



HSA5

QuietComfort™ DXC 1600

Product Specifications

14/15 SEER SINGLE STAGE AIR CONDITIONER WITH ION® COMMUNICATING SYSTEM

1½ THRU 5 TONS SPLIT SYSTEM — 208 / 230 Volt, 1-phase, 60 Hz

REFRIGERATION CIRCUIT

- Copeland Scroll® compressors on select models
- Filter-drier supplied with every unit for field installation
- External high and low refrigerant service ports
- Copper tube / aluminum fin coil

PERFORMANCE

- Communicating, self-configuring operation when used with Ion® System Control (SYST0101CW)
- Outdoor temperature sensor factory installed
- Compressor sound blanket standard
- Isolation compressor grommets

EASY TO INSTALL AND SERVICE

- Text based diagnostics with Ion® System Control
- Easy access service valves on all models
- Innovative control box design
- High and low pressure switches
- Only two screws to access control panel
- Factory charged with R-410A refrigerant

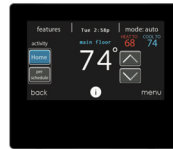
BUILT TO LAST

- High gloss, baked-on powder coat finish over galv. steel
- Post-painted (black) coil fins
- Coated, weather-resistant cabinet screws
- Coated inlet grille with 3/8" (10mm) spacing for extra protection
- Corner posts for extra strength and style

WARRANTY*

- 3-year No Hassle Replacement™ limited warranty
- 5-year parts limited warranty (include compressor & coil)
 - With timely registration, an additional 5-year parts limited warranty (including compressor and coil)

* Applies to original purchaser/homeowner, some limitations may apply. See Warranty certificate for complete details.



SYST0101CW
Recommended
(sold separately)

