



# HITACHI



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# 01 Compressors & Condensing Units

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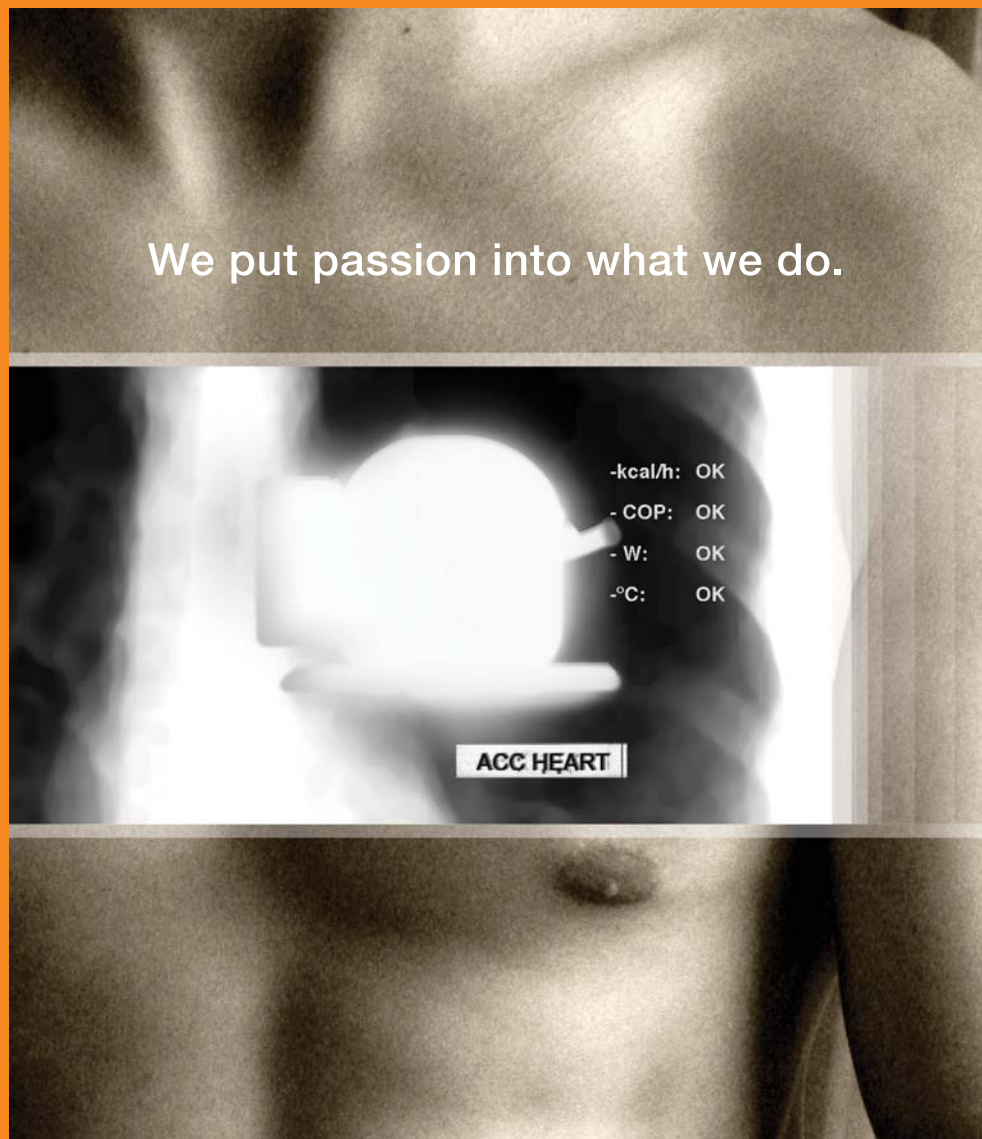
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We put passion into what we do.

It is not only about manufacturing compressors. It is not only about having high technology. Or experience or capability. There is much more to it. It is the willingness to be at the customer's side, anticipating his needs, offering new and original solutions. It is in generating a satisfactory and complete service at all times. We can be proud of our good products, but that is just not enough. We put passion into what we do.



*passion* for the cold

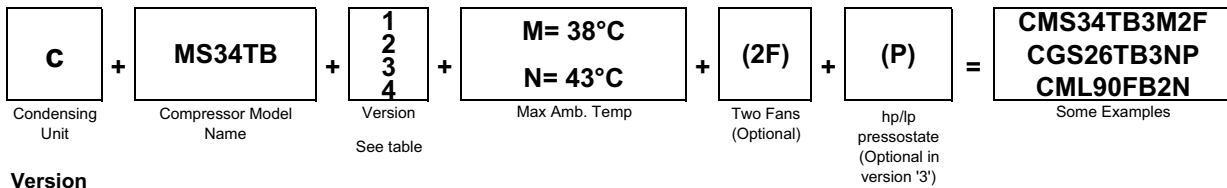


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# Compressors & Condensing Units

# 01

## ACC Condensing Units : Designation



### Version

#### Version 1

Basic equipment to be directly connected, by soldering, to the tubes of the compressor as well as to the condenser. Applicable to systems with capillary.

#### Version 2

Equipped with service valves in order to facilitate the connection and installation

#### Version 3

Equipped with service valves and liquid receiver. Applicable to systems with expansion valve.

#### Version 4

As Version 1 but with Schrader valve on the process tube to facilitate the refrigerant charging.

### Test conditions

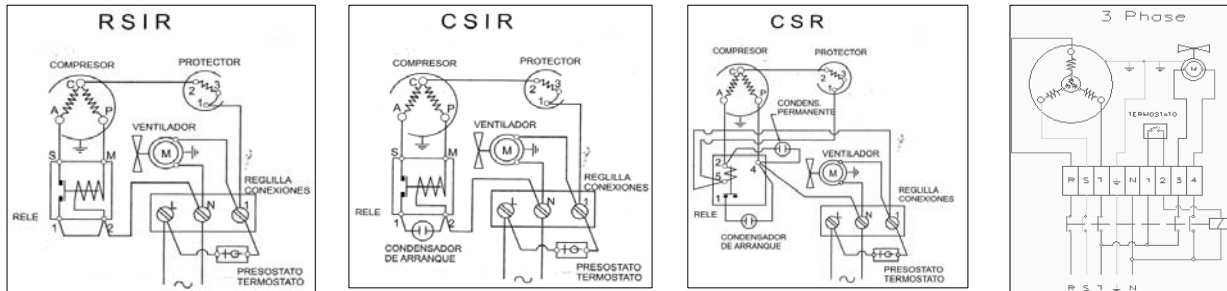
	HMBP.HBP	LBP
Ambient and return gas temperature	35°C	32°C
Liquid temperature entering expansion valve	Sub cooled to condenser limits	

Testing voltage equals lowest value of the rated voltage range

### Rating conditions

	HMBP.HBP	LBP
Evaporating Temperature	7.2°C	-23.3°C

### Wiring Diagrams



# 01 Compressors & Condensing Units

## ACC Condensing Units



HMBP R134a		List Price £	Power HP	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts								Design	Flat Pack Housing	
Model	Evaporating temperature					-25	-20	-15	-10	-5	0	5	7.2			10
CGL45PB4NR		224.34	1/6	4.50	C	108	142	183	231	285	346	413	445	487	3A	SCH-01
CGL45TB4NR		224.34	1/6	4.50	C-V	108	142	183	231	285	346	413	445	487	3B	SCH-01
CGL60PB2NR		229.19	1/5	5.67	C	130	177	231	293	360	435	516	554	604	3B	SCH-01
CGL90TB3		269.15	1/4	8.85	C-V	203	265	341	430	532	647	775	836	916	3B	SCH-01
CGL90TB4N		252.37	1/4	8.85	C-V	203	265	341	430	532	647	775	836	916	3B	SCH-01
CGP12TB3NR SV		290.07	3/8	12.05	C-V	251	342	448	568	702	851	1013	1089	1190	3B	SCH-01
CGP14TB3		351.83	3/8	14.00	C-V	291	386	499	629	776	941	1123	1209	1323	3B	SCH-01
CGX18TB3N		421.28	1/2	18.40	C-V	383	506	653	822	1014	1229	1467	1579	1728	2D	SCH-01
CGR18TB3NR SV		446.52	1/2	18.40	C-V	355	495	658	845	1056	1291	1550	1672	1833	2B	SCH-02
CGX21TB3N		465.82	5/8	20.72	C-V	459	606	778	974	1194	1438	1706	1832	1999	1D	SCH-02
CGR22TB3N		465.82	5/8	22.00	C-V	463	650	850	1063	1290	1530	1784	1900	2051	1B	SCH-02
CGX23TB3N		480.43	5/8	23.20	C-V	492	695	907	1128	1358	1597	1845	1957	2102	1D	SCH-02
CGS26TB3N		509.36	3/4	25.93	C-V	524	747	990	1254	1539	1844	2170	2320	2517	1A	SCH-01
CGS30TB3N		546.00	7/8	29.95	C-V	609	854	1135	1453	1807	2198	2625	2824	3088	1A	SCH-02
CGS34TB3N		582.65	1	34.42	C-V	686	972	1284	1623	1988	2380	2798	2990	3242	1A	SCH-02

LBP R404A		List Price £	Power HP	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts							Design	Flat Pack Housing		
Model	Evaporating temperature					-40	-35	-30	-25	-23.3	-20	-15			-10	
CML90FB2N SV		252.90	1/3	8.85	C-V	195	248	315	394	424	486	591	709	-	3B	SCH-01
CMP14FB3N		389.86	1/2	14.00	C-V	263	362	470	588	630	715	852	998	-	3B	SCH-01
CMR22FB3N		512.09	2/3	21.75	C-V	354	571	791	1015	1093	1243	1475	1711	-	2A	SCH-02
CMS26FB3N		516.24	3/4	25.93	C-V	368	687	1002	1312	1417	1618	1920	2217	-	1A	SCH-02
CMS34FB3N		552.34	1	34.42	C-V	825	992	1230	1539	1660	1919	2370	2891	-	1A	SCH-02

