FAYETTE County
Create Your Story!

Purchasing Department
140 Stonewall Avenue West, Ste 204
Fayetteville, GA 30214
Phone: 770-305-5420
www.fayettecountyga.gov

September 26, 2025

Subject: RFQ 26043-A: Crosstown WTP Raw #1 Pump/Motor Repairs
Addendum #1

Gentlemen/Ladies:

Below, please find responses to questions, clarification, or additional information for the above referenced **RFQ**. You will need to consider this information when preparing your quote.

1. **How long is the pump?**
   21FT 11IN. Please see Attachment A.

2. **Will the pump and motor be painted green?**
   Only the pump, the motor will be a matched gray.

Received by (Name): _____ Company_____

Note: If this addendum is not returned to the Fayette County Purchasing Department or if it is returned not signed, responding individuals, companies or other organizations will still be responsible for the requirements of this addendum and the specifications or changes herein.

The opening date for this RFQ has not changed. **The opening time and date are 3:00p.m., Tuesday, September 30, 2025.** Quotes must be received by the Purchasing Department at the address above, Suite 204, at or before the opening date and time. **Please advise that quotes can also be emailed to ccobb@fayettcountyga.gov or faxed to (770) 719-5544.**

The deadline for inquiries has passed, so the Purchasing Department will not be able to accept any additional questions after this time.

If you have questions, please contact Colette Cobb, Contract Administrator at (770) 305-5115, fax (770) 719-5544 or email at ccobb@fayettecountyga.gov .

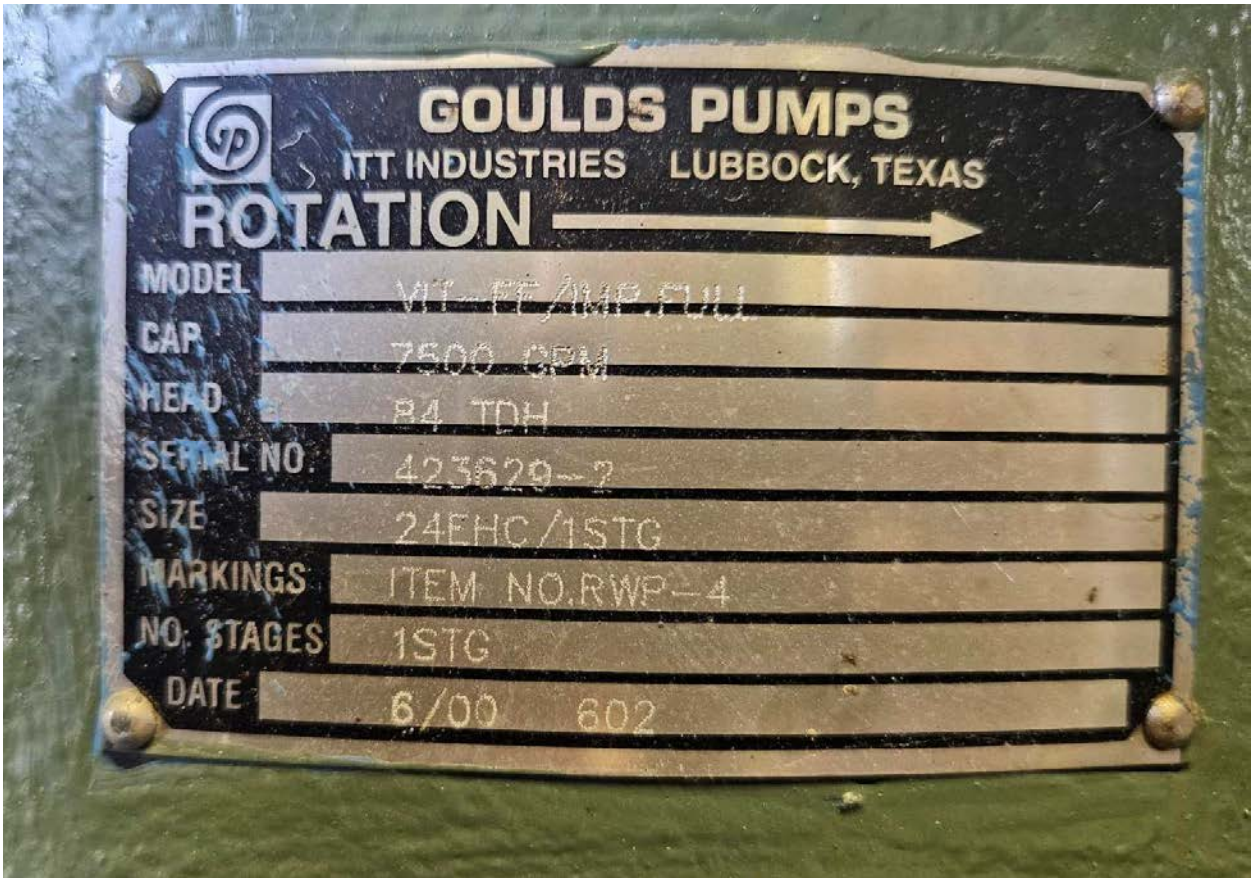
Sincerely,

Ted L. Burgess
Chief Procurement Officer

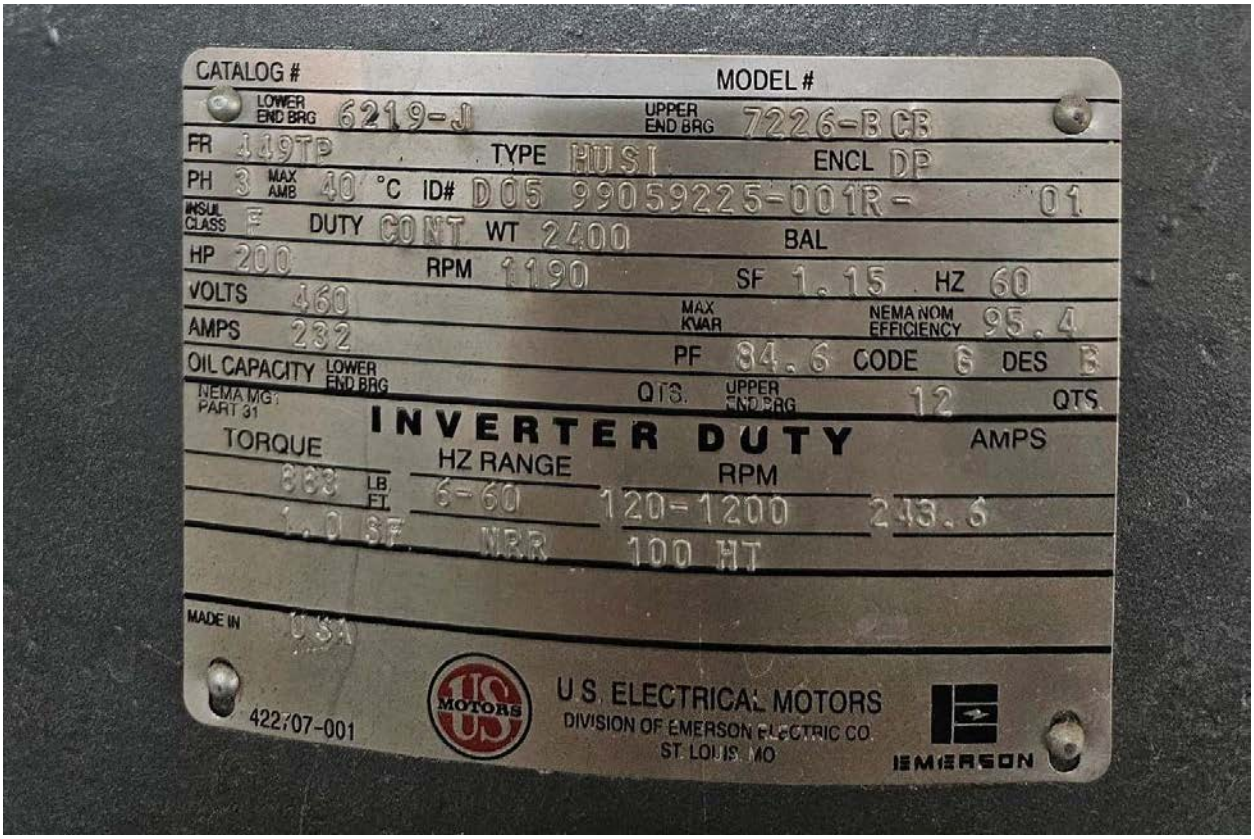
TLB/cc

Crosstown WTP Raw Pump Building

Crosstown Raw Pump #1



Crosstown Raw Water Pump #1 Goulds Pumps Nameplate



Crosstown Raw Water Pump #1 US Motor Nameplate

Section 2: Vertical Turbine Pumps & Motors

Crosstown Raw Water Pumps 1 and 4

Engineering Document Package

O & M MANUAL

OWNER:	**FAYETTE COUNTY WATER SYSTEM**
ENGINEER:	**MALLETT & ASSOCIATES, INC.**
PURCHASER:	**CMK, INC.**
PROJECT:	**CROSSTOWN W.T.P RAW WATER FLOW MODIFICATIONS PEACHTREE CITY, GEORGIA**
MANUFACTURER:	**GOULDS PUMPS, INC.**
SUPLLIER:	**GPM ENVIRONMENTAL, INC.**
SECTION:	**11920 - VERTICAL TURBINE PUMPS**

GPM Environmental, Inc.
8231 Dunwoody Place, Bldg. 16
Atlanta, Georgia 30350

O & M MANUAL

OWNER:	**FAYETTE COUNTY WATER SYSTEM**
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PROJECT:	**CROSSTOWN W.T.P** **RAW WATER FLOW MODIFICATIONS** **PEACHTREE CITY, GEORGIA**
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SECTION:	**11920 - VERTICAL TURBINE PUMPS**

FAYETTE COUNTY WATER SYSTEM
CROSSTOWN W.T. P.
(RAW WATER FLOW MODIFICATIONS)
PEACHTREE CITY, GA
Contractor: CMK, Inc.

Section: 11920	-	**Vertical Turbine Pumps**
Manufacturer:		**ITT Industries Goulds Pumps** **241 Falls Street** **Seneca Falls, NY 13148** **Ph: 315-568-2811 / 315-568-5162**
Supplier:		**GPM Environmental, Inc.** **8281 Dunwoody Place Bldg. 16** **Atlanta, GA 30350** **PH. 770-643-4859, Fax. 770-552-0319**
Parts/Service Local Contact:		**GPM Environmental Inc.** **Ph: 770-643-4859 / Fax: 770-552-0319**

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Section 119200

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Pump and Motor

Section 11920 Vertical Turbine Pumps

Crosstown Raw Water Pumps 1 and 4

Scope of Supply

SCOPE OF SUPPLY SHEET

GOULDS PUMPS

VERTICAL TURBINE PUMP

TO: CMK, Inc.
150 Wyngate Circle
Fayetteville, GA 30215

REPLY TO: GPM Environmental, Inc.
8281 Dunwoody Place, Bldg. 16
Atlanta, GA 30350
Phone: 770-643-4859
Facsimile: 770-552-0319

Date: 01-17-00 Page: 1/1

Item No.: Section 11920

Project: Fayette County Water System
Crosstown Treatment Plant
Raw Water Flow Modifications

Equipment No.: RWP-1, RWP-4

Service: Raw Water Pump

CONDITIONS OF SERVICE -

Liquid	Raw Water		Suct Press	-	
G.P.M.	7,500	Sp. Gr. @ 60°F 1.0	Abrasives	-	Disch Press. -
T.D.H.	84 (FT.)	Sp. Gr. @ P.T. 1.0	NPSHA	- (FT.)	Solids % -
P.T.	Ambient	Visc. @ P.T. -	NPSHR @ C/L Imp.	25 (FT.)	Solids Size - (IN)
					Subm. Reqd. 42 (IN)

PUMP DESCRIPTION -

Quantity	2	Bowl	Cast Iron	Col./Mat'l	Flanged/Steel	Efficiency	86 %
Model	VIT	Impeller	Bronze	Col. Dia./Lgth	16/16.78 (IN./FT.)	B.H.P. Rating	185
Stgs.	24EHC/1	Bowl Brg.	Bronze	Col. Brg. Mat'l	Rubber	B.H.P. Max.	189
Lube	Product	Bowl Shaft	416 SS	Col. Shaft Mat'l	416 St. St.	Pump Thr. Rtg.	4,295
Pump Lgth.	21'-11"	Bowl Wrg. Ring	-	Col. Shaft Size	1-11/16 (IN.)	Pump Thr. Max.	6,908
Curve No.	E6624EBPC1	Imp. Wrg. Ring	-	Disch. Hd. Mat'l	Fabricated Steel	Imp. Dia. Rtg.	15.42"
Bulletin	3A.1	Strainer	Galvanized	Disch. Hd. Size	16 (IN.)	Imp. Dia. Min./Max.	13.60"/15.42"
		Soleplate	Fabr. Steel	Shaft Sleeves	304 Stainless Stl.		

