SCROLL COMPRESSOR

SIAM COMPRESSOR INDUSTRY CO., LTD.

Advanced Scroll Frame Compliant Technology

SIAM COMPRESSOR INDUSTRY CO., LTD.

Content

Index

MITSUBISHI ELECTRIC, SHIZUOKA WORKS (MELSHI)

MITSUBISHI ELECTRIC (GUANGZHOU) COMPRESSOR CO., LTD. (MGC)

SIAM COMPRESSOR INDUSTRY CO., LTD. (SCI)

Company Profile

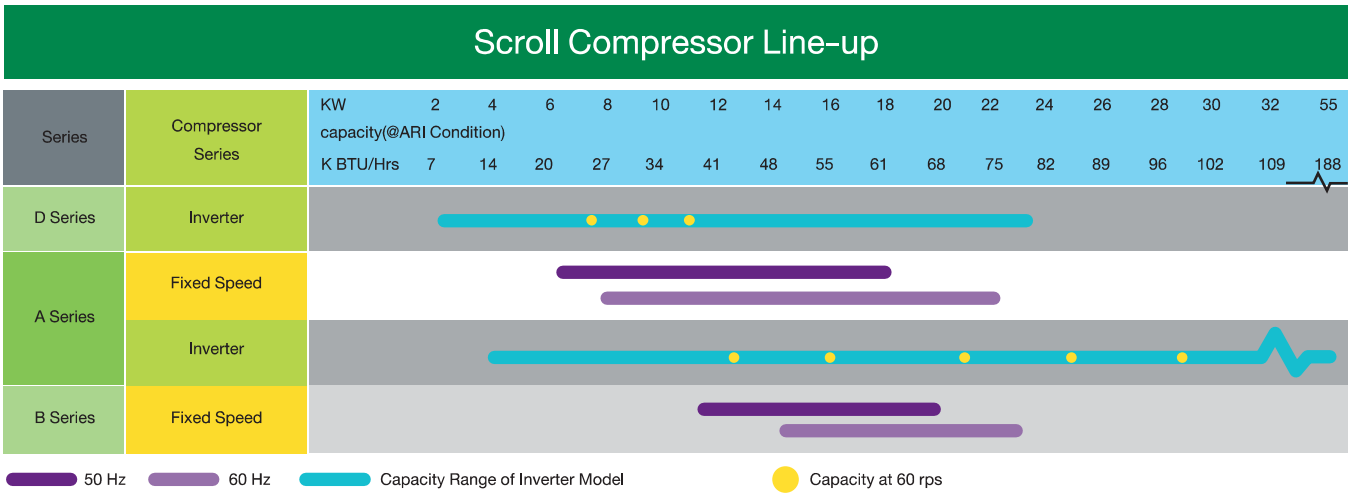
Siam Compressor Industry Co., Ltd. (SCI) is Thailand's first manufacturer of rotary compressor for room air conditioner. SCI was founded on May 25, 1990 as a subsidiary of Mitsubishi Electric Corporation of Japan, a world leader in compressor technology with over 70 years of experience. So successful was SCI in the first year of production that we were able to open a second plant only five years later, on December 16, 1995. Further milestones since then have been the inauguration of our research and development centre in 1998, the launching of a new ozone – friendly compressor that does not use HCFC coolant in 1999 and the opening of a third plant on October 16, 2002 and recently, the opening of the forth plant in June 2012.

Since 2003, SCI has been producing Advanced Scroll Compressor utilizing Frame – Complaint Mechanism technology, thus saving energy and minimizing energy loss due to friction. SCI remains at the forefront of the global compressor industry in terms of technical progress, efficiency of production, the competence of our trained staff and our ongoing expansion.

In 2013, SCI received the Good Factory Awards for Factory Management in Japan, SCI has been performing many outstanding activities such as the development, the supply chain management, production process, and working system in factories to help strengthen management system. SCI was the first compressor manufacturer in Thailand to recieved this honorable award.

In August 2017, SCI recieved the Prime Minister's Industry Award 2017 in category – productivity. It was the Thai government's highest official award annually granted to outstanding Thailand industries to showcase and acknowledge their initiative and effort to create advantage to development of national industries. It was such an honor and SCI is beyond proud since the award is the highest rank of industry award in national level.

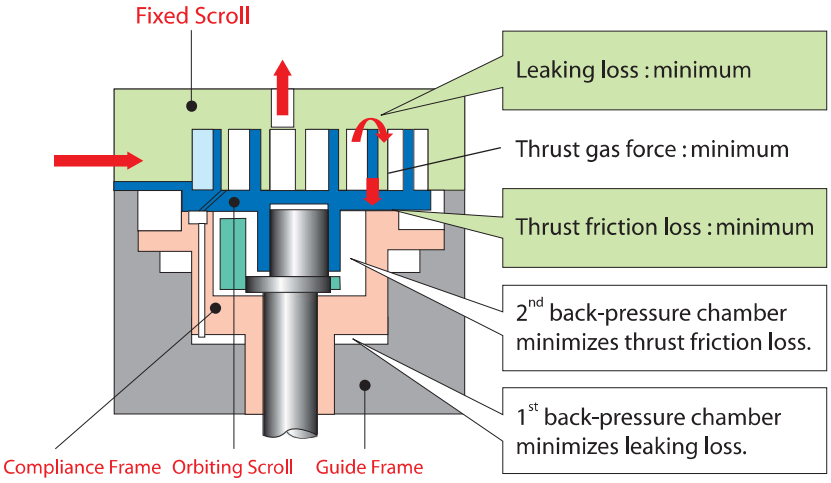
Scroll Compressor Line-Up



Mitsubishi Scroll Compressor, Advanced scroll with frame compliant technology, began production in 2002 for packaged air conditioner system. We have been proven more than 20 years in scroll market and become leading scroll compressor manufacturer especially with innovative inverter technology which is bear out by world leading brand in both air-conditioning and heating industry more than decades. Furthermore, our advanced scroll technology especially with inverter system can provide the highest energy efficiency plus optimized energy-saving, emphasize on environmental concern issue, which contribute for large market expansion to all parts of the world continuously.

It is the state-of-art compressor innovation which is carefully designed to be superior than other scroll engineering. Under the modern of Mitsubishi Electric, aiming for the energy saving and the reliability of the compressor, the sophisticated Frame Compliance Mechanism is developed. It enhances the compressor efficiency and justifies the thrust force to the suitable level thus reducing the excessive energy and weariness. This creation brings about the most advanced scroll technology which ensures the highest efficient compressor existing in today market place.

FCM outline diagram



Frame Compliance Mechanism (FCM)

FCM can minimize gas leakage in scroll compression chamber, keep refrigerating capacity and reduce power losses by self-adjustment system of orbiting scroll position to pressure load and accuracy of fixed scroll profile. It is a big feature that FCM has not only a moveable orbiting scroll but also a moveable Frame unlike other manufacturer's one which is known so far. Incidentally, FCM have already applied as patent 31 matters including 221 items in Japan and foreign countries.

Scroll Compressor

Model Code Diagram

For Example A N B 33 F CA M T

(1) (2) (3) (4) (5) (6) (7) (8)

1. Series name

2. Refrigerant

Symbol	Temperature band	Refrigerants
H	High-temperature	R-22
E	High-temperature	R-407C
N	High-temperature	R-410A
P	High-temperature	R-290
V	High-temperature	R-32
D	High-temperature	R-404A
G	High-temperature	R-448A/R-449A

3. Special specifications

Symbol	Specifications
B	DC Inverter
V	AC Inverter
H	Fixed Speed Compressor for Heating Application
E	Inverter for Heating Application
S	Fixed speed Injection
K	Inverter Injection
Z	Horizontal Scroll Compressor

* Contact us regarding other special specifications.

4. Stroke volume of compressor (Indicated in cm^3)

For example, "33" indicates 33 cm^3. A two-digit volume is given for the A, B series.

5. Power supply

Symbol	Phase	Rated voltage (v)	Rated Frequency (Hz)
N	1	208-230V	60Hz
V	1	220-240V	50Hz
T	3	200/200-230V	50/60Hz
Y	3	380-415/460V	50/60Hz
X	3	380V	60Hz
F	3	Inverter	Variable

6. Special specifications

Symbols are used here to indicate any special specifications the customer may have ordered.

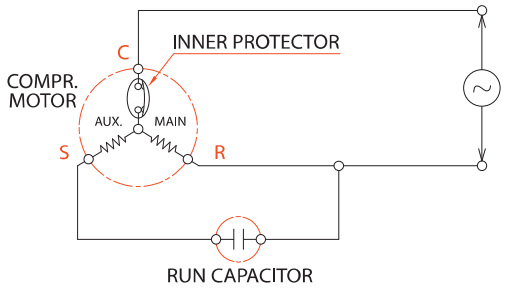
7. Refrigerant oil code

M : miscible oil (PVE oil)

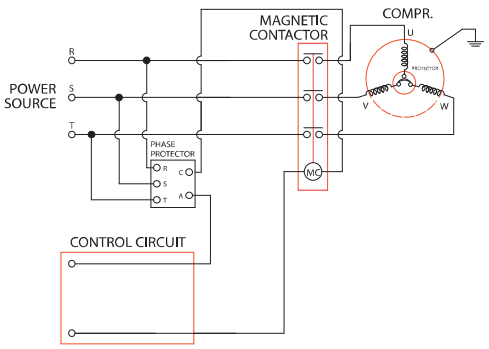
8. T : Thailand

Wiring Diagram

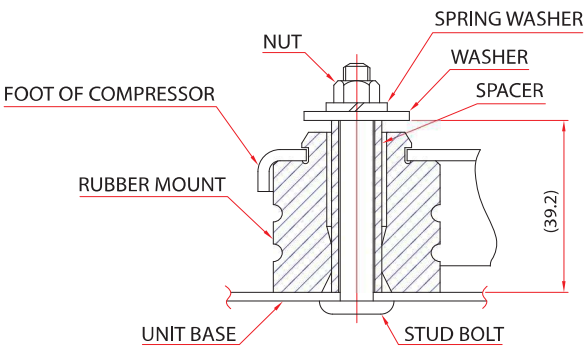
1 Phase



3 Phases



Mounting Assembly



BASIC ACCESSORIES

TERMINAL COVER SPACER RUBBER MOUNT

Thermoacoustic shell

Features :

- 10dBA sound reduction compare with same compressor model without thermoacoustic shell
- Easy to fit
- Optional for sound sensitive application such as metropolitan shops and retailers in residential areas
- Stable compressor operation, performance reliability for heating application (Heat pump)
- Increase efficiency for heating application

Model for A-Series

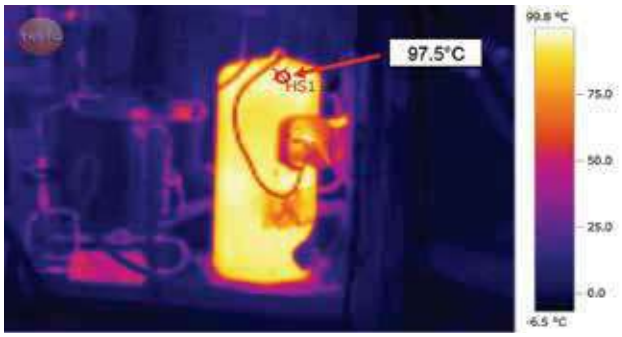
Horizontal suction (long)

Horizontal suction (Short)

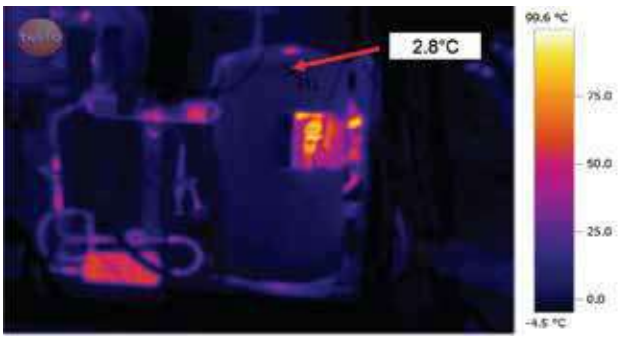
Vertical suction

Model for D-Series

Heat loss by thermo camera



Without insulation



Thermoacoustic Shell

Multi-tube Oil Separator

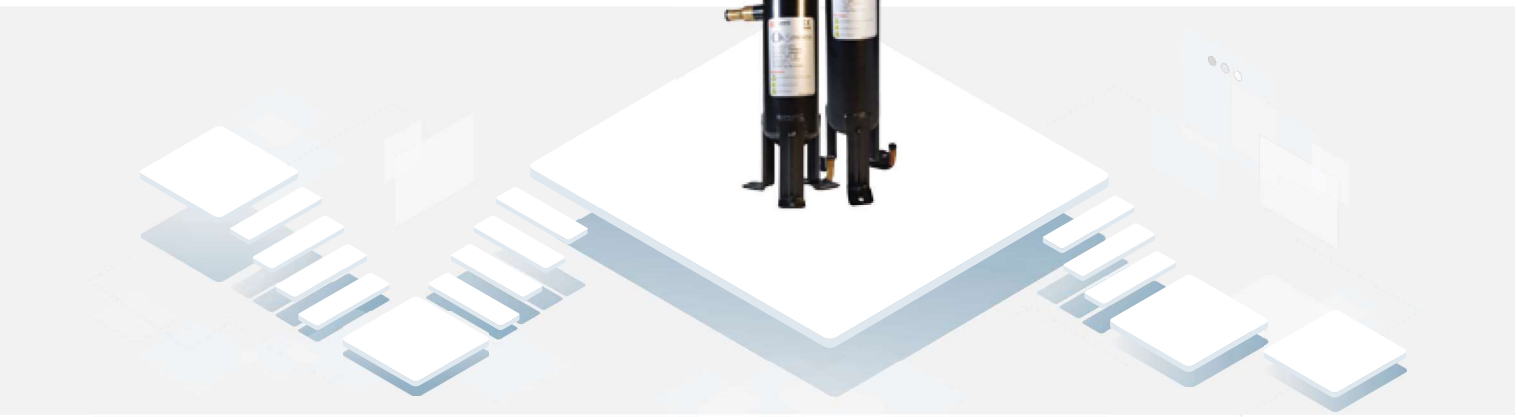
Multitube oil separator (patented to SCI) changes the oil flow from turbulent flow to laminar flow. It also enlarges the size of oil droplets.

