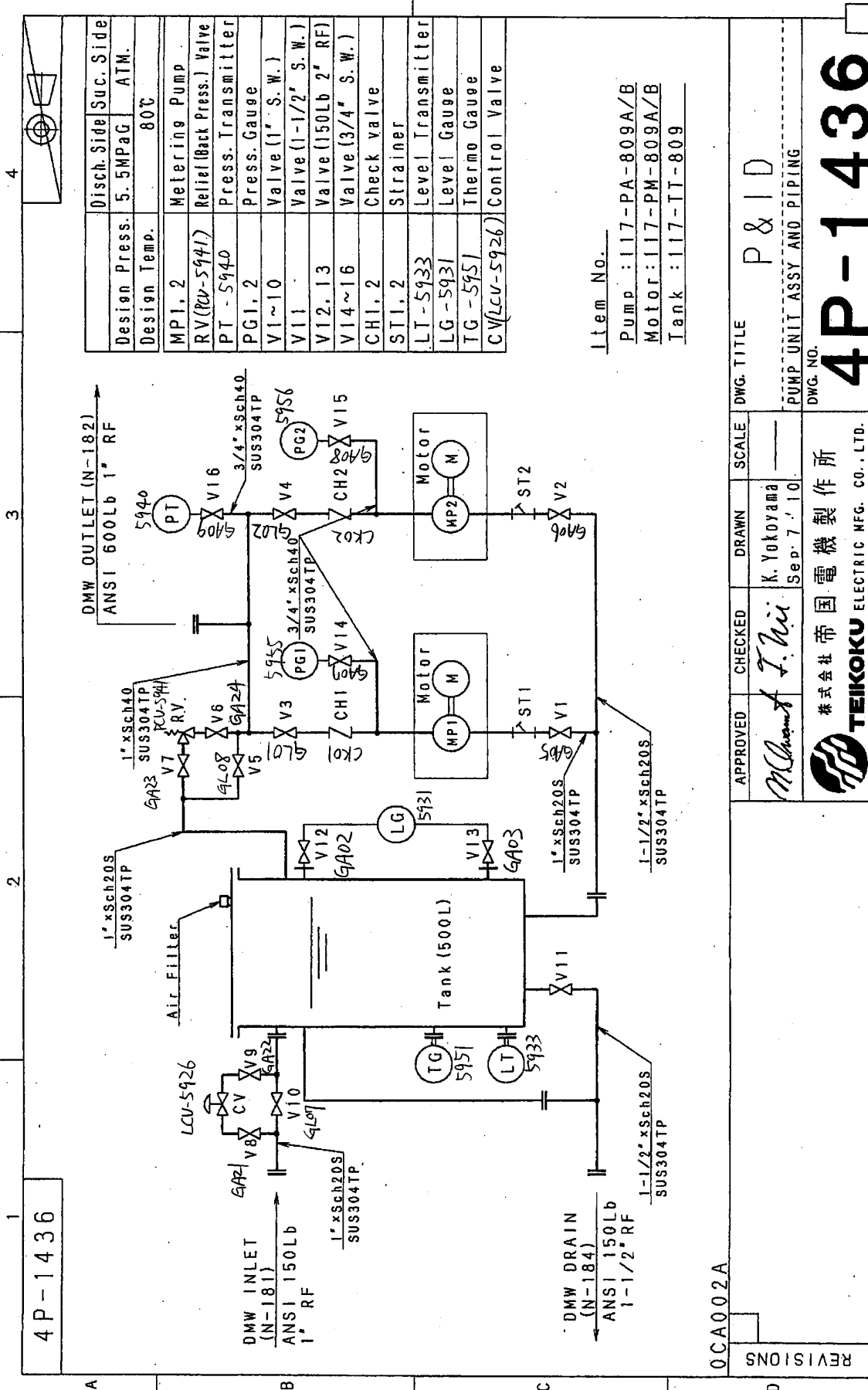


Package Data Sheet		1/1		TEIKOKU ELECTRIC MFG. CO.,LTD									
Customer: M/S KOBE STEEL,LTD.				Item No. ---				Order No. ---					
P/J Name ---				JOB No. of Customer ---				Doc. No. Q0C-A002A					
Service Name ---													
Type: TP-055-L				No. Req:				1set					
[1] General													
1 Ambient Condition		Pump unit:		Indoor		Control Panel:		---					
2 System		---											
3 Fluid		Water											
4 Concentration / Temperature / Solidifying Point (%) / (°C)		25 ~ 50											
5 Specific gravity / Viscosity () / (mPa·s)		1 / 1											
6 Capacity (m³/h)		0.6(0.01 ~ 0.6)											
7 Operating pressure discharge (kg/cm²G)		50											
8 Operating pressure suction (kg/cm²G)		0											
[2] Design data													
Pump unit		Paint color(Munsell)		Flame: 10B5/10		Pump: 10B5/10							
9 Pump type		TKD-1P											
10 Suction line		Design press./Temp. (kg/cm²G) / (°C)		ATM. / 80									
11 Piping		1B x Sch20S											
12 Filter		40MESH											
13 Pressure gauge (kg/cm²G)		---											
14 Flow meter (kg/h)		---											
15 Volume of Pulsation Damper (L)		---											
16													
17 Discharge line		Design press./Temp. (kg/cm²G) / (°C)		55 / 80									
18 Piping		1B x Sch40											
19 Filter		---											
20 Pressure gauge (kg/cm²G)		---											
21 Flow meter (kg/h)		---											
