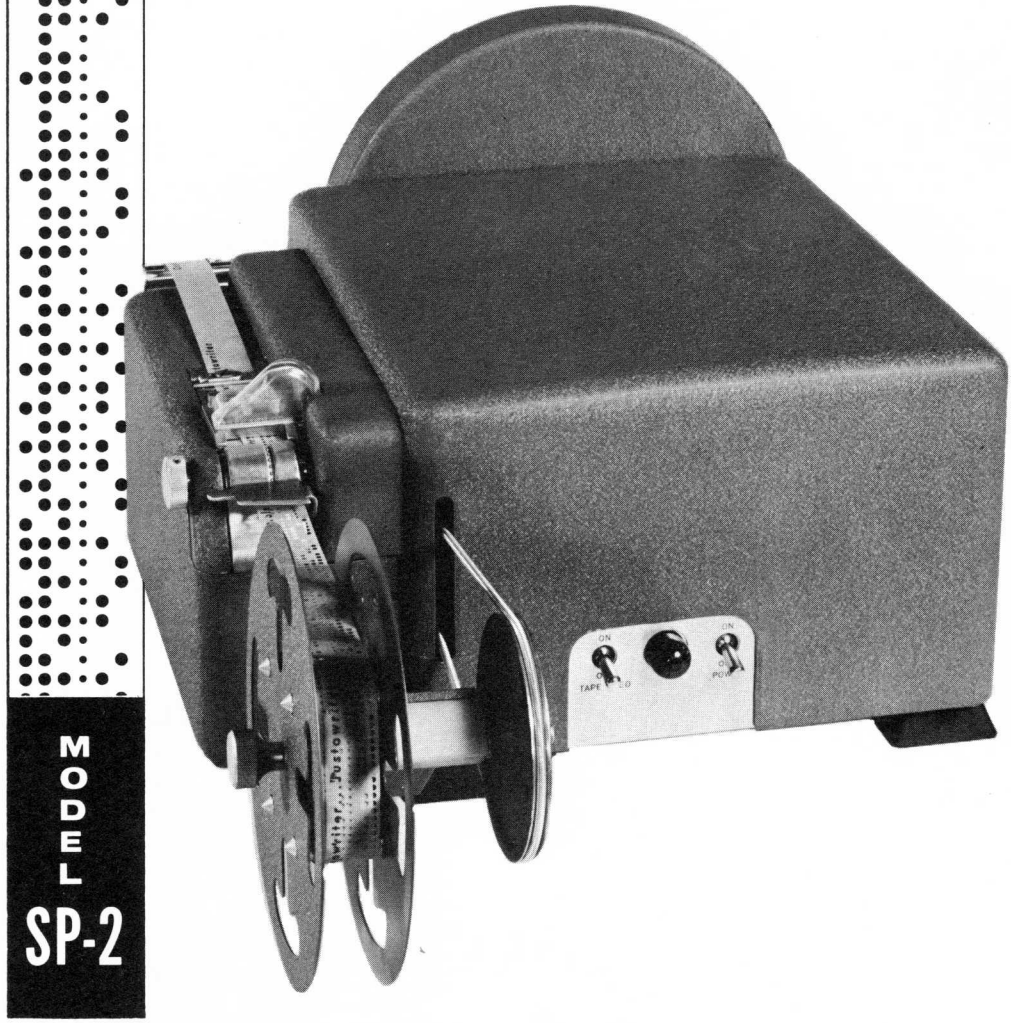
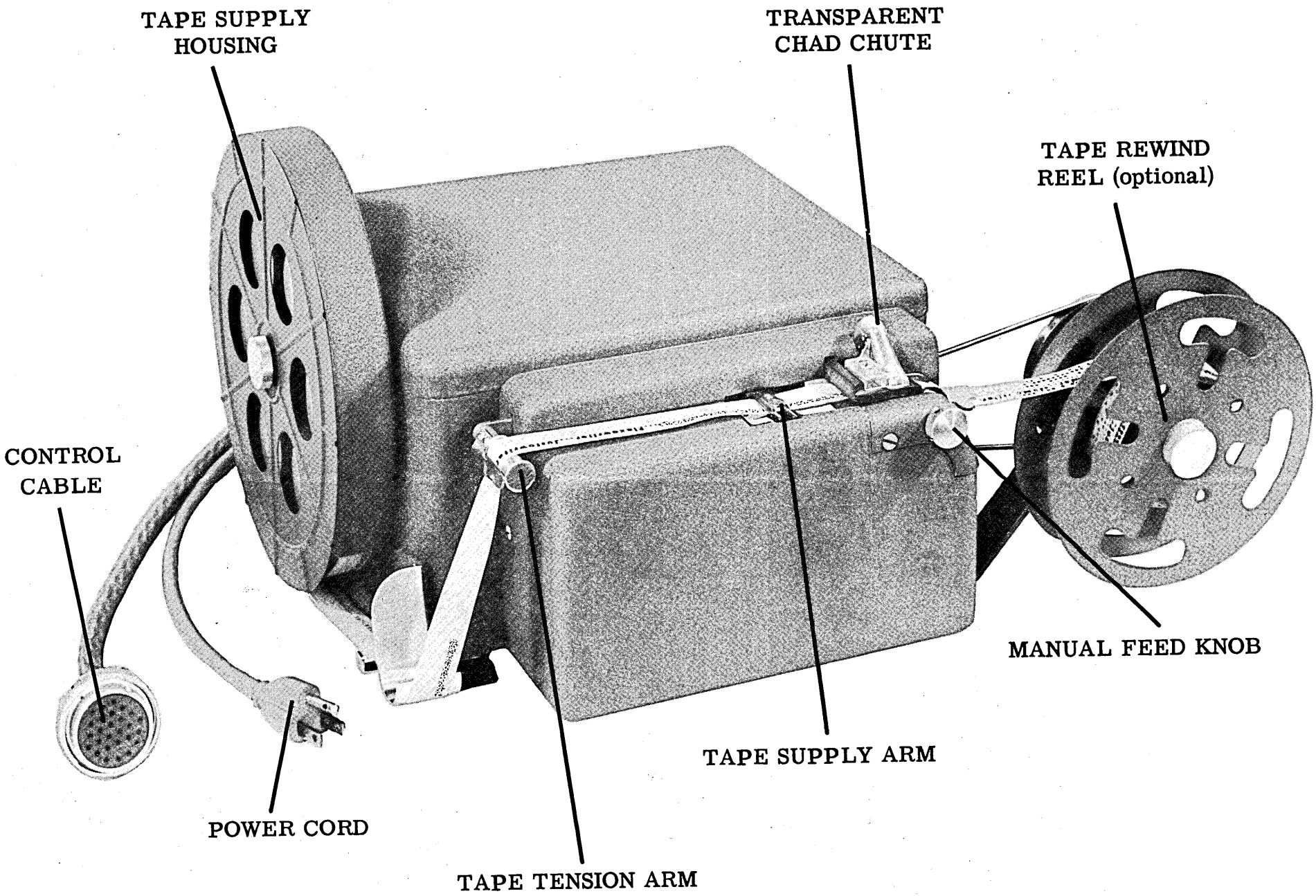
Friden

