Industry & Facilities Division
Procurement Services
Inspection Report

INSPECTION REPORT N° 12355-01
☒ Initial ☐ Interim ☒ Final ☐ Resident ☐ Remote
Inspection requested by: Delta GmbH
BV Job Nr: 20412767

Project: Refrigeration Compressor 2 Sets 160S Model	**IPO Ref** (*If applicable*)**:** **20392985-1002** *(BV internal P/o)*
BV Client: Delta GmbH	**P/o nr:** *(client to BV)*
Manufacturer/Vendor: MAYEKAWA Europe	**P/o nr:** DELTA-PE-2023-PO-200-1 *(client to Manufacturer)*
Sub-Vendor *(If applicable)***: -**	
Inspection Location (Address): Mayekawa Europe BV, Belgium	**Previous Inspection** *(If applicable)***:** NONE
Inspection Location (GPS coordinates):	**Next Inspection** *(If applicable)***:** NONE *(Date)*
Inspection performed on: Oct. 02, 2024 *(Date(s))*	**Total No. of Inspection Days: 1**

MATERIAL / SUBJECT OF INSPECTION ☐ **Refer to attachment section J instead** *(Indicate if separate material list is provided in attachment)*	**ITEM / TAG Nr**	**QTY** As per P/O	**QTY** Offered for inspection
Screw Compressor Visual Inspection	**RU-0001 A/B**	**2**	**2**

A – INSPECTION RESULT

☒ **Satisfactory** **(Without comments)**	☐ **Satisfactory with comments** **(Any of trailing Punch or Non Conformity items is still open)**	☐ **Not Satisfactory** **(NCR raised during the inspection)**

Inspection Summary: (for details refer to section E)

I visited MAYEKAWA on Oct. 02, 2024 to witness Compressor Visual Inspection Model 160S two sets for Screw compressor.
The result was Satisfactory without comment.

Open Non Conformities:	☐ Yes, details in section G	☒ No
Open Punch List Items:	☐ Yes, details in section H	☒ No
Release Note Issued:	☐ Yes, number(s): *(Release Note number)*	☒ No

BV Inspector: Atsuo IMAI *(Name and Signature)*	**BV Coordinator:** Chika KIOI *(Name and Signature)*
BV Office: Yokohama Japan	**Inspection Report Date: Nov. 03, 2023**
Distribution: ☒ **CLIENT** ☒ **BV** ☐ **OTHER :**	**Attachments Report:** ☒ Yes, details in section J ☐ No

B - REFERENCE DOCUMENTATION:

☐ **Refer to attachment section J instead**
(Indicate if separate document list is provided in attachment)

Title	Reference n°	Rev.	Approval status	Approved by	Date
INSPECTION AND TEST PLAN FOR COMPRESSOR	2513293	0	Approved	Delta GmbH	-
Screw Compressor Standard Inspection Procedures Performance Test, Mechanical Running Test, Noise and Vibration Test	SCSD-010-13	13	Approved	Delta GmbH	2023/01/17

C – ATTENDEES

Name	Position	Representing
Mr. TETSUO KAZASA	General Manager	MAYEKAWA
Mr. Toshiyuki Sakaguchi	QA Gr.	MAYEKAWA
Ms. Tomoko Kanazawa	QA Gr.	MAYEKAWA
Mr. Frank IMAI	On Behalf of Delta GmbH (BV Inspector)	BV Belgium

D - MEASURING & TESTING EQUIPMENT USED

☒ **Refer to attachment section J instead**
(Indicate if separate equipment list is provided in attachment)

Equipment Type	Equipment Identity n°	Last Calibration Date	Expiry Date
-			

E - INSPECTION DETAILS

E – General

The following Test was carried out accordance with “Reference documents” above-mentioned.
The result was Satisfactory without comment.

E1 – Details of Witness (W) & Hold (H) Inspection Points

1. Witness of Compressor Skids 160S used for Propane Refrigeration Package Air Cooled Unit with Compressor Serial Numbers 1656466 and 1656467. The Inspection was including Compressor Block, Oil Pump, and other parts assembled on Compressor skid and inspection included of Visual and Scope Check of both skids on behalf of DELTA GmbH.

E2 – Details of Monitoring and Surveillance Patrols

☐ **Tick if conducted during the visit**

NONE

E3 – Details of Certificates Review

☐ **Tick if conducted during the visit**

NONE

F – HEALTH, SAFETY & ENVIRONMENT COMMENTS

(Comment on Observations and Actions Taken During the Inspection)

No health and safety concerns or violations were observed before or during conducting the inspection activity.

G- NON CONFORMITIES

☐ **Refer to attachment section J instead**
(Indicate if separate punch list is provided in attachment)

Item	Description	Status	Raised on	Report #	Closed on	Report #	Comments
	NONE						

H – PUNCH LIST

☐ **Refer to attachment section J instead**
(Indicate if separate punch list is provided in attachment)

Item	Description	Status	Raised on	Report #	Closed on	Report #	Comments
	NONE						

I - DIGITAL PICTURES

Description: Compressor Skid A
(Model No. P160S / Sr. No. 1656466)

Description: Compressor Skid A
(Model No. P160S / Sr. No. 1656466)

Description: Compressor Skid A
(Model No. P160S / Sr. No. 1656466)

Description: Compressor Skid A
(Model No. P160S / Sr. No. 1656466)

I - DIGITAL PICTURES

Description: Compressor Skid B
(Model No. P160S / Sr. No. 1656467)

Description: Compressor Skid B
(Model No. P160S / Sr. No. 1656467)

Description: Compressor Skid B
(Model No. P160S / Sr. No. 1656467)

Description: Compressor Skid B
(Model No. P160S / Sr. No. 1656467)

J – ATTACHMENTS			
Item	**Attachment Name**	**Total Pages**	**Description**
	Inspection & Test Record	44	(Mechanical running test and Performance inspection)
	Compressor Package DSH	7	EI027-HSE-VD – ME– DSH– 001
	Compressor Package DWG	3	EI027-HSE-VD – ME– DWG– 002

END OF REPORT

MYCOM

INSPECTION & TEST RECORD

Item No.	: -
Order No.	: ME24-11MMEPO240063
Report No.	: 2024323A
Type of Compressor	: Screw Compressor
Name of Manufacturer	: MAYEKAWA MFG. CO., LTD.
Model	: P160VSD-M
Serial No.	: 1656466

(Remarks)
This inspection and test record is complete together with the following test records attached herewith :

1 .Material Identification List

2 .Hydrostatic and Gas Leak Tests Report

3 .Screw Compressor Test Results

4 .Outer Dimensions Report

5 .Rotor Balancing Test Report

Date of Issue : July 3, 2024

Approved by : A. Fujiwara

Checked by : K. Watanabe

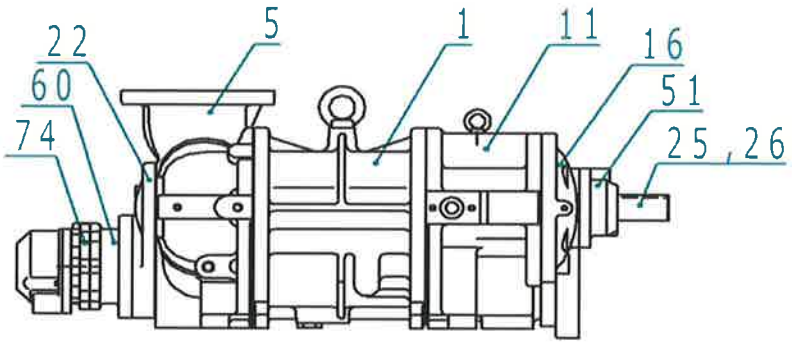
MYCOM

Material identification list

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Model	: P160VSD-M
Serial No.	: 1656466
Date	: July 3, 2024

SURVEYOR



Parts No.	Name of Part	Material	Identification No.	Page	Remarks
1	Main Rotor Casing	FC300	S23Z13	P 1	
5	Suction Cover	FC300	K3Z15	P 2	
11	Bearing Head	FC300	K3Z13	P 3	
16	Bearing Cover	FC300	K4213	P 4	
22	Balance Piston Cover	FC300	C23X15	P 5	
51	Seal Cover	FC300	1Y30	P 6	
60	Unloader Cylinder	FC300	3419	P 7	
74	Unloader Cover	FC300	3Y16	P 8	
25	Male Rotor	FCD600	C24305	P 9	
26	Female Rotor	FCD600	C24228	P 10	

Approved by : A. Kiyama

Checked by : K. Watanabe

材 料 試 験 証 明 書
MATERIAL TEST CERTIFICATE

(株)前川製作所 MAYEKAWA MFG. CO. LTD 様 (EN10204 3,1)

発行日 2024年7月1日 No855
Date of Issue : 1-Jul-2024

オーダー Order		品 名 Product	ローター-ケーシング Rotor Casing	材 質 Material	FC−300	個数 Quantity	1
注文番号 Order No.			160VS	鋳込年月日 Cast Date	2023年 12 月 13 日		

機械試験	試験項目 Test Items / 規格 Spec JIS Z 2241 JIS Z 2243 / 試験片番号 溶解番号 Specimen No. Charge No.	引張試験 Tensile Test				カタサ試験 Hardness	抗折試験 Transverse Test		+ 試験結果 Decision
		試験片寸法 Size of Specimen		引張荷重 Bresking Load	引張強サ Tensile Strength	ブリネル Brinell	荷 重 Load	タワミ Deflect	
		直径 Dia	断面積 Area						
		mm	mm²	N	N／mm²	HB	N	mm	
					MIN.	MAX.			
		20	314		300	262			
	S23Z13	20	314		312	218	11400	8.4	良

化学分析	項目・規格 Items. Spec. / 溶解番号 Charge No.	化学成分 Chemical Composition (%)									
		C	Si	Mn	P	S	Cu	Sn			
	S23Z13	3.25	2.1	0.40	0.03	0.02	0.5	0.05			

材料規格 Standard of Material	JIS G 5501-1995
備 考 Remarks	

Reviewed by : K. Watanabe
MAYEKAWA. MFG. CO.,LTD

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

承認 Approval	作成者 Implementer
盛多 MORITA	高山 TAKAYAMA

三共鋳鉄株式会社
〒726-0013 広島県府中市高木町213-1
SANKYO CAST STEEL .CO.,LTD
213-1 TAKAGI-CHO FUCHU-SHI HIROSIMA
726-0013 JAPAN

材料試験証明書　Material Test Certificate

EN10204　3.1

1071

発行日　令和 6 年 4 月 19 日
DATE of Issue 19 － APR － 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,　Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.，LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００	試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　ＮＯ．８Ｃ	Brinell hardness test	ＪＩＳ　Ｚ　２２４３
				Temsile test	ＪＩＳ　Ｚ　２２４１

規　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ｻｸｼｮﾝｶﾊﾞｰ SUCTION COVER	160V	K3Z15	2023/12/22	20.0	98,213	312.8	217	3.15	1.60	0.809	0.024	0.058	0.016
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ BEARING HEAD	160VD	K3Y29	2023/12/6	20.0	103,934	331.0	223	3.07	1.45	0.845	0.022	0.053	0.043
ﾍﾞｱﾘﾝｸﾞｶﾊﾞｰ BEARING COVER	160VD	K4209	2024/2/16	20.0	97,937	311.9	207	3.28	1.85	0.648	0.022	0.063	0.014

Reviewed by: K. Watanabe
MAYEKAWA. MFG, CO.,LTD

備考　Remarks

品質責任者

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

Checked by　S.Hayashi 林　Tested by　M. Omote 表

材料試験証明書　Material Test Certificate

EN10204　3.1

1079

発行日　令和 6 年 6 月 10 日
DATE of Issue 10 － JUN － 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.，LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００	試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　NO. ８C	Brinell hardness test	ＪＩＳ　Ｚ　２２４３
				Temsile test	ＪＩＳ　Ｚ　２２４１

規　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ﾛｰﾀｰｹｰｼﾝｸﾞ(2) ROTOR CASING(2)	1612C	K1414	2021/4/21	20.0	96,115	306.1	217	3.18	1.65	0.616	0.024	0.071	0.029
ｻｸｼｮﾝｶﾊﾞｰ(1) SUCTION COVER(1)	1612C	K4205	2024/2/12	20.0	97,591	310.8	212	3.24	1.79	0.630	0.021	0.065	0.034
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ(1) BEARING HEAD(1)	1612C	K4131	2024/2/7	20.0	96,995	308.9	212	3.21	1.71	0.641	0.021	0.075	0.035
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ(2) BEARING HEAD(2)	1612C	K4226	2024/3/6	20.0	98,533	313.8	212	3.24	1.72	0.638	0.022	0.063	0.034
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ BEARING HEAD	160VD	K3Z13	2023/12/20	20.0	101,419	323.0	223	3.12	1.46	0.860	0.021	0.069	0.037