HMBP R404A		List Price £	Power HP	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts								Design	Flat Pack Housing	
Model	Evaporating temperature					-25	-20	-15	-10	-5	0	5	7.2			10
CML40TB3N		290.36	1/6	4.04	C-V	198	246	300	360	427	500	580	617	666	3B	SCH-01
CML45TB3N		290.75	1/5	4.50	C-V	215	268	328	393	463	539	620	658	707	3B	SCH-01
CML60TB3N		317.84	1/4	5.67	C-V	266	334	409	490	578	672	773	819	880	3B	SCH-01
CML80TB3N		326.32	3/8	7.57	C-V	408	479	567	672	794	932	1088	1162	1261	3C	SCH-01
CML90TB3N		335.70	3/8	8.85	C-V	420	528	646	774	912	1061	1220	1294	1390	3D	SCH-01
CMP12TB3N		360.90	1/2	12.00	C-V	581	732	899	1081	1278	1491	1720	1825	1964	1D	SCH-01
CMP14TB3N		397.00	1/2	14.00	C-V	612	786	972	1173	1387	1614	1854	1965	2109	1D	SCH-01
CMX18TB3M		522.79	7/8	18.39	C-V	789	995	1206	1424	1648	1877	2113	2218	1370	1D	SCH-01
CMR22TB3N		548.02	1	21.75	C-V	859	1092	1355	1648	1971	2323	2706	2883	3118	1C	SCH-02
CMS26TB3N		584.83	1 3/8	25.93	C-V	1182	1507	1854	2222	2611	3021	3453	3650	3906	1A	SCH-02

HBP R404A		List Price £	Power HP	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts						Design	Flat Pack Housing	
Model	Evaporating temperature					-15	-10	-5	0	5	7.2			10
CMS34TB3N*		653.85	1 5/8	34.42	C-V	2424	2960	3480	3984	4472	4690	4944	1A	SCH-02

HMBP R22		List Price £	Power HP	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts							Design	Flat Pack Housing		
Model	Evaporating temperature					-25	-20	-15	-10	-5	0	5			7.2	10
CL57TN3MR		266.16	1/4	5.67	C-V	204	267	341	424	517	621	735	788	858	3B	SCH-01
CL76TN3MR		317.01	3/8	7.47	C-V	325	388	469	569	688	825	980	1054	1154	3B	SCH-01
CL88TN3MR		328.37	3/8	8.85	C-V	347	437	545	670	814	976	1156	1241	1355	3D	SCH-01
CP12TN3MR		437.09	1/2	12.00	C-V	422	553	710	891	1098	1330	1588	1709	1870	2D	SCH-01
CS26TN3M		554.71	1	25.93	C-V	933	1223	1532	1860	2206	2571	2955	3130	3357	1A	SCH-02

\*CMS34TB3N - Operation limited to a lowest evaporating temperature of -15°C

Expansion device  
C: Capillary  
V: Expansion Valve

### HMBP R134a

Model	Fan		Motor	Dimensions (mm)			Receiver Approx. Size (l)	Condenser		Tubes	
	Motor	Blade (mm)		W	H	D		Type	Model	Suction ID Inch	Discharge ID Inch
CGL45PB4NR	5W	172	RSIR	305	210	375	-	CU-AL	7T 2R	1/4"	5/16"
CGL45TB4NR	5W	172	CSIR	305	210	375	-	CU-AL	7T 2R	1/4"	5/16"
CGL60PB2NR	5W	200	RSIR	305	235	425	-	CU-AL	8T 2R	1/4"	5/16"
CGL90TB3	5W	200	CSIR	340	245	425	1	CU-AL	8T 4R	3/8"	1/4"
CGL90TB4N	5W	200	CSIR	330	245	375	-	CU-AL	8T 4R	1/4"	5/16"
CGP12TB3NR SV	10W	230	CSIR	350	270	425	1	CU-AL	9T 3R	3/8"	1/4"
CGP14TB3	10W	230	CSIR	350	270	425	1	CU-AL	9T 3R	3/8"	1/4"
CGX18TB3N	25W	254	CSIR	361	297	510	1.3	CU-AL	10T 4R	3/8"	3/8"
CGR18TB3NR SV	25W	254	CSIR	350	300	535	1.3	CU-AL	10T 4R	1/2R"	5/16R"
CGX21TB3N	25W	254	CSIR	450	312	480	1.55	CU-AL	11T 4R	3/8"	3/8"
CGR22TB3N	25W	254	CSIR	450	315	530	1.55	CU-AL	11T 4R	1/2R"	3/8R"
CGX23TB3N	25W	254	CSIR	450	312	480	1.55	CU-AL	11T 4R	3/8"	3/8"
CGS26TB3N	25W	300	CSIR	425	355	525	2.55	CU-AL	12T 3R	5/8R"	3/8R"
CGS30TB3N	25W	300	CSR	425	350	545	2.55	CU-AL	12T 4R	5/8R"	3/8R"
CGS34TB3N	25W	300	CSR	425	350	500	2.55	CU-AL	12T 4R	5/8R"	3/8R"

### LBP R404A

Model	Fan		Motor	Dimensions (mm)			Receiver Approx. Size (l)	Condenser		Tubes	
	Motor	Blade (mm)		W	H	D		Type	Model	Suction ID Inch	Discharge ID Inch
CML90FB2N SV	5W	200	CSIR	320	245	425	-	CU-AL	8T 4R	3/8"	1/4F"
CMP14FB3N	5W	200	CSIR	320	245	375	1	CU-AL	8T 4R	3/8"	1/4F"
CMR22FB3N	10W	230	CSR	385	300	539	1.55	CU-AL	10T 4R	1/2R"	3/8R"
CMS26FB3N	25W	300	CSR	425	355	525	2.55	CU-AL	12T 3R	1/2R"	3/8R"
CMS34FB3N	25W	300	CSR	425	350	545	2.55	CU-AL	12T 4R	5/8R"	3/8R"

### HMBP R404A

Model	Fan		Motor	Dimensions (mm)			Receiver Approx. Size (l)	Condenser		Tubes	
	Motor	Blade (mm)		W	H	D		Type	Model	Suction ID Inch	Discharge ID Inch
CML40TB3N	5W	200	CSIR	325	235	425	1	CU-AL	8T 2R	3/8"	1/4F"
CML45TB3N	5W	200	CSIR	325	235	425	1	CU-AL	8T-2R	3/8"	1/4F"
CML60TB3N	5W	200	CSIR	320	245	375	1	CU-AL	8T 4R	3/8"	1/4F"
CML80TB3N	10W	230	CSIR	355	270	450	1	CU-AL	9T 4R	3/8"	1/4F"
CML90TB3N	10W	230	CSIR	355	270	425	1.3	CU-AL	9T 4R	3/8"	1/4F"
CMP12TB3N	25W	300	CSIR	425	350	480	1.3	CU-AL	12T 3R	3/8"	3/8R"
CMP14TB3N	25W	300	CSIR	425	350	500	2.55	CU-AL	12T 4R	3/8"	3/8R"
CMX18TB3M	25W	300	CSIR	430	350	500	2.55	CU-AL	12T 3R	3/8"	3/8R"
CMR22TB3N	79W	300	CSR	455	440	525	2.55	CU-AL	16T 4R	1/2R"	3/8R"
CMS26TB3N	140W	350	CSIR	455	440	515	2.55	CU-AL	16T 4R	5/8R"	3/8R"

### HBP R404A

Model	Fan		Motor	Dimensions (mm)			Receiver Approx. Size (l)	Condenser		Tubes	
	Motor	Blade (mm)		W	H	D		Type	Model	Suction ID Inch	Discharge ID Inch
CMS34TB3N	140W	350	CSIR	455	440	480	2.55	CU-AL	16T 5R	5/8R"	3/8R"

### HMBP R22

Model	Fan		Motor	Dimensions (mm)			Receiver Approx. Size (l)	Condenser		Tubes	
	Motor	Blade (mm)		W	H	D		Type	Model	Suction ID Inch	Discharge ID Inch
CL57TN3MR	5W	200	CSIR	330	245	425	1	CU-AL	8T 4R	3/8"	1/4F"
CL76TN3MR	10W	230	CSIR	338	270	425	1	CU-AL	9T 3R	3/8"	1/4F"
CL88TN3MR	10W	230	CSIR	355	270	425	1.3	CU-AL	9T 4R	3/8"	3/8R"
CP12TN3MR	25W	254	CSR	360	300	513	1.3	CU-AL	10T 4R	3/8"	3/8R"
CS26TN3M	25W	300	CSR	432	352	530	2.55	CU-AL	12T 5R	5/8R"	3/8R"

F: Flare

R: Rotolock

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# 01 Compressors & Condensing Units

