

CLE DELAY
1ST CYCLE

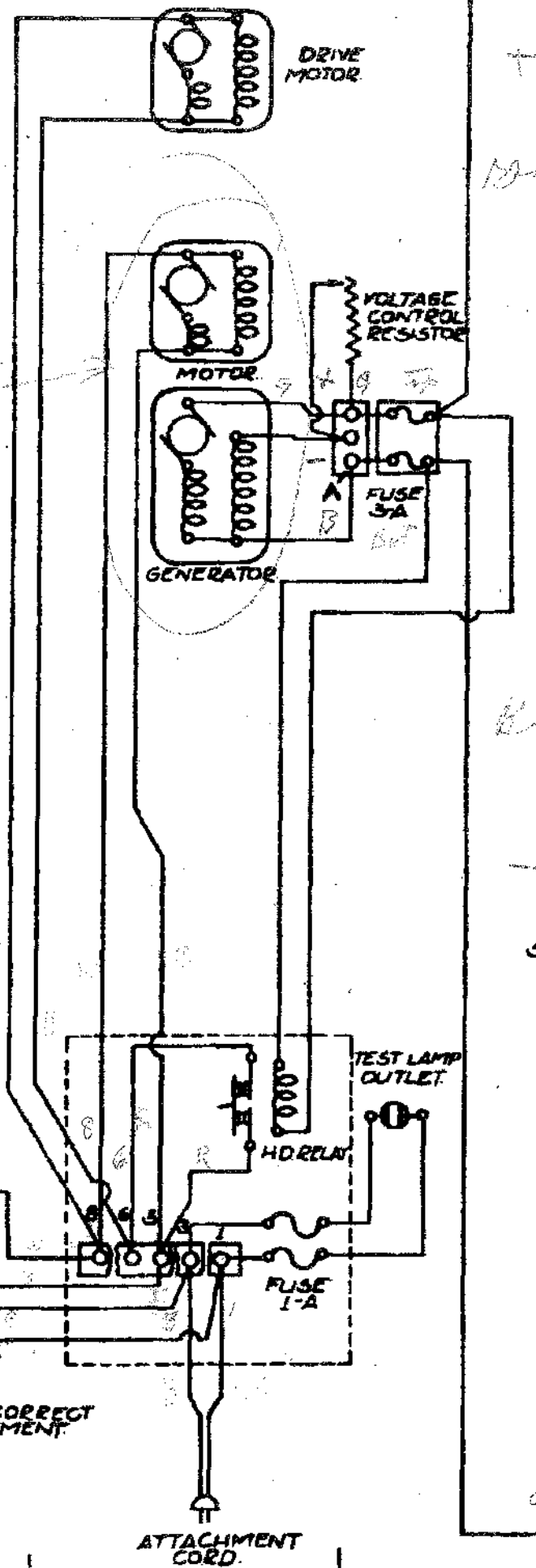
7-355°
5-40°

M-123
B-168

M-1
B-1

PS
36V 2A

SEE CHART FOR CORRECT THERMAL ELEMENT



+ Motor
104

Black

5

add



ENGINEERING SPECIFICATIONS

FORM NO. 94-7392-3

INSTRUCTIONS

No. 290303

NAME	WHERE USED	TECH. SERVICES APPROVAL	MADE BY	APPROVED BY
Count Device (2Pos)	077 - Collator		JDW	FVB
		DATE	DATE PREPARED	OF
			1-16-50	4

518 MASTER

REFERENCE

FIG. DRAWING

INSTRUCTIONS: Replace relays 8, 15, 19 and 20 by new relays for additional points which will be used in the card count circuit. Mount additional relays ~~44/4444/44/4444/44/4444/44/4444~~ on row #3 of duo gate and mount dial relays on bottom row. Remove circuit breaker assembly and replace front side frame if necessary. Mount additional circuit breaker shaft, cams, emitter, etc. as shown on instruction drawing #280278. ~~44/4444/44/4444/44/4444/44/4444~~ in card count circuit as shown on circuit diagram #290303.

Wire

Particular attention should be made to the adjustments of the dial relays. A drawing of this relay is in the ~~44/4444/44/4444/44/4444/44/4444~~ and all adjustments should be noted and checked on the relay itself. 077 customer Eng. Ref Manual

OPERATION: The purpose of this device is to control feeding in such a manner that a predetermined number of cards from either feed can be filed before or after a single card from the other feed. Likewise a predetermined number of cards from both feeds may be merged. On machines that have digit emitter already installed assemble new shaft for positions Cr-5-6-7-8 and install emitter in this position. Transfer digit emitter wires to this added emitter and use lower emitter for count device. The device has a capacity of from 1 to 99 when counting cards from one feed only, and a capacity of from 1 to 9 when counting in both feeds. The circuit is arranged for maximum flexibility so that interconnection with the other functions of the machine is possible.

