



Individual Model
Specifications
Reciprocating Compressor

【 Model No. CB150H 】

訂符 MARK	訂番 REV.NO.	年月日 DATE	点検 CHKD

APPROVED

CHECKED & DRAWN

DATE
Apr. 2006

————— MITSUBISHI HEAVY INDUSTRIES, LTD. —————

SPEC. NO. ESP-PA-6215	REV. 	PAGE 1/5	DISTR. XX	SIZE A4=1-5
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1. Scope

This INDIVIDUAL MODEL SPECIFICATIONS applies to model **CB150H**
(3-Ph, 346-415V~ 50Hz, 380-440V~ 60Hz) of M.H.I. Hermetic reciprocating Compressors.
The general matter and the application standards of all reciprocating compressors comply
with the CB series application standard. (ESP-PA-6215 5/5)

2. Range of Production

The products are as shown below.

(1) Compressor

Part Name	No. Req	Part No.	Drw. No.
Compressor	1	AAD201A014HJ	AAD000Z082B

(2) Electrical Parts

Part Name	No. Req	Part No.	Drw. No.	Application
Over Current Relay	1	SSA522B043C	ASA000Z167	346-415V~ 50Hz
Over Current Relay	1	SSA522B043D	ASA000Z146	380-440V~ 60Hz
Crank Case Heater	1	ASA541B019A	ASA000Z277	Optional Part

(3) Accessory Parts

Part Name	No. Req	Part No.	Drw. No.
Terminal Cover	1	AAD947K004	AAD000Z045
Screw (Terminal Cover)	1	H051D05X008	AAC000Z046A
Rubber Cushion	4	SSA941C103A	ASA000Z149
Edging	1	SSA947H010	AAC000Z042
Terminal Brock	1	ASA561B002	ASA000Z063
Screw (Terminal Brock)	3	SSA912A001	AAA000Z359

(4) Wiring Diagram and Performance Curve

Part Name	Drw. No.
Wiring Diagram	AAD000Z085
Performance Curve of Compressor	AAD000Z181

(5) Comp. Mounting Detail

Part Name	No. Req	Part No.	Drw. No.
Comp. Mounting Detail	—	—	AAD000Z075



3. Individual Specifications 【 Model No.CB150H 】

(1) Compressor Data

No. of Cylinder	4	Cylinder Diameter	55 mm
Stroke	30.14 mm	Displacement	286.4 cm ³
Refrigerant	R 407C	Refrigerant Charge	4 kg(max)
Oil	DIAMOND FREEZE MA32R	Oil Charge	4400 cm ³
Weight (incl. oil)	75.4 kg	Compressor Cooling	Natural Air Draft

(2) Rated Performance*1

Power Source	3-Ph 415V 50Hz	3-Ph 440V 60Hz
Capacity (±8%)	43950 W	52440 W
Motor Input (±8%)	14540 W	18490 W
Rated Load Amperes (±10%)	22.9 A	26.6 A
C.O.P (±8%)	3.03	2.84

*1 Rated Conditions:ASHRAE-T

Evaporating temp.	7.2°C
Condensing temp.	54.4°C
Suction gas temp.	35.0°C
Liquid temp.	46.1°C
Ambient temp.	35.0°C

(3) Motor Data

Motor Type	3-Ph, 2-Pole, Induction Motor
Starting Method	IR
Rated Power Supply	3-Ph, 346-415V~ 50Hz, 380-440V~ 60Hz
Rated Output	10.8 kW
Insulation Class Rating	Class-E
Resistance of Winding [at.20°C]	0.779 Ω
Starting Current [415V 50Hz/440V 60Hz]	183 / 174 A



(4) Over Current Relay Data

[Region of 50Hz]

Trip Current	42.5 A
Non Trip Current	37.4 A

[Region of 60Hz]

