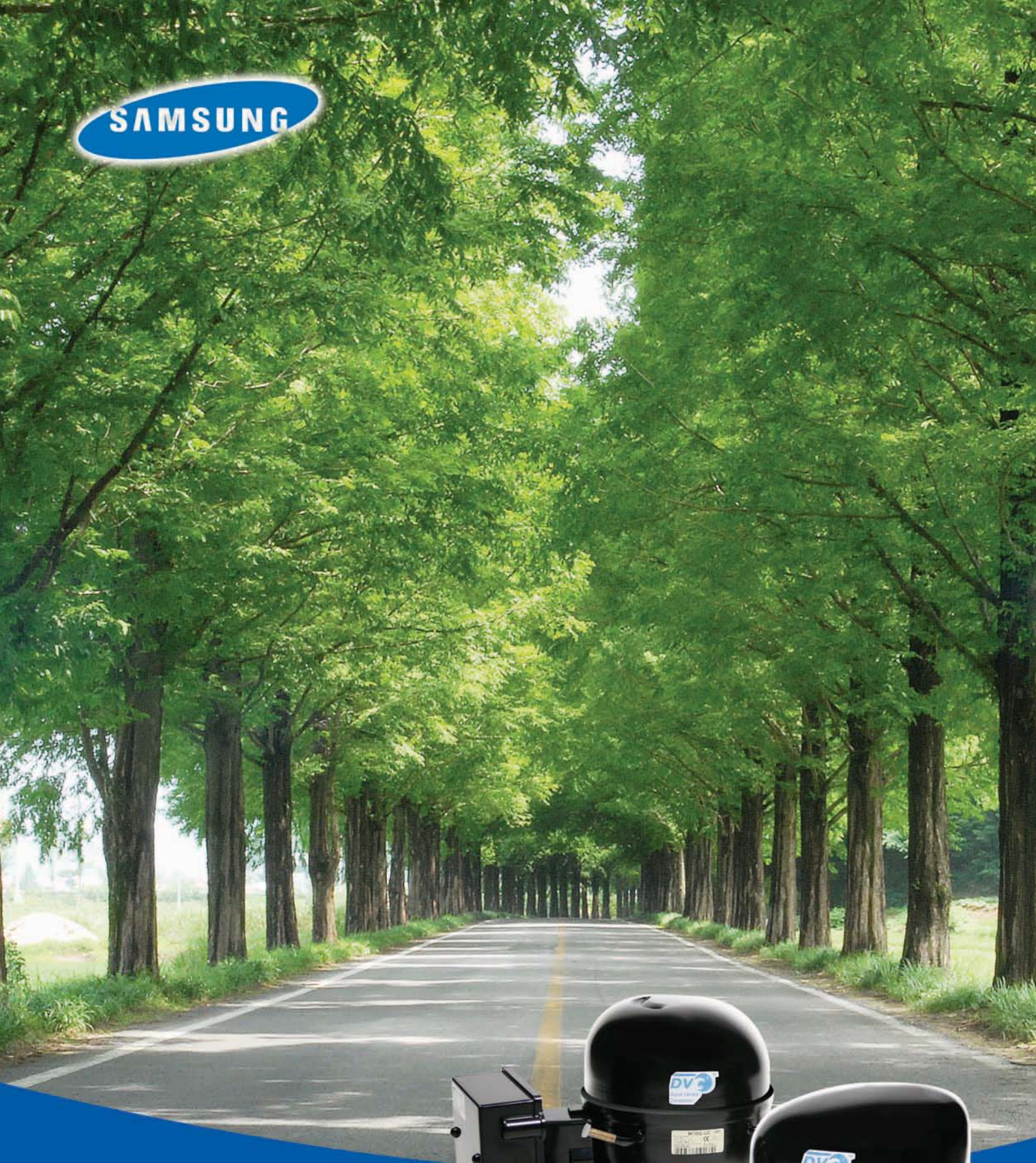
SAMSUNG



Samsung Compressor


최고의 삼성 콤프레샤

Brief History

1975 | Compressor technology collaboration with Kelvinator, USA
1976 | Started to produce Medium frame compressor
1987 | Started to produce Small frame compressor
1993 | Achieved certification of ISO9001
1994 | Started to produce R134a compressor
1996 | Achieved certification of ISO14001
1997 | Moved the plant from Suwon to Gwangju
| Started to produce R600a compressor
1999 | Started to produce BLDC compressor BK Series [DVC 1]
2002 | Started to produce MK Series
2003 | Started to produce Mini frame CD Series
2005 | Started to produce R600a BLDC Compressor EU-Series [DVC 2]
2007 | Started to produce R134a BLDC Compressor BKII-Series [DVC 2]
2008 | Started to produce MS-Series
2009 | Started to produce High EER R600a BLDC ENV-Series [DVC 3]
2010 | Started to produce High EER R134a BLDC MKV-Series [DVC 3]




Model Identification

Name plate

MK 1 62 Q - L 1 U A (① ② ③ ④ ⑤ ⑥ ⑦ ⑧)

FMA 70 C 2 Y (① ③ ④ ⑥ ⑦)

1) Compressor model identification

NUMBER		MEANING
①	Series	CD, DD, SD, MD, SK, MK, DK, BK, EU, EY, HK, MS, FMA, ENV, MKV
②	Refrigerant	1 : R 134a (LBP) 3 : R 12 (LBP) 4 : R 600a (LBP) 6 : R 134a (HBP) 8 : R 12 (HBP)
③	Displacement (cc/Rev.) x 10	24 : 2.40cc, 30 : 2.93cc, 37 : 3.71cc, 43 : 4.38cc, 50 : 5.21cc, 51 : 5.12cc 52 : 5.21cc, 60 : 6.16cc, 62 : 6.16cc, 70 : 6.99cc, 72 : 7.21cc, 80 : 8.19cc, 82 : 8.19cc, 83 : 8.19cc, 90 : 9.07cc, A1 : 10.68cc, A2 : 12.13cc, A3 : 12.52cc, A5 : 15.32cc
④	Rated voltage and frequency	B : 220V ~ 60Hz C : 115V ~ 60Hz D : 115-127V ~ 60Hz E : 100V ~ 50/60Hz G : 220-240V ~ 50Hz, 220V ~ 60Hz H : 200-220V ~ 50Hz, 220V ~ 60Hz K : 200-220V ~ 50Hz P : 127V ~ 60Hz Q : 220-240V ~ 50Hz
⑤	Application	L/R/S : Low Back Pressure H : High Back Pressure
⑥	Cooling type	0 : Oil cooling 1 : Static 2 : Fan Cooling
⑦	Motor type	B/C/X : BLDC S : PTC or Current-CSIR U : PTC-RSCR (Optional RSIR) W : PTC-CSR Y : Current-RSIR Z : PTC-RSIR
⑧	Option	

2) Serial number

① Model code
② Production line
③ **Year** : 01 → R, 02 → T, 03 → W, 04 → X, 05 → Y, 06 → A, 07 → P, 08 → Q, 09 → S, 10 → Z
④ **Month** : 1 → Jan, 2 → Feb, · · · · A → Oct, B → Nov, C → Dec
⑤ Serial number

2376CC A S 5 00005 (① ② ③ ④ ⑤)

BLDC Model

BK/MKV

Application
- Large size refrigerator
- Variable speed type

EU/ENV

Application
- Large size refrigerator
- Variable speed type

AC Model

CD

Application
- Water dispenser
- Small size refrigerator

SD/DD/MD

Application
- Medium size refrigerator
- Kimchi refrigerator

MS

Application
- Medium size refrigerator

HK/SK/MK/DK/FMA

Application
- Large size refrigerator

EY

Application
- Large size refrigerator

R 134a LBP

Remark(*) means under developing model.

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	RUNNING RPM	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
BLDC 115V/60Hz	BK172C-L2C	115-60	2000	122	142	484	77	1.58	1.84	6.29	FC
			2200	135	157	536	86	1.57	1.83	6.23	
			2880	176	205	699	113	1.56	1.81	6.18	
			3480	212	247	842	138	1.54	1.79	6.10	
			3650	223	259	885	147	1.52	1.76	6.02	
	BK190C-L2C	115-60	1800	146	170	580	92	1.59	1.85	6.30	FC
			2200	174	202	691	110	1.58	1.84	6.28	
			2880	227	264	901	146	1.55	1.81	6.17	
			3480	274	319	1088	178	1.54	1.79	6.11	
			3650	294	342	1167	194	1.52	1.76	6.02	
BLDC 220-240V/50Hz	BK172Q-L2C	220-50	2000	122	142	484	77	1.58	1.84	6.29	FC
			2200	135	157	536	86	1.57	1.83	6.23	
			2880	176	205	699	113	1.56	1.81	6.18	
			3480	212	247	842	138	1.54	1.79	6.10	
			3650	223	259	885	147	1.52	1.76	6.02	
BLDC 220-240V/50Hz 220V/60Hz	BK190G-L2C	220-60	1800	146	170	580	92	1.59	1.85	6.30	FC
			2200	174	202	691	111	1.57	1.82	6.22	
			2880	227	264	901	146	1.55	1.81	6.17	
			3480	274	319	1088	178	1.54	1.79	6.11	
			3650	294	342	1167	194	1.52	1.76	6.02	
BLDC 115V/60Hz	* MKV172C-L2B	115-60	1800	113	131	449	69	1.64	1.90	6.50	FC
			2200	135	157	536	84	1.61	1.87	6.38	
			2880	176	205	699	114	1.54	1.80	6.13	
			3480	212	247	842	140	1.51	1.76	6.01	
			3600	219	255	869	147	1.49	1.73	5.91	
	MKV190C-L2B	115-60	1800	146	170	580	89	1.64	1.91	6.51	FC
			2200	174	202	691	109	1.60	1.86	6.34	
			2880	227	264	901	147	1.54	1.80	6.13	
			3480	274	319	1088	180	1.52	1.77	6.04	
			3600	289	336	1147	194	1.49	1.73	5.91	
BLDC 220-240V/50Hz 220V/60Hz	* MKV190G-L2B	220-60	1800	146	170	580	89	1.64	1.91	6.51	FC
			2200	174	202	691	109	1.60	1.86	6.34	
			2880	227	264	901	147	1.54	1.80	6.13	
			3480	274	319	1088	180	1.52	1.77	6.04	
			3600	289	336	1147	194	1.49	1.73	5.91	

COOLING TYPE

FC : Fan cooling
OC : Oil cooling
ST : Static

ASHRAE CONDITIONS (LBP)

Evaporating Temp. : -23.3℃ (-10℉)
Condensing Temp. : 54.4℃ (130℉)
Gas Superheated to : 32.2℃ (90℉)
Liquid sub-cooled to : 32.2℃ (90℉)
Ambient Temp. : 32.2℃ (90℉)

UNIT CONVERSION TABLE

1 watt = 3.41 Btu/Hr
1 watt = 0.86 Kcal/Hr
1 Kcal/Hr = 3.97 Btu/Hr

R 600a LBP

Remark(*) means under developing model.

