

NO. 14 TELETYPEWRITER AND TYPING REPERFORATOR INTERNAL WIRING VARIATIONS

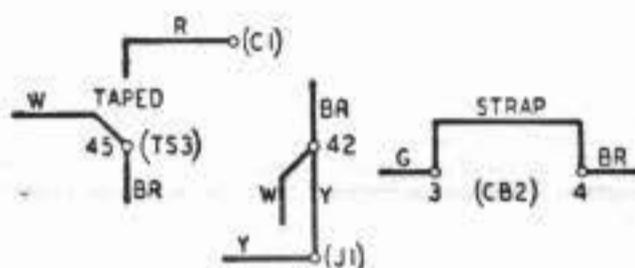
1. GENERAL

- 1.01 This section covers the internal wiring variations of the 14 Teletypewriter in the form of M Plans.
- 1.02 This section is reissued to add plans M1.29, M1.30, M1.31, and correct titles to plans M4.01, M4.02 and M4.03.
- 1.03 The following Plans are shown:

<u>Plan No.</u>	<u>Title</u>
M1.01	Operation without Line Relay (14A & B Bases)
M1.02	Polar Operation of 215A Line Relay (14A & B Bases)
M1.03A	Connections for 240 O.P.M.—For 100V to 124V (14E, F, N, S & W Typing Units)
M1.03B	Connections for 240 O.P.M.—For 125V to 130V (14E, F, N, S & W Typing Units)
M1.04A	Connections for 368 & 460 O.P.M.—For 100V to 111V (14E, F, N, S, W, AA & AD Typing Units)
M1.04B	Connections for 368 & 460 O.P.M.—For 125V to 130V (14E, F, N, S, W, AA & AD Typing Units)
M1.05	Line to Pos. Power at TTY—115V D-C Supply (14A & B Bases)
M1.06	Short-circuiting Break Key (14M Base)
M1.07	Modification for Remote Motor Control—Used with External Relay on A-C Power (14K Base)
M1.08	Connection of TTY Permanently in Line Condition (14B, L & M Bases)
M1.09	For Use with 130A1 TTY Sub. Set (14M Base)
M1.10	Operation on .020 Amp. Circuit (14M Base)
M1.11	Connection for Use of Power Switch (14M Base)

<u>Plan No.</u>	<u>Title</u>
M1.12	Connection for Duplex Operation (14B Base)
M1.13	Station Line Resistance (14A, B & L Bases)
M1.14	Line to Pos. Power at TTY—115V A-C Supply (14A & B Bases)
M1.15	Line to Neg. Power at TTY—115V A-C Supply (14A & B Bases)
M1.16	Connection for Operation of Stop Magnet on A-C Power—Motor Control Unit (14L & 15A, B, C & D Bases)
M1.17	Operation in .005—.025 Amp. Circuit (14M Base)
M1.18	Disabling Power Switch (14B Base)
M1.19	Adding Motor Control Relay (14B Base)
M1.20	Operation in .020 Amp. Circuit (14A & B Bases)
M1.21	Polar Operation of 255A Line Relay (14A & B Bases)
M1.22	Addition of Break Lock Contacts (14J & R TTY Bases)
M1.23	Disabling Break Lock Contacts (14H TTY Base)
M1.24	Adding Resistor for .020 Ampere Operation (14AB Typing Reperforator Base)
M1.25	Connections for Tape Feed-Out Magnet (14AB Typing Reperforator Base)
M1.26	Adding Tape Feed-Out Magnet (14U, M, P and W Typing Reperforator Units)
M1.27	Adding Line Relay (14AD and 14AE Typing Reperforator Bases)
M1.28	Connections for Local Test in .020 Amp. Circuit without Line Relay (14B TTY Base)
M1.29	Extending Relay Bias and Two-Speed Governor Circuits (14P Typing Reperforator Base)
M1.30	Adding Two-Speed Governor with External Control (14AM Typing Reperforator Unit)
M1.31	Extending Relay Bias Circuit (14U TTY Base)
M4.01	Motor Resistance Connections—240 O.P.M.—125V to 130V (14C, 14K & 14AF Transmitter Distributors)
M4.02	Operation of Start Magnet on A-C Power (14A, 14B, 14D, 14H, 14J, 14L, 14Y, 14AE & 14AU Transmitter Distributors)
M4.03	Motor Resistance Connections—368 & 460 O.P.M.—125V to 130V (14C, 14K & 14AF Transmitter Distributors)

