RECORDING INSTRUMENTS
DIRECT ACTING—STRIP CHART
TYPES GX-40 AND GY-40

Switchboard and Portable Forms
Direct Current and Alternating Current

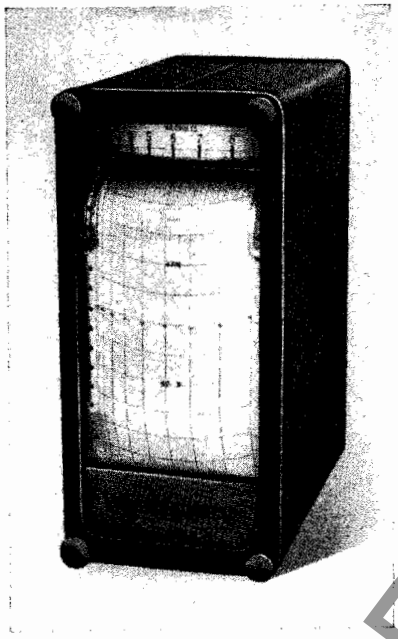

Fig. 1—Type GY-40 Switchboard Recording A-C. Kilovolt Meter

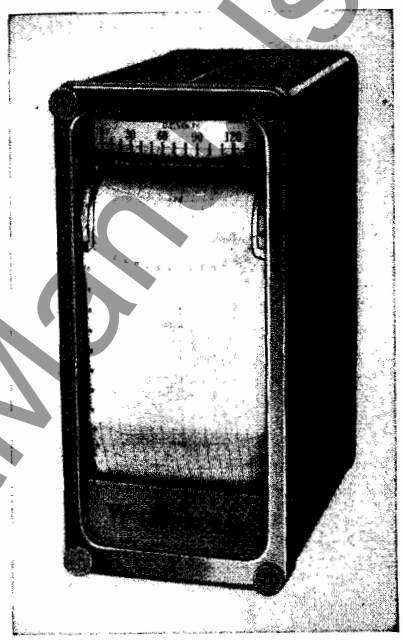

Fig. 2—Type GX-40 Switchboard Recording D-C. Voltmeter

DATA

Mounting	Switchboard (projection) and portable.
Case Material	Pressed steel, black baked enamel finish.
Case Size	5l" wide, 12" high, 9" deep.
Movements Direct Current	Permanent magnet, moving coil TYPE GX-40 for D-C. volts and amperes. Single element, iron core dynamometer TYPE GY-40 for D-C. self-contained watts.
Movements Alternating Current	Single element, iron core dynamometer TYPE GY-40 for A-C, volts, amps. and single phase watts. Double element, iron core dynamometer TYPE GY-40 for A-C. watts, vars, magnetic.
Damping	Critical.
Response	¾ to 1¼ seconds.
Insulation Rating	750 Volts.
Chart	4 5/16" wide, 4" scale. (for length see p.).
Chart Speeds	¾", 1½" (3" standard) and 6" per hour, (and per minute by manua trip.).
Chart Speed Change Gears	Complete set for above speeds furnished with each recorder.
Clocks	Synchronous motor driven. Spring driven, 8 day, handwound.
Shielding	Shielded against external magnetic and static fields.
Accuracy	**Permanent magnet moving coil types:** D-C. self contained ammeters (max. capacity 80 A.)....Within 1%. D-C. shunt operated (100 M. V.) ammeters.....Within 1½%. D-C. voltmeters and milliammeters.....Within 1%. **Single element Dynamometer types:** A-C. Voltmeters and ammeters.....Within 1%. A-C. wattmeters and varmeters.....Within 1%. D-C. self contained wattmeters (max. capacity 20 A.)...Within 3%. **Double element Dynamometer types:** A-C. Polyphase wattmeters and varmeters.....Within 1%.
Power consumption Weights	See tables on pages 6 and 7.

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TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

GENERAL

Experience of many years in design and manufacture of recording instruments, contributes to the high standards of performance, general utility and perfection of detail in the Westinghouse G-40 line of recorders.

Careful design of movements and damping mechanisms provides uniformly consistent performance for all types and capacities. The general utility of the line is broadened by built-in features which provide in each recorder, the selection at will of many operating characteristics which heretofore required a selection at time of ordering and which could not be readily changed in the field. Perfection of detail in chart drive, chart reroll, chart threading means, inking system, etc., has eliminated inconvenience in operating and removed many causes of lost records.

The use of accurate die castings for frame members and other important alignment parts, is standard practice in G-40 recorders. Line reamed sleeve bearings and precision ball bearings minimize friction and contribute to dependable operation of the chart mechanism.

Housings are of sturdy pressed steel fully reinforced and provided with dust and moisture proofing. The convenient size of the G-40 recorder permits of greater panel economy, mounting on 6 inch center lines. With portable features the recorder is as convenient to carry as a brief case.

DISTINCTIVE FEATURES

1. Convenient size for switchboard mounting and for portable service.
2. Complete line of movements, permanent magnet moving coil, single element dynamometer, double element dynamometer, cross coil dynamometer.
3. Structural members of pressed steel, die cast aluminum alloy, hard alloy plate and high strength moldarta assure permanent accuracy.
4. Removable
   - Pen
   - Ink reservoir
   - Chart mechanism
   - Clocks
   - Pivots and bearing screws
   - Bearing bracket
   - Scales
5. Integral movement. All dynamometer movement members, including damping vane, mounted concentric on one piece, rigid bronze alloy shaft.
6. Uniformly good damping and response.
7. High grade high torque clocks. Selection of 4 speeds by selecting one gear. All clocks are furnished standard with high speed feature.
8. Simplified chart mechanism. Only two gear meshes between clocks and chart driving drum thus minimizing backlash and simplifying construction.
9. Two color. Easy to read charts with special sizing to provide better records. No wood pulp paper used.
10. Charts have double perforations for more dependable operation.

APPLICATION

The G-40 Recorder is furnished with a broad line of movements to meet all conventional requirements in central station and industrial fields. Superior construction features and the ultimate in convenience and accuracy make it valuable in general portable service. On this service its ruggedness, accuracy and multiple range combinations place it in a distinctive class. Some of the specific applications covered are as follows:

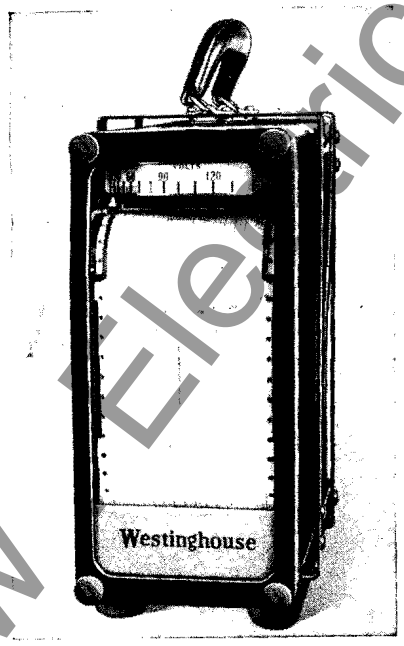


FIG. 3—PORTABLE TYPE GY-40 RECORDING A-C. VOLTMETER

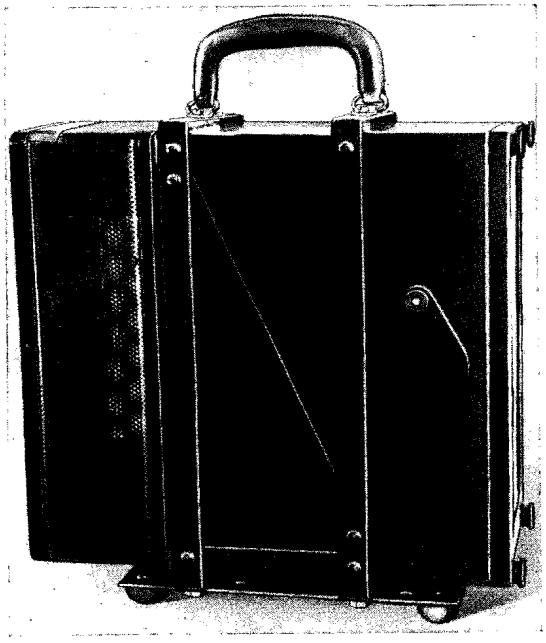


FIG. 4—PORTABLE RECORDER SHOWING PORTABLE BRACKET AND RESISTOR COMPARTMENT.