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	RUNNING RPM	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
BLDC 220-240V/50Hz	EU4A3Q-L2X	220-50	1650	101	117	400	63	1.60	1.85	6.33	FC
			2050	135	157	535	82	1.64	1.91	6.53	
			2800	178	207	707	112	1.59	1.85	6.31	
			3600	228	265	905	150	1.52	1.77	6.05	
BLDC 200-220V/50Hz 220V/60Hz	EU4A5H-L2X	220-60	1650	116	135	460	72	1.61	1.87	6.39	FC
			1800	129	151	514	79	1.64	1.91	6.52	
			2050	145	168	575	87	1.66	1.93	6.58	
			2450	174	203	692	107	1.63	1.89	6.46	
			2800	193	225	767	121	1.60	1.86	6.34	
			3600	254	296	1010	166	1.53	1.78	6.08	
	EU4A5H-L2XA	220-60	1650	117	136	464	75	1.56	1.81	6.17	FC
			1800	133	154	526	85	1.57	1.82	6.22	
			2050	151	176	601	96	1.57	1.83	6.25	
			2450	176	205	700	114	1.55	1.80	6.16	
			2800	198	230	785	129	1.53	1.78	6.07	
			3600	254	296	1010	171	1.48	1.73	5.89	
BLDC 220-240V/50Hz	EU4A5Q-L2X	220-50	1650	116	135	460	72	1.61	1.87	6.39	FC
			1800	129	151	514	79	1.64	1.91	6.52	
			2050	145	168	575	87	1.66	1.93	6.58	
			2450	174	203	692	107	1.63	1.89	6.46	
			2800	193	225	767	121	1.60	1.86	6.34	
			3600	254	296	1010	166	1.53	1.78	6.08	
BLDC 220-240V/50Hz 220V/60Hz	* ENV4A3G-L2B	220-60	1650	104	121	413	62	1.68	1.95	6.66	FC
			1950	141	164	560	82	1.72	2.00	6.83	
			2800	180	209	715	113	1.59	1.85	6.32	
			3650	230	267	913	158	1.46	1.69	5.78	
BLDC 200-220V/50Hz 220V/60Hz	ENV4A5H-L2B	220-60	1650	120	139	475	71	1.69	1.97	6.72	FC
			1950	153	178	606	89	1.71	1.99	6.79	
			2800	210	244	834	132	1.59	1.85	6.31	
			3650	274	319	1088	188	1.45	1.69	5.78	

R 134a LBP

Remark(*) means under developing model.

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
AC 100V/50-60Hz	CD124E-L1Z2	100-50	RSIR	43	50	171	68	0.63	0.74	2.51	ST
		100-60		52	60	206	68	0.76	0.89	3.04	
	CD130E-L1Z2	100-50	RSIR	58	67	230	76	0.76	0.89	3.03	ST
		100-60		70	81	278	79	0.89	1.03	3.52	
	SD137E-L1U2	100-50	RSCR	72	84	286	91	0.79	0.92	3.14	ST
		100-60		87	101	345	99	0.88	1.02	3.49	
	SD152E-L1W2	100-50	CSR	117	136	464	111	1.05	1.23	4.18	ST
		100-60		135	157	536	121	1.12	1.30	4.43	
	SD162E-L1W2	100-50	CSR	144	168	572	141	1.02	1.19	4.06	ST
		100-60		170	198	676	147	1.16	1.35	4.60	
	DD137E-L1U2	100-50	RSCR	80	93	317	85	0.94	1.09	3.73	ST
		100-60		96	111	380	99	0.97	1.12	3.84	
	MD152E-L1U2	100-50	RSCR	118	137	468	103	1.15	1.33	4.55	ST
		100-60		143	166	568	118	1.21	1.41	4.81	
	MD162E-L1U2	100-50	RSCR	143	166	568	116	1.23	1.43	4.89	ST
		100-60		182	212	723	141	1.29	1.50	5.12	
	SK170E-L2W	100-50	CSR	168	195	667	149	1.13	1.31	4.48	FC
		100-60		206	240	818	170	1.21	1.41	4.81	
	SK182E-L2W	100-50	CSR	203	236	806	188	1.08	1.26	4.29	FC
		100-60		239	278	950	196	1.22	1.42	4.85	
	DK182E-L2U	100-50	RSCR	203	236	806	161	1.26	1.47	5.01	FC
		100-60		256	298	1016	191	1.34	1.56	5.32	
	DK190E-L2U	100-50	RSCR	230	267	913	180	1.28	1.49	5.07	FC
		100-60		280	326	1112	209	1.34	1.56	5.32	
	MK172E-L2U	100-50	RSCR	181	210	719	140	1.29	1.50	5.13	ST
		100-60		226	263	897	162	1.40	1.62	5.54	
AC 115V/60Hz	CD124C-L1Z2	115-60	RSIR	52	60	206	65	0.80	0.93	3.18	ST
	CD124C-S1Z2	115-60	RSIR	52	60	206	57	0.91	1.06	3.62	ST
	CD124C-L1ZA	115-60	RSIR	50	58	199	68	0.74	0.85	2.92	ST
	CD130C-L1Z2	115-60	RSIR	70	81	278	76	0.92	1.07	3.66	ST
	CD130C-S1Z2	115-60	RSIR	70	81	278	73	0.96	1.12	3.81	ST
	CD130C-S1ZA	115-60	RSIR	70	81	278	82	0.85	0.99	3.39	ST
	CD137C-S1U2	115-60	RSCR	87	101	345	97	0.90	1.04	3.56	ST
	* SD137C-L1UB	115-60	RSIR	93	108	369	102	0.91	1.06	3.62	ST
			RSCR	93	108	369	96	0.97	1.13	3.85	
	SD143C-L1U2	115-60	RSCR	114	133	454	114	1.00	1.17	3.98	ST
	SD152C-L1U2	115-60	RSCR	135	157	537	122	1.11	1.29	4.40	ST
	SD152C-L1UA	115-60	RSCR	140	163	556	126	1.11	1.29	4.41	ST
	SD162C-L1U2	115-60	RSIR	170	198	675	157	1.08	1.26	4.30	ST
			RSCR	170	198	675	150	1.13	1.32	4.50	
	DD143C-L1U2	115-60	RSCR	121	141	480	115	1.05	1.22	4.18	ST
	DD152C-L1U2	115-60	RSCR	139	162	552	117	1.19	1.38	4.72	ST
	DD162C-L1U2	115-60	RSCR	174	202	691	138	1.26	1.47	5.01	ST
	MD152C-R1U2	115-60	RSCR	149	173	592	112	1.33	1.55	5.28	ST
	MD152C-R1UA	115-60	RSCR	152	177	603	118	1.29	1.50	5.11	ST
	MD152C-L1UB	115-60	RSCR	152	177	603	118	1.29	1.50	5.11	ST
	MD162C-S1U2	115-60	RSCR	166	193	659	146	1.14	1.32	4.51	ST
	SK170C-L2W	115-60	CSR	206	240	818	170	1.21	1.41	4.81	FC
	SK182C-L2U	115-60	RSCR	239	278	950	201	1.19	1.38	4.73	FC
	SK182C-L2W	115-60	CSR	239	278	950	196	1.22	1.42	4.85	FC
	SK1A1C-L2W	115-60	CSR	303	352	1202	263	1.15	1.34	4.57	FC
	DK172C-L2U	115-60	RSCR	230	267	913	173	1.33	1.55	5.28	FC
	DK172C-L1UA	115-60	RSCR	230	267	913	167	1.38	1.60	5.47	ST
	DK182C-L2U	115-60	RSCR	256	298	1016	188	1.36	1.58	5.41	FC
	DK190C-L2U	115-60	RSCR	280	326	1112	209	1.34	1.56	5.32	FC
	MK162C-L1U	115-60	RSCR	184	214	730	130	1.42	1.65	5.62	ST
	MK162C-L1UA	115-60	RSCR	184	214	730	134	1.37	1.60	5.45	ST
	MK172C-L2U	115-60	RSCR	224	260	889	159	1.41	1.64	5.59	FC
	MK172C-L2UA	115-60	RSCR	224	260	889	159	1.41	1.64	5.59	FC
	MK183C-L2U	115-60	RSCR	258	300	1024	179	1.44	1.68	5.72	FC
	MSS151C-L1U	115-60	RSCR	152	177	603	107	1.42	1.65	5.64	ST
	MSA151C-L1U	115-60	RSCR	152	177	603	113	1.35	1.56	5.34	ST
	MSS162C-L1U	115-60	RSCR	182	212	723	129	1.41	1.64	5.60	ST
	MSA162C-L1U	115-60	RSCR	182	212	723	136	1.34	1.56	5.31	ST
	MSB162C-L1U	115-60	RSCR	182	212	723	136	1.34	1.56	5.31	ST
	MSS170C-L1U	115-60	RSCR	222	258	881	152	1.46	1.70	5.80	ST
	MSA170C-L1U	115-60	RSCR	222	258	881	160	1.39	1.61	5.51	ST

R 134a LBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE COOLING CAPACITY Kcal/Hr	ASHRAE COOLING CAPACITY Watt	ASHRAE COOLING CAPACITY BTU/Hr	ASHRAE POWER INPUT W	ASHRAE EFFICIENCY EFF Kcal/WHr	ASHRAE EFFICIENCY COP W/W	ASHRAE EFFICIENCY EER BTU/WHr	COOLING TYPE
AC 115-127V/60Hz	MK162D-L1U	115-60	RSCR	184	214	730	124	1.48	1.73	5.89	ST
		127-60		184	214	730	126	1.46	1.70	5.80	
	MK162D-L2U	115-60	RSCR	208	242	826	123	1.69	1.97	6.71	FC
	MK162D-S2UB	115-60	RSCR	184	214	730	135	1.36	1.58	5.41	FC
		127-60		184	214	730	142	1.30	1.51	5.14	
	MK172D-R2U	115-60	RSCR	224	260	889	149	1.50	1.75	5.97	FC
		127-60		224	260	889	152	1.47	1.71	5.85	
	MK182D-L2U	115-60	RSCR	258	300	1024	179	1.44	1.68	5.72	FC
		127-60		258	300	1024	182	1.42	1.65	5.63	
	MSS143D-S1U	115-60	RSCR	116	135	461	85	1.36	1.59	5.42	FC
	MSS162D-S1U	115-60	RSCR	187	217	742	135	1.39	1.61	5.50	FC
AC 127V/60Hz	CD124P-L1Z2	127-60	RSIR	52	60	206	68	0.76	0.89	3.04	ST
	CD130P-L1Z2	127-60	RSIR	70	81	278	76	0.92	1.07	3.66	ST
	SD152P-L1W2	127-60	CSR	135	157	536	122	1.11	1.29	4.39	ST
	SD162P-L1U2	127-60	RSCR	170	198	675	147	1.16	1.34	4.59	ST
	MD162P-S1U2	127-60	RSCR	185	215	734	143	1.29	1.50	5.14	ST
	MK162P-S1U	127-60	RSCR	184	214	730	130	1.42	1.65	5.62	ST
	MK162P-S1UA	127-60	RSCR	184	214	730	134	1.37	1.60	5.45	ST
	MK172P-S2U	127-60	RSCR	224	260	889	159	1.41	1.64	5.59	FC
	MK183P-S2U	127-60	RSCR	263	306	1044	190	1.38	1.61	5.50	FC
AC 200-220V/50Hz 220V/60Hz	CD124H-L1Z2	220-50	RSIR	43	50	171	63	0.68	0.79	2.71	ST
		220-60		52	60	206	64	0.81	0.94	3.23	
	CD124H-L1ZA	220-50	RSIR	42	49	167	71	0.59	0.69	2.35	ST
		220-60		50	58	199	71	0.70	0.82	2.80	
	CD130H-L1Z2	220-50	RSIR	58	67	230	73	0.79	0.92	3.15	ST
		220-60		70	81	278	76	0.92	1.07	3.66	
	SD137H-L1Z2	220-50	RSIR	72	84	286	90	0.80	0.93	3.18	ST
		220-60		87	101	345	97	0.90	1.04	3.56	
		220-50	RSCR	72	84	286	87	0.83	0.96	3.29	ST
		220-60		87	101	345	94	0.93	1.08	3.67	
	SD137H-L1UB	220-50	RSIR	75	87	298	93	0.81	0.94	3.20	ST
		220-60		93	108	369	98	0.95	1.10	3.77	
		220-50	RSCR	75	87	298	87	0.86	1.00	3.42	ST
		220-60		93	108	369	92	1.01	1.18	4.01	
	SD143H-L1U2	220-50	RSCR	95	110	376	103	0.92	1.07	3.65	ST
		220-60		114	133	454	114	1.00	1.17	3.98	
	SD143H-L1UA	220-50	RSCR	98	114	389	109	0.90	1.05	3.57	ST
		220-60		118	137	468	114	1.04	1.20	4.11	
	SD152H-L1U2	220-50	RSCR	117	136	466	110	1.07	1.24	4.23	ST
		220-60		135	157	537	122	1.11	1.29	4.40	
	SD152H-S1UA	220-50	RSCR	110	128	437	110	1.00	1.16	3.97	ST
		220-60		140	163	556	122	1.15	1.33	4.56	
	SD162H-L1U2	220-50	RSCR	144	167	572	143	1.01	1.17	4.00	ST/OC
		220-60		170	198	676	148	1.15	1.34	4.57	
	SD162H-L1UA	220-50	RSCR	140	163	556	144	0.97	1.13	3.86	ST
		220-60		173	201	687	147	1.18	1.37	4.67	
	SK170H-L1U	220-50	RSCR	168	195	667	153	1.10	1.28	4.36	ST
		220-60		206	240	818	167	1.23	1.43	4.90	
	SK170H-L1UA	220-50	RSCR	168	195	667	153	1.10	1.28	4.36	ST/OC
		220-60		206	240	818	164	1.26	1.46	4.99	
	SK182H-L2U	220-50	RSCR	203	236	806	187	1.09	1.26	4.31	FC/OC
		220-60		239	278	949	191	1.25	1.46	4.97	
	SK182H-L2UA	220-50	RSCR	203	236	806	182	1.12	1.30	4.43	FC/OC
		220-60		239	278	949	191	1.25	1.46	4.97	
	SK190H-L2U	220-50	RSCR	227	264	901	202	1.12	1.31	4.46	FC/OC
		220-60		264	307	1047	212	1.24	1.45	4.94	
	SK190H-L2UA	220-50	RSCR	227	264	901	208	1.09	1.27	4.33	FC/OC
		220-60		264	307	1047	211	1.25	1.45	4.96	
	MK172H-L2U	220-50	RSCR	176	205	699	131	1.34	1.56	5.33	FC/OC
		220-60		224	260	889	159	1.41	1.64	5.59	
	MK183H-L2UB	220-50	RSCR	203	236	806	154	1.32	1.53	5.23	FC/OC
		220-60		258	300	1024	179	1.44	1.68	5.72	
	DK1A3H-L2W	220-50	CSR	305	355	1211	290	1.05	1.22	4.18	FC
		220-60		360	419	1429	313	1.15	1.34	4.57	

