

TEIKOKU CANNED MOTOR PUMP DATA SHEET

Messrs : Evonik Degussa Corporation

No. QFH-1395A

Aug. 10 2015

Order No. : 4701013179

Job No. : ---

Project Name : ---

Item No. : P-9142

Item Name : ---

Model : F61-317C4BM-0508TS1-AV

Qty : 1

CERTIFIEDDrawing conforms to the
customer's latest specificationsSign 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) : 32	Capacity (L/min) : 833.4	Casing : SCS14 (CF-8M 316 SS)	
	(m3/h) : 50	Impeller : SCS14 (CF-8M 316 SS)	
Suction Press. (barA) : 0.55~3.18	Discharge Press. (barA) : ---	FBH : SUS316 (316 SS)	
NPSHava. (m) : 4.8	NPSHreq. (m) : 2.7	RBH : SUS316 (316 SS)	
Liquid : Finished ACA		Motor Flange : SUS316L (316L SS)	
Temperature (Des./Nor.) (°C) : 25	/ ---	Stator Can : SUS316L (316L SS)	
Specific gravity (Des./Nor.) : 1.03	/ ---	Shaft : SUS316 (316 SS)	
Viscosity (Des./Nor.) (mPa·s) : 0.64	/ ---	Rotor Can : SUS316L (316L SS)	
Mechanical Design Temperature (°C) : ---		Bearing : Carbon Graphite	
Specific Heat (kJ/(kg·K)) : ---	Melting Temp. (°C) : ---	Shaft Sleeve : SUS316 (316 SS)+Stellite	
Vapor Press. (BarA) : 0.004		+ Thrust Collar : SUS316 (316 SS)+Stellite	
Solids Name : ---		Pump Gasket : PTFE	
Concentration (wt%) : ---	Particle Size (μm) : ---	Motor Gasket : PTFE	
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) : ☒ 9.32	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 (m3/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		Dimensional Dwg. : 6E-8487	Allowable Piping Forces and Moments : 4N-6993-12
Project : ACA G600		Terminal Box : 4N-8988-01	☒ Thermowell : 4N-7445
Project# : 4142.00940		Sectional View Dwg. : 6E-7804	
Evonik's Pump# : P-9142		Material List : P-31990	
Requisition# : C0078-010		Est. Performance Curve : SFH-1395A	
		Connection Diagram : ☒ 4N-8389	
		Recommended Spare	
		Spare Parts List : SB-4032	
Power Supply & Drive Motor		Other	
Frame No. : 317	Duty : Cont	Special Treatment : None	
Voltage (V) : 460	Frequency (Hz) : 60	Painting Color : Light Gray	
Output (kW/hp) : 8.4/11.26	Rated Amp. (A) : 17	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 : NPT1	Cable O.D. (Main) (mm) : ---		
Instrument Cable Conduit : NPT3/4	Cable O.D. (Sub) (mm) : ---		
ATEX Marking : ---			

Remarks :