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

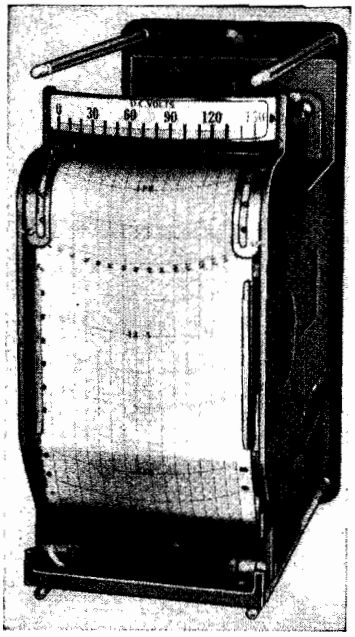


FIG. 5—RECORDING D.C. VOLTMETER TYPE GX-40, COVER REMOVED

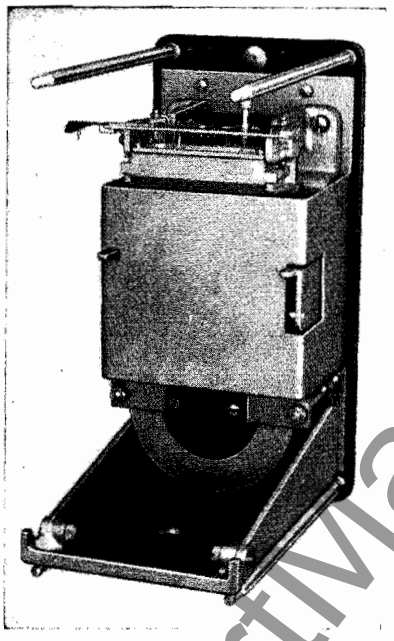


FIG. 6—PERMANENT MAGNET MOVING COIL MECHANISM, USED IN TYPE GX-40 D.C. RECORDER, SHOWN WITH SHIELD AND RECORDER BASE

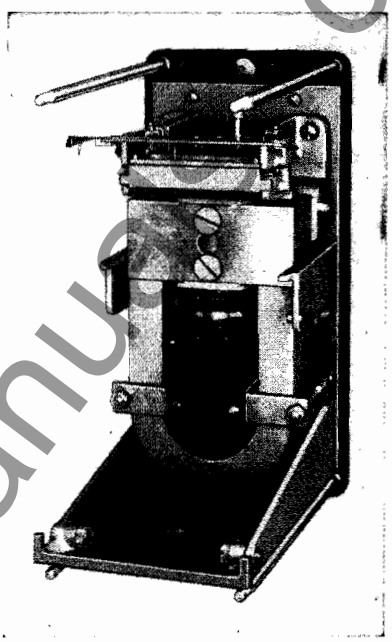


FIG. 7—TYPE GX-40 MECHANISM, SHIELD REMOVED, SHOWN ON RECORDER BASE. THIS CUT ALSO SHOWS THE SIMPLE AND POSITIVE PEN LIFTING MECHANISM

CENTRAL STATION

Power Generating Stations—

Load and voltage in:
- Generator circuit
- Transformer circuit
- Feeder circuit
- Auxiliaries

Telemeter load recording of:
- Station total load
- Transmission load
- Tie line load

Sub Stations—

Load and voltage in:
- Bus circuits
- Feeder circuits
- Tie lines

Operating and Maintenance—

Load and voltage in:
- Feeder circuits
- Transformers
- Consumers loads

Laboratory—

Volts, amperes, milliamperes, and watts, in:
- Test circuits
- Performance tests
- Life tests

INDUSTRIAL

Manufacturing—

Load and voltage:

Factory distribution circuit, Load surveys, motor load surveys.

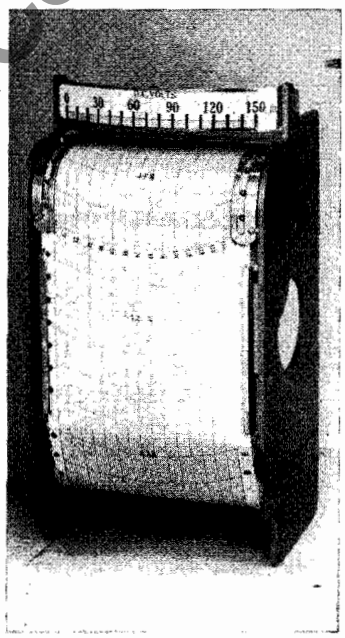


FIG. 8—CHART MECHANISM, FRONT SHOWING UNIT CONSTRUCTION

Machine drive performance (load factor).

Machine performance as indicated by load curves.

Performance of on - off appliances.

Production machinery (load and time) factor

Maintenance—

Load and voltage:

Periodic records on transformers and motors to forestall shutdowns.

Load cycle and daily cycle records on modified or repaired electric motors, drives and machinery.

Electrical Testing Laboratories—

Watts, volts, amperes, and milliamperes, for:
- Apparatus performance records
- Life test records

Research—

Watts, volts, amperes, and milliamperes:

Performance records of electrical quantities in experimental setups.

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

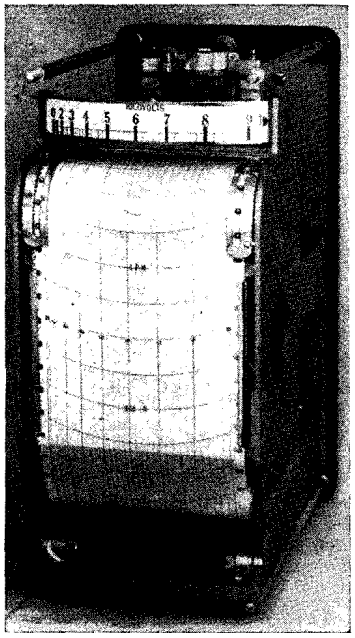


FIG. 9—RECORDING A-C. KILOWATT METER TYPE GY-40 SHOWING SUBSTANTIAL FRAME MEMBERS AND CHART MECHANISM

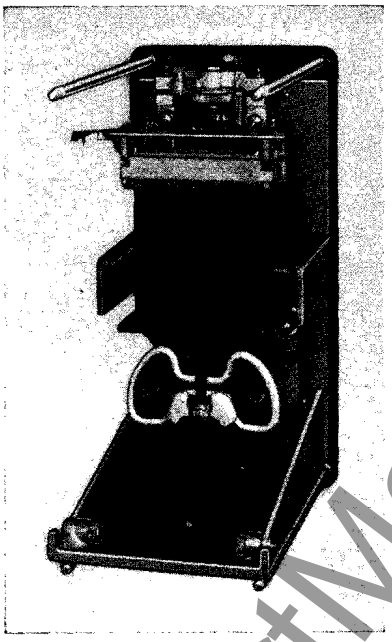


FIG. 10—SINGLE ELEMENT DYNAMOMETER MECHANISM USED IN A-C. AMMETERS, VOLTMETERS AND SINGLE PHASE WATTMETERS. NOTE THE RIGID CONCENTRICALLY MOUNTED DAMPING MECHANISM

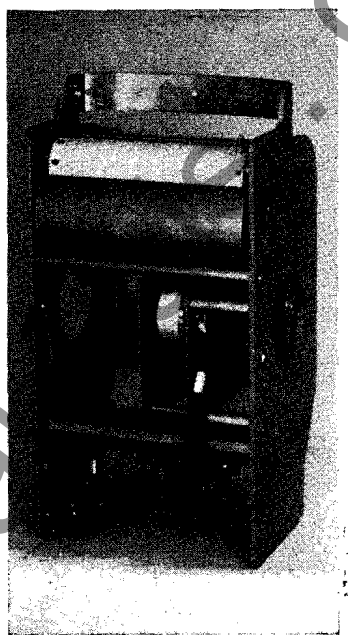


FIG. 11—CHART MECHANISM, REAR. NOTE CLOCK MOUNTING AND CONVENIENT STORAGE POSITION FOR CHART SPEED CHANGE GEARS

CONSTRUCTION

Framework and Housing—Base and frame members are made of heavy gauge pressed steel plate or die castings. Covers are of formed and welded sheet iron.