R 134a LBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
AC 220V/60Hz	CD124B-L1ZA	220-60	RSIR	50	58	199	72	0.69	0.81	2.76	ST
	CD130B-S1ZA	220-60	RSIR	70	81	278	82	0.85	0.99	3.39	ST
	CD137B-S1U2	220-60	RSCR	87	101	345	97	0.90	1.04	3.56	ST
	DD162B-L1U2	220-60	RSCR	171	199	679	140	1.22	1.42	4.85	ST
	MD152B-L1U2	220-60	RSCR	136	158	540	112	1.21	1.41	4.82	ST
	MD152B-L1UA	220-60	RSCR	148	172	588	122	1.21	1.41	4.82	ST
	MD162B-L1U2	220-60	RSCR	160	186	635	136	1.18	1.37	4.67	ST
	SK162B-L1U	220-60	RSCR	170	198	675	137	1.24	1.44	4.93	ST
	SK162B-L1UA	220-60	RSCR	170	198	675	141	1.21	1.40	4.79	ST
	SK170B-L2W	220-60	CSR	206	240	818	165	1.25	1.45	4.96	FC
	SK182B-L2W	220-60	CSR	239	278	949	186	1.28	1.49	5.10	FC
	SK190B-L2W	220-60	CSR	264	307	1048	206	1.28	1.49	5.09	FC
	SK1A1B-L2W	220-60	CSR	303	352	1203	263	1.15	1.34	4.57	FC
	DK172B-L2U	220-60	RSCR	230	267	913	169	1.36	1.58	5.40	FC
	DK182B-L2U	220-60	RSCR	256	298	1016	186	1.38	1.60	5.46	FC
	DK190B-L2U	220-60	RSCR	280	326	1112	206	1.36	1.58	5.40	FC
	MK162B-L1U	220-60	RSCR	184	214	730	130	1.42	1.65	5.62	ST
	MK162B-L1UA	220-60	RSCR	184	214	730	134	1.37	1.60	5.45	ST
	MK172B-L2U	220-60	RSCR	224	260	889	159	1.41	1.64	5.59	FC
	MK172B-L2UA	220-60	RSCR	224	260	889	159	1.41	1.64	5.59	FC
	MK183B-L2U	220-60	RSCR	258	300	1024	179	1.44	1.68	5.72	FC
	MK190B-S2W	220-60	CSR	285	331	1131	200	1.43	1.66	5.66	FC
AC 220-240V/50Hz 220V/60Hz	MK183G-L2U	220-50	RSCR	203	236	806	149	1.36	1.58	5.41	FC
		220-60		258	300	1024	179	1.44	1.68	5.72	
	MK190G-L2U	220-50	RSCR	225	262	893	168	1.34	1.56	5.32	FC
		220-60		285	331	1131	200	1.43	1.66	5.66	
	MSS151G-L1U	220-50	RSCR	125	145	496	90	1.39	1.61	5.51	ST
		220-60		152	177	603	107	1.42	1.65	5.64	
	MSS170G-L1U	220-50	RSCR	178	207	707	124	1.44	1.67	5.70	ST
		220-60		222	258	881	151	1.47	1.71	5.84	
AC 220-240V/50Hz	CD124Q-L1Z2	220-50	RSIR	43	50	171	57	0.75	0.88	2.99	ST
	CD130Q-L1Z2	220-50	RSIR	58	67	230	65	0.89	1.04	3.54	ST
	CD130Q-S1ZA	220-50	RSIR	58	67	230	74	0.78	0.91	3.11	ST
	CD137Q-S1U2	220-50	RSCR	72	84	286	80	0.90	1.05	3.57	ST
		240-50		72	84	286	82	0.88	1.02	3.49	
	SD143Q-L1U2	220-50	RSCR	95	110	376	99	0.96	1.11	3.80	ST
		240-50		95	110	376	101	0.94	1.09	3.72	
	SD152Q-L1U2	220-50	RSIR	117	136	466	117	1.00	1.17	3.98	ST
		240-50		117	136	466	119	0.99	1.15	3.91	
		220-50	RSCR	117	136	466	111	1.06	1.23	4.20	
		240-50		117	136	466	114	1.03	1.20	4.08	
	SD152Q-L1UB	220-50	RSCR	112	130	445	103	1.09	1.26	4.32	ST
		240-50		112	130	445	110	1.02	1.18	4.04	
	SD152Q-L1UA	220-50	RSCR	112	130	445	115	0.97	1.13	3.87	ST
	SD162Q-L1U2	220-50	RSIR	144	168	572	138	1.04	1.21	4.15	ST
		240-50		144	168	572	140	1.03	1.20	4.09	
		220-50	RSCR	144	168	572	133	1.08	1.26	4.30	
		240-50		144	168	572	136	1.06	1.23	4.21	
	SD162Q-L1UA	220-50	RSCR	140	163	556	132	1.06	1.23	4.21	ST
	SD162Q-L1UB	220-50	RSCR	140	163	556	120	1.17	1.36	4.63	ST
		240-50		140	163	556	127	1.10	1.28	4.38	
	DD143Q-L1U2	220-50	RSCR	99	115	392	93	1.06	1.24	4.22	ST
		240-50		99	115	392	95	1.04	1.21	4.13	
	MD152Q-L1U2	220-50	RSCR	110	128	437	95	1.16	1.35	4.60	ST
		240-50		110	128	437	97	1.13	1.32	4.50	
	MD162Q-S1U2	220-50	RSCR	138	160	548	121	1.14	1.33	4.53	ST
		240-50		138	160	548	124	1.11	1.29	4.42	
	SK170Q-L2U	220-50	RSCR	168	195	667	141	1.19	1.39	4.73	ST/FC/OC
		240-50		168	195	666	143	1.17	1.36	4.66	
	SK182Q-L2U	220-50	RSCR	203	236	806	164	1.24	1.44	4.91	FC/OC
		240-50		203	236	806	168	1.21	1.41	4.80	
	SK190Q-L2U	220-50	RSCR	227	264	901	180	1.26	1.47	5.01	FC/OC
		240-50		227	265	903	183	1.24	1.45	4.94	
	SK1A1Q-L2U	220-50	RSCR	268	312	1064	227	1.18	1.37	4.69	FC
		240-50		268	312	1066	234	1.15	1.33	4.55	
	DK172Q-L2U	220-50	RSCR	177	206	703	130	1.36	1.58	5.41	FC
		240-50		177	206	703	132	1.34	1.56	5.32	
	DK172Q-L1UA	220-50	RSCR	177	206	703	130	1.36	1.58	5.41	ST
		240-50		177	206	703	132	1.34	1.56	5.32	

R 134a LBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
AC 220-240V/50Hz	DK182Q-L2U	220-50	RSCR	203	236	806	148	1.37	1.59	5.45	FC
		240-50		203	236	806	150	1.35	1.57	5.37	
	DK190Q-L2U	220-50	RSCR	230	268	914	168	1.37	1.59	5.44	FC
		240-50		230	267	913	170	1.35	1.57	5.37	
	MK162Q-L1U	220-50	RSCR	150	174	596	109	1.38	1.60	5.46	ST
		240-50		150	174	596	111	1.35	1.57	5.36	
	MK162Q-L1UA	220-50	RSCR	145	169	576	105	1.38	1.61	5.48	ST
		240-50		145	169	576	107	1.36	1.58	5.38	
	MK172Q-L2U	220-50	RSCR	176	205	699	126	1.40	1.62	5.55	FC
		240-50		176	205	699	129	1.36	1.59	5.42	
	MK172Q-L2UA	220-50	RSCR	176	205	699	126	1.40	1.62	5.55	FC
		240-50		176	205	699	129	1.36	1.59	5.42	
	MK183Q-L2U	220-50	RSCR	203	236	806	142	1.43	1.66	5.68	FC
		240-50		203	236	806	144	1.41	1.64	5.60	
	MK190Q-L2U	220-50	RSCR	225	262	893	157	1.43	1.67	5.69	FC
		240-50		225	262	893	160	1.41	1.64	5.58	
	MSA143Q-S1Z	220-50	RSIR	96	112	381	83	1.16	1.34	4.59	ST
	MSS162Q-L1U	220-50	RSCR	151	176	600	105	1.44	1.67	5.71	ST
AC 200-220V/50Hz	VD143K-S1U2	220-50	RSCR	90	105	357	101	0.89	1.04	3.54	ST
	VD143K-S1UB	220-50	RSCR	96	112	381	103	0.93	1.08	3.70	ST
	MSA143K-S1U	220-50	RSCR	96	112	381	77	1.25	1.45	4.95	ST
	SK170K-T1U SK170K-T1Z	220-50	RSIR	168	195	667	151	1.12	1.30	4.43	ST
	SK170K-S1U	220-50	RSCR	168	195	667	137	1.23	1.43	4.87	ST
	DK172K-L2U	220-50	RSCR	177	206	703	140	1.26	1.47	5.02	FC
	DK190K-T2U	200-50	RSCR	230	267	913	173	1.33	1.55	5.28	FC
		220-50		230	267	913	175	1.31	1.53	5.22	
	MK172K-S1U	220-50	RSCR	176	205	699	124	1.42	1.65	5.63	ST

COOLING TYPE

FC : Fan cooling
OC : Oil cooling
ST : Static

MOTOR TYPE

RSIR : Resistance Start Induction Run
RSCR : Resistance Start Capacitor Run
CSIR : Capacitor Start Induction Run
C S R : Capacitor Start Capacitor Run

ASHRAE CONDITIONS (LBP)

