

ITEM	PAGES
Bulletin 3180	
Product Numbering System - Series 3180	1
Typical Architect / Engineers Specifications	2
Standard Materials of Construction - Series 3180.....	3
Pressure Temperature Ratings - Series 3180	4
Corrosion Allowance - Series 3180	5
Dimensions, Figs. 3182, 3185, 3186, Std Construction - ANSI-B73.2	6
Dimensions, Figs. 3182, 3185, 3186 Alloy Construction - ANSI-B73.2	7
Auxiliary Piping Connections - Fig. 3182.....	8
Auxiliary Piping Connections - Fig. 3185.....	9
Auxiliary Piping Connections - Fig. 3186.....	10
Pump Assembly - Fig. 3180 Series, Std Construction with Packed Stuffing Box.....	11
Assembly & Parts - Fig. 3180 Series - Optional Auxiliary Equipment.....	12
Pump Assembly - Fig. 3180 Series, Optional Construction with Water Jacketed Box	13
Seal Assembly Pages.....	14 - 25
Selection Curves, 3500RPM	26
Selection Curves, 1750RPM	27
Performance Curve, Fig 3180, VAA-E, Size: 1½ x 1 x 6, 3500 & 1750RPM.....	28
Performance Curve, Fig 3180, VAB-E, Size: 3 x 1½ x 6, 3500 & 1750RPM.....	29
Performance Curve, Fig 3180, VA10-E, Size: 3 x 2 x 7¼, 3500 & 1750RPM	30
Performance Curve, Fig 3180, VA05-E, Size: 2 x 1 x 9½, 3500 & 1750RPM	31
Performance Curve, Fig 3180, VA50-E, Size: 3 x 1½ x 9½, 3500 & 1750RPM	32
Performance Curve, Fig 3180, VA60-E, Size: 3 x 2 x 9½, 3500 & 1750RPM	33
Performance Curve, Fig 3180, VA70-E, Size: 4 x 3 x 9½, 3500 & 1750RPM	34
Performance Curve, Fig 3180, VA20-E, Size: 3 x 1½ x 12, & VA30-E, Size: 3 x 2 x 12, 1750RPM.....	35
Performance Curve, Fig 3180, VA40-E, Size: 4 x 3 x 12, & VA80-E, Size: 6 x 4 x 12, 1750RPM.....	36



WARNING:
CANCER AND REPRODUCTIVE HARM -
WWW.P65WARNINGS.CA.GOV

This page intentionally left blank

Vertical In-Line Chemical & Process Pumps

The Product Numbering System used, consists of 12 digits, and the following is a description of that system:

0000 - 000 - 00 - 0 0 0
 1 thru 4 5 thru 7 8 & 9 10 11 12

Digits 1 thru 4 describes the pump figure number.

1 thru 4	Description
3182 or 3185	Vertical In-Line Industrial Process Pump w/Close Coupled Motor

Digits 5 thru 7 describes the pump size.

5 thru 7	Description	5 thru 7	Description
102	VAA-E 1-1/2 x 1 x 6	305	VA70-E 4 x 3 x 9-1/2
152	VAB-E 3 x 1-1/2 x 6	158	VA20-E 3 x 1-1/2 x 12
203	VA10-E 3 x 2 X 7-1/4	208	VA30-E 3 x 2 x 12
105	VA05-E 2 x 1 x 9-1/2	308	VA40-E 4 x 3 x 12
155	VA50-E 3 x 1-1/2 x 9-1/2	408	VA80-E 6 x 4 x 12
205	VA60-E 3 x 2 x 9-1/2		

DigitS 8 & 9 describes the motor horsepower. 00 = Less motor.

ODP	TEFC	EXP. PROF	HORSEPOWER
03	23	43	1/2
04	24	44	3/4
05	25	45	1
06	26	46	1-1/2
07	27	47	2
08	28	48	3
09	29	49	5
10	30	50	7-1/2
11	31	51	10
12	32	52	15
13	33	53	20
14	34	54	25
15	35	55	30
16	36	56	40
17	37	57	50
18	38	58	60
19	39	59	75
20	40	60	100

Digit 10 describes the shaft sealing method.

Digit 10	Description	Digit 10	Description
0	Standard Packing	5	Crane Single Type 9T Q/XF1C1
1	Crane Single Type 1 BF1C1	6	Crane Single Type 9T Q/XF171
2	Crane Single Type 1 BF171	7	Crane Single Type 9T QF1C1
3	Crane Double Type 1 BF1C1	8	Crane Single Type 9T QF171
4	Crane Double Type 1 BF171	9	Crane Single Type 9T Q/XF1C1

Digit 11 describes the material of construction and speed

Digit 11	Description	Digit 11	Description
1	S.F.A.I 1750RPM	5	S.F.A.I 3500RPM
2	Bronze Fitted 1750RPM	6	Bronze Fitted 3500RPM
3	Ductile Iron 1750RPM	7	Ductile Iron 3500RPM
4	316 Stainless 1750RPM	8	316 Stainless 3500RPM

Digit 12 describes the sleeve material

Digit 12	Description
0	440C
1	A-20
2	316 Stainless Steel

Vertical In-Line Chemical & Process Pumps

General

Furnish and install as indicated on plans and specifications qty _____ Deming Series 3180 Chemical & Process Vertical In-line Centrifugal pump(s) for _____ type service.

Operating Conditions

Each pump shall be capable of delivering _____ GPM of _____ liquid against _____ feet total head. The characteristics of the liquid to be pumped are as follows:

Liquid Handled _____
Temperature _____
Specific Gravity _____
Nature of Solids Present _____
Percentage of Solids by Weight _____
Viscosity of Liquid at Pumping Temperature _____
NPSHA _____

NOTE: Add any additional facts concerning the nature of the liquid which might affect pump construction or application.

Construction Details

The casing of the pump shall be of (cast iron)(ductile iron)(316 st. stl.) material and shall be equipped with (125lb.)(150lb.) Flat face flanges on the inlet and outlet connections. The discharge and suction connections shall be in-line, and perpendicular to the shaft axis. The casing shall be designed for working pressures up to 250 lbs., with 1/8" corrosion allowance, and have optional (250lb.)(300 lb.) flanges or raised faces.

Impeller

The impeller shall be of the enclosed single suction type of (cast iron)(bronze)(316 st. Stl.) both statically and hydraulically balanced for maximum efficiency and smooth operation. Balance holes shall be provided to keep smooth positive pressure on the mechanical seal and balanced axial thrust loads. The impeller shall be keyed to the shaft so that it will have maximum drive with shaft rotation.

Shaft Sleeve

Pumps shall be equipped with a hooked style shaft sleeve which is securely keyed to the shaft. The surface of the sleeve shall be finished to 32 micro inches. Sealing gaskets shall be provided to prevent leakage of the fluid pumped. The sleeve shall extent throughout the stuffing box area and shall be 440C (500 Brinnell) for packed ductile iron pump or (316 stainless steel) for a pump with mechanical seal.

Casing/Seal (Housing) Head Adapter

The pumps shall be packed box consisting of packing, (5 rings), Teflon seal cage and split gland. The stuffing box shall include water cooling jacket for use where required. The stuffing box shall incorporate an external connection through which sealing liquid may be provided to the seal cage. Pump construction shall permit conversion from packed stuffing box to mechanical seal without special machining.

As an alternate to packing, the pump can be furnished with a single seal or double mechanical seal that is compatible with the material being pumped.

Motor

The motor shall be not less than _____ hp _____ RPM, NEMA design B squirrel cage type, (drip proof)(TEFC) (EISA)(premium) efficiency motor with (1.15)(1.0) service factor and suitable for operation on (115)(230) volt, 1 phase, (50)(60) Hertz power supply OR (200)(230)(460) (575) volt, 3 phase, 60 hertz power supply. Motor size shall be sufficient to prevent overloading at operating conditions or at the lowest listed head conditions whichever point requires greater horsepower. Following installation, grouting and connection of all piping, pump and motor must be checked for alignment in accordance with standards of the Hydraulic Institute

Vertical In-Line Chemical & Process Pumps

ITEM	MATERIAL GROUP	ALL IRON	BRONZE FITTED	DUCTILE IRON	TYPE 316 STAINLESS	ALL BRONZE
	GROUP NO.	1	2	4	6	3
	NAME OF PART					
1	Casing	Cast Iron	Cast Iron	Ductile	316 SS	#8 Bz.
2	Impeller	Cast Iron	#8 Bz.	Cast Iron	316 SS	#8 Bz.
7	Casing Wearing Ring	Cast Iron	#5 Bz.	Cast Iron	316 SS	#5 Bz.
† 8	Impeller Wearing Ring	Cast Iron	#8 Bz.	Cast Iron	316 SS	#8 Bz.
11	Packing Box Cover	Cast Iron		Ductile	316 SS	#5 Bz.
* 13	Packing	Garlock 8913			JC 1335 Teflon	
14	Shaft Sleeve	316 Stainless Steel			316 SS	#5 Bz.
* 17	Split Gland	Cast Iron			316 SS	#5 Bz.
* 17A	Snuffing Gland	Cast Iron			316 SS	#5 Bz.
26	Impeller Screw	316 SS				316 SS
27	Balance wear Ring	Cast Iron	#5 Bz.	Cast Iron	316 SS	#5 Bz.
* 29	Lantern Ring	Teflon				
30	Impeller Nut Gasket	Teflon				
32	Impeller Key	Steel				
38	Shaft Gasket	Teflon				
40	Deflector	Neoprene				
† 65	Mechanical Seal	---				
71	Adapter	Cast Iron				
73	Casing Gasket	Garlock HTC-9800				
203	Nameplate	304 SS				
206	Split Gland Clip	316 SS				
208	Pipe Plug	M.I.			316 SS	Brass
210	Hex Nut	316 SS				A-20
212	Cap Screw	Steel			304 SS	
214	Drive Screw	304 SS				
216	Pipe Plug	M.I.			316 SS	Brass
219	Cap Screw	Steel				
239	Stud	Steel			316 SS	
249	Hex Nut	Steel			316 SS	
† 251	Seal Gland	---				
263	Pipe Plug	18-8			316 SS	18-8
264	Pipe Plug	M.I.			316 SS	Brass
270	Impeller Washer	316 SS				316 SS
272	O-ring	Teflon Coated Buna N				
281	Gland Stud	316 SS				316 SS
282	Washer	316 SS				316 SS
283	Cap Screw	316 SS				316 SS
† 284	Snuffing Gland Ring	Garlock 8913				
287	Jack Screw	Steel			304 SS	
297	Pipe Plug	Galvanized				
298	Thread Protector	Steel				
† 300	recirculation Line					

(†) Optional when specified

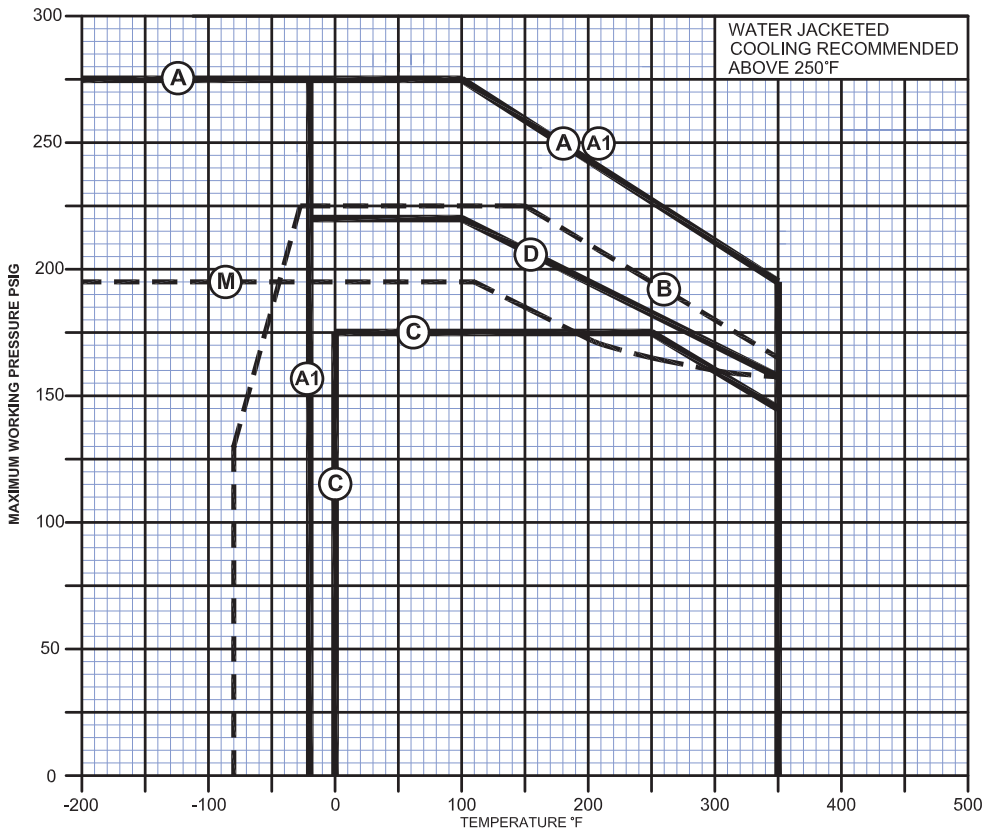
(*) Omit with Seal Construction



WARNING:

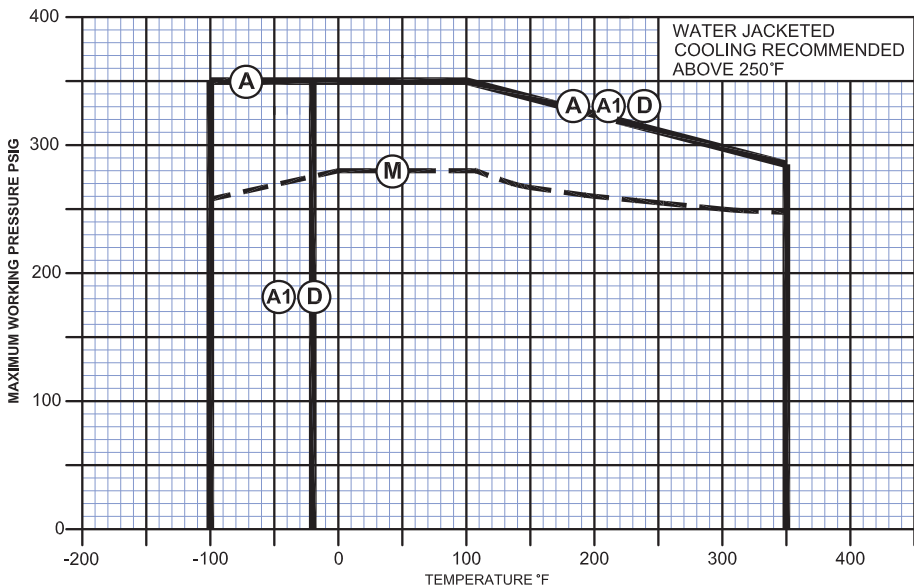
CANCER AND REPRODUCTIVE HARM -
WWW.P65WARNINGS.CA.GOV

Vertical In-Line Chemical & Process Pumps

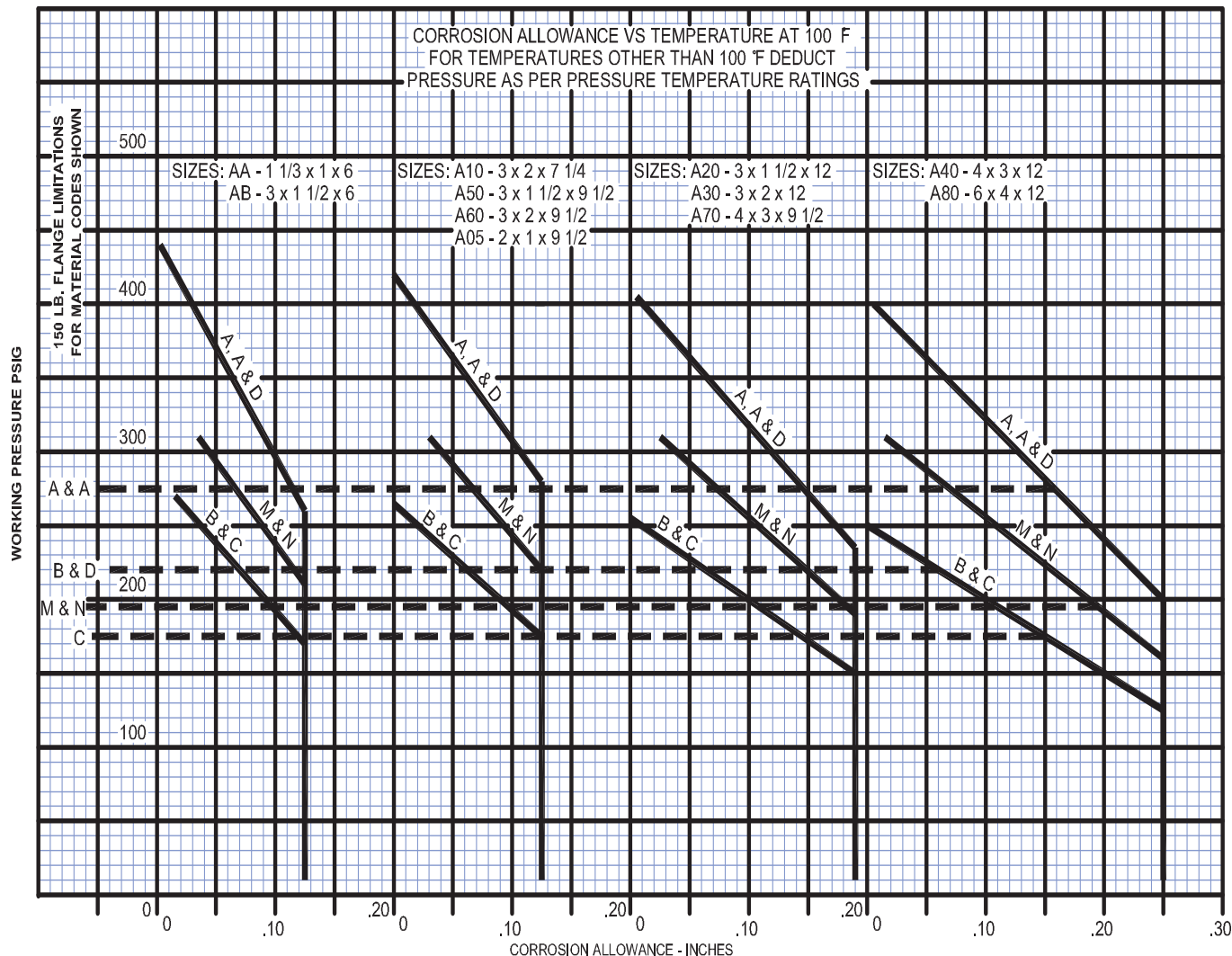


MATERIAL CODE FOR THESE CHARTS

CODE A	CODE A1	CODE B	CODE C	CODE D	CODE M
304 SS 316 SS 347 SS A-20 SS	CARBON STEEL	BRONZE #5 BRONZE #8	CAST IRON	DUCTILE IRON	MONEL



Vertical In-Line Chemical & Process Pumps



EXAMPLES:	VAA-E PUMP - STEEL CASE - 300# FLANGES
	100°F - Maximum Working Pressure + 350 psi (PT chart) Corrosion Allowance = .0623" = 1/16" (CA chart)
	350°F - Maximum Working Pressure = 285 psi (PT chart) Corrosion Allowance = .109" = 7/64" (CA chart)
	VA40-E PUMP - DUCTILE IRON CASE - 150# FLANGES
	100°F - Maximum Working Pressure + 220 psi (PT chart) Corrosion Allowance = .22" = 7/32" (CA chart)
	350°F - Actual Working Pressure = 50 psi (Assumed) Corrosion Allowance = .25" = 1/4" (CA chart)

Minimum case corrosion allowance with good design practice is 1/16" at the maximum allowable working pressure of the pump. Figure 3180 pumps have this allowance. However, for a given case thickness, corrosion allowance varies inversely with actual working pressure. Thus, a user operating a pump at lower working pressure can permit more than 1/16" corrosion before retiring the case. The above chart is designed to illustrate this. To find corrosion allowance enter chart a: maximum or actual working pressure and read corrosion allowance at intersection of solid line (diagonal or vertical).