Measuring Elements—All measuring elements are of integral design, one frame carrying all moving parts including damping mechanisms. This design renders the elements virtually self-contained and independent of alignment of frame and base and eliminates influence of mounting irregularities.

Measuring elements are of the direct acting type. Electromagnetic damping is used throughout the line. The damping discs are concentrically mounted on the moving element shafts thus eliminating possibilities of misalignment. All elements are shielded against inter-element and external field influence.

Direct Current Voltmeter, Ammeter, Millivoltmeter and Milliammeter Elements operate on the permanent magnet moving coil principle. The magnetic pole assembly on this movement is one piece, assuring perfect air gap symmetry and permanent calibration. Moving element alignment is maintained by direct support of the bearings from the pole assembly through two concentrically machined bell brackets.

Firm support and excellent damping of the moving element is assured by a special form of movement frame which utilizes a large percentage of the total flux for damping. The cylindrical form of this frame provides a strength factor of 10 to 20 times that of the conventional rectangular form.

Single Phase Wattmeter, Voltmeter and Ammeter Elements are iron clad, iron core, single element dynamometers. These movements have high torque weight ratios, nominal volt-ampere burdens and good frequency performance.

Polyphase Wattmeter and Varmeter Elements. The double element dynamometer principle is used. Varmeters are furnished with phase shifting compensators to provide the necessary quadrature voltages where required.

Chart Mechanism—Close attention to the finest details of construction and operation, characterizes the design of the G-40 chart mechanism. In earlier recording devices, the measuring elements were the principal sources of inaccuracy. The chart mechanisms, however, were responsible for a majority of failures to record. In keeping with the high standard of design and construction of G-40 recorders, the chart mechanism has been given special attention to eliminate lost records.

The assembly of moving parts is rigidly supported between two ⅛" thick brass plates. The entire mechanism is hinged and removable by simply "lifting out" after swinging to the unlock position.

Synchronous and spring driven clocks are interchangeable and may be detached by removing three screws. Paper speeds are changed by substituting one gear. Gears for ¾", 1½", 3", and 6" per hour are furnished and mounted conveniently within the chart mechanism.

To minimize backlash, only one auxiliary gear shaft is used between the paper driving drum and the clock. A friction clutch is provided by means of which the chart timing may be corrected by simply advancing or retarding the chart drive drum.

Threading the chart is accomplished by simple procedure. The chart roll is opened, placed in the roll compartment, fed under pressure roller, fed

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

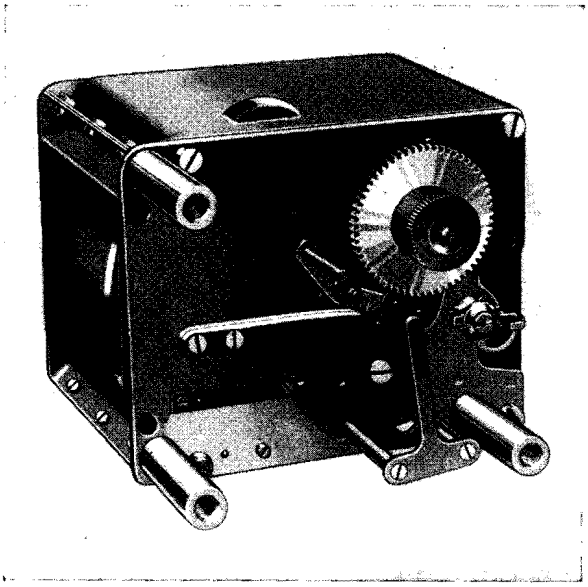


FIG. 12—SPRING DRIVEN HAND WOUND EIGHT-DAY CLOCK

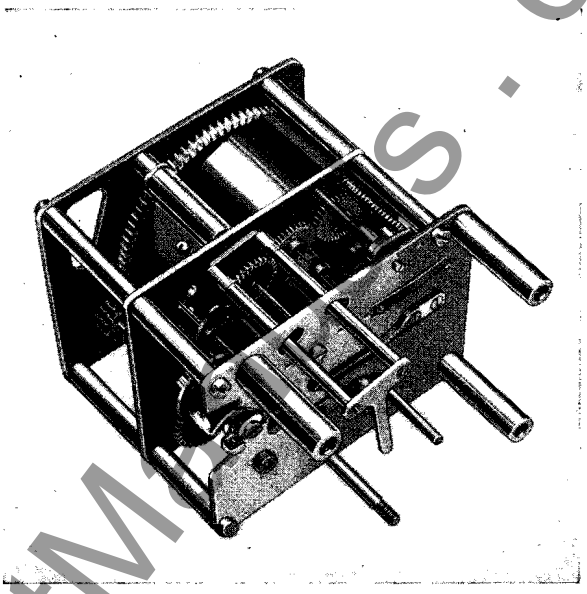


FIG. 13—SPRING DRIVEN HAND WOUND EIGHT-DAY CLOCK. COVER REMOVED

over chart drive drum sprocket, placed in guide plate and threaded on the reroll spool.

Chart rerolling is accomplished by a simple direct drive which is free of gears, clutches and travel restraining devices. This form of reroll is the outcome of extensive test to determine the simplest and most dependable action. The reroll spool drive bearing is a low friction high grade ball bearing. This low friction bearing is an essential requirement of the direct drive reroll.

Mounting and Terminal Hardware—The G-40 line is available in projection mounting housing. Portable carrying details may be added to standard housings. An integral mounted resistor compartment is supplied with portables and is mounted directly on the rear of the standard case and base.

Standardized terminals are furnished with switchboard mounting recorders. These terminals are centralized for maximum convenience in wiring and are universal for panels from $\frac{1}{16}$″ to 2″ in thickness.

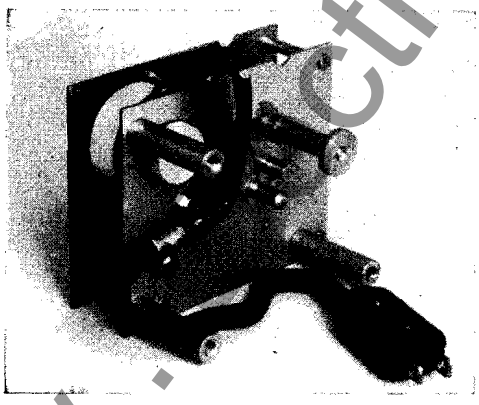


FIG. 14—SYNCHRONOUS MOTOR DRIVEN CLOCK USED IN G-40 RECORDERS. NOTE SIMPLICITY OF MOUNTING AND CONVENIENT PLUG FOR DISCONNECTING WHEN CHART MECHANISM OR CLOCK IS REMOVED

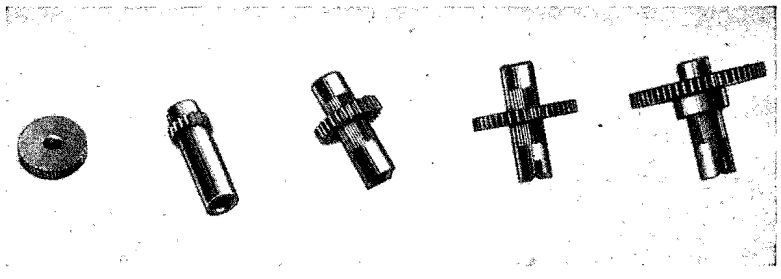


FIG. 15—THUMB NUT AND CHART—SPEED CHANGE GEARS

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

WEIGHTS

Including External Resistors, Reactors and Compensators When Required

Type	Capacity	Approx. Net Weight Pounds	Approx. Ship. Weight Pounds
TYPE GX-40 DIRECT CURRENT RECORDERS **Weight of Shunts Not Included**			
Voltmeter	300 volts or less	40	90
Voltmeter	Above 300 volts *	42	95
Ammeter	60 amps. or less	40	90
Ammeter	Above 80 amps. †	40	90
Milliammeter	800 M.A. or less	40	90

* Supplied with external resistor.
† Requires external shunt.