Evaporating Temp. : -23.3℃ (-10℉)
Condensing Temp. : 54.4℃ (130℉)
Gas Superheated to : 32.2℃ (90℉)
Liquid sub-cooled to : 32.2℃ (90℉)
Ambient Temp. : 32.2℃ (90℉)

UNIT CONVERSION TABLE

1 watt = 3.41 Btu/Hr
1 watt = 0.86 Kcal/Hr
1 Kcal/Hr = 3.97 Btu/Hr

R 600a LBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
								EFF	COP	EER	
				Kcal/Hr	Watt	BTU/Hr	W	Kcal/WHr	W/W	BTU/WHr	
AC 220-240V/50Hz	MD462Q-L1Z2	220-50	RSIR	78	91	310	69	1.13	1.31	4.49	ST
		240-50		78	91	310	71	1.10	1.28	4.36	
	MD462Q-L1UA	220-50	RSCR	78	91	310	68	1.15	1.33	4.55	ST
	MD490Q-L1U2	220-50	RSCR	130	151	516	94	1.38	1.61	5.49	ST
		240-50		130	151	516	96	1.35	1.57	5.38	
	MD490Q-L1UA	220-50	RSCR	130	151	516	99	1.31	1.53	5.21	ST
	MD4A1Q-L1U2	220-50	RSCR	157	183	623	111	1.41	1.64	5.62	ST
		240-50		157	183	623	113	1.39	1.62	5.52	
	MD4A3Q-L1U2	220-50	RSCR	179	208	711	132	1.36	1.58	5.38	ST
		240-50		179	208	711	136	1.32	1.53	5.23	
	MK490Q-L1U	220-50	RSCR	130	151	516	95	1.37	1.59	5.43	ST
		240-50		130	151	516	97	1.34	1.56	5.32	
	MK4A1Q-L1U	220-50	RSCR	155	180	615	109	1.42	1.65	5.65	ST
		240-50		155	180	615	112	1.38	1.61	5.49	
	MK4A3Q-L1U	220-50	RSCR	179	208	711	128	1.40	1.63	5.55	ST
		240-50		179	208	711	131	1.37	1.59	5.42	
	MK4A5Q-R1U	220-50	RSCR	222	258	881	152	1.46	1.70	5.80	ST
		240-50		222	258	881	154	1.44	1.68	5.72	
	MSS470Q-L1U	220-50	RSCR	98	114	389	67	1.46	1.70	5.81	ST
	MSS488Q-L1U	220-50	RSCR	120	140	476	82	1.46	1.70	5.81	ST
	MSS4A1Q-L1U	220-50	RSCR	164	191	651	109	1.50	1.75	5.97	ST
	MSS4A2Q-R1U	220-50	RSCR	180	209	715	120	1.50	1.74	5.96	ST
	EY4A3Q-R1U	220-50	RSCR	185	215	734	120	1.54	1.79	6.12	ST
	EY4A5Q-R1U	220-50	RSCR	220	256	873	145	1.52	1.76	6.02	ST
	EY4A5Q-L1U	220-50	RSCR	220	256	873	145	1.52	1.76	6.02	ST

COOLING TYPE

FC : Fan cooling
OC : Oil cooling
ST : Static

MOTOR TYPE

RSIR : Resistance Start Induction Run
RSCR : Resistance Start Capacitor Run
CSIR : Capacitor Start Induction Run
C S R : Capacitor Start Capacitor Run

ASHRAE CONDITIONS (LBP)

Evaporating Temp. : -23.3℃ (-10℉)
Condensing Temp. : 54.4℃ (130℉)
Gas Superheated to : 32.2℃ (90℉)
Liquid sub-cooled to : 32.2℃ (90℉)
Ambient Temp. : 32.2℃ (90℉)

UNIT CONVERSION TABLE

1 watt = 3.41 Btu/Hr
1 watt = 0.86 Kcal/Hr
1 Kcal/Hr = 3.97 Btu/Hr

R 134a HBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE COOLING CAPACITY Kcal/Hr	ASHRAE COOLING CAPACITY Watt	ASHRAE COOLING CAPACITY BTU/Hr	ASHRAE POWER INPUT W	ASHRAE EFFICIENCY EFF Kcal/WHr	ASHRAE EFFICIENCY COP W/W	ASHRAE EFFICIENCY EER BTU/WHr	COOLING TYPE
AC 100V/50-60Hz	HK690E2W	100-50	CSR	780	907	3097	390	2.00	2.33	7.94	FC
		100-60		950	1105	3772	445	2.13	2.48	8.48	
	HK6A3E2W	100-50	CSR	1050	1221	4169	577	1.82	2.12	7.22	FC
		100-60		1250	1453	4963	644	1.94	2.26	7.71	
AC 115V/60Hz	SD643C-H2U2	115-60	RSIR	450	523	1787	235	1.91	2.23	7.60	FC
			RSCR	450	523	1787	220	2.05	2.38	8.12	
	SD652C-H2U2	115-60	RSCR	550	640	2184	262	2.10	2.44	8.33	FC
	SK670C-H2Y	115-60	RSIR	720	837	2858	390	1.85	2.15	7.33	FC
	SK682C-H2Y	115-60	RSIR	830	965	3295	460	1.80	2.10	7.16	FC
	SK6A1C-H2Y	115-60	RSIR	1080	1256	4288	630	1.71	1.99	6.81	FC
	HK672C2Z	115-60	RSIR	750	872	2978	370	2.03	2.36	8.05	FC
	HK680C2Z	115-60	RSIR	850	988	3375	430	1.98	2.30	7.85	FC
	HK690C2Z	115-60	RSIR	950	1105	3772	490	1.94	2.25	7.70	FC
	HK6A1C2U	115-60	RSCR	1090	1267	4327	545	2.00	2.33	7.94	FC
	HK6A3C2W	115-60	CSR	1250	1453	4963	690	1.81	2.11	7.19	FC
AC 220-240V/50Hz	SD643Q-H2Z2	230-50	RSIR	370	430	1469	197	1.88	2.18	7.46	FC
	SD652Q-H2Z2	230-50	RSIR	450	523	1787	220	2.05	2.38	8.12	FC
	SK670Q-H2Z	230-50	RSIR	595	692	2362	310	1.92	2.23	7.62	FC
	SK670Q-H2S	230-50	CSIR	600	698	2382	310	1.94	2.25	7.68	FC
	SK682Q-H2Z	230-50	RSIR	700	814	2779	365	1.92	2.23	7.61	FC
	SK6A1Q-S2S	230-50	CSIR	900	1047	3573	480	1.88	2.18	7.44	FC
	HK672Q2Z	220-50	RSIR	610	709	2422	305	2.00	2.33	7.94	FC
	HK680Q2Z	220-50	RSIR	700	814	2779	350	2.00	2.33	7.94	FC
	HK690Q2Z	220-50	RSIR	780	907	3097	380	2.05	2.39	8.15	FC
	HK6A1Q2Z	220-50	RSIR	910	1058	3613	465	1.96	2.28	7.77	FC
	HK6A3Q2U	220-50	RSCR	1050	1221	4169	535	1.96	2.28	7.79	FC
AC 220V/60Hz	SD643B-H2U2	220-60	RSCR	450	523	1787	220	2.05	2.38	8.12	FC
	SD652B-S2W2	220-60	CSR	550	640	2184	255	2.16	2.51	8.56	FC
	SK670B-H2U	220-60	RSCR	720	837	2858	330	2.18	2.54	8.66	FC
	SK682B-H2U	220-60	RSCR	830	965	3295	405	2.05	2.38	8.14	FC
	SK6A1B-S2W	220-60	CSR	1080	1256	4288	560	1.93	2.24	7.66	FC
	HK672B2Z	220-60	RSIR	750	872	2978	370	2.03	2.36	8.05	FC
	HK680B2Z	220-60	RSIR	850	988	3375	430	1.98	2.30	7.85	FC
	HK690B2Z	220-60	RSIR	950	1105	3772	490	1.94	2.25	7.70	FC
	HK6A1B2W	220-60	CSR	1090	1267	4327	520	2.10	2.44	8.32	FC
	HK6A3B2W	220-60	CSR	1250	1453	4963	650	1.92	2.24	7.63	FC

R 22 HBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	MOTOR TYPE	ASHRAE COOLING CAPACITY Kcal/Hr	ASHRAE COOLING CAPACITY Watt	ASHRAE COOLING CAPACITY BTU/Hr	ASHRAE POWER INPUT W	ASHRAE EFFICIENCY EFF Kcal/WHr	ASHRAE EFFICIENCY COP W/W	ASHRAE EFFICIENCY EER BTU/WHr	COOLING TYPE
AC 115V/60Hz	FMA50C2Y	115-60	RSIR	830	965	3295	420	1.98	2.30	7.85	FC
	FMA60C2Y	115-60	RSIR	990	1151	3930	610	1.62	1.89	6.44	FC
	FMA70C2Y	115-60	RSIR	1080	1256	4288	610	1.77	2.06	7.03	FC
	FMA70C2U	115-60	RSCR	1080	1256	4288	550	1.96	2.28	7.80	FC
	FMA80C2Z	115-60	RSIR	1300	1512	5161	680	1.91	2.22	7.59	FC
	FMA80C2U	115-60	RSCR	1300	1512	5161	615	2.11	2.46	8.39	FC
	FMA90C2Z	115-60	RSIR	1400	1628	5558	775	1.81	2.10	7.17	FC
	FMA110C2W	115-60	CSR	1650	1919	6551	850	1.94	2.26	7.71	FC
AC 220-240V/50Hz	FMA50Q2Y	220-50	RSIR	690	802	2739	350	1.97	2.29	7.83	FC
	FMA70Q2Y	220-50	RSIR	910	1058	3613	500	1.82	2.12	7.23	FC
AC 220V/60Hz	FMA50B2Y	220-60	RSIR	830	965	3295	420	1.98	2.30	7.85	FC
	FMA70B2Y	220-60	RSIR	1080	1256	4288	610	1.77	2.06	7.03	FC
	FMA110B2W	220-60	CSR	1650	1919	6551	830	1.99	2.31	7.89	FC

COOLING TYPE

FC : Fan cooling
OC : Oil cooling
ST : Static

MOTOR TYPE

RSIR : Resistance Start Induction Run
RSCR : Resistance Start Capacitor Run
CSIR : Capacitor Start Induction Run
CSR : Capacitor Start Capacitor Run

ASHRAE CONDITIONS (HBP)

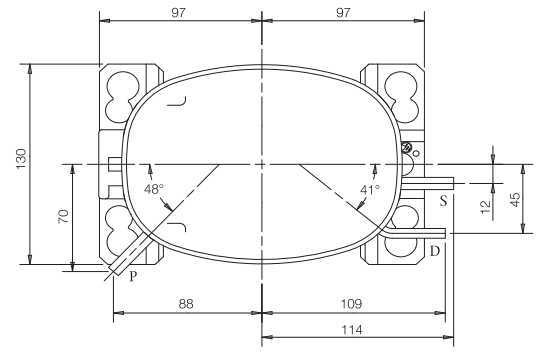
Evaporating Temp. : 7.2℃ (45℉)
Condensing Temp. : 54.4℃ (130℉)
Gas Superheated to : 35.0℃ (95℉)
Liquid sub-cooled to : 46.1℃ (115℉)
Ambient Temp. : 35.0℃ (95℉)