備考　Remarks

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

品質責任者

Checked by S.Hayashi 林　Tested by M. Omote 表

Reviewed by : K. Tsutsumi
MAYEKAWA. MFG, CO.,LTD

材料試験証明書　Material Test Certificate

EN10204　3.1

1082

発行日　令和 6 年 6 月 27 日
DATE of Issue 27 — JUN — 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.,LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００			試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　ＮＯ．８Ｃ			Brinell hardness test	ＪＩＳ　Ｚ　２２４３					
								Temsile test	ＪＩＳ　Ｚ　２２４１					
規　　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ﾍﾞｱﾘﾝｸﾞｶﾊﾞｰ BEARING COVER	160VD	K4213	2024/2/20	20.0	96,524	307.4	201	3.28	2.17	0.616	0.019	0.072	0.014
ﾛｰﾀｰｹｰｼﾝｸﾞ ROTOR CASING	320VL	K4208	2024/2/15	20.0	95,299	303.5	212	3.25	1.69	0.638	0.023	0.063	0.035
										Reviewed by : K. Watanabe			
										MAYEKAWA. MFG. CO.,LTD			

備考　Remarks

品質責任者

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We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

Checked by　S.Hayashi 林　Tested by　M. Omote 表

材 料 試 験 証 明 書 Material Test Certificate

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門
TO Messrs： MAYEKAWA MFG. CO., LTD. MORIYA PLANT

発行日： 2024年4月26日
Date of Issue： 26-Apr-24

㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

溶解日(Charge Date) 2023/10/11
管理番号(Control-Number)

Name of Articles 製品名		Product Type 機種		Grey iron castings JIS G 5501(1995)	Material	FC300	Test piece	JIS Z 2241(2011) No.8C Φ20mm			Quality Responsibility Person		Checked by	K.Tsuruta
BALANCE PISTON COVER バランスピストンカバー		160S/L		ねずみ鋳鉄品	材質		試験片				品質責任者		Tested by	Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. チャージ No./ テストピース No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 直径 Diameter	Maximum Load 引張荷重 N	Tensile Strength 引張強さ	Hardness Test Hardness 硬度	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%]	Si[%]	Mn[%]	P[%]	S[%]	Sn[%]	–	Form Number 枠番号
			20.0mm	-	≧300[N/mm2]	≦262[HB]	-	-	-	-	-	-	–	
C23 X13	TP-1	2023/10/16	19.9	105841	339	229	2.947	1.517	0.672	0.018	0.013	0.023	–	3-5
C23 X14														
C23 X15														
C23 X16														
C23 X17														
C23 X18														

Remarks 備考
Material mill test report shall be in compliance with EN10204 3.1.

Reviewed by: K. Watanabe
MAYEKAWA MFG. CO., LTD.

材料試験証明書

Material Test Certificate

EN10204 3.1

番号 Number	顧客名 to Messrs	品番 Part Number	品名 Part Name	型式 Type
No.5851	㈱前川製作所　殿	161a0029	SEAL COVER	160S/L

	試験片の形状 Testpiece Size	材質 Material
	No.8C JIS Z2241	FC300 JIS G5501

試験項目 Kind of Test	引張試験 Tensile Test JIS Z 2241			硬さ試験 Hardness JIS Z 2243	
	引張強さ Tensile Strength N/mm^2	耐力 Yield Strength N/mm^2	伸び Elongation %	HB	
規格 / 記号 Mark	≧300			≦262	
1Y30	312	—	—	229	

化学分析試験 Chemical Analysis Test (%)

成分記号	C	Si	Mn	P	S	Cu	Cr		
1Y30	3.15	1.70	0.98	0.044	0.084	-	-		

顕微鏡写真 Micro-Photograph

倍率 Magnify	×100
腐食 Etching	4%ピクリン酸 4%Picric acid

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

備考 Remark

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We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

※試験日(Date of Test) : 2021/12/1

試験の結果は、上記の通りであります。
We certify that the result of the material test has been as described above.

㈱シグマ製作所花泉工場
HANAIZUMI FACTORY SIGUMA MFG.CO.,LTD

〒029-3207 岩手県一関市花泉町油島字南沢97-156
97-156 MINAMIZAWA YUSIMA HANAIZUMI ICHINOSEKI
IWATE 029-3207

TEL:0191(82)5481　FAX:0191(82)5496

承認	作成
大庭	加藤

発行日 : 2022年4月19日
Date of Issue : 19-Apr-22

2024年1月23日

Date of issue Jan. 23. 2024

材料試験証明書　Material Test Certificate

EN 10204　3.1

得意先名　　(株) 前川製作所　　様

To Messers　MAYEKAWA MFG CO., LTD.

新潟県長岡市宮下町436-1

株式会社　キャストアンドー

436-1 Miyashitamati Nagaoka-shi Niigata-ken Japan

CAST ANDOH CO.

材質 Material	1995年改正 JIS. G5501 FC300	試料の形状 Test Piese Size	2011年改正 JIS. Z2241 NO. 8C			試験日 Date of test	2023年5月17日
機名 Machine	160V	図番 DFT. No.		部品名 Name of parts	アンローダーシリンダー Unloader Cylinder		

規格 Standard / 試料記号 T. P. NO.	直径 Diameter mm	引張荷重 Maximum Lord N	引張強さ Tensile Stlength N/mm²	耐力 Yield Stlength N/mm²	伸び Elogation %	直径 Diameter mm	最大荷重 Maximum Lord N	たわみ Deflection mm	硬さ試験 Hardness 1998年改定 JIS. Z2243 硬度数 Brinell HB	化学成分 Chemical Composition TC %	Si %	Mn %	P %	S %	*
	20±0.7	———	≧300	———	———	———	———	———	≦262	———	———	———	———	———	*
3419	20.0	104900	334	———	———	———	———	———	224	3.28	1.69	0.85	0.052	0.054	*
				———	———	———	———	———							*
				———	———	———	———	———							*
				———	———	———	———	———							*

備考・Remarks　本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured and inspected and inspected satisfactory with requirement of the above specificasion

品質管理者

Checked by　　Tested by

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

SI単位換算値
Conversion of Unit
1kgf=9.80665N
1kgf/mm²=9.80665N/mm²
1kgf m=9.80665J

材料試験証明書

Material Test Certificate

EN10204 3.1

番号 Number	顧客名 to Messrs	品番 Part Number	品名 Part Name	型式 Type
No.6704	㈱前川製作所　殿	161a0032	UNLOADER COVER	160S/L

試験片の形状 Testpiece Size	材質 Material
No.8C JIS Z2241	FC300 JIS G5501

試験項目 Kind of Test	引張試験 Tensile Test JIS Z 2241			硬さ試験 Hardness JIS Z 2243	
	引張強さ Tensile Strength N/mm^2	耐力 Yield Strength N/mm^2	伸び Elongation %	HB	
規格 / 記号 Mark	≧300			≦262	
3Y16	333	—	—	259	

化学分析試験 Chemical Analysis Test (%)

成分記号	C	Si	Mn	P	S	Cu	Cr		
3Y16	3.11	1.68	1.28	0.050	0.091	–	–		

顕微鏡写真 Micro-Photograph

倍率 Magnify	×100
腐食 Etching	4%ピクリン酸 4%Picric acid

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

備考 Remark

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。

We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

※試験日(Date of Test) : 2023/11/17

試験の結果は、上記の通りであります。

We certify that the result of the material test has been as described above.

㈱シグマ製作所花泉工場

HANAIZUMI FACTORY SIGUMA MFG.CO.,LTD

〒029-3207 岩手県一関市花泉町油島字南沢97-156

97-156 MINAMIZAWA YUSIMA HANAIZUMI ICHINOSEKI IWATE 029-3207

TEL:0191(82)5481　FAX:0191(82)5496

発行日 : 2024年2月9日

Date of Issue 9-Feb-24

承認	作成
佐藤	加藤

材 料 試 験 証 明 書 Material Test Certificate

発行日： 2024年6月25日
Date of Issue： 25-Jun-24

㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門 殿
TO Messrs: MAYEKAWA MFG. CO., LTD. MORIYA PLANT

溶解日(Charge Date) 2024/3/19
管理番号(Control-Number)

Name of Articles 製品名		Product Type 機種	Spheroidal graphite iron castings JIS G 5502(2022)	Material	FCD600-3/S	Test piece	JIS Z 2241(2011) No.4 Φ14mm	Quality Responsibility Person	Checked by	K.Tsuruta
Male Rotor Mロータ		160S	球状黒鉛鋳鉄品	材質		試験片		品質責任者	Tested by	Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. チャージ No./テストピース No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 Tensile Strength 引張強さ	Yield stress 耐力	Elongation 伸び	Hardness test Hardness 硬度	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%]	Si[%]	Mn[%]	P[%]	S[%]	Mg[%]	Ratio Of Graphite Spheroidizing 黒鉛球状化率	Flask Number 枠番号
			≧600[N/mm2]	≧370[N/mm2]	≧3[%]	170～270[HB]	≧2.5	-	-	-	≦0.02	≦0.09	≧80[%]	
C24 305 C24 306 C24 307 C24 308	TP-1	2024/3/21	827	485	4.7	244	3.434	2.336	0.167	0.019	0.015	0.046	93.0	2-1

Heat Treatment 熱処理	Condition / Temp. 種類 / 温度	-	Remarks 備考
		-	Material mill test report shall be in compliance with EN10204 3.1.

Reviewed by: K. Watanabe
MAYEKAWA MFG. CO., LTD.

材 料 試 験 証 明 書 Material Test Certificate

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門　　殿
TO Messrs: MAYEKAWA MFG. CO., LTD. MORIYA PLANT

溶解日(Charge Date)　2024/2/19
管理番号(Control-Number)

発行日： 2024年5月27日
Date of Issue: 27-May-24
㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

Name of Articles 製品名	Product Type 機種	Spheroidal graphite iron castings JIS G 5502(2022)	Material	FCD600-3/S	Test piece	JIS Z 2241(2011) No.4 Φ14mm	Quality Responsibility Person	Checked by	K.Tsuruta
Female Rotor Fローター	160S	球状黒鉛鋳鉄品	材質		試験片		品質責任者	Tested by	Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. チャージ No./ テストピース No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 Tensile Strength 引張強さ ≧600[N/mm2]	Yield stress 耐力 ≧370[N/mm2]	Elongation 伸び ≧3[%]	Hardness test Hardness 硬度 170～270[HB]	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%] ≧2.5	Si[%] -	Mn[%] -	P[%] -	S[%] ≦0.02	Mg[%] ≦0.09	Ratio Of Graphite Spheroidizing 黒鉛球状化率 ≧80[%]	Flask Number 枠番号
C24 217 C24 218 C24 219 C24 220	TP-1	2024/2/21	798	465	6.4	226	3.437	2.279	0.187	0.018	0.007	0.036	91.3	1-2
C24 221 C24 222 C24 223 C24 224														1-4
C24 225 C24 226 C24 227 C24 228														1-6

Heat Treatment 熱処理	Condition / Temp. 種類 / 温度	-	Remarks 備考 Material mill test report shall be in compliance with EN10204 3.1.
		-	

Reviewed by: K. Watanabe
MAYEKAWA MFG. CO., LTD.

