

TEIKOKU CANNED MOTOR PUMP DATA SHEET

Messrs : Evonik Degussa Corporation

No. QFH-1376A

Aug. 10 2015

Order No. : ☒ ※1
 Job No. : ---
 Project Name : ---
 Item No. : ☒ ※1
 Item Name : ---
 Model : ☒ F62-2417C4BM-0508T1V-EV

CERTIFIED
 Drawing conforms to the
 customer's latest specifications

Qty : ☒ 2

Sign For Receipt
 (For customer)

TEIKOKU ELECTRIC MFG. CO., LTD.

Approved by	Checked by	Designed by
R. Takeuchi	R. Matsumura	M. Morii

Operating Conditions		Materials	
Total Head (m) : 56.6	Capacity (L/min) : 429.4	Casing : SCS14 (CF-8M 316 SS)	
	(m ³ /h) : 25.76	Impeller : SCS14 (CF-8M 316 SS)	
Suction Press. (barA) : 0.27~4.4	Discharge Press. (MPaG) : ---	FBH : SUS316 (316 SS)	
NPSHava. (m) : 1.97	NPSHreq. (m) : 1.8	RBH : SUS316 (316 SS)	
Liquid : Quench Liquid		Motor Flange : SUS316L (316L SS)	
Temperature (Des./Nor.) (°C) : 25	/ ---	Stator Can : SUS316L (316L SS)	
Specific gravity (Des./Nor.) : 0.94	/ ---	Shaft : SUS316 (316 SS)	
Viscosity (Des./Nor.) (mPa·s) : 0.96	/ ---	Rotor Can : SUS316L (316L SS)	
Mechanical Design Temperature (°C) : ---		Bearing : Carbon Graphite	
Specific Heat (kJ/(kg·K)) : ---	Melting Temp. (°C) : ---	Shaft Sleeve : ---	
Vapor Press. (BarA) : 0.032		+ Thrust Collar : SUS316 (316 SS)+Stellite	
Solids Name : ---		Pump Gasket : ☒ SUS316 (316 SS)+Grafoil	
Concentration (wt%) : ---	Particle Size (μm) : ---	Motor Gasket : ☒ SUS316 (316 SS)+Grafoil	
Flushing or Barrier Fluid : ---		Other Gasket : ---	
Liquid/S.Gr. (mPa·s) : ---	/	Mechanical Seal : ---	
Press. (MPaG) : S.P. + --- ± ---	Flow (L/min) : ---		
Pump Design & Construction		Performance	
Design Press ☒ (bar) : ☒ 10.58	Temp. (°C) : 25	Impeller Type : CLOSE	
Code Applied : None	Nameplate : English	No. of Stage : 1	
Nozzle Connection : ASME Finish : SMOOTH FINISH		Min. Flow (L/min) : ---	
Nozzle	Rating	Size	Facing
Suction	150LB EQ.	3"	RF
Discharge	150LB EQ.	2"	RF
Drain	---	---	---
Reverse	---	---	---
Jacket Design Press. (MPa) : ---		Min. Flow (m ³ /h) : ---	
Utilities Required	Media	Condition (Max)	Flow (Min.)
Casing	NONE	---	---
Motor	NONE	---	---
Heat Ex./Est. Circ.	NONE	---	---
Motor (Stop)	---	---	---
Customer : Evonik Corporation		Vendor Drawings and Data	
PO# : 4701013179/4701319034		Dimensional Dwg. : 6E-8502	
Project : ACA G600		Terminal Box : 6E-0732-01	
Project# : 4142.00940		Sectional View Dwg. : 6E-8517	
Evonik's Pump# : P-1420/P-1420S		Material List : ☒ P-32930	
Requisition# : C0078-010		Est. Performance Curve : SFH-1376A	
		Connection Diagram : 4N-9071	
		Recommended Spare	
		Spare Parts List : ☒ SC-1106	
Power Supply & Drive Motor		Other	
Frame No. : 417	Duty : Cont	Special Treatment : None	
Voltage (V) : 460	Frequency (Hz) : 60	Painting Color : Light Gray	
Output (kW/hp) : 19.5/26.15	Rated Amp. (A) : 35.5	Rotating Direction : ---	
Thermal Class : 220	Start Method : DIRECT	Monitoring : Yes	
R.P.M. (rpm) : 3600	Direction : C.C.W. (Viewed from Pump Suction)	Bearing Wear Monitor : Radial / Local	
Voltage for protection (V) : 120	Protection Device : Thermostat b		
Dry Run Protection Relay : ---			
Terminal Box : Stud/Thread/ 1			
Power Cable Conduit : NPT2	Cable O.D. (Main) (mm) : ---		
Instrument Cable Conduit : NPT3/4	Cable O.D. (Sub) (mm) : ---		
ATEX Marking : ---			
Remarks :		REVISIONS	
-T-USA#385330		B: Revised 7 points. Added 2 points. Deleted 1 point	
-Hazardous Area Classification : Class.1, Div.2, Gr. C&D T2		(2015.10.27) M. Morii	
-Mechanical Design Temperature : 180°C (Pumps do not run at this temperature. Pumps are not expected to function post experience of this temperature.)		C: Revised 3 points. Added 1 point (2015.11.11) M. Morii	
-※1 Item No. P-1420 / Order No. 4701013179. Item No. P-1420S / Order No. 4701319034		D: Revised 1 point (2015.11.13) M. Morii	
		E: Revised 1 point (2015.12.2) M. Morii	

