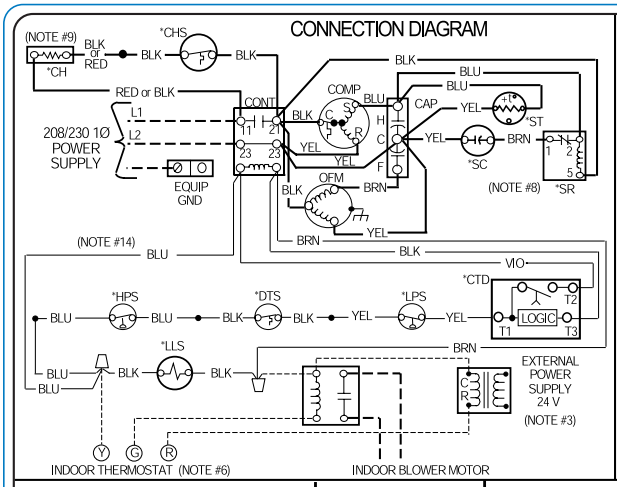
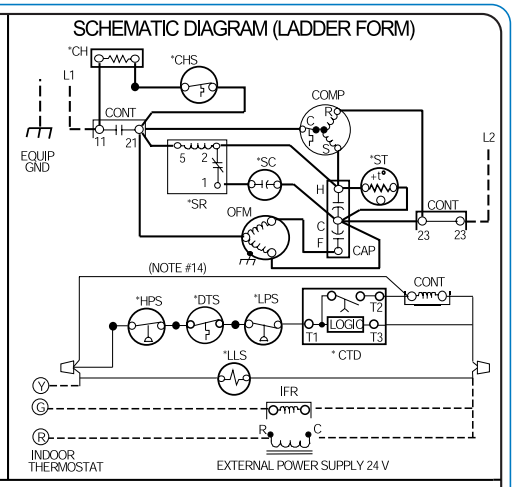
Wiring Diagram

PAYNE®

Split System Air Conditioner
Sizes 018—060

PA13





LEGEND

——	FACTORY POWER WIRING
——	FACTORY CONTROL WIRING
- - - -	FIELD CONTROL WIRING
- - - -	FIELD POWER WIRING
○	COMPONENT CONNECTION
	FIELD SPLICE
—●—	JUNCTION
CONT	CONTACTOR
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER SWITCH
COMP	COMPRESSOR
*CTD	COMPRESSOR TIME DELAY
*DTS	DISCHARGE TEMP SWITCH
*HPS	HIGH PRESSURE SWITCH
IFR	INDOOR FAN RELAY
*LLS	LIQ LINE SOLENOID VALVE
*LPS	LOW PRESSURE SWITCH
OFM	OUTDOOR FAN MOTOR
*SC	START CAPICATOR
*SR	START RELAY
*ST	START THERMISTOR

*** MAY BE FACTORY INSTALLED**

⚠ CAUTION

1. Compressor damage may occur if system is over charged.
2. This unit is factory charged with R-22 in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required Indoor air Flow Rates and for use of line lengths over 15 feet.
3. Relieve pressure and recover all refrigerant before system repair or final disposal. Use all service ports and open all flow-control devices, including solenoid valves.
4. Never vent refrigerant to atmosphere. Use approved recovery equipment.

NOTES:

1. Symbols are electrical representation only.
2. Compressor and fan motor furnished with inherent thermal protection.
3. To be wired in accordance with National Electric N.E.C. and local codes.
4. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.
5. Use copper conductors only. Use conductors suitable for at least 75°C (167°F).
6. Connection for typical cooling only thermostat. For other arrangements see installation instructions.
7. If indoor section has a transformer with a grounded secondary, connect the grounded side to the BRN lead.
8. When start relay and start capacitor are installed, start thermistor is not used.
9. CH not used on all units.
10. If any of the original wire, as supplied must be replaced, use the same or equivalent wire.
11. Check all electrical connections inside control box for tightness.
12. Do not attempt to operate unit until service valves have been opened.
13. Do not rapid cycle compressor. Compressor must be off 3 minutes to allow pressures to equalize between high and low side before starting.
14. Wire not present if HPS, LPS or CTD are used.