MYCOM

Hydrostatic & Gas Leak Tests Report

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Model	: P160VSD-M
Serial No.	: 1656466
Inspection items	: Internal test
Plant location	: MAYEKAWA MFG. CO.,LTD. MORIYA PLANT 2000, Tatsuzawa Moriya-city, Ibaraki-pref., 302-0118, Japan

SURVEYOR

* Test record ;

Item	Design pressure	Test pressure	Used fluid	Hold time	Tested date	Judgment
Hydrostatic test	25.0 [barG] 2.5 [MPaG]	37.5 [barG] 3.8 [MPaG]	Oil	30 [min]	June 20, 2024	Accepted
Gas leak test	25.0 [barG] 2.5 [MPaG]	25.0 [barG] 2.5 [MPaG]	Air	30 [min]	June 20, 2024	Accepted

* Used pressure gauges ;

Item	Dia × Max. Pres. [MPaG]	Manufacturer	Class(JIS)	Pressure gauge No.
Hydrostatic test	φ100 × 7.0	NAGANO KEIKI CO., LTD.	1.5	1 , 2
Gas leak test	φ100 × 5.0	NAGANO KEIKI CO., LTD.	1.5	1 , 2

* Pressure gauge information ;

Hydrostatic test	Pressure gauge No.	Registration No.	Terms of validity
	1	AA-70114	End of July,2024
	2	AA-70115	End of July,2024

Gas leak test	Pressure gauge No.	Registration No.	Terms of validity
	1	AA-50011	End of July,2024
	2	AA-50012	End of July,2024

Approved by : A. Kojima

Checked by : K. Watanabe

MYCOM

Performance inspection record table for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656466
Test fluid	: Air
Orifice No.	: 8
Time	: 9:40
Inspection items	: Internal test
Load capacity	: 100%

SURVEYOR

1. Revolution speed			2993	[min-1]
2. Running torque	Measured value		1.070	[V]
	Converted value		107.0	[Nm]
3. Room temperature			22	[°C]
4. Atmospheric pressure			1007	[hPa]
5. Discharge pressure			0.5	[MPaG]
6. Suction pressure	L	(7.00)	0.00	[kPa]
	R	(7.00)		
7. Pressure before orifice	L	(9.06)	4.04	[kPa]
	R	(5.02)		
8. Pressure difference at orifice	L	(9.74)	5.74	[kPa]
	R	(4.00)		
9. Oil pressure			0.7	[MPaG]
10. Suction temperature			21	[°C]
11. Temperature before orifice			20	[°C]
12. Oil temperature			32	[°C]
13. Discharge temperature			46	[°C]
Noise			80.3	[dB]
Background noise			66.0	[dB]

* Mechanical running test ;

Temp. of rotor casing	P 1	39	[°C]
Temp. of bearing head	P 2	40	[°C]
Temp. of shaft seal	P 3	31	[°C]

* Vibration
Displacement [0-P]

V	1	[μm]
H	2	[μm]
A	1	[μm]

Approved by : A. Kajiwara

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Performance inspection report for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656466
Test fluid	: Air
Orifice No.	: 8
Time	: 9:40
Inspection items	: Internal test
Load capacity	: 100%

SURVEYOR

* Performance test ;

		Standard	Actual measurement value		Judgment	Criteria
Volume flow rate of suction gas	[m3/h]	361.2	376.2	(104.2 %)	Accepted	95 % and more
Kilowatts	[kW]	34.3	33.5	(97.7 %)	Accepted	105 % or less

* Mechanical running test ;

			Allowable Maximum		Measured value	Judgment
Temp. of rotor casing	[°C] P 1	:	67	≧	39	Accepted
Temp. of bearing head	[°C] P 2	:	67	≧	40	Accepted
Temp. of shaft seal	[°C] P 3	:	52	≧	31	Accepted

* Vibration and Noise tests ;

Noise	[dB](A)	:	84.0	≧	80.3	Accepted

Vibration ;

(Frequency range : 10 - 1000Hz)(0-P)

Displacement [0-P]	[μm]	V	20	≧	1	Accepted
		H			2	Accepted
		A			1	Accepted

Approved by : A. Kagami

Checked by : K. Watanabe

MYCOM

Performance inspection record table for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656466
Test fluid	: Air
Orifice No.	: 8
Time	: 12:30
Inspection items	: Internal test
Load capacity	: 90%

SURVEYOR

Reference

1. Revolution speed			2998	[min-1]
2. Running torque	Measured value		0.900	[V]
	Converted value		90.0	[Nm]
3. Room temperature			22	[°C]
4. Atmospheric pressure			1007	[hPa]
5. Discharge pressure			0.5	[MPaG]
6. Suction pressure	L	(7.00)	0.00	[kPa]
	R	(7.00)		
7. Pressure before orifice	L	(8.26)	2.48	[kPa]
	R	(5.78)		
8. Pressure difference at orifice	L	(8.66)	3.50	[kPa]
	R	(5.16)		
9. Oil pressure			0.7	[MPaG]
10. Suction temperature			23	[°C]
11. Temperature before orifice			22	[°C]
12. Oil temperature			30	[°C]
13. Discharge temperature			44	[°C]
Noise			78.7	[dB]
Background noise			64.7	[dB]

* Mechanical running test ;

Temp. of rotor casing	P 1	38	[°C]
Temp. of bearing head	P 2	41	[°C]
Temp. of shaft seal	P 3	35	[°C]

* Vibration
Displacement [0-P]

V	1	[μm]
H	2	[μm]
A	1	[μm]

Approved by : A. Hagiwara

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Performance inspection report for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656466
Test fluid	: Air
Orifice No.	: 8
Time	: 12:30
Inspection items	: Internal test
Load capacity	: 90%

SURVEYOR

Reference

* Performance test ;

		Standard	Actual measurement value
Volume flow rate of suction gas	[m3/h]	361.8	294.5
Kilowatts	[kW]	34.3	28.2

* Mechanical running test ;

			Allowable Maximum		Measured value	Judgment
Temp. of rotor casing	[°C] P 1	:	65	≧	38	Accepted
Temp. of bearing head	[°C] P 2	:	65	≧	41	Accepted
Temp. of shaft seal	[°C] P 3	:	50	≧	35	Accepted

* Vibration and Noise tests ;

Noise	[dB](A)	:	84.0	≧	78.7	Accepted

Vibration ;
(Frequency range : 10 - 1000Hz)(0-P)

		V			1	Accepted
Displacement [0-P]	[μm]	H	20	≧	2	Accepted
		A			1	Accepted

Approved by : A. Koyama

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Compressor shop mechanical running test report

* General information ;

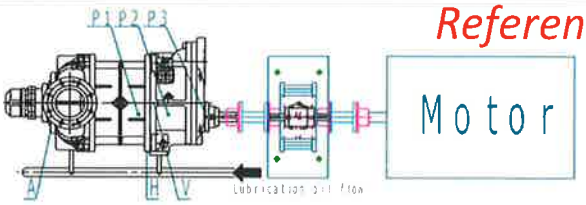
Item No.	:	-
Report No.	:	2024323A
Type of compressor	:	Screw compressor
Date of test	:	June 19, 2024
Model	:	P160VSD-M
Serial No.	:	1656466
Inspection items	:	Internal test

SURVEYOR

* Running test condition ;

Suction pressure	:	0.0 [kPa]
Discharge pressure	:	0.5 [MPaG]
Test fluid	:	Air
Revolution speed	:	max. 3000 [min-1]
Load capacity	:	90 [%]

Start-up time 10:00



Reference

Seal leakage 0.0 [cc] / 2.5 hrs

Item	Unit	Time									
		10:15	10:30	11:00	11:30	12:00	12:30				
Suction Press. Ps	[kPa]	0	0	0	0	0	0				
Suction Temp. Ts	[°C]	22	22	23	23	23	23				
Before orifice ΔH	L [kPa]	8.30	8.28	8.26	8.26	8.26	8.26				
	R [kPa]	5.74	5.76	5.78	5.78	5.78	5.78				
Temp. Before Orifice	[°C]	21	21	22	22	22	22				
Differential Pressue ΔH	L [kPa]	8.70	8.68	8.66	8.66	8.66	8.66				
	R [kPa]	5.10	5.14	5.16	5.16	5.16	5.16				
Discharge Press. Pd	[MPaG]	0.5	0.5	0.5	0.5	0.5	0.5				
Discharge Temp. Td	[°C]	40	43	44	44	44	44				
Oil Press. Poil	[MPaG]	0.7	0.7	0.7	0.7	0.7	0.7				
Oil Temp. Toil	[°C]	28	30	30	30	30	30				
Room Temp. Ta	[°C]	22	22	22	22	22	22				
Atmospheric Pressure	[hPa]	1007	1007	1007	1007	1007	1007				
Point 1	[°C]	34	37	38	38	38	38				
Point 2	[°C]	37	40	41	41	41	41				
Point 3	[°C]	29	33	34	35	35	35				
Displacement:Vertical	[μm]	1	1	1	1	1	1				
Displacement:Horizontal	[μm]	2	2	2	2	2	2				
Displacement:Axial	[μm]	1	1	1	1	1	1				
Noise	[dB](A)	79.0	78.8	79.2	78.5	78.6	78.7				
Rotation Speed	[min-1]	2999	3000	2997	2998	2996	2998				
Running Torque	[V]	0.920	0.910	0.900	0.900	0.900	0.900				
Oil Flow(Journal)	[l/min]	18.0	19.0	20.0	20.0	20.0	20.0				
Oil Flow(Injection)	[l/min]	20.0	21.0	22.0	22.0	22.0	22.0				
Oil Flow(F Side)	[l/min]	6.4	6.7	6.9	7.0	7.0	7.0				
Judgment		Accepted									

Approved by: A. Kagawa

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

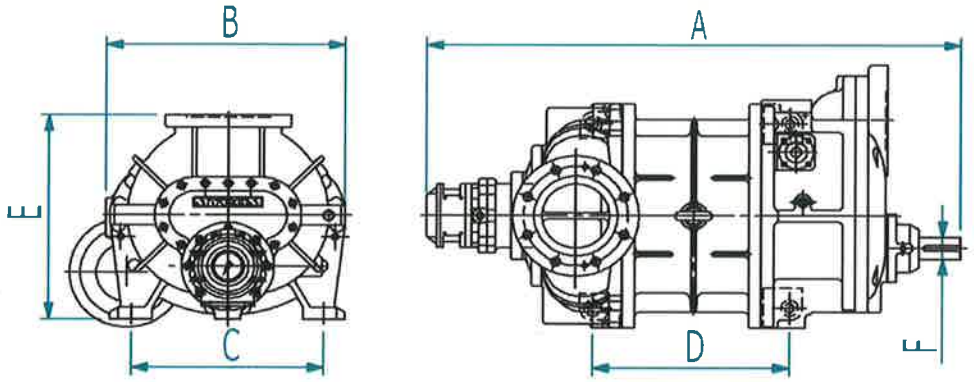
MYCOM

Outer dimensions report

* General information :

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
Model	: P160VSD-M
Serial No.	: 1656466
Date of measurement	: June 20, 2024
Inspection items	: Internal test
Plant location	: MAYEKAWA MFG. CO.,LTD. MORIYA PLANT 2000, Tatsuzawa Moriya-city, Ibaraki-pref., 302-0118, Japan

SURVEYOR



Measurement points	Drawing dimensions [mm]	Dimensional tolerance [mm]	Dimensional range [mm]	Measured value [mm]	Judgment
A	1029.0	8.0	1037.0	1029.0	Accepted
		-8.0	1021.0		
B	470.0	5.0	475.0	470.0	Accepted
		-5.0	465.0		
C	370.0	1.0	371.0	370.0	Accepted
		-1.0	369.0		
D	280.0	1.0	281.0	280.0	Accepted
		-1.0	279.0		
E	410.0	5.0	415.0	410.0	Accepted
		-5.0	405.0		
F	45.0	0.011	45.011	45.010	Accepted
		-0.005	44.995		

Appearance inspection : Accepted

Criteria : There must be no defects in appearance and the compressor appearance must conform to the customer's authorized drawing.

Approved by : A. Kojima

Checked by : K. Watanabe

MYCOM

Rotor balancing test report

* General information ;

Item No.	: -
Report No.	: 2024323A
Model	: P160VSD-M
Serial No.	: 1656466
Inspection items	: Internal test

SURVEYOR

Rotor size	Material	Test speed [min-1]	Correction radius [cm]
160S	FCD600	1265	7.3

* Balancing class : G 2.5 [JIS B 0905]

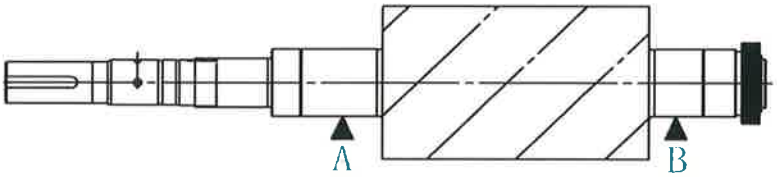
- Male rotor allowable residual unbalance
  = (2.5 × 9550 / 4500) × (M / 2) × (1 / 10)
- Female rotor allowable residual unbalance
  = (2.5 × 9550 / 3000) × (M / 2) × (1 / 10)
- Male rotor weight (M) : 28.6 [kg]
- Female rotor weight (M) : 22.2 [kg]

* Testing device : NAGAHAMA SEISAKUSHO LTD.,

Model : H20NB
Serial No. : 56-0366
Term of validity : End of July,2024

MALE ROTOR

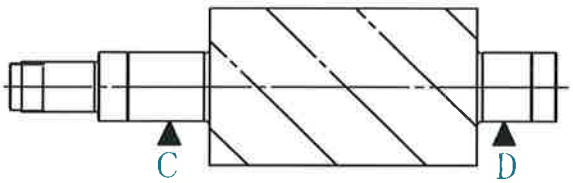
Rotor No. : C24305
Date of test : June 15, 2024



	Unbalanced value at the left side (A)			Unbalanced value at the right side (B)		
	[g]	Angle [°]	Value [g cm]	[g]	Angle [°]	Value [g cm]
Allowable residual unbalance	---	---	7.6	---	---	7.6
After adjustment	0.456	226	3.3	0.717	23	5.2

FEMALE ROTOR

Rotor No. : C24228
Date of test : June 15, 2024



	Unbalanced value at the left side (C)			Unbalanced value at the right side (D)		
	[g]	Angle [°]	Value [g cm]	[g]	Angle [°]	Value [g cm]
Allowable residual unbalance	---	---	8.8	---	---	8.8
After adjustment	0.593	324	4.3	0.377	105	2.8

Criteria judgment : Accepted

Approved by : A. Yagisawa

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

CBDoC000388

EU Declaration of Conformity

We MAYEKAWA MFG. CO., LTD.
3-14-15, Botan, Koto-ku, Tokyo, 135-8482, Japan

Representatives within the EU
N.V. MAYEKAWA EUROPE S.A.
Leuvensesteenweg 605, 1930 Zaventem, Belgium

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration:

Equipment : **Screw Compressor**
Type : **SCV-series**
Model : **P160VSD-M**
S/N : **1656466, 1656467**

to which this declaration relates is in conformity with the following EU directive and harmonized standards.