6E-8502

NOTE

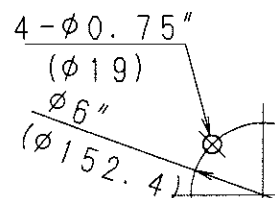
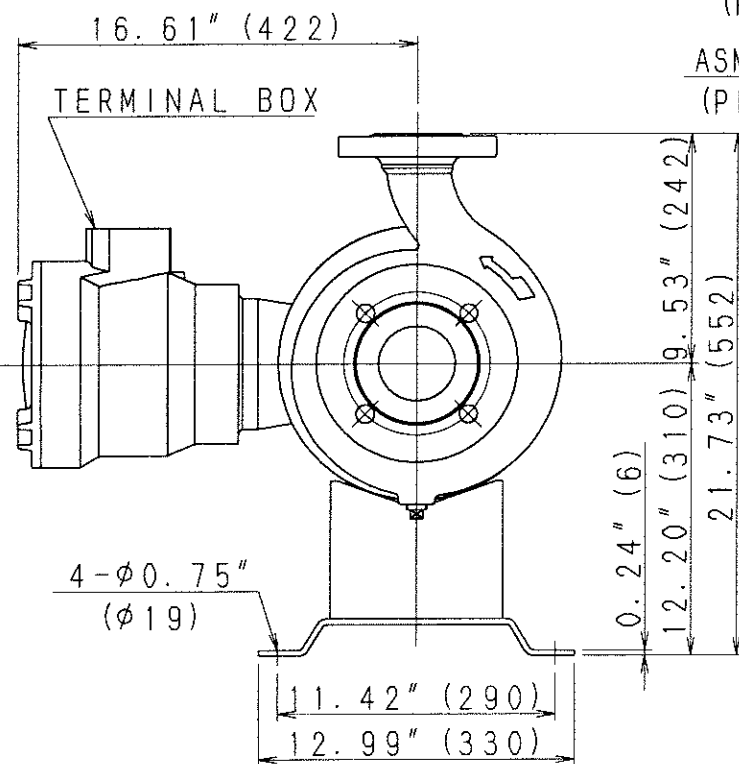
Thickness and outside diameter follows
those of ANSI#300 flange.

CERTIFIED

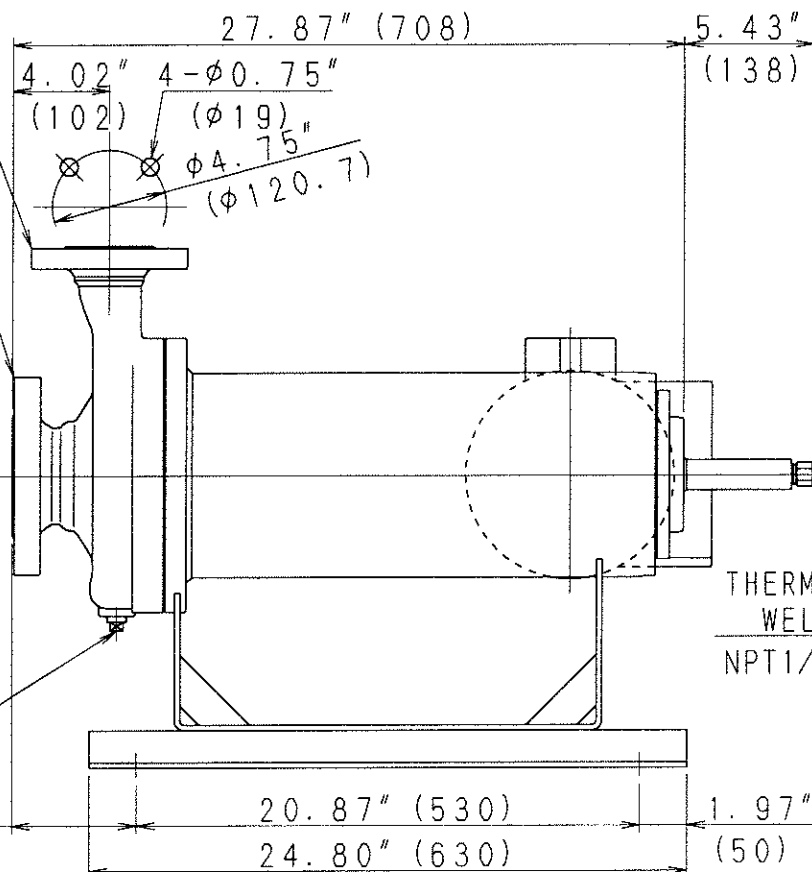
Drawing conforms to the
customer's latest specifications

ASME 150Lb Equiv. 2" RF
(Please see note)

ASME 150Lb Equiv. 3" RF
(Please see note)



DRAIN
NPT 1/2



FH1376A WEIGHT: 195kg (430Lb)

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142.00940
Evonik's Pump# : P-1420/P-1420S
Requisition# : C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE 外形

R. Tajima
R. Matsumura

M. Morii
Aug. 6 '15

FREE

DIMENSIONAL DRAWING

TYPE: F-417-0508T1-V

DWG. NO.

