

# TEIKOKU CANNED MOTOR PUMP DATA SHEET

No. QFH-1386A

Aug. 10 2015

Messrs : Evonik Degussa Corporation

Order No. : 4701013179  
 Job No. : ---  
 Project Name : ---  
 Item No. : P-4490  
 Item Name : ---  
 Model :  DA61-216J4BM-0204S1V-A

**CERTIFIED**  
 Drawing conforms to the  
 customer's latest specifications

Qty : 1

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) : 35.3	Capacity (L/min) : 76.5	Casing : SCS14 (CF-8M 316 SS)	
	(m3/h) : 4.59	Impeller : SCS14 (CF-8M 316 SS)	
Suction Press. (barA) : 0.63~4.82	Discharge Press. (barA) : ---	Adapter : SCS14 (CF-8M 316 SS)	
NPSHava. (m) : 5.8	NPSHreq. (m) : 1.6	RBH : SUS316 (316 SS)	
Liquid : ACA Residue		Motor Flange : SUS316L (316L SS)	
Temperature (Des./Nor.) (°C) : 102.5 / ---		Stator Can : SUS316L (316L SS)	
Specific gravity (Des./Nor.) : 0.97 / ---		Shaft : SUS316 (316 SS)	
Viscosity (Des./Nor.) (mPa·s) : 1.7 / ---		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) : 0.018		+ Thrust Collar : SUS316 (316 SS)+Stellite	
Solids Name : ---		Pump Gasket : <input checked="" type="checkbox"/> SUS316 (316 SS)+Grafoil	
Concentration (wt%) : ---	Particle Size (μm) : ---	S.Gr. : ---	
Flushing or Barrier Fluid : ACA Residue		Motor Gasket : PTFE	
Liquid/S.Gr. (mPa·s) : 0.97 / 1.7		O-ring : PTFE	
Press. (MPaG) : S.P. + 0.25 ± 0.05	Flow (mL/h) : Max. 3	Mechanical Seal : SiC+Carbon	

Pump Design & Construction		Performance	
Design Press <input checked="" type="checkbox"/> (bar) : <input checked="" type="checkbox"/> 4.59	Temp. (°C) : 102.5	Impeller Type : CLOSE	
Code Applied : None	Nameplate : English	No. of Stage : 1	

Nozzle Connection : ASME		Finish : SMOOTH FINISH		
Nozzle	Rating	Size	Facing	Position
Suction	150LB	1-1/2"	RF	END
Discharge	150LB	1"	RF	TOP
Drain	---	---	---	---
Reverse	---	---	---	---

Jacket Design Press. (MPa) : ---				
Utilities Required	Media	Condition (Max)	Flow (Min.)	Connection
Casing	NONE	---	---	---
Motor	COOLING <input checked="" type="checkbox"/> CW	<input checked="" type="checkbox"/> 35°C	0.3 m3/h	NPT 1/2
Heat Ex./Ext. Circ.	COOLING <input checked="" type="checkbox"/> CW	<input checked="" type="checkbox"/> 35°C	0.9 m3/h	NPT 1/2
Motor (Stop)	---	---	---	---

Customer : Evonik Corporation  
 PO# : 4701013179  
 Project : ACA G600  
 Project# : 4142. 00940  
 Evonik's Pump# : P-4490  
 Requisition# : C0078-010

Min. Flow (L/min) : ---
Min. Flow (m3/h) : ---

Spare Parts	

Accessories	

Vendor Drawings and Data	
Dimensional Dwg. : 6E-8510	Allowable Piping Forces and Moments : 4N-6993-01
Terminal Box : 4N-8988-01	<input checked="" type="checkbox"/> Thermowell : 4N-7445
Sectional View Dwg. : <input checked="" type="checkbox"/> 6E-8554	
Material List : P-32821	
Est. Performance Curve : SFH-1386A	
Connection Diagram : <input checked="" type="checkbox"/> 4N-4415-01	
Mechanical Seal : 4N-4024-06	
Recommended Spare	
Spare Parts List : SC-1032	

Power Supply & Drive Motor		Other	
Frame No. : 216	Duty : Cont	Special Treatment : None	
Voltage (V) : 460	Frequency (Hz) : 60	Phase : 3	Pole : 2
Output (kW/hp) : 2.5/3.35	Rated Amp. (A) : 5	Start Amp. (A) : 26	
Thermal Class : 220	Start Method : DIRECT		
R.P.M. (rpm) : 3600	Direction : C.C.W. (Viewed from Pump Suction)		
Voltage for protection (V) : 120	Protection Device : Thermostat b		
Dry Run Protection Relay : ---			
Terminal Box : Stud/Thread/ 1		Painting Color : Light Gray	
Power Cable Conduit : NPT1	Cable O.D. (Main) (mm) : ---	Rotating Direction	
Instrument Cable Conduit : NPT3/4	Cable O.D. (Sub) (mm) : ---	Monitoring : Yes	
ATEX Marking : ---		Bearing Wear Monitor : Radial / Local	

Remarks :  
 -T-USA#385330  
 -Hazardous Area Classification : Class.1, Div.2, Gr.C&D T2  
 -Mechanical Design Temperature : 250°C (Pumps do not run at this temperature. Pumps are not expected to function post experience of this temperature.)