EU directive:

Directive 2014/34/EU	**Equipment and protective systems intended for use in potentially explosive atmospheres**

Harmonized standards:

EN ISO 80079-36:2016	**Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements (ISO 80079-36:2016)**
EN ISO 80079-37:2016	**Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres – Non-electrical type of protection constructional safety 'c', control of ignition sources 'b', liquid immersion 'k' (ISO 80079-37:2016)**

The marking of the equipment: **Ex II 3 G Ex h IIC T3 Gc CE**

Subject products are manufactured and tested according to appropriate quality control procedures.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation: Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, 2016).

Signature : T. Tsutsumi
Name : **Takao Tsutsumi**
Title of Signatory : **Division Manager**
Compressor Manufacturing Division
Date : **July 2nd, 2024**

CBDoC000383

EU Declaration of Conformity

We MAYEKAWA MFG. CO., LTD.
3-14-15, Botan, Koto-ku, Tokyo, 135-8482, Japan
Representatives within the EU
N.V. MAYEKAWA EUROPE S.A.
Leuvensesteenweg 605, 1930 Zaventem, Belgium

This declaration of conformity is issued under the sole responsibility of the manufacturer.
Object of the declaration:

Equipment : **Unloader indicator**
Type : **IND-05**
Model : **IND-052EP-VP**
S/N : **202406-0001544, 202406-0001545**

to which this declaration relates is in conformity with the following EU directive and harmonized standards.
EU directive:

Directive 2014/34/EU	**Equipment and protective systems intended for use in potentially explosive atmospheres**

Harmonized standards:

EN IEC 60079-0 : 2018	**Explosive atmospheres – Part 0 : Equipment – General requirements**
EN 60079-11 : 2012	**Explosive atmospheres – Part 11 : Equipment protection by intrinsic safety 'i'**

The marking of the equipment: **Ⓔx II 2 G Ex ib IIC T4 Gb CE**
The name, identification number and address of the Notified Body and the number of the EC-type examination certificate:

Notified Body Name : **DEKRA Certification B.V.**
Identification number : **0344**
Address : **Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands**

EC-Type Examination Certificate number : **DEKRA 14ATEX0055 X**

Subject products are manufactured and tested according to appropriate quality control procedures.
The object of the declaration described above is in conformity with the relevant Union harmonization legislation: Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, 2016).

Signature : T. Tsutsumi
Name : **Takao Tsutsumi**
Title of Signatory : **Division Manager**
Compressor Manufacturing Division
Date : **July 2nd, 2024**

MYCOM

INSPECTION & TEST RECORD

Item No.	: -
Order No.	: ME24-11MMEPO240063
Report No.	: 2024323B
Type of Compressor	: Screw Compressor
Name of Manufacturer	: MAYEKAWA MFG. CO., LTD.
Model	: P160VSD-M
Serial No.	: 1656467

(Remarks)
This inspection and test record is complete together with the following test records attached herewith :

1 .Material Identification List

2 .Hydrostatic and Gas Leak Tests Report

3 .Screw Compressor Test Results

4 .Outer Dimensions Report

5 .Rotor Balancing Test Report

Date of Issue : July 3, 2024

Approved by : A. Fujimura

Checked by : K. Watanabe

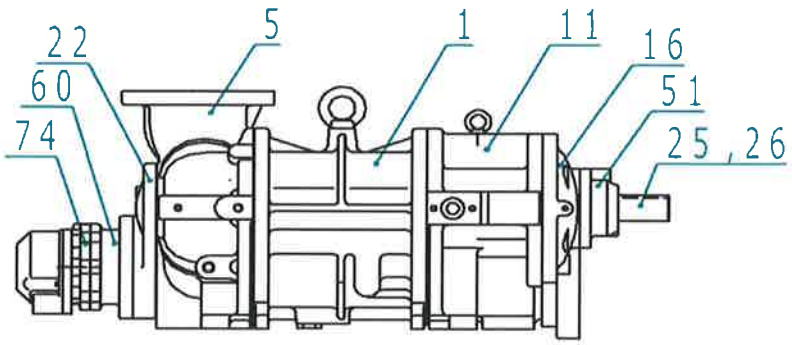
MYCOM

Material identification list

* General information :

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Model	: P160VSD-M
Serial No.	: 1656467
Date	: July 3, 2024

SURVEYOR



Parts No.	Name of Part	Material	Identification No.	Page	Remarks
1	Main Rotor Casing	FC300	S23Z13	P 1	
5	Suction Cover	FC300	K3Z15	P 2	
11	Bearing Head	FC300	K3Z13	P 3	
16	Bearing Cover	FC300	K4213	P 4	
22	Balance Piston Cover	FC300	C23X33	P 5	
51	Seal Cover	FC300	1Y30	P 6	
60	Unloader Cylinder	FC300	3419	P 7	
74	Unloader Cover	FC300	3Y27	P 8	
25	Male Rotor	FCD600	C24306	P 9	
26	Female Rotor	FCD600	C24226	P 10	

Approved by : A. Kagisawa

Checked by : K. Watanabe

材 料 試 験 証 明 書
MATERIAL TEST CERTIFICATE

(株)前川製作所 MAYEKAWA MFG. CO. LTD 様 （EN10204 3,1）

発行日 2024年7月1日 No855
Date of Issue : 1-Jul-2024

オーダー Order		品 名 Product	ローターケーシング Rotor Casing	材 質 Material	FC−300	個数 Quantity	1
注文番号 Order No.			160VS	鋳込年月日 Cast Date	2023年 12 月 13 日		

機械試験

試験項目 Test Items / 規格 Spec JIS Z 2241 JIS Z 2243 / 試験片番号 溶解番号 Specimen No. Charge No.	引張試験 Tensile Test				カタサ試験 Hardness	抗折試験 Transverse Test		+
	試験片寸法 Size of Specimen		引張荷重 Bresking Load	引張強サ Tensile Strength	ブリネル Brinell	荷 重 Load	タワミ Deflect	試験結果 Decision
	直径 Dia	断面積 Area						
	mm	mm²	N	N／mm²	Hʙ	N	mm	
				MIN.	MAX.			
	20	314		300	262			
S23Z13	20	314		312	218	11400	8.4	良

化学分析

項目・規格 Items. Spec. / 溶解番号 Charge No.	化学成分 Chemical Composition (%)									
	C	Si	Mn	P	S	Cu	Sn			
S23Z13	3.25	2.1	0.40	0.03	0.02	0.5	0.05			

材料規格 Standard of Material	JIS G 5501-1995
備 考 Remarks	

Reviewed by : K. Watanabe
MAYEKAWA. MFG. CO.,LTD

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

承認 Approval	作成者 Implementer
盛多 MORITA	高山 TAKAYAMA

三共鋳鉄株式会社
〒726-0013 広島県府中市高木町213-1
SANKYO CAST STEEL .CO.,LTD
213-1 TAKAGI-CHO FUCHU-SHI HIROSIMA
726-0013 JAPAN

材料試験証明書　Material Test Certificate

EN10204　3.1

1071

発行日　令和 6 年 4 月 19 日
DATE of Issue 19 — APR — 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.,LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００	試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　NO. ８Ｃ	Brinell hardness test	ＪＩＳ　Ｚ　２２４３
				Temsile test	ＪＩＳ　Ｚ　２２４１

規　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ｻｸｼｮﾝｶﾊﾞｰ SUCTION COVER	160V	K3Z15	2023/12/22	20.0	98,213	312.8	217	3.15	1.60	0.809	0.024	0.058	0.016
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ BEARING HEAD	160VD	K3Y29	2023/12/6	20.0	103,934	331.0	223	3.07	1.45	0.845	0.022	0.053	0.043
ﾍﾞｱﾘﾝｸﾞｶﾊﾞｰ BEARING COVER	160VD	K4209	2024/2/16	20.0	97,937	311.9	207	3.28	1.85	0.648	0.022	0.063	0.014

Reviewed by : K. Watanabe
MAYEKAWA. MFG, CO.,LTD

備考　Remarks

品質責任者

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

Checked by　S.Hayashi 林　Tested by　M. Omote 表

材料試験証明書　Material Test Certificate

EN10204　3.1

1079

発行日　令和 6 年 6 月 10 日
DATE of Issue 10 － JUN － 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.，LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００	試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　ＮＯ．８Ｃ	Brinell hardness test	ＪＩＳ　Ｚ　２２４３
				Temsile test	ＪＩＳ　Ｚ　２２４１

規　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ﾛｰﾀｰｹｰｼﾝｸﾞ(2) ROTOR CASING(2)	1612C	K1414	2021/4/21	20.0	96,115	306.1	217	3.18	1.65	0.616	0.024	0.071	0.029
ｻｸｼｮﾝｶﾊﾞｰ(1) SUCTION COVER(1)	1612C	K4205	2024/2/12	20.0	97,591	310.8	212	3.24	1.79	0.630	0.021	0.065	0.034
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ(1) BEARING HEAD(1)	1612C	K4131	2024/2/7	20.0	96,995	308.9	212	3.21	1.71	0.641	0.021	0.075	0.035
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ(2) BEARING HEAD(2)	1612C	K4226	2024/3/6	20.0	98,533	313.8	212	3.24	1.72	0.638	0.022	0.063	0.034
ﾍﾞｱﾘﾝｸﾞﾍｯﾄﾞ BEARING HEAD	160VD	K3Z13	2023/12/20	20.0	101,419	323.0	223	3.12	1.46	0.860	0.021	0.069	0.037

備考　Remarks

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

品質責任者

Checked by S.Hayashi 林　Tested by M. Omote 表

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

材料試験証明書　Material Test Certificate

EN10204　3.1

1082

発行日　令和 6 年 6 月 27 日
DATE of Issue 27 — JUN — 2024

株式会社　協　和　製　作　所
〒933-0351　富山県高岡市四日市１３３－１２
KYOWA　SEISAKUSHO　Co.,　Ltd
133-12 YOKKAICHI TAKAOKA TOYAMA 933-0351 JAPAN

御得意様名　株式会社　前　川　製　作　所　様
TO Messrs　MAYEKAWA　MFG　CO.,　LTD.

材　質 Material	ＪＩＳ　Ｇ　５５０１　ＦＣ３００	試験片の形状 Test Piece Size	ＪＩＳ　Ｚ　２２４１　ＮＯ．８Ｃ	Brinell hardness test	ＪＩＳ　Ｚ　２２４３
				Temsile test	ＪＩＳ　Ｚ　２２４１

規　格　Standard				引張試験 Tensile Test			硬さ試験	金属材料衝撃試験	ＪＩＳ　Ｚ　２２４２（ＦＣ材、ＦＣＤ材は無）					
								化　学　成　分 Chemical Composition						
品名 Product	機　種 Model	ﾁｬｰｼﾞNo. ChargeNo.	試験月日 Date of Inspection	直　径 Diameter mm	引張荷重 Maximum Load N	引張強さ Tensile Strength N/mm²	硬　度　数 Hardness HBW	ＴＣ	Ｓｉ	Ｍｎ	Ｐ	Ｓ	Ｓｎ
				20.0		300≦	≦262						
ﾍﾞｱﾘﾝｸﾞｶﾊﾞｰ BEARING COVER	160VD	K4213	2024/2/20	20.0	96,524	307.4	201	3.28	2.17	0.616	0.019	0.072	0.014
ﾛｰﾀｰｹｰｼﾝｸﾞ ROTOR CASING	320VL	K4208	2024/2/15	20.0	95,299	303.5	212	3.25	1.69	0.638	0.023	0.063	0.035

Reviewed by : K. Kurotsuchi
MAYEKAWA. MFG, CO.,LTD

備考　Remarks

品質責任者

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured
and inspected satisfactory with the requirement of the above specification.