Trip Current	54.4 A
Non Trip Current	47.9 A

(5) Crank Case Heater Data

Rated Power Supply	440 V AC
Rated Output	70 W



CB Series Application Standard

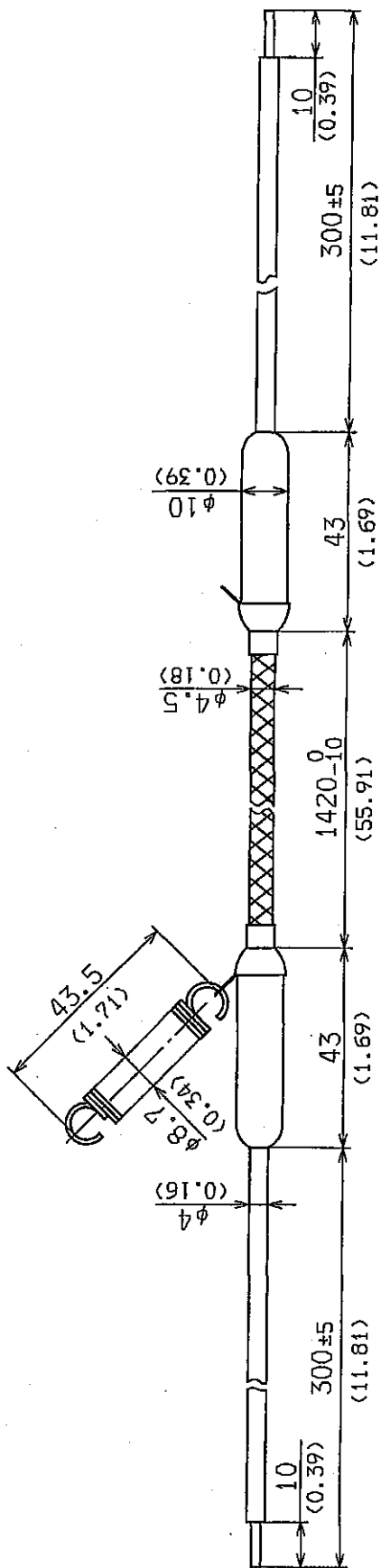
When using the compressor, the following standards should be followed.

	Item	Limits
1	Refrigerant	R407C
2	Evaporating temp.	-30°C~12°C(0.07~0.65MPa).
3	Condensing temp.	30°C~68°C(1.17~3.03MPa).
4	Compression ratio	8 max.
5	Motor winding temp.	105°C max. in resistance method. (It becomes less than 105°C by internal thermostat.)
6	Shell bottom temp.	90°C max. Saturated temp. of evaporating pressure plus 20degC min.
7	Discharge gas temp.	140°C max.
8	Voltage (running)	Within $\pm 10\%$ of the rating at compressor terminal.
9	Start up voltage	Starting voltage shall be more than 85% of rated voltage measured at compressor terminal.
10	On-Off cycle	12 minutes min./cycle. Off time should be more than 3 minutes. Start-up should be at balanced pressure on high-low pres. sides, but 0.79MPa max. high-low pressure difference is allowed.
11	Refrigerant charge limitation	4kg max. In this case have no use crankcase heater and accumulator. When charging above this limit, crankcase heater and accumulator must be used. The accumulator volume should be equal to the unit charging volume.
12	On-Off frequency	Less than 100,000 times.
13	Oil hold limit	940 cm ³ (Lower limit at running condition)
14	Electrical components ambient temp.	55°C max.
15	Tilt angle of comp.	5 degrees max. in any direction.
16	Moisture content	Moisture content of the compressor is controlled at 300mg max. when shipped from the factory. However, Moisture content circuit shall be 80ppm max. at 60°C ambient temperature.
17	Contaminants content	Contaminants content of the compressor is kept under 50mg when shipped from the factory. Contaminants content (metal particles, lint, sand, flux, etc.) should not exceed 0.2g/m ² in the refrigerant system.
18	Non-condensable gas content	The non-condensables that are extracted from the gas phase of the low pressure side should be held to the ratio 1% or less in terms of volume. To achieve such a state the vacuuming of ref. circuit should be done to about 26.7Pa(0.2 mm Hg).

General Cautions

- (1) Do not keep the compressor open for more than fifteen minutes.
- (2) Do not use the compressor for the vacuum evacuation of the refrigerant circuit.
- (3) Do not allow compressor to suck in and compress air.
- (4) Do not apply current to the compressor in a vacuum condition.
- (5) Do not tilt or drop compressor during transportation.
- (6) Do not damage the compressor paint coating.