DRIVER -

HP 200 RPM 1200 PH/HZ 3/60 Volts 460 Encl./Insul. WP-1/Cl.F Eff. Prem SF 1.15
VHS yes VSS no Thrust 11,250 BD 24.5 SRC no NRR yes Mfg. USEM Furn. by Goulds

UNIT PRICES -

UNIT WEIGHTS -

Pump Weight: 5,025#
Motor Weight: 2,700#

Total Unit Weight: 7,725#

ADDITIONAL COMMENTS -

Pump includes factory performance test-for approval; bowl and discharge head hydrostatic test; 2" air vacuum valve; interior of bowl assembly is coated with Scotchcote 134; and Engard 480 epoxy coating is included on the OD of the bowl assembly, ID of discharge head, and ID & OD of column pipe.
Motor includes steady bushing, and is inverter duty rated.

This Scope -- Prepared by Jim Naus

Pump/Motor Dimensional Print

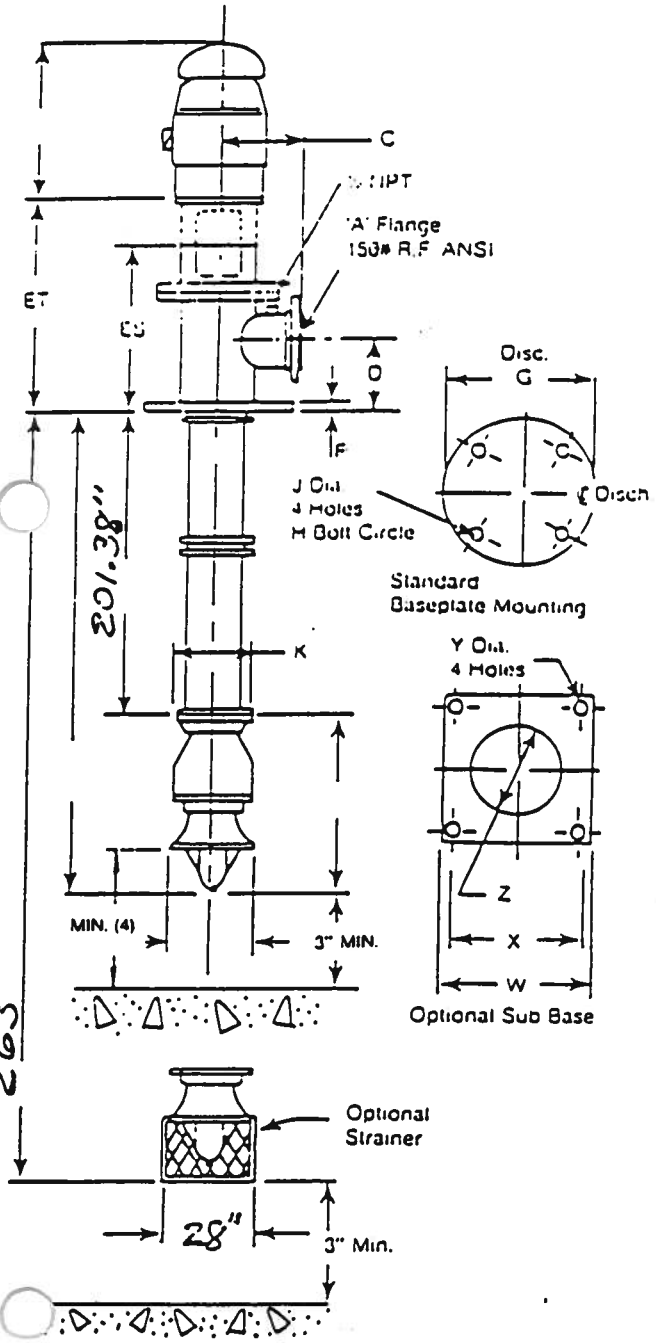
VIT-FF DIMENSION PRINT

(All dimensions are in inches)

Pump Data
Size 16 x 24 EHC / 1 STAGE

Condition Data
GPM 7,500 TDH 84'
Liquid RAW WATER

Motor Data
Motor Mfgr. USEM
H.P. 200 RPM 1200
Phase 3 Cycle 60 Volts 460
VHS YES VSS NO Thrust 11,250
Frame 5006F Encl. WP-1 BD 24.5



Column & Discharge Size			Baseplate (3)						
A	C	D	(1) ES	(2) ET	F	G	H	J	Motor BD
~~1~~	~~+2~~	~~7½~~	~~*9-1~~	~~12~~	~~+2~~	~~+6~~	~~+6.25~~	~~1~~	~~+6~~
~~4~~	~~+3~~	~~7~~	~~*11-1~~	~~13½~~	~~+2~~	~~+6~~	~~+6.25~~	~~1~~	~~+2~~
~~6~~	~~+6~~	~~8.5~~	~~11-1~~	~~17.5~~	~~+2~~	~~10~~	~~12~~	~~1~~	~~16.5~~
~~8~~	~~+5.5~~	~~7.5~~	~~13-1~~	~~19.5~~	~~+2~~	~~23.5~~	~~24.25~~	~~1~~	~~20~~
~~10~~	~~+5~~	~~+1~~	~~*9-1~~	~~16.5~~	~~+2~~	~~16.5~~	~~17.75~~	~~1.5~~	~~16.5~~
~~12~~	~~12~~	~~+1~~	~~*10-1~~	~~16.5~~	~~1.5~~	~~32~~	~~20.5~~	~~1.5~~	~~20.0~~
16	21	16	42	–	1.88	40	37.5	1.38	24.5

Column & Discharge Size	Optional Sub Base				
A	W	X	Y	Z	Thick
~~1~~	~~+6~~	~~+3~~	~~30~~	~~+1~~	~~1~~
~~4~~	~~+6~~	~~+3~~	~~30~~	~~+1~~	~~1~~
~~6~~	~~12~~	~~16~~	~~1~~	~~14~~	~~1~~
~~8~~	~~13.5~~	~~18.5~~	~~1~~	~~16.25~~	~~1~~
~~10~~	~~26~~	~~32~~	~~1~~	~~18~~	~~1~~
~~12~~	~~32~~	~~29~~	~~1~~	~~26~~	~~1~~
~~14~~	~~30.75~~	~~36~~	~~+25~~	~~30~~	~~+25~~
16	48	44	1.38	32	1.25
~~18~~	~~+3.75~~	~~+0.5~~	~~+30~~	~~36~~	~~+30~~
~~20~~	~~+3.75~~	~~+0.5~~	~~+30~~	~~36~~	~~+30~~
~~24~~	~~+6~~	~~+2.75~~	~~+30~~	~~36~~	~~+.75~~

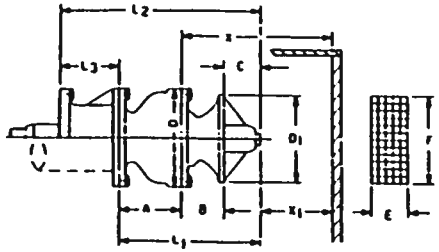
(1) Open line shaft, standard stuffing box, adjustable coupling.
(2) Mechanical seal and spacer coupling or enclosed line shaft and adjustable coupling
(3) Baseplates available to match ANSI F F 150 lb. bolting.
(4) Min. Dim = 1/2 suction bell dia.

Proposal No. _____
Customer CMK, INC. / FAYETTE COUNTY WATER SYS.
Project CROSSTOWN TREATMENT PLANT - RAW WATER MOD.
Inquiry No. _____
Item No. RW PUMP - 1, 4
Service RAW WATER PUMPS

Submitted by _____
Date 5/17/00

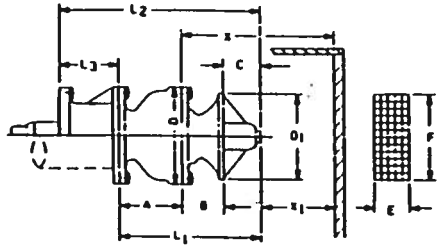
Do not use for construction unless certified by VPD Engineering Department

BOWL ASSEMBLY DIMENSIONS 18" THRU 60"



	Bowl Size	First Stage Bowl Length OLS	First Stage Bowl Length ELS	Each Add'l Stage	Bell Length to Bell Lip	Proj. of Hub Below Bell	Bowl Dia.	Bell Dia.	Disch. Bowl Length	Imp. Eye to Bottom of Can or Pit	Bell Bottom to Bottom of Can or Pit	WR2 Wet Per Stg.
		L1	L2	A	B	C	D	D1	L3	X	X1	
B	18B	25.25	36.50	13	8.6	3.5	17.50	17.50	11.25	23.81	11.56	13.9
	20B	33.31	RF	16.31	12.25	4.75	19.75	19.75	RF	22.82	7.32	19.3
	28B	37.75	49.75	22	13	2.75	26.8	28.5	12	30.94	14.19	90.3
	30B	44.81	56.81	24	15	5.81	29.5	33	12	33.69	12.69	133
	36B	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
C	18C	32.5	RF	16.37	10.75	5.37	17.5	17	RF	19.25	3.13	9.09
	20C	37.87	47.75	19.12	12.63	6.12	20.5	20	9.87	22.63	3.88	22.52
	24C	45	60	23.25	15.44	6.38	25	24.5	15	27.75	6.00	68.5
D	18D	33.05	42.92	16.75	12	4.3	17.75	17.75	9.87	22.5	6.25	13.3
	18DX	33	--	16.75	12	4.25	17.75	17.75	--	26.56	10.31	14.2
	24D	44.75	58.25	22.75	16.37	5.63	24.25	25	13.5	29.13	7.13	69.9
	32D	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	36D	54.87	70.37	31.75	18.25	4.87	38.25	39.5	15.5	40.60	18.94	598.5
E	18E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	~~20E~~	~~39.62~~	~~49.75~~	~~19~~	~~12.5~~	~~3.87~~	~~18.88~~	~~20~~	~~9.88~~	~~26~~	~~9.19~~	~~12.5~~
	24E	39.25	RF	21	14.62	3.63	22.25	25.75	RF	27.5	9	52.1
	~~28E~~	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	32E	56.12	76.12	28.87	20	7.25	30.0	36	20	38	10.75	149.2
	34E	57.5	73	31.5	21.75	4.25	32.62	37.0	15.5	42.88	16.88	321.4
	36E	59.87	RF	32.25	19.75	7.87	35.62	39.5	RF	43.87	16.25	524
	38E	65	RF	35.5	24.62	4.88	37	44.37	RF	46.13	16.63	552
	44E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	52E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	60E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
F	24F	46.5	70.5	24.10	14.75	7.75	24.12	24.5	24.0	27.37	4.87	52.1
G	20G	37.37	52.37	21.50	12.5	3.37	20.75	22	15	25.37	9.5	15.8
	24G	42.5	56.0	24.75	14.5	3.25	24.25	25	13.5	30	12.19	40.5
	28G	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	32G	56.68	78.68	33.12	18.75	4.81	31.25	34	20	43.38	19.13	262.1
	34G	59.87	--	35.25	20.63	4.00	35.13	36	--	38.63	14	243.90
	36G	67.37	RF	38.75	23.25	4.37	38.38	40	RF	44	16.07	545
	44G	77.65	RF	46	26.87	4.78	45.75	47	RF	51.75	19.63	1026.5
	52G	91	RF	53.50	31.5	6.00	55.50	55	RF	59	21.5	1865
	60G	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
H	18H	34.31	44.18	17.62	8.88	7.81	18	18	9.87	22.13	5.44	21.7
	18HX	33.81	N/A	17.62	12	4.19	18	17.75	N/A	26.5	10.31	14.15
	20H	29	42.12	14.5	12.62	1.88	19.75	22.87	13.12	24	9.5	21.7
	20HX	29	42.12	14.5	12.62	1.88	19.75	22.87	13.12	24	9.5	21.7
L	18L	33.75	43.62	18.63	12.75	2.37	18	23.5	9.87	24.5	9.38	8.1
	42L	72.37	RF	40.37	27.75	4.25	37.5	47	RF	51.31	19.18	552
	48L	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
T	28T	49.12	67.62	25	13.5	10.62	26.12	22.56	18.5	34.5	10.38	22.5
	36T	62.62	82.62	32	17.25	13.37	33.43	30	20	43.25	12.63	147.8