22 Set press. of external relief valve (kg/cm²G)		50											
23 Pressure Transmitter (kg/cm²G)		---											
24 Volume of Pulsation Damper (L)		---											
25													
Control panel		Paint color(Munsell)		Inside: ---		Outside: ---							
26 Service name		---											
27 External appearance structure		---											
28 Electric power supply (Instrumentation)		---											
29 Appliance Spec. Voltmeter/Ammeter (V)/(A)		---											
30 Frequency meter (%)		---											
31 Variable frequency (Hz)		---											
32													
33													
34													
35													
36													
37													
[3] Spare parts and Accessories													
38													
39													
40													
41													
[4] Drawings													
42 Dimentional Drawing		2A-2717		P&ID		4P-1436		Metering Pump Data Sheet		QLC-6503A			
43													
44													
45													
[5] Remarks													
46													
47													
48													
49 Issue		Sep.13.'10	K.Yokoyama	Rev.	Date	Issued	Rev.D		Rev.H				
50 Check			<i>T. Iwii</i>	Rev.B			Rev.E		Rev.J				
51 Approve			<i>M. Yamashita</i>	Rev.C			Rev.F		Rev.K				

02A002A	REV. 1304 K. Yokoyama Sep. 24, '10	 株式会社帝國電機製作所 TEKOKU ELECTRIC MFG. CO., LTD.	2A-2717 DIMENSIONAL DRAWING TP-355-1 (TKD-1P) P. 257	形 外	SCALE 1:1	DWG. TITLE 形	OPERATING WEIGHT: 1800g ENERGY WEIGHT: 1000g	APPROVED 	CHECKED T. Ichi	DRAWN K. Yokoyama	FREE SEP. 8, '10
								[B]			



