



Savings, Performance, 3 Technologies

NEW SILENSYS®

Silence to meet
your highest expectation



Tecumseh



PISTON



ROTARY



SCROLL

Cooling for a Better Tomorrow™



SILENSYS®

The first condensing unit which combines **silence and performance**, available in **3 technologies**.

The only manufacturer to master the 3 compressor technologies.



PISTON

Tecumseh proven compressor technology. Reliability and robustness characterize these reciprocating compressors. Tecumseh continues to lead the way by designing energy efficiency, quiet operation and reliability into every new reciprocating compressor we produce.



ROTARY

Rotary technology ensures optimum performance especially for small cooling capacities. This compressor technology allows energy saving (due to reduced electrical input power on a large evaporation range) and a low acoustic level with a small footprint. Ideally suited for demanding applications, its design gives it great strength.



SCROLL

Scroll technology ensures high efficiency for medium and high cooling capacities regardless of the operating regime. This technology allows significant energy savings and is ideal for demanding applications. Its design gives it great resistance to liquid flooding.

SILENSYS®, a range of cutting edge products

With 50 years of experience in the refrigeration industry, world leader Tecumseh develops and devises high performance condensing unit solutions.

Tecumseh continues to innovate and launches in 2011 three new Silensys® condensing unit ranges.



SILENSYS®, an innovative idea, French designed and manufactured

MADE IN FRANCE

Tecumseh Europe's R&D department and accredited laboratory guarantee performance levels and validated improvements.

This level of excellence is recognized by the leading accreditation and certification bodies:

- Laboratory COFRAC accreditation
- Compressor performance ASERCOM certification.

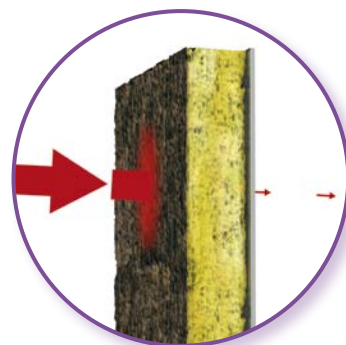


Silensys®'s benefits

Acoustics

Silensys®, the ultra silent range, remains the acoustic reference on the market.

Decrease in sound power is **at least 50% on S, M and L** [-3 dB(A)] and **75% on size XL** [-6 dB(A)].



Energy efficiency

The Reciprocating range has been supplemented by two "High Efficiency" (HE) ranges, which integrate the new Rotary and Scroll compressors. With the addition of EC fan (motors) on some models Tecumseh further meets the needs to reduce energy consumption.

Coefficient of Performance (COP) improvement

- **Reciprocating technology:** on average +5%
- **Scroll technology:** on average +15%
- **Rotary technology:** on average +20%



Robustness and reliability

French made Silensys® condensing units are manufactured with **high quality components**.

Silensys® is designed to operate in a wide range of environments, including those with high ambient temperatures.



Installation and maintenance

Contents and functions of the new condensing units have been upgraded **in order to ease installation and maintenance**. Safety aspects have also been improved.

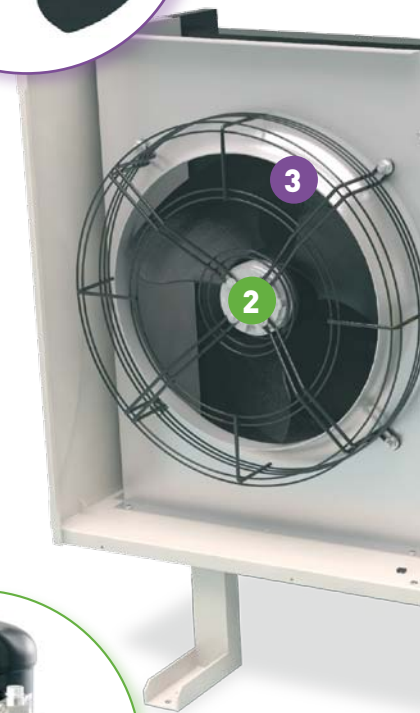


SILENSYS® RANGE

ACOUSTICS

And the silence is

- 1 New fan blade design geometry
- 2 Added foam within the cover to encapsulate noise
- 3 Air flow optimization by adding a buffer around the fan
- 4 Noise transmission is further limited by the lateral double skin plastic door
- 5 Redesigned metal door frame for increased overall stiffness and reduced vibration
- 6 Discharge muffler line reduces the pulsations (depending on model)
- 7 Specific pipe-bending to reduce and absorb cooling circuit vibrations



