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Owner	 MAGMA NUSANTARA LTD		
Project	WAYANG WINDU UNIT2 GEOTHERMAL POWER PROJECT		
Contract No.	Contractor <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 5px;"> 71510012-OS </div> <div style="text-align: center;">  </div> <div style="margin-left: 10px;"> Sumitomo Corporation </div> </div>		
MNL Drawing No.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 10px;">WW2 - ME - LU - 5350</td> <td style="text-align: center; padding: 10px; width: 10%;">0</td> </tr> </table>	WW2 - ME - LU - 5350	0
WW2 - ME - LU - 5350	0		
Dwg. Status	<div style="border: 2px solid black; padding: 10px; font-size: 24px; font-weight: bold;">AS BUILT</div>		

REVISIONS	B) ISSUED FOR AS BUILT. Feb-13-2009 Yokoyama, Takeyama		DWG. CODE	CONTROL NO.: WW2-ME-LU-5350				
	A) ISSUED FOR CONSTRUCTION. May-26-2008 Yokoyama, Takeyama		TITLE	K1B10159G1 OUTLINE DRAWING OF EMERGENCY OIL PUMP				
DRAWN	Yokoyama	APPROVED	SCALE	<div style="font-size: 36px; font-weight: bold;">ST7C5442</div> <div style="font-size: 24px;">1/10</div>				
CHECKED	Takeyama		DRAWING NO.					
DATE	Feb. - 5-2008 <i>f. Idori</i>							
Fuji Electric Systems Co., Ltd.			REF.	<table border="1" style="border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px; text-align: center;">A</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px; text-align: center;">B</td> </tr> </table>		A		B
	A							
	B							

KANSUI PUMP CO., LTD

DWG. No. H4007071
WORK No 200712-2

PUMP DATE SHEET

MESSRS	FUJI ELECTRIC SYSTEMS CO., LTD		
USER	WAYANG WINDU	ITEM No	P-203
SERVICE	EMERGENCY OIL PUMP	NO REQUIRED :	1

OPERATING CONDITIONS

LIQUID :	TURBINE OIL ISO VG32	CAPACITY :	25	m ³ /h
		SUCTION HEAD :	—	MPaG
LIQUID TEMP	30 ~ 70 °C	DISCHARGE PRESSURE	—	MPaG
SPECIFIC GRAVITY :	0.852~0.825 kg/	DIFFERENTIAL PRESSURE	1.9	bar
VAPOR PRESSURE :	— KPaA	DIFFERENTIAL HEAD :	1.9	bar
VISCOSITY	51.5 × 10 ⁻⁶ ~ 11.3 × 10 ⁻⁶ m ² -S	NPSH AVAILABLE :	—	m
pH :	—	INSTALLATION	INDOOR	

PERFORMANCE

SPEED	1750 min ⁻¹	CASING DESIGN PRESS :	0.294	MPaG
Ns (m ³ /m min ⁻¹) :	—	CASING DESIGN TEMP :	77	°C
NPSH REQUIRED :	— m	JACKET DESIGN PRESS	—	MPaG
EFFICIENCY :	38 %	COOLING WATER REQ' D :	—	MPaG
BRAKE HORSE POWER	3.5 kW	FLUSHING LIQUID REQ' D	—	MPaG
		HEATING STEAM REQ' D	—	MPaG
MIN CONTINUOUS FLOW	—			
METHOD OF PRIMING :	—			

CONSTRUCTIONS

TYPE							VERTICAL TYPE SINGLE SUCTION VOLUTE PUMP						
MODEL NO			65 VSC-1 #2640				NO OF STAGE :			1			
CASING			SINGLE VOLUTE				SPLIT			RADIALLY			
IMPELLER :			CLOSE TYPE				MOUNTING :			TANK TOP MOUNT			
CONNECTION		SIZE	RATING		FACING	POSITION	VENT						
SUCTION FLANGE		—	—		BELL MOUTH	BOTTOM	DRAIN : —						
DISCHARGE FLANGE		65A	JIS 10k		F·F	HORIZONTAL	GAUGE		SW 1/2				
METHOD OF SHAFT SEAL							SEAL LESS						
MECHANICAL SEAL		MODEL NO	SIZE	MATERIAL	FLUSHING	COOLING WATER							
GLAND PACKING :		—	—	—	—	—	MPa	— /min					
BEARING		BALL	PLANE	LUBRICANT	CAPACITY	SYSTEM	COOLING WATER						
RADIAL		—	CARBON	ISO VG32	—	OIL BATH	—	MPa	— /min				
THRUST		#6309	—	ISO VG32	—	FLOOD	—	MPa	— /min				
POWER TRANSMISSION							FLEXIBLE COUPLING						
ROTATION VIEWED FROM DRIVER							CW						
MATERIAL		CASING :	FC250	IMPELLER	SCS13	SHAFT	SUS304						
MOUTHPIECE		SUS304	SLEEVE :	—	COUPLING	FC200	BASEPLATE SS400						
CASING STUJ		SS400	GASKET	NBR	STRAINER	SUS304							