GOULDS PUMPS, INC.



	Bowl Size	Std. Shaft Dia.	Opt. Column Size	Typical Column Size	E Strainer Length	F Strainer Diameter	Bowl Wall Thk.	Max. Solid Size	Impeller Weight	Bowl Wts. Lbs. First Stage OLS	Bowl Wts. Lbs. First Stage ELS	Each Add'l Stage	Strainer Weight
B	18B	2.43	--	12.14.16	17	19.5	.5	1.12	88	552	975	374	40
	20B	2.43	3.5	10.12	26.25	21.5	.62	1.0	95	730	RF	395	40
	28B	2.69	3.19-3.69	16.18.20	27.75	30.5	.69	1.5	148.8	1505	2027	1045	RF
	30B	2.94	4.25	18.20.24.30	32.12	34.66	.75	1.87	220	1815	2365	1325	100
	36B	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
C	18C	2.43	--	10.12.14.16	17	18.63	.38	1.0	46	447	--	309	RF
	20C	2.43	2.94	12.14.16.18	20	21.63	.44	1.25	63	718	992	496	RF
	24C	2.43	3.43	14.16.18.20	24	26.18	.53	1.62	138	1302	1800	899	70
D	18D	2.69	--	12.14.16	17	19.5	.43	.75	60.7	647	905	482	40
	18DX	2.69	--	12.14.16	17	19.5	.43	1.25	60.7	661	N/A		--
	24D	2.43	--	16.18.20	27.12	26.68	.62	1.0	158	1569	2144	1063	1
	32D	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	36D	3.43	3.69-4.25	24.30	38.37	41.25	.65	2.0	530	3360	5580	2246	100
E	18E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	~~20E~~	~~2.43~~	~~2.69~~	~~16.14.16~~	~~21~~	~~24.18~~	~~.43~~	~~1.25~~	~~58~~	~~699~~	~~995~~	~~399~~	~~40~~
	24E	2.43	4.00	16.18.20	26	27.68	.58	2.0	82.5	1312	RF	878	RF
	~~28E~~	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	32E	3.69	4.0	18.20.24.30	35.12	37.68	.5	3.0	250	2425	3415	1560	100
	34E	3.43	--	24.30	40.75	38.68	.56	1.33	390	2934	4740	2180	RF
	36E	3.43	4.0-4.5	24.30	28.5	41.75	.62	2.5	580	3398	RF	2369	RF
	38E	3.43	4.0-4.25	24.30	42.37	45.25	.62	2.0	520	4230	RF	2290	RF
	44E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	52E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	60E	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
F	24F	2.94	--	16.18.20	24	26.18	.5	2.75	116	1120	RF	780	RF
G	20G	2.43	2.93	16	21	23.62	.37	1.56	77	714	1150	519	100
	24G	2.94	--	16.18.20	24.75	26.68	.5	1.75	150	1108	1800	769	100
	28G	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
	32G	4.0	3.19-4.5	20.24.30	33.06	35.68	.56	2.19	361.5	4156	5249	2369	RF
	34G	4.0	--	18.20.24	36	37.63	.63	2.88	378	2962	--	1604	RF
	36G	3.43	--	20.24.30	39.87	41.75	.62	5.25	540	4230	RF	2290	RF
	44G	3.19	4.0-5.0	30.36.42	46.5	48.75	.87	5.87	1004	7790	RF	5080	RF
	52G	5.00	--	36.42.48	55	56.63	1.02	5.19	1242	12,417	--	8,098	RF
	60G	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
H	18H	2.69	--	12.14.16	17	19.5	.4	1.75	65	648	886	371	RF
	18HX	2.69	--	12.14.16	17	21	.37	1.25	60.7	700	N/A	N/A	RF
	20H	2.69	--	14.16	19	24.37	.5	1.5	74	665	965	462	RF
	20HX	2.69	--	14.16	19	24.37	.5	1.5	74	665	965	462	RF
L	18L	2.43	--	16.18	26.5	25.0	.43	1.25	87.5	616	1020	456	82
	42L	5.0	--	30.36	47	48.75	.62	5.75	895	6290	RF	4660	RF
	48L	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF	RF
T	28T	3.19	--	14.16.18.20	22.12	24.25	.5	1.87	104	1254	1857	868	100
	36T	4.0	--	20.24	29.37	31.75	.62	1.5	200	2537	4210	1881	RF

Pump Performance / Hydrostatic Test Report

ITT Industries
Engineered for life

GOULDS PUMPS
VERTICAL PRODUCT OPERATIONS

PERFORMANCE TEST DATA

TEST NO.: T-00-147

CUSTOMER : GOULDS PUMPS TEXAS
P.O. No. : 809677
ITEM No. :
SERIAL NO. : 756637 -1

MODEL:	24 EHC
IMP(S)	1
DIA.	15.42
UNDERFILE	.13 x 3.0
IMP.MTRL.	ALBRZ
BOWL MATRL.	CI
COATING	SCH134

TEST EQUIPMENT

TEST MOTOR - HP: 200 HP - 1190 RPM
TEST LINE DIA. DISCH : 14
VENTURI: 12
WATT SCALE MULTIPLIER 640
AXIAL CLEARANCE : 0.375

GUARANTEED PERFORMANCE

RPM : **1180**
FLOW-GPM: 7500
HEAD-FEET: 84
HP.: 200.0 —— S.F. : 1.00
SP.GR : 1.000

FLOW -CuM/Hr.: 1703
HEAD-M: 25.6
KW.: 149.2
VISC.-SSU: 32

READING	1	2	3	4	5	6	7	8	9	10
RPM	1191	1191	1189	1188	1187	1187	1188			
DISCH PRESS. - PSI	57.6	50.3	44.0	39.0	33.0	25.0	15.0			
DISCH. HEAD-Ft.	133.1	116.2	101.6	90.1	76.3	57.8	34.7			
ELEV.CORRECTION-Ft.	6.43	6.43	6.43	6.43	6.43	6.43	6.43			
VELOCITY HEAD-Ft.	0.00	0.36	1.42	3.32	4.99	6.45	7.93			
TOTAL HEAD-Ft.	139.5	123.0	109.4	99.9	87.7	70.7	49.0			
FLOW READING -" BLUE										
FLOW READING - " Hg	0.00	1.30	5.10	11.90	17.85	23.10	28.40			
FLOW-GPM	0.0	2037.3	4035.2	6163.8	7549	8588	9522.2			
WATT READING	0.163	0.171	0.193	0.227	0.242	0.233	0.215			
INPUT TO MOTOR-Kw	104.3	109.4	123.5	145.3	154.9	149.1	137.6			
BRAKE HORSEPOWER	130.8	137.2	154.9	181.7	193.5	186.4	172.3			
EFFICIENCY-%	0.00	46.13	72.00	85.55	86.40	82.19	68.43			
PERFORMANCE CONVERTED TO :					1180 RPM		SP.GR. : 1.00			
TOTAL HEAD-Ft.	137.0	120.8	107.8	98.5	86.6	69.8	48.4			
FLOW-GPM	0.0	2018.5	4004.6	6122.3	7504.6	8537.2	9458.1			
BRAKE HORSEPOWER	127.2	133.5	151.4	178.1	190.1	183.2	168.8			
EFFICIENCY-%	0.00	46.13	72.00	85.55	86.40	82.19	68.43			

ITT/GP WTG-Turbine Division
P.O. #: 809677
S.O. #: 756637
TAG: SO 423629

TESTED BY : P.LARSON
TEST DATE : 5/16/00

CERTIFIED BY:

GOULDS PUMPS
VERTICAL PRODUCTS OPERATIONS

ITT Industries
Engineered for life

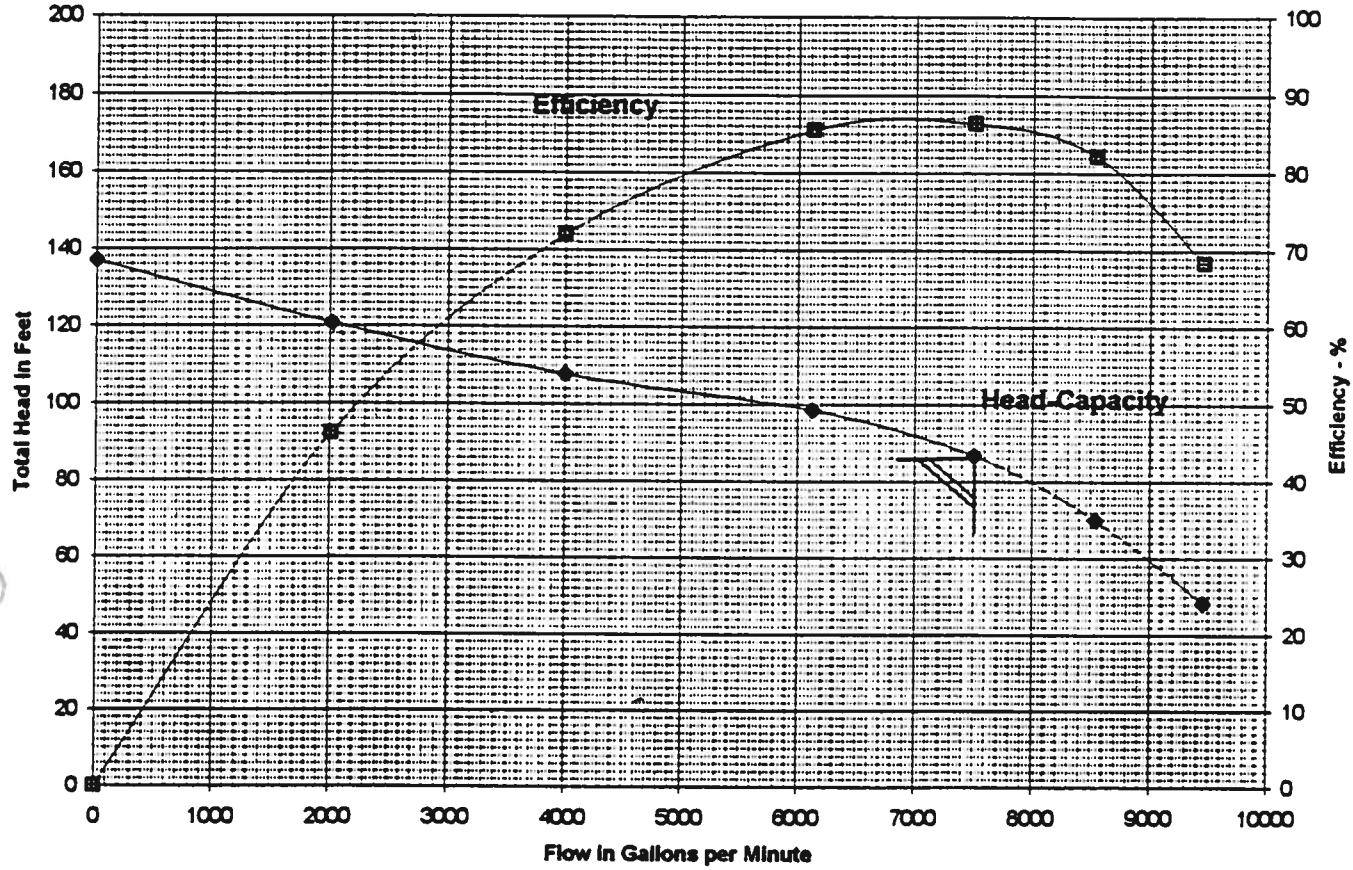
GOULDS PUMPS
VERTICAL PRODUCT OPERATIONS

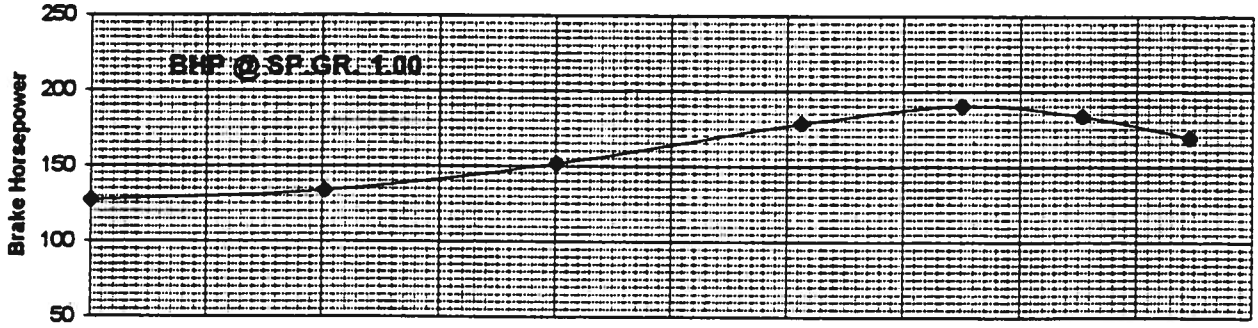
PERFORMANCE TEST CURVE

CUSTOMER : GOULDS PUMPS TEXAS
P.O. No. : 809677
ITEM No. :

TEST NO.: T-00-147 **GOULDS S.O. No. : 756637 – 1**

NOTE: NO FRICTION LOSSES ARE INCLUDED TEST DATE: 5/16/00 TESTED BY: P.LARSON





MODEL 24 EHC
STAGES: 1
DIAMETER : 15.42
UNDERFILE : .13 x 3.0
RPM 1180

CERTIFIED BY:

GOULDS PUMPS INC.
VERTICAL PRODUCTS OPERATIONS

CURVES SHOW APPROXIMATELY THE CHARACTERISTICS WHEN PUMPING CLEAR NON-AERATED WATER. NO GUARANTEE IS MADE EXCEPT FOR THE RATED POINT.

ITT/GP WTG-Turbine Division
P.O. #: 80967
S.O. #: 75663
TAG: SO 423629

ITT Industries
Engineered for life

GOULDS PUMPS
VERTICAL PRODUCT OPERATIONS

PERFORMANCE TEST DATA

TEST NO.: T-00-148

CUSTOMER : GOULDS PUMPS TEXAS
P.O. No. : 809677
ITEM No. :
SERIAL NO. : 756637 -2

MODEL:	24 EHC
IMP(S)	1
DIA.	15.42
UNDERFILE	.13 x 3.0
IMP.MTRL.	ALBRZ
BOWL MATRL.	CI
COATING	SCH134

TEST EQUIPMENT

TEST MOTOR - HP: 200 HP - 1190 RPM
TEST LINE DIA. DISCH : 14
VENTURI: 12
WATT SCALE MULTIPLIER 640
AXIAL CLEARANCE : 0.375

GUARANTEED PERFORMANCE

RPM : **1180**
FLOW-GPM: 7500
HEAD-FEET: 84
HP.: 200.0 —— S.F. : 1.00
SP.GR : 1.000

FLOW -CuM/Hr.: 1703
HEAD-M: 25.6
KW.: 149.2
VISC.-SSU: 32

READING	1	2	3	4	5	6	7	8	9	10
RPM	1191	1190	1189	1188	1187	1187	1188			
DISCH PRESS. - PSI	57.4	50.0	44.1	39.3	33.2	24.9	14.8			
DISCH. HEAD-Ft.	132.7	115.6	101.9	90.8	76.7	57.5	34.2			
ELEV.CORRECTION-Ft.	6.43	6.43	6.43	6.43	6.43	6.43	6.43			
VELOCITY HEAD-Ft.	0.00	0.34	1.42	3.34	4.97	6.48	7.93			
TOTAL HEAD-Ft.	139.1	122.3	109.8	100.6	88.1	70.5	48.6			
FLOW READING -" BLUE										
FLOW READING - " Hg	0.00	1.20	5.10	11.95	17.80	23.20	28.40			
FLOW-GPM	0.0	1957.4	4035.2	6176.8	7539	8606	9522.2			
WATT READING	0.162	0.170	0.194	0.228	0.243	0.233	0.211			
INPUT TO MOTOR-Kw	103.7	108.8	124.2	145.9	155.5	149.1	135.0			
BRAKE HORSEPOWER	130.0	136.4	155.7	182.5	194.2	186.4	169.1			
EFFICIENCY-%	0.00	44.32	71.86	85.96	86.37	82.13	69.05			
PERFORMANCE CONVERTED TO :					1180 RPM		SP.GR. : 1.00			
TOTAL HEAD-Ft.	136.5	120.3	108.1	99.2	87.1	69.6	47.9			
FLOW-GPM	0.0	1940.9	4004.6	6135.2	7494.1	8555.7	9458.1			
BRAKE HORSEPOWER	126.4	133.0	152.1	178.9	190.8	183.2	165.7			
EFFICIENCY-%	0.00	44.32	71.86	85.96	86.37	82.13	69.05			

ITT/GP WTG-Turbine Division
P.O. #: 809677
S.O. #: 756637
TAG: SO 423629

TESTED BY : P.LARSON
TEST DATE : 5/17/00

CERTIFIED BY:

GOULDS PUMPS
VERTICAL PRODUCTS OPERATIONS

ITT Industries
Engineered for life

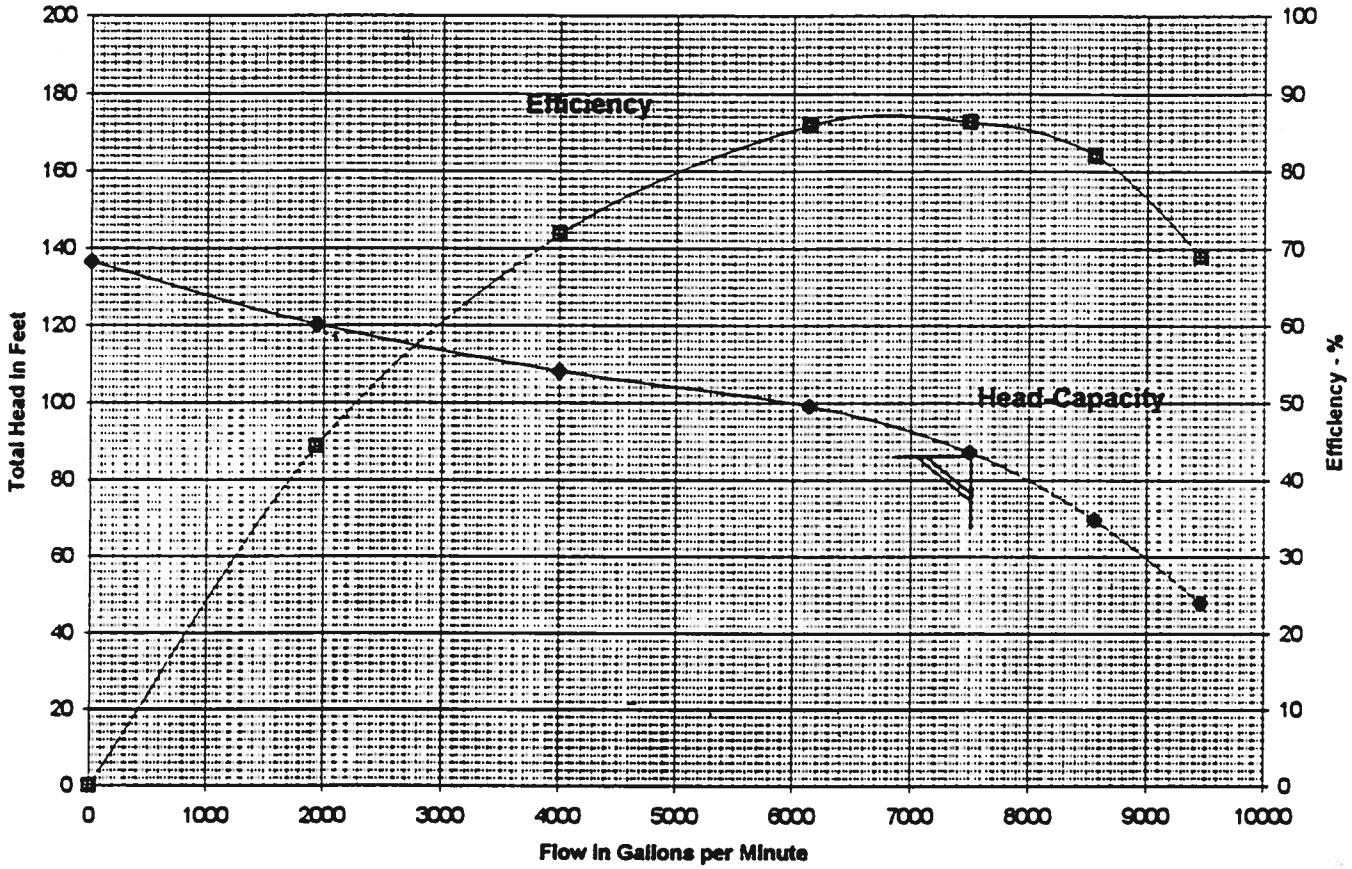
GOULDS PUMPS
VERTICAL PRODUCT OPERATIONS