These two increase the efficiency of centrifugal separation up to 99%.

Multi-tube oil separator is used for VRF, CCAC and refrigerant system for use with HFC and HCFC refrigerants.

Features :

- Easy installation and service
- Superior efficiency 99%
- Light weight
- No pre-charge oil
- Use centrifugal principle
- External oil return managemant



Product name:

MUTO : Multi - Tube Oil Separator

Nominal shell diameter :

A : Diameter 76 mm

Maximum cooling capacity at ARI condition

20 : 20 kW

40 : 40 kW

MUTO-X XX X X X

Expansion device :

N : None expansion device inside

Leg type :

3 : 3 legs

Air tightness test pressure :

5 : 5 MPaG

Specifications

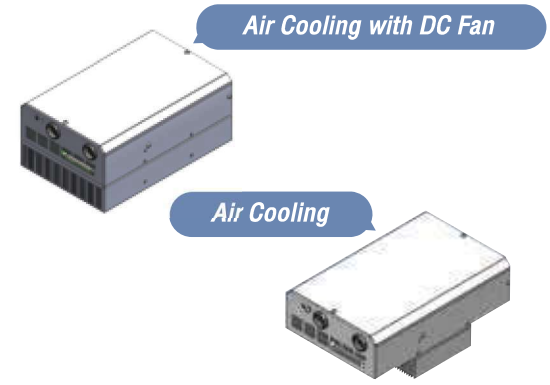
- Maximum working pressure 5 MPaG
- CE marked per PED 97/83EC
- Certified by UL (MUTO-A4053N)

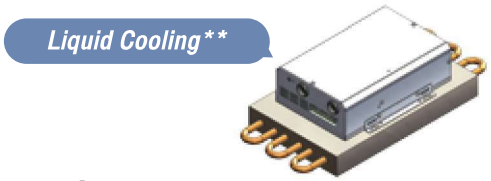
Type	Refrigerant	Height (mm)	Weight (kg)	Stroke (CC)	
				Inverter compressor	Fixed speed compressor
MUTO-A2053N	HCFC, HFC	362	1.5	≤ 33	≤ 66
MUTO-A4053N		522	2.2	33 - 78	66 - 128

SCI Inverter Driver

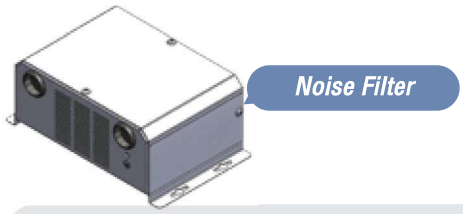
- Complete Matching between driver & Compressor
- Package Solution

Standard



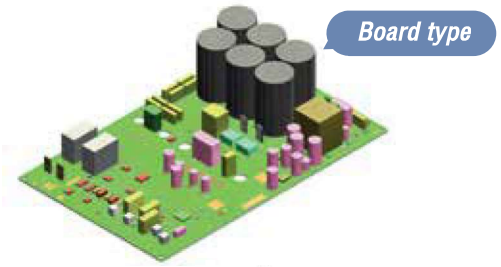


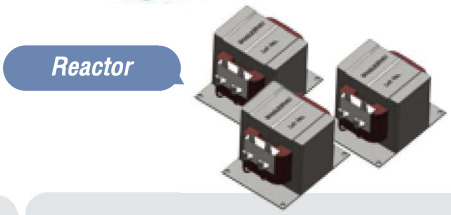
Optional



Feature

- Operating temperature -20°C to +60°C, 2 to 95%RH (Non-condensing, Non-freezing)
- Efficiency more than 95%
- Low harmonic distortion (Power factor up to 0.99)
- Built-in Overcurrent protection
- Built-in Compressor control envelop
- Built-in Motor Heat function
- Built-in Oil management control
- Water/Refrigerant loop cooling for liquid cooling type





EMC Standard : IEC61800-3

- Emission Class C1
- Radiation Class B (Household)

Leakage Current <3mA

- AC Reactor (3pcs/set) : IEC61000-3-2 (≤16A input)
- DC Reactor (1pc/set) : IEC61000-3-12 (≤75A input)

SCI Inverter Driver Line-up

3P 400 V / 1P 230 V	4.2 kW		6 kW / 6.6 kW		10.5 kW		14 kW		
Capacity R-290	8	12	14	16	20				(kW)
Displacement	22	30.6	36	42	52				(cc)
Capacity R-404A			14		18		28	32	(kw)
Displacement			33		42		66	78	(cc)
Capacity R-448A			12	16	22	26	32	36	(kw)
R-449A Displacement			33	42	52	66	78	87	(cc)
Capacity R-410A	10		12	16	18	24	26	34	(kw)
R-32 Displacement	17.2		22	30.6	28	36	42	52	(cc)

*At ARI Condition

Inverter Technology

Inverter-driven system promotes maximum compressor efficiency. The system detects subtle temperature changes and automatically adjust its capacity output. These lead to stabilizing temperature, minimizing power consumption, and optimizing humidity control.

Inverter system can control over room temperature to deliver appropriate capacity which is a smart technology that can suitably match cooling and heating performance with operating requirements at specific location so the system can ensure that a room will stay with steady temperature and comfort.

Conventional compressor operates at a fixed speed with on and off repetitively, on the other hand, inverter compressor has controller which can control power output to fit with variable operating environment as well as optimize system therefore amazingly performance in any variant load is ensured throughout the system by means of unit customization and design.

With a proper design concept, the system can reach as higher SEER as 64% comparing with other VRF technology.

Inverter Benefits

1) Precision Temperature Control : unnoticeable swing in temperature because of its adaptation of capacity to match with any variable conditions automatically.
2) High Efficiency : deliver only the energy needed to satisfy the cooling or heating condition, thereby saving both energy and cash.
3) Humidity Control : enjoy greater comfortable climate with desired level of humidity at a glance.
4) Compact size and light weight : Owing to motor speed changing technology of inverter compressor, the inverter compressor is more compact size and light weight more than 30% comparing with other Variable Refrigerant Flow (VRF) technology.

Touch with Advanced Inverter Technology

Optimum inverter system is accompanied with delicate design and easy for development. Our inverter designing service team has customized full solution offering, inverter consulting and intense unit testing service. Our long reputation services and experienced supports are the reasons why anyone can touch MITSUBISHI INVERTER TECHNOLOGY.

R-410A Inverter Scroll for HVAC Application Specifications

DNB Inverter Compact Scroll Compressor for R-410A

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number	STD.
							Capacity		Input		COP.	EER.				
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)				
a) DC Inverter 200 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
DNB22FALMT (15-120 RPS)	1,910	13,950	1,642	11,994	6,517	47,597	7,000	23,884	2,310	6.70	3.03	10.34	22.5	1000	17	
DNB28FAJMT (15-120 RPS)	2,270	18,110	1,952	15,571	7,745	61,791	9,060	30,913	2,800	13.40	3.24	11.04	23.5	1000	17	
DNB36FAJMT (15-120 RPS)	2,970	23,100	2,554	19,861	10,134	78,817	11,600	39,579	3,650	15.90	3.18	10.84	23.5	1000	17	
DNB22FAHMT (15-120 RPS)	1,860	13,900	1,599	11,951	6,346	47,427	7,000	23,884	2,240	6.70	3.13	10.66	22.9	1400	17	UL
DNB28FAGMT (15-120 RPS)	2,260	18,100	1,943	15,562	7,711	61,757	9,050	30,879	2,830	13.40	3.20	10.91	23.9	1400	17	UL
DNB36FAGMT (15-120 RPS)	2,970	23,100	2,554	19,861	10,134	78,817	11,600	39,579	3,650	15.90	3.18	10.84	23.9	1400	17	UL
b) DC Inverter 400 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
DNB22FAPMT (15-120 RPS)	1,910	13,950	1,642	11,994	6,517	47,597	7,000	23,884	2,290	5.20	3.06	10.43	22.5	1000	17	
DNB28FANMT (15-120 RPS)	2,270	18,110	1,952	15,571	7,745	61,791	9,060	30,913	2,850	7.80	3.18	10.85	23.5	1000	17	
DNB36FANMT (15-120 RPS)	2,970	23,100	2,554	19,861	10,134	78,817	11,600	39,579	3,590	9.70	3.23	11.02	23.5	1000	17	

ANB Inverter Scroll Compressor for R-410A

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number	STD.
							Capacity		Input		COP.	EER.				
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)				
a) DC Inverter 200 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
ANB33FNJMT (20-120 RPS)	3,200	20,700	2,751	17,798	10,918	70,628	10,600	36,167	3,350	14.80	3.16	10.80	33.6	2300	6	
ANB42FQQMT (20-120 RPS)	3,920	27,710	3,370	23,825	13,375	94,547	12,900	44,015	4,080	18.40	3.16	10.79	32.9	1700	25	
Vertical Suction	Min	Max	Min	Max	Min	Max										
ANB66FVCMT (15-120 RPS)	5,370	43,000	4,617	36,971	18,322	146,716	21,500	73,358	6,460	31.30	3.33	11.36	39.3	2300	27	UL
ANB78FVCMT (15-120 RPS)	6,350	50,800	5,460	43,678	21,666	173,330	25,400	86,665	7,640	36.50	3.32	11.34	39.3	2300	27	UL
ANB87FVPMT (15-120 RPS)	7,000	56,000	6,019	48,149	23,884	191,072	28,000	95,536	8,450	30.50	3.31	11.31	39.8	2000	12	UL
b) DC Inverter 400 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
ANB33FLGMT (20-120 RPS)	3,500	21,000	3,009	18,056	11,942	71,652	10,500	35,826	3,350	12.60	3.13	10.69	32.2	1400	8	UL
ANB42FLGMT (20-120 RPS)	4,500	27,000	3,869	23,215	15,354	92,124	13,500	46,062	4,200	16.10	3.21	10.97	31.0	1400	8	UL
Vertical Suction	Min	Max	Min	Max	Min	Max										
ANB52FVRMT (15-120 RPS)	4,120	33,000	3,542	28,373	14,057	112,596	16,500	56,298	5,200	18.50	3.17	10.83	35.1	1900	28	UL
ANB66FVQMT (15-120 RPS)	5,250	42,000	4,514	36,112	17,913	143,304	21,000	71,652	6,500	21.50	3.23	11.02	38.8	1900	28	UL
ANB78FVQMT (15-120 RPS)	6,220	49,800	5,348	42,818	21,223	169,918	24,900	84,959	7,640	26.00	3.26	11.12	39.3	1900	28	UL
ANB87FVLMT (15-120 RPS)	7,000	56,000	6,019	48,149	23,884	191,072	28,000	95,536	8,500	30.50	3.29	11.24	39.8	2300	28	UL

ARI Condition

R-410A Inverter Scroll with Injection and R-32 Compact Inverter Scroll for HVAC Application Specifications

DNK Inverter Compact Scroll Compressor with Injection for R-410A

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
							Capacity		Input		COP.	EER.			
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
DNK22FALMT (15-120 RPS)	1,910	13,950	1,642	11,994	6,517	47,597	7,000	23,884	2,200	6.70	3.18	10.86	22.9	1000	16
DNK28FAJMT (15-120 RPS)	2,270	18,110	1,952	15,571	7,745	61,791	9,060	30,913	2,820	13.40	3.21	10.96	23.9	1000	16
DNK36FAJMT (15-120 RPS)	2,970	23,100	2,554	19,861	10,134	78,817	11,600	39,579	3,590	16.90	3.23	11.02	23.9	1000	16
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
DNK22FAPMT (15-120 RPS)	1,910	13,950	1,642	11,994	6,517	47,597	7,000	23,884	2,290	5.20	3.06	10.43	22.5	1000	16
DNK28FANMT (15-120 RPS)	2,270	18,110	1,952	15,571	7,745	61,791	9,060	30,913	2,850	7.80	3.18	10.85	23.5	1000	16
DNK36FANMT (15-120 RPS)	2,970	23,100	2,554	19,861	10,134	78,817	11,600	39,579	3,590	9.70	3.23	11.02	23.5	1000	16

