



# Samsung Compressor



## 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 ISO 9001
- 1994** | Started to produce R-134a compressor
- 1996** | Achieved certification of ISO 14001
- 1997** | Moved the plant from Suwon to Gwangju  
Started to produce R-600a compressor
- 1999** | Developed BLDC compressor BK Series [DVC 1]
- 2002** | Started to produce High EER MK Series
- 2003** | Developed Mini frame CD Series
- 2005** | Started to produce R-600a High EER BLDC EU Series [DVC 2]
- 2007** | Developed R-134a High EER BLDC BK Series [DVC 2]
- 2008** | Developed High EER 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]
- 2011** | Started to produce Very High EER R600a MSE-Series
  - | Started to produce New R134a, R600a BLDC MSV-Series [DVC 3]



# Model Identification

## Name plate



**MK 1 62 Q - L 1 U A**  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

### 1) Compressor model identification

NUMBER		MEANING
①	Series	CD, SD, MD, SK, MK, HK, MSS, MSA, MSE, ENV, MKV, MSV
②	Refrigerant	1 : R 134a (LBP) 4 : R 600a (LBP) 6 : R 134a (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, 88 : 8.80cc, 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 A : variable for BLDC
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 : 05 → Y, 06 → L, 07 → P, 08 → Q, 09 → S, 10 → Z, 11 → B, 12 → C, 13 → D, 14 → F
- 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

# Product Line-up

## BLDC Model

MSV



Application  
- Medium size refrigerator  
- Variable speed type

MKV



Application  
- Large size refrigerator  
- Variable speed type

ENV



Application  
- Large size refrigerator  
- Variable speed type

## AC Model

CD



Application  
- Water dispenser  
- Small size refrigerator

SD/MD



Application  
- Medium size refrigerator  
- Kimchi refrigerator

MSS/MSA/MSE



Application  
- Medium size refrigerator

HK/SK/MK



Application  
- Large size refrigerator

# BLDC LBP

## R 134a LBP

RATED VOLTAGE	MODEL	VOLTAGE [V-Hz]	RUNNING RPM	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT W	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		EFF Kcal/WHr	COP W/W	EER BTU/WHr	
AC 115V-60Hz	MKV172C-L2J	115-60	1800	110	128	437	72	1.53	1.78	6.07	FC
			2200	135	157	536	90	1.50	1.74	5.96	
			2880	176	205	699	120	1.47	1.71	5.82	
			3480	212	247	842	151	1.40	1.63	5.57	
			3600	223	259	885	160	1.39	1.62	5.53	
	MKV190C-L2B	115-60	1800	146	170	580	89	1.64	1.91	6.51	FC
			2200	174	202	691	107	1.63	1.89	6.46	
			2880	227	264	901	145	1.57	1.82	6.22	
			3480	274	319	1088	186	1.47	1.71	5.85	
			3600	294	342	1167	200	1.47	1.71	5.84	
	MKV190C-L2J	115-60	1800	146	170	580	93	1.57	1.83	6.23	FC
			2200	174	202	691	113	1.54	1.79	6.11	
			2880	227	264	901	152	1.49	1.74	5.93	
			3480	274	319	1088	195	1.41	1.63	5.58	
			3600	294	342	1167	210	1.40	1.63	5.56	
AC 220-240V-50Hz, 220V-60Hz	MKV172G-L2J	220-50/60	1800	110	128	437	72	1.53	1.78	6.07	FC
			2200	135	157	536	90	1.50	1.74	5.96	
			2880	176	205	699	120	1.47	1.71	5.82	
			3480	212	247	842	151	1.40	1.63	5.57	
			3600	223	259	885	160	1.39	1.62	5.53	
	MKV190G-L2B	220-50/60	1800	146	170	580	89	1.64	1.91	6.51	FC
			2200	174	202	691	107	1.63	1.89	6.46	
			2880	227	264	901	145	1.57	1.82	6.22	
			3480	274	319	1088	186	1.47	1.71	5.85	
			3600	294	342	1167	200	1.47	1.71	5.84	
	MKV190G-L2J	220-50/60	1800	146	170	580	93	1.57	1.83	6.23	FC
			2200	174	202	691	113	1.54	1.79	6.11	
			2880	227	264	901	152	1.49	1.74	5.93	
			3480	274	319	1088	195	1.41	1.63	5.58	
			3600	294	342	1167	210	1.40	1.63	5.56	
AC 200-240V-50Hz, 220V-60Hz	MSV162A-L1J	220-60	1400	80	93	318	56	1.43	1.66	5.67	ST
			2000	105	122	417	70	1.50	1.74	5.96	
			3000	155	180	615	105	1.48	1.72	5.86	
			4000	210	244	834	143	1.47	1.71	5.83	
	MSV162A-L1B	220-60	1200	60	70	238	43	1.40	1.62	5.54	ST
			2000	105	122	417	68	1.54	1.80	6.13	
			3000	155	180	615	103	1.50	1.75	5.97	
			4300	225	262	893	160	1.41	1.64	5.58	
	MSV172A-L1B	220-60	1200	67	78	266	50	1.34	1.56	5.32	ST
			2000	123	143	488	79	1.56	1.81	6.18	
			3000	192	223	762	125	1.54	1.79	6.10	
			4300	256	298	1016	188	1.36	1.58	5.41	

**COOLING TYPE**  
 FC : Fan cooling  
 OC : Oil cooling  
 ST : Static

**ASHRAE CONDITIONS (LBP)**  
 Evaporating Temp. : -23.3°C (-10°F)  
 Condensing Temp. : 54.4°C (130°F)  
 Gas Superheated to : 32.2°C (90°F)  
 Liquid sub-cooled to : 32.2°C (90°F)  
 Ambient Temp. : 32.2°C (90°F)

**UNIT CONVERSION**  
 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]	RUNNING RPM	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT W	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		EFF Kcal/WHr	COP W/W	EER BTU/WHr	
AC 115-127V~60Hz	ENV4A5DL2B	115-60	1650	127	148	504	75	1.69	1.97	6.72	FC
			1950	150	174	596	88	1.70	1.98	6.77	
			2800	210	244	834	130	1.62	1.88	6.41	
			3650	271	315	1076	182	1.49	1.73	5.91	
AC 200-220V~50Hz 220V~60Hz	ENV4A5H-L2B	220-60	1650	127	148	504	75	1.69	1.97	6.72	FC
			1950	150	174	596	88	1.70	1.98	6.77	
			2800	210	244	834	130	1.62	1.88	6.41	
			3650	271	315	1076	182	1.49	1.73	5.91	
AC 220-240V~50Hz 220V~60Hz	ENV4A3G-L2J	220-60	1650	111	129	441	68	1.63	1.90	6.48	FC
			1800	119	138	472	73	1.63	1.90	6.47	
			2800	184	214	730	120	1.53	1.78	6.09	
			3600	239	278	949	166	1.44	1.67	5.72	
	ENV4A3G-L2B	220-50/60	1650	111	129	441	66	1.68	1.96	6.68	FC
			1800	119	138	472	71.5	1.66	1.94	6.61	
			2800	184	214	730	115	1.60	1.86	6.35	
			3600	239	278	949	161	1.48	1.73	5.89	
	ENV4A5G-L2B	220-50	1650	127	148	504	75	1.69	1.97	6.72	FC
			1950	150	174	596	88	1.70	1.98	6.77	
			2800	210	244	834	130	1.62	1.88	6.41	
			3600	271	315	1076	182	1.49	1.73	5.91	
	ENV4A5G-L2J	220-60	1650	127	148	504	78	1.63	1.89	6.46	FC
			1950	150	174	596	91.5	1.64	1.91	6.51	
			2800	210	244	834	139	1.51	1.76	6.00	
			3600	271	315	1076	193	1.40	1.63	5.57	
AC 200-240V~50Hz 220V~60Hz	MSV488A-L1J	220-60	1200	51	59	202	35	1.46	1.69	5.78	ST
			1400	63	73	250	41	1.54	1.79	6.10	
			2000	91	106	361	60	1.52	1.76	6.02	
			3000	132	153	524	89	1.48	1.72	5.89	
			3650	185	215	734	134	1.38	1.61	5.48	
	MSV4A1A-L1B	220-60	1200	65	76	258	43	1.51	1.76	6.00	ST
			1400	79	92	314	49.5	1.60	1.86	6.34	
			2000	115	134	457	73	1.58	1.83	6.25	
			3000	166	193	659	108	1.54	1.79	6.10	
			4300	233	271	925	163	1.43	1.66	5.67	
	MSV4A1A-L1J	220-60	1200	65	76	258	44	1.48	1.72	5.86	ST
			1400	79	92	314	51	1.55	1.80	6.15	
			2000	115	134	457	75	1.53	1.78	6.09	
			3000	166	193	659	112	1.48	1.72	5.88	
			4300	233	271	925	168	1.39	1.61	5.51	

**COOLING TYPE**  
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 ST : Static

**ASHRAE CONDITIONS (LBP)**  
 Evaporating Temp. : -23.3°C (-10°F)  
 Condensing Temp. : 54.4°C (130°F)  
 Gas Superheated to : 32.2°C (90°F)  
 Liquid sub-cooled to : 32.2°C (90°F)  
 Ambient Temp. : 32.2°C (90°F)

