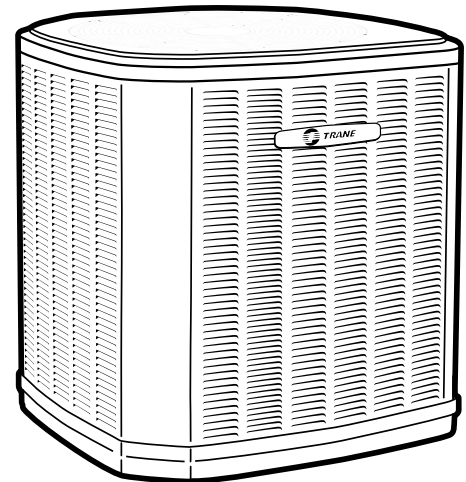




Service Facts

Split System Cooling 1.5 Ton

4TTR6018J1000A



Note: "Graphics in this document are for representation only. Actual model may differ in appearance."

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

October 2018

4TTR6018J-SF-1B-EN





SAFETY SECTION

Important — This document contains service information. This is customer property and is to remain with this unit. Please return to service information pack upon completion of work.

⚠ WARNING

HAZARDOUS VOLTAGE!

Failure to follow this Warning could result in property damage, severe personal injury, or death.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized.

⚠ WARNING

REFRIGERANT OIL!

Failure to follow this Warning could result in property damage, severe personal injury, or death.

These units use R-410A refrigerant which operates at 50–70% higher pressures than R-22. Use only R-410A approved service equipment. Refrigerant cylinders are painted a “Rose” color to indicate the type of refrigerant and may contain a “dip” tube to allow for charging of liquid refrigerant into the system. All R-410A systems use a POE oil that readily absorbs moisture from the atmosphere. To limit this “hygroscopic” action, the system should remain sealed whenever possible. If a system has been open to the atmosphere for more than 4 hours, the compressor oil must be replaced. Never break a vacuum with air and always change the driers when opening the system for component replacement. For specific handling concerns with R-410A and POE oil, reference Retrofit Bulletin TRN-APG02-EN.

⚠ CAUTION

HOT SURFACE!

May cause minor to severe burning. Failure to follow this Caution could result in property damage or personal injury.

Do not touch top of compressor.

⚠ CAUTION

CONTAINS REFRIGERANT!

Failure to follow proper procedures can result in personal illness or injury or severe equipment damage.

System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening system.

⚠ CAUTION

GROUNDING REQUIRED!

Failure to inspect or use proper service tools may result in equipment damage or personal injury.

Reconnect all grounding devices. All parts of this product that are capable of conducting electrical current are grounded. If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

⚠ WARNING

SERVICE VALVES!

Failure to follow this warning will result in abrupt release of system charge and may result in personal injury and/or property damage.

Extreme caution should be exercised when opening the Suction and Liquid Line Service Valve. Turn valve stem counterclockwise only until the stem contacts the rolled edge. No torque is required.

⚠ WARNING

BRAZING REQUIRED — IF USING MECHANICAL CONNECTIONS, ENSURE LEAK TEST IS NEGATIVE!

Failure to inspect lines or use proper service tools may result in equipment damage or personal injury.

if using existing refrigerant lines make certain that all joints are brazed, not soldered.

⚠ WARNING

Warning!

This product can expose you to chemicals including lead which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov

Important: If using other than copper pipe, follow manufacturer's installation instructions. Joints must be brazed or other UL/IMC/URMC approved joint that meets pressure requirements.