ANB Inverter Scroll Compressor with Injection for R-410A

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
							Capacity		Input		COP.	EER.			
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ANB33FJSMT (20-120 RPS)	3,200	20,700	2,751	17,798	10,918	70,628	10,600	36,167	3,240	11.60	3.27	11.16	33.6	2300	19
ANB42FJWMT (20-120 RPS)	4,020	27,810	3,456	23,911	13,716	94,888	12,800	43,674	4,080	18.40	3.14	10.70	33.4	2300	19
Vertical Suction	Min	Max	Min	Max	Min	Max									
ANB52FY1MT (15-120 RPS)	4,560	36,300	3,921	31,211	15,559	123,856	16,600	56,639	5,300	36.60	3.13	10.69	35.8	2300	24
ANB66FY1MT (15-120 RPS)	5,820	46,150	5,004	39,680	19,858	157,464	21,000	71,652	6,450	24.73	3.26	11.11	39.5	2300	24
ANB78FY1MT (15-120 RPS)	6,640	54,300	5,709	46,687	22,656	185,272	25,200	85,982	7,550	29.12	3.34	11.39	39.4	2300	24
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ANB33FUBMT (20-120 RPS)	7,100	22,100	6,105	19,002	24,225	75,405	10,500	35,826	3,320	12.50	3.16	10.79	32.9	1900	20
ANB42FUBMT (20-120 RPS)	9,000	27,900	7,738	23,988	30,708	95,195	13,500	46,062	4,150	15.40	3.25	11.10	33.6	1900	20
Vertical Suction	Min	Max	Min	Max	Min	Max									
ANB52FZKMT (15-120 RPS)	4,460	36,200	3,835	31,125	15,218	123,514	16,500	56,298	5,400	21.00	3.06	10.43	35.3	2300	23
ANB66FZHMT (15-120 RPS)	5,620	45,950	4,832	39,508	19,175	156,781	21,300	72,676	6,650	21.50	3.20	10.93	39.3	2300	23
ANB78FZHMT (15-120 RPS)	6,640	54,300	5,709	46,687	22,656	185,272	25,200	85,982	7,700	26.00	3.27	11.17	39.6	2300	23
ANB87FZXMT (15-120 RPS)	7,250	57,280	6,234	49,249	24,737	195,439	28,000	95,536	8,500	30.50	3.29	11.24	40.5	2300	24

ARI Condition

DVB Inverter Compact Scroll Compressor for R-32

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Foot shell (mm)	Drawing Number
							Capacity		Input		COP.	EER.				
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)				
a) DC Inverter 200 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
DVB28FCAMT (10-100 RPS)	1,380	15,820	1,187	13,602	4,709	53,980	9,730	33,199	2,960	8.99	3.29	11.22	22.7	1000	130.0	15
DVB36FCBMT (10-100 RPS)	1,500	20,050	1,290	17,239	5,118	68,413	11,860	40,466	3,800	15.90	3.12	10.65	23.5	1000	130.0	15

ARI Condition

R-32 & R-290 Inverter Scroll for HVAC Application Specifications

AVB Inverter Scroll Compressor for R-32

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity W	Capacity BTU/hr	Input Watt	Input Amps	COP. (w/w)	EER. (Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AVB33FACMT (10-120 RPS)	1,750	22,020	1,505	18,933	5,971	75,132	10,900	37,191	3,470	6.60	3.14	10.72	32.8	1400	13
AVB36FC1MT (15-120 RPS)	2,010	24,200	1,728	20,807	6,858	82,570	12,100	41,285	3,740	12.80	3.24	11.04	32.8	1400	13
Vertical Suction	Min	Max	Min	Max	Min	Max									
AVB52FT4MT (15-120 RPS)	4,550	36,400	3,912	31,297	15,525	124,197	18,200	62,098	5,560	21.32	3.27	11.17	35.5	2300	29
AVB66FT4MT (15-120 RPS)	5,720	45,980	4,918	39,534	19,517	156,884	22,990	78,442	6,890	22.60	3.34	11.38	39.2	2300	29
AVB78FT4MT (15-120 RPS)	6,820	54,600	5,864	46,945	23,270	186,295	27,300	93,148	8,110	26.90	3.37	11.49	39.0	2300	29
AVB87FT4MT (15-120 RPS)	7,600	60,800	6,534	52,276	25,931	207,450	30,400	103,725	8,950	32.40	3.40	11.59	39.7	2300	29

ARI Condition

AVB Inverter Scroll Compressor with Injection for R-32

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity W	Capacity BTU/hr	Input Watt	Input Amps	COP. (w/w)	EER. (Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AVB33FJAMT (10-120 RPS)	1,850	22,220	1,591	19,105	6,312	75,815	11,110	37,907	3,380	9.50	3.29	11.22	32.8	1400	22
AVB36FJBMT (10-120 RPS)	2,010	24,200	1,728	20,807	6,858	82,570	12,100	41,285	3,670	12.60	3.30	11.25	32.8	1400	22
b) DC Inverter 400 Volt															
Vertical Suction	Min	Max	Min	Max	Min	Max									
AVB52FT5MT(15-120 RPS)	4,550	36,400	3,912	31,297	15,525	124,197	18,200	62,098	5,560	21.32	3.27	11.17	36.2	2300	25
AVB66FT5MT(15-120 RPS)	5,720	45,980	4,918	39,534	19,517	156,884	22,990	78,442	6,890	22.60	3.34	11.38	39.9	2300	25
AVB78FT5MT(15-120 RPS)	6,820	54,600	5,864	46,945	23,270	186,295	27,300	93,148	8,110	26.90	3.37	11.49	39.7	2300	25
AVB87FT5MT(15-120 RPS)	7,600	60,800	6,534	52,276	25,931	207,450	30,400	103,725	8,950	32.40	3.40	11.59	40.4	2300	25

ARI Condition

APB Inverter Scroll Compressor for R-290

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity W	Capacity BTU/hr	Input Watt	Input Amps	COP. (w/w)	EER. (Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
APB33FABMT(15-120 RPS)	1,500	10,500	1,290	9,028	5,118	35,826	5,100	17,401	1,650	5.90	3.09	10.55	30.4	900	14
APB42FABMT(15-120 RPS)	2,000	14,100	1,720	12,123	6,824	48,109	6,200	21,154	2,200	8.70	2.82	9.62	30.3	900	14
APB52FABMT(15-120 RPS)	2,500	17,500	2,150	15,047	8,530	59,710	8,300	28,320	2,620	9.20	3.17	10.81	30.5	900	14
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
APB33FAAMT(15-120 RPS)	1,500	10,500	1,290	9,028	5,118	35,826	5,100	17,401	1,720	4.00	2.97	10.12	31.0	900	14
APB42FAAMT(15-120 RPS)	2,000	14,100	1,720	12,123	6,824	48,109	6,200	21,154	2,200	4.70	2.82	9.62	30.7	900	14
APB52FAAMT(15-120 RPS)	2,500	17,500	2,150	15,047	8,530	59,710	7,800	26,614	2,620	5.60	2.98	10.16	31.0	900	14

Heat pump Condition

R-410A & R-290 Fixed Speed Scroll for HVAC Application Specifications

AN Fixed Speed Scroll Compressor for R-410A

Models	Capacity Range			Input		Capacity Range		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number	STD
	W	Kcal/hr	BTU/hr	Watt	Amps	HP	KW.							
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase														
Horizontal Suction														
AN30VEJMT	7,670	6,595	26,170	2,570	11.90	3.08	2.30	2.98	10.18	50 / 420	36.3	900	4	
AN33VEJMT	8,500	7,308	29,002	2,790	13.00	3.35	2.50	3.05	10.39	50 / 420	36.3	900	4	
AN36VEJMT	9,450	8,125	32,243	3,100	14.60	3.55	2.65	3.05	10.40	55 / 420	36.3	900	4	
AN42VEJMT	10,700	9,200	36,508	3,540	16.90	4.02	3.00	3.02	10.31	60 / 450	36.7	900	4	
b) Electrical 50/60 Hz : 380 - 415/460 Volt : 3 Phases														
Horizontal Suction														
AN33YBUMT(50)	8,430	7,248	28,763	2,710	4.70	3.35	2.50	3.11	10.61	-	37.1	1700	27	
AN33YBUMT(60)	10,300	8,856	35,144	3,280	4.80	3.35	2.50	3.14	10.71	-	37.1	1700	27	
AN42YBUMT(50)	10,800	9,286	36,850	3,490	5.90	4.02	3.00	3.09	10.56	-	38.3	1700	27	
AN42YBUMT(60)	12,930	11,117	44,117	4,140	6.00	4.02	3.00	3.12	10.66	-	38.3	1700	27	
AN47YBUMT(50)	12,130	10,429	41,388	3,830	6.60	4.49	3.35	3.17	10.81	-	38.3	1700	27	
AN47YBUMT(60)	14,680	12,622	50,088	4,580	6.70	4.49	3.35	3.21	10.94	-	38.3	1700	27	
AN52YBUMT(50)	13,600	11,693	46,403	4,280	7.40	4.96	3.70	3.18	10.84	-	38.3	1700	27	
AN52YBUMT(60)	16,520	14,204	56,366	5,130	7.50	4.96	3.70	3.22	10.99	-	38.3	1700	27	
AN36YKLMT(50)	9,500	8,168	32,414	3,080	5.20	3.75	2.80	3.08	10.52	-	37.9	1300	7	UL
AN36YKLMT(60)	11,600	9,974	39,579	3,700	5.30	3.75	2.80	3.14	10.70	-	37.9	1300	7	UL
AN47YKLMT(50)	12,130	10,429	41,388	3,830	6.60	4.49	3.35	3.17	10.81	-	37.8	1300	7	UL
AN47YKLMT(60)	14,680	12,622	50,088	4,580	6.70	4.49	3.35	3.21	10.94	-	37.8	1300	7	UL
AN66YQSMT(50)	16,500	14,187	56,298	5,460	9.30	5.76	4.30	3.02	10.31	-	38.4	1700	7	UL
AN66YQSMT(60)	21,000	18,056	71,652	6,520	9.40	5.76	4.30	3.22	10.99	-	38.4	1700	7	UL
c) Electrical 60 Hz : 208 - 230 Volt : 1 Phase														
Horizontal Suction														
ANH30NELMT	8,100	6,964	27,637	2,740	12.50	2.5	1.90	2.96	10.09	55 / 400	36.3	900	4	UL
ANH42NELMT	11,400	9,802	38,897	3,720	17.20	3.6	2.70	3.06	10.46	65 / 400	36.7	900	4	UL
ANH47NELMT	12,600	10,833	42,991	4,130	19.50	4.4	3.30	3.05	10.41	70 / 400	37.4	900	4	UL
d) Electrical 50/60 Hz : 200/200 - 230 Volt : 3 Phase														
AN66TQSMT	19,500	16,766	66,534	6,580	20.50	6.2	4.60	2.96	10.11	-	38.4	1700	26	UL

ARI Condition

BN Fixed Speed Scroll Compressor for R-410A

Models	Capacity Range			Input		Capacity Range		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number	STD
	W	Kcal/hr	BTU/hr	Watt	Amps	HP	KW.							
a) Electrical 50/60 Hz : 380 - 415/460 Volt : 3 Phases														
Horizontal Suction														
BN52YHAMT(50)	13,900	11,951	47,427	4,360	7.50	4.96	3.70	3.19	10.88	-	47.5	1700	9	UL
BN52YHAMT(60)	16,800	14,445	57,322	5,200	7.70	4.96	3.70	3.23	11.02	-	47.5	1700	9	UL
BN57YHAMT(50)	15,300	13,155	52,204	4,800	8.40	5.36	4.00	3.19	10.88	-	47.8	1700	9	UL
BN57YHAMT(60)	18,260	15,700	62,303	5,710	8.50	5.36	4.00	3.20	10.91	-	47.8	1700	9	UL
BN62YHAMT(50)	17,600	15,132	60,051	5,450	9.60	6.17	4.60	3.23	11.02	-	47.8	1700	9	UL
BN65YHAMT(60)	21,030	18,082	71,754	6,440	9.70	6.17	4.60	3.27	11.14	-	47.8	1700	9	UL
BN75YFQMT(50)	19,700	16,938	67,216	6,350	11.00	7.24	5.40	3.10	10.59	-	47.9	2100	5	
b) Electrical 60 Hz : 380 : 3 Phases														
BN65XFFMT	20,870	17,944	71,208	6,500	10.90	7.78	5.80	3.21	10.96	-	48.0	1700	1	

ARI Condition

APH Fixed Speed Scroll Compressor for R-290A

Models	Capacity Range			Input		Capacity Range		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number	STD
	W	Kcal/hr	BTU/hr	Watt	Amps	HP	KW.							
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase														
Horizontal Suction														
APH42VAAMT	6,300	5,417	21,496	1,990	8.90	2.5	1.90	3.17	10.80	45 / 420	33.3	900	4	
APH52VAAMT	7,930	6,818	27,057	2,360	11.20	3.1	2.30	3.36	11.46	50 / 420	35.2	900	4	
APH60VAAMT	9,160	7,876	31,254	2,750	13.40	3.6	2.70	3.33	11.37	60 / 450	35.4	900	4	
b) Electrical 50 Hz : 380 - 415/460 Volt : 3 Phases														
Horizontal Suction														
APH42YAAMT	6,320	5,434	21,564	1,880	3.60	2.5	1.90	3.36	11.47	-	33.3	2300	4	
APH52YAAMT	7,950	6,835	27,125	2,320	4.20	3.2	2.35	3.43	11.69	-	35.2	2300	4	
APH60YAAMT	9,160	7,876	31,254	2,640	4.90	3.6	2.70	3.47	11.84	-	35.4	2300	4	
APH73YAAMT	11,100	9,544	37,873	3,310	5.70	4.7	3.50	3.35	11.44	-	35.4	2300	4	

