

TEIKOKU CANNED MOTOR PUMP DATA SHEET

Messrs : Evonik Degussa Corporation

No. QFH-1374A

2015/8/20

Order No. : ☐ ※1
 Job No. : ---
 Project Name : ---
 Item No. : ☐ ※1
 Item Name : ---
 Model : ☐ F61-216J4BM-0204S1V-AV

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) : 30	Capacity (L/min) : 147.2	Casing : SCS14 (CF-8M 316 SS)	
	(m ³ /h) : 8.83	Impeller : SCS14 (CF-8M 316 SS)	
Suction Press. (barA) : 1.32	Discharge Press. (MPaG) : ---	FBH : SUS316 (316 SS)	
NPSHava. (m) : 12.28	NPSHreq. (m) : 2.2	RBH : SUS316 (316 SS)	
Liquid : AcCH		Motor Flange : SUS316L (316L SS)	
Temperature (Des./Nor.) (°C) : -2 / ---		Stator Can : SUS316L (316L SS)	
Specific gravity (Des./Nor.) : 1.02 / ---		Shaft : SUS316 (316 SS)	
Viscosity (Des./Nor.) (mPa·s) : 5.96 / ---		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) : ☐ 5.8	Temp. (°C) : -2	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	1-1/2"	RF
Discharge	150LB	1"	RF
Drain	150LB	1/2"	RF
Reverse	---	---	---
Jacket Design Press. (psi) : 125		Min. Flow (m ³ /h) : ---	
Utilities Required	Media	Condition (Max)	Flow (Min.)
Casing	NONE	---	---
Motor	COOLING	Brine	-15 °C
Heat Ex./Est. Circ.	NONE	---	---
Motor (Stop)	---	---	---
Customer : Evonik Corporation		Vendor Drawings and Data	
PO# : 4701013179/4701319034		Dimensional Dwg. : 6E-8540	
Project : ACA G600		Terminal Box : 4N-8988-01	
Project# : 4142.00940		Sectional View Dwg. : 6E-8541	
Evonik's Pump# : P-1220/P-1220S		Material List : ☐ P-33041	
Requisition# : C0078-010		Est. Performance Curve : SFH-1374A	
		Connection Diagram : ☐ 4N-4415-01	
		Recommended Spare	
		Spare Parts List : SB-4031	
Power Supply & Drive Motor		Other	
Frame No. : 216	Duty : Cont	Special Treatment : None	
Voltage(V) : 460	Frequency(Hz) : 60	Painting Color : LightGray	
Output(kW/hp) : 2.2/2.95	Rated Amp. (A) : 4.7	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 :		REVISIONS	
-T-USA#385330		B: Revised 3 points, Added 2 points, Deleted 1 point	
-Hazardous Area Classification : Class 1, Div. 2, Gr. C&D T2		(2015.10.26) M. Morii	
-Estimated liquid temperature rise at rated capacity. (Pump side): 0.3°C, (Motor side): 3.2°C.		C: Revised 3 points, Added 1 point (2015.11.11) M. Morii	
-Mechanical Design Temperature: 160°C (Pumps do not run at this temperature. Pumps are not expected to function post experience of this temperature.)		D: Revised 1 point (2015.12.2) M. Morii	
-※1 Item No. P-1220 / Order No. 4701013179, Item No. P-1220S / Order No. 4701319034		E: Revised 4 points (2016.1.15) M. Morii	

