

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 : 

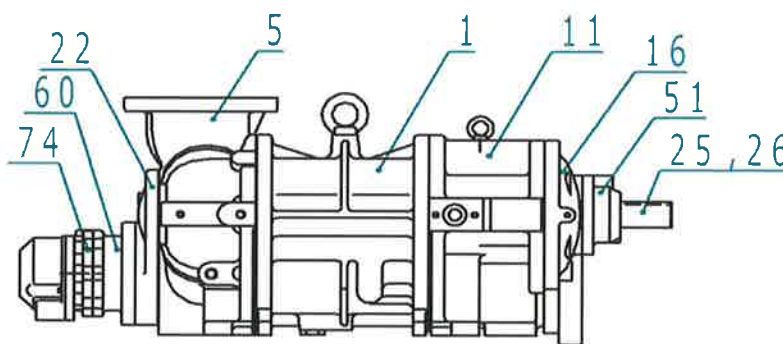
Checked by : 

Material identification list

* General information :

Item No.	: -
Report No.	: 2024323A
Type of compressor	: Screw compressor
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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. Higuchi

Checked by :

K. Watanabe

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1-33-1-2
 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				
	規格 Standard		引張試験 Tensile Test		引張強度 Tensile Strength		Tensile test		JIS Z 2242 (FC材、FCD材は無)				
品名 Product	機種 Model	チャージNo. ChargeNo.	試験月日 Date of Inspection	直径 Diameter	引張荷重 Maximum Load	引張強さ Tensile Strength	硬度数 Hardness	化学成分 Chemical Composition					
								TC	Si	Mn	P	S	Sn
サクションカバー 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
ベアリングヘッド 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
ベアリングカバー 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
備考 Remarks								品質責任者 Reviewed by: <i>A. Kubota</i> 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.

Checked by S. Havashi 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1-33-112
 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						
	規格	標準	引張試験	Tensile Test	硬さ試験	金属材料衝撃試験		Tensile test	JIS Z 2242 (FC材、FCD材は無)				
品名 Product	機種 Model	チャージ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/mm ²	硬度数 Hardness HBW	化学成分 Chemical Composition					
								TC	Si	Mn	P	S	Sn
ローターカasing (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
サクションカバー (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
ベアリングヘッド (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
ベアリングヘッド (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
ベアリングヘッド 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

品質責任者

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

Reviewed by: K. Yamamoto

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	(株)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 HB			
	引張強さ Tensile Strength N/mm ²	耐力 Yield Strength N/mm ²	伸び Elongation %				
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	—	—
<u>顕微鏡写真 Micro-Photograph</u>							
倍率 Magnify	×100						
腐食 Etching	4%ピクリン酸 4%Picric acid						
Reviewed by: <u>K. Watanabe</u> MAYEKAWA. MFG, CO.,LTD							
<u>備考 Remark</u>							
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.		(株)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				

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

株式会社 キヤス

436-1 Miyashitamati Nagaoka-shi Niigata-ken Japan

CAST ANDOH CO.

材質 Material	1995年改正 JIS. G5501 FC300	試験の形状 Test Piece Size	2011年改正 JIS. Z2241 NO. 8C	部品名 Name of parts		試験日 Date of test									
				160V	アンローダーシリンダー Unloader Cylinder										
規格 Standard	直径 Diameter mm	引張強度 Maximum Load N	引張長さ Tensile Stlength N/mm ²	耐力 Yield Stlength N/mm ²	伸び Elogation %	直径 Diameter mm	最大荷重 Maximum Load N	たわみ Deflection mm	硬度試験 Hardness 1998年改定 JIS. Z2243	化学成分 Chemical Composition					
試料記号 T. P. NO.	20±0.7	104900	≥300						硬度数 Brinell	T C	S i	M n	P	S	*
3419	20.0	104900	334						HB	%	%	%	%	%	%
									≤262						*
									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 specification

品質管理者

Checked by



Tested by

Reviewed by: *K. Suetsugu*

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	(株)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 HB					
	引張強さ Tensile Strength N/mm ²	耐力 Yield Strength N/mm ²	伸び Elongation %						
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 : <i>K. Watanabe</i> 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.			(株)シグマ製作所花泉工場 HANAIZUMI FACTORY SIGUMA MFG.CO.,LTD						
発行日 : 2024年2月9日 Date of Issue 9-Feb-24			〒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					