Some of the applications of this device are enumerated as follows:

1. Insertion of a predetermined number of secondary cards behind a single primary card.
2. Insertion of a predetermined number of primary cards ahead of a single secondary card.
3. Insertion of a variable number of secondary cards behind a single primary card.
4. Insertion of a variable number of primary cards ahead of a single secondary card.
5. Insertion of single heading cards for identifying predetermined groups within an account as for heading initial and overflow sheets in a listing operation.
6. Same as 5 except inserting multiple heading cards.

ENG. CHANGE NO.	DATE	SR 6495	10-30-46 9251	12-19-49 91626	6-18-52 93434	10-7-53 B94394	6-26-59				DATE TYPED 10-15-58 JDB
-----------------	------	---------	------------------	-------------------	------------------	-------------------	---------	--	--	--	-------------------------------

INTERNATIONAL BUSINESS MACHINES CORPORATION
ENGINEERING SPECIFICATIONS

303 MASTER

INSTRUCTIONS

No. 290303

NAME Count Device (2 Pos)NO. OF SHEETS 4 SHEET 2 ^{2 of 4}WHERE USED 077 - Collator

DATE _____

7. Collation of a predetermined number of primary and secondary cards.
8. Insertion of a variable number of secondary cards from 1 to 9, behind a single primary card, the number being automatically determined as the difference between the digit punched in the primary card and a predetermined number plugged on the board.
9. Consecutive Number Checking.

For plugging charts and a more detailed description of the various operations, it is suggested that reference be made to ~~Counting Collator Type 077, Form 52-3185.~~

Principles of Operation, Collator Type 077, Form 52-3185.

The functions of the various circuits are as follows:

The counting circuits are plugged from PS, P C AND S hubs to the units "IN" and tens "IN". Therefore, the counting relays always pickup at 201°. The holding circuit for these relays is held until 0° thru CR-11. At 270° CR-9 makes and completes the circuit to the step relay coil through relays 42-B and 41-B.

Relays R-43 and 44 are the 9's test relays. Relay R-39 and 40 are the restoring relays for the step units. Relays R-41 and 42 are the carry control and automatic restoration when the step relays reach 9. Relay R-47 is in parallel with the respective card lever relay to provide the necessary capacity for card lever control of the source hubs. The purpose of 19 BU and 19 BL is to insure the step relays being at zero at the beginning of a run.

The "Units Break" and "Tens Break" contacts mounted on the respective relays serve as drop-out points when the relays are restored to their zero position.

Assume a straight counting operation when the total number is greater than 10. Counting to be controlled from the primary brush station #2.

A plugwire will be placed from "P" hub to "U" "IN" hub. The carry switch is plugged on and the "U-C" hub is plugged to tens hub corresponding to the tens digit being counter.

M M

DATE	12/19/46-18-52			GPW	DATE 1/16/50
CHANGE NOS.	SR 6495 91626 93434			MADE BY JDW APPD FVB	TYPED MJL

INTERNATIONAL BUSINESS MACHINES CORPORATION
ENGINEERING SPECIFICATIONS

393 MASTER

INSTRUCTIONS

No. 290303

NAME Count Device (2 Pos)

No. OF SHEETS 4 ^{3 of 4} SHEET 3

WHERE USED 077 - Collator

DATE

"Control Inputs"

By plugging from ~~1744/1749~~ of the standard section to the units hub corresponding to the digit being counted, and from the "T-C" hub to the "PU" of a standard selector, this selector can be used to control feeding of the two units under control of the counter.

At 201° on each primary cycle as the cards pass the primary brushes #2 relay 45 will be energized. A holding circuit is established through CR 11 until 0°. At 270° CR-9 completes a circuit through Rel. 45 B and 42 B to the units count magnet. This circuit causes the units step relay to advance one position for each primary cycle. After having counted 9 cards, the circuit for carry is as follows:

At 221° on the 10th count cycle CR 10 completes the circuit through R-43 and 44. Through the transferred points of R-43 A & B and R-44 A & B a test is made from CR-10 through the 9 spots on the units and tens step relays.