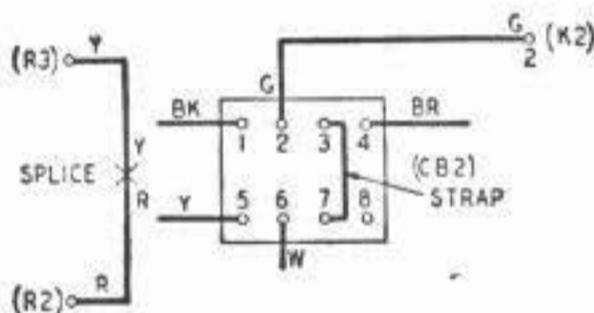
- M5.01 Polar Operation of 215A Line Relay (14A Reperforator Unit)
- M5.02 Control of Start Magnet from External Circuit (14A Reperforator Base Plate)
- M5.03 Polar Operation of 255A Line Relay (14A Reperforator Unit)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
R	(C1)	45	REMOVE FROM 45 & TAPE
Y	(J1)	46	REMOVE FROM 46

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
Y	(J1)	46	CONN. TO 42
—	—	—	STRAP 3-4(CB2)

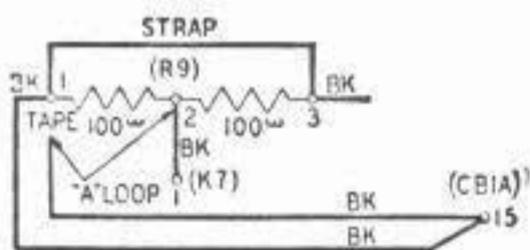
M1.01 Operation without Line Relay (14A & B TTY Bases)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
Y	(R3)	2(CB2)	REMOVE FROM 2 & 7, SPLICE & TAPE
R	(R2)	7(CB2)	
G	2(K2)	3(CB2)	REMOVE FROM 3(CB2)

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
G	2(K2)	3(CB2)	CONN. TO 2(CB2)
—	—	—	STRAP 3-7(CB2)

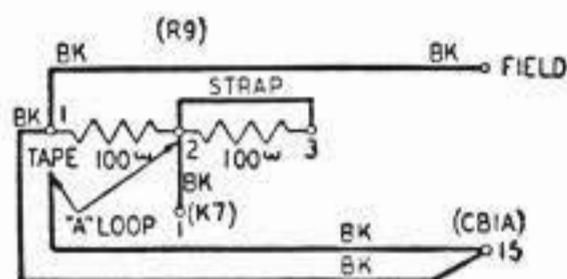
M1.02 Polar Operation of 215A Line Relay (14A & B TTY Bases)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
STRAPS	1&3(R9)	2(R9)	REMOVE STRAPS
			CUT 'A' LOOP AT (R9) & TAPE END OF LEAD FROM 15 AT 'A'

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
—	—	—	STRAP 1-3(R9)
BK	1(K7)	'A'	CONN. TO 2(R9)

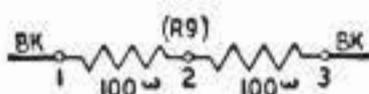
M1.03A Connections for 240 O.P.M.—For 100V to 124V (No. 14E, F, N, S & W Typing Units)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BK	FIELD	3(R9)	REMOVE FROM 3(R9)
			CUT "A" LOOP AT (R9) & TAPE END OF LEAD FROM 15 AT "A"
STRAP	1(R9)	2(R9)	REMOVE STRAP

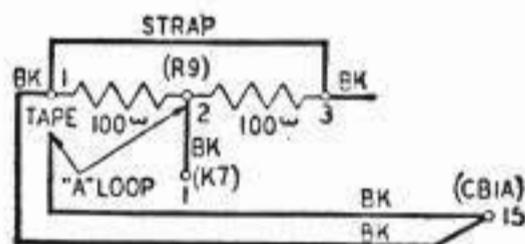
LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BK	FIELD	3(R9)	CONN. TO 1(R9)
BK	1(K7)	"A"	CONN. TO 2(R9)

M1.03B Connections for 240 O.P.M.—For 125V to 130V (No. 14E, F, N, S & W Typing Units)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
STRAPS	1&3(R9)	2(R9)	REMOVE STRAPS

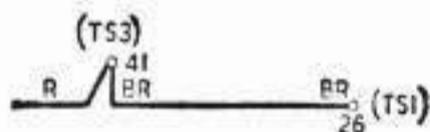
M1.04A Connections for 368 & 460 O.P.M.—For 100V to 111V (No. 14E, F, N, S, W, AA & AD Typing Units)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
STRAPS	1&3(R9)	2(R9)	REMOVE STRAPS
			CUT "A" LOOP AT (R9) & TAPE END OF LEAD FROM 15 AT "A"