Motorized Tape Punch



MODEL SP-2


TAPE SUPPLY HOUSING
TRANSPARENT CHAD CHUTE
TAPE REWIND REEL (optional)
CONTROL CABLE
MANUAL FEED KNOB
TAPE SUPPLY ARM
POWER CORD
TAPE TENSION ARM

the Friden
Motorized Tape Punch, model SP-2

The Friden Motorized Tape Punch, Model SP-2 is designed for general applications involving the recording of information in punched paper tape. It is a completely self-contained machine requiring only cable connections to the apparatus with which it is to be associated.

The Tape Punch has been designed for a wide variety of tape applications. It is capable of punching any number up to eight transversely-spaced code holes. A simple adjustment permits the use of any width tape from eleven-sixteenths to one-inch wide.

The punch unit is mechanically operated by a cam shaft which makes a single revolution for each punching cycle. This cam shaft is under control of an electro-magnetically controlled, single-revolution clutch for connecting the cam shaft to a constantly running drive pulley. A feed hole is always punched in the tape during each revolution of the cam shaft and individual electro-magnets control the punching of the code holes during each revolution. The clutch magnet and the individual code magnets are controlled by external control circuits.

specifications

TAPE USED	.687 to 1.000 inch wide
HOLE SIZE	.046" diameter feed hole .072" diameter code hole
HOLE SPACING	.100" both longitudinally and transversely. The standard tape punch is constructed to punch feed holes in line with the code holes transversely of the tape, but special punches are available which punch the feed holes .013" in advance of the code holes.
FEED HOLE LOCATION	The standard punch is made for punching the feed holes .394" from the inner or guiding edge of the tape, but special punches are also available for punching these feed holes .4375" from the guiding edge.
OPERATING SPEED	Standard parts are available for driving the punch at either 1000 r.p.m. or 1228 r.p.m., the latter speed being sufficient to reliably punch codes supplied at the rate of 20 per second. Special drives can be provided for obtaining other punch operating speeds.