-T-USA#385330

-Hazardous Area Classification : Class.1, Div.2, Gr.C&D T2

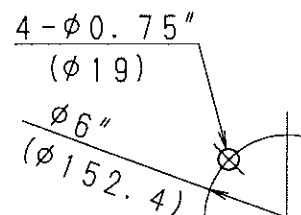
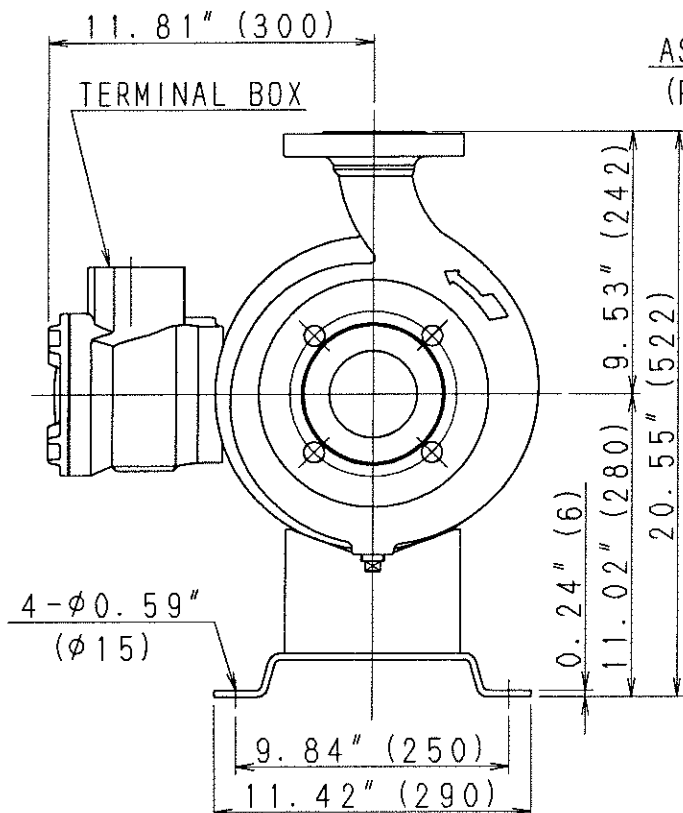
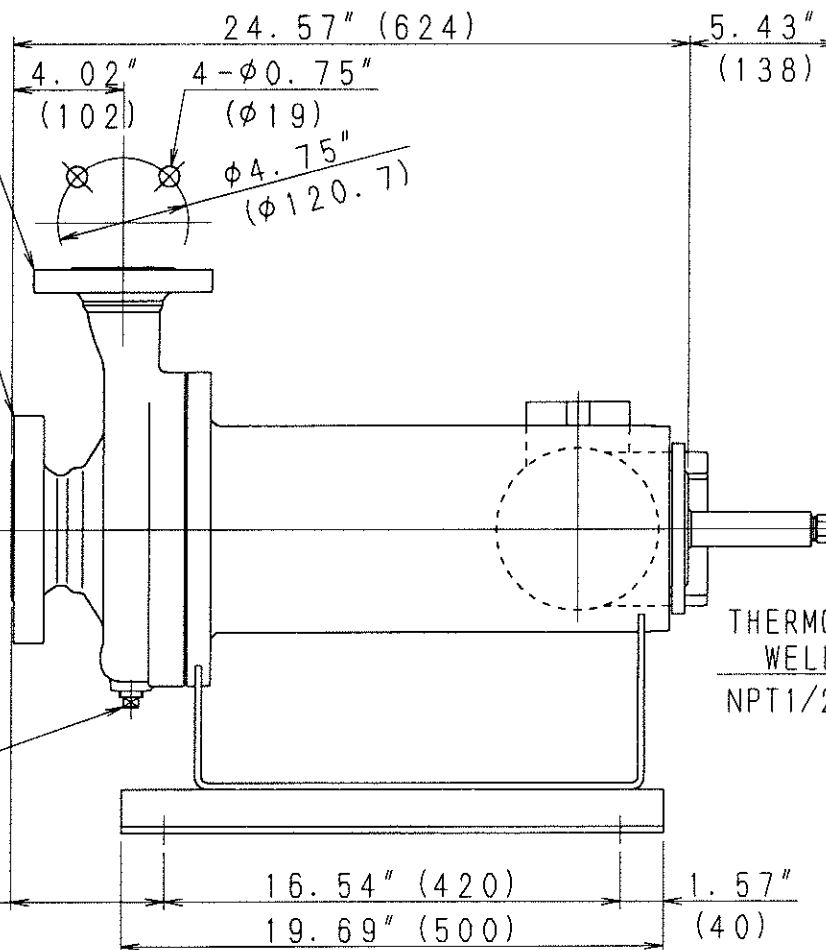
☒ -Mechanical Design Temperature : 200°C (Pumps do not run at this temperature. Pumps are not expected to function post experience of this temperature.)

REVISIONS

B: Revised 3 points, Added 2 points, Deleted 1 point
(2015.10.28) M. Morii
C: Revised 1 point (2015.11.18) M. Morii
D: Revised 1 point (2015.12.2) M. Morii

6E-8487

Note:

Thickness and outside diameter follows
those of ANSI#300 flange.**CERTIFIED**
Drawing conforms to the
customer's latest specificationsASME 150Lb Equiv. 2" RF
(Please see note)ASME 150Lb Equiv. 3" RF
(Please see note)DRAIN
NPT1/2

FH1391A

WEIGHT: 138kg (305Lb)

REVISIONS

Customer : Evonik Corporation
PO# : 4701013179
Project : ACA G600
Project# : 4142.00940
Evonik's Pump# : P-9142
Requisition# : C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE 外形図

DIMENSIONAL DRAWING

TYPE: F-310-0508TS1-V

DWG. NO.