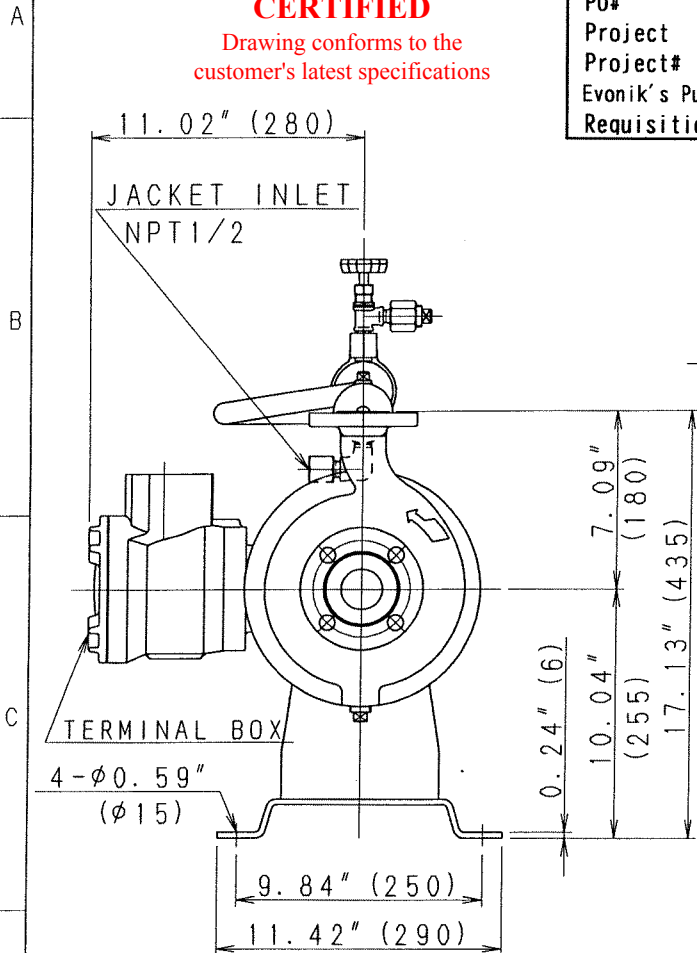
REVISIONS	B: Revised 1 Point (Aug. 21' 15) M. Morii	
	C: Revised 5 points, Added 2 points, Deleted 1 point (2015. 10. 29) M. Morii	
	D: Revised 5 points (2016. 1. 6) M. Morii	

6E-8510

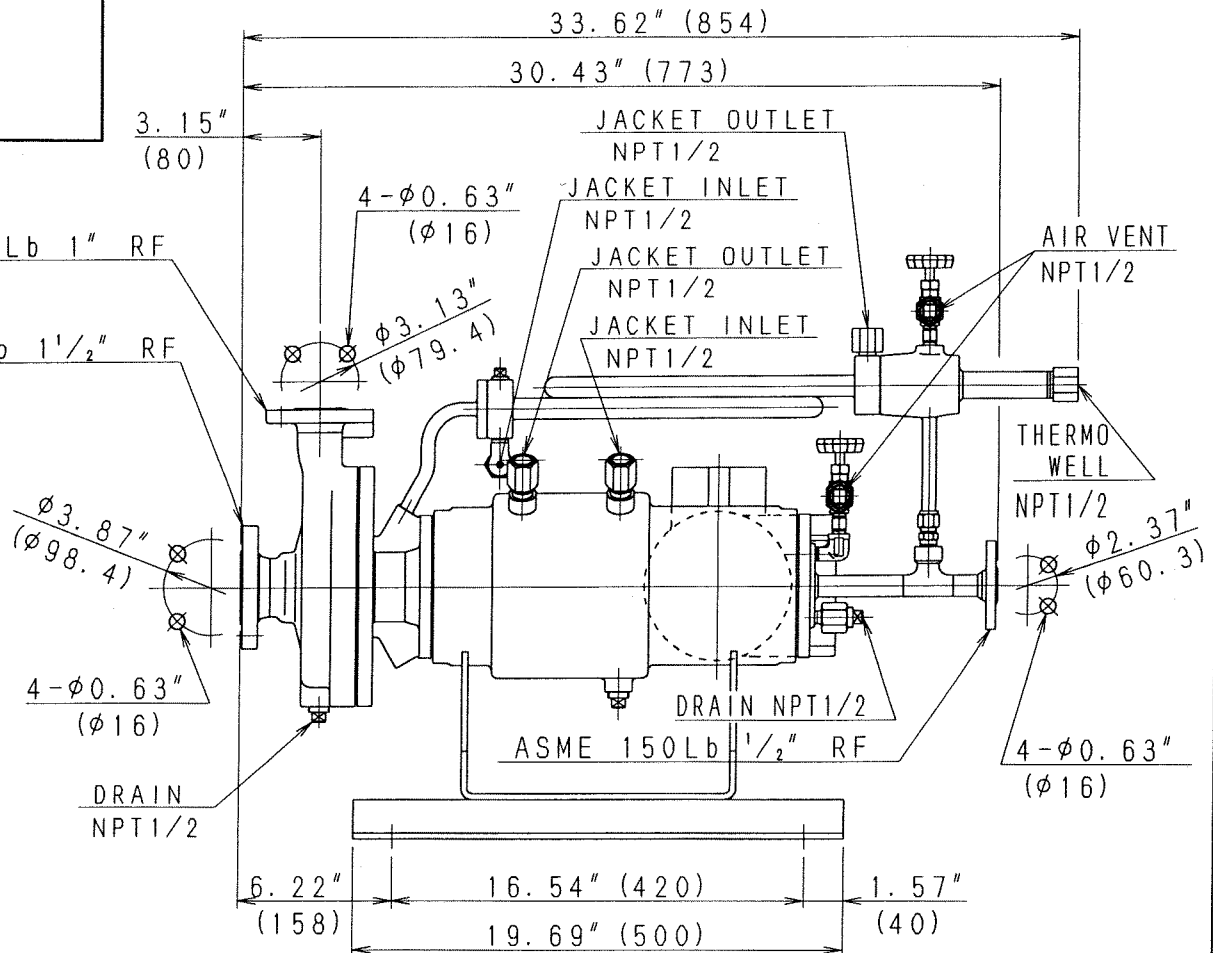
**CERTIFIED**

Drawing conforms to the customer's latest specifications

Customer :Evonik Corporation  
 PO# :4701013179  
 Project :ACA G600  
 Project# :4142.00940  
 Evonik's Pump# :P-4490  
 Requisition# :C0078-010



