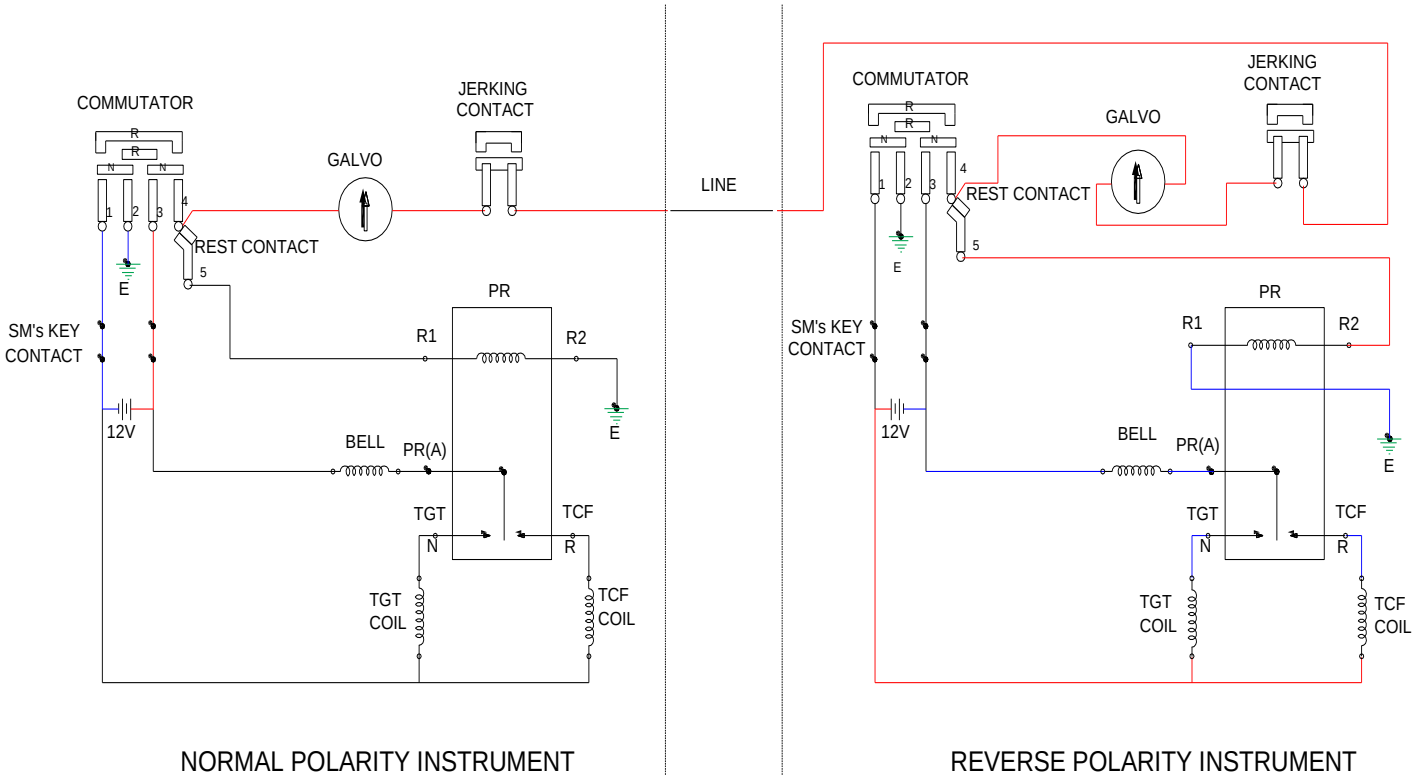
I/C >>

O/G >

SCHEMATIC DIAGRAM OF NEALE'S BALL TOKEN BLOCK INSTRUMENT

STATION 'A'