CONDENSING UNIT CHARGING INSTRUCTIONS
For use with units using R-22 refrigerant

REQUIRED LIQUID LINE TEMPERATURE

(PSIG) Liquid Pressure at Service Valve	Required Subcooling Temperature (° F)			
	5	10	15	20
134	71	66	61	56
141	74	69	64	59
148	77	72	67	62
156	80	75	70	65
163	83	78	73	68
171	86	81	76	71
179	89	84	79	74
187	92	87	82	77
196	95	90	85	80
205	98	93	88	83
214	101	96	91	86
223	104	99	94	89
233	107	102	97	92
243	110	105	100	95
253	113	108	103	98
264	116	111	106	101
274	119	114	109	104
285	122	117	112	107
297	125	120	115	110
309	128	123	118	113
321	131	126	121	116
331	134	129	124	119
346	137	132	127	122
359	140	135	130	125

COOLING ONLY PROCEDURE

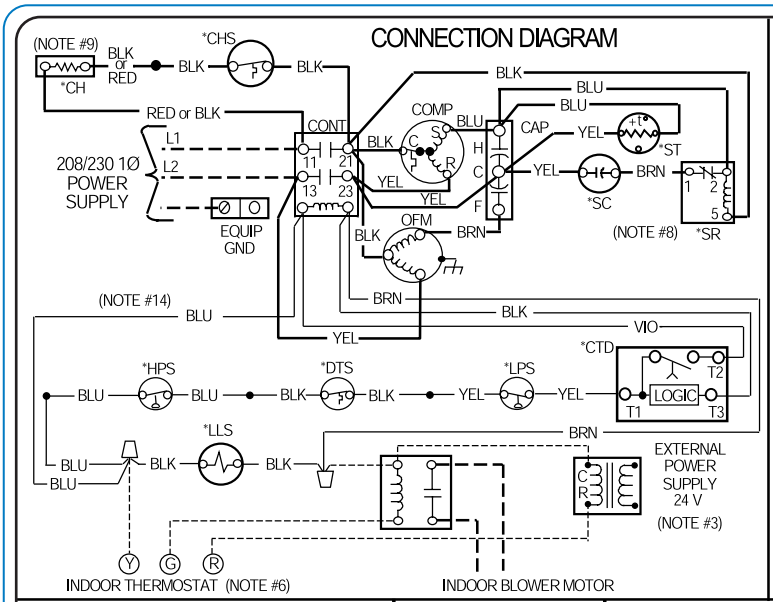
1. Operate unit a minimum of 10 minutes before checking the charge.
2. Measure liquid service valve pressure by attaching an accurate gauge to the service port.
3. Measure the liquid line temperature by attaching an accurate thermistor type or electronic thermometer to the liquid line near the outdoor coil.
4. Refer to unit rating plate for required subcooling temperature.
5. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.
6. To obtain the required subcooling temperature at a specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated or remove refrigerant if temperature is lower. Allow a tolerance of +/- 3°F.

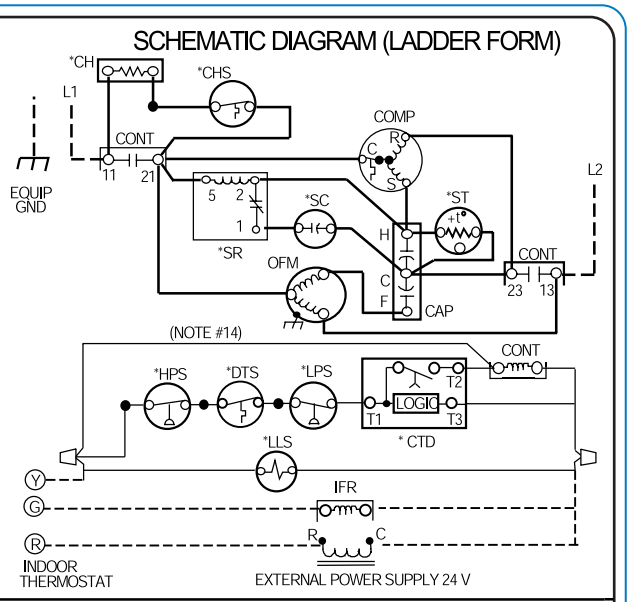
330060-101 REV. B

A05010

Fig. 1—PA13 018-A—048-A 208/230v, 1 Phase, 60 Hertz

Form: WD-PA13-01 Cancels: New Printed in U.S.A. 1-06 Catalog No. WD-PA13-01





LEGEND

———	FACTORY POWER WIRING
———	FACTORY CONTROL WIRING
- - - - - -	FIELD CONTROL WIRING
·— — —	FIELD POWER WIRING
○	COMPONENT CONNECTION
	FIELD SPLICE
—●—	JUNCTION
CONT	CONTACTOR
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER
COMP	CRANKCASE HEATER SWITCH
*CTD	COMPRESSOR
*DTS	COMPRESSOR TIME DELAY
*HPS	DISCHARGE TEMP SWITCH
IFR	HIGH PRESSURE SWITCH
*LLS	INDOOR FAN RELAY
*LPS	LIQ LINE SOLENOID VALVE
OFM	LOW PRESSURE SWITCH
*SC	OUTDOOR FAN MOTOR
*SR	START CAPICATOR
*ST	START RELAY
	START THERMISTOR

