

SHOP DRAWING REVIEW FORM AND TRANSMITTAL

DATE: November 5, 2021

TO: Carl Hendrickson
Project Manager
Veolia Water
825 West Water Street
Taunton, MA 02780

FROM: Michael Andrus, P.E.
Project Manager
BETA Group, Inc.
701 George Washington Hwy
Lincoln, Rhode Island 02865

RE: City of Taunton, MA
WWTF Phase 1 Improvements
Contract S-2021-1

Shop Drawing No. 15500-01 – Hot Water Pumps

BETA COMMENTS:

<u>Item</u>	<u>Action Code</u>	<u>Description/Comments</u>
1	3	Hot Water Pumps (Taco) 1. See attached comments from SAR.

Action Codes

- 1 - No Exception Taken
- 2 - Make Corrections Noted
- 3 - Amend and Resubmit
- 4 - Rejected, See Remarks

- a. Installation shall proceed only when Action Code is '1' or '2'.
- b. Submittals action coded '3' shall be resubmitted within time limit set in Contract.
- c. Review does not relieve Contractor from responsibility of compliance with the Contract Documents.



Hart Engineering Corporation

SUBMITTAL:
15500-01

PROJECT: 9900. - Veolia/Taunton WWTF Phase 1 Improvements

DATE: 10/29/2021

SUBMITTAL: 15500-01 - Hot Water Pumps

REVISION: 0

STATUS: Eng

SPEC #: 15500

TO:
Michael Andrus
Beta Group Inc.
6 Blackstone Place
Lincoln, RI 02865
MAndrus@BETA-Inc.com

FROM:
Ryan Murphy
Hart Engineering Corporation
800 Scenic View Drive
Cumberland, RI 02864
rmurphy@hartcompanies.com

Item	Revision	Description	Status	Date Sent	Date Returned
15500-01	0	Hot Water Pumps	Eng	10/29/2021	

Notes:

Additional Notes:

Status Codes

- 1-APP – No Exceptions Taken
- 2-ANR – Make Corrections Noted
- 3-R&R – Revise and Resubmit
- 4-REJ – Rejected
- 5-IPO – For Information Purposes Only
- 6-NRR – Not Required for Review
- ENG – Submitted to Engineer

Sincerely,
Hart Engineering Corporation

DATE: 10/29/2021

SHOP DRAWING REVIEW

1 – Approved 2 – Approved as Noted
 3 – Revise and Resubmit 4 - Rejected
 5 – Record File Only – No Action Taken

(Above Check Designates Action Code – See Review Comments)

IMPORTANT NOTE FOR CONTRACTOR

Review is only for general compliance with the design concept and information provided in Contract Documents. Corrections and comments made on the Shop Drawings during review do not relieve the Contractor from compliance with the requirements of the plans and specifications. Review and/or approval of a specific item shall not include review or approval of an assembly of which the item is a component. No approval or correction of a Shop Drawing shall be construed as an order for extra work. The Contractor is responsible for: all quantities and dimensions to be confirmed and correlated; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all trades and subcontractors; and performing all Work in a safe and satisfactory manner.

BETA GROUP, INC. Checked By: RB (SAR)

By: MLA Date: 11/5/21



TO: BETA Group

701 George Washington Highway

Lincoln, RI 02865

Attention: Mike Andrus

Sent by: R. Brown

Date: November 4, 2021

SAR Job Number: 18009.00

Reference: Taunton WWTF Upgrades – Phase 1

Enclosed Herewith We are sending you the following item(s):

- VIA Print(s) Reproducible(s) Original Drawing(s)
- Mail Diskette(s) Report(s) Sketch (es)
- Messenger Shop Drawing(s) Specification(s) Sample(s)
- Express Copy of Letter Change Order Other _____
- Email: Filename: _____ Time Sent _____ AM

Copies	Date	Description
1		15500-01 REV 0 – Hot Water Pumps

These are transmitted as indicated

- For approval For review and comment As requested For your information

Remarks

Copy to

File(s)

Transmittal Enclosure



Review Comments

JOB: Taunton WWTF Upgrades – Phase 1

DATE: November 4, 2021

SUBMITTAL NO.: 15500-01 REV 0

SUBJECT: Hot Water Pumps

<input type="checkbox"/> NO EXCEPTION <input type="checkbox"/> TAKEN <input type="checkbox"/> REJECTED	<input type="checkbox"/> MAKE CORRECTIONS <input type="checkbox"/> NOTED <input checked="" type="checkbox"/> REVISE AND RESUBMIT
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Checking is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for: Dimensions which shall be confirmed and correlated at the job site fabrications process and techniques of construction; coordination of His work with that all other trades; and the satisfactory performance of his work.