## ACC Condensing Units : Design & Wiring

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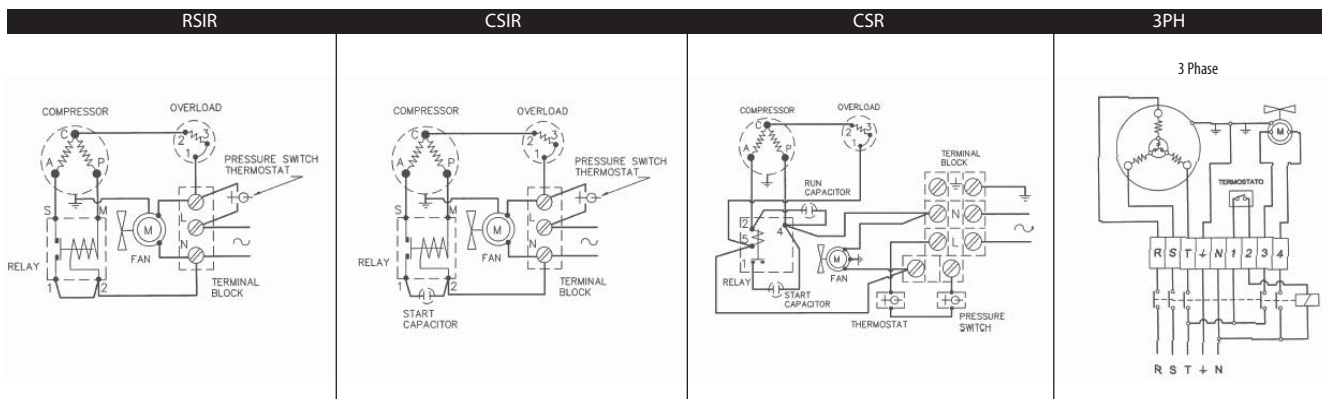
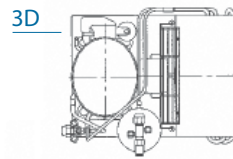
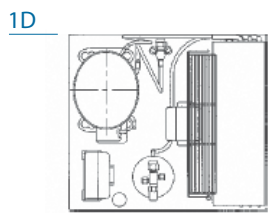
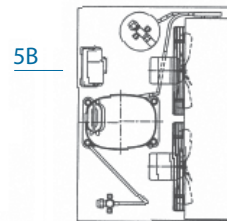
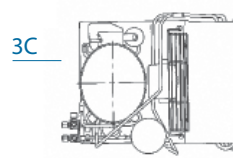
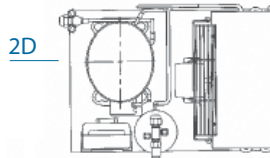
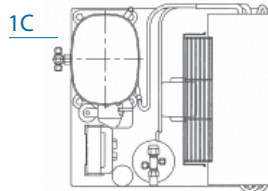
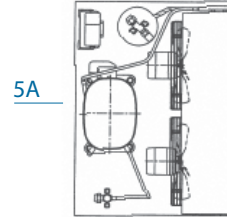
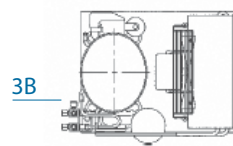
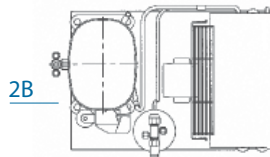
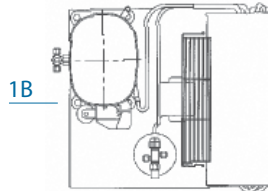
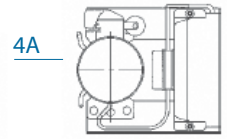
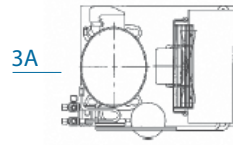
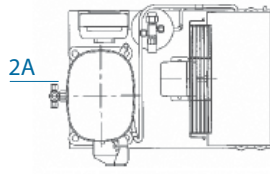
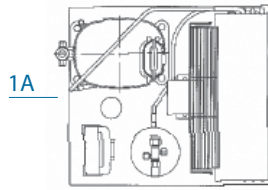
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# 01 Compressors & Condensing Units

ACC Compressors : R134a



GD\*\*\*



GL\*\*\*



GP\*\*\*

LBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts Evaporating temperature °C				
						-35	-30	-25	-23.3	-10
GD36AA	113.31	1/12	S	3.62	C	28	43	61	84	135
GD40AA	115.71	1/9	S	4.01	C	22	42	65	91	154
GL45AA (SPC)	128.47	1/8	S	4.55	C	37	56	81	112	183
GL50AA (SPC)	127.43	1/7	S	5.12	C	41	63	91	124	204
GL60AA (SPC)	129.08	1/6	S	5.99	C	50	75	107	147	238
GL90AA	152.77	1/4	S	9.08	C	82	119	165	224	350
GL99AA	162.47	1/4	S	9.93	C	83	124	175	238	377
GP12AB	173.42	1/3	S	12.00	C	83	131	190	262	424
GP14CB	182.40	3/8	F	14.00	C	99	158	228	314	509



GD\*\*\*



GL\*\*\*



GP\*\*\*



GX\*\*\*



GS\*\*\*

HMBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts Evaporating temperature °C				
						-25	-15	5	+7.2	10
GD30MB-B	116.21	1/10	F	3.00	C	48	88	233	279	281
GD36MB-D (SPC)	123.17	1/10	F	3.62	C-V	52	95	261	314	318
GD40MB-D (SPC)	114.30	1/8	F	4.05	C-V	63	117	301	360	363
GL45PB	122.57	1/6	F	4.50	C	76	134	342	409	412
GL45TB	126.93	1/6	F	4.50	C-V	76	134	342	409	412
GL60PB	128.86	1/5	F	5.67	C	95	170	437	523	527
GL60TB	136.74	1/5	F	5.67	C-V	95	170	437	523	527
GL80PB	133.64	1/5	F	7.57	C	111	212	554	663	667
GL80TB	145.82	1/5	F	7.57	C-V	111	212	554	663	667
GL90PB	138.42	1/4	F	8.85	C	142	259	661	791	796
GL90TB	151.80	1/4	F	8.85	C-V	142	259	661	791	796
GP12TB	173.54	3/8	F	12.05	C-V	169	338	893	1070	1077
GP14TB	175.49	3/8	F	14.00	C-V	190	373	999	1198	1208
GP16TB	187.20	3/8	F	16.00	C-V	-	476	1213	1442	1452
GX18TB	233.42	1/2	F	18.40	C-V	285	539	1390	1663	1673
GX21TB	265.06	5/8	F	20.72	C-V	322	603	1550	1858	1866
GX23TB	294.90	5/8	F	23.20	C-V	368	677	1730	2070	2083
GS26TB	332.84	3/4	F	25.93	C-V	264	703	2071	2488	2514
GS26TB-V	355.96	3/4	F	25.93	C-V	264	703	2071	2488	2514
GS30TB-V	383.87	7/8	F	29.95	C-V	264	703	2071	2965	2514
GS34TB	386.81	1	F	34.42	C-V	476	1068	2852	3408	3421
GS34TB-V	400.88	1	F	34.42	C-V	476	1068	2852	3408	3421

**Model Suffix**

SPC: Snap on fixings

V: Valve connections

VS: Valve connection suction

**Compressor Cooling**

S: Static Cooled

F: Fan Cooled

OC: Oil Cooled

**Expansion device**

C: Capillary

V: Expansion Valve

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## Technical

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electrics] (W x H x D mm)	Connections Inch (mm)		
								Suction/ Process	Process/ Suction	Discharge
GD36AA	R134a	LBP	8.0	0.7	RSIR LST	5.7	140 x 154 x 140	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GD40AA	R134a	LBP	7.0	0.8	RSIR LST	8.2	170 x 161.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL45AA	R134a	LBP	7.5	0.9	RSIR LST	8.3	170 x 161.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL50AA	R134a	LBP	8.1	1.0	RSIR LST	8.9	192 x 170 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL60AA	R134a	LBP	9.9	1.1	RSIR LST	9.1	192 x 170 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL90AA	R134a	LBP	12.8	1.7	RSIR LST	10.2	192 x 185 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL99AA	R134a	LBP	14.0	1.8	RSIR LST	11.1	192 x 198 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GP12AB	R134a	LBP	15.6	2.1	RSIR LST	11.5	192 x 198.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GP14CB	R134a	LBP	16.5	2.4	RSIR LST	11.5	192 x 203.6 x 162	5/16" (8.2)	5/16" (8.2)	1/4" (6.5)

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electrics] (W x H x D mm)	Connections Inch (mm)		
								Suction/ Process	Process/ Suction	Discharge
GD30MB-b	R134a	HMBP	7.1	1.0	RSIR LST	5.8	140 x 154 x 140	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GD36MB-d	R134a	HMBP	5.2	1.2	CSIR HST	6.7	140 x 159 x 140	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GD40MB-d	R134a	HMBP	5.6	1.3	CSIR HST	6.7	140 x 159 x 140	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL45PB	R134a	HMBP	7.9	1.3	RSIR LST	7.9	192 x 175.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL45TB	R134a	HMBP	6.5	1.3	CSIR HST	8.4	192 x 175.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL60PB	R134a	HMBP	11.6	1.6	RSIR LST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL60TB	R134a	HMBP	8.2	1.6	CSIR HST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL80PB	R134a	HMBP	13.4	2.0	RSIR LST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL80TB	R134a	HMBP	9.7	2.0	CSIR HST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL90PB	R134a	HMBP	14.3	2.3	RSIR LST	10.8	192 x 203.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GL90TB	R134a	HMBP	12.0	2.3	CSIR HST	10.8	192 x 203.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
GP12TB	R134a	HMBP	13.5	3.1	CSIR HST	11.2	192 x 203.6 x 162	5/16" (8.1)	5/16" (8.1)	1/4" (6.5)
GP14TB	R134a	HMBP	18.0	3.6	CSIR HST	11.5	192 x 216 x 162	5/16" (8.1)	5/16" (8.1)	1/4" (6.5)
GP16TB	R134a	HBP	20.0	4.2	CSIR HST	13.0	192 x 216 x 162	5/16" (8.1)	5/16" (8.1)	1/4" (6.5)
GX18TB	R134a	HMBP	24.0	4.6	CSIR HST	15.0	213 x 215 x 174	5/16" (7.94)	5/16" (7.94)	1/4" (6.35)
GX21TB	R134a	HMBP	26.0	5.3	CSIR HST	16.0	213 x 221 x 174	3/8" (9.53)	3/8" (9.53)	1/4" (6.35)
GX23TB	R134a	HMBP	26.0	5.8	CSIR HST	16.5	213 x 221 x 174	3/8" (9.53)	3/8" (9.53)	1/4" (6.35)
GS26TB	R134a	HMBP	32.0	6.8	CSIR HST	22.7	219 x 265 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)
GS26TB	R134a	HMBP	32.0	6.8	CSIR HST	22.7	219 x 265 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)
GS30TB	R134a	HMBP	29.0	6.0	CSR HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)
GS34TB	R134a	HMBP	32.0	7.1	CSR HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)
GS34TB	R134a	HMBP	32.0	7.1	CSR HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)

\*Start current taken from lock rotor Amps

\*\*Run current taken at worst case conditions, for other conditions visit [www.acc-compressors.com](http://www.acc-compressors.com)