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
			STRAP 1-3(R9)
BK	1(K7)	"A"	CONN. TO 2(R9)

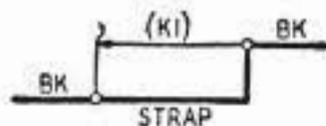
M1.04B Connections for 368 & 460 O.P.M.—For 125V to 130V (No. 14E, F, N, S, W, AA & AD Typing Units)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BR	26	33	REMOVE FROM 33

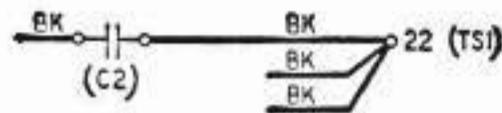
LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BR	26	33	CONN. TO 41

M1.05 Line to Positive Power at TTY—115V D-C Supply (14A & B TTY Bases)



LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
—	—	—	STRAP TERMS. OF (K1)

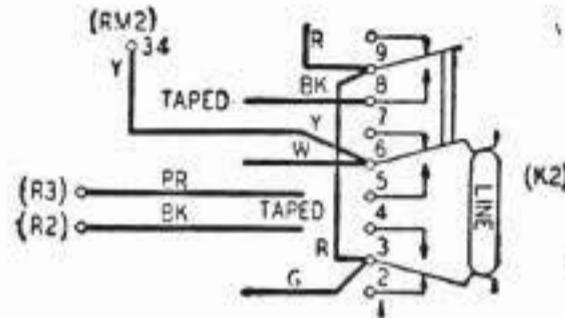
M1.06 Short-circuiting Break Key (14M TTY Base)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BK	(C2)	21	REMOVE FROM 21

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BK	(C2)	21	CONN. TO 22

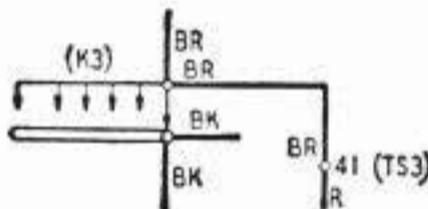
M1.07 Modification for Remote Motor Control—Used with External Relay on A-C Power (14K TTY Base)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
R	8(K2)	1(K2)	REMOVE FROM 1(K2)
BK	(R2)	3(K2)	REMOVE FROM 3(K2) & TAPE
BR	(R3)	4(K2)	REMOVE FROM 4(K2) & TAPE
BK	7(K2)	6(K2)	REMOVE FROM 6(K2) & TAPE
Y	34	6(K2)	REMOVE FROM 6(K2)

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
R	8(K2)	1(K2)	CONN. TO 2(K2)
Y	34	6(K2)	CONN. TO 5(K2)

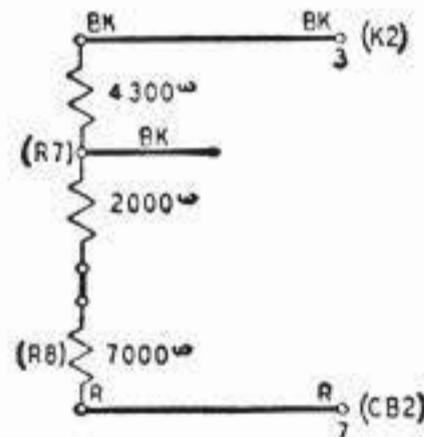
M1.08 Connection of TTY Permanently in Line Condition (14B, L & M TTY Bases)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BR	(K3)	42	REMOVE FROM 42

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BR	(K3)	42	CONN. TO 41

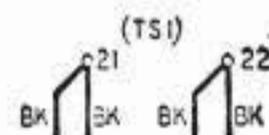
M1.09 For Use with 130A1 TTY Sub. Set (14M TTY Base)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
R	7(CB2)	(R2)	REMOVE FROM (R2)
BK	3(K2)	(R2)	REMOVE FROM (R2)

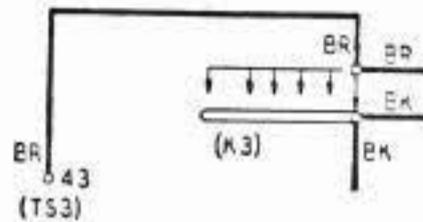
LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
R	7(CB2)	(R2)	CONN. TO LOWER TERM. (R8)
BK	3(K2)	(R2)	CONN. TO UPPER TERM. (R7)

M1.10 Operation on .020 Amp. Circuit (14M TTY Base)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
STRAP	21	22	REMOVE STRAP