P&ID

DWG. TITLE

SCALE

DRAWN

CHECKED

APPROVED

SEP 7 '10

K. Yokoyama

TEIKOKU

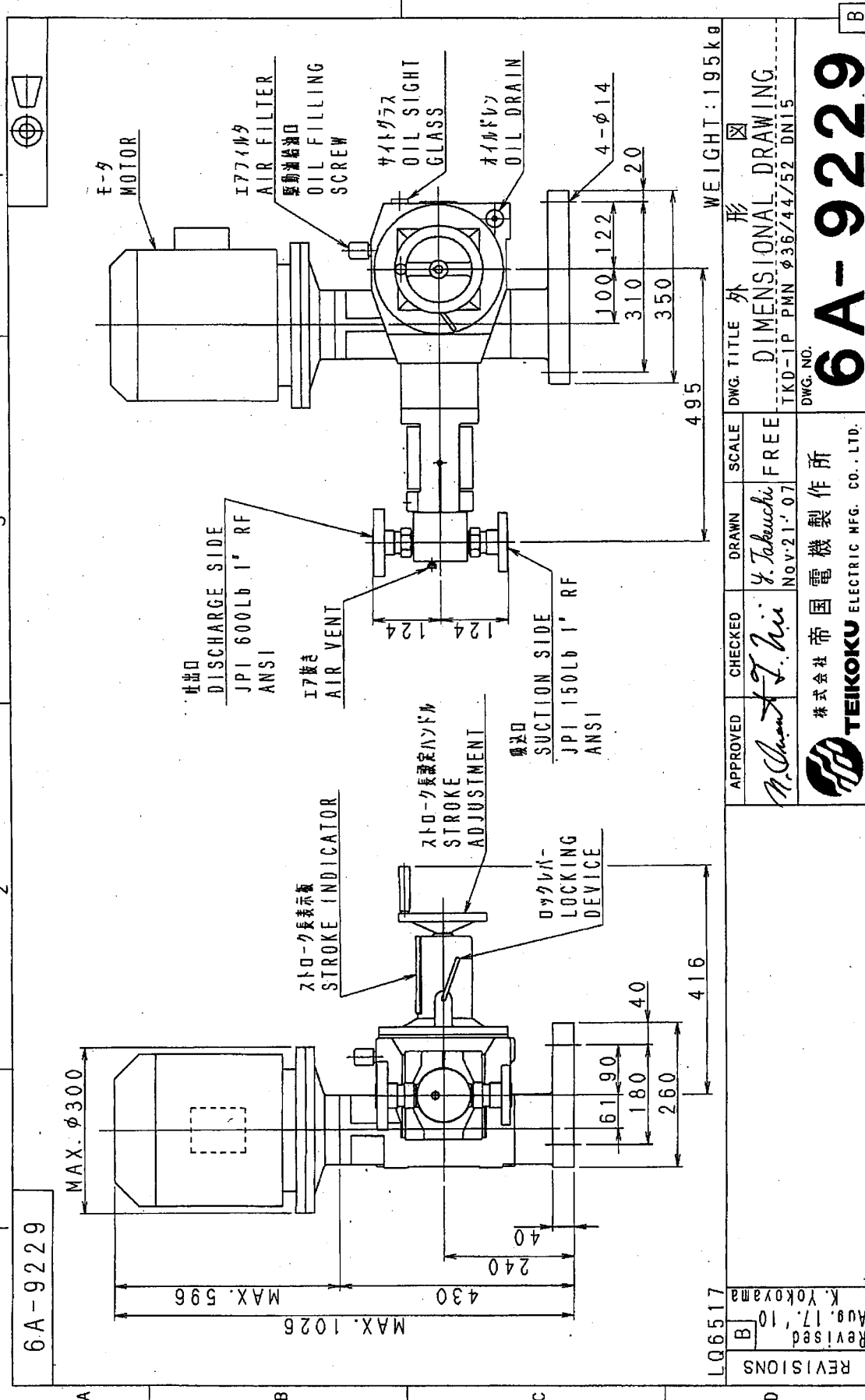
ELECTRIC MFG. CO., LTD.

