Installation Instructions

LP Conversion Kit

Used with 3 to 10 Tons Two-Stage Gas Packaged Units

Model Number: **Used With:**

BAYLPKT029* YSC036-060G(3,4,W)*(L,X,M,Y,H,Z)B
Y*C072E/F(3,4,W)*(H,Z), YSC072H(3,4,W)*(H,Z),
YHC074F(3,4)*(H,Z),
Y*C090E/F(3,4,W)*(M,Y,H,Z), YSC090H(3,4,W)*(M,Y,H,Z),
Y*C092E/F(3,4,W)*(M,Y,H,Z), YSC092H(3,4,W)*(M,Y,H,Z),
Y*C102E/F(3,4,W)*(M,Y,H,Z), YSC102H(3,4,W)*(M,Y,H,Z),
Y*C120F(3,4,W)*(L,X,M,Y,H,Z), YSC120H(3,4,W)*(L,X,M,Y,H,Z)
YHC120E/F(3,4,W)*(L,X,M,Y,H,Z), DHC074H(3,4,W)*(H,Z),
DHC(092/102)H(3,4,W)*(M,Y,H,Z),
DHC120H(3,4,W)*(L,X,M,Y,H,Z)

BAYLPKT030* YSC072ED*H, YSC090ED*H, YSC102ED, YSC120ED

⚠ 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.

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Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe

NOTICE Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

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⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury. All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

⚠ WARNING

Personal Protective Equipment Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards. Before installing/servicing this unit, technicians MUST put on all Personal Protective Equipment (PPE) recommended for the work being undertaken. ALWAYS refer to appropriate SDS sheets and OSHA guidelines for proper PPE. When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling recommendations. If there is a risk of arc or flash, technicians MUST put on all necessary Personal Protective Equipment (PPE) in accordance with NFPA70E for arc/flash protection PRIOR to servicing the unit. Failure to follow recommendations could result in death or serious injury.

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

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General

These instructions describe converting gas package unit models from natural gas to LP gas. Conversion from natural gas to LP gas is a critical procedure; therefore, these instructions must be followed closely.

Inspection

1. Unpack all components of the LP Conversion Kit.
2. Check carefully for any shipping damage. If any damage is found it must be reported immediately and a claim made against the transportation company.
3. This kit contains the correct parts required for LP conversion. Refer to Table 3 to determine proper orifice selection. The kit contains the following items.

Table 1. BAYLPKT029*

Quantity	Description
1	Block Off Plate - 2 Hole
1	Block Off Plate - 3 Hole
1	Block Off Plate - 4 Hole
1	Block Off Plate - 5 Hole
2	Sheet Metal Screws 10-16 x 1/2
2	Self Drilling Hex Head Screws 10-16 x 1/2
5	Orifice Spuds, Drill # 46 -.081 in. (2.057mm) Dia.
5	Orifice Spuds, Drill # 47 - 0785 in. (1.994 mm) Dia.
4	Orifice Spuds, Drill # 49 -.073 in. (1.854 mm) Dia.
2	Orifice Spuds, Drill #50 - .070 in. (1.778 mm) Dia.
4	Orifice Spuds, Drill #51 - .067 in. (1.702 mm) Dia.
4	Orifice Spuds, Drill #53 - .0595 in. (1.511 mm) Dia.
3	Orifice Spuds, Drill 1/16 in. (1.588 mm) Dia.
1	LP Nameplate Label
1	LP Conversion Spring Kit

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Table 1. BAYLPKT029* (continued)

Quantity	Description
1	LP Conversion Literature
1	1.643 in. Air Orifice, Part No. 436646151710
1	1.844 in. Air Orifice Plate, Part No. 436646150310
1	2.00 in. Air Orifice Plate, Part No. 436646151310
1	2.40 in. Air Orifice Plate, Part No. 436646152410
1	2.75 in. Air Orifice Plate, Part No. 436646150510
1	2.9 in. Air Orifice Plate, Part No. 436646151110

Table 2. BAYLPKT030*

Quantity	Description
1	Block Off Plate - 2 Hole
1	Block Off Plate - 3 Hole
1	Block Off Plate - 4 Hole
1	Block Off Plate - 5 Hole
2	Sheet Metal Screws 10-16 x 1/2
2	Self Drilling Hex Head Screws 10-16 x 1/2
3	Orifice Spuds, Drill # 51 -.067 in. (1.70 mm) Dia.
5	Orifice Spuds, Drill #49 -.073 in. (1.85 mm) Dia.
1	LP Nameplate Label
2	LP Conversion Literature