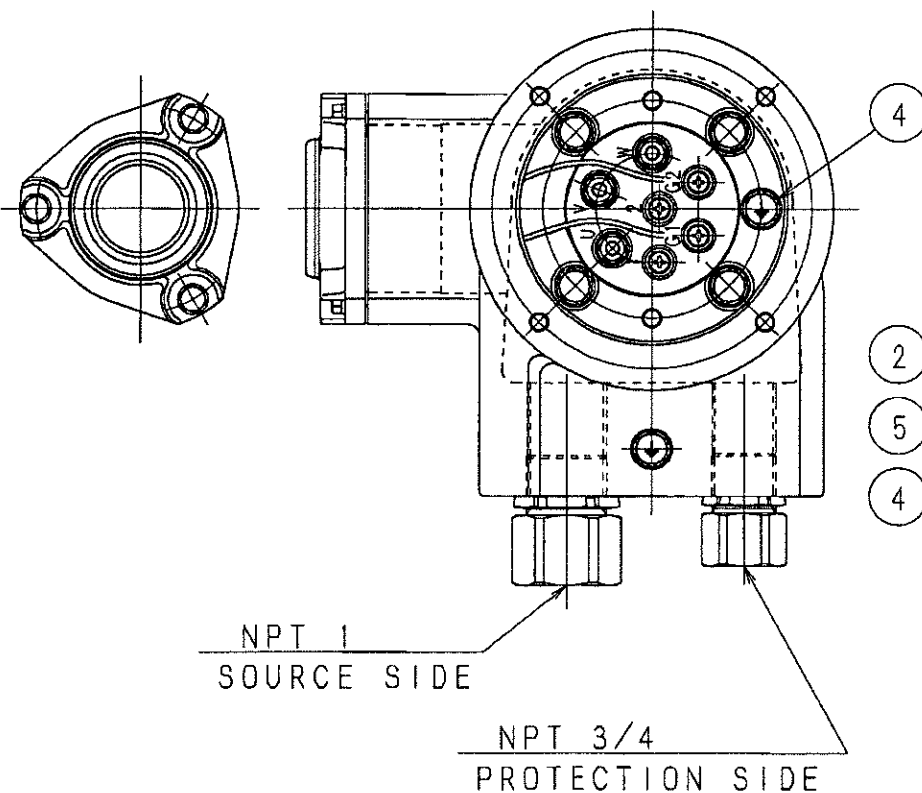


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TEIKOKU ELECTRIC MFG. CO., LTD.

6E-8487

4N-8988-01



No.	NAME
1	TERMINAL BOX
2	TERMINAL COVER
3	TERMINAL PLATE
4	EARTH TERMINAL
5	GASKET
6	O-RING
7	TRG METER
8	O-RING

TERMINAL MARK

U·V·W----SOURCE (M6)

1·2-----THERMOSTAT (M4)

G1·G2----TRG METER (M4)

FG2021A

REVISIONS

Customer :Evonik Corporation
PO# :4701013179
Project :ACA G600
Project# :4142.00940
Evonik's Pump# :P-9142
Requisition# :C0078-010

APPROVED

T. Takeuchi

CHECKED

R. Okamoto

DRAWN

K. Nakazumi

SCALE

FREE

DWG. TITLE

TERMINAL BOX

SIZE : S

Hermetic (Special)

DWG. NO.

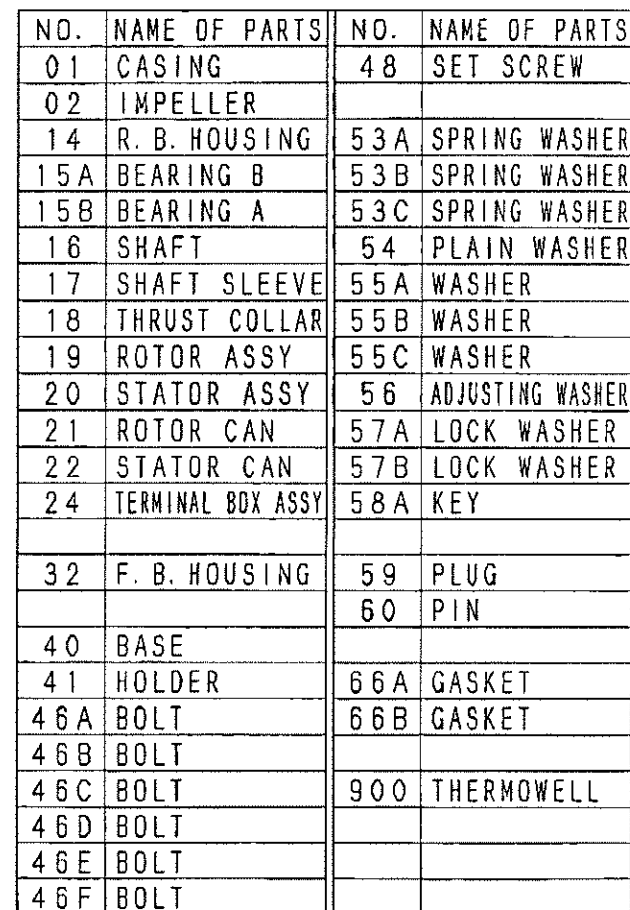
4N-8988-01



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Bearing A...with spiral & straight grooves
Bearing B...with spiral grooves



APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE 構造断面図
T. T. Challa	R. O. Kamuro	H. Kuroda Jan 30 '15	FREE	SECTIONAL VIEW DRAWING TYPE: F-V

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TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. NO. **6E-7804**

REVISIONS

MATERIAL LIST

(1/1)

NO.	NAME	MATERIAL (JIS Std./Eq. ASTM, AISI Std.)	REMARKS
01	CASING	SCS14 / CF-8M 316 SS	
02	IMPELLER	SCS14 / CF-8M 316 SS	
14	R. B. HOUSING	SUSF316 or SCS14 / F 316 SS or CF-8M 316 SS	
15A	BEARING B	Carbon Graphite	
15B	BEARING A	Carbon Graphite	
16	SHAFT	SUS316 / 316 SS	
17	SHAFT SLEEVE	SUS316 / 316 SS + Stellite	
18	THRUST COLLAR	SUS316 / 316 SS + Stellite	
19	ROTOR ASS'Y		
20	STATOR ASS'Y		
21	ROTOR CAN	SUS316L / 316L SS	
22	STATOR CAN	SUS316L / 316L SS	
24	TERMINAL BOX ASS'Y	FC200 / Cl.No. 35 etc.	
32	F. B. HOUSING	SUSF316 or SCS14 / F 316 SS or CF-8M 316 SS	
40	BASE	SS400 / Carbon Steel	
41	HOLDER	SS400 / Carbon Steel	
46A	BOLT	SUS316 / 316 SS	
46B	BOLT	SUS316 / 316 SS	
46C	BOLT	SUS304 / 304 SS	
46D	BOLT	S20C / AISI 1020	
46E	BOLT	SUS316 / 316 SS	
46F	BOLT	SUS304 / 304 SS	
48	SET SCREW	SUS316 / 316 SS	
53A	SPRING WASHER	SUS304 / 304 SS	
53B	SPRING WASHER	SWRH / Carbon Steel	
53C	SPRING WASHER	SUS304 / 304 SS	
54	PLAIN WASHER	SPCC / Carbon Steel	
55A	WASHER	SUS316L / 316L SS	
55B	WASHER	SUS316L / 316L SS	
55C	WASHER	SUS316L / 316L SS	
56	ADJUSTING WASHER	SUS316L / 316L SS	
57A	LOCK WASHER	SUS316L / 316L SS	
57B	LOCK WASHER	SUS316L / 316L SS	
58A	KEY	SUS316 / 316 SS	
59	PLUG	SUS316 / 316 SS	
60	PIN	SUS316 / 316 SS	
66A	GASKET	T/#9007-LC / PTFE	
66B	GASKET	T/#9007-LC / PTFE	
900	THERMOWELL	SUS316 / 316 SS	
(F-V)		APPROVED <i>T. Tohno</i>	CHECKED <i>R. Matsumura</i>
		DRAWN K. Nakazumi Dec. 12 '13	P-31990

Customer	:Evonik Corporation
PO#	:4701013179
Project	:ACA G600
Project#	:4142.00940
Evonik's Pump#	:P-9142
Requisition#	:C0078-010