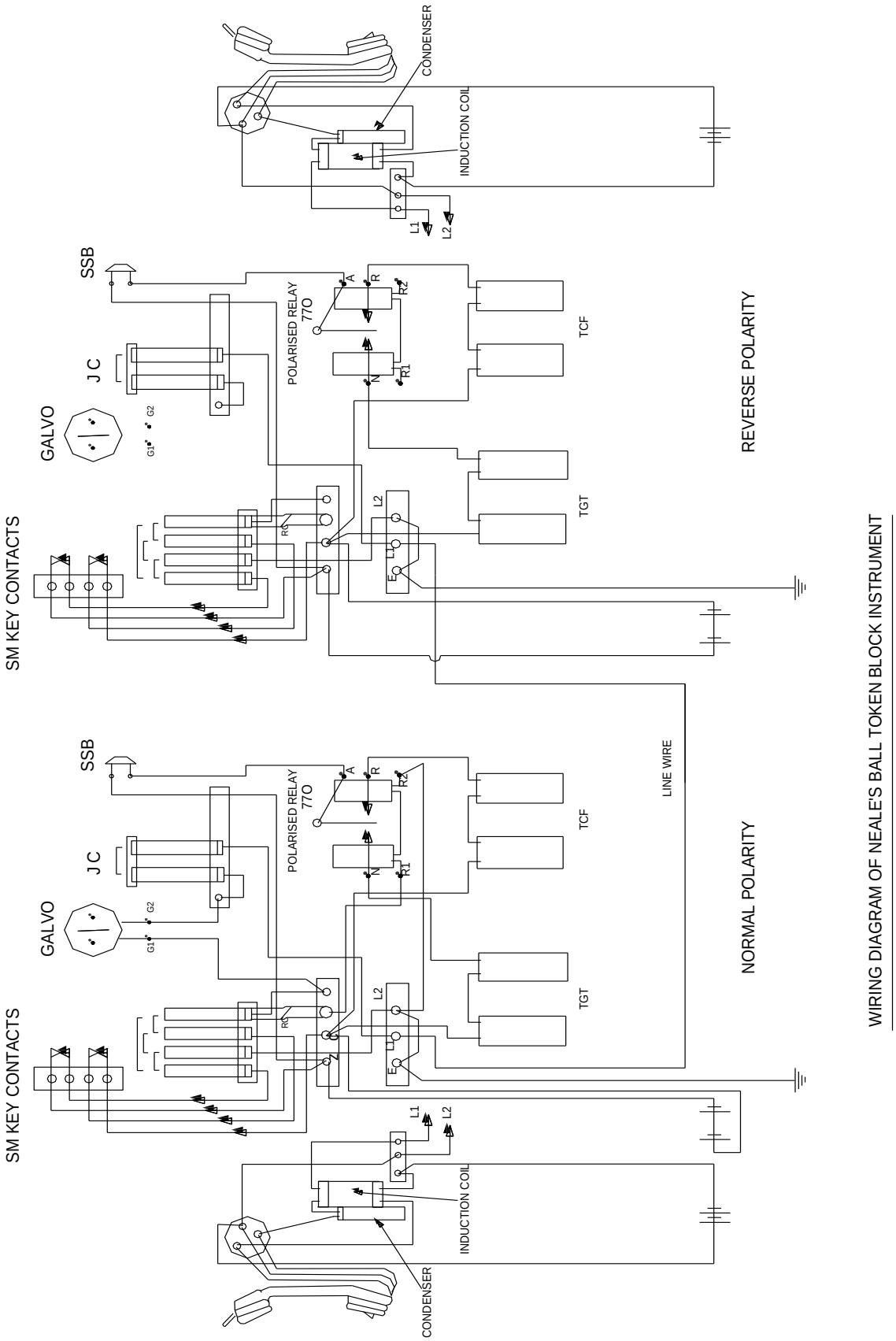
STATION 'B'



NORMAL POLARITY INSTRUMENT

REVERSE POLARITY INSTRUMENT

POLARISED RELAY	77 Ohms , 25 mA , 1.9 V
GALVO	150 Ohms , 20 mA
BELL COIL	25 Ohms , 80 mA , 2 V
TGT COIL	28 Ohms , 160 mA, 4.5 V
TCF COIL	28 Ohms , 160 mA, 4.5 V



WIRING DIAGRAM OF NEALE'S BALL TOKEN BLOCK INSTRUMENT

IV. i) Study the wiring connections of the Normal Polarity Instrument:-
ii) Complete the wiring of the Reverse Polarity Instrument.
iii) Bring the differences in the wiring connections between
1.Normal Polarity and
2.Reverse Polarity instruments:

a)

b)

c)

V. At one end say at Station 'A' Press the Bell Plunger and observe the following: -

In Normal Polarity Instrument ***OR*** Reverse Polarity Instrument

S.No.	**Position of the Bottom Handle**	**Position of the Commutator**	**Contacts Closed**	**Lock energized at other end i.e. at Station 'B'**
1.	Line Closed Position	Normal or Reverse	1&2; 3&4/ 1&4; 2&3	TCF/TGT
2.	TCF Position	Normal or Reverse	1&2; 3&4/ 1&4; 2&3	TCF/TGT
3.	TGT Position	Normal or Reverse	1&2; 3&4/ 1&4; 2&3	TCF/TGT
4.	TCF/TGT Position with token inserted and Plunger pressed	Normal or Reverse	1&2; 3&4/ 1&4; 2&3	TCF/TGT

VI. At Station 'A' SM Key is IN and turned.

i) Check Battery voltage

a) +ve (C) and –ve **(**Z) ……. Volts
b) At SM's Key contact ……. Volts
c) Commutator spring contact ……. Volts

ii) Press bell plunger at Station 'A' and check voltages at Station 'A'

a) At L1 and L2 (E) …….. Volts
b) At Galvo G1 and G2 …… Volts
c) At Polarised Relay R1 and R2 ……. Volts

iii) Press bell plunger at Station 'A' and check voltages at Station 'B'

d) At L1 and L2 (E) …….. Volts
e) At Galvo G1 and G2 …… Volts
f) At Polarised Relay R1 and R2 ……. Volts

VII. Failure practice on Neale's Ball Token Block Instrument:

S.No	**Position of Handle & Action**	**Nature of fault**	**Remarks**	
1.	Both instrument are at Line closed	Line battery +ve and –ve interchanged at Station 'A'	Handle turned to	
			At 'A'	At 'B'
i)	Press bell plunger at Station 'A'			
ii)	Press bell plunger at Station 'B'			
2.	Both instruments are at Line closed	Line wires L1 & L2(E) interchanged at Station 'A'	Handle turned to	
			At 'A'	At 'B'
i)	Press bell plunger at Station 'A'			
ii)	Press bell plunger at Station 'B'			
3.	Both instruments are at Line closed	Break at Rest contact at Station 'A'		
i)	Press bell plunger at Station 'A'	Whether bell beat is received at Station 'B'	Yes/No	Yes/No
ii)	Press bell plunger at Station 'B'	Whether bell beat is received at Station 'A'	Yes/No	Yes/No
4.	Both instruments Line closed	Break at jerking contact at Station 'A'		
i)	Press bell plunger at Station 'A'	Whether bell beat is received at Station 'B'	Yes/No	Yes/No
ii)	Press bell plunger at Station 'B'	Whether bell beat is received at Station 'A'	Yes/No	Yes/No

Signature of Trainee