

AUTOMATIC MODELS C-349, CA-109, F-139, FA-219,
FP-276TR, L-559, LA-449, LAP-29, LP-929,
RT-7D, S-91, SA-529, SP-1, SPA-209

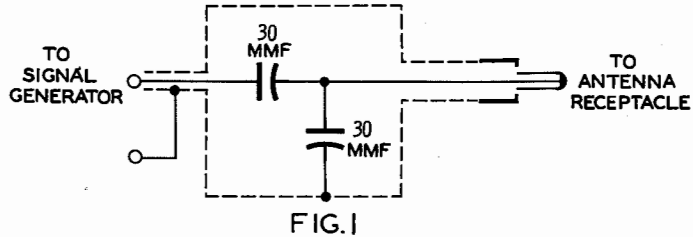


MODEL FP-276TR

TRADE NAME	Automatic Models C-349, CA-109 (For 1959 Chevrolet) F-139, FA-219, FP-276TR (For 1959 Ford) L-559, LA-449, LAP-29, LP-929 (For 1959 Studebaker Lark) RT-7D (Universal Type) S-91, SA-529, SP-1, SPA-209 (For 1958-1959 Simca Aronde)		
MANUFACTURER	Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston 15, Mass.		
TYPE SET	Battery Operated 4 Tube - 1 Transistor Automobile AM Receiver		
POWER SUPPLY	12 Volt Storage Battery		
TUNING RANGE	Broadcast 535 -1610KC	RATING	1.7 Amp. @12.6 Volts DC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT					
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.					
Suggested alignment tools: A1 thru A4.....GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440 WALSCO #2526, 2543, 2544, 2545 A5, A6.....GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089 WALSCO #2512, 2525, 2528					
SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. High side thru .1mf to pin 7 (grid) of Converter. Low side to chassis.	455KC (for Manual tuning) 265KC (for Pushbutton models) (400v Mod.)	High end stop.	Across voice coll.	A1, A2, A3, A4	Adjust for maximum output.
2. Antenna receptacle thru dummy (Fig 1.)	1610KC	"	"	A5, A6, A7	"
3. With radio installed in car and antenna fully extended, tune in a weak station near1400KC and adjust A7 for maximum output.					
PUSHBUTTON ADJUSTMENT 1. Tune manually to desired station. 2. Pull pushbutton out. Push in firmly. 3. Repeat for remaining pushbuttons.					



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



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PARTS LIST AND DESCRIPTIONS

TUBES

CBS			GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	RF Amplifier Converter	12BL6 (12AF6) *	V3	IF Amplifier	12BL6 (12AF6) *	V4	Det. -AVC- Driver	12DL8			
V2		12AD6									

* Alternate

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS	RCA	RAYTHEON	SYLVANIA	
X1	4247 *	Output	2N236A			2N242	PNP Note 1

* Some versions may use CT-4447, 4347 or equivalent in this application. *
 Note 1. When replacing, apply Silicone Compound between the transistor and chassis.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	CAP.	VOLT.	REPLACEMENT DATA				NOTES
				AERVOX PART No.	CORNELL-DUBIER PART No.	MALLORY PART No.	PYRAMID PART No.	
C1A	#500	15	20-317 ①	AFH3-00-95	WF200-6		TVLS-2157 *	
C2	750	3	20-757	SRE3V500	BEU000-6	PETA190	TD-1000-6 TVAS-1097 *	

① Some versions may use 500-150mfd (Part #20-315).
 * Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						SPRAGUE PART No.
			AERVOX PART No.	CORNELL-DUBIER PART No.	CENTRALAB PART No.	CTS-IRC PART No.	MALLORY PART No.	ELMOCO PART No.	
C3	40 NPO	#28-800K (.047) †	NPO-DI 39	TCZ-39	TCZ-39		CCTO-390	CNO-439	10TCC-Q39
C4	1 200V		P288N-1	DF-104	DD-103		2DP-3-104	GFM-201	2TM-P1
C5	3000		DI-3000	DD-302	DD-302		CCD-302	GP230	5HK-D30
C6	12 NPO			TCZ-12	DD-103		CCTO-120	CNO-412	10TCC-Q12
C7	40			TCZ-39	DD-103		CCTO-Q39	CNO-439	10TCC-Q39
C8A	51 N750	#28-4046 (100) †		TCN-51	DD-103		CCTO-103	GP110	5HK-S10
C9	10000		BPD-01	DD-103	DD-103		CCTO-270	CNO-427	10TCC-Q27
C10	27 NPO		NPO-DI 25	TCZ-27	DD-302		CCD-302	GP230	5HK-D30
C11	3000		DI-3000	DD-302	DD-103		CCD-103	GP110	5HK-S10
C12	10000		BPD-01	DD-103	DD-103		CCD-103	GP110	5HK-S10
C13	10000			DD-302	DD-302		CCD-302	GP230	5HK-D30
C14	10000			DD-103	DD-103		CCD-103	GP110	5HK-S10
C15	3000		DI-3000	DD-302	DD-302		CCD-302	GP230	5HK-D30