4P-1436

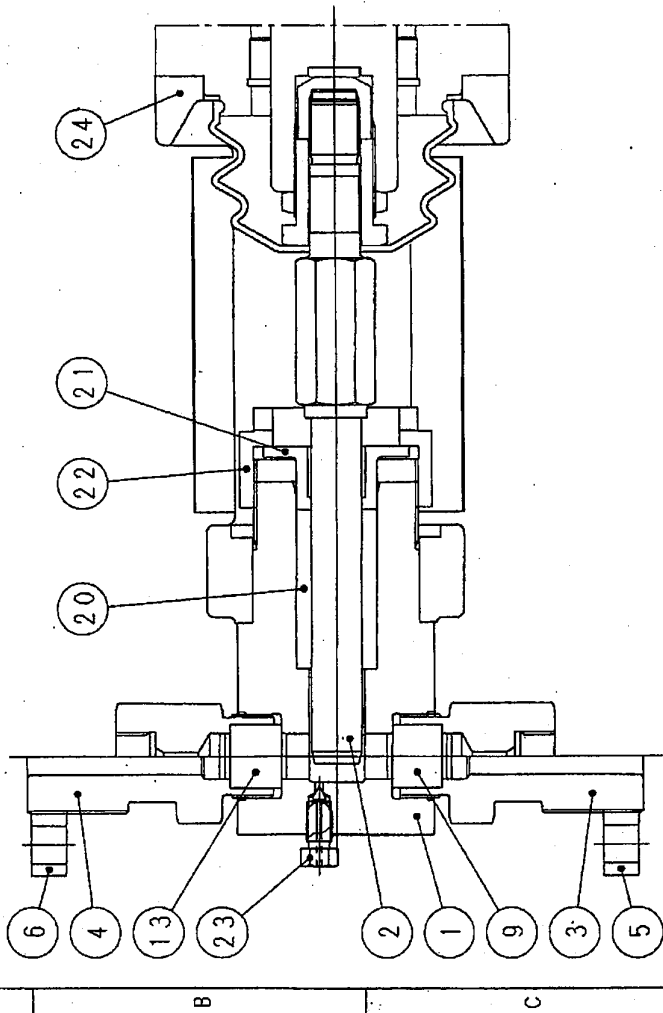
PUMP UNIT ASSY AND PIPING

DWG. NO.

Metering Pump Data Sheet									
Customer: M/S M/S KOBE STEEL, LTD.					Item No. —		Doc. No. Q LC-6503A		
P/J Name: —					Job No. of Customer —		Order No. —		
Item Name: —									
Pump type: TKD-1P			No. Req.: 2		Paint color: Munsell 10B5/10				
Element			A						
Fluid			Water						
Temperature / Melting point (°C)			25~50 / —						
Specific gravity / Viscosity - / (mPa·s)			1 / 1						
Vapor pressure (kg/cm ² A)			—						
Solids / Concentration - / (wt%)			— / —						
Solids size / Specific gravity (μm) / -			— / —						
Capacity (max.) (m ³ /h)			0.6						
Capacity (min.) (m ³ /h)			0.01(%)						
Discharge pressure (kg/cm ² G)			50						
Suction pressure (kg/cm ² G)			0						
Construction									
Stroke adjustment			Manual						
Max stroke length / Plunger dia. (mm)			30 / 52						
Gear reduction / Stroke speed (@ - Hz) - / (min ⁻¹)			8.33 / 170						
Discharge valve type / Suction valve type			1-ball Type / 1-ball Type						
Diaphragm rupture indicator			—						
Set press. of Internal Safety valve (kg/cm ² G)			—						
Min. required suct. press. / Inlet pressure loss (kg/cm ² A) / (kg/cm ²)			— / 0.40						
Discharge connection			ANSI 600Lb 1" RF						
Suction connection			ANSI 150Lb 1" RF						
Materials·Oil									
Pump body			SUS316						
Diaphragm / Plunger			SUS316+H.Cr						
Valve seat (Insert ring) / Valve guide			SUS316 / SCS14						
Valve ball / Plate			SUS316						
Valve gasket / Valve spring			PTFE/C / —						
Plunger seal			Aramid fiber impregnated with PTFE						
Lubricant oil of drive element			Synthetic oil ISO VG220						
Hydraulic fluid / Intermediate fluid			— / —						
Motor Customer's supply									
Maker	Siemens	Rated output (kW)	5.5	Voltage(V)	380	Phase	3	Cable inlet port	Unknown / Unknown
Start up	Direct	EEx.	Unknown	Freq. (Hz)	50	Pole	4 P	Cable dia. φ(mm)	Unknown
Spare parts									
Accessories									
Drawing list									
Dimensional DWG.	6A-9229	Drive element	2A-2422	Pump head	4Z-8155				
Ball Valve	4Z-6652	Plunger sealing	6A-6706	Est. flow char. of pumps	SLC-6503A				
Lubricant List	SB-5078								
Remarks									
Design press.: 55 kg/cm ² G Design temp.: 80 °C									
※ Lower limit of the warranty is 0.06m ³ / h.									
Rev.				 株式会社 帝国電機製作所 TEIKOKU ELECTRIC MFG. CO., LTD.			Approved	Checked	Issued
							<i>M. Kuroki</i>	<i>T. Kii</i>	K. Yokoyama
									2010. 9.13



4Z-6155



NO.	名称 NAME	数量 Q'TY	材質 MATERIAL
1	ポンプボディ PUMP BODY	1	SUS316
2	プランジャ PLUNGER	1	SUS316+Hard Cr.
3. 4	バルブボディ VALVE BODY	2	SUS316
5. 6	フランジ FLANGE	2	SUS304
9. 13	バルブ VALVE	2	SUS316
20	プランジャシール PLUNGER SEAL	1	SUS316+PTFE. etc.
21	スリーブ SLEEVE	1	SUS316
22	プランジャグランドナット STUFF BOX GRAND NUT	1	SUS316
23	エア抜きねじ VENT SCREW	1	SUS316
24	ヨークタイプホルダ HOLDER YOKE TYPE	1	FCD400