FF1893A



ESTIMATED PERFORMANCE CURVE

Date : Aug. 05. 2015
No : E18H0017-01
Dwg. No. : SFH-1395A

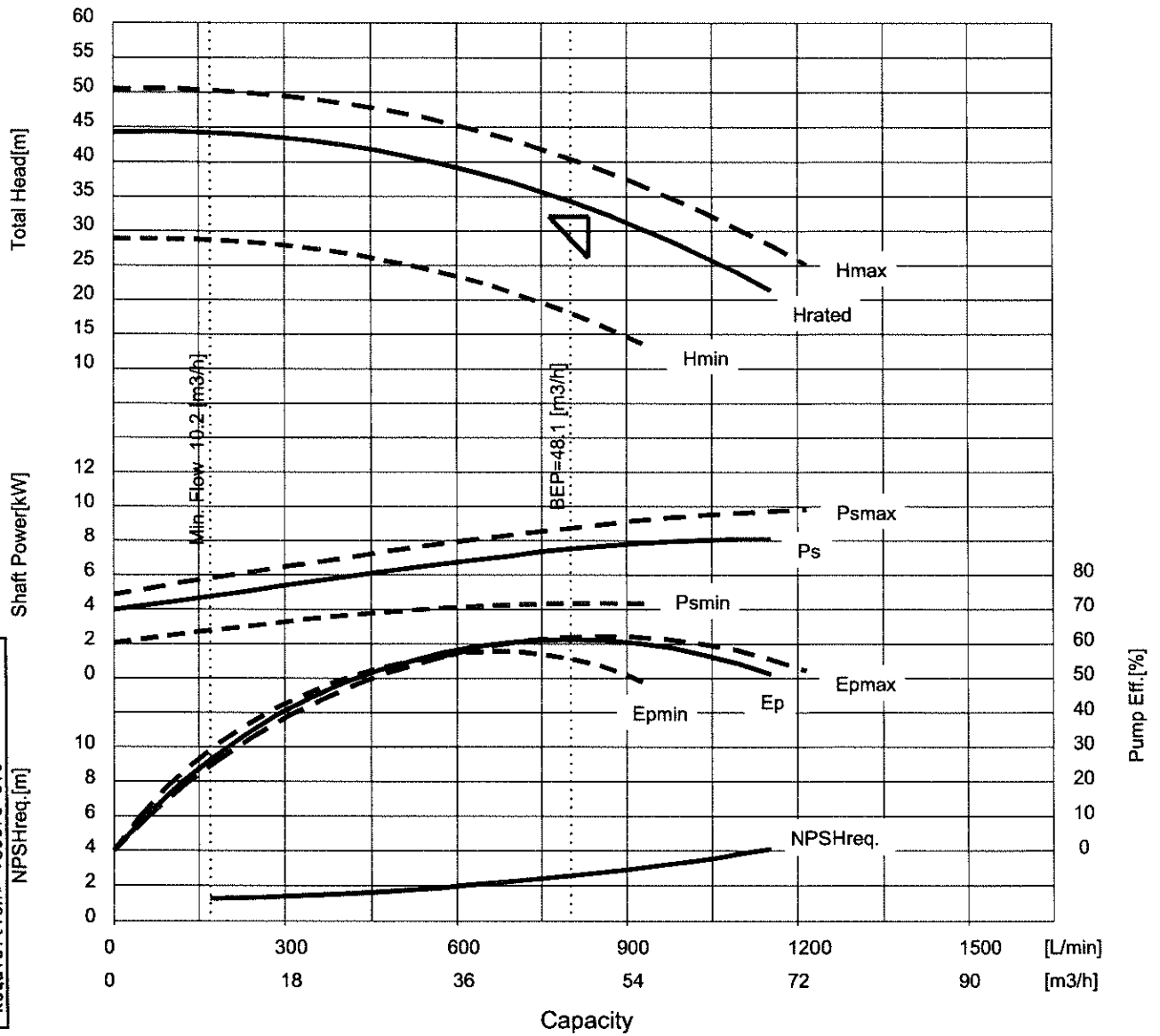
Item No. P-9142

Item Name ****

Model F61-317C4BM-0508TS1-AV

Frequency 60 Hz
Voltage 460 V
Phase 3
Pole 2
Output 8.4 kW
Current 17 A

Total Head 32 m
Capacity 833.4 L/min 50 m³/h
Min.Flow 170 L/min 10.2 m³/h
Liquid Finished ACA
Temp. 25 degC
S.G. 1.03
NPSHavail. 4.8 m
Vis. 0.64 mPas
NPSHreq. 2.7 m



Customer : Evonik Corporation
PO# : 4701013179
Project : ACA G600
Project# : 4142.00940
Evonik's Pump# : P-9142
Requisition# : C0078-010

Remarks :

- Shut-off head : 44.2m
- 33.3m, 61.2%, 7.62kW, 3413rpm @ rated flow
- 69.18m³/hr, 8.1kW @ EOC
- 9.813kW @ EOC (max. dia.)

- Ns : 25.96, SSS : 11473
- Impeller Dia(mm):166(Max)/156(Rated)/130(Min)
- Output:11.26(hp)