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Table 3. Orifice size selection

Unit	Gas Input		LP Gas Orifice Size	Air Orifice Plate (Part No. Last 4 Digits)
	Rating MBh	kW		
YSC036G**(L,X)B	72	21.1	DRILL #50	1310
YSC048G**(L,X)B	72	21.1	DRILL #50	0310
YSC060G**(L,X)B	72	21.1	DRILL #50	1710
YSC036G**(M,Y)B	100	29.3	DRILL 1/16	0310
YSC048G**(M,Y)B	100	29.3	DRILL 1/16	0310
YSC060G**(M,Y)B	100	29.3	DRILL 1/16	1310
YSC036G**(H,Z)B	120	35.2	DRILL #53	1310
YSC048G**(H,Z)B	130	38.1	DRILL #53	1310
YSC060G**(H,Z)B	150	44.0	DRILL #51	2410
YSC072E/F/H**(H,Z)	150	44.0	DRILL #46	0310
YHC072E/F**(H,Z)	150	44.0	DRILL #49	1310
DHC074H**(H,Z)	150	44.0	DRILL #46	REMOVE
YZC072F**(H,Z)	150	44.0	DRILL #46	REMOVE
YHC074**(H,Z)	150	44.0	DRILL #49	2410
DHC092H**(M,Y)	150	44.0	DRILL #46	REMOVE
YZC090F**(M,Y)	150	44.0	DRILL #46	REMOVE
YSC090E/F/H**(M,Y)	150	44.0	DRILL #46	0310
YSC092E/F**(M,Y)	150	44.0	DRILL #46	NO CHANGE
YSC092H**(M,Y)****(0,1)	150	44.0	DRILL #46	NO CHANGE
YSC092H**(M,Y)****(6,7)	150	44.0	DRILL #46	REMOVE
YHC092E**(M,Y)	150	44.0	DRILL #46	NO CHANGE
YHC092F**(M,Y)	150	44.0	DRILL #46	REMOVE

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Table 3. Orifice size selection (continued)

Unit	Gas Input		LP Gas Orifice Size	Air Orifice Plate (Part No. Last 4 Digits)
	Rating MBh	kW		
YSC102E/F**(M,Y)	150	44.0	DRILL #46	NO CHANGE
YSC102H**(M,Y)****(0,1)	150	44.0	DRILL #46	NO CHANGE
YSC102H**(M,Y)****(6,7)	150	44.0	DRILL #46	REMOVE
DHC102H**(M,Y)	150	44.0	DRILL #46	REMOVE
YHC102E**(M,Y)	150	44.0	DRILL #46	REMOVE
YZC102F**(M,Y)	150	44.0	DRILL #46	REMOVE
YSC120E/F/H**(L,X)	150	44.0	DRILL #46	REMOVE
DHC120H**(L,X)	150	44.0	DRILL #46	REMOVE
YHC120E**(L,X)	150	44.0	DRILL #46	REMOVE
YZC120F**(L,X)	150	44.0	DRILL #46	REMOVE
YSC090E/F/H**(H,Z)	200	58.6	DRILL #46	0510
DHC092H**(H,Z)	200	58.6	DRILL #46	REMOVE
YZC090F**(H,Z)	200	58.6	DRILL #49	REMOVE
YSC092E/F**(H,Z)	200	58.6	DRILL #46	NO CHANGE
YSC092H**(H,Z)****(0,1)	200	58.6	DRILL #46	NO CHANGE
YSC092H**(H,Z)****(6,7)	200	58.6	DRILL #49	REMOVE
YHC092E**(H,Z)	200	58.6	DRILL #46	0510
YHC092F**(H,Z)	200	58.6	DRILL #46	2410
YSC102E/F**(H,Z)	200	58.6	DRILL #46	NO CHANGE
YSC102H**(H,Z)****(0,1)	200	58.6	DRILL #46	NO CHANGE
YSC102H**(H,Z)****(6,7)	200	58.6	DRILL #49	REMOVE
DHC102H**(H,Z)	200	58.6	DRILL #49	REMOVE
YHC102E**(H,Z)	200	58.6	DRILL #46	0510

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Table 3. Orifice size selection (continued)

