

# LG Refrigeration Compressors



**Refrigerants:**

**R 134a**

**R 600a**



***Hermetic  
Compressors***

**Compressor Name Code:**

**Example:**



**MA 69 L A E G**

**Series name**

- MA
- MB
- MC
- MQ

**Displacement**

Ex) 69 = 6.9cc/rev.

**Application category**

- L : R134a, LBP
- H : R134a, HBP
- N : R600a, LBP

**Improvement order**

- A
- B
- C
- D
- E
- F
- H,K,J,M,N – AL-Wire

**Motor type**

- G : RSIR, PTC
- F : CSIR, PTC
- M : RSCR, PTC
- H : CSR, PTC
- P : CSIR, RELAY

**Rated voltage & Frequency**

- |                   |                   |
|-------------------|-------------------|
| A : 110V 50/60Hz  | P : 110V 50Hz     |
| B : 220V 50/60Hz  | Q : 110-115V 60Hz |
| C : 115V 60Hz     | S : 200-220V 50Hz |
| D : 220V 60Hz     | 200V 60Hz         |
| E : 220-240V 50Hz | T : 220-240V 50Hz |
| F : 127V 60Hz     | 220V 60Hz         |
| J : 220V 50Hz     | U : 110-127V 60Hz |
| K : 110V 60Hz     |                   |