REV.	Date	Description

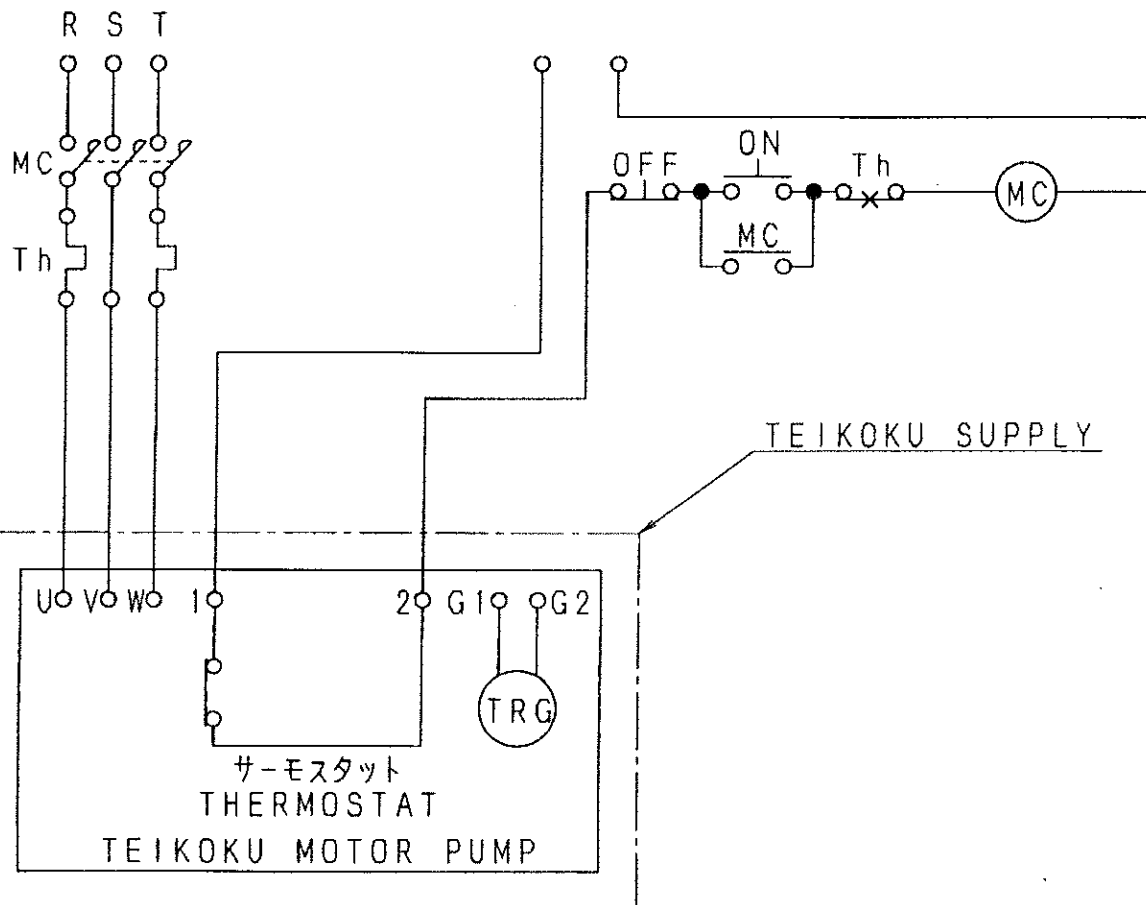
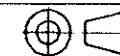
APPROVED BY	CHECKED BY	DRAWN BY
<i>RTA/cmc</i>	<i>R. Matsumoto</i>	M.Morii

TEIKOKU ELECTRIC MFG. CO., LTD.

UNIS Version 3.0.2

NDTS11_15

4N-8389



THERMOSTAT	
Canned Motor THERMAL CLASS	220
RATING	374°F-CUT OFF
b-CONTACTOR	AC250V-2.5A AC110V-3.0A DC24V-3.0A

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

FE1968A

REVISIONS

Customer : Evonik Corporation
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Project# : 4142.00940
Evonik's Pump# : P-9142
Requisition# : C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE

結線図

*T. Takahashi**R. Matsumura*
N. Kaiami
Feb 21 '13

FREE

CONNECTION DIAGRAM
S (374°F)

DWG. NO.

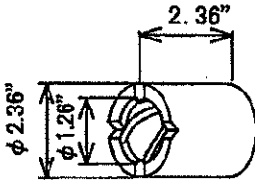
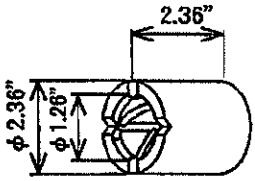
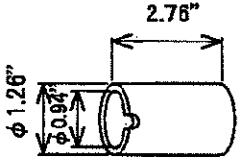
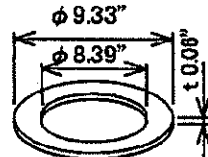
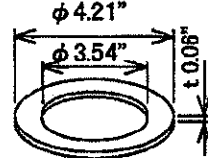
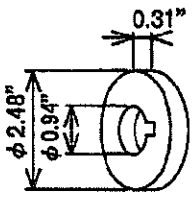
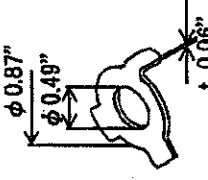