ARI Condition

Operation standard and limits of R-410A Scroll for HVAC Application

Models	AN / BN	ANB	ANB (Injection)
Compressor			
Type	Scroll Type (Fixed Speed)	Scroll Type (DC Inverter)	
Displacement (cc/rev.)	30~75	33~87 (33/42/52/66/78/87)	33~87 (33/42/52/66/78/87)
Refrigerant type	R-410A		
Pressure			
Maximum Condensing	4.15 MPaG/65°C (602 psiG/149°F)		
Evaporating	0.23~1.59 MPaG (33.4~230.6 psiG)	0.20~1.59 MPaG (29.0~230.6 psiG)	0.10~1.59 MPaG (14.5~230.6 psiG)
Compression Ratio	1.8~8.0		
Abnormal Rise in pressure	5.9 MPaG (855.7psiG) or less		
Temperature			
Condensing	Under 65°C (Under149°F)		
Evaporating	- 25°C~26°C (-13°F~78.8°F)	-27°C~26°C (-16.6°F~78.8°F)	-37°C~26°C (-34.6°F~78.8°F)
Discharged Gas (max)	120°C(248°F) please see speed limit allowable area at Envelop (See Note 1)	120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)	120°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)		
Discharged gas 's superheat	10°C or more		
Outdoor Ambient Temp.	Under 43°C (109.4°F)		
Electrical			
Supply voltage (during operation)	The compressor must be operated on the rated voltage ±10%. Provided the rated voltage 208-230 V, The regulation must be within -5% for 208V, +10% for 230 V. The operating voltage shall be the terminal voltage of the compressor durring operation.	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.
Starting voltage	Minimum 80 % of rated voltage at balance pressure (at 43°C) In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more of 208V The starting voltage shall be the terminal voltage of the compressor when the voltage drops due to starting current.	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less
Reverse phase (rotation)	Compressor is not design to run reverse phase		
Frequency range	Rated Frequency ± 2%	See in Specification of Compressor	See in Specification of Compressor
ON/OFF			
ON/OFF Frequency	Less than 250,000 cycles		
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach tobalance pressure (more than 3 minutes)		
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)		
Refrigerant Circuit			
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, B Series : 7.0 kg, no accumulator < 4.5 kg, (See detail in Compressor Technical Manual)	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.		
Inclination of compressor	Within 5°		
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created		
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)		
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)		

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

Operation standard and limits of R-410A Compact Scroll for HVAC Application

Models	DNB	DNK (Injection)
Compressor		
Type	Scroll Type (DC Inverter)	
Displacement (cc/rev.)	22-36 (22/28/36)	22-36 (22/28/36)
Refrigerant type	R-410A	
Pressure		
Maximum Condensing	4.66 MPaG/70°C (676 psiG/158°F)	
Evaporating	0.10~1.70 MPaG (14.5~246.6 psiG)	0.10~1.70 MPaG (14.5~246.6 psiG)
Compression Ratio	1.8~8.0	
Abnormal Rise in pressure	5.9 MPaG (855.7 psiG) or less	
Temperature		
Condensing	Under 70°C (Under158°F)	
Evaporating	-37°C~28°C (-34.6°F~82.4°F)	-37°C~28°C (-34.6°F~82.4°F)
Discharged Gas (max)	120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)	120°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)
Suction Gas (max)	"Must be more than 0°C (No liquid back) (See Note 1)	
Discharged gas's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4°F)	
Electrical		
Supply voltage (during operation)	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.	
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution fo unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less	
Reverse phase (rotation)	Compressor is not design to run reverse phase	
Frequency range	See in Specification of Compressor	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)	
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	D Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

Operation standard and limits of R-32 Scroll for HVAC Application

Models	AVB	AVB (Injection)	DVB
Compressor			
Type	Scroll Type (DC Inverter)		
Displacement (cc/rev.)	33~87 (33/36/52/66/78/87)	33~87 (33/36/52/66/78/87)	22-36 (22/28/36)
Refrigerant type	R-32		
Pressure			
Maximum Condensing	4.15 MPaG/63.5°C (602 psiG/146.3°F)		
Evaporating	0.20~1.59 MPaG (29.0~230.6 psiG)	0.10~1.59 MPaG (14.5~230.6 psiG)	0.15~1.70 MPaG (21.8~246.6 psiG)
Compression Ratio	1.8~8.0		
Abnormal Rise in pressure	5.9 MPaG (855.7 psiG) or less		
Temperature			
Condensing	Under 63.5°C (Under 146.3°F)		
Evaporating	- 27°C~25.2°C (-16.6°F~77.3°F)	-37°C~25.2°C (-34.6°F~77.3°F)	-32°C~27.4°C (-25.6°F~81.3°F)
Discharged Gas (max)	120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)	120°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)	115°C (239°F) please see speed limit allowable area at Envelop (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)		
Discharged gas 's superheat	10°C or more		
Outdoor Ambient Temp.	Under 43°C (109.4°F)		
Electrical			
Supply voltage (during operation)	The compressor must be operated on the rated voltage ±10%. Provided the rated voltage 208-230 V, The regulation must be within -5% for 208V, +10% for 230 V. The operating voltage shall be the terminal voltage of the compressor durring operation.		
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less		
Reverse phase (rotation)	Compressor is not design to run reverse phase		
Frequency range	See in Specification of Compressor		
ON/OFF			
ON/OFF Frequency	Less than 250,000 cycles		
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)		
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)		
Refrigerant Circuit			
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)		D Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)
Piping vibration	Maximum 0.8 mm.		
Inclination of compressor	Within 5°		
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created		
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)		
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)		

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

Operation standard and limits of R-290 Scroll for HVAC Application

Models	APB	APH
Compressor		
Type	Scroll Type (DC Inverter)	Scroll Type (Fixed Speed)
Displacement (cc/rev.)	33~52 (33/42/52)	42~73 (42/52/60/73)
Refrigerant type	R-290	
Pressure		
Maximum Condensing	3.15 MPaG/82°C (457 psiG/179.6°F)	
Evaporating	0.07~0.69 MPaG (10.1~100 psiG)	
Compression Ratio	Follow pressure operating envelop	
Abnormal Rise in pressure	-	
Temperature		
Condensing	Under 82°C (Under 179.6°F)	
Evaporating	-30°C~18°C (-22°F~64.4°F)	
Discharged Gas (max)	120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)	120°C (248°F) (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)	
Discharged gas's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4°F)	
Electrical		
Supply voltage (during operation)	The compressor must be operated on the rated voltage ±10%. Provided the rated voltage 208-230 V, The regulation must be within -5% for 208V, +10% for 230 V. The operating voltage shall be the terminal voltage of the compressor durring operation.	
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less	Minimum 80% of rated voltage at balance pressure (at 43°C) In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more of 208V The starting voltage shall be the terminal voltage of the compressor when the voltage drops due to starting current.
Reverse phase (rotation)	Compressor is not design to run reverse phase	
Frequency range	See in Specification of Compressor	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)	
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

R-410A, R-448/R-449A & R-404A Inverter Scroll for Low Temp. Refrigeration Application Specifications

ANB Inverter Scroll Compressor for R-410A in Low Temp. Application

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity		Input		COP.	EER.			
							W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ANB33FD1MTS (20-100 RPS)	360	2,900	310	2,493	1,228	9,895	1,447	4,937	1,248	3.10	1.16	3.96	35.0	1900	21
ANB42FD1MTS (20-100 RPS)	540	4,350	464	3,740	1,842	14,842	2,173	7,414	1,904	5.95	1.14	3.89	35.2	1900	21
ANB66FD1MTS (20-100 RPS)	1,100	8,760	946	7,532	3,753	29,889	4,380	14,945	3,797	14.13	1.15	3.94	39.3	1900	21
Vertical Suction	Min	Max	Min	Max	Min	Max									
ANB78FD1MTS (15-120 RPS)	1,380	11,000	1,187	9,458	4,709	37,532	5,508	18,793	5,441	19.28	1.01	3.45	39.2	1900	23
ANB87FD1MTS (15-120 RPS)	1,620	12,900	1,393	11,091	5,527	44,015	6,463	22,052	5,688	21.37	1.14	3.88	40.1	1900	23
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ANB33FUHMTS (20-100 RPS)	360	2,900	310	2,493	1,228	9,895	1,447	4,937	1,248	2.73	1.16	3.96	35.0	1900	21
ANB42FUHMTS (20-100 RPS)	540	4,350	464	3,740	1,842	14,842	2,173	7,414	1,904	5.29	1.14	3.89	35.2	1900	21
ANB66FUJMTS (20-100 RPS)	1,100	8,760	946	7,532	3,753	29,889	4,380	14,945	3,797	13.25	1.15	3.94	39.3	1900	21
Vertical Suction	Min	Max	Min	Max	Min	Max									
ANB78FE1MTS (15-120 RPS)	1,380	11,000	1,187	9,458	4,709	37,532	5,508	18,793	5,441	18.58	1.01	3.45	39.2	1900	23
ANB87FE1MTS (15-120 RPS)	1,620	12,900	1,393	11,091	5,527	44,015	6,463	22,052	5,688	20.82	1.14	3.88	40.1	1900	23

Low Temp. Condition : ET = -35°C, CT = 40°C, Ts = 20°C, SC = 0K

AGB Inverter Scroll Compressor for R-448A/R-449A in Low Temp. Application

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity		Input		COP.	EER.			
							W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AGB33FD1MTS (20-100 RPS)	220	1,640	189	1,410	751	5,596	824	2,811	728	2.35	1.13	3.86	35.0	1900	30
AGB42FD1MTS (20-100 RPS)	320	2,470	275	2,124	1,092	8,428	1,237	4,221	1,110	4.06	1.11	3.80	35.2	1900	30
AGB66FD1MTS (20-100 RPS)	630	4,980	542	4,282	2,150	16,992	2,494	8,510	2,215	8.40	1.13	3.84	39.3	1900	30
Vertical Suction	Min	Max	Min	Max	Min	Max									
AGB78FD1MTS (15-120 RPS)	790	6,270	679	5,391	2,695	21,393	3,137	10,703	3,174	11.01	0.99	3.37	39.2	1900	31
AGB87FD1MTS (15-120 RPS)	920	7,360	791	6,328	3,139	25,112	3,680	12,556	3,318	12.95	1.11	3.78	40.1	1900	31
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AGB33FE1MTS (20-100 RPS)	220	1,640	189	1,410	751	5,596	824	2,811	728	1.59	1.13	3.86	35.0	1900	30
AGB42FE1MTS (20-100 RPS)	320	2,470	275	2,124	1,092	8,428	1,237	4,221	1,110	3.09	1.11	3.80	35.2	1900	30
AGB66FE1MTS (20-100 RPS)	630	4,980	542	4,282	2,150	16,992	2,494	8,510	2,215	7.73	1.13	3.84	39.3	1900	30
Vertical Suction	Min	Max	Min	Max	Min	Max									
AGB78FE1MTS (15-120 RPS)	790	6,270	679	5,391	2,695	21,393	3,137	10,703	3,174	10.84	0.99	3.37	39.2	1900	31
AGB87FE1MTS (15-120 RPS)	920	7,360	791	6,328	3,139	25,112	3,680	12,556	3,318	12.21	1.11	3.78	40.1	1900	31

Low Temp. Condition : ET = -35°C, CT = 40°C, Ts = 20°C, SC = 0K

ADB Inverter Scroll Compressor for R-404A in Low Temp. Application

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
	Watt		Kcal/hr		BTU/hr		Capacity		Input		COP.	EER.			
							W	BTU/hr	Watt	Amps	(w/w)	(Btu/hr*w)			
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ADB33FD1MTS (20-100 RPS)	240	1,910	206	1,642	817	6,517	958	3,269	867	2.15	1.10	3.77	35.0	1900	30
ADB42FD1MTS (20-100 RPS)	360	2,870	309	2,468	1,227	9,792	1,439	4,910	1,322	3.84	1.09	3.71	35.2	1900	30
ADB66FD1MTS (20-100 RPS)	720	5,800	619	4,987	2,457	19,790	2,900	9,895	2,637	10.18	1.10	3.75	39.3	1900	30
Vertical Suction	Min	Max	Min	Max	Min	Max									
ADB78FD1MTS (15-120 RPS)	910	7,290	782	6,268	3,105	24,873	3,648	12,447	3,779	13.28	0.97	3.29	39.2	1900	31
ADB87FD1MTS (15-120 RPS)	1,070	8,560	920	7,360	3,651	29,207	4,280	14,603	3,950	14.69	1.08	3.70	40.1	1900	31
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ADB33FE1MTS (20-100 RPS)	240	1,910	206	1,642	817	6,517	958	3,269	867	1.89	1.10	3.77	35.0	1900	30
ADB42FE1MTS (20-100 RPS)	360	2,870	309	2,468	1,227	9,792	1,439	4,910	1,322	3.68	1.09	3.71	35.2	1900	30
ADB66FE1MTS (20-100 RPS)	720	5,800	619	4,987	2,457	19,790	2,900	9,895	2,637	9.20	1.10	3.75	39.3	1900	30
Vertical Suction	Min	Max	Min	Max	Min	Max									
ADB78FE1MTS (15-120 RPS)	910	7,290	782	6,268	3,105	24,873	3,648	12,447	3,779	12.90	0.97	3.29	39.2	1900	31
ADB87FE1MTS (15-120 RPS)	1,070	8,560	920	7,360	3,651	29,207	4,280	14,603	3,950	14.53	1.08	3.70	40.1	1900	31