**Serial Number:**

**69 LAEG 9 11 007201 EJ**

**Displacement**

**Model Name**

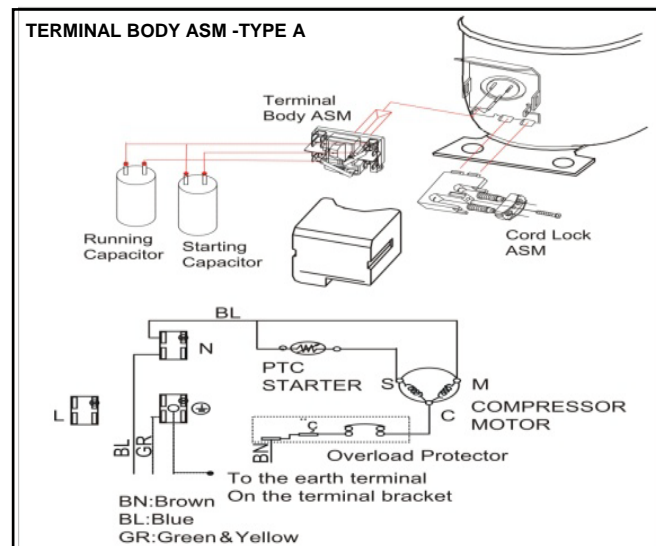
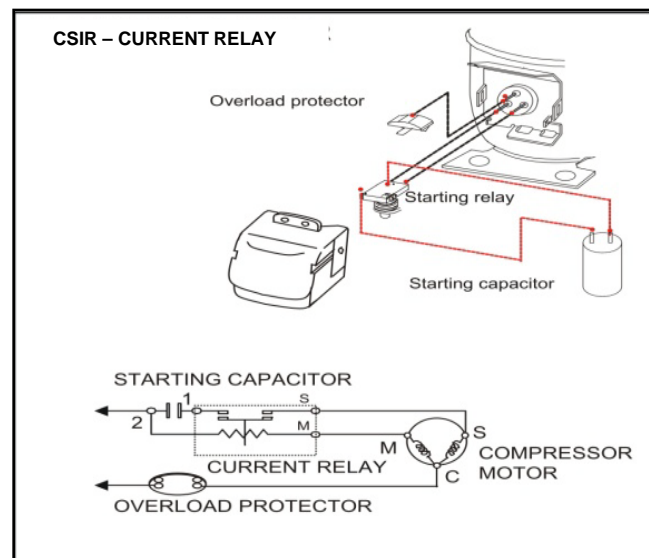
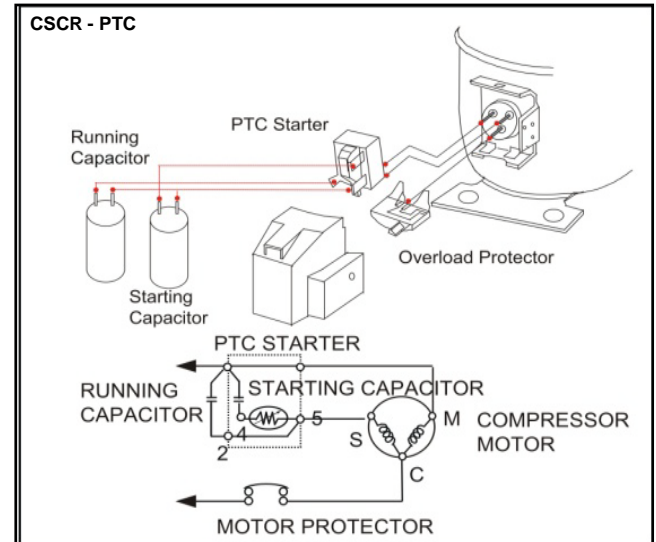
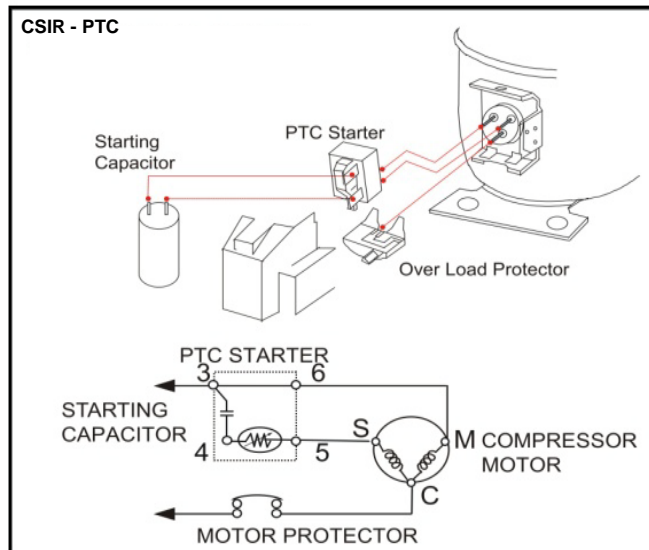
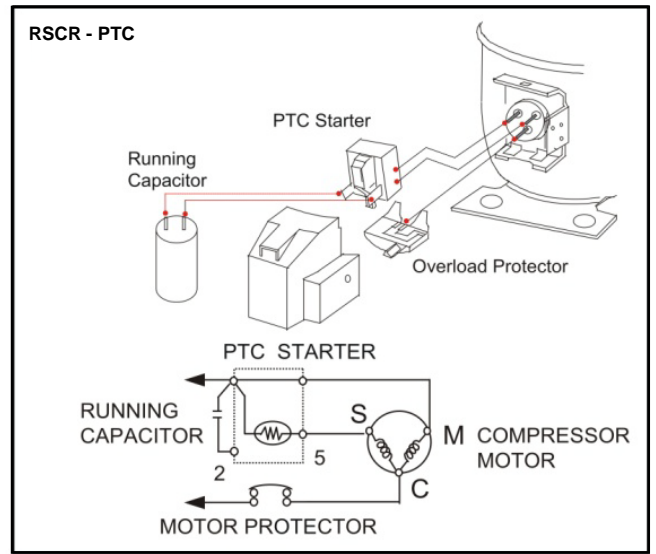
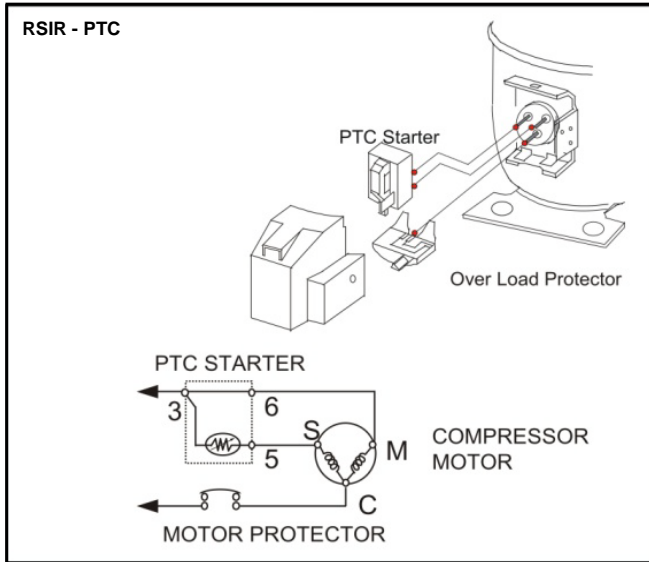
**Year Of Mfg.**

