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

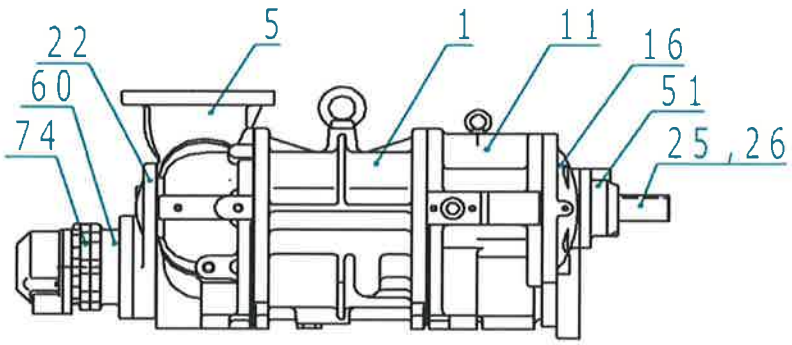
MYCOM

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

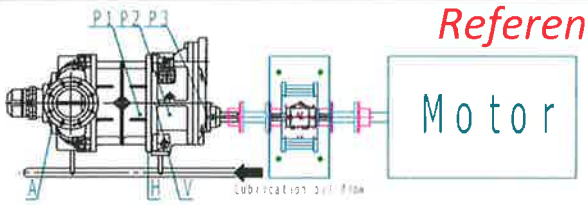
SURVEYOR

* 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

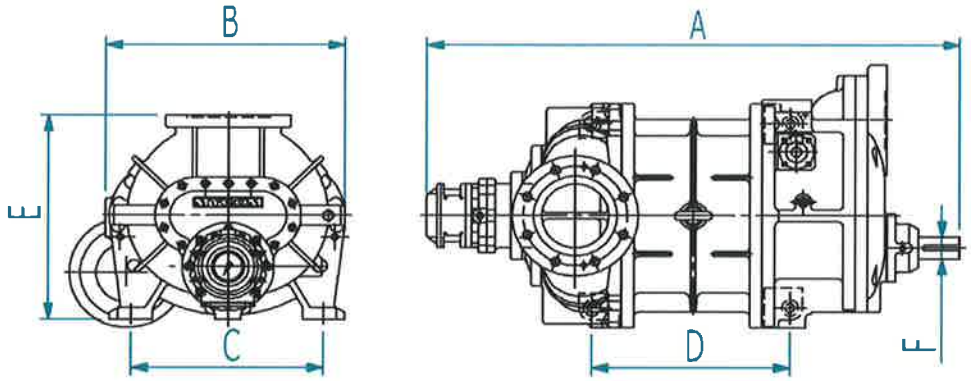
MYCOM

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)

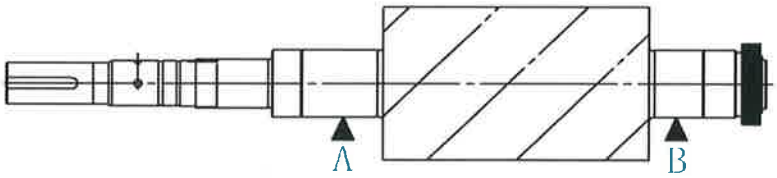
- Male rotor weight (M) : 28.6 [kg]
- Female rotor weight (M) : 22.2 [kg]

* Testing device : NAGAHAMA SEISAKUSHO LTD.,

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

MALE ROTOR

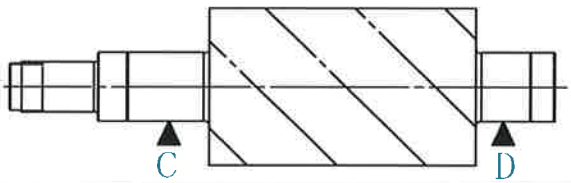
Rotor No.	: C24306
Date of test	: June 15, 2024



	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**