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
 株式会社 前川製作所 東広島工場 圧縮機製造部門 品質保証グループ
 〒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: 株式会社 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	Test piece	JIS Z 2241(2011) No.4 Φ 14mm	Quality Responsibility Person	Checked by	Chemical Composition		Ratio Of Graphite Spheroidizing 黒鉛球状比率 ≥80[%]
								Chemical Composition 検査規格	Flask Number 枠番号	
Male Rotor Mロータ	160S	球状黒鉛鑄鉄品	材質	試験片		品質責任者	Tested by			
Charge No. /TP-No. チャージ No./ テスト・ス No.	Date of Inspection 試験日	Tensile Test Inspection Yield stress 耐力	Elongation 伸び	Hardness test Hardness 硬度	Inspection Standard	化学成分		Ratio Of Graphite		
TP-1	2024/3/21	≥370(N/mm2)	≥3[%]	170~270[HB]	Si[%]	C[%]	S[%]	P[%]	Mn[%]	黒鉛球状比率
C24 305		827	4.7	244	C[%]	≥2.5	≤0.02	≤0.09	0.167	93.0
C24 306					Si[%]	-	-	-	0.019	0.015
C24 307					Mn[%]	-	-	-	0.167	0.046
C24 308					C[%]	3.434	2.336	0.167	0.015	0.046
Heat Treatment 熱処理	Condition / Temp. 種類 / 温度	Tensile Test Inspection Yield stress 耐力		Hardness test Hardness 硬度	Inspection Standard	化学成分		Ratio Of Graphite		
		827		170~270[HB]	Si[%]	C[%]	S[%]	P[%]	Mn[%]	黒鉛球状比率
		485		244	C[%]	≥2.5	≤0.02	≤0.09	0.167	93.0
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
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		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si[%]	-	-	-	0.019	0.015
		827			Mn[%]	-	-	-	0.167	0.046
		485			C[%]	3.434	2.336	0.167	0.015	0.046
		4.7			Si					

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

殿

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 品質保証グループ
 〒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

発注日(Charge Date) 2024/2/19

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	Test piece	JIS Z 2241(2011) No.4 Φ14mm	Quality Responsibility Person	Checked by					
Female Rotor Fロータ		160S	球状黒鉛鋳鉄品	材質	試験片		品質責任者	Tested by					
Serial Number 製造番号	Charge No. /TP-No. チャージ No./ テスト-ス No.	Date of Inspection 試験日	Tensile Test Inspection		Elongation 伸び	Chemical Composition			Ratio Of Graphite Spheroidizing 黒鉛球状化率 ≥80[%]	Flask Number 枠番号			
			Tensile Strength 引張強さ ≥600[N/mm ²]	Yield stress 耐力 ≥370[N/mm ²]		Inspection S[%]	Standard Mn[%]	Check Standard P[%]			Mg[%]		
C24 217	TP-1	2024/2/21	798	465	170~270[HB]	C[%] ≥2.5	3.437	2.279	0.187	0.007	0.036	91.3	1-2
C24 218					226	Si[%]							1-4
C24 219													1-6
C24 220													
C24 221													
C24 222													
C24 223													
C24 224													
C24 225													
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. Guatanabe*
 MAYEKAWA MFG. CO., LTD.

HIGASHIHIROSHIMA PLANT MAYEKAWA MFG. CO., LTD
 ㈱前川製作所 東広島工場

2023.4.19/第3版

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]	37.5 [barG]	Oil	30 [min]	June 20, 2024	Accepted
	2.5 [MPaG]	3.8 [MPaG]				
Gas leak test	25.0 [barG]	25.0 [barG]	Air	30 [min]	June 20, 2024	Accepted
	2.5 [MPaG]	2.5 [MPaG]				

* 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 :

	Pressure gauge No.	Registration No.	Terms of validity
Hydrostatic test	1	AA-70114	End of July,2024
	2	AA-70115	End of July,2024
Gas leak test	1	AA-50011	End of July,2024
	2	AA-50012	End of July,2024