ASME 150Lb 1" RF  
 ASME 150Lb 1 1/2" RF



FH1386A

REVISIONS	B	C	D
Revised	Aug. 21, 15	Revised	Revised
Aug. 21, 15	M. Morii	Nov. 16, 15	Jan. 6, 16
		M. Morii	M. Morii

WEIGHT		
MOTOR TYPE	kg	Lb
215	100	220
216, 217	105	230

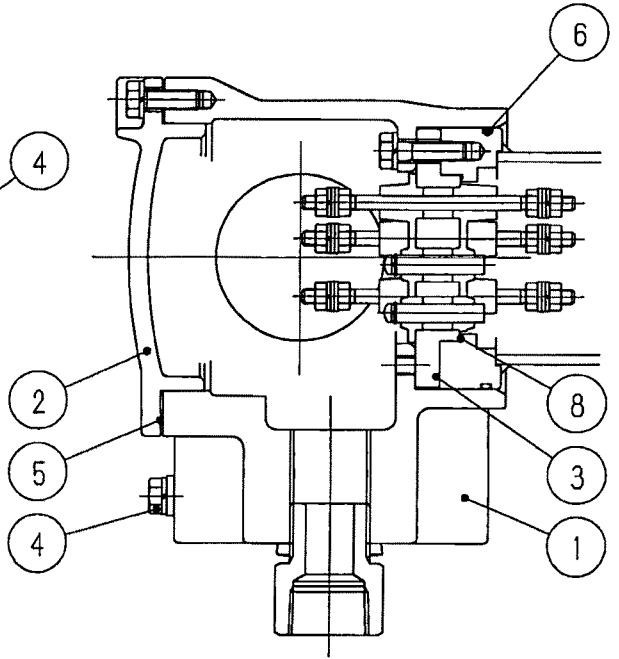
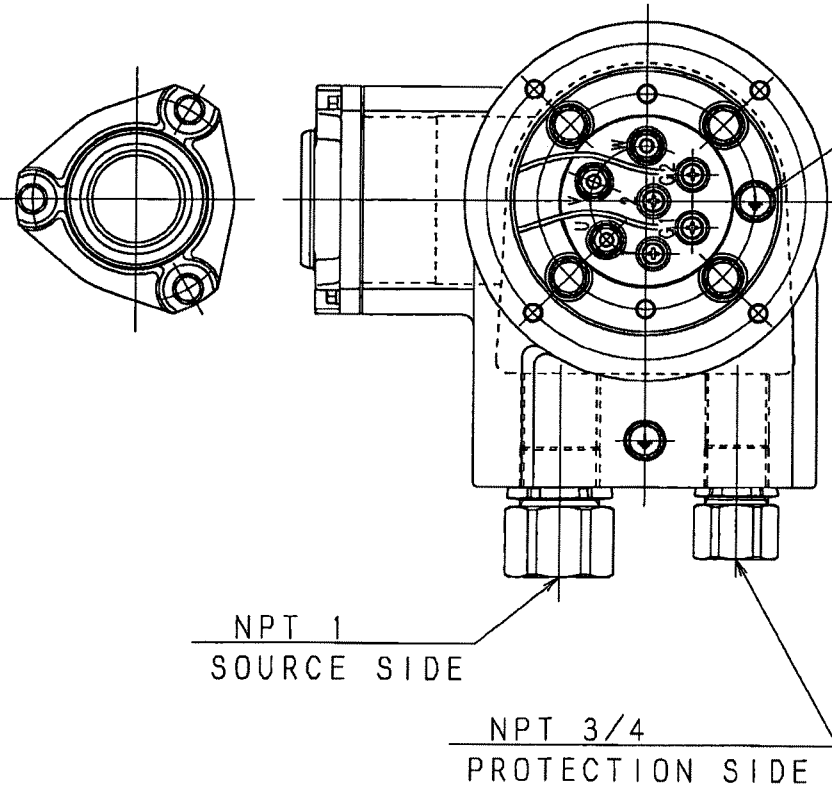
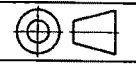
APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE
<i>R. Matsumoto</i>	<i>R. Matsumoto</i>	M. Morii	FREE	外形
		Aug. 7, 15		DIMENSIONAL DRAWING
				TYPE: DA-210-0204S1

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**TEIKOKU** ELECTRIC MFG. CO., LTD.

DWG. NO. **6E-8510**

**6E-8510**

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

NPT 1  
SOURCE SIDE

NPT 3/4  
PROTECTION SIDE

TERMINAL MARK  
U·V·W----SOURCE (M6)  
1·2-----THERMOSTAT (M4)  
G1·G2----TRG METER (M4)