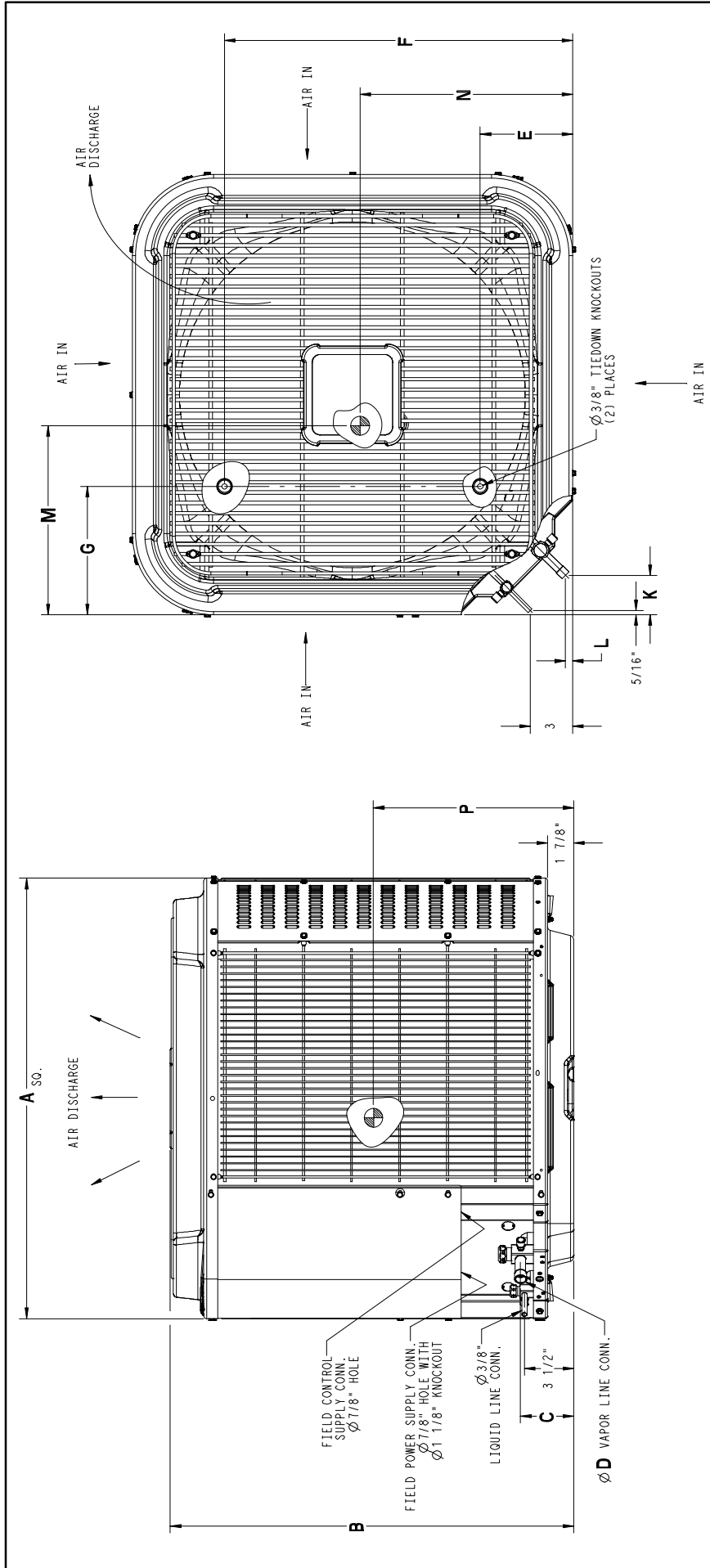


Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

Model Number	Size (tons)	Nominal Btu/hr	Min. Circuit Ampacity	Max. Fuse or Breaker	Operating Dimensions depth x width x height in. (mm)	Ship / Operating Weight lbs. (kg)
HSA518GKA	1½	18,000	11.8	20	31-3/16 x 31-3/16 x 28-11/16 (792.5 x 792.5 x 729.3)	213 / 176 (97 / 80)
HSA524GKA	2	24,000	17.6	25	31-3/16 x 31-3/16 x 28-11/16 (792.5 x 792.5 x 729.3)	213 / 176 (97 / 80)
HSA530GKA	2½	30,000	16.8	25	31-3/16 x 31-3/16 x 32-1/8 (792.5 x 792.5 x 815.6)	199 / 165 (90 / 75)
HSA536GKA	3	36,000	18.1	30	31-3/16 x 31-3/16 x 35-1/2 (792.5 x 792.5 x 902.0)	211 / 177 (96 / 80)
HSA542GKA	3½	42,000	22.3	35	31-3/16 x 31-3/16 x 28-11/16 (792.5 x 792.5 x 729.3)	237 / 203 (108 / 92)
HSA548GKA	4	48,000	20.8	35	31-3/16 x 31-3/16 x 28-11/16 (792.5 x 792.5 x 729.3)	238 / 204 (108 / 93)
HSA560GKA	5	60,000	27.5	40	31-3/16 x 31-3/16 x 32-1/8 (792.5 x 792.5 x 815.6)	257 / 225 (117 / 102)

