

Air-Cooled Condensing Units

INDEX

MODEL		VOLTS/PHASE (60-Hz)	LABEL DIAGRAM	
			Fig.	No.
38GR	002300	230/1	1	38GR500604
	002310			
	003300			
	003310			
	004300			
	004310			
	045300			
	005300	3	38GR501074	
	006300	4	38GR500624	
	003400	208/3	5	38GR500734
	004400			
	005400			
	006400			
	003500	230/3	5	38GR500734
	004500			
	005500			
	006500			
	003410	208/3	6	38GR501084
004410				
045400				
003510	230/3	6	38GR501084	
004510				
045500				

38GR System Control Circuit Connections

Fig 7

NOTES

- 1 Compressor and fan motor thermally protected
- 2 Power available for external loads on 24-volt NEC Class 2 circuit is 10 va
- 3 Compressor Protection Control System (CPCS) set to trip at 140% compressor FLA

MODEL	COMPRESSOR PROTECTION CONTROL SYSTEM NO.	TRIP AMPS
38GR002300,310	38GR500474	20 7
38GR003300,310	38GR500484	26 8
38GR004300,310	38GR500494	32 0
38GR045300	38GR500504	37 6
38GR005300	38GR500514	42 6
38GR006300	38GR500524	54 6
38GR003400,410	38GR500664	18 2
38GR003500,510	38GR500674	16 1
38GR004400,410	38GR500684	19 6
38GR004500,510	38GR500694	17 6
38GR045400	38GR500904	23 8
38GR045500	38GR500914	22.1
38GR005400	38GR500934	26 0
38GR005500	38GR500944	22 5
38GR006400	38GR500964	32 2
38GR006500	38GR500974	28 6

PHASING TRANSFORMERS

When furnace transformer is used together with condensing unit transformer, the transformers may have to be phased. It is always necessary to phase a two-transformer hookup on an automatic change-over (heating to cooling) system. If transformers are not phased, they may be damaged. Check phasing on the transformers (after system is wired) as follows:

Remove thermostat base from the subbase. Turn power on to system and take a voltage reading between subbase terminals RH and RC or R and terminal 4. If a zero voltage reading is indicated, the transformers are phased. If other than a zero voltage reading is indicated, the transformers are not phased. To phase transformers, shut power off to system and switch position of line power leads to condensing unit. After switching leads, a zero voltage reading at subbase terminals RH and RC (or R and terminal 4) should be indicated.

Tag unit near controls to specify that this is a two-transformer system.

LEGEND

C	— Contactor
CH	— Crankcase Heater
Comp	— Compressor
CPCS	— Compressor Protection Control System
CT	— Current Transformer
FC	— Fan Capacitor
FM	— Fan Motor
FT	— Fan Thermostat
HPS	— High-Pressure Switch
IFR	— Indoor Fan Relay
IP	— Internal Protector
LPS	— Low-Pressure Switch
Plg	— Plug
QT	— Quad Terminal
RC	— Run Capacitor
Recp	— Receptacle
Res	— Resistor
SC	— Start Capacitor
SR	— Start Relay
Tran	— Transformer
	Component Connections (Marked)
	Component Connections (Unmarked)
	Field Splice
	Junction
	Field Power Wiring
	Field Control Wiring NEC Class 2
	To indicate common potential only Not to represent wire
	Plug Connection
	Receptacle Connection