6E-8540

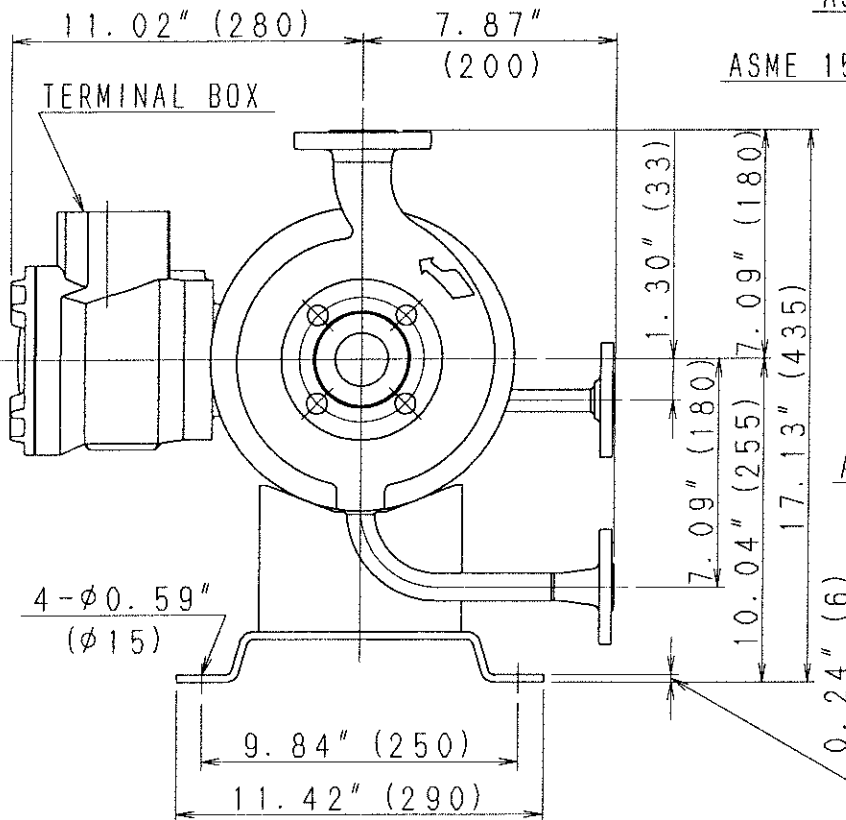
CERTIFIEDDrawing conforms to the
customer's latest specifications