All Sizes - Figs. 3182, 3185, 3186

Standard Construction - ANSI-B73.2

Bulletin 3180

DEMING®

www.cranepumps.com

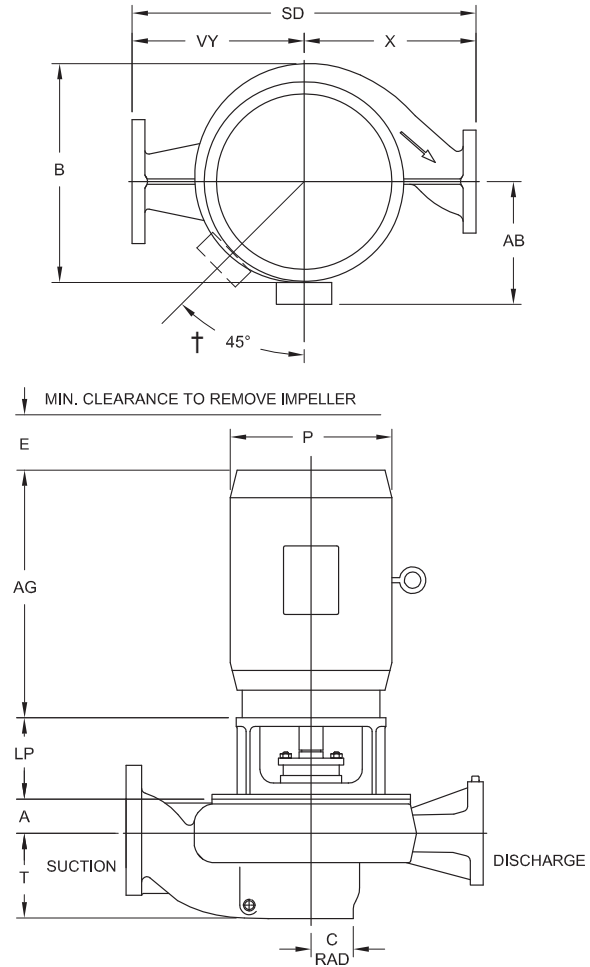
Vertical In-Line Chemical & Process Pumps

STD. PUMP DESIGNATION	PUMP SIZE	SUCT.	DISCH.	MAX. IMP. DIA.	WT	A	B	C	T	E	X	VY	SD
---	VAA-E	1½	1	6	64	1⅞	8⅞	1¾	3⅞	4	6½	7½	14
3015 / 15	VAB-E	3	1½		80	1⅞ ₁₆	9¾	2	4⅞ ₃₂	4	6¼	8¾	15
3020 / 17	VA10-E	3	2		107	2⅞	11⅞ ₁₆	2	4⅞ ₃₂	4⅞	7¾	9¾	17
---	VA05-E	2	1	9½	115	2	12¾	2⅞	4⅞ ₁₆	4	8½	10½	19
3015 / 19	VA50-E	3	1½		126	2⅞ ₃₂	13¾	2⅞	5⅞	4⅞	8½	10½	19
3020 / 20	VA60-E	3	2		132	2⅞ ₁₆	13¾	2⅞	5⅞	4⅞	9½	10½	20
4030 / 22	VA70-E	4	3	12	168	2⅞	14¾	3	5⅞	5	11	11	22
3015 / 24	VA20-E	3	1½		161	2⅞ ₁₆	16¾	2⅞	4⅞ ₁₆	4⅞	12½	11½	24
3020 / 24	VA30-E	3	2		161	2⅞ ₁₆	16¾	2⅞	4⅞ ₁₆	4⅞	11½	12½	24
4030 / 25	VA40-E	4	3		223	2⅞	18¾	3⅞ ₁₆	6⅞	5	12½	12½	25
6040 / 28	VA80-E	6	4		312	2⅞	19¾	3⅞ ₁₆	7⅞	5⅞	13½	14½	28

FLANGE DRILLING DATA Δ								
NOZZLE SIZE	150# FLANGE				300# FLANGE			
	NO.	SIZE	B.C.	DIA.	NO.	SIZE	B.C.	DIA.
1	4	⅝	3⅞	4¼	4	¾	3½	4⅞
1½	4	⅝	3⅞	5	4	⅞	4½	6⅞
2	4	¾	4¾	6	8	¾	5	6½
3	4	¾	6	7½	8	⅞	6⅞	8¼
4	8	¾	7½	9	8	⅞	7⅞	10
6	8	⅞	9½	11	12	⅞	10⅞	12½

(†) CAN BE ROTATED IN INCREMENTS OF 90°, 364-365TC FRAME ONLY.
 (Δ) FLANGE THICKNESS PER ANSI STANDARD B123.1-1971, FLAT FACE
 (*) COULD ALSO BE "TC" FRAMES

NOTE: PUMP DESIGNATION: DEFINES DESIGN, FLANGE SIZES AND "SD" DIMENSIONS



MOTOR DATA		FIGURE															
		3182						3185						3186			
TOTALLY ENCLOSED EXPLOSION PROOF	FRAME	*143 JP	*145 JP	182 JP	184 JP	213 TCZ	215 TCZ	213 JP	215 JP	*254 JP	*256 JP	284 JP	286 JP	*324 JP	*326 JP	364 JP	365 JP
	HP. at 3600	1½	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	HP. at 1800	1	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	WEIGHT	40	45	95	110	140	175	145	180	245	305	375	465	575	635	815	940
	P	6½	6½	9⅞	9⅞	11¼	11¼	11¼	11¼	13¼	13¼	14¾	14¾	17	17	19⅞	19⅞
	AB	4⅞	4⅞	8⅞	8⅞	9⅞	9⅞	9⅞	9⅞	11⅞	11⅞	12¼	12¼	13¼	13¼	17⅞	17⅞
DRIP-PROOF	AG	11½	12	12⅞ ₃₂	13⅞ ₃₂	15⅞	16⅞	15⅞	16⅞	19¼	21½	21⅞	22⅞	23⅞	25⅞	27	28
	LP	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆
	HP. at 3600	1½	3	5	7½	10	15	10	15	20	25	30	40	50	60	75	100
	HP. at 1800	1	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	WEIGHT	40	45	75	90	120	145	125	150	220	260	320	375	455	500	705	770
	P	6½	6½	9⅞	9⅞	11	11	11	11	13⅞	13⅞	14¾	14¾	16¾	16¾	18⅞	18⅞
	AB	4⅞	4⅞	7⅞ ₁₆	7⅞ ₁₆	8⅞	8⅞	8⅞	8⅞	10⅞	10⅞	11¼	11¼	14⅞	14⅞	15⅞ ₁₆	15⅞ ₁₆
	AG	11⅞ ₁₆	11⅞ ₁₆	10⅞	11⅞	13⅞ ₁₆	15	13⅞ ₁₆	15	17¼	19	19	20½	21⅞ ₁₆	22⅞ ₁₆	23⅞ ₁₆	24⅞ ₁₆
	LP	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆	5⅞ ₁₆

Customer				Shop Order No.			Date:		By:	
Pump Data	Fig. No.	Size	Curve No.	GPM	Head	Sp. Gr.	Temp.	Rotation	Packing/Seal	
Motor Data	MFGR	Hp	RPM	Phase-Cycle Voltage		Frame	Enclosure	Insulation	Furnished by	Mounted

SECTION 38
PAGE 6
DATE 6/11

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

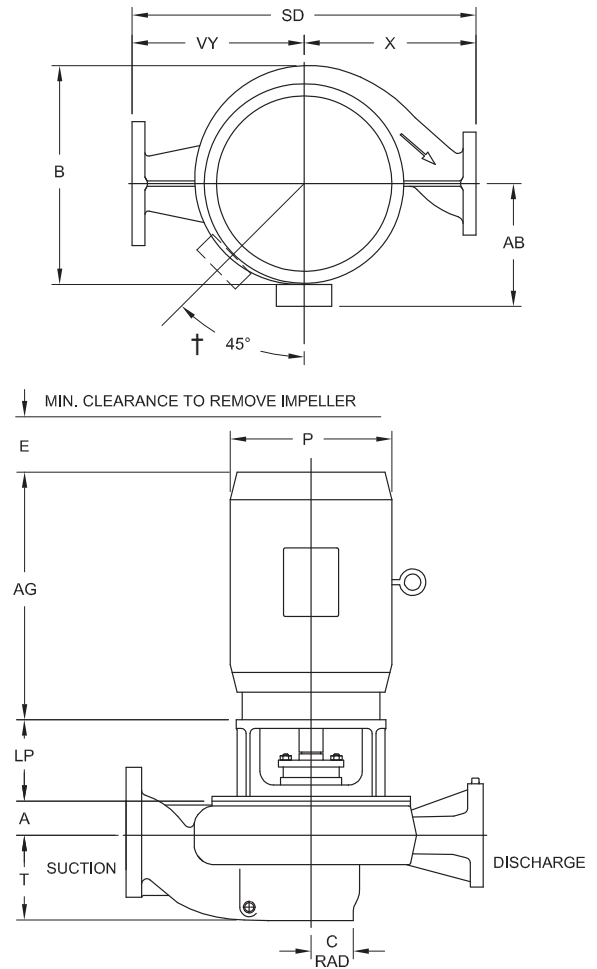
Vertical In-Line Chemical & Process Pumps

STD. PUMP DESIGNATION	PUMP SIZE	SUCT.	DISCH.	MAX. IMP. DIA.	WT	A	B	C	T	E	X	VY	SD
---	VAA-E	1½	1	6	64	1⅞	8⅞	1¾	3⅞	4	6½	7½	14
3015 / 15	VAB-E	3	1½		80	1⅞	9¾	2	4⅞	4	6¼	8¾	15
3020 / 17	VA10-E	3	2		107	2⅞	11⅞	2	4⅞	4¾	7¾	9¾	17
---	VA05-E	2	1	9½	115	2	12¾	2⅞	4⅞	4	8½	10½	19
3015 / 19	VA50-E	3	1½		126	2⅞	13¾	2⅞	5⅞	4¼	8½	10½	19
3020 / 20	VA60-E	3	2		132	2⅞	13¾	2⅞	5⅞	4¼	9½	10½	20
4030 / 22	VA70-E	4	3	12	168	2⅞	14¾	3	5⅞	5	11	11	22
3015 / 24	VA20-E	3	1½		161	2⅞	16¾	2¼	4⅞	4¼	12½	11½	24
3020 / 24	VA30-E	3	2		161	2⅞	16¾	2¼	4⅞	4¼	11½	12½	24
4030 / 25	VA40-E	4	3		223	2⅞	18¾	3⅞	6⅞	5	12½	12½	25
6040 / 28	VA80-E	6	4		312	2⅞	19¾	3⅞	7⅞	5	13½	14½	28

FLANGE DRILLING DATA Δ								
NOZZLE SIZE	150# FLANGE				300# FLANGE			
	NO.	SIZE	B.C.	DIA.	NO.	SIZE	B.C.	DIA.
1	4	⅝	3⅞	4¼	4	¾	3½	4⅞
1½	4	⅝	3⅞	5	4	¾	4½	6⅞
2	4	¾	4¾	6	8	¾	5	6½
3	4	¾	6	7½	8	¾	6⅞	8¼
4	8	¾	7½	9	8	¾	7⅞	10
6	8	⅞	9½	11	12	⅞	10⅞	12½

(†) CAN BE ROTATED IN INCREMENTS OF 90°, 364-365TC FRAME ONLY.
 (Δ) FLANGE THICKNESS PER ANSI STANDARD B123.1-1971, FLAT FACE
 (†) COULD ALSO BE "TC" FRAMES

NOTE: PUMP DESIGNATION: DEFINES DESIGN, FLANGE SIZES AND "SD" DIMENSIONS



MOTOR DATA		FIGURE															
		3182						3185						3186			
TOTALLY ENCLOSED EXPLOSION PROOF	FRAME	*143 JP	*145 JP	182 JP	184 JP	213 TC	215 TC	213 JP	215 JP	*254 JP	*256 JP	284 JP	286 JP	*324 JP	*326 JP	364 JP	365 JP
	HP. at 3600	1½	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	HP. at 1800	1	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	WEIGHT	40	45	95	110	140	175	145	180	245	305	375	465	575	635	815	940
	P	6½	6½	9⅞	9⅞	11¼	11¼	11¼	11¼	13¼	13¼	14¾	14¾	17	17	19⅞	19⅞
	AB	4⅞	4⅞	8⅞	8⅞	9⅞	9⅞	9⅞	9⅞	11⅞	11⅞	12¼	12¼	13¼	13¼	17⅞	17⅞
DRIP-PROOF	AG	11½	12	12⅞	13⅞	15⅞	16⅞	15⅞	16⅞	19¾	21½	21⅞	22⅞	23⅞	25⅞	27	28
	LP	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞
	HP. at 3600	1½	3	5	7½	10	15	10	15	20	25	30	40	50	60	75	100
	HP. at 1800	1	2	3	5	7½	10	7½	10	15	20	25	30	40	50	60	75
	WEIGHT	40	45	75	90	120	145	125	150	220	260	320	375	455	500	705	770
	P	6½	6½	9⅞	9⅞	11	11	11	11	13⅞	13⅞	14¾	14¾	16¾	16¾	18⅞	18⅞
	AB	4⅞	4⅞	7⅞	7⅞	8⅞	8⅞	8⅞	8⅞	10⅞	10⅞	11¼	11¼	14⅞	14⅞	15⅞	15⅞
	AG	11⅞	11⅞	10⅞	11⅞	13⅞	15	13⅞	15	17¼	19	19	20½	21⅞	22⅞	23⅞	24⅞
	LP	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞	5⅞

Customer				Shop Order No.			Date:		By:	
Pump Data	Fig. No.	Size	Curve No.	GPM	Head	Sp. Gr.	Temp.	Rotation	Packing/Seal	
Motor Data	MFGR	Hp	RPM	Phase-Cycle Voltage		Frame	Enclosure	Insulation	Furnished by	Mounted

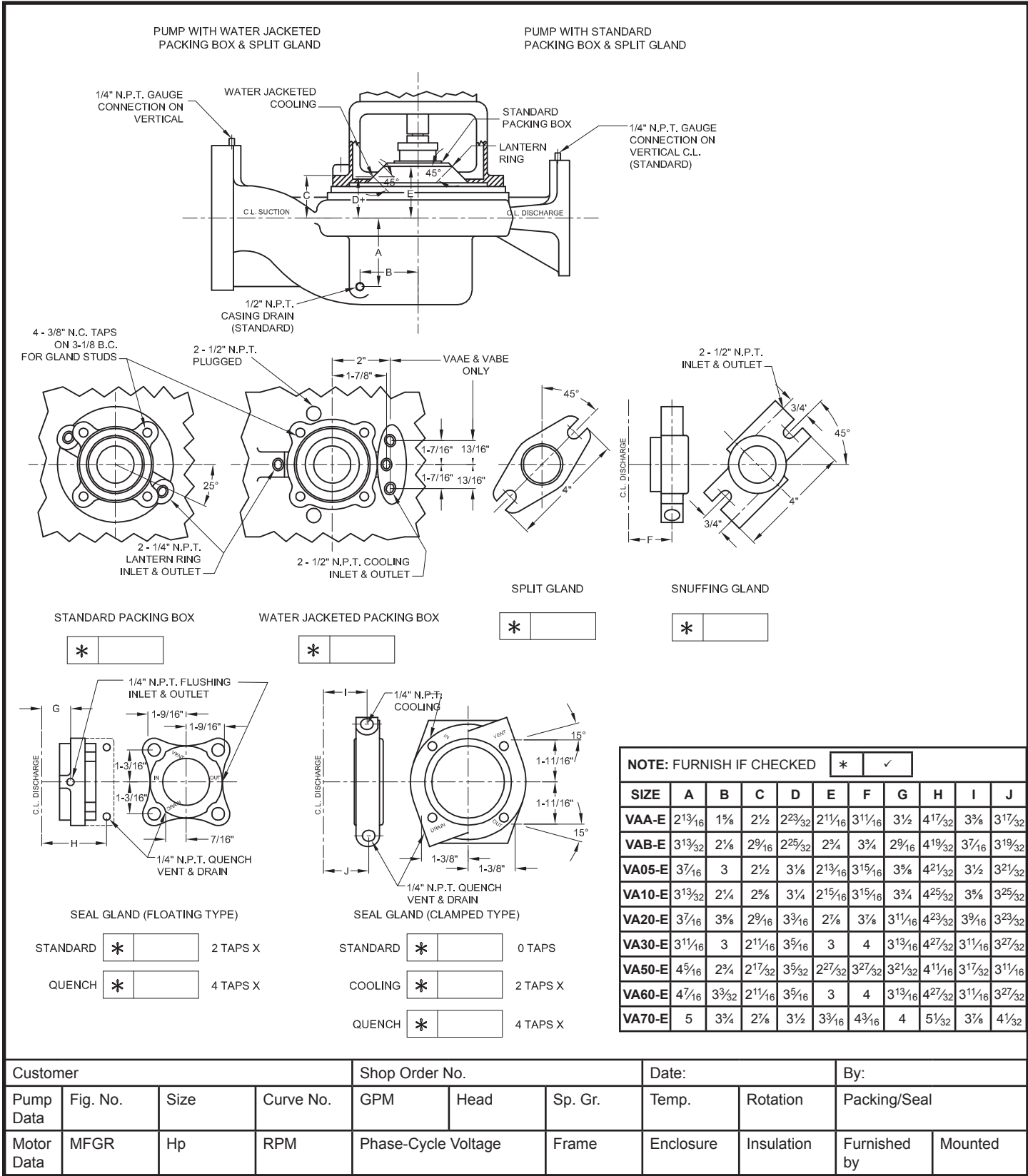
Auxiliary Piping Connections - Fig. 3182

Vent, Drain, Gauge, Flushing and Cooling - Pipe Tap Sizes
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



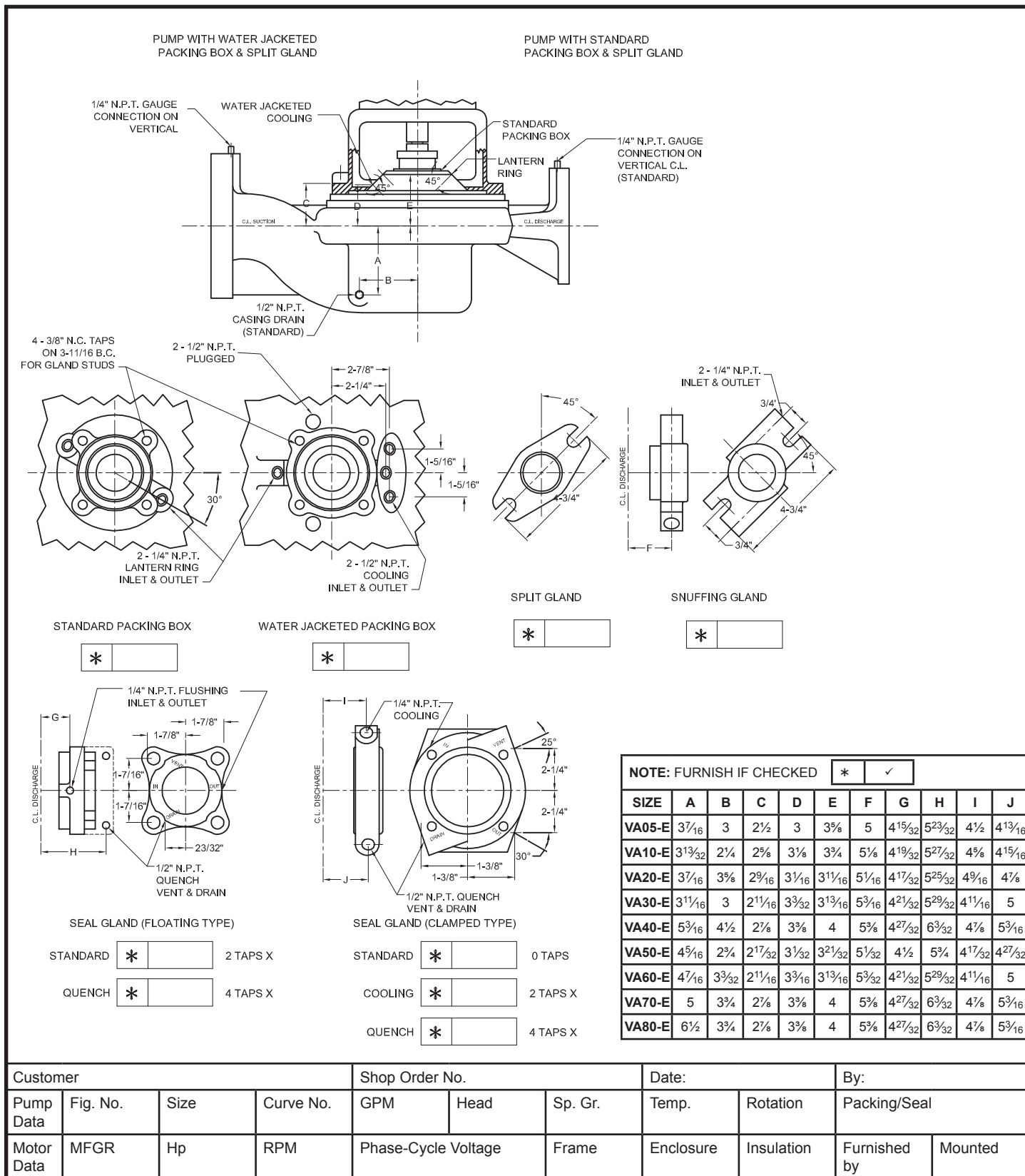
Customer				Shop Order No.			Date:		By:	
Pump Data	Fig. No.	Size	Curve No.	GPM	Head	Sp. Gr.	Temp.	Rotation	Packing/Seal	
Motor Data	MFGR	Hp	RPM	Phase-Cycle Voltage		Frame	Enclosure	Insulation	Furnished by	Mounted

