



ENGINEERING REPORT INDEX SHEET

PURSUANT TO RULE 61G15-23.001(4)(B), F.A.C.

SUPPLEMENTAL INFORMATION TO THE SUBJECT RESIDENTIAL POOL/SPA PERMIT APPLICATION meeting 2023 FBC 8th Ed, Section 454.2 Private Swimming Pools

SPECIFICALLY:

- WORKSHEET SHOWING COMPLIANCE WITH ANSI 15
- SITE SPECIFIC INFORMATION SHOWING COMPLIANCE WITH ANSI 7
- TDH CALCULATION SUPPORTING ANSI 7 SUCTION OUTLET INFORMATION
- ATTACHED PRODUCT SHEETS WITH INFORMATION SUPPORTING
ANSI 7 AND 15 WORK SHEETS



Review for Code Compliance
Universal Engineering Science

Lawrence Pernell
Examiner-License No.

PX2707 09/27/2024

PROJECT INFORMATION:

CLIENT: GATOR POOL BUILDERS

NAME: MATHEWS

ADDRESS: 330 SW UTAH ST

LOT: 27&28

SUBDIVISION: THREE RIVERS ESTATES

J. Kent Kimes, PE, #33678

Principal Engineer

WR

This item has been digitally signed and sealed by J. Kent Kimes, PE on date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

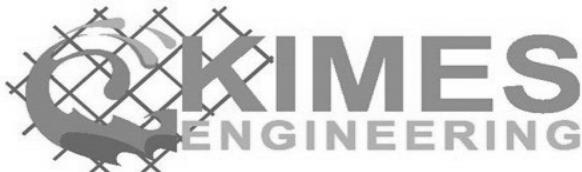
Digitally signed by James K. Kimes
DN: c=US, o=KIMES
ENGINEERING AND
MANAGEMENT SERVICES INC
dnQualifier=A01410C00000018
77C95694C00059AC5
cn=James K Kimes
Date: 2024.09.16 11:59:17
-04'00'

- For Client Use Only -

© 2024 Kimes Engineering and Management Services, Inc.
1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311

C.A. 27189

9/12/2024



CLIENT: GATOR POOL BUILDERS
 NAME: MATHEWS
 ADDRESS: 330 SW UTAH ST
 LOT: 27&28
 SUBDIVISION: THREE RIVERS ESTATES

SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH ANSI/APSP-15

ANSI 15 SECTION 5.2 MAX FILTRATION FLOW - VOLUME

$$\text{POOL SQFT} \quad 450 \quad \times \text{AVG DEPTH} \quad 4.75 = \quad 2,138 \quad \text{CF} \times \quad 7.48 \text{ GAL/CF}$$

$$= \quad \boxed{15,990} \quad \text{GALLONS}$$

MAXIMUM FILTRATION FLOW: GREATER THAN 36 GPM OR POOL VOLUME/360

$$= \quad \boxed{44.4} \quad \text{MAX GPM}$$

LOWER GPM ALLOWED IF IT MEETS 12 HR TURNOVER*

MAY USE LESS THAN THIS MAXIMUM IF IT COMPLIES WITH ANSI 5 TWELVE HOUR TURNOVER

$$\text{DESIGN ANSI 15 FLOW:} \quad \boxed{44.4} \quad \text{GPM}$$

$$\text{DESIGN TURNOVER AT ANSI 15 FLOW} = \quad \boxed{6.0} \quad \text{HOURS}$$

ANSI 15 SECTION 5.4 - FILTER FLOW CAPACITY

FILTER RATES - CARTRIDGE: 0.375/0.75/0.85/1.00; SAND: 15/20; DE: 2 (ALL RATES IN MEASUREMENT OF GPM/SF)

MODEL OF FILTER:

FILTER RATE:

$$\boxed{56.25} \quad \text{MAX GPM}$$

ANSI 15 SECTION 5.4 - FILTER FLOW CAPACITY

$$\text{ANSI 15 FILTER FLOW:} \quad \boxed{44.4} \quad \text{GPM} / \quad \boxed{0.375} \quad \text{GPM/SF FILTER RATE} \quad \text{Review for Code Compliance} \\ \text{Universal Engineering Science}$$

$$= \quad \boxed{118.4} \quad \text{MIN FILT SIZE SF}$$

ANSI 15 SECTION 4.3 - HEATER EFFICIENCY

Lawrence Penner Jr. 09/27/2024

Examiner-License No.