A

B

C

D

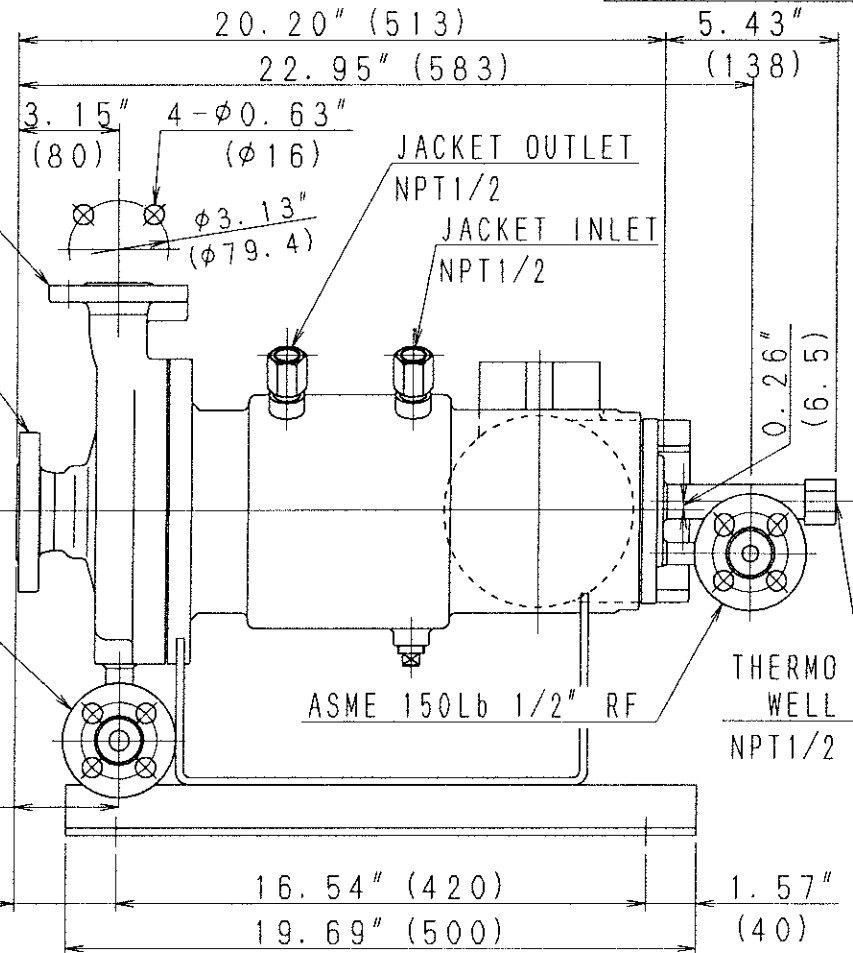


ASME 150Lb 1" RF

ASME 150Lb 1 1/2" RF

4- ϕ 0.63"
(ϕ 16) ϕ 3.87"
(ϕ 98.4)

ASME 150Lb 1/2" RF

3.27"
(83)3.19"
(81)

FH1374A

REVISIONS

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142.00940
Evonik's Pump# : P-1220/P-1220S
Requisition# : C0078-010

WEIGHT	
MOTOR TYPE	Lbs/kg
215	176/80
216, 217	188/85

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE 外形図

R. Tachibana R. Matsunaga

M. Morii
Aug. 19, '15

FREE

DIMENSIONAL DRAWING

TYPE: F-210-0204S1-V

DWG. NO.

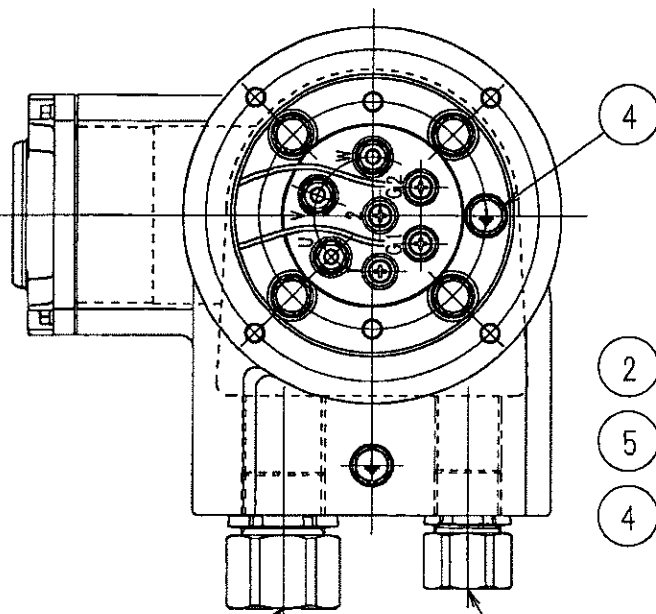
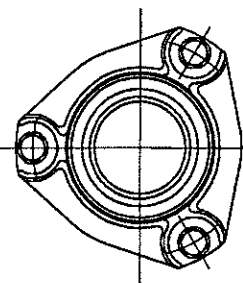
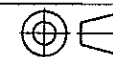
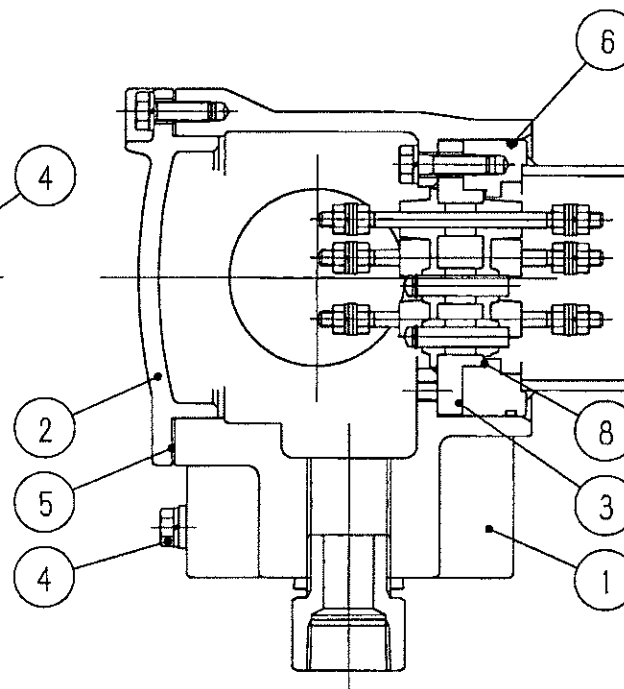