Product Specifications

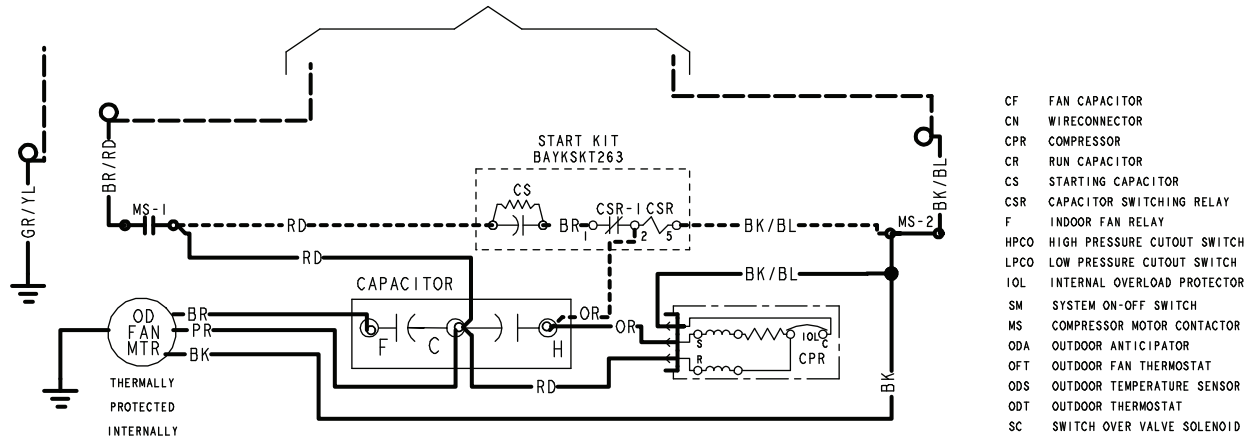
OUTDOOR UNIT ^(a) ^(b)	4TTR6018J1000A
POWER CONNS. — V/PH/HZ ^(c)	208/230/1/60
MIN. BRCH. CIR. AMPACITY	12
BR. CIR. PROT. RTG. — MAX. (AMPS)	20
COMPRESSOR	CLIMATUFF®- SCROLL
NO. USED — NO. STAGES	1 — 1
VOLTS/PH/HZ	208/230/1/60
R.L. AMPS ^(d) — L.R. AMPS	9 — 47.5
FACTORY INSTALLED	
START COMPONENTS ^(e)	NO (Uses BAYKSKT263)
INSULATION/SOUND BLANKET	NO
COMPRESSOR HEAT	NO
OUTDOOR FAN	PROPELLER
DIA. (IN.) — NO. USED	23.02 — 1
TYPE DRIVE — NO. SPEEDS	DIRECT — 1
CFM @ 0.0 IN. W.G. ^(f)	2675
NO. MOTORS — HP	1 — 1/8
MOTOR SPEED R.P.M.	850
VOLTS/PH/HZ	200/230/1/60
F.L. AMPS	0.64
OUTDOOR COIL — TYPE	SPINE FIN™
ROWS — F.P.I.	1 — 24
FACE AREA (SQ. FT.)	16.25
TUBE SIZE (IN.)	3/8
REFRIGERANT	
LBS. — R-410A (O.D. UNIT) ^(g)	4 LBS., 15 OZ
FACTORY SUPPLIED	YES
LINE SIZE — IN. O.D. GAS ^(h) ⁽ⁱ⁾	3/4
LINE SIZE — IN. O.D. LIQ.	3/8
CHARGING SPECIFICATIONS	
SUBCOOLING	8°F
DIMENSIONS	H X W X D
CRATED (IN.)	34 x 30.1 x 33
WEIGHT	
SHIPPING (LBS.)	189
NET (LBS.)	161

- (a) Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.
- (b) Rated in accordance with AHRI standard 270.
- (c) Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.
- (d) This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.
- (e) Use start components only when compressor is found to enter locked rotor condition and will not start or when lights dim at compressor start. "No" means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter. Optional kit shown.
- (f) Standard Air — Dry Coil — Outdoor
- (g) This value approximate. For more precise value see unit nameplate.
- (h) For standard, recommended linear length and lift applications, see the Subcool Charging Chart on page 5. For greater lengths and other applications, consult refrigerant piping software Pub. No. 32-3312-xx (xx denotes latest revision).
- (i) Trane outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit and 15 feet of tested connecting lines. If connecting line length exceeds 15 feet, then final refrigerant charge adjustment is necessary. Each additional foot over 15 feet requires 0.6 oz. of refrigerant. See the Installer's Guide for full charging instructions.