DRIVER

OUT PUT :	5.5 kW	SPEED :	1750 min ⁻¹	MFR	YASKAWA	MODEL NO	GFEVF #180L
ELEC POWER	— Hz	230 V DC PHASE	INSULATION	F / B	POLES :	4	

TEST & INSPECTION

PUMPING PERFORMANCE TEST		JIS-B8301	
HYDROSTATIC TEST :	0.45	MPaG	
PNEUMATIC TEST	—	MPaG	

MISCELLANEOUS

MASS (APPROX)							
PUMP :	250 kg						
BASE :	90 kg						
DRIVER	245 kg						
TOTAL	585 kg	REV NO	DESCRIPTION	DATE	DRA	CHE	APP

APPROVED 大野 CHECKED 吉良 DRAWN 橋本 DATE JULY 11 2007

ST7C5442B 2/10

PERFORMANCE CURVE

KANSUI PUMP CO., LTD.
 KOBE JAPAN

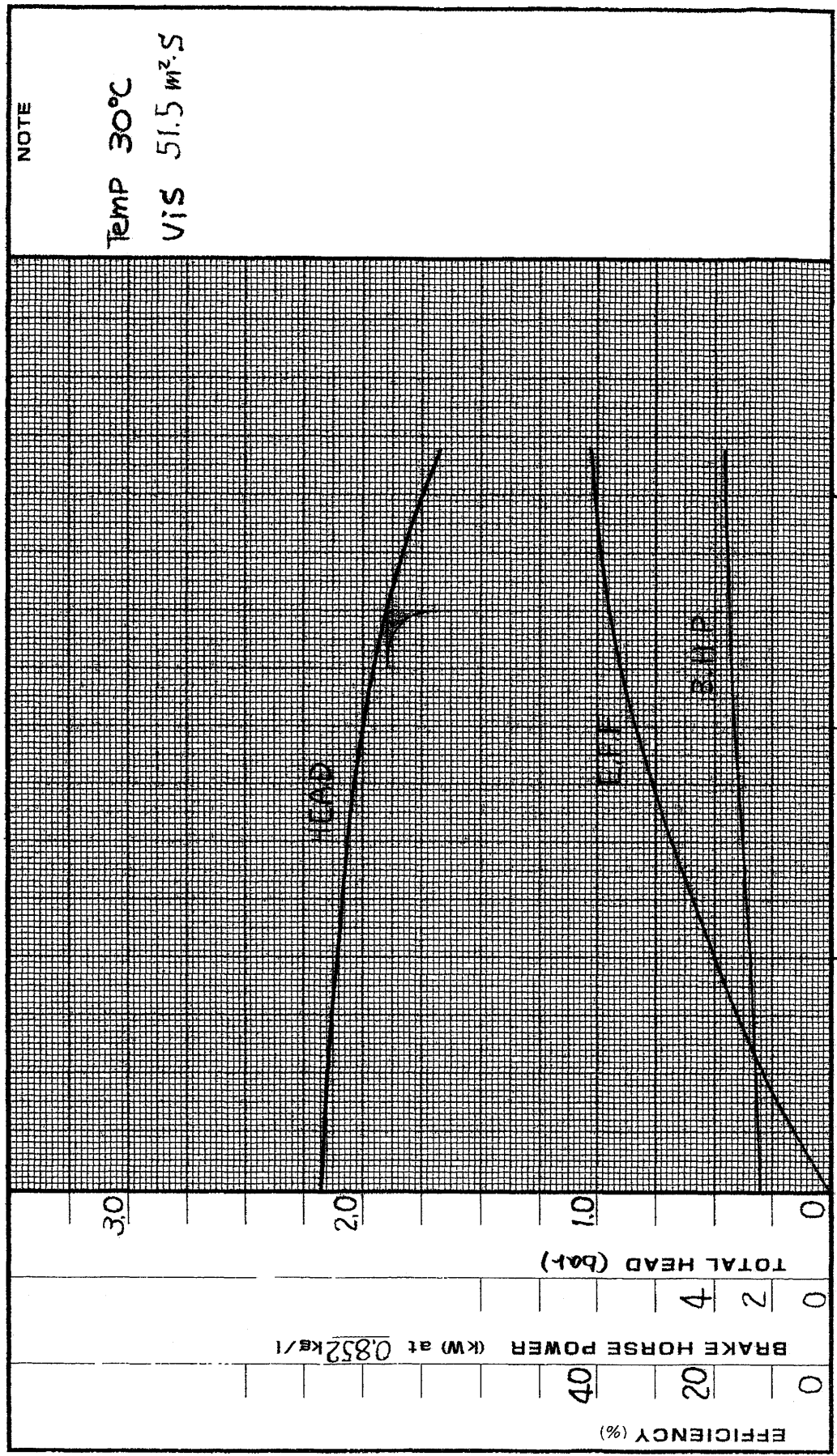
WANG WINDU

EMERGENCY OIL PUMP

APPROVED BY 大野
 CHECKED BY 大野
 DRAWN BY 大野
 DATE JULY.11.2007

WORK NO. 200712-2

PUMP NO	BORE	MODEL & NO.	Q	HT	SPEED	MOTOR
P-203	65	VSC #2640	25 m ³ /h	1.9 bar	1750 min ⁻¹	5.5 kW 4 P 230 V DC

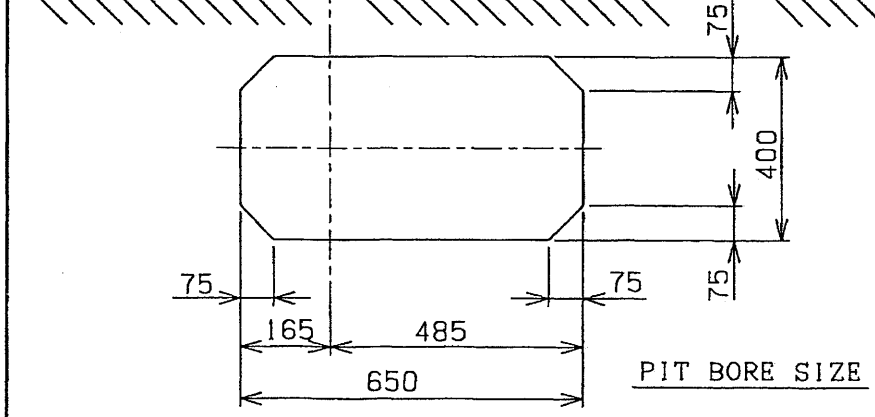
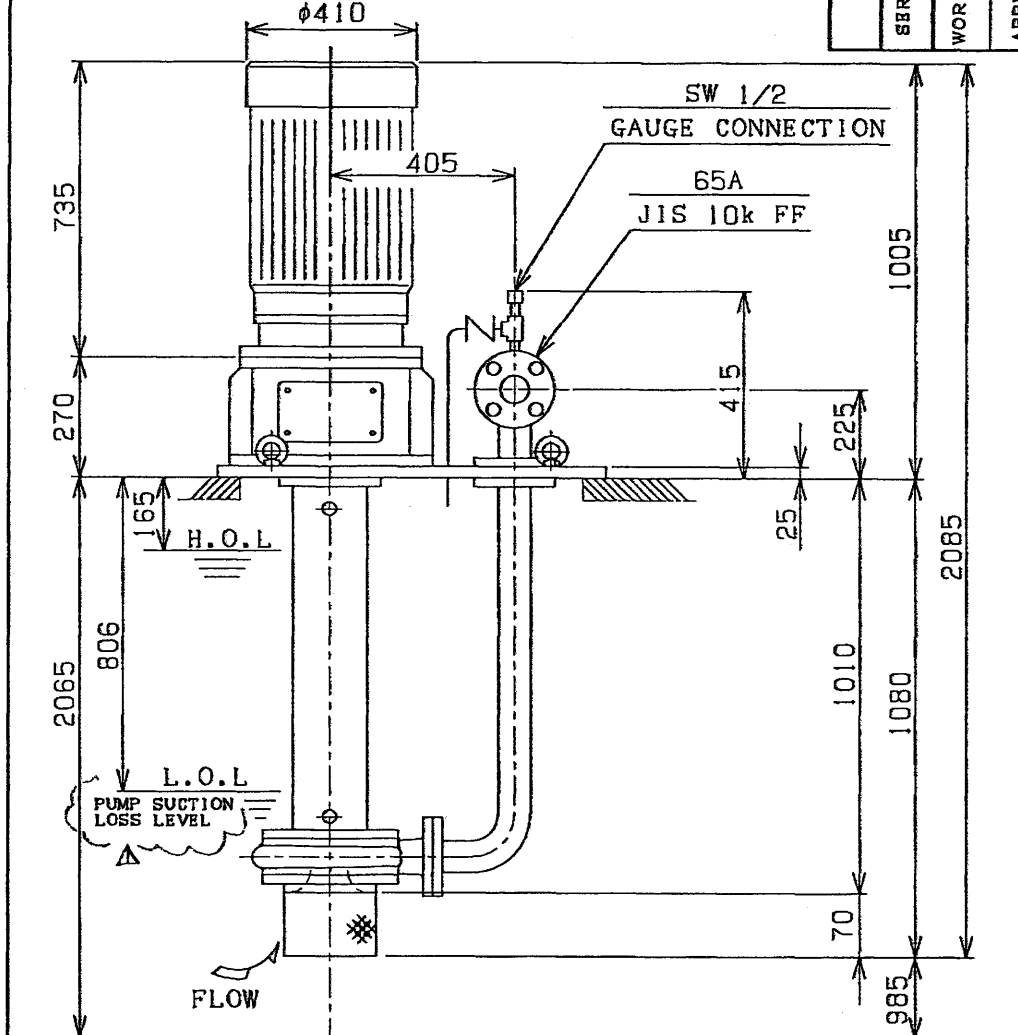
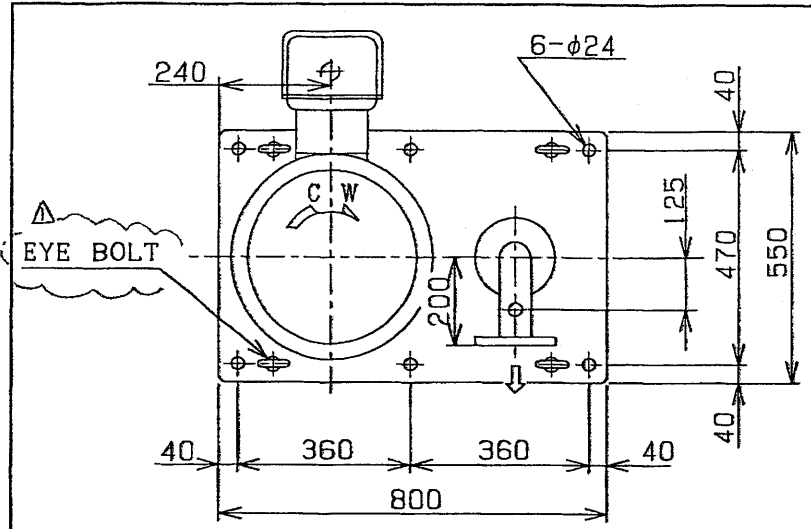