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6E-8540

4N-8988-01

NPT 1
SOURCE SIDENPT 3/4
PROTECTION SIDE

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

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1220/P-1220S
Requisition# : C0078-010

APPROVED

T. Takeuchi

CHECKED

R. Okamoto

DRAWN

K. Nakazumi

Mar. 26, '15

SCALE

FREE

DWG. TITLE

TERMINAL BOX

SIZE : S

Hermetic (Special)

DWG. NO.

4N-8988-01



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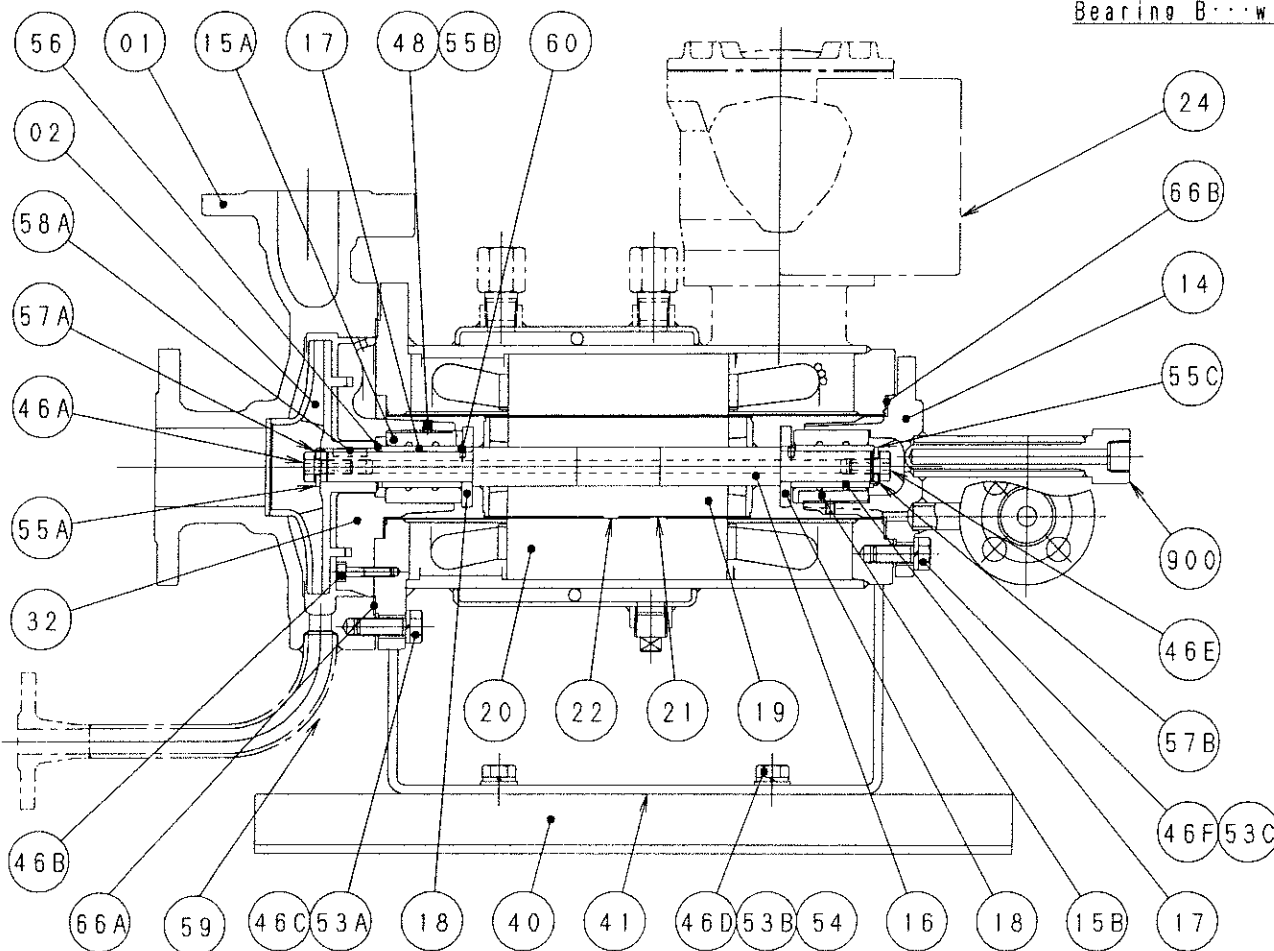
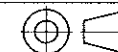
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6E-8541