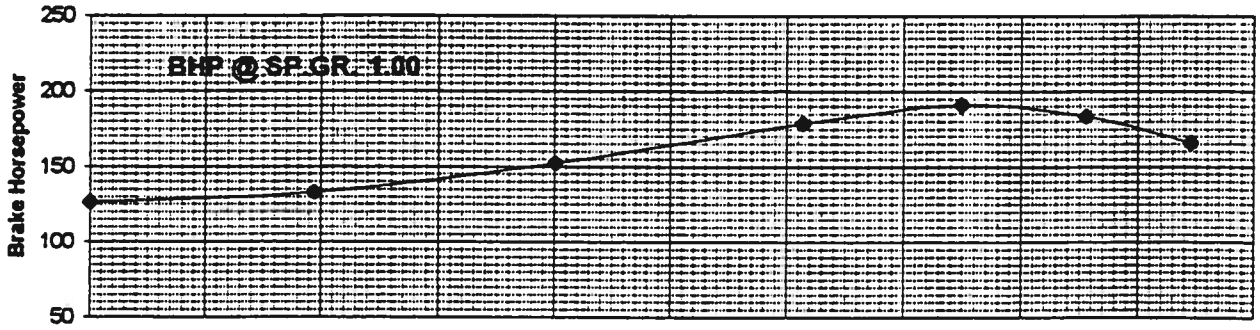
PERFORMANCE TEST CURVE

CUSTOMER : GOULDS PUMPS TEXAS
P.O. No. : 809677
ITEM No. :

TEST NO.: T-00-148 **GOULDS S.O. No. : 756637 – 2**

NOTE: NO FRICTION LOSSES ARE INCLUDED TEST DATE: 5/17/00 TESTED BY: P.LARSON





MODEL 24 EHC
STAGES: 1
DIAMETER : 15.42
UNDERFILE : .13 x 3.0
RPM 1180

CERTIFIED BY:

GOULDS PUMPS INC.
VERTICAL PRODUCTS OPERATIONS

:TERISTICS WHEN PUMPING CLEAR
.DE EXCEPT FOR THE RATED POINT.

ITT/GP WTG-Turbine Division
P.O. #: 809677
S.O. #: 756637
TAG: SO 423629

QUALITY ASSURANCE DEPARTMENT

ITT Industries

Vertical Products Operations

3951 Capitol Avenue
City of Industry, CA 90601
Phone: 562-949-2113
Fax: 562-695-8523

GOULDS PUMPS

CERTIFICATION OF HYDROSTATIC TEST

CUSTOMER: GOULDS PUMPS / WTG TURBINE DIVISION DATE: 5-17-2000

GOULDS SHOP ORDER#: 756637 SPECIFICATION#: MA029 REV: 1

The parts and/or assemblies noted below have been hydrostatically tested to the pressures and lengths of time indicated; in accordance with the provisions of the specification referenced above.

	QTY	PART NO.	PSI	TIME
HEAD - DISCHARGE				
HEAD - SUCTION				
STUFFING BOX				
BLEED LINES				
COLUMNS, TOP				
INTERMEDIATE				
BOTTOM				
BOWLS, TOP	2	812240F101	100	5 MIN.
INTERMEDIATE				
SPIDERS				
CAN				
OTHER:				

SERIAL NUMBER: 201078 CALIB: 3-16-2000 DUE: 9-16-2000

RANGE: 0 TO 200

SERIAL NUMBER: CALIB: DUE:

RANGE:

TEST WITNESSED AND ACCEPTED BY: "W.L." DATE: 5-17-2000

CUSTOMER WITNESS: DATE:

COMMENTS:

CERTIFIED BY:
QUALITY ASSURANCE DEPARTMENT

IT[illegible] WTG-Turbine Division
P.O. #: 809677
S.O. #: 756637
TAG: SO 423629

FORM NO. QA216
REV. 0 8/06/97

Pump Critical Speed Calculation

CRITICAL SPEED CALCULATION

SO: 423629 Date: 30-Apr-00

JOB INFORMATION

Customer:	GPM Environmental	Pump Type:	VIT-FF
PO:	00001826	Bowl Model:	24EHC
Contact:	Barbara Barth	No Stages:	1

INPUT INFORMATION

Lineshaft Diameter:	1.69 in	Rated Flow:	7500.0 gpm
Lineshaft Material:	416SS	Rated Head:	84.0 ft
Bearing Spacing:	60 in	Rated Speed:	1180 rpm

OUTPUT INFORMATION

Impeller Weight:	82.50 lbs
K-Factor:	42.00 lbs/ft
Moment of Inertia:	0.3981 in^2 x in^2
Modulus of Elasticity:	29000000.00 lbs/in^2
Material Unit Weight:	0.63 lbs/in

CRITICAL SPEED CALCULATIONS

First Critical:	2331 rpm
Second Critical:	8958 rpm

Jimmy Scroggins
Engineer

CRITICAL SPEED CALCULATION

SO: 423629 Date: 30-Apr-00

JOB INFORMATION

Customer:	GPM Environmental	Pump Type:	VIT-FF
PO:	00001826	Bowl Model:	24EHC
Contact:	Barbara Barth	No Stages:	1

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Modulus of Elasticity:	29000000.00 lbs/in^2
Material Unit Weight:	0.63 lbs/in

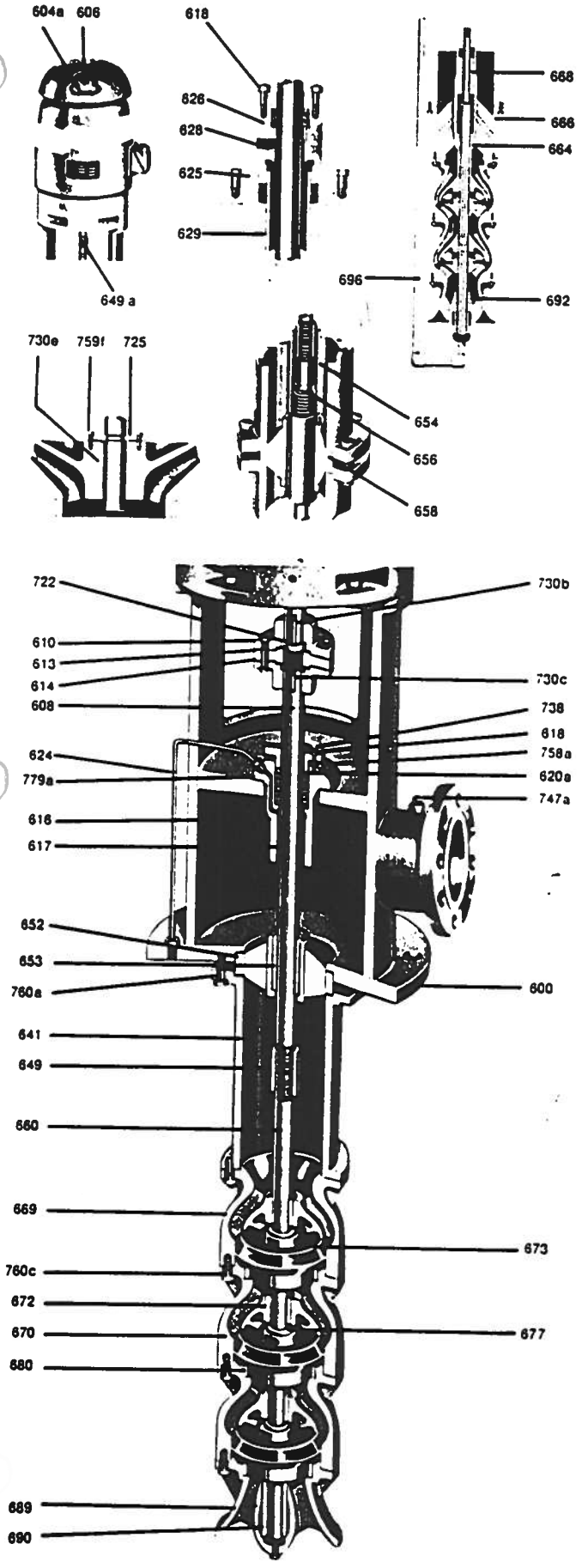
CRITICAL SPEED CALCULATIONS

First Critical:	2331 rpm
Second Critical:	8958 rpm

Jimmy Scroggins
Engineer

Spare Parts/Repair Parts/List

Sectional View



ITEM NO.	NO. REQ'D. Per PUMP	PART NAME	MATERIAL CONSTRUCTION	
			BRONZE FITTED	ALL IRON
600	1	Discharge Head	FAB. STL.	
604a	1 (n)	Adjusting nut	AISI C-1018	
606	1 (n)	Drive shaft	AISI C-1045	
608*	1	Headshaft	416 SS	
610	1 (k)	Upper half coupling	AISI C-1213	
613	1 (k)	Adjusting plate	AISI C-1213	
614	1 (k)	Lower half coupling	AISI C-1213	
616	1	Stuffing box	1003	
617*	1	Throttle bushing	1104	1003
618	1 (s)	Split stuffing box gland	1104	1003
620a*	1 set	Packing	Graphitized Yarn	
624	1	Bypass pipe	SAE-1020	
625	1 (m)	Tube tension plate	1003	
626	1 (m)	Adjusting nut	1003	
628	1 (m)	Bushing nut	1104	
629	1 (m)	Tube tension nipple	ASTM STL. 120	
641	(g)	Column pipe	FAB. STL.	
649*	1	Pump shaft coupling	416 SS	
649a	1 (n)	Headshaft coupling	416 SS	
652	(g)	Bearing retainer	AISI C-1213	
653*	(g)	Lineshaft bearing	1104	1003
654	(g) (m)	Shaft enclosing tube	ASTM STL. 120	
656*	(g) (m)	Tube shaft bearing	1104	1104
658	(g) (m)	Tube stabilizer	1212	
660*	1	Pump Shaft	416 SS	
664*	1 (m)	Dischg. bowl throttle bushing	1104	1003
666	1 (m)	Discharge bowl w/ports	1003	
668*	1 (m)	Tube adapter bushing	1104	1104
669	1 (p)	Top bowl	1003	
670	1 (a) (p)	Intermediate bowl	1003	
672*	1 (b)	Bowl bearing	1104	1003
673	1 (b) (t)	Impeller	1102	1003
677*	1 (b) (e)	Impeller taper lock	AISI C-1018	
680*	1 (b)	Bowl wear ring	1117	1003
689	1	Suction bell	1003	
690*	1	Suction bell bearing	1104	1003
692*	1	Sand collar	1104	1003
696	1 (m)	Flush line	Galv. Steel Pipe	
722	1 (k) (s)	Split ring-upper half cplg.	AISI C-1213	
725*	1 (b) (f) (s)	Split ring-impeller	416 SS	
730b	1 (k)	Key motor shaft	AISI C-1213	
730c	1 (k)	Key, headshaft	AISI C-1213	
730e	1 (b) (f)	Impeller key	416 SS	
738	2	Gland bolt	AISI C-1018	
747a	1	Pipe plug	ASTM A338	
758a	(q)	Capscrew-stuffing box	AISI C-1018	
759f	4 (b) (f)	Capscrew, split ring collar	416-SS	
760a	(g)	Column flange bolt	AISI C-1018	
760c	(q)	Capscrew	AISI C-1018	
779a*	1	Stuffing box gasket	Vellumoid	

*Minimum recommended spare parts that should be stocked.