TYPE GY-40 ALTERNATING CURRENT RECORDERS **Weight of Instrument Transformer Not Included**			
Ammeter	20 amps. or less	34	85
Voltmeter	750 volts or less *	36	90
Single Phase Wattmeter	575 volts or less * / 20 amps. or less	36	95
Polyphase Wattmeter	575 volts or less * / 20 amps. or less	38	100
Polyphase Varmeter	115 volts or less ‡ / 5 amps. / 25-50-60 cycles	50	110

* Supplied with external resistor.
‡ Supplied with external compensator and resistors.

TYPE GX-40 PORTABLE DIRECT CURRENT RECORDERS **Self-Contained**			
Voltmeter	750 volts or less	45	105
Ammeter	100 amps. or less	45	100
Millivoltmeter	100 M.V.	40	90
Milliammeter	800 M.A. or less	40	90
Volt-Milliammeter	750 V. or less / 500 M.A. or less	45	100

TYPE GY-40 PORTABLE ALTERNATING CURRENT RECORDERS **Self-Contained**			
Ammeter	20 amps. or less	38	90
Voltmeters	750 volts or less	38	90
Single Phase Wattmeters	300 volts or less / 20 amps. or less	40	90
Polyphase Wattmeters	300 volts or less / 20 amps. or less	45	95

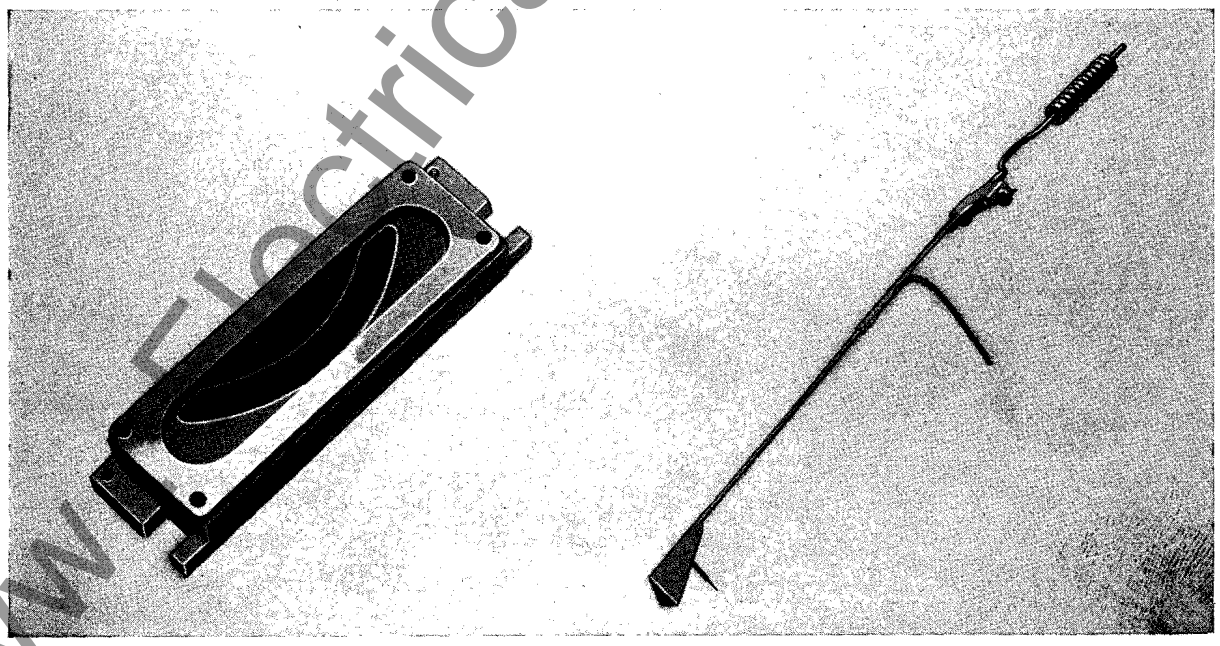


FIG. 16—INK WELL AND PEN. THE PEN IS CONSTRUCTED FROM SILVER TUBING WITH PLATINUM-IRIDIUM POINT

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

POWER CONSUMPTION

Direct Current Recorders

Type	At Rating	Circuit	Watts	Ohms Resistance
GX-40 Millivoltmeter, 0-100 M.V.	100 M.V.	Millivolt	.05	0.2
GX-40 Ammeter, 0-5 A.	5	Current	0.5	.02
GX-40 Voltmeter, 0-150 V.	150	Voltage	3.75	6000

Alternating Current Recorders

Type	At Rating	Circuit		60 Cycle V.A.	Watts	Vars	%P.F
GY-40 Ammeter, 0-5 A	5	Current		10	6.25	7.8	62.5
GY-40 Voltmeter, 0-150 V	115	Voltage		13.3	13.3	0.0	100
GY-40 Single Phase Wattmeter	5	Current		7.05	2.8	6.4	40
	115	Voltage		12.5	12.5	0.0	100
‡GY-40 3 Ph. 3-W Wattmeter, 2 Ph. 4-W Wattmeter	5	Current		6.0	3.3	5.0	55
2 Ph. 4-W Varmeter with Cross Phase Connection. (2 C.C.—2 P.C.)	115	Voltage		12.9	12.9	0.0	100
GY-40 3 Ph. 4-W	5	Current	A	3.0	1.7	2.5	55
			C	3.0	1.7	2.5	55
			B	6.0	3.3	5.0	55
Wattmeter (3 C.C.—2 P.C.)	115	Voltage		12.9	12.9	0.0	100
‡GY-40 3 Ph. 3-W	5	Current		6.0	00.3	5.0	55
Varmeter (2 C.C.—2 P.C.)	115	Voltage	A-B	....	00.45	—5.7	...
			B-C	....	07.45	+1.7	...
			C-A	....	03.9	—2.0	...

‡Varmeter voltage circuit burdens include burdens of compensators.

Synchronous Clock Motors

GY-40 Syn. Motor	115	Voltage	3.3	....	.....	...
Driven Clock	230	Voltage	6.	....	.....	...

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

SUPPLIES FURNISHED WITH EACH RECORDER

Quantity	Style	Description
3	....	Chart rolls, 3 inches per hour (supplied for low range when recorder has more than one range, unless otherwise specified on order).
1	108 067	Green ink, 1 oz. bottle, concentrated to make one quart.
1	72 449	Rubber syringe for filling ink well.
1	837 390	Rubber syringe for starting pen.
1 pkg.	837 391	Pen cleaning wires, 1 dozen.
1	876 241	Winding key (furnished with recorders having handwound clocks).
1*	820 502	Change gear for ¾" per hour.
1*	820 488	Change gear for 1½" per hour.
1*	820 486	Change gear for 3" per hour.
1*	820 484	Change gear for 6" per hour.

* Change gears are conveniently mounted in the chart mechanism and may be changed at will. Only one gear need be changed.

RECORD CHARTS

For
Ammeters Direct Current—Voltmeters Direct Current
Wattmeters Direct Current—Wattmeters Alternating Current
Varmeters Alternating Current