Unit	Gas Input		LP Gas Orifice Size	Air Orifice Plate (Part No. Last 4 Digits)
	Rating MBh	kW		
YHC102F**(H,Z)	200	58.6	DRILL #46	2410
YZC102F**(H,Z)	200	58.6	DRILL #49	REMOVE
YSC120E/F/H**(M,Y)	200	58.6	DRILL #46	NO CHANGE
DHC120H**(M,Y)	200	58.6	DRILL #46	REMOVE
YHC120E**(M,Y)	200	58.6	DRILL #46	REMOVE
YZC120F**(M,Y)	200	58.6	DRILL #46	REMOVE
YSC120H**(H,Z)	235	68.9	DRILL #47	REMOVE
YSC120E/F/H**(H,Z)	250	73.3	DRILL #46	REMOVE[(a)]
DHC120H**(H,Z)	250	73.3	DRILL #46	REMOVE
YHC120E/F**(H,Z)	250	73.3	DRILL #46	REMOVE
YZC120F**(H,Z)	250	73.3	DRILL #46	REMOVE
YSC072ED*H	167	48.9	DRILL #49	NO CHANGE
YSC090ED*H	167	48.9	DRILL #49	NO CHANGE
YSC102ED*L	125	36.6	DRILL #49	NO CHANGE
YSC102ED*H	208	60.9	DRILL #49	NO CHANGE
YSC120ED*L	125	36.6	DRILL #49	NO CHANGE
YSC120ED*H	208	60.9	DRILL #49	NO CHANGE

(a) YSC120E/F/H**(H,Z) with 250MBh heat input requires additional removal of heat exchange baffles if installed in the heat exchanger tubes behind the burner bracket assembly.

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Installation

Conversion Procedure

Note: *Conversion should be made prior to installation of equipment at the job site.*

1. Place the thermostat selector switch to the OFF position.

⚠ WARNING

Hazardous Voltage w/Capacitors!

Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury. Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. Verify with an appropriate voltmeter that all capacitors have discharged.

For additional information regarding the safe discharge of capacitors, see PROD-SVB06A-EN

2. Open the unit electrical disconnect switch.
3. Shut off gas supply to the unit
4. Remove gas valve access panel.
5. Break pipe union.
6. Remove pipe from street elbow.
7. Remove four (4) screws from manifold bracket. See Figure 1.

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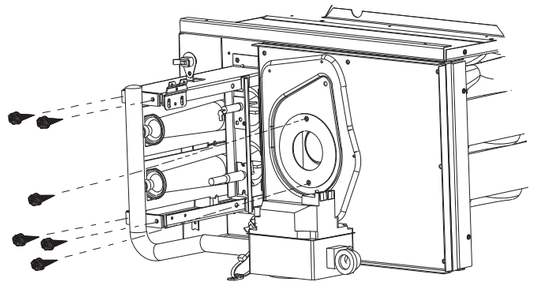
Figure 1. Remove screws from manifold bracket



8. Remove natural gas orifices from manifold. See Figure 2.

Figure 2. Remove gas orifices

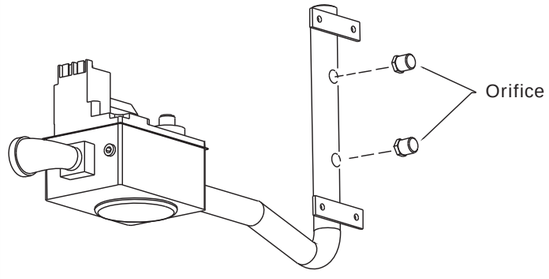


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Figure 3. Remove burner bracket assembly

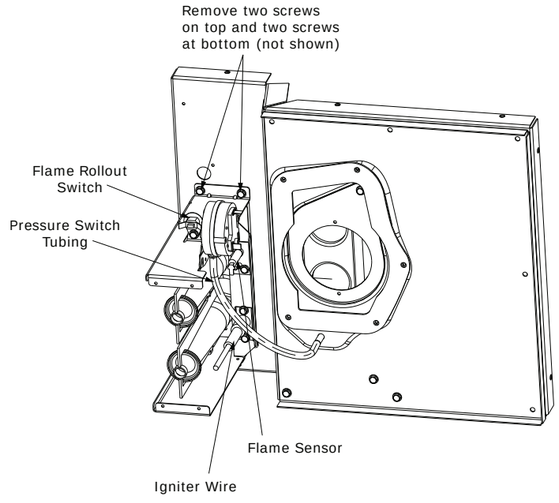

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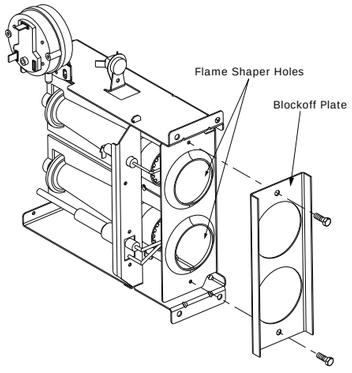
Figure 4. Install flame shaper blockoff plate



