



- NOTES:
1. UNLESS OTHERWISE SPECIFIED; RESISTORS IN OHMS, 1/4W, 5% CAPACITORS IN μF DIODES ARE IN4148
 2. LINE VERSION ONLY, MODEL 420A
 3. BATTERY VERSION ONLY, MODEL 420D
 4. ALL SWITCHES SHOWN IN OUT POSITION.
 5. FOR 120V CONNECT POWER LINE TO TERMINALS 1 & 2, F1=1/4A. FOR 220V CONNECT POWER LINE TO TERMINALS 1 & 3, F1=1/8A. FOR 240V CONNECT POWER LINE TO TERMINALS 1 & 4, F1=1/8A.

MODEL 420
PROJECT 11855
FUNCTION GENERATOR
SCHEMATIC DIAGRAM
S. RICHARD 8-7-79
SIMPSON ELECTRIC CO.

FIGURE 7-1. SCHEMATIC DIAGRAM

SBSOLETE

Replacement Parts

Symbol	Description	Part No.
	Battery, Eveready CH 1.8 or equivalent (ea. battery is rated at 1.25 V, 1.8 amp-hrs.)	
F1	Fuse ¼ A, 250V 3AG	1-113835
	Fuse Clip	5-117739
C1	Capacitor, 3µF ±2%, 100V	6-111369
C2	Capacitor, .33µF ±2%, 100V	6-111948
C3	Capacitor, .033µF ±2%, 100V	6-111947
C4	Capacitor, 3000pF ±2.5%, 33V	6-111946
C5	Capacitor, Variable, 5.5-60pF	5-116235
C6	Capacitor, 250pF ±5%, 100V	6-111945
C7, C8	Capacitor, .01µF ±20%, 50V	5-117969
C9	Capacitor, 1000pF ±20%, 1kV	1-119959
C10	Capacitor, 180pF ±10%, 50V	6-111944
C11	Capacitor, 560pF ±20%, 500V	5-112695
C12	Capacitor, .01µF ±20%, 50V	5-117969
C13	Capacitor, 47µF +50% -10%, 10V	5-118498
C14	Capacitor, 1µF +80% -10%, 50V	5-119660
C15, C16, C17, C18	Capacitor, 220µF +50% -10%, 25V	6-111949
C19, C20	Capacitor, 22µF +50% -10%, 16V	6-110774
C21	Capacitor, .01µF ±20%, 50V	5-117969
C22	Capacitor, 180pF ±10%, 50V	6-111944
C23	Capacitor, .01µF ±20%, 50V	5-117969
C24	Capacitor, 47µF +50% -10%, 10V	5-118498
C25	Capacitor, 2200µF +50% -10%, 16V	5-118084

Replacement Parts

Symbol	Description	Part No.
C26	Capacitor, 10µF 16V	5-118426
C27	Capacitor, 100µF 10V	5-117050
C28	Capacitor, .022µF ±20%, 100V	5-116188
C29	Capacitor, 1000pF, 1kV	5-111119
C30, C31	Capacitor, 100µF 20V	6-110306
C32	Capacitor, 47µF +50% -10%, 10V	5-118498
D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14 D16, D17 D18, D19, D20 D21, D22	Diode, 1N4148 Diode, 1N4002 Diode, 1N4148 Diode, 1N4001 Diode, 1N914	5-115214 5-113201 5-115214 5-113200 5-112004
Z01	Zener Diode, 1N5232B	6-111413
Z02	Zener Diode, 1N753A	5-112634
	Rectifier, Full Wave Bridge, W005	5-115945
	Light Emitting Diode, MV5025	5-116206
IC1	Integrated Circuit, LM3046N	5-119447
IC2	Integrated Circuit, LM1458N ("A" Version) TL022 ["D" Version]	5-117432 5-119511
IC3	Integrated Circuit, LM319N	6-111950
IC4	Integrated Circuit, DM7400N	5-118317
IC5	Integrated Circuit, 78L12A	6-111110
IC6	Integrated Circuit, 78L05A	6-111951
IC7	Integrated Circuit, LM1458N ("A" Version) TL022 ["D" Version]	5-117432 5-119511
IC8	Integrated Circuit, LM3046N	5-119447
IC9	Integrated Circuit, LM741CN	5-115928