H4007072

CAPACITY m³/h

DRAWING No H4007072

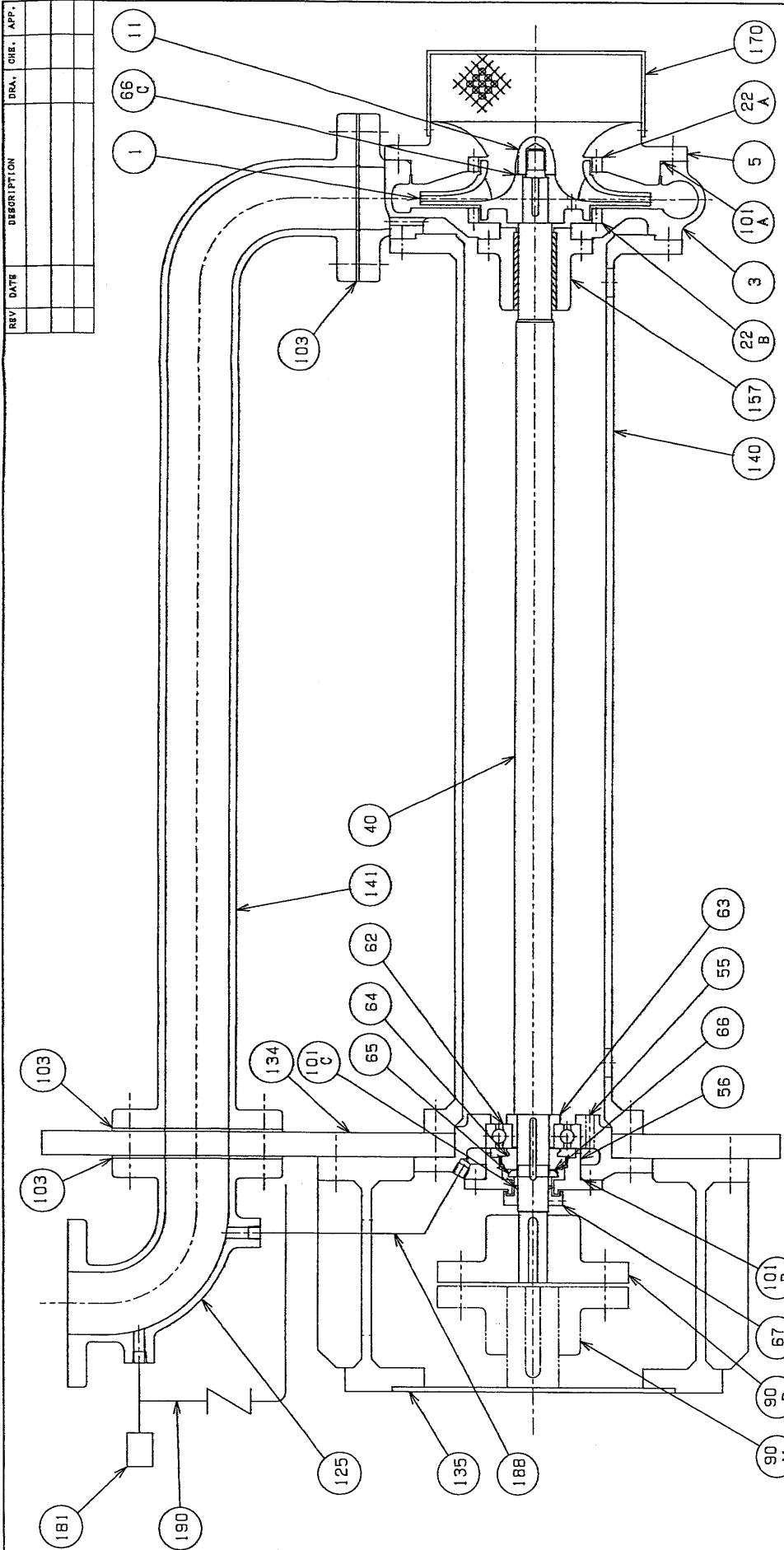
ST7C5442B 3/10



OUTLINE DRAWING			
SERVICE	EMERGENCY OIL PUMP		
WORK No.	200712-2	ITEM No.	P-203
APPROVED	矢野	MODEL	VSC
CHECKED	吉良	SCALE	NONE