**UNIT CONVERSION**  
 1 watt = 3.41 Btu/Hr  
 1 watt = 0.86 Kcal/Hr  
 1 Kcal/Hr = 3.97 Btu/Hr

# R 134a LBP



## R 134a LBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
AC 100V~50/60Hz	CD124E-L1Z2	RSIR	100-50	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	RSIR	100-50	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	RSCR	100-50	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	CSR	100-50	117	136	464	111	1.05	1.23	4.18	ST
			100-60	135	157	536	121	1.12	1.30	4.43	
	MD152E-L1U2	RSCR	100-50	118	137	468	103	1.15	1.33	4.55	ST
			100-60	143	166	568	118	1.21	1.41	4.81	
	SD162E-L1W2	CSR	100-50	144	167	572	141	1.02	1.19	4.05	ST/OC
			100-60	170	198	675	147	1.16	1.34	4.59	
	MD162E-L1U2	RSCR	100-50	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	CSR	100-50	168	195	667	149	1.13	1.31	4.48	FC
			100-60	206	240	818	170	1.21	1.41	4.81	
MK172E-L2U	RSCR	100-50	181	210	719	140	1.29	1.50	5.13	FC	
		100-60	226	263	897	162	1.40	1.62	5.54		
SK182E-L2W	CSR	100-50	203	236	806	188	1.08	1.26	4.29	FC/OC	
		100-60	239	278	949	196	1.22	1.42	4.84		
AC 115V~60Hz	CD124C-L1Z2	RSIR	115-60	52	60	206	65	0.80	0.93	3.18	ST
	CD124C-L1ZA	RSIR	115-60	50	58	199	68	0.74	0.85	2.92	ST
	CD124C-S1Z2	RSIR	115-60	52	60	206	57	0.91	1.06	3.62	ST
	CD130C-L1Z2	RSIR	115-60	70	81	278	76	0.92	1.07	3.66	ST
	CD130C-S1Z2	RSIR	115-60	70	81	278	73	0.96	1.12	3.81	ST
	CD130C-S1ZA	RSIR	115-60	70	81	278	82	0.85	0.99	3.39	ST
	CD137C-S1U2	RSCR	115-60	87	101	345	97	0.90	1.04	3.56	ST
	SD137C-L1ZB	RSIR	115-60	93	108	369	102	0.91	1.06	3.62	ST
	SD137C-L1UB	RSCR	115-60	93	108	369	96	0.97	1.13	3.85	ST
	SD143C-L1U2	RSCR	115-60	114	133	453	114	1.00	1.16	3.97	ST
	MSA143C-S1A	RSIR	115-60	124	144	492	100	1.24	1.44	4.92	ST
	MSA143C-S1B	RSCR	115-60	124	144	492	94	1.32	1.53	5.24	ST
	SD152C-L1UA	RSCR	115-60	146	170	580	123	1.19	1.38	4.71	ST
	MD152C-L1UB	RSCR	115-60	147	171	584	115	1.28	1.49	5.07	ST
	MD162C-	RSCR	115-60	152	177	603	116	1.31	1.52	5.20	ST
	MSS151C-L1U	RSCR	115-60	152	177	603	107	1.42	1.65	5.64	ST
	MSA151C-L1U	RSCR	115-60	152	177	603	113	1.35	1.56	5.34	ST
	MSA151C-L1G	RSCR	115-60	152	177	603	109	1.39	1.62	5.54	ST
	MSA151C-L1B	RSCR	115-60	152	177	603	113	1.35	1.56	5.34	ST
	SD162C-L1U2	RSIR	115-60	170	198	675	157	1.08	1.26	4.30	ST
			115-60	170	198	675	150	1.13	1.32	4.50	
	SD162C-L1UB	RSCR	115-60	170	198	675	155	1.10	1.28	4.35	ST
	MD162C-S1U2	RSCR	115-60	166	193	659	146	1.14	1.32	4.51	ST
	MK162C-L1UA	RSCR	115-60	184	214	730	134	1.37	1.60	5.45	ST
	MSS162C-L1U	RSCR	115-60	182	212	723	129	1.41	1.64	5.60	ST
	MSA162C-L1U	RSCR	115-60	182	212	723	136	1.34	1.56	5.31	ST
	MSA162C-L1B	RSCR	115-60	187	217	742	145	1.29	1.50	5.12	ST
	SK170C-L2W	CSR	115-60	206	240	818	170	1.21	1.41	4.81	FC
	MK172C-L2UA	RSCR	115-60	224	260	889	159	1.41	1.64	5.59	FC
	MSS170C-L1U	RSCR	115-60	222	258	881	152	1.46	1.70	5.80	ST
	MSA170C-L1U	RSCR	115-60	222	258	881	160	1.39	1.61	5.51	ST
	MSA170C-L1B	RSCR	115-60	222	258	881	160	1.39	1.61	5.51	ST
	SK182C-L2U	RSCR	115-60	239	278	949	201	1.19	1.38	4.72	FC
	SK182C-L2W	CSR	115-60	239	278	949	196	1.22	1.42	4.84	FC
MK183C-L2U	RSCR	115-60	258	300	1024	179	1.44	1.68	5.72	FC	

# R 134a LBP

## R 134a LBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
AC 115V~60Hz	MK183C-S2U	RSCR	115-60	258	300	1024	187	1.38	1.60	5.48	FC
	SK1A1C-L2W	CSR	115-60	303	352	1203	275	1.10	1.28	4.37	FC
	SK1A1C-L2WB	CSR	115-60	312	363	1239	290	1.08	1.25	4.27	FC
AC 115-127V~60Hz	MSS143D-S1U	RSCR	115-60	116	135	461	85	1.36	1.59	5.42	ST
			127-60	116	135	461	92	1.26	1.47	5.01	
	MSA151D-L1B	RSCR	115-60	152	177	603	113	1.35	1.56	5.34	ST
			127-60	152	177	603	120	1.27	1.47	5.03	
	MSS162D-S1U	RSCR	115-60	187	217	742	135	1.39	1.61	5.50	ST
			127-60	187	217	742	142	1.32	1.53	5.23	
	MSA162D-L1B	RSCR	115-60	187	217	742	145	1.29	1.50	5.12	ST
			127-60	187	217	742	150	1.25	1.45	4.95	
	MK162D-L1U	RSCR	115-60	184	214	730	124	1.48	1.73	5.89	ST
			127-60	184	214	730	126	1.46	1.70	5.80	
	MK162D-S2UB	RSCR	115-60	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	RSCR	115-60	224	260	889	149	1.50	1.75	5.97	FC
			127-60	224	260	889	152	1.47	1.71	5.85	
	MK183D-L2U	RSCR	115-60	258	300	1024	179	1.44	1.68	5.72	FC
127-60			258	300	1024	182	1.42	1.65	5.63		
MK183D-L2UB	RSCR	115-60	258	300	1024	185	1.39	1.62	5.54	FC	
		127-60	258	300	1024	194	1.33	1.55	5.28		
AC 127V~60Hz	CD124P-L1Z2	RSIR	127-60	52	60	206	68	0.76	0.89	3.04	ST
	CD124P-S1ZB	RSIR	127-60	52	60	206	74	0.70	0.82	2.79	ST
	CD130P-L1Z2	RSIR	127-60	70	81	278	76	0.92	1.07	3.66	ST
	CD130P-S1ZB	RSIR	127-60	70	81	278	92	0.76	0.88	3.02	ST
	SD152P-L1W2	CSR	127-60	135	157	536	122	1.11	1.29	4.39	ST
	MK152P-S1U	RSCR	127-60	148	172	588	108	1.37	1.59	5.44	ST
	SD162P-L1U2	RSCR	127-60	170	198	675	147	1.16	1.34	4.59	ST
	MD162P-S1U2	RSCR	127-60	187	217	742	144	1.30	1.51	5.16	ST
	MSA162P-S1B	RSCR	127-60	187	217	742	147	1.27	1.48	5.05	ST
	MK162P-S1UA	RSCR	127-60	184	214	730	134	1.37	1.60	5.45	ST
	MK172P-L2U	RSCR	127-60	224	260	889	159	1.41	1.64	5.59	FC
	SK182P-L2U	RSCR	127-60	239	278	949	201	1.19	1.38	4.72	FC
	MK183P-S2U	RSCR	127-60	263	306	1044	190	1.38	1.61	5.50	FC
AC 200-220V~50Hz, 220V~60Hz	CD124H-L1Z2	RSIR	220-50	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	RSIR	220-50	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	RSIR	220-50	58	67	230	73	0.79	0.92	3.15	ST
			220-60	70	81	278	76	0.92	1.07	3.66	
	SD137H-L1ZB	RSIR	220-50	75	87	298	93	0.81	0.94	3.20	ST
			220-60	93	108	369	98	0.95	1.10	3.77	
	SD137H-L1UB	RSCR	220-50	75	87	298	87	0.86	1.00	3.42	ST
			220-60	93	108	369	92	1.01	1.18	4.01	
	SD143H-L1UA	RSCR	220-50	98	114	389	109	0.90	1.05	3.57	ST
			220-60	118	137	468	114	1.04	1.20	4.11	
	SD152H-S1UB	RSCR	220-50	120	140	476	113	1.06	1.23	4.21	ST
			220-60	146	170	580	122	1.20	1.39	4.75	
	SD162H-L1UB	RSCR	220-50	146	170	580	139	1.05	1.22	4.17	ST
			220-60	182	212	723	152	1.20	1.39	4.75	
	SK170H-L1UB	RSCR	220-50	168	195	667	153	1.10	1.28	4.36	ST
			220-60	206	240	818	164	1.26	1.46	4.99	
MSA170H-L1B	RSCR	220-50	173	201	687	141	1.23	1.43	4.87	ST	
		220-60	220	256	873	163	1.35	1.57	5.36		
MSA170H-L1G	RSCR	220-50	173	201	687	131	1.32	1.54	5.34	ST	
		220-60	220	256	873	157	1.40	1.63	5.56		