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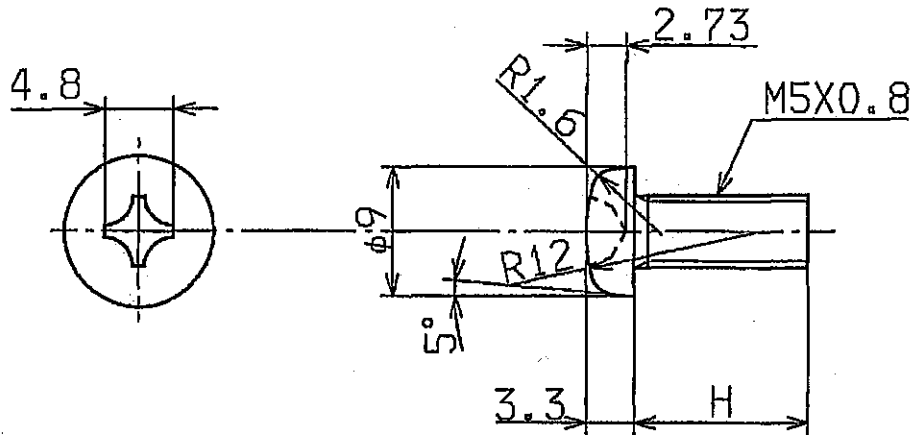


MANUFACTURER : KURABE INDUSTRIES CO., LTD.
 RATED VOLTAGE : 440V AC
 CAPACITY : 70W
 PART NO. : ASAS41B019A

DIMENSION : mm(in)

FORM SCALE	形式 MODEL	1:1 AS	FORM NEXT ASSY	
NAME	名称	Heater (Crank Case)	CAD	
REV. NO.	REV. NO.	08.10.30	DATE	87.227
CHKD	検査	S. Yoshida	CHKD	
DRANK	製図	M. Harose	DRANK	
APPD	承認	T. Itoh	APPD	
PART NO.		ZASAA000Z277		
SUFFIX		A11XX		
REV. MARK		E A3		

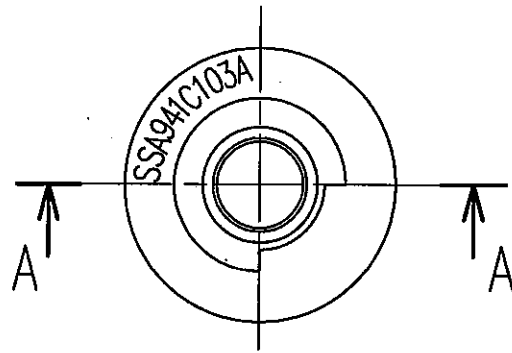
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 MITSUBISHI HEAVY INDUSTRIES, LTD.



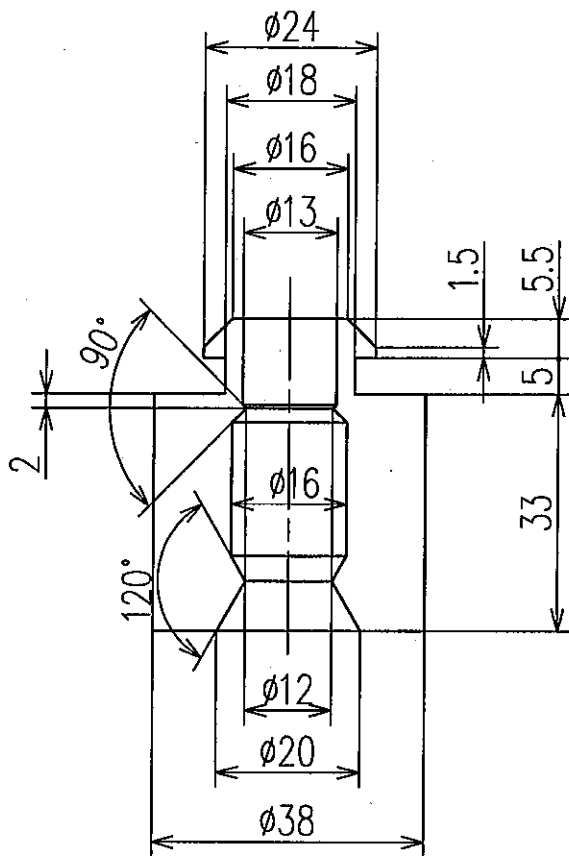
図番 DWG. NO.	H	材料 MATERIAL	部品番号 PART NO.
AAC000Z046	12	SWRM10~15 又は (OR)	H051D05X012
	A 8	SS41, S10C~S20C	H051D05X008
	B 8	C3604BD 又は (OR) G2700V-1/2H	H051E05X008
	C 20	SWRM10~15 又は (OR) SS41, S10C~S20C	H051D05X020