### LBP

Ambient & return gases +32°C,  
Liquid temp, inlet valve, sub cooled +32°C

### HMBP

Ambient & return gases +35°C,  
Liquid temp, inlet valve, sub cooled +9°C

RSIR: Resistance Start, Induction Run

CSIR: Capacitor Start, Induction Run

CSR: Capacitor Start & Run

# 01 Compressors & Condensing Units

ACC Compressors : R404A



ML\*\*\*\*



MP\*\*\*\*



MX\*\*\*\*



MS\*\*\*\*

LBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts Evaporating temperature °C				
						-35	-30	-25	-23.3	-10
ML45FB	121.89	1/6	F	4.59	C-V	52	99	134	198	274
ML80FB	144.52	1/4	F	8.10	C-V	99	190	253	372	506
ML90FB (SPC)	150.61	1/3	F	8.85	C-V	104	207	276	407	549
MP12FB	173.46	3/8	F	12.00	C-V	104	252	351	523	747
MP14FB	202.34	1/2	F	14.00	C-V	121	304	422	628	880
MX18FB	250.93	5/8	F	18.39	C-V	173	397	548	814	1151
MX21FB	281.13	3/4	F	20.72	C-V	212	463	632	936	1301
MR22FB	325.61	2/3	F	21.75	C-V	138	269	633	953	1427
MX23FB	325.61	7/8	F	23.20	C-V	260	535	720	1064	1460
MS26FB	344.62	3/4	F	25.93	C-V	182	571	816	1221	1743
MS26FB-V	355.78	3/4	F	25.93	C-V	182	571	816	1221	1743
MS34FB-B-T	376.33	1	F	34.42	C-V	242	763	1089	1628	2319
MS34FB-B-VS	388.53	1	F	34.42	C-V	242	763	1089	1628	2319



ML\*\*\*\*



MP\*\*\*\*



MX\*\*\*\*



MS\*\*\*\*

HMBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts Evaporating temperature °C				
						-25	-15	5	+7.2	10
ML45TB	135.01	1/5	F	4.50	C-V	151	238	528	663	624
ML60TB	138.54	1/4	F	5.67	C-V	166	277	647	814	769
ML90TB	155.48	3/8	F	8.85	C-V	282	463	1055	1326	1249
MP12TB	214.12	1/2	F	12.00	C-V	372	634	1463	1837	1731
MP14TB	225.54	1/2	F	14.00	C-V	463	765	1673	2092	1961
MX18TB	281.14	7/8	F	18.39	C-V	554	936	2157	2709	2554
MX21TB	319.52	1	F	20.72	C-V	625	1052	2425	2617	2873
MS26TB	327.31	1 3/8	F	25.93	C-V	674	1294	3185	4011	3788
MS26TB-VS	342.45	1 3/8	F	25.93	C-V	674	1294	3185	4011	3788



MS\*\*\*\*

HBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts Evaporating temperature °C				
						-15	-5	5	+7.2	10
MS34TB	339.25	1 5/8	F	34.42	C-V	1860	2935	4231	4551	4959
MS34TB-VS	354.44	1 5/8	F	34.42	C-V	1860	2935	4231	4551	4959

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# Compressors & Condensing Units

01

ACC Compressors : R404A



**Technical**

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electronics] (W x H x D mm)	Connections Inch (mm)			
								Suction/ Process	Process/ Suction	Discharge	
ML45FB	R404A	LBP	8.6	1.8	CSIR	HST	9.9	192 x 191.1 x 162	1/4" (6.35)	1/4" (6.35)	3/16" (4.9)
ML80FB	R404A	LBP	12.2	2.8	CSIR	HST	10.9	192 x 191.1 x 162	1/4" (6.35)	1/4" (6.35)	3/16" (4.9)
ML90FB	R404A	LBP	12.2	3.0	CSIR	HST	11.0	192 x 203.5 x 162	1/4" (6.35)	1/4" (6.35)	3/16" (4.9)
MP12FB	R404A	LBP	14.8	3.6	CSIR	HST	12.0	192 x 216 x 162	5/16" (8.1)	5/16" (8.1)	1/4" (6.5)
MP14FB	R404A	LBP	17.5	4.5	CSIR	HST	13.9	192 x 216 x 162	5/16" (8.2)	5/16" (8.2)	1/4" (6.5)
MX18FB	R404A	LBP	18.0	3.0	CSR	HST	17.3	213 x 221 x 217	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)
MX21FB	R404A	LBP	24.0	3.6	CSR	HST	17.5	213 x 221 x 174	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)
MR22FB	R404A	LBP	24.0	5.3	CSR	HST	20.0	219 x 222 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8)
MX23FB	R404A	LBP	24.0	4.0	CSR	HST	17.5	213 x 221 x 174	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)
MS26FB	R404A	LBP	30.0	6.5	CSR	HST	22.6	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8)
MS26FB	R404A	LBP	30.0	6.5	CSR	HST	22.6	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8)
MS34FB	R404A	LBP	39.0	9.1	CSR	HST	22.7	219 x 276 x 165	5/8" (15.9)	3/8" (9.6)	5/16" (8)
MS34FB	R404A	LBP	39.0	9.1	CSR	HST	22.7	219 x 276 x 165	5/8" (15.9)	3/8" (9.6)	5/16" (8)

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electronics] (W x H x D mm)	Connections Inch (mm)			
								Suction/ Process	Process/ Suction	Discharge	
ML45TB	R404A	HMBP	9.5	2.2	CSIR	HST	10.1	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)
ML60TB	R404A	HMBP	10.6	2.6	CSIR	HST	10.1	192 x 191.1 x 162	1/4" (6.35)	1/4" (6.35)	3/16" (4.9)
ML90TB	R404A	HMBP	16.0	4.1	CSIR	HST	11.6	192 x 203.5 x 162	1/4" (6.35)	1/4" (6.35)	3/16" (4.9)
MP12TB	R404A	HMBP	17.0	4.2	CSR	HST	13.5	170 x 216 x 162	3/8" (9.6)	5/16" (8.2)	1/4" (6.5)
MP14TB	R404A	HMBP	19.0	5.2	CSR	HST	13.5	192 x 216 x 162	3/8" (9.53)	5/16" (8.2)	1/4" (6.35)
MX18TB	R404A	HMBP	19.0	6.5	CSR	HST	17.2	213 x 221 x 217	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)
MX21TB	R404A	HMBP	33.0	7.1	CSR	HST	17.5	213 x 221 x 217	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)
MS26TB	R404A	HMBP	38.0	8.7	CSR	HST	23.0	219 x 276 x 165	1/2" (12.7)	3/8" (9.53)	5/16" (8.2)
MS26TB	R404A	HMBP	38.0	8.7	CSR	HST	23.0	219 x 276 x 165	1/2" (12.7)	3/8" (9.53)	5/16" (8.2)

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electronics] (W x H x D mm)	Connections Inch (mm)			
								Suction/ Process	Process/ Suction	Discharge	
MS34TB	R404A	HBP	41.0	12.8	CSR	HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8)
MS34TB	R404A	HBP	41.0	12.8	CSR	HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8)

\*Start current taken from lock rotor Amps

\*\*Run current taken at worst case conditions, for other conditions visit [www.acc-compressors.com](http://www.acc-compressors.com)

**LBP**

Ambient & return gases +32°C,  
Liquid temp, inlet valve, sub cooled +32°C

**HMBP**

Ambient & return gases +35°C,  
Liquid temp, inlet valve, sub cooled +9°C

**RSIR:** Resistance Start, Induction Run

**CSIR:** Capacitor Start, Induction Run

**CSR:** Capacitor Start & Run

# 01 Compressors & Condensing Units

ACC Compressors : R22



L\*\*TN



P\*\*TN



X\*\*TN



S\*\*TN

HMBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts				
						Evaporating temperature °C				
						-25	-15	5	+7.2	10
L45TN	132.78	1/5	F	4.50	C-V	156	206	497	581	592
L57TN	138.80	1/5	F	5.67	C-V	194	255	612	715	728
L76TN	152.74	3/8	F	7.57	C-V	268	347	816	953	971
L88TN	159.79	3/8	F	8.85	C-V	322	416	975	1140	1161
P12TN	210.67	1/2	F	12.00	C-V	412	537	1312	1538	1574
S22TN-V	338.55	7/8	F	21.77	C-V	645	890	2460	2907	3000
S26TN	344.10	1	F	25.93	C-V	857	1182	3027	3548	3623
S26TN-V	357.86	1	F	25.93	C-V	857	1182	3027	3548	3623

HMBP Model	List Price £	Power HP	Compressor Cooling	Displacement cm <sup>3</sup>	Expansion Device	Cooling Capacity Watts				
						Evaporating temperature °C				
						-25	-15	5	+7.2	10
X18TN	278.10	3/4	F	18.10	C-V	554	755	2022	2384	2454

## EXTRA COLD PACKAGED CONDENSING UNITS



Use the selection tables at the front of this catalogue to quickly select the right kit for your job.