LM6521

REVISEIONS
B
Revised Aug. 17, '10 K. Yokoyama

APPROVED	CHECKED	DRAWN	SCALE
<i>M. Choshi</i>	<i>T. Nii</i>	<i>Y. Tabuchi</i>	FREE
Oct. 22, '97			

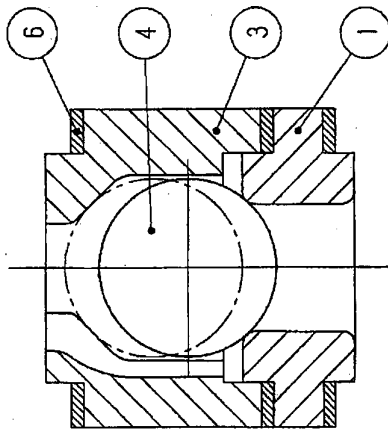
株式会社 帝国電機製作所
TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. TITLE 構造断面図
SECTIONAL VIEW DRAWING
TKC φ10~52, TKD φ20~52 DMN

DWG. NO.
4Z-6155

B

4Z-6652



NO.	名 称 NAME	個 数 Q'TY	材 質 MATERIAL
1	バルブシート VALVE SEAT	1	SUS316
3	バルブガイド VALVE GUIDE	1	SCS14
4	ボール BALL	1	SUS316
6	シールリング SEAL RING	3	PTFE/C

REVISED	REVISIONS
B	Revised Mar. 18, '10 M. NIKI

25406-A02-980
25407-A02-980

APPROVED
A. Usami
CHECKED
T. Iri
DRAWN
Y. Tabuchi
SCALE
2:1
Jan. 30, '98

DWG. TITLE
ボールバルブ
BALL VALVE
B1P10NN, B1P15NN
DWG. NO.

株式会社 帝 国 電 機 製 作 所
TEIKOKU ELECTRIC MFG. CO., LTD.

4Z-6652

B

6A-6706 1234		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">NO.</th> <th style="width: 35%;">名 称 NAME</th> <th style="width: 15%;">個 数 Q' TY</th> <th style="width: 35%;">材 質 MATERIAL</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ガイドブッシュ GUIDE BUSH</td> <td>2</td> <td>PTFE/C</td> </tr> <tr> <td>3</td> <td>チャンバリングディスク CHAMBERING DISK</td> <td>1</td> <td>PTFE/G</td> </tr> <tr> <td>5</td> <td>パッキンリング PACKING RING</td> <td>6</td> <td>ARAMID FIBER IMPREGNATED WITH PTFE</td> </tr> <tr> <td>8</td> <td>スラストリング THRUST RING</td> <td>1</td> <td>SUS316</td> </tr> </tbody> </table>	NO.	名 称 NAME	個 数 Q' TY	材 質 MATERIAL	1	ガイドブッシュ GUIDE BUSH	2	PTFE/C	3	チャンバリングディスク CHAMBERING DISK	1	PTFE/G	5	パッキンリング PACKING RING	6	ARAMID FIBER IMPREGNATED WITH PTFE	8	スラストリング THRUST RING	1	SUS316	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DWG. TITLE</td> <td style="width: 70%;">プランジャシール PLUNGER SEAL</td> </tr> <tr> <td style="width: 30%;">DWG. NO.</td> <td style="width: 70%;">6A-6706</td> </tr> </table>	DWG. TITLE	プランジャシール PLUNGER SEAL	DWG. NO.	6A-6706
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DWG. TITLE	プランジャシール PLUNGER SEAL																										
DWG. NO.	6A-6706																										
 株式会社 帝国電機製作所 TOKOKU ELECTRIC MFG. CO., LTD. APPROVED <i>K. Takada</i> CHECKED <i>K. Takada</i> DRAWN K. Kaku Jan. 27, '06 SCALE FREE		(31402) REVISIONS																									