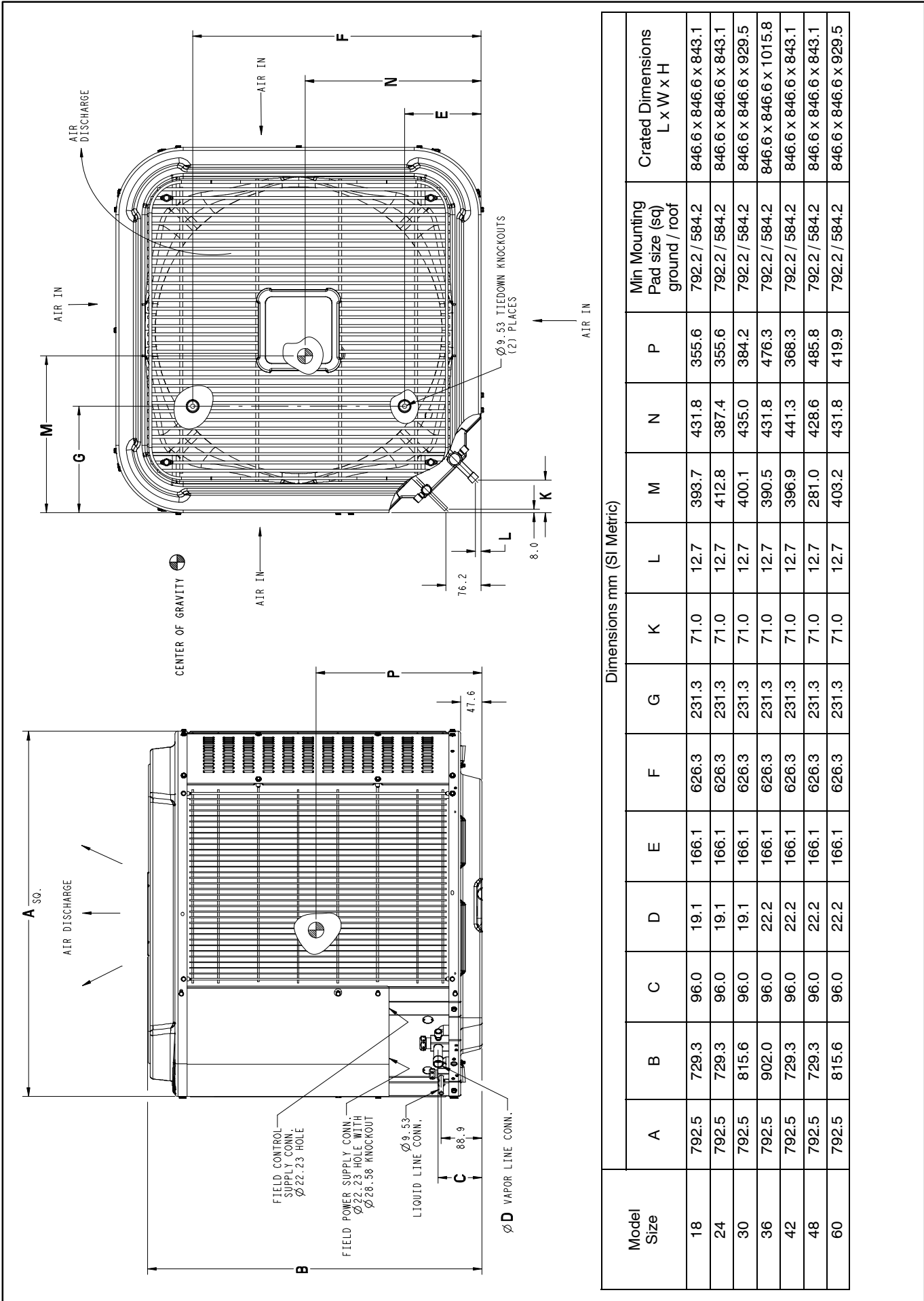
OUTDOOR UNIT MODEL NUMBER IDENTIFICATION GUIDE (single phase)											
Digit Position:	1	2	3	4	5, 6	7	8	9	10	11	12
Example Part Number:	H	S	A	5	18	G	K	A	1	0	1
H = Heil Mainline	BRANDING										
S = Single Stage Communicating		KEY CHARACTERISTIC									
A = Air Conditioner			TYPE								
H = Heat Pump											
3 = 13 SEER 4 = 14 SEER 5 = 15 SEER 6 = 16 SEER 7 = 17 SEER 8 = 18 SEER			NOMINAL EFFICIENCY								
18 = 18,000 BTUH = 1½ tons 24 = 24,000 BTUH = 2 tons 30 = 30,000 BTUH = 2½ tons 36 = 36,000 BTUH = 3 tons 42 = 42,000 BTUH = 3½ tons 48 = 48,000 BTUH = 4 tons 60 = 60,000 BTUH = 5 tons					NOMINAL CAPACITY						
A = Standard Grille G = Coil Guard Grille C = Coastal						FEATURES					
K = 208/230-1-60							VOLTAGE				
Sales Code											
Engineering Revision											
Extra Digit											
Extra Digit											

ACCESSORIES PART NUMBER IDENTIFICATION GUIDE									
Digit Position:	1	2	3	4	5	6, 7	8, 9	10, 11	
Example Part Number:	N	A	S	A	0	01	01	CH	
N = Non-Branded	PRODUCT GROUP								
A = Accessory			KIT USAGE						
S = Split System (AC & HP)					MAJOR SERIES				
A = Original B = 2nd Generation 0 = Generic or Not Applicable 4 = R-410A						REFRIGERANT			
Product Identifier Number									
Package Quantity									
Type of Kit (Example: CH = Crankcase Heater)									



Dimensions Inches (English)

