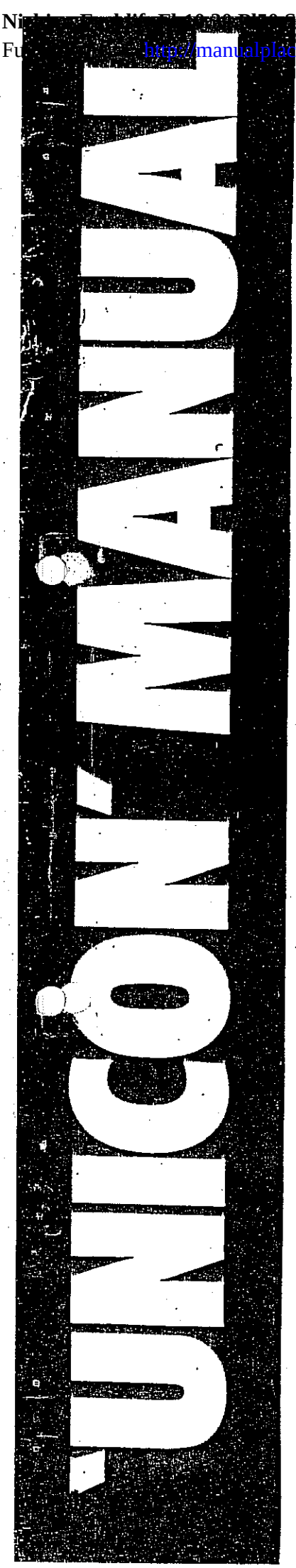
Pub. NO. 86W-2202-A
MAY 1991

TVH 10702804

NY122



FB 10/14/15/18P.PL-50
FB 20/25/28P.PL-50
FB 30P-50

NICHIYU

NIPPON YUSOKI CO., LTD.
KYOTO JAPAN

CONTENTS

I UNICON 20 FAULT FINDING PROCEDURE

If something trouble on "UNICON" SCR control happens with the truck, know exactly the fault phenomenon and take visual check for fuse blown, bad contact of connectors, loose of terminal bolts, bad movement of contactor, contact tips melt, loose of connectors, etc. When the cause is unknown even after this check, jack up the drive wheels and follow the procedure given below.

1. Measurement by V-ohm meter

(1) Are the fuses not blown?

(2) Are the parts fitted properly (particularly polarity)?

(3) Is the wiring harness connected correctly?

(4) Is the insulation resistance 10 KΩ min.? (Measure at x100Ω range)
Use a V-ohm meter for this check. (Don't use a megger meter)
In measuring at x100Ω range, hold the negative (—) lead of the tester in contact with the chassis and the positive (+) lead in contact with the live part, and also interchange these (+) and (—).

(5) Voltage measurement of test points
Measure voltages of each test point in the numeral order shown in attached table, while keeping the accelerator pedal depressed. When measuring voltages at each test point at high speeds of stage 4 and 5, apply the brake lightly and measure within 3 seconds. Change over the voltage range to DC 50V or 250V. Then, place the (+) lead of the V-ohm meter on the test points from 1 through 10 and take reading, while holding the (—) lead in contact with S (—) terminal of the unit. The voltages at test points are normal if those are as specified in next table.