Assuming the units step relay has reached 9, a circuit is completed through R-43 A, 9 spot R-43 B and relay 42 and holding through CR-11.

At 270° on the same cycle (Primary) CR-9 completes a circuit through R-45 B, R-42B, carry switch, normally closed 41 (B) to tens count magnet. A parallel circuit is also completed through 45 B, 42 AL to units restoring magnet. Thus, on the 10th cycle, a one is counted into the tens step relay and the units step relay is restored to zero.

If it happens that both the units and tens step relays were holding 9's it can be seen that the 100th impulse will pass through R-45 B, 42 (B) energized, 41 B energized, and tens restoring magnet as well as through the 42 AL points and units restoring magnet.

When it is desired to restore the step relays from some source outside the counter circuit, relays R-39 and 40 must be plugged to the source and it may be any of the normal machine sources.

When insertion is to be controlled by the selector unit it is necessary to plug 0-9 inputs of the units and tens step relays together by means of bottle plugs, and then plug the transfer switch "ON".

M

DATE	12/19/49	3-9-55				GPW	DATE 1/16/50
ENG. CHANGE NOS.	SR 6495	91626	190094			MADE BY JDW APPD FVB	TYPED MJL

INTERNATIONAL BUSINESS MACHINES CORPORATION
 ENGINEERING SPECIFICATIONS

393 MASTER

INSTRUCTIONS

No. 290303

NAME Count Device (2 Pos) NO. OF SHEETS 4 SHEET 4

WHERE USED 077 - Collator DATE _____

A number may then be read from the card into one side of the selector unit in the normal manner. The output of the step relays is then plugged to the other side of the selector unit. Counting and carrying are in the normal manner.

During the reading portion of each machine cycle the figures in the step relays are read into the selector units, under control of the emitter. This reading compares in the normal manner with the figures read directly from the card. The selector output is used to control feeding.

M

DATE	12/19/49					GPW	DATE 1/16/50
ENG. CHANGE NOS.	SR 6405	01626				MADE BY JDM APPD FVB	TYPED MJL

BILL OF MATERIAL

IBM

FORM 920-7002-1
END.

NAME

- 1 I-COUNT DEVICE #2 POS#
- 2 159762*-Y 193681*-H
- 3 104419*-W 295577

QUANTITY	DATE ISSUED	ZONE	PART NUMBER	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER
			290303		290303

SHEET NO. 1

STATUS C DWG

MACH. TYPE 077

MASTER

NO. OF SHEETS

5
10
15

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	B P CABLE DWG		P	S		159846		1	159846	5010	10
	B P C B MTG INSTR DWG		R	S		280278		1	280278	5010	25
	INSTRUCTIONS		R	S		290303		1	290303	5010	30
890490	W.D. SUFF D		R	S		290303		1	290303	5010	35
	EMITTER MTG SCREW		L	D		358	01	2		5010	40
	RELAY MTG SCREW		L	D		2300	01	18		5010	45
	DIAL RELAY MTG SCREW		L	D		2384	01	4		5010	50
	EMITTER BRUSH HLDR SCREW		L	D		3500	01	1		5010	55
	DIAL RELAY MTG SPACER			D		3586	01	4		5010	60
	EMIT BR HLDR SL LWASHER		L	D		9092	01	1		5010	65
	SPACER RELAY GATE		L	D		17026	01	2		5010	70
890490	JUMPER ASM WIRE			A		21791	01	1		5010	72
	EMITTER BRKT MTG SCREW		L	D		38381	01	3		5010	75
	EMIT BR HLDR SL SCREW		L	D		38383	01	1		5010	80
	EMIT BR HLDR SL WASHER			D		41087	01	1		5010	85
	EMITTER BRUSH ASSEM		L	A		109339	01	5		5010	90

"PL" PLANNING CODE "PL"

J REG. USAGE
K AS REQ'D
L DNF. ITEM
M REMOVE ITEM
P BULK MAT'L
Q E.C. CARD
R PLAN'G REJECT'N

"CH" CHARACTER CODE "CH"

A WITH B/M
D WITHOUT B/M
R FACTORY REFERENCE
S REF MAT'L TO BE SHIPPED

01-PIECE EACH
02-PAIR
03-SET
04-ROLL-SPOOL-BALL
05-SHEET
06-C OR 100 PCS.
07-GROSS
08-REAM
09-BALE
10-BALE
11-INCH
12-FEET
13-YARD
14-80. FEET
15-50. INCH
16-50. INCH
17-SQ. FEET

"U OF M" UNIT OF MEASURE CODE

18-CU. FEET
19-PER 100 FT.
31-OUNCE
32-POUND

35-OUNCE (TROY)
41-GRAM
51-PINT
52-QUART
53-GALLON
61-PER M
81-BOX
82-CARTON
83-TUBE
84-BARREL
85-DRUM
86-TANK
87-CAN-JAR
88-CARBOY
89-KEG

BILL OF MATERIAL

IBM

FORM 920-7002-1
END.