Model Size	A	B	C	D	E	F	G	K	L	M	N	P	Min Mounting Pad size (sq) ground / roof	Crated Dimensions L x W x H
18	31-3/16	28-11/16	3-3/4	3/4	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15-1/2	17	14	31-3/16 / 23	33-5/16 x 33-5/16 x 33-3/16
24	31-3/16	28-11/16	3-3/4	3/4	6-9/16	24-11/16	9-1/8	2-13/16	1/2	16-1/4	15-1/4	14	31-3/16 / 23	33-5/16 x 33-5/16 x 33-3/16
30	31-3/16	32-1/8	3-3/4	3/4	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15-3/4	17-1/8	15-1/8	31-3/16 / 23	33-5/16 x 33-5/16 x 36-5/8
36	31-3/16	35-1/2	3-3/4	7/8	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15-3/8	17	18-3/4	31-3/16 / 23	33-5/16 x 33-5/16 x 40
42	31-3/16	28-11/16	3-3/4	7/8	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15-5/8	17-3/8	14-1/2	31-3/16 / 23	33-5/16 x 33-5/16 x 33-3/16
48	31-3/16	28-11/16	3-3/4	7/8	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15	16-7/8	19-1/8	31-3/16 / 23	33-5/16 x 33-5/16 x 33-3/16
60	31-3/16	32-1/8	3-3/4	7/8	6-9/16	24-11/16	9-1/8	2-13/16	1/2	15-7/8	17	16-1/2	31-3/16 / 23	33-5/16 x 33-5/16 x 36-5/8



Dimensions mm (SI Metric)

Model Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Min Mounting Pad size (sq) ground / roof	Crated Dimensions L x W x H
18	792.5	729.3	96.0	19.1	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	393.7	431.8	355.6	792.2 / 584.2	846.6 x 846.6 x 843.1	
24	792.5	729.3	96.0	19.1	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	412.8	387.4	355.6	792.2 / 584.2	846.6 x 846.6 x 843.1	
30	792.5	815.6	96.0	19.1	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	400.1	435.0	384.2	792.2 / 584.2	846.6 x 846.6 x 929.5	
36	792.5	902.0	96.0	22.2	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	390.5	431.8	476.3	792.2 / 584.2	846.6 x 846.6 x 1015.8	
42	792.5	729.3	96.0	22.2	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	396.9	441.3	368.3	792.2 / 584.2	846.6 x 846.6 x 843.1	
48	792.5	729.3	96.0	22.2	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	281.0	428.6	485.8	792.2 / 584.2	846.6 x 846.6 x 843.1	
60	792.5	815.6	96.0	22.2	166.1	626.3	231.3	231.3	231.3	231.3	71.0	12.7	403.2	431.8	419.9	792.2 / 584.2	846.6 x 846.6 x 929.5	

PHYSICAL DATA (1-phase)							
Model Size	18	24	30	36	42	48	60
Nominal Cooling Capacity (BTU/hr)	18,000	24,000	30,000	36,000	42,000	48,000	60,000
Nominal SEER	14.0						
Compressor Type	Scroll						
REFRIGERANT	R-410A						
Charge -lb(kg)	5.25(3.28)	6.00(2.72)	5.67(2.57)	6.40(2.90)	7.46(3.38)	8.31(3.77)	9.39(4.26)
Required Subcooling °F (°C)	10 (5.5)	10 (5.5)	12(6.6)	11 (6)	11 (6)	11 (6)	13 (7.2)
COND FAN	Propeller Type, Direct Drive						
Air Discharge	Vertical						
Air Qty (CFM)	1600	1881	2614	3365	3700	3454	3700
Motor HP	1/12	1/10	1/10	1/5	1/4	1/4	1/4
Motor RPM	1100	1100	1100	1100	1110	1110	1100
COND COIL							
Face Area (Sq ft)	8.4	9.9	17.24	20	21.6	15.1	17.25
Fins per In.	25	25	25	25	25	20	25
Rows	1	1	1	1.75	1	2	2
Circuits	3	4	4	6	7	6	8
VALVE CONNECT. (In. ID)							
Vapor - in. (mm)	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)	7/8 (22)	7/8 (22)	7/8 (22)
Liquid - in. (mm)	3/8 (10)						
REFRIGERANT TUBES* (In. OD)							
Rated Vapor in. (mm)	3/4 (19)	3/4 (19)	3/4 (19)	7/8 (22)	7/8 (22)	7/8 (22)	1 1/8 (29)
Rated Liquid in. (mm)	3/8 (10)						

* Units are rated with 25 ft (7.6 m) of lineset length. See Vapor Line Sizing and Cooling Capacity Loss Table when using other sizes of lineset. NOTE: See unit Installation Instructions for proper installation.