Checked by　S.Hayashi 林　Tested by　M. Omote 表

材 料 試 験 証 明 書 Material Test Certificate

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門
TO Messrs: MAYEKAWA MFG. CO., LTD. MORIYA PLANT

溶解日(Charge Date) 2023/10/17
管理番号(Control-Number)

発行日： 2024年6月27日
Date of Issue: 27-Jun-24
㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

Name of Articles 製品名	Product Type 機種	Grey iron castings JIS G 5501(1995)	Material	FC300	Test piece	JIS Z 2241(2011) No.8C Φ20mm	Quality Responsibility Person	Checked by	鶴田 K.Tsuruta
BALANCE PISTON COVER バランスピストンカバー	160S/L	ねずみ鋳鉄品	材質		試験片		品質責任者	Tested by	坂森 Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. ﾁｬｰｼﾞ No./ ﾃｽﾄﾋﾟｰｽ No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 直径 Diameter	Maximum Load 引張荷重 N	Tensile Strength 引張強さ	Hardness Test Hardness 硬度	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%]	Si[%]	Mn[%]	P[%]	S[%]	Sn[%]	–	Form Number 枠番号
			20.0mm	-	≧300[N/mm2]	≦262[HB]	-	-	-	-	-	-	-	
C23 X31	TP-1	2023/10/20	20.0	105104	333	229	2.901	1.582	0.672	0.017	0.008	0.023	-	4-5
C23 X32														
C23 X33														
C23 X34														
C23 X35														
C23 X36														

Remarks 備考

Material mill test report shall be in compliance with EN10204 3.1.

Reviewed by: K. Watanabe
MAYEKAWA MFG. CO., LTD.

材料試験証明書

Material Test Certificate

EN10204 3.1

番号 Number	顧客名 to Messrs	品番 Part Number	品名 Part Name	型式 Type
No.5851	㈱前川製作所　殿	161a0029	SEAL COVER	160S/L

	試験片の形状 Testpiece Size	材質 Material
	No.8C JIS Z2241	FC300 JIS G5501

試験項目 Kind of Test	引張試験 Tensile Test JIS Z 2241			硬さ試験 Hardness JIS Z 2243	
	引張強さ Tensile Strength N/mm^2	耐力 Yield Strength N/mm^2	伸び Elongation %	HB	
規格 / 記号 Mark	≧300			≦262	
1Y30	312	—	—	229	

	化学分析試験 Chemical Analysis Test (%)								
成分記号	C	Si	Mn	P	S	Cu	Cr		
1Y30	3.15	1.70	0.98	0.044	0.084	-	-		

顕微鏡写真 Micro-Photograph

倍率 Magnify	×100
腐食 Etching	4%ピクリン酸 4%Picric acid

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

備考 Remark

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

※試験日 (Date of Test) : 2021/12/1

試験の結果は、上記の通りであります。
We certify that the result of the material test has been as described above.

㈱シグマ製作所花泉工場
HANAIZUMI FACTORY SIGUMA MFG.CO.,LTD

発行日 : 2022年4月19日
Date of Issue : 19-Apr-22

〒029-3207 岩手県一関市花泉町油島字南沢97-156
97-156 MINAMIZAWA YUSIMA HANAIZUMI ICHINOSEKI
IWATE 029-3207
TEL:0191(82)5481　FAX:0191(82)5496

承認	作成
大庭	加藤

2024年1月23日

Date of issue Jan. 23. 2024

材料試験証明書　Material Test Certificate

EN 10204 3.1

得意先名　（株）前川製作所　様

To Messers MAYEKAWA MFG CO., LTD.

新潟県長岡市宮下町特定
株式会社　キャストアンドー
436-1 Miyashitamati Nagaoka-shi Niigata-ken Japan
CAST ANDOH CO.

材質 Material	1995年改正 JIS. G5501 FC300	試料の形状 Test Piese Size	2011年改正 JIS. Z2241 NO. 8C			試験日 Date of test	2023年5月17日
機名 Machine	160V	図番 DFT. No.		部品名 Name of parts	アンローダーシリンダー Unloader Cylinder		

規格 Standard / 試料記号 T. P. NO.	直径 Diameter mm	引張荷重 Maximum Lord N	引張強さ Tensile Stlength N/mm²	耐力 Yield Stlength N/mm²	伸び Elogation %	直径 Diameter mm	最大荷重 Maximum Lord N	たわみ Deflection mm	硬さ試験 Hardness 1998年改定 JIS. Z2243 硬度数 Brinell HB	化学成分 Chemical Composition TC %	Si %	Mn %	P %	S %	*
	20±0.7	———	≧300	———	———	———	———	———	≦262	———	———	———	———	———	*
3419	20.0	104900	334	———	———	———	———	———	224	3.28	1.69	0.85	0.052	0.054	*
				———	———	———	———	———							*
				———	———	———	———	———							*
				———	———	———	———	———							*

備考・Remarks　本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。
We hereby certify that material described has been manufactured and inspected and inspected satisfactory with requirement of the above specificasion

SI単位換算値
Conversion of Unit
1kgf=9.80665N
1kgf/mm²=9.80665N/mm²
1kgf m=9.80665J

品質管理者

Checked by

Tested by

Reviewed by : K. Watanabe
MAYEKAWA. MFG, CO.,LTD

材料試験証明書

Material Test Certificate

EN10204 3.1

番号 Number	顧客名 to Messrs	品番 Part Number	品名 Part Name	型式 Type
No.6694	㈱前川製作所 殿	161a0032	UNLOADER COVER	160S/L

	試験片の形状 Testpiece Size	材質 Material
	No.8C JIS Z2241	FC300 JIS G5501

試験項目 Kind of Test	引張試験 Tensile Test JIS Z 2241			硬さ試験 Hardness JIS Z 2243	
	引張強さ Tensile Strength N/mm^2	耐力 Yield Strength N/mm^2	伸び Elongation %	HB	
規格 / 記号 Mark	≧300			≦262	
3Y27	301	—	—	241	

化学分析試験 Chemical Analysis Test (%)

成分記号	C	Si	Mn	P	S	Cu	Cr		
3Y27	3.06	1.63	1.19	0.048	0.091	–	–		

顕微鏡写真 Micro-Photograph

倍率 Magnify	×100
腐食 Etching	4%ピクリン酸 4%Picric acid

Reviewed by : K. Watanabe

MAYEKAWA. MFG, CO.,LTD

備考 Remark

本製品は、ご指定の規格または仕様によって製造され、その要求事項を満足していることを証明します。

We hereby certify that material described has been manufactured and inspected satisfactory with the requirement of the above specification.

※試験日(Date of Test) : 2023/11/28

試験の結果は、上記の通りであります。

We certify that the result of the material test has been as described above.

㈱シグマ製作所花泉工場
HANAIZUMI FACTORY SIGUMA MFG.CO.,LTD

〒029-3207 岩手県一関市花泉町油島字南沢97-156
97-156 MINAMIZAWA YUSIMA HANAIZUMI ICHINOSEKI
IWATE 029-3207

TEL:0191(82)5481 FAX:0191(82)5496

承認	作成
大庭	加藤

発行日 : 2024年2月2日
Date of Issue :2-Feb-24

材 料 試 験 証 明 書 Material Test Certificate

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門　　殿
TO Messrs: MAYEKAWA MFG. CO., LTD. MORIYA PLANT

溶解日(Charge Date)　2024/3/19
管理番号(Control-Number)

発行日： 2024年6月25日
Date of Issue: 25-Jun-24
㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

Name of Articles 製品名		Product Type 機種	Spheroidal graphite iron castings JIS G 5502(2022)	Material	FCD600-3/S	Test piece	JIS Z 2241(2011) No.4 Φ14mm	Quality Responsibility Person	Checked by	K.Tsuruta
Male Rotor Mロータ		160S	球状黒鉛鋳鉄品	材質		試験片		品質責任者	Tested by	Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. チャージ No./ テストピース No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 Tensile Strength 引張強さ ≧600[N/mm2]	Yield stress 耐力 ≧370[N/mm2]	Elongation 伸び ≧3[%]	Hardness test Hardness 硬度 170～270[HB]	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%] ≧2.5	Si[%] -	Mn[%] -	P[%] -	S[%] ≦0.02	Mg[%] ≦0.09	Ratio Of Graphite Spheroidizing 黒鉛球状化率 ≧80[%]	Flask Number 枠番号
C24 305 C24 306 C24 307 C24 308	TP-1	2024/3/21	827	485	4.7	244	3.434	2.336	0.167	0.019	0.015	0.046	93.0	2-1

Heat Treatment 熱処理	Condition / Temp. 種類 / 温度	-	Remarks 備考
		-	Material mill test report shall be in compliance with EN10204 3.1.

Reviewed by: K. Tsutanabe
MAYEKAWA MFG. CO., LTD.

材 料 試 験 証 明 書 Material Test Certificate

得意先名： ㈱前川製作所 守谷工場 圧縮機製造部門 殿
TO Messrs: MAYEKAWA MFG. CO., LTD. MORIYA PLANT

溶解日(Charge Date) 2024/2/19
管理番号(Control-Number)

発行日： 2024年5月27日
Date of Issue: 27-May-24
㈱前川製作所 東広島工場 圧縮機製造部門 品質保証ｸﾞﾙｰﾌﾟ
〒739-2117 広島県東広島市高屋台2-3-40
MAYEKAWA MFG. CO., LTD. HIGASHI HIROSHIMA PLANT
QUALITY-ASSURANCE GROUP
2-3-40, Takayadai, Higashihiroshima-City Hiroshima-Pref. 739-2117, Japan

Name of Articles 製品名	Product Type 機種	Spheroidal graphite iron castings JIS G 5502(2022)	Material	FCD600-3/S	Test piece	JIS Z 2241(2011) No.4 Φ14mm	Quality Responsibility Person	Checked by	K.Tsuruta
Female Rotor Fローター	160S	球状黒鉛鋳鉄品	材質		試験片		品質責任者	Tested by	Y.Sakamori

Serial Number 製造番号	Charge No. /TP-No. チャージ No./ テストピース No.	Date of Inspection 試験日	Tensile Test Inspection 引張試験 Tensile Strength 引張強さ ≧600[N/mm2]	Yield stress 耐力 ≧370[N/mm2]	Elongation 伸び ≧3[%]	Hardness test Hardness 硬度 170～270[HB]	Chemical Composition 化学成分 Inspection Standard 検査規格 C[%] ≧2.5	Si[%] -	Mn[%] -	P[%] -	S[%] ≦0.02	Mg[%] ≦0.09	Ratio Of Graphite Spheroidizing 黒鉛球状化率 ≧80[%]	Flask Number 枠番号
C24 217	TP-1	2024/2/21	798	465	6.4	226	3.437	2.279	0.187	0.018	0.007	0.036	91.3	1-2
C24 218														
C24 219														
C24 220														
C24 221														1-4
C24 222														
C24 223														
C24 224														
C24 225														1-6
C24 226														
C24 227														
C24 228														

Heat Treatment 熱処理	Condition / Temp. 種類 / 温度	-	Remarks 備考 Material mill test report shall be in compliance with EN10204 3.1.
		-	

Reviewed by: K. Watanabe
MAYEKAWA MFG. CO., LTD.