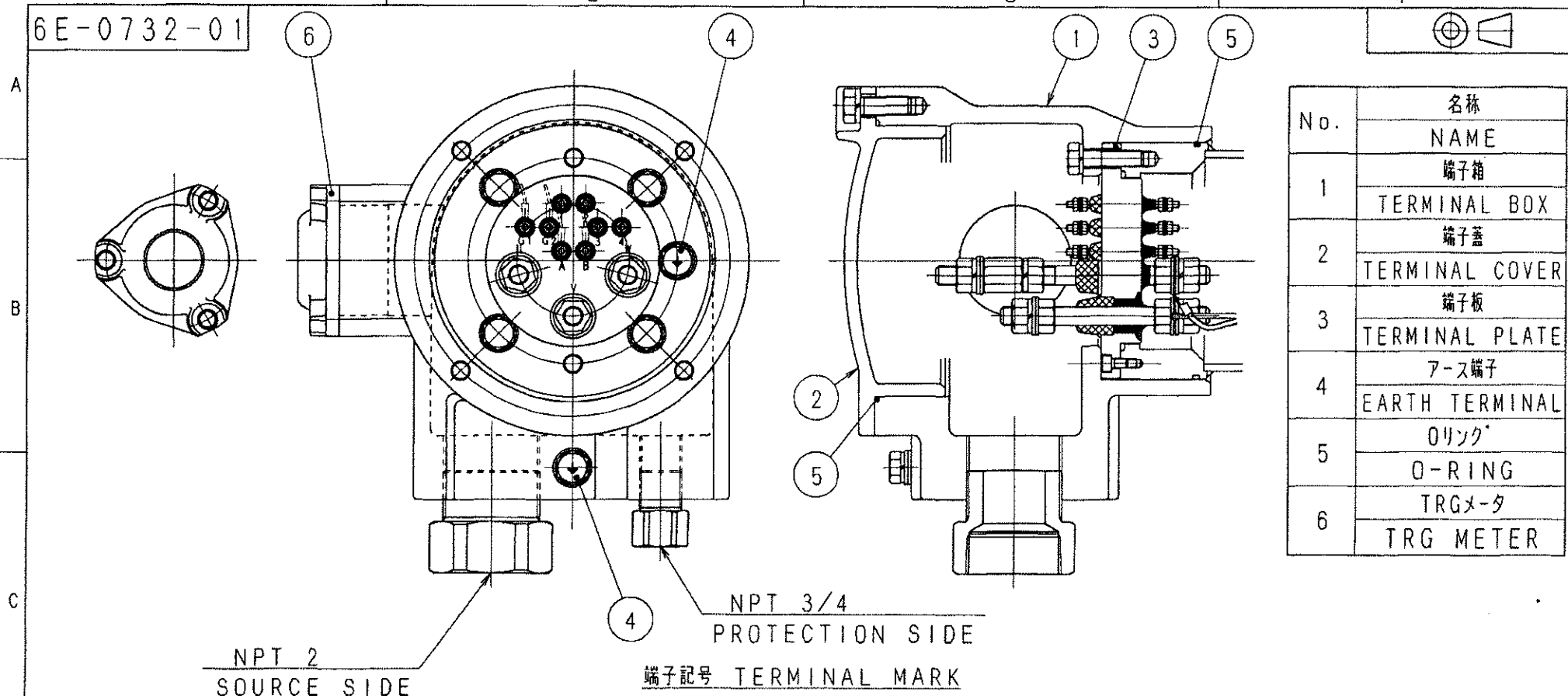


株式会社 帝国電機製作所

TEIKOKU ELECTRIC MFG. CO., LTD.

6E-8502

6E-0732-01



No.	名称
	NAME
1	端子箱 TERMINAL BOX
2	端子蓋 TERMINAL COVER
3	端子板 TERMINAL PLATE
4	アース端子 EARTH TERMINAL
5	Oリング O-RING
6	TRGメータ TRG METER

端子記号 TERMINAL MARK

U, V, W 電源 SOURCE (M12)

1, 2, 3 サーモスタット THERMOSTAT (M4)

G1, G2, A, B . . . TRGメータ TRG METER (M4)

FA1829A

REVISIONS

B

Rewritten
Jun. 6, '11
C. Mitsumori

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1420/P-1420S
Requisition# : C0078-010

APPROVED

A. Usami

CHECKED

R. Takeuchi

DRAWN

K. Yamamoto
Mar 18 ' 09

SCALE

FREE

DWG. TITLE

端子箱

TERMINAL BOX

SIZE : L FMCII

DWG. NO.



株式会社 帝国電機製作所

TEIKOKU ELECTRIC MFG. CO., LTD.

6E-0732-01

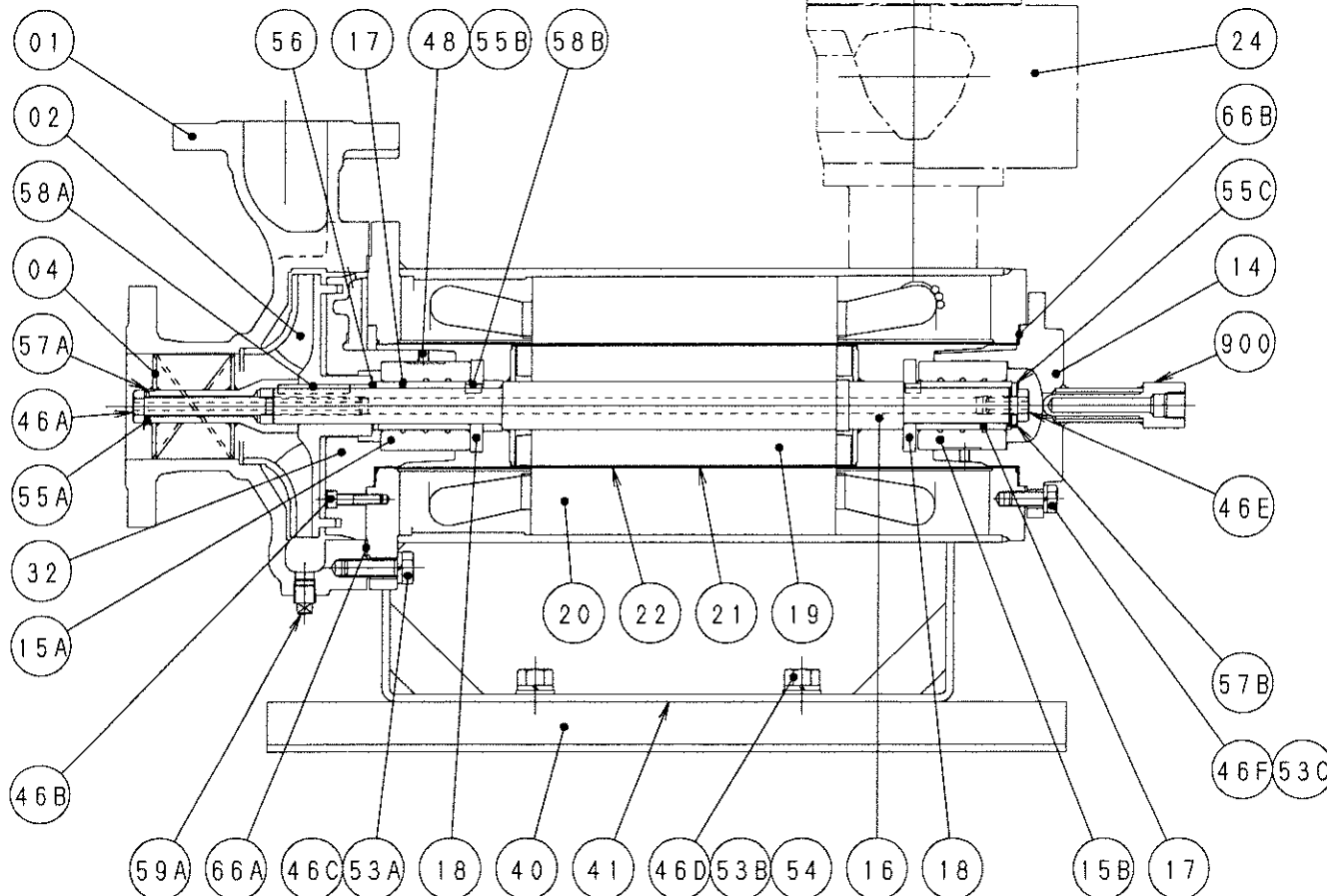
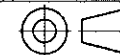
B