Low Temp. Condition : ET = -35°C, CT = 40°C, Ts = 20°C, SC = 0K

R-404A Fixed Speed Scroll for Low Temp. Refrigeration Application Specifications

AD Fixed speed Scroll Compressor for R-404A in Low Temp. Application

Models	Capacity			Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number
	W	Kcal/hr	Btu/hr	Watt	Amps	HP	KW.						
a) Electrical 50/60 Hz : 380 - 415/460 Volt : 3 Phase													
AD30YL1MTS	900	774	3,071	1,120	2.6	3.1	2.30	0.80	2.74	-	39.3	1300	33
AD33YL1MTS	1,000	860	3,412	1,300	2.7	3.2	2.40	0.77	2.62	-	39.5	1300	33
AD42YL1MTS	1,350	1,161	4,606	1,650	3.4	4.2	3.10	0.82	2.79	-	39.1	1300	33
AD52YL1MTS	1,650	1,419	5,630	1,970	3.9	5.1	3.80	0.84	2.86	-	39.6	1300	33
AD66YL1MTS	2,000	1,720	6,824	2,820	5.7	6.4	4.80	0.71	2.42	-	39.7	1700	33

Low temp. Condition : ET = -35°C, CT = 40°C, Ts = 20°C, SC = 0K

ADZ Fixed speed Horizontal Scroll Compressor for R-404A in Low Temp. Application

Models	Capacity			Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number
	W	Kcal/hr	Btu/hr	Watt	Amps	HP	KW.						
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase													
ADZ30VBBMTS	960	825	3,276	1,160	5.3	2.3	1.74	0.83	2.82	45 / 400	37.8	900	18
ADZ33VBBMTS	1,080	929	3,685	1,295	7.5	2.3	1.74	0.83	2.85	45 / 400	38.0	900	18
ADZ36VBBMTS	1,230	1,058	4,197	1,360	6.3	2.3	1.74	0.90	3.09	45 / 400	37.3	900	18
ADZ42VBBMTS	1,420	1,221	4,845	1,550	7.1	3.1	2.28	0.92	3.13	50 / 420	37.3	900	18
ADZ52VBBMTS	1,780	1,530	6,073	1,950	9.0	3.6	2.70	0.91	3.11	60 / 440	38.4	900	18
b) Electrical 60 Hz : 208 - 230 Volt : 1 Phase													
ADZ30NBBMTS	1,172	1,008	3,999	1,448	7.4	2.6	1.94	0.81	2.76	50 / 420	36.8	900	18
ADZ33NBBMTS	1,285	1,105	4,384	1,569	9.0	2.8	2.10	0.82	2.79	50 / 420	37.0	900	18
ADZ36NBBMTS	1,398	1,202	4,770	1,690	10.2	3.1	2.28	0.83	2.82	50 / 420	37.3	900	18
ADZ42NBBMTS	1,634	1,405	5,575	1,913	8.8	3.6	2.70	0.85	2.91	55 / 420	36.9	900	18
ADZ52NBBMTS	2,027	1,743	6,916	2,390	15.3	4.5	3.36	0.85	2.89	65 / 440	37.1	900	18

Low temp. Condition : ET = -35°C, CT = 40°C, Ts = 20°C, SC = 0K

SCI Compressor with sightglass

R-410A, R-448/R-449A & R-404A Inverter Scroll for Medium Temp. Refrigeration Application Specifications

ANB Inverter Scroll Compressor for R-410A in Medium Temp. Application

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number	STD.
							Capacity		Input		COP. (w/w)	EER. (Btu/hr*w)				
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps						
a) DC Inverter 200 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
ANB33FEYMTS (20-120 RPS)	1,720	11,530	1,479	9,913	5,869	39,340	5,500	18,766	2,600	10.80	2.12	7.22	32.7	1900	3	UL
ANB42FEYMTS (20-120 RPS)	2,180	14,450	1,874	12,424	7,438	49,303	6,900	23,543	3,250	13.80	2.12	7.24	32.8	1900	3	UL
Vertical Suction	Min	Max	Min	Max	Min	Max										
ANB66FVCMTS (15-120 RPS)	3,610	23,000	3,104	19,775	12,317	78,476	11,500	39,238	5,250	24.10	2.19	7.47	38.9	1900	28	UL
ANB78FVCMTS (15-90 RPS)	4,240	20,620	3,646	17,729	14,467	70,355	13,500	46,062	6,180	30.10	2.18	7.45	38.9	1900	28	UL
ANB87FF1MTS (15-80 RPS)	4,890	20,560	4,204	17,677	16,685	70,151	15,000	51,180	6,850	37.00	2.19	7.47	39.4	1900	28	
b) DC Inverter 400 Volt																
Horizontal Suction	Min	Max	Min	Max	Min	Max										
ANB33FKJMTS (20-120 RPS)	1,720	11,530	1,479	9,913	5,869	39,340	5,700	19,448	2,720	10.90	2.10	7.15	33.5	1900	2	UL
ANB42FKJMTS (20-120 RPS)	2,290	14,760	1,969	12,691	7,813	50,361	7,150	24,396	3,400	13.20	2.10	7.18	33.5	1900	2	UL
Vertical Suction	Min	Max	Min	Max	Min	Max										
ANB66FVQMTS (15-120 RPS)	3,700	23,000	3,181	19,775	12,624	78,476	11,200	38,214	5,300	17.00	2.11	7.21	38.9	1900	28	UL
ANB78FVQMTS (15-120 RPS)	4,440	27,290	3,818	23,464	15,149	93,113	13,200	45,038	6,300	20.20	2.10	7.15	38.9	1900	28	UL
ANB87FVLMTS (15-120 RPS)	4,890	30,850	4,204	26,525	16,685	105,260	14,800	50,498	6,950	24.60	2.13	7.27	39.4	1900	28	

Medium temp. Condition : ET = -10°C, CT = 45°C, Ts = 20°C, SC = 0K

AGB Inverter Scroll Compressor for R-448A/R-449A in Medium Temp.

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
							Capacity		Input		COP. (w/w)	EER. (Btu/hr*w)			
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps					
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AGB33FABMTS (15-120 RPS)	1,220	8,150	1,049	7,007	4,163	27,808	3,890	13,273	1,820	6.80	2.14	7.29	33.9	1900	32
AGB42FABMTS (15-120 RPS)	1,540	10,200	1,324	8,770	5,254	34,802	4,870	16,616	2,210	8.50	2.20	7.52	33.1	1900	32
AGB52FABMTS (15-120 RPS)	1,910	12,610	1,642	10,842	6,517	43,025	6,020	20,540	2,780	11.00	2.17	7.39	33.4	1900	32
Vertical Suction	Min	Max	Min	Max	Min	Max									
AGB66FBBMTS (15-120 RPS)	2,460	15,660	2,115	13,464	8,394	53,432	7,830	26,716	3,650	11.90	2.15	7.32	39.0	1900	11
AGB78FBBMTS (15-120 RPS)	2,920	14,200	2,511	12,209	9,963	48,450	9,300	31,732	4,180	13.40	2.22	7.59	39.0	1900	11
AGB87FBBMTS (15-120 RPS)	3,320	13,960	2,855	12,003	11,328	47,632	10,190	34,768	4,590	15.30	2.22	7.57	39.8	1900	11
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
AGB33FAAMTS (15-120 RPS)	1,170	7,870	1,006	6,767	3,992	26,852	3,890	13,273	1,820	6.80	2.14	7.29	33.9	1900	32
AGB42FAAMTS (15-120 RPS)	1,560	10,050	1,341	8,641	5,323	34,291	4,870	16,616	2,210	8.30	2.20	7.52	33.1	1900	32
AGB52FAAMTS (15-120 RPS)	1,910	12,610	1,642	10,842	6,517	43,025	6,020	20,540	2,780	10.70	2.17	7.39	33.4	1900	32
Vertical Suction	Min	Max	Min	Max	Min	Max									
AGB66FBAMTS (15-120 RPS)	2,590	16,080	2,227	13,826	8,837	54,865	7,830	26,716	3,650	11.70	2.15	7.32	39.0	1900	11
AGB78FBAMTS (15-120 RPS)	3,130	19,220	2,691	16,525	10,680	65,579	9,300	31,732	4,180	13.10	2.22	7.59	39.0	1900	11
AGB87FBAMTS (15-120 RPS)	3,370	21,240	2,898	18,262	11,498	72,471	10,190	34,768	4,590	15.10	2.22	7.57	39.8	1900	11

Medium temp. Condition : ET = -10°C, CT = 45°C, Ts = 20°C, SC = 0K

ADB Inverter Scroll Compressor for R-404A in Medium Temp. Application

Models	Capacity Range (min ~ max)						Performance at 60 rps						Weight (kgs.)	Oil (cc.)	Drawing Number
							Capacity		Input		COP. (w/w)	EER. (Btu/hr*w)			
	Watt		Kcal/hr		BTU/hr		W	BTU/hr	Watt	Amps					
a) DC Inverter 200 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ADB33FF1MTS (15-120 RPS)	1,360	9,140	1,169	7,859	4,640	31,186	4,360	14,876	2,070	7.70	2.11	7.19	33.9	1900	35
ADB42FF1MTS (15-120 RPS)	1,730	11,450	1,487	9,845	5,903	39,067	5,470	18,664	2,540	9.50	2.15	7.35	33.1	1900	35
Vertical Suction	Min	Max	Min	Max	Min	Max									
ADB66FF1MTS (15-120 RPS)	2,770	17,680	2,382	15,201	9,451	60,324	8,840	30,162	4,100	13.70	2.16	7.36	39.0	1900	11
ADB78FF1MTS (15-120 RPS)	3,280	15,960	2,820	13,722	11,191	54,456	10,450	35,655	4,730	15.60	2.21	7.54	39.0	1900	11
ADB87FF1MTS (15-120 RPS)	3,730	15,700	3,207	13,499	12,727	53,568	11,460	39,102	5,180	17.60	2.21	7.55	39.8	1900	11
b) DC Inverter 400 Volt															
Horizontal Suction	Min	Max	Min	Max	Min	Max									
ADB33FCAMTS (15-120 RPS)	1,310	8,820	1,126	7,583	4,470	30,094	4,360	14,876	2,070	7.50	2.11	7.19	33.9	1900	32
ADB42FCAMTS (15-120 RPS)	1,750	11,290	1,505	9,707	5,971	38,521	5,470	18,664	2,540	9.10	2.15	7.35	33.1	1900	32
Vertical Suction	Min	Max	Min	Max	Min	Max									
ADB66FDAMTS (15-120 RPS)	2,920	18,150	2,511	15,605	9,963	61,928	8,840	30,162	4,100	13.30	2.16	7.36	39.0	1900	11
ADB78FDAMTS (15-120 RPS)	3,510	21,600	3,018	18,572	11,976	73,699	10,450	35,655	4,730	15.20	2.21	7.54	39.0	1900	11
ADB87FG1MTS (15-120 RPS)	3,780	23,890	3,250	20,541	12,897	81,513	11,460	39,102	5,180	17.00	2.21	7.55	39.8	1900	11

Medium temp. Condition : ET = -10°C, CT = 45°C, Ts = 20°C, SC = 0K

R-404A Fixed Speed Scroll for Medium Temp. Refrigeration Application Specifications

AD Fixed Speed Scroll Compressor for R-404A in Medium temp. Appplication

Models	Capacity			Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number
	W	Kcal/hr	Btu/hr	Watt	Amps	HP	KW.						
a) Electrical 50/60 Hz : 380-415/460 Volt : 3 Phase													
AD30YL1MTS	3,150	2,708	10,748	1,520	3.0	2.2	1.62	2.07	7.07	-	39.3	1300	34
AD33YL1MTS	3,500	3,009	11,942	1,650	3.0	2.3	1.72	2.12	7.24	-	39.5	1300	34
AD42YL1MTS	4,450	3,826	15,183	2,100	4.0	3.0	2.24	2.12	7.23	-	39.1	1300	34
AD52YL1MTS	5,500	4,729	18,766	2,520	4.6	3.7	2.76	2.18	7.45	-	39.6	1300	34
AD66YL1MTS	6,850	5,890	23,372	3,280	7.1	4.7	3.48	2.09	7.13	-	39.7	1700	34

Medium temp. Condition : ET = -10°C, CT = 45°C, Ts = 20°C, SC = 0K

ADZ Fixed speed Horizontal Scroll Compressor for R-404A in Medium Temp.