業別毎サイズ

A		AAC1007		98.10.30		点検		尺度 SCALE		形式 MODEL		親部番 NEXT ASSY		特別配布先	
訂待 MARK		訂 番 REV. NO.		年 月 日 DATE		点 検 CHKD		2=1		CA				1 S, S, 1	
認可 APPD		検図 CHKD		製図 DRAWN		名称 NAME		ターミナル スクリュー		CAD				2 A, G, 1	
森		西本 広		吉田		図種 図番 DWG NO.		Z AAC000Z046		品別 SUFFIX		訂入符 REV. MARK		3	
岡田 せ		570629				図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		4	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		5	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		6	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		7	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		8	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		9	
						図種 図番 DWG NO.		Z AAC000Z046		業別 PAGE		1/1		E A4	



A-A



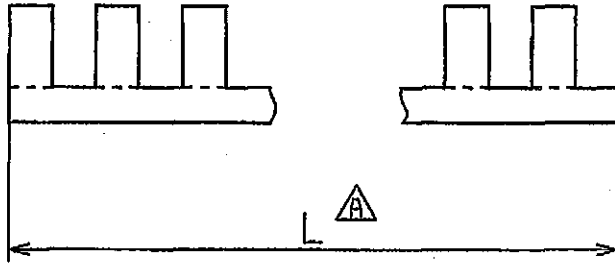
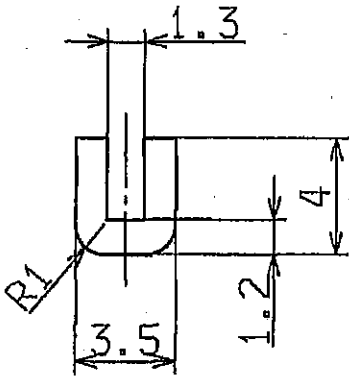
部品番号 PART NO.	SSA941C103A
材料 MATERIAL	クロロプレンゴム (RBC5105B14C12G21) △ CHLOROPRENE RUBBER

寸法
DIMENSION : mm

葉別毎サイズ

B ASA1245 0512.27 町田		尺度 SCALE 形式 MODEL X CB		親部番 NEXT ASSY		特別配布先	
A ASA1244 0512.13 町田		名称 NAME ラバークッション CUSHION, RUBBER		AUT		1 SS,1 △ 2 SN,1 △	
訂符 MARK	訂番 REV. NO.	年月日 DATE	点検 CHKD	品別 SUFFIX		訂符 REV. MARK	葉別 標準配布 ST. DISTR.
T.ITOH	M.Hirose H.Honda	製図 DRAWN S.Yoshida 85.6.4	図種 番 DWG NO. ZASA000Z149	1/B		1/1	XX
三菱重工業株式会社 冷熱事業本部 MITSUBISHI HEAVY INDUSTRIES, LTD.				12		翻 E	A4