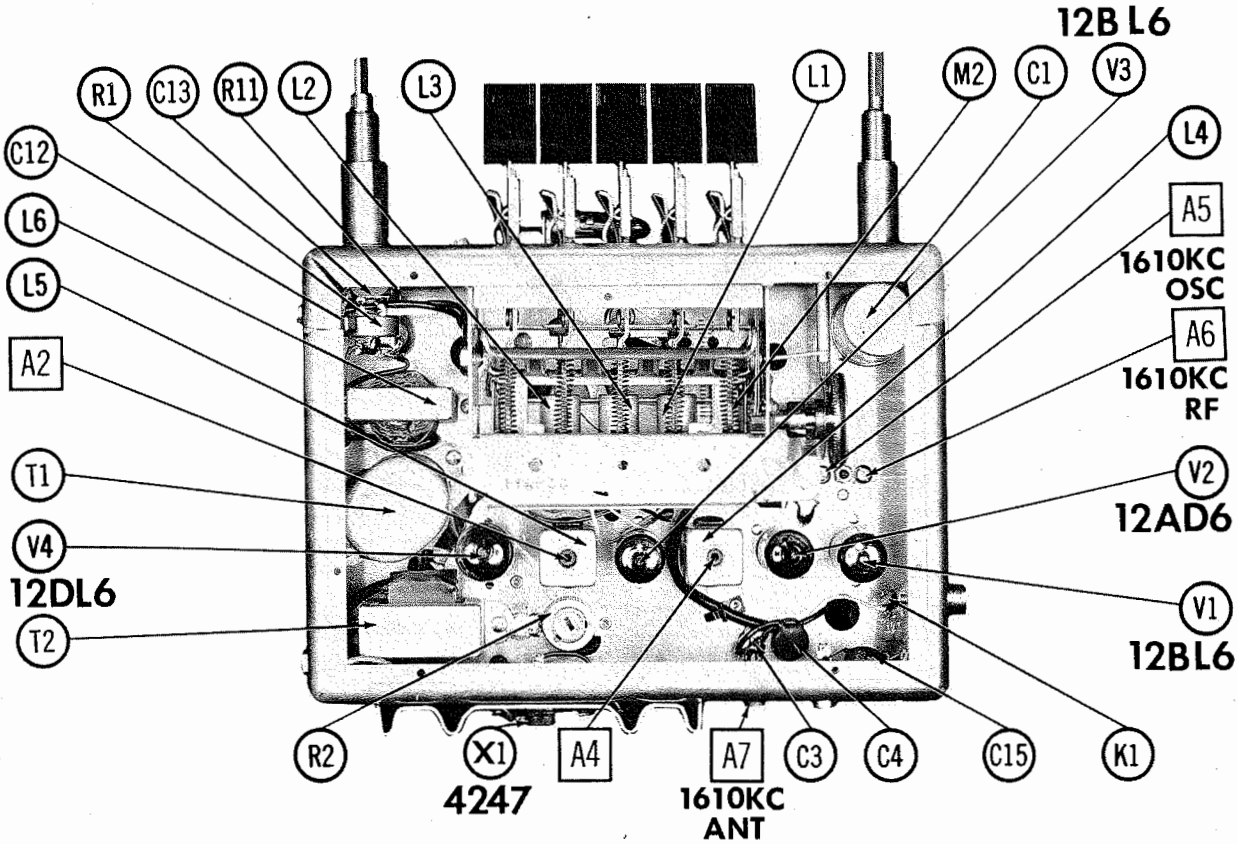
Automatic Part Number.