6E-8517

NOTE

Bearing A...with spiral & straight grooves

Bearing B...with spiral grooves



NO.	NAME OF PARTS	NO.	NAME OF PARTS
01	CASING	48	SET SCREW
02	IMPELLER		
04	INDUCER	53A	SPRING WASHER
14	R. B. HOUSING	53B	SPRING WASHER
15A	BEARING B	53C	SPRING WASHER
15B	BEARING A	54	PLAIN WASHER
16	SHAFT	55A	WASHER
17	SHAFT SLEEVE	55B	WASHER
18	THRUST COLLAR	55C	WASHER
19	ROTOR ASSY	56	ADJUSTING WASHER
20	STATOR ASSY	57A	LOCK WASHER
21	ROTOR CAN	57B	LOCK WASHER
22	STATOR CAN	58A	KEY
24	TERMINAL BOX ASSY	58B	KEY
32	F. B. HOUSING	59A	PLUG
40	BASE		
41	HOLDER	66A	GASKET
46A	BOLT	66B	GASKET
46B	BOLT		
46C	BOLT		
46D	BOLT		
46E	BOLT	900	TERMOWELL
46F	BOLT		

FH1376A

Customer :Evonik Corporation
PO# :4701013179/4701319034
Project :ACA G600
Project# :4142.00940
Evonik's Pump# :P-1420/P-1420S
Requisition# :C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE 構造断面図

R. T. / can ch. R. Matsumoto

M. Morii

FREE

Aug-10-15

SECTIONAL VIEW DRAWING

TYPE:F-V



株式会社 帝国電機製作所

TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. NO.

6E-8517

(1/1)