# R 134a LBP



## R 134a LBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
								Kcal/WHr	W/W	BTU/WHr	
AC 200-220V~50Hz, 220V~60Hz	MK172H-L1U	RSCR	220-50	176	205	699	131	1.34	1.56	5.33	ST/OC
			220-60	224	260	889	159	1.41	1.64	5.59	
	MK172H-L1UB	RSCR	220-50	176	205	699	135	1.30	1.52	5.18	ST/OC
			220-60	224	260	889	159	1.41	1.64	5.59	
	SK182H-L2UA	RSCR	220-50	203	236	806	182	1.12	1.30	4.43	FC/OC
			220-60	239	278	949	191	1.25	1.46	4.97	
	SK182H-L2UB	RSCR	220-50	203	236	806	182	1.12	1.30	4.43	FC/OC
			220-60	247	287	981	191	1.29	1.50	5.13	
	MK183H-L2UB	RSCR	220-50	203	236	806	154	1.32	1.53	5.23	FC
			220-60	258	300	1024	179	1.44	1.68	5.72	
	SK190H-S2U	RSCR	220-50	227	264	901	233	0.97	1.13	3.87	FC/OC
			220-60	264	307	1048	229	1.15	1.34	4.58	
	SK190H-L2UA	RSCR	220-50	227	264	901	208	1.09	1.27	4.33	FC/OC
			220-60	264	307	1048	211	1.25	1.45	4.97	
	SK190H-L2UB	RSCR	220-50	227	264	901	208	1.09	1.27	4.33	FC/OC
			220-60	264	307	1048	211	1.25	1.45	4.97	
MK190H-L2U	RSCR	220-50	225	262	893	168	1.34	1.56	5.32	FC	
		220-60	285	331	1131	200	1.43	1.66	5.66		
AC 220V~60Hz	CD124B-L1ZA	RSIR	220-60	50	58	199	72	0.69	0.81	2.76	ST
	CD130B-S1ZA	RSIR	220-60	70	81	278	82	0.85	0.99	3.39	ST
	CD137B-S1U2	RSCR	220-60	87	101	345	97	0.90	1.04	3.56	ST
	MD152B-L1UA	RSCR	220-60	148	172	588	122	1.21	1.41	4.82	ST
	MD162B-L1U2	RSCR	220-60	160	186	635	136	1.18	1.37	4.67	ST
	SK162B-L1UA	RSCR	220-60	170	198	675	141	1.21	1.40	4.79	ST
	MK162B-L1UB	RSCR	220-60	184	214	730	134	1.37	1.60	5.45	ST
	MSA162B-L1G	RSCR	220-60	187	217	742	136	1.38	1.60	5.46	ST
	SK170B-L2W	CSR	220-60	206	240	818	165	1.25	1.45	4.96	FC
	MK172B-L2UB	RSCR	220-60	224	260	889	159	1.41	1.64	5.59	FC
	SK182B-L2W	CSR	220-60	239	278	949	186	1.28	1.49	5.10	FC
	MK183B-L2U	RSCR	220-60	258	300	1024	179	1.44	1.68	5.72	FC
	SK190B-L2W	CSR	220-60	264	307	1048	206	1.28	1.49	5.09	FC
	MK190B-S2W	CSR	220-60	285	331	1131	200	1.43	1.66	5.66	FC
	SK1A1B-L2WB	CSR	220-60	312	363	1239	279	1.12	1.30	4.44	FC
	AC 220-240V~50Hz, 220V~60Hz	MSS151G-L1U	RSCR	220-50	125	145	496	90	1.39	1.61	5.51
220-60				152	177	603	107	1.42	1.65	5.64	
MSA151G-L1B		RSCR	220-50	125	145	496	96	1.30	1.51	5.17	ST
			220-60	152	177	603	114	1.33	1.55	5.29	
MSA162G-L1B		RSCR	220-50	151	176	599	119	1.27	1.48	5.04	ST
			220-60	187	217	742	140	1.34	1.55	5.30	
MSS170G-L1U		RSCR	220-50	178	207	707	124	1.44	1.67	5.70	ST
			220-60	222	258	881	151	1.47	1.71	5.84	
MK183G-L2U		RSCR	220-50	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	RSCR	220-50	225	262	893	168	1.34	1.56	5.32	FC	
		220-60	285	331	1131	200	1.43	1.66	5.66		
AC 220-240V~50Hz	CD124Q-L1Z2	RSIR	220-50	43	50	171	57	0.75	0.88	2.99	ST
	CD130Q-L1Z2	RSIR	220-50	58	67	230	65	0.89	1.04	3.54	ST
	CD130Q-S1ZA	RSIR	220-50	58	67	230	74	0.78	0.91	3.11	ST
	CD137Q-S1U2	RSCR	220-50	72	84	286	80	0.90	1.05	3.57	ST
	SD137Q-L1ZB	RSIR	220-50	75	87	298	86	0.87	1.01	3.46	ST
	SD137Q-L1UB	RSCR	220-50	75	87	298	80	0.94	1.09	3.72	ST
	SD143Q-L1U2	RSCR	220-50	95	110	377	99	0.96	1.12	3.81	ST
	MSA143Q-S1Z	RSIR	220-50	96	112	381	83	1.16	1.34	4.59	ST
	SD152Q-L1UB	RSCR	220-50	120	140	476	104	1.15	1.34	4.58	ST
	MD152Q-L1U2	RSCR	220-50	118	137	468	98	1.20	1.40	4.78	ST
	SD162Q-L1UB	RSCR	220-50	146	170	580	125	1.17	1.36	4.64	ST

# R 134a/R 600a LBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
AC 220-240V-50Hz	MK162Q-L1UA	RSCR	220-50	145	169	576	105	1.38	1.61	5.48	ST
	MSS162Q-L1U	RSCR	220-50	151	176	599	105	1.44	1.67	5.71	ST
	MSA162Q-L1G	RSCR	220-50	151	176	599	111	1.36	1.58	5.40	ST
	SK170Q-L1U	RSCR	220-50	168	195	667	141	1.19	1.39	4.73	ST/OC
	MSA170Q-L1B	RSCR	220-50	173	201	687	129	1.37	1.60	5.45	ST
	MSA170Q-L1G	RSCR	220-50	173	201	687	126	1.34	1.56	5.32	ST
	MK172Q-L2UB	RSCR	220-50	176	205	699	129	1.36	1.59	5.42	FC
	SK182Q-L2U	RSCR	220-50	203	236	806	164	1.24	1.44	4.91	FC/OC
	MK183Q-L2UB	RSCR	220-50	203	236	806	142	1.43	1.66	5.68	FC
	SK190Q-L2U	RSCR	220-50	227	264	901	180	1.26	1.47	5.01	FC/OC
AC 200-220V-50Hz	CD124K-S1ZA	RSIR	220-50	42	49	167	71	0.59	0.69	2.35	ST
	CD130K-S1ZA	RSIR	220-50	58	67	230	79	0.73	0.85	2.91	ST
	MSA143K-S1B	RSCR	220-50	96	112	381	77	1.25	1.45	4.95	ST
	SK170K-T1UA	RSCR	220-50	168	195	667	137	1.23	1.43	4.87	ST
	SK170K-S1UB	RSCR	220-50	168	195	667	137	1.23	1.43	4.87	ST
	MSA170K-S1G	RSCR	220-50	173	201	687	135	1.28	1.49	5.09	ST
	MK172K-S1U	RSCR	220-50	176	205	699	124	1.42	1.65	5.63	ST

## R 600a LBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
AC 115V-60Hz	MD462C-S1ZB	RSIR	115-60	97	113	385	94	1.03	1.20	4.10	ST
AC 220V-60Hz	MK490B-L1UA	RSCR	220-60	152	177	603	114	1.33	1.55	5.29	ST
AC 220-240V-50Hz	MD462Q-L1UA	RSCR	220-50	78	91	310	68	1.15	1.33	4.55	ST
	MSS470Q-L1U	RSCR	220-50	98	114	389	67	1.46	1.70	5.81	ST
	MSE482Q-L1U	RSCR	220-50	127	148	504	77	1.65	1.92	6.55	ST
	MSE482Q-L1G	RSCR	220-50	125	145	496	81	1.54	1.79	6.13	ST
	MSS488Q-L1U	RSCR	220-50	120	140	476	82	1.46	1.70	5.81	ST
	MSA488Q-L1B	RSCR	220-50	120	140	476	90	1.33	1.55	5.29	ST
	MD490Q-L1U2	RSCR	220-50	130	151	516	94	1.38	1.61	5.49	ST
	MD490Q-L1UA	RSCR	220-50	130	151	516	99	1.31	1.53	5.21	ST
	MSE490Q-L1U	RSCR	220-50	139	162	552	87	1.60	1.86	6.34	ST
	MSE4A0Q-L1U	RSCR	220-50	158	184	627	100	1.58	1.84	6.27	ST
	MSE4A0Q-L1G	RSCR	220-50	162	188	643	107	1.51	1.76	6.01	ST
	MD4A1Q-L1U2	RSCR	220-50	157	183	623	111	1.41	1.64	5.62	ST
	MSS4A1Q-L1U	RSCR	220-50	164	191	651	109	1.50	1.75	5.97	ST
	MSA4A1Q-L1B	RSCR	220-50	164	191	651	115	1.43	1.66	5.66	ST
	MSE4A1Q-L1U	RSCR	220-50	176	205	699	112	1.57	1.83	6.24	ST
	MSE4A1Q-L1G	RSCR	220-50	175	203	695	118	1.48	1.72	5.89	ST
	MSS4A2Q-R1U	RSCR	220-50	180	209	715	120	1.50	1.74	5.96	ST
	MSE4A2Q-L1U	RSCR	220-50	192	223	762	126	1.52	1.77	6.05	ST
	MD4A3Q-L1U2	RSCR	220-50	179	208	711	132	1.36	1.58	5.38	ST
	MK4A3Q-L1UA	RSCR	220-50	179	208	711	132	1.36	1.58	5.38	ST
	MK4A5Q-L1U	RSCR	220-50	222	258	881	162	1.37	1.59	5.44	ST
MK4A5Q-R1U	RSCR	220-50	222	258	881	152	1.46	1.70	5.80	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  
 CSR : Capacitor Start Capacitor Run

**ASHRAE CONDITIONS (LBP)**  
 Evaporating Temp. : -23.3°C (-10°F)  
 Condensing Temp. : 54.4°C (130°F)  
 Gas Superheated to : 32.2°C (90°F)  
 Liquid sub-cooled to : 32.2°C (90°F)  
 Ambient Temp. : 32.2°C (90°F)

**UNIT CONVERSION**  
 1 watt = 3.41 Btu/Hr  
 1 watt = 0.86 Kcal/Hr  
 1 Kcal/Hr = 3.97 Btu/Hr

# R 134a HBP



AC 200-220V~50Hz, 220V~60Hz	MSE482H-L1G	RSCR	220-60	150	174	596	102	1.47	1.71	5.84	ST
		RSCR	220-50	130	151	516	87	1.49	1.74	5.93	
	MSA488H-L1B	RSCR	220-60	153	178	607	110	1.39	1.62	5.52	ST
		RSCR	220-50	120	140	476	90	1.33	1.55	5.29	