DRAWN	橋本	DATE	JULY.11.2007
DWG NO.	G4007073		
KANSUI PUMP CO., LTD.			

REV	DATE	DESCRIPTION	DRA.	CHK.	APP.
1	Oct. 26 2007	Eye bolts are added.	橋本	吉良	矢野

K3007379

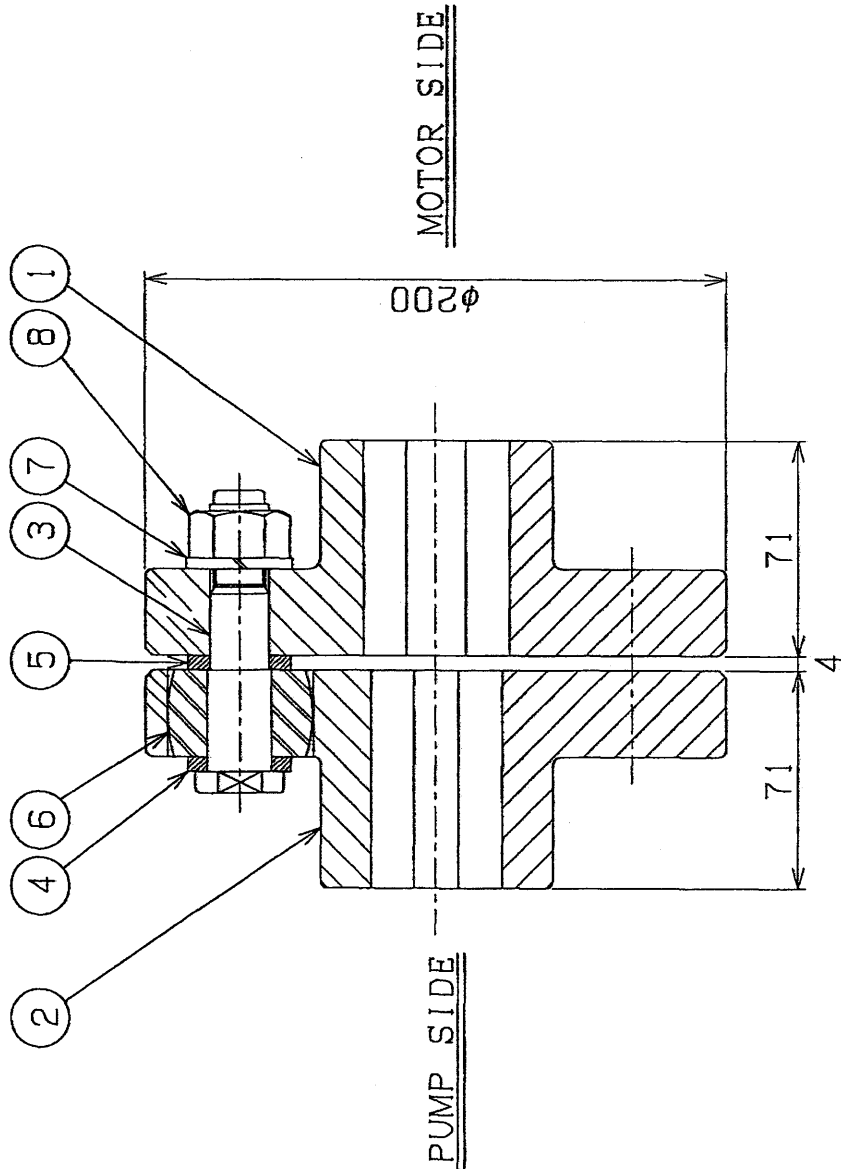


REV.	DATE	DESCRIPTION	DRW.	CHK.	APP.

