



AK² Series Compressor

Reference Guide
Commercial Refrigeration Applications

The AK² logo is prominently displayed in the center of the image. It features the letters "AK" in a bold, sans-serif font, followed by a superscript "2". A large, white, curved swoosh arches over the letters, starting from the left and ending at the right, framing the text.

Cooling For a Better Tomorrow™

www.tecumseh.com

AK² SERIES COMPRESSOR



ECO-FRIENDLY

AK² is optimized for use with eco-friendly refrigerant R290 (Propane), plus newly released U.S. EPA SNAP approved refrigerants R513A, R452A, R448A and R449A. Traditional refrigerants R134a and R404A are also supported by the AK².



PERFORMANCE

New valve plate, muffler and motor designs result in improved compressor efficiency.



PROVEN RELIABILITY

Leverages robust design attributes developed from decades of commercial refrigeration experience with this expansion and update of the AK product family including larger bearing surfaces.



SERVICE AND SUPPORT

Backed by Tecumseh's network of knowledgeable applications engineers, test labs and support personnel.



LOW NOISE

New suction muffler and internal suspension system as well as a new rounded housing combine to deliver significant improvements in sound quality.

AK² COMMERCIAL REFRIGERATION “BEST IN CLASS”

The AK² borrows its name from Tecumseh's popular AK series compressor and there are a multitude of improvements.

From the acoustically shaped housing to the refrigerant handling system and the mechanical pump kit and motor, the AK² has been designed to deliver high performance without sacrificing Tecumseh's industry known reputation for reliability. While increasing bearing surfaces AK² R290 compressor models deliver efficiencies as high as 10.5, 7.1 and 5.3 EER respectively in the expanded High/Commercial evaporating range and Low Temperature conditions. Tecumseh's new AK² is one of the quietest commercial refrigeration compressors produced to-date with sound power levels as low as 50 dBA.



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TYPICAL APPLICATIONS

The AK² has a H/CBP expanded evaporating temperature range from +5°F to +59°F (-15°C to +15°C). Models also available in LBP temperature from -40°F to +10°F (-40°C to -12°C).



AK² SERIES COMPRESSOR NOMENCLATURE

AK 4 482 U-XA3B

Compressor Series

Application Code

2 LBP
4 H/CBP

Rating Point (Evaporating Temperature)

LBP -10°F (-23.3°C)

CBP +20°F (-6.7°C)

HBP +45°F (+7.2°C)

Capacity (Btu/h)

First digit represents the number of digits in BTU capacity at ASHRAE conditions.

Last two digits represent the first two digits in the Rated Btu/h capacity. In this example, four (4) total digits with the first two (82) or 8,200 Btu/h capacity.

Capacitor Options

First Character (Run Capacitor)

- 1 Without Run Capacitor
- 2 Optional Run Capacitor
- 3 With Run Capacitor

Voltage Code

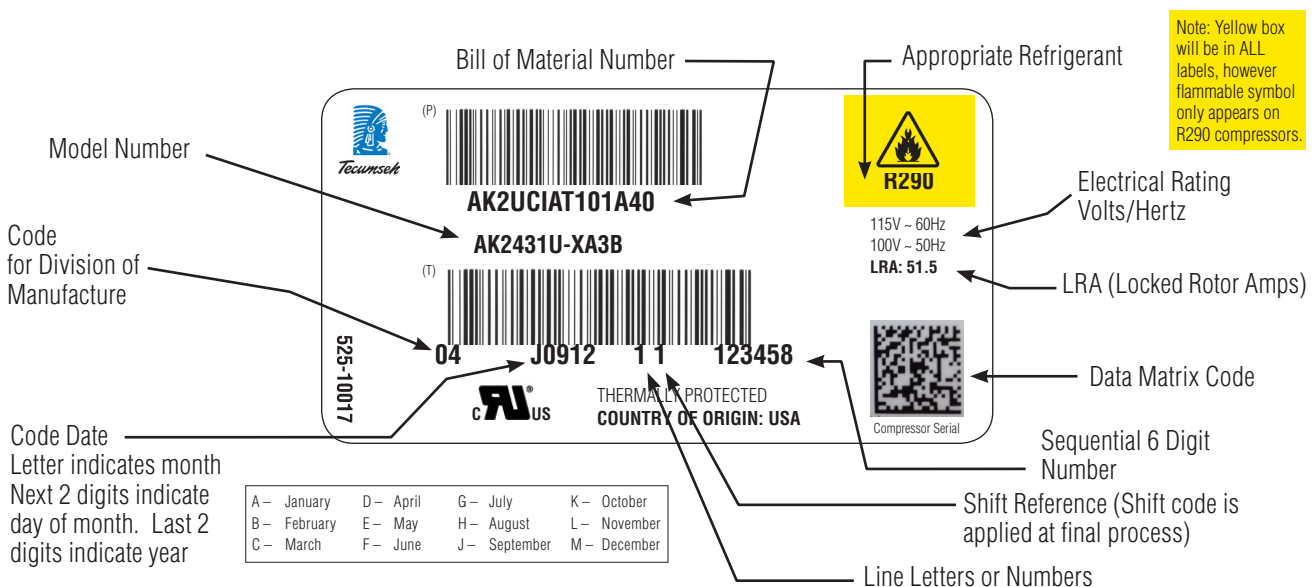
AA 115/60/1
XA 115/60/1
100/50/1
XD 208-230/60/1
200/50/1
XN 208-230/60/1
200-220/50/1
NA 208-230/60/1
FZ 220-240/50/1