ELECTRICAL DATA (208/230-1-60, voltage range 197V - 253V)							
Model Size	18	24	30	36	42	48	60
Minimum Circuit Ampacity - MCA (amps)	11.8	17.6	16.8	18.1	22.3	20.8	27.5
Maximum OverCurrent Protective device - MOCP (amps)	20	25	25	30	35	35	40
Compressor RLA (Rated Load Amps)	9	13.5	12.8	13.6	16.7	15.5	20.8
LRA (Locked Rotor Amps)	48.0	58.3	67.8	79.0	109.0	105.5	127.1
Fan Motor FLA (Full Load Amps)	.50	.70	.75	1.10	1.40	1.40	1.52

A-Weighted Sound Power Level - With Sound Jacket								
Unit Size	Standard Rating (dBA)	TYPICAL OCTAVE BAND SPECTRUM (without tone adjustment)						
		125	250	500	1000	2000	4000	8000
18	71	44	51	58	64	58	53	43
24	69	43	51	59	60	56	52	43
30	73	48	56	63	64	60	58	53
36	72	49	55	61	63	60	57	53
42	74	53	65	64	63	61	57	51
48	76	55	63	64	65	61	58	49
60	73	54	59	63	63	60	56	48

Note: Tested in accordance with AHRI Standard 270-2008 (not listed in AHRI).

REFRIGERANT PIPING LENGTH LIMITATIONS

Liquid Line Sizing and Maximum Total Equivalent Lengths† for Cooling Only Systems with R-410A Refrigerant:

The maximum allowable length of a residential split system depends on the liquid line diameter and vertical separation between indoor and outdoor units.

See Table below for liquid line sizing and maximum lengths :

Maximum Total Equivalent Length Outdoor Unit BELOW Indoor Unit

Size	Liquid Line Connection	Liquid Line Diam. w/ TXV	AC with R-410A Refrigerant Maximum Total Equivalent Length†: Outdoor unit BELOW Indoor Vertical Separation ft (m)								
			0-5 (0-1.5)	6-10 (1.8-3.0)	11-20 (3.4-6.1)	21-30 (6.4-9.1)	31-40 (9.4-12.2)	41-50 (12.5-15.2)	51-60 (15.5-18.3)	61-70 (18.6-21.3)	71-80 (21.6-24.4)
18 AC with R-410A	3/8	1/4	150	150	125	100	100	75	--	--	--
		5/16	250*	250*	250*	250*	250*	250*	250*	225*	150
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
24 AC with R-410A	3/8	1/4	75	75	75	50	50	--	--	--	--
		5/16	250*	250*	250*	250*	250*	225*	175	125	100
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
30 AC with R-410A	3/8	1/4	30	--	--	--	--	--	--	--	--
		5/16	175	225*	200	175	125	100	75	--	--
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
36 AC with R-410A	3/8	5/16	175	150	150	100	100	100	75	--	--
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
42 AC with R-410A	3/8	5/16	125	100	100	75	75	50	--	--	--
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	150
48 AC with R-410A	3/8	3/8	250*	250*	250*	250*	250*	250*	230	160	--
60 AC with R-410A	3/8	3/8	250*	250*	250*	225*	190	150	110	--	--

* Maximum actual length not to exceed 200 ft (61 m)

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

-- = outside acceptable range

Maximum Total Equivalent Length Outdoor Unit ABOVE Indoor Unit

Size	Liquid Line Connection	Liquid Line Diam. w/ TXV	AC with R-410A Refrigerant Maximum Total Equivalent Length†: Outdoor unit ABOVE Indoor Vertical Separation ft (m)								
			25 (7.6)	26-50 (7.9-15.2)	51-75 (15.5-22.9)	76-100 (23.2-30.5)	101-125 (30.8-38.1)	126-150 (38.4-45.7)	151-175 (46.0-53.3)	176-200 (53.6-61.0)	
18 AC with R-410A	3/8	1/4	175	250*	250*	250*	250*	250*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
24 AC with R-410A	3/8	1/4	100	125	175	200	225*	250*	250*	250*	250*
		5/16	250*	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
30 AC with R-410A	3/8	1/4	30	--	--	--	--	--	--	--	--
		5/16	250*	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
36 AC with R-410A	3/8	5/16	225*	250*	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
42 AC with R-410A	3/8	5/16	175	200	250*	250*	250*	250*	250*	250*	250*
		3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
48 AC with R-410A	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*
60 AC with R-410A	3/8	3/8	250*	250*	250*	250*	250*	250*	250*	250*	250*

* Maximum actual length not to exceed 200 ft (61 m)

† Total equivalent length accounts for losses due to elbows or fitting. See the Long Line Guideline for details.