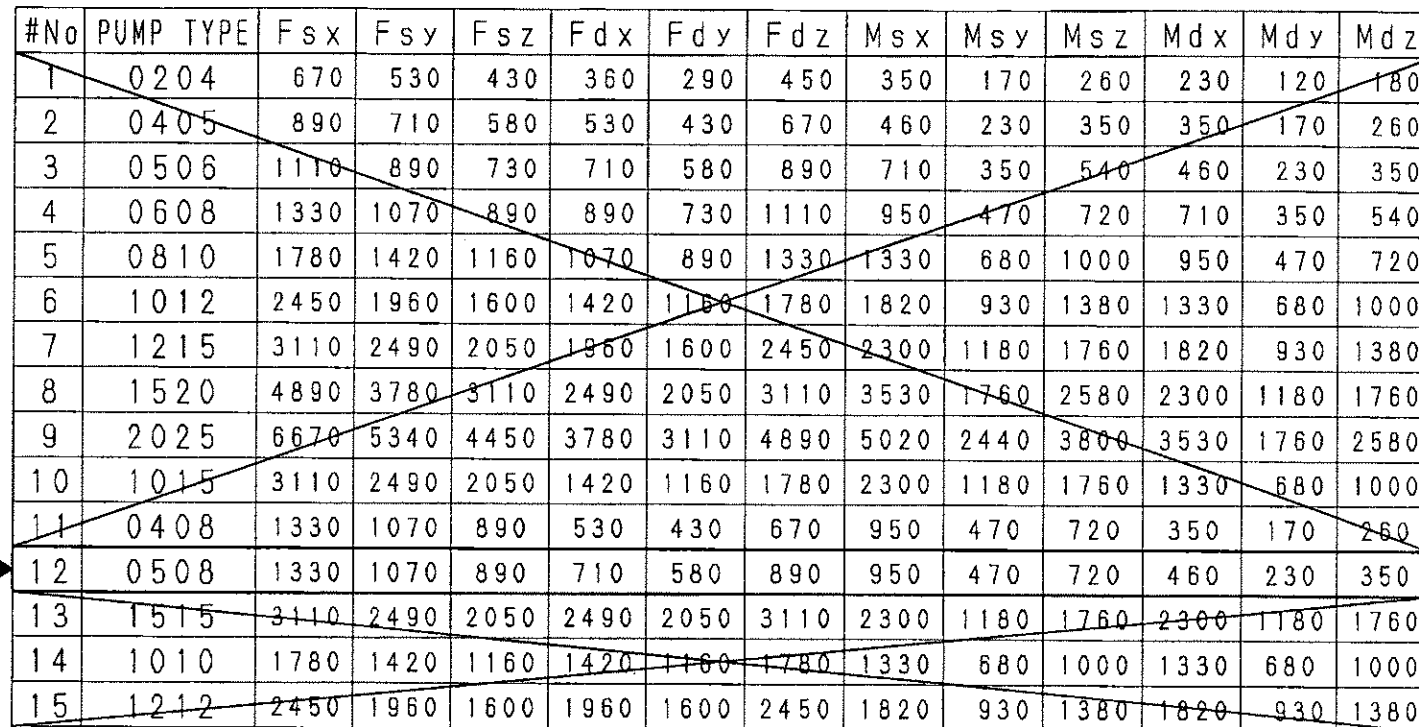
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TEIKOKU ELECTRIC MFG. CO., LTD.

4N-8389

Customer : Evonik Corporation
 PO# : 4701013179
 Project : ACA G600
 Project# : 4142. 00940
 Evonik's Pump# : P-9142
 Requisition# : C0078-010

RECOMMENDED SPARE PARTS LIST

TYPE					SB-4032		1
F-V, R 310-T							1
No.	PARTS NAME	DIMENSION	MATERIAL	FOR 1SETS	REMARKS		
1	BEARING B		Carbon Graphite	1	#15A 60 x 32 x 60 (mm)		
2	BEARING A (with spiral & straight grooves)		Carbon Graphite	1	#15B 60 x 32 x 60 (mm)		
3	SHAFT SLEEVE		316 SS (SUS316) + Stellite	2	#17 32 x 24 x 70 (mm)		
4	GASKET		PTFE	1	#66A 237 x 213 x 1.5 (mm)		
5	GASKET		PTFE	1	#66B 107 x 90 x 1.5 (mm)		
6	THRUST COLLOR		316 SS (SUS316) + Stellite	2	#18 63 x 24 x 8 (mm)		
7	LOCK WASHER		316L SS (SUS316L)	2	#57A, #57B 22 x 12.5 x 1.5 (mm)		
REV.	来歴 REV.	 株式会社 帝国電機製作所 TEIKOKU ELECTRIC MFG. CO., LTD.		APPROVED	CHECKED	DRAWN	
C2362	② Rounritten (Apr. 14 '99) M. Kato			T. Inoue.	T. Motomura	Y. Maruyama Aug. 25. '99	