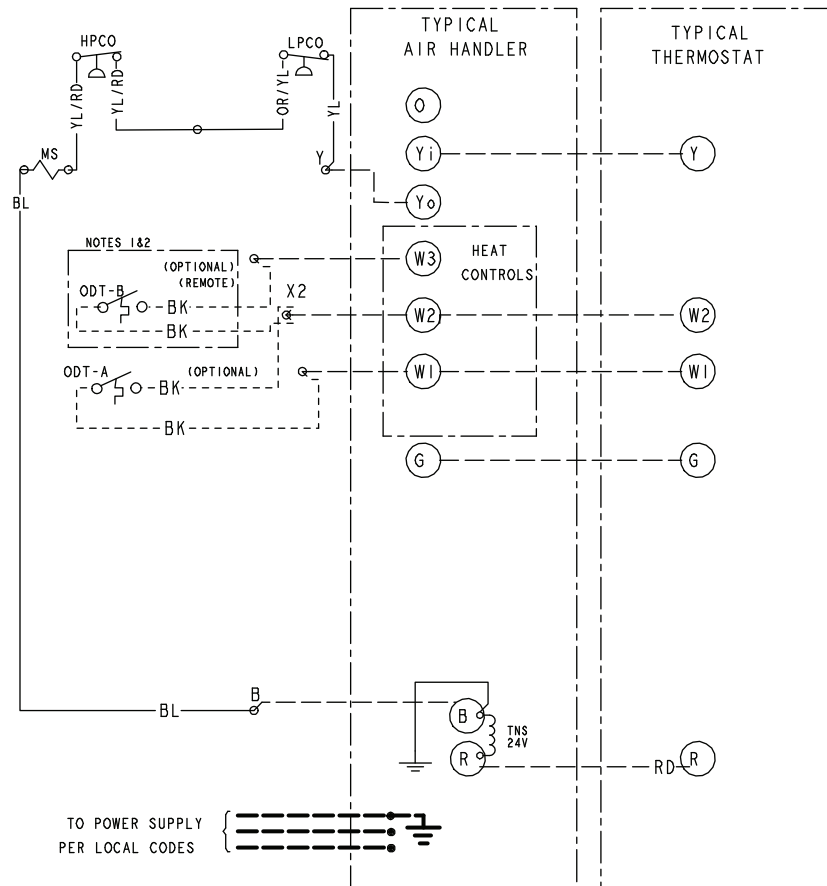


SCHEMATIC — D157362P03

TO POWER SUPPLY PER UNIT NAMEPLATE AND LOCAL CODES



CF	FAN CAPACITOR
CN	WIRECONNECTOR
CPR	COMPRESSOR
CR	RUN CAPACITOR
CS	STARTING CAPACITOR
CSR	CAPACITOR SWITCHING RELAY
F	INDOOR FAN RELAY
HPCO	HIGH PRESSURE CUTOFF SWITCH
LPCO	LOW PRESSURE CUTOFF SWITCH
IOL	INTERNAL OVERLOAD PROTECTOR
SM	SYSTEM ON-OFF SWITCH
MS	COMPRESSOR MOTOR CONTACTOR
ODA	OUTDOOR ANTICIPATOR
OFT	OUTDOOR FAN THERMOSTAT
ODS	OUTDOOR TEMPERATURE SENSOR
ODT	OUTDOOR THERMOSTAT
SC	SWITCH OVER VALVE SOLENOID
TDL	DISCHARGE LINE THERMOSTAT
TNS	TRANSFORMER



WARNING

HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRICAL
POWER INCLUDING REMOTE
DISCONNECTS BEFORE SERVICING.
Failure to disconnect power
before servicing can cause
severe personal injury or
death.

CAUTION

USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT DESIGNED
TO ACCEPT OTHER TYPES OF CONDUCTORS.
Failure to do so may cause damage
to the equipment.

COLOR OF WIRE	
BK/BL	COLOR OF MARKER
BK	BLACK
BL	BLUE
BR	BROWN
PK	PINK
RD	RED
WH	WHITE
YL	YELLOW
GR	GREEN
OR	ORANGE
PR	PURPLE
LTBL	LIGHT BLUE

NOTES:

1. IF ODT-B IS NOT USED, ADD JUMPER BETWEEN W2 & W3 AT AIR HANDLER. IF USED, ODT-B MUST BE MOUNTED REMOTE OF CONTROL BOX IN AN APPROVED WEATHER PROOF ENCLOSURE.
2. IF ODT-A IS NOT USED, ADD JUMPER BETWEEN W1 & W2 AT AIR HANDLER.
3. LOW VOLTAGE (24 V) FIELD WIRING MUST BE 18 AWG MIN.

FOR CANADIAN INSTALLATIONS
POUR INSTALLATIONS CANADIENNES

CAUTION: NOT SUITABLE FOR USE ON
SYSTEMS EXCEEDING 150V-TO-GROUND
ATTENTION: NE CONVIENT PAS AUX
INSTALLATIONS DE PLUS DE 150 V A
LA TERRE

PRINTED FROM D157362P03 REV00



Subcooling Charging in Cooling between 55° F and 120° OD Ambient

Trane has always recommended installing Trane approved matched indoor and outdoor systems.