GAS EFFICIENCY MINIMUM 82%, HEAT PUMP EFFICIENCY MINIMUM C.O.P. OF 4.0

HEATER MAKE/MODEL:

GAS EFFICIENCY RATING:

HEAT PUMP EFFICIENCY C.O.P.:

N/A

ANSI 15 SECTION 5.3 - CIRCULATION PUMP APSP/DOE/PHTA LISTING

PUMP MAKE/MODEL:

CERTIFIED:

CONTROLLER:

TOTAL HP:

ANSI 15 SECTION 5.5 - VELOCITY LIMITATIONS FILTRATION SYSTEM PIPING

DESIGN ANSI 15 FLOW:
 GPM

 APPLIES TO MAIN DRAIN SUCTION,
 SKIMMER SUCTION, AND FILTRATION.
DOES NOT APPLY TO SPA JET SUCTION,
 FLOW, OR FEATURE FLOW

SCHD 40 TRUNK PIPE SIZE	1.0"	1.5"	2.0"	2.5"	3.0"	4.0"	6.0"	8.0"
GPM @ 6 FPS	16	38	63	89	138	238	540	935
GPM @ 8 FPS	22	51	84	119	184	317	720	1,247

DESIGN PIPE SIZES
 NO CHANGES WITHOUT
 ENGINEER APPROVAL

MAIN DRAIN SIZE: <input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="2.5"/>	IN	<6 FPS	COMPLIES	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="YES"/>
SKIMMER SUCTION SIZE: <input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="2"/>	IN	<6 FPS	COMPLIES	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="YES"/>
CIRCULATION RETURN SIZE: <input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="2"/>	IN	<8 FPS	COMPLIES	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text" value="YES"/>

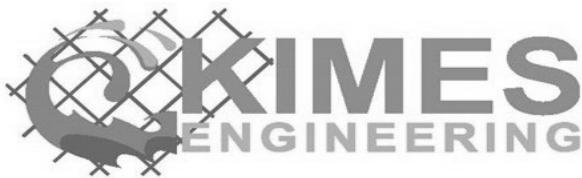
- For Client Use Only -

© 2024 Kimes Engineering and Management Services, Inc.

1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311

C.A. 27189

9/12/2024



CLIENT: GATOR POOL BUILDERS

NAME: MATHEWS

ADDRESS: 330 SW UTAH ST

LOT: 27&28

SUBDIVISION: THREE RIVERS ESTATES

SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH ANSI/APSP-7: DETAILED TDH CALCULATION & CURVE(S)

PUMP PURPOSE:

FILTRATION PUMP

ANSI 7 SECTION 4.4.5: POSSIBLE SYSTEM FLOW - THIS IS REQUIRED FOR EVERY SUBMERGED SUCTION OUTLET

MAXIMUM FLOW FROM PUMP CURVE

135.0

GPM

FAIL OF MAXIMUM FLOW REQUIRES TDH CALCULATION INTERSECT ON PUMP CURVE

COMPLIANCE BY TDH CALCULATIONS REQUIRES VERIFICATION AT FINAL INSPECTION

ANSI 7 SECTION 4.4.3: POOL SUCTION OUTLET - SOFA SAFETY

PUMP: JANDY FLOPRO VSFHP270DV2A

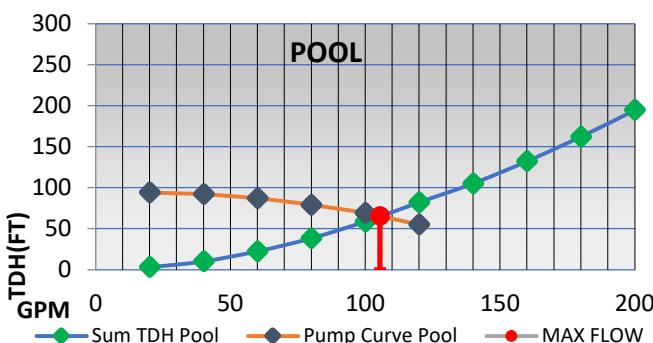
FILTER: JANDY CS150 150SF

HEATER: X

HEAD LOSS IS BASED ON HAZEN-WILLIAMS EQUATION, WHERE C=150 HEAD LOSS PER 100 FT = $(0.2083 (100/C)^{1.852}) * (q^{1.852} / (d_h)^{4.8655})$