# R 134a HBP

RATED VOLTAGE	MODEL	MOTOR TYPE	VOLTAGE [V-Hz]	ASHRAE							COOLING TYPE
				COOLING CAPACITY			POWER INPUT	EFFICIENCY			
				Kcal/Hr	Watt	BTU/Hr		W	EFF	COP	
								Kcal/WHr	W/W	BTU/WHr	
AC 100V~50/60Hz	SD652E-S2W2	CSR	100-50	450	523	1787	230	1.96	2.28	7.77	FC
			100-60	550	640	2184	262	2.10	2.44	8.33	
	HK690E2W	CSR	100-50	780	907	3097	390	2.00	2.33	7.94	FC
			100-60	950	1105	3772	445	2.13	2.48	8.48	
	HK6A3E2W	CSR	100-50	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	RSCR	115-60	450	523	1787	220	2.05	2.38	8.12	FC
	SD652C-H2U2	RSCR	115-60	550	640	2184	262	2.10	2.44	8.33	FC
	SK670C-H2Y	RSIR	115-60	720	837	2858	390	1.85	2.15	7.33	FC
	SK682C-H2Y	RSIR	115-60	830	965	3295	460	1.80	2.10	7.16	FC
	SK6A1C-H2Y	RSIR	115-60	1080	1256	4288	630	1.71	1.99	6.81	FC
	HK672C2Z	RSIR	115-60	750	872	2978	370	2.03	2.36	8.05	FC
	HK680C2Z	RSIR	115-60	850	988	3375	430	1.98	2.30	7.85	FC
	HK690C2Z	RSIR	115-60	950	1105	3772	490	1.94	2.25	7.70	FC
	HK6A1C2U	RSCR	115-60	1090	1267	4327	545	2.00	2.33	7.94	FC
	HK6A3C2W	CSR	115-60	1250	1453	4963	690	1.81	2.11	7.19	FC
AC 220V~60Hz	SD643B-H2U2	RSCR	220-60	450	523	1787	220	2.05	2.38	8.12	FC
	SD643B-H2UB	RSCR	220-60	480	558	1906	238	2.02	2.35	8.00	FC
	SD652B-S2W2	CSR	220-60	550	640	2184	255	2.16	2.51	8.56	FC
	SK670B-H2U	RSCR	220-60	720	837	2858	330	2.18	2.54	8.66	FC
	SK682B-H2U	RSCR	220-60	830	965	3295	405	2.05	2.38	8.14	FC
	SK6A1B-S2W	CSR	220-60	1080	1256	4288	560	1.93	2.24	7.66	FC
	HK672B2Z	RSIR	220-60	750	872	2978	370	2.03	2.36	8.05	FC
	HK680B2Z	RSIR	220-60	850	988	3375	430	1.98	2.30	7.85	FC
	HK690B2Z	RSIR	220-60	950	1105	3772	490	1.94	2.25	7.70	FC
	HK6A1B2W	CSR	220-60	1090	1267	4327	520	2.10	2.44	8.32	FC
	HK6A3B2W	CSR	220-60	1250	1453	4963	650	1.92	2.24	7.63	FC
	AC 220-240V~50Hz	SD643Q-H2Z2	RSIR	230-50	370	430	1469	197	1.88	2.18	7.46
SD652Q-H2Z2		RSIR	230-50	450	523	1787	220	2.05	2.38	8.12	FC
SK670Q-H2S		CSIR	230-50	600	698	2382	310	1.94	2.25	7.68	FC
SK670Q-H2Z		RSIR	230-50	595	692	2362	310	1.92	2.23	7.62	FC
SK682Q-H2Z		RSIR	230-50	700	814	2779	365	1.92	2.23	7.61	FC
SK6A1Q-S2S		CSIR	230-50	900	1047	3573	480	1.88	2.18	7.44	FC
HK672Q2Z		RSIR	220-50	610	709	2422	305	2.00	2.33	7.94	FC
HK680Q2Z		RSIR	220-50	700	814	2779	350	2.00	2.33	7.94	FC
HK690Q2Z		RSIR	220-50	780	907	3097	380	2.05	2.39	8.15	FC
HK6A1Q2Z		RSIR	220-50	910	1058	3613	465	1.96	2.28	7.77	FC
HK6A3Q2U		RSCR	220-50	1050	1221	4169	535	1.96	2.28	7.79	FC

**COOLING TYPE**  
 FC : Fan cooling  
 OC : Oil cooling  
 ST : Static

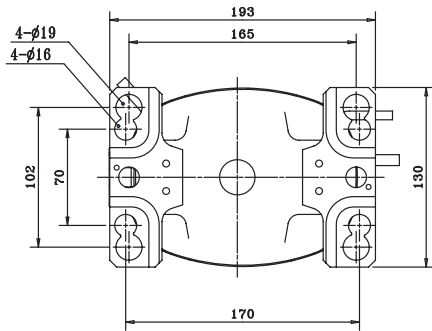
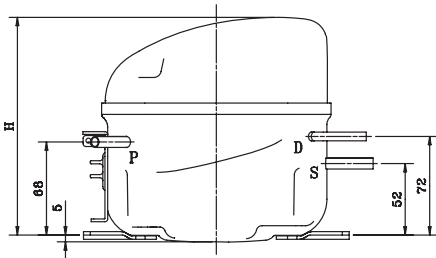
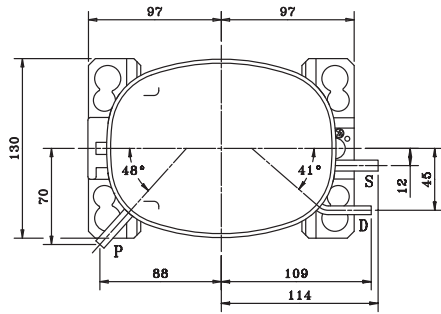
**MOTOR TYPE**  
 RSIR : Resistance Start Induction Run  
 RSCR : Resistance Start Capacitor Run  
 CSIR : Capacitor Start Induction Run  
 CSR : Capacitor Start Capacitor Run

**ASHRAE CONDITIONS (HBP)**  
 Evaporating Temp. : 7.2°C (45°F)  
 Condensing Temp. : 54.4°C (130°F)  
 Gas Superheated to : 35.0°C (95°F)  
 Liquid sub-cooled to : 46.1°C (115°F)  
 Ambient Temp. : 35.0°C (95°F)

**UNIT CONVERSION**  
 1 watt = 3.41 Btu/Hr  
 1 watt = 0.86 Kcal/Hr  
 1 Kcal/Hr = 3.97 Btu/Hr

# Dimensions

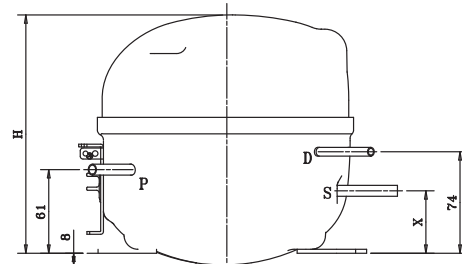
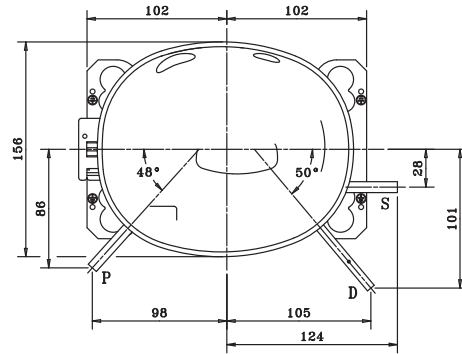
## CD Series (Universal Type)



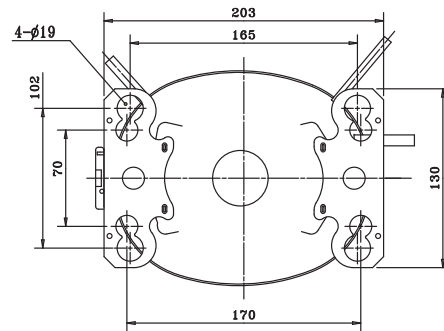
Height [mm]		
Grade	Cooling Type	H
24/30GR	Static	157
37GR		162

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)



MODEL	X(mm)
MSS, MSA	45
MSE	61

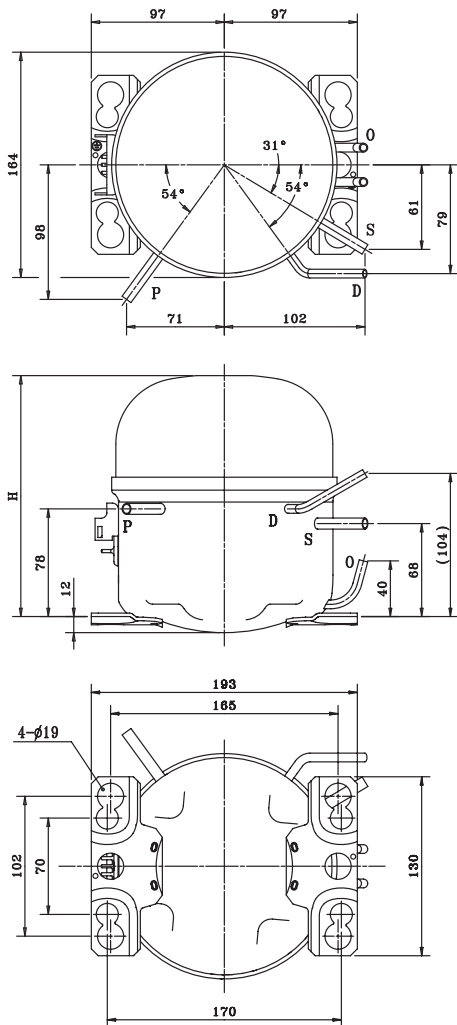


Height [mm]		
Grade	Cooling Type	H
43/51GR	Static	169
62/70/A2GR		173

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

# Dimensions

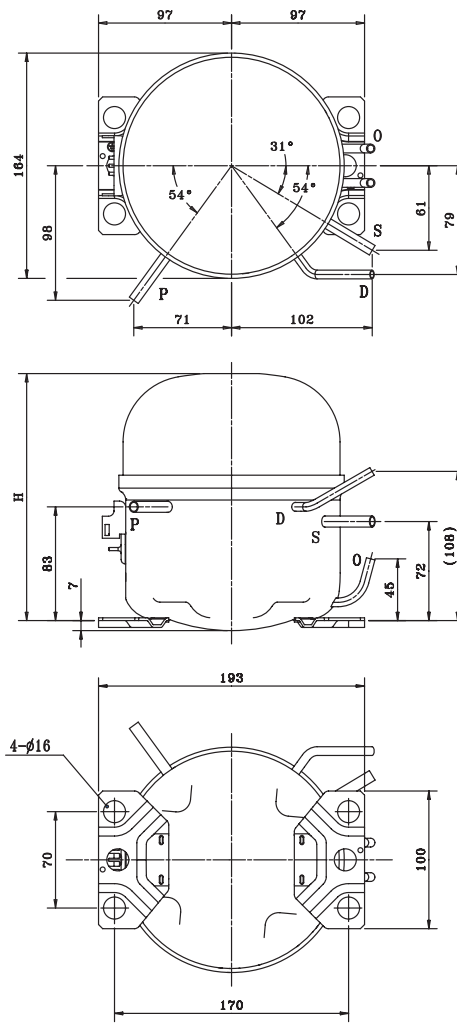
## SD, MD Series (Universal Type)



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, MD Series (European Type)

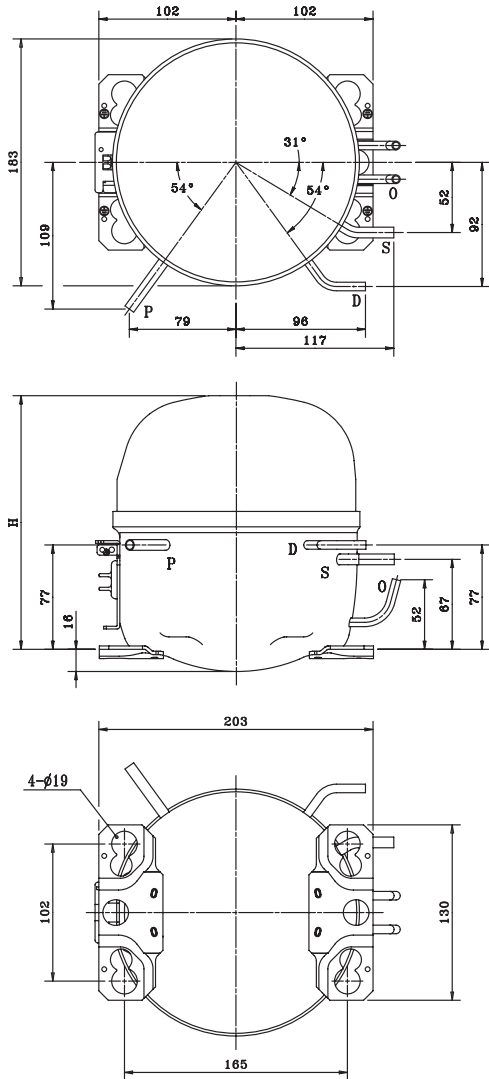


Height [mm]		
Grade	Cooling Type	H
30GR	Static	161
37/43GR		170
52GR		175
62GR		179
62GR	Oil Cooling	182