Refrigerant Type

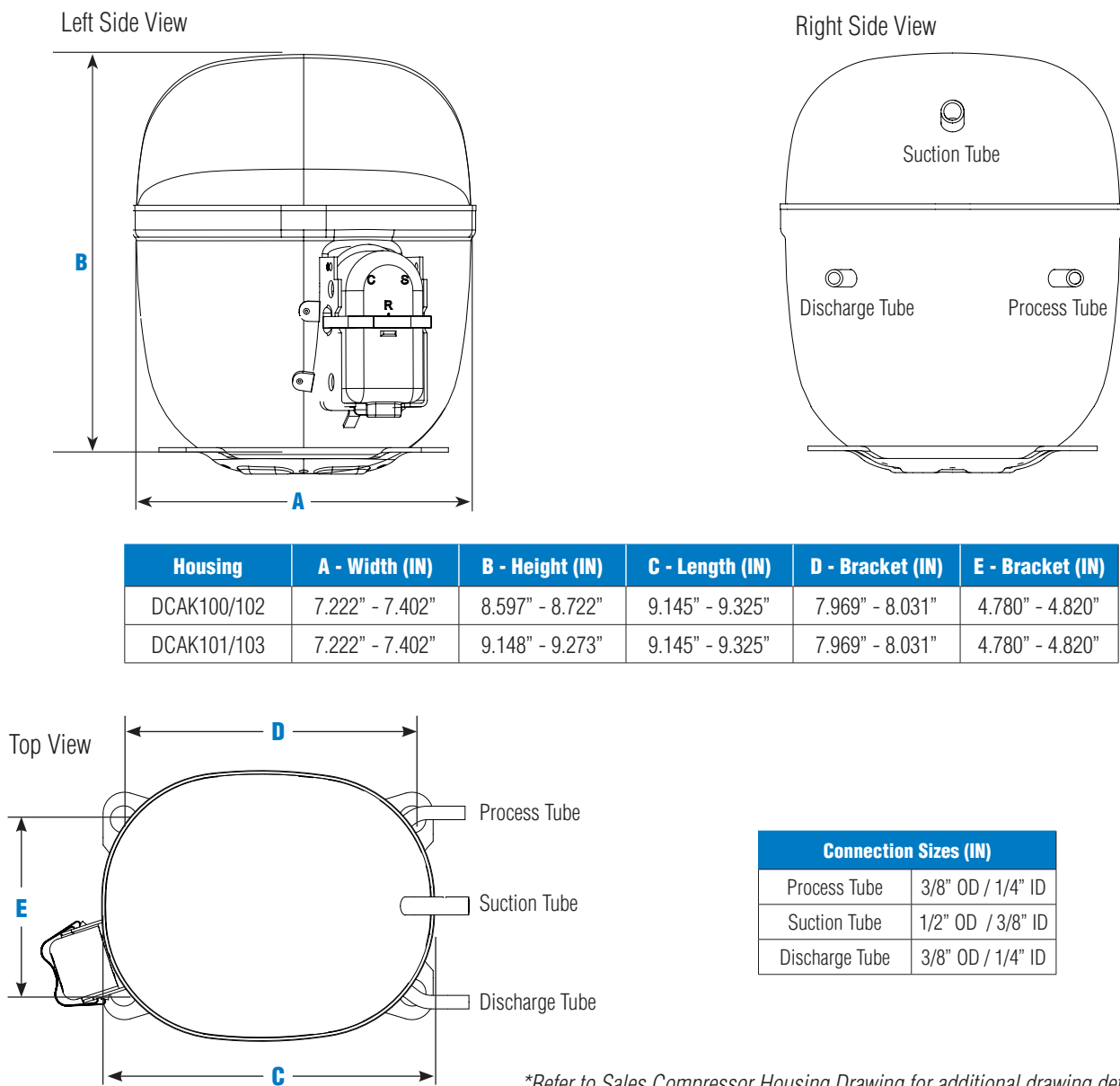
U R290
Y R134a/R513A
Z R404A/R452A/
R448A/R449A

AK² SERIES BOM NOMENCLATURE

A	K	4	U	A	1	A	T	1	0	0	A	4	0
Compressor Series	Application	Refrigerant	Displacement Code	Model Variant	Voltage	Country of Origin	Compressor Housing	Pack Type	Process Code				
	2 LBP 4 H/CBP	U R290 Y R134a/R513A Z R404A/R452A/R448A/R449A	Cu In / Cu Cm A 0.954 / 15.6 B 1.065 / 17.5 C 1.247 / 20.4 D 1.567 / 25.7	1 Current 2 Future 3 Future	A = XA, AA D = XD, XN, NA J = FZ	T Tupelo/USA	100 DCAK100 101 DCAK101 102 DCAK102 103 DCAK103	A Pallet Pack J Single Pack P Plant Use	By Region, See BOM structure				



AK² SERIES COMPRESSOR DIMENSIONS

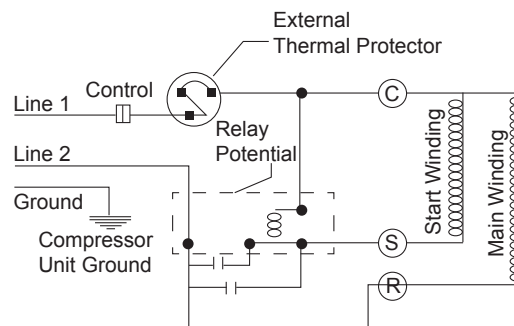


*Refer to Sales Compressor Housing Drawing for additional drawing details.

CAPACITOR START AND RUN (CSR) MOTOR TYPE*

This motor arrangement uses a start capacitor and a run capacitor in parallel with each other and in series with the motor start winding (see figure). This motor has a high starting torque, runs efficiently, and is used on many applications. A potential relay removes the start capacitor from the circuit after the motor is up to speed. On AK² the motor is protected by an external thermal protector.