POOL	SUCTION	PRESSURE	EQUIP
PIPE SIZE (IN.)	2.5	2.0	2.0
PIPE LENGTH (100% FLOW)	99	28	15
#EL FITTINGS	5	5	5
#T RUN FITTINGS	2	2	2
#T BRANCH FITTINGS	1	1	1
GATE VALVES	0	0	0
#3 WAY VALVES	1	1	1

DETAILED TDH - POOL						
PIPE FRICTION	2	17	45	84	133	193
FILTER(S)	0	2	7	10	14	18
RETURN FITTINGS	1	3	7	11	15	19
SALT SYSTEM	0	0	0	0	0	0
HEATER(S)	0	0	0	0	0	0
SUM TDH (FT H2O)	3	22	59	105	162	230
FLOW (GPM)	20	40	60	80	100	120



- For Client Use Only -

© 2024 Kimes Engineering and Management Services, Inc.
1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311

C.A. 27189

SAFE SUCTION OUTLET CONDITIONS

SOFA LOCATION: POOL FLOOR

PARAMOUNT SUPERFLOW 360 RING DRAIN

3" OR 4" CONNECTION

BRANCH PIPE SIZE: N/A

SOFA REQUIRES MIN SIZE BEFORE CHANGE

OF PIPE SIZE 3" or 4" FOR MIN 16"

BEFORE REDUCING OR ENLARGING SUCTION

MIN. N/A SUMP REQUIRED FOR SOFA

DESIGN SUCTION TO PUMP: 2.5"

MAXIMUM POTENTIAL FLOW: 135

GPM

LISTED FLOOR FLOW (GPM) 310

SOFA COMPLIES FOR FLOOR? PASS

LISTED WALL FLOW (GPM) N/A

SOFA COMPLIES FOR WALL? N/A

REFER TO SUMMARY PAGE IN DOCUMENT. REVIEW BEFORE APPROVING/BUILDING FOR EASE OF REFERENCE AND UNDERSTANDING

POOL		
MAXIMUM:	105 GPM @ 65 TDH	
BRANCH SUCTION:	N/A	
TRUNK SUCTION TO EQUIP:	2.5"	



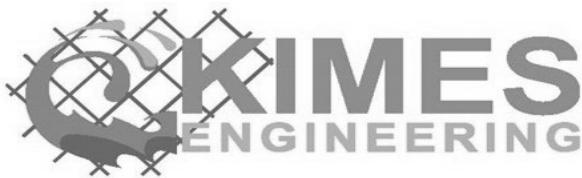
Review for Code Compliance
Universal Engineering Science


Lauren P. Mathews
Examiner-Licence No.

PX2707

09/27/2024

9/12/2024



SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH ANSI/APSP-7: DETAILED TDH CALCULATION & CURVE(S)

PUMP PURPOSE:

SPA JET SHARED WITH POOL

ANSI 7 SECTION 4.4.5: POSSIBLE SYSTEM FLOW - THIS IS REQUIRED FOR EVERY SUBMERGED SUCTION OUTLET

MAXIMUM FLOW FROM PUMP CURVE

135.0

GPM

FAIL OF MAXIMUM FLOW REQUIRES TDH CALCULATION INTERSECT ON PUMP CURVE

COMPLIANCE BY TDH CALCULATIONS REQUIRES VERIFICATION AT FINAL INSPECTION

ANSI 7 SECTION 4.4.3: SPA SUCTION OUTLET - SOFA SAFETY

PUMP: JANDY FLOPRO VSFHP270DV2A

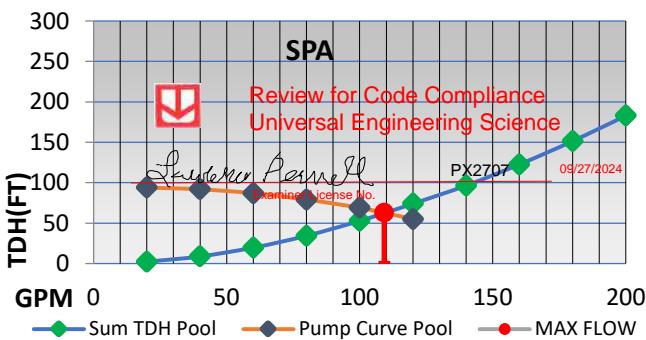
FILTER: JANDY CS150 150SF

HEATER: X

HEAD LOSS IS BASED ON HAZEN-WILLIAMS EQUATION, WHERE C=150 HEAD LOSS PER 100 FT = $(0.2083 (100/C)^{1.852}) * (q^{1.852} / (d_h)^{4.8655})$