**Part of Hawco Refrigeration's Total Cooling Solutions**



Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electronics] (W x H x D mm)	Suction/Process	Process/Suction	Discharge	Connections Inch (mm)	
<b>L45TN</b>	R22	HMBP	9.0	1.7	CSIR	HST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)	
<b>L57TN</b>	R22	HMBP	9.0	2.0	CSIR	HST	9.5	192 x 191.1 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)	
<b>L76TN</b>	R22	HMBP	12.3	2.8	CSIR	HST	10.0	192 x 203.5 x 162	1/4" (6.5)	1/4" (6.5)	3/16" (4.9)	
<b>L88TN</b>	R22	HMBP	10.6	3.3	CSIR	HST	10.6	192 x 203.5 x 162	5/16" (8.2)	5/16" (8.2)	1/4" (6.5)	
<b>P12TN</b>	R22	HMBP	14.0	3.2	CSIR	HST	12.3	192 x 216 x 162	3/8" (9.7)	5/16" (8.2)	1/4" (6.5)	
<b>S22TN-V</b>	R22	HMBP	32.0	5.6	CSIR	HST	22.7	219 x 265 x 165	5/8" SAE	3/8" (9.6)	5/16" (8.0)	
<b>S26TN</b>	R22	HMBP	35.0	7.2	CSIR	HST	22.7	219 x 276 x 165	1/2" (12.7)	3/8" (9.6)	5/16" (8.0)	
<b>S26TN-V</b>	R22	HMBP	35.0	7.2	CSIR	HST	22.7	219 x 276 x 165	1/2" SAE	3/8" (9.6)	5/16" (8.0)	

Model	Refrigerant	Application	Start Current (Amp)*	Running Current (Amp)**	Motor Type	weight (kg)	Dimensions [Excl. electronics] (W x H x D mm)	Suction/Process	Process/Suction	Discharge	Connections Inch (mm)	
<b>X18TN</b>	R22	HBP	31.9	6.5	CSIR	HST	17.8	213 x 221 x 174	3/8" (9.7)	3/8" (9.7)	1/4" (6.5)	

\*Start current taken from lock rotor Amps

\*\*Run current taken at worst case conditions, for other conditions visit [www.acc-compressors.com](http://www.acc-compressors.com)

#### LBP

Ambient & return gases +32°C,

Liquid temp, inlet valve, sub cooled +32°C

#### HMBP

Ambient & return gases +35°C,

Liquid temp, inlet valve, sub cooled +9°C

**RSIR**: Resistance Start, Induction Run

**CSIR**: Capacitor Start, Induction Run

**CSR**: Capacitor Start & Run

## Create your Coldroom Package in 3 EASY STEPS

# 1

### Choose your Cooler



# 2

### Choose your Condensing Unit



# 3

### Choose your Ancillaries



# 01 Compressors & Condensing Units

## ACC Compressor & Condensing Unit Accessories

### Evaporative Trays

Part No.	Description	List Price £
125451 EVAP TRAY	Evaporative tray to suit D body compressors	7.49
109955 EVAP TRAY	Evaporative tray to suit L body compressors	7.49
401015 FIXINGS	Snap on fixings for D/L body compressors (Set of 4)	1.52

### Condensing Unit Housings



SCH-01

Flat packed housings, in two standard sizes, suitable for most brands of outdoor refrigeration condensing equipment.



The Electro-galvanised steel receives 8-phase, epoxy-polymer powder coating, with a scratch resistant, textured finish (RAL 7023)



SCH-02

Model	Type	Size (mm)		List Price £
		H x W x D		
SCH-01	Small Housing	Ext: 500 x 600 x 710		127.00
		Int: 410 x 640 x 530		
SCH-02	Large Housing	Ext: 550 x 720 x 810		148.92
		Int: 460 x 740 x 640		

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### Crankcase Heaters

A range of heaters for air conditioners and refrigeration compressors to prevent the absorption of refrigerant into the oil. The lower the temperature is, the faster and the more complete is the absorption. This will cause severe damage when the compressor starts due to lack of lubrication.

- Quick and easy installation
- Silicon insulated heating element
- Tinned copper braid for mechanical protection and earthing
- Completely moistureproof
- Special dimensions on request
- Multicore cold tail
- CE marking



#### Specification

Insulation resistance : 100 Megaohms minimum at 2500 Volts

Tolerance on output : +/- 10%

Cold tail : 3 x 0.75 mm<sup>2</sup> PVC insulated

Cold tail length : 1m as a standard



Model	Rating (W)	Size (mm)	Min Compressor dia. (mm)	Max Compressor dia. (mm)	List Price £
JFCH-10	35	120 - 170	Ø 120	Ø 175	14.00
JFCH-40	55	180 - 280	Ø 180	Ø 280	15.50
JFCH-60	65	245 - 330	Ø 245	Ø 370	17.50

- Die cast aluminium construction. Wire sprung type legs
- Removable 450mm (18") cable with moulded plug
- Solid state, PTC controlled, self regulating
- UL Approved

### Condensate Tray

#### Specification

Voltage: 220V

Dimensions: 120 x 317 x 70mm

Connection: 450mm power cord w/ moulded end (included)



Model	Description	Evaporation rate	List Price £
T12-0372	160W Condensate tray. Capacity 1.5 litres	0.17 l/hr	45.00
T12-5200	300W Condensate tray. Capacity 1.5 litres	0.28 l/hr	49.00
T12-3350	Wall mount bracket		16.00



It is important that the sprung legs included or the mounting bracket are used to mount the tray to avoid burn-out. Not suitable for mounting on wet, wood or flammable surfaces.

### Anti-Vibration Pads

DiversiTech EVA anti-vibration pads are designed to eliminate vibrations emanating from motor driven appliances such as compressors used in air-conditioning and refrigeration units. This product consists of a polymeric foam core laminated with two-ribbed, 90-degree-opposed, rubber sheets.



Part N°	Description	List Price £
AVP-50	Anti-vibration pad. Size: 50 x 50 x 22mm	1.32

### Anti-Vibration Strip



Hawco anti-vibration mounting strip. A cost effective method for sound and vibration attenuation. Suitable for use under condensing units, air conditioning condensing units, fans and pump sets.



Maximum loading 10 Tonnes/m<sup>2</sup> or 1kg/cm<sup>2</sup>

Part N°	Description	List Price £
P500-5	Anti-vibration strip. Size: 500 x 50 x 15mm	3.52
P1200-7	Anti-vibration strip. Size: 1200 x 75 x 15mm	13.97

# 01 Compressors & Condensing Units

## Hawco: Packaged Condensing Units (R404A)



The HAWCO range of packaged Condensing Units features the latest design technology, guaranteeing both performance and energy efficiency resulting in reduced running costs.

The HAWCO units are available for R404a refrigerant across High, Medium and Low temperature ranges. The entire range can be directly balanced with Lu-Ve SHC and SHA evaporators to suit a wide spectrum of applications. They all can be controlled with Hawco's wide range of Control Panels and controllers.

These HAWCO units are fabricated from painted galvanized steel ensuring a durable weatherproof unit that can be ground, flat roof or wall mounted. Their design makes them ideal for situations where space is limited and aesthetics are important. These units house the latest energy efficient hermetic compressors and condenser coils with an energy efficient Ziel EBM fan.



### Condensing Unit Features:

- Exterior suction and discharge service valves
- System Isolator
- L'Unite Hermetique Compressor
- Compressor contactor with over-current protection
- Liquid Receiver with service shut off valve and pressure relief valve
- ALCO Liquid line Filter Drier and ALCO Sight Glass
- ALCO Adjustable HP & LP switch

HMBP Model	List Price £	Power HP	Displacement cm <sup>3</sup>	Sound Level dBA @ 10m	Cooling Capacity Watts							List Price £
					Evaporating temperature °C							
					-10	-5	0	5	7.2	10	15	
CSU/0100-ME/D	786.50	1/2	11.3	33	711	908	1141	1422	1545	1739	2086	786.50
CSU/0140-ME/D	828.41	5/8	15.2	35	1009	1284	1607	1999	2172	2449	2943	828.41
CSU/0175-ME/D	846.91	3/4	18.3	35	1252	1583	1972	2443	2650	2978	3563	846.91
CSU/0205-ME/D	862.93	1	24.2	36	1501	1955	2485	3125	3406	3851	4646	862.93
CSU/0245-ME/D	957.85	1 1/4	25.95	42	1776	2273	2857	3554	3860	4331	5173	957.85
CSU/0325-ME/D	989.91	1	34.45	42	2353	3009	3756	5057	5630	6027	6735	989.91
CSU/0385-ME/D	1,108.64	2	43.5	45	2570	3407	4361	5483	5977	6739	8101	1,108.64
CSU/0385-TE/D	1,156.23	2	43.5	45	2570	3407	4361	5483	5977	6739	8101	1,156.23
CSU/0500-ME/D	1,270.88	2 1/2	56.65	45	3300	4419	5706	7148	7782	8658	10222	1,270.88
CSU/0500-TE/D	1,200.58	2 1/2	56.65	45	3300	4419	5706	7148	7782	9675	13056	1,200.58
CSU/0670-TE/D	1,425.01	3	74.25	44	4475	5771	7276	9039	9814	10978	13056	1,425.01
CSU/0740-TE/D	1,508.84	4 1/2	100.7	45	4922	6752	8958	11630	12805	14627	17880	1,508.84
CSU/0890-TE/D	1,680.00	5	112.5	46	5895	7942	10452	11588	12088	15010	20227	1,680.00
CSU/1065-TE/D	1,919.84	6	124.4	46	7077	9294	11972	13144	13660	16927	22760	1,919.84
CSU/1165-TE/D	2,265.96	6 1/2	134.8	46	7710	10163	13123	16493	17976	20428	24806	2,265.96



LBP Model	List Price £	Power HP	Displacement cm <sup>3</sup>	Sound Level dBA @ 10m	Cooling Capacity Watts						List Price £
					Evaporating temperature °C						
					-35	-30	-25	-23	-20	-15	
FSU/0110-ME/D	824.73	3/4	26.15	34	578	817	1110	1210	1483	1832	824.73
FSU/0145-ME/D	859.88	1 1/2	34.45	37	741	1084	1346	1608	1902	2407	859.88
FSU/0170-ME/D	1,124.86	2	53.2	38	738	1319	1751	2183	2662	3476	1,124.86
FSU/0270-ME/D	1,170.84	2 1/2	74.25	41	1380	2016	2575.5	3135	3796	4931	1,170.84
FSU/0360-TE/D	1,370.93	4	106.4	44	1475	2638	3502.5	4367	5324	6952	1,370.93
FSU/0475-TE/D	1,581.84	5	106.4	47	2378	3542	4532	5522	6688	8711	1,581.84

Conditions based on 10m of pipe work.

ME: Single phase model, 220-240V, 50/60Hz

TE: Three phase model, 380-420V, 50/60Hz

### Optional Extras



### Features

- Pressure actuated fan speed control
- Adjustable pressure for Cut-off
- High voltage Triac (800 Volts)
- Integrated protection circuit against voltage peaks
- Compact Design
- IP65 protection
- Easy mounting and adjustment
- Easy retrofit into existing plants
- No additional gasket required (complete moulded into plug)
- EMC-Filter included in connection FSF
- Multi position plug including 1.5m cable for flexible installation



Model	Description	List Price £
FSX-42S	Fan Speed Controller, proportional voltage output over range 3.8 Bar with cut off at minimum 13 to 25 Bar	83.73
FSF-N15	EMC filter plug for FSX fan speed controller, 1.5m lead	16.89

Stock availability - Although Hawco will endeavour to keep stock of all our packaged units, we cannot guarantee their availability particularly at peak season. Please contact the sales office to check availability.