**Buyer Code**

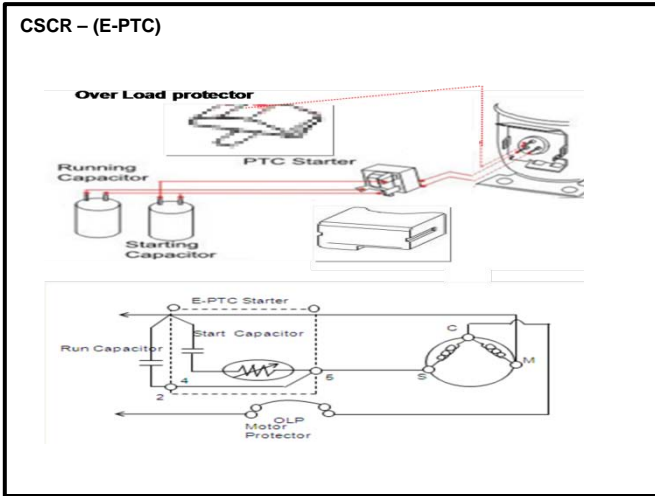
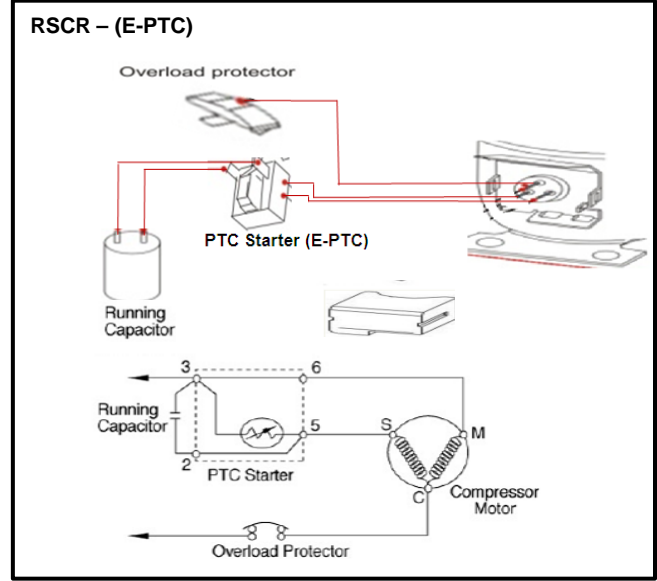
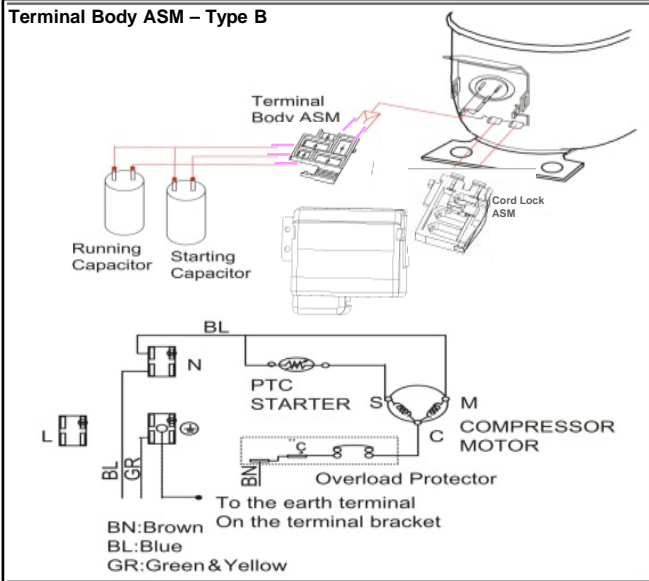
**Serial Number**

**Month of Mfg.**

### Electrical Wiring Diagrams :



## Electrical Wiring Diagrams :



## Motor Types

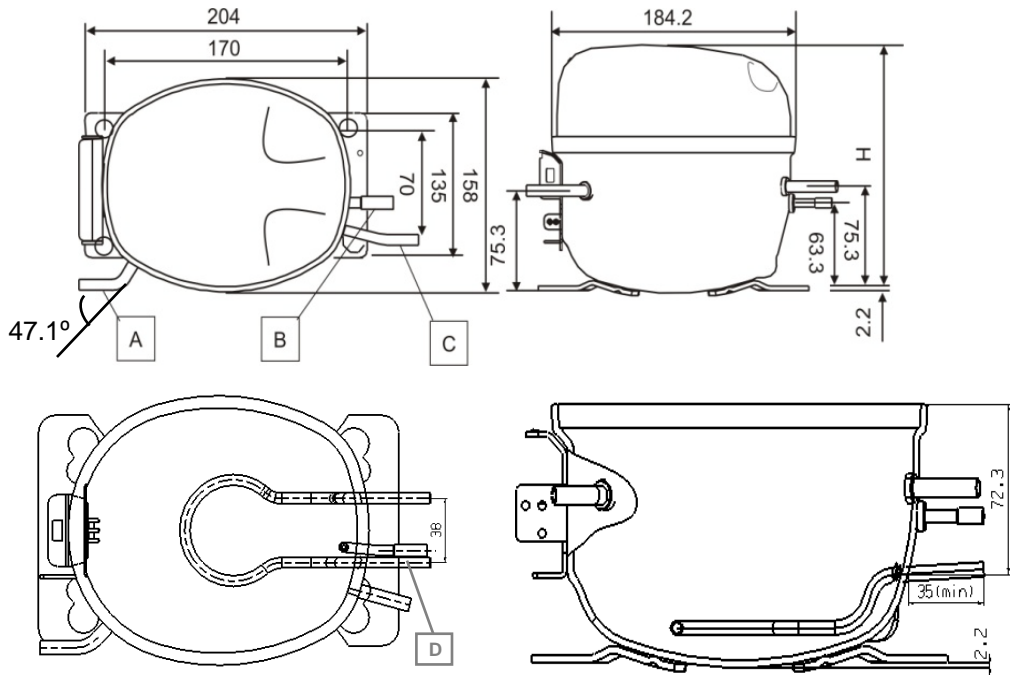
Motor Type	Overload Protector	Starting Device		Capacitors	
		PTC Starter	Current Relay	Starting	Running
RSIR	Yes	Yes			
RSCR	Yes	Yes			Yes
CSIR	Yes	Yes	Yes	Yes	
CSCR	Yes	Yes		Yes	Yes