ENERGY EFFICIENCY

Friendly power

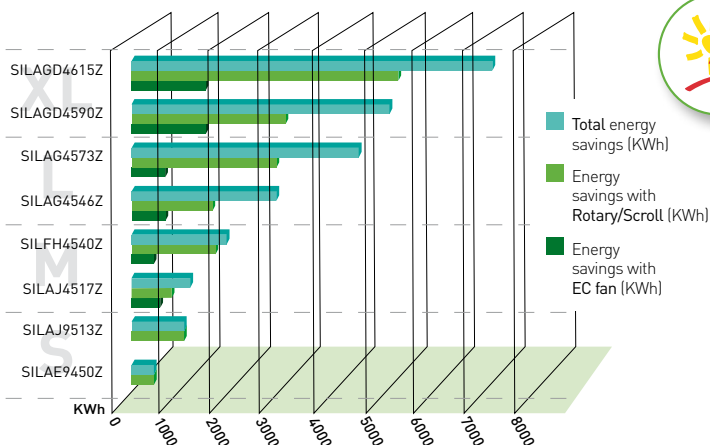
- 1 Reduced electrical input power with Rotary and Scroll technologies due to higher volumetric efficiency
- 2 Improved AC fan performance with permanent capacitor for S size
- 3 Fan speed regulator direct mounted on 3-way valve (or liquid receiver)



Rotary compressor



Scroll compressor



- In a condensing unit compressor power largely determines in the total power consumption
- Tecumseh has anticipated the Energy related Product (ErP) 2013/2015 directive requirements which sets minimum efficiency numbers for EC fans (permanent magnet motor)
- Digital controller on XL Scroll Silensys® for multiple evaporator capability
- Silensys®' condensers are devised to operate in High Ambient Temperature

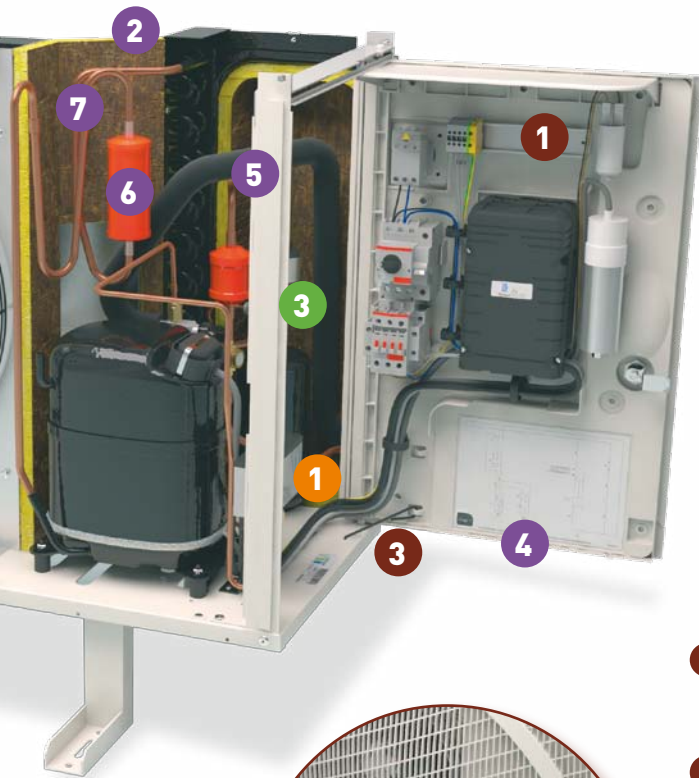


What's new?