LEFT ZERO UNIFORMLY DIVIDED

Capacity	Chart Divisions Main	Sub.	Total	Record Charts — Chart Speed—Inches Per Hour: ¾ Style No.	1½ Style No.	3 Style No.	6 Style No.
1	10	5	50	1 093 141	1 093 142	1 093 143	1 093 144
2	8	5	40	1 093 068	1 093 069	1 093 070	1 093 071
3	6	5	30	1 093 000	1 093 001	1 093 002	1 093 003
4	8	5	40	1 093 072	1 093 073	1 093 074	1 093 075
5	10	5	50	1 093 145	1 093 146	1 093 147	1 093 148
6	12	5	60	1 093 207	1 093 208	1 093 209	1 093 210
7.5	15	5	75	1 059 244	1 059 245	1 059 246	1 059 247
8	8	5	40	1 093 076	1 093 077	1 093 078	1 093 079
10	10	5	50	1 093 149	1 093 150	1 093 151	1 093 152
12	12	5	60	1 093 211	1 093 212	1 093 213	1 093 214
15	15	5	75	1 093 257	1 093 258	1 093 259	1 093 260
16	8	4	32	1 093 020	1 093 021	1 093 022	1 093 023
20	8	5	40	1 093 080	1 093 081	878 231	1 093 082
25	10	5	50	1 093 153	1 093 154	1 093 155	1 093 156
30	6	5	30	1 093 004	1 093 005	1 093 006	1 093 007
32	8	4	32	1 093 024	1 093 025	1 093 026	1 093 027
40	8	5	40	1 093 083	1 093 084	1 093 085	1 093 086
50	10	5	50	1 093 157	1 093 158	1 093 159	1 093 160
60	12	5	60	1 093 215	1 093 216	1 093 217	1 093 218
64	8	4	32	1 093 028	1 093 029	1 093 030	1 093 031
75	15	5	75	1 093 261	1 093 262	1 093 263	1 093 264
80	8	5	40	1 003 639	1 093 087	1 003 591	1 093 088
100	10	5	50	930 186	1 093 161	930 718	838 752
120	12	5	60	1 003 638	1 093 219	1 003 594	1 093 220
150	15	5	75	1 003 392	1 093 265	1 093 266	1 093 267
160	8	4	32	1 093 032	1 093 033	1 093 034	1 093 035
200	8	5	40	1 003 641	1 093 089	1 003 592	1 093 090
250	10	5	50	1 093 162	1 093 163	1 093 164	1 093 165
300	6	5	30	1 093 008	1 093 009	1 093 010	1 093 011
320	8	4	32	1 093 036	1 093 037	1 093 038	1 093 039
400	8	5	40	1 003 640	1 093 091	1 003 593	1 093 092
500	10	5	50	1 093 166	1 093 167	836 812	1 093 168
600	12	5	60	1 093 221	1 093 222	1 093 223	1 093 224
640	8	4	32	1 093 040	1 093 041	1 093 042	1 093 043
750	15	5	75	1 093 268	1 093 269	1 093 270	1 093 271
800	8	5	40	1 093 093	1 093 094	1 093 095	1 093 096
1000	10	5	50	1 003 642	1 093 169	1 002 027	1 093 170
1200	12	5	60	1 093 225	1 093 226	1 093 227	1 093 228
1500	15	5	75	1 093 272	1 093 273	1 093 274	1 093 275
1600	8	4	32	1 093 044	1 093 045	1 093 046	1 093 047
2000	8	5	40	1 093 097	1 093 098	1 093 099	1 093 100
2500	10	5	50	1 093 171	1 093 172	1 093 173	1 093 174
3000	6	5	30	1 093 012	1 093 013	1 093 014	1 093 015

Order by Style Number

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

RECORD CHARTS—Continued

For

Ammeters Direct Current

Voltmeters Direct Current

Wattmeters Direct Current

Wattmeters Alternating Current

Varmeters Alternating Current

LEFT ZERO UNIFORMLY DIVIDED

Capacity	Chart Divisions			Record Charts — Chart Speed—Inches Per Hour			
	Main	Sub.	Total	¾ Style No.	1½ Style No.	3 Style No	6 Style No.
4000	8	5	40	1 093 101	1 093 102	1 093 103	1 093 104
5000	10	5	50	1 093 175	1 093 176	1 093 177	1 093 178
6000	12	5	60	1 093 229	1 093 230	1 003 708	1 093 231
7500	15	5	75	1 093 276	1 093 277	1 093 278	1 093 279
8000	8	5	40	1 093 105	1 093 106	1 093 107	1 093 108

For

Ammeters Direct Current

Voltmeters Direct Current

Wattmeters Direct Current

Wattmeters Alternating Current

Varmeters Alternating Current

CENTER ZERO UNIFORMLY DIVIDED

Capacity	Chart Divisions			Record Charts — Chart Speed—Inches Per Hour			
	Main	Sub.	Total	¾ Style No.	1½ Style No.	3 Style No.	6 Style No.
5-0-5	10	5	50	1 093 179	1 093 180	1 093 181	1 093 182
8-0-8	8	4	32	1 093 048	1 093 049	1 093 050	1 093 051
10-0-10	8	5	40	1 093 109	1 093 110	1 093 111	1 093 112
15-0-15	6	5	30	1 059 248	1 059 249	1 059 250	1 059 251
20-0-20	8	5	40	1 093 113	1 093 114	1 093 115	1 093 116
25-0-25	10	5	50	1 093 183	1 093 184	1 093 185	1 093 186
30-0-30	12	5	60	1 093 233	1 093 234	1 093 235	1 093 236
40-0-40	8	5	40	1 093 117	1 093 118	1 093 119	1 093 120
50-0-50	10	5	50	1 093 187	1 093 188	1 093 189	1 093 190
60-0-60	12	5	60	1 093 237	1 093 238	1 093 239	1 093 240
80-0-80	8	4	32	1 093 052	1 093 053	1 093 054	1 093 055
100-0-100	8	5	40	1 093 121	1 093 122	1 093 123	1 093 124
150-0-150	6	5	30	1 059 252	1 059 253	1 059 254	1 059 255
200-0-200	8	4	32	1 093 056	1 093 057	1 093 058	1 093 059
250-0-250	10	5	50	1 093 191	1 093 192	1 093 193	1 093 194
300-0-300	12	5	60	1 093 241	1 093 242	1 093 243	1 093 244
400-0-400	8	5	40	1 093 125	1 093 126	1 093 127	1 093 128
500-0-500	10	5	50	1 093 195	1 093 196	1 093 197	1 093 198
600-0-600	12	5	60	1 093 245	1 093 246	1 093 247	1 093 248
800-0-800	8	4	32	1 093 060	1 093 061	1 093 062	1 093 063
1000-0-1000	8	5	40	1 093 129	1 093 130	1 093 131	1 093 132
1500-0-1500	6	5	30	1 093 016	1 093 017	1 093 018	1 093 019
2000-0-2000	8	5	40	1 093 133	1 093 134	1 093 135	1 093 136
2500-0-2500	10	5	50	1 093 199	1 093 200	1 093 201	1 093 202
3000-0-3000	12	5	60	1 093 249	1 093 250	1 093 251	1 093 252
4000-0-4000	8	5	40	1 093 137	1 093 138	1 093 139	1 093 140
5000-0-5000	10	5	50	1 093 203	1 093 204	1 093 205	1 093 206
6000-0-6000	12	5	60	1 093 253	1 093 254	1 093 255	1 093 256
8000-0-8000	8	4	32	1 093 064	1 093 065	1 093 066	1 093 067

Order by Style Number

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

RECORD CHARTS—Continued

For

Voltmeters Alternating Current

Ammeters Alternating Current

LEFT ZERO NON-UNIFORMLY DIVIDED

Capacity	Chart Divisions			Record Charts — Chart Speed—Inches Per Hour			
	Main	Sub.	Total	¾ Style No.	1½ Style No.	3 Style No.	6 Style No.
2.5	10	5	50x	1 093 312	1 093 313	1 093 314	1 093 315
5	10	5	50x	1 093 316	1 093 317	1 003 752	1 093 318
6	12	5	60*	1 059 256	1 059 257	1 059 258	1 059 259
7.5	15	5	75 θ	1 093 382	1 093 383	1 093 384	1 093 385
9	9	5	45x	1 003 386	1 059 260	1 059 261	1 059 262
10	10	5	50x	1 093 319	1 093 320	1 093 321	1 093 322
15	15	5	75 θ	1 093 386	1 093 387	1 093 388	1 093 389
20	8	5	40x	1 093 280	1 093 281	1 093 282	1 093 283
25	10	5	50x	1 093 323	1 093 324	1 093 325	1 093 326
30	12	5	60*	1 093 355	1 093 356	1 093 357	1 093 358
40	8	5	40x	1 093 284	1 093 285	1 093 286	1 093 287
50	10	5	50x	1 093 327	1 093 328	1 093 329	1 093 330
60	12	5	60*	1 093 359	1 093 360	1 093 361	1 093 362
75	15	5	75 θ	1 093 390	1 093 391	1 093 392	1 093 393
80	8	5	40x	1 093 288	1 093 289	1 093 290	1 093 291
100	10	5	50x	1 093 331	1 093 332	1 093 333	1 093 334
120	12	5	60*	1 093 363	1 093 364	1 093 365	1 093 366
150	15	5	75 θ	1 093 394	1 093 395	1 003 385	1 093 396
200	8	5	40x	1 093 292	1 093 293	1 093 294	1 093 295
250	10	5	50x	1 093 335	1 093 336	1 093 337	1 093 338
300	12	5	60*	1 093 367	1 093 368	1 093 369	1 093 370
400	8	5	40x	1 093 296	1 093 297	1 093 298	1 093 299
500	10	5	50x	1 093 339	1 093 340	1 093 341	1 093 342
600	12	5	60*	1 093 371	1 093 372	1 093 373	1 093 232
750	15	5	75 θ	1 093 397	1 093 398	1 093 399	1 093 400
800	8	5	40x	1 093 300	1 093 301	1 093 302	1 093 303
1000	10	5	50x	1 093 343	1 093 344	1 093 345	1 093 346
1200	12	5	60*	1 093 374	1 093 375	1 093 376	1 093 377
1500	15	5	75 θ	1 093 401	1 093 402	1 093 403	1 093 404
2000	8	5	40x	1 093 304	1 093 305	1 093 306	1 093 307
2500	10	5	50x	1 093 347	1 093 348	1 093 349	1 093 350
3000	12	5	60*	1 093 378	1 093 379	1 093 380	1 093 381
4000	8	5	40x	1 093 308	1 093 309	1 093 310	1 093 311
5000	10	5	50x	1 093 351	1 093 352	1 093 353	1 093 354