## Motor Starting Torque Classification

Type	Description
LST	Low Starting Torque For RSIR/RSCR motor in LBP / HBP model Suitable for capillary application
HST	High Starting Torque For CSIR/ CSCR motor in LBP / HBP model Suitable for expansion valve application

### Compressor Mounting Details:

#### MA/MC/MQ



### Compressor Pipe Dimensions:

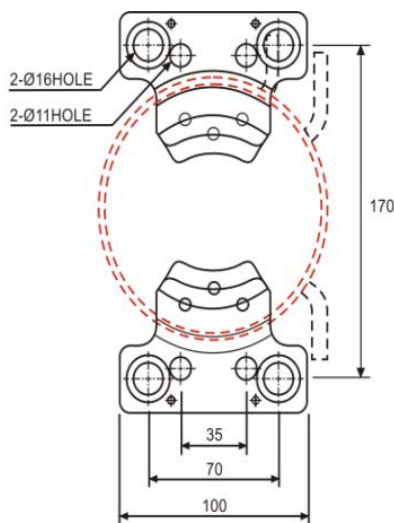
Pipe	OD (mm)	ID (mm)	T(mm)	Material	Remarks
Suction (A)	7.94	6.54	0.7	copper	Suction Pipe bend as per the customer requirement
		6.10	0.9	copper	
Discharge (B)	6.7	5.00	0.85	copper	
Process (C)	7.94	6.54	0.7	copper	
		6.10	0.9	copper	
Oil Cooling (D)	6.35	4.95	0.7	copper	

### Compressor Height:

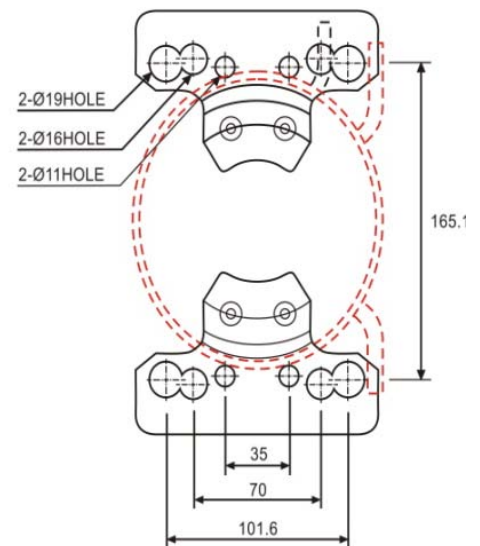
Series	Height (H) (mm)
MA42/45/53	172
MA57/62/69/72/88 MA42LH*/MA53LH*/ MA45LH*	177
MC53/57/ MA62LH*/ MA69LH* / MA72LH*	180
MQ88/98	

### Mounting Bracket:

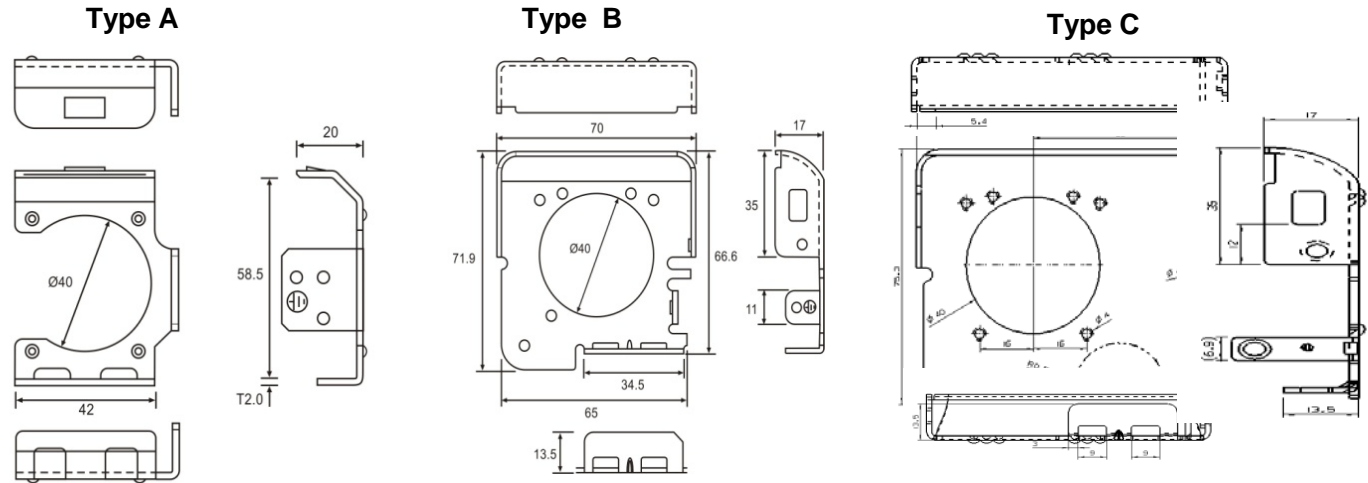
#### Type A



#### Type B



**Terminal Protector:**



**Mounting Accessories:**

Type	Grommet	Sleeve Bolt
<p><b>4A (10) type</b></p>		
<p><b>5A type</b></p>		
<p><b>7A type</b></p>		
<p><b>4A snap on type</b></p>		