SPA	SUCTION	PRESSURE	EQUIP
PIPE SIZE (IN.)	2.5	2.0	2.0
PIPE LENGTH (100% FLOW)	56	56	15
#EL FITTINGS	5	5	5
#T RUN FITTINGS	2	2	2
#T BRANCH FITTINGS	1	1	1
GATE VALVES	0	0	0
#3 WAY VALVES	1	1	1

DETAILED TDH - SPA						
PIPE FRICTION	2	18	46	86	137	199
FILTER(S)	0	2	7	10	14	18
RETURN FITTINGS	0	0	0	0	0	0
SALT SYSTEM	0	0	0	0	0	0
HEATER(S)	0	0	0	0	0	0
SUM TDH (FT H2O)	2	20	53	97	151	217
FLOW (GPM)	20	40	60	80	100	120



CLIENT: GATOR POOL BUILDERS

NAME: MATHEWS

ADDRESS: 330 SW UTAH ST

LOT: 27&28

SUBDIVISION: THREE RIVERS ESTATES

MAXIMUM FLOW FROM PUMP CURVE

135.0

GPM

SAFE SUCTION OUTLET CONDITIONS

SOFA LOCATION: SPA FLOOR

PARAMOUNT SUPERFLOW 360 RING DRAIN

3" OR 4" CONNECTION

BRANCH PIPE SIZE: N/A

SOFA REQUIRES MIN SIZE BEFORE CHANGE

OF PIPE SIZE 3" OR 4" FOR MIN 16"

BEFORE REDUCING OR ENLARGING SUCTION

MIN. N/A SUMP REQUIRED FOR SOFA

DESIGN SUCTION TO PUMP: 2.5"

MAXIMUM POTENTIAL FLOW: 135

GPM

LISTED FLOOR FLOW (GPM) 310

PASS

LISTED WALL FLOW (GPM) N/A

N/A

REFER TO SUMMARY PAGE IN DOCUMENT. REVIEW BEFORE APPROVING/BUILDING FOR EASE OF REFERENCE AND UNDERSTANDING

SPA		
MAXIMUM:	110 GPM @ 62 TDH	
BRANCH SUCTION:	N/A	
TRUNK SUCTION TO EQUIP:	2.5"	

SPAS ARE REQUIRED TO HAVE A MINIMUM OF ONE RETURN IN ADDITION TO THE SPA JETS

- For Client Use Only -

© 2024 Kimes Engineering and Management Services, Inc.

1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311

C.A. 27189

9/12/2024



CLIENT: GATOR POOL BUILDERS
NAME: MATHEWS
ADDRESS: 330 SW UTAH ST
LOT: 27&28
SUBDIVISION: THREE RIVERS ESTATES

ANSI 5 AND 2023 FBC AUXILIARY FLOW DESIGN AND PIPE SIZING: 8 FPS BOTH SUCTION AND PRESSURE

AUXILIARY FLOW	DESIRED EFFECT	PIPE SIZE	PIPE SIZE	COMPLIES
WATER FEATURE:	FLOW	SUCTION (INCHES)	RETURN (INCHES)	W/ 8 FPS
SPA JETS:				
6 Therapy Jets @ 10 GPM				
	60	2.5"	2	YES
AUXILIARY FLOW 1:				
N/A	N/A	N/A	N/A	N/A
AUXILIARY FLOW 2:				
N/A	N/A	N/A	N/A	N/A
AUXILIARY FLOW 3:				
N/A	N/A	N/A	N/A	N/A

SUMMARY FOR SITE SPECIFIC INFORMATION FOR COMPLIANCE WITH ANSI/APSP-7 POINTS OF SUCTION

PIPE PURPOSE SUCTION SYSTEM	MAX FLOW OF PUMP OR TDH - GPM	SOFA*	BRANCH SIZE	SUCTION TO PUMP	RETURN TRUNK	NOTES
POOL CIRCULATION	135	PASS	N/A	2.5"	2"	POOL FLOOR
SPA JET	135	PASS	N/A	2.5"	2"	SPA FLOOR

NOTES

*REVIEW SOFA MANUAL AND CHECK SOFA SHEET FOR SUMP AND PIPE REQUIREMENTS TO BE SAFE



Review for Code Compliance
Universal Engineering Science

Lawrence Perna Jr.
Examiner-License No.