DEMING® Auxiliary Piping Connections - Fig. 3185

www.cranepumps.com

Vent, Drain, Gauge, Flushing and Cooling - Pipe Tap Sizes
Bulletin 3180

Vertical In-Line Chemical & Process Pumps



CRANE

A Crane Co. Company

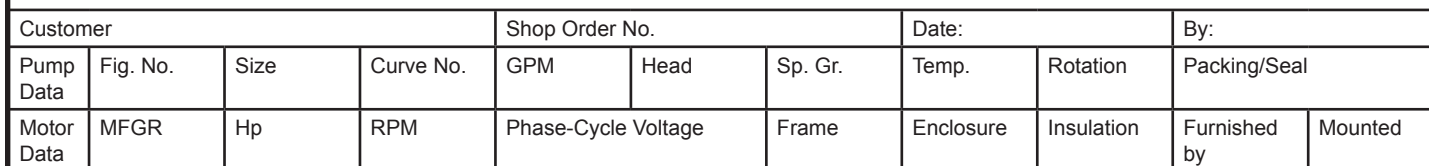
PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

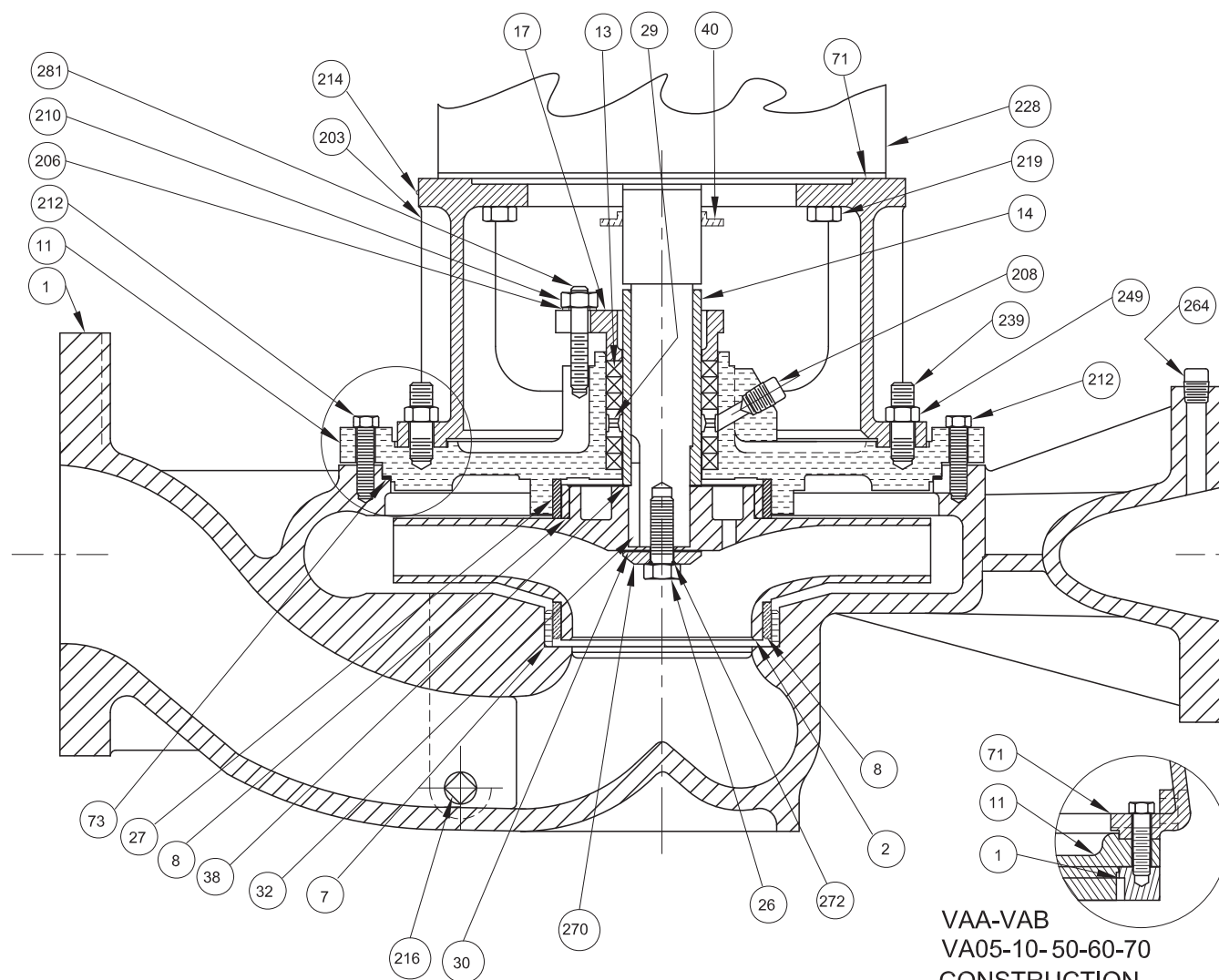
SECTION 38
PAGE 9
DATE 7/07

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



Vertical In-Line Chemical & Process Pumps



VAA-VAB
VA05-10- 50-60-70
CONSTRUCTION

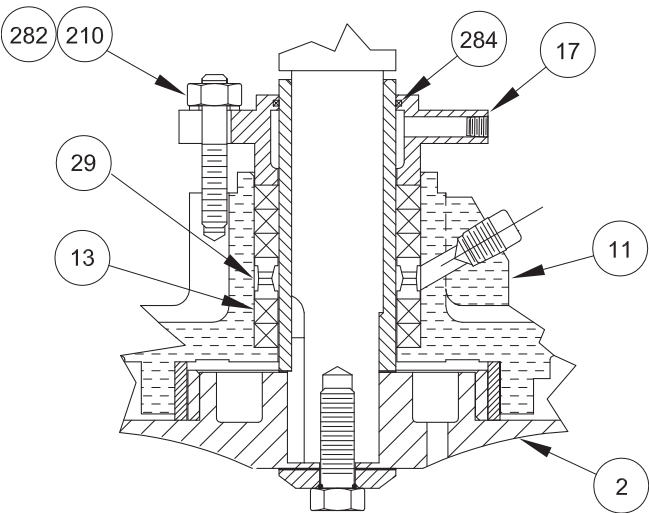
ITEM No.	DESCRIPTION
1	Casing
2	Impeller
* 7	Casing Wear Ring
* 8	Impeller wear Rings (Opt.)
11	Packing Box Cover
* 13	Packing
* 14	Shaft Sleeve
17	Split Gland
* 26	Impeller Screw
* 27	Packing Box Wear Ring
29	Lantern ring
* 30	Impeller Washer Gasket
32	Impeller Key
* 38	Shaft gasket

ITEM No.	DESCRIPTION
40	Deflector
71	Adapter
* 73	Casing Gasket
203	Name Plate
206	Split Gland Clip
208	Pipe Plug, 2
210	Hex Nut
212	Cap screw
214	Drive Screw
216	Pipe Plug
219	Cap Screw
228	Motor
239	Stud
249	hex Nut

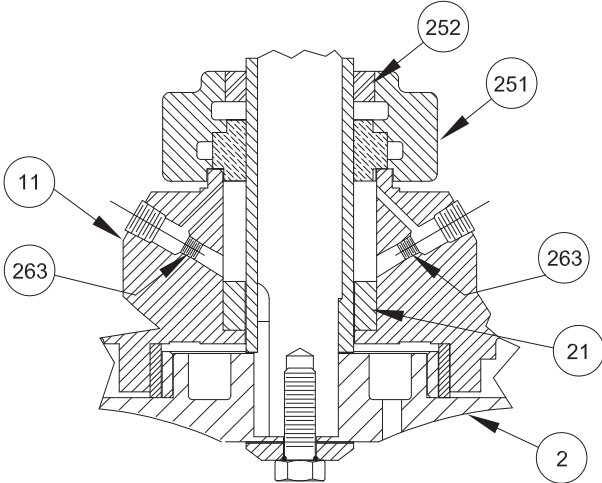
ITEM No.	DESCRIPTION
264	Pipe Plug
270	Impeller Washer
* 272	Impeller Screw-o-ring
281	Gland Stud
287	Jack Screw

(*) Recommended Spare Parts

Vertical In-Line Chemical & Process Pumps



SNUFFING GLAND



CLAMPED SEAL/FLUSH *

* THROAT BUSHING

* THROTTLE BUSHING

203 NAME PLATE

CRANE PUMPS & SYSTEMS
Fiqua, Ohio **DEMING®**

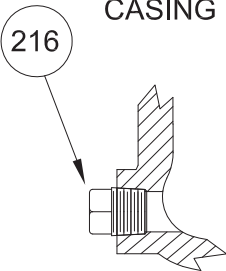
PRODUCT FIG. NO.

SIZE SERIAL

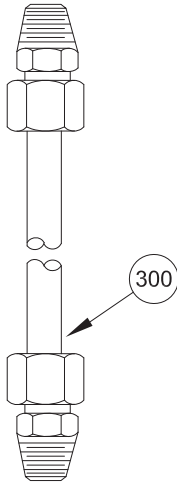
DIA. TYPE UNIT

GPM FT RPM

CASING DRAIN



STANDARD
1/2" NPT



RECIRCULATION LINE

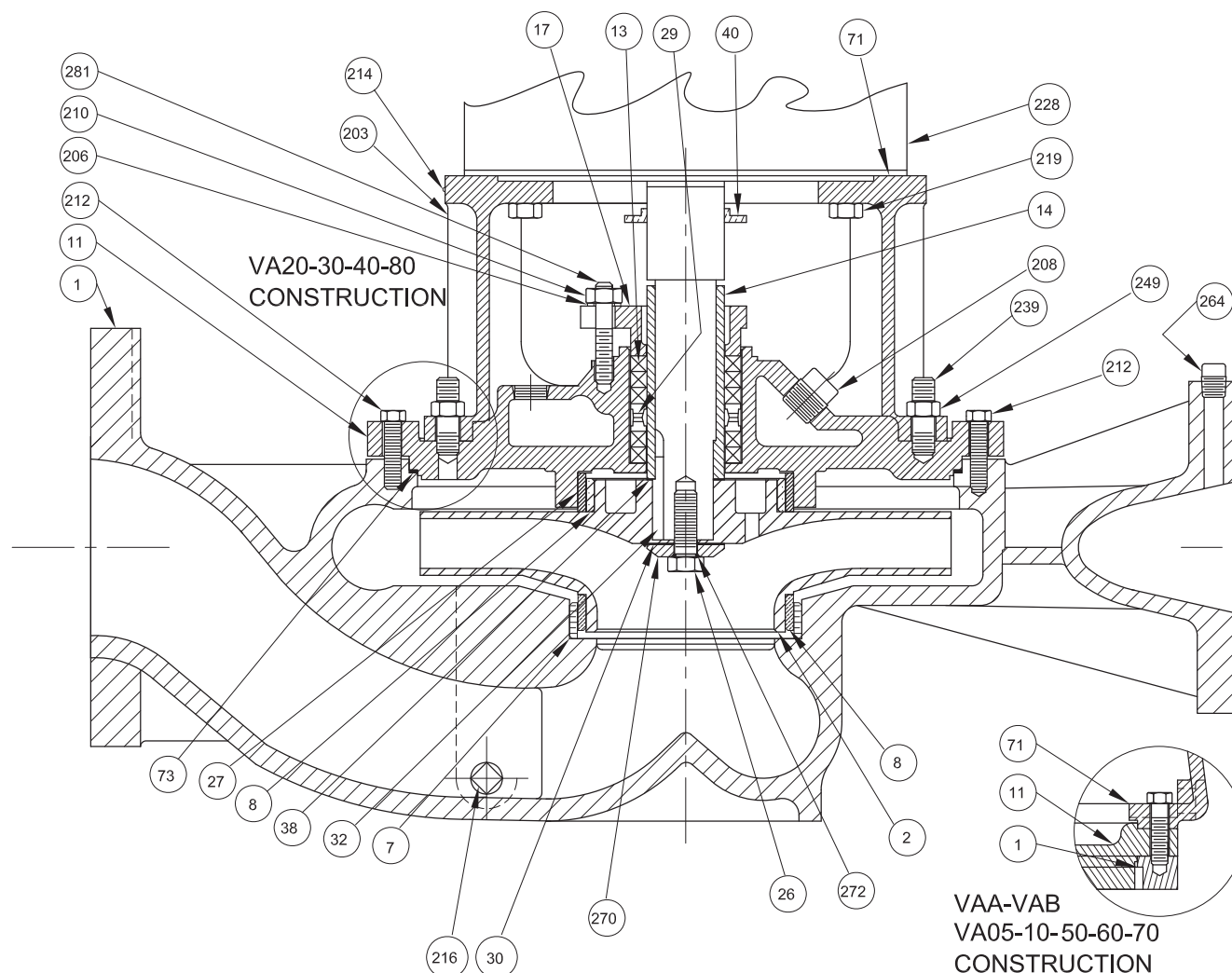


ITEM No.	DESCRIPTION
2	Impeller
11	Packing Box Cover
* 13	Packing
17	Snuffing Gland
29	Lantern Ring
203	Name Plate
210	Hex Nut
216	Pipe Plug
251	Seal Gland

ITEM No.	DESCRIPTION
263	Pipe Plug, 1/2" NPT
282	Washer
* 284	Snuffing Gland Ring
252	Throttle Bushing
21	Throat Bushing
300	Recirculation Line

(*) Recommended Spare Parts

Vertical In-Line Chemical & Process Pumps

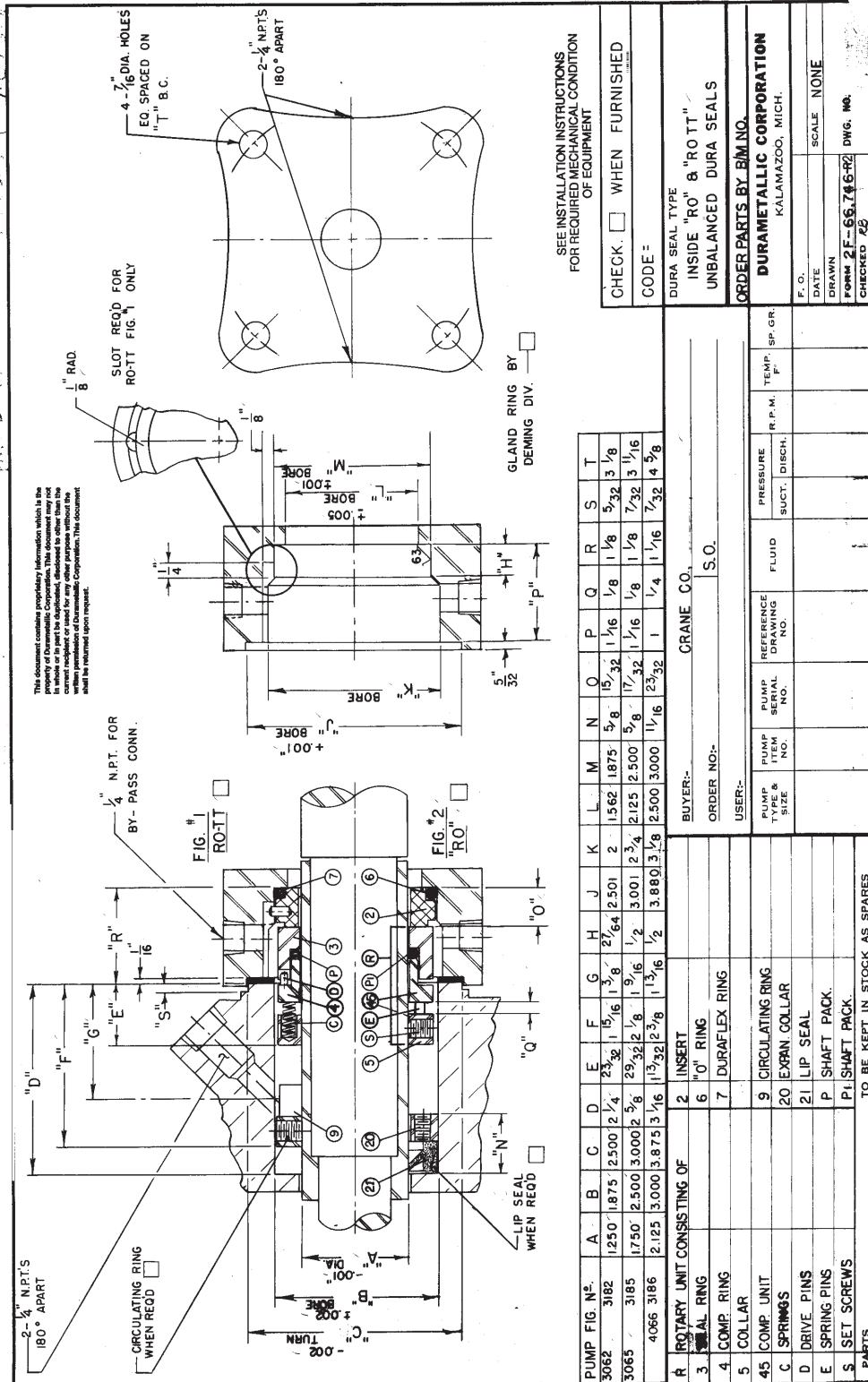


ITEM No.	DESCRIPTION
1	Casing
2	Impeller
* 7	Casing Wear Ring
* 8	Impeller wear Rings (Opt.)
11	Packing Box Cover
* 13	Packing
* 14	Shaft Sleeve
17	Split Gland
* 26	Impeller Screw
* 27	Packing Box Wear Ring
29	Lantern ring
* 30	Impeller Washer Gasket
32	Impeller Key
* 38	Shaft gasket

ITEM No.	DESCRIPTION
40	Deflector
71	Adapter
* 73	Casing Gasket
203	Name Plate
206	Split Gland Clip
208	Pipe Plug, 2
210	Hex Nut
212	Cap screw
214	Drive Screw
216	Pipe Plug
219	Cap Screw
228	Motor
239	Stud
249	Hex Nut

ITEM No.	DESCRIPTION
264	Pipe Plug
270	Impeller Washer
* 272	Impeller Screw-o-ring
281	Gland Stud
287	Jack Screw
297	Pipe Plug, 2
298	Thread Protector, 2

(*) Recommended Spare Parts



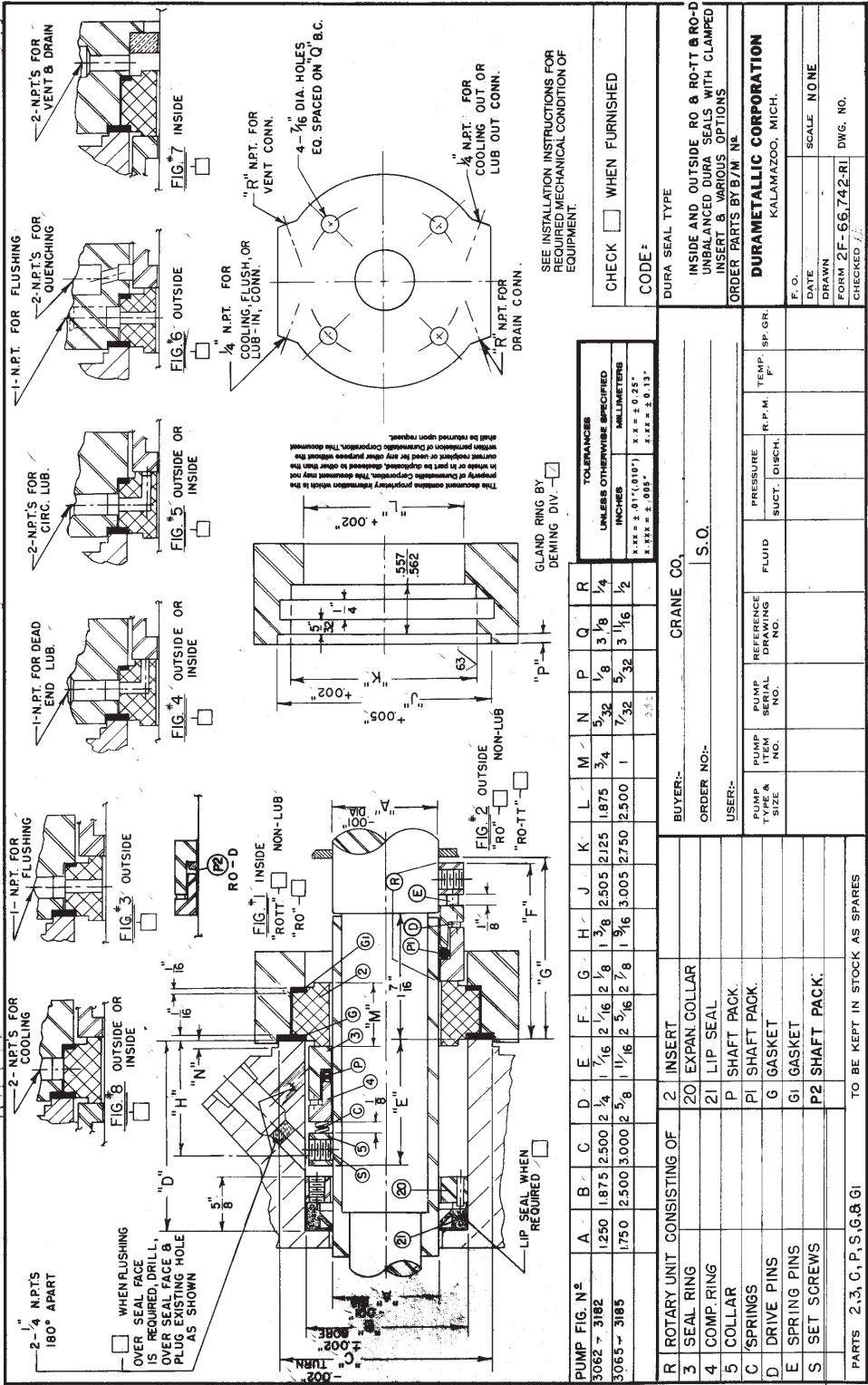
Optional Mechanical Seal - 3180 Series

DURA-SEALS Single, Unbalanced, Inside "RO" and "ROTT" with "O" Ring Insert Mounting - Bulletin 3180