x First ten subdivisions are omitted.
* First fifteen subdivisions are omitted.
θ First twenty subdivisions are omitted.

RECORD CHART DATA

Rulings in Black—Time and Capacity Markings in Color

Speed Inches per Hour	Length of Chart—Feet	Will Run Days	Time Marking	Distance Between Markings	
				Time	Capacity
¾	54	35	12M-4AM-8AM etc.	3″	12″
1½	54	17	12M-2AM-4AM etc.	3″	12″
3	54	8	12M-1AM-2AM etc.	3″	12″
6	48	3	12M-1AM-2AM etc.	6″	12″

Order by Style Number

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

RECORD CHART DIVISION

UNIFORMLY DIVIDED CHARTS

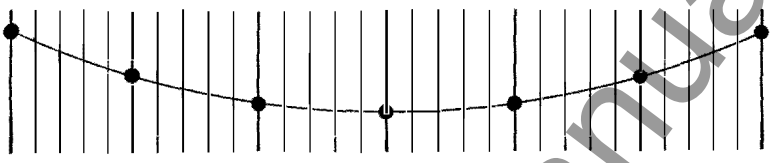
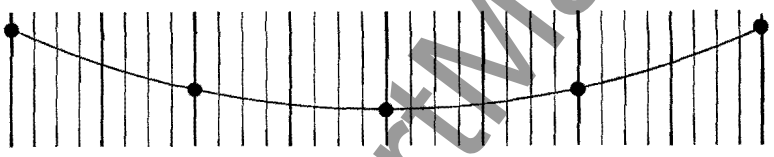
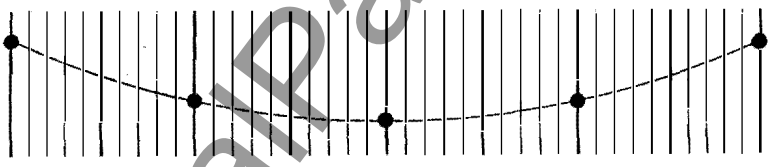
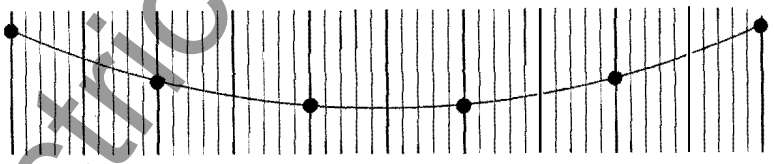
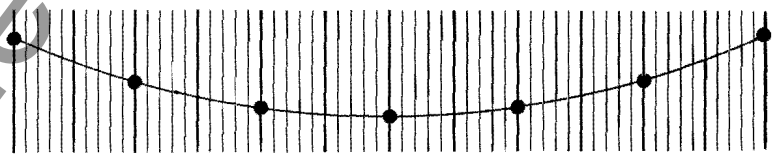
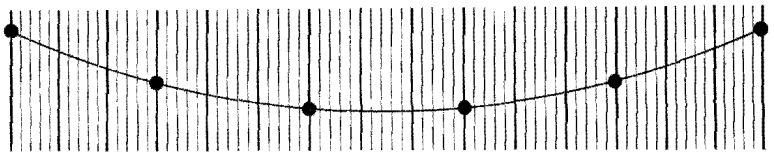
—DIVISION PLAN— Main	Sub.	Total	Cardinal Points are Indicated by Dots. Capacity Markings are Located at These Points
6	5	30	
8	4	32	
8	5	40	
10	5	50	
12	5	60	
15	5	75	