CLUTCH	A magnetically-operated, single-revolution clutch is used to drive the cam shaft on the punch. The control impulse for the clutch magnet should have a minimum duration of 15 milliseconds and should not exceed the cycle time of the driven cam shaft to avoid repeat operation. Clutch magnets are available for 90, 48 or 24 volt D.C. operation.
CODE MAGNETS	The code punched in the tape is selected by energizing individual code magnets for each unit of the code. The control impulse duration for the code magnets is the same as for the clutch magnet. The clutch and code magnets may be impulsed simultaneously at the start of each punch cycle. Code magnets are

Cont'd.

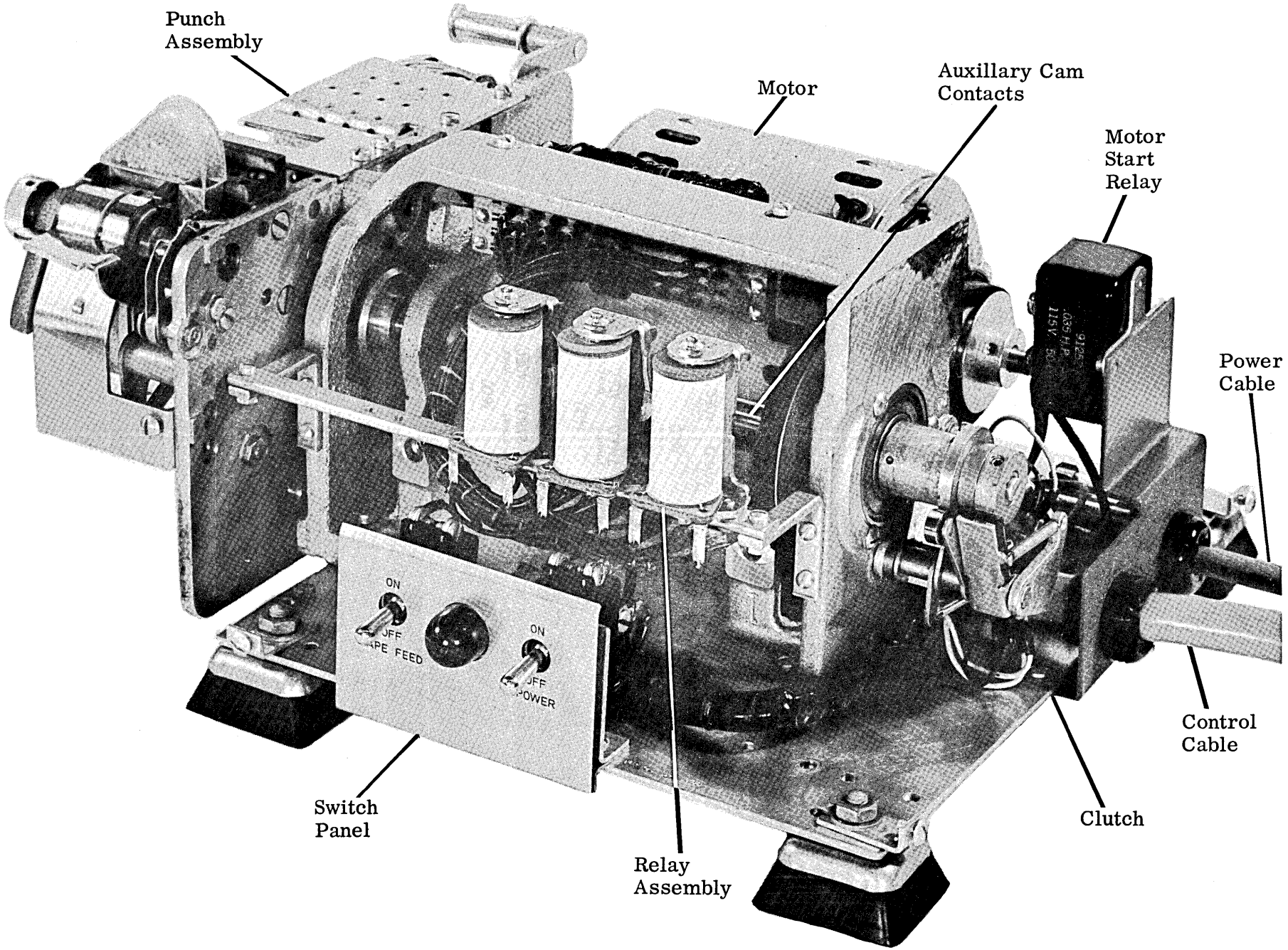
CODE MAGNETS	available for 90, 48 or 24 volt D.C. operation.
TAPE CHECK MECHANISM	The punch is provided with mechanism for operating contacts whenever the tape is excessively tight, or whenever the supply of tape is exhausted, or when the tape hold-down arm is not in position to hold the tape in feeding position against the pin wheel.
MOTOR DRIVE	The punch is equipped with a 35 milli-horsepower induction motor. A V-belt is used to connect the motor to a clutch shaft. The shaft is mounted in precision sealed ball bearings.
AUXILIARY CONTACTS	A maximum of ten cam-operated tungsten contacts may be provided on the clutch shaft to operate in variable timed relation with the punch cycle. Each contact may be operated to close for various different portions of the cycle.
PUNCH MOUNTING	The punch is removably mounted as a unit on the clutch casting which is in turn mounted on a sheet metal base. The drive from the clutch shaft is through a separable coupling to the cam shaft of the punch.
CONTROL SWITCHES	A switch and indicating light bracket are provided in the front of the cover which can contain two toggle switches and one indicating light. One switch is normally used to control the power of the motor and the other to control the feeding of leader strips of tape. The indicating light is usually provided for indicating when the punch is in operating condition.
EXTERNAL CONNECTIONS	A power cord and a separate control cable are attached to the Motorized Tape Punch. The control cable can terminate in any size connector.