FH1376A



ESTIMATED PERFORMANCE CURVE

Date : Aug. 10, 2015

No : E18H0030-02

Dwg. No. : SFH-1376A

Item No. ☒ P-1420 / P-1420S

Item Name ****

Model ☒ F62-2417C4BM-0508T1V-EV

Frequency 60 Hz

Voltage 460 V

Phase 3

Pole 2

Output 19.5 kW

Current 35.5 A

Total Head 56.6 m

Capacity 429.4 L/min 25.76 m³/hMin.Flow 170 L/min 10.2 m³/h

Liquid Quench Liquid

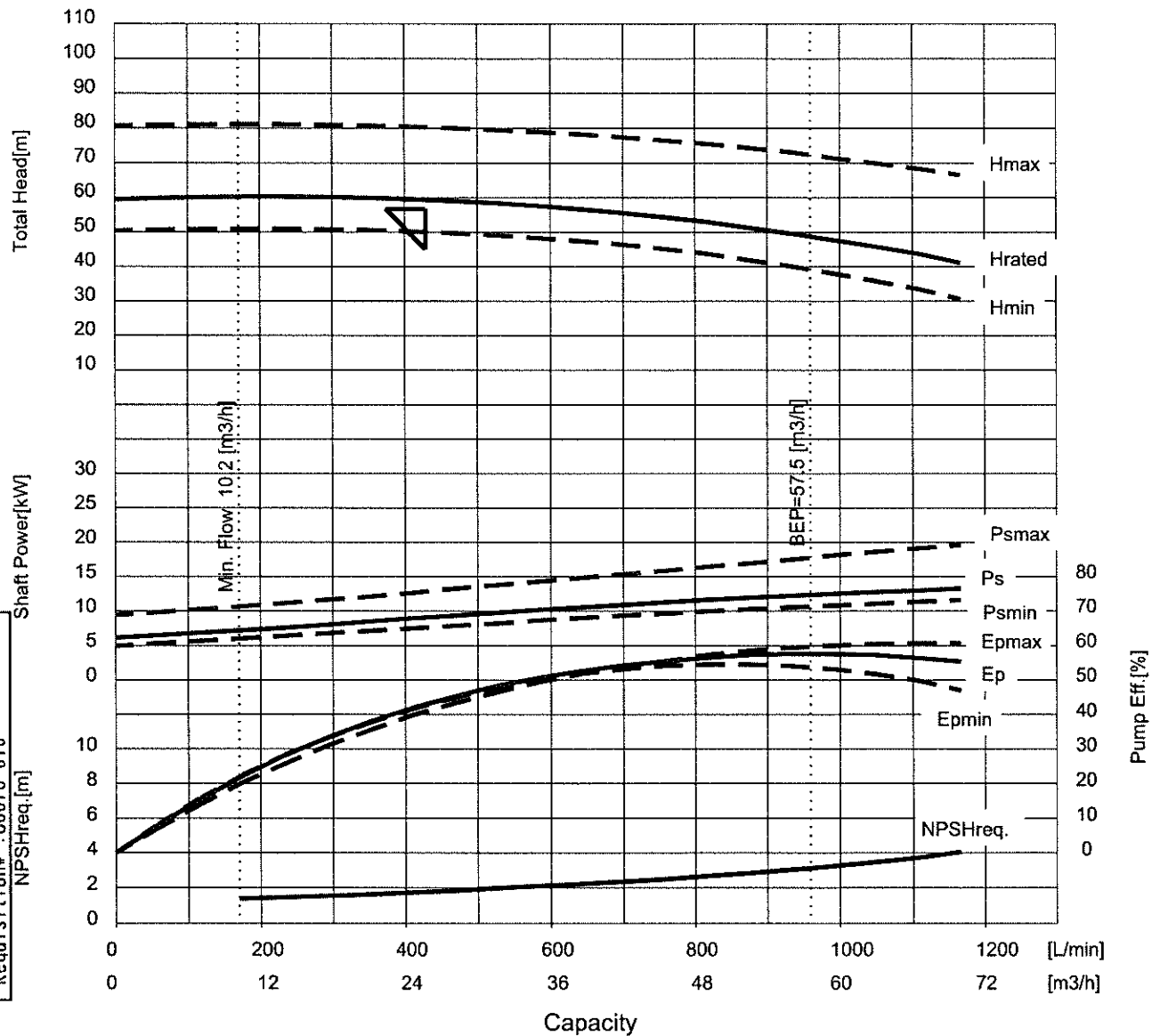
Temp. 25 degC

S.G. 0.94

NPSHavail. 1.97 m

Vis. 0.96 mPas

NPSHreq. 1.8 m



Remarks :

- Shut-off head : 59.4m
- 59.4m, 43.1%, 9.05kW, 3524rpm @ rated flow
- 70m³/hr, 13.3kW @ EOC
- 19.59kW @ EOC (max. dia.)
- Ns : 19.76, SSS : 10950
- Impeller Dia(mm):208(Max)/179(Rated)/166(Min)
- Output:26.15(hp)
- With Inducer

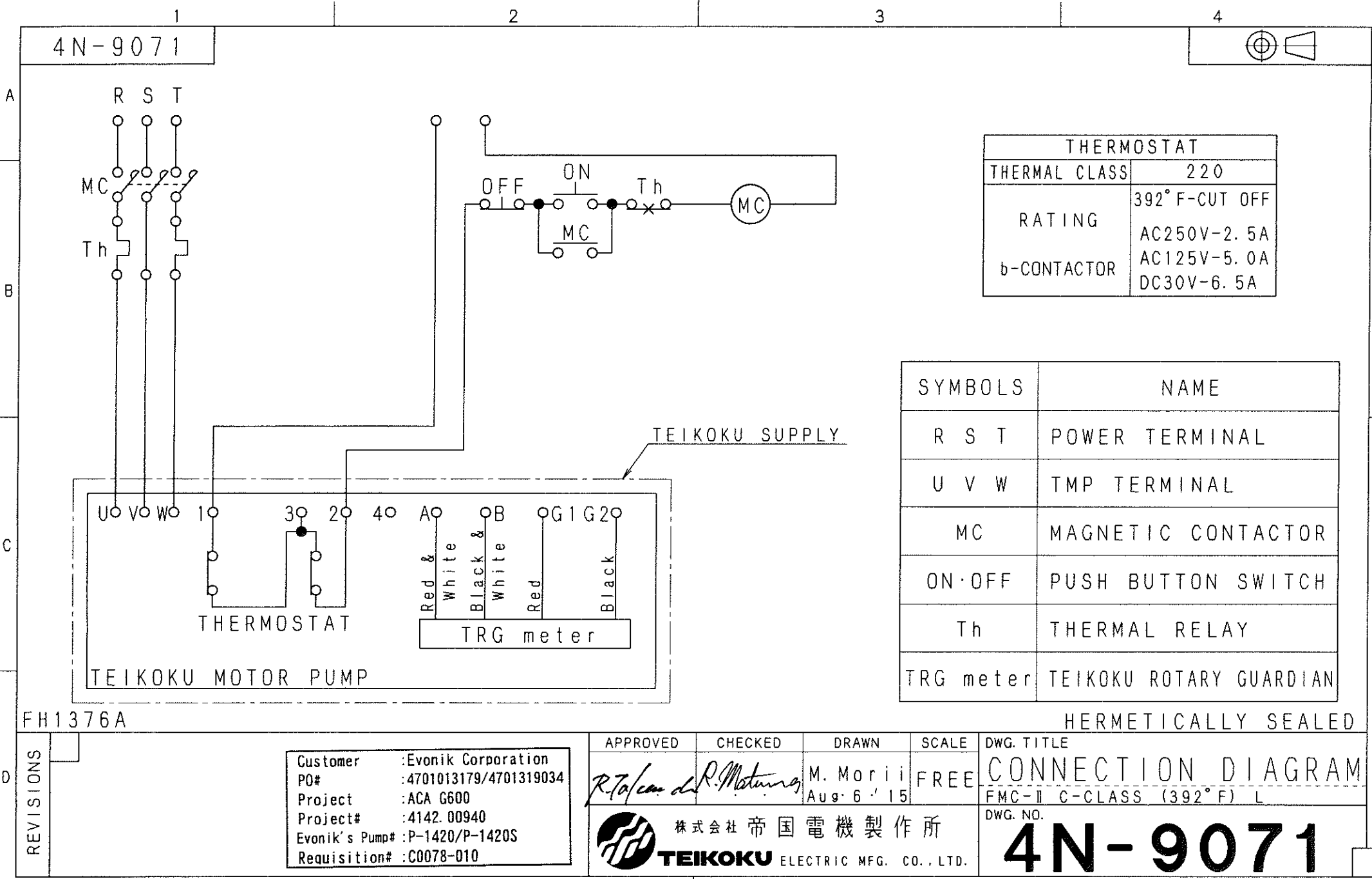
D	2015.11.13	Revised 1 Point. M.Morii
C	2015.11.11	Revised 1 Point. M.Morii
B	2015.10.27	Revised 1 Point. M.Morii
REV.	Date	Description