OBS

Replacement Parts

Symbol	Description	Part No.
Q1	Transistor, 2N4126	5-116458
Q2	Transistor, 2N4338	5-119216
Q3	Transistor, 2N5828	5-117065
Q4	Transistor, 2N4126	5-116458
Q5	Transistor, 2N5828	5-117065
Q6	Transistor, 2N4126	5-116458
Q7, Q8	Transistor, 2N5828	5-117065
Q9	Transistor, 2N4121	5-115939
Q10	Transistor, 2N5828	5-117065
Q11	Transistor, 2N4121	5-115939
Q13	Transistor, D40DI	5-117342
Q14, Q15	Transistor, GET 2222	5-115934
Q16, Q17	Transistor, 2N5828	5-117065
R1	Resistor, 2K $\pm 5\%$, $\frac{1}{2}$ W	5-119349
R2	Resistor, 3.9K $\pm 5\%$, $\frac{1}{4}$ W	5-114974
R3	Resistor, 100 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-118152
R4	Resistor, 3.9K $\pm 5\%$, $\frac{1}{4}$ W	5-114974
R5	Resistor, 2K $\pm 5\%$, $\frac{1}{4}$ W	6-110093
R6, R7	Resistor, 10K $\pm 5\%$, $\frac{1}{4}$ W	5-118161
R8	Resistor, 6.8K $\pm 5\%$, $\frac{1}{4}$ W	5-118256
R9	Resistor, 2K $\pm 1\%$, $\frac{1}{8}$ W	5-115500
R10	Resistor, 4.87K $\pm 1\%$, $\frac{1}{8}$ W	6-110551
R11	Resistor, 510K $\pm 5\%$, $\frac{1}{4}$ W	6-110844
R12	Resistor, 2K $\pm 1\%$, $\frac{1}{8}$ W	5-115500
R13	Resistor, 2K $\pm 5\%$, $\frac{1}{4}$ W	6-110093
R14	Resistor, 200 Ω $\pm 1\%$, $\frac{1}{8}$ W	5-119741
R15	Resistor, 1.96K $\pm 1\%$, $\frac{1}{8}$ W	6-111965
R16	Resistor, 19.6K $\pm 1\%$, $\frac{1}{8}$ W	5-116504
R17, R18	Resistor, 10 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119670
R19	Resistor, 2K $\pm 5\%$, $\frac{1}{4}$ W	6-110093
R20	Resistor, 56K $\pm 5\%$, $\frac{1}{4}$ W	5-118167

Replacement Parts

Symbol	Description	Part No.
R21	Resistor, 20K $\pm 1\%$, $\frac{1}{8}$ W	5-116621
R22	Resistor, 1K $\pm 1\%$, $\frac{1}{8}$ W	1-117058
R23	Resistor, 10K $\pm 5\%$, $\frac{1}{4}$ W	5-118161
R24, R25	Resistor, 1K $\pm 5\%$, $\frac{1}{4}$ W	5-118155
R26	Resistor, 200 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119740
R27	Resistor, 1K $\pm 1\%$, $\frac{1}{8}$ W	1-117058
R28	Resistor, 20K $\pm 1\%$, $\frac{1}{8}$ W	5-116621
R29	Resistor, 1K $\pm 5\%$, $\frac{1}{4}$ W	5-118155
R30	Resistor, 510 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-114965
R31	Resistor, 10K $\pm 5\%$, $\frac{1}{4}$ W	5-118161
R32	Resistor, 300 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119630
R33	Resistor, 1K $\pm 5\%$, $\frac{1}{4}$ W	5-118155
R34	Resistor, 20K $\pm 5\%$, $\frac{1}{4}$ W	5-119645
R35	Resistor, 1K $\pm 5\%$, $\frac{1}{4}$ W	5-118155
R36	Resistor, 3.9K $\pm 5\%$, $\frac{1}{4}$ W	5-114974
R37, R38, R39	Resistor, 100 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-118152
R40, R41	Resistor, 20K $\pm 1\%$, $\frac{1}{8}$ W	5-116621
R42	Resistor, 2K $\pm 1\%$, $\frac{1}{8}$ W	5-115500
R43	Resistor, 332 Ω $\pm 1\%$, $\frac{1}{8}$ W	5-118047
R44	Resistor, 750 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119760
R45, R46	Resistor, 1K $\pm 5\%$, $\frac{1}{4}$ W	5-118155
R47	Resistor, 3.9K $\pm 5\%$, $\frac{1}{4}$ W	5-114974
R48	Resistor, 300 Ohm $\pm 5\%$, $\frac{1}{4}$ W	5-119620
R49	Resistor, 100K $\pm 5\%$, $\frac{1}{4}$ W	5-118168
R50	Resistor, 750 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119760
R51	Resistor, 20K $\pm 5\%$, $\frac{1}{4}$ W	5-119645
R52	Resistor, 6.8K $\pm 5\%$, $\frac{1}{4}$ W	5-118256
R53	Resistor, 10 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119670
R54	Resistor, 200 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119740
R55	Resistor, 10 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119670
R56	Resistor, 750 Ω $\pm 5\%$, $\frac{1}{4}$ W	5-119760