SAR ENGINEERING, INC.

DATE: November 4, 2021 **BY:** R. Brown

R-2/21/2003

Comments:

1. Confirm all pump motors to be VFD rated as noted on Pump Schedule.
2. Furnish pumps with casing wear ring as per specification 15500.2.07.B.2.a.



Aero Mechanical, Inc.

10 Leah St.
Johnston, RI 02919

Phone: 401-751-8880
Fax: 401-751-7595

SUBMITTAL

No. 1

TITLE: Hot Water Pumps
PROJECT: Hart Taunton WWTF
Drawing: _____
STATUS: NEW
BIC: _____

REQUIRED START: 10/27/2021
REQUIRED FINISH: 11/3/2021
DAYS HELD: _____
DAYS ELAPSED: _____
DAYS OVERDUE: _____

RECEIVED FROM	SENT TO	RETURNED BY	FORWARDED TO
Independent/ A. Goldstein	R. Murphy		

Revision No.	Description / Remarks	Received	Sent	Returned	Forwarded	Status
NEW	Hot Water Pumps	10/27/2021	10/27/2021			NEW



EMERSON SWAN

Engineered Products Division – Equipment Submittal

Project: TAUNTON WWTF

Contractor: AERO MECHANICAL

Engineer: SAR

Products: TACO

Prepared on:10/26/2021

James Goodrich - Engineered Products Division
Emerson-Swan: 300 Pond Street, Ranolph, MA 02368
(781)986-2555 Office Phone (781)986-2027 Office Fax
JGoodrich@emersonswan.com

FI Series Pump | Submittal Data

Submittal No: 301-2104 | Model: 2510C | RPM: 1760 - 60 Hz | Effective: January 27, 2020 | Supersedes: May 31, 2017

JOB: TAUNTON WWTF

REPRESENTATIVE: Emerson Swan

ENGINEER: SAR ENG

CONTRACTOR: AERO MECH

PRODUCT DATA

ITEM NO. 7HWP-1,2 MODEL NO. 2510C
 IMPELLER DIAMETER 8.20 HORSEPOWER 7.50
 GPM 300 VOLTAGE 480/3
 HEAD/FT 60 RPM 1760
 WEIGHT _____ PUMP/MOTOR _____

NSF 61 CERTIFIED YES NO

DIMENSIONS

Model No. | 2510C
 Flange Size (Suction x Discharge) | 3 x 2 1/2 (76 x 64)