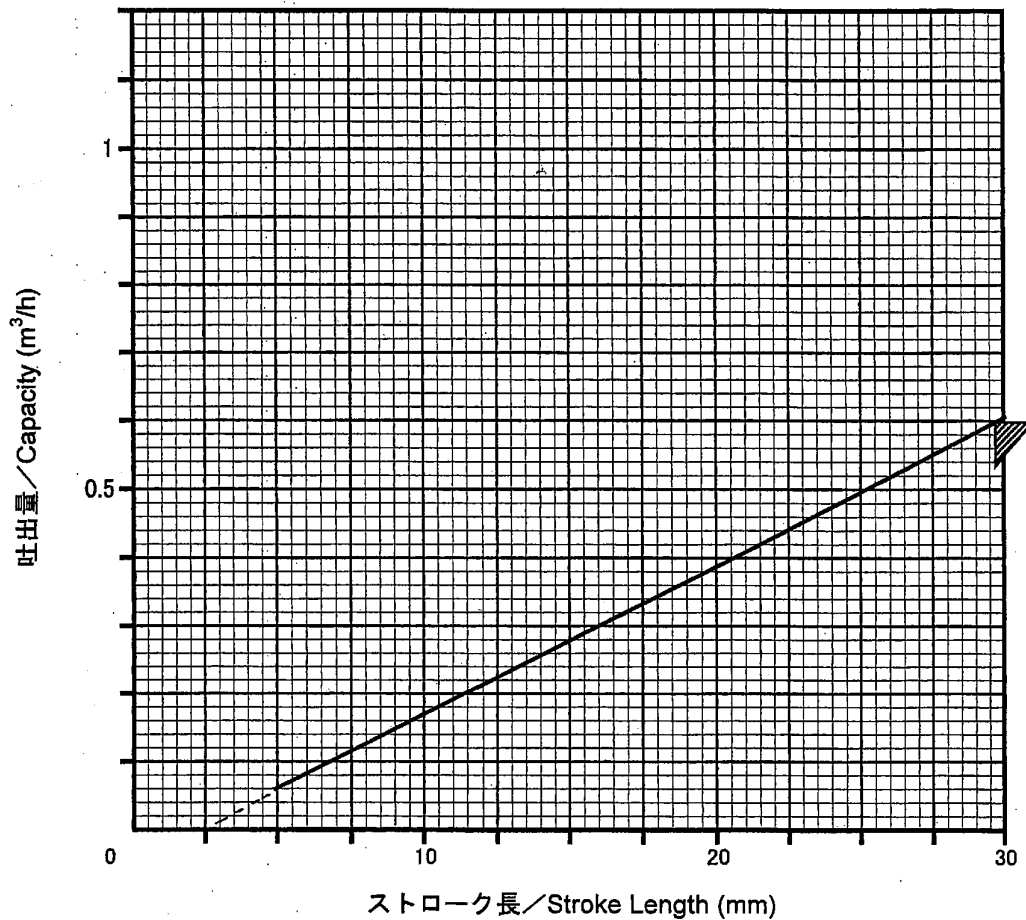
定量ポンプ 予想性能特性

Estimated Flow Characteristic of Metering Pumps

Sheet No.

S LC-6503A

客先 / Customer M/S M/S KOBE STEEL, LTD.		製造番号 / Product No. LC-6503A -1,2	
機器番号 / Item No.	---	ポンプ形式 / Pump Type	TKD-1P
機器名称 / Item name	---	最大ストローク長	30 mm
液体名 / Fluid	Water	プランジャ径 / Plunger Dia.	ϕ 52 mm
温度 / Temperature	25~50 °C	ストローク数 / Stroke speed	170 min ⁻¹ (@ - Hz)
比重 / Specific Gravity	1	モータ出力・極数 / Power・Pole	5.5 kW 4 P
粘度 / Viscosity	1 mPa·s	電源 / Power supply	380 V 50 Hz 4 ϕ
吐出量 / Capacity	0.6 m ³ /h	備考 / Remarks	
吐出圧力 / Disch. Press.	50 kg/cm ² G		
吸込圧力 / Suction Press.	0 kg/cm ² G		



株式会社 帝国電機製作所
TEIKOKU ELECTRIC MFG. CO., LTD.

Approved

Checked

Issued

K. Yokoyama
T. Ichi

K. Yokoyama

'10. 9.13