MYCOM

Hydrostatic & Gas Leak Tests Report

* General information ;

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Model	: P160VSD-M
Serial No.	: 1656467
Inspection items	: Internal test
Plant location	: MAYEKAWA MFG. CO.,LTD. MORIYA PLANT 2000, Tatsuzawa Moriya-city, Ibaraki-pref., 302-0118, Japan

SURVEYOR

* Test record ;

Item	Design pressure	Test pressure	Used fluid	Hold time	Tested date	Judgment
Hydrostatic test	25.0 [barG] 2.5 [MPaG]	37.5 [barG] 3.8 [MPaG]	Oil	30 [min]	June 20, 2024	Accepted
Gas leak test	25.0 [barG] 2.5 [MPaG]	25.0 [barG] 2.5 [MPaG]	Air	30 [min]	June 20, 2024	Accepted

* Used pressure gauges ;

Item	Dia × Max. Pres. [MPaG]	Manufacturer	Class(JIS)	Pressure gauge No.
Hydrostatic test	φ100 × 7.0	NAGANO KEIKI CO., LTD.	1.5	1 , 2
Gas leak test	φ100 × 5.0	NAGANO KEIKI CO., LTD.	1.5	1 , 2

* Pressure gauge information ;

Hydrostatic test	Pressure gauge No.	Registration No.	Terms of validity
	1	AA-70114	End of July,2024
	2	AA-70115	End of July,2024

Gas leak test	Pressure gauge No.	Registration No.	Terms of validity
	1	AA-50011	End of July,2024
	2	AA-50012	End of July,2024

Approved by : A. Kagisawa

Checked by : K. Watanabe

MYCOM

Performance inspection record table for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656467
Test fluid	: Air
Orifice No.	: 8
Time	: 14:00
Inspection items	: Internal test
Load capacity	: 100%

SURVEYOR

1. Revolution speed		2992	[min-1]
2. Running torque	Measured value	1.070	[V]
	Converted value	107.0	[Nm]
3. Room temperature		23	[°C]
4. Atmospheric pressure		1007	[hPa]
5. Discharge pressure		0.5	[MPaG]
6. Suction pressure	L (7.00)	0.00	[kPa]
	R (7.00)		
7. Pressure before orifice	L (9.06)	4.06	[kPa]
	R (5.00)		
8. Pressure difference at orifice	L (9.72)	5.70	[kPa]
	R (4.02)		
9. Oil pressure		0.7	[MPaG]
10. Suction temperature		22	[°C]
11. Temperature before orifice		21	[°C]
12. Oil temperature		34	[°C]
13. Discharge temperature		46	[°C]
Noise		80.5	[dB]
Background noise		66.2	[dB]

* Mechanical running test ;

Temp. of rotor casing	P 1	40	[°C]
Temp. of bearing head	P 2	42	[°C]
Temp. of shaft seal	P 3	35	[°C]

* Vibration
Displacement [0-P]

V	1	[μm]
H	2	[μm]
A	1	[μm]

Approved by : A. Kazama

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Performance inspection report for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656467
Test fluid	: Air
Orifice No.	: 8
Time	: 14:00
Inspection items	: Internal test
Load capacity	: 100%

SURVEYOR

* Performance test ;

		Standard	Actual measurement value		Judgment	Criteria
Volume flow rate of suction gas	[m3/h]	361.1	375.6	(104.0 %)	Accepted	95 % and more
Kilowatts	[kW]	34.3	33.5	(97.7 %)	Accepted	105 % or less

* Mechanical running test ;

			Allowable Maximum		Measured value	Judgment
Temp. of rotor casing	[°C] P 1	:	69	≧	40	Accepted
Temp. of bearing head	[°C] P 2	:	69	≧	42	Accepted
Temp. of shaft seal	[°C] P 3	:	54	≧	35	Accepted

* Vibration and Noise tests ;

Noise	[dB](A)	:	84.0	≧	80.5	Accepted

Vibration ;
(Frequency range : 10 - 1000Hz)(0-P)

Displacement [0-P]	[μm]	V	20	≧	1	Accepted
		H			2	Accepted
		A			1	Accepted

Approved by : A. Hotsumi

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Performance inspection record table for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656467
Test fluid	: Air
Orifice No.	: 8
Time	: 17:00
Inspection items	: Internal test
Load capacity	: 90%

SURVEYOR

Reference

1. Revolution speed		2999	[min-1]
2. Running torque	Measured value	0.898	[V]
	Converted value	89.8	[Nm]
3. Room temperature		23	[°C]
4. Atmospheric pressure		1007	[hPa]
5. Discharge pressure		0.5	[MPaG]
6. Suction pressure	L (7.00)	0.00	[kPa]
	R (7.00)		
7. Pressure before orifice	L (8.24)	2.44	[kPa]
	R (5.80)		
8. Pressure difference at orifice	L (8.66)	3.50	[kPa]
	R (5.16)		
9. Oil pressure		0.7	[MPaG]
10. Suction temperature		23	[°C]
11. Temperature before orifice		22	[°C]
12. Oil temperature		31	[°C]
13. Discharge temperature		45	[°C]
Noise		79.0	[dB]
Background noise		66.0	[dB]

* Mechanical running test ;

Temp. of rotor casing	P 1	38	[°C]
Temp. of bearing head	P 2	40	[°C]
Temp. of shaft seal	P 3	34	[°C]

* Vibration

Displacement [0-P]

V	1	[μm]
H	2	[μm]
A	1	[μm]

Approved by : A. Koyama

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

MYCOM

Performance inspection report for screw compressor

* General information ;

Item No.	: -
Report No.	: 2024323B
Type of compressor	: Screw compressor
Date of test	: June 19, 2024
Model	: P160VSD-M
Serial No.	: 1656467
Test fluid	: Air
Orifice No.	: 8
Time	: 17:00
Inspection items	: Internal test
Load capacity	: 90%

SURVEYOR

Reference

* Performance test ;

		Standard	Actual measurement value
Volume flow rate of suction gas	[m3/h]	361.9	294.5
Kilowatts	[kW]	34.3	28.2

* Mechanical running test ;

			Allowable Maximum		Measured value	Judgment
Temp. of rotor casing	[°C] P 1	:	66	≧	38	Accepted
Temp. of bearing head	[°C] P 2	:	66	≧	40	Accepted
Temp. of shaft seal	[°C] P 3	:	51	≧	34	Accepted

* Vibration and Noise tests ;

Noise	[dB](A)	:	84.0	≧	79.0	Accepted

Vibration ;
(Frequency range : 10 - 1000Hz)(0-P)

		V			1	Accepted
Displacement [0-P]	[μm]	H	20	≧	2	Accepted
		A			1	Accepted

Approved by : A. Kojima

Checked by : K. Tsutsumi

MYCOM

Compressor shop mechanical running test report

* General information ;

Item No.	:	-
Report No.	:	2024323B
Type of compressor	:	Screw compressor
Date of test	:	June 19, 2024
Model	:	P160VSD-M
Serial No.	:	1656467
Inspection items	:	Internal test

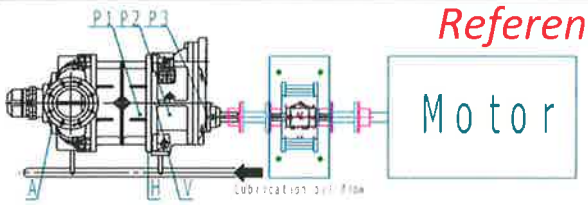
SURVEYOR

* Running test condition ;

Suction pressure	:	0.0 [kPa]
Discharge pressure	:	0.5 [MPaG]
Test fluid	:	Air
Revolution speed	:	max. 3000 [min-1]
Load capacity	:	90 [%]

Start-up time 14:30

Reference



Seal leakage 0.0 [cc] / 2.5 hrs

Item	Unit	Time									
		14:45	15:00	15:30	16:00	16:30	17:00				
Suction Press. Ps	[kPa]	0	0	0	0	0	0				
Suction Temp. Ts	[°C]	22	22	23	23	23	23				
Before orifice ΔH	L [kPa]	8.26	8.26	8.24	8.24	8.24	8.24				
	R [kPa]	5.76	5.78	5.80	5.80	5.80	5.80				
Temp. Before Orifice	[°C]	21	21	22	22	22	22				
Differential Pressue ΔH	L [kPa]	8.70	8.68	8.66	8.66	8.66	8.66				
	R [kPa]	5.10	5.12	5.14	5.16	5.16	5.16				
Discharge Press. Pd	[MPaG]	0.5	0.5	0.5	0.5	0.5	0.5				
Discharge Temp. Td	[°C]	42	44	45	45	45	45				
Oil Press. Poil	[MPaG]	0.7	0.7	0.7	0.7	0.7	0.7				
Oil Temp. Toil	[°C]	29	30	31	31	31	31				
Room Temp. Ta	[°C]	22	22	22	23	23	23				
Atmospheric Pressure	[hPa]	1007	1007	1007	1007	1007	1007				
Point 1	[°C]	35	37	38	38	38	38				
Point 2	[°C]	37	39	40	40	40	40				
Point 3	[°C]	31	33	34	34	34	34				
Displacement:Vertical	[μm]	1	1	1	1	1	1				
Displacement:Horizontal	[μm]	2	2	2	2	2	2				
Displacement:Axial	[μm]	1	1	1	1	1	1				
Noise	[dB](A)	79.4	80.0	79.0	79.2	78.9	79.0				
Rotation Speed	[min-1]	2999	2998	2996	2997	2999	2999				
Running Torque	[V]	0.914	0.910	0.900	0.898	0.898	0.898				
Oil Flow(Journal)	[l/min]	17.0	19.0	19.0	20.0	20.0	20.0				
Oil Flow(Injection)	[l/min]	20.0	21.0	22.0	24.0	23.0	24.0				
Oil Flow(F Side)	[l/min]	6.5	6.7	6.9	7.0	7.1	7.0				
Judgment		Accepted									

Approved by : A. Fujimura

Checked by : K. Watanabe

MAYEKAWA MFG,CO.,LTD. MoriyaPlant

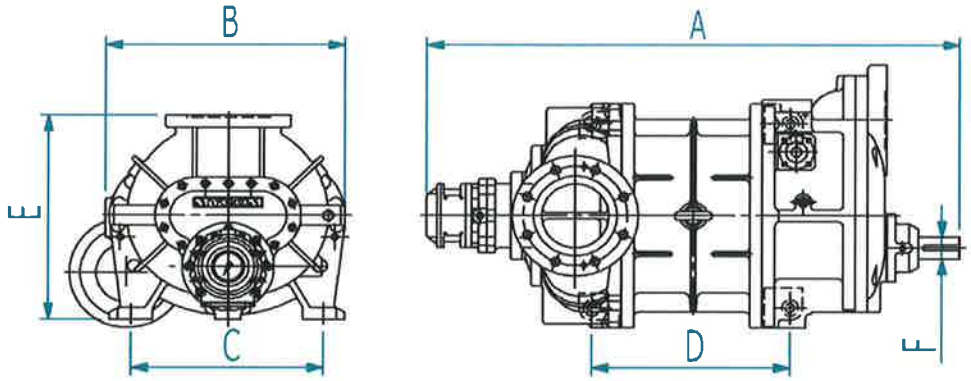
MYCOM

Outer dimensions report

* General information ;

Item No.	:	-
Report No.	:	2024323B
Type of compressor	:	Screw compressor
Model	:	P160VSD-M
Serial No.	:	1656467
Date of measurement	:	June 20, 2024
Inspection items	:	Internal test
Plant location	:	MAYEKAWA MFG. CO.,LTD. MORIYA PLANT 2000, Tatsuzawa Moriya-city, Ibaraki-pref., 302-0118, Japan

SURVEYOR



Measurement points	Drawing dimensions [mm]	Dimensional tolerance [mm]	Dimensional range [mm]	Measured value [mm]	Judgment
A	1029.0	8.0	1037.0	1029.0	Accepted
		-8.0	1021.0		
B	470.0	5.0	475.0	470.0	Accepted
		-5.0	465.0		
C	370.0	1.0	371.0	370.0	Accepted
		-1.0	369.0		
D	280.0	1.0	281.0	280.0	Accepted
		-1.0	279.0		
E	410.0	5.0	415.0	410.0	Accepted
		-5.0	405.0		
F	45.0	0.011	45.011	45.009	Accepted
		-0.005	44.995		

Appearance inspection : Accepted

Criteria : There must be no defects in appearance and the compressor appearance must conform to the customer's authorized drawing.