NAME

1 I-COUNT DEVICE #2 POS#
2 159762*-Y 193681*-H
3 104419*-W 295577

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
----------	-------------	------	-----------------------	---------------------------	----------------------

SHEET NO. 1

B STATUS	C DWG	MACH. TYPE	077
----------	-------	------------	-----

MASTER

NO. OF SHEETS
5
10
15

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	B P CABLE DWG		P	S		✓ 159846		1	159846	5010	10
	B P C B MTG INSTR DWG		R	S		✓ 280278		1	280278	5010	25
	INSTRUCTIONS		R	S		✓ 290303		1	290303	5010	30
890490	W.D. SUFF D		R	S		✓ 290303		1	290303	5010	35
	EMITTER MTG SCREW		L	D		✓ 358	01	2		5010	40
	RELAY MTG SCREW		L	D		✓ 2300	01	18		5010	45
	DIAL RELAY MTG SCREW		L	D		✓ 2384	01	4		5010	50
	EMITTER BRUSH HLDR SCREW		L	D		✓ 3500	01	1		5010	55
	DIAL RELAY MTG SPACER			D		✓ 3586	01	4		5010	60
	EMIT BR HLDR SL LWASHER		L	D		✓ 9092	01	1		5010	65
	SPACER RELAY GATE		L	D		✓ 17026	01	2		5010	70
890490	JUMPER ASM WIRE			A		✓ 21791	01	1		5010	72
	EMITTER BRKT MTG SCREW		L	D		✓ 38381	01	3		5010	75
	EMIT BR HLDR SL SCREW		L	D		✓ 38383	01	1		5010	80
	EMIT BR HLDR SL WASHER			D		✓ 41087	01	1		5010	85
	EMITTER BRUSH ASSEM		L	A		✓ 109339	01	5		5010	90

"PL" PLANNING CODE "PL"
J REG. USAGE L DNF. ITEM Q E.C. CARD
K AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
K COMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
A WITH B/M R FACTORY REFERENCE
D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01—PIECE EACH 06—C OR 100 PCS. 12—FEET
02—PAIR 07—GROSS 13—YARD
03—SET 08—REAM 15—80. FEET
04—ROLL-SPOOL-BALL 09—BALE 16—50. INCH
05—SHEET 11—INCH 17—50. FEET

"U OF M" UNIT OF MEASURE CODE
18—CU. FEET 31—OUNCE
19—PER 100 FT. 32—POUND

35—OUNCE (TROY) 61—PER M 85—DRUM
41—GRAM 81—BOX 86—TANK
51—PINT 82—CARTON 87—CAN-JAR
52—QUART 83—TUBE 88—CWRBOY
53—GALLON 84—BARREL 89—KEG

BILL OF MATERIAL
IBM

FORM 920-7002-1
END.

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
----------	-------------	------	-----------------------	---------------------------	----------------------

SHEET NO. 2

STATUS	DWG	MACH. TYPE
--------	-----	------------

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	BRUSH HOLDER LOCK SCREW		L	D		112055	01	2		5010	95
	EMITTER ASSEMBLY			A		120283	01	1		5010	100
	BRASS JUMPER-DIAL RELAY		L	D		120943	01	2		5010	105
	BRASS JUMPER		L	D		121349	01	2		5010	110
	RELAY ASSEMBLY #15-#20			A		124843	01	2		5010	115
	RELAY ASSEMBLY #19			A		124844	01	1		5010	120
890866	CAM ASM C R 9-10			A		695704	01	2		5010	125
	DIAL RELAY ASSEMBLY			A		134969	01	2		5010	130
	BRASS JUMPER-C R CAMS		L	D		135405	01	1		5010	135
	BRUSH CLAMP			D		153479	01	1		5010	140
	DUMMY PLUG		L	D		153681	01	1		5010	145
	CONTROL PANEL JUMPER		L	D		153682	01	1		5010	150
	CAM ASM 231 DEG C R-11			A		159751	01	1		5010	155
	EMITTER BRACKET			D		159843	01	1		5010	160
	COND-RESIS 5 MFD-10 OHM			D		176407	01	1		5010	165