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		
14	R. B. HOUSING	53A	SPRING WASHER
15A	BEARING B	53B	SPRING WASHER
15B	BEARING A	53C	SPRING WASHER
16	SHAFT	54	PLAIN WASHER
17	SHAFT SLEEVE	55A	WASHER
18	THRUST COLLAR	55B	WASHER
19	ROTOR ASSY	55C	WASHER
20	STATOR ASSY	56	ADJUSTING WASHER
21	ROTOR CAN	57A	LOCK WASHER
22	STATOR CAN	57B	LOCK WASHER
24	TERMINAL BOX ASSY	58A	KEY
32	F. B. HOUSING		
		60	PIN
40	BASE		
41	HOLDER	66A	GASKET
46A	BOLT	66B	GASKET
46B	BOLT		
46C	BOLT	900	THERMOWELL
46D	BOLT		
46E	BOLT		
46F	BOLT		

FH1374A

Customer :Evonik Corporation
PO# :4701013179/4701319034
Project :ACA G600
Project# :4142.00940
Evonik's Pump# :P-1220/P-1220S
Requisition# :C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE 構造断面図

SECTIONAL VIEW DRAWING

TYPE:F-V

DWG. NO.



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TEIKOKU ELECTRIC MFG. CO., LTD.

6E-8541

(1/1)