△C



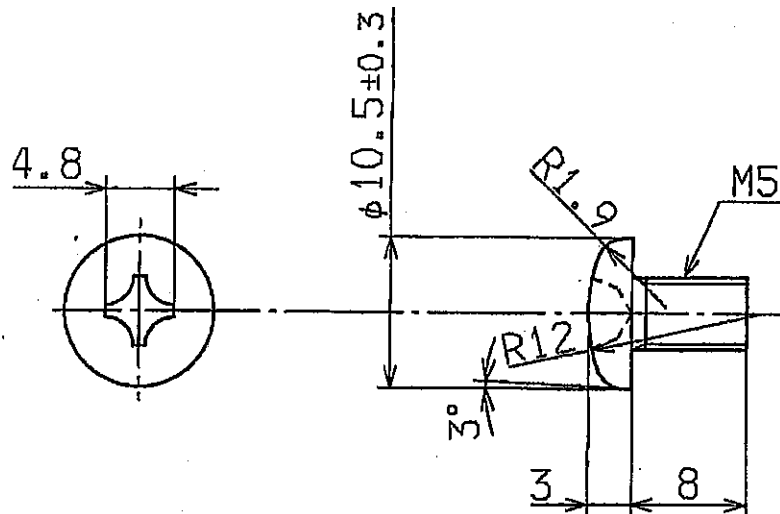
△A	図番 DWG. NO.	L	部品番号 PART NO.	材料 MATERIAL
	AAC000Z042	99	SSA947H010	6-ナイロン (6-NYLON)
	↓ A	139	↓ D	
△A	↓ B	105	↓ J	

業別毎サイズ

△C	AAC1007	98.10.30	◎本橋	尺度SCALE	形式MODEL	親部番 NEXT ASSY	特別配布先
△B	品別追加の巻	930629	西浦	4:1	CA		1 S.S.I
△A	品別追加の巻	590625	いとお				2 A.G.I
訂符 MARK	訂 番 REV. NO.	年 月 日 DATE	点 検 CHKD	名 称 NAME	エッジング EDGING		3
認可 APPD	換図 CHKD	製図 DRAWN	◎	図 番 DWG NO.	ZAAC000Z042	品 別 SUFFIX	4
森	西 本 岡 田	◎ 広瀬	570731	訂 入 符 REV. MARK	~ B/C	業 別 PAGE	5
				機 準 記 布 ST. DISTR.	1/1	1/1	6
						13	7
							8
							9

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MITSUBISHI HEAVY INDUSTRIES, LTD.

13 翻 訳 E A4



材料 : C2700W-1/2H
MATERIAL

部品番号 : SSA912A001
PART NO.

葉別歯サイズ

A		AAA1033		98.10.30	森	名称 ターミナル スクリュー SCREW, TERMINAL		CAD		特別配布先		
訂符 MARK	訂 番 REV. NO.	年 月 日 DATE	点 検 CHKD	製 図 DRAWN	製 図 DRAWN	図 号 DWG NO.	品 別 SUFFIX	訂 入 符 REV. MARK	葉 別 PAGE	標 準 配 布 ST. DISTR.		
認 可 APPD	森	本	広	吉 田	570628	ZAAA000Z359 ~	/A	1/1	XX			
三菱重工業株式会社 エアコン製作所 MITSUBISHI HEAVY INDUSTRIES, LTD.										15	E	A4