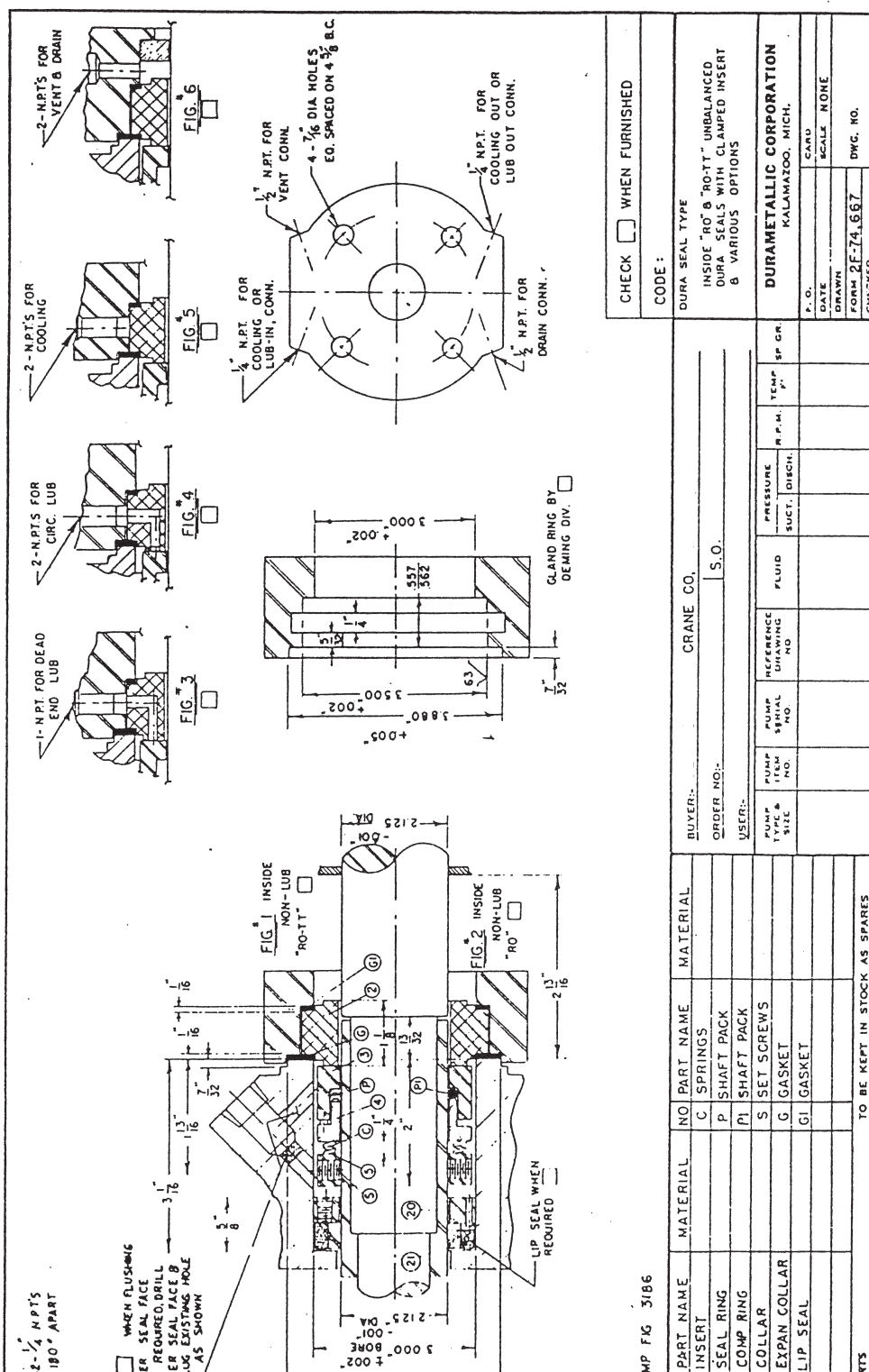
DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



FORM REVISED 10-27-69



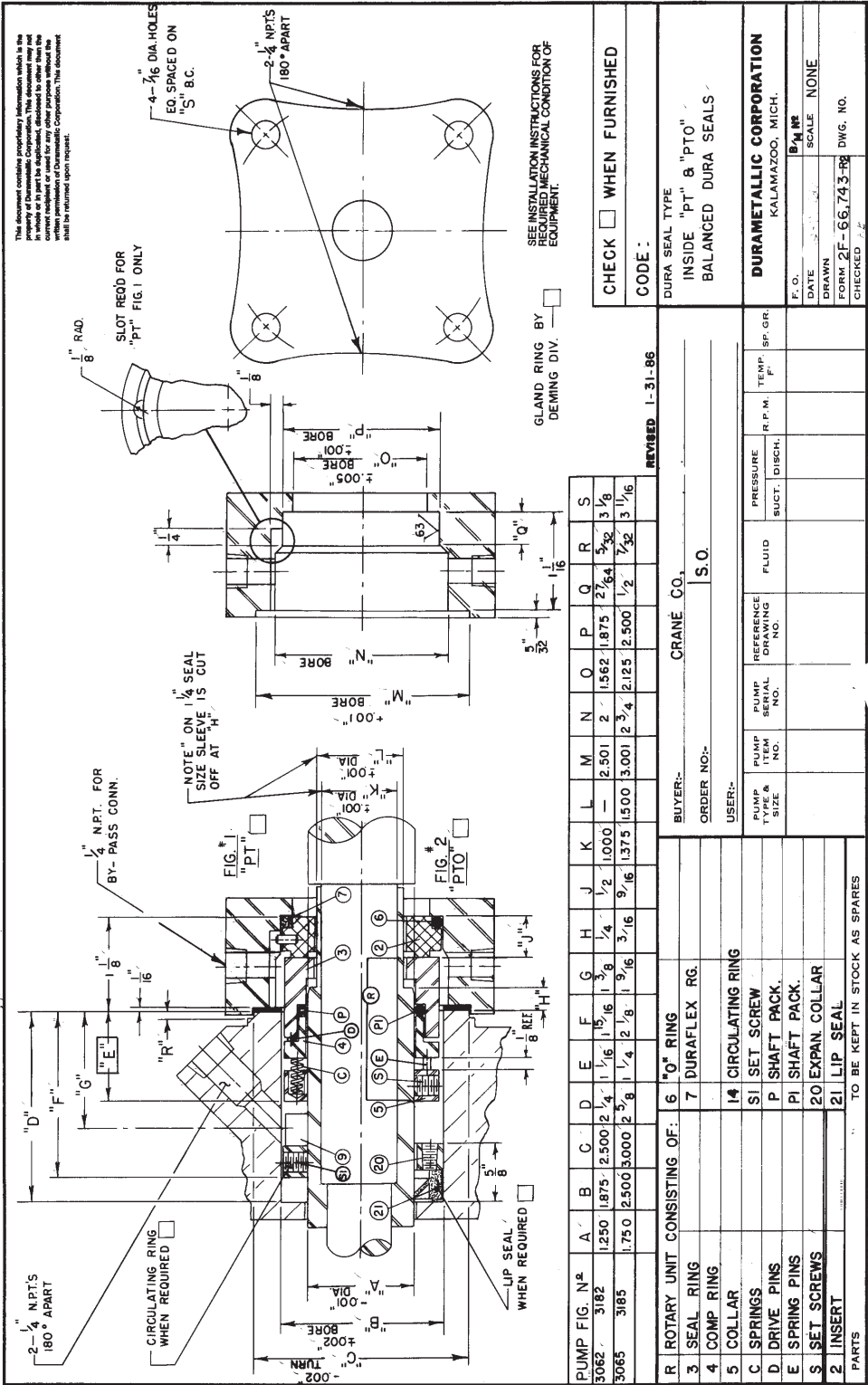
Optional Mechanical Seal - 3180 Series

DURA-SEALS Single, Balanced, Inside "PT" and "PTO"
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



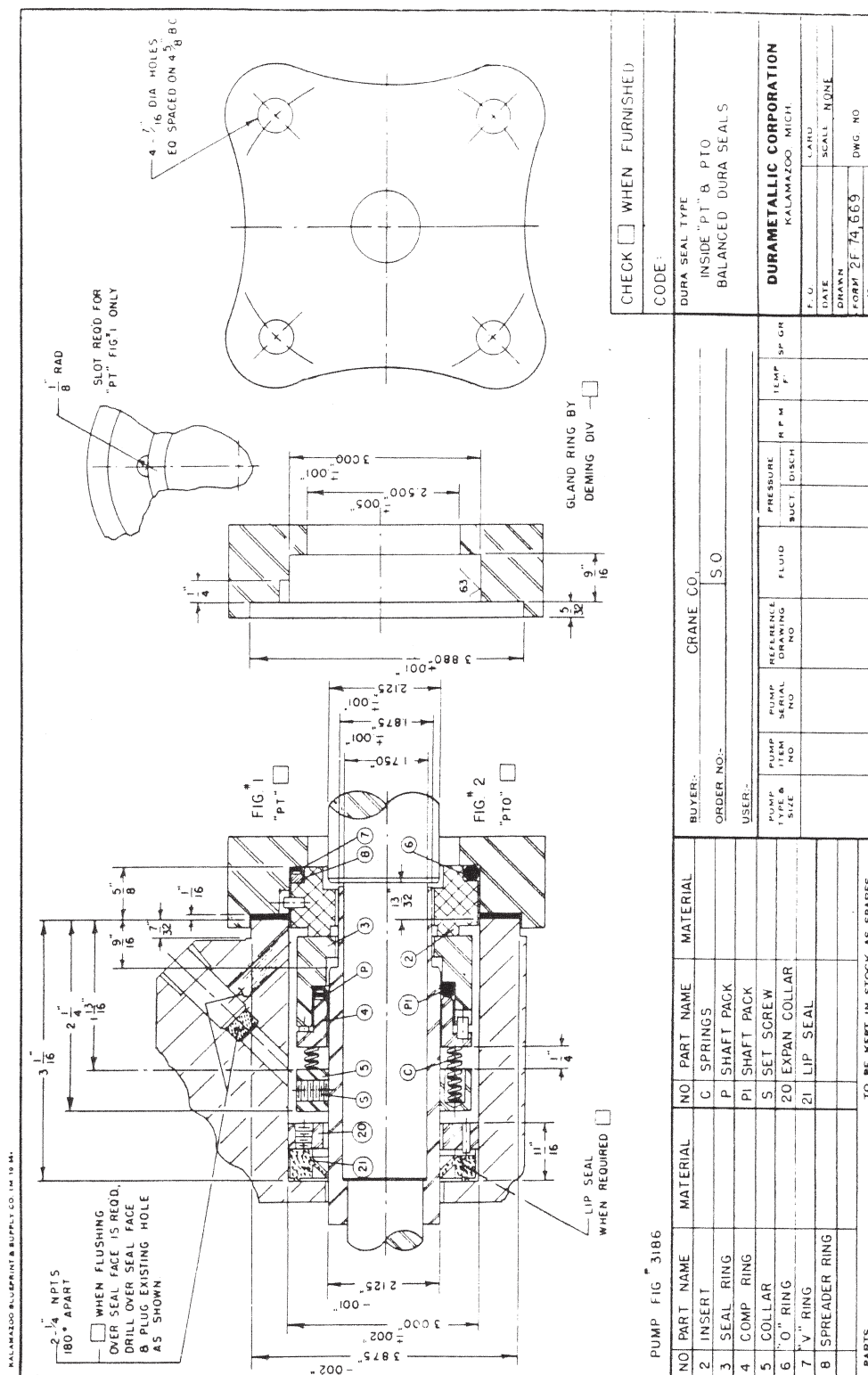
SECTION 38
PAGE 20
DATE 7/07

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

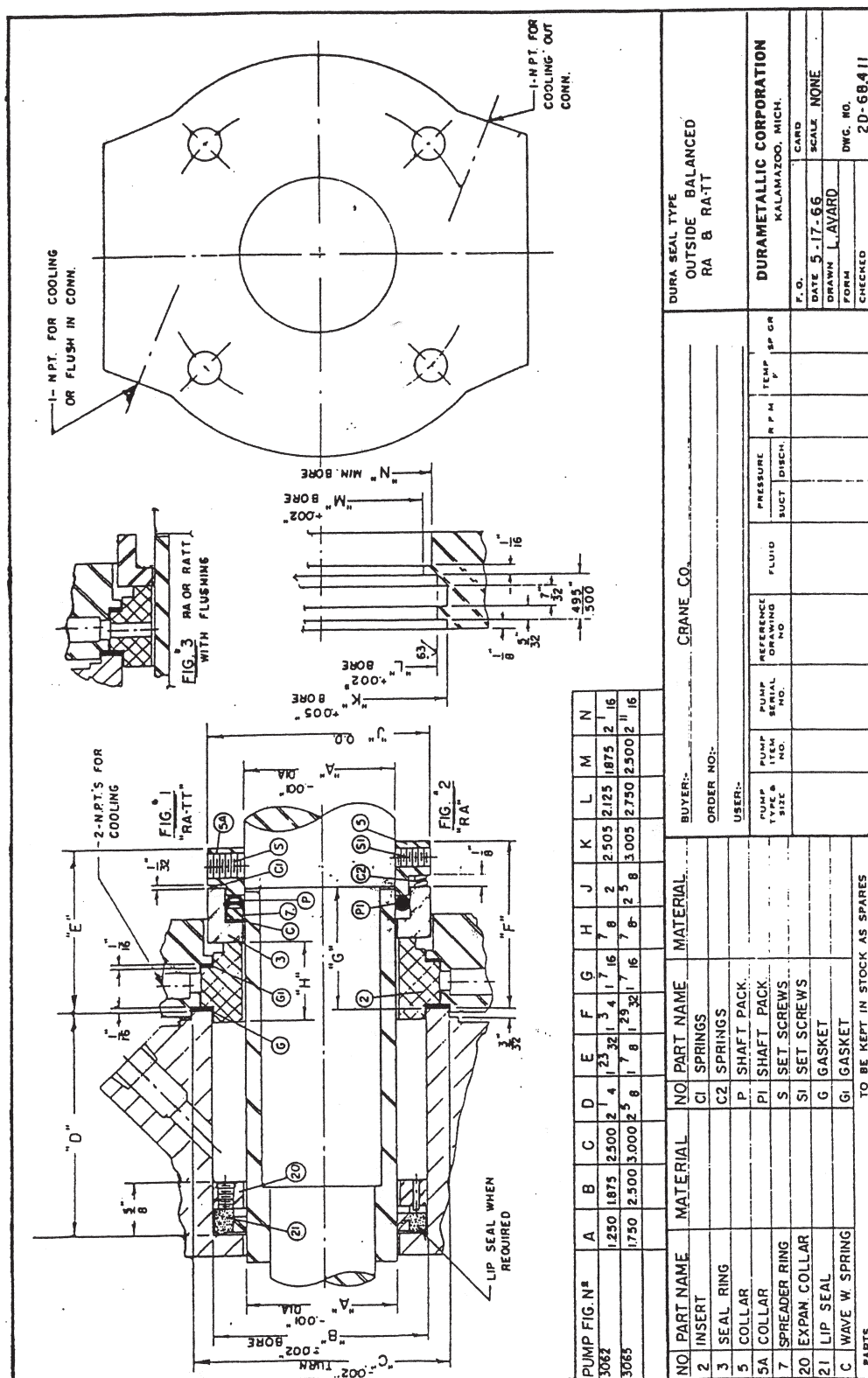


DURA-SEALS Single, Balanced, Outside "RA" and "RA-TT" Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