ROBUSTNESS & RELIABILITY

Built to last

- 1 Oil management: Silensys® ranges (Rotary, Reciprocating and Scroll) are equipped with an oil separator
- Check valve on cooling circuit for rotary compressors
- Oil equalization piping between 2 compressors (Silensys® DUO)
- IP44 Electrical Protection Class (resistant to water spray)
- Corrosion and UV-resistant condensing unit



REGULATIONS - CERTIFICATIONS

Silensys® has anticipated the Energy related Product European directive (ErP), applicable for electrical motors placed in effect 2013 and 2015.

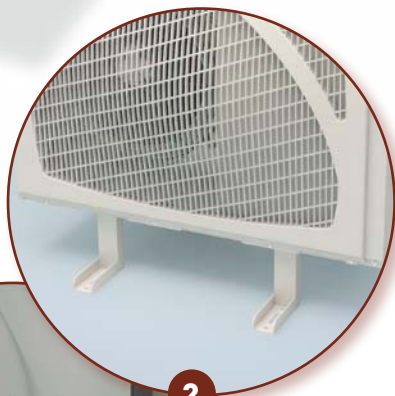
The ErP European directive sets minimum efficiency numbers for fans: applicable for fan input power > 125 W.

All Tecumseh fans are CE marked.

INSTALLATION AND MAINTENANCE

It could not be simpler

- 1 Rail DIN length increased to ease integration of additional components
- 2 Floor or wall setting installation (on S and M sizes)
- 3 90° open door lock
- Electrical safety reinforcement:
 - Power circuit breaker
 - Additional circuit breaker on EC fan motor
 - Internal or external overload on compressor
- Valve on liquid receiver for refrigerant capture during maintenance
- Easy removable front panel for accessibility (M, L and XL sizes)



OPTIONS

- Fusible plug to protect over pressure
- Sightglass mount on liquid receiver
- HP/BP – HP pressure switch/ manual reset

SILENSYS®

A range that meets all your needs

MODEL S

MODEL M

MODEL L

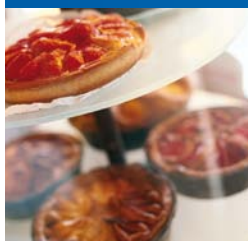


Volume

From S to L: 1 m³ to 170 m³

Power

From S to L: 0,5 kW to 14 kW



Small business

Proximity stores/Bio medical

Petrol station

Whatever the volume to cool,
a Silensys® product meets your needs:

Applications:

- Cold rooms
- Fermentation chambers
- Refrigerated cabinets
- Wine cellars
- Ice makers

Segments:

- Proximity food stores (small supermarket, petrol station, bakery, butcher's, delicatessen, fish shop...)
- Supermarkets
- Non food proximity stores

Others:

- Wine merchant, beer and wine bar, restaurants, community kitchen, biomedical units, morgue