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ESTIMATED PERFORMANCE CURVE

Date : Aug. 20. 2015
No : E18H0038-00
Dwg. No. : SFH-1374A

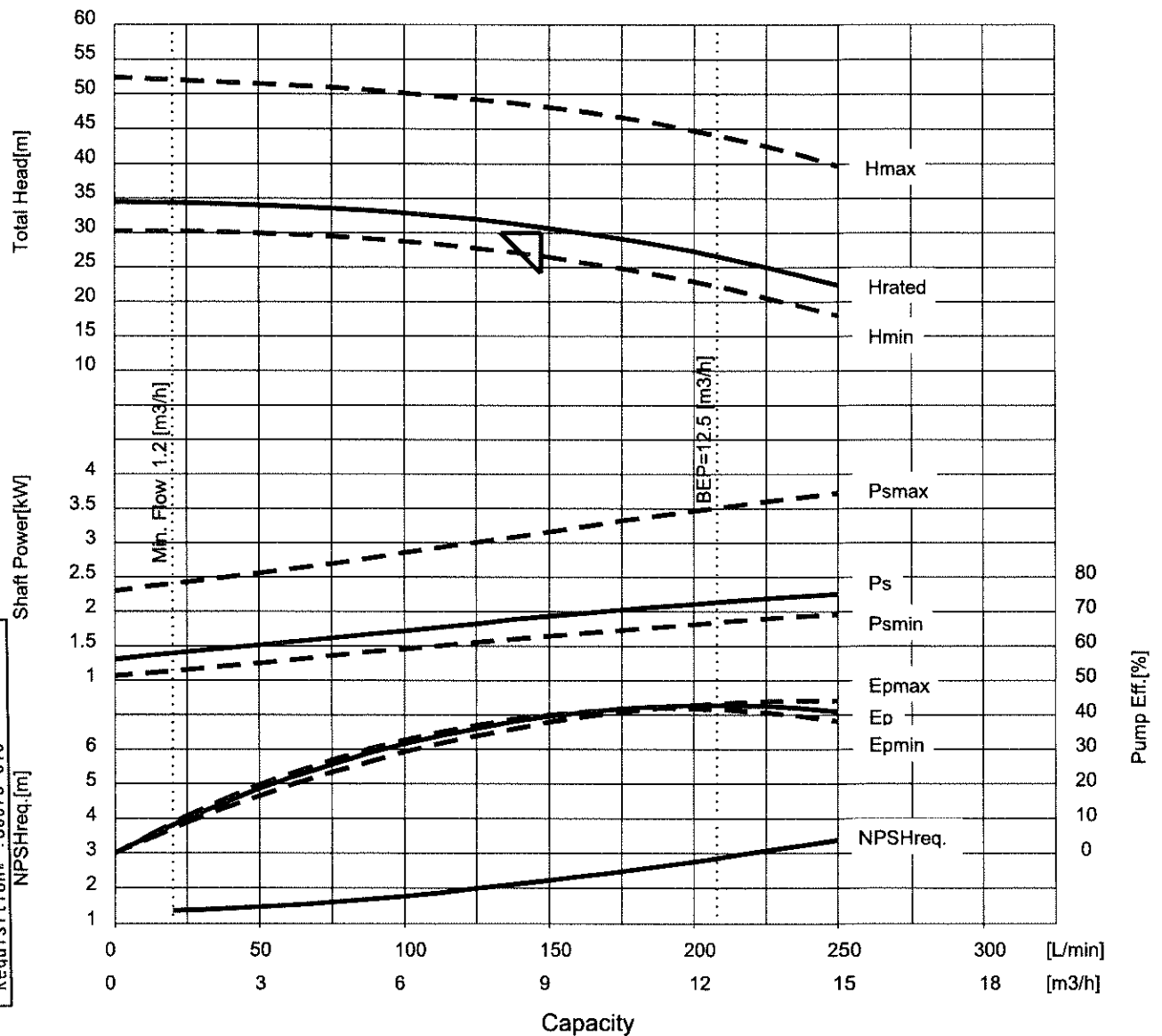
Item No. **P-1220 / P-1220S**
Model **F61-216J4BM-0204S1V-AV**

Item Name ****

Frequency 60 Hz
Voltage 460 V
Phase 3
Pole 2
Output 2.2 kW
Current 4.7 A

Total Head 30 m
Capacity 147.2 L/min 8.83 m3/h
Min.Flow 20 L/min 1.2 m3/h
Liquid AcCH
Temp. -2 degC
S.G. 1.02
NPSHavail. 12.28 m

Vis. 5.96 mPas
NPSHreq. 2.2 m



Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1220/P-1220S
Requisition# : C0078-010

Remarks :

- Shut-off head : 34.4m
- 30.8m, 39.3%, 1.92kW, 3429rpm @ rated flow
- 15m3/hr, 2.3kW @ EOC
- 3.731kW @ EOC (max. dia.)
- Ns : 12.87, SSS : 6077
- Impeller Dia(mm):166(Max)/138(Rated)/130(Min)
- Output:2.95(hp)