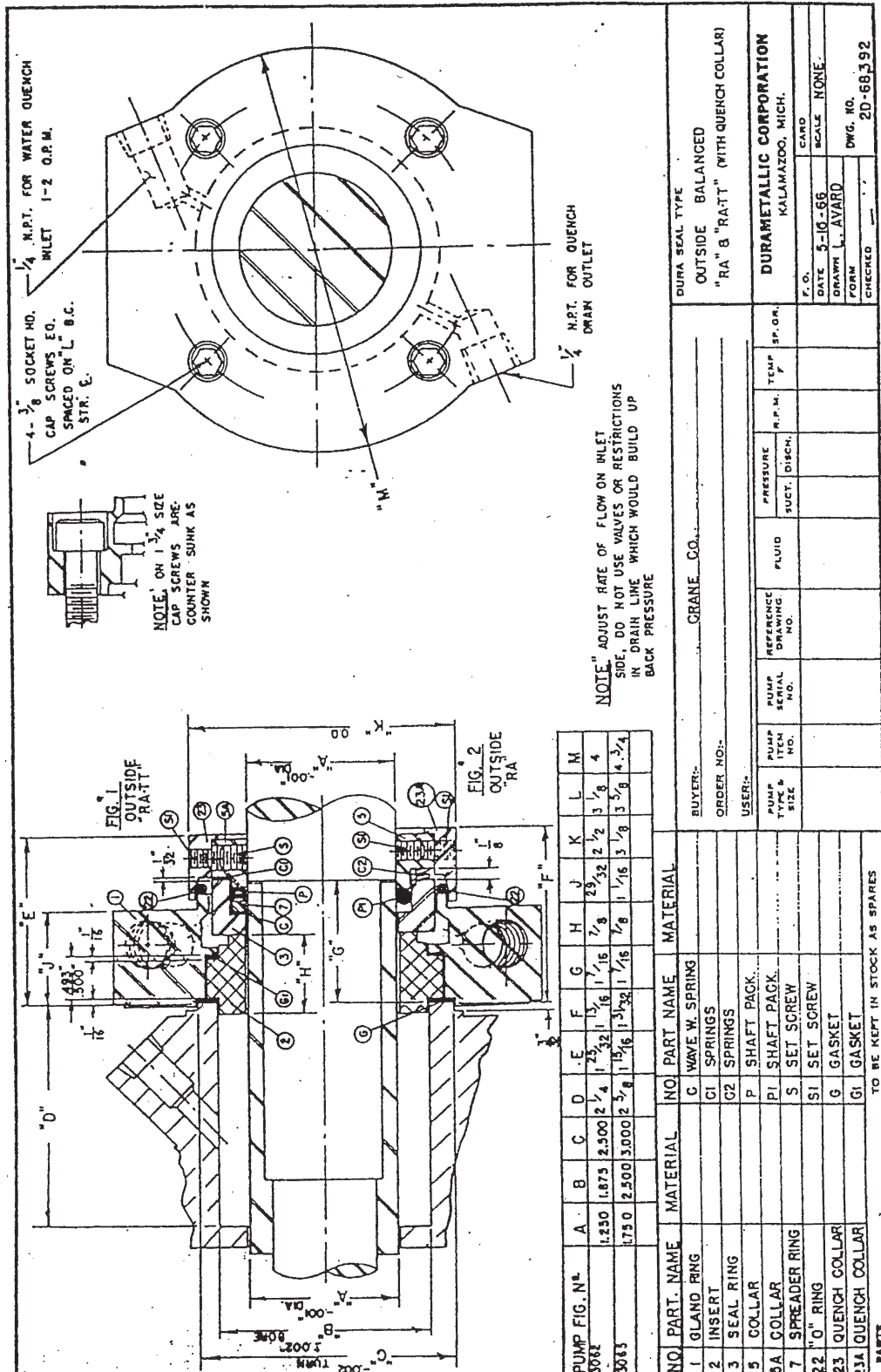
SECTION 38
PAGE 22
DATE 7/07

CRANE

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598



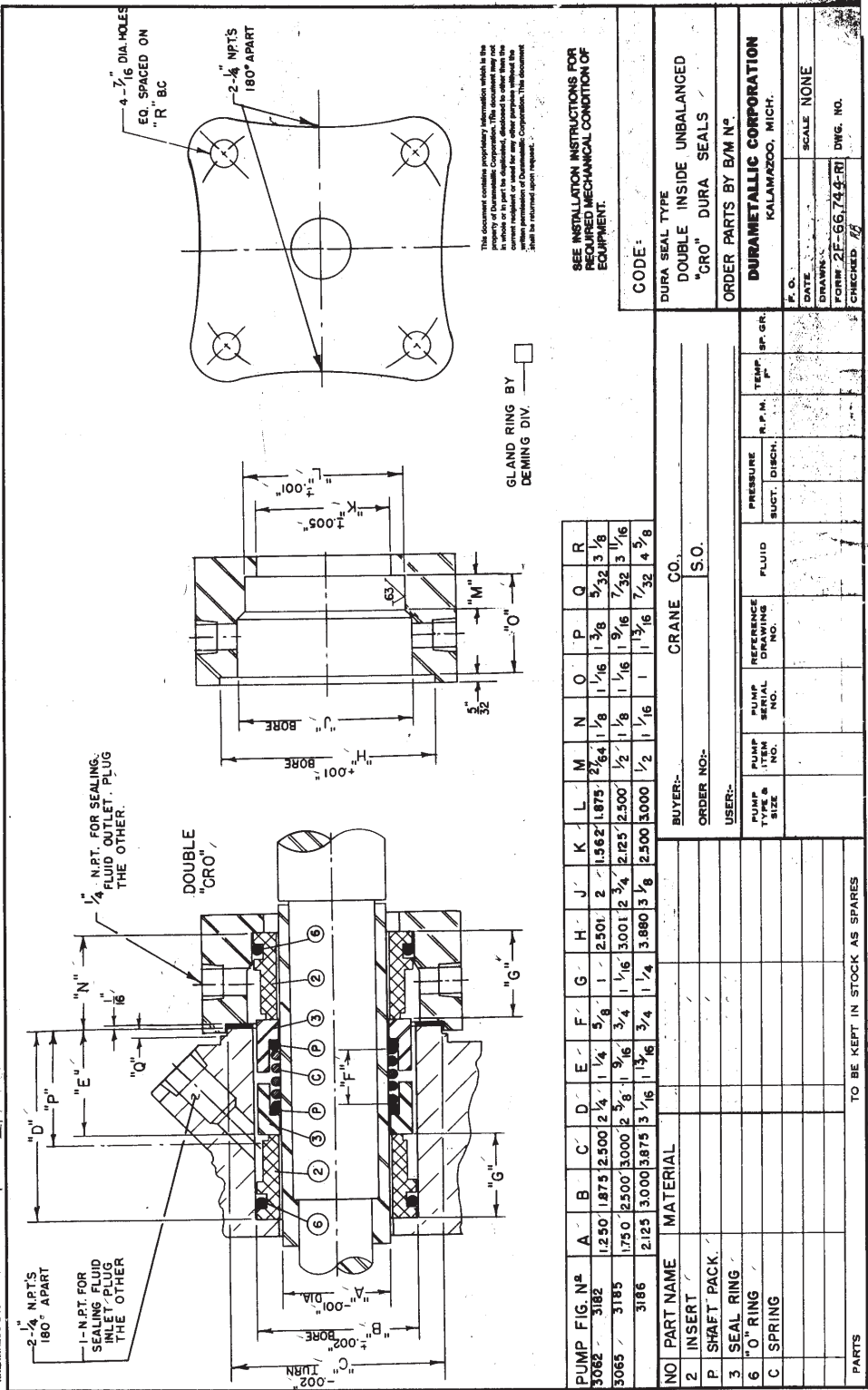
Optional Mechanical Seal - 3180 Series

DURA-SEALS, Double, unbalanced, Inside "CRO"
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 24
DATE 7/07

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Vertical In-Line Chemical & Process Pumps

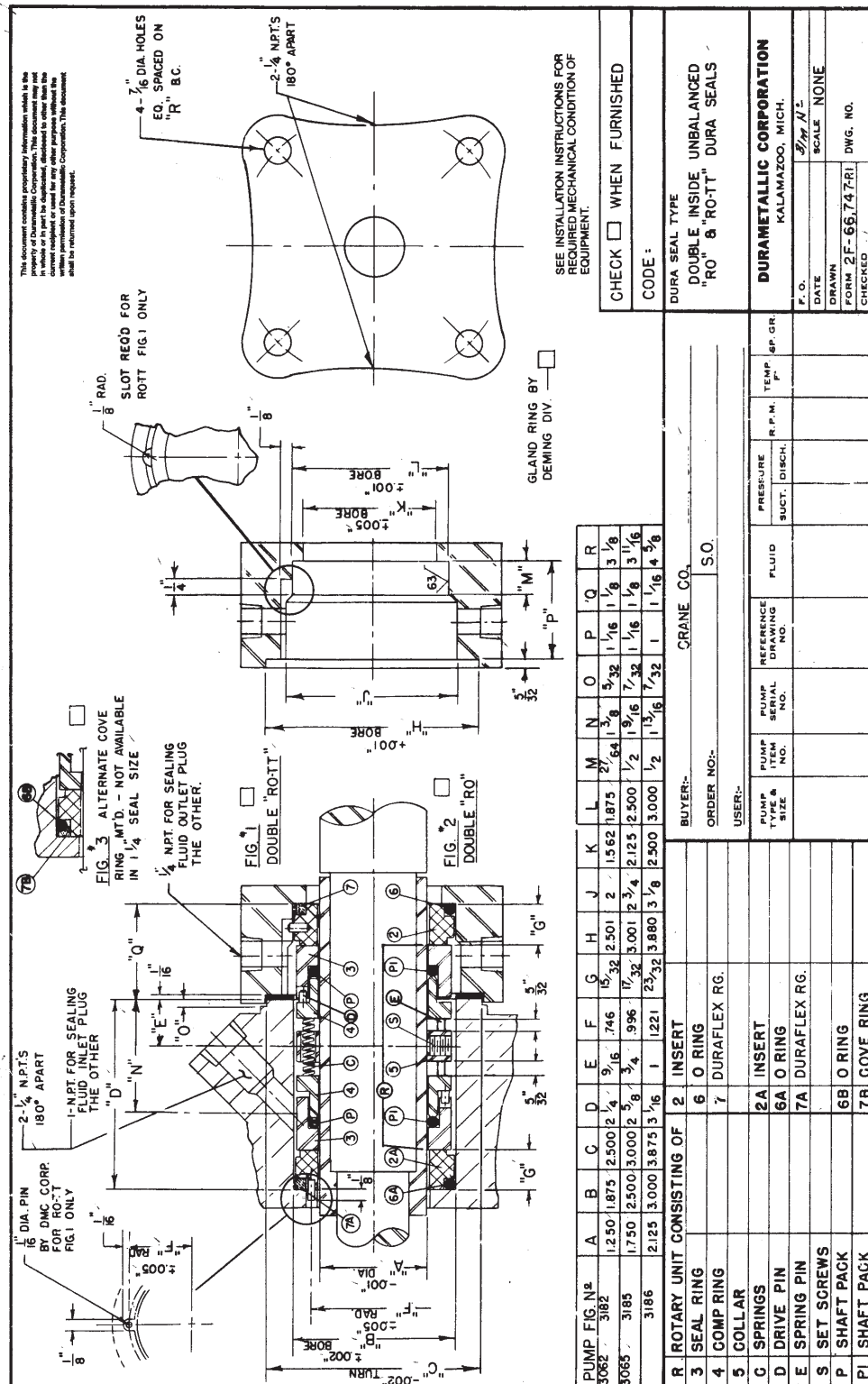
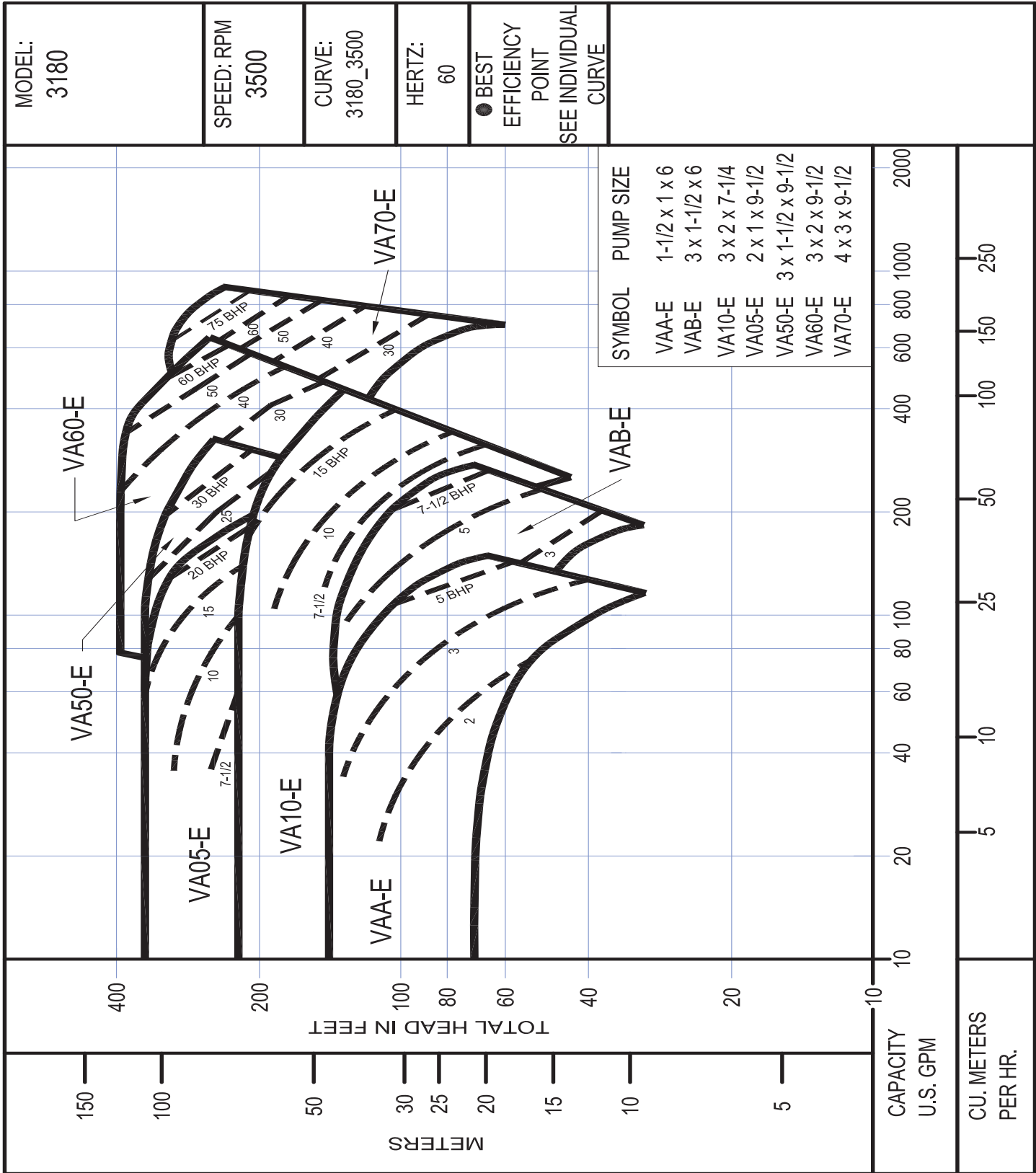


Fig. 3180

Selection Curve, 3500 RPM
Bulletin 3180

Vertical In-Line Chemical & Process Pumps



Vertical In-Line Chemical & Process Pumps

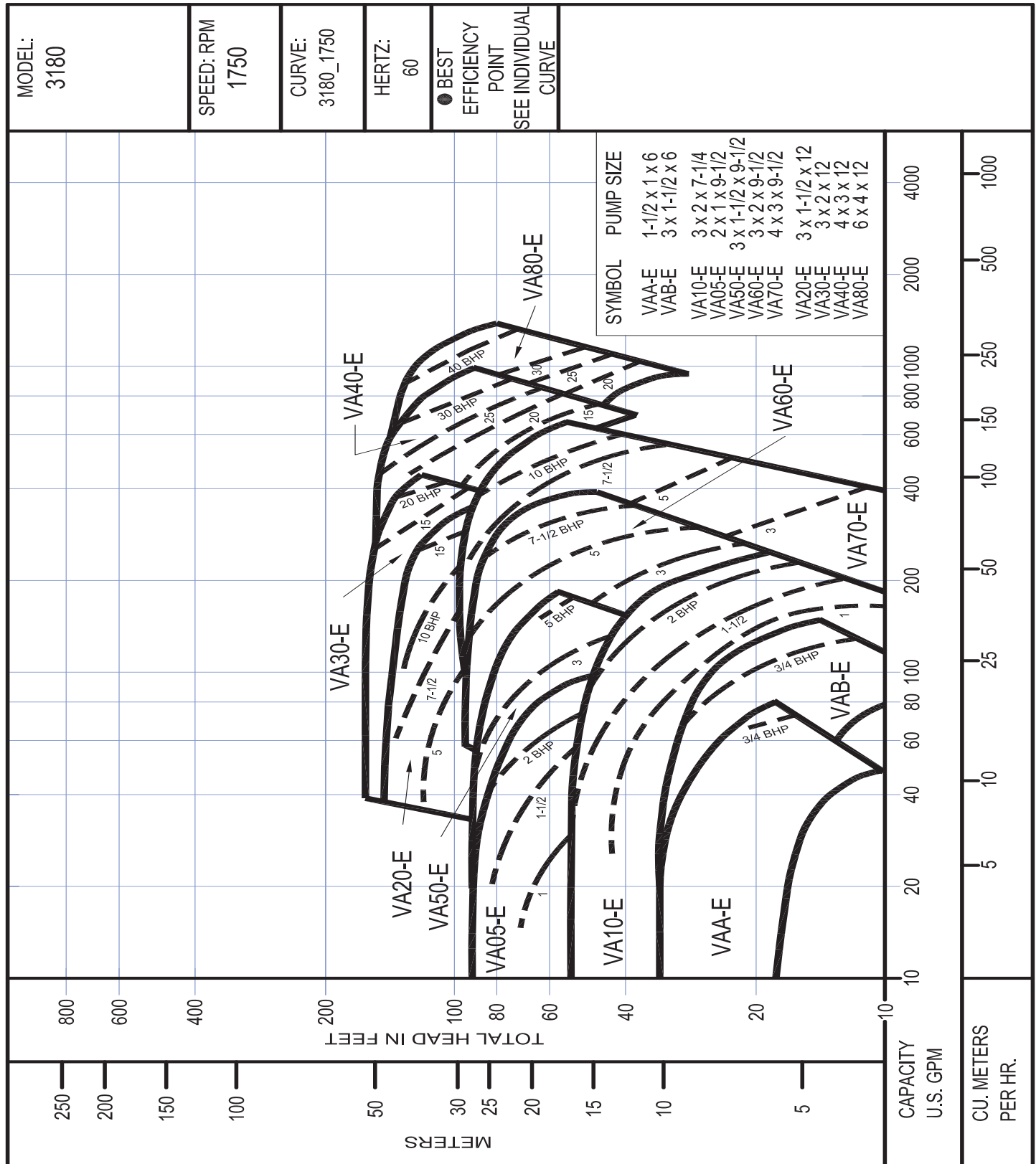


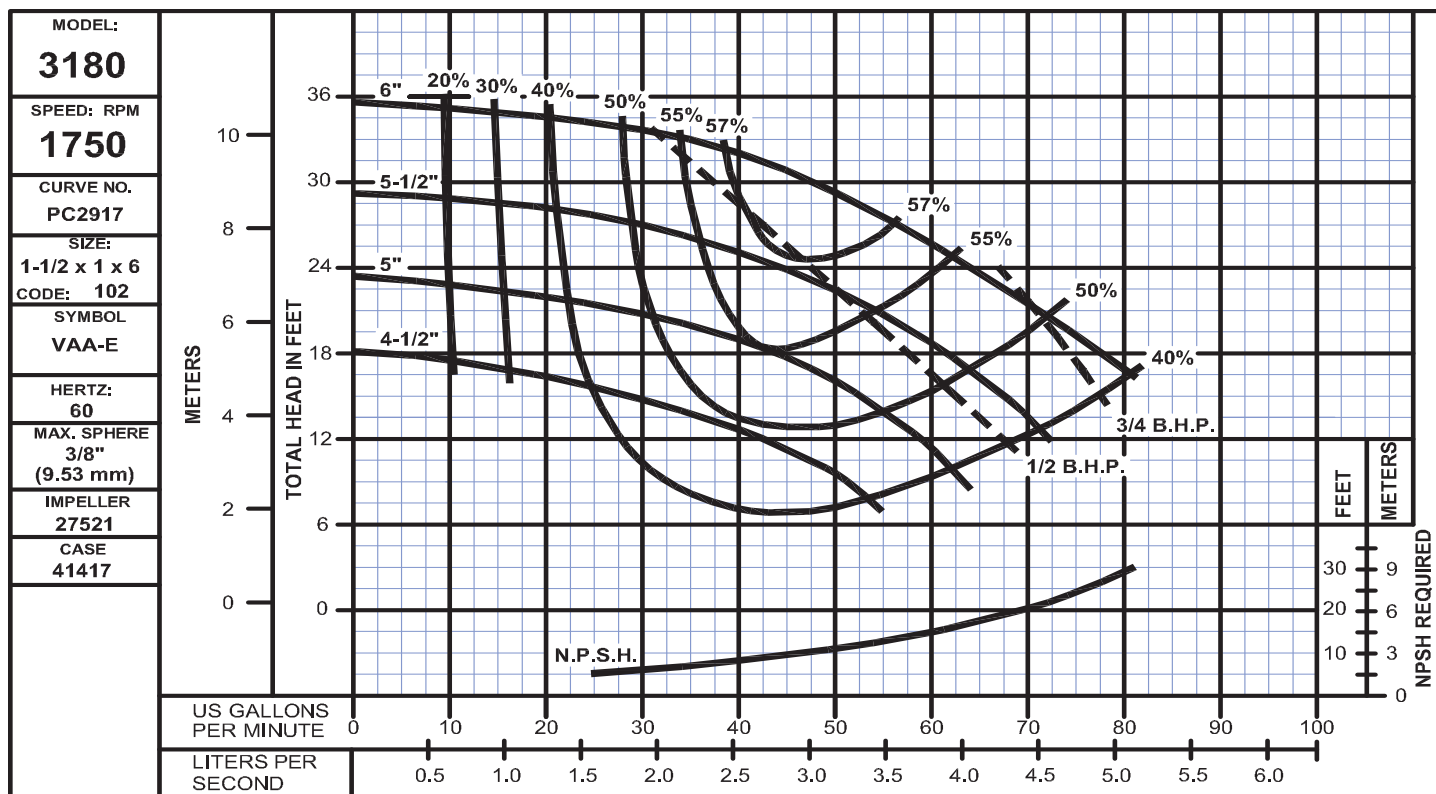
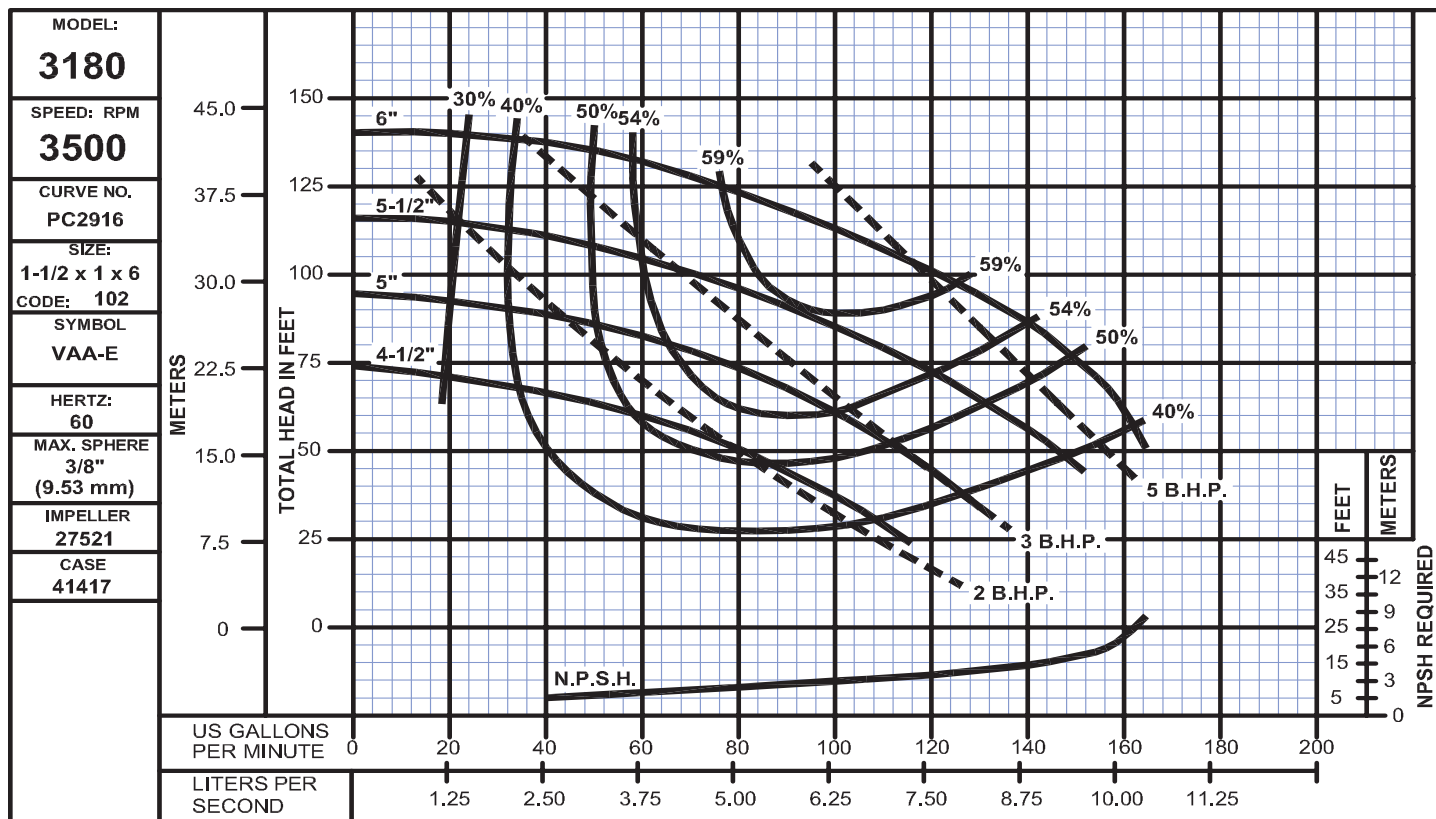
Fig. 3180