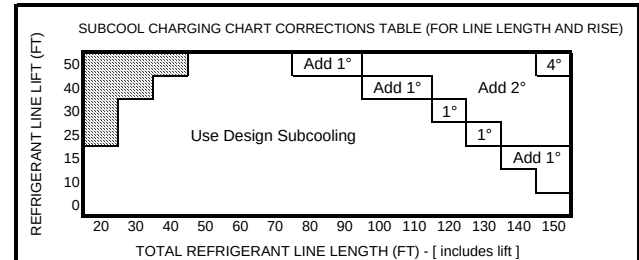
The benefits of installing approved indoor and outdoor split systems are maximum efficiency, optimum performance and the best overall reliability.

The following charging methods are therefore prescribed for matched systems with indoor TXVs / EEVs.

(Systems can be rated with TXV, EEV or Piston. Ensure charging method is correct).

1. Subcooling (in the cooling mode) is the only recommended method of charging above 55° ambient temperatures.
2. For best results — the indoor temperature should be kept between 70° to 80° F. Add system heat if needed.
3. At startup, or whenever charge is removed or added, the system must be operated for a minimum of (20) minutes to stabilize before accurate measurements can be made.
4. Measure Liquid Line Temperature and Refrigerant Pressure at service valves.
5. Determine total refrigerant line length, and height (lift) if indoor section is above the condenser.
6. Determine the Design Subcooling Charging Temperature from the unit nameplate.
7. Locate this value in the appropriate column of the Subcooling Charging Table. Locate your liquid line temperature in the left column of the table, and the intersecting liquid line pressure under your nameplate subcool value column. Add refrigerant to raise the pressure to match the table, or remove refrigerant to lower the pressure. Again, wait (20) minutes for the system conditions to stabilize before adjusting charge again.
8. When system is correctly charged, you can refer to System Pressure Curves to verify typical performance.

Subcool Charging Correction Charts



Weigh-In Method for Charging

Weigh-In Method can be used for the initial installation, or anytime a system charge is being replaced. Weigh-In Method can also be used when power is not available to the equipment site or operating conditions (indoor/outdoor temperatures) are not in range to verify with the subcooling charging method.

Calculating Charge Using the Weigh-In Method		
STEP 1 - Measure in feet the distance between the outdoor unit and the indoor unit. (Include the entire length of the line from the service valve to the IDU.) Subtract 15 ft from this entire length and record on line 1.	1. Total Line Length (ft) — 15 ft	
STEP 2 - Enter the charge multiplier (0.6 oz/ft). Each linear foot of interconnecting tubing requires the addition of 0.6 oz of refrigerant.	2. Charge multiplier	x 0.6 oz
STEP 3 - Multiply the total length of refrigerant tubing (Line 1) times the value on Step 2. Record the result on Line 3 of the Worksheet.	3. Step 1 x Step 2	= _____ - _____
STEP 4 - This is the amount of refrigerant to weigh-in prior to opening the service valves.	4. Refrigerant (oz)	= _____ - _____ oz