PX2707 09/27/2024

NO CHANGE TO ENGINEERING WITHOUT APPROVAL OF THE ENGINEER

- For Client Use Only -

© 2024 Kimes Engineering and Management Services, Inc.
1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311

C.A. 27189

9/12/2024

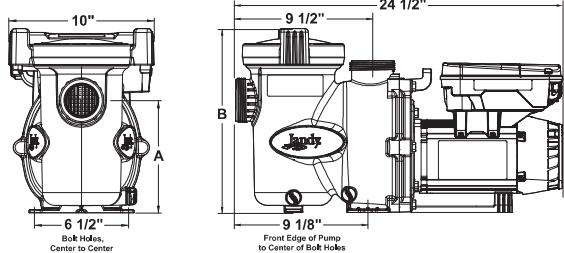


Adjustable Base Configurations

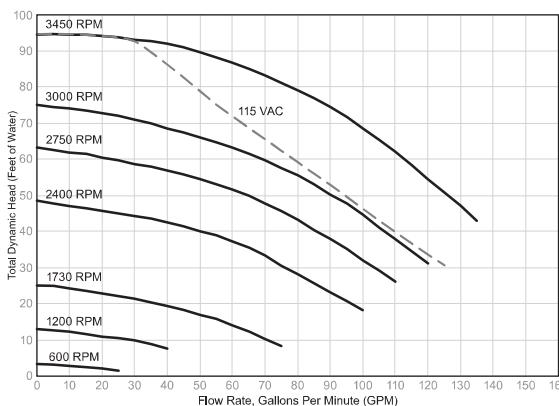
Every VS FloPro pump includes the small base with spacers. Large base is optional part number R0546400.

BASE	FITS	'A' DIMENSION	'B' DIMENSION
No Base	Hayward® Super Pump®, Pentair® SuperFlo®, Sta-Rite® SuperMax®	7 3/4"	12 3/4"
Small Base	Hayward Super II™, Jandy PlusHP and MaxHP Pumps	8 7/8"	13 7/8"
Small Base w/ Spacers	Pentair WhisperFlo®, Sta-Rite Dyna-Glas™	9 1/8"	14 1/8"
Small Base & Large Base	Sta-Rite Max-E Pro®, Sta-Rite Dura-Glas®, Sta-Rite Dura-Glas II, Sta-Rite Max-E Glas	10 3/4"	15 3/4"

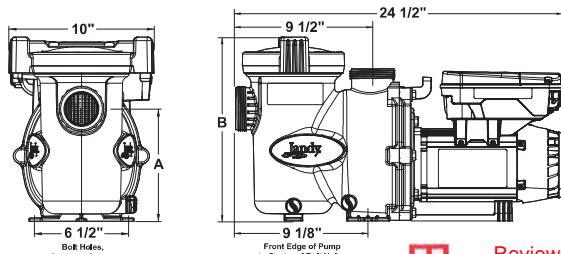
MODEL NO.	THP	WEF	VOLTAGE	MAX WATTS	AMPS	UNION SIZE	REC. PIPE SIZE
VSFHP270DV2A	2.7	7.3	230 VAC 115 VAC	2,550 W 1,840 W	10.5 16.0	2" x 2"	2" - 3"



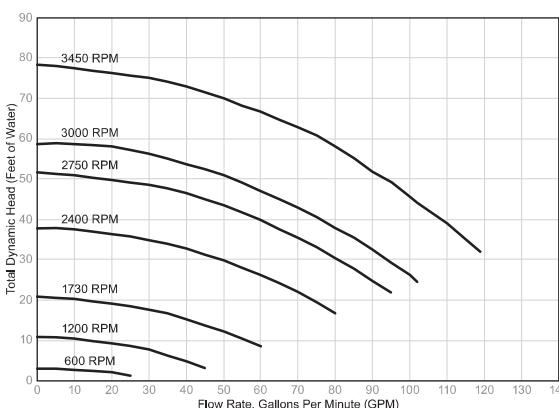
VS FloPro 2.7 HP Performance Curves



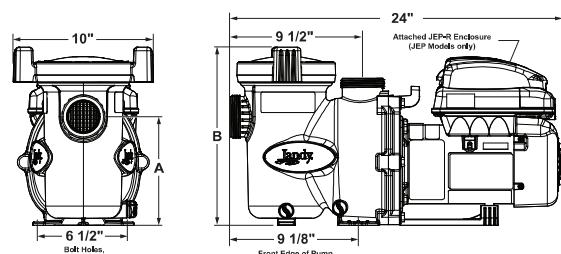
MODEL NO.	THP	WEF	VOLTAGE	MAX WATTS	AMPS	UNION SIZE	REC. PIPE SIZE
VSFHP185DV2A	1.85	8.5	230 VAC 115 VAC	1,700 W 1,800 W	7.5 15.5	2" x 2"	1 1/2" - 2 1/2"