Models	Capacity			Input		Nominal Output		COP. (W/W)	EER. (Btu/hr*w)	Run Cap. (mF/VAC)	Weight (kgs.)	Oil (cc.)	Drawing Number
	W	Kcal/hr	Btu/hr	Watt	Amps	HP	KW.						
a) Electrical 50 Hz : 220 - 240 Volt : 1 Phase													
ADZ30VBBMTS	3,170	2,726	10,816	1,810	5.6	2.3	1.74	1.75	5.98	45 / 400	37.8	900	18
ADZ33VBBMTS	3,550	3,052	12,113	1,970	6.6	2.3	1.74	1.80	6.15	45 / 400	38.0	900	18
ADZ36VBBMTS	3,850	3,310	13,136	2,200	7.2	2.3	1.74	1.75	5.97	45 / 400	37.3	900	18
ADZ42VBBMTS	4,400	3,783	15,013	2,500	7.6	3.1	2.28	1.76	6.01	50 / 420	37.7	900	18
ADZ52VBBMTS	5,600	4,815	19,107	3,100	9.3	3.6	2.70	1.81	6.16	60 / 440	38.4	900	18
b) Electrical 60 Hz : 208 - 230 Volt : 1 Phase													
ADZ30NBBMTS	3,850	3,310	13,136	2,210	7.5	2.6	1.94	1.74	5.94	50 / 420	36.8	900	18
ADZ33NBBMTS	4,200	3,611	14,330	2,400	8.1	2.8	2.10	1.75	5.97	50 / 420	37.8	900	18
ADZ36NBBMTS	4,600	3,955	15,695	2,600	8.2	3.1	2.28	1.77	6.04	50 / 420	37.3	900	18
ADZ42NBBMTS	5,350	4,600	18,254	3,000	8.6	3.6	2.70	1.78	6.08	55 / 420	36.9	900	18
ADZ52NBBMTS	6,600	5,675	22,519	3,750	11.2	4.5	3.36	1.76	6.01	65 /440	37.1	900	18

Medium temp. Condition : PLUG IN

Operation standard and limits of R-410A Scroll for Refrigeration Application

Models	ANB for Low Temp.		ANB for Medium Temp.
Compressor			
Type	Scroll Type (DC Inverter)		
Displacement (cc/rev.)	33~66 (33/42/66)	78~87 (78/87)	33~87 (33/42/52/66/78/87)
Refrigerant type	R-410A		
Pressure			
Maximum Condensing	4.15 MPaG/65°C (602 psiG/149°F)		
Evaporating	0.10~1.59 MPaG (14.5~230.6 psiG)		0.20~1.59 MPaG (33.4~230.6 psiG)
Compression Ratio	1.8~8.0		
Abnormal Rise in pressure	5.9 MPaG [855.7 psiG] or less		
Temperature			
Condensing	Under 65°C (Under 149°F)		
Evaporating	-45°C~10°C (-34.6°F~50°F)	-37°C~10°C (-34.6°F~50°F)	-27°C~26°C (-16.6°F~78.8°F)
Discharged Gas (max)	120°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)		120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)		
Discharged gas 's superheat	10°C or more		
Outdoor Ambient Temp.	Under 43°C (109.4°F)		
Electrical			
Supply voltage (during operation)	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.		
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less		
Reverse phase (rotation)	Compressor is not design to run reverse phase		
Frequency range	See in Specification of Compressor		
ON/OFF			
ON/OFF Frequency	Less than 250,000 cycles		
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)		
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)		
Refrigerant Circuit			
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)		
Piping vibration	Maximum 0.8 mm.		
Inclination of compressor	Within 5°		
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created		
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)		
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)		

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

Operation standard and limits of R-448A/R-449A Scroll for Refrigeration Application

Models	AGB for Low Temp.	AGB for Medium Temp.
Compressor		
Type	Scroll Type (DC Inverter)	
Displacement (cc/rev.)	33~87 (33/42/52/66/78/87)	33~87 (33/42/52/66/78/87)
Refrigerant type	R-448A/R-449A	
Pressure		
Maximum Condensing	3.01 MPaG/65°C (436.7 psiG/149°F)	3.01 MPaG/65°C (436.7 psiG/149°F)
Evaporating	0.04~0.76 MPaG (5.8~110.2 psiG)	0.09~0.76 MPaG (13.1~110.2 psiG)
Compression Ratio	-	
Abnormal Rise in pressure	5.9 MPaG [855.7 psiG] or less	
Temperature		
Condensing	Under 68°C (Under 154.4°F)	
Evaporating	-45°C~10°C (-49°F~50°F)	-25°C~18°C (-13°F~64.4°F)
Discharged Gas (max)	110°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)	110°C (230°F) please see speed limit allowable area at Envelop (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)	
Discharged gas 's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4°F)	
Electrical		
Supply voltage (during operation)	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.	
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less	
Reverse phase (rotation)	Compressor is not design to run reverse phase	
Frequency range	See in Specification of Compressor	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)	
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	

Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

Operation standard and limits of R-404A Inverter Scroll for Refrigeration Application

Models	ADB for Low Temp.	ADB for Medium Temp.
Compressor		
Type	Scroll Type (DC Inverter)	
Displacement (cc/rev.)	33~87 (33/42/52/66/78/87)	33~87 (33/42/52/66/78/87)
Refrigerant type	R-404A	
Pressure		
Maximum Condensing	3.31 MPaG/68°C (480.1 psiG/154.4°F)	
Evaporating	0.05~0.93 MPaG (4.4~134.9 psiG)	0.15~0.93 MPaG (21.8~134.9 psiG)
Compression Ratio	-	-
Abnormal Rise in pressure	5.9 MPaG (855.7 psiG) or less	
Temperature		
Condensing	Under 68°C (Under 154.4°F)	
Evaporating	-37°C~18°C (-34.6°F~50°F)	-25°C ~ 18°C (-13°F~64.4°F)
Discharged Gas (max)	120°C (248°F) Please see speed limit and injection pressure allowable area at Envelop (See Note 1)	120°C (248°F) please see speed limit allowable area at Envelop (See Note 1)
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)	
Discharged gas 's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4 °F)	
Electrical		
Supply voltage (during operation)	The compressor must be operated on the proper voltage in accordance with the designated voltage frequency curve.	
Starting voltage	The compressor motor must be operated by suitable supply voltage and revolution for unit condition without reverse rotation. The balanced high/low pressure at start-up must be 2.49 MPa (43°C) or less	
Reverse phase (rotation)	Compressor is not design to run reverse phase	
Frequency range	See in Specification of Compressor	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)	
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	

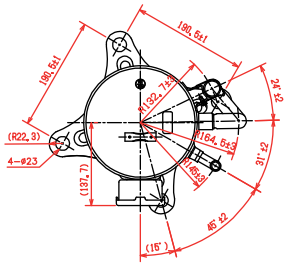
Note :
1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

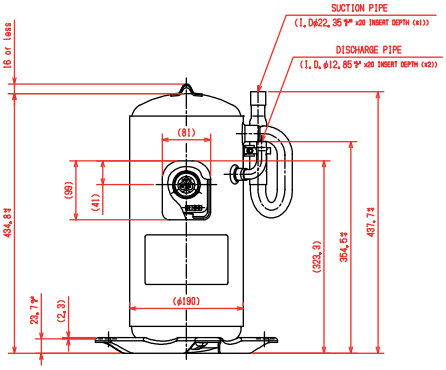
Operation standard and limits of R-404A
Fixed Speed Scroll for Refrigeration Application

Models	AD for Low Temp. & Medium Temp.	ADZ for Low Temp. & Medium Temp.
Compressor		
Type	Scroll Type (Fixed Speed)	Horizontal Scroll Type (Fixed Speed)
Displacement (cc/rev.)	30~66 (30/33/42/52/66)	30~52 (30/33/42/52)
Refrigerant type	R-404A	R-404A
Pressure		
Maximum Condensing	3.10 MPaG/65°C (449.6 psiG/149°F)	3.10 MPaG/65°C (449.6 psiG/149°F)
Evaporating	0.05~0.98 MPaG (4.4~142.1 psiG)	0.05~0.98 MPaG (4.4~142.1 psiG)
Compression Ratio	-	-
Abnormal Rise in pressure	4.7 MPaG (681.7 psiG) or less	4.7 MPaG (681.7 psiG) or less
Temperature		
Condensing	Under 65°C (Under 149°F)	Under 65°C (Under 149°F)
Evaporating	-37°C~10°C (-34.6°F~50°F)	-37°C~10°C (-34.6°F~50°F)
Discharged Gas (max)	120°C (248°F) (See Note 1)	
Suction Gas (max)	Must be more than 0°C (No liquid back) (See Note 1)	
Discharged gas 's superheat	10°C or more	
Outdoor Ambient Temp.	Under 43°C (109.4°F)	
Electrical		
Supply voltage (during operation)	The compressor must be operated on the rated voltage ±10%. Provided the rated voltage 208-230 V, The regulation must be within -5% for 208V, +10% for 230 V. The operating voltage shall be the terminal voltage of the compressor durring operation.	
Starting voltage	Minimum 80% of rated voltage at balance pressure (at 43°C) In case of 208-230 V Rated Voltage (N-code compressor), the starting voltage shall be 85% or more of 208 V The starting voltage shall be the terminal voltage of the compressor when the voltage drops due to starting current.	
Reverse phase (rotation)	Compressor is not design to run reverse phase	
Frequency range	See in Specification of Compressor	
ON/OFF		
ON/OFF Frequency	Less than 250,000 cycles	
ON/OFF Cycle	1. The ON/OFF cycle shall be a maximum of 10 time/hour. 2. OFF time shall be the time until the high side and low side pressure reach to balance pressure (more than 3 minutes)	
Pipe Stress	3.5 Kg/mm^2 or less at start and stop condition (1.8 kg/mm^2 during operation)	
Refrigerant Circuit		
Maximum Refrigerant Charge	A Series : 6.0 kg, no accumulator < 2.0 kg, (See detail in Compressor Technical Manual)	
Piping vibration	Maximum 0.8 mm.	
Inclination of compressor	Within 5°	
Evacuation level	Degree of vaccum equivalent to about 133 Pa (abs) (1.0 mmHg) shall be created	
Piping length between indoor and outdoor units	Max. 50 m. (164 ft.) (See note 2)	
Elevation between indoor and outdoor units	Max. 30 m. (98 ft.) (See note 2)	

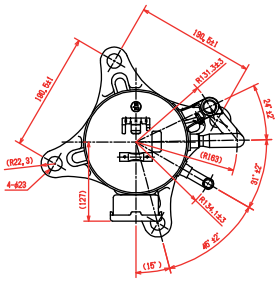
Note : 1. The temperature must be lower than this critical value even the unit has been using for many years.
2. It is recommended that evaluation of oil return to the compressor has to be done.
3. Specifications subject to change without notice.