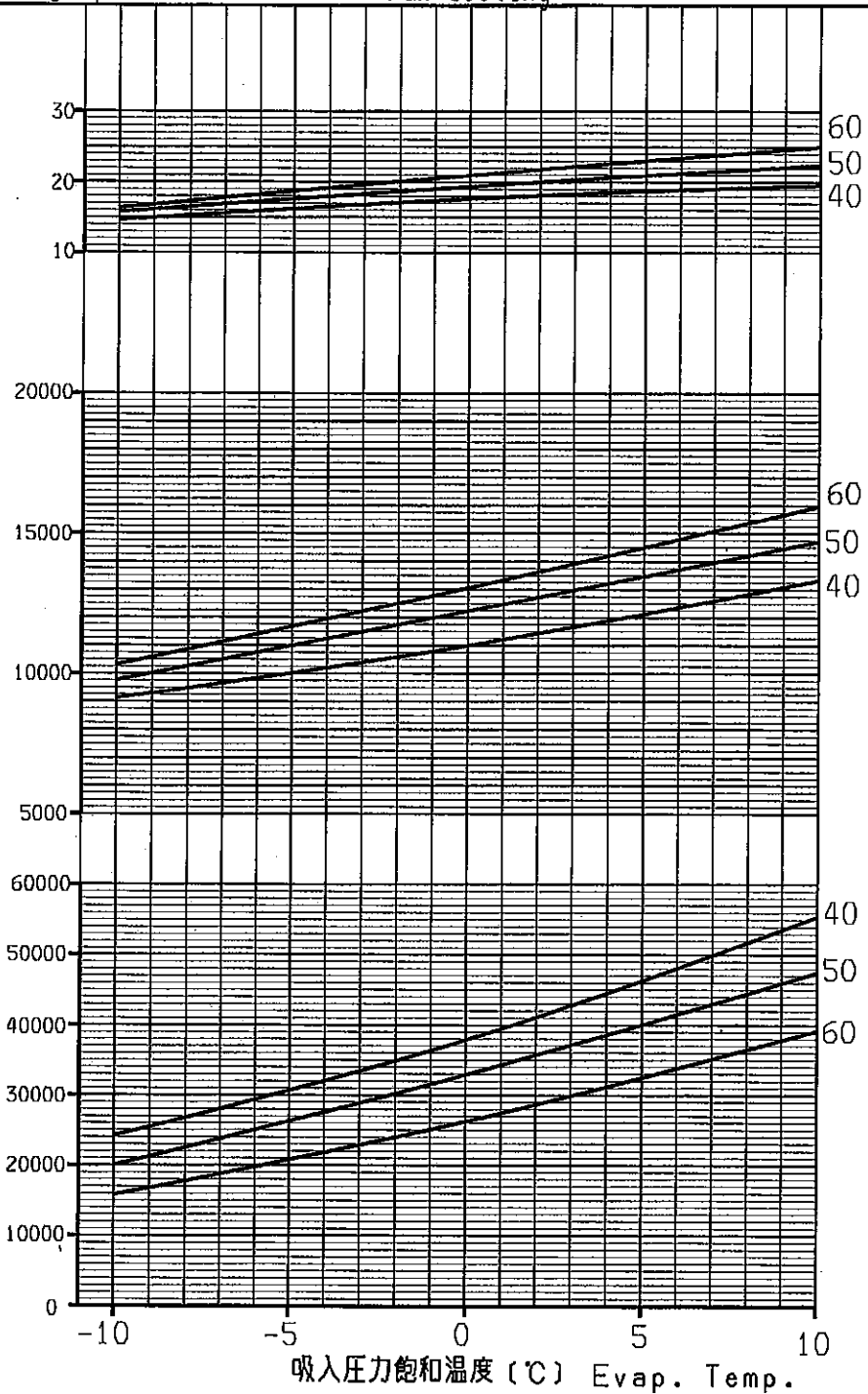
圧縮機形式
 Compressor Model No.
 定格電源
 Power Source
 過熱度
 Super Heat
 圧縮機冷却
 Compressor Cooling

CB150H
 R407C
 3Ph, 415V, 50Hz
 過冷却
 Sub Cooling
 周囲温度
 Ambient Temp.
 0 degC
 10 degC
 35 °C
 ファン通風
 Fan Cooling

電流 (A)
Current

入力 (W)
Input

冷凍能力 (W)
Capacity



吐出圧力飽和温度 (°C)
Condensing Temp.

MER03
HIRO
葉別毎サイズ
A4=1.2

訂符 MARK		訂番 REV. NO.	年月日 DATE	点検 CHKD	名称 NAME	尺度 SCALE	形式 MODEL	親部番 NEXT ASSY	特別配布先
					パフオーマンスカーブ	X	CB150H		1 S, S, 1
認可 APPD		検図 CHKD	製図 DRAWN	図種	CURVE, PERFORMANCE	CAD		葉別 標準配布	2 S, N, 1
影山		影山	広瀬	02.9.2	ZAAD000Z181	品別 訂入符		6	3
						SUFFIX REV. MARK		7	4
						PAGE ST. DISTR.		8	5
						1/2 XX		9	6

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 MITSUBISHI HEAVY INDUSTRIES, LTD.

17 訳 E A4

壓縮機形式
 Compressor Model No.

CB150H

R407C

定格電源
 Power Source

3Ph, 440V, 60Hz

過冷却
 Sub Cooling

0 degC

過熱度
 Super Heat

10 degC

周囲温度
 Ambient Temp.