Sizes: 1½ x 1 x 6, Symbol: VAA-E
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 28
DATE 7/07

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

Curves shown performance with liquid having
Specific Gravity - 1.0, Viscosity - 30 SSU

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Vertical In-Line Chemical & Process Pumps

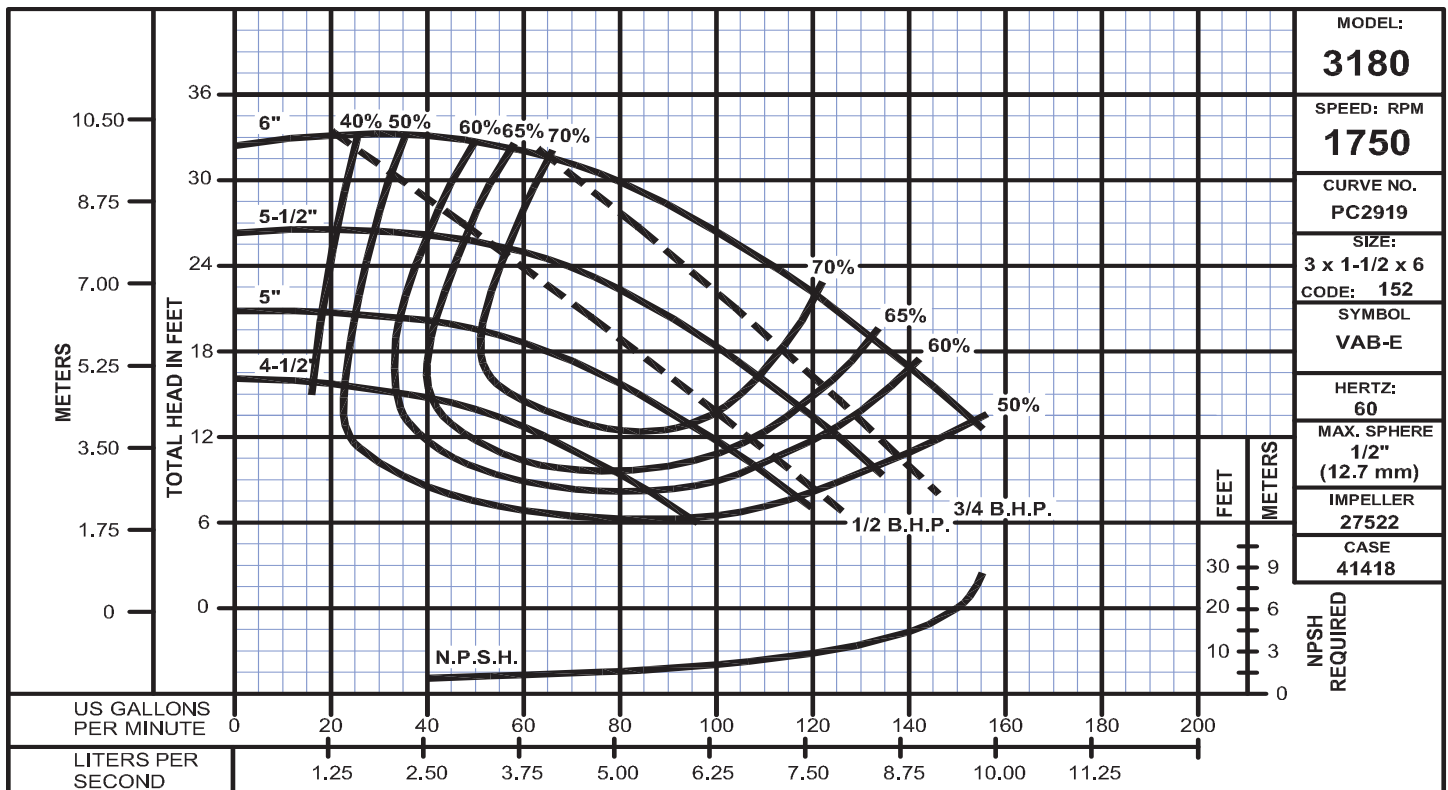
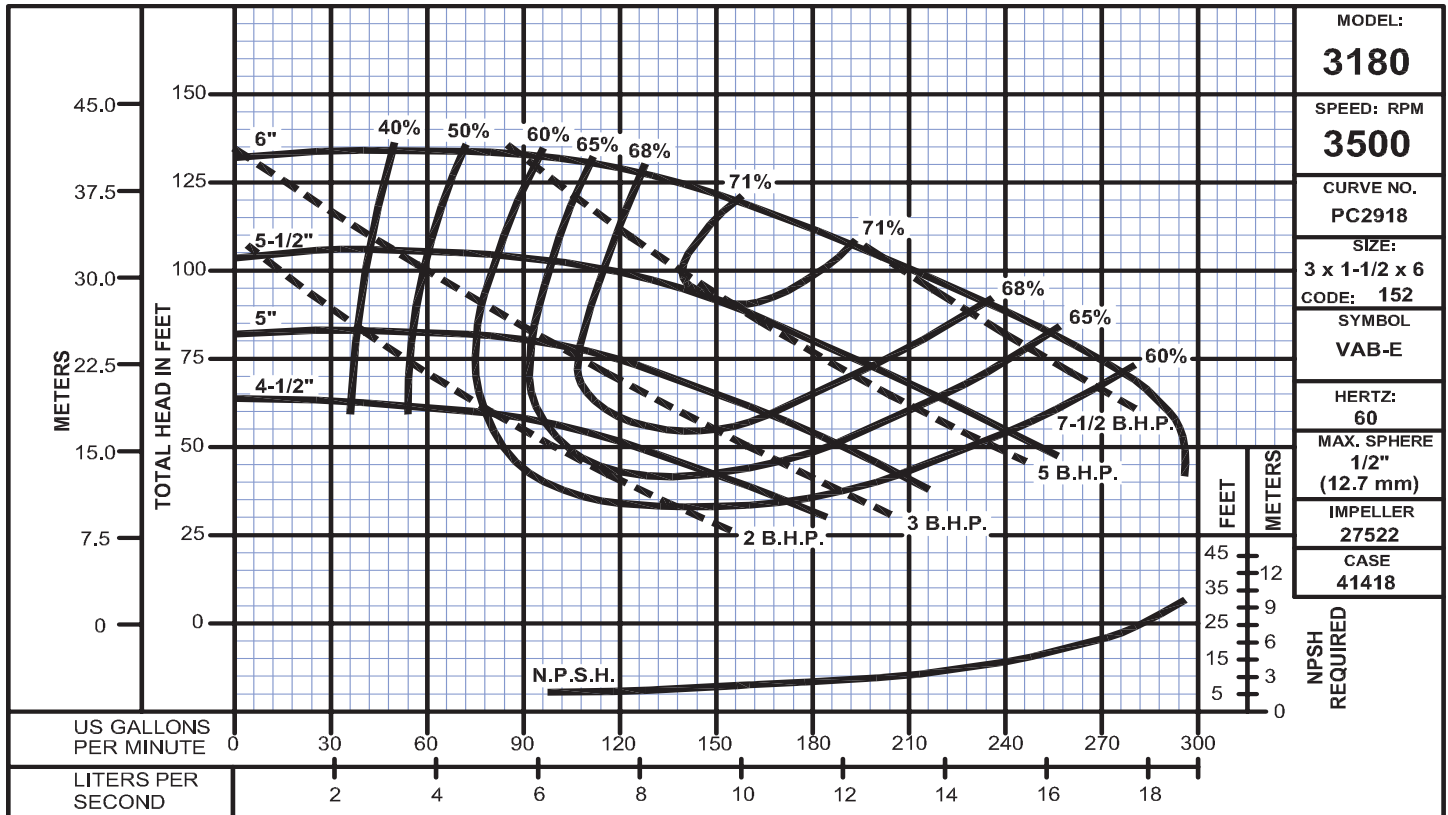


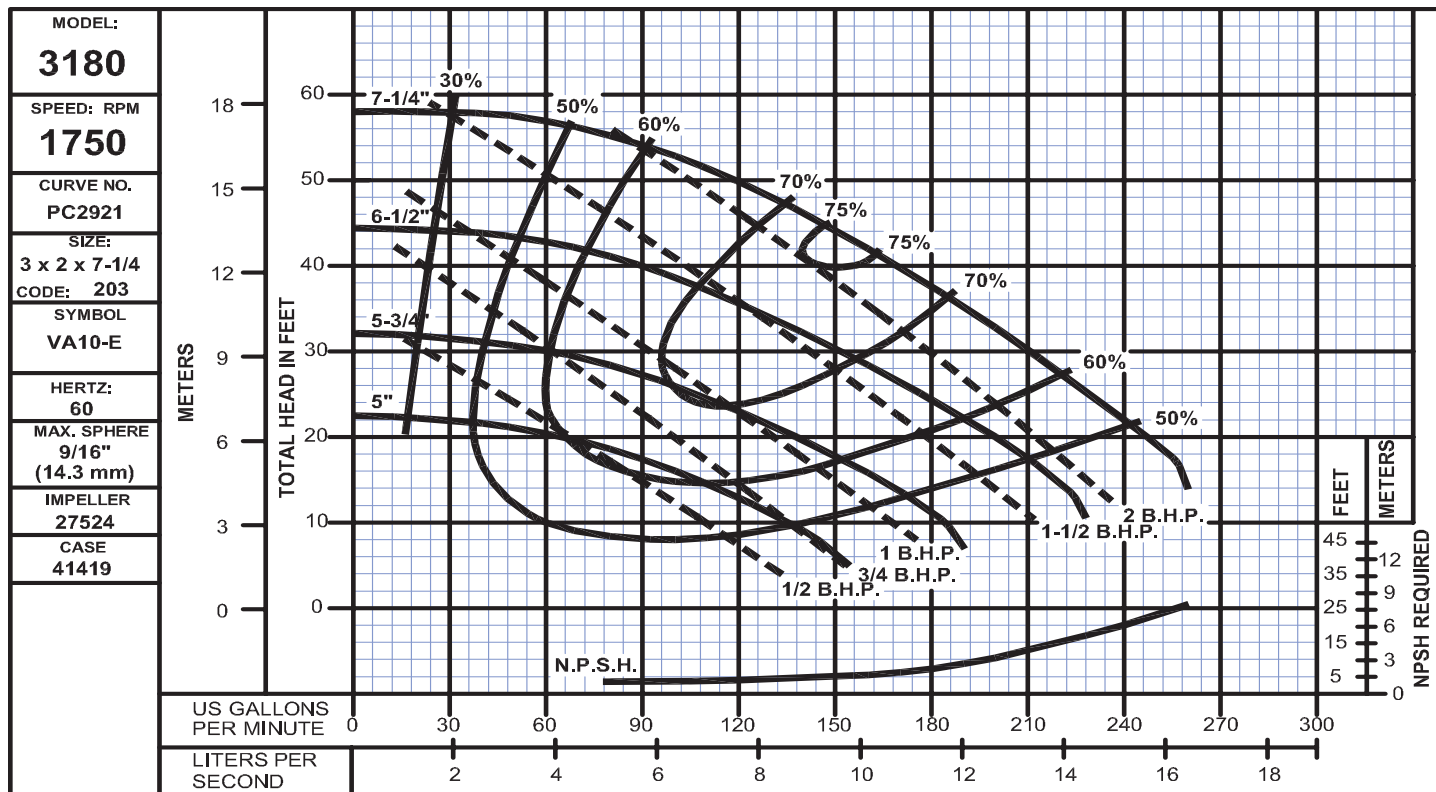
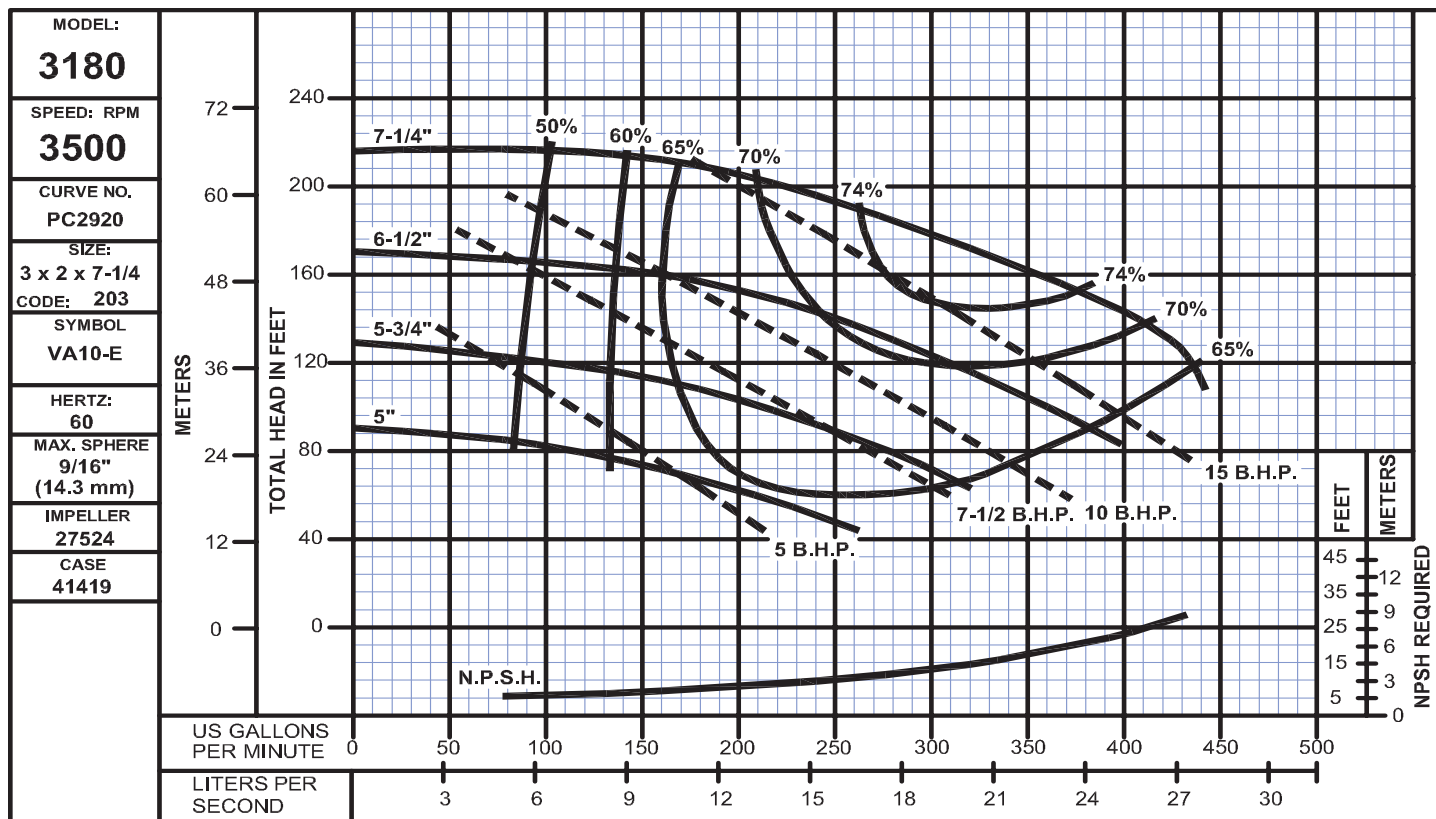
Fig. 3180

Sizes: 3 x 2 x 7¼, Symbol: VA10-E
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 30
DATE 7/07

CRANE

A Crane Co. Company

PUMPS & SYSTEMS

Curves shown performance with liquid having
Specific Gravity - 1.0, Viscosity - 30 SSU

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Vertical In-Line Chemical & Process Pumps

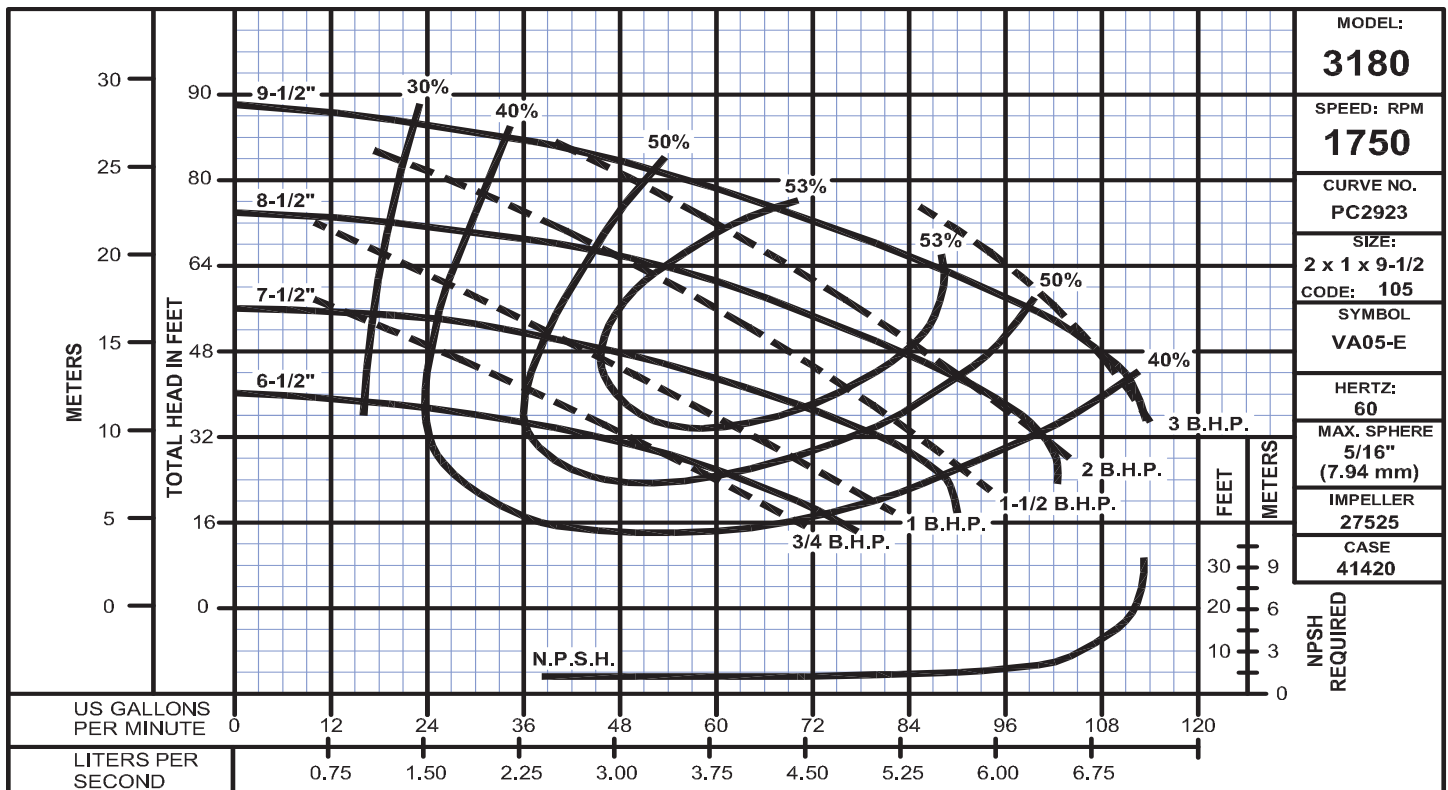
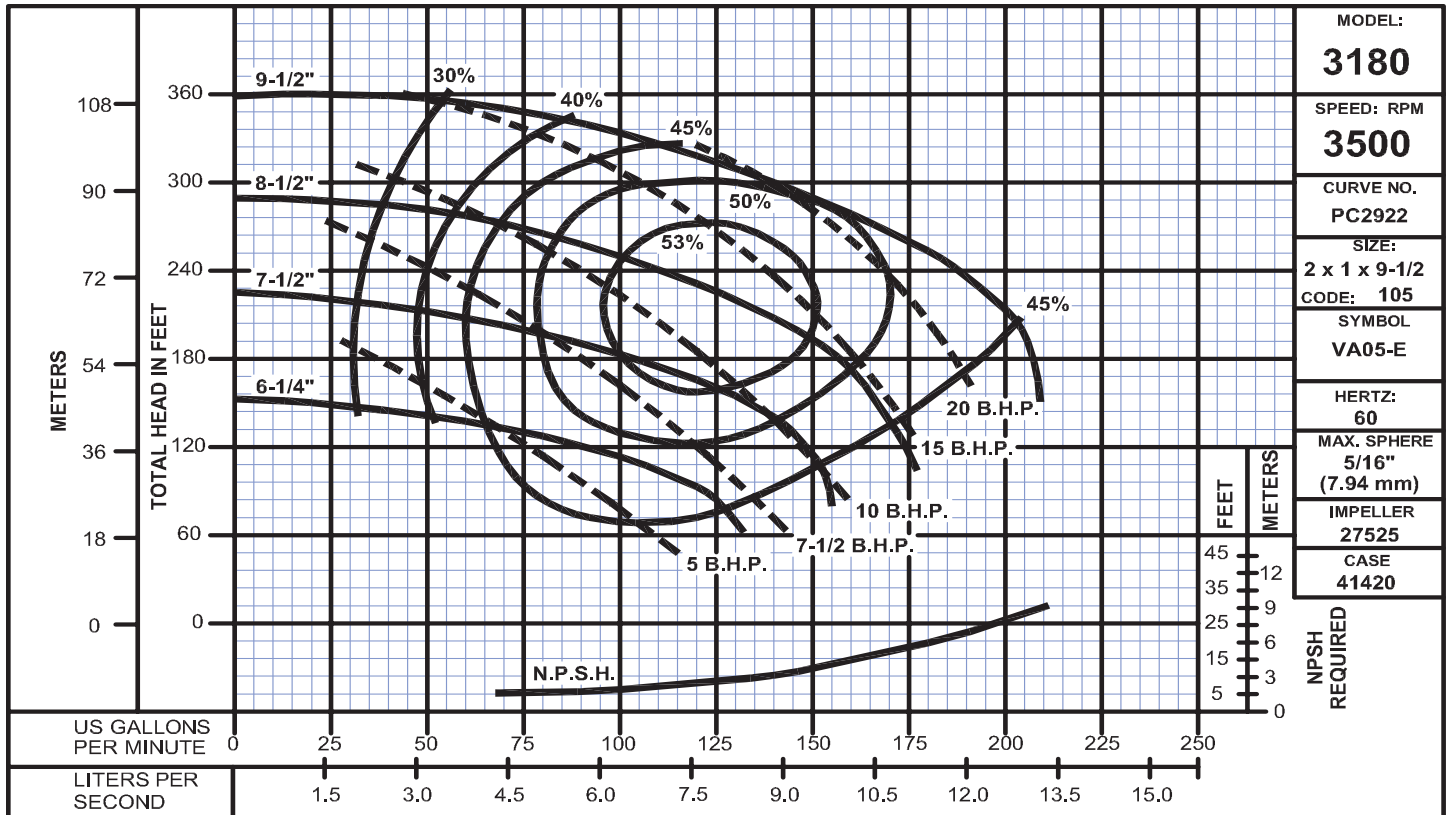