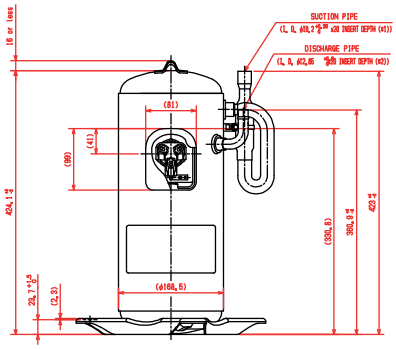
Drawing Number 01



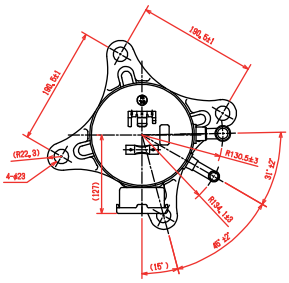


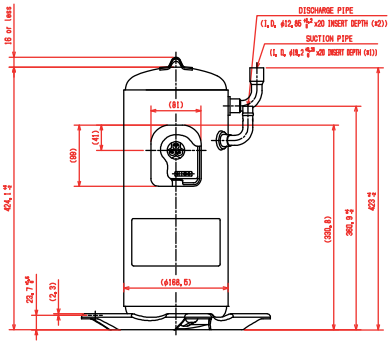
Drawing Number 02



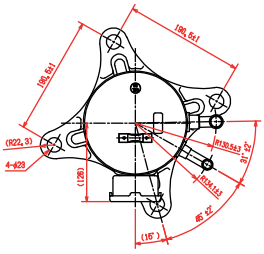


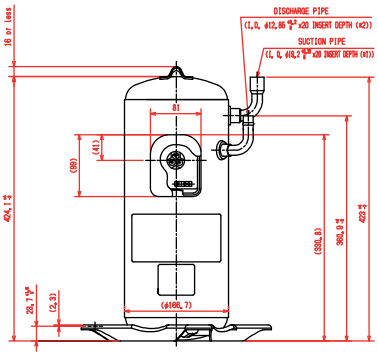
Drawing Number 03



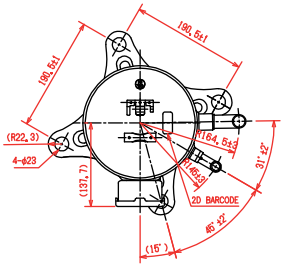


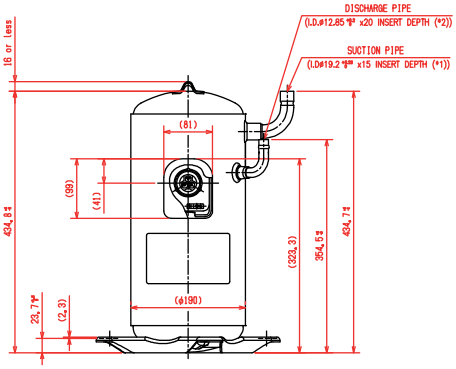
Drawing Number 04



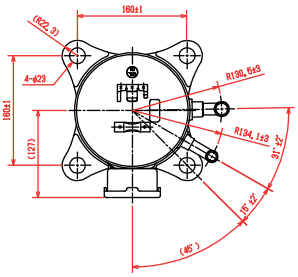


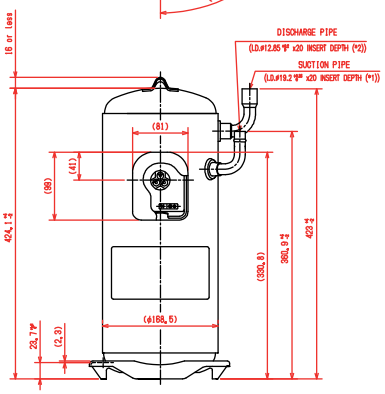
Drawing Number 05



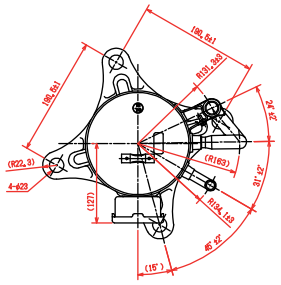


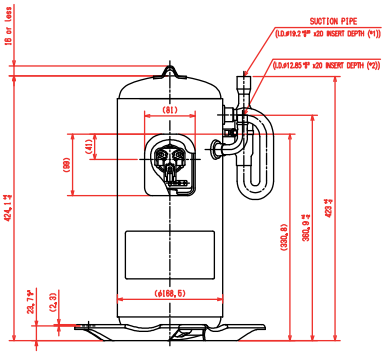
Drawing Number 06



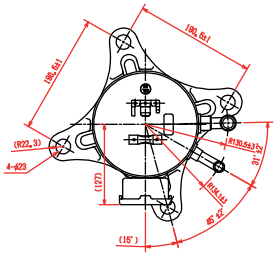


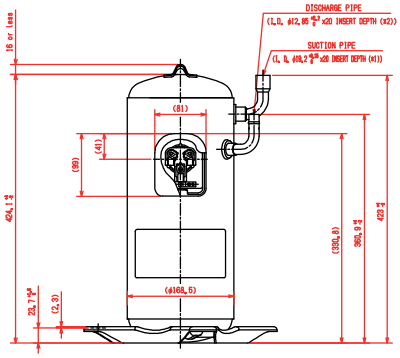
Drawing Number 07



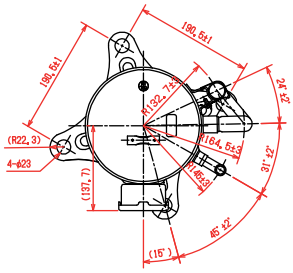


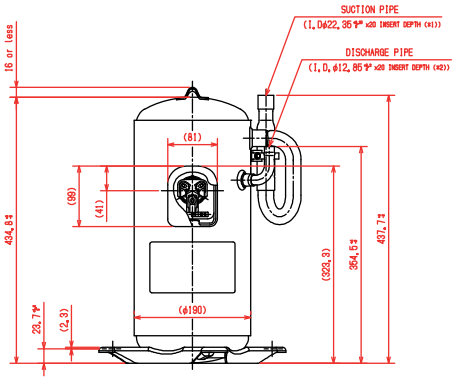
Drawing Number 08



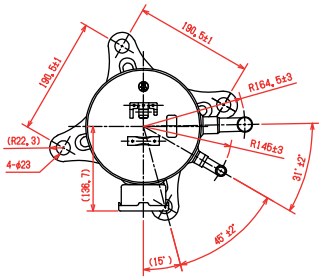


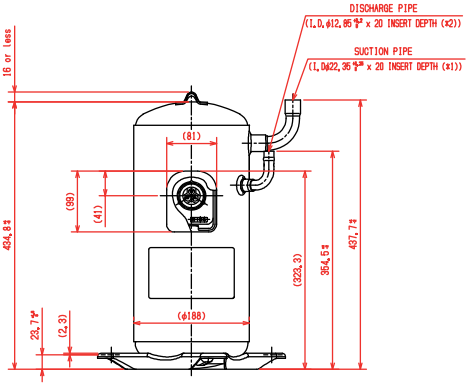
Drawing Number 09



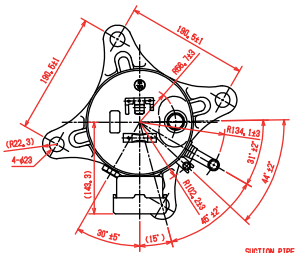


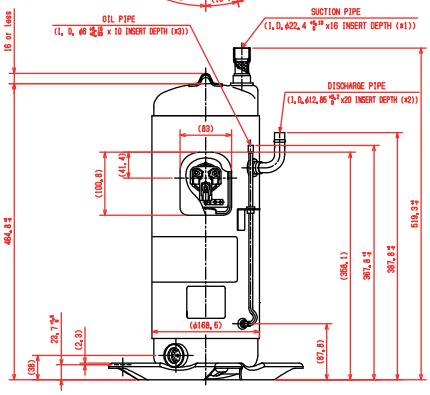
Drawing Number 10



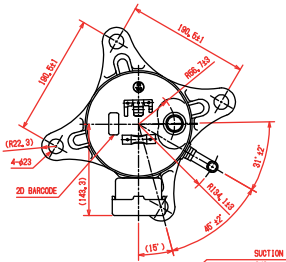


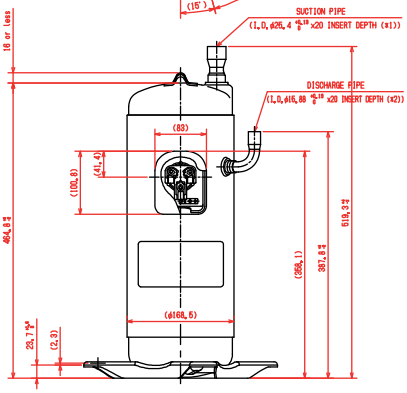
Drawing Number 11



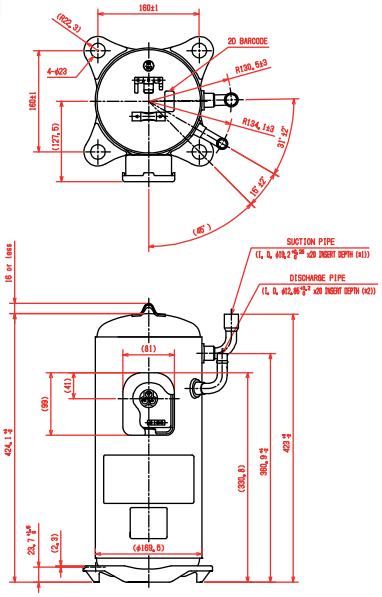


Drawing Number 12

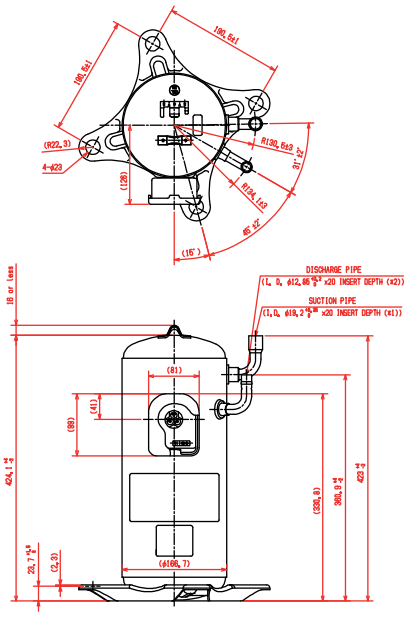




Drawing Number 13

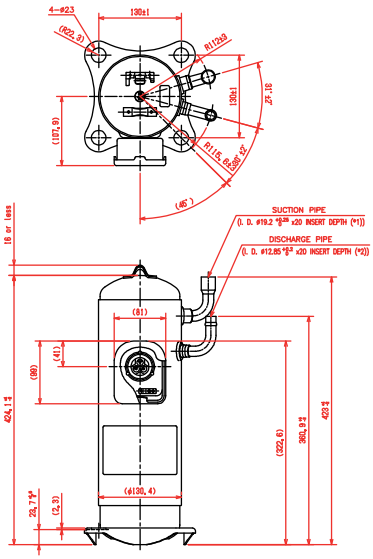


Drawing Number 14



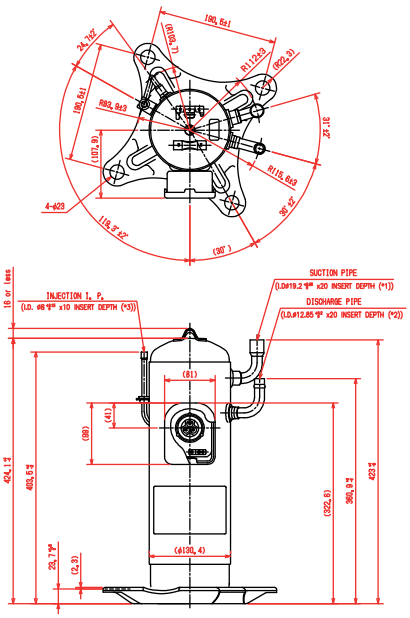
Drawing Number 15

Compact



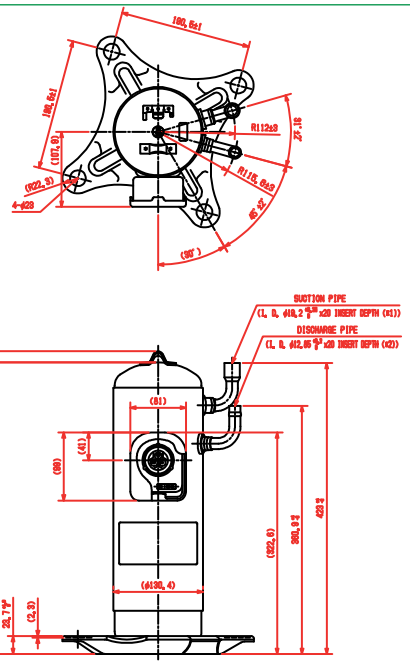
Drawing Number 16

Compact/Injection



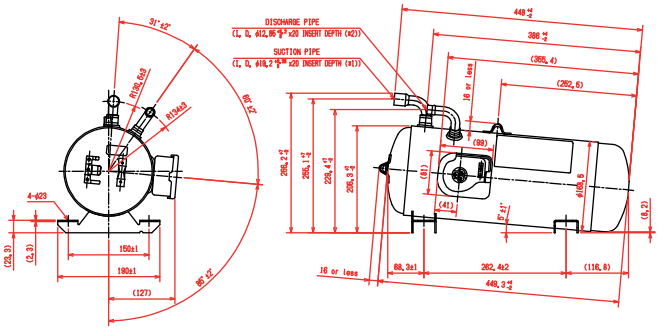
Drawing Number 17

Compact



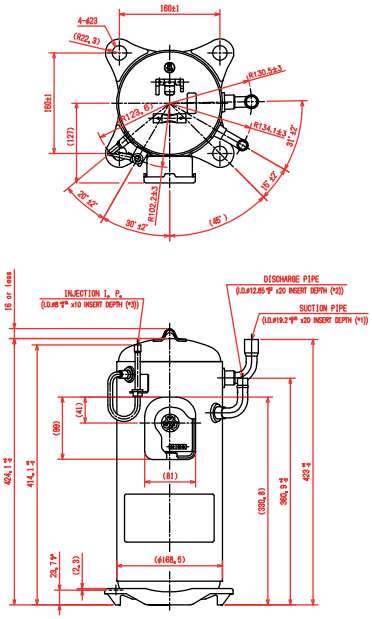
Drawing Number 18

Horizontal



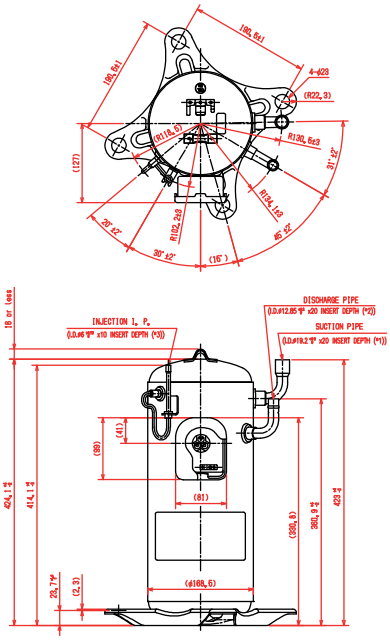