MODEL XL



XL: 170 m³ to 400 m³

XL: 15 kW to 30 kW

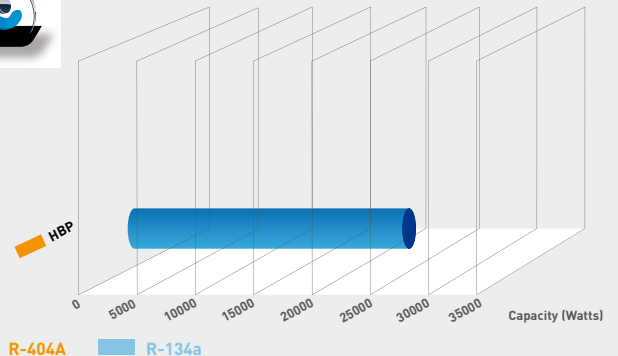
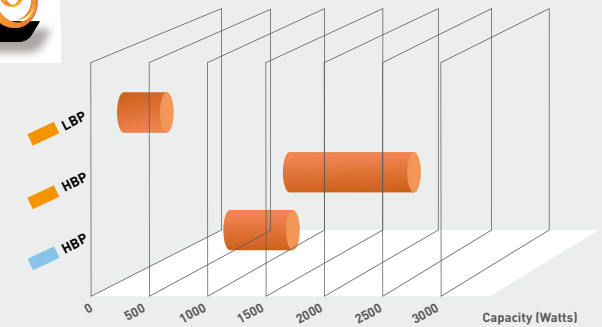
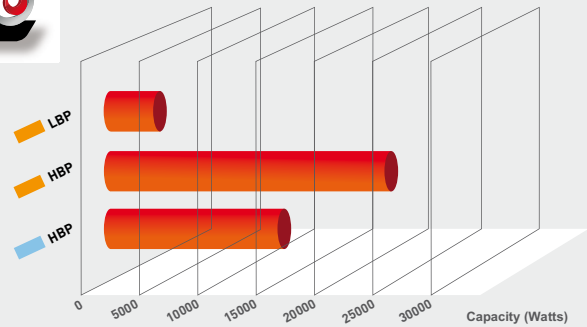


Mini markets /Discounter

A piston range supplemented by a High Efficiency range

In order to reduce energy consumption and ensure greater efficiency, Tecumseh has developed an optimum range regardless the application.

This new product offer, which is part of the Tecumseh proactive approach for "eco-design", takes into account the environmental concern while ensuring silence and performance.



■ R-404A ■ R-134a

Rating conditions

EN 13215

	LBP	HBP
T° evaporating	-35 °C	+5 °C
T° Ambient	+32 °C	+32 °C
T° return gas (= evaporator outlet)	+20 °C	+20 °C
Sub-cooling	3K	3K



PISTON

	VOL-TAGE CODE	Cooling capacity (Watts) EN13215 Return suction gas 20 °C									EN13215 Super heating 10K		Sound pressure 10 m	Sound pressure 5 m	
		FZ TZ KZ	Ambient temperature	-20 °C	-15 °C	-10 °C	-5 °C	0 °C	5 °C	10 °C	15 °C	Cool. cap. (W) -10 °C	Power input (W)	Acoustic* [dB(A)]	
	SILAE9450Z	FZ	25	631	788	974	1188	1431	1703	2003	2333	833	448		
			32	539	678	843	1034	1251	1494	1764	2059	756	469	30	36
			43	395	506	638	792	968	1166	1387	1629	559	502		
	SILAE9460Z	FZ	25	744	923	1130	1365	1631	1929	2262	2633	1022	636		
			32	643	804	987	1194	1427	1688	1979	2304	881	627	30	36
			43	484	615	760	922	1102	1303	1528	1782	660	615		
	SILAJ9480Z	FZ/TZ	25	1037	1280	1556	1866	2208	2580	2980	3404	1409	695		
			32	917	1140	1391	1671	1979	2312	2671	3051	1247	724	29	35
			43	724	918	1132	1366	1620	1894	2189	2502	993	770		
SILAJ9510Z	FZ/TZ	25	1284	1574	1904	2271	2674	3108	3570	4056	1722	845			
		32	1137	1405	1704	2035	2396	2785	3199	3634	1524	879	29	35	
		43	900	1131	1384	1659	1956	2274	2613	2971	1210	932			
SILAJ9513Z	FZ/TZ	25	1572	1948	2361	2809	3291	3801	4338	4898	2131	1003			
		32	1361	1710	2087	2491	2918	3368	3837	4324	1864	1022	29	35	
		43	1022	1329	1649	1982	2326	2680	3045	3419	1441	1053			
	SILAJ4517Z	FZ/ TZ/KZ	25	1725	2142	2608	3118	3668	4254	4870	5510	2348	1180		
			32	1501	1896	2326	2791	3286	3807	4350	4910	2072	1223	36	42
			43	1143	1498	1871	2262	2668	3086	3515	3951	1629	1291		
	SILAJ4519Z	FZ/ TZ/KZ	25	2231	2767	3362	4016	4729	5497	6321	7198	3020	1582		
			32	1993	2489	3030	3615	4243	4912	5622	6369	2693	1634	36	42
			43	1608	2039	2492	2966	3459	3971	4501	5048	2168	1716		
	SILFH4524Z	FZ/ TZ/KZ	25	2445	3097	3820	4610	5464	6380	7351	8376	3433	1766		
			32	2096	2706	3370	4086	4853	5668	6530	7436	2995	1790	37	43
			43	1530	2070	2639	3238	3866	4525	5216	5941	2291	1826		
SILFH4531Z	FZ/ TZ/KZ	25	3248	4098	4968	5859	6772	7706	8663	9641	4456	2322			
		32	2676	3539	4393	5245	6098	6956	7820	8697	3898	2309	37	43	
		43	1714	2606	3447	4248	5017	5763	6496	7231	2992	2287			
SILFH4540Z	FZ/ TZ/KZ	25	3841	4765	5753	6776	7801	8794	9722	10550	5140	2941			
		32	3396	4262	5173	6105	7031	7921	8747	9483	4567	2974	37	43	
		43	2603	3388	4190	4990	5770	6511	7195	7818	3609	3025			