Fig. 3180

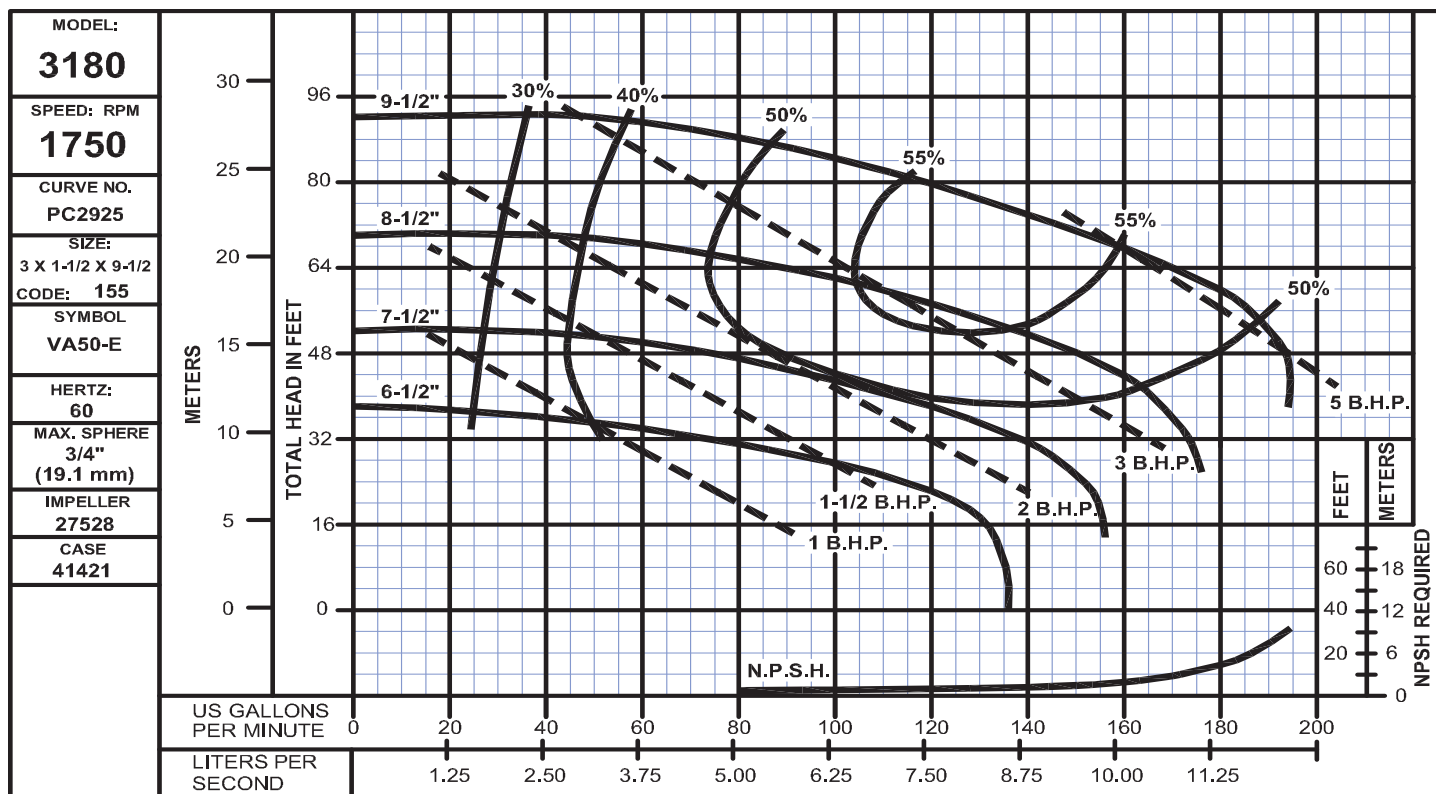
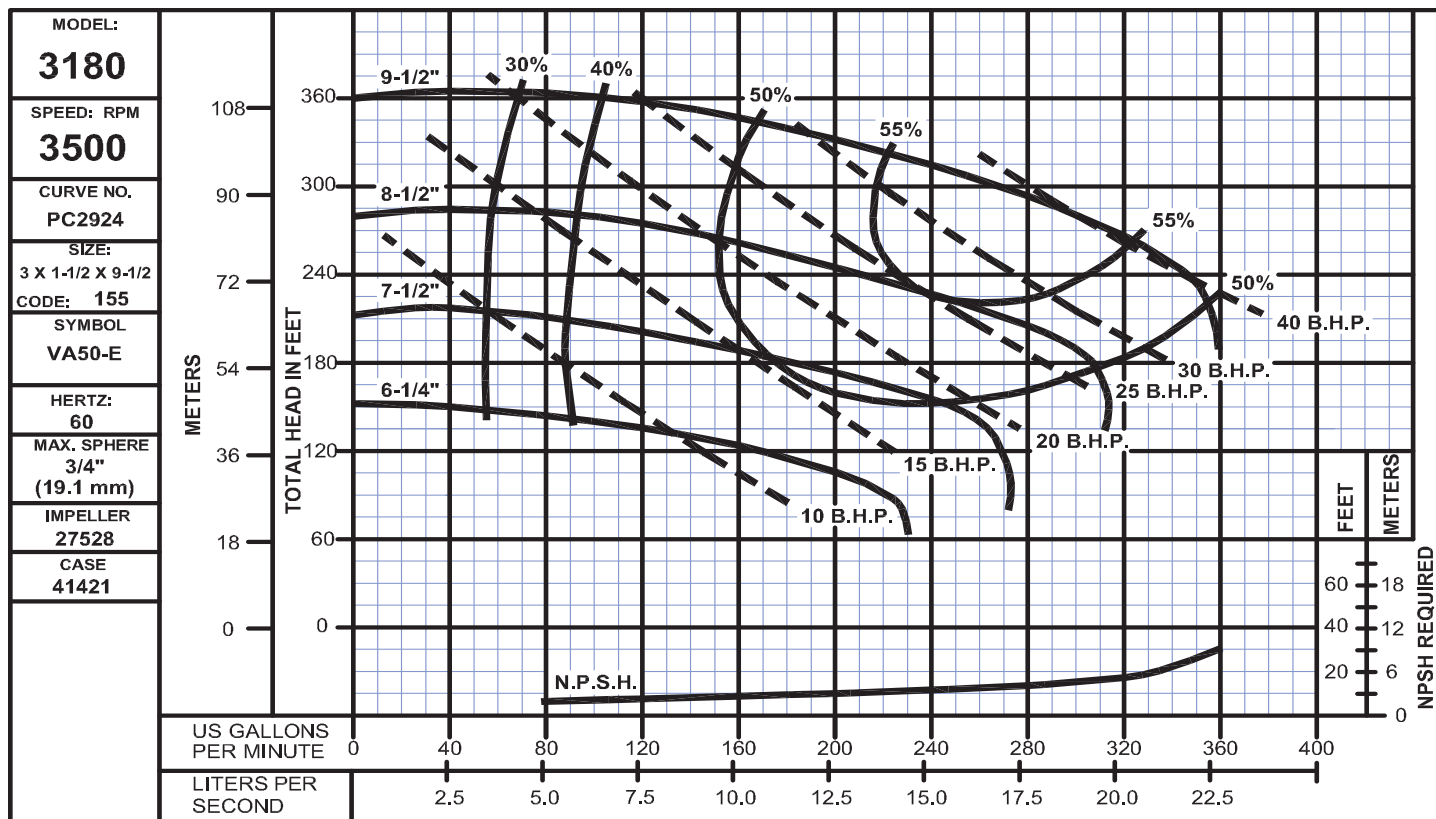
Sizes: 3 x 1½ x 9½, Symbol: VA50-E

Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 32
DATE 7/07

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

Curves shown performance with liquid having
Specific Gravity - 1.0, Viscosity - 30 SSU

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Vertical In-Line Chemical & Process Pumps

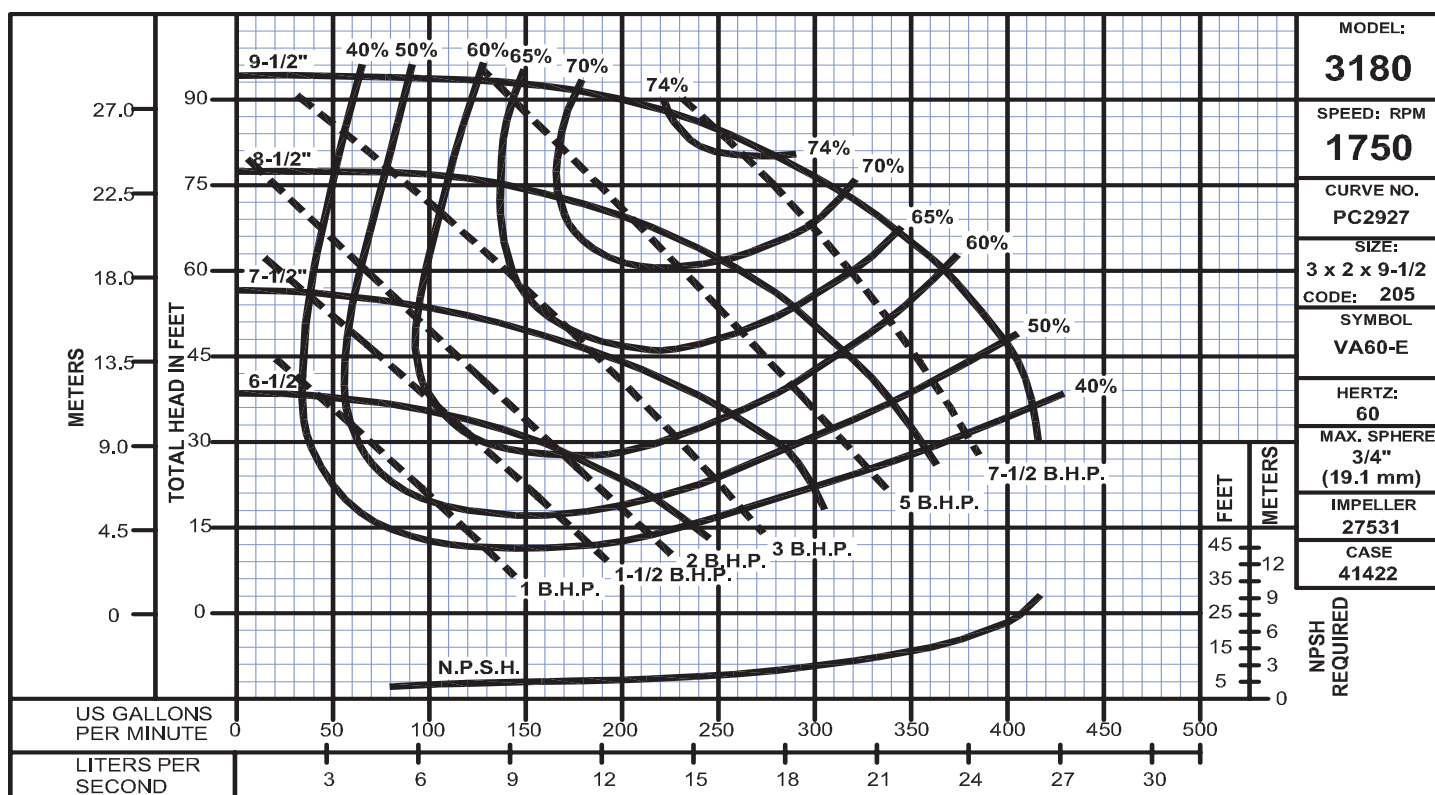
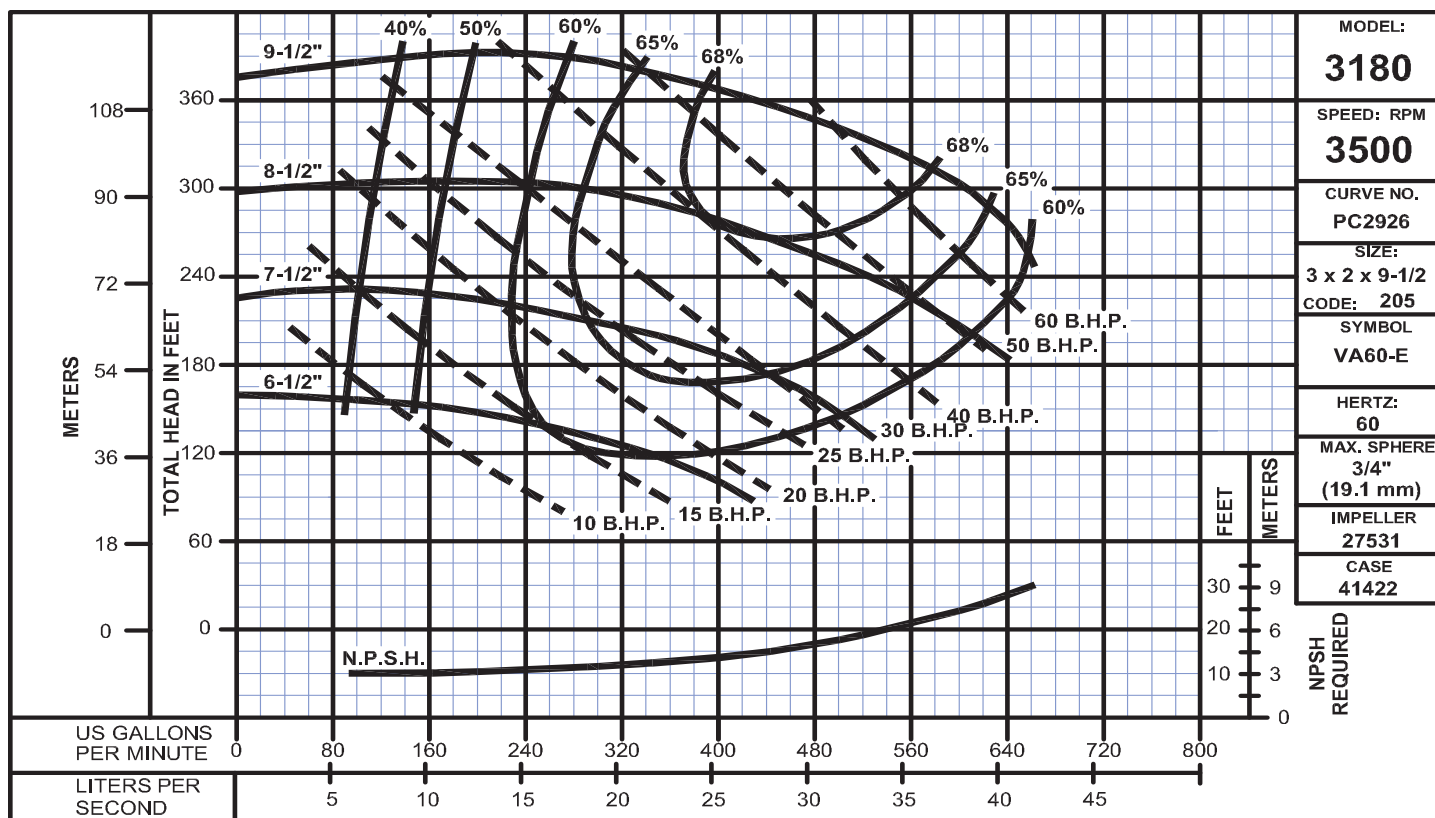