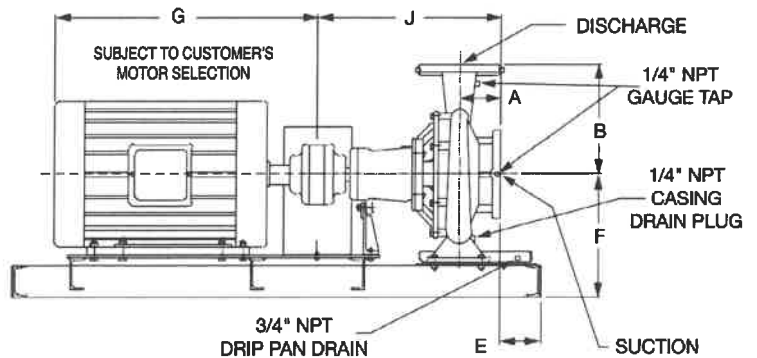
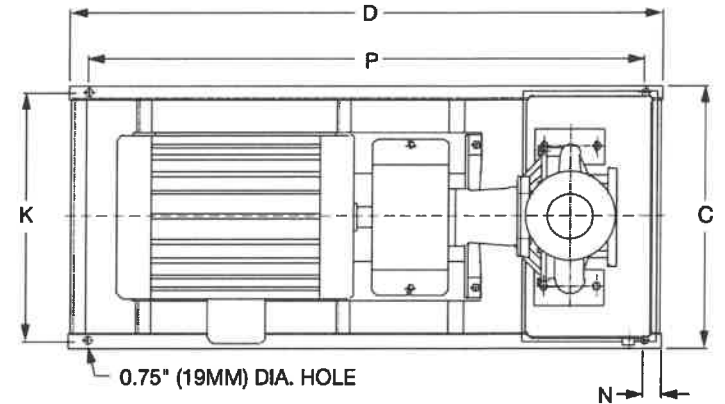
HORSEPOWER		5	7.5	10	15
ODP	MOTOR FRAME	184T	213T	215T	254T
	G MAX	16.63 (422)	19.08 (484)	22.57 (573)	
	MAXIMUM ASSEMBLY WEIGHT LBS. (KG)	452 (205)	542 (246)	624 (283)	
TEFC	MOTOR FRAME	184T	213T	215T	254T
	G MAX	18.19 (462)	20.65 (514)		23.41 (594)
	MAXIMUM ASSEMBLY WEIGHT LBS. (KG)	452 (205)	542 (246)		624(283)
A	ANSI Class 125: 4.72 (120) ANSI Class 250: 5.09 (129)				
B	ANSI Class 125: 9.75 (248) ANSI Class 250: 10.06 (256)				
C	17.18 (436)				
D	40.0 (1016)		43.0 (1092)		
E	ANSI Class 125: 1.14 (29) ANSI Class 250: 0.77 (20)				
F	12.06 (306)				
J	ANSI Class 125: 18.30 (465) ANSI Class 250: 18.67 (474)				
K	15.68 (398)				
N	2.00 (51)				
P	36.0 (914)		39.0 (991)		

Configuration	DOE Basic Model Number	PEI Value		Energy Rating
Bare Pump	FI2510C-4P-BP	PEI _d	0.94	6
Pump + Motor	FI2510C-4P-PM	PEI _d	0.94	6

OPERATING SPECIFICATIONS

FLANGE	PRESSURE	TEMPERATURE
ANSI Class 125	175 PSIG* (1210 KPA)	250°F (120°C)
ANSI Class 250	300 PSIG** (2070 KPA)	250°F (120°C)

Motors: All NEMA Standard (T Frame)
 * In accordance with ANSI Standard B16.1 Class 125
 ** In accordance with ANSI Standard B16.1 Class 250



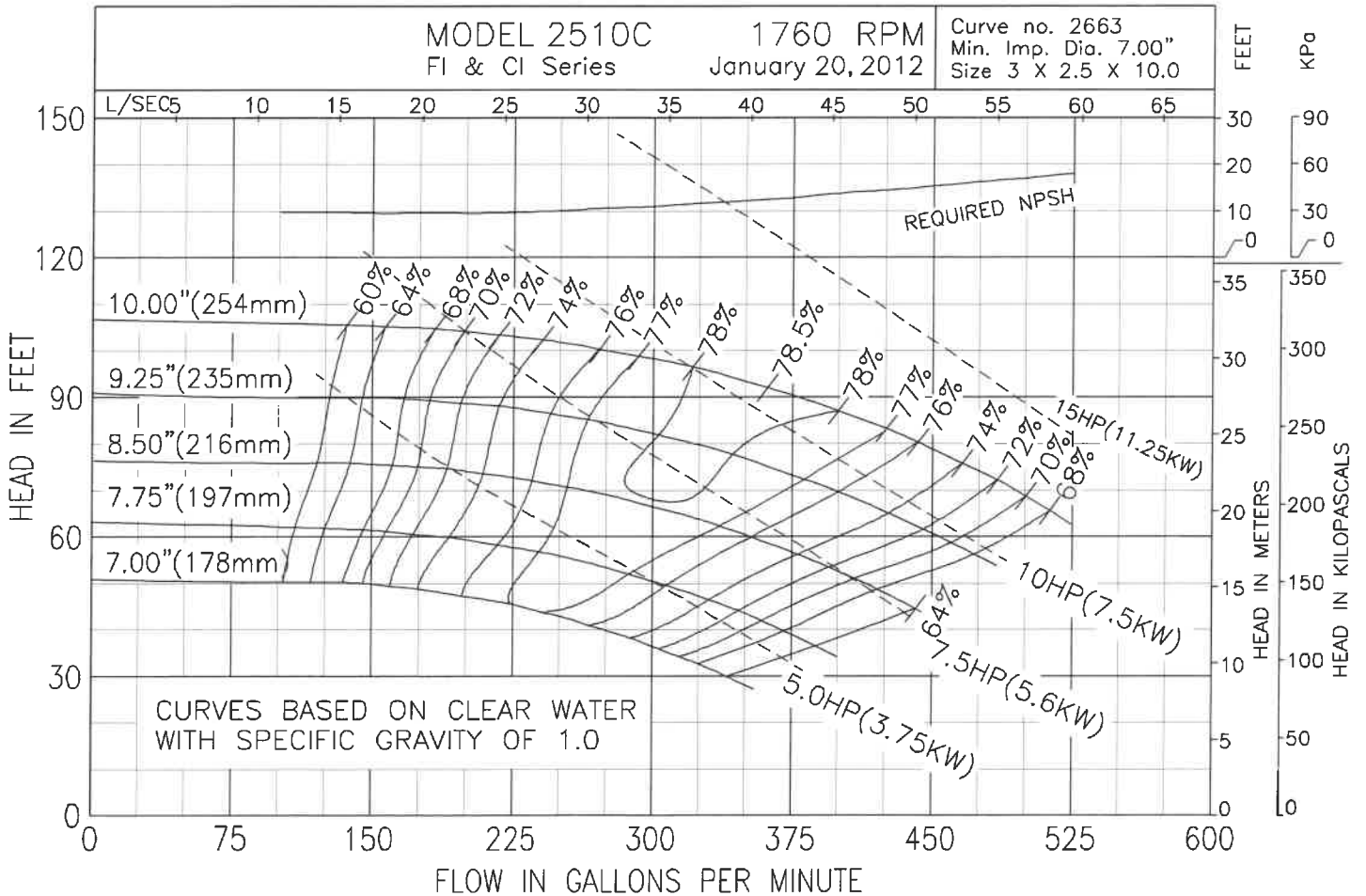
English dimensions are in inches. Metric dimensions are in millimeters.
 Metric data is presented in (). Do not use for construction purposes unless certified.