*Refer to DEAK1 Drawing for specific electrical hookup and wiring diagram information



PERFORMANCE SPECIFICATION H/CBP

HBP/CBP 5°F to +59°F or (-15° C to +15°C)																					
Model	Voltage	Disp (Cu In)	Refrig.	ASHRAE								AHRI								EN12900	
				45°F (7.2°C)				20°F (-6.7°C)				45°F (7.2°C)				20°F (-6.7°C)				41°F (5°C)	
				Capacity		Efficiency		Capacity		Efficiency		Capacity		Efficiency		Capacity		Efficiency		Capacity	Efficiency
				BTU/Hr	Watts	EER	COP	BTU/Hr	Watts	EER	COP	BTU/Hr	Watts	EER	COP	BTU/Hr	Watts	EER	COP	Watts	COP
R134a / R513A																					
AK4461Y-XA3B	115/60/1 100/50/1	0.954	R134a / R513A	6,145	1,799	9.13	2.67	3,077	901	6.20	1.82	5,844	1,711	8.72	2.55	2,983	873	6.00	1.76		
AK4461Y-FZ3B	220-240/50/1	0.954	R134a / R513A	5,440	1,593	10.28	3.01	2,619	767	6.80	1.99	5,090	1,490	9.71	2.84	2,511	735	6.50	1.90	1,372	2.80
AK4468Y-XA3B	115/60/1 100/50/1	1.065	R134a / R513A	6,750	1,976	9.15	2.68	3,500	1,025	6.50	1.90	6,500	1,903	8.70	2.55	3,221	943	5.80	1.70		
AK4481Y-XA3B	115/60/1 100/50/1	1.247	R134a / R513A	8,172	2,393	8.80	2.58	4,393	1,286	6.40	1.87	7,624	2,232	8.60	2.52	4,136	1,211	6.50	1.90		
AK4481Y-FZ3B	220-240/50/1	1.247	R134a / R513A	6,814	1,995	9.60	2.81	3,804	1,114	7.10	2.08	6,471	1,895	9.15	2.68	3,401	996	6.20	1.82	1,712	2.50
AK4481Y-XD3B	208-230/60/1 200/50/1	1.247	R134a / R513A	8,173	2,393	9.37	2.74	4,460	1,306	6.50	1.90	7,677	2,248	8.38	2.45	3,890	1,139	5.80	1.70		
AK4510Y-XA3B	115/60/1 100/50/1	1.567	R134a / R513A	10,371	3,037	8.91	2.61	5,330	1,561	5.91	1.73	9,830	2,878	8.41	2.46	5,018	1,469	6.00	1.76		
AK4510Y-NA3B	208-230/60/1	1.567	R134a / R513A	10,304	3,017	9.08	2.66	4,900	1,435	5.90	1.73	9,669	2,831	8.50	2.49	4,865	1,425	5.90	1.73		
R404A/R452A/R448A/R449A																					
AK4510Z-XA3B	115/60/1 100/50/1	0.954	R404A	9,871	2,890	8.55	2.50	5,389	1,578	5.60	1.64	8,812	2,580	7.41	2.17	4,839	1,417	5.30	1.55		
			R452A	9,841	2,882	8.75	2.56	5,365	1,571	5.95	1.74	9,094	2,663	8.10	2.37	4,818	1,411	5.63	1.65		
			R448A/R449A	9,776	2,863	9.22	2.70	5,412	1,585	6.42	1.88	9,162	2,683	8.65	2.53	4,860	1,423	6.08	1.78		
AK4510Z-FZ3B	220-240/50/1	0.954	R404A	8,244	2,414	9.30	2.72	4,814	1,410	6.55	1.92	7,513	2,200	8.47	2.48	4,323	1,266	6.20	1.82	1,946	2.50
			R452A	8,339	2,442	9.74	2.85	4,488	1,314	6.33	1.85	7,623	2,232	8.89	2.60	4,030	1,180	5.99	1.75	2,042	2.50
			R448A/R449A	8,191	2,399	10.00	2.93	4,466	1,308	6.66	1.95	7,693	2,253	9.36	2.74	4,011	1,174	6.30	1.84	2,310	3.10
AK4510Z-NA3C	208-230/60/1	0.954	R404A	10,073	2,949	9.35	2.74	6,198	1,815	7.08	2.07	9,280	2,717	8.50	2.49	5,565	1,629	6.70	1.96		
			R452A	9,947	2,913	9.45	2.77	5,357	1,569	6.29	1.84	9,240	2,706	8.75	2.56	4,811	1,409	5.95	1.74		
			R448A/R449A	9,872	2,890	9.91	2.90	5,581	1,634	6.97	2.04	9,323	2,730	9.31	2.73	5,011	1,467	6.60	1.93		
AK4511Z-XA3B	115/60/1 100/50/1	1.065	R404A	10,581	3,098	8.38	2.45	5,861	1,716	5.60	1.64	9,755	2,856	7.74	2.27	5,263	1,541	5.30	1.55		
			R452A	10,316	3,020	8.52	2.49	5,402	1,582	5.77	1.69	10,333	3,026	7.99	2.34	4,851	1,420	5.46	1.60		
			R448A/R449A	10,245	3,000	8.88	2.60	5,574	1,632	6.27	1.83	9,590	2,808	8.30	2.43	5,005	1,466	5.93	1.74		