-- = outside acceptable range

CHARGING SUBCOOLING (TXV-TYPE EXPANSION DEVICE)

UNIT SIZE-SERIES	REQUIRED SUBCOOLING °F (°C)
18	10 (5.5)
24	10 (5.5)
30	12 (6.6)
36	11 (6.0)
42	11 (6.0)
48	11 (6.0)
60	13 (7.2)

REFRIGERANT CHARGE ADJUSTMENTS

Liquid Line Size	R-410A Charge oz/ft (g/m)
3/8	0.60 (17.74) (Factory charge for lineset = 9 oz / 266.16 g)
5/16	0.40 (11.83)
1/4	0.27 (7.98)

Units are factory charged for 15 ft (4.6 m) of 3/8" liquid line. The factory charge for 3/8" lineset 9 oz. When using other length or diameter liquid lines, charge adjustments are required per the chart above.

Charging Formula:

[(Lineset oz/ft x total length) – (factory charge for lineset)] = charge adjustment

Example 1: System has 15 ft of line set using existing 1/4" liquid line. What charge adjustment is required?

Formula: (.27 oz/ft x 15ft) – (9 oz) = (-4.95) oz.

Net result is to remove 4.95 oz of refrigerant from the system

Example 2: System has 45 ft of existing 5/16" liquid line. What is the charge adjustment?

Formula: (.40 oz/ft. x 45ft) – (9 oz.) = 9 oz.

Net result is to add 9 oz of refrigerant to the system

LONG LINE APPLICATIONS

An application is considered Long Line, when the refrigerant level in the system requires the use of accessories to maintain acceptable refrigerant management for systems reliability. See Accessory Usage Guideline table for required accessories. Defining a system as Long Line depends on the liquid line diameter, actual length of the tubing, and vertical separation between the indoor and outdoor units.

For Air Conditioner systems, the charts below show when an application requires a TXV and long-line accessories due to lineset length.

**AC WITH R-410A REFRIGERANT LONG LINE DESCRIPTION ft (m)
Beyond these lengths, a TXV is required**

Liquid Line Size	Units On Same Level	Outdoor Below Indoor	Outdoor Above Indoor
1/4 + TXV	No accessories needed within allowed lengths	No accessories needed within allowed lengths	175 (53.3)
5/16 + TXV	120 (36.6)	50 (15.2) vertical or 120 (36.6) total	120 (36.6)
3/8 + TXV	80 (24.4)	35 (10.7) vertical or 80 (24.4) total	80 (24.4)

Note: See Long Line Guideline for details

VAPOR LINE SIZING AND COOLING CAPACITY LOSS

Acceptable vapor line diameters provide adequate oil return to the compressor while avoiding excessive capacity loss. The suction line diameters shown in the chart below are acceptable for AC systems with R-410A refrigerant:

Vapor Line Sizing and Cooling Capacity Losses — R-410A Refrigerant 1-Stage Air Conditioner Applications

Unit Nominal Size (Btuh)	Maximum Liquid Line Diameters (In. OD)	Vapor Line Diameters (In. OD)	Cooling Capacity Loss (%) Total Equivalent Line Length ft. (m)								
			26-50 (7.9-15.2)	51-80 (15.5-24.4)	81-100 (24.7-30.5)	101-125 (30.8-38.1)	126-150 (38.4-45.7)	151-175 (46.0-53.3)	176-200 (53.6-61.0)	201-225 (61.3-68.6)	226-250 (68.9-76.2)
018 1 Stage AC with R-410A	3/8	1/2	1	2	3	5	6	7	8	9	11
		5/8	0	1	1	1	2	2	2	3	3
		3/4	0	0	0	0	1	1	1	1	1
024 1 Stage AC with R-410A	3/8	5/8	0	1	2	2	3	3	4	5	5
		3/4	0	0	1	1	1	1	1	2	2
		7/8	0	0	0	0	0	1	1	1	1
030 1 Stage AC with R-410A	3/8	5/8	1	2	3	3	4	5	6	7	8
		3/4	0	0	1	1	1	2	2	2	3
		7/8	0	0	0	0	1	1	1	1	1
036 1 Stage AC with R-410A	3/8	5/8	1	2	4	5	6	8	9	10	12
		3/4	0	1	1	2	2	3	3	4	4
		7/8	0	0	0	1	1	1	1	2	2
042 1 Stage AC with R-410A	3/8	3/4	0	1	2	2	3	4	4	5	6
		7/8	0	0	1	1	1	2	2	2	3
		1 1/8	0	0	0	0	0	0	0	0	0
048 1 Stage AC with R-410A	3/8	3/4	0	1	2	3	4	5	5	6	7
		7/8	0	0	1	1	2	2	2	3	3
		1 1/8	0	0	0	0	0	0	0	1	1
060, 061 1 Stage AC with R-410A	3/8	3/4	1	2	4	5	6	7	9	10	11
		7/8	0	1	2	2	3	4	4	5	5
		1 1/8	0	0	0	1	1	1	1	1	1