TAPE SUPPLY	A tape supply roll housing is removably mounted on the main cover. This accommodates a standard eight-inch diameter roll of tape containing approximately 1000 feet. A low tape supply contact can be provided to operate when the supply of tape is nearly exhausted.
TAPE REWIND	An optional rewind reel for the punched tape can be provided. This is a six-inch diameter reel driven by a spring belt from the clutch shaft. This can be omitted when not required.
CHAD HANDLING	The chads punched from the tape are conducted by a vertical chute through the bottom of the cover on the punch unit. No container for collecting the chads is provided within the machine.
AUXILIARY EQUIPMENT	Protecting fuses and terminal blocks are provided within the machine. When required up to five telephone type relays can also be mounted within the machine. Also when required, a full-wave rectifier can be mounted within the machine for providing 70-watt D.C. supply at 90 volts.
PARITY CHECK CONTACTS	A contact assembly operated directly by the punch pins can be provided for checking accuracy of punching when self-checking codes are used of the odd-even type. This assembly can be wired to open a circuit only when an even number of holes are punched. A different wiring permits closing one circuit when an even number of holes are punched and closing another circuit when an odd number of holes are punched.
SIZE	Width - 12 1/2" Depth - 12 1/2" (19 1/2" with rewind reel.) Height - 6 1/2" (9" with tape housing.)
WEIGHT	28 lbs.
FINISH	Gray or Tan Armorsol. Specify when ordering.