# Compressors & Condensing Units 01

## Hawco: Packaged Condensing Units (R404A)

### Technical

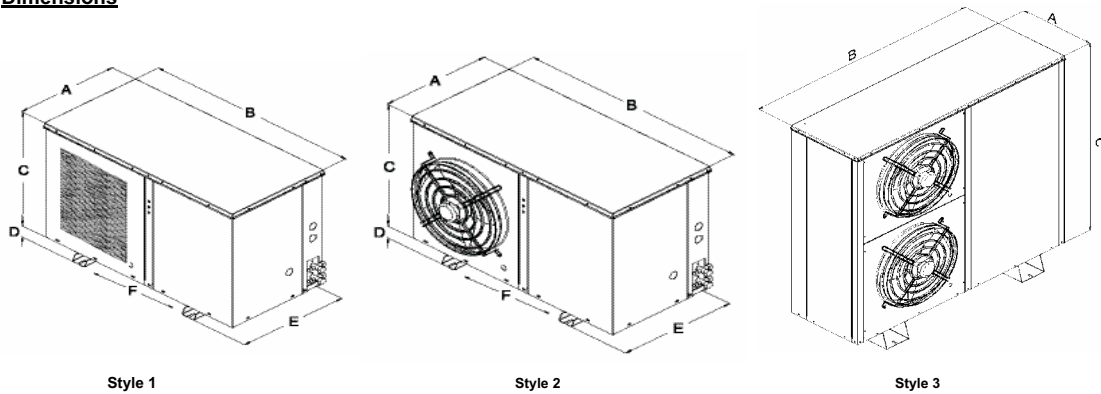
Model	Refrigerant	Room Volume (Guide Only)						Power Supply Volt/Ø/Hz	Full Load Amps (A)	Circuit Breaker (D Rated - Amps)	Installation Power (W)
		Room Temp. -21°C (Evap -27°C, Amb 32°C)		Room Temp. +1°C (Evap -5°C, Amb 32°C)		Room Temp. +11°C (Evap +5°C, Amb 32°C)					
		Volume (m³)	Duty	Volume (m³)	Duty	Volume (m³)	Duty				
CSU/0100-ME/D	R404a	-	-	4.5	908	13	1300	240/1/50	4.14	13	798
CSU/0140-ME/D	R404a	-	-	7.5	1284	24	1800	240/1/50	6.6	16	1028
CSU/0175-ME/D	R404a	-	-	10.5	1583	40	2200	240/1/50	7.1	20	1479
CSU/0205-ME/D	R404a	-	-	15	1955	58	2800	240/1/50	10.1	25	1495
CSU/0245-ME/D	R404a	-	-	18	2273	80	3200	240/1/50	10.6	25	1668
CSU/0325-ME/D	R404a	-	-	28	2900	125	4150	240/1/50	15.4	40	2317
CSU/0385-ME/D	R404a	-	-	34	3300	150	4900	240/1/50	18.1	50	-
CSU/0500-ME/D	R404a	-	-	47	4419	240	6400	240/1/50	26.3	63	-
CSU/0385-TE/D	R404a	-	-	34	3300	150	4900	415/3/50	6.3	13	-
CSU/0500-TE/D	R404a	-	-	47	4419	240	6400	415/3/50	8.1	20	-
CSU/0670-TE/D	R404a	-	-	68	5600	330	8000	415/3/50	9.2	20	-
CSU/0740-TE/D	R404a	-	-	78	6390	480	10400	415/3/50	12	25	-
CSU/0890-TE/D	R404a	-	-	93	7702	-	-	415/3/50	14	25	-
CSU/1065-TE/D	R404a	-	-	113	9108	-	-	415/3/50	15.2	25	-
CSU/1165-TE/D	R404a	-	-	125	9835	-	-	415/3/50	18	32	-
FSU/0110-ME/D	R404a	3.2	900	-	-	-	-	240/1/50	6.3	16	1355
FSU/0145-ME/D	R404a	6	1200	-	-	-	-	240/1/50	10	25	1785
FSU/0170-ME/D	R404a	12	1600	-	-	-	-	240/1/50	19	50	1627
FSU/0270-ME/D	R404a	18	2016	-	-	-	-	240/1/50	25	63	2188
FSU/0360-TE/D	R404a	34	3400	-	-	-	-	415/3/50	6.3	16	1355
FSU/0475-TE/D	R404a	50	4300	-	-	-	-	415/3/50	14	32	3934

Model	Net Weight (kg)	Suction Valve (Inch[mm])	Discharge Valve (Inch[mm])	Compressor Model	Power Rating (W)	Fan Ø (mm)	Consumption Capacity	Air Volume (m³/h)	Fin Spacing (mm)	Condenser Surface Area (m²)
CSU/0100-ME/D	52	1/2"[12.7]	1/4"[6.35]	CAE9460Z	587	300	73	830	3.2	4.3
CSU/0140-ME/D	64	1/2"[12.7]	1/4"[6.35]	CAJ9480Z	762	300	73	830	3.2	4.3
CSU/0175-ME/D	66	5/8"[15.875]	3/8"[9.525]	CAJ9510Z	762	350	130	1150	3.2	6.7
CSU/0205-ME/D	67	5/8"[15.875]	3/8"[9.525]	CAJ9513Z	1068	350	73	1100	2.5	8.75
CSU/0245-ME/D	70	5/8"[15.875]	3/8"[9.525]	CAJ4517Z	1174	350	73	1100	2.5	8.75
CSU/0325-ME/D	79	5/8"[15.875]	3/8"[9.525]	CAJ4519Z	1681	350	130	2901	2.5	16.5
CSU/0385-ME/D	93	5/8"[15.875]	3/8"[9.525]	FH4524Z	1753	400	160	2901	2.5	16.5
CSU/0500-ME/D	88	3/4"[19.05]	3/8"[9.525]	FH4531Z	2310	450	245	2901	2.5	16.5
CSU/0385-TE/D	93	5/8"[15.875]	3/8"[9.525]	TFH4524Z	1753	400	160	2901	2.5	16.5
CSU/0500-TE/D	88	3/4"[19.05]	3/8"[9.525]	TFH4531Z	2310	450	245	2901	2.5	16.5
CSU/0670-TE/D	107	3/4"[19.05]	1/2"[12.7]	FH4540Z	2800	450	245	6566	2.5	31.7
CSU/0740-TE/D	121	3/4"[19.05]	1/2"[12.7]	TAG4553Z	3192	450	245	6566	2.5	31.7
CSU/0890-TE/D	132	7/8"[22.225]	1/2"[12.7]	TAG4561Z	4264	500	770	6566	2.5	31.7
CSU/1065-TE/D	140	7/8"[22.225]	1/2"[12.7]	TAG4568Z	4800	500	770	6566	3.2	31.7
CSU/1165-TE/D	140	7/8"[22.225]	1/2"[12.7]	TAG4573Z	4755	2 x 400	2 x 160	6952	2.5	52.8
FSU/0110-ME/D	64	1/2"[12.7]	1/4"[6.35]	CAJ2446Z	845	300	73	830	3.2	4.3
FSU/0145-ME/D	68	5/8"[15.875]	3/8"[9.525]	CAJ2464Z	1126	350	73	1080	3.2	6.7
FSU/0170-ME/D	77	5/8"[15.875]	3/8"[9.525]	FH2480Z	1527	400	73	1100	2.5	8.75
FSU/0270-ME/D	83	5/8"[15.875]	3/8"[9.525]	FH2511Z	1895	400	130	1007	2.5	11.56
FSU/0360-TE/D	64	3/4"[19.05]	3/8"[9.525]	TAG2516Z	845	450	160	2901	2.5	16.5
FSU/0475-TE/D	119	7/8"[22.225]	1/2"[12.7]	TAG2516Z	2522	450	245	6566	2.5	31.7

# 01 Compressors & Condensing Units

Hawco : Packaged Condensing Units (R404A)

## Dimensions



Model	Dimension						Style
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	
CSU/0100-ME/D	490	955	480	30	495	500	1
CSU/0140-ME/D	490	955	480	30	495	500	1
CSU/0175-ME/D	490	955	480	30	495	500	1
CSU/0205-ME/D	490	955	480	30	495	500	1
CSU/0245-ME/D	490	955	480	30	495	500	1
CSU/0325-ME/D	490	955	480	30	495	500	1
CSU/0385-ME/D	521	971	605	30	550	565	2
CSU/0500-ME/D	521	971	605	30	550	565	2
CSU/0385-TE/D	521	971	605	30	550	565	2
CSU/0500-TE/D	521	971	605	30	550	565	2
CSU/0670-TE/D	481	1241	685	30	521	845	2
CSU/0740-TE/D	481	1241	685	30	521	845	2
CSU/0890-TE/D	481	1241	685	30	521	845	2
CSU/1065-TE/D	481	1241	685	30	521	845	2
CSU/1165-TE/D	480	1259	1100	30	475	842	3
FSU/0110-ME/D	490	955	480	30	406	500	1
FSU/0145-ME/D	490	955	480	30	495	500	1
FSU/0170-ME/D	490	955	480	30	495	500	1
FSU/0270-ME/D	490	955	480	30	495	500	1
FSU/0360-TE/D	521	971	605	30	524	565	2
FSU/0475-TE/D	481	1241	685	30	485	845	2