AK4511Z-XD3B	208-230/60/1 200/50/1	1.065	R404A	11,323	3,315	8.85	2.59	6,017	1,762	5.71	1.67	10,467	3,065	8.18	2.40	5,403	1,582	5.40	1.58		
			R452A	11,123	3,257	9.01	2.64	5,922	1,734	5.91	1.73	10,306	3,018	8.36	2.45	5,318	1,557	5.59	1.64		
			R448A/R449A	10,916	3,196	9.21	2.70	5,948	1,742	6.23	1.83	10,447	3,059	8.81	2.58	5,341	1,564	5.90	1.73		
AK4513Z-XA3B	115/60/1 100/50/1	1.247	R404A	12,914	3,781	8.13	2.38	6,837	2,002	5.39	1.58	11,851	3,470	7.51	2.20	6,139	1,798	5.10	1.49		
			R452A	12,701	3,719	8.31	2.43	6,950	2,035	6.05	1.77	11,829	3,464	7.76	2.27	6,241	1,827	5.73	1.68		
			R448A/R449A	12,385	3,626	8.49	2.49	6,950	2,035	6.05	1.77	12,047	3,527	8.30	2.43	6,241	1,827	5.73	1.68		
AK4513Z-FZ3B	220-240/50/1	1.247	R404A	10,882	3,186	8.88	2.60	6,058	1,774	6.13	1.79	10,063	2,947	8.23	2.41	5,440	1,593	5.80	1.70	2,715	2.40
			R452A	10,895	3,190	9.16	2.68	5,955	1,744	6.16	1.80	10,090	2,954	8.44	2.47	5,347	1,566	5.83	1.71	2,689	2.44
			R448A/R449A	10,726	3,141	9.49	2.78	6,172	1,807	6.75	1.98	10,226	2,994	9.00	2.64	5,542	1,623	6.39	1.87	2,725	2.60
AK4513Z-XD3B	208-230/60/1 200/50/1	1.247	R404A	12,731	3,728	8.23	2.41	6,706	1,964	5.39	1.58	11,687	3,422	7.67	2.25	6,022	1,763	5.10	1.49		
			R452A	11,968	3,504	8.10	2.37	6,846	2,004	5.75	1.68	11,720	3,432	7.90	2.31	6,147	1,800	5.44	1.59		
			R448A/R449A	11,191	3,277	7.95	2.33	6,815	1,996	5.49	1.61	10,615	3,108	7.60	2.23	6,120	1,792	5.20	1.52		
AK4513Z-NA3C	208-230/60/1	1.247	R404A	13,071	3,827	8.70	2.55	7,430	2,176	6.02	1.76	12,045	3,527	7.92	2.32	6,672	1,954	5.70	1.67		
			R452A	13,120	3,842	9.02	2.64	7,148	2,093	6.11	1.79	12,201	3,573	8.39	2.46	6,419	1,879	5.78	1.69		
			R448A/R449A	13,234	3,875	9.02	2.64	7,272	2,129	6.60	1.93	12,266	3,592	8.86	2.59	6,530	1,912	6.25	1.83		
AK4516Z-NA3C	208-230/60/1	1.567	R404A	16,246	4,757	8.28	2.42	8,687	2,544	5.49	1.61	14,973	4,384	7.59	2.22	7,800	2,284	5.20	1.52		
			R452A	15,570	4,559	8.51	2.49	8,313	2,434	5.72	1.67	14,873	4,355	7.86	2.30	7,465	2,186	5.41	1.58		
			R448A/R449A	16,251	4,464	8.74	2.56	8,587	2,514	6.17	1.81	15,244	4,464	8.45	2.47	7,710	2,258	5.84	1.71		
R290																					
AK4482U-XA3B	115/60/1 100/50/1	0.954	R290	8,238	2,412	9.80	2.87	4,203	1,231	6.54	1.91	7,834	2,294	9.34	2.73	3,991	1,169	6.20	1.82		
AK4482U-FZ3B	220-240/50/1	0.954	R290	6,904	2,022	10.55	3.09	3,930	1,151	7.70	2.25	6,487	1,899	9.87	2.89	3,203	938	6.50	1.90	1,731	2.90
AK4482U-XD3B	208-230/60/1 200/50/1	0.954	R290	8,410	2,463	10.45	3.06	4,632	1,356	7.00	2.05	7,995	2,341	9.90	2.90	4,213	1,234	6.50	1.90		
AK4492U-XA3B	115/60/1 100/50/1	1.065	R290	9,167	2,684	9.60	2.81	5,050	1,479	6.46	1.89	8,591	2,516	9.17	2.68	4,490	1,315	6.30	1.84		
AK4492U-XN3B	208-230/60/1 200-220/50/1	1.065	R290	9,362	2,741	10.42	3.05	4,939	1,446	7.00	2.05	8,883	2,601	9.88	2.89	4,663	1,365	6.66	1.95		
AK4511U-XA3B	115/60/1 100/50/1	1.247	R290	11,028	3,229	9.05	2.65	6,406	1,876	6.40	1.87	10,558	3,091	8.70	2.55	5,791	1,696	6.10	1.79		
AK4514U-NA3B	208-230/60/1	1.567	R290	14,363	4,206	9.66	2.83	7,940	2,325	6.90	2.02	13,731	4,020	9.26	2.71	6,950	2,035	6.20	1.82		