"PL" PLANNING CODE "PL"
 - REG. USAGE L DNF. ITEM Q E. C. CARD
 J AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
 K COMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
 A WITH B/M R FACTORY REFERENCE
 D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01-PIECE EACH 06-C OR 100 PCS. 12- FEET
 02-PAIR 07-GROSS 13-YARD
 03-SET 08-REAM 15-BD. FEET
 04-ROLL-SPOOL-BALL 09-BALE 16-SQ. INCH
 05-SHEET 11-INCH 17-SQ. FEET

"U OF M" UNIT OF MEASURE CODE
 18-CU. FEET 31-OUNCE
 19-PER 100 FT. 32-POUND

35-OUNCE (TROY) 61-PER M 85-DRUM
 41-GRAM 81-BOX 86-TANK
 51-PINT 82-CARTON 87-CAN-JAR
 52-QUART 83-TUBE 88-CARBOY
 53-GALLON 84-BARREL 89-KEG

PRINTED IN U. S. A.

BILL OF MATERIAL



FORM 920-7002-1

END.

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS			DWG	MACH. TYPE	

SHEET NO. 3

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
810057	RELAY ASSEM #8			A		178103	01	1	[Red box around parts 178103, 196298, 214442, 286167]	5010	170
	CONDENSER MTG. SCREW		L	D		196298	01	2		5010	180
	CONTROL PANEL CONTACT		L	D		214442	01	50		5010	183
	RELAY BAR . CABLE ASM			A		286167	01	1		5010	185
	FOR EACH CONTROL PANEL SHIPPED PRIOR TO 1942 ADD---									5020	5
	CONTROL PANEL-FIXED		J	D		103227	01	1	[Red X over parts 103227, 167444]	5020	10
	CONTROL PANEL-MANUAL		J	D		167444	01	1		5020	15
	FOR MACHINES WIRED TO 159762 OR LATER 295577 OR 193681*-H WITHOUT 293420 ALPHA COLLATING OR 292718 DIGIT EMITTER ADD---									5030	5
	BEARING RETAINER SCREW		L	D		244	01	6	[Red box around parts 244, 3500, 50104, 166823, 166897]	5030	10
	BRG RET CAP MTG SCREW		L	D		3500	01	3		5030	25
	SHAFT RETAINER SCREW		L	D		50104	01	1		5030	30
	BEARING RETAINER			D		166823	01	2		5030	35
	SHAFT BEARING			D		166897	01	2		5030	40

"PL" PLANNING CODE REG. USAGE AS REQ'D COMP. OF TOT.	"PL" L DNF. ITEM M REMOVE ITEM P BULK MAT'L	"PL" Q E. C. CARD R PLAN'G REJECT'N	"CH" CHARACTER CODE "CH" A WITH B/M D WITHOUT B/M	R FACTORY REFERENCE S REF MAT'L TO BE SHIPPED	01-PIECE EACH 02-PAIR 03-SET 04-ROLL-SPOOL-BALL 05-SHEET	06-C OR 100 PCS. 07-GROSS 08-REAM 09-BALE 11-INCH	12-FEET 13-YARD 14-BD. FEET 15-SQ. INCH 16-SQ. INCH 17-SQ. FEET	"U OF M" UNIT OF MEASURE CODE 18-CU. FEET 19-PER 100 FT.	20-OUNCE 21-OUNCE 32-POUND	35-OUNCE (TROY) 41-GRAM 51-PINT 52-QUART 53-GALLON	61-PER M 81-BOX 82-CARTON 83-TUBE 84-BARREL	85-DRUM 86-TANK 87-CAN-JAR 88-CARBOY 89-KEG
--	---	--	--	--	--	---	--	---	----------------------------------	--	---	---

BILL OF MATERIAL

IBM

FORM 920-7002-1

END.