品番	部品名	数量	材質	備考	品番	部品名	数量	材質	備考
63	BEARING BUSHING	1	S25C		103	SHEET PACKING	3	NONE	
62	BALL BEARING	1	#6309		101C	O-RING	1	NBR #832	
56	BEARING CASE COVER	1	FC200		101B	O-RING	1	NBR #8100	
55	BEARING CASE	1	FC200		101A	O-RING	1	NBR #260X3.2	
40	SHAFT	1	SUS304		90M	COUPLING HUB	1	FC200	
22B	CASING WEARING	1	SUS304		90P	COUPLING HUB	1	FC200	
22A	CASING WEARING	1	SUS304		67	DEFLECTOR	1	SUS304	
11	IMPELLER NUT	1	SUS304		66C	IMPELLER WASHER	1	SUS304	
5	SUCTION COVER	1	FC200		66	BEARING WASHER	1	SPCC JIS A407	
3	CASING	1	FC250		65	BEARING NUT	1	SS400 JIS A407	
1	IMPELLER	1	SS413		64	BEARING COLLAR	1	S25C	
11	IMPELLER	1	SS400H-STPG370		125	DISCHARGE BEND	1	S25C	
3	CASING	1	SS400		134	FLOOR BASE	1	SS400	
5	SUCTION COVER	1	FC200		135	MOTOR FRAME	1	SS400	
11	IMPELLER NUT	1	SUS304		140	COLUMN	1	SS400H-STPG370	
22A	CASING WEARING	1	SUS304		141	DISCHARGE PIPE	1	SS400H-STPG370	
22B	CASING WEARING	1	SUS304		157	BOTTOM CASING BEARING	1	FC200H-CARBON	
40	SHAFT	1	SUS304		170	STRAINER	1	SUS304	
55	BEARING CASE COVER	1	FC200		181	SOCKET (GAUGE CONNECTION)	1	S25C	SW1/2
56	BEARING CASE	1	FC200		180	AIRVENT PIPE	1	SUS304TH	
62	BALL BEARING	1	#6309		188	LUBRICATION PIPE	1	SUS304TH	
63	BEARING BUSHING	1	S25C		190	AIRVENT PIPE	1	SUS304TH	

ST7C5442B 5/10

SECTIONAL DRAWING	
SERVICER	EMERGENCY OIL PUMP
WORK No.	200712-2
APPROVED	天野
CHECKED	吉良
DRAWN	橋本
ITEM No.	P-203
MODEL	VSC
SCALE	NONE
DATE	JULY, 11, 2007
DWG No.	K3007379
KANSUI PUMP CO., LTD.	



No.	部品名称	材質	数量
①	HUB	FC200	1
②	HUB	FC200	1
③	BOLT	SS400	8
④	WASHER	SS400	8
⑤	WASHER	SS400	8
⑥	BUSH	NBR	8
⑦	SPRING WASHER	SWRH62	8
⑧	NUT	SS400	8

JIS B1452 CL#200

COUPLING

SERVICE	EMERGENCY OIL PUMP	
WORK No.	200712-2	ITEM No. P-203
APPROVED	天野	MODEL VSC
CHECKED	右良	SCALE NONE
DRAWN	橋本	DATE Oct.29.2007
DWG NO.	H4007101	