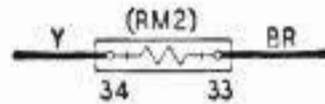
M1.11 Connection for Use of Power Switch (14M TTY Base)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BR	(K3)	42	REMOVE FROM 42

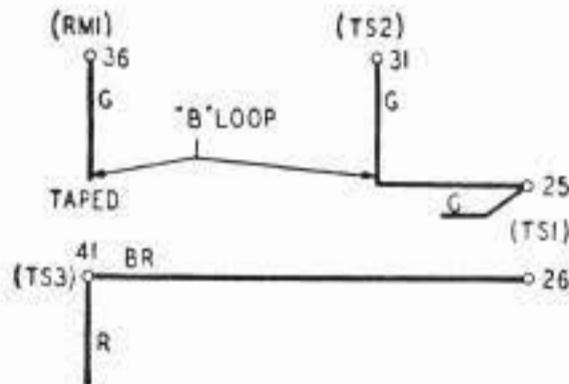
LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BR	(K3)	42	CONN. TO 43

M1.12 Connection for Duplex Operation (14B TTY Base)



RESISTANCE TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
—	—	—	INSERT PROPER NO.18 OR NO.19 TYPE RESISTANCE IN (RM2) AS REQUIRED.

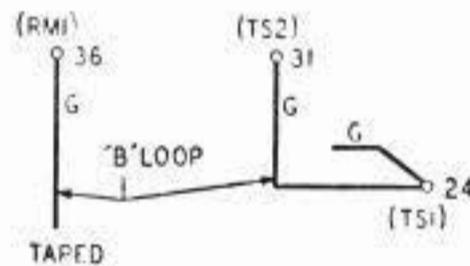
M1.13 Station Line Resistance (14A, B & L TTY Bases)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
BR	26	33	REMOVE FROM 33
G	31	36	CUT LOOP AT 'B' & TAPE END OF LEAD FROM 36 AT 'B'

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
BR	26	33	CONN. TO 41
G	31	'B'	CONN. TO 25

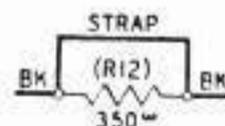
M1.14 Line to Positive Power at TTY—115V A-C Supply (14A & B TTY Bases)



LEADS TO BE REMOVED			
COLOR	FROM	TO	REMARKS
G	31	36	CUT LOOP AT 'B' & TAPE END OF LEAD FROM 36 AT 'B'

LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
G	31	'B'	CONN. TO 24

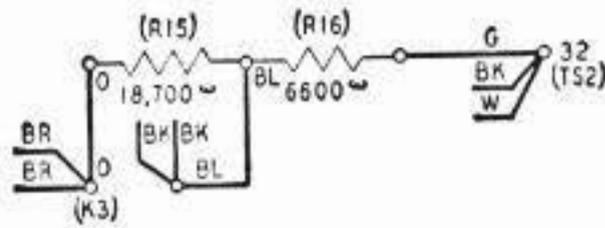
M1.15 Line to Negative Power at TTY—115V A-C Supply (14A & B TTY Bases)



LEADS TO BE CONNECTED			
COLOR	FROM	TO	REMARKS
—	—	—	STRAP OUT (R12)

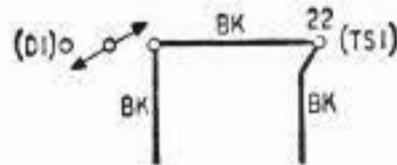
M1.16 Connection for Operation of Stop Magnet on A-C Power (Motor Control Unit—14L & 15A, B, C & D TTY Bases)





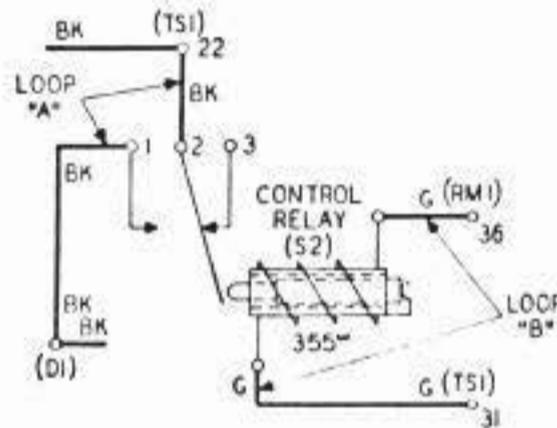
COLOR	FROM	TO	CHANGE
O	(R15)	-	CONN TO LEFT TERM. (K3)
BL	(R15)	-	CONN TO RIGHT TERM. (K3)
G	(R16)	-	CONN TO 32 (TS2)