1
2
3

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS		DWG		MACH. TYPE	

SHEET NO. 4

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	BEARING RETAINER CAP			D		167061	01	1		5030	45
	C B BAR ASSEMBLY			A		280238	01	1		5030	50
	C B SHAFT ASSEMBLY			A		280239	01	1		5030	55
		FOR MACHINES WIRED TO 159762*-P 295577 OR 193681*-H WITHOUT 293420 ALPH COLLATING OR 292718 DIGIT EMITTER ADD---								5040	5
										5040	10
										5040	15
	COVER L H END			A		159845	01	1		5040	20
		FOR MACHINES WIRED TO 159762Q OR LATER WITHOUT 293420 ALPH COLLATING OR 292718 DIGIT EMIT ADD---								5050	5
										5050	10
	COVER L H END			A		238675	01	1		5050	15
		FOR MACHINES WITHOUT 292718 DIGIT EMITTER ADD---								5060	5
	SLEEVE EMITTER BR HLDR			D		159842	01	1		5060	10
1900206	HOLDER EMITTER BRUSH			A		159847	01	1		5060	15
		FOR MACHINES WITH 292718 DIGIT EMITTER ADD---								5070	5

"PL" PLANNING CODE "PL"
 . REG. USAGE L DNF. ITEM O E. C. CARD
 J AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
 K. COMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
 A WITH B/M R FACTORY REFERENCE
 D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01-PIECE EACH 06-C OR 100 PCS. 12- FEET
 02-PAIR 07-GROSS 13-YARD
 03-SET 08-REAM 15-50. FEET
 04-ROLL SPOOL-BALL 09-BALE 16-50. INCH
 05-SHEET 11-INCH 17-50. FEET

"U OF M" UNIT OF MEASURE CODE
 18-CU. FEET 31-OUNCE
 19-PER 100 FT. 32-POUND

35-OUNCE (TROY) 61-PER M 85-DRUM
 41-GRAM 81-BOX 86-TANK
 51-PINT 82-CARTON 87-CAN. JAR
 52-QUART 83-TUBE 88-CARBOY
 53-GALLON 84-BARREL 89-KEG

PRINTED IN U. S. A.

BILL OF MATERIAL



FORM 920-7002-1

END.

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS			DWG	MACH. TYPE	

SHEET NO. 5

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
120158	HOLDER BRUSH			D		153478	01	1		5070	10
	SHAFT ASM CR			A		283025	01	1		5070	15
	SLEEVE BRUSH HOLDER			D		283027	01	1		5070	20
	SIDE FRAME CR FRONT			A		283028	01	1		5070	25
		FOR MACHINES WIRED TO 159762*-P, 295577, 193681*-H OR 104419*-H WITH 292718 DIGIT EMITTER ADD---								5080	5
	COVER ASM LH END			A		283029	01	1		5080	15
		FOR MACHINES WIRED TO 159762Q OR LATER OR 104419J OR LATER WITH 292718 DIGIT EMITTER ADD---								5090	5
	COVER ASM LH END			A		239510	01	1		5090	10
		FOR MACHINES WIRED TO 104419*-G OR LATER OR EQUIPPED WITH 293420 ALPHA COLLATING ADD---								5100	5
	CONTACT GROUP			A		140992	01	3		5100	15
		FOR MACHINES WIRED TO 104419H OR LATER ADD---								5110	5

"PL" PLANNING CODE "PL"
 - REG. USAGE L DNF ITEM Q E.C. CARD
 J AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
 K COMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
 A WITH B/M R FACTORY REFERENCE
 D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01-PIECE EACH 06-C OR 100 PCS. 12- FEET
 02-PAIR 07-GROSS 13-YARD
 03-SET 08-REAM 15-80. FEET
 04-ROLL-SPOOL-BALL 09-BALE 16-50. INCH
 05-SHEET 11-INCH 17-50. FEET

"U OF M" UNIT OF MEASURE CODE
 10-CU. FEET 31-OUNCE
 19-PER 100 FT. 32-POUND

35-OUNCE (TROY) 61-PER M
 41-GRAM 81-BOX
 51-PINT 82-CARTON
 52-QUART 83-TUBE
 53-GALLON 84-BARREL
 85-DRUM
 86-TANK
 87-CAN JAR
 88-CARBOY
 89-KEG

BILL OF MATERIAL

IBM

FORM 920-7002-1

END.