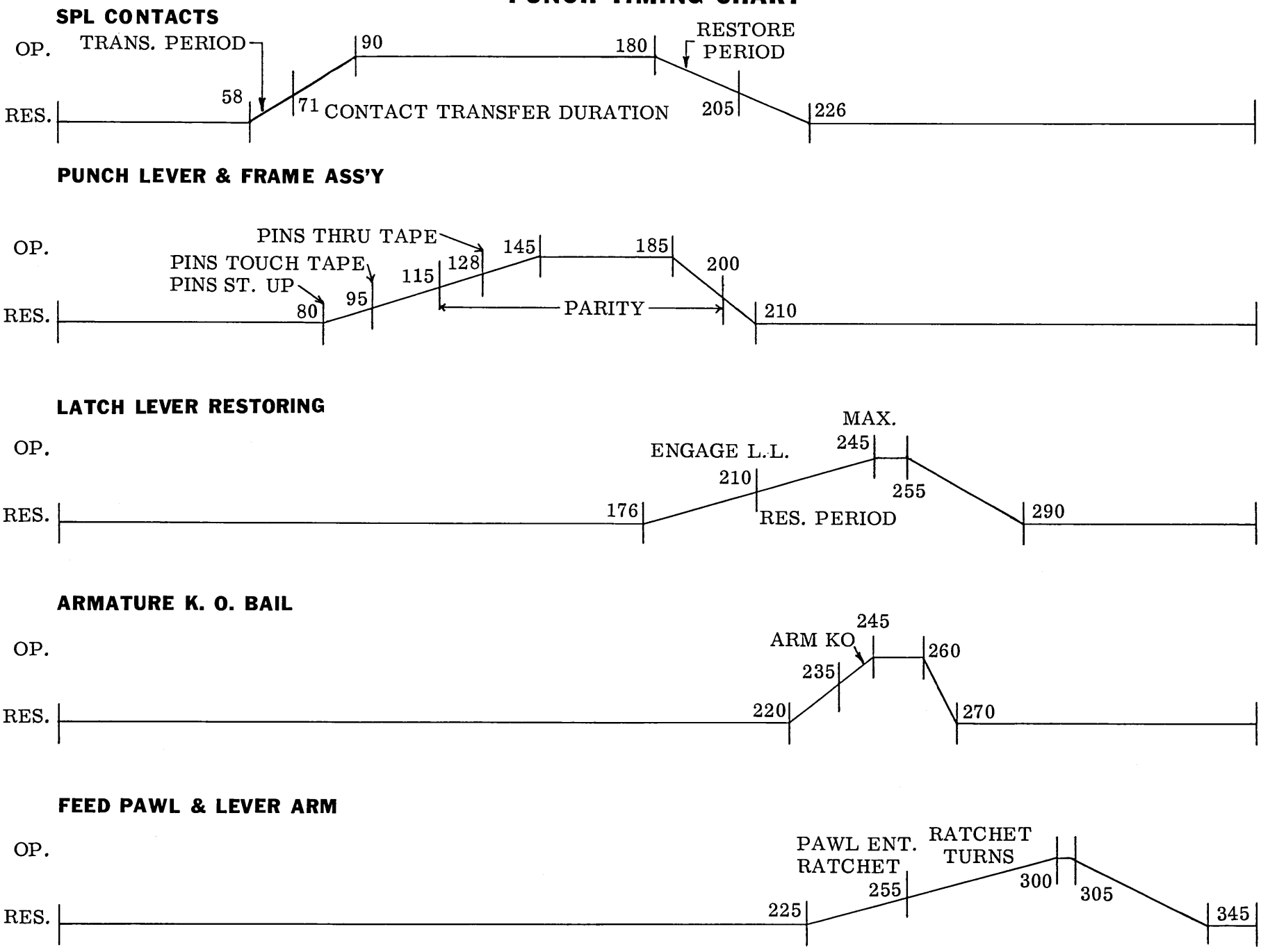
SPECIFICATIONS FOR CAM OPERATED CONTACTS