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

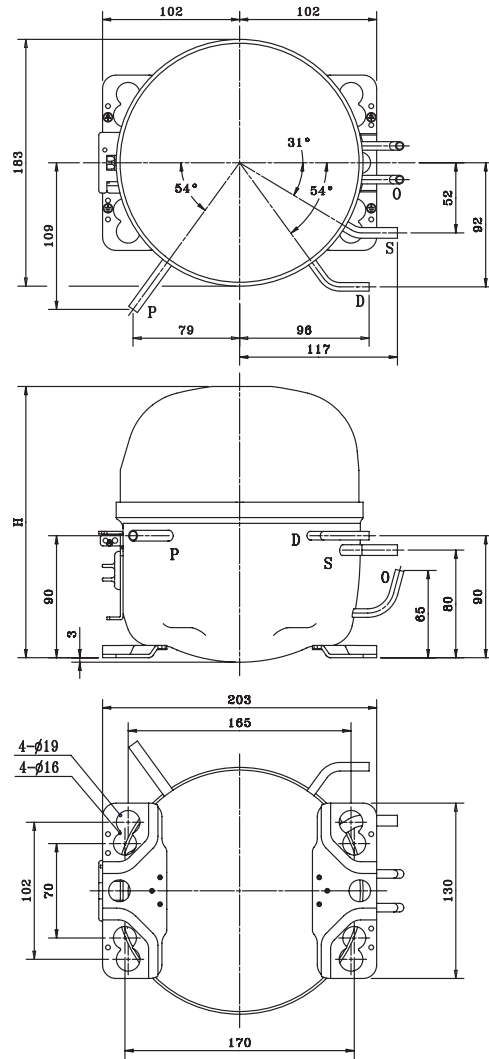
## SK, MK, MKV Series (Universal Type I)



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, MK, MKV Series (Universal Type II)

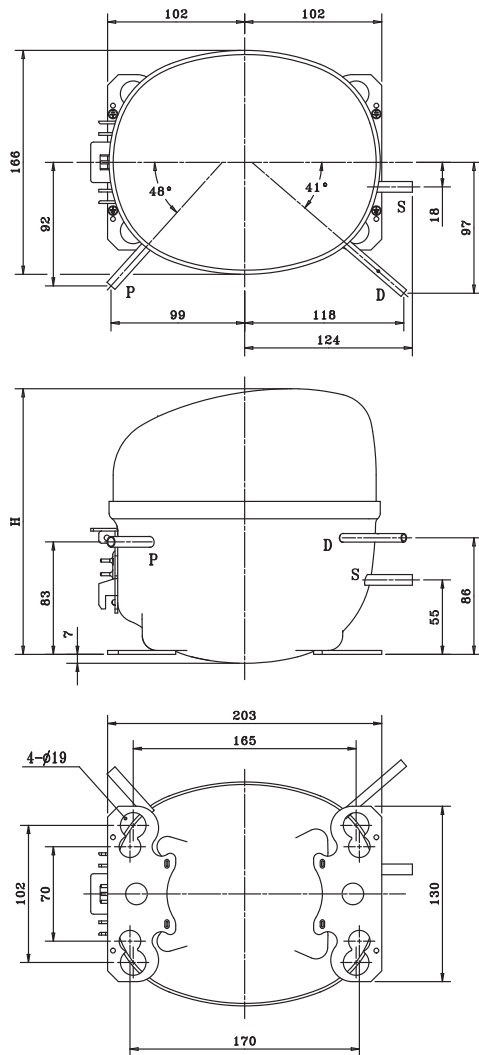


Height [mm]		
Grade	Cooling Type	H
62/70/82/90GR A1/A3/A5GR	Static/ Fan Cooling	202
62/70/82/90GR A1/A3/A5GR	Oil Cooling	208

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

# Dimensions

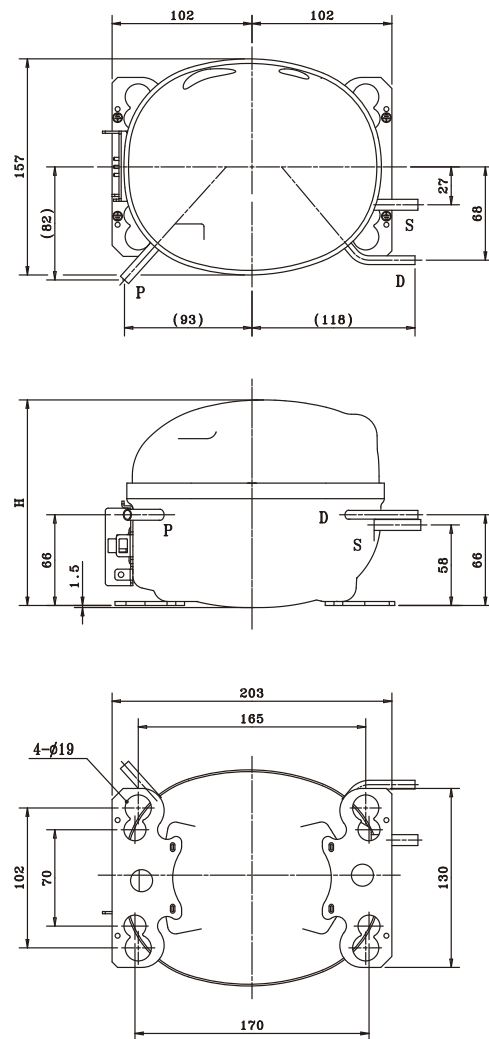
## ENV Series (Universal Type)



Height [mm]		
Grade	Cooling Type	H
A3/A5GR	Fan Cooling Static	183

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

## MSV Series (Universal Type)



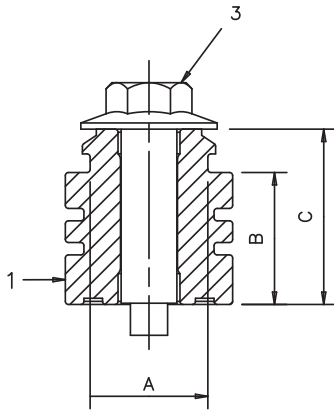
Height [mm]		
Grade	Cooling Type	H
62/72/88/A1GR	Static	149

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

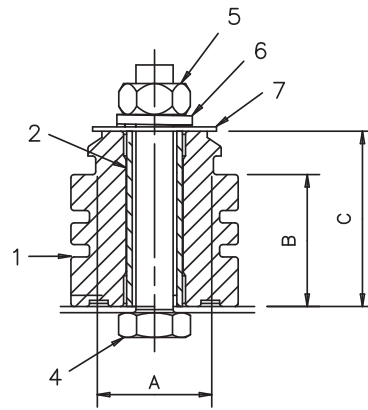
# Mounting Accessories

## BLDC Model

### BOLT-HEX Type I)

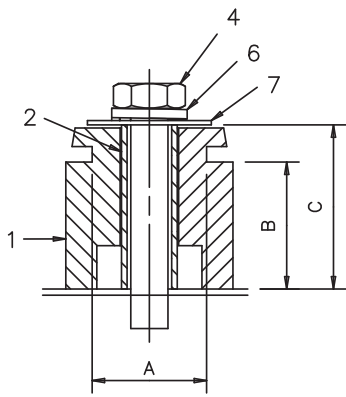


### NUT-HEX Type I)

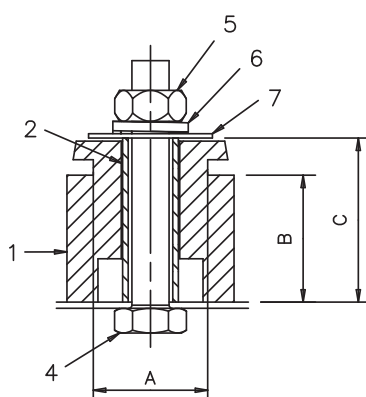


## AC Model

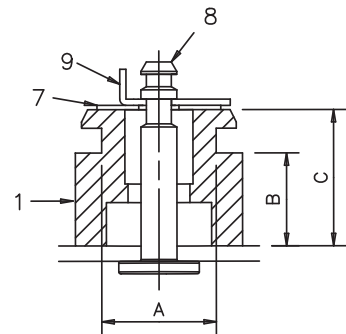
### BOLT-HEX Type II)



### NUT-HEX Type II)



### SNAP-ON



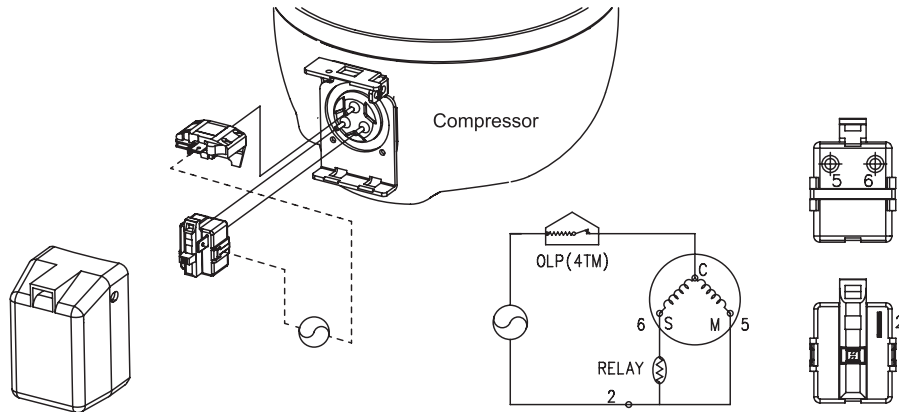
1. Grommet 2. Sleeve 3. Bolt-comp(M6) 4. Bolt-hex(M6) 5. Nut-hex(M6) 6. Washer spring  
7. Washer plain 8. Bolt-stud 9. Retainer