# Compressors & Condensing Units

# 01



## Hawco : Packaged Condensing Unit Spares

### Single Phase Units

Model	Compressor		Compressor Electrics		Fan Assembly	
	Part No.	List Price £	Part No.	List Price £	Part No.	List Price £
CSU/0100-ME/D	CAE9460Z	220.00	HPU ELEC BOX CSU0100	67.32	HPU FAN MOTOR/300	83.82
CSU/0140-ME/D	CAJ9480Z	365.00	HPU ELEC BOX CSU0140	67.32	HPU FAN MOTOR/300	83.82
CSU/0175-ME/D	CAJ9510Z	385.00	HPU ELEC BOX CSU0175	97.36	HPU FAN MOTOR/350	87.77
CSU/0205-ME/D	CAJ9513Z	405.00	HPU ELEC BOX CSU0205	95.63	HPU FAN MOTOR/350	87.77
CSU/0245-ME/D	CAJ4517Z	410.00	HPU ELEC BOX CSU0245	109.18	HPU FAN MOTOR/350	87.77
CSU/0325-ME/D	CAJ4519Z	435.00	HPU ELEC BOX CSU0325	100.24	HPU FAN MOTOR/350	87.77
CSU/0385-ME/D	FH4524Z	505.00	HPU ELEC BOX CSU0385	98.04	HPU FAN MOTOR/400	94.52
CSU/0500-ME/D	FH4531Z	545.00	HPU ELEC BOX CSU0500	114.75	HPU FAN MOTOR/450	113.52
FSU/0110-ME/D	CAJ2446Z	370.00	HPU ELEC BOX FSU0110	98.04	HPU FAN MOTOR/300	83.82
FSU/0145-ME/D	CAJ2464Z	395.00	HPU ELEC BOX FSU0145	101.20	HPU FAN MOTOR/350	87.77
FSU/0170-ME/D	FH2480Z	495.00	HPU ELEC BOX FSU0170	110.40	HPU FAN MOTOR/400	94.52
FSU/0270-ME/D	FH2511Z	510.00	HPU ELEC BOX FSU0270	104.57	HPU FAN MOTOR/400	94.52

### 3-Phase Units

Model	Compressor		Fan Assembly	
	Part No.	List Price £	Part No.	List Price £
CSU/0385-TE/D	TFH4524Z	505.00	HPU FAN MOTOR/400	94.52
CSU/0500-TE/D	TFH4531Z	480.00	HPU FAN MOTOR/450	117.06
CSU/0670-TE/D	TFH4540Z	515.00	HPU FAN MOTOR/450	117.06
CSU/0740-TE/D	TAG4553Z	665.00	HPU FAN MOTOR/450	117.06
CSU/0890-TE/D	TAG4561Z	715.00	HPU FAN MOTOR/050	196.68
CSU/1065-TE/D	TAG4568Z	750.00	HPU FAN MOTOR/050	196.68
CSU/1165-TE/D	TAG4573Z	795.00	HPU FAN MOTOR/400	94.52
FSU/0360-TE/D	TAG2516Z	710.00	HPU FAN MOTOR/450	117.06
FSU/0475-TE/D	TAG2516Z	710.00	HPU FAN MOTOR/450	117.06

Pressure Switch	
Alco Dual pressure switch and capillary coupler to suit all Hawco packaged units	
	
Pressure Switch	
Part No.	List Price £
PS2-A7A	32.39
Coupler	
	
Part No.	List Price £
TCK-500V	3.39

### Service Valves

Model	Service Valve Sizes		Service Valve (Suction line)		Service Valve (Liquid line)	
	Suction (Inch)	Liquid (Inch)	Part No.	List Price £	Part No.	List Price £
CSU/0100-ME/D	1/2"	1/4"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 14	10.00
CSU/0140-ME/D	1/2"	1/4"	HPU SERVICE VALVE 12	12.00	HPU SERVICE VALVE 14	10.00
CSU/0175-ME/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
CSU/0205-ME/D	1/2"	1/4"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 14	10.00
CSU/0245-ME/D	1/2"	1/4"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 14	10.00
CSU/0325-ME/D	1/2"	3/8"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 38	12.00
CSU/0385-ME/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
CSU/0500-ME/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
FSU/0110-ME/D	1/2"	1/4"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 14	10.00
FSU/0145-ME/D	5/8"	1/4"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 14	10.00
FSU/0170-ME/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
FSU/0270-ME/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
CSU/0385-TE/D	1/2"	3/8"	HPU SERVICE VALVE 12	14.00	HPU SERVICE VALVE 38	12.00
CSU/0500-TE/D	5/8"	3/8"	HPU SERVICE VALVE 58	16.00	HPU SERVICE VALVE 38	12.00
CSU/0670-TE/D	3/4"	1/4"	HPU SERVICE VALVE 34	18.00	HPU SERVICE VALVE 14	10.00
CSU/0740-TE/D	3/4"	1/4"	HPU SERVICE VALVE 34	18.00	HPU SERVICE VALVE 14	10.00
CSU/0890-TE/D	7/8"	1/4"	HPU SERVICE VALVE 78	20.00	HPU SERVICE VALVE 14	10.00
CSU/1065-TE/D	7/8"	1/4"	HPU SERVICE VALVE 78	20.00	HPU SERVICE VALVE 14	10.00
CSU/1165-TE/D	7/8"	1/4"	HPU SERVICE VALVE 78	20.00	HPU SERVICE VALVE 14	10.00
FSU/0360-TE/D	7/8"	3/8"	HPU SERVICE VALVE 78	20.00	HPU SERVICE VALVE 38	12.00
FSU/0475-TE/D	7/8"	1/4"	HPU SERVICE VALVE 78	20.00	HPU SERVICE VALVE 14	10.00

# 01 Compressors & Condensing Units

## Hitachi ZS Scroll Compressors



Low Profile Space Saving Design  
Wide Range Line Up  
Compact Size  
Wide Operating Range  
Low Sound and Vibration  
High Reliability  
Proven Performance

# HITACHI

- Over 13 Years of HITACHI Quality Refrigeration Scroll Compressor Products

Model	Nominal Power HP	Displacement ml/rev	Cooling Capacity Watts										List Price £		
			Evaporating temperature °C												
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
<b>ZS4084S1</b>	1/2	8.4	154.7	185.9	234.7	300.9	384.7	485.9	604.6	740.8	894.5	1065.7	1254.4	1460.5	<b>190.59</b>
<b>ZS6013S1*</b>	3/4	12.5	260.5	307.2	379.7	478.2	602.5	752.7	928.9	1130.9	1358.9	1612.7	1892.4	2198.1	<b>191.76</b>
<b>ZS7516S1</b>	1	15.9	264.9	374.9	500.7	642.3	799.6	972.8	1161.8	1366.6	1587.1	1823.5	2075.7	2343.6	<b>195.12</b>
<b>ZS1120S1</b>	1 1/2	20.1	444.7	550.4	686.9	854.3	1052.5	1281.6	1541.6	1832.4	2154.1	2506.6	2890.0	3304.3	<b>236.47</b>

\* Non-stock item, please contact sales office for lead time and minimum purchase quantity

### ZS4084S1

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	237	283	353	447	565	708	875	1,066	1,281	1,521	1,785	2,073
	240V-50Hz	238	284	355	449	568	712	879	1,071	1,287	1,527	1,792	2,081
40	220V-50Hz	220	262	327	415	525	657	812	989	1,189	1,411	1,656	1,923
	240V-50Hz	223	265	330	418	528	661	816	994	1,195	1,418	1,663	1,932
45	220V-50Hz	202	242	302	383	485	607	749	913	1,097	1,301	1,527	1,772
	240V-50Hz	208	247	306	387	488	610	753	917	1,102	1,308	1,535	1,782
50	220V-50Hz	175	212	267	341	434	546	677	826	994	1,182	1,388	1,612
	240V-50Hz	181	216	270	344	436	548	679	829	998	1,187	1,395	1,621
55	220V-50Hz	148	181	232	299	384	486	604	740	892	1,062	1,249	1,452
	240V-50Hz	155	186	235	301	385	486	605	741	895	1,066	1,254	1,461

### ZS6013S1

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	372	445	552	694	870	1,082	1,328	1,610	1,926	2,277	2,663	3,084
	240V-50Hz	375	446	553	694	871	1,083	1,330	1,612	1,930	2,282	2,670	3,093
40	220V-50Hz	350	416	514	645	808	1,004	1,233	1,494	1,788	2,114	2,473	2,864
	240V-50Hz	353	418	516	647	811	1,007	1,237	1,499	1,794	2,122	2,482	2,876
45	220V-50Hz	327	387	476	596	746	927	1,138	1,378	1,650	1,951	2,283	2,644
	240V-50Hz	331	390	480	600	750	931	1,143	1,385	1,658	1,961	2,295	2,659
50	220V-50Hz	292	345	426	535	672	836	1,029	1,250	1,499	1,775	2,080	2,412
	240V-50Hz	296	349	430	539	676	842	1,036	1,258	1,508	1,787	2,094	2,429
55	220V-50Hz	256	303	375	473	597	746	921	1,121	1,348	1,599	1,877	2,180
	240V-50Hz	261	307	380	478	603	753	929	1,131	1,359	1,613	1,892	2,198

### ZS7516S1

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	476	570	705	881	1,099	1,358	1,659	2,001	2,384	2,809	3,275	3,782
	240V-50Hz	475	570	705	882	1,100	1,360	1,661	2,004	2,388	2,813	3,280	3,788
40	220V-50Hz	425	521	653	821	1,023	1,260	1,533	1,841	2,184	2,562	2,975	3,423
	240V-50Hz	423	521	654	822	1,025	1,263	1,536	1,844	2,188	2,566	2,979	3,427
45	220V-50Hz	373	473	602	760	947	1,162	1,407	1,681	1,983	2,315	2,675	3,064
	240V-50Hz	370	472	603	762	950	1,167	1,412	1,685	1,988	2,318	2,678	3,066
50	220V-50Hz	319	422	548	697	868	1,062	1,279	1,519	1,781	2,066	2,373	2,704
	240V-50Hz	317	423	552	702	875	1,070	1,287	1,526	1,787	2,071	2,377	2,705
55	220V-50Hz	265	372	495	634	790	962	1,151	1,357	1,579	1,817	2,072	2,343
	240V-50Hz	265	375	501	642	800	973	1,162	1,367	1,587	1,824	2,076	2,344