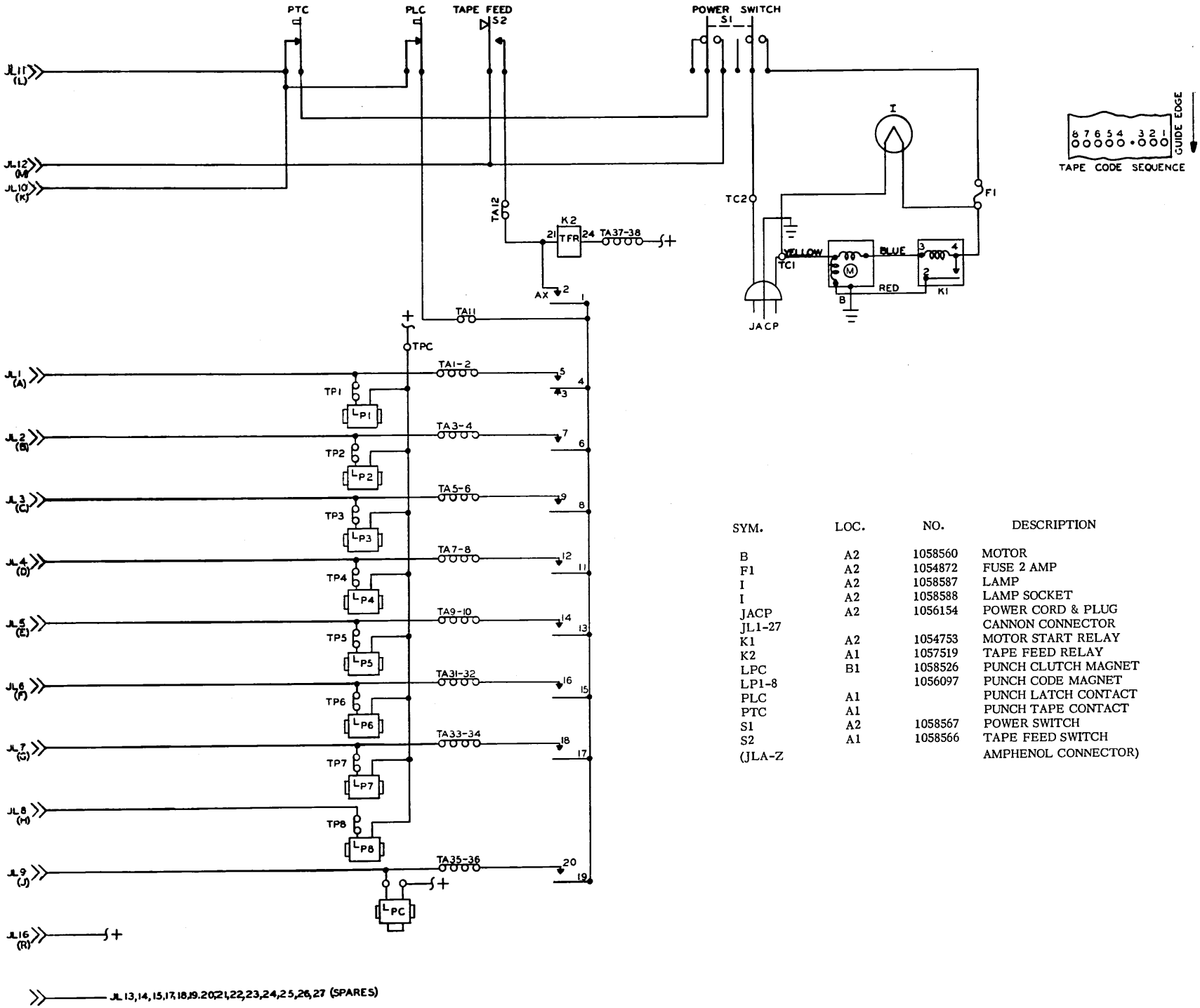
PART NO.	DEGREES CLOSED CLASS 'A' CONTACT	DEGREES CLOSED CLASS 'C' CONTACT
1044341	5	
1044342	10	
1044343	20	15
1044344	25	20
1044345	30	25
1044346	35	30
1048178	40	35
1058677	50	45
1043757	55	50
1044347	60	55
1044348	65	60
1058678	70	65
1044349	75	70
1058679	80	75
1044350	90	85
1044351	95	90
1044352	100	95
1044353	109	104
1048177	115	110
1048176	120	115
1044354	125	120
1058546	130	125
1044355	135	130
1058545	145	140
1058682	155	150
1058683	158	153
1044356	165	160
1044357	170	165
1058684	180	175
1043758	185	180
1044358	190	185
1044359	205	200
1044360	215	210
1044361	221	216
1044362	226	221
1058685	230	225
1044369	245	240
1044363	250	245
1044364	255	250
1058686	260	255
1044365	270	265
1044366	275	270
1058687	285	280
1044367	306	301
1044368	325	320
1058663	360	360

Motorized Tape Punch, Model No. SP-2



PUNCH TIMING CHART





SYM.	LOC.	NO.	DESCRIPTION
B	A2	1058560	MOTOR
F1	A2	1054872	FUSE 2 AMP
I	A2	1058587	LAMP
I	A2	1058588	LAMP SOCKET
JACP	A2	1056154	POWER CORD & PLUG
JL1-27			CANNON CONNECTOR
K1	A2	1054753	MOTOR START RELAY
K2	A1	1057519	TAPE FEED RELAY
LPC	B1	1058526	PUNCH CLUTCH MAGNET
LP1-8		1056097	PUNCH CODE MAGNET
PLC	A1		PUNCH LATCH CONTACT
PTC	A1		PUNCH TAPE CONTACT
S1	A2	1058567	POWER SWITCH
S2	A1	1058566	TAPE FEED SWITCH
(JLA-Z			AMPHENOL CONNECTOR)

Friden, Inc.

HOME OFFICE AND MAIN PLANT
SAN LEANDRO, CALIFORNIA
SALES AND SERVICE THROUGHOUT THE WORLD

SP-8590-R4-ROCH

PRINTED IN U.S.A.