PERFORMANCE SPECIFICATION LBP

LBP -40°F to +10°F or (-40°C to -12°C)													
Model	Voltage	Disp (Cu In)	Refrig.	ASHRAE				AHRI				EN12900	
				-10°F (-23.3°C)				-10°F (-23.3°C)				-31°F (-35°C)	
				Capacity		Efficiency		Capacity		Efficiency		Capacity	Efficiency
				BTU/Hr	Watts	EER	COP	BTU/Hr	Watts	EER	COP	Watts	COP

R404A / R452A

AK2427Z-FZ3B	220-240/50/1	0.954	R404A	1,906	558	4.50	1.32	1,462	428	3.33	0.98	243	0.90
			R452A	1,811	530	4.40	1.29	1,389	407	3.30	0.97	184	0.80
AK2427Z-NA3B	208-230/60/1	0.954	R404A	2,697	790	4.60	1.35	2,081	609	3.51	1.03		
			R452A	2,468	723	4.47	1.31	1,980	580	3.52	1.03		
AK2430Z-XA3B	115/60/1 100/50/1	1.065	R404A	3,007	880	4.63	1.36	2,321	680	3.50	1.02		
			R452A	2,920	855	4.78	1.40	2,257	661	3.62	1.06		
AK2430Z-FZ3B	220-240/50/1	1.065	R404A	2,500	732	4.63	1.36	1,828	535	3.54	1.04	339	1.00
			R452A	2,191	642	4.54	1.33	1,728	506	3.58	1.05	307	0.90
AK2430Z-XD3B	208-230/60/1 200/50/1	1.065	R404A	2,930	858	4.41	1.29	2,327	681	3.39	0.99		
			R452A	2,488	729	4.24	1.24	2,197	643	3.60	1.05		
AK2436Z-AA3B	115/60/1	1.247	R404A	3,650	1,069	4.68	1.37	2,887	845	3.60	1.05		
			R452A	2,975	871	4.50	1.32	2,523	739	3.82	1.12		
AK2436Z-FZ3B	220-240/50/1	1.247	R404A	3,121	914	4.70	1.38	2,248	658	3.43	1.00	454	1.00
			R452A	2,797	819	4.47	1.31	2,287	670	3.67	1.07	443	1.00
AK2448Z-AA3C	115/60/1	1.567	R404A	4,780	1,400	4.80	1.41	3,493	1,023	3.50	1.02		
			R452A	4,444	1,301	4.73	1.38	3,403	996	3.67	1.07		
AK2448Z-FZ3C	220-240/50/1	1.567	R404A	4,130	1,209	5.10	1.49	3,057	895	3.80	1.11	612	1.10
			R452A	3,676	1,076	4.96	1.45	2,865	839	3.90	1.14	556	1.10
AK2448Z-NA3C	208-230/60/1	1.567	R404A	4,892	1,432	4.70	1.38	3,587	1,050	3.50	1.02		
			R452A	4,454	1,304	4.29	1.26	3,412	999	3.30	0.97		

R290

AK2424U-XA3B	115/60/1 100/50/1	1.065	R290	2,500	732	4.71	1.38	2,024	593	3.94	1.15		
AK2431U-XA3B	115/60/1 100/50/1	1.247	R290	3,360	984	5.00	1.46	2,587	758	4.21	1.23		
AK2431U-FZ3B	220-240/50/1	1.247	R290	2,498	731	4.90	1.43	1,995	584	3.98	1.17	387	1.10
AK2431U-XN3B	208-230/60/1 200-220/50/1	1.247	R290	3,166	928	5.06	1.48	2,628	770	4.23	1.24		
AK2447U-AA3C	115/60/1	1.567	R290	4,651	1,362	5.30	1.55	3,804	1,114	4.40	1.29		
AK2447U-NA3C	208-230/60/1	1.567	R290	4,539	1,329	5.30	1.55	3,690	1,080	4.40	1.29		

Tip: Use Customer Resource Tools page at www.tecumseh.com for the most up-to-date Tecumseh and competitive model cross references.

AK² SERIES COMPRESSOR INFORMATION

Application	ASHRAE / AHRI	ASHRAE / AHRI	ASHRAE / AHRI	ASHRAE / AHRI	ASHRAE / AHRI
	R290	R134a / R513A	R404A	R452A	R449A
HBP	8,250-14,350 7,850-13,750	6,150-10,350 5,850-9,850	9,850-16,250 8,800-14,950	9,850-15,550 9,100-14,850	9,800-16,250 9,150-15,250
CBP	4,200-7,950 4,000-6,950	3,100-5,350 3,000-5,000	5,400-8,700 4,850-7,800	5,350-8,300 4,800-7,450	5,400-8,600 4,850-7,700
LBP	2,500-4,650 2,000-3,800	N/A	2,700-4,900 2,100-3,600	2,450-4,450 2,000-3,400	N/A