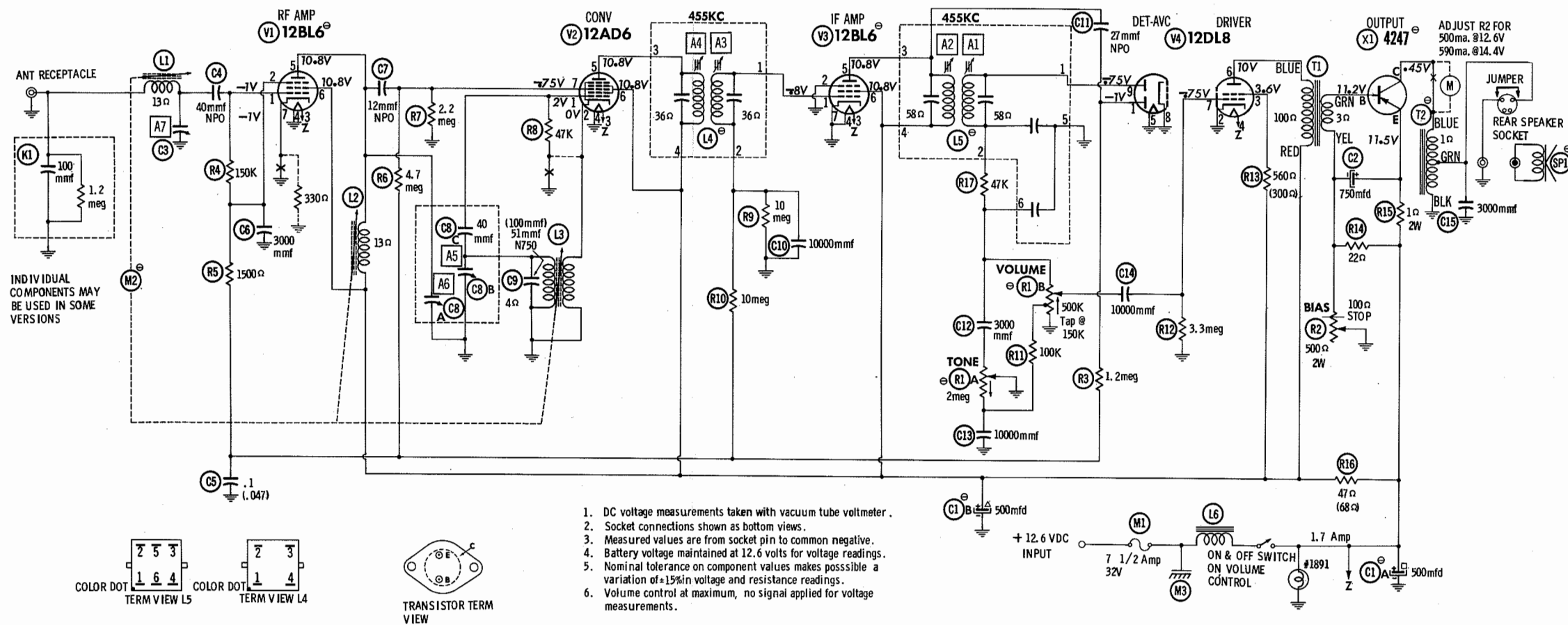
† Alternate Value.

CONTROLS

ITEM No.	RATING	RESISTANCE	WATTS	REPLACEMENT DATA				INSTALLATION NOTES	
				AUTOMATIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	2meg			80-266				UE4102S	Tone Note 1
R1B	500K							† QJ-1256A	Volume Note 1
R1C	150K Tap Switch								Power Off-On
R2A	2meg			80A6183		RIV-68K	† QJ-1256A	UE3981-S	Tone Note 2
R2B	1meg							† QJ-993A	Volume Note 2
R2C	650K Tap Switch								Power Off-On

CHASSIS—TOP VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12BL6	6.3meg	6.2meg	1.5 Ω	0 Ω	$\dagger 60\Omega$	$\dagger 47\Omega$	0 Ω		
V2	12AD6	47K	.9 Ω	0 Ω	1.5 Ω	$\dagger 80\Omega$	$\dagger 47\Omega$	2meg		
V3	12BL6	8meg	0 Ω	0 Ω	1.5 Ω	$\dagger 105\Omega$	$\dagger 47\Omega$	0 Ω		
V4	12DL8	7.2meg	0 Ω	$\dagger 600\Omega$	1.5 Ω	0 Ω	$\dagger 150\Omega$	3.3meg	0 Ω	500K