Fig. 3180

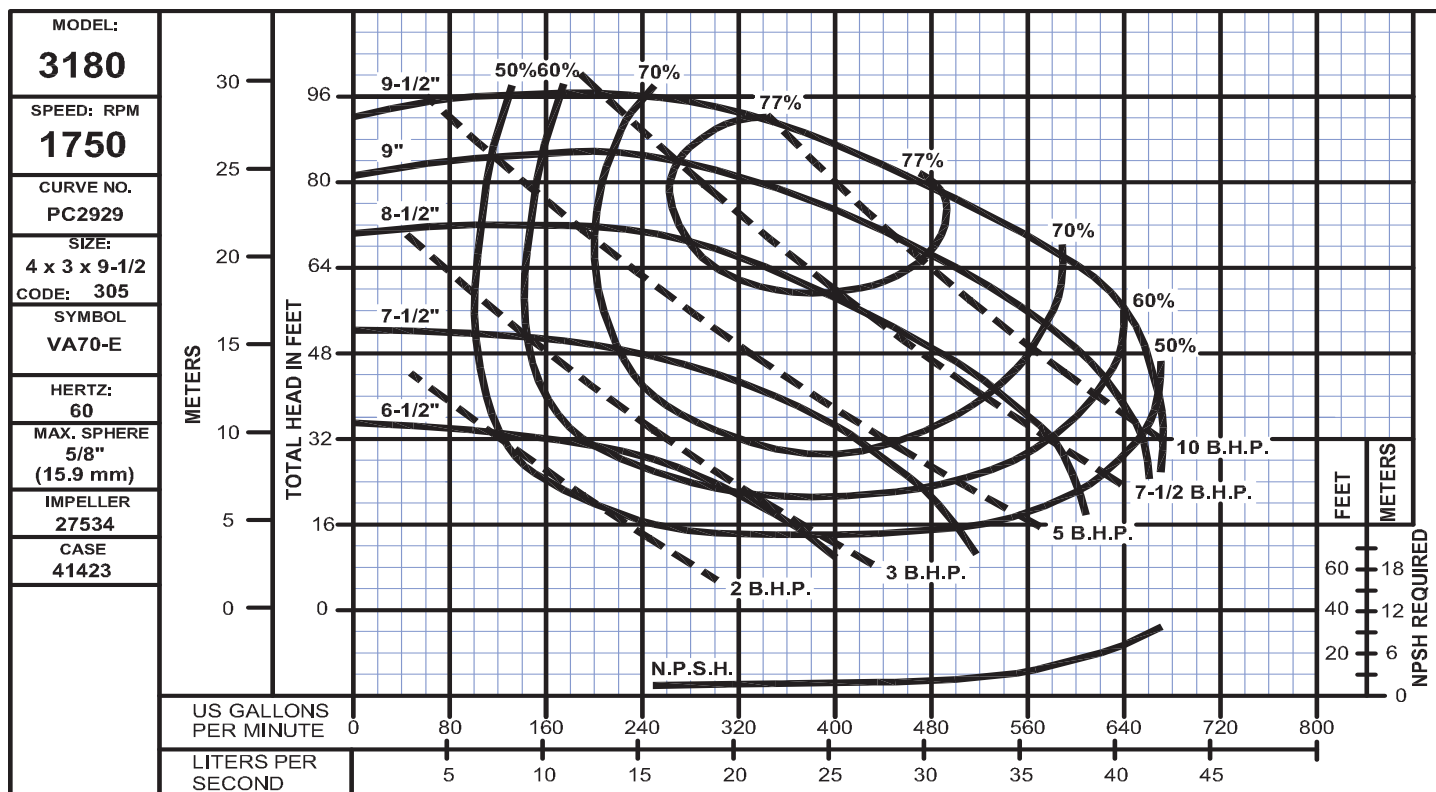
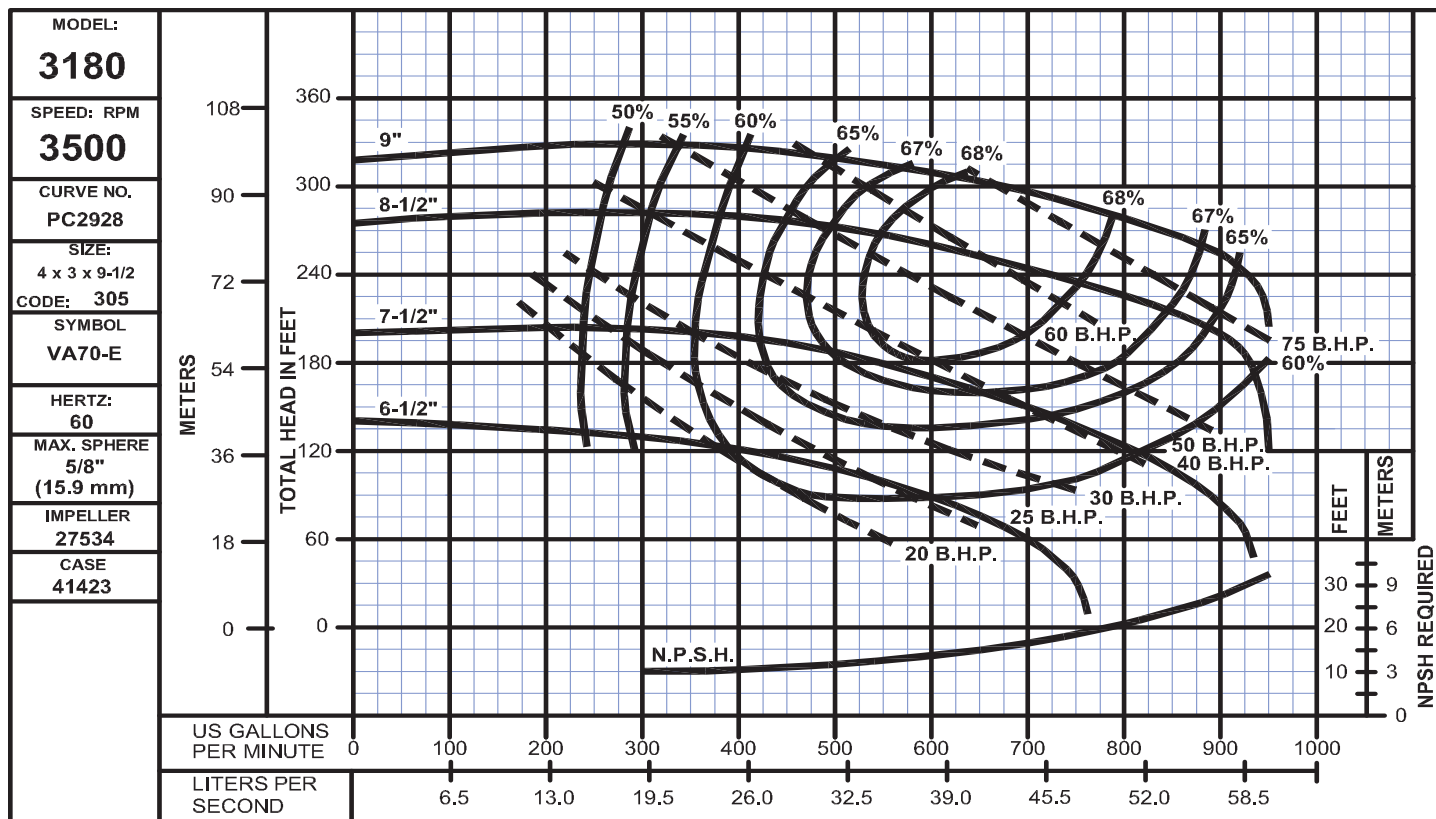
Sizes: 4 x 3 x 9½, Symbol: VA70-E

Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 34
DATE 7/07

CRANE®

A Crane Co. Company

PUMPS & SYSTEMS

Curves shown performance with liquid having
Specific Gravity - 1.0, Viscosity - 30 SSU

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598

Vertical In-Line Chemical & Process Pumps

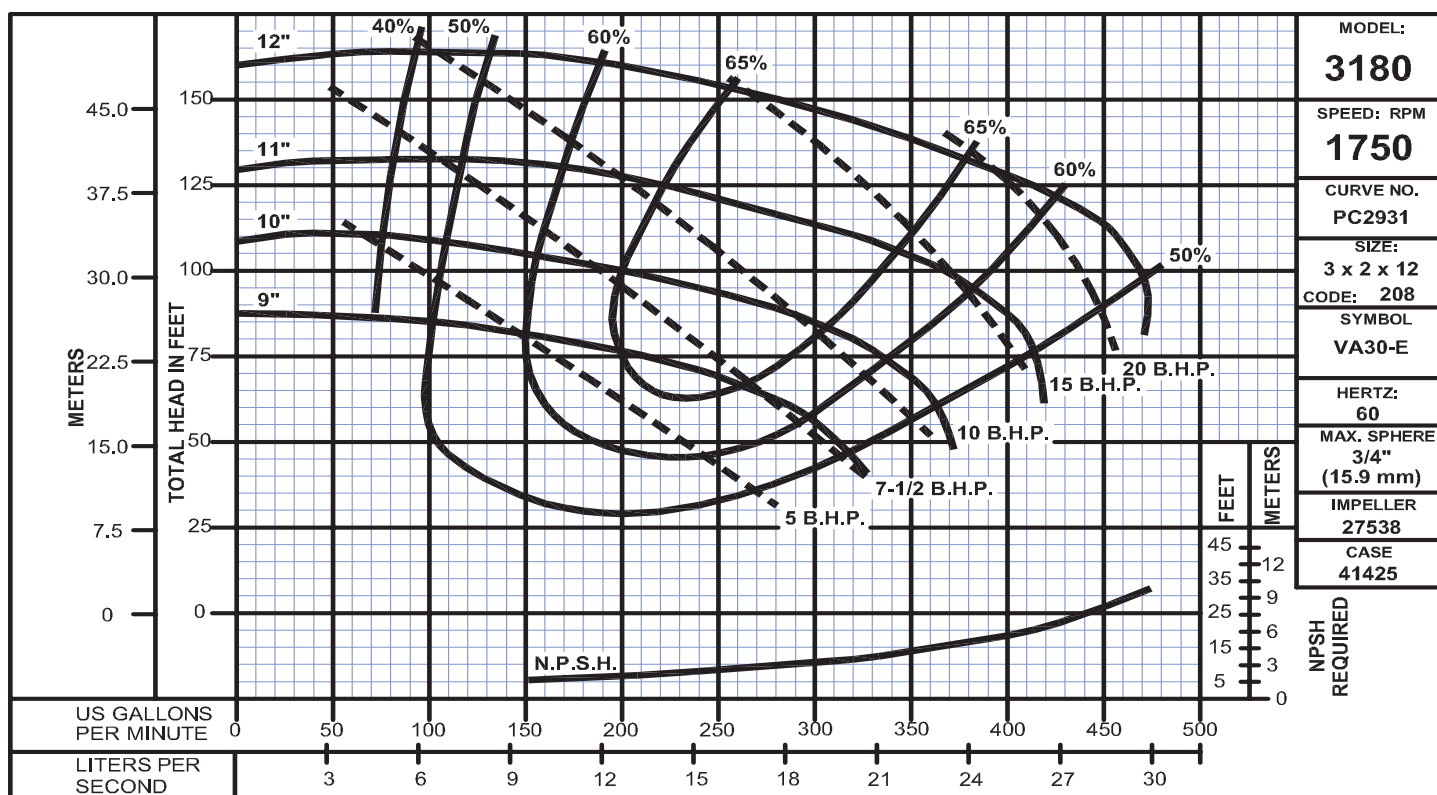
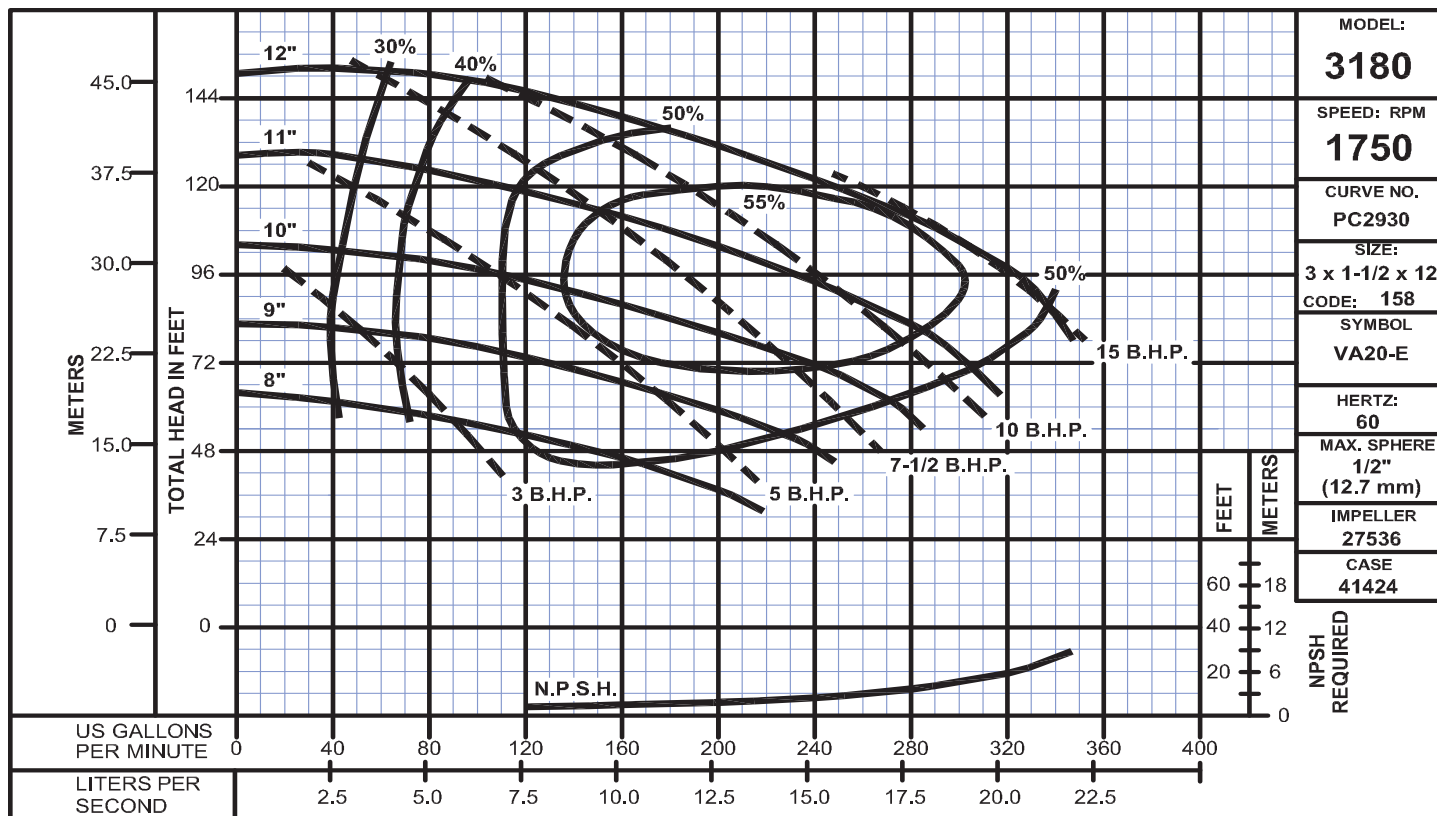


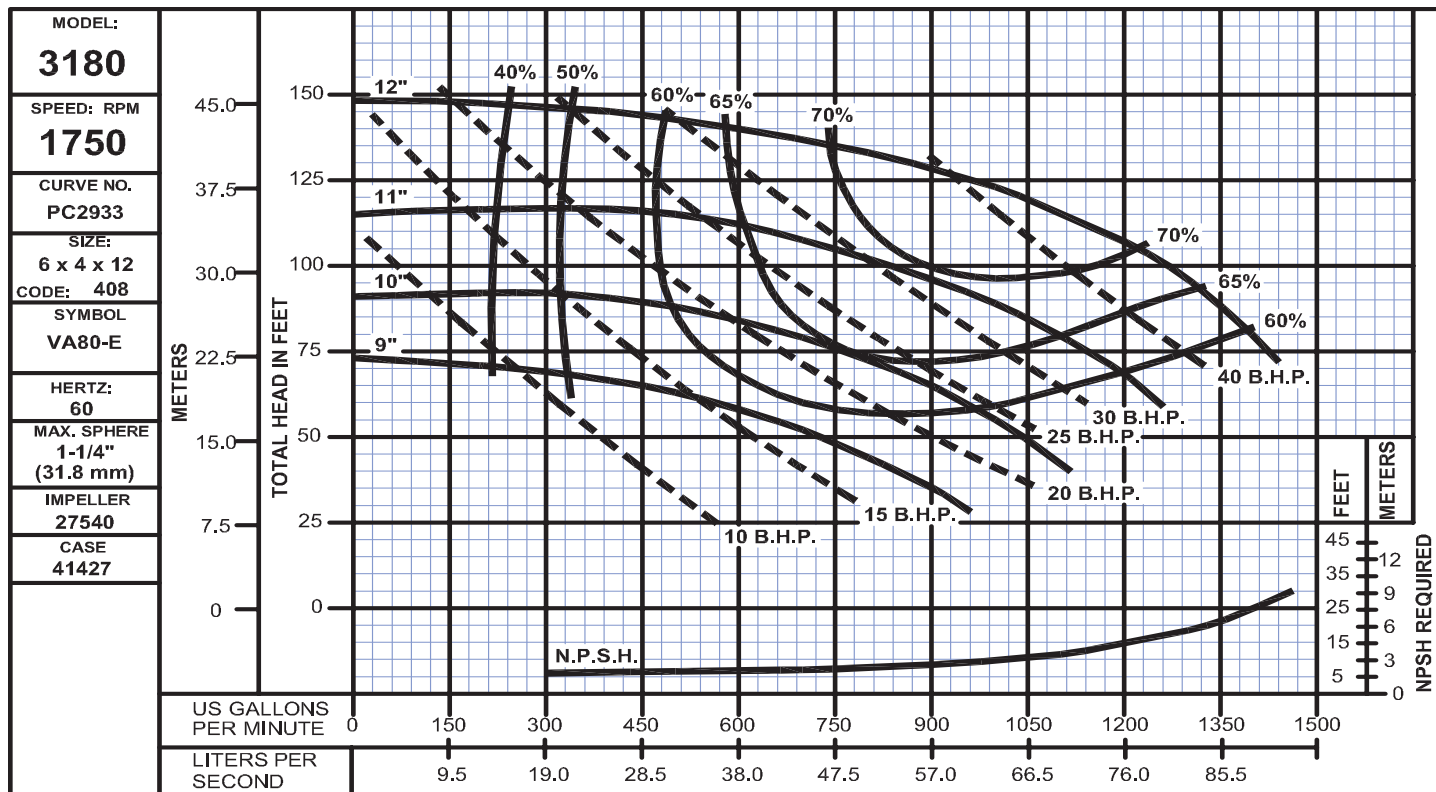
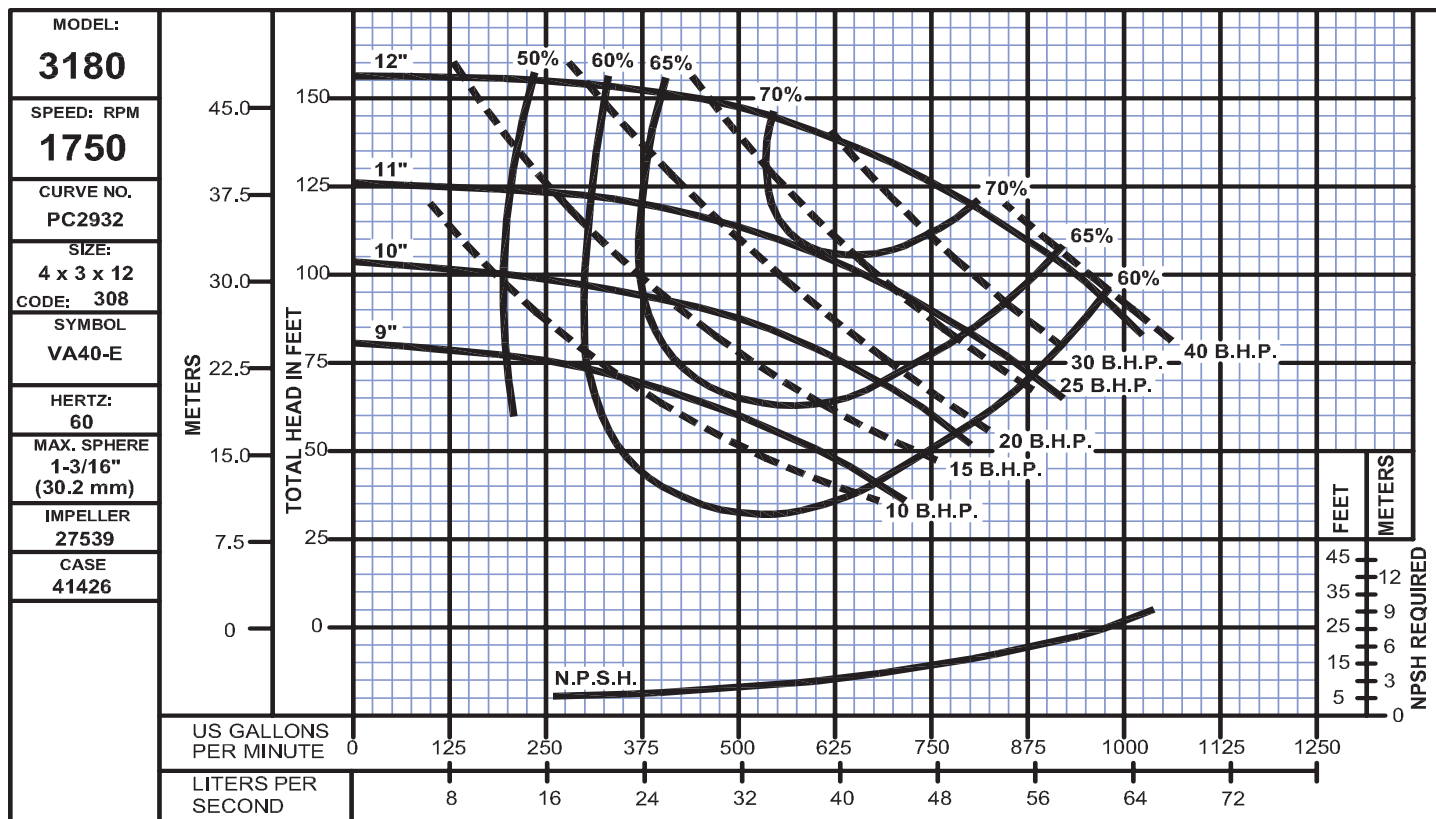
Fig. 3180

Sizes: 4 x 3 x 12, Symbol: VA40-E & 6 x 4 x 12, VA80-E
Bulletin 3180

DEMING®

www.cranepumps.com

Vertical In-Line Chemical & Process Pumps



SECTION 38
PAGE 36
DATE 7/07

CRANE

A Crane Co. Company

PUMPS & SYSTEMS

Curves shown performance with liquid having
Specific Gravity - 1.0, Viscosity - 30 SSU

USA: (937) 778-8947 • Canada: (905) 457-6223 • International: (937) 615-3598