# R134a - Performance data sheet:

Refrigerant	Application	Voltage (V)	Freq (Hz)	Model	Displacement (CC)	PERFORMANCE (ASHRAE 23.3°C/54.4°C @ 50 Hz)						PERFORMANCE (ASHRAE 23.3°C/54.4°C @ 60 Hz)						ELECTRICAL PARTS						OIL		Cooling Type	Compressor Height (mm)	Net Weight (kg)
						Cooling Capacity			Input Power (W)	COP W/W	EER Btu/Wh	Cooling Capacity			Input Power (W)	COP W/W	EER Btu/Wh	Motor Type	Starting Device (PTC)	Motor Protector (OLP)	Capacitor		Viscosity (cst)	Qty (cc)				
						kcal/h	W	Btu/h				HP	kcal/h	W							Btu/h	Starting (µF / Surge Voltage)			Running (µF / Surge Voltage)			
50	LBP	220	50	MA42LJEM	4.2	92	107	365	0.144	97	1.1	3.77	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	22	220	ST	172	8.1		
				MA42LJEG	4.2	96	112	381	0.150	96	1.2	3.97	-	-	-	-	RSR-PTC	QP2-33MC1	4TM158RFB	-	-	22	220	ST	172	8.1		
				MA42LJUG	4.2	92	107	365	0.144	96	1.1	3.80	-	-	-	-	RSR-PTC	QP2-33MC1	DRB19T61A1	-	-	22	220	ST	172	8.2		
				MA42LJUG	4.2	92	107	365	0.144	96	1.1	3.80	-	-	-	-	RSR-PTC	QP1-33MC1	DRB19T61A1	-	-	22	220	ST	172	8.2		
				MA42LJUG*	4.2	99	115	393	0.154	99	1.2	3.97	-	-	-	-	RSR-PTC	QP2-33MC1	4TM174RFB	-	-	22	220	ST	172	8.2		
				MA45LDJG	4.5	99	115	393	0.144	97	1.1	3.77	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM166LFB	-	5/400	22	220	ST	177	7.5		
				MA45LDJG	4.5	99	115	393	0.154	104	1.1	3.78	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	5/400	22	220	ST	172	8.3		
				MA45LJG	4.5	99	115	393	0.154	104	1.1	3.78	-	-	-	-	RSR-PTC	QP2-33MD2	4TM213SFB	-	-	22	220	ST	172	8.3		
				MA45LDJG	4.5	99	115	393	0.154	99	1.2	3.97	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	22	220	ST	172	8.2		
				MA45LDJG	4.5	102	119	405	0.159	94	1.3	4.31	-	-	-	-	RSCR-PTC	QP2-33MD2	DRB17R61A1	-	5/400	22	220	ST	172	8.5		
220	HBP	220	50	MA45LJEM	4.5	102	119	405	0.159	94	1.3	4.31	-	-	RSCR-PTC	QP2-33MD2	DRB17R61A1	-	5/400	22	220	ST	177	8.8				
				MA45LJEM	4.5	102	119	405	0.159	94	1.3	4.31	-	-	RSCR-PTC	QP2-33MD2	4TM213SFB	-	5/400	22	220	ST	177	8.8				
				MA53LJEM	5.3	125	145	496	0.195	118	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM213SFB	-	5/400	22	220	ST	177	8.2		
				MA53LJEM	5.3	125	145	496	0.195	118	1.2	4.21	-	-	-	-	RSCR-PTC	P220MC	DRB20T61A1	-	-	22	220	ST	177	8.9		
				MA53LJEM	5.3	125	145	496	0.195	118	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST	172	8.2		
				MA53LJEM	5.3	125	145	496	0.195	118	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST	172	8.2		
				MA53LJEM	5.3	125	145	496	0.195	118	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST	172	8.2		
				MA57LJEM	5.7	138	160	548	0.215	130	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	177	8.8		
				MA57LJEM	5.7	138	160	548	0.215	130	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM213SFB	-	5/400	22	220	ST	172	8.2		
				MA57LJEM	5.7	138	160	548	0.215	130	1.2	4.21	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST	177	9.0		
220-240	HBP	220	50	MA62LJEM	6.2	150	174	596	0.234	134	1.3	4.44	-	-	RSCR-PTC	QP2-33MC1	DRB24S61A1	-	5/400	22	220	ST	177	8.5				
				MA62LJEM	6.2	150	174	596	0.234	134	1.3	4.44	-	-	-	-	RSCR-PTC	QP2-33MC1	DRB24S61A1	-	-	22	220	ST/OC	177	9.2		
				MA62LJEM	6.2	150	174	596	0.234	122	1.4	4.88	-	-	-	-	RSCR-PTC	QP2-33MD2	DRB17R61A1	-	5/400	22	220	ST	177	9.2		
				MA62LJEM	6.2	150	174	596	0.234	127	1.4	4.69	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST/OC	177	9.1		
				MA62LJEM	6.2	150	174	596	0.234	134	1.3	4.44	-	-	-	-	RSCR-PTC	QP2-33MC1	DRB24S61A1	-	-	22	220	ST	180	9.0		