FG2021A

REVISIONS

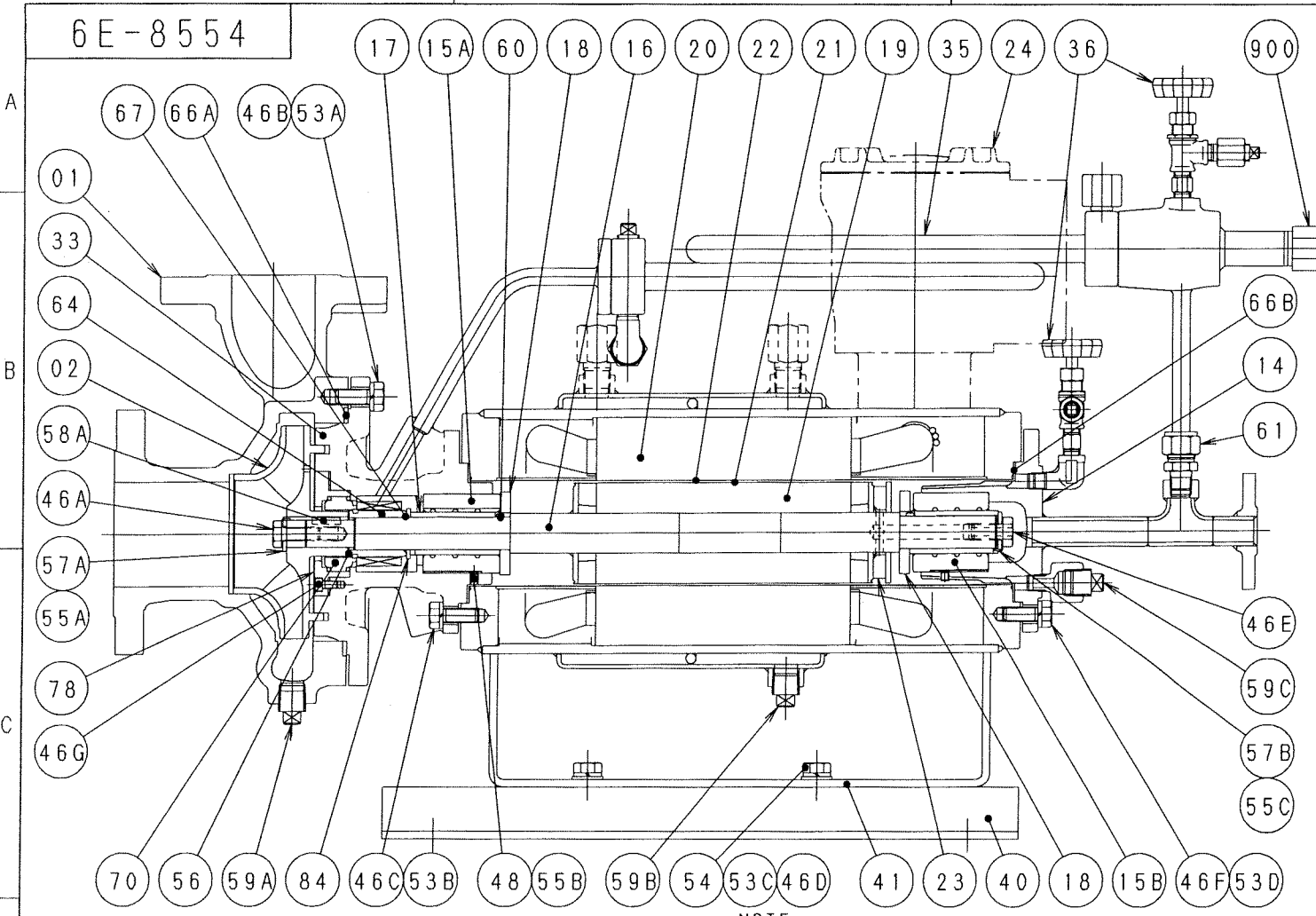
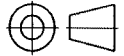
Customer : Evonik Corporation  
 PO# : 4701013179  
 Project : ACA G600  
 Project# : 4142. 00940  
 Evonik's Pump# : P-4490  
 Requisition# : C0078-010

APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE
T. Takeuchi	R. Okamoto	K. Nakazumi	FREE	TERMINAL BOX
		Mar-26-'15		SIZE : S Hermetic (Special)

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**TEIKOKU** ELECTRIC MFG. CO., LTD.

DWG. NO.  
**4N-8988-01**

6E-8554



No.	NAME OF PARTS	No.	NAME OF PARTS
01	CASING	48	SET SCREW
02	IMPELLER	53A	SPRING WASHER
14	R. B. HOUSING	53B	SPRING WASHER
15A	BEARING A	53C	SPRING WASHER
15B	BEARING B	53D	SPRING WASHER
16	SHAFT	54	PLAIN WASHER
17	SHAFT SLEEVE	55A	WASHER
18	THRUST COLLAR	55B	WASHER
19	ROTOR ASS'Y	55C	WASHER
20	STATOR ASS'Y	56	ADJUSTING WASHER
21	ROTOR CAN	57A	LOCK WASHER
22	STATOR CAN	57B	LOCK WASHER
23	AUXILIARY IMPELLER	58A	KEY
24	TERMINAL BOX ASS'Y	59A	PLUG
33	ADAPTER	59B	PLUG
35	HEAT EXCHANGER ASS'Y	59C	PLUG
36	VENT VALVE	60	PIN
40	BASE	61	DOUBLE JOINT
41	HOLDER	64	SPACER
46A	BOLT	66A	GASKET
46B	BOLT	66B	GASKET
46C	BOLT	67	O-RING
46D	BOLT	70	MECHANICAL SEAL
46E	BOLT	78	GLAND
46F	BOLT	84	COLLAR
46G	BOLT	900	THERMOWELL

NOTE  
 BEARING A...with spiral & straight grooves  
 BEARING B...with spiral grooves

FH1383A

REVISIONS	B	C
Revised	Nov. 11 '15	Revised
	M. Morii	Jan. 6 '16
		M. Morii

Customer :Evonik Corporation  
 PO# :4701013179  
 Project :ACA G600  
 Project# :4142.00940  
 Evonik's Pump# :P-4490  
 Requisition# :C0078-010

APPROVED	CHECKED	DRAWN	SCALE
<i>R. Takemoto</i>	<i>R. Matsumura</i>	M. Morii	FREE
		Aug. 21 '15	

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 TEIKOKU ELECTRIC MFG. CO., LTD.