MOUNTING TYPE	BOLT-HEX TYPE II						
	NUT-HEX TYPE						
	BOLT-HEX TYPE I	SNAP-ON TYPE					
Series	ENV, MKV, MSV	CD, SD, MD			SK, MK, HK, MS		
Mounting Bracket	Universal	Universal	European	Universal	European		
Hole Size	Ø19	Ø19	Ø16	Ø16	Ø19	Ø16	
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

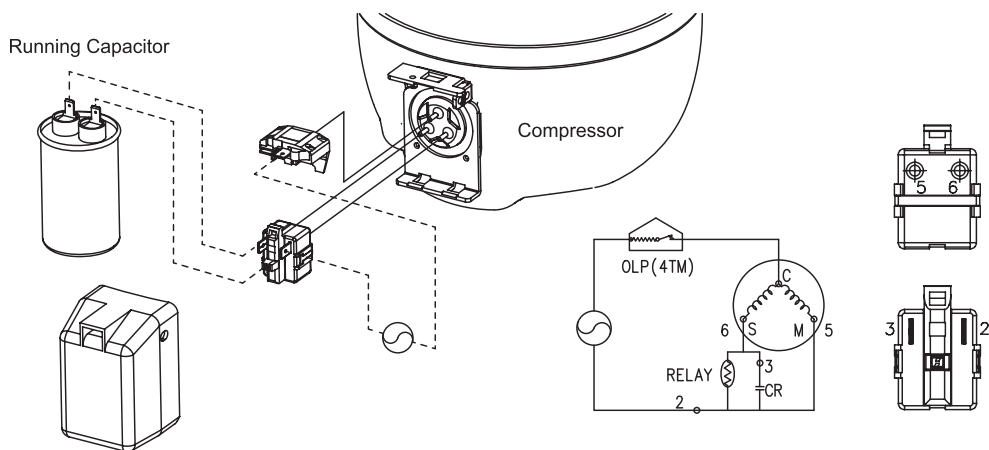


# Assembly Diagrams

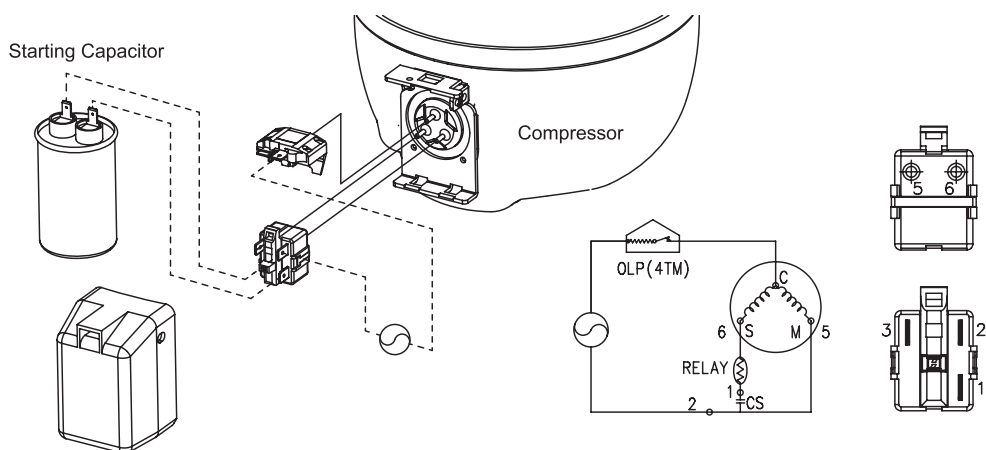
## Assembly of OLP and PTC Relay in RSIR Motor (with S-HOOK Cover Type)



## Assembly of OLP and PTC Relay in RSCR Motor (with S-HOOK Cover Type)

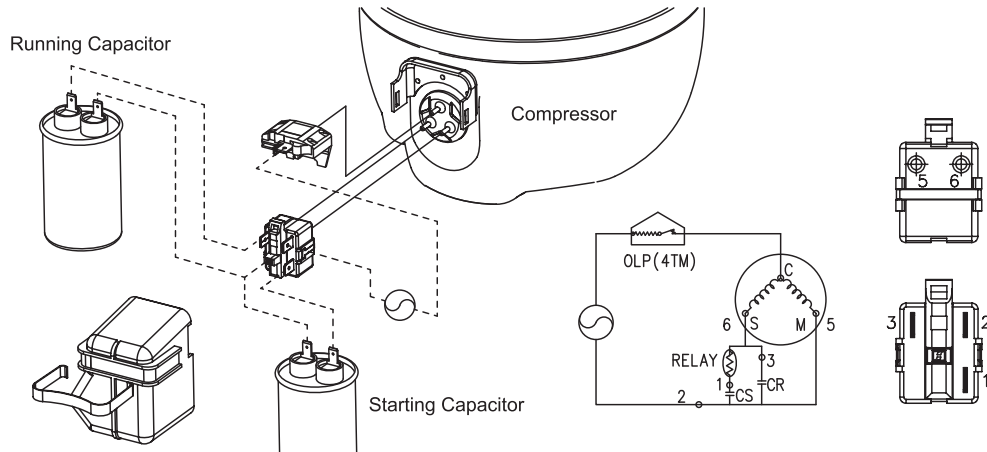


## Assembly of OLP and PTC Relay in CSIR Motor (with S-HOOK Cover Type)

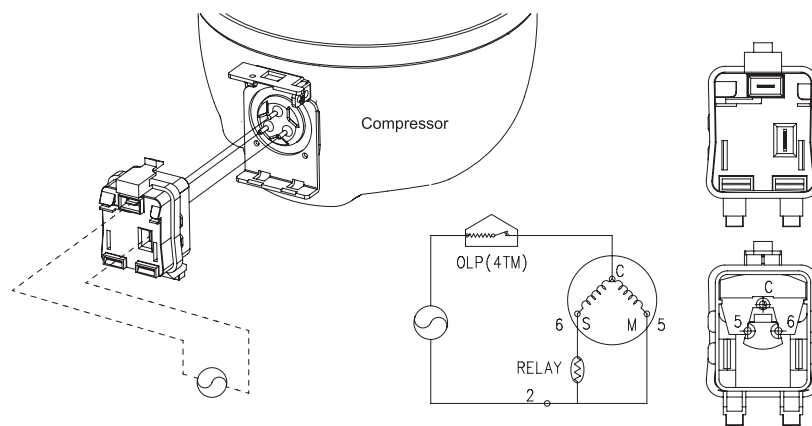


# Assembly Diagrams

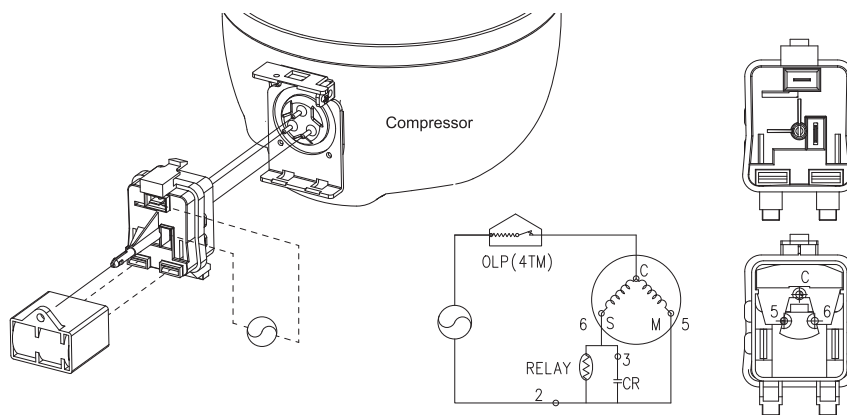
## Assembly of OLP and PTC Relay in CSR Motor (with Clamp Cover Type)



## Assembly of Assy Combo in RSIR Motor (with Combo Type)

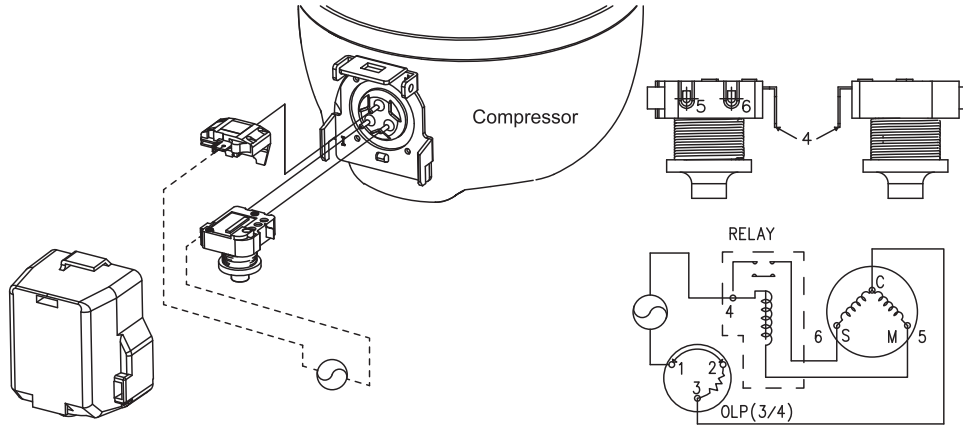


## Assembly of Assy Combo in RSCR Motor (with Combo Type)

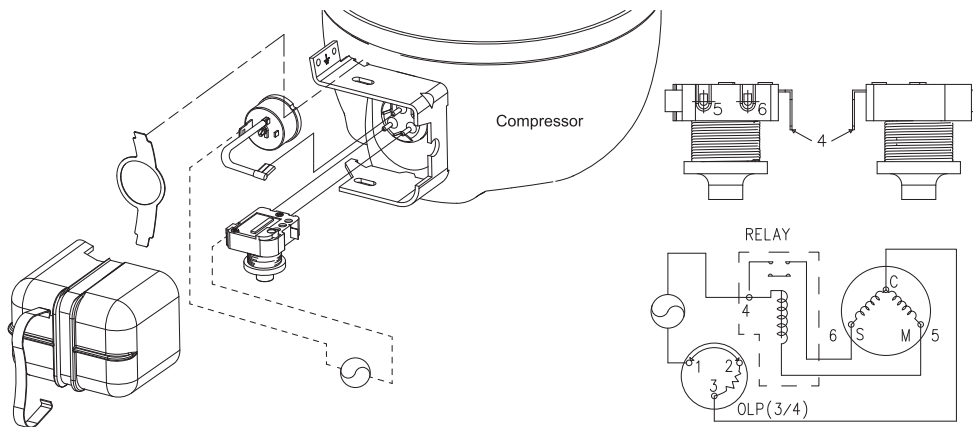


# Assembly Diagrams

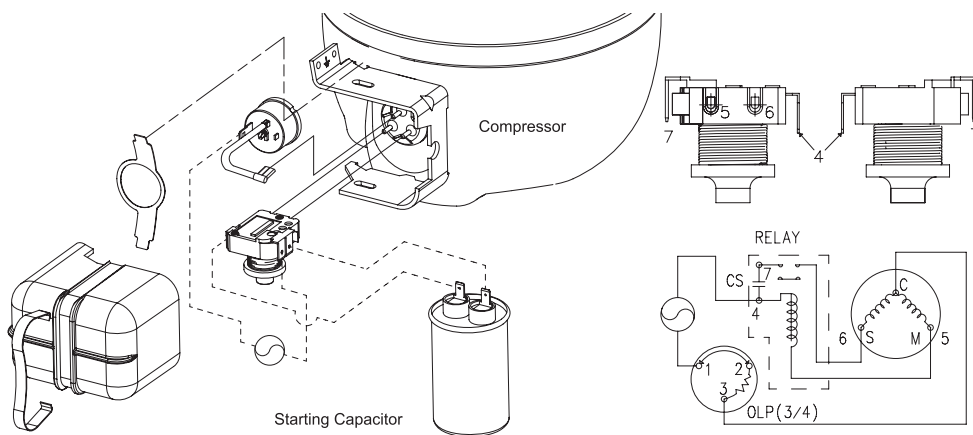
## Assembly of OLP and Current Relay in RSIR Motor (with HOOK Cover Type)