MATERIALS OF CONSTRUCTION

	BRONZE FITTED			NSF 61		
	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#
	125# Flange	250# Flange		125# Flange	250# Flange	
Casing	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A
Cover	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A
Impeller	Bronze ASTM B584 ALLOY C83600 or C84400	Bronze ASTM B584 ALLOY C83600 or C84400	N/A	Stainless Steel ASTM A351/A 351M-08	Stainless Steel ASTM A351/A 351M-08	N/A
Wear Ring	N/A	N/A	Bronze ASTM B584-98A C92200	N/A	N/A	Bronze ASTM B584-98A C92200
Shaft	Stainless Steel TYPE 416"™" or 410"™" ASTM A582	Stainless Steel TYPE 416"™" or 410"™" ASTM A582	N/A	Carbon Steel AISI 1045	Carbon Steel AISI 1045	Stainless Steel TYPE 416"™" or 410"™" ASTM A582
Shaft Sleeve	Bronze ASTM B584-98A C92200	Bronze ASTM B584-98A C92200	Stainless Steel TYPE 303 ASTM A276	Bronze ASTM B584-98A C92200	Bronze ASTM B584-98A C92200	N/A
Mechanical Seal	Ceramic/EPT	Ceramic/EPT	Tungsten Carbide/EPT or Silicon- Carbide/EPT	Ceramic/EPT	Ceramic/EPT	N/A
Seal Flush Line Assembly	N/A	N/A	Copper & Brass C3600	Copper & Brass C3600	Copper & Brass C3600	N/A