Material Specification

Code	Specification
1003	ASTM A48 CL30B
1102	ASTM B145-836 (SAE40)
1104	ASTM B144-932 (SAE660)
1117	ASTM B148-952 (SAE68E)
1212	ASTM A216 Gr. WCB
6521	ASTM 120 Gr. B

(a) 1 each additional stage
(b) per stage
(c) optional
(e) standard through 16" Bowl size
(f) standard on 18 size and above
(g) dependent on pump length
(k) standard on VSS drive only
(m) enclosed lineshaft only
(n) standard on VHS drive only
(p) C.I. bowls through 18 are glass lined
(q) dependent upon pump size
(s) 1 set in 2 halves
(t) C.I. impellers standard on 18 and larger sizes

Figure 3-1. STANDARD VIT PUMP

Motor Data Package

U. S. ELECTRICAL MOTORS

DIVISION OF EMERSON ELECTRIC CO.

ORDER DOCUMENTATION SERVICES * 8100 WEST FLORISSANT AVE.
EMERSON MOTOR TECHNOLOGY CENTER
P.O. BOX 36912 * ST. LOUIS, MO. 63136
PHONE (314) 595-8419 * FAX (314) 595-8507

Date - 03/29/00
Customer - 120205
Brn/Plt - M020
Work Order - 2446410
Order Nbr - 99059225 SO
Invoice -
Customer PO 809703

Goulds Pumps Inc
PO Box 5487
Accounts Payable Department
Lubbock TX 79417

Ship To: CROSSTOWN WTP
% CMK, INC
3500 TDK BLVD
SO 423629

ATTN:

Project/ Line # / Schedule Date	Description	Item Number	Quantity
1.000	NA-WPI-VFD-MOD AC~ SO 423629	HURU 8VM	2

Horsepower ..... 00200.00~00000.00 ~ KW: 149.2
Enclosure ..... WPI
Poles ..... 06~00 ~ RPM: 1200~0
Frame Size ..... 449~TP
Phase/Frequency/Voltage.. 3~060~460 ~ Random Wound
Service Factor 1.15
Insulation Class ..... Class "F" ~ VPI-2000
Altitude In Feet (Max) .. 3300 Ft.(1000 M)
Ambient In Degree C (Max) +40 C
Efficiency Class ..... Premium Efficiency
Application ..... Centrifugal Pump
Customer Part Number ....
Base Diameter (Inches) 24.5
Coupling Size ..... 1-11/16" Bore, 3/8" Key
NRR/SRC/Bolted Coupling ..... Non-Reverse Ratchet
Steady Bushing ..... Steady Bushing
Pricebook Thrust Value (lbs).. 11250
Down Thrust At Design (lbs) .. 11250
Down Thrust At Shutoff (lbs)..
Up Thrust (lbs) .....
Inverter Duty Rating:
Load Type (Base Hz & Below) .. Variable Torque
Speed Range (Base Hz & Below). 10:1
Temperature Rise (Sine Wave): "F" Rise @ S.F. (Resist)
NEMA Design ..... Refer To PerfData
KVA Code Letter ..... Refer To PerfData
Starting Method ..... Standard Value For Rating
Duty Cycle ..... Continuous Duty
Efficiency Value ..... Refer To PerfData ~ Typical
Power Factor (Uncorrected): Refer To PerfData
Sound Level Value (dBa).. Refer To PerfData
Inrush Limit ..... Refer To PerfData
Load Inertia (lb-ft2): NEMA ~ NEMA Inertia: 2238.00 ~ 1.00
BDT: Refer To PerfData ~ LRT: Refer To PerfData
Number Of Starts Per Hour: NEMA
Motor Type Code ..... HUSI
Counter CW Rotation FODE

THE INFORMATION ON THIS PAGE AND ALL ATTACHMENTS IS CERTIFIED AS CORRECT FOR ORDER NOTED ABOVE.

ENCLOSURES

CERTIFIED: AB 3/31/00

SBMTTL

U. S. ELECTRICAL MOTORS

DIVISION OF EMERSON ELECTRIC CO.

ORDER DOCUMENTATION SERVICES * 8100 WEST FLORISSANT AVE.
EMERSON MOTOR TECHNOLOGY CENTER
P.O. BOX 36912 * ST. LOUIS, MO. 63136
PHONE (314) 595-8419 * FAX (314) 595-8507

Date -	03/29/00
Customer -	120205
Brn/Plt -	M020
Work Order -	2446410
Order Nbr -	99059225 SO
Invoice -	
Customer PO	809703

Goulds Pumps Inc
PO Box 5487
Accounts Payable Department
Lubbock TX 79417

Ship To: CROSSTOWN WTP
% CMK, INC
3500 TDK BLVD
SO 423629

ATTN: JOHN ROSSG

Project/ Line #/ Schedule Date	Description	Item Number	Quantity

Insul. Bearing - Upper Bracket
Thermostats - Normally Closed
VFD Duty
Submittal Requirements:
Number Of Copies Requested: 1 ~ Number Of I/M's: 1
Title Block Required (Y/N): No
Mail Submittals To: Ship-To Address
Mail Submittals Attention: JOHN ROSSG
Due Date (Format MMDDYY): 040300
Certified Dimension Print
Performance Data
Nameplate Data
Wiring (Connection) Diagram
Instruction Manual
Parts List

THE INFORMATION ON THIS PAGE AND ALL ATTACHMENTS IS CERTIFIED AS CORRECT FOR ORDER NOTED ABOVE.

ENCLOSURES

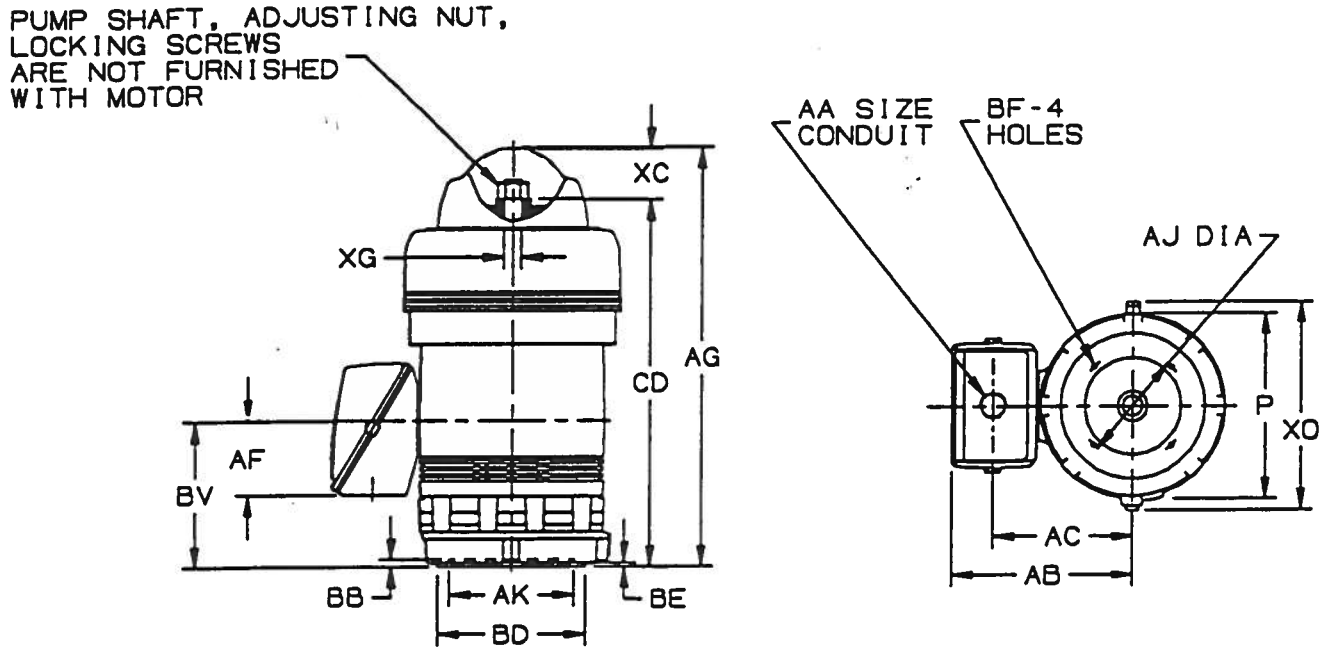
CERTIFIED:_____

SBMTTL

VERTICAL MOTORS

HOLLOWSHAFT STYLE "P" BASE
FRAME: 449TP, TPH
TYPE: HUS

PRINT NO: 09/1775
EFFECTIVE: 11-08-95
SUPERSEDES: NEW



ALL DIMENSIONS ARE IN INCHES

	FRAME	AJ	AK	BD	BF
■	449TP	14-3/4	13-1/2	24-1/2	11/16
	449TPH	14-3/4	13-1/2	20	11/16

	MAIN CONDUIT BOX	AA	AB	AC	AF
■	SIZE #2 - STD	3-1/2	23-1/4	17-3/4	8-1/16
	SIZE #2.5	3-1/2	24-1/2	18-3/4	10
	SIZE #3	3-1/2	28	20-7/8	10-15/16

	P[2]	AG	BB	BE	BV	CD	XC	XG	XO
	29	56-5/16	1/4	7/8	19-3/8	49-25/32	6-1/4	2-1/2	34

TOLERANCES	
"AK" DIMENSION	-.000;+.005
FACE RUNOUT	.007 F.I.R.
PERMISSIBLE ECCENTRICITY OF MOUNTING RABBET	.007 F.I.R.

1: ALL ROUGH CASTING DIMENSIONS MAY VARY BY 1/4" DUE TO CASTING VARIATIONS.
2: LARGEST MOTOR WIDTH.

3: CONDUIT OPENING MAY BE LOCATED IN STEPS OF 90 DEGREES REGARDLESS OF LOCATION. STANDARD AS SHOWN WITH CONDUIT OPENING DOWN.

CERTIFIED BY AB DATE: 11/8/95

9905922 S

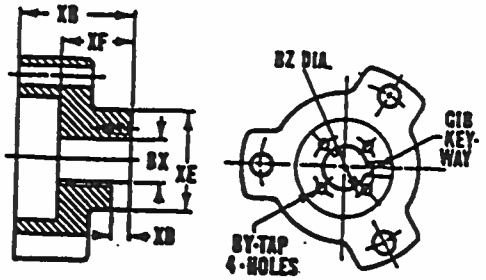
U.S. ELECTRICAL MOTORS
DIVISION OF EMERSON ELECTRIC CO.