1
2
3

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS			DWG	MACH. TYPE	

SHEET NO. 6

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	COVER L H END			A		238675	01	1		5110	10
	SHAFT ASM C R			A		280239	01	1		5110	15
		FOR MACHINES SHIPPED PRIOR TO JAN 6 1941		ADD---						5120	5
	C B SIDE FRAME-FRONT			D		166865	01	1		5120	10
		FOR MACHINES SHIPPED PRIOR TO MARCH 1, 1940		ADD---						5130	5
	JUMPER WIRE ASSEMBLY		L	A		26428	01	1		5130	10
	WIRE CLIP			D		121384	01	5		5130	15
	RELAY ASM #12, #13, #14			A		124843	01	3		5130	20
	WIRE #20 YELLOW		P	D		179626	12	10		5130	25
		FOR MACHINES WIRED TO 193681*-H WITH TUBE CONTROL OR 104419*-G OR LATER OR EQUIPPED WITH 294385								5140	5
	JUMPER WIRE ASSEMBLY			A		26427	01	1		5140	10
		GROUNDING CIRCUIT ADD---								5140	15
										5140	20

"PL" PLANNING CODE "PL"
 - REG. USAGE L DNF. ITEM O E. C. CARD
 J AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
 K COMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
 A WITH B/M R FACTORY REFERENCE
 D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01—PIECE EACH 06—C OR 100 PCS. 12—FEET
 02—PAIR 07—GROSS 13—YARD
 03—SET 08—REAM 15—BD. FEET
 04—ROLL-SPOOL-BALL 09—BALE 16—SQ. INCH
 05—SHEET 11—INCH 17—SQ. FEET

"U OF M" UNIT OF MEASURE CODE
 18—CU. FEET 31—OUNCE
 19—PER 100 FT. 32—POUND

35—OUNCE (TROY) 61—PER M 85—DRUM
 41—GRAM 81—BOX 86—TANK
 51—PINT 82—CARTON 87—CAN-JAR
 52—QUART 83—TUBE 88—CARBOY
 53—GALLON 84—BARREL 89—KEG

PRINTED IN U. S. A.

BILL OF MATERIAL



FORM 920-7002-1
END.

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS			DWG	MACH. TYPE	

SHEET NO. 7

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING	
	CLIP WIRE			D		121384	01	8		5140	25	
	RELAY ASM □REPLACE 55□			A		127009	01	1		5140	30	
	JUMPER BRASS		L	D		135405	01	1		5140	35	
	WIRE #20 YELLOW STRANDED		P	D		179626	12	10		5140	40	
	FOR MACHINES SHIPPED AFTER JAN 1, 1948 ADD---										5150	5
	SCREW FELT MTG		L	D		92	01	3		5150	10	
	WASHER FELT MTG		L	D		4085	01	1		5150	15	
	SCREW FELT MTG BRKT		L	D		4236	01	4		5150	20	
	SLEEVE COMPRESSION		L	D		121277	01	2		5150	25	
	TAIL TUBE		L	D		123189	01	2		5150	30	
	RIGHT METER UNIT			D		190275	01	1		5150	35	
	NUT		L	D		190279	01	2		5150	40	
	TAIL TUBE CLAMP		L	D		190351	01	2		5150	45	
	LEFT METER UNIT			D		190360	01	1		5150	50	
	WIPER BRACKET LONG			D		190370	01	1		5150	55	

"PL" PLANNING CODE "PL"
 REG. USAGE L DNF. ITEM Q E. C. CARD
 AS REQ'D M REMOVE ITEM R PLAN'G REJECT'N
 AMP. OF TOT. P BULK MAT'L

"CH" CHARACTER CODE "CH"
 A WITH B/M R FACTORY REFERENCE
 D WITHOUT B/M S REF MAT'L TO BE SHIPPED

01—PIECE EACH 06—C OR 100 PCS. 12—FEET
 02—PAIR 07—GROSS 13—YARD
 03—SET 08—REAM 15—SQ. FEET
 04—ROLL-SPOOL-BALL 09—BALE 16—SQ. INCH
 05—SHEET 11—INCH 17—SQ. FEET

"U OF M" UNIT OF MEASURE CODE
 18—CU. FEET 31—OUNCE
 19—PER 100 FT. 32—POUND

35—OUNCE (TROY) 61—PER M 85—DRUM
 41—GRAM 81—BOX 86—TANK
 51—PINT 82—CARTON 87—CAN-JAR
 52—QUART 83—TUBE 88—CARBOY
 53—GALLON 84—BARREL 89—KEG

BILL OF MATERIAL
IBM
 FORM 920-7002-1
 END.