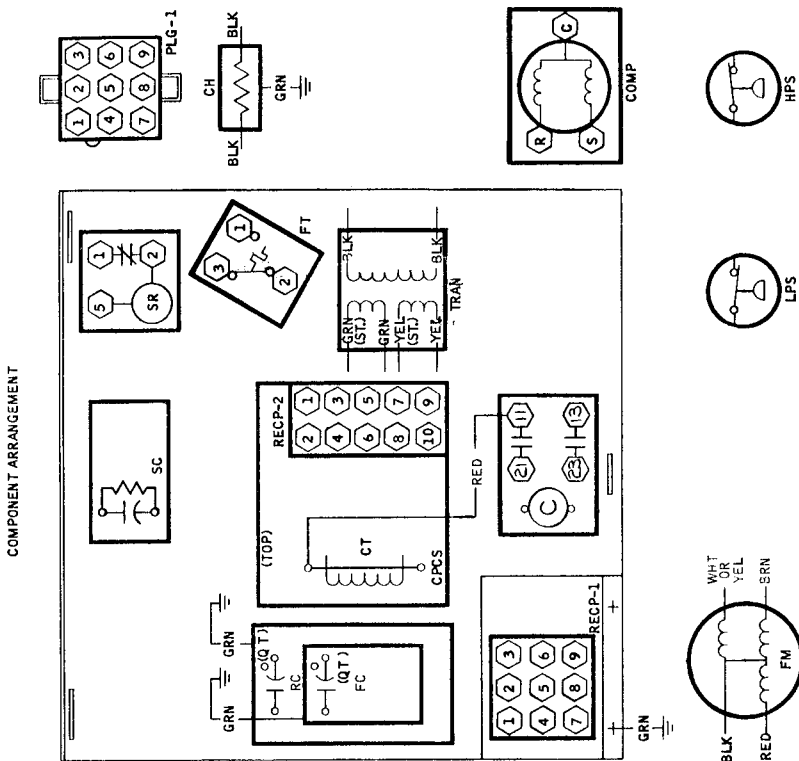
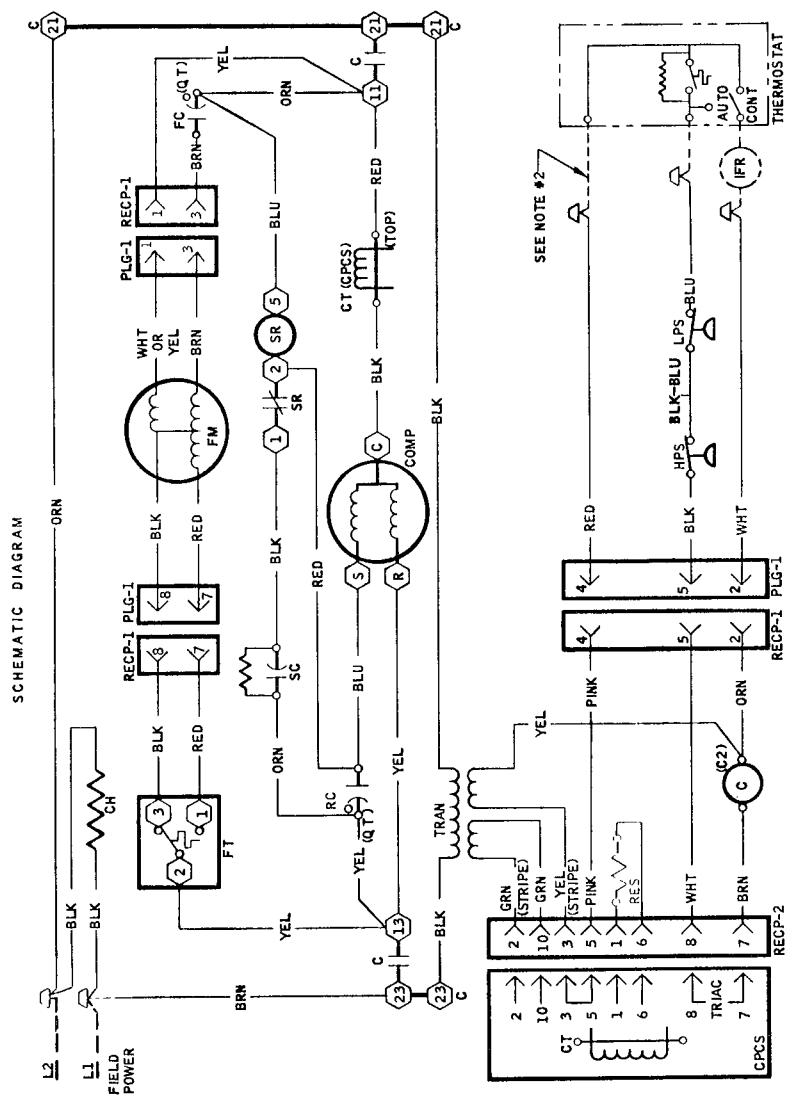