Applications in this area may be long line and may have height restrictions. See the Residential Piping and Long Line Guideline.

TESTED AHRI COMBINATION RATINGS*

NOTE: Ratings contained in this document are subject to change at any time.

For AHRI ratings certificates, please refer to the AHRI directory. www.ahridirectory.org

Additional ratings and system combinations can be accessed via the Heil database:

<http://www.icpeqp.com/AHRIratings/ratings.aspx?Brand=Heil>

Or scan this QR code:



Unit Size	Indoor Model	AHRI Standard Ratings					
		Cooling 95° F (35°C)					
		Capacity	Factory Enhancement	SEER			EER
Standard	W/ Field TDR			W/ Field TXV			
HSA518GKA	*EN(A,D)4X19*17**	18,800	TXV		14		12.2
HSA524GKA	*EN(A,D)4X31*17**	23,600	TXV		14		12.2
HSA530GKA	EA*4X37L21A	29,600	TXV		14		12.2
HSA536GKA	EA*4X37L21A	34,600	TXV		14		12.2
HSA542GKA	EA*4X43L21A	40,000	TXV		14		11.7
HSA548GKA	EA*4X61L24A	45,000	TXV		14		11.7
HSA560GKA	EA*4X60L24A	56,500	TXV		14		11.7

† For coils not listed with a matching furnace or blower, coil rating applies with any indoor blower device.

ACCESSORY USAGE GUIDELINES		
Accessory	REQUIRED FOR LOW-AMBIENT APPLICATIONS {Below 55°F (13°C)}	REQUIRED FOR LONG LINE APPLICATIONS*
Crankcase Heater	Yes	Yes
Evaporator Freeze Thermostat	Yes	No
Winter Start Control	Yes	No
Hard Start Kit (Capacitor & Relay)	Yes	Yes
Low Ambient Kit (Pressure Switch)	Yes	No
Support Feet, 4" (102mm) tall	Recommended	No
TXV *	Yes	Yes

* .TXV required beyond 20 ft (6.1 m) vertical separation, or 50 ft (15.2 m) total length.

ACCESSORIES		
Part Number	Description	Used On Model Size
NASA003CH	Crankcase Heater for Scroll Compressor (208/230 V)	24, 30, 36
NASA001CH	Crankcase Heater for Scroll Compressor (208/230 V)	42
NASA00501CH	Crankcase Heater for Scroll Compressor (208/230 V)	48, 60
NASA001SC	Start Component – PTC Device	ALL
NASA00201FS	Evaporator Freeze Thermostat	ALL
NASA401LS	Liquid Line Solenoid Valve, R-410A	ALL
NASA001TD	Time Delay Relay, Indoor Blower	ALL
NASA001WS	Winter Start Control	ALL
NASA001AC	Anti-Cycle Timer (5 minute delay)	ALL
NASA014SC	Hard Start Kit (Capacitor & Relay)	ALL
NASA401LA	Low Ambient Kit (Pressure Switch), R-410A	ALL
NASA00201SF	Support Feet, 4" (102mm) tall, 5 included	ALL
NAEA40501TX	TXV Kit, R-410A – for use with copper or tin fan coils	18, 24, 30
NAEA40601TX	TXV Kit, R-410A – for use with copper or tin fan coils	36, 42
NAEA40701TX	TXV Kit, R-410A – for use with copper or tin fan coils	48, 60
NAEB40501TX	TXV Kit, R-410A – for use with aluminum fan coils	18, 24, 30
NAEB40601TX	TXV Kit, R-410A – for use with aluminum fan coils	36,
NAEB40701TX	TXV Kit, R-410A – for use with aluminum fan coils	42, 48, 60
SYST0101CW	Ion® System Control	ALL