N/A - Not Available

Revised: 05/31/2017



COMMENTS P.E. MOTORS WITH SHAFT GROUNDING RINGS

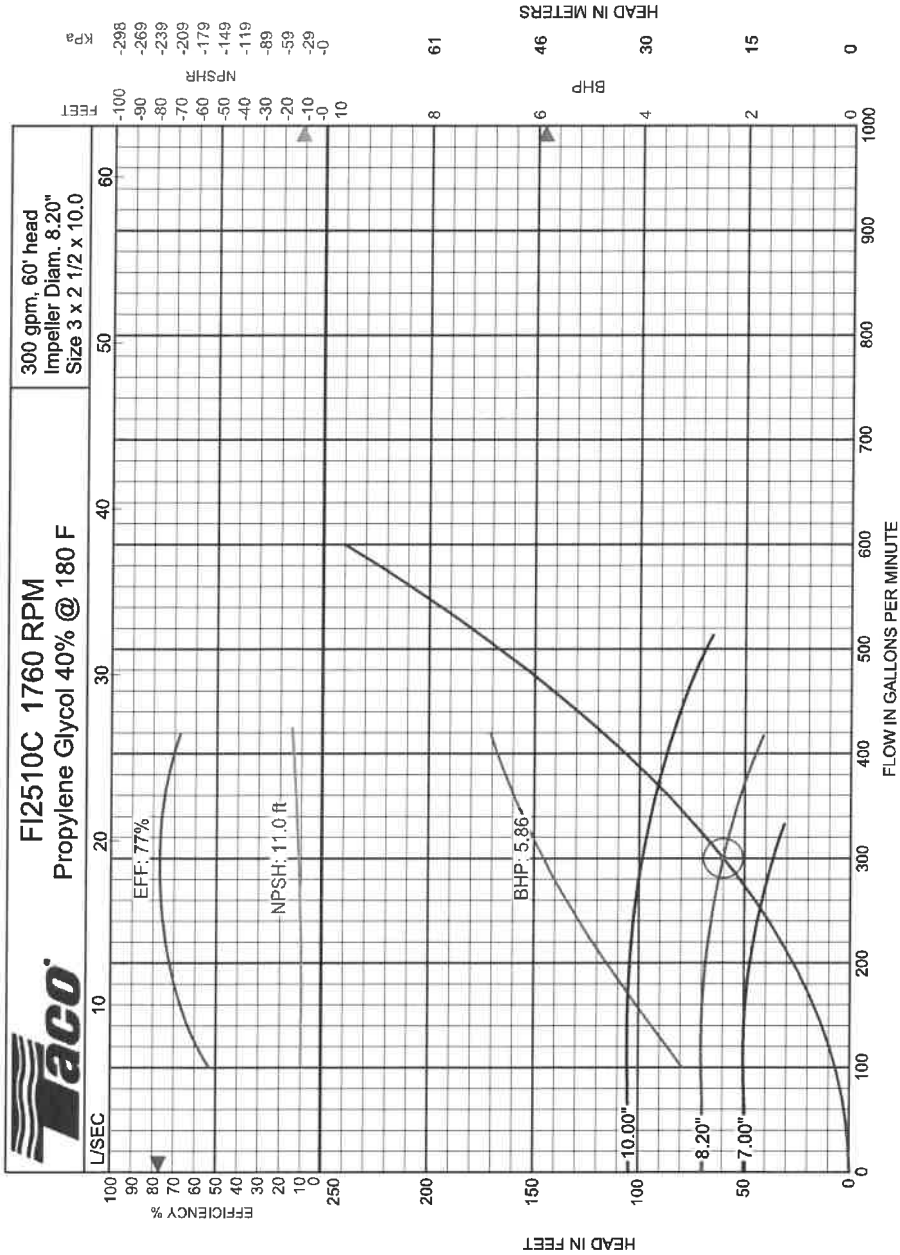


Model: FI2510C

Tag:

7HWP-1,2

- Flow Rate (GPM):** 300
- Head (FT):** 60
- Working Fluid:** Propylene Glycol
40% @ 180 F
- Efficiency (%):** 77%
- Construction:** Iron
- Design Hp:** 5.86
- Nol Hp:** 6.93
- Motor Hp:** 7.50
- Npsh (Ft):** 11
- RPM:** 1760



FI Series Pump | Submittal Data

Submittal No: 301-2104 | Model: 2510C | RPM: 1760 - 60 Hz | Effective: January 27, 2020 | Supersedes: May 31, 2017

JOB: TAUNTON WWTF

REPRESENTATIVE: Emerson Swan

ENGINEER: SAR ENG

CONTRACTOR: AERO MECH

PRODUCT DATA

ITEM NO. 9HWP-1,2 MODEL NO. 2510C

IMPELLER DIAMETER 7.75 HORSEPOWER 7.50

GPM 300 VOLTAGE 480/3

HEAD/FT 50 RPM 1760

WEIGHT PUMP/MOTOR

NSF 61 CERTIFIED YES NO

DIMENSIONS

Model No. | 2510C
Flange Size (Suction x Discharge) | 3 x 2 1/2 (76 x 64)