Fig. 1 — 38GR002,003,004 Label Diagram; 230-1-60

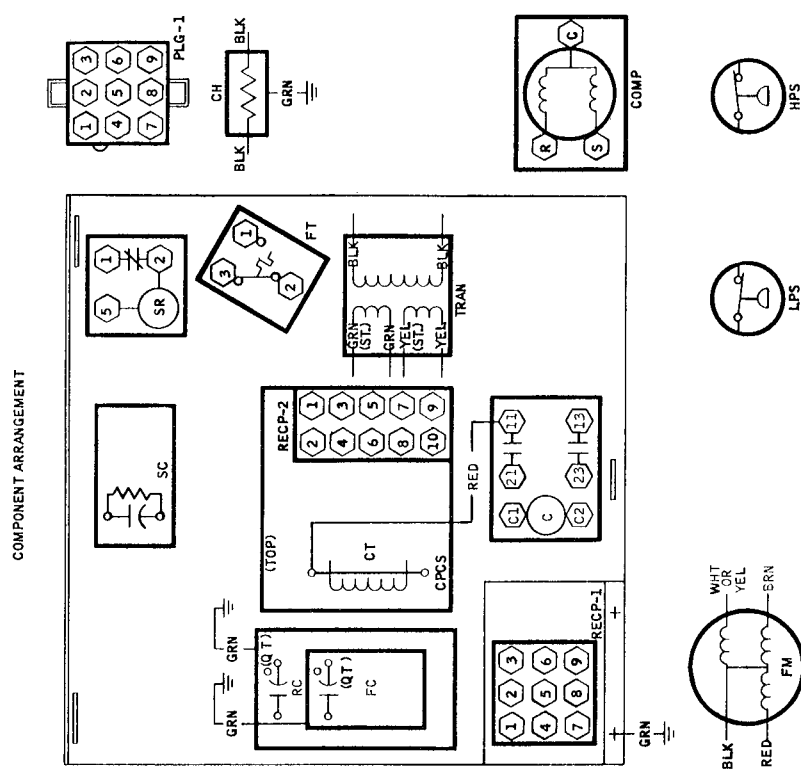
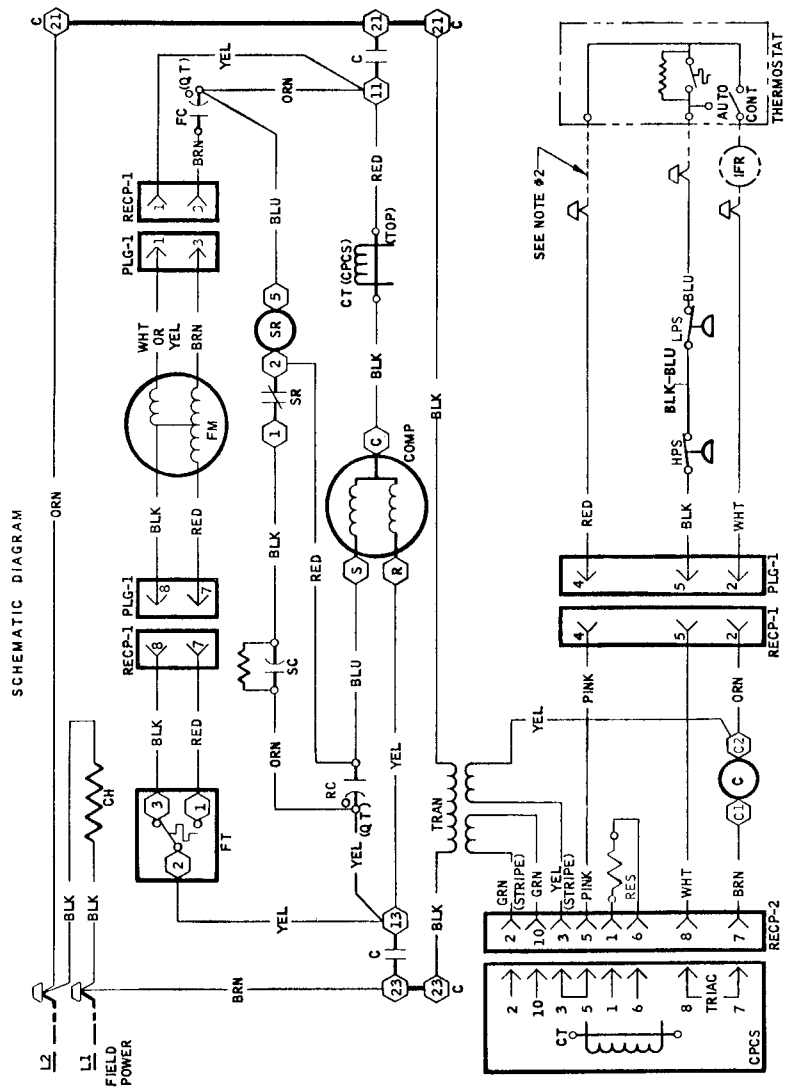
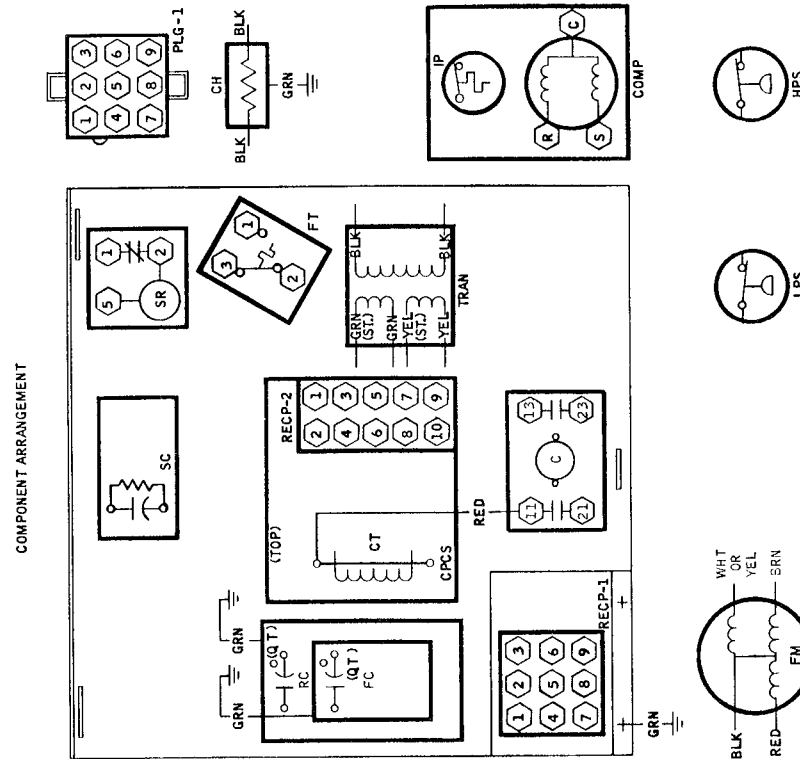


Fig. 2 — 38GR045 Label Diagram; 230-1-60



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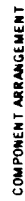