*** MAY BE FACTORY INSTALLED**

⚠ CAUTION

1. Compressor damage may occur if system is over charged.
2. This unit is factory charged with R-22 in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required Indoor air Flow Rates and for use of line lengths over 15 feet.
3. Relieve pressure and recover all refrigerant before system repair or final disposal. Use all service ports and open all flow-control devices, including solenoid valves.
4. Never vent refrigerant to atmosphere. Use approved recovery equipment.

NOTES:

1. Symbols are electrical representation only.
2. Compressor and fan motor furnished with inherent thermal protection.
3. To be wired in accordance with National Electric N.E.C. and local codes.
4. N.E.C. class 2, 24 V circuit, min. 40 VA required, 60 VA on units installed with LLS.
5. Use copper conductors only. Use conductors suitable for at least 75ºC (167ºF).
6. Connection for typical cooling only thermostat. For other arrangements see installation instructions.
7. If indoor section has a transformer with a grounded secondary, connect the grounded side to the BRN lead.
8. When start relay and start capacitor are installed, start thermistor is not used.
9. CH not used on all units.
10. If any of the original wire, as supplied must be replaced, use the same or equivalent wire.
11. Check all electrical connections inside control box for tightness.
12. Do not attempt to operate unit until service valves have been opened.
13. Do not rapid cycle compressor. Compressor must be off 3 minutes to allow pressures to equalize between high and low side before starting.
14. Wire not present if HPS, LPS or CTD are used.

CONDENSING UNIT CHARGING INSTRUCTIONS

For use with units using R-22 refrigerant

REQUIRED LIQUID LINE TEMPERATURE

(PSIG) Liquid Pressure at Service Valve	Required Subcooling Temperature (º F)			
	5	10	15	20
134	71	66	61	56
141	74	69	64	59
148	77	72	67	62
156	80	75	70	65
163	83	78	73	68
171	86	81	76	71
179	89	84	79	74
187	92	87	82	77
196	95	90	85	80
205	98	93	88	83
214	101	96	91	86
223	104	99	94	89
233	107	102	97	92
243	110	105	100	95
253	113	108	103	98
264	116	111	106	101
274	119	114	109	104
285	122	117	112	107
297	125	120	115	110
309	128	123	118	113
321	131	126	121	116
331	134	129	124	119
346	137	132	127	122
359	140	135	130	125