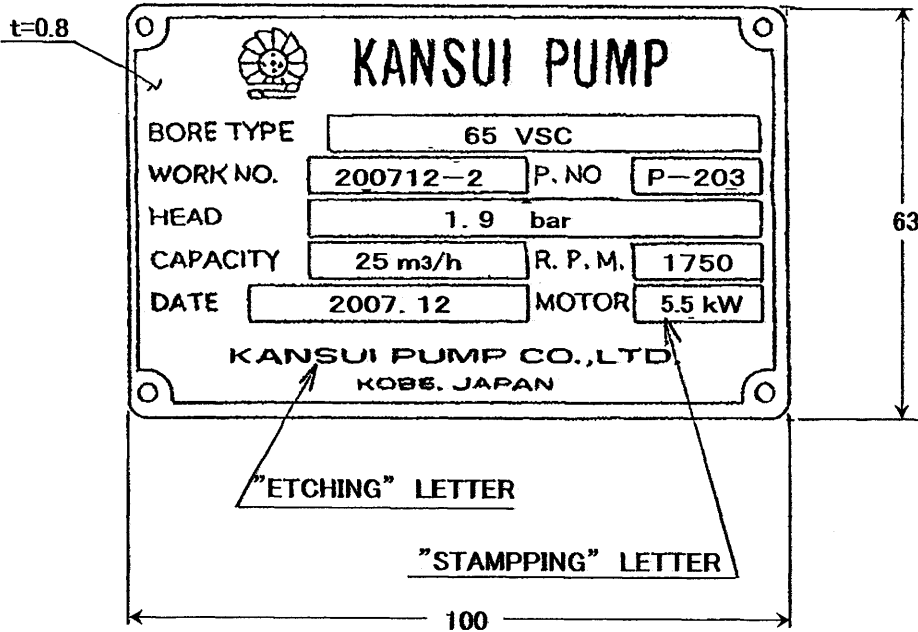
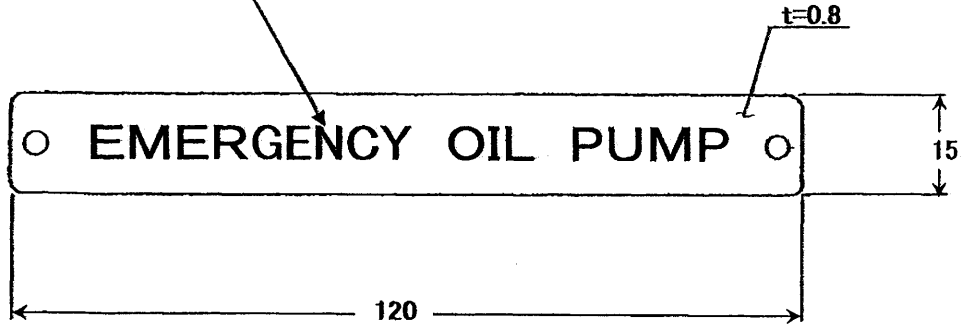
KANSUI PUMP CO., LTD.

REV	DATE	DESCRIPTION	DRA.	CHE.	APP.

F No H D 図 番 H4007093

REV 改訂	DATE 日付	DESCRIPTION 記 述	DRA 作成	CHE 審査	APP 承認
△					
△					
△					
△					
△					

"ETCHING" LETTER



MATERIAL : SUS304

WORK No	200712-2	
APP 天野	CUSTOMER FUJI ELECTRIC SYSTEMS CO.,LTD	
CHE 古良	USER	WAYANG WINDU
DRA 橋本	SERVICE	EMERGENCY OIL PUMP
	NAME	NAME PLATE
DATE Oct. 3. 2007	DWG No H4007093	REV △ 0
KANSUI PUMP CO.,LTD		

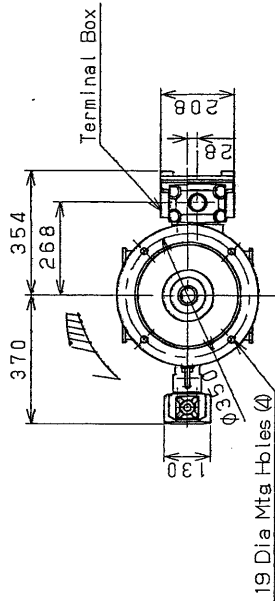
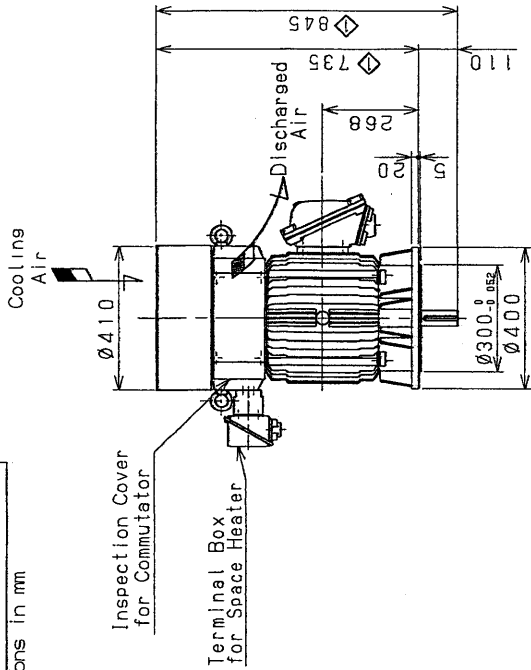
ST7C5442B 7/10

ACCESSORIES LIST

EQUIP NO		P-203		TYPE-MODEL NO		65 VSC-1 #2640	
SERVICE		EMERGENCY OIL PUMP		NO REQUIRED		1	
NO	PART NAME	MATERIAL	NOREQ'D 員数		REMARKS		
				Total			
1	Emergency Oil pump			1			
2	Motor			1	Articles supplied		
3	Flexible coupling	FC200		1Set	Installed		
4	Bolt, Nut, Washer, Bush			8Sets	For Coupling		
5	Floor base	SS400		1	Installed		
6	Air vent pipe	SUS304		1Set	Installed		
7	Lubrication pipe	SUS304		1Set	Installed		
8	Coupling cover	SS400		2Sets	Installed		
9	Strainer	SUS304		1Set	Installed		
△ 10	Eye bolt	SS400		4	Installed		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
					APP.	矢野	
					CHEK.	吉良	
					MADE	橋本	
1	Oct 29 2007	Eye bolts are added	橋本	吉良	DATE	Oct 3 2007	
REV	DATE	DESCRIPTION	MADE	CHE	APP	WORK NO	200712-2