Fig. 4 – 38GR006 Label Diagram; 230-1-60

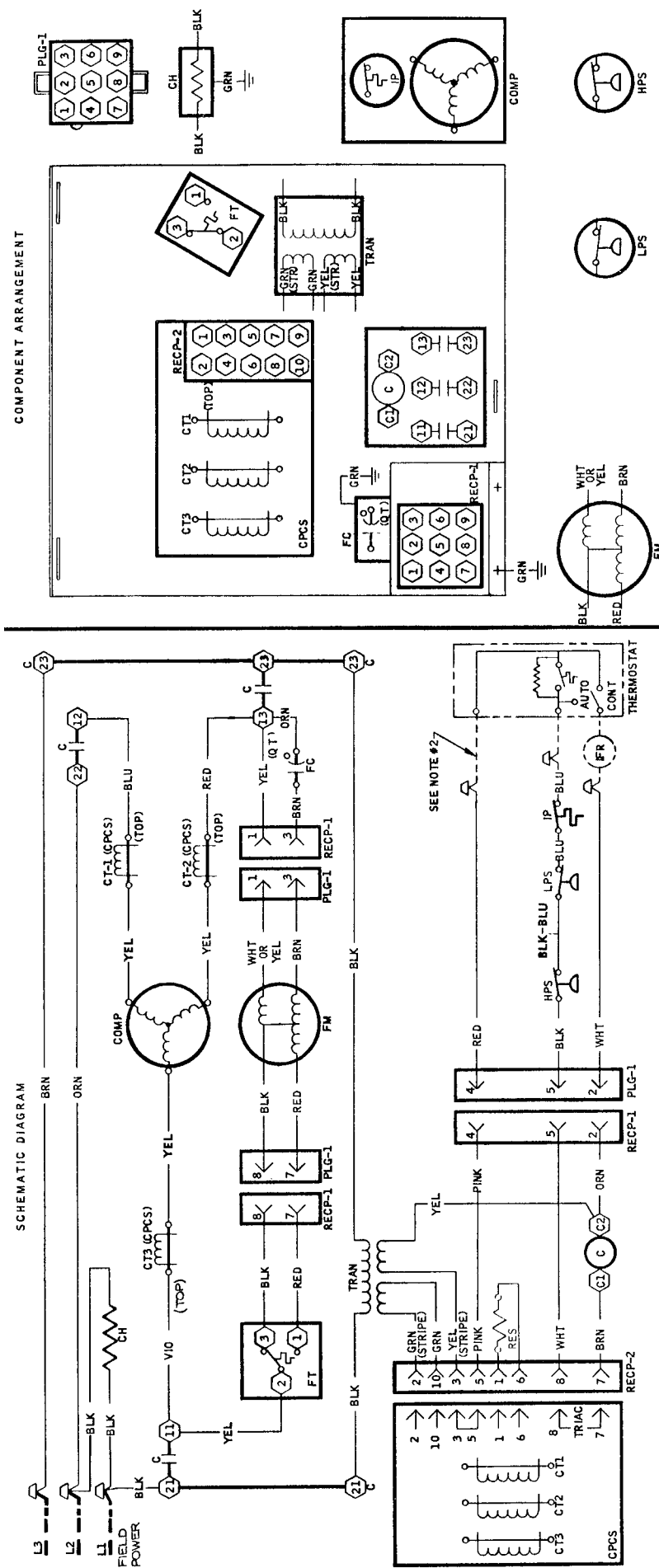


Fig. 5 — 38GR003,004,005,006 Label Diagram; 208-3-60 and 230-3-60

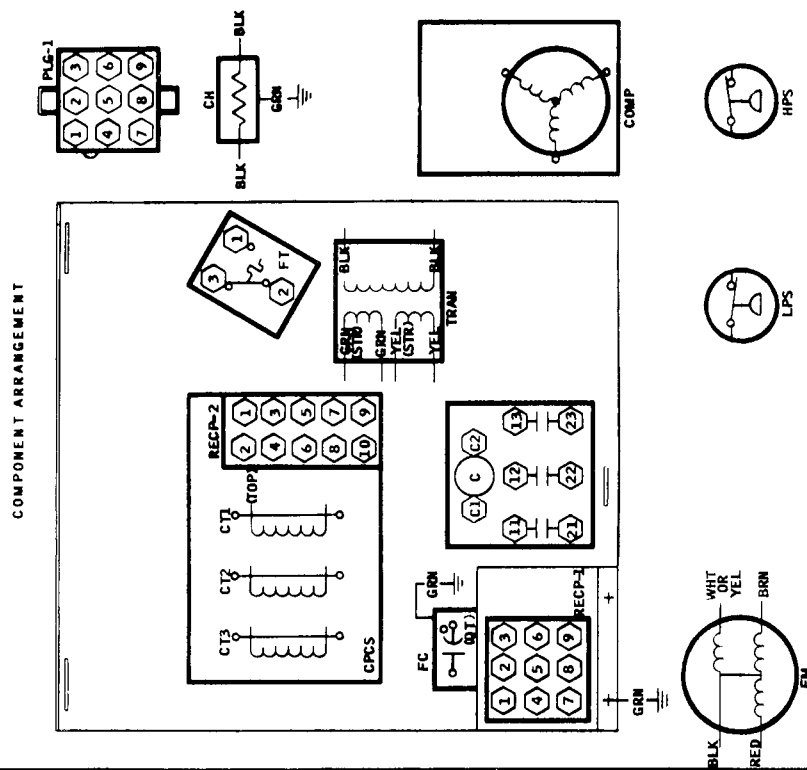