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

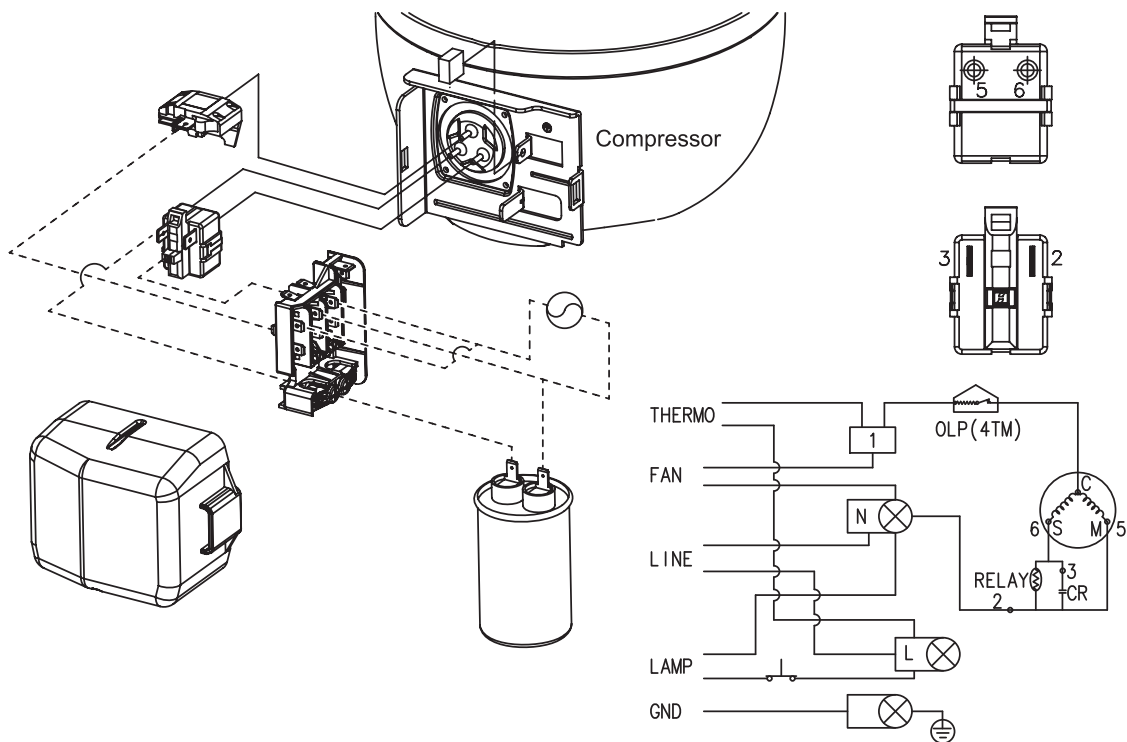


## Assembly of OLP and Current Relay in CSIR Motor (with Current Relay Cover Type)



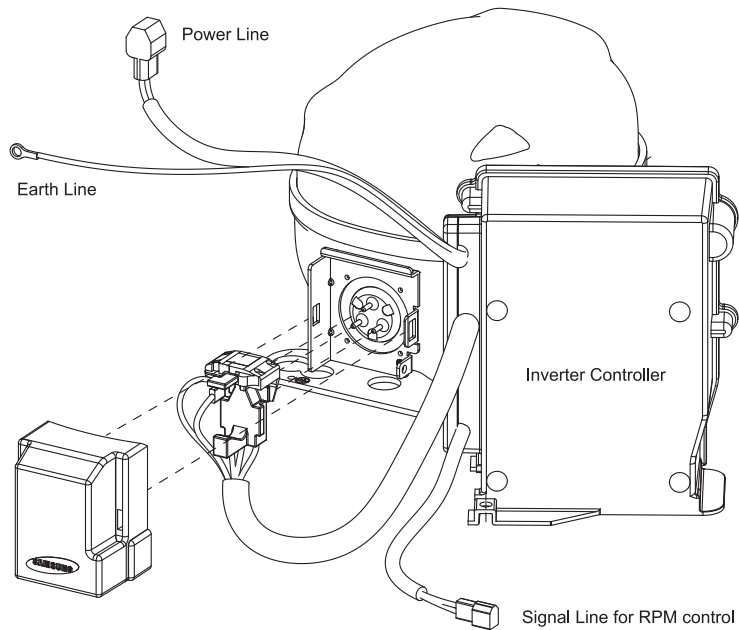
# Assembly Diagrams

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

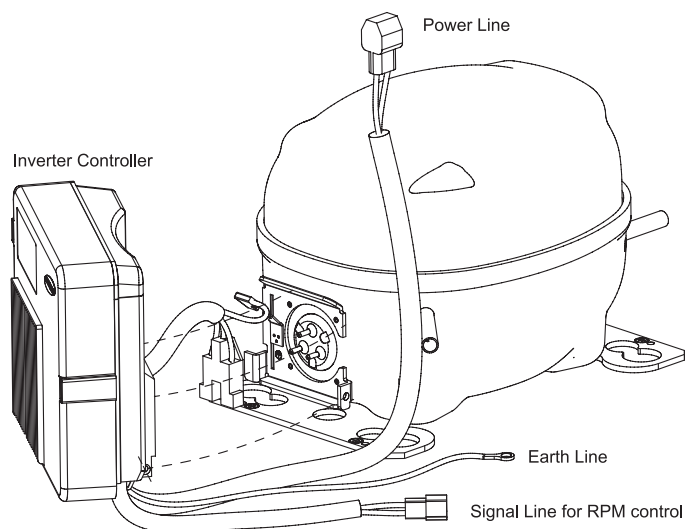


# Assembly Diagrams

## Assembly of Inverter Controller in BLDC Motor (with Separation Type)



## Assembly of Inverter Controller in BLDC Motor (with Built-in Type)



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

	LBP(Low Back Pressure)		HBP(High Back Pressure)
REFRIGERANT	R134a	R600a	R134a
	Purity of 99.95% Min.	Purity of 99.5% Min.	Purity of 99.95% Min.

## 2. Starting condition

The LBP type compressors start at 85% of the nominal voltage.

- Equalized pressure up to 70psig(4.9kgf/cm<sup>2</sup>g) for R134a LBP compressors.
- Equalized pressure up to 40psig(2.8kgf/cm<sup>2</sup>g) for R600a LBP compressors.

The HBP type compressors start at 90% of the nominal voltage.

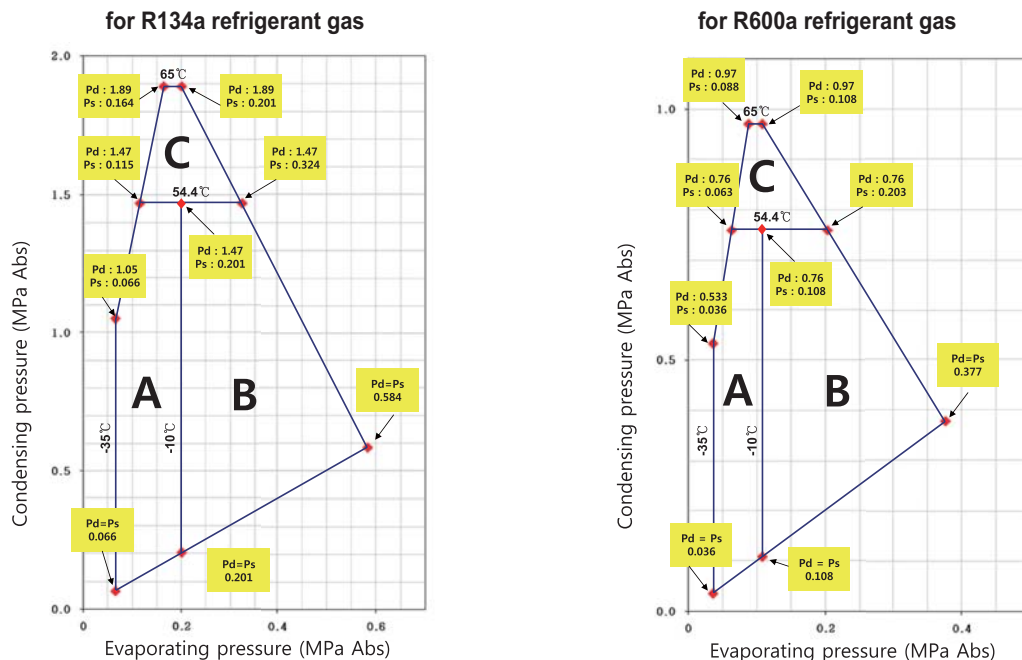
- Equalized pressure up to 90psig(6.3kgf/cm<sup>2</sup>g) for R134a HBP compressors.

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

## 3. Temperature and Pressure of cycle

The refrigerant system must be used within the temperature and pressure range as below table.

### In case of LBP refrigerant system with R134a and R600a refrigerant gas

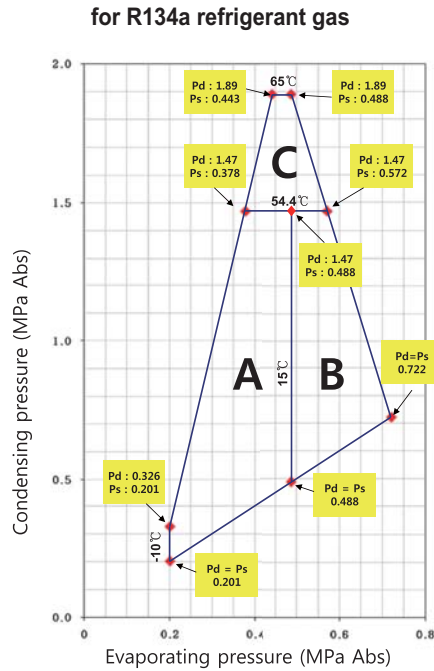


### \*Remarks

1. "A" area on chart : Stabilized running condition before stopping.
2. "A", "B" area on chart : Transient running condition just after starting.
3. "A", "B", "C" area on chart : Compressor initial pull-down and restarting after defrost.