				MA62LJEM	6.2	150	174	596	0.234	127	1.4	4.69	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM213SFB	-	-	22	220	ST/OC	177	9.1		
				MA69LAEM	6.9	172	200	683	0.268	148	1.4	4.61	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM213SFB	-	5/400	22	220	ST/OC	177	9.1		
				MA69LAEM	6.9	170	198	675	0.265	159	1.2	4.24	-	-	-	-	CSIR-Relay	QL2-3-3B3	4TM232TFB	50/275	-	22	220	FC	180	8.2		
				MA69LAEM	6.9	170	198	675	0.265	159	1.2	4.24	-	-	-	-	CSIR-Relay	QL2-3-3B3	4TM232TFB	50/275	-	22	220	FC	177	9.0		
				MA69LAEM	6.9	172	200	683	0.268	145	1.4	4.71	-	-	-	-	RSCR-PTC	QP2-33MD2	DRB19T61A1	-	5/400	22	220	ST/OC	177	9.1		
220-240	HBP	220	50	MA69LJEM	6.9	169	197	671	0.264	152	1.3	4.41	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	180	9.5				
				MA72LJEM	7.2	180	209	715	0.281	162	1.3	4.41	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST/OC	177	9.2		
				MA72LJEM	7.2	180	209	715	0.281	162	1.3	4.41	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	180	9.5		
				MA72LJEM	7.2	180	209	715	0.281	162	1.3	4.41	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	180	9.5		
				MA72LJEM	7.2	180	209	715	0.281	162	1.3	4.41	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	177	9.2		
				MA72LJEM	7.2	180	209	715	0.281	162	1.3	4.41	-	-	-	-	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	180	9.5		
				MA88LAEM	8.8	235	273	933	0.367	227	1.2	4.11	-	-	-	-	CSIR-Relay	QL2-5-553	4TM314TFB	50/275	-	22	220	FC	177	9.3		
				MA88LAEM	8.8	235	273	933	0.367	227	1.2	4.11	-	-	-	-	CSIR-Relay	QL2-5-553	4TM314TFB	50/275	-	22	220	FC	177	9.3		
				MA88LAEM	8.8	235	273	933	0.367	227	1.2	4.11	-	-	-	-	RSCR-PTC	P688MB	4TM314TFB	100/160	-	22	220	ST	172	8.2		
				MA88LAEM	8.8	235	273	933	0.367	227	1.2	4.11	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM314TFB	14/220	-	22	220	ST	172	8.2		
220-240	HBP	220	50	MA53LATG	5.3	140	163	556	0.218	104	1.6	5.34	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	22	220	ST	172	8.2				
				MA57LATG*	5.7	138	160	548	0.215	134	1.2	4.09	170	197	675	147	1.3	4.6	RSCR-PTC	QP2-33MC1	DRB20T61A1	-	-	22	220	ST	172	8.3
				MA62LATG*	6.2	150	174	596	0.234	150	1.2	3.97	180	209	715	155	1.4	4.6	RSCR-PTC	QP2-33MC1	4TM232TFB	-	-	22	220	ST	177	9.0
				MA69LATG*	6.9	172	200	683	0.268	163	1.2	4.19	210	244	834	185	1.3	4.5	RSCR-PTC	QP2-33MC1	4TM283RFB	-	-	22	220	ST	177	8.3
				MA69LATG*	6.9	172	200	683	0.268	163	1.2	4.19	210	244	834	185	1.3	4.5	RSCR-Relay	QL2-5-55B3	4TM314TFB	40-60/275	-	22	220	FC	177	8.3
				MA69LATG*	6.9	172	200	683	0.268	163	1.2	4.19	210	244	834	185	1.3	4.5	RSCR-Relay	QL2-5-55B3	4TM314TFB	40-60/275	-	22	220	FC	177	8.3
				MA53LBFH*	5.3	-	-	-	-	-	-	-	-	-	-	-	-	RSCR-PTC	P688MB	4TM314TFB	100/160	-	22	220	ST	172	8.2	
				MA53LAEH	5.3	140	163	556	0.218	104	1.6	5.34	-	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	22	220	ST	172	8.2	
				MA53LAEH	5.3	140	163	556	0.218	104	1.6	5.34	-	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	22	220	ST	177	9.0	
				MA53LAEH	5.3	139	162	552	0.217	105	1.5	5.30	-	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	5/400	10	220	ST	180	9.5	
220-240	HBP	220	50	MC03LBEH	5.3	139	162	552	0.217	105	1.5	5.26	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	-	22	220	ST	180	8.1				
				MC57LAEH	5.7	147	171	584	0.229	106	1.6	5.50	-	-	-	-	RSCR-PTC	QP2-33MD2	4TM158RFB	-	-	22	220	ST	180	9.0		
				MC57LBEH	5.7	147	171	584	0.229	106	1.6	5.50	-	-	-	-	RSCR-PTC	QP-33MD2	4TM166LFB	-	5/400	10	220	ST	180	9.5		
				MC62LAEH*	6.2	153	178	607	0.239	112	1.6	5.42	-	-	-	-	RSCR-PTC	QP-33MD2	4TM166LFB	-	5							