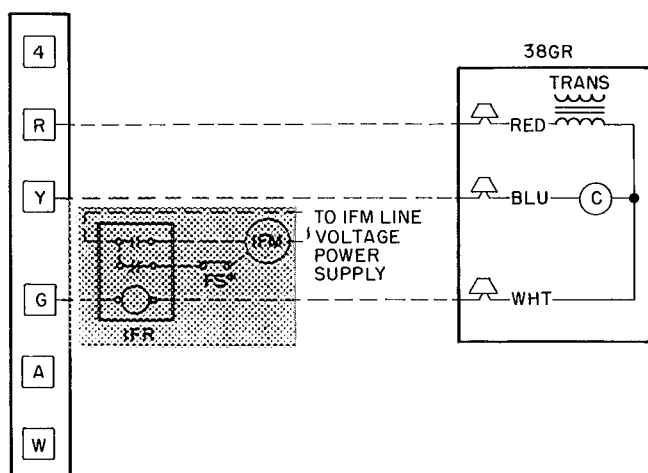


Fig. 6 — 38GR003,004,045 Label Diagram; 208-3-60 and 230-3-60

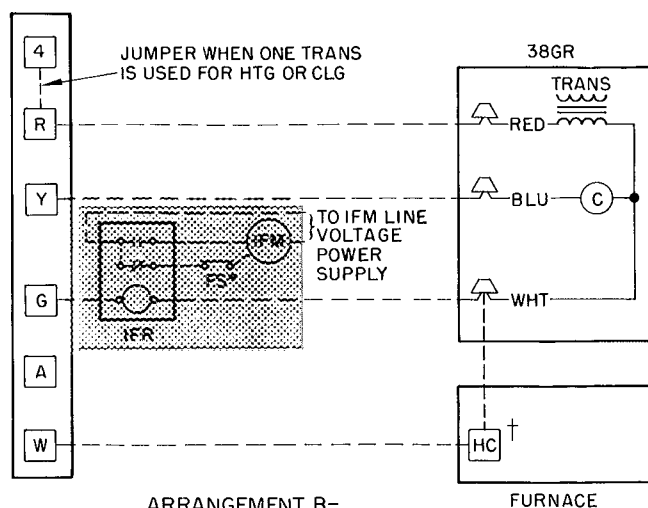
THERMOSTAT SUBBASE TERMINALS
HH93AZ042 OR
HH93AZ040