# Application Guide

## In case of HBP refrigerant system with R134a refrigerant gas



**\*Remarks**

1. "A" area on chart : Stabilized running condition before stopping.
2. "A", "B" area on chart : Transient running condition just after starting.
3. "A", "B", "C" area on chart : Compressor initial pull-down and restarting after defrost.

### 4. Motor Winding Temperature

**In case of LBP refrigerant system**

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

**In case of HBP refrigerant system**

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

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.

$$T2 = (R2-R1)/R1*(K+T1)+T1$$

- 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
- K : Temperature coefficient of resistance  
 (Copper wire : 234.5, Aluminum wire : 225.0)

## 5. Other Temperatures

Below temperatures should not be exceeded the refrigerant system to be operated normally.

If the around testing temperature of the refrigerant system is not indicated, it is measured at the ambient temperature.

APPLICATION	REFRIGERANT	SUCTION GAS TEMP	DISCHARGE GAS TEMP	COMPRESSOR UPPER SURFACE TEMP
LBP	R134a	Than the ambient temperature -2°C(28°F)~+1°C(34°F), to prevent dew formation.	Max. 100°C(212°F) Peak 115°C(239°F)	Max. 100°C(212°F) in the hot side Min. 5°C(41°F) in the low side at 43°C(109°F) ambient temp.
	R600a			
HBP	R134a		Max. 100°C(212°F) at 26.7°C(80°F) ambient temperature Peak 115°C(239°F) at 32.3°C(90°F) ambient temperature	Max. 100°C(212°F) in the hot side Min. 5°C(41°F) in the low side at 32.2°C(90°F) ambient temp.

### ※ Measurement location

Suction Gas Temperature is measured at the distance 15cm of the insulated surface suction pipe from welded case.

Discharge Gas Temperature is measured at the distance 5cm of the insulated surface discharge pipe from welded case.

## 6. Refrigerant Charging

For each refrigerant system, the optimal refrigerant charge 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, lowering of efficiency and damage of compressor life.

The refrigerant charge of the refrigerant system must not exceed above No.2 start condition as suction and discharge pressure.

## 7. Operating condition

The refrigerant system should be maintained as below table.

APPLICATION	REFRIGERANT	COMPRESSION RATIO	OPERATED RATIO	AMBIENT TEMPERATURE	REFRIGERATION OIL	ON/OFF CYCLE TIME
LBP	R134a	Max. 12.7	Max. 65% Based on Ref. Normal-Normal Condition	Max. 5°C~43°C (Max. 41°F~109°F)	TAN 0.01mgKOH/ g max. Moisture 10ppm max.	Restarting time limit must be longer than 5 minutes
	R600a	Max. 12.4				
HBP	R134a	Max. 3.9	Max. 65% Based on Normal-Normal Condition at 26.7°C ambient Temp.		TAN 0.01mgKOH/ g max. Moisture 20ppm max.	Max. 6 times/ hours



# Application Guide



## 8. Evacuation of cycle

Prevent non-condensable gases, such as air, from permeating into the cycle.

Air or non-condensable 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-condensable gas in R134a 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.

It is not allowed that putting electric power into the compressor with a vacuum condition, then electric spark will be occurred in the compressor and compressor can be damaged critically. (Vacuum Discharge)

## 9. Filter dryer

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

	R134a	R600a
FILTER DRYER	XH-7 or XH-9	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 bellow 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.

## 10. Notice in handling, storage and transportation of compressor

10-1. Compressor with the removal of rubber cap from tube should be assembled with the cycle as soon as possible.

It is not allowed that the compressor without rubber-cap is left in the air more than 15 minutes.

10-2. Compressor might be affected by the environmental condition which it is stored.

So, compressor that is charged with nitrogen and sealed should be used within recommendation period.

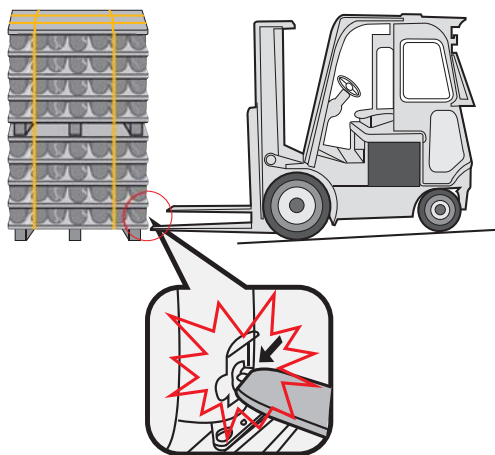
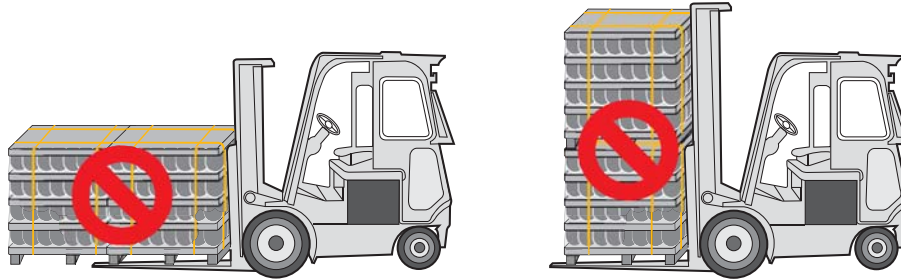
	R134a	R600a
Storage	8 months	10 months

After recommendation period, compressor can be used after validating the moisture level of compressor inside.

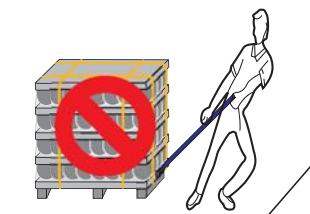
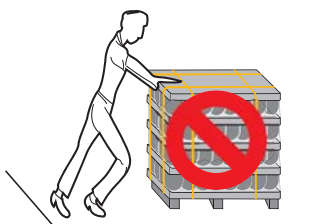
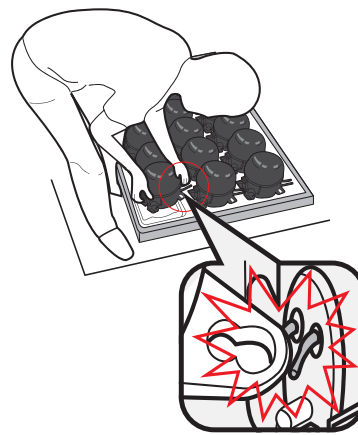
10-3. The finished product(compressor adopted to application) should be positioned upright during transportation.

If the other transportation condition is needed, the discussion with SAMSUNG must be done in advance.

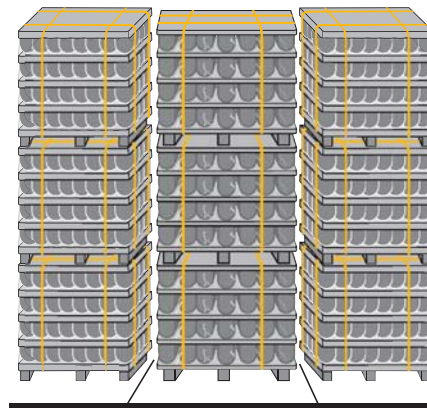
## 11. Handling



Handle with care



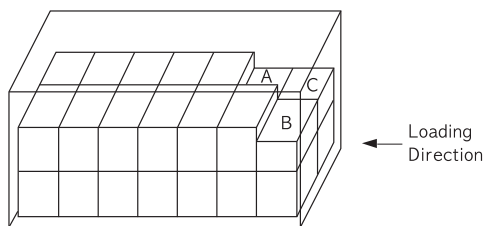
Max 3 Carton



# Packing Information

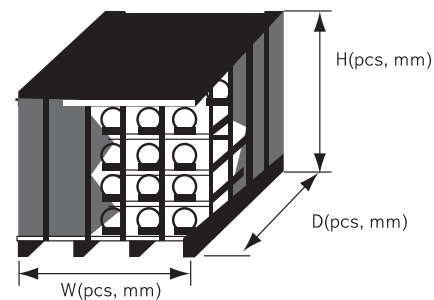
SERIES	GRADE	Weight	Array	Pallet Height	Comp Q'ty/Pallet	Pallet Q'ty/CNTR	Loading Q'ty/ CNTR
		(kg)	(WxDxH)	(mm)	(pcs)	(pcs)	(pcs)
CD	24GR	6.3	7 x 4 x 5	1,114	140	20	2,800
	30GR	6.4	7 x 4 x 5	1,114	140	19	2,660
	37GR	6.6	7 x 4 x 5	1,114	140	18	2,520
SD,MD	37GR	7.4	6 x 4 x 4	955	96	9	2,304
			6 x 4 x 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
90GR	8.1	6 x 4 x 4	1,040	96	21	2,016	
A1GR	8.5	6 x 4 x 4	1,040	96	21	2,016	
SK, HK, 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	10.5	5 x 3 x 4	1,046	60	25	1,500
	82GR, 90GR	10.8	5 x 3 x 4	1,046	60	25	1,500
	A1GR, 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
MSS / MSA	43GR	8.3	6 x 3 x 4	990	72	11	2,052
			6 x 3 x 5	1,190	90	14	
	51GR	8.3	6 x 3 x 4	990	72	25	1,800
	62GR	8.6	6 x 3 x 4	1,006	72	25	1,800
	70GR, 88GR	8.8	6 x 3 x 4	1,006	72	25	1,800
	A1GR, A2GR	9.1	6 x 3 x 4	1,006	72	25	1,800
MSE	82GR, 90GR, A0GR, A1GR, A2GR	9.6	6 x 3 x 4	1,006	72	25	1,800
MSV	62GR, 88GR	7.1	6 x 3 x 5	1,010	90	25	2,250
	A1GR	7.4	6 x 3 x 5	1,010	90	25	2,250
ENV	A3GR	9.6	5 x 3 x 4	1,038	60	25	1,500
	A5GR	9.6	5 x 3 x 4	1,038	60	25	1,500

## Container Packing Method



※ A, B, C : Accessory Packing Box

## Pallet Packing Method



※ Pallet Size  
 CD, SD, MD : 1,090(W) \* 946(D)  
 SK, MK, HK, MS, ENV, MSV : 1,110(W) \* 766(D)