R19
 R20
 S01

Replacement Parts

Symbol	Description	Part No.
R57	Resistor, 100 Ω \pm 5%, 1/4 W	5-118152
R58, R59	Resistor, 200 Ω \pm 5%, 1/4 W	5-119740
R60	Resistor, 5.6K \pm 5%, 1/4 W	5-118257
R61	Resistor, 750 Ω \pm 5%, 1/4 W	5-119760
R62, R63	Resistor, 6.8 \pm 5%, 1/4 W	5-118256
R64	Resistor, 100K \pm 5%, 1/4 W	5-118168
R65	Resistor, 22 Ω \pm 5%, 1/4 W	5-115509
R66, R67	Resistor, 300 Ω \pm 5%, 1/4 W	5-119630
R68	Resistor, 22 Ω \pm 5%, 1/4 W	5-115509
R69	Resistor, 300 Ω \pm 5%, 1/4 W	5-119630
R70	Resistor, 3.9K \pm 5%, 1/4 W	5-114974
R71	Resistor, 300 Ω \pm 5%, 1/4 W	5-119630
R72	Resistor, 3.9K \pm 5%, 1/4 W	5-114974
R73	Resistor, 680 Ω \pm 5%, 1/4 W	5-119634
R74	Resistor, 390 Ω \pm 5%, 1/4 W	5-118420
R75	Resistor, 18K \pm 5%, 1/4 W	5-115512
R76	Resistor, 62 Ω \pm 5%, 1/2 W	6-112004
R77, R78	Resistor, 0.5 Ω \pm 1%, 1W	5-113998
R79	Resistor, 22 Ω \pm 5%, 1/4 W	5-115509
R80	Resistor, 1K \pm 5%, 1/4 W	5-118155
R81	Resistor, 10K \pm 5%, 1/4 W	5-118161
R82	Resistor, 5.6K \pm 5%, 1/4 W	5-118257
R83	Resistor, 15K \pm 5%, 1/4 W	5-118162
R84	Resistor, 510K \pm 5%, 1/4 W	6-110844
VR1	Potentiometer, 5K 1/2 W	6-111943
VR2	Potentiometer, 5K .2W	5-119773
VR3	Potentiometer, 100K .2W	5-118175
VR6	Potentiometer, 100 Ω .2W	5-119770
VR7	Potentiometer, 100K .2W	5-118175
VR8, VR9	Potentiometer, 1K .2W	5-119649
VR10	Potentiometer, 5K .2W	5-119773

Replacement Parts

Symbol	Description	Part No.
VR11	Potentiometer, 5K 1/2 W	6-111943
VR12, SW2	Potentiometer, 50K, 1/4 W w/Switch	5-119779
VR13	Potentiometer, 100K .2W	5-118175
VR14	Potentiometer, 1K .1W	5-116185
VR15	Potentiometer, 5K .2W	5-119773
SW1	Switch, Push Button, 12 Positions	6-111952
T1	Power Transformer ("A" Version)	6-111953
	["D" Version]	5-119391
T2	DC-DC Converter Transformer	5-118377
	Button, Red	6-110113
	Button, Gray	6-110115
	Button, Black	6-110114
	Fuse Clip	5-117739
	Heat Sink	5-118657
	Battery Holder	6-111960
	Bracket Assembly, Power Connector	10-863216
	Panel Assembly	10-864544
	BNC Connector	5-111622
	Connector, Jack	5-117326
	Binding Post	6-111955
	Case Assembly, Top (420A)	10-864543
	Case, Bottom	5-118373
	Handle	5-118375
	Plate, Insert, Handle	5-118398
	Bumper, Rubber Foot	1-117829
	Cover, Transformer	3-261059
	Knob, 1/8" Dia. Bushing	5-118140
	Knob, 1/4" Dia. Bushing	6-111941
	Knob, Frequency Indicator	6-111977