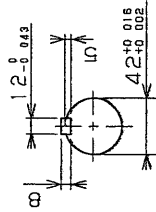
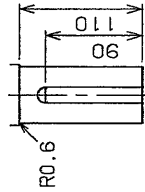
DWG NO P0312964

Dimensions in mm



19 Dia Mtg Holes (4)

Detail of Terminal Box



Detail of Shaft Extension

Notes:

- Standards : NEMA MG-1, Thermal classification : F/Brise
- Rotation direction (Facing drive end) : Clockwise Counter clockwise Reversible
- Thermostat : Request With Without
- Drive method : Direct drive
- Shaft extension key is furnished by Yaskawa
- Regreasable type bearings packed with lithium based grease are used
- Enclosure : IP55
- Space Heater Output_50 W, Phase_1, Voltage_220V
- Noise : 82dB (A) Full Load

YASKAWA PRESENTATION STAMP
 Sep.12.2007.
 YASKAWA ELECTRIC CORPORATION

Approx. Inertia (GD²/4)	Bearing No.
Mass kg	End opp. Drive
245	0 35 6311ZZ 6310ZZ

Customer -----
 End User -----
 Application -----
 Order No. - Item No T760082-1
 Estimate No -----

RATINGS

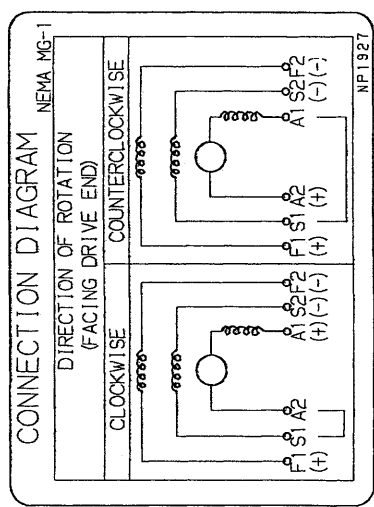
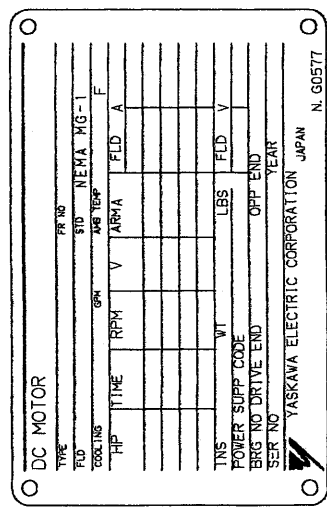
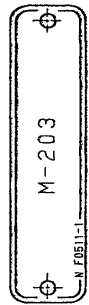
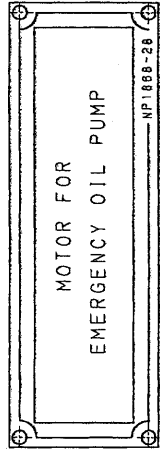
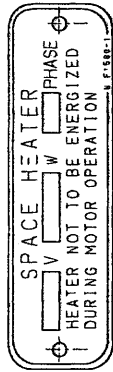
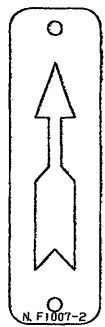
Type	Output kW	Time Rating	Speed min-1	Voltage V	Excitation	Frame No.
GFEVF	5.5	CONT	1750	230	SELF WITH STABI	GFEV-180L

TITLE	Dimensions of DC Motor		DWG. NO	P0312964
Totally Enclosed Fan-Cooled Type				
作 成 DRAW	S. Honda	REV	◇	
檢 査 CHECK	K Oyama	DATE	Sep 10 07S Kondok Oyama	
承 認 APPR		BY	SCALE	

DWG NO. P0313400

Order No T76062-1

YASKAWA
 PRESENTATION
 STAMP
 Sep. 25, 2007.
 YASKAWA ELECTRIC CORPORATION



⚠ DANGER

ROTATING EQUIPMENT INSIDE
 COVER MUST BE CLOSED
 PRIOR TO OPERATING EQUIPMENT

N.F.6636

REV	◇
DWG. NO	P0313400
TITLE	Name Plate
作 製	S. Honda
DR 脚	
CHECK 査	K Oyama
APPR 承認	
DESCRIPTION	DATE
BY	APPR
SCALE	