Fixed Orifice Superheat Charging Table

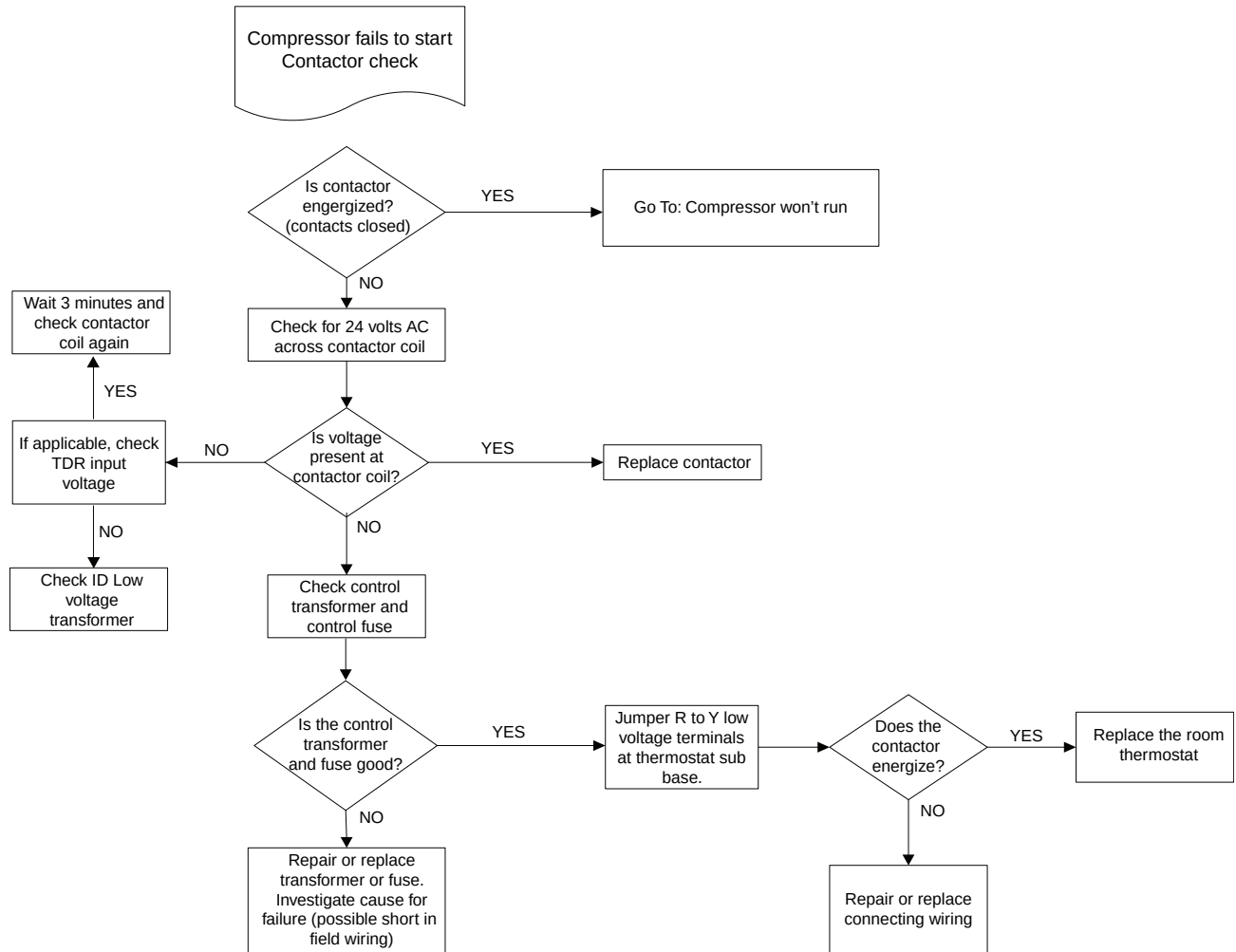
	Indoor Wet Bulb Temp (F)																													
	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	
Outdoor Dry Bulb Temperature (F)	55	7	9	10	11	12	14	15	17	18	20	21	23	24	26	27	29	30												
	60	5	7	8	9	10	12	13	15	16	18	19	21	22	24	25	27	28	30	31										
	65			4	6	8	10	11	13	14	16	18	19	21	22	24	25	27	28	27	31									
	70					5	7	8	10	11	13	14	16	17	18	19	21	22	24	25	27	28	30	31						
	75							5	6	7	9	10	12	14	16	18	19	21	22	24	26	28	29	31	32					
	80									4	6	7	9	10	11	12	14	16	18	19	21	23	25	26	28	29	31	33		
	85											4	6	7	9	10	13	14	16	18	20	21	23	24	26	28	29	30	31	32
	90													4	6	8	10	11	13	14	16	18	20	22	24	25	27	28	30	31
	95															4	6	8	10	13	14	16	18	20	22	23	25	26	28	29
	1-00																	6	8	10	12	13	16	18	20	21	23	25	27	29
1-05																	4	6	7	9	11	13	15	18	20	22	24	26	28	
1-10																			4	7	9	11	13	16	18	21	23	26	28	
1-15																				6	9	12	14	16	19	21	24	26	26	
Using a digital psychrometer, measure the return air wet-bulb temperature at the unit just before the coil. Also measure the outdoor dry-bulb temperature. Use these temperatures to locate the target superheat on the charging table. Do not attempt to charge the system if these conditions fall outside of this charging table. ADD refrigerant to DECREASE total superheat. REMOVE refrigerant to INCREASE total superheat. Always allow 10 to 15 minutes of operation after any refrigerant or air flow change prior to determining the final superheat.																														



Refrigerant Charging Chart

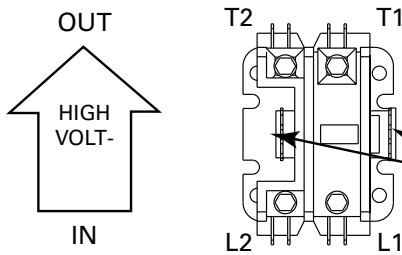
R-410A REFRIGERANT CHARGING CHART							
LIQUID TEMP (°F)	DESIGN SUBCOOLING (°F)						
	8	9	10	11	12	13	14
	LIQUID GAGE PRESSURE (PSI)						
55	179	182	185	188	191	195	198
60	195	198	201	204	208	211	215
65	211	215	218	222	225	229	232
70	229	232	236	240	243	247	251
75	247	251	255	259	263	267	271
80	267	271	275	279	283	287	291
85	287	291	296	300	304	309	313
90	309	313	318	322	327	331	336
95	331	336	341	346	351	355	360
100	355	360	365	370	376	381	386
105	381	386	391	396	402	407	413
110	407	413	418	424	429	435	441
115	435	441	446	452	458	464	470
120	464	470	476	482	488	495	501
125	495	501	507	514	520	527	533