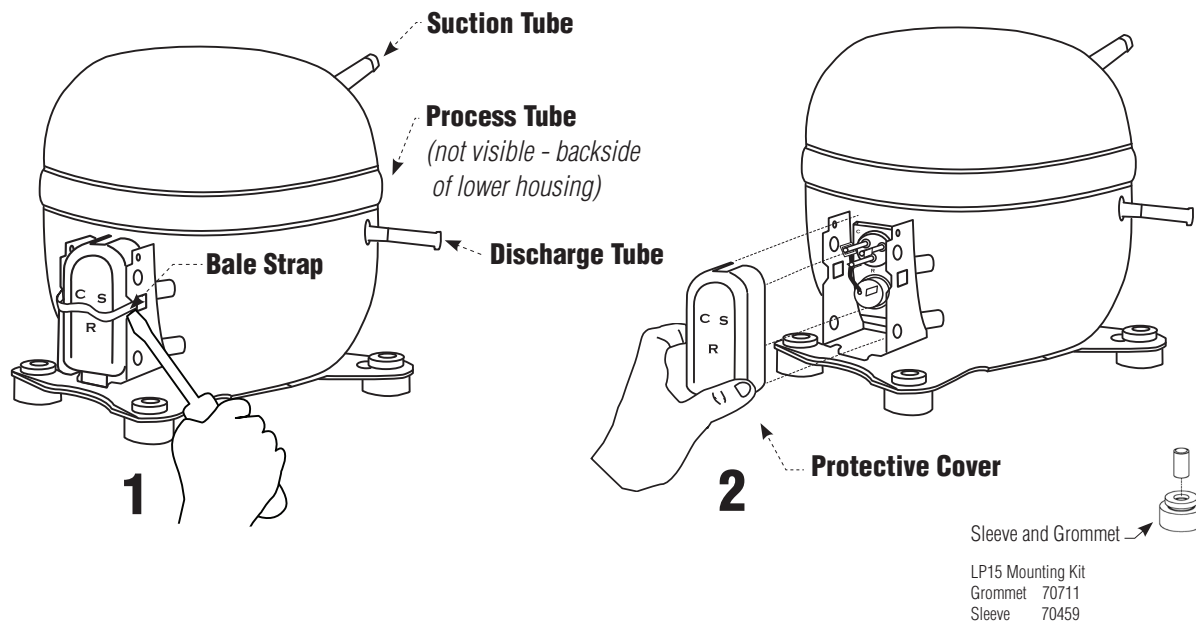
Note: Capacity is in BTUs

AK² SERIES COMPRESSOR INSTALLATION INSTRUCTIONS

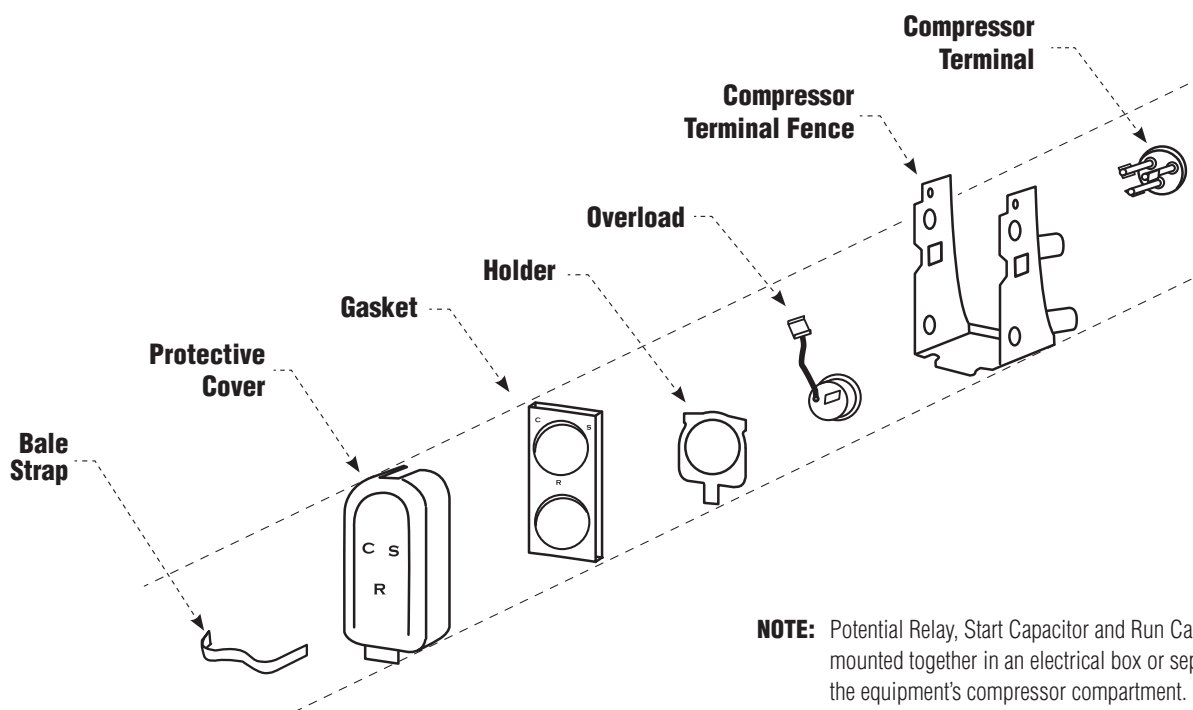
Typical CSR Application

Removal of the Protective Cover

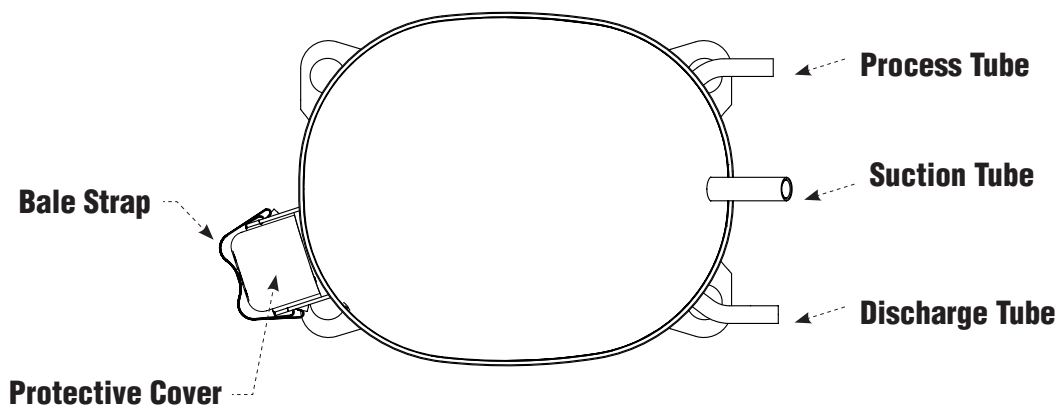
- 1 Remove the protective cover bale strap with screwdriver.
- 2 Remove the protective cover.



Exploded View of Assembly

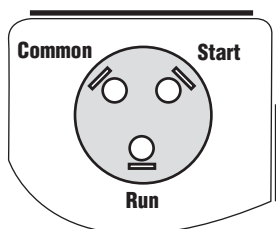


Compressor Port Locations



NOTE: Reference Tecumseh Engineering Policy Bulletin EP-16 when applying AK² Series and other direct suction compressors in Cube Ice Machine applications. Refer to the "Library – Engineering Policies" section of our website (www.tecumseh.com).