DWG. TITLE 構造断面図  
 SECTIONAL VIEW DRAWING  
 TYPE: DA

DWG. NO.  
**6E-8554**

# MATERIAL LIST

(1/1)

NO.	NAME	MATERIAL (JIS Std./Eq. ASTM, AISI Std.)	REMARKS
01	CASING	SCS14 / CF-8M 316SS	
02	IMPELLER	SCS14 / CF-8M 316SS	
14	R. B. HOUSING	SUSF316 or SCS14 / F 316 SS or CF-8M 316 SS	
15A	BEARING A	Carbon Graphite	
15B	BEARING B	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	
23	AUXILIARY IMPELLER	SUS316L / 316L SS	
24	TERMINAL BOX ASS' Y	FC200 / Cl.No. 35 etc.	
33	ADAPTER	SCS14 / CF-8M 316SS	
35	HEAT EXCHANGER ASS' Y	SUS316L / 316L SS etc.	
36	VENT FLANGE	SUS316 / 316 SS	
40	BASE	SS400 / Carbon Steel	
41	HOLDER	SS400 / Carbon Steel	
46A	BOLT	SUS316 / 316 SS	
46B	BOLT	CSCM435 / AISI 4137	
46C	BOLT	SUS304 / 304 SS	
46D	BOLT	S20C / AISI 1020	
46E	BOLT	SUS316 / 316 SS	
46F	BOLT	SUS304 / 304 SS	
46G	BOLT	SUS316 / 316 SS	
48	SET SCREW	SUS316 / 316 SS	
53A	SPRING WASHER	CSWRH / Carbon Steel	
53B	SPRING WASHER	SUS304 / 304 SS	
53C	SPRING WASHER	SWRH / Carbon Steel	
53D	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	
59A	PLUG	SUS316 / 316 SS	
59B	PLUG	SS400 / Carbon Steel	
59C	PLUG	SUS316 / 316 SS	
60	PIN	SUS316 / 316 SS	
61	DOUBLE JOINT	SUS316 / 316 SS	
64	SPACER	SUS316 / 316 SS	
66A	GASKET	CUSUS316 / 316 SS+Grafoil	
66B	GASKET	T/#9007-LC / PTFE	
67	O-RING	PTFE	
70	MECHANICAL SEAL	SiC + Carbon	
78	GLAND	SUS316 / 316 SS	
84	COLLAR	SUS316 / 316 SS	
900	THERMOWELL	SUS316 / 316 SS	

Customer	: Evonik Corporation
PO#	: 4701013179
Project	: ACA G600
Project#	: 4142.00940
Evonik's Pump#	: P-4490
Requisition#	: C0078-010

(DA) Added 1 Point (Aug. 21' 15) M. Morii Revised 3 Points (Oct. 29' 15) M. Morii Added 1 Point (Nov. 11' 15) M. Morii	APPROVED R. Takeuchi	CHECKED R. Matsumura	DRAWN K. Nakazumi Aug.10 '15
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**P-32821**