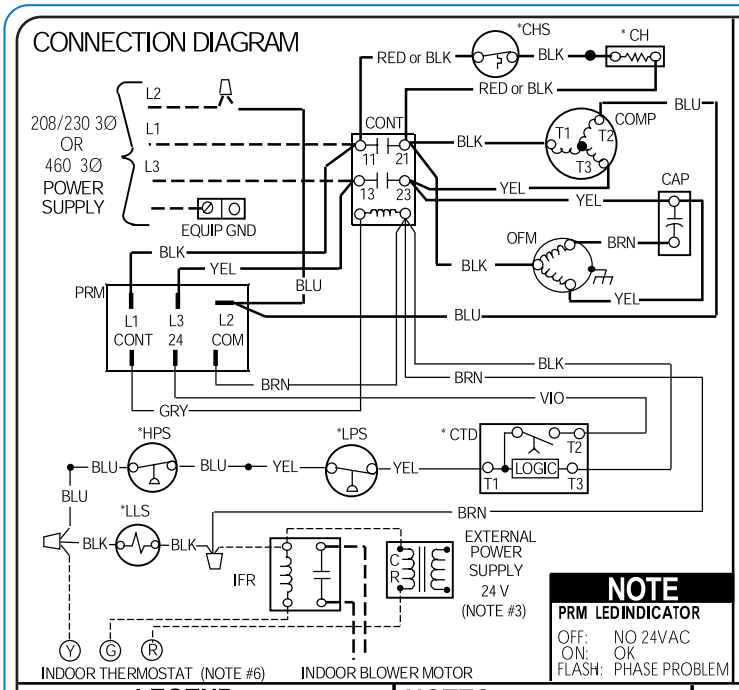
COOLING ONLY PROCEDURE

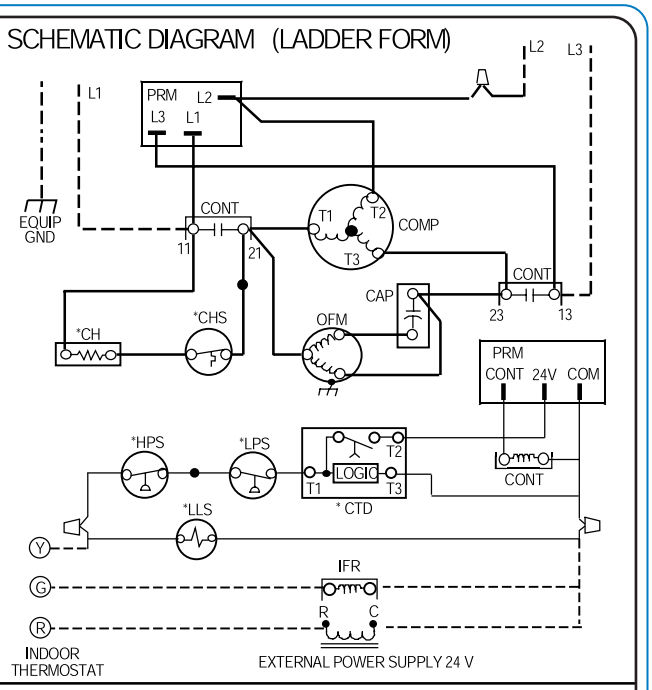
1. Operate unit a minimum of 10 minutes before checking the charge.
2. Measure liquid service valve pressure by attaching an accurate gauge to the service port.
3. Measure the liquid line temperature by attaching an accurate thermistor type or electronic thermometer to the liquid line near the outdoor coil.
4. Refer to unit rating plate for required subcooling temperature.
5. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.
6. To obtain the required subcooling temperature at a specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated or remove refrigerant if temperature is lower. Allow a tolerance of +/- 3ºF.

330061-101 REV. B

A05011

Fig. 2—PA13 060-A 208/230v, 1 Phase, 60 Hertz





LEGEND

———	FACTORY POWER WIRING
———	FACTORY CONTROL WIRING
-------	FIELD CONTROL WIRING
·– – –	FIELD POWER WIRING
○	COMPONENT CONNECTION
	FIELD SPLICE
—●—	JUNCTION
CONT	CONTACTOR
CAP	CAPACITOR (DUAL RUN)
*CH	CRANKCASE HEATER
*CHS	CRANKCASE HEATER SWITCH
COMP	COMPRESSOR
*CTD	COMPRESSOR TIME DELAY
*DTS	DISCHARGE TEMP SWITCH
*HPS	HIGH PRESSURE SWITCH
IFR	INDOOR FAN RELAY
*LLS	LIQ LINE SOLENOID VALVE
*LPS	LOW PRESSURE SWITCH
OFM	OUTDOOR FAN MOTOR
PRM	PHASE ROTATION MONITOR

*** MAY BE FACTORY INSTALLED**

⚠ CAUTION

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2. This unit is factory charged with R-22 in accordance with the amount shown on the rating plate. The charge is adequate for most systems using matched coils and tubing not over 15 feet long. Check refrigerant charge for maximum efficiency. See Product Data Literature for required Indoor air Flow Rates and for use of line lengths over 15 feet.
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NOTES:

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7. If indoor section has a transformer with a grounded secondary, connect the grounded side to the BRN lead.
8. CH not used on all units.
9. If any of the original wire, as supplied must be replaced, use the same or equivalent wire.
10. Check all electrical connections inside control box for tightness.
11. Do not attempt to operate unit until service valves have been opened.
12. Do not rapid cycle compressor. Compressor must be off 3 minutes to allow pressures to equalize between high and low side before starting.
13. Wire not present if HPS, LPS or CTD are used.
14. It is imperative to connect 3Ø field power to unit with correct phasing. The Phase Rotation Monitor will not allow the contactor to be energized if the phasing is not correct. If phasing is reversed, simply interchange any two of the three power connectors on field side.

CONDENSING UNIT CHARGING INSTRUCTIONS
For use with units using R-22 refrigerant

REQUIRED LIQUID LINE TEMPERATURE

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COOLING ONLY PROCEDURE

1. Operate unit a minimum of 10 minutes before checking the charge.
2. Measure liquid service valve pressure by attaching an accurate gauge to the service port.
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4. Refer to unit rating plate for required subcooling temperature.
5. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.
6. To obtain the required subcooling temperature at a specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated or remove refrigerant if temperature is lower. Allow a tolerance of +/- 3ºF.

330098-101 REV. B

A05012

Fig. 3—PA13 All 3 Phase Units