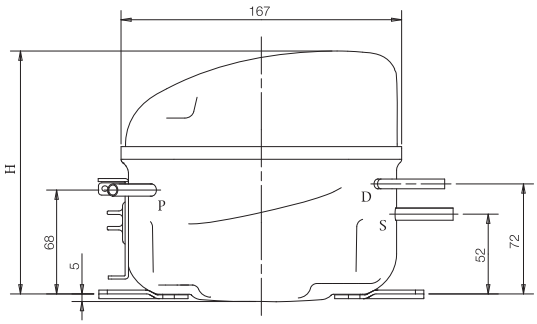
UNIT CONVERSION TABLE

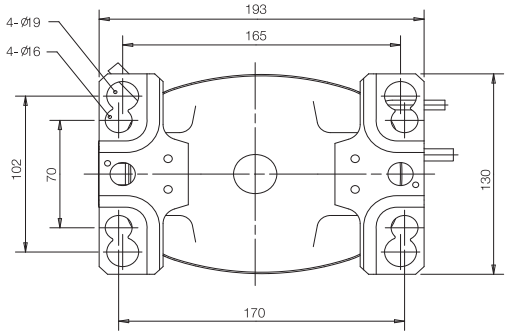
1 watt = 3.41 Btu/Hr
1 watt = 0.86 Kcal/Hr
1 Kcal/Hr = 3.97 Btu/Hr

Dimensions

CD Series (Universal Type)



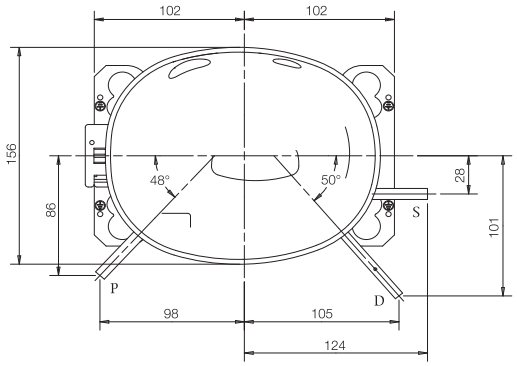


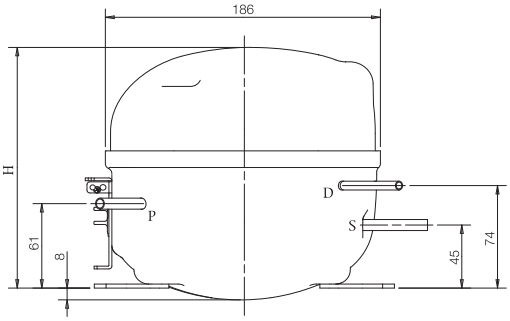


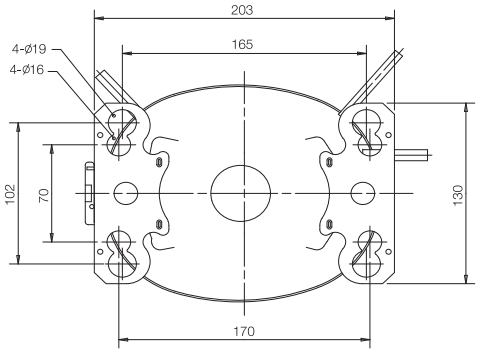
Height [mm]		
Grade	Cooling Type	H
24/30GR	Static	157
37GR		162

Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35
(S) Suction		7.94
(P) Process		7.94

MS Series (Universal Type)



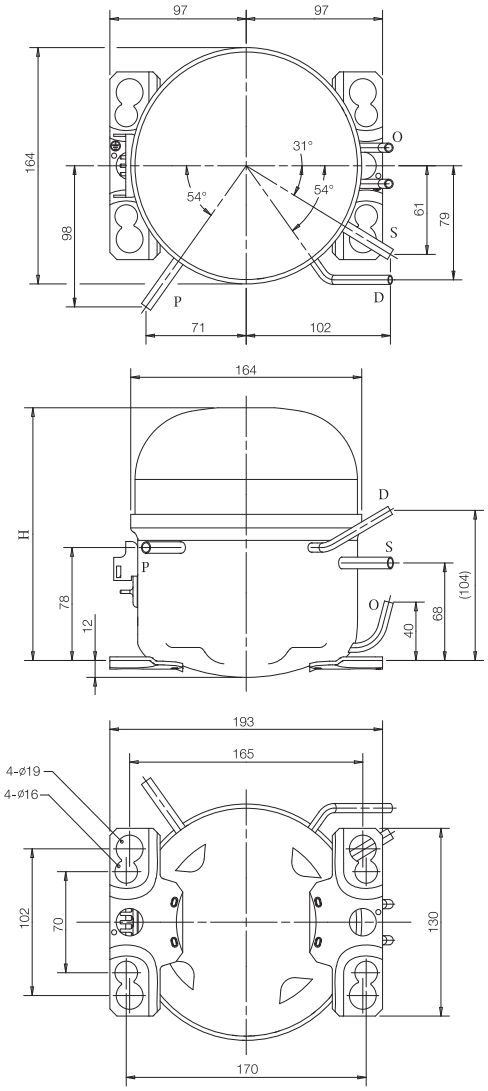




Height [mm]		
Grade	Cooling Type	H
43/51GR	Static	169
62/70/A2GR		173

Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35
(S) Suction		7.94
(P) Process		7.94

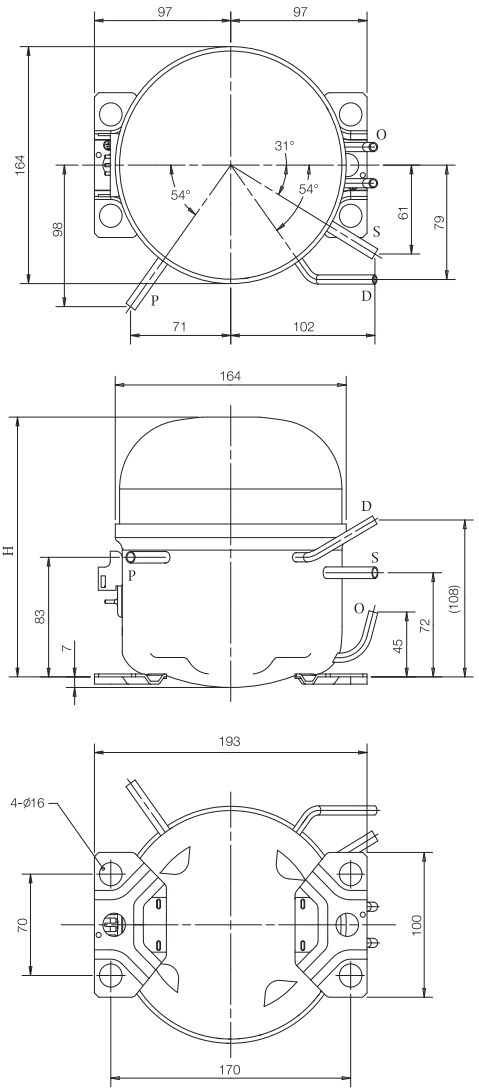
SD,DD,MD Series (Universal Type)



Height [mm]		
Grade	Cooling Type	H
30GR	Static	157
37/43GR		166
52GR		171
62GR		175
62GR	Oil Cooling	178

Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35 / 6.50
(S) Suction		7.94 / 7.60
(P) Process		7.94 / 7.60
(O) OIL COOLER	Steel	6.35

SD,DD,MD Series (European Type)

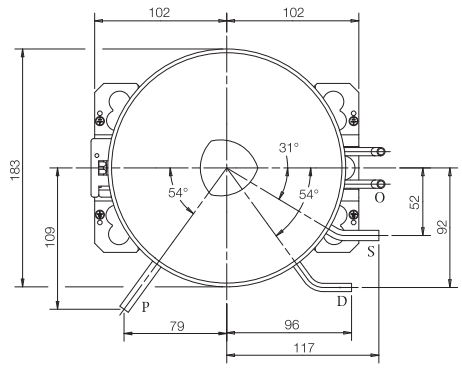


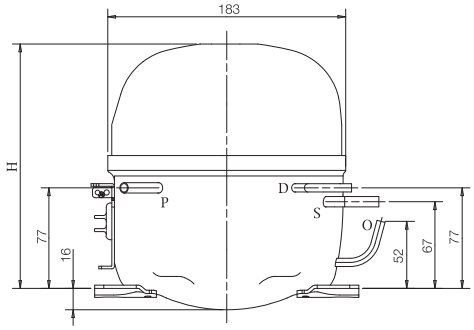
Height [mm]		
Grade	Cooling Type	H
30GR	Static	161
37/43GR		170
52GR		175
62GR		179
62GR	Oil Cooling	182

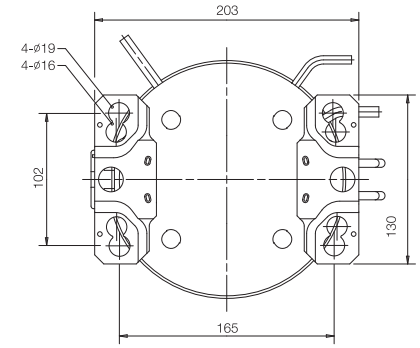
Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35 / 6.50
(S) Suction		7.94 / 7.60
(P) Process		7.94 / 7.60
(O) OIL COOLER	Steel	6.35

Dimensions

SK,DK,MK,FMA,BK,MKV Series (Universal Type I)



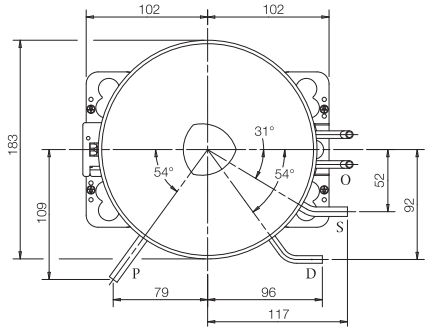


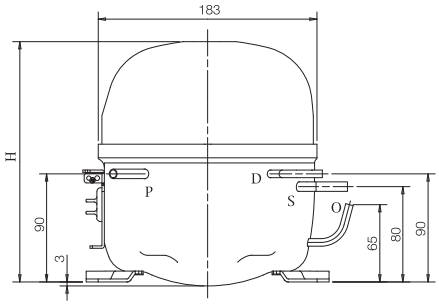


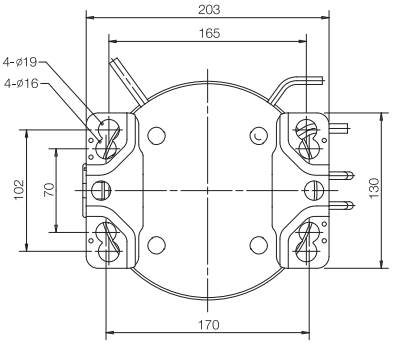
Height [mm]		
Grade	Cooling Type	H
62/70/82/90GR A1/A3/A5GR	Static/ Fan Cooling	189
62/70/82/90GR A1/A3/A5GR	Oil Cooling	196

Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35 / 6.50
(S) Suction		7.94 / 7.60
(P) Process		7.94 / 7.60
(O) OIL COOLER	Steel	6.35

SK,DK,MK,FMA,BK,MKV Series (Universal Type II)



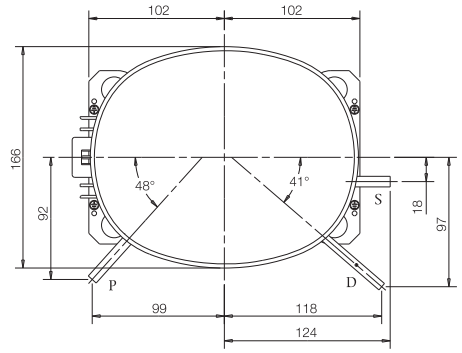


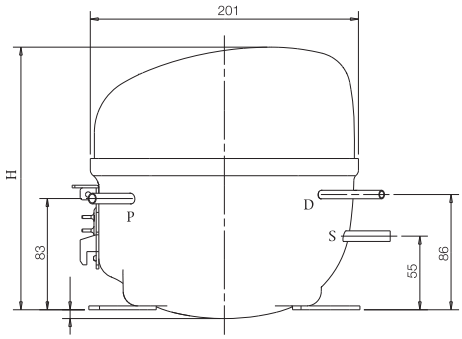


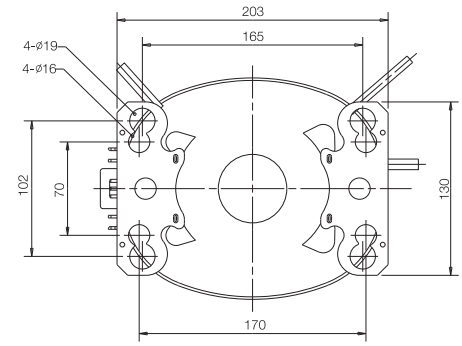
Height [mm]		
Grade	Cooling Type	H
62/70/82/90GR A1/A3/A5GR	Static/ Fan Cooling	202
62/70/82/90GR A1/A3/A5GR	Oil Cooling	208

Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35 / 6.50
(S) Suction		7.94 / 7.60
(P) Process		7.94 / 7.60
(O) OIL COOLER	Steel	6.35

EU, EY, ENV Series (Universal Type)





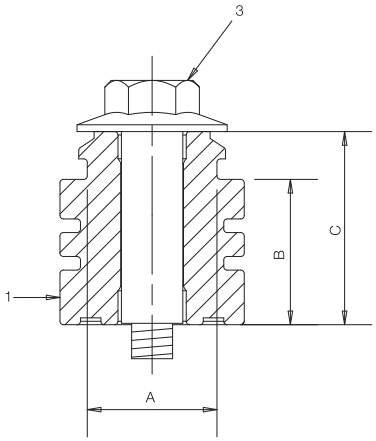


Height [mm]		
Grade	Cooling Type	H
EU/ENV A3/A5GR	Fan Cooling	184
EY A3/A5GR	Static	197

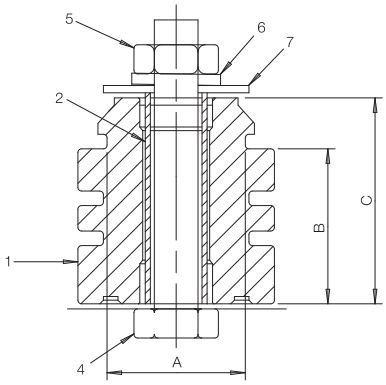
Tube Connection [mm]		
Tubing	Material	OD [T:0.7]
(D) Discharge	Copper	6.35
(S) Suction		7.94
(P) Process		7.94

BLDC Model

BOLT-HEX TYPE I

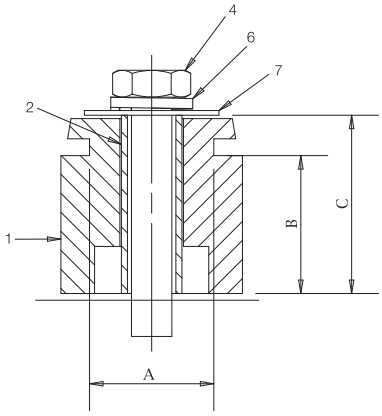


NUT-HEX TYPE I

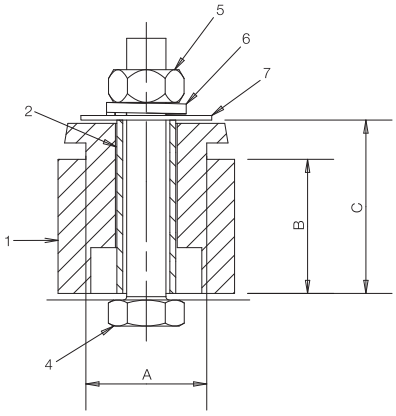


AC Model

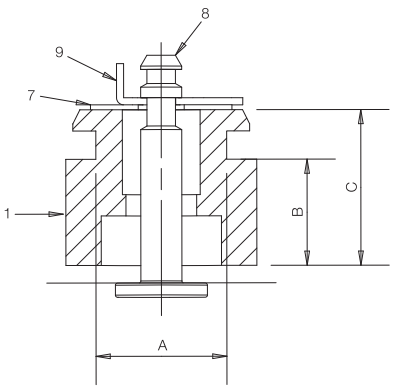
BOLT-HEX TYPE II



NUT-HEX TYPE II



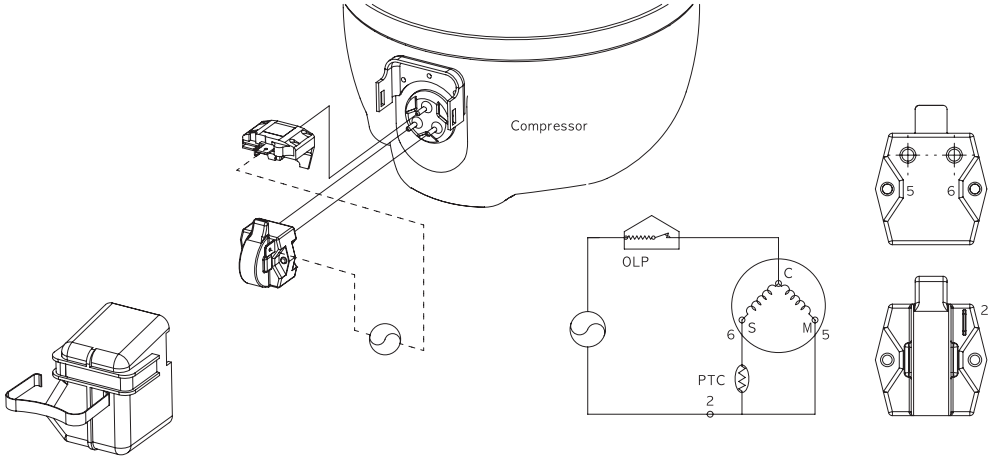
SNAP-ON



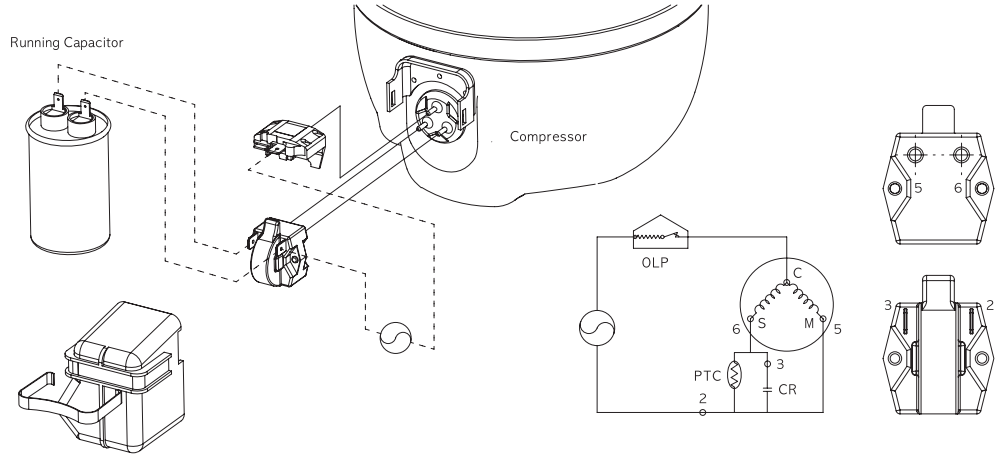
1. Grommet 2. Sleeve 3. Bolt-comp(M6) 4. Bolt-hex(M6) 5. Nut-hex(M6)
6. Washer spring 7. Washer plain 8. Bolt-stud 9. Retainer

Mounting Type		BOLT-HEX TYPE II					
		BOLT-HEX TYPE I	NUT-HEX TYPE II				
		NUT-HEX TYPE I	SNAP-ON TYPE				
Series		BK,EU,EY,ENV,MKV	CD,VD,SD,DD,MD			SK,DK,MK,HK,FMA,MS	
Mounting Bracket		Universal	Universal		European	Universal	European
Hole Size		Φ19	Φ19	Φ16	Φ16	Φ19	Φ16
DIMENSION [mm]	A	18.5	18.5	15.5	15.5	18.5	15.5
	B	21.3	15.0	15.0	9.0	20.5	9.0
	C	28.0	23.0	22.5	16.0	26.0	16.0

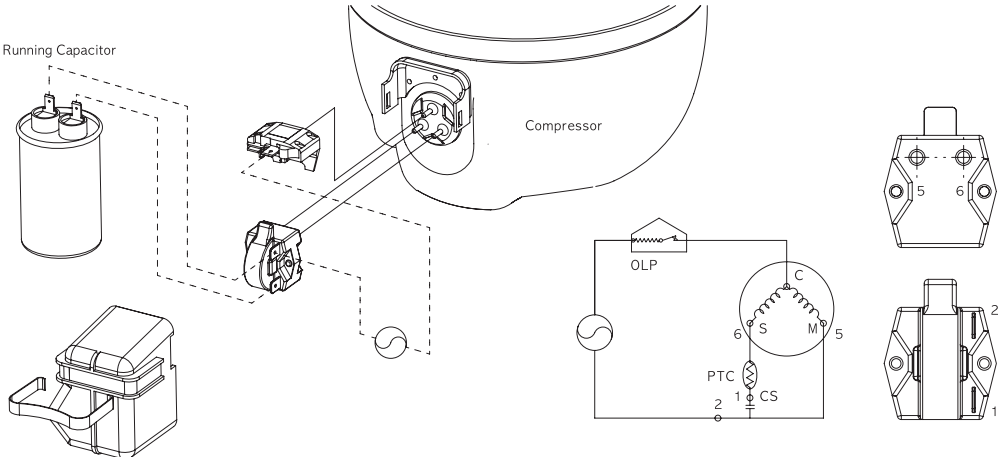
Assembly of OLP and PTC Relay in RSIR Motor (with Clamp Cover Type)



Assembly of OLP and PTC Relay in RSCR Motor (with Clamp Cover Type)

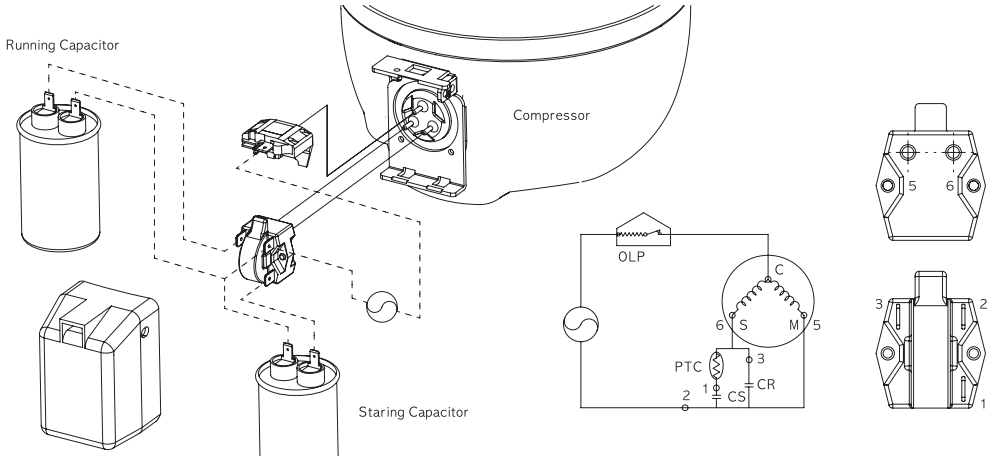


Assembly of OLP and PTC Relay in CSIR Motor (with Clamp Cover Type)