Preliminary data.

* Sound level at maximum speed ventilation
 ** In: nominal current - Im: maximal current

Sound power	Technical data				FZ Voltage code			TZ Voltage code			KZ Voltage code			Weight	
	Air flow (m³/h)	Liquid receiver volume (L)	For tubing O.D.		220V - 240V 50 Hz 1~			400V 50 Hz / 440V 60 Hz 3~			220V 50 Hz / 220V 60 Hz 3~			Gross (kg)	Net (kg)
			Suction	Liquid line	Power input (W)	In (A)**	Im (A)	Power input (W)	In (A)	Im (A)	Power input (W)	In (A)	Im (A)		
61	1650	0,75	3/8	1/4	551	3,0	4,4	-	-	-	-	-	-	79	59
61	1650	0,75	3/8	1/4	743	3,2	6,0	-	-	-	-	-	-	79	59
60	1650	1,5	1/2	3/8	891	4,1	7,2	902	2,0	3,4	-	-	-	88	68
60	1650	1,5	5/8	3/8	1112	5,2	8,5	1138	2,3	3,5	-	-	-	89	69
60	1650	1,5	5/8	3/8	1354	6,5	10,7	1287	2,7	4,2	-	-	-	91	71
67	2700	2,35	5/8	3/8	1663	7,5	13,8	1651	3,6	5,1	1536	5,9	7,9	92	70
67	2700	2,35	5/8	3/8	2174	10	16,3	2167	4,7	5,9	2207	7,9	12,3	93	71
68	2700	2,35	5/8	1/2	2463	11	20,7	2458	4,9	8,8	2459	8	11,1	106	83
68	2700	3,9	7/8	1/2	3215	14,2	23,5	3068	5,8	10,1	3136	9,8	14,5	109	87
68	2700	3,9	7/8	1/2	4188	19,3	28,1	4107	8,4	10,3	4269	14,8	21,7	109	87

More models next page →

Old letter code	New letter code	Designation
F	FZ	220-240V-50Hz
/	XC	220-240V-50Hz
K	KZ	220V 3-50Hz 220V 3-60Hz
T	TZ	400V 3-50Hz 440V 3-60Hz
/	XG	380-420V 3-50Hz 460V 3-60Hz

Cooling capacity according EN 13215 conditions: suction gas 20 °C, sub cooling 3K, Ambient T° 32 °C.

Cooling performances are listed for single phase groups.

For three-phase groups in some cases they may be different.

Presentation of acoustic values of maximum fan speed in a straight line and according EN 13215.

In a constant effort to reconcile reported and actual acoustic values,

Tecumseh Europe meets the acoustic standard EN ISO 3743-1.

Silensys® is designed to operate in high ambient temperatures (Ambient T° 46 °C).