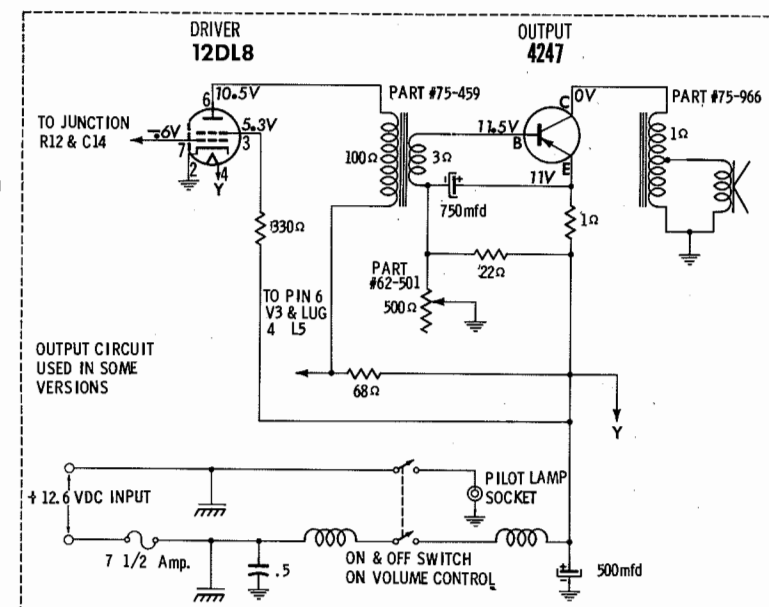
\dagger MEASURED FROM JUNCTION OF R16 AND C14
TRANSISTOR RESISTANCE NOT GIVEN ON X1 BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.



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PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS (cont)

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		AUTOMATIC PART No.	CENTRALAB PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1A	2meg	80A663B				Tone Note 3
R1B	2meg					Volume Note 3
R2	650K Tap					Power Off-On
	5000 Ohm					Bias
	2(VW)	62-50L	39-500-100	112-500-100	FL-600S	

Note 1. Models C-349, CA-100 use 2meg Tone, lineag volume. (Part #80A1070).
Models S-91, SP-1, SA-529, SP-209 use 2meg Tone, lineag volume. (Part #80A1090).
Note 2. Used in Models F-139, FA-219, FP-276TR, LAP-29.
Note 3. Used in Models L-559, LA-449, LP-929, LA-449, LAP-29.
▲ "TRA-LOC" equivalent: FV26A, RU16T164, OS2125, IS2625, US41.
† "Concentrik" equivalent: K-8 Kit with base elements and shafts: BI3-139, PI4-202 (Panel), 76-1 (Switch), BI3-133X, RI-216 (Rear), 89 (Bushings).
* "Concentrik" equivalent: K-8 Kit with base elements and shafts: BI3-139, PI3-128 (Panel), BI9-137X, RI-207 (Rear), 76-1 (Switch), 8-50 (Bushings).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R3	1.2meg		R13	560Ω	(330Ω) *
R4	150K		R14	22Ω	
R5	1500Ω		R15	1Ω 2W	
R6	4.7meg		R16	47Ω	(68Ω) *
R7	2.2meg		R17	47K	

* Alternate Value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AUTOMATIC PART No.	REPLACEMENT DATA
K1	Antenna Filter	100mmf, 1.2meg	89-4204	Spague PRC-9

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		AUTOMATIC PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.
L1	Ant. Coil					
L2	RF Coil					
L3	Osc. Coil					
L4	Input IF Trans.	14-285①	J6-6752	J6-6752	BC-350	I2-H1
L5	Output IF Trans.	14-287①	J6-6754	J6-6754	BC-354	I2-H6

① Part #14-1655-6/X used in manual tuning models.

FILTER CHOKES

ITEM No.	RATINGS	REPLACEMENT DATA				Triad PART No.
		INDUCTANCE (1000 μH)	AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.
L6	DC RES. 1.7A	.90	75A601			

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO	REPLACEMENT DATA				NOTES
		AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.
T1	5:1	75-459				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA				NOTES
		AUTOMATIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.
T2	140 Taps @ 3-4Ω	75A966①				

① Part #75-966 may be used in all models.
Part #75-460 may be used in Models L-559, LP-929, LA-449, LAP-29, C-349, CA-109.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		AUTOMATIC PART No.	QUAM PART No.	
SP1	6"x 9" PM 3-4Ω	73B902	69A3	Models F-139, FA-219, FP-276TR
	4"x 8" PM 3-4Ω	73-1170		Models L-559, LP-929, LA-449, LAP-29
	2"x 10" PM 3-4Ω	73-969		Models S-91, SP-1, SA-529, SPA-209
	6"x 9" PM 3-4Ω	73B1083		Models C-349, CA-109

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA			
			AUTOMATIC PART No.	LITTELFUSE PART No.	BUSS PART No.	
M1	SFE	7 1/2A 32V	FUSE	307007.5	FUSE	HOLDER
					SFE 7 1/2	HHH

WIRING DATA

General-use Unshielded Hook-up Wire Use BELDEN No. 8530 (Solid) Available in Ten Colors
Shielded Hook-up Wire Use BELDEN No. 8885
Banding Strap Use BELDEN No. 8861

CHASSIS—BOTTOM VIEW