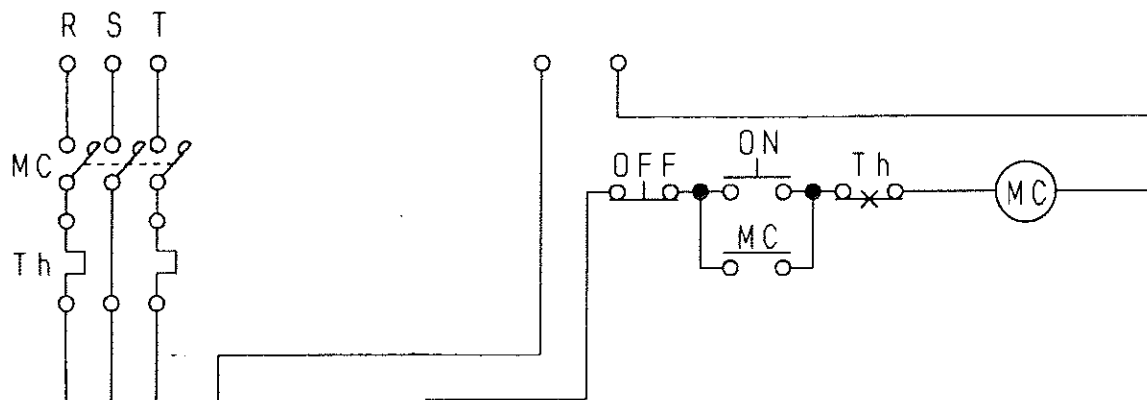
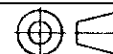
REV.	Date	Description
C	2016.1.15	Revised 1 Point. M.Morii
B	2015.11.11	Revised 1 Point. M.Morii

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

TEIKOKU ELECTRIC MFG. CO., LTD.

UNIS Version 3.0.2
NDTS11_15

4N-4415-01



TEIKOKU SUPPLY

サーモスタット
THERMOSTAT
TEIKOKU MOTOR PUMP

サーモスタット THERMOSTAT	#1	#2
耐熱クラス THERMAL CLASS	220	F
定格 RATING	220°C-CUT OFF AC250V-6.3A	150°C-CUT OFF AC230V-13A
b-接点 CONTACTOR	AC110V-10A DC24V-1.5A	AC115V-18A DC24V-18A

記号 SYMBOLS	名称 NAME
R S T	電源端子 POWER TERMINAL
U V W	TMP接続端子 TMP TERMINAL
MC	電磁開閉器 MAGNETIC CONTACTOR
ON・OFF	押釦スイッチ (起動・停止用) PUSH BUTTON SWITCH
Th	サーマルリレー THERMAL RELAY
TRG	テイコクロータリーガード TEIKOKU ROTARY GUARDIAN

REVISED

B
Rewritten
Dec. 5, '01
Y. Takeuchi

C
Rewritten
Oct. 30, '07
Y. Iwasaki

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1220/P-1220S
Requisition# : C0078-010

APPROVED

M. Sakai

CHECKED

T. Takeuchi

DRAWN

Y. Kii
Jun 10 '96

SCALE

FREE

DWG. TITLE

結線図
..... CONNECTION DIAGRAM

DWG. NO.



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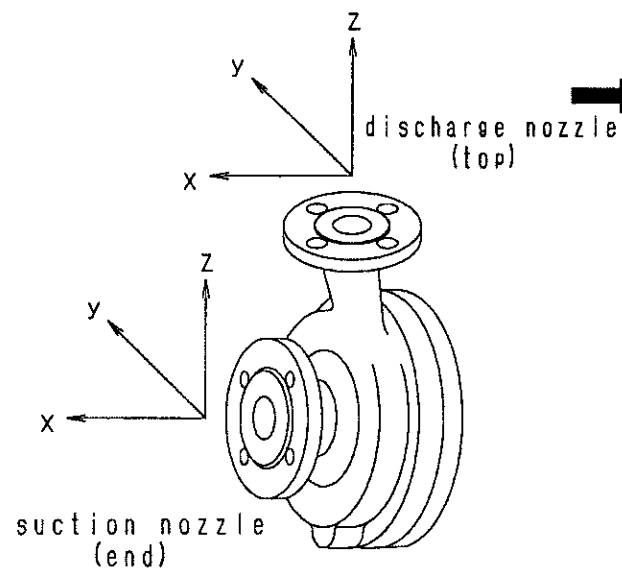
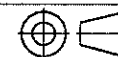
C

RECOMMENDED SPARE PARTS LIST

056150

Customer :Evonik Corporation
PO# :4701013179/4701319034
Project :ACA G600
Project# :4142. 00940
Evonik's Pump# :P-1220/P-1220S
Requisition# :C0078-010