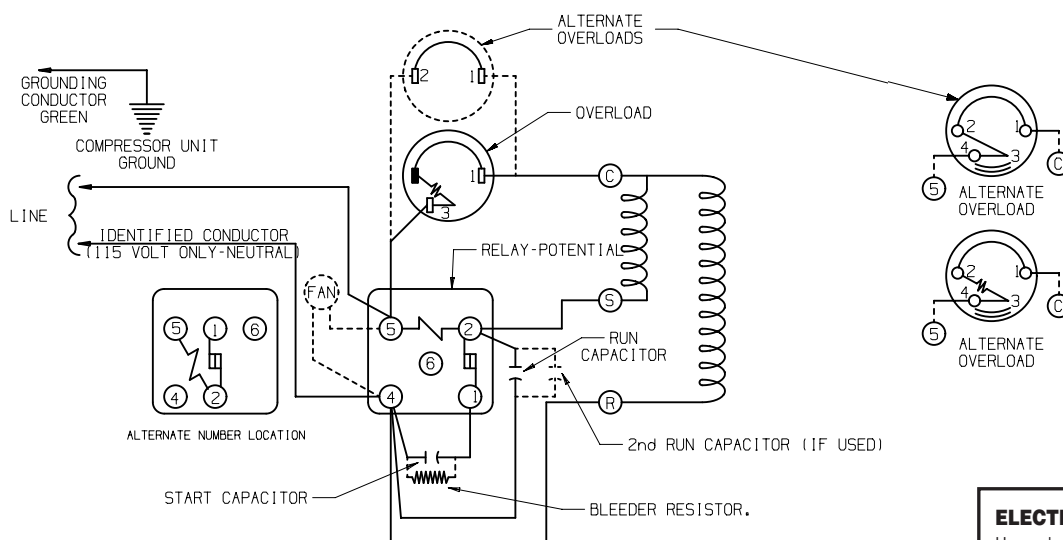
Terminal Pin Orientation



CAUTION: Safety First
Note: Never energize the system unless;
 1. The protective cover is securely fastened, and
 2. The compressor is properly connected to ground.

WARNING
 Never service, repair, or troubleshoot unless you are qualified to perform these functions. Improper servicing can lead to serious injury or death from fire, electrical shock, or explosion.

Electrical Wiring Diagram – CSR



115 or 230 Volt – Schematic Wiring Diagram
CSR or CSR Start Capacitor Assist

ELECTRICAL COMPONENTS
 Use only new electrical components specific for this compressor model.

GENERAL INSTALLATION INSTRUCTIONS

- * Prior to removal of current compressor please refer to Tecumseh's Service Handbook to verify compressor requires replacement. The Service Handbook is available online at www.tecumseh.com.
- * Tubing sizes and orientation may vary between compressors and applications.
- * Use only electrical start components supplied with this replacement compressor.

Do Not Reuse Electrical Components! Use Only New Electrical Components.

- * Tecumseh recommends using provided replacement mounting grommets and hardware.
- * Install a properly sized filter-drier for the system being serviced.
- * Evacuate to a minimum of 500 microns. Always use a vacuum gauge to measure vacuum levels.



CAUTION: SAFETY FIRST

- * DO NOT INSTALL, service, repair, or troubleshoot an air conditioning or refrigeration system without proper certification and approval from authorities (Local, State, Federal).
- * YOU MUST have the necessary knowledge, training and equipment.
- * DISCONNECT ELECTRICAL POWER before removing the protective cover of any electrical terminal.
- * DO NOT RE-CONNECT electrical power unless the protective covers of all electrical terminals are in place and securely fastened.
- * DO NOT OPERATE compressor or connect electrical power, unless it is connected to ground.
- * DO NOT RESET A BREAKER or replace a fuse without first checking for ground fault (short circuit to ground).
- * An open fuse or tripped circuit breaker is a strong indication of a ground fault, also known as a short circuit to ground.
- * If a ground fault does exist, keep the power off and find and repair. Use only a Mega Ohmmeter ("megger") or a Hi-potential ground tester ("Hi-Pot") to check for a ground fault. A conventional ohmmeter will not reliably detect an insulation breakdown causing the ground fault.
- * Never expose system to leak test pressures greater than 150 psig (11.4 bar abs).
- * Never overcharge system with refrigerant. Overcharging with refrigerant may lead to excessive pressures and rupture of terminal block may occur. Always use proper charging techniques and limit charge amounts to those specified on the system equipment serial label or in the original equipment manufacturer's service information.
- * Contact with refrigerant, mixtures of refrigerant and oil, or other chemicals can cause a variety of injuries including burns and frostbite.
- * Oil and refrigerant can spray from compressor electrical terminals and be ignited by electricity or other sources of ignition causing serious INJURY or DEATH.

NEW INSTALLATION TIPS

- * Upon receipt of your new compressor check for damage from shipping. Report any damage immediately to your local Tecumseh Authorized Wholesaler.
- * Check the name plate for correct voltage, phase, frequency, and refrigerant for the intended use BEFORE installation.
- * Check compressor windings for correct ohm's readings and short circuit to ground BEFORE installation. Keep the following in mind:
 - Power to unit must be off
 - Removing wires to expose terminals can lead to mis-wiring, replace correctly
 - Securely replace protective cover
- * **Warning labels are provided to inform and protect persons servicing Tecumseh equipment. Care must be taken not to damage or destroy labels during installation.**

Damaged or missing labels should be replaced with approved labels from your Tecumseh Authorized Wholesaler.