APPROVED BY	CHECKED BY	DRAWN BY
R.Takeuchi	R.Matsumura	M.Morii

TEIKOKU ELECTRIC MFG. CO., LTD.

UNIS Version 3.0.2

NDTS11_15



THERMOSTAT	
THERMAL CLASS	220
RATING	392° F-CUT OFF
b-CONTACTOR	AC250V-2.5A
	AC125V-5.0A
	DC30V-6.5A

SYMBOLS	NAME
R S T	POWER TERMINAL
U V W	TMP TERMINAL
MC	MAGNETIC CONTACTOR
ON·OFF	PUSH BUTTON SWITCH
Th	THERMAL RELAY
TRG meter	TEIKOKU ROTARY GUARDIAN

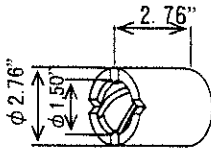
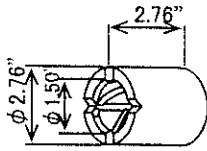
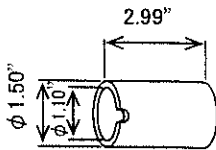
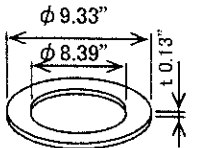
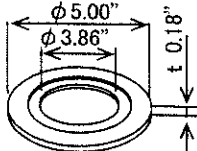
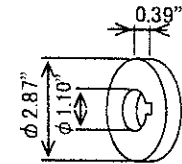
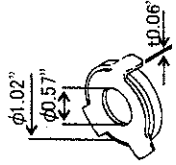
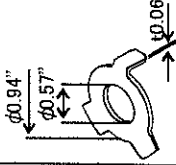
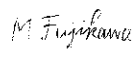
FH1376A

HERMETICALLY SEALED

REVISIONS	
Customer :Evonik Corporation	
PO# :4701013179/4701319034	
Project :ACA G600	
Project# :4142.00940	
Evonik's Pump# :P-1420/P-1420S	
Requisition# :C0078-010	

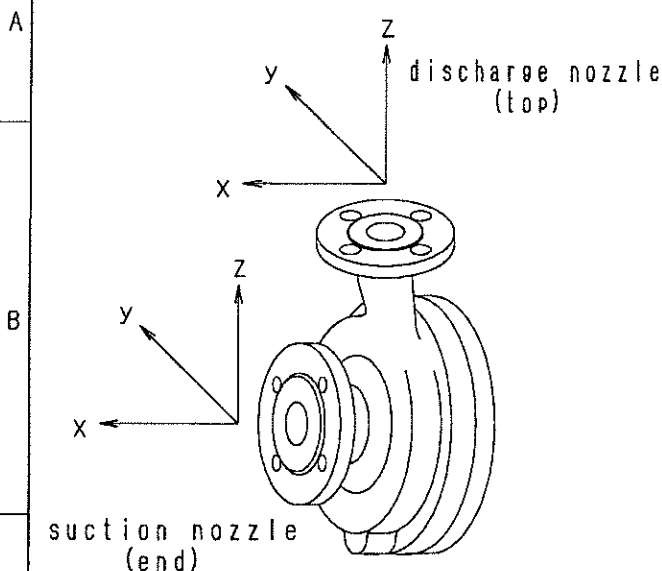
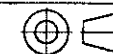
APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE
<i>R. T. / can de R. Motunoy</i>	<i>R. Motunoy</i>	M. Morii	FREE	CONNECTION DIAGRAM
Aug. 6 ' 15				FMC-II C-CLASS (392° F) L
DWG. NO.				
株式会社 帝国電機製作所				
TEIKOKU ELECTRIC MFG. CO., LTD.				
4N-9071				

RECOMMENDED SPARE PARTS LIST

TYPE				SC-1106		1 1
F-V, R 410-T						
No.	PARTS NAME	DIMENSION	MATERIAL	FOR 1 SETS	REMARKS	
1	BEARING B		Carbon Graphite	1	#15A 70×38×70 (mm)	
2	BEARING A (with spiral & straight grooves)		Carbon Graphite	1	#15B 70×38×70 (mm)	
3	SHAFT SLEEVE		316 SS (SUS316) + Stellite	2	#17 38×28×76 (mm)	
4	GASKET		316 SS (SUS316) + Grafoil	1	#66A 237×213×3.2 (mm)	
5	GASKET		316 SS (SUS316) + Grafoil	1	#66B 127×98×4.5 (mm)	
6	THRUST COLLOR		316 SS (SUS316) + Stellite	2	#18 73×28×10 (mm)	
7	LOCK WASHER & WASHER		316L SS (SUS316L)	1	#55A, #57A 24×14.5 (mm)	
8	LOCK WASHER		316L SS (SUS316L)	1	#57B 24×14.5×1.5 (mm)	
FH1376A 来歴 REV.	 株式会社 帝国電機製作所 TEIKOKU ELECTRIC MFG. CO., LTD.		APPROVED	CHECKED	DRAWN	
					M. Morii Oct. 27. '15	