### ZS1120S1

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	672	792	968	1,199	1,484	1,825	2,220	2,670	3,175	3,735	4,350	5,019
	240V-50Hz	654	773	945	1,170	1,449	1,781	2,167	2,605	3,097	3,643	4,241	4,893
40	220V-50Hz	617	736	904	1,120	1,384	1,697	2,059	2,469	2,927	3,434	3,990	4,594
	240V-50Hz	606	722	885	1,096	1,355	1,661	2,015	2,417	2,866	3,363	3,908	4,501
45	220V-50Hz	563	680	839	1,040	1,284	1,569	1,897	2,267	2,679	3,133	3,630	4,168
	240V-50Hz	559	671	825	1,022	1,260	1,541	1,863	2,228	2,635	3,084	3,575	4,108
50	220V-50Hz	502	617	768	955	1,177	1,436	1,730	2,060	2,425	2,827	3,264	3,737
	240V-50Hz	502	611	756	938	1,156	1,411	1,702	2,030	2,394	2,795	3,232	3,706
55	220V-50Hz	441	555	697	870	1,071	1,302	1,562	1,852	2,171	2,520	2,898	3,305
	240V-50Hz	445	550	687	854	1,053	1,282	1,542	1,832	2,154	2,507	2,890	3,304

RATING CONDITIONS ;

Refrigerant : R404A

Power supply : 220-240V/50Hz

Suction Temperature.: 32°C

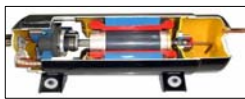
Sub cooling : 0 K

# Compressors & Condensing Units

01

## Hitachi DS Scroll Compressors

# HITACHI



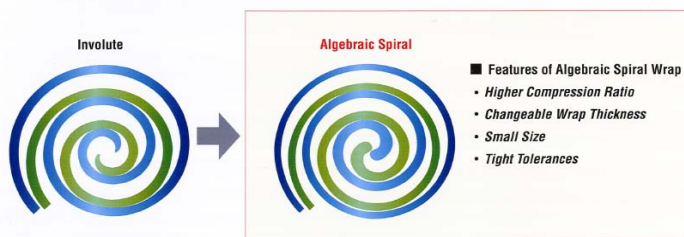
Model	Nominal Power HP	Displacement ml/rev	Cooling Capacity Watts Evaporating temperature °C												List Price £
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
<i>DS1529S1*</i>	2	28.6	673	806	939	1175	1412	1750	2090	2531	2972	3491	4061	4682	<b>400.00</b>
<b>DS1836S1</b>	2 1/2	35.7	687	805	987	1232	1540	1912	2347	2846	3408	4033	4721	5473	<b>340.00</b>
<i>DS2244V1*</i>	3 1/2	44.0	681	920	1211	1555	1952	2401	2903	3458	4065	4725	5437	6202	<b>593.75</b>

\*models in italic are not always kept in stock. Please contact sales office for availability.

**Compressor cooling (DS and ZS):** For applications where it is likely the compressor body will exceed 90°C, injected liquid cooling is required. Liquid injection capillary is included with the accessories pack and a liquid injection thermostat is available separately to order. Please contact the sales office for further information, data sheets and pricing.

The New Algebraic Series attains up to approximately 20% more energy savings than its predecessor, by changing the shape of the spiral wall in the heart of the scroll compressors from a conventional round involute curve to algebraic spiral curve.

Efficiency in the low freezing temperature range (when suction pressure is low), is improved as the algebraic spiral increases the compressor's compression ratio. Performance is also improved as the spiral wall is thickened in the centre.



**DS1529S1** Algebraic Scroll

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	803	1,047	1,292	1,650	2,009	2,483	2,957	3,548	4,139	4,813	5,545	6,333
	240V-50Hz	807	1,051	1,294	1,653	2,013	2,489	2,967	3,562	4,157	4,837	5,574	6,369
40	220V-50Hz	795	990	1,244	1,557	1,929	2,360	2,850	3,399	4,007	4,675	5,401	6,186
	240V-50Hz	800	993	1,246	1,560	1,933	2,366	2,859	3,412	4,025	4,697	5,429	6,222
45	220V-50Hz	727	915	1,103	1,405	1,707	2,122	2,537	3,067	3,597	4,211	4,881	5,608
	240V-50Hz	731	918	1,106	1,408	1,710	2,127	2,545	3,078	3,612	4,231	4,907	5,641
50	220V-50Hz	735	876	1,074	1,329	1,639	2,007	2,431	2,912	3,449	4,042	4,692	5,399
	240V-50Hz	739	879	1,076	1,331	1,643	2,012	2,439	2,922	3,463	4,062	4,717	5,430
55	220V-50Hz	669	803	937	1,173	1,409	1,746	2,083	2,521	2,959	3,474	4,039	4,655
	240V-50Hz	673	806	939	1,175	1,412	1,750	2,090	2,531	2,972	3,491	4,061	4,682

Suction Temperature: 18°C, Sub cooling OK

**DS1836S1** Involute Scroll

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	220V-50Hz	1,079	1,240	1,499	1,855	2,309	2,861	3,510	4,256	5,100	6,041	7,080	8,217
	240V-50Hz	1,092	1,245	1,498	1,850	2,302	2,854	3,506	4,258	5,109	6,060	7,111	8,262
40	220V-50Hz	982	1,131	1,369	1,697	2,113	2,619	3,214	3,897	4,670	5,532	6,483	7,523
	240V-50Hz	991	1,135	1,370	1,696	2,112	2,619	3,216	3,905	4,684	5,553	6,514	7,565
45	220V-50Hz	884	1,022	1,240	1,538	1,917	2,377	2,918	3,539	4,240	5,022	5,885	6,829
	240V-50Hz	889	1,025	1,242	1,541	1,921	2,383	2,927	3,552	4,258	5,047	5,916	6,868
50	220V-50Hz	787	912	1,110	1,380	1,721	2,135	2,622	3,180	3,810	4,513	5,288	6,134
	240V-50Hz	788	915	1,115	1,386	1,731	2,148	2,637	3,199	3,833	4,540	5,319	6,170
55	220V-50Hz	689	803	980	1,221	1,525	1,894	2,326	2,821	3,380	4,003	4,690	5,440
	240V-50Hz	687	805	987	1,232	1,540	1,912	2,347	2,846	3,408	4,033	4,721	5,473

**DS2244V1** Involute Scroll

Condensing Temp. °C	Power Supply	Evaporating Temp. °C											
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
35	400V-50Hz	1,121	1,409	1,780	2,233	2,768	3,386	4,087	4,869	5,735	6,683	7,713	8,826
40	400V-50Hz	1,028	1,301	1,648	2,070	2,566	3,136	3,780	4,499	5,292	6,159	7,100	8,116
45	400V-50Hz	935	1,193	1,517	1,907	2,363	2,885	3,473	4,128	4,848	5,635	6,487	7,406
50	400V-50Hz	808	1,057	1,364	1,731	2,158	2,643	3,188	3,793	4,457	5,180	5,962	6,804
55	400V-50Hz	681	920	1,211	1,555	1,952	2,401	2,903	3,458	4,065	4,725	5,437	6,202

# 01 Compressors & Condensing Units

## Hitachi FL Scroll Compressors

# HITACHI



Model	Gas	Nominal Power HP	Displacement ml/rev	Cooling Capacity Watts								List Price £
				Evaporating temperature °C								
				-40	-35	-30	-25	-20	-15	-10	-5	
FL200DL	R404A	2	40.1	-	-	1580	1970	2420	2940	3550	4230	652.93
FL300DL	R404A	3	56.0	-	-	2210	2750	3380	4110	4950	5920	676.89
FL400DL	R404A	4	71.7	-	-	2860	3570	4370	5320	6420	7660	809.45
FL500DL	R404A	5	90.0	-	-	3590	4470	5490	6670	8050	9620	834.83

Power Supply 3PH/400V/50Hz  
Cooling: 2-stage Liquid Injection

### FL200DL

Condensing Temp. °C	Evaporating Temp. °C							
	-40	-35	-30	-25	-20	-15	-10	-5
35	1380	1760	2190	2720	3320	4030	4860	5800
40	1290	1640	2050	2540	3110	3780	4550	5450
45	1190	1510	1900	2360	2890	3510	4230	5050
50	-	1400	1760	2180	2670	3240	3910	4670
55	-	-	1580	1970	2420	2940	3550	4230

Refrigerant R404A  
Power Supply 3PH/400V/50Hz  
Sub Cooling 5 K  
Return Gas Temp. 18°C  
Cooling Liquid Injection

### FL300DL

Condensing Temp. °C	Evaporating Temp. °C							
	-40	-35	-30	-25	-20	-15	-10	-5
35	1930	2440	3070	3800	4640	5630	6840	8120
40	1800	2290	2870	3550	4350	5290	6370	7620
45	1660	2120	2660	3300	4040	4910	5920	7070
50	-	1940	2430	3020	3710	4420	5440	6510
55	-	-	2210	2750	3380	4110	4950	5920

Refrigerant R404A  
Power Supply 3PH/400V/50Hz  
Sub Cooling 5 K  
Return Gas Temp. 18°C  
Cooling Liquid Injection

### FL400DL

Condensing Temp. °C	Evaporating Temp. °C							
	-40	-35	-30	-25	-20	-15	-10	-5
35	2500	3180	3970	4920	6010	7290	8800	10050
40	2320	2950	3700	4590	5620	6830	8230	9850
45	2150	2740	3440	4270	5220	6350	7650	9140
50	-	2510	3160	3930	4820	5860	7060	8440
55	-	-	2860	3570	4370	5320	6420	7660

Refrigerant R404A  
Power Supply 3PH/400V/50Hz  
Sub Cooling 5 K  
Return Gas Temp. 18°C  
Cooling Liquid Injection

### FL500DL

Condensing Temp. °C	Evaporating Temp. °C							
	-40	-35	-30	-25	-20	-15	-10	-5
35	3140	3980	4980	6160	7540	9150	11030	13180
40	2920	3710	4650	5760	7060	8580	10330	12360
45	2690	3430	4310	5350	6560	7970	9600	11480
50	-	3150	3960	4920	6040	7340	8850	10580
55	-	-	3590	4470	5490	6670	8050	9620

Refrigerant R404A  
Power Supply 3PH/400V/50Hz  
Sub Cooling 5 K  
Return Gas Temp. 18°C  
Cooling Liquid Injection

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