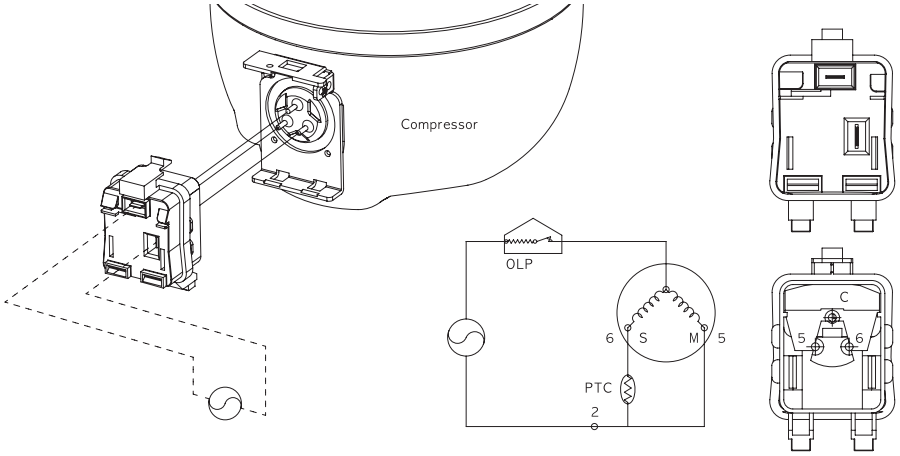


Assembly Diagrams

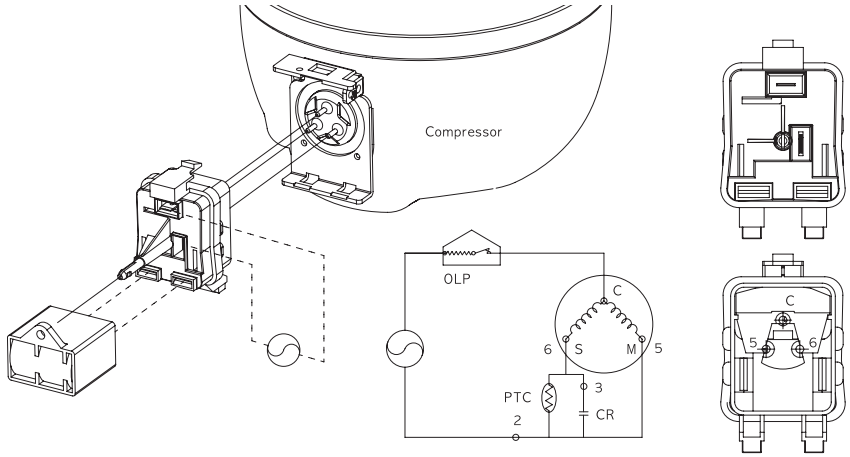
Assembly of OLP and PTC Relay in CSR Motor (with S-Hook Cover Type)



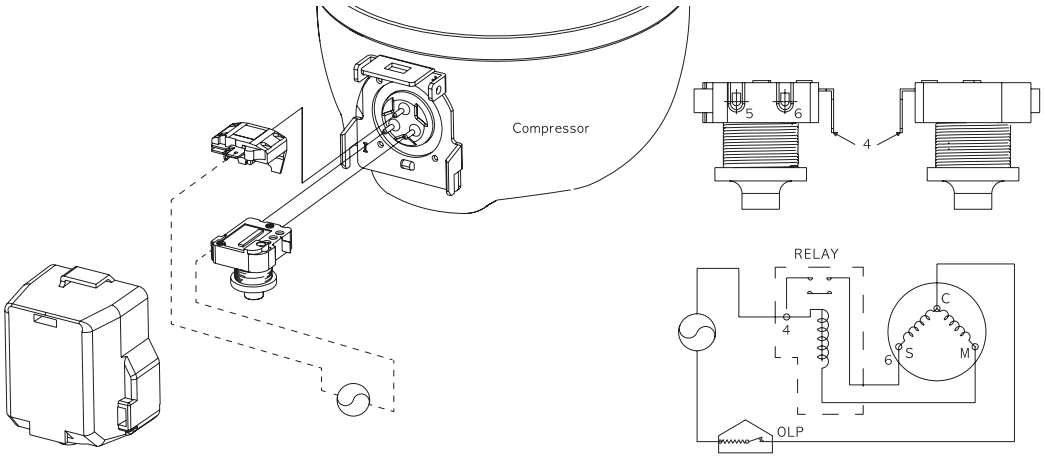
Assembly of Assy Combo in RSIR Motor



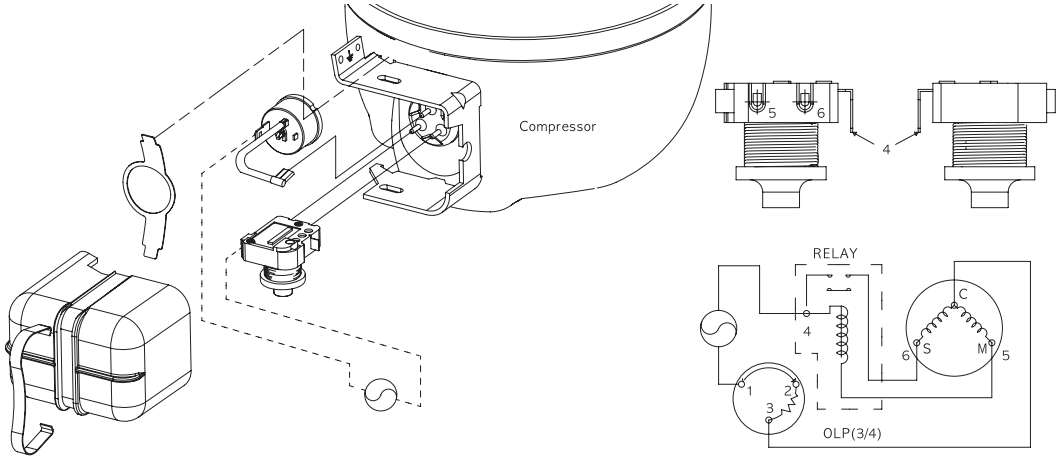
Assembly of Assy Combo in RSCR Motor



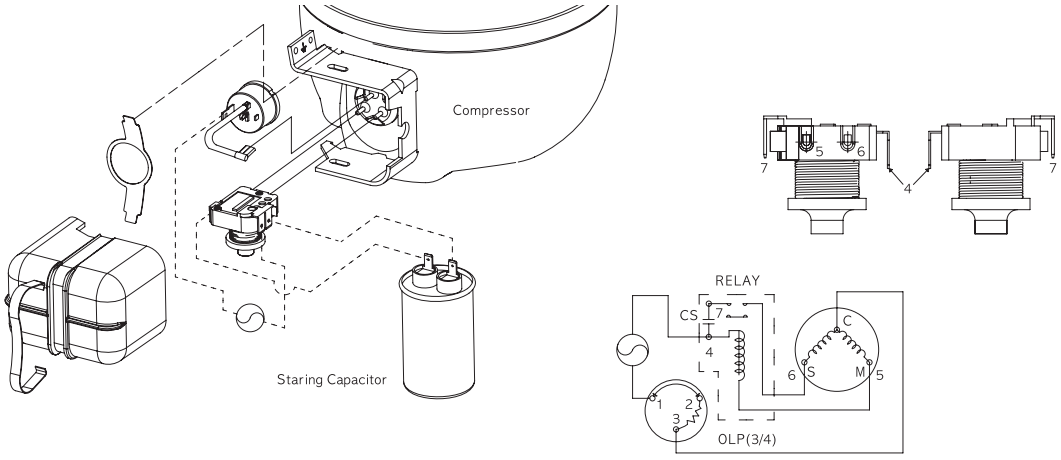
Assembly of OLP and Current Relay in RSIR Motor (with Hook Cover Type)



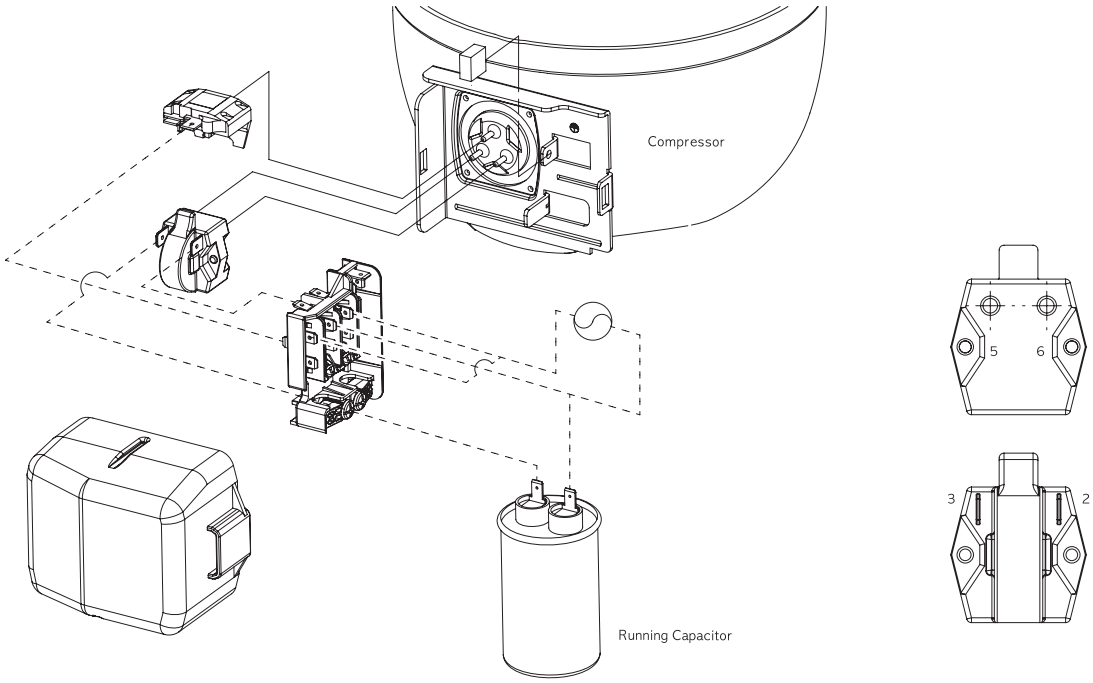
Assembly of OLP and Current Relay in RSIR Motor (with Current Relay Cover Type)

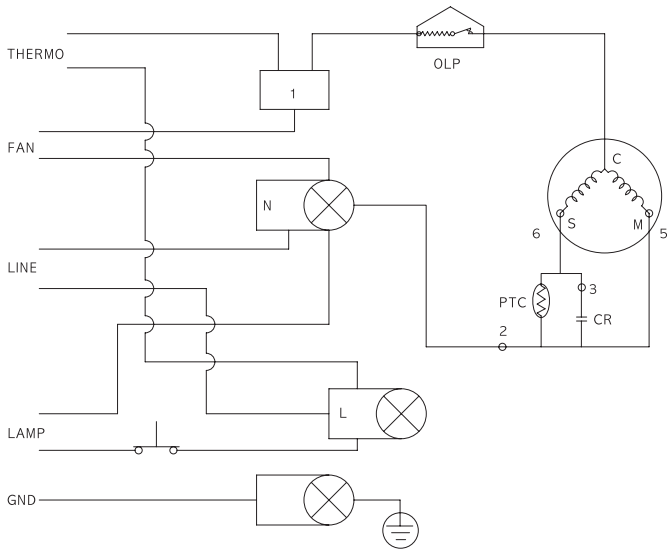


Assembly of OLP and Current Relay in CSIR Motor (with Current Relay Cover Type)



Assembly of OLP and PTC Relay in RSCR Motor (with T/B Type)





Application Guide for Samsung Compressor

Compressors under improper application can not achieve good performance and long-life reliability.This application guide provide the recommended handling techniques and requirements for application of SAMSUNG reciprocating compressor in order to help achieving good performance and long-life reliability.

1. Usable Refrigerant

	R134a	R600a	R22	R12
Refrigerant	Purity of 99.95% Min.	Purity of 99.5% Min.	Purity of 99.95% Min.	Purity of 99.95% Min.

2. Starting and operating voltage

The LBP type compressors start at 85% of the norminal voltage.
-.Equalized pressure up to 70psig(4.9kgf/㎠ g) for R134a and R12 LBP compressors.
-.Equalized pressure up to 40psig(2.8kgf/㎠ f) for R600a LBP compressors.