Drawing Number 19

Injection



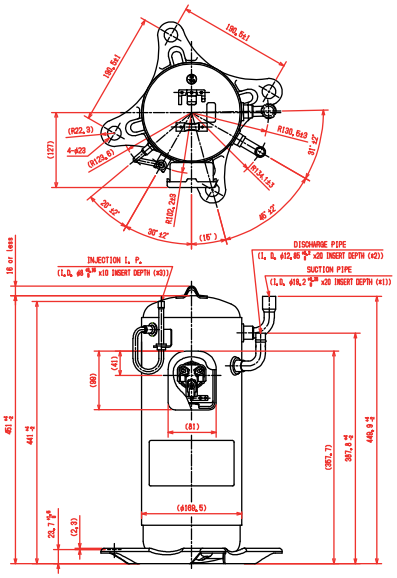
Drawing Number 20

Injection



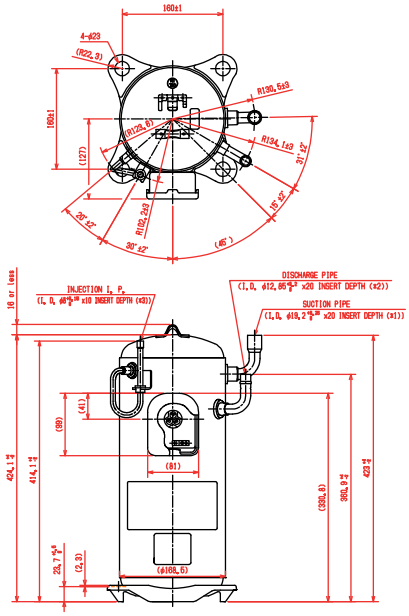
Drawing Number 21

Injection



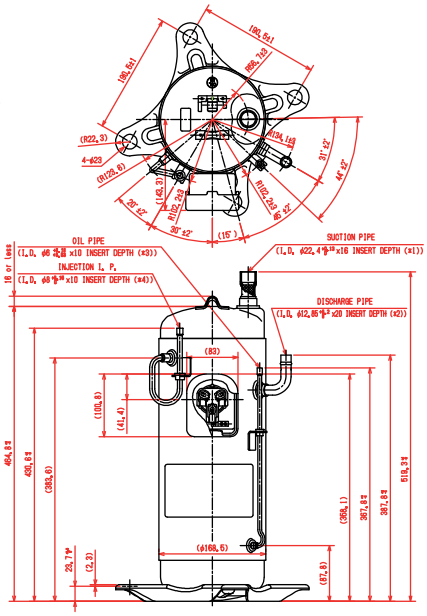
Drawing Number 22

Injection



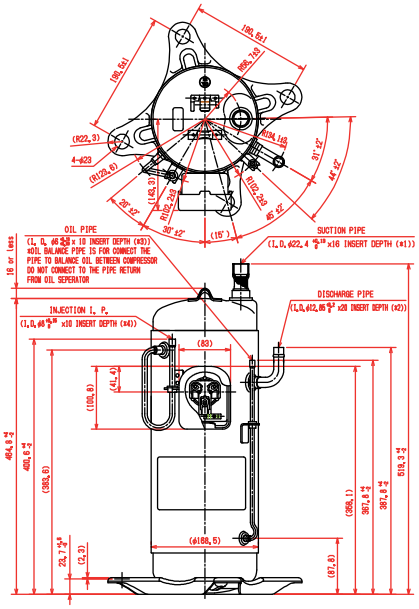
Drawing Number 23

Oil balance/ Injection



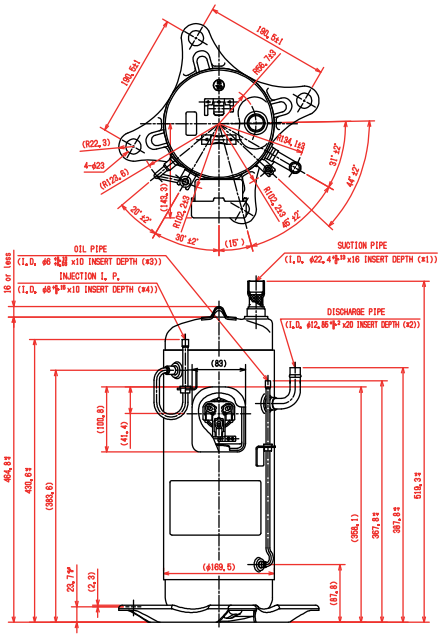
Drawing Number 24

Oil balance/ Injection



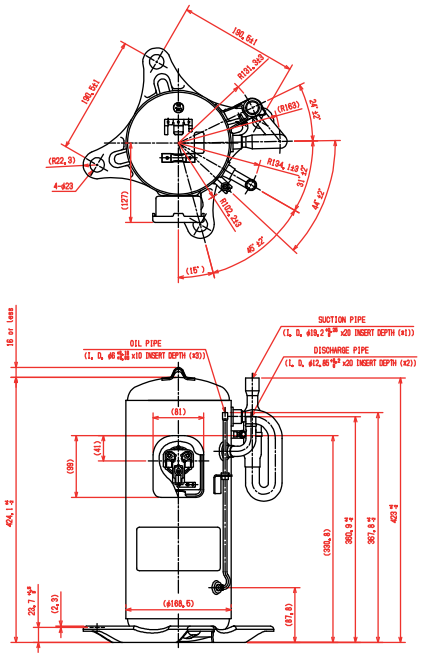
Drawing Number 25

Oil balance



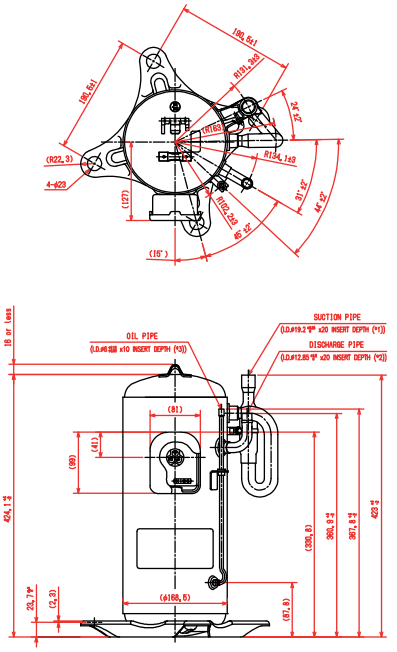
Drawing Number 26

Oil balance



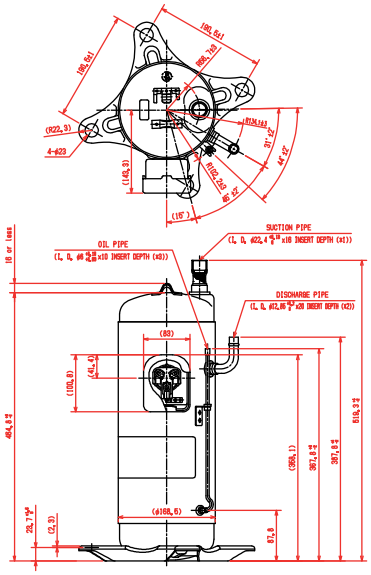
Drawing Number 27

Oil balance



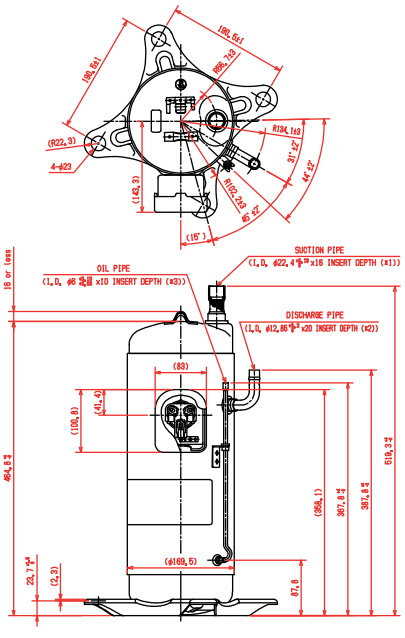
Drawing Number 28

Oil balance



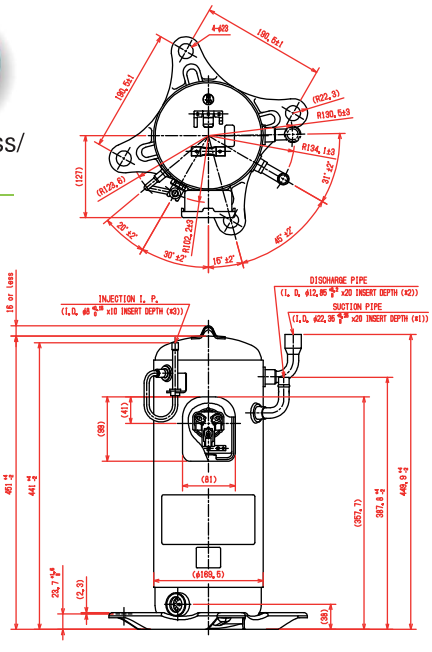
Drawing Number 29

Oil balance



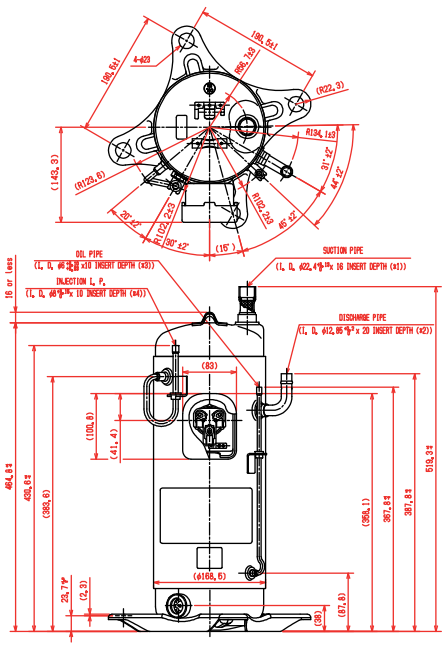
Drawing Number 30

Sight Glass/ injection



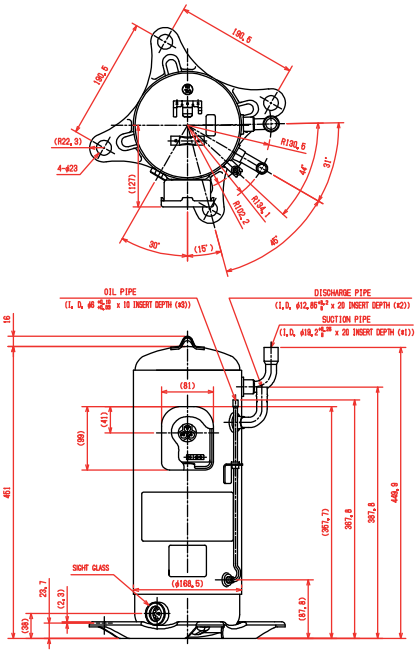
Drawing Number 31

Sight Glass/ Oil balance/ Injection



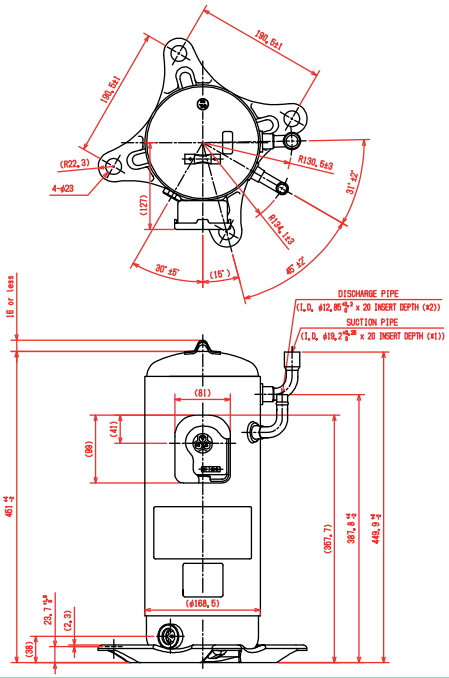
Drawing Number 32

Sight Glass/ Oil balance



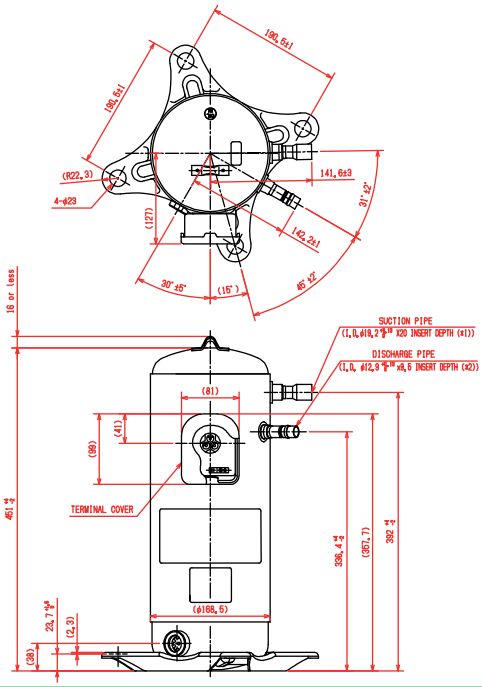
Drawing Number 33

Sight Glass



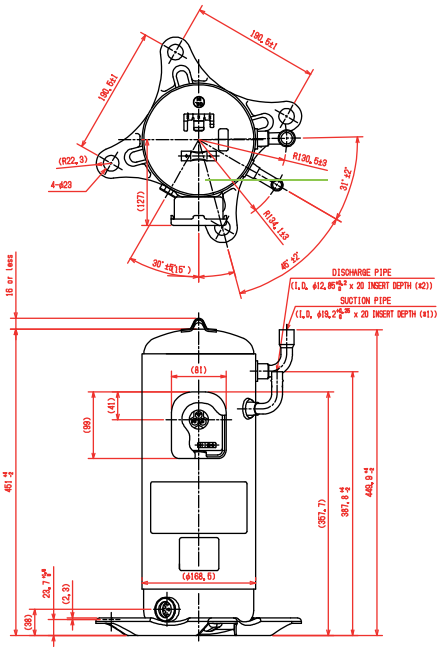
Drawing Number 34

Sight Glass



Drawing Number 35

Sight Glass



SIAM COMPRESSOR INDUSTRY CO., LTD.

Siam Compressor Industry Co., Ltd.

Head Office & Factory :
Laem Chabang Industrial Estate 87/10 Moo 2,
Sukhumvit Road, Sriracha, Chonburi 20230, Thailand
Tel. +66 (0) 38 490 900 to 912
Fax. +66 (0) 38 490 917

Website : www.siamcompressor.com

"Specifications subject to change without notice"

Printing Date : August 2019