9. Install LP orifices, specified in Table 3, by engaging threads of manifold and tightening orifice three and one half turns.
10. Disconnect the wiring leads attached to the flame rollout switch, flame sensor, igniter wire, and the tubing connected to the pressure switch. See Figure 3.
11. Remove the four screws securing the burner bracket assembly to the heat exchanger vestibule.
12. Install the appropriate size flame shaper block off plate with two sheet metal screws provided. If there are no attachment holes in the burner bracket carefully secure utilizing the two self drilling screws. See Figure 4.
13. Reinstall burner bracket assembly with block off plate, reconnect all wiring and tubing connections, and reinstall manifold bracket with the LP orifices.

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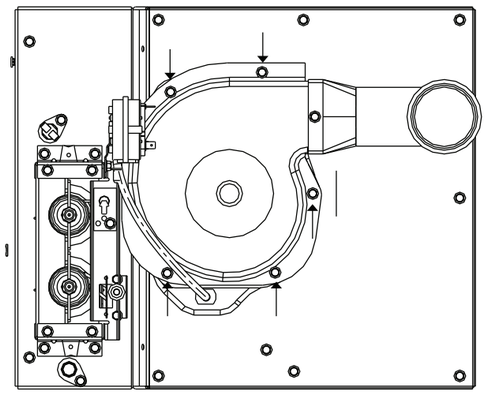
14. If the unit model as listed in Table 3 requires a change to the air orifice plate or no orifice plate, perform Step 15 through Step 20; otherwise, proceed to Step 21.
15. Disconnect the inducer motor wiring harness.
16. Remove the five (5) screws securing the inducer motor assembly (see Figure 5).
17. Remove the inducer motor assembly.
18. Remove the two (2) screws securing the air orifice plate (see Figure 1).
19. Remove or install the air orifice plate if required, as noted in Table 3.
20. Installation is the reverse of Step 15 through Step 18.

Figure 5. Remove 5 screws securing inducer motor assembly



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21. For the YSC072ED, YSC090ED, YSC102ED, and YSC120ED models, no gas valve or spring change is required. Proceed to Step 27.
22. Remove HIGH regulator brass cap.
23. Remove regulator adjustment screw (beneath the cover screw).
24. Remove the Natural Gas regulator spring from regulator sleeve.
25. Insert the LP regulator spring (provided in the included spring kit) into the regulator sleeve.
26. Replace the regulator adjustment screw.
27. Reverse the disassembly procedure and secure all components in their respective position.
28. If reconnecting wiring, refer to Figure 6 and Figure 7.

Table 4. Gas valve wiring[a]

Gas valve terminal #	C	MP	HI
ReliaTel™ control wire #	101	105	123
Electromechanical control wire #	179 or W32	105	123
Novar control wire #		W26	

(a) This table applies to both Figure 6 and Figure 7.

Figure 6. 36H gas valve layout

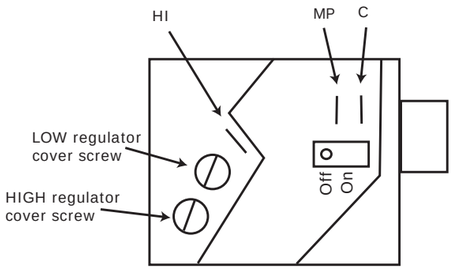

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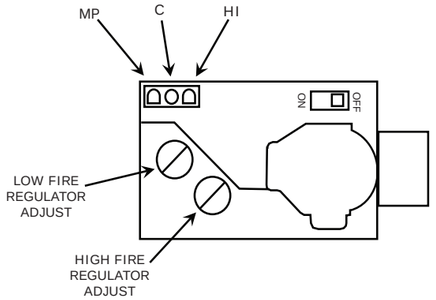
Figure 7. 36G two-stage gas valve layout



29. Attach the nameplate and label supplied with the conversion kit below the unit nameplate.
30. Check all piping joints and electrical connections for tightness.
31. Turn on the gas supply to unit.
32. Measure the supply gas pressure. If the pressure exceeds 14 inches water column (34.8 mbar), reset the regulator at the gas supply.
33. Restore unit power.
34. Place the thermostat selector switch to the HEAT position and adjust the setpoint indicator to its highest setting. The burners should light.
35. If required, adjust the unit high regulator manifold pressure to 10 inches water column (24.9 mbar) per the rating plate. Adjust the unit low regulator manifold pressure to 4.9 inches water column (12.2 mbar).

Note: *A spring change is not required on the low regulator for LP.*

Install the access panel.

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