Approved by: 

Checked by: 

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:

Checked by:

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	[m ³ /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]		20	≥	V	Accepted
					H	Accepted
					A	Accepted

Approved by:

Checked by:

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: 

Checked by: 

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 [m ³ /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)

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

Approved by: 

Checked by: 

Compressor shop mechanical running test report

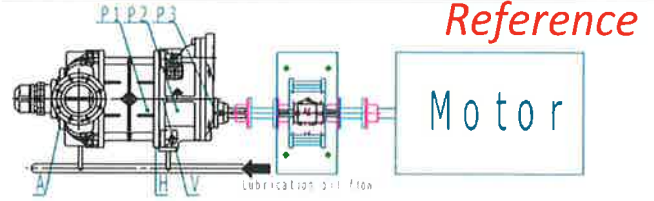
*** General information :**

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



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. Fujimori*

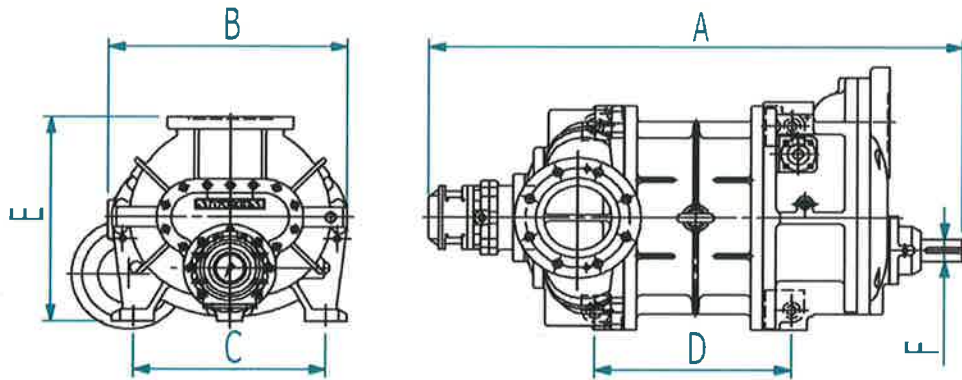
Checked by: *K. Uatomabe*

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 -8.0	1037.0 1021.0	1029.0	Accepted
B	470.0	5.0 -5.0	475.0 465.0	470.0	Accepted
C	370.0	1.0 -1.0	371.0 369.0	370.0	Accepted
D	280.0	1.0 -1.0	281.0 279.0	280.0	Accepted
E	410.0	5.0 -5.0	415.0 405.0	410.0	Accepted
F	45.0	0.011 -0.005	45.011 44.995	45.010	Accepted

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. Fujimura*

Checked by : *K. Uatomake*

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]

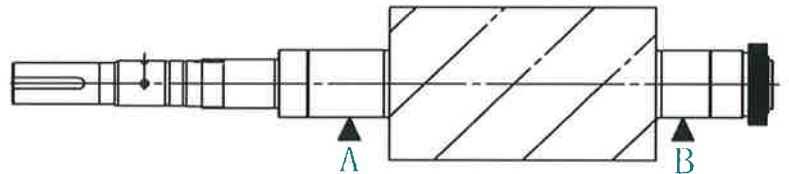
- Male rotor allowable residual unbalance
 $= (2.5 \times 9550 / 4500) \times (M / 2) \times (1 / 10)$
- Female rotor allowable residual unbalance
 $= (2.5 \times 9550 / 3000) \times (M / 2) \times (1 / 10)$
- Male rotor weight (M) : 28.6 [kg]
- Female rotor weight (M) : 22.2 [kg]

* Testing device : NAGAHAMA SEISAKUSHO LTD.,

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

MALE ROTOR

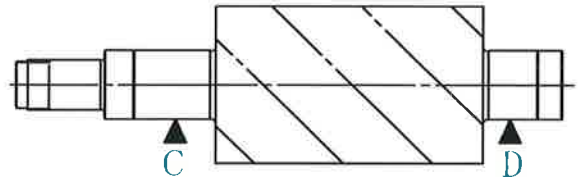
Rotor No. : C24305
 Date of test : June 15, 2024



	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. Fujimori*

Checked by : *K. Uatanabe*