FH1383A

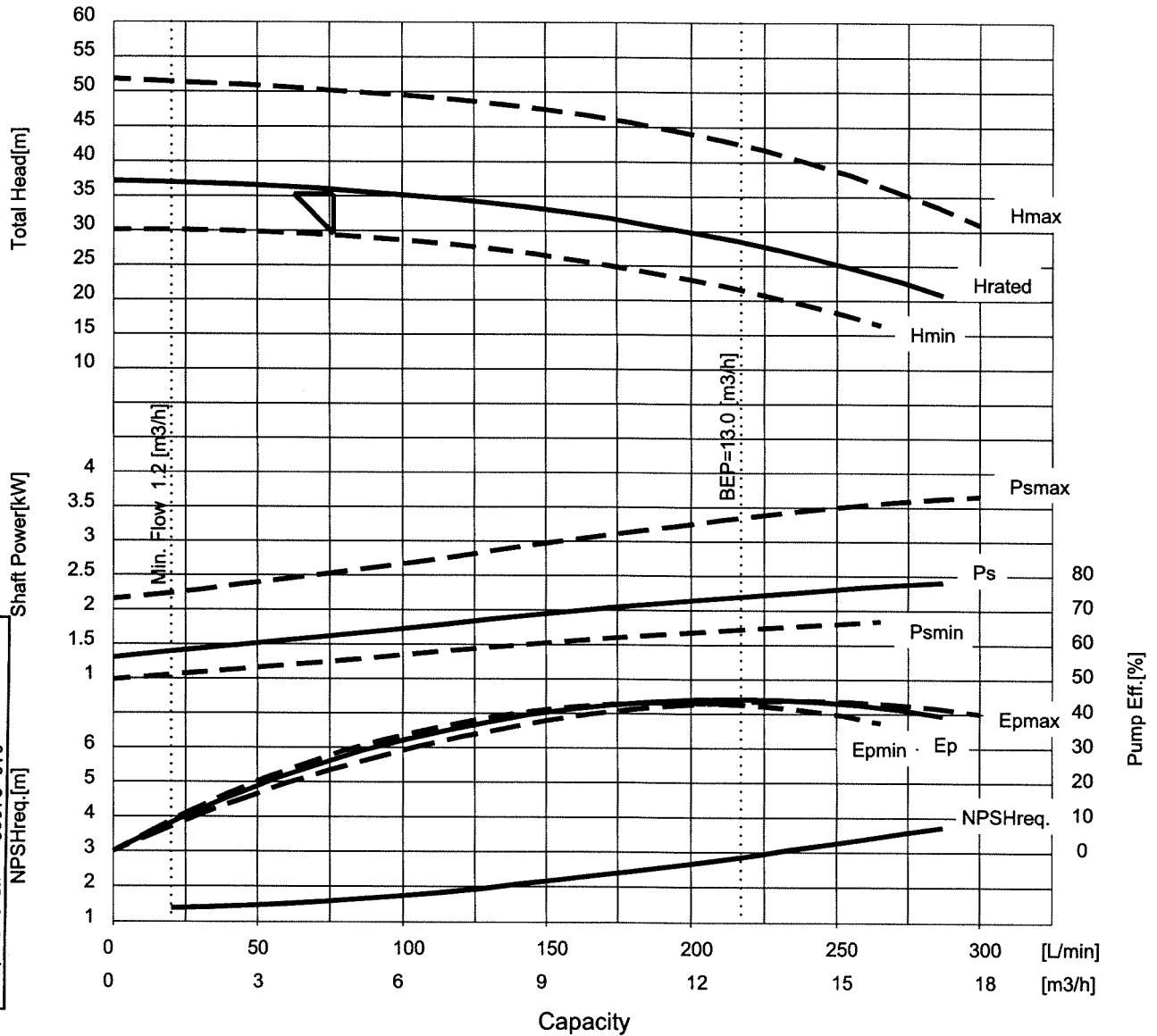


# ESTIMATED PERFORMANCE CURVE

Date : Aug. 07. 2015  
 No : E18H0031-00  
 Dwg. No. : SFH-1386A

Item No. P-4490 Item Name \*\*\*\*  
 Model **DA61-216J4BM-0204S1V-A**

Frequency	60	Hz	Total Head	35.3	m
Voltage	460	V	Capacity	76.5	L/min 4.59 m3/h
Phase	3		Min.Flow	20	L/min 1.2 m3/h
Pole	2		Liquid	ACA Residue	
Output	2.5	kW	Temp.	102.5	degC
Current	5	A	S.G.	0.97	Vis. 1.7 mPas
			NPSHavail.	5.8	m NPSHreq. 1.6 m



PO# : 4701013179  
 Project : ACA G600  
 Project# : 4142. 00940  
 Evonik's Pump# : P-4490  
 Requisition# : C0078-010

**Remarks :**

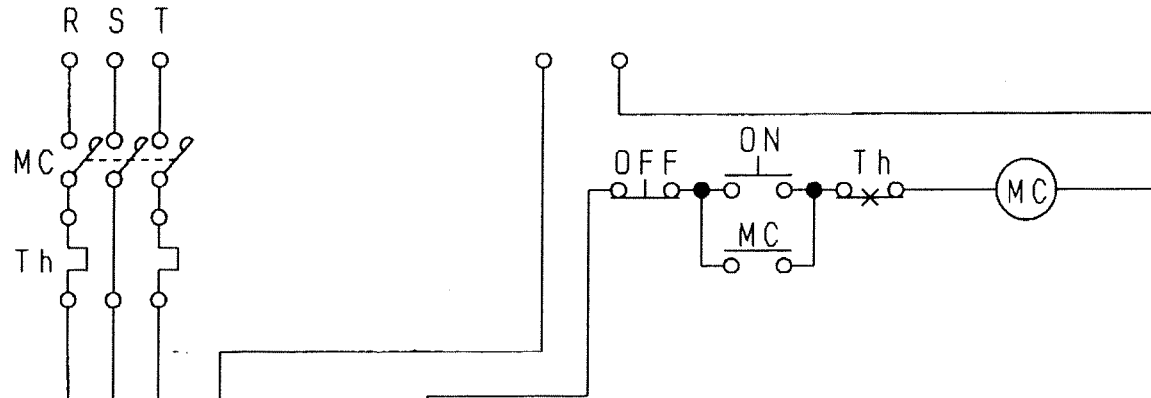
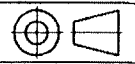
- Shut-off head : 37.1m
- 35.9m, 26.7%, 1.63kW, 3434rpm @ rated flow
- 17.24m3/hr, 2.41kW @ EOC
- 3.687kW @ EOC (max. dia.)
- Ns : 12.74, SSS : 5969
- Ns : 12.74, SSS : 5969
- Output:3.35(hp)

B	2015.10.29	Revised 1 Point. M.Morii	
REV.	Date	Description	

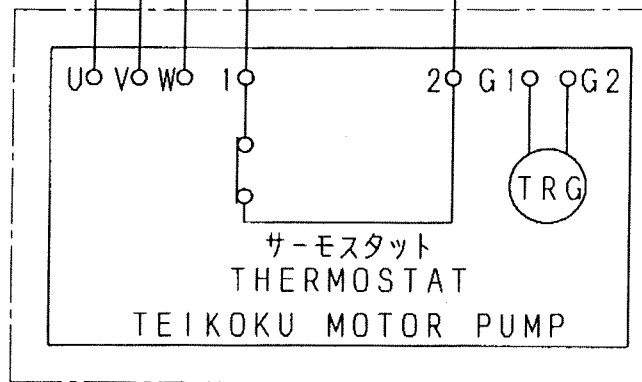
APPROVED BY	CHECKED BY	DRAWN BY
R.Takeuchi	R.Matsumura	M.Morii

TEIKOKU ELECTRIC MFG. CO., LTD.

4N-4415-01



TEIKOKU SUPPLY



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	押しボタンスイッチ (起動・停止用) PUSH BUTTON SWITCH
Th	サーマルリレー THERMAL RELAY
TRG	テイクロータリーガードイアン TEIKOKU ROTARY GUARDIAN

REVISIONS	B
	C
	D
	E
Rewritten	Dec. 5, '01
Y. Takeuchi	
Rewritten	Oct. 30, '07
Y. Iwasaki	

Customer : Evonik Corporation  
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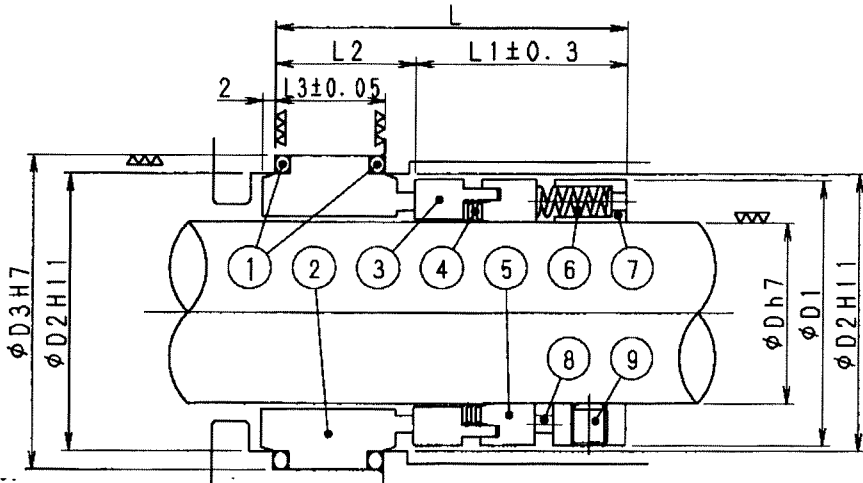
APPROVED	CHECKED	DRAWN	SCALE
M. Sakai	T. Takeuchi	Y. Kii	FREE
		Jun 10 '96	