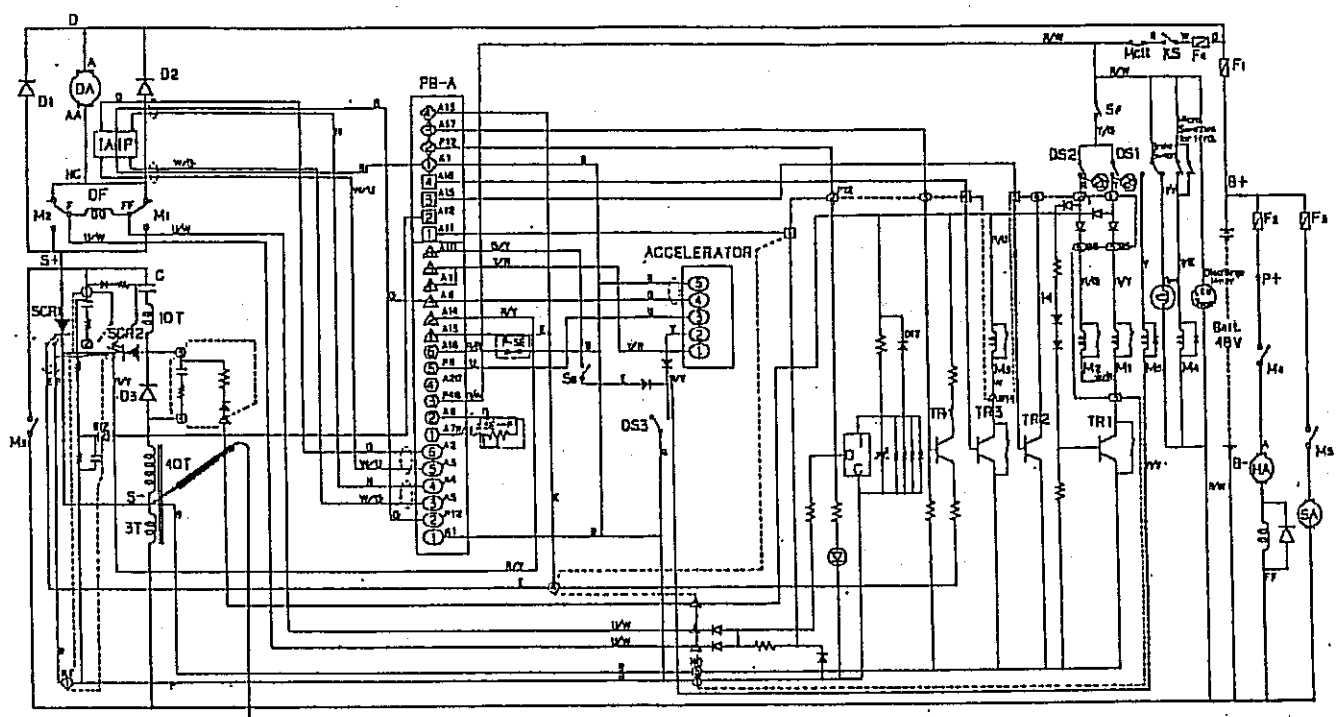
(6) When replacing parts, be sure to disconnect the battery plug.
When replacing any component of the SCR unit, discharge the capacitor (C) by a resistor (20W, 50Ω or 50W, 10Ω).

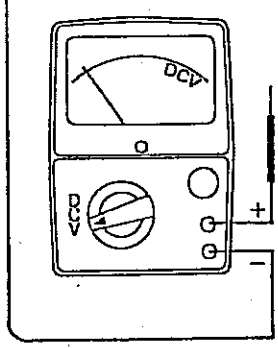
Standard voltage of test points (48V battery)

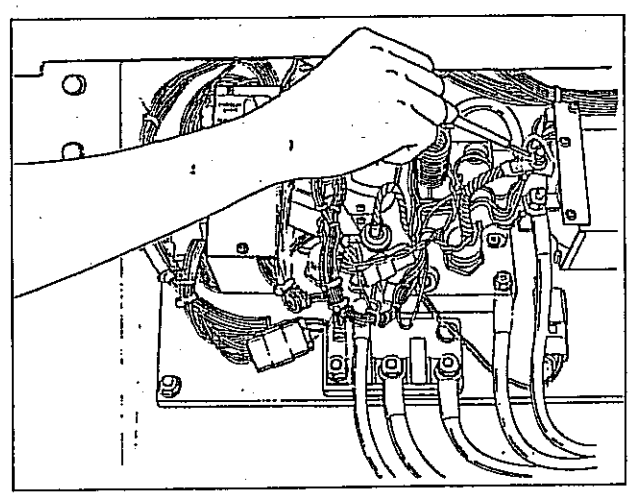
Stage / Test point	1	2	3	4	5
	Key switch ON	Accel. pedal depressed S_F ON	Minimum pulse rate	SCR1 fully turned ON	SCR1 by-pass
1 (S_F [COM])	45 – 55 V	45 – 55 V	44 – 53 V	44 – 51 V	44 – 51 V
2 (DS1, 2 [NO])	0	45 – 55	44 – 53	44 – 51	44 – 51
3 (TR1 for travel)	0	0.2 – 2.0	0.2 – 2.0	0.2 – 2.0	0.2 – 2.0
4 (Power for IC)	0	11.5 – 12.5	11.5 – 12.5	11.5 – 12.5	11.5 – 12.5
5 (SCR1 [G])	0	0	0.01 – 0.1	0.1 – 1.0	1.0 – 3.0
6 (SCR1 [A])	0	45 – 55	44 – 53	0.7 – 1.5	0 – 0.5
7 (SCR2 [G])	0	0.9 – 4.0	0.9 – 3.0	0.01 – 0.5	0
8 (SCR2 [A])	0	0.5 – 3.0	0 – 2.0	80 and over	44 and over
9 (TR3 for bypass)	0	44 – 54	43 – 52	43 – 50	0.2 – 2.0
10 (Accel. output)	0	2.4 – 3.0	6.0 – 6.7	8.5 – 9.5	8.5 – 9.5

Notes: 1. For voltage measurement of the test points in a lift truck with energy-saving switch (P-SE select), set the switch at "P" position.
2. For voltage measurement of the test points, select carefully the proper range of V-ohm meter.
3. Accuracy of V-ohm meter is not considered in the above voltages.

Location of V-ohm meter minus (—) lead







S(—) terminal