- * This compressor is shipped with a holding charge of nitrogen or dry air. Remove the holding charge only after the equipment has been installed with connecting tubing and a new filter-drier installed. Purge the holding charge thru a service port. DO NOT leave the unit open to the atmosphere for an extended period of time, to do so will contaminate the oil and cause excessive evacuation time, and could cause premature failure.
- * Be sure to use clean, refrigeration tubing with both ends sealed.
- * Remove discharge tube hang tag prior to brazing. Cut, form and braze tubes carefully to avoid getting dirt and/or metal filings into the lines. When sizing suction and liquid lines, consult the refrigerant line sizing section of the Tecumseh Hermetic Service Handbook, or use the Tecumseh refrigerant line sizing app located at <http://boxload.tecumseh.com/>

- * Whenever possible, pitch the suction line downward in the direction of flow, approximately 1/2" for each 10 ft length, to aid in oil drainage. Avoid line lengths in excess of 100 ft. Contact Tecumseh Technical Service for assistance.
- * When you open the system, complete the service operation as quickly as possible so it will not be exposed to the air longer than necessary.
- * Once all connections have been made, leak test with regulated dry nitrogen or other approved gas to a pressure not to exceed 150 psig (11.4 bar abs). Repair any leaks and leak test again.
- * When system is leak free, connect a vacuum pump capable of at least 500 microns vacuum to both sides of the system. Evacuate to at least 500 microns for a minimum of 30 min. Vacuum levels should be measured with an electronic gauge.
- * Do not operate the compressor without a charge in the system. Operating the compressor without a charge in the system can damage the hermetic terminals. To avoid serious injury or death from terminal venting with ignition, DO NOT energize the compressor unless the protective cover is securely fastened.
- * CAUTION!!! Only use refrigerant indicated on serial label when charging the system. Using a different refrigerant can lead to excessive system pressure and/or an explosion. Use of a refrigerant other than the serial label refrigerant will void the warranty.

COMPRESSOR REPLACEMENT TIPS

- * Disconnect all electrical power supplies to the system, making sure all power legs are open.
(NOTE: The system may have more than one power supply.)
- * Be sure all refrigerant is recovered before removing the compressor. Attempting to remove the compressor before removing all refrigerant from the system can cause a sudden release of refrigerant and oil. Among other things, this can cause a variety of injuries including burns and frostbite, a fire, and expose the service person to toxic gas.
- * Install a properly sized filter-drier for the system being serviced.
- * Use only regulated dry nitrogen or dry nitrogen with trace amounts of the serial label refrigerant to purge and/or leak test the system to a pressure not to exceed 150 psig (11.4 bar abs).

PED REQUIREMENTS



Standards series EN 60335-2 apply only to loads <150g of flammable fluids. R290 for a load >150g: Apply the ISO 5149 / EN 378. We recommend to make a risk analysis (refer to EN1127-1 standard) and also avoid the refrigerant accumulation in case of leakage in potentially ignition source zones. By the refrigeration system design, the protective cover environment must not be in an explosive atmosphere.

Compliance Statements and Incorporation: This compressor is designed for installation in machines in accordance with the machinery directive 2006/42 / EC. They comply with the low voltage directive 2006/95 /EC and Directive PED 97/23 /EC. Commissioning is only permitted if the assembly was performed in accordance with these instructions and if the machines meet the regulations. **Consistent with the PED**, all Class II compressors are tested under a higher air pressure or equal to the required 1.1 PS according to Annex C 13.2 of EN 14276-1 standard. The compressor free internal volume is 4.5 L. For information: 1.1 * Ps = 17.2 bar for R290. **Maximum allowable pressure:** this is the maximum refrigerant saturation pressure, at 46°C ambient temperature, in the shell, compressor off. Limit the refrigerant charge in order not to exceed the maximum allowable pressure (read the label). **Application signage:** refrigerant used and its mass must be completed. In case of A2, A2L or A3 refrigerant, the flammability logo will be visible and legible. **"Steam Effect" caution:** can occur when water enters into the refrigerant circuit. The compressor will behave as a steam generator and motor temperature will increase pressure beyond the maximum operating pressure. The use of a safety pressure switch is a way to limit the pressure rise in the compressor shell. In order to continually improve its products, TECUMSEH reserves the right to modify this manual without notification.

QUESTIONS AND SUPPORT

Tecumseh Tech Support: 800.211.3427 or Email: technical.service@tecumseh.com

Tecumseh reserves the right to change any information in this publication at any time.

This document is not intended to replace the training required for professional service personnel, or replace other information available from refrigeration and air conditioning equipment manufacturers. The information in this document is intended to assist service personnel in safely installing and servicing Tecumseh AK² compressor. Mounting and tubing connections are likely to differ from original installation. Careful review of current application requirements is essential. IT IS THE RESPONSIBILITY OF THE SERVICE PERSON TO ASSURE THEY HAVE PURCHASED A REPLACEMENT PRODUCT WHICH MEETS THE NEED OF THE APPLICATION. Failure to do so may result in misapplication requiring immediate or subsequent additional compressor replacement.

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206.4]

340-10029
DISCHARGE - COPPER
O.D. - .375 (9.5) NOMINAL
WALL - .058 (1.5) NOMINAL
END I.D. - .253-.257 (6.43-6.53) X .590 (15.0) MIN.
PLUG - 2 HAND FORM

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For more information on products by Tecumseh,
please visit our website www.tecumseh.com

MUST USE ONLY
AS SUCTION

340-10022
SUCTION - COPPER
O.D. - .500 (12.7) NOMINAL
WALL - .058 (1.5) NOMINAL
END I.D. - .378-.382 (9.6-9.7) TO RADIUS
PLUG, -4



Tecumseh

3 - COPPE
75 (9.5) NOMINAL
058 (1.5) NOMINAL
- .253-.257 (6.43-6.53) X .590 (15.0) MIN.
HAND FORM