Troubleshooting

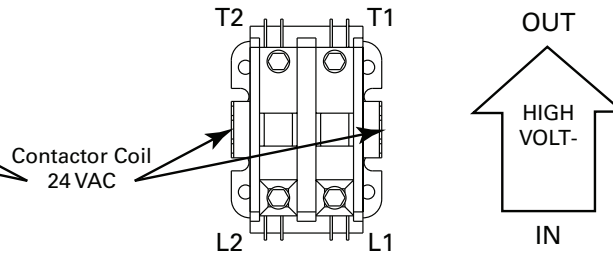


Contactors

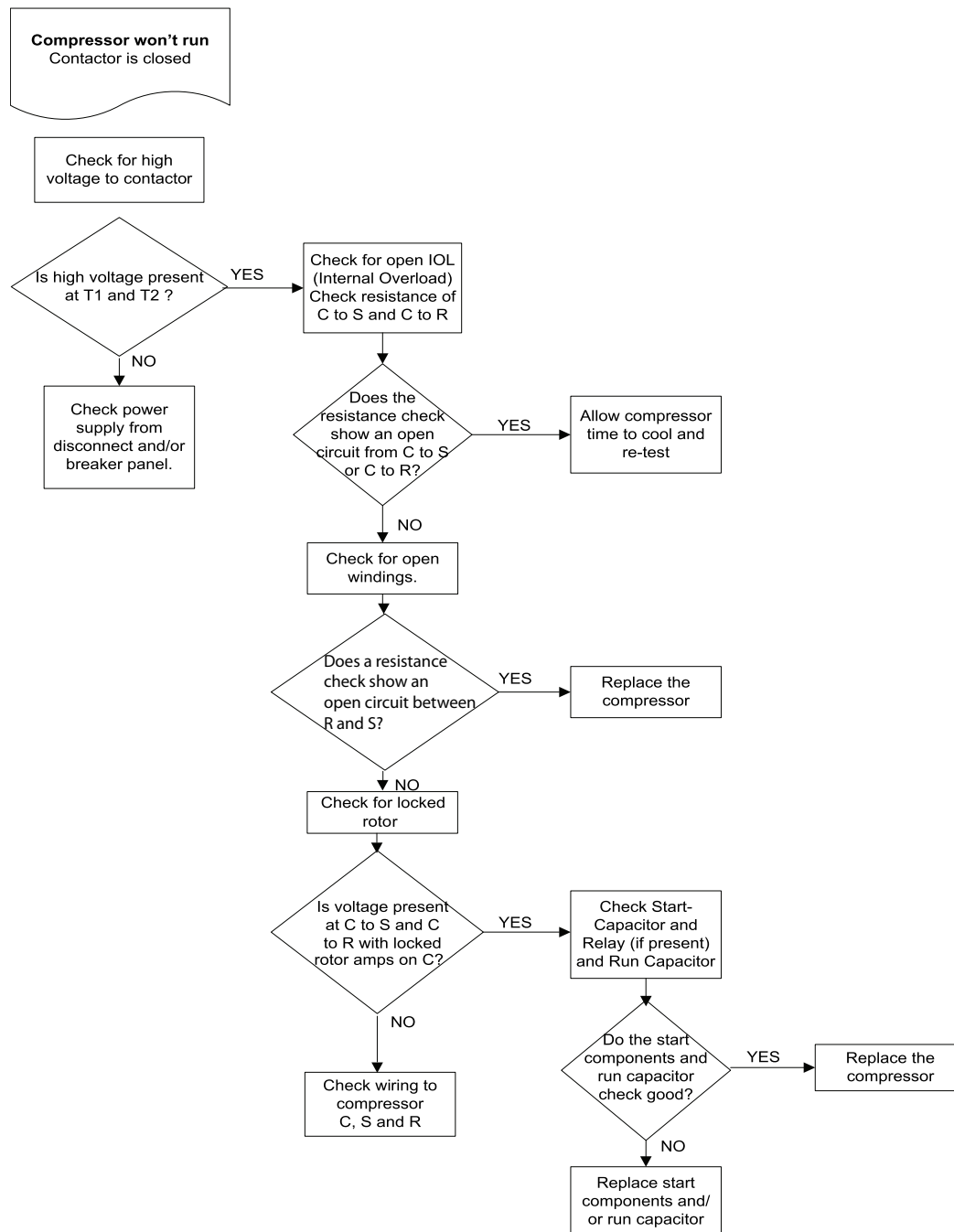
Single Pole Contactor (MS)*



Double Pole Contactor (MS)*

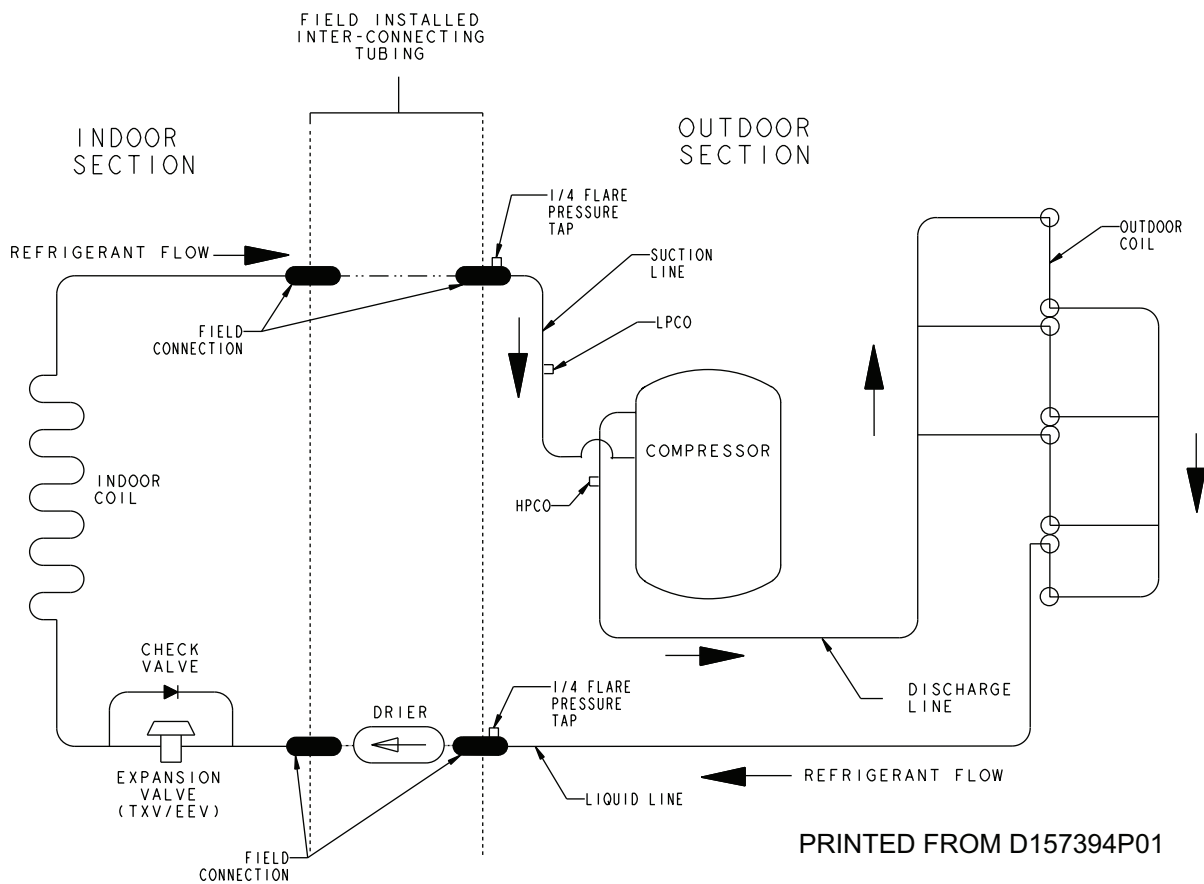


Troubleshooting





Refrigeration Circuit

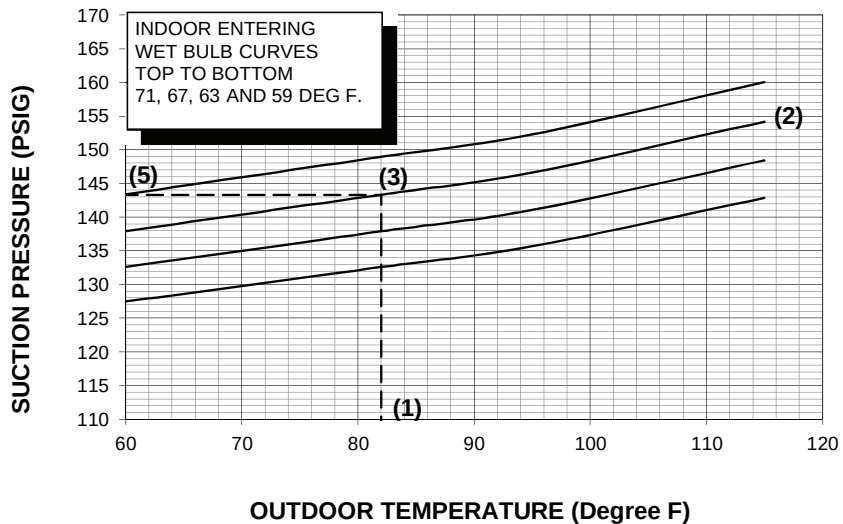
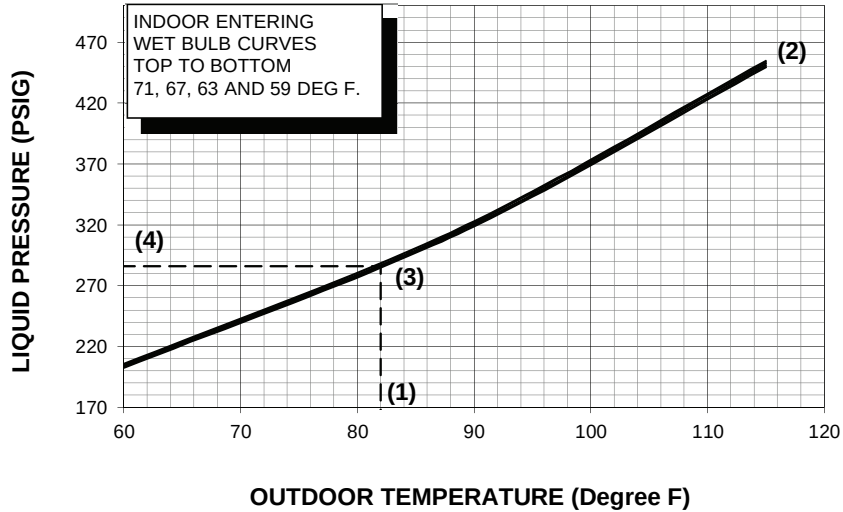




Pressure Curves

PRESSURE CURVES FOR 4TTR6018J1

4PXCBU24AC3
Cooling @ 600 SCFM



COOLING PERFORMANCE CAN BE CHECKED WHEN THE OUTDOOR TEMP IS ABOVE 65 DEG F.

TO CHECK COOLING PERFORMANCE, SELECT THE PROPER INDOOR CFM, ALLOW PRESSURES TO STABILIZE. MEASURE INDOOR WET BULB