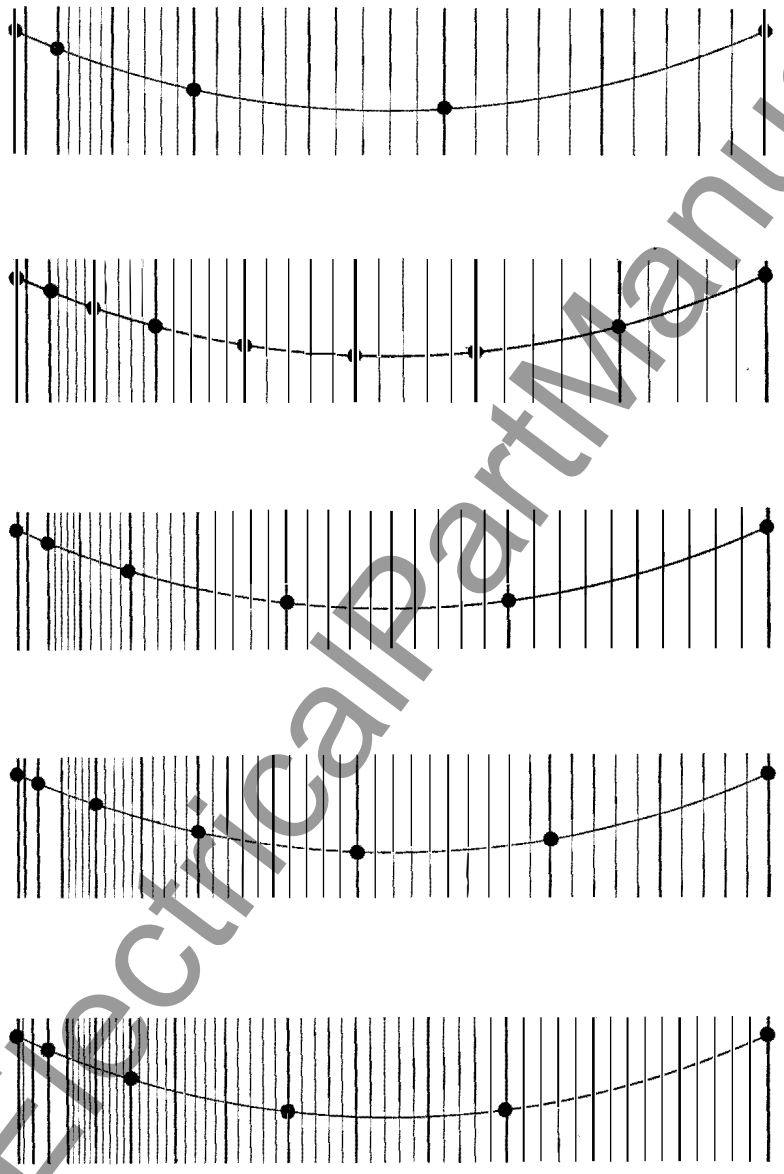
FIG. 18—RECORD CHART DIVISION

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

NON-UNIFORMLY DIVIDED CHARTS

—DIVISION PLAN— Main	Sub.	Total
8	5	40*
9	5	45*
10	5	50*
12	5	60†
15	5	75‡

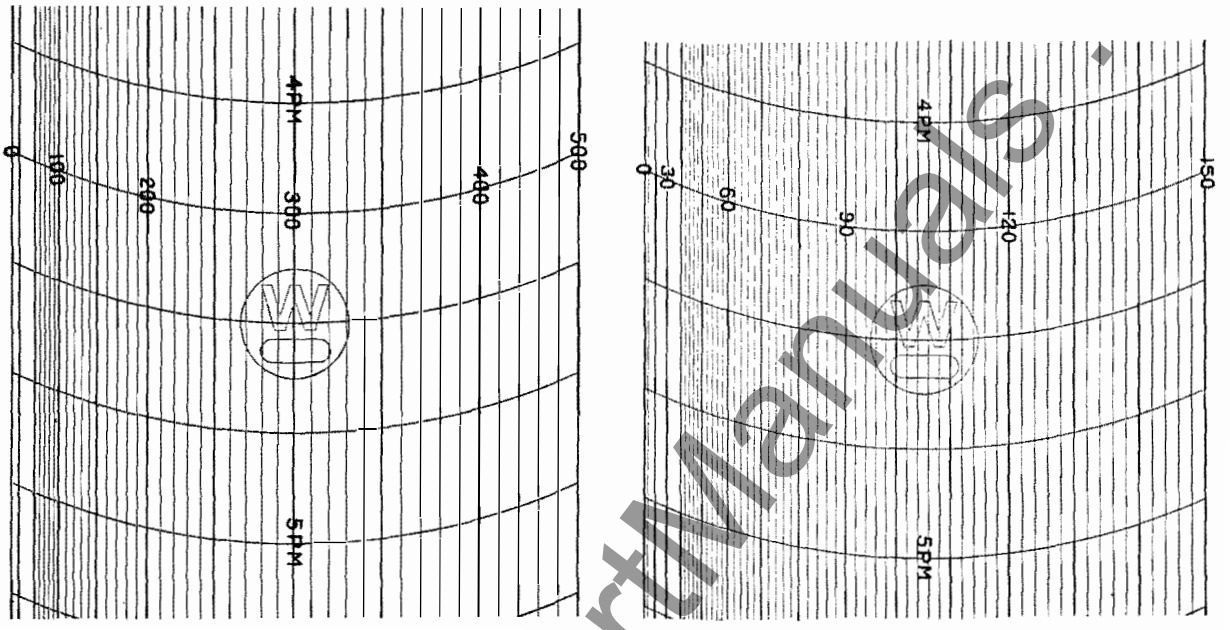
Cardinal Points are Indicated by Dots.
Capacity Markings are Located at These Points.



* First ten subdivisions are omitted.
† First fifteen subdivisions are omitted.
‡ First twenty subdivisions are omitted.

FIG. 19—RECORD CHART DIVISION

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued



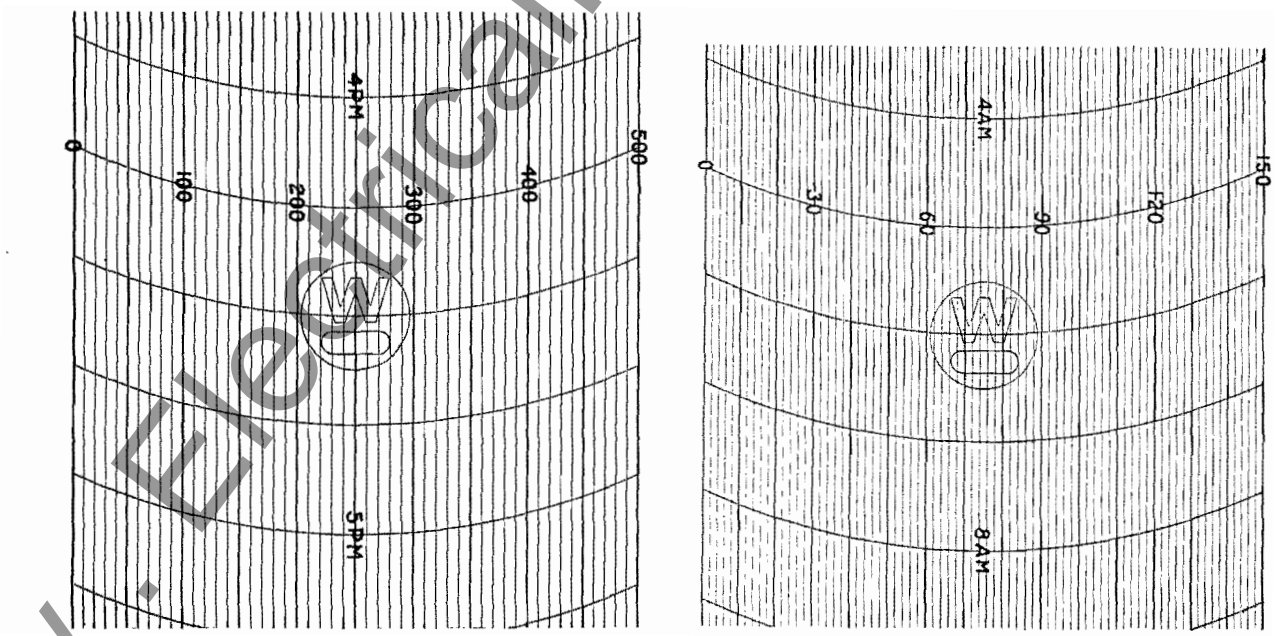


FIG. 20—SAMPLE CHARTS

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

OUTLINE DIMENSIONS IN INCHES

Dimensions are for reference only; for Official Dimensions see instructions shipped with Recorders, or apply to the nearest Westinghouse Sales Office.

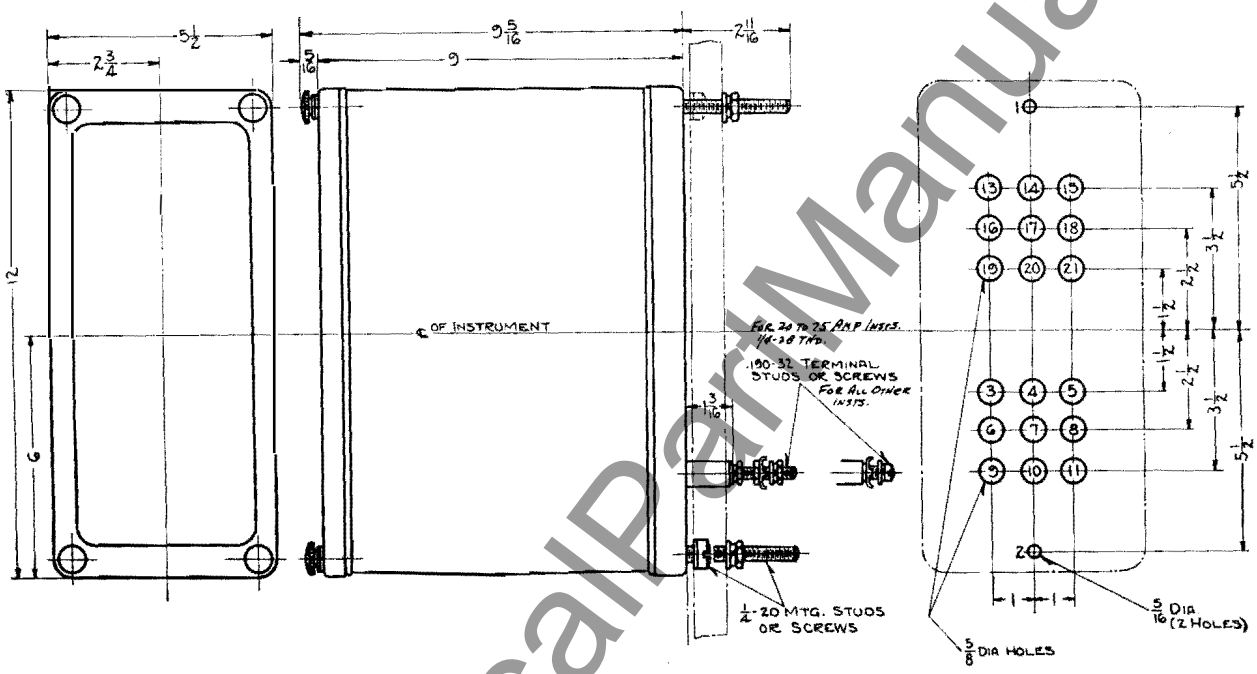


FIG. 21—OUTLINE AND DRILLING PLAN, TYPE G-40 RECORDERS

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

WIRING DIAGRAMS

Diagrams are for reference only. For official diagrams refer to nearest Westinghouse Sales Office.