4N-6993-01

CASING

#No	PUMP TYPE	Fsx	Fsy	Fsz	Fdx	Fdy	Fdz	Msx	Msy	Msx	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	1960	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
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Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1220/P-1220S
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	APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE	許容配管荷重
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		T. Takeuchi	S. Kimura	Y. Shimizu Apr. 11' 08	FREE	ALLOWABLE PIPING FORCES AND MOMENTS	
									SI Units	API610 (10th)
									DWG. NO.	
									4N-6993-01	E

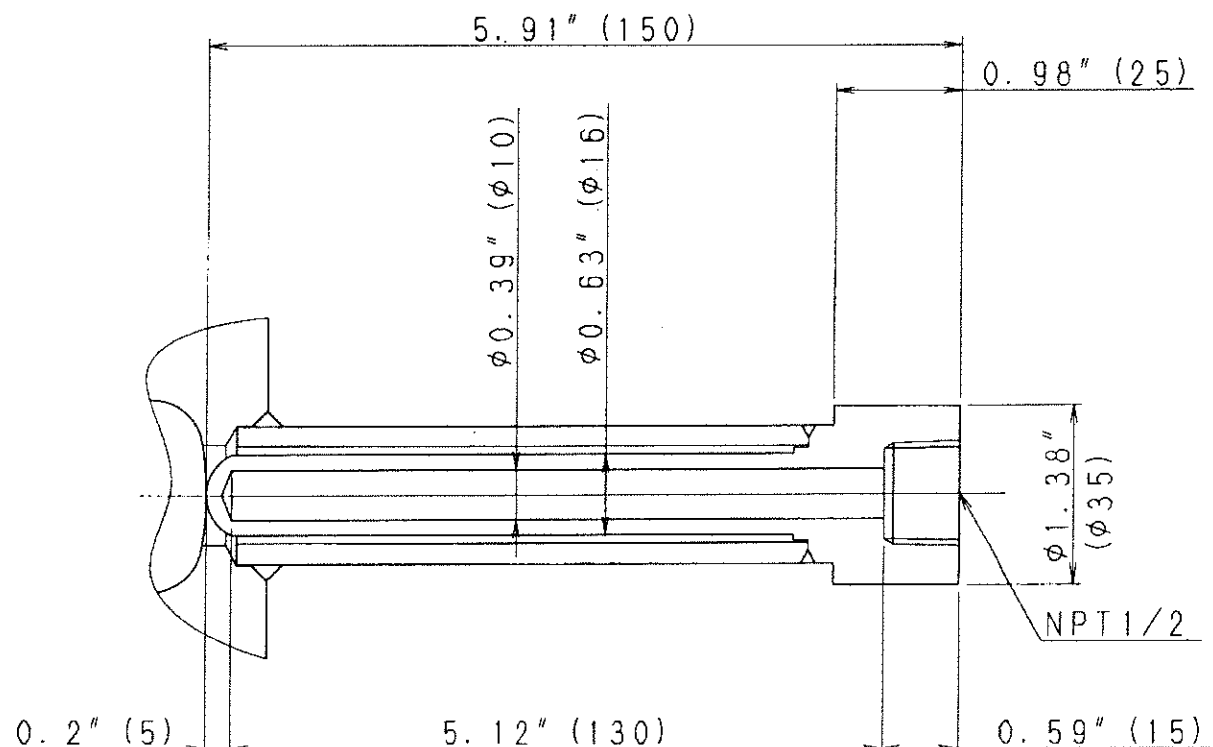
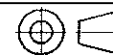


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4N-6993-01

4N-7445



FB1809A
FB1810A

REVISIONS

Customer : Evonik Corporation
PO# : 4701013179/4701319034
Project : ACA G600
Project# : 4142. 00940
Evonik's Pump# : P-1220/P-1220S
Requisition# : C0078-010

APPROVED

CHECKED

DRAWN

SCALE

DWG. TITLE

S. Takahashi *S. Takahashi*

K. Yamamoto
Apr. 22 '10

FREE

THERMOWELL



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DWG. NO.

4N-7445