## R600a - Performance data sheet:

Application	Voltage (V)	Freq (Hz)	Model	Displacement (CC)	PERFORMANCE (ASHRAE 23.3°C/54.4°C @ 50 Hz)				PERFORMANCE (CECOMAF -25°C/55°C @ 50 Hz)				ELECTRICAL PARTS				OIL		Cooling Type	Compressor Height (mm)	Net Weight (kg)						
					Cooling Capacity		Input Power (W)	COP W/W	EER Btu/Wh	Cooling Capacity		Input Power (W)	COP W/W	EER Btu/Wh	Motor Type	Starting Device (PTC)	Motor Protector (OLP)	Capacitor				Viscosity (cSt)	Qty (cc)				
kcal/h	W	Btu/h	HP	kcal/h	W	Btu/h				kcal/h	W							Btu/h	Starting (µF Surge Voltage)	Running (µF Surge Voltage)							
LP	220	50	MQ98NAJH	9.8	150	174	596	0.234	100.0	1.7	5.96	112.5	131	447	97	1.3	4.6	CSQR-PTC	P330MB	4TM149NFB	30/300	5400	10	220	ST	180	9.5
			MQ98NEJH	9.8	150	174	596	0.234	100.0	1.7	5.96	112.5	131	447	97	1.3	4.6	CSQR-EPTC	P7HTM330MB3	4TM149NFB	30/300	5400	10	220	ST	180	9.5
LP	220-240	50	MQ98NAEM	9.8	150	174	596	0.234	94.5	1.8	6.30	112.5	131	447	92	1.4	4.9	RSQR-PTC	QP2-33MD2	4TM149NFB	-	5400	10	220	ST	180	9.5
			MQ98NAEM	9.0	141	164	560	0.220	89.0	1.8	6.29	106	123	420	86	1.4	4.9	RSQR-EPTC	P7HTM470MD2	4TM149NFB	-	5400	10	220	ST	180	9.5
LP	220-240	50	MQ98NAEH	9.0	141	164	560	0.220	94.0	1.7	5.96	106	123	420	91	1.3	4.6	CSQR-EPTC	P7HTM330MB3	4TM149NFB	30/300	5400	10	220	ST	180	9.5
			MQ62NAEM	6.2	88.6	103	352	0.138	61.7	1.7	5.70	66	77	264	60	1.3	4.4	RSQR-EPTC	P7HTM470MD2	4TM134KFB	-	5400	10	220	ST	180	9.5
			MB82NAEM	8.2	123	143	488	0.192	89.0	1.6	5.49	92.25	107	366	86	1.2	4.2	RSQR-PTC	220MD2	4TM149NFB	-	5400	10	220	ST	177	9.0

Note: ST: Static Cooled, OC: Oil Cooled, FC - Fan Cooled.

### Conversions:

- 1 Watt = 3.41 Btu/hr
- 1 Watt = 0.86 Kcal/hr
- 1 Kcal/hr = 3.97 Btu/hr
- 1 cu.ft = 28.32 liters



## Applications:

### Low Back pressure (LBP):

These models are used to work in low evaporating temperature ranges , these are suitable for commercial refrigeration , deep freezers and house hold refrigerators as well.

- Deep freezer
- Refrigerator
- Ice cube Machine
- Laboratory Appliance
- Dehumidifier

## Compressor Selection Guide:

### Refrigerator:

Application	Capa (L)	Compressor
DC	170-190	MA42LFJG/ MA42LHJG/ MA42LJJG/ MA42LMJG
FF	210-230	MA53LBJG MA53LHJG
	280	MA57LBJG/ MA57LHJG
	300-350	MA62LBJG/MA62LHJG
	390	MA69LAEG/MA69LHEG
	400	MA69LAEP
	360-450	MA72LBJG/MA72LHEG

### Deep Freezer:

Capa (L)	Compressor
70-80	MA42LFJG / MA42LMJG/ MA42LHJG / MA42LJJG
250	MA57LBJG / MA57LHJG / MA62LBJG / MA62LHJG
300	MA69LAEP
350	MA72LAEP
400	MA88LAEP

## HBP Applications:

These models are suitable to work under the conditions exposed to high evaporating temperature ranges. These type of compressors are suitable for the applications such as dehumidifiers.