M1.17 Operation in .005—.025 Amp. Circuit (14M TTY Base)



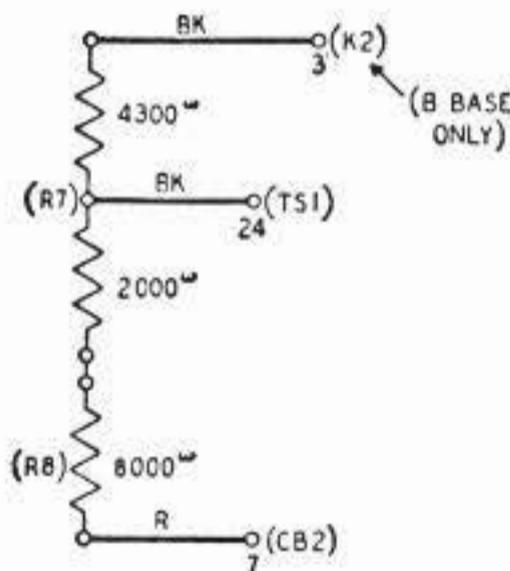
COLOR	FROM	TO	CHANGE
BK	22	(D1)	MOVE FROM LEFT TO RT TERM (D1)

M1.18 Disabling Power Switch (14B TTY Base)



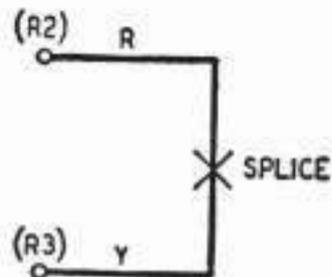
COLOR	FROM	TO	CHANGE
BK	22	LOOP "A"	CUT LOOP AT "A" & CONN. TO 1 & 2 OF (S2)
BK	(D1)	LOOP "A"	
G	36	LOOP "B"	CUT LOOP AT "B" & CONN. TO TERMS OF RELAY COIL
G	31	LOOP "B"	

M1.19 Adding Motor Control Relay (14B TTY Base)



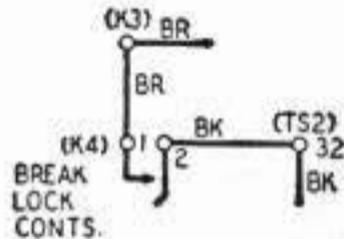
COLOR	FROM	TO	CHANGE
R	7 (CB2)	(R2)	MOVE FROM (R2) TO LOWER TERM (R8)
BK (B BASE ONLY)	3 (K2)	(R2)	MOVE FROM (R2) TO UPPER TERM (R7)
BK	-	-	CONN 24 (TS1) TO MIDDLE TERM. (R7)

M1.20 Operation in .020 Amp. Circuit (14A & B TTY Bases)



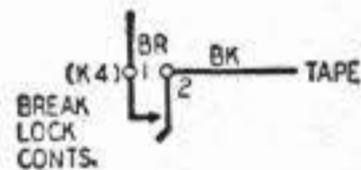
COLOR	FROM	TO	CHANGE
Y	R3	2(CB2)	REMOVE FROM 2 & 7(CB2) SPLICE & TAPE
R	R2	7(CB2)	

M1.21 Polar Operation of 255A Line Relay (14A & B TTY Bases)



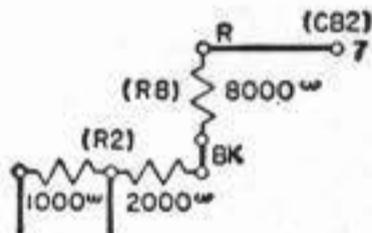
COLOR	FROM	TO	CHANGE
BR	1(K4)	-	CONNECT TO (K3)
BK	2(K4)	-	CONNECT TO 32(TS2)

M1.22 Addition of Break Lock Contacts (14J & R TTY Bases)



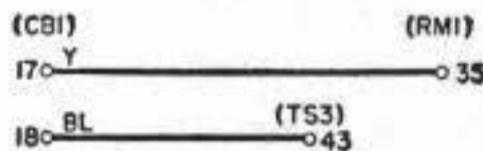
COLOR	FROM	TO	CHANGE
BK	2(K4)	32(TS2)	REMOVE FROM 32 & TAPE

M1.23 Disabling Break Lock Contacts (14H TTY Base)