Customer	: Evonik Corporation
PO#	: 4701013179/4701319034
Project	: ACA G600
Project#	: 4142. 00940
Evonik's Pump#	: P-1420/P-1420S
Requisition#	: C0078-010

4N-6993-12

CASING

#No	PUMP TYPE	Fsx	Fsy	Fsz	Fdx	Fdy	Fdz	Msx	Msy	MsZ	Mdx	Mdy	Mdz
1	0204	670	530	430	360	290	450	350	170	260	230	120	180
2	0405	890	710	580	530	430	670	460	230	350	350	170	260
3	0506	1110	890	730	710	580	890	710	350	540	460	230	350
4	0608	1330	1070	890	890	730	1110	950	470	720	710	350	540
5	0810	1780	1420	1160	1070	890	1330	1330	680	1000	950	470	720
6	1012	2450	1960	1600	1420	1160	1780	1820	930	1380	1330	680	1000
7	1215	3110	2490	2050	1860	1600	2450	2300	1180	1760	1820	930	1380
8	1520	4890	3780	3110	2490	2050	3110	3530	1760	2580	2300	1180	1760
9	2025	6670	5340	4450	3780	3110	4890	5020	2440	3800	3530	1760	2580
10	1015	3110	2490	2050	1420	1160	1780	2300	1180	1760	1330	680	1000
11	0408	1330	1070	890	530	430	670	950	470	720	350	170	260
12	0508	1330	1070	890	710	580	890	950	470	720	460	230	350
13	1515	3110	2490	2050	2490	2050	3110	2300	1180	1760	2300	1180	1760
14	1010	1780	1420	1160	1420	1160	1780	1330	680	1000	1330	680	1000
15	1212	2450	1960	1600	1960	1600	2450	1820	930	1380	1820	930	1380

Customer :Evonik Corporation
PO# :4701013179/4701319034
Project :ACA G600
Project# :4142.00940
Evonik's Pump# :P-1420/P-1420S
Requisition# :C0078-010

NOTE : F = force (N) M = moment (N-m)

S = suction nozzle

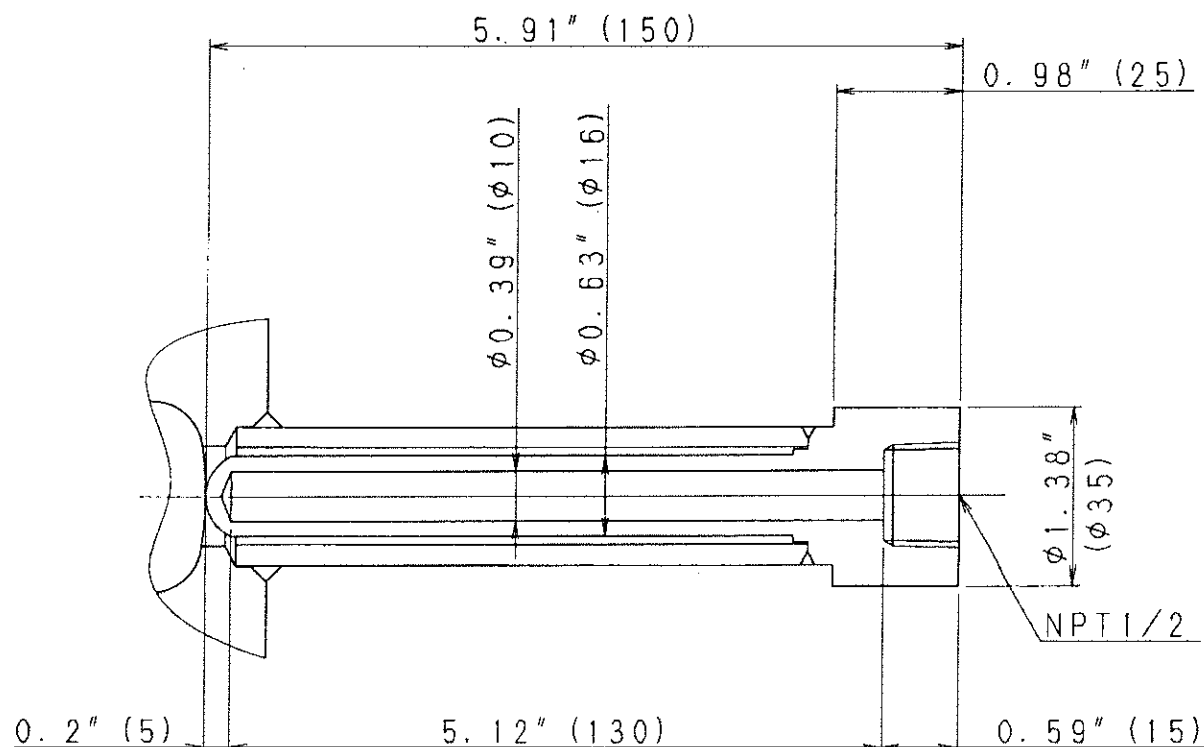
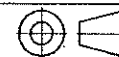
d = discharge nozzle

See the figure for orientation of nozzle loads (x, y, z)