DWG. TITLE 結線図  
 CONNECTION DIAGRAM

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

DWG. NO.  
**4N-4415-01**

4N-4024-06



G-No	D	D1	D2	D3	L	L1	L2	L3
1	20	34	36	42	58	35	23	18
2	22	36	38	44	58	35	23	18
3	24	38	40	46	58	35	23	18
4	25	39	41	47	58	35	23	18
5	28	42	44	50	58	35	23	18
6	30	44	46	52	58	35	23	18
7	32	46	48	54	58	35	23	18
8	33	47	49	55	58	35	23	18
9	35	49	51	57	58	35	23	18
10	38	54	58	64	63	38	25	20
11	40	56	60	66	63	38	25	20
12	42	58	62	68	63	38	25	20
13	43	59	63	69	63	38	25	20
14	45	61	65	71	63	38	25	20
15	48	64	68	74	63	38	25	20

G-No	D	D1	D2	D3	L	L1	L2	L3
16	50	66	70	76	64	39	25	20
17	52	68	72	78	65	40	25	20
18	53	69	73	79	65	40	25	20
19	55	71	75	81	65	40	25	20
20	58	75	83	89	69	41	28	22
21	60	78	85	91	69	41	28	22
22	62	80	87	93	69	41	28	22
23	63	81	88	94	69	41	28	22
24	65	83	90	96	69	41	28	22
25	68	86	93	99	71	41	30	24
26	70	90	95	101	72	42	30	24
27	75	95	104	110	72	42	30	24
28	80	100	109	115	73	42	31	25
29	90	110	119	125	76	45	31	25

No.	NAME	NOTES
1	O リング O RING	PTFE FF (TEFLON)
2	シール リング SEAL RING	CARBON
3	メイトイング リング MATING RING ASS'Y	SIC RETAINER:TITANIUM
4	V パッキン V-PACKING	PTFE FF (TEFLON)
5	コンプレッション リング COMPRESSOIN RING	316 SS
6	コイル スプリング COIL SPRING	316 SS
7	カラー COLLAR	316 SS
8	ドライブ ピン DRIVE PIN	316 SS
9	セット スクリュー SET SCREW	316L SS

REVISIONS	B	C
Mar. 22 '01	G-29 Added	(N. Maruo)
Aug. 19 '03	Revised	(K. Nakazumi)

Customer : Evonik Corporation  
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 Requisition# : C0078-010

APPROVED	CHECKED	DRAWN	SCALE
M. Sakai	T. Takeuchi	R. Takeuchi Feb. 2 '98	FREE

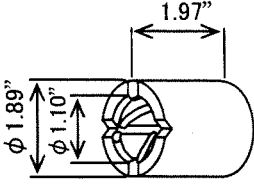
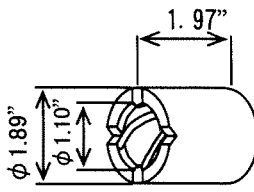
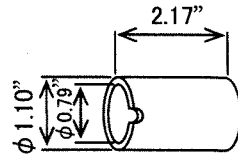
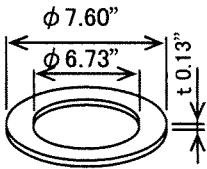
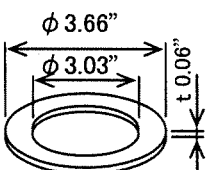
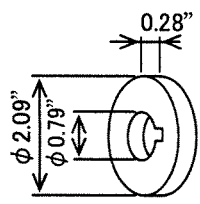

株式会社 帝国電機製作所  
**TEIKOKU** ELECTRIC MFG. CO., LTD.

DWG. TITLE **メカニカル シール**  
**MECHANICAL SEAL**  
 TYPE: LIE

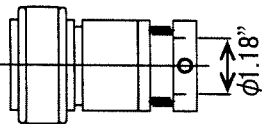
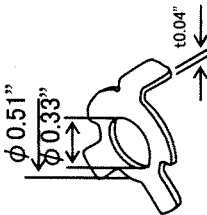
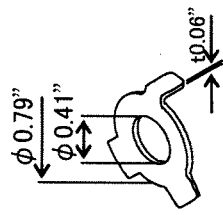