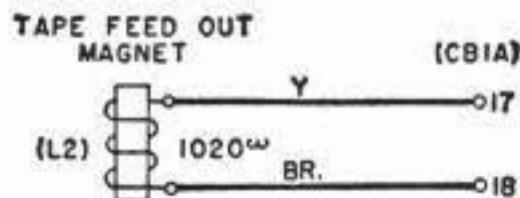
COLOR	FROM	TO	CHANGE
R	7(CB2)	(R2)	MOVE FROM (R2) TO (R8)
BK	-	-	CONN. (R2) TO (R8)

M1.24 Adding Resistor for .020 Amp. Operation (14AB Typing Reperforator Base)



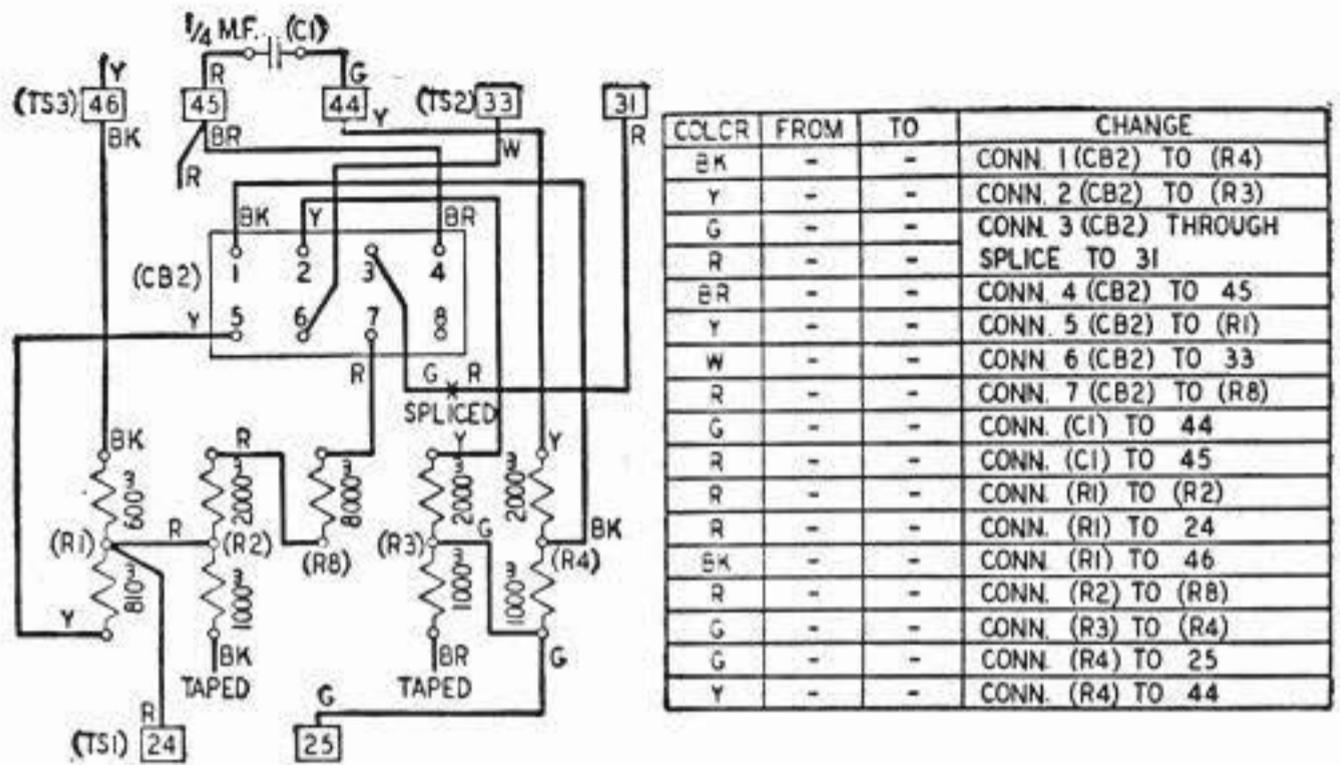
COLOR	FROM	TO	CHANGE
Y	-	-	CONN. 17(CBI) TO 35(RMI)
BL	-	-	CONN. 18(CBI) TO 43(TS3)

M1.25 Connections for Tape Feed-Out Magnet (14AB Typing Reperforator Base)