DQ1377

REVISIONS					B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	BH	BI	BJ	BK	BL	BM	BN	BO	BP	BQ	BR	BS	BT	BU	BV	BW	BX	BY	BZ	CA	CB	CC	CD	CE	CF	CG	CH	CI	CJ	CK	CL	CM	CN	CO	CP	CQ	CR	CS	CT	CU	CV	CW	CX	CY	CZ	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	DO	DP	DQ	DR	DS	DT	DU	DV	DW	DX	DY	DZ	EA	EB	EC	ED	EE	EF	EG	EH	EI	EJ	EK	EL	EM	EN	EO	EP	EQ	ER	ES	ET	EU	EV	EW	EX	EY	EZ	FA	FB	FC	FD	FE	FF	FG	FH	FI	FJ	FK	FL	FM	FN	FO	FP	FQ	FR	FS	FT	FU	FV	FW	FX	FY	FZ	GA	GB	GC	GD	GE	GF	GG	GH	GI	GJ	GK	GL	GM	GN	GO	GP	GQ	GR	GS	GT	GU	GV	GW	GX	GY	GZ	HA	HB	HC	HD	HE	HF	HG	HH	HI	HJ	HK	HL	HM	HN	HO	HP	HQ	HR	HS	HT	HU	HV	HW	HX	HY	HZ	IA	IB	IC	ID	IE	IF	IG	IH	II	IJ	IK	IL	IM	IN	IO	IP	IQ	IR	IS	IT	IU	IV	IW	IX	IY	IZ	JA	JB	JC	JD	JE	JF	JG	JH	JI	JJ	JK	JL	JM	JN	JO	JP	JQ	JR	JS	JT	JU	JV	JW	JX	JY	JZ	KA	KB	KC	KD	KE	KF	KG	KH	KI	KJ	KK	KL	KM	KN	KO	KP	KQ	KR	KS	KT	KU	KV	KW	KX	KY	KZ	LA	LB	LC	LD	LE	LF	LG	LH	LI	LJ	LK	LL	LM	LN	LO	LP	LQ	LR	LS	LT	LU	LV	LW	LX	LY	LZ	MA	MB	MC	MD	ME	MF	MG	MH	MI	MJ	MK	ML	MM	MN	MO	MP	MQ	MR	MS	MT	MU	MV	MW	MX	MY	MZ	NA	NB	NC	ND	NE	NF	NG	NH	NI	NJ	NK	NL	NM	NN	NO	NP	NQ	NR	NS	NT	NU	NV	NW	NX	NY	NZ	OA	OB	OC	OD	OE	OF	OG	OH	OI	OJ	OK	OL	OM	ON	OO	OP	OQ	OR	OS	OT	OU	OV	OW	OX	OY	OZ	PA	PB	PC	PD	PE	PF	PG	PH	PI	PJ	PK	PL	PM	PN	PO	PP	PQ	PR	PS	PT	PU	PV	PW	PX	PY	PZ	QA	QB	QC	QD	QE	QF	QG	QH	QI	QJ	QK	QL	QM	QN	QO	QP	QQ	QR	QS	QT	QU	QV	QW	QX	QY	QZ	RA	RB	RC	RD	RE	RF	RG	RH	RI	RJ	RK	RL	RM	RN	RO	RP	RQ	RR	RS	RT	RU	RV	RW	RX	RY	RZ	SA	SB	SC	SD	SE	SF	SG	SH	SI	SJ	SK	SL	SM	SN	SO	SP	SQ	SR	SS	ST	SU	SV	SW	SX	SY	SZ	TA	TB	TC	TD	TE	TF	TG	TH	TI	TJ	TK	TL	TM	TN	TO	TP	TQ	TR	TS	TT	TU	TV	TW	TX	TY	TZ	UA	UB	UC	UD	UE	UF	UG	UH	UI	UJ	UK	UL	UM	UN	UO	UP	UQ	UR	US	UT	UU	UV	UW	UX	UY	UZ	VA	VB	VC	VD	VE	VF	VG	VH	VI	VJ	VK	VL	VM	VN	VO	VP	VQ	VR	VS	VT	VU	VV	VW	VX	VY	VZ	WA	WB	WC	WD	WE	WF	WG	WH	WI	WJ	WK	WL	WM	WN	WO	WP	WQ	WR	WS	WT	WU	WV	WW	WX	WY	WZ	XA	XB	XC	XD	XE	XF	XG	XH	XI	XJ	XK	XL	XM	XN	XO	XP	XQ	XR	XS	XT	XU	XV	XW	XX	XY	XZ	YA	YB	YC	YD	YE	YF	YG	YH	YI	YJ	YK	YL	YM	YN	YO	YP	YQ	YR	YS	YT	YU	YV	YW	YX	YY	YZ	ZA	ZB	ZC	ZD	ZE	ZF	ZG	ZH	ZI	ZJ	ZK	ZL	ZM	ZN	ZO	ZP	ZQ	ZR	ZS	ZT	ZU	ZV	ZW	ZX	ZY	ZZ																																																																																																																																																																																																																																																																																																																																																																																																
Rewritten Aug. 7' 08 K. Nakazumi					Revised API610 8th Edition to API610 10th Edition. Sep. 3' 08 Y. Shimizu					#11~#13 Added Sep. 2' 13 K. Nakazumi					#14, #15 Added Mar. 20' 15 K. Nakazumi										APPROVED T. Takeuchi					CHECKED S. Kimura					DRAWN Y. Shimizu Apr. 11' 08					SCALE FREE					DWG. TITLE 許容配管荷重 ALLOWABLE PIPING FORCES AND MOMENTS SI Units API610 (10th)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

4N-7445



FB1809A
FB1810A

REVISIONS

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142.00940
Evonik's Pump# : P-1420/P-1420S
Requisition# : C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE

S. Takahata *S. Takahata*

K. Yamamoto
Apr. 22 '10

FREE

THERMOWELL



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

DWG. NO.

4N-7445