Approved by : A. Kuzumi

Checked by : K. Watanabe

MYCOM

Rotor balancing test report

* General information :

Item No.	: -
Report No.	: 2024323B
Model	: P160VSD-M
Serial No.	: 1656467
Inspection items	: Internal test

SURVEYOR

Rotor size	Material	Test speed [min-1]	Correction radius [cm]
160S	FCD600	1265	7.3

* Balancing class : G 2.5 [JIS B 0905]

- Male rotor allowable residual unbalance

  = (2.5 × 9550 / 4500) × (M / 2) × (1 / 10)

- Female rotor allowable residual unbalance

  = (2.5 × 9550 / 3000) × (M / 2) × (1 / 10)

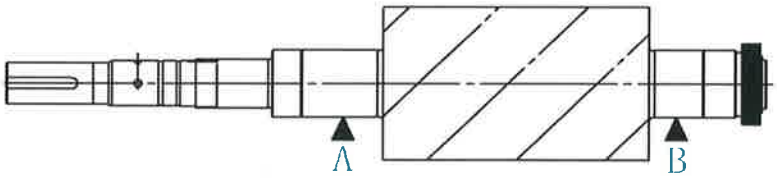
- Male rotor weight (M) : 28.6 [kg]
- Female rotor weight (M) : 22.2 [kg]

* Testing device : NAGAHAMA SEISAKUSHO LTD.,

Model	: H20NB
Serial No.	: 56-0366
Term of validity	: End of July,2024

MALE ROTOR

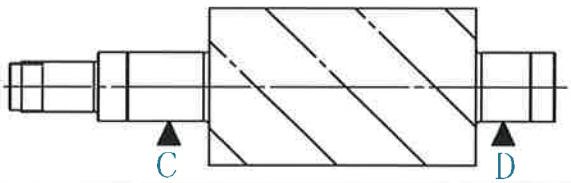
Rotor No.	: C24306
Date of test	: June 15, 2024



	Unbalanced value at the left side (A)			Unbalanced value at the right side (B)		
	[g]	Angle [°]	Value [g cm]	[g]	Angle [°]	Value [g cm]
Allowable residual unbalance	---	---	7.6	---	---	7.6
After adjustment	0.687	14	5.0	0.071	259	0.5

FEMALE ROTOR

Rotor No.	: C24226
Date of test	: June 15, 2024



	Unbalanced value at the left side (C)			Unbalanced value at the right side (D)		
	[g]	Angle [°]	Value [g cm]	[g]	Angle [°]	Value [g cm]
Allowable residual unbalance	---	---	8.8	---	---	8.8
After adjustment	0.239	0	1.7	0.951	179	6.9

Criteria judgment : Accepted

Approved by : A. Hagiwara

Checked by : K. Watanabe

CBDoC000388

EU Declaration of Conformity

We MAYEKAWA MFG. CO., LTD.
3-14-15, Botan, Koto-ku, Tokyo, 135-8482, Japan

Representatives within the EU
N.V. MAYEKAWA EUROPE S.A.
Leuvensesteenweg 605, 1930 Zaventem, Belgium

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Object of the declaration:

Equipment : **Screw Compressor**
Type : **SCV-series**
Model : **P160VSD-M**
S/N : **1656466, 1656467**

to which this declaration relates is in conformity with the following EU directive and harmonized standards.

EU directive:

Directive 2014/34/EU	**Equipment and protective systems intended for use in potentially explosive atmospheres**

Harmonized standards:

EN ISO 80079-36:2016	**Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic method and requirements (ISO 80079-36:2016)**
EN ISO 80079-37:2016	**Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres – Non-electrical type of protection constructional safety 'c', control of ignition sources 'b', liquid immersion 'k' (ISO 80079-37:2016)**

The marking of the equipment: **II 3 G Ex h IIC T3 Gc**

Subject products are manufactured and tested according to appropriate quality control procedures.

The object of the declaration described above is in conformity with the relevant Union harmonization legislation: Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, 2016).

Signature : T. Tsutsumi
Name : **Takao Tsutsumi**
Title of Signatory : **Division Manager**
Compressor Manufacturing Division
Date : **July 2nd, 2024**

CBDoC000383

EU Declaration of Conformity

We MAYEKAWA MFG. CO., LTD.
3-14-15, Botan, Koto-ku, Tokyo, 135-8482, Japan
Representatives within the EU
N.V. MAYEKAWA EUROPE S.A.
Leuvensesteenweg 605, 1930 Zaventem, Belgium

This declaration of conformity is issued under the sole responsibility of the manufacturer.
Object of the declaration:

Equipment : **Unloader indicator**
Type : **IND-05**
Model : **IND-052EP-VP**
S/N : **202406-0001544, 202406-0001545**

to which this declaration relates is in conformity with the following EU directive and harmonized standards.
EU directive:

Directive 2014/34/EU	**Equipment and protective systems intended for use in potentially explosive atmospheres**

Harmonized standards:

EN IEC 60079-0 : 2018	**Explosive atmospheres – Part 0 : Equipment – General requirements**
EN 60079-11 : 2012	**Explosive atmospheres – Part 11 : Equipment protection by intrinsic safety 'i'**

The marking of the equipment: **Ⓔx II 2 G Ex ib IIC T4 Gb CE**
The name, identification number and address of the Notified Body and the number of the EC-type examination certificate:

Notified Body Name : **DEKRA Certification B.V.**
Identification number : **0344**
Address : **Meander 1051, 6825 MJ Arnhem P.O. Box 5185, 6802 ED Arnhem The Netherlands**

EC-Type Examination Certificate number : **DEKRA 14ATEX0055 X**

Subject products are manufactured and tested according to appropriate quality control procedures.
The object of the declaration described above is in conformity with the relevant Union harmonization legislation: Directive 94/9/EC (until April 19th, 2016) and Directive 2014/34/EU (from April 20th, 2016).

Signature : T. Tsutsumi
Name : **Takao Tsutsumi**
Title of Signatory : **Division Manager**
Compressor Manufacturing Division
Date : **July 2nd, 2024**

STYRENE PARK OFFSITE

Document Title:

Package / Compressor Data Sheet

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R2	07-05-2024	IFA	F.SH	M.O	A.M
R1	05-02-2024	IFA	F.SH	M.O	A.M
R0	09-09-2023	IFA	N.B	F.SH	A.M

REVISION RECORD SHEET

Page	Revisions								Page	Revisions						
Page	R0	R1	R2	R3	R4	R5	R6			R0	R1	R2	R3	R4	R5	R6
1	X	X	X						41							
2	X	X	X						42							
3	X	X	X						43							
4	X	X	X						44							
5	X	X	X						45							
6	X	X	X						46							
7	X	X	X						47							
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	Package data sheet		
Document Title: Package / Compressor Data Sheet			
Document No.: EI027-HSE-VD-ME-DSH-001- R2	Rev.R2	Date:07.05.2024	Page 03 Of 07

Customer		PETRO ELECTRIC				
Plant Name/Project Name		RU-0001 A/B				
Item No./Name		CHILLER UNIT			No.of Required	2 Unit(s)
OPERATING CONDITION (PROCESS) – BASED ON CUSTOMER DS / PER EACH COMP. UNIT						
		Design	**IN**	**OUT**	**Main & side flow Composition**	
Fluid	(degC)	Styrene	15.2	5		
Capacity	kW	165				
Evaporating Temp.	(degC)	0				
Condensing Temp.	(degC)	56				
Side Temp.	(degC)					
COMPRESSOR DESIGN CONDITION (BASED ON MAYEKAWA CALCULATIONS) / PER EACH COMP. UNIT						
Design		Design			Note	
Compressor Model						
Motor Speed	(rpm)	2950			※Motor Speed = Compressor Speed	
Comp Load	( )	100				
Quantity		1	Per unit			
Capacity/unit	kW	165				
Power/unit	(kW)	120			* Compressor BkW	
Driver		Motor				
Stating Method		Direct				
Capacity Control	Control Source	***				
	Range of Control	30-100				
	Control Method	Slide Valve				

SITE CONDITION	
Location	☐ Indoor (heated) ■ Outdoor under Shelter (Provided by Client) ■ Hazardous Area : Zone 2 IIB T3
	■ Normal weather condition (Temp. +5℃ TO +48℃)
Noise	☑ Noise Level 85dB(A) at 1m from Unit
Oil Separation	1st Separation

MATERIAL DESIGN						
Code & Standard	Item	Material		Design		Remarks
	Unit System	☐ JIS			■ MYK Standard	JIS = Japanese Industrial Standards
	Compressor	■ JIS			■ MYK Standard	
	Press Vessel	■ AD/MYCOM STD	☐ ISO	☐ PED ■ MYK Standard		
	Heat Exchanger	■ AD/MYCOM STD	☐ ISO	☐ PED ■ MYK Standard		
	Valve	■ DIN ■ ASME	☐ ISO	☐ PED ■ Manufacture's Std.	☐ ISO	DIN = Germany Industrial Standards
	Safety Valve	☐ DIN ☐ ASME	☐ ISO	■ Manufacture's Std.	☐ ASRAE	Single Type
	Piping	■ DIN ■ ASME	☐ ISO	■ Manufacture's Std.		Piping inside the Compressor Skid is as per MYCOM STD, Tie in as per Project specification
	Flange	■ DIN ■ ASME	☐ ISO	■ Manufacture's Std.	☐ JIS	Piping inside the Compressor Skid is as per MYCOM STD, Tie in as per Project specification
	Thread Connection	☐ DIN ☐ ASME	☐ ISO	☐	☐ PT ☐ NPT	
	MOTOR	☐ DIN ☐ ASME	☐ ISO	☐ JIS ■ IEC ■ Manufacture's Std.	☐ ISO	
	Instrumentation	☐ DIN ☐ ASME	☐ ISO	☐ JIS ■ IEC ■ Manufacture's Std.	☐ ISO	
	Control Panel	☐ DIN ☐ ASME	☐ ISO	☐ JIS ☐ IEC ☐ Manufacture's Std.	☐ ISO	1 set of S7 1200 Common for the Unit
	Cable & wiring	☐ DIN ☐ ASME	☐ ISO	☐ JIS ■ IEC ■ Manufacture's Std.	☐ ISO	

UTILITY							
Electricity		Rated Power (kW)		Volte (V)	Frequency (Hz)	Phase	Note
		Value	Q'ty				
	Compressor Power	120	1	LV	50	3	Compressor shaft power Rpm, 2950
	Oil Pump Motor for CP	2.5	1	LV	50	3	CP = Compressor Pump
	SB Oil Pump Motor for CP	n/a				3	SB = Stand-by
	Control Panel			DC24V		1	
	Oil Heater	1.5kW				3	
Cooling Water	Temp. (degC)	in NA			return NA		
	Press. (barG)	in					
	Flow Rate (m3/hr)		× 1		Fouling Factor TBA		m2h℃/kcal
Instrument	Press. (barG)	***	Temp. (degC)	***	Flow Rate (Nm3/hr)		Approx. ***

Scope of Supply and Work (1/3)- Two Refrigeration Packages Each One including following items:

No	Item	Scope	Q'ty	Remarks
1	MYCOM Compressor		1	Compressor Skid
				model P160VSD-M
	Compressor			Casing / Rotor : Cast iron / Ductile Iron, O-rings Viton
	Electric motor for compressor	■	1	Rated power 120k , LV, 50 Hz IP55 Exec Suitable for Zone 2
	Oil Pump	■	1	For Each Compressor
	Electric motor for Oil Pump	■	1	2.5 kW IP55 / Class F/B
	1st Oil separator	■	1	Horizontal drum type primary fine oil separator
				Shell : Carbon Steel / Design Cord : PED
	Oil cooler	■	1	MYCOM STD Refrigerant Cooled
	Oil filter	■	1	Shell : Carbon Steel For Each Compressor
	Oil heater	■	1	1.5 kW For Each Compressor
	Condenser Air Cooler	■	1	
	Evaporator	■	1	
	Expansion Valve of Evaporator	■	1	
	Dryer Filter	■	1	Temporary use for both packages
	Suction Filter	■	1	Suction strainer
	Control panel	■	1	Siemens S7-1200 PLC for safe area common for complete system
	Instruments IP65, Ex execution	■	1set	1) Suction/Discharge check valves (SC)
				2) Single Safety valve for compressor on oil separators (CS)
				3) ATEX coupling (main coupling and oil pump) , non sparking
				4) Instrumentation Exd and will be As per MYCOM STD
				5) Instruments to be mounted locally
	Junction Box Exe	■		Per Mfr Std, qty: 1 pce, Exe
				Direct feeder for Package Electrical users to be
				provided by client

Scope of Supply and Work (2/3) :

No	Item	Scope	Q'ty	Remarks
	Piping , Tubing Work & Valves			
	Within skid / Shop Work	■	1set	CS material
	Between skids / Site Work	☐		
	To others / site Work	☐		
	Electric Wiring Work			
	Wiring within skid / Shop Work	■	1 set	Mfg standard
	Wiring between skids / Site Work	☐		
	Wiring to others / site Work	☐		
	Thermal insulation, personal protection and fire protection			
	Engineering	■		
	Shop work	☐		
	Field work	☐		
	Ladder, Platform and Structure / Maintenance accessory			
	Material	☐		
	Shop work	☐		
	Field work	☐		
	Heat/Steam tracing			
	Material	☐		By Client
	Shop work	☐		
	Field work	☐		
	Acoustic Enclosure	☐		Not For this Size Machine Not Required

Scope of Supply and Work (3/3)

No	Item	Scope	Q'ty	Remarks
3	Inspection (Shop work) & Document	■	1set	Manufacture's Std.
4	Painting and rust prevention (Shop work)	■	1set	Mayekawa Std. , Monocolor
5	Export packing	■		Manufacture's Std /Shrink packing
6	Domestic transportation	□		
7	Ocean freight	■		CFR Assaluyeh
8	Supervising			
	Installation, re-assembly	□		
	Pre-commissioning	□		
	Start-up	□		
9	Foundation work	□		

MYCOM SCREW COMPRESSOR PERFORMANCE SINGLE STAGE (BOOSTER)

Title :	