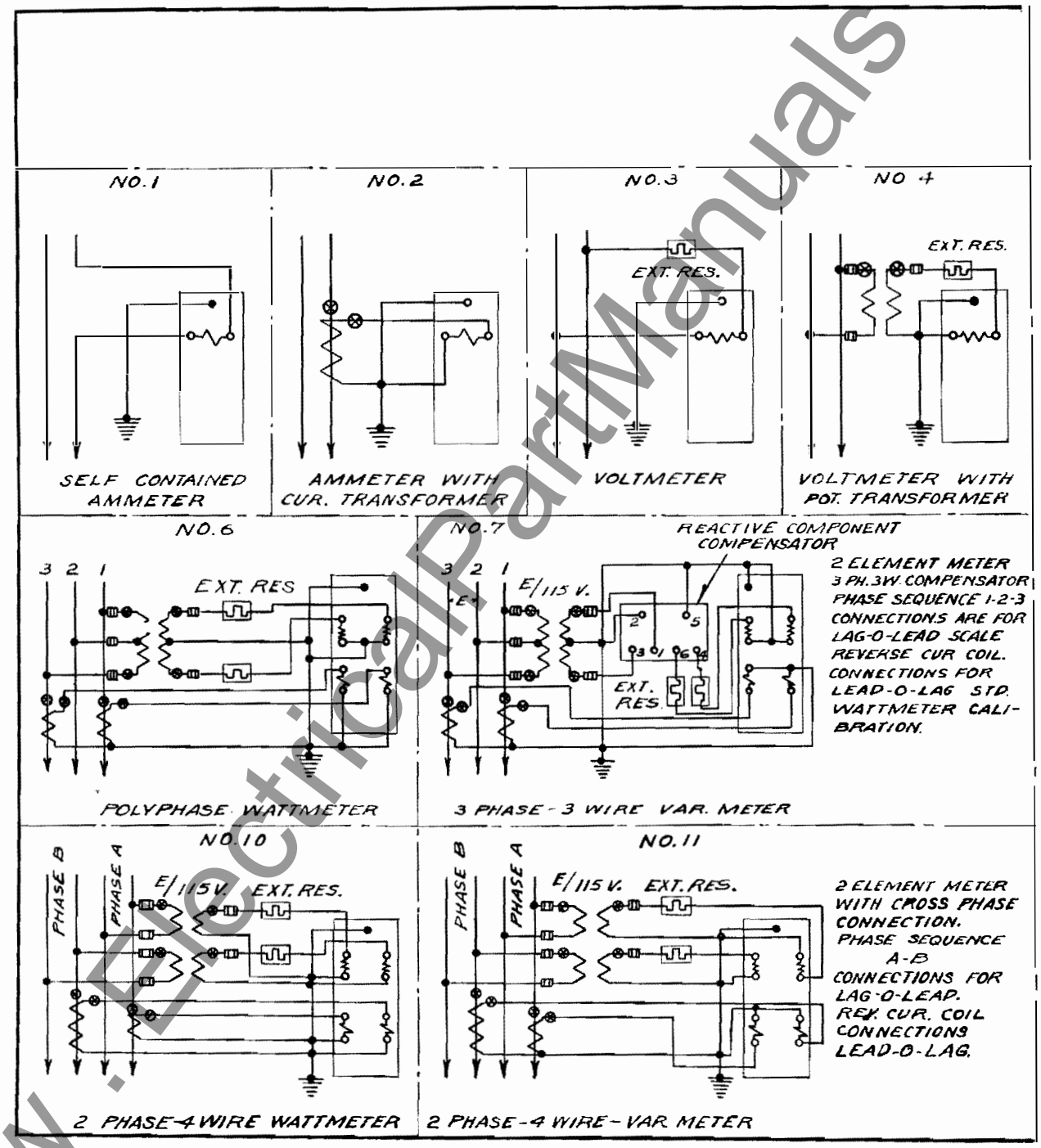


FIG. 22—WIRING DIAGRAMS REAR VIEWS

TYPES GX-40 AND GY-40 RECORDING INSTRUMENTS—Continued

WIRING DIAGRAMS—Continued

Diagrams are for reference only. For official diagrams refer to nearest Westinghouse Sales Office.

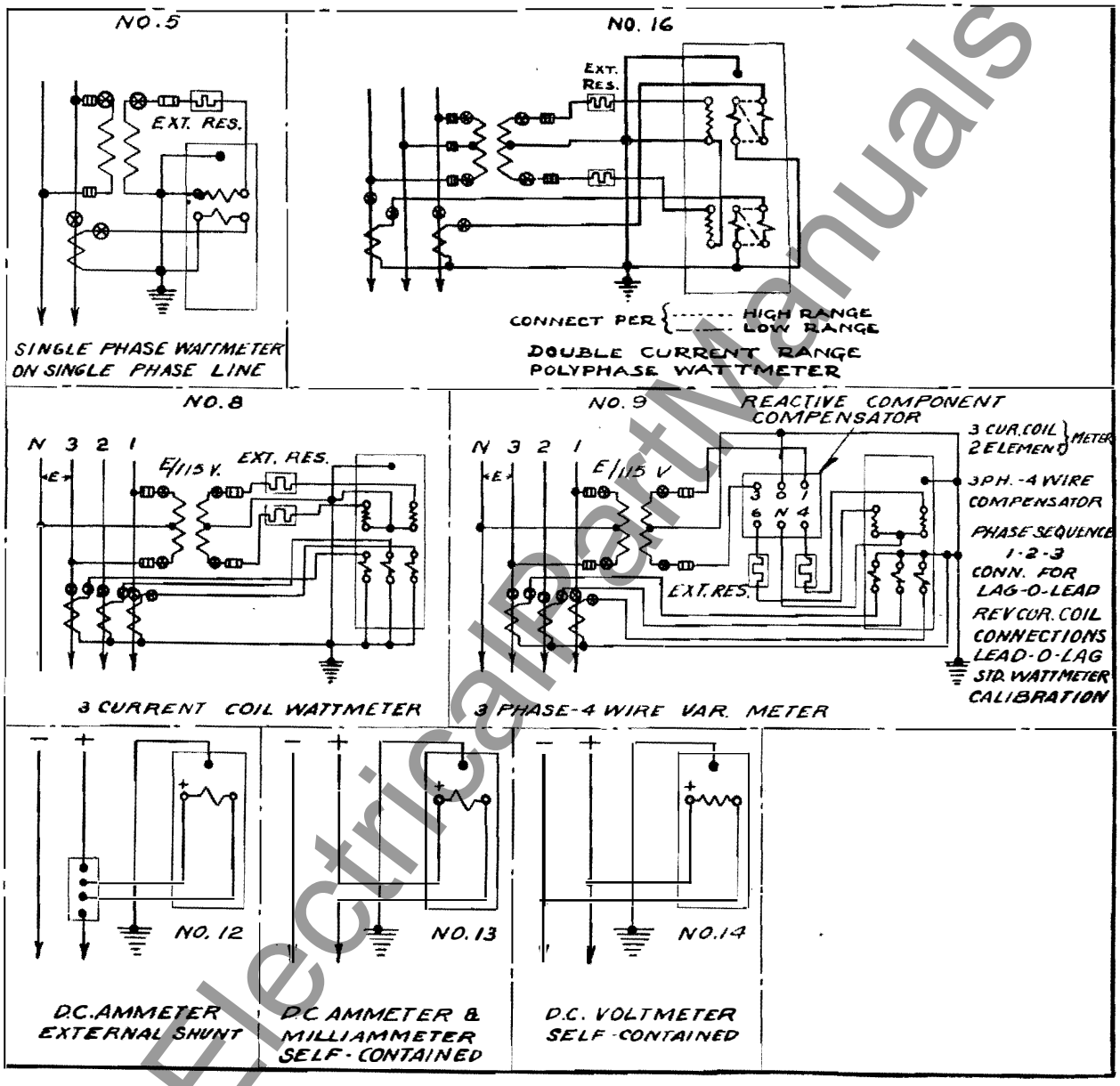


FIG. 22-A—WIRING DIAGRAMS REAR VIEWS