35 °C

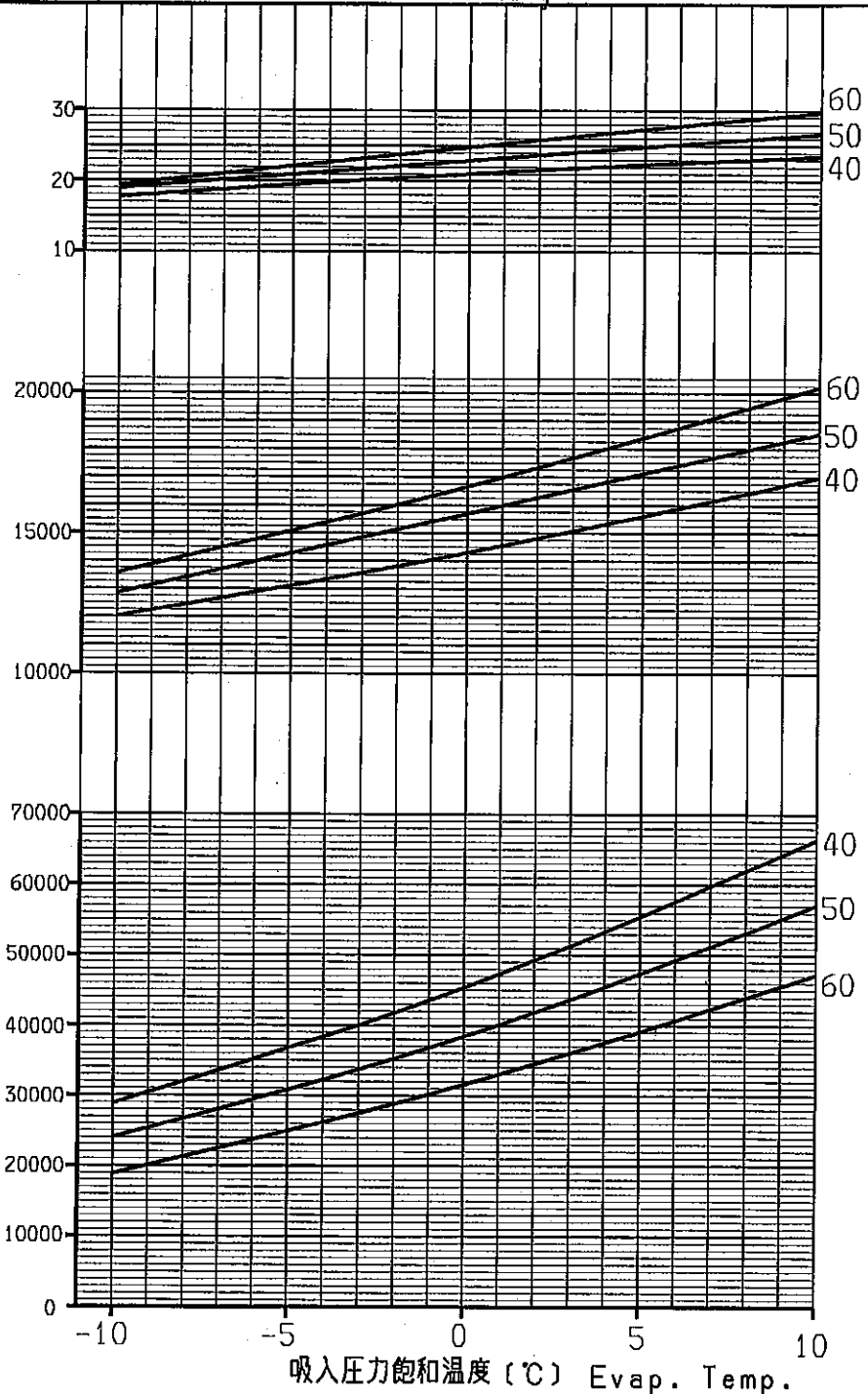
壓縮機冷却
 Compressor Cooling

ファン通風
 Fan Cooling

電流 (A)
 Current

入力 (W)
 Input

冷凍能力 (W)
 Capacity

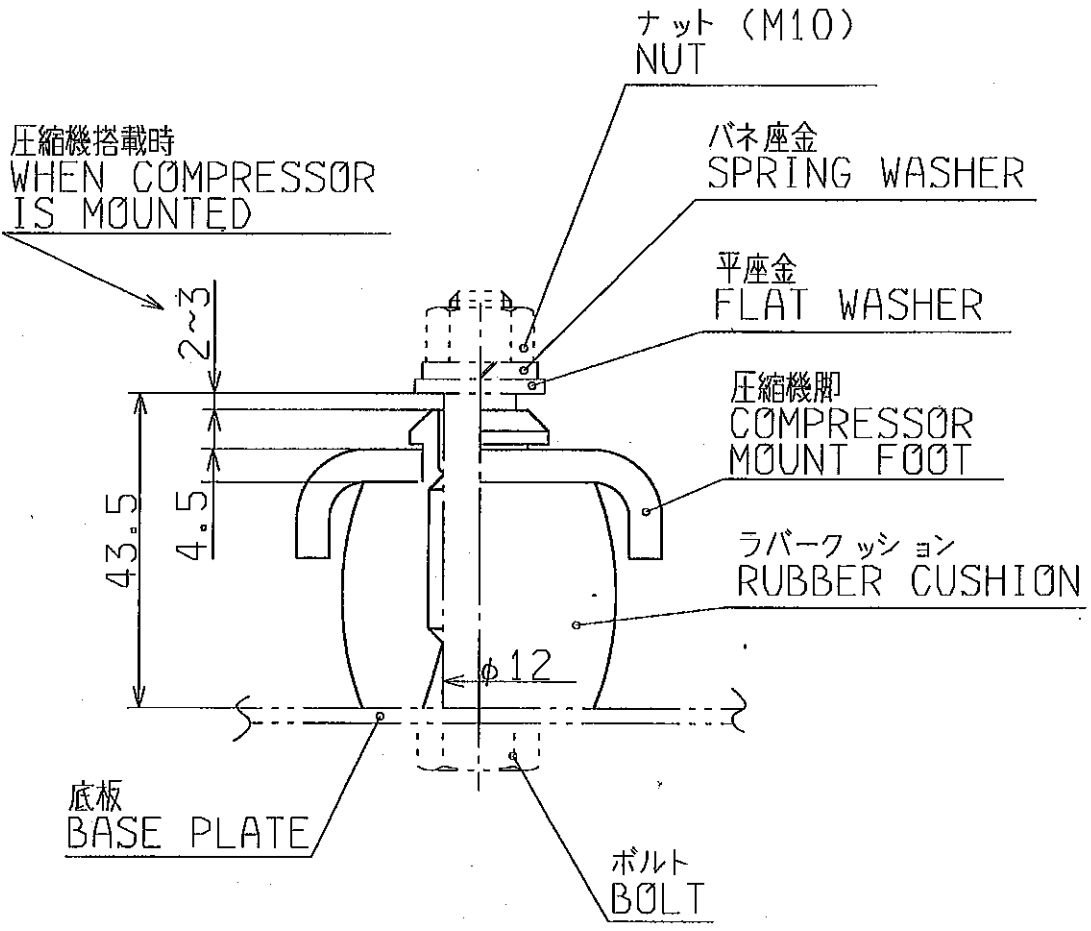


吐出圧力飽和温度 (°C)
 Condensing Temp.

吸入圧力飽和温度 (°C) Evap. Temp.

訂符 MARK		訂番 REV. NO.		年月日 DATE		点検 CHKD		名称 NAME		CAD		特別配布先	
認可 APPD		検図 CHKD		製図 DRAWN		図種 図番 DWG NO.		品別 SUFFIX		訂入符 REV. MARK		葉別標準配布 PAGE ST. DISTR.	
						ZAAD000Z181 ~				2/2		18	

A



			尺度 SCALE	形式 MODEL	親部番 NEXT ASSY	特別配布先
			X	CB		1 S, N, 1
A	AAD1463	021118	影山	名称	コンプ マウンティング デテール	CAD
訂符 MARK	訂番 REV. NO.	年月日 DATE	点検 CHKD	名称	MOUNTING DETAIL, COMP	2 S, S, 1
認可 APPD	検図 CHKD	製図 DRAWN	図種	図番 DWG NO.	品別 SUFFIX	3
伊藤	本田	吉田			訂入符 REV. MARK	4
					業別 PAGE	5
					標準配布 ST. DISTR.	6
						7
						8
						9
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						A4