DO NOT USE FOR CONSTRUCTION PURPOSES UNLESS CERTIFIED

VERTICAL MOTORS

DRIVE COUPLINGS FOR HOLLOSHAFT MOTORS FRAMES 444 THRU 6810

SECTION: 505
PAGE: 17
EFFECTIVE: 07-01-90
SUPERCEDES: 10-15-88



ALL DIMENSIONS ARE IN INCHES

TYPE	FRAME	PART NUMBER	BX BORE NOMINAL	BX BORE ACTUAL	BY	BZ	XB	XD	XE	XF	SQ. KEY
LU TU	444, 445 447TP, TPA	172314	1-7/16	1.437	1/4-20	2-1/8	3-3/16	17/32	3-5/8	2-3/4	3/8
		118296	1-1/2	1.501	1/4-20	2-1/8	3-13/16	17/32	3-5/8	2-3/4	3/8
		118297	1-11/16	1.688	1/4-20	2-1/8	3-13/16	17/32	3-5/8	2-3/4	3/8
		118298	1-3/4	1.751	1/4-20	2-1/8	3-13/16	17/32	3-5/8	2-3/4	3/8
		118299	1-15/16	1.938	1/4-20	2-1/8	3-13/16	17/32	3-5/8	2-3/4	3/8
RU	444, 445TP, TPA	132576	1-7/16	1.437	1/4-20	2-1/8	4	11/16	3-11/16	2-7/8	3/8
		132577	1-1/2	1.501	1/4-20	2-1/8	4	17/32	3-11/16	2-7/8	3/8
		132578	1-11/16	1.687	1/4-20	2-1/2	4	17/32	3-11/16	2-7/8	3/8
		132579	1-15/16	1.937	1/4-20	2-1/2	4	11/16	3-11/16	2-7/8	1/2
		136874	2-3/16	2.188	3/8-16	3-1/4	4	11/16	4	2-7/8	1/2
		136875	2-1/4	2.250	3/8-16	3-1/4	4	11/16	4	2-7/8	1/2
		131805	BLANK	.751	-	-	4	-	3-11/16	2-7/8	-
		136876	BLANK	.751	-	-	4	-	4	2-7/8	-
EU HU JU	449TP, TPH 5006, 5008 5009, 5108 5109, P, PH	129679	1-11/16	1.688	1/4-20	2-1/2	4-3/8	17/32	4-3/4	3-1/16	3/8
		113288	1-15/16	1.938	1/4-20	2-1/2	4-3/8	11/16	4-3/4	3-1/16	1/2
		113287	2-1/8	2.126	3/8-16	3-1/4	4-3/8	11/16	4-3/4	3-1/16	1/2
		113289	2-3/16	2.188	3/8-16	3-1/4	4-3/8	11/16	4-3/4	3-1/16	1/2
		113313	2-3/8	2.376	3/8-16	3-1/4	4-3/8	25/32	4-3/4	3-1/16	5/8
		113290	2-7/16	2.438	3/8-16	3-1/4	4-3/8	25/32	4-3/4	3-1/16	5/8
		113314	2-1/2	2.501	3/8-16	3-1/4	4-3/8	25/32	4-3/4	3-1/16	5/8
		113285	BLANK	.000	-	-	4-3/8	-	4-3/4	3-1/16	-
HU	5808, 5809, 5810 P, PH	143112	2-3/16	2.188	3/8-16	3-1/4	5-1/8	1/2	5	3-5/8	1/2
		143113	2-7/16	2.438	3/8-16	3-1/4	5-1/8	1/2	5	3-5/8	5/8
EU JU	5805 PH	128009	2-3/16	2.188	3/8-16	3-1/4	4-3/8	11/16	4-3/4	3-1/16	1/2
		127376	2-7/16	2.438	3/8-16	3-1/4	4-3/8	25/32	4-3/4	3-1/16	5/8
EU JU	5807, 5809 5811 P, PH	143112	2-3/16	2.188	3/8-16	3-1/4	5-1/8	1/2	5	3-5/8	1/2
		143113	2-7/16	2.438	3/8-16	3-1/4	5-1/8	1/2	5	3-5/8	5/8
HU	6808 P, PH, 6810 P, PA	293643	2-11/16	2.687	3/8-16	3-3/4	7-7/8	11/16	7-5/8	6	5/8
		830210	2-15/16	2.937	3/8-16	3-3/4	7-7/8	1	7-5/8	6	3/4
		255753	3-3/16	3.187	3/8-16	5	7-7/8	1	7-5/8	6	7/8
		255609	3-7/16	3.437	3/8-16	5	7-7/8	1	7-5/8	6	7/8
		178611	BLANK	.000	-	-	7-7/8	-	7-5/8	6	-

SPECIAL COUPLING DIMENSIONS

PART NUMBER	BX BORE NOMINAL	BX BORE ACTUAL	BY	BZ	SQ. KEY SIZE	XB	XD	XE	XF

All tapped holes are unified national course, right-hand thread.

All rough casting dimensions may vary by 1/4" due to casting variations.

Coupling bore dimension "BX" is machined with a tolerance of -.000", + .001" up to 1-1/2" bore inclusive. Larger bores: -.000", + .002".

US ELECTRICAL MOTORS
ST. LOUIS, MO 63136

MOTOR PERFORMANCE (SINEWAVE POWER)

HP	POLES	PHASE	HZ		TYPE	FRAME
200.00	6	3	60		HUSI	449

MODEL NO.		ORDER NO.	99059225	LINE NO.	1	MP ID NO.	52295

VOLTS:	460
SERVICE FACTOR:	1.15
EFFICIENCY:	
S.F.	95.3
FULL	95.4
3/4	96.1
1/2	95.8
1/4	93.6
POWER FACTOR:	
S.F.	84.8
FULL	84.6
3/4	82.4
1/2	75.7
1/4	55.8
NO LOAD	3.6
LOCKED ROTOR	25.0
AMPS:	
S.F.	266.0
FULL	232.0
3/4	177.0
1/2	129.0
1/4	90.0
NO LOAD	71.5
LOCKED ROTOR	1498.5
NEMA CODE LETTER	G
NEMA DESIGN LETTER	B
FULL LOAD RPM	1190
NEMA NOMINAL EFFICIENCY	95.4
GUARANTEED EFFICIENCY	94.5
MAX KVAR	48.4
SAFE STALL TIME-HOT (SEC.)	30
SOUND PRESSURE (DBA @ 1M)	82.0
TORQUES:	
BREAKDOWN (%) F.L.)	241
LOCKED ROTOR (% F. L.)	120
FULL LOAD (LB-FT)	883.1

DATE: 3/30/00

THE ABOVE DATA IS TYPICAL UNLESS NOTED OTHERWISE

571201

Nameplate Data Listing

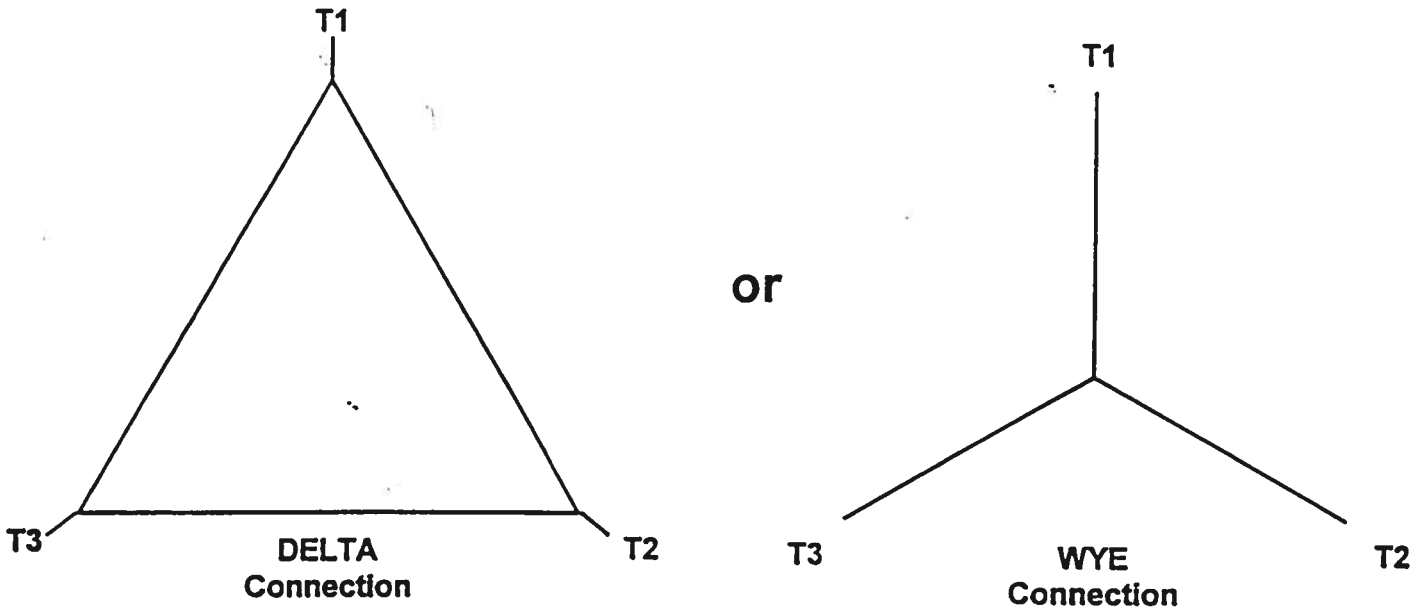
Date: 3/29/00

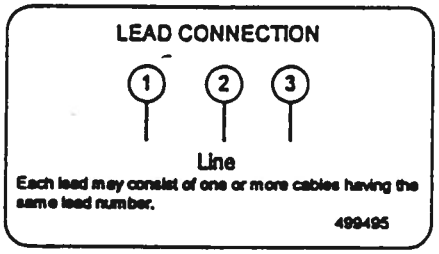
Item Number. . . . HURU 8VM NAMEPLATE,BLANK
Order Number . . . 99059225 SO Line 1.000 W.O. Number. 2446410 WO
Effective Date . 03292000
Nameplate Blank. . 422707-001 Nameplate Blank P/N

Motor Frame Size.	449
Frame Alpha Suffix.	TP
Motor Type Code	HUSI
Enclosure	DP
SHAFT/LWR Bearing	6219-J
LWR Bearing Quantity.	1
OPP/UPR Bearing	7226 BCB
UPR Bearing Quantity.	1
Phase	3
Maximum Ambient	40 C
Insulation Class.	F
Duty Cycle.	CONT
Horsepower	200
RPM.	1190
Voltage 1.	460
Full Load Amps 1	232.0
Service Factor	1.15
Design	B
Code	G
NNE	95.4
Power Factor	84.6
Hertz.	60
OPP/Upper Oil Capacity. . . .	12 QT/11.4 L
SHAFT/Lower Oil Capacity. . .	GREASE
Vertical Thrust Percentage. .	100% HT
VFD Voltage 1	460
VFD Full Load Amps 1.	243.6
VFD Torque 1.	883.1
VFD Load Type 1	VT/PWM
VFD Hertz Range 1	6-60
VFD Speed Range 1	120-1200
VFD Service Factor.	1.00
+ Motor Weight (LBS).	2400
+ Thermal Protect - Windings.	OVER TEMP PROT 2
+ Non Reverse Ratchet	NRR
+ Notes (Conn Decal / Plate).	WD=499495
AUX Decal/Plate 1 & 2	422689

*** Typical Data Under SineWave Power ***

Motor Wiring Diagram





To reverse direction of rotation interchange connections L1 and L2.

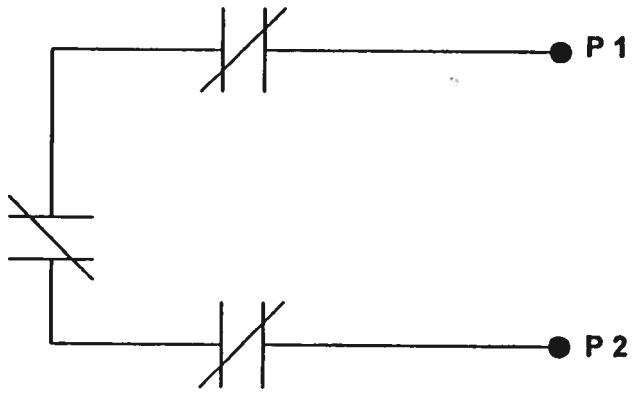
Each lead may be comprised of one or more cables.
Each cable will be marked with the appropriate lead number.

EFFECTIVE: 2/27/96
SUPERCEDES: X736618, 96441, 179879, 284138
Connection Plate: 499495
Connection Decal: 912113

834066

NORMALLY CLOSED (N.C.) THERMOSTATS:

1. MOTOR IS EQUIPPED WITH QTY-3 (1 PER PHASE) NORMALLY CLOSED THERMOSTATS IN THE MOTOR WINDING. THERMOSTATS ARE SET TO OPEN AT HIGH TEMPERATURE.
2. THERMOSTATS MUST NOT BE USED TO SWITCH ABOVE 18 AMPS @ 24 VDC OR 12 AMPS @ 230 VAC.