ARRANGEMENT A-
(COOLING ONLY)

*Connect FS to low-speed indoor fan terminal when two-speed fan is used

THERMOSTAT SUBBASE TERMINALS
HH93A7076



ARRANGEMENT B- ONE TRANSFORMER
(ONE STAGE HT- SEE NOTE I BELOW)

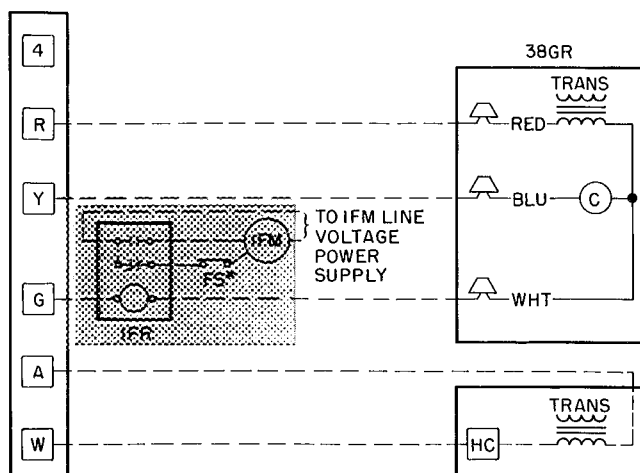
*Connect FS to low-speed indoor fan terminal when two-speed fan is used

Heating control power requirement not to exceed 12 va

NOTE:

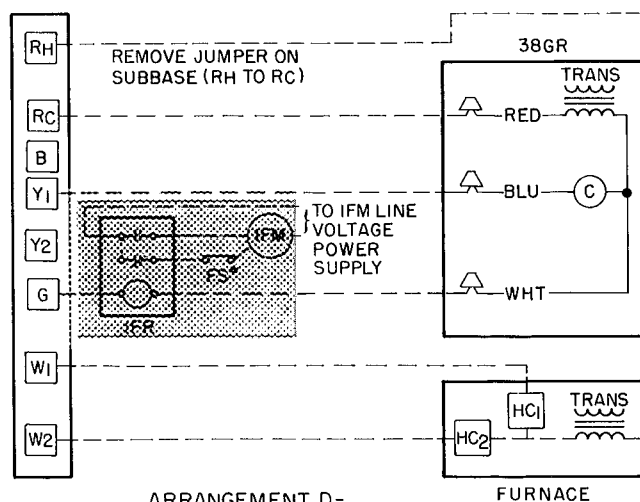
- 1 Two transformers required for 24-volt external load over 10 va on cooling or 25 va on heating (See Arrangements C and D)
- 2 On cooling/heating applications where furnace has a transformer, a two-transformer wiring hookup is recommended (Arrangement C and D)

When two 24-v transformers are used, ensure that secondaries are in phase. Condensing unit transformer must be used to power condensing unit controls. (See Phasing Transformers, page 1.)



ARRANGEMENT C - TWO TRANSFORMERS
(ONE STAGE HT- SEE NOTE 2 BELOW)

*Connect FS to low-speed indoor fan terminal when two-speed fan is used



ARRANGEMENT D- FURN
TWO TRANSFORMERS
(TWO STAGE HT - SEE NOTE 2 BELOW)

*Connect FS to low-speed indoor fan terminal when two-speed fan is used

 IFR, FS and IFM are located in furnace on heating-cooling applications. If accessory IFR is required for cooling only applications, locate (IFR) in fan coil.

- C** — Contactor
Ctg — Cooling
FS — Fan Switch
HC — Heating Control
Htg — Heating
IFM — Indoor Fan Motor
IFR — Indoor Fan Relay
Trans — Transformer

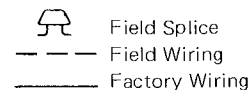


Fig. 7 – Control Circuit Connections

Manufacturer reserves the right to change any product specifications without notice.