HORSEPOWER		5	7.5	10	15
ODP	MOTOR FRAME	184T	213T	215T	254T
	G MAX	16.63 (422)	19.08 (484)	22.57 (573)	
	MAXIMUM ASSEMBLY WEIGHT LBS. (KG)	452 (205)	542 (246)	624 (283)	
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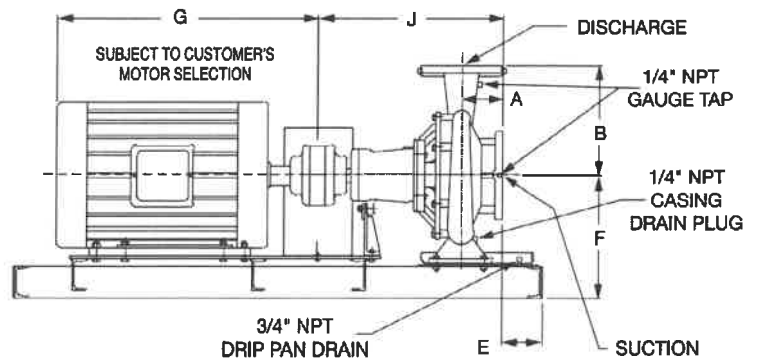
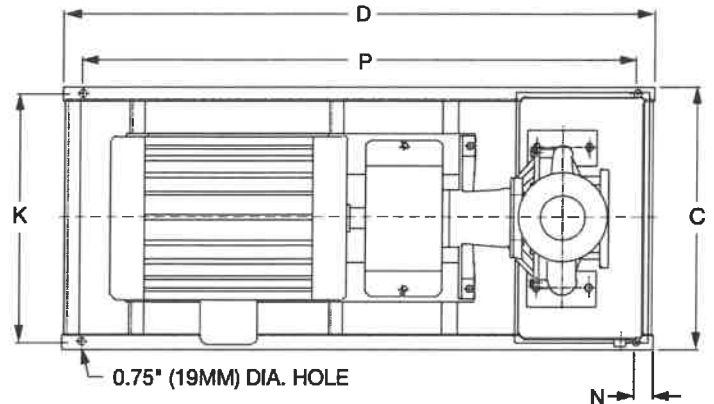
OPERATING SPECIFICATIONS

FLANGE	PRESSURE	TEMPERATURE
ANSI Class 125	175 PSIG* (1210 KPA)	250°F (120°C)
ANSI Class 250	300 PSIG** (2070 KPA)	250°F (128°C)

Motors: All NEMA Standard (T Frame)