TEMPERATURE, OUTDOOR TEMPERATURE, LIQUID AND SUCTION PRESSURES. ON THE PLOTS LOCATE OUTDOOR TEMPERATURE (1); LOCATE INDOOR WET BULB (2); FIND INTERSECTION OF OD TEMP. & ID W.B. (3); READ LIQUID (4) OR SUCTION (5) PRESSURE IN LEFT COLUMN.

EXAMPLE: (1) OUTDOOR TEMP. 82 F.
(2) INDOOR WET BULB 67 F.
(3) AT INTERSECTION
(4) LIQUID PRESSURE @ 600 CFM IS 286 PSIG
(5) SUCTION PRESSURE @ 600 CFM IS 143 PSIG

ACTUAL:
LIQUID PRESSURE SHOULD BE +/- 10 PSI OF CHART
SUCTION PRESSURE SHOULD BE +/- 3 PSIG OF CHART

INTERCONNECTING LINES
GAS - 3/4 " O.D.
LIQUID - 3/8 " O.D.

DWG.NO. 4TTR6018J1



Ingersoll Rand (NYSE: IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands — including Club Car®, Ingersoll Rand®, Thermo King® and Trane® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.



ingersollrand.com



The AHRI Certified mark indicates Ingersoll Rand participation in the AHRI Certification program. For verification of individual certified products, go to www.ahridirectory.org.

Ingersoll Rand has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice.

We are committed to using environmentally conscious print practices.

4TTR6018J-SF-1B-EN 31 Oct 2018
Supersedes 4TTR6018J-SF-1A-EN (August 2015)

©2015 Ingersoll Rand