- Beverage Cooler/Bottle Cooler
- Panel Cooler
- Water Chiller
- Refrigerated Air Dryer
- Milk Cooler

## Compressor Selection Guide:

Application	Capa	Compressor
Water Cooler	20 LPH	MA53HAEF
Bottle Cooler	100-120 Ltrs	MA53HAEF
	150-200 Ltrs	MA62HAEG
	220-250 Ltrs	MA72HAEP / MA88HAEP
Visi Cooler	110 Ltrs (2 Case)	MA53HAEF
	150 Ltrs (4 Case)	MA62HAEG
	250 Ltrs (7 Case)	MA72HAEP / MA88HAEP

## Applications:

### Evaporating Temperature Range

LBP	-30°C to -5°C
HBP	-5°C to +15°C

## Oil types:

All the compressors are charged with moisture free oil.

### OIL Types

R 134a	Polyole Ester Oil
R 600a	Mineral Oil

## Safety :

### **WARNING**



**Install the refrigerant, lubricant oil and electrical component (Capacitor and controller) specified by compressor manufacturer**

It can cause fire or electrical shock



**Connect the electrical wiring correctly in accordance with manufacturer's instruction.**

It can cause fire or electrical shock



**Compressor must be grounded whenever power is supplied.**

It can cause electrical shock



**Before servicing, always remove the power plug from the outlet.**

It can cause electrical shock



**Before welding, always remove refrigerant in the compressor.**

**Do not operate compressor in the air or vacuum status.**

It can cause explosion.



**Do not touch the compressor with bare hands during operation or after stopping instantly.**

It can cause get burnt.

## Safety Approval:



VDE approved model

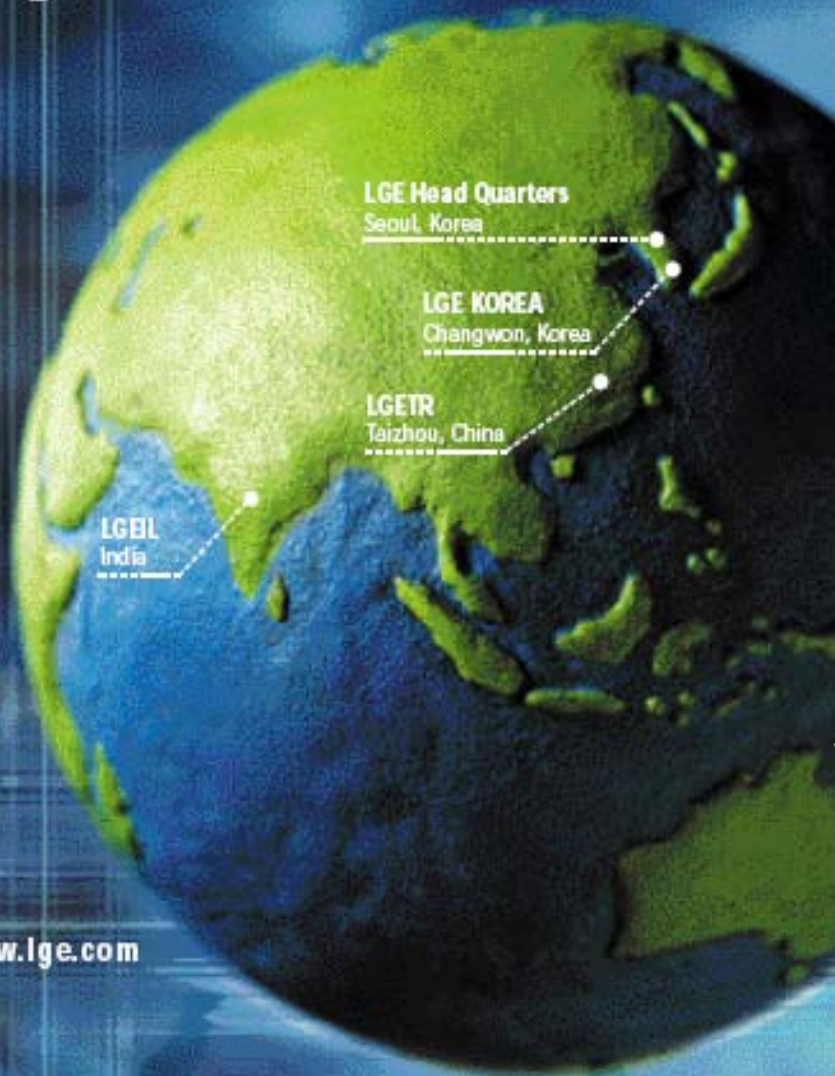


CE approved model



TUV approved model

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