DWG. NO.  
**4N-4024-06**



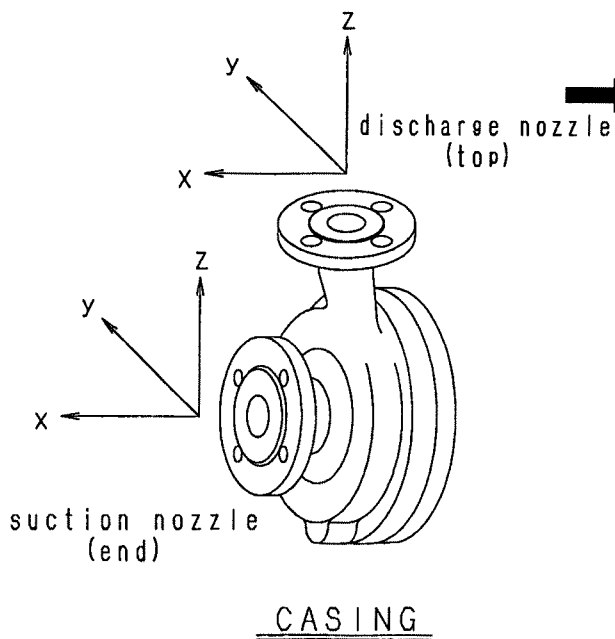
# RECOMMENDED SPARE PARTS LIST

TYPE		DA-210-S			SC-1032	1 2	
No.	PARTS NAME	DIMENSION	MATERIAL	FOR 1SETS	REMARKS		
1	<b>BEARING A</b> (with spiral & straight grooves)		Carbon Graphite	1	#15A 48×28×50 (mm)		
2	<b>BEARING B</b>		Carbon Graphite	1	#15B 48×28×50 (mm)		
3	<b>SHAFT SLEEVE</b>		316 SS (SUS316) + Stellite	2	#17 28×20×55 (mm)		
4	<b>GASKET</b>		316 SS (SUS316) + Grafoil	1	#66A 193×171×3.2 (mm)		
5	<b>GASKET</b>		PTFE	2	#66B 93×77×1.5 (mm)		
6	<b>THRUST COLLOR</b>		316 SS (SUS316) + Stellite	2	#18 53×20×7 (mm)		
来歴. REV.	改訂: Rewritten Oct. 29. '15 M. Morij 		株式会社 帝国電機製作所 <b>TEIKOKU</b> ELECTRIC MFG. CO., LTD.		APPROVED	CHECKED	DRAWN
				R. Takeuchi	R. Matsumura	K. Nakazumi Aug. 15. '15	

## RECOMMENDED SPARE PARTS LIST

TYPE		SC-1032			2 2
No.	PARTS NAME	DIMENSION	MATERIAL	FOR 1SETS	REMARKS
7	MECHANICAL SEAL		SiC + Carbon	1	#70 30 (mm)
8	LOCK WASHER		316L SS (SUS316L)	1	#57A 13×8.5×1.0 (mm)
9	LOCK WASHER		316L SS (SUS316L)	1	#57B 20×10.5×1.5 (mm)
			Customer : Evonik Corporation PO# : 4701013179 Project : ACA G600 Project# : 4142.00940 Evonik's Pump# : P-4490 Requisition# : C0078-010		
来歴. REV.	 株式会社 帝国電機製作所 <b>TEIKOKU</b> ELECTRIC MFG. CO., LTD.		APPROVED	CHECKED	DRAWN
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4N-6993-01



#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	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  
 PO# :4701013179  
 Project :ACA G600  
 Project# :4142.00940  
 Evonik's Pump# :P-4490  
 Requisition# :C0078-010

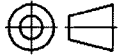
NOTE : F = force (N) M = moment (N-m)  
 S = suction nozzle  
 d = discharge nozzle  
 See the figure for orientation of nozzle loads (x, y, z)

DQ1377

D REVISIONS	B	C	D	E	APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE
	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	許容配管荷重 ALLOWABLE PIPING FORCES AND MOMENTS SI Units
					株式会社 帝国電機製作所 TEIKOKU ELECTRIC MFG. CO., LTD.		DWG. NO. <b>4N-6993-01</b>		

E

4N-7445

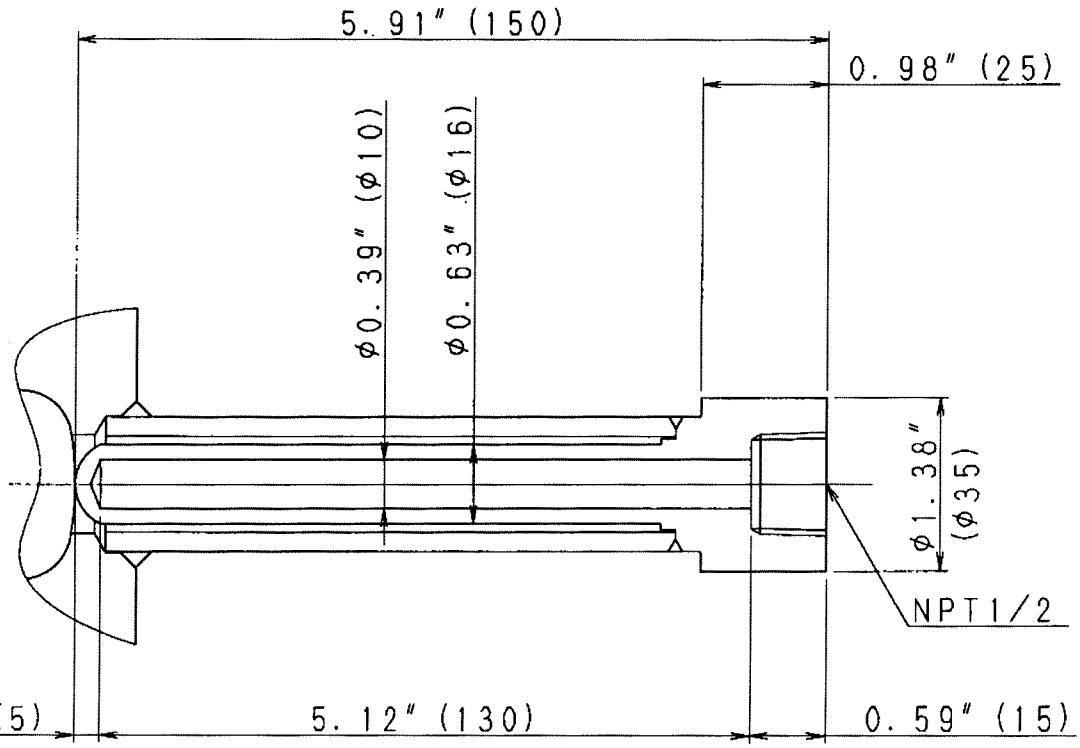


A

B

C


D



FB1809A  
FB1810A

REVISIONS

Customer	: Evonik Corporation
PO#	: 4701013179
Project	: ACA G600
Project#	: 4142.00940
Evonik's Pump#	: P-4490
Requisition#	: C0078-010

APPROVED	CHECKED	DRAWN	SCALE	DWG. TITLE
<i>S. Takahata</i>	<i>S. Takahata</i>	K. Yamamoto	FREE	THERMOWELL
				DWG. NO.
 株式会社 帝国電機製作所 <b>TEIKOKU</b> ELECTRIC MFG. CO., LTD.				<b>4N-7445</b>