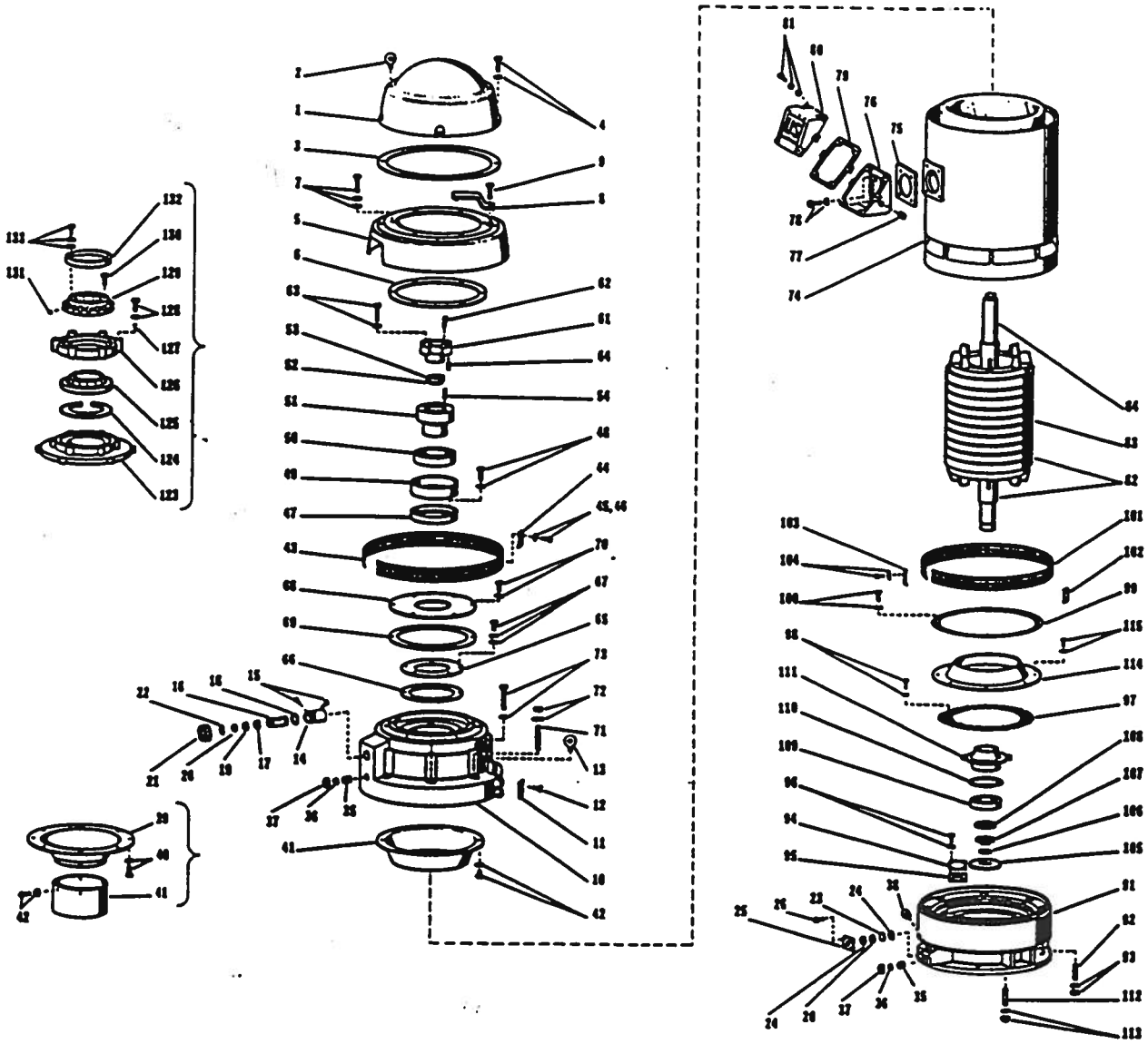


NORMALLY CLOSED THERMOSTATS

ACCESSORY LISTING
QTY-3 N.C. THERMOSTATS
CUSTOMER CONNECTION DRAWING

REV. 1/24/96-ODS

FRAME SERIES 449 THRU 8000 - -TYPE HU, HUE, HV4, HVE4, HVS4, RV4, RVE4, RVS4)



ITEM NO	QTY	NAME OF PART
1	1	Canopy cap
2	2	Eyebolt (Not used on frame 5006P, PH & 5008 P, PH)
3	1	Gasket
4	4	Hex head cap screw & lockwasher
5	1	Bracket cover (Used on frame 6808P, PH)
6	1	Gasket (Used on frame 6808P, PH)
7	6	Hex head cap screw, plain & lockwasher (Used on frame 6808P, PH)
8	1	Locking arm

ITEM NO	QTY	NAME OF PART
9	1	Hex head cap screw
10	1	Upper bracket assembly
11	2	Safety plate (Used on frame 6808P, PH)
12	2	Flat head cap screw (Used on frame 6808P, PH)
13	2	Eyebolt (Used on frame 6808P, PH)
14	2	Oil fill drawer housing ((6808PH & Qty. 1 on 6808P)
15	4	Flat head machine screw (6808PH & Qty. 2 on 6808P)

PR[illegible]:
Pa[illegible]ing distributors: refer to your USEM renewal parts numerical index.
All o[illegible]: refer to your nearest USEM parts stocking distributor.

ITEM NO	QTY	NAME OF PART
16	2	Oil fill drawer (6808PH & Qty. 1 on 6808P)
17	2	Lock ring (6808PH & Qty. 1 on 6808P)
18	2	"O" ring (6808PH & Qty. 1 on 6808P)
19	2	Oil drawer filter assembly (6808PH & Qty. 1 on 6808P)
20	2	Sight gauge window
21	2	Ferrule (6808PH & Qty. 1 on 6808P)
22	2	"O" ring (6809PH & Qty. 1 on 6808P)
23	2	Reflector disc (Qty. 1 on 6808P, not used on 6808PH)
24	4	Gasket (Qty. 2 on 6808P, not used on 6808PH)
25	2	Special housing (Qty. 1 on 6808P, not used on 6808PH)
26	8	Oval head screw (Qty. 4 on 6808P, not used on 6808PH)
27—34	—	NOT USED ON THIS ASSEMBLY
35	2	Pipe nipple
36	2	Gasket
37	2	Drain cap
38	2	Special plug (Fill)(Qty. 1 on 6808P, PH)
39	1	Cast air deflector(Used on frame 6808P,PH)
40	8	Hex head cap screw & lockwasher (Used on frame 6808P, PH)
41	1	Air deflector
42	6	Screw & lockwasher (Qty. 8 on 6808P, PH)
43	1	Grill
44	1	Grill cleat (Qty. 6 on 6808P, PH)
45	2	Hex head cap screw & lockwasher(Qty. 10 on 6808P,PH. Not used on frames 5808P, PH & 5809P, PH)
46	16	Pan head machine screw (Qty. 8 on 6006P, PH & 5006P, PH. Not used on frame 6808P, PH)
47	1	Metering plate
48	1	Hex head cap screw & lockwasher (Not used on frame 6808P, PH)
49	1	Bearing spacer
50	2	Ball bearing (Refer to section 775)
51	1	Bearing mounting
52	1	Lockwasher (Sold with item no. 53)
53	1	Lock nut (Sold with item no. 52)
54	1	Square key
55—60	—	NOT USED ON THIS ASSEMBLY
61	1	Coupling HU only
62	1	Gib key
63	2	Hex head cap screw & lockwasher (Qty. 3 on 5006P, PH & 5008P, PH)
64	4	Slotted headless screw (Qty. 3 on 5006P, PH & 5008P, PH)
65	1	Oil baffle (Used on frame 6808P, PH)
66	1	Gasket (Used on frame 6808P, PH)
67	5	Hex head cap screw, plain & lockwasher (Used on frame 6808P, PH)
68	1	Dust ring
69	1	Gasket
70	6	Hex head cap screw & plain washer (Qty. 8 on 5006P, PH & 5008P, PH)
71	4	Stud (Qty. 8 on 6808P, PH. Not used on frames 5808P, PH & 5008P, PH)
72	4	Hex nut & lockwasher (Qty. 8 on 6808P, PH. Not used on frames 5808P, PH & 5809P, PH)
73	4	Hex head cap screw & lockwasher (Not used on frames 5808P, PH & 5809P, PH)
74	1	Wound stator assembly
75	1	Gasket

ITEM NO	QTY	NAME OF PART
76	1	Outlet box base
77	1	Countersunk hex pipe plug
78	4	Hex head cap screw & lockwasher
79	1	Gasket
80	1	Outlet box cover
81	6	Hex head cap screw, plain & lockwasher
82	1	Rotor assembly (Includes items 83 & 84)
83	1	Rotor core
84	1	Rotor shaft
85—90	—	NOT USED ON THIS ASSEMBLY
91	1	Bracket assembly
92	4	Stud (Qty. 8 on 6808P, PH)
93	4	Hex nut & lockwasher (Qty. 8 on 6808P, PH)
94	1	Cover plate(Not used on frame 6808P, PH)
95	1	Gasket (Not used on frame 6808P, PH)
96	4	Hex head cap screw & lockwasher(Not used on frame 6808P, PH)
97	1	Screen
98	6	Screw & plain washer (Qty. 6 on 6808P, PH & 5809P, PH. Qty. 7 on 6808P, PH)
99	1	Grill or screen (Not used on frames 5808P, PH & 5809P, PH)
100	8	Hex head cap screw & plain washer (Qty. 16 washers on 6808P, PH. Not used on frames 5808P, PH & 5809P, PH)
101	1	Grill(Used on frame 6808P, PH)
102	8	Grill cleat (Used on frame 6808P, PH)
103	1	Joint grill cleat (Used on frame 6808P, PH)
104	18	Round head screw & lockwasher(Used on frame 6808P, PH)
105	1	Oil baffle plate
106	1	Dust sealing ring
107	1	Snap ring
108	1	Bearing spacer (Used on frames 5808P, PH & 5809P, PH)
109	1	Ball bearing (Refer to section 775)
110	1	"O" ring
111	1	Bearing cap
112	4	Stud
113	4	Cap or hex nut & lockwasher
114	1	Air deflector
115	8	Screw & lockwasher
116—122	—	NOT USED ON THIS ASSEMBLY
		FOR NON-REVERSE RATCHET(OPTIONAL), OMIT ITEMS 68,69(6808P, PH only) 8, 9 (5006P, PH & 5008P, PH) & ADD:
123	1	Ratchet adaptor assembly (Not used on frame 6808P, PH)
124	1	"C" spring
125	1	Stationary ratchet assembly
126	1	Pressure plate assembly
127	6	Compression spring (Qty. 4 on 5006P, PH & 5008P, PH)
128	6	Hex head cap screw & plain washer (Qty. 4 on 5006P, PH & 5008PH)
129	1	Rotating ratchet
130	4	Hex head cap screw (Qty. 3 on 5006P, PH & 5008P, PH)
131	12	Steel ball (Qty. 14 on 5808P, PH & 5809P, PH. Qty. 16 on 6808P, PH)
132	1	Ball retaining ring
133	6	Hex head cap screw, plain & lockwasher (Qty. 7 on 5808P, PH & 5809P, PH, Qty. 8 on 6808P, PH)

PRICES:
P... stocking distributors: refer to your USEM renewal parts numerical index
... refer to your nearest USEM parts stocking distributor

Installation, Operation & Maintenance Instructions
Pump and Motor