MODEL :	P160VS*-M			
REFRIGERANT :	PROPANE			
RECOMMENDED PORT :		M	M	M
Vi :	[-]	3.64	3.64	3.64
COMPRESSION RATIO :	[-]	4.37	4.37	4.37
CAPACITY :	[kW]	196.1	171.4	151.3
CAPACITY :	[TR]	55.8	48.7	43.0
ABSORBED POWER :	[kW]	98.2	91.2	85.6
DRIVE SHAFT SPEED :	[min-1]	2950	2950	2950
COMPRESSOR SPEED :	[min-1]	2950	2950	2950
INDICATOR POSITION :	[%]	90.0	80.0	70.0
CONDENSING TEMP. :	[degC]	56.0	56.0	56.0
EVAPORATIVE TEMP. :	[degC]	0.00	0.00	0.00
SUCTION SUPERHEAT :	[degC]	0.00	0.00	0.00
LIQUID SUBCOOLING :	[degC]	0.00	0.00	0.00
SUCTION TEMP. :	[degC]	0.00	0.00	0.00
OIL SUPPLY TEMP. :	[degC]	50.0	50.0	50.0
SUCTION PRESS. :	[MPaA]	0.466	0.466	0.466
DISCHARGE PRESS. :	[MPaA]	2.03	2.03	2.03
OIL SUPPLY PRESS. :	[MPaA]	2.23	2.23	2.23
SUCTION PRES. DROP :	[MPa]	0.005	0.005	0.005
DISCHARGE PRES. DROP :	[MPa]	0.050	0.050	0.050
SWEPT VOLUME :	[m3/h]	415	415	415
LOAD(SUCTION VOL. FLOW RATE) :	[%]	86.5	75.6	66.7
DISCHARGE TEMP. :	[degC]	68.6	69.2	69.7
REFRIG. FLOW RATE SUC. :	[m3/h]	317	277	245
REFRIG. FLOW RATE DIS. :	[m3/h]	75.1	65.9	58.4
REFRIG. FLOW RATE SUC. :	[kg/h]	3213	2808	2479
REFRIG. FLOW RATE DIS. :	[kg/h]	3213	2808	2479
INJECT. OIL FLOW RATE :	[L/min]	-	-	-
LUB. OIL FLOW RATE :	[L/min]	44.9	44.9	44.9
F.SIDE OIL FLOW RATE :	[L/min]	8.33	8.33	8.33
TOTAL OIL FLOW RATE :	[L/min]	53.2	53.2	53.2
OIL HEAT REJECTION :	[kW]	28.0	28.9	29.7
OIL SPEC HT :	[J/kgK]	1930	1930	1930
OIL DENSITY :	[kg/m3]	880	880	880
COP :	[-]	2.00	1.88	1.77
Elevation :	[m]	NA	NA	NA
Atmospheric :	[MPa]	NA	NA	NA

--- SUPER HEAT is NOT counted in refrigeration capacity ---

--- WITH THERMO-SIPHON OIL COOLER ---

--- NO OIL INJECTION ---

--- When choosing the motor set a safety factor of more than 10% for the brake power. ---

--- Please check carefully the operating range. ---

--- Reference temperature : Dew Point ---

*** MYCOMW27 compressor performance table is valid until the end of Mar, 2024. ***

SP
MYCOM SCREW COMPRESSOR PERFORMANCE 27
MAYEKAWA MFG. CO., LTD.
MYCOMW 27E

STYRENE PARK OFFSITE

Document Title:

Compressor Package Outline Drawing

Rev.	Issued Date	DESCRIPTION	PREPARED	CHECKED	APPROVED
R1	08-06-2024	IFA	F.SH	M.O	A.M
R0	03-02-2024	IFA	F.SH	M.O	A.M

REVISION RECORD SHEET

Page	Revisions								Page	Revisions						
Page	R0	R1	R2	R3	R4	R5	R6			R0	R1	R2	R3	R4	R5	R6
1	X	X							41							
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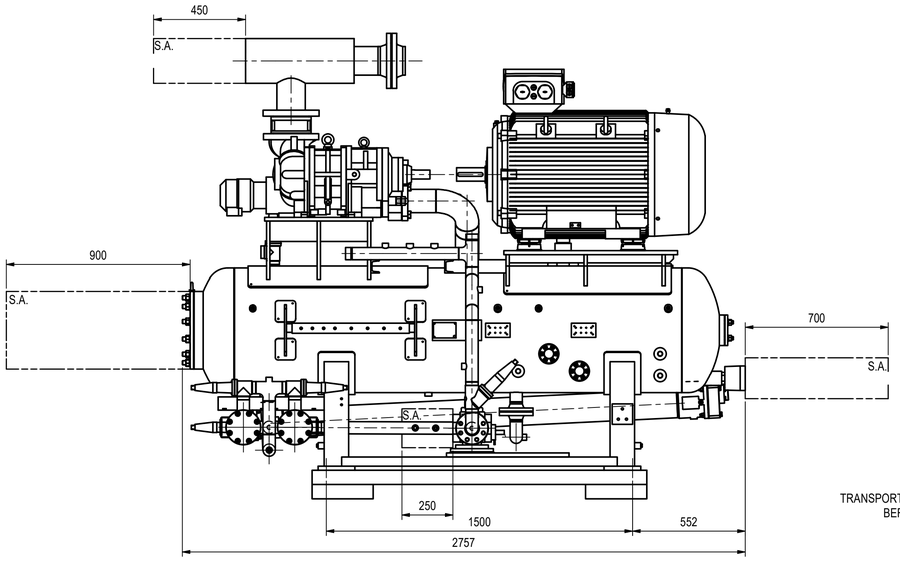

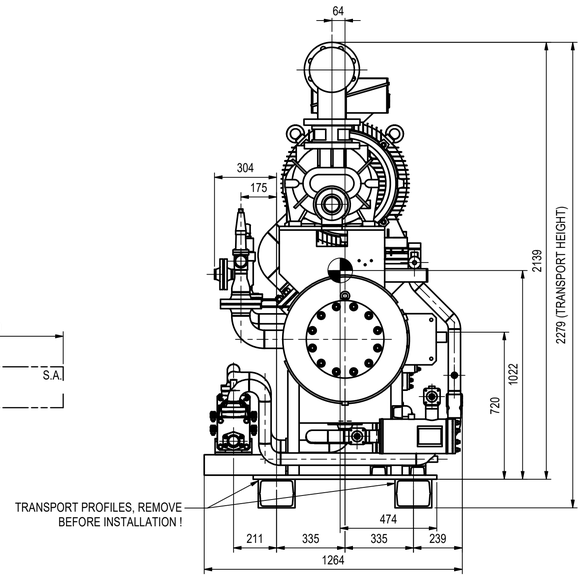

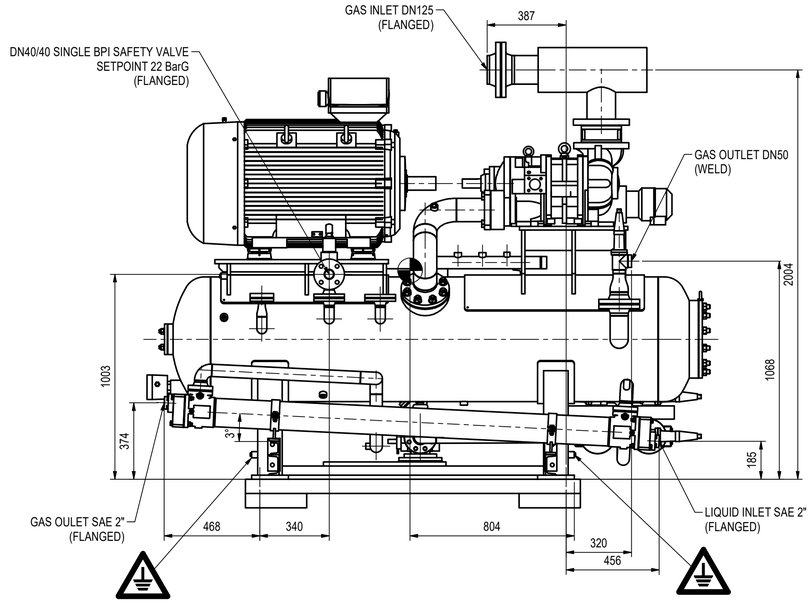

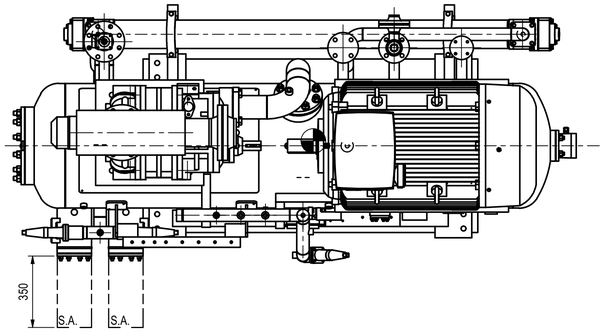

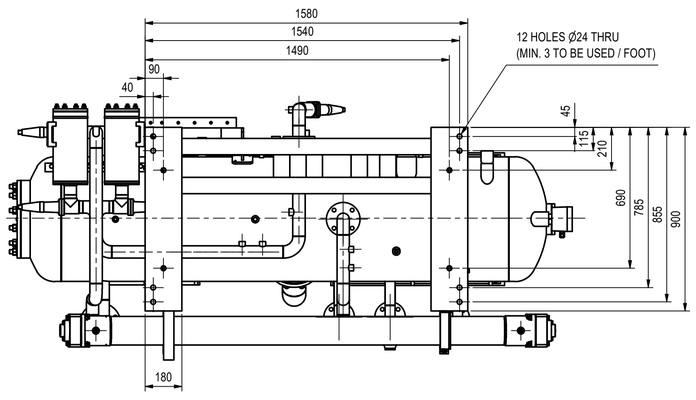

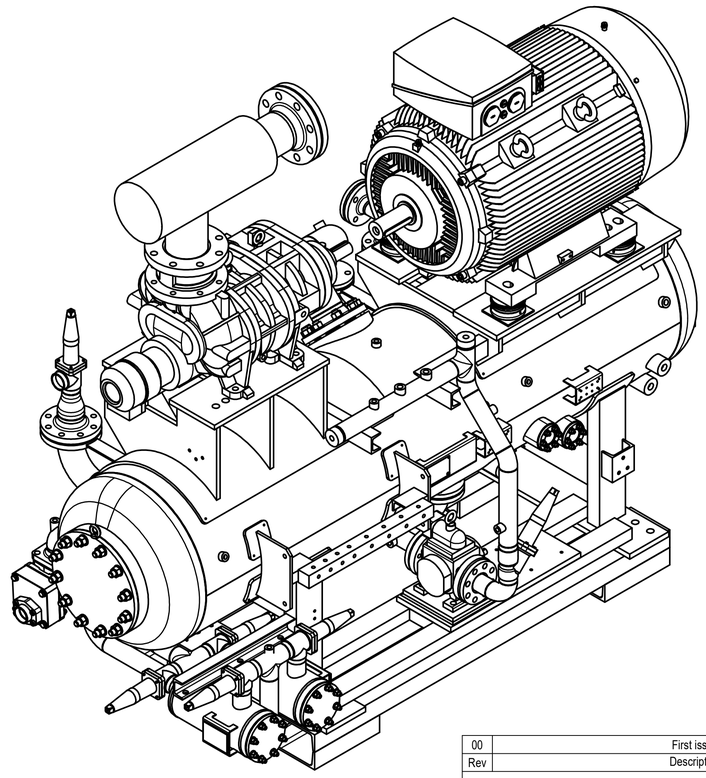

S.A. = SERVICE AREA

= CENTER OF GRAVITY

= GROUNDING
(AT LEAST 1 MANDATORY)

00	First issue	JCR	YA	04/06/2024
Rev	Description	Drw	App	Date App

Revision table

MAYEKAWA
www.mayekawa.eu

MAYEKAWA EUROPE N.V.
Leuvensesteenweg, 605
1930 Zaventem - Belgium

Customer:
Proj. nr:
Proj. name:
Ext. dwg. nr:
Ext. Rev.:

Status: **Work in Progress**

P160VSD-M

General arrangement for customer

For more accurate transport dimensions, please contact Mayekawa Europe one week in advance of foreseen shipment date.	
Weight information (Approx.):	
Empty weight (kg): 3300	Max. operating weight (kg): 3500
Paint information:	
Unit color (RAL): 7035	Motor in the unit color: ☐ Yes ☒ No
Paint system:	

Drawn: JCR 04/06/2024
Chk'd: YA 04/06/2024
App'd:
Eng:

Unless mentioned, all dimensions in mm
Rc = Int. BSPT taper (ISO 7)
Rp = Int. BSPT parallel (ISO 7)
R = Ext. BSPT (ISO 7)

Scale: 1 : 15

Replaces:

Size A1 | Sheet 1 of 1

Rev. 00