The HBP type compressors start at 90% of the norminal voltage.
-.Equalized pressure up to 90psig(6.3kgf/㎠ g) for R134a HBP compressors.
-.Equalized pressure up to 130psig(9.1kgf/㎠ g) for R22 HBP compressors.

Depending on the operating condition and system characteristics, compressors can start at lower voltages.

3.Evaporating temperature range

Classification	Normal Condition	Limit Condition
LBP	-35℃ to -15℃ (-31℉ to +5℉)	-35℃ to -10℃ (-31℉ to +14℉)
HBP	-5℃ to +10℃ (+23℉ to +50℉)	-10℃ to +15℃ (+14℉ to +59℉)

※ We strongly recommend the refrigeration system should not be operated with the limit condition in the continuous operation.

4. Condensing Pressure Limit

The compressor must operate in accordance with the pressure and temperature described below.

LBP refrigeration system

R134a

Condensing pressure of the refrigeration system must not exceed 202psig(14.2kgf/㎠ g) in the continuous operation at the expected maximum ambient temperature(43℃,109℉).
Peak condensing pressure must not exceed 259psig(18.2kgf/㎠ g) at the same ambient temperature(43℃,109℉).

R600a

Condensing pressure of the refrigeration system must not exceed 97psig(6.8kgf/㎠ g) in the continuous operation at the expected maximum ambient temperature(43℃,109℉).
Peak condensing pressure must not exceed 126psig(8.9kgf/㎠ g) at the same ambient temperature(43℃,109℉).

R12

Condensing pressure of the refrigeration system must not exceed 180psig(12.6kgf/㎠ g) in the continuous operation at the expected maximum ambient temperature(43℃,109℉).
Peak condensing pressure must not exceed 250psig(17.5kgf/㎠ g) at the same ambient temperature(43℃,109℉).

HBP refrigeration system

R134a

Condensing pressure of the refrigeration system must not exceed 14.2 kgf/㎠.g(202psig) in the continuous operation at the expected maximum ambient temperature(43℃,109℉).
Peak condensing pressure must not exceed 18.2kgf/㎠.g(259psig) at the same ambient temperature(43℃,109℉).

R22

Condensing pressure of the refrigeration system must not exceed 17.4 kg/㎠.g(248psig) in the continuous operation at the expected maximum ambient temperature(26.7℃, 81℉).
Limit condensing pressure must not exceed 21.1kg/㎠.g(301psig) at the expected maximum ambient temperature(32.2℃, 90℉).

5. Motor Winding Temperature

LBP refrigeration system

The motor winding temperature should not exceed 120℃(248℉) in the continuous operation and 130℃(266℉) in the Pull-Down operation at the expected ambient temperature(43℃)

HBP refrigeration system

The motor winding temperature should not exceed 120℃(248℉) in the continuous operation and 130℃(266℉) in the Pull-Down operation at the expected ambient temperature(26.7℃, 81℉)
The limit motor winding temperature should not exceed 130℃(266℉) at the expected maximum ambient temperature(32.2℃, 90℉).

If the temperature exceeds, the motor is overloaded, then it shortens the motor life. The winding temperature of the motor can be calculated by below equation.

$T2 = (R2/R1)(234.5+T1)-234.5$

T1; The room temperature at the beginning of the test
T2; The winding temperature(unknown) at the end of the test
R1; The resistance at the beginning of the test
R2; The resistance at the end of the test

6. Other Temperatures

Below temperatures should not be exceed the refrigeration system to be operated normally.
If the around testing temperature of the refrigeration system is not indicated, it is measured at the ambient temperature.

Application	Refrigerant	Suction Gas temp.	Discharge Gas temp.	Compressor dome temp.
LBP	R12	-2℃(28℉)~+1℃(34℉)	Max. 105℃(221℉) Limit 120℃(248℉)	Max. 100℃(212℉) in the hot side Min. 5℃(41℉) in the low side at 43℃(109℉) ambient temp.
	R134a		Max. 100℃(212℉) Limit 115℃(239℉)	
	R600a			
HBP	R134a		Max. 100℃(212℉) at 26.7℃(80℉) ambient temperature Limit 115℃(239℉) at 32.3℃(90℉) ambient temperature	Max. 100℃(212℉) in the hot side Min. 5℃(41℉) in the low side at 32.2℃(90℉) ambient temp.
	R22	equal or lower than ambient Temp. There are no dew forms on suction pipe		

※ Measurement location
Suction Gas Temperature is measured at the distance 15cm of the insulated surface suction pipe apart from shell surface.
Discharge Gas Temperature is measured at the distance 5cm of the insulated surface discharge pipe from shell surface.

7. Refrigerant Charging quantity

For each refrigeration system, the optimal refrigerant charging quantity should be determined in an appropriate test laboratory in order to obtain the best working condition.
If the refrigerant amount exceeds or lacks compared to the proper amount range, it'll be caused loss of cooling capacity, lowerling of efficieny and damage of compressor life.

8. Operating condition

The refrigeration system should be maintained as below table.

Application	Refrigerant	Compression ratio	Operating ratio	Ambient Temperature	Refrigeration Oil	On/Off Cycle time
LBP	R12	Max. 10.0	Max. 65% Based on Ref. Normal-Normal Condition	Max. 5℃~43℃ (Max. 41℉~109℉)	TAN 0.01mgKOH/g max. Moisture 20ppm max.	Restarting time limit must be longer than 5 mimutes
	R134a	Max. 12.7			TAN 0.01mgKOH/g max. Moisture 10ppm max.	
	R600a	Max. 12.4				
HBP	R134a	Max. 3.9	Max. 65% Based on Normal-Normal Condition at 26.7℃ ambient Temp.	Max. 5℃~40℃ (Max. 41℉~104℉)		
	R22	Max. 3.4			TAN 0.01mgKOH/g max Moisture 20ppm max.	Max. 6 times / hour

9. Evacuation of cycle

Prevent non-condensible gases, such as air, from permeating into the cycle.
Air or non-condensible gases in the refrigerant cause a decline in cooling capacity and a rise in input wattage due to high discharge pressure.
In particular, air(Oxygen) cause the generation of sludge and shortening of compressor life. Therefore, the non-condensible gas in R-134a system must not exceed 1%(vol.).
The recommendable vacuum level is under 0.08 Torr(mmHg), and the evacuation time must be 40 minutes or more with the capacity of vacuum pump of 300 LT/min or more.
The vacuum pump should be used exclusively , and it is better to vacuum simultaneously in high and low pressure sides with a pump per system.

10. Filter dryer

The filter dryer should be chosen with the molecular sieve suitable to the refrigerant type as below.

	R134a	R600a	R22	R12
Filter Dryer	XH-7 or XH-9	XH-5	XH-6	XH-5

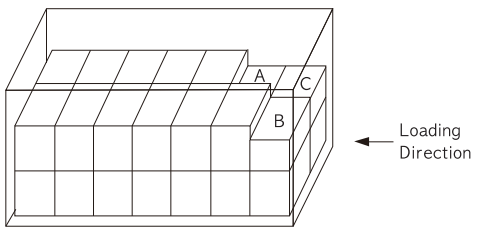
※ If a filter dryer of the refrigerant system is not chosen properly, it can be a source of the indicated causes as below table.

Problems	Appearances
Ice build-up	The moisture in the capillary tube is frozen, then it reduces the cross-sectional area of capillary tube and finally obstruct the capillary tube.
Acid build-up	The moisture reacts with refrigeration oil and then creates acid. Acid is caused as below chemical typical marks and consequences. - Copper plating of valve plate, valve reeds, crankshaft, bearing, block, frame etc. - Etching of electric motor insulation with burning of motor winding. - Destruction of the filter with disintegration of molecular sieve and build-up of "dusts"
Oil contamination	The moisture causes acidification and reduction of the lube capability of the refrigeration oil with change of oil color as brown. It can cause build-up of sludge with subsequent poor lube of compressor.

Packing Information

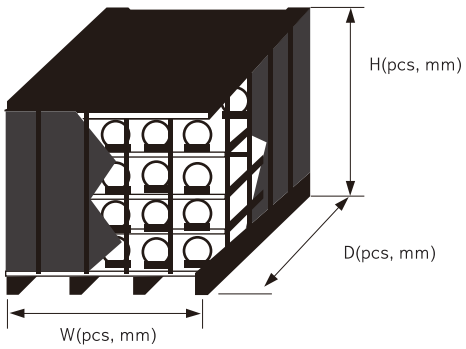
Series	Grade	Weight (kg)	Array (W x D x H)	Pallet Height (mm)	Comp Q'ty/Pallet (pcs)	Pallet Q'ty/CNTR (pcs)	Loading Q'ty/CNTR (pcs)
CD	24GR	6.2	7 x 4 x 5	1,114	140	20	2,800
	30GR	6.4	7 x 4 x 5	1,114	140	19	2,660
	37GR	6.6	7 x 4 x 5	1,114	140	18	2,520
VD,SD, DD,MD	37GR	7.4	6 x 4 x 4	955	96	9	2,304
			6 x 4 x 5	1,140	120	12	
	43GR	7.8	6 x 4 x 4	955	96	12	2,232
			6 x 4 x 5	1,140	120	9	
	52GR	8.0	6 x 4 x 4	985	96	15	2,160
			6 x 4 x 5	1,210	120	6	
	62GR	8.5	6 x 4 x 4	1,012	96	21	2,016
FMA	50GR	9.7	5 x 3 x 4	990	60	11	1,710
			5 x 3 x 5	1,190	75	14	
	60GR	10.0	5 x 3 x 4	1,020	60	25	1,500
	70GR	10.5	5 x 3 x 4	1,046	60	25	1,500
	80GR	10.8	5 x 3 x 4	1,046	60	25	1,500
	90GR	10.8	5 x 3 x 4	1,046	60	25	1,500
	A1GR	10.8	5 x 3 x 4	1,046	60	25	1,500
SK, HK DK, MK	52GR	10.1	5 x 3 x 4	1,020	60	25	1,500
	62GR	10.2	5 x 3 x 4	1,046	60	25	1,500
	70GR	9.9	5 x 3 x 4	1,046	60	25	1,500
	80GR	10.3	5 x 3 x 4	1,046	60	25	1,500
	90GR	10.3	5 x 3 x 4	1,046	60	25	1,500
	A1GR	10.6	5 x 3 x 4	1,046	60	25	1,500
	A3GR	10.6	5 x 3 x 4	1,046	60	25	1,500
	A5GR	10.9	5 x 3 x 4	1,046	60	25	1,500
MSA MSS	43GR	7.6	6 x 3 x 4	990	72	11	2,052
			6 x 3 x 5	1,190	90	14	
	51GR	8.0 / 8.5	6 x 3 x 4	990	72	25	1,944
	62GR	8.8 / 9.3	6 x 3 x 4	1,006	72	25	1,800
	70GR	8.8 / 9.3	6 x 3 x 4	1,006	72	25	1,800
	88GR	8.8	6 x 3 x 4	1,006	72	25	1,800
	A1GR	9.1	6 x 3 x 4	1,006	72	25	1,800
	A2GR	9.1	6 x 3 x 4	1,006	72	25	1,800
EY	A3GR	11.0	5 x 3 x 4	1,075	60	25	1,500
	A5GR	11.0	5 x 3 x 4	1,075	60	25	1,500
EU ENV	A3GR	9.5	5 x 3 x 4	1,038	60	19	1,140
	A5GR	9.5	5 x 3 x 4	1,038	60	19	1,140
BK	62GR	10.0	5 x 3 x 4	1,046	60	19	1,140
	72GR	10.0	5 x 3 x 4	1,046	60	19	1,140
	90GR	10.0	5 x 3 x 4	1,046	60	19	1,140

Container Packing Method



※ A, B, C : Accessory Packing Box

Pallet Packing Method



※ Pallet Size
CD, SD, VD, DD,MD : 1,090(W) * 946(D)
SK, DK, MK, HK, FMA, MS : 1,110(W) * 766(D)

MEMO

Samsung Compressor

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