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
----------	-------------	------	-----------------------	---------------------------	----------------------

SHEET NO. 8

STATUS	DWG	MACH. TYPE
--------	-----	------------

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
	WIPER BRACKET SHORT			D		190371	01	1		5150	60
	FELT WIPER LONG			D		190372	01	1		5150	65
	FELT WIPER SHORT			D		190373	01	1		5150	70
	REMOVE		M							5160	5
	SUPPORT BAR		M	D		103675	01	1		5160	10
	C B SIDE FRAME FRONT		M	D		166865	01	1		5160	15
890232	COVER L H END AS REQD		M	D		167272	01	1		5160	20
890232	COVER L H END AS REQD		M	D		233423	01	1		5160	25
B943946		100753	Q			9999999				9000	
B943396		91453	Q			9999999				9000	
B946386		22454	Q			9999999				9000	
B946386	11380996	022454	R			9999999		123	252	9000	
B948816	.476988CR	092754	R			9999999		4CR	29CR	9000	

"PL" PLANNING CODE "PL" - REG. USAGE J AS REQ'D K COMP. OF TOT. L DNF. ITEM M REMOVE ITEM P BULK MAT'L Q E. C. CARD R PLAN'G REJECT'N	"CH" CHARACTER CODE "CH" A WITH B/M D WITHOUT B/M R FACTORY REFERENCE S REF MAT'L TO BE SHIPPED	01—PIECE EACH 02—PAIR 03—SET 04—ROLL-SPOOL-BALL 05—SHEET 06—C OR 100 PCS. 07—GROSS 08—REAM 09—BALE 10—INCH 12—FEET 13—YARD 14—BD. FEET 15—SQ. INCH 16—SQ. FEET 17—SQ. FEET	"U OF M" UNIT OF MEASURE CODE 18—CU. FEET 19—PER 100 FT. 20—OUNCE 21—OUNCE 22—POUND 23—OUNCE (TROY) 24—GRAM 25—PINT 26—QUART 27—GALLON 28—PER M 29—BOX 30—CARTON 31—TUBE 32—BARREL 33—DRUM 34—TANK 35—CAN-JAR 36—CARBOY 37—KEG
--	--	---	---

PRINTED IN U. S. A.

BILL OF MATERIAL



FORM 920-7002-1

END.

NAME

QUANTITY	DATE ISSUED	ZONE	PART NUMBER 290303	PROD. SEQ. OR ACCOUNT NO.	B/M NUMBER 290303
STATUS			DWG	MACH. TYPE	

SHEET NO. 9

NO. OF SHEETS

ENG. CHANGE OR DATE	BASIC NAME	DESCRIPTION	PL	CH	ZONE CLASS	PART NO. OR RAW MAT'L CODE	UNIT MEAS.	QUANTITY	REFERENCE	OPER. NO.	DEPT. USING
B94881&			Q			9999999				9000	
B190020&			Q			9999999				9000	
190020&		21055	R			9999999		1		9000	
7 04 5	1347705		R			9999999				9000	
C890232			Q			9999999				9000	5
890232	233423		R			9999999		2	1	9000	
120158			Q			9999999				9000	
120158			R			9999999		1		9000	
B890490		62659	Q			9999999				9000	
890490	305184CR	062659	R			9999999		1CR	1CR	9000	
C890866		61060	Q			9999999					
890866	560740	061060	R			9999999		1			
B810057		22262	Q			9999999					
810057	34359	022262	R			9999999		1			
	*	407-04 225							*	*	

<p>"PL" PLANNING CODE "PL"</p> <p>J REG. USAGE K AS REQ'D L COMP. OF TOT.</p> <p>L DNF. ITEM M REMOVE ITEM P BULK MAT'L</p> <p>Q E. C. CARD R PLAN'G REJECT'N</p>	<p>"CH" CHARACTER CODE "CH"</p> <p>A WITH B/M D WITHOUT B/M</p> <p>R FACTORY REFERENCE S REF MAT'L TO BE SHIPPED</p>	<p>01—PIECE EACH 02—PAIR 03—SET 04—ROLL-SPOOL-BALL 05—SHEET</p> <p>06—C OR 100 PCS. 07—GROSS 08—REAM 09—BALE 11—INCH</p> <p>12—FEET 13—YARD 14—BD. FEET 15—SQ. INCH 16—SQ. INCH 17—SQ. FEET</p>	<p>"U OF M" UNIT OF MEASURE CODE</p> <p>18—CU. FEET 19—PER 100 FT.</p> <p>20—OUNCE 21—OUNCE 22—POUND</p>	<p>23—OUNCE (TROY) 24—GRAM 25—PINT 26—QUART 27—GALLON</p> <p>28—PER M 29—BOX 30—CARTON 31—TUBE 32—BARREL</p>	<p>33—DRUM 34—TANK 35—CAN-JAR 36—CARBOY 37—KEG</p>
--	---	---	---	--	--