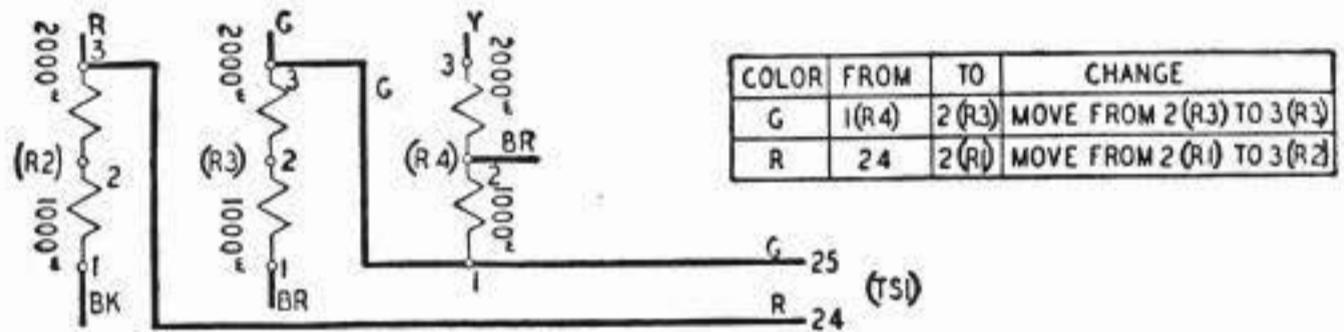


COLOR	FROM	TO	CHANGE
Y	-	-	CONN. (L2) TO 17(CBIA)
BR	-	-	CONN. (L2) TO 18(CBIA)

M1.26 Adding Tape Feed-Out Magnet (14U, M, P & W Typing Reperforator Units)



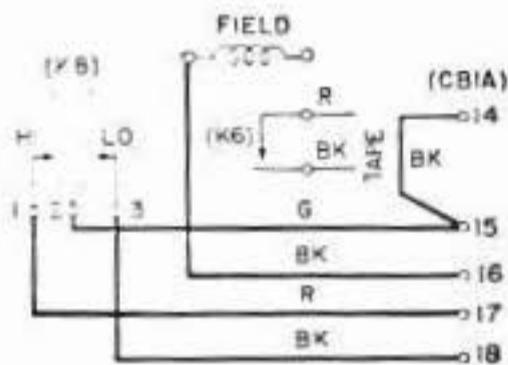
M1.27 Adding Line Relay (14AD & 14AE Typing Reperforator Bases)



M1.28 Connections for Local Test in .020 Amp. Circuit without Line Relay (14B TTY Base)



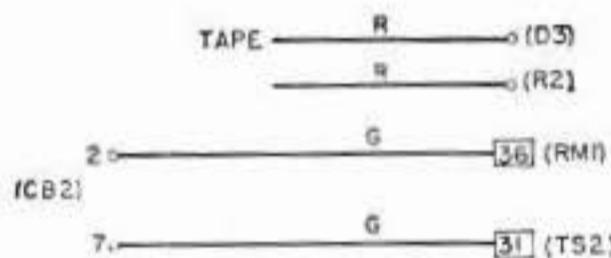
M1.29 Extending Relay Bias and Two-Speed Governor Circuits (14P Typing Reperforator Base)



COLOR	FROM	TO	CHANGE
R	(K6)	14	REMOVE FROM 14 & TAPE
BK	(K6)	15	REMOVE FROM 15 & TAPE
BK	FIELD	2 (K7)	MOVE FROM 2 (K7) TO 16
G	15	1 (K7)	MOVE FROM 1 (K7) TO 2 (K8)
BK	-	-	CONN. 14 TO 15
R	-	-	CONN. 17 TO 1 (K8)
BK	-	-	CONN. 18 TO 3 (K8)

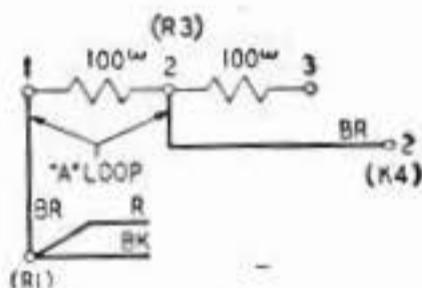
NOTE: 1-TP82619 TERMINAL BLOCK & 1-TP103312 SET OF PARTS FOR TWO-SPEED GOVERNOR ARE REQUIRED FOR THIS MODIFICATION.