Customer :Evonik Corporation
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Project# :4142.00940
Evonik's Pump# :P-9142
Requisition# :C0078-010

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

REV	REVISIONS	BY	DATE
1	Rewritten		
2	Aug. 7 '08		
3	K. Nakazumi		
4	Revised		
5	API610 8th		
6	Edition to API610		
7	10th Edition.		
8	See. 3'08		
9	Y. Shimizu		
10	#11~#13		
11	Added		
12	See. 2'13		
13	K. Nakazumi		
14	#14, #15		
15	Added		
16	Mar. 20'15		
17	K. Nakazumi		

APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE 許容配管荷重
T. Takeuchi	S. Kimura	Y. Shimizu Apr-11-'08	FREE	ALLOWABLE PIPING FORCES AND MOMENTS SI Units API 610 (10th)

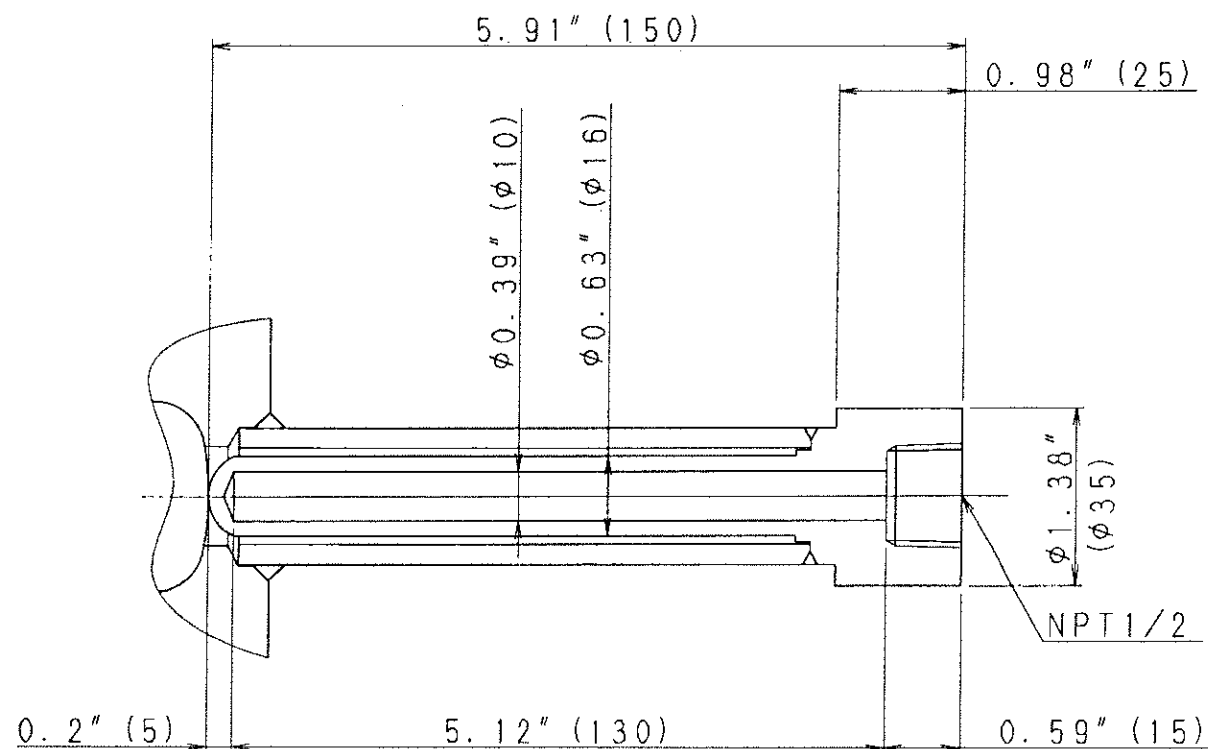
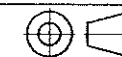


TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. NO.	
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4N-6993-12

4N-7445



FB1809A
FB1810A

REVISIONS

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Project# :4142.00940
Evonik's Pump# :P-9142
Requisition# :C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE

S. Takahashi *S. Takahashi*

K. Yamamoto

FREE

THERMOWELL



株式会社 帝国電機製作所

TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. NO.

4N-7445