* In accordance with ANSI Standard B16.1 Class 125

** In accordance with ANSI Standard B16.1 Class 250



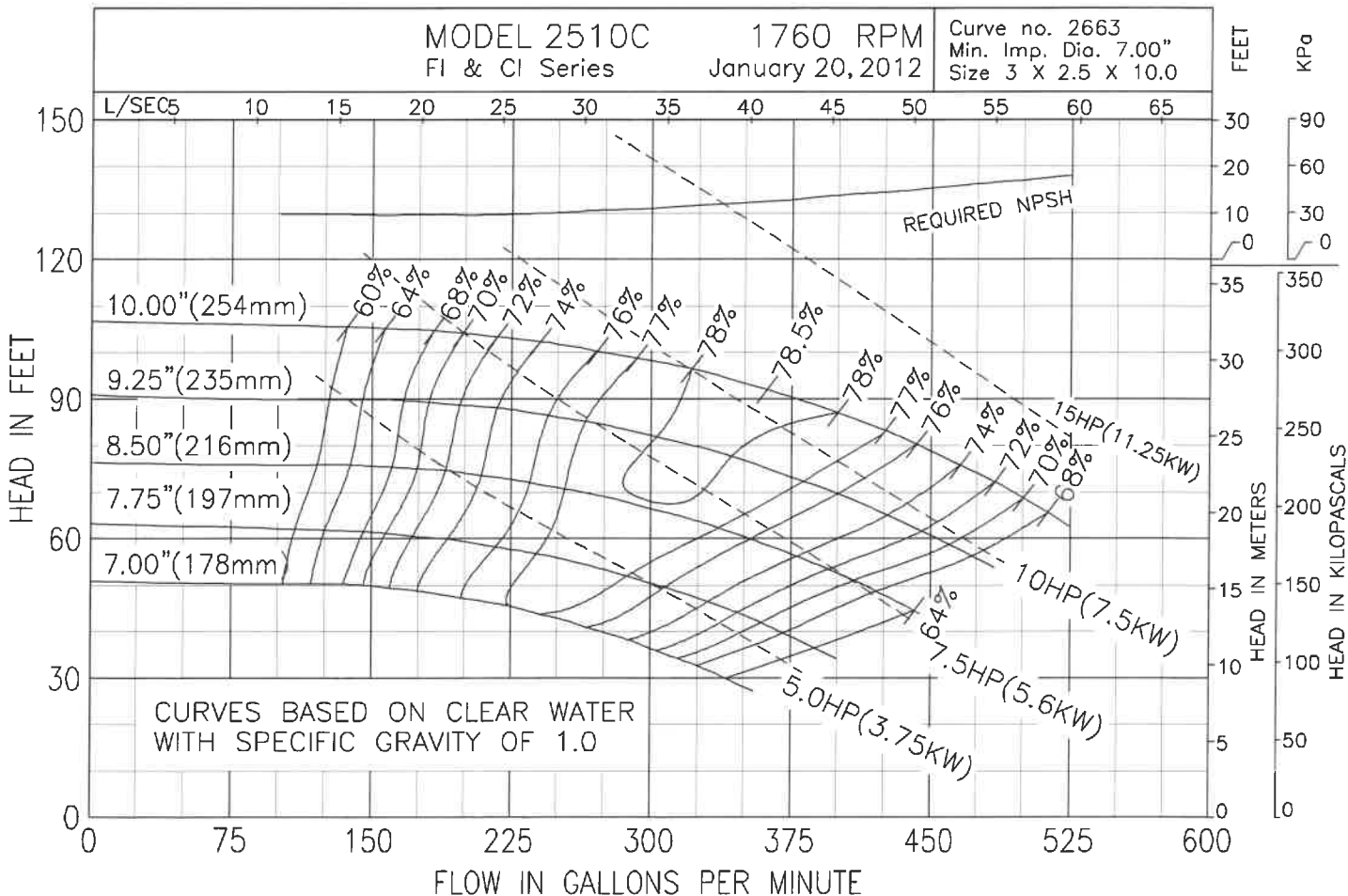
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MATERIALS OF CONSTRUCTION

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	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#	STANDARD PUMP CONSTRUCTION		OPTIONAL 125# or 250#
	125# Flange	250# Flange		125# Flange	250# Flange	
Casing	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A	Cast Iron ASTM A48/A48M-03 Class 30A	Ductile Iron ASTM A536-84 Grade 65-45-12	N/A
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Wear Ring	N/A	N/A	Bronze ASTM B584-98A C92200	N/A	N/A	Bronze ASTM B584-98A C92200
Shaft	Stainless Steel TYPE 416™™ or 410™™ ASTM A582	Stainless Steel TYPE 416™™ or 410™™ ASTM A582	N/A	Carbon Steel AISI 1045	Carbon Steel AISI 1045	Stainless Steel TYPE 416™™ or 410™™ ASTM A582
Shaft Sleeve	Bronze ASTM B584-98A C92200	Bronze ASTM B584-98A C92200	Stainless Steel TYPE 303 ASTM A276	Bronze ASTM B584-98A C92200	Bronze ASTM B584-98A C92200	N/A
Mechanical Seal	Ceramic/EPT	Ceramic/EPT	Tungsten Carbide/EPT or Silicon-Carbide/EPT	Ceramic/EPT	Ceramic/EPT	N/A
Seal Flush Line Assembly	N/A	N/A	Copper & Brass C3600	Copper & Brass C3600	Copper & Brass C3600	N/A

N/A - Not Available

Revised: 05/31/2017



COMMENTS P.E. MOTORS WITH SHAFT GROUNDING RINGS



Model: FI2510C

Tag:

9HWP-1,2

- Flow Rate (GPM):** 300
- Head (FT):** 50
- Working Fluid:** Propylene Glycol
40% @ 180 F
- Efficiency (%):** 76%
- Construction:** Iron
- Design Hp:** 4.95
- Nol Hp:** 5.59
- Motor Hp:** 7.50
- Npsh (Ft):** 11
- RPM:** 1760