M1.30 Adding Two-Speed Governor with External Control (14AM Typing Reperforator Unit)



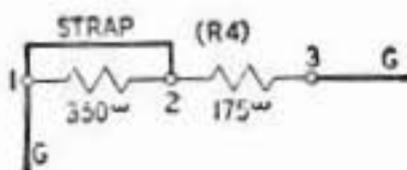
COLOR	FROM	TO	CHANGE
R	(D3)	2 (CB2)	REMOVE FROM 2 (CB2) & TAPE
R	(R2)	7 (CB2)	REMOVE FROM 7 (CB2) & TAPE
G	36	"B"	CUT LOOP AT "B" & CONN.
G	31	"B"	36 TO 2 (CB2) & 31 TO 7 (CB2)

M1.31 Extending Relay Bias Circuit (14U TTY Base)



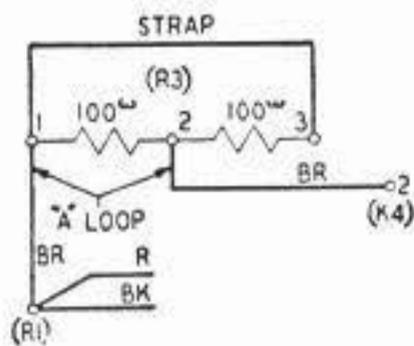
COLOR	FROM	TO	CHANGE
BR	(R1)	2 (K4)	CUT LOOP AT "A" & CONNECT TO (R3) AS FOLLOWS: FROM (R1) TO 1 (R3) FROM 2 (K4) TO 2 (R3)

M4.01 Motor Resistance Connections—240 O.P.M.—125V to 130V (14C, 14K & 14AF Transmitter Distributors)



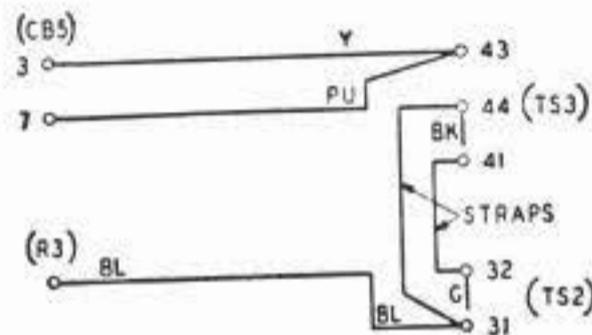
COLOR	FROM	TO	CHANGE
			STRAP 1-2 (R4)

M4.02 Operation of Start Magnet on A-C Power (14A, 14B, 14D, 14H, 14J, 14L, 14Y, 14AE & 14AU Transmitter Distributors)



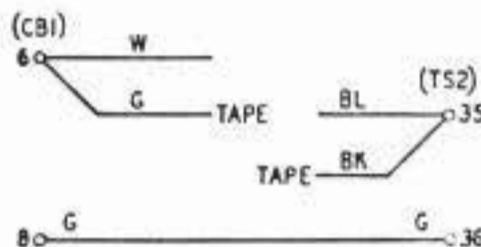
COLOR	FROM	TO	CHANGE
BR	(R1)	2(K4)	CUT LOOP AT 'A' & CONNECT TO (R3) AS FOLLOWS: FROM (R1) TO 1(R3) FROM 2(K4) TO 2(P3)
—	—	—	STRAP 1-3 (R3)

M4.03 Motor Resistance Connections—368 & 460 O.P.M.—125V to 130V (14C, 14K & 14AF Transmitter Distributors)



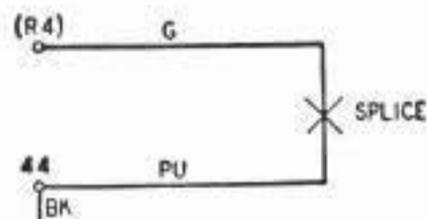
COLOR	FROM	TO	CHANGE
Y	3 (CB5)	41 (TS3)	MOVE FROM 41 TO 43
PU	7 (CB5)	44 (TS3)	MOVE FROM 44 TO 43
BL	(R3)	33 (TS2)	MOVE FROM 33 TO 31
—	—	—	STRAP 41 (TS3) TO 32 (TS2)
—	—	—	STRAP 44 (TS3) TO 31 (TS2)

M5.01 Polar Operation of 215A Line Relay (14A Reperforator Unit)



COLOR	FROM	TO	CHANGE
BK	6 (CB1)	8 (CB1)	REMOVE FROM 8 AND TAPE
G	36 (TS2)	7 (CB1)	MOVE FROM 7 TO 8
BK	35 (TS2)	23 (TS1)	REMOVE FROM 23 AND TAPE

M5.02 Control of Start Magnet from External Circuit (14A Reperforator Base Plate)



COLOR	FROM	TO	CHANGE
G	(R4)	2 (CB5)	REMOVE FROM 2 & 7 (CB5)
PU	44	7 (CB5)	SPLICE & TAPE

M5.03 Polar Operation of 255A Line Relay (14A Reperforator Unit)