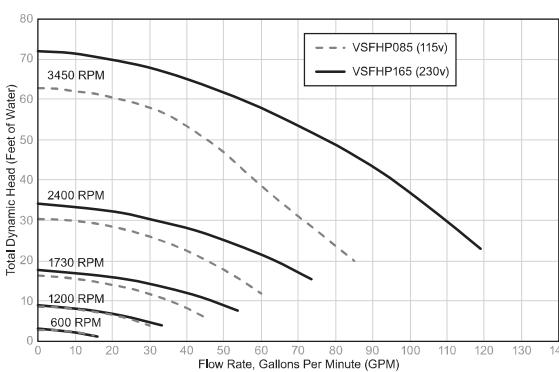
VS FloPro 1.85 HP Performance Curves



MODEL NO.	THP	WEF	VOLTAGE	MAX WATTS	AMPS	UNION SIZE	REC. PIPE SIZE
VSFHP165JEP	1.65	9.1	230 VAC	1,600 W	10.5	2" x 2"	1 1/2" - 2 1/2"
VSFHP165AUT							
VSFHP085JEP	0.85	11.9	115 VAC	975 W	10.0	2" x 2"	1 1/2" - 2"
VSFHP085AUT							



VS FloPro 0.85 HP and 1.65 HP Performance Curves



Review for Code Compliance
Universal Engineering Science

Lawler Powell
Examiner-Licence No. PX2707
09/27/2024

IAPMO RESEARCH AND TESTING, INC.

CERTIFICATE OF LISTING



Issued To: COLOR MATCH POOL FITTINGS INC.

File Number: SP-4077

Product: Suction Outlet Fitting Assemblies (SOFA) for Use in Pools,
Spas, and Hot Tubs

Effective Date: January 2019

Revised Date: July 18, 2022

Void After: January 2024

**

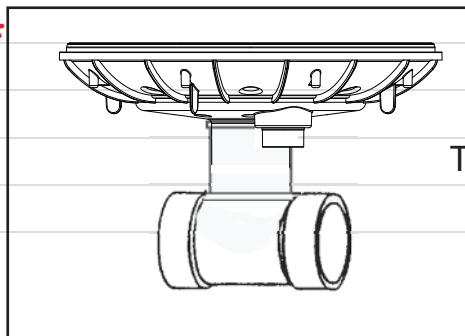
SUPER FLOW 360 AND OPEN FLOW 360

This certificate is not evidence of current listing. To verify listing status, visit the IAPMO R&T Product Listing Directory at pld.iapmo.org

Model Number	Description
VTDC-XXX	8" Drain cover with slotted drain model VTDC-XXX, vinyl support plate model VSP-XXX, gasket model VLG, mounting ring model VMR-XXX, vinyl drain cover VTD-XXX & fasteners (8000-SP, 80212-SP, 810125-SP). Floor: 128 GPM /Wall: 72 GPM with 1.5" pipe. Installed in a cold-fabricated sump at 1-7/8" depth

Model Number	Description
Super Flow 360 SF360R-XXX	20" pebble top drain cover with slotted drain cover model 360-SDC, fillable sump lip model 360-FSL, plug model 360-PG, gasket model 360-GT, main sump model 360-MS, & fasteners/screw pack model 360-SP. Floor: 340 GPM at 3" diameter pipe.
Open Flow 360 OF360-XXX	20" pebble top drain cover with openflow divider drain cover model 360-OFD, fillable sump lip model 360-FSL, plug model 360-PG, gasket model 360-GT, main sump model 360-MS, & fasteners/screw pack model 360-SP. Floor: 324 GPM at 3" diameter pipe.

TWO PUMP OPTION



Tee Coupler or
Reducer

** MAXIMUM FLOW RATE BY PIPE SIZE:
SuperFlow 360: 3-inch or 4-inch pipe = 310 GPM
Maximum flow rate is not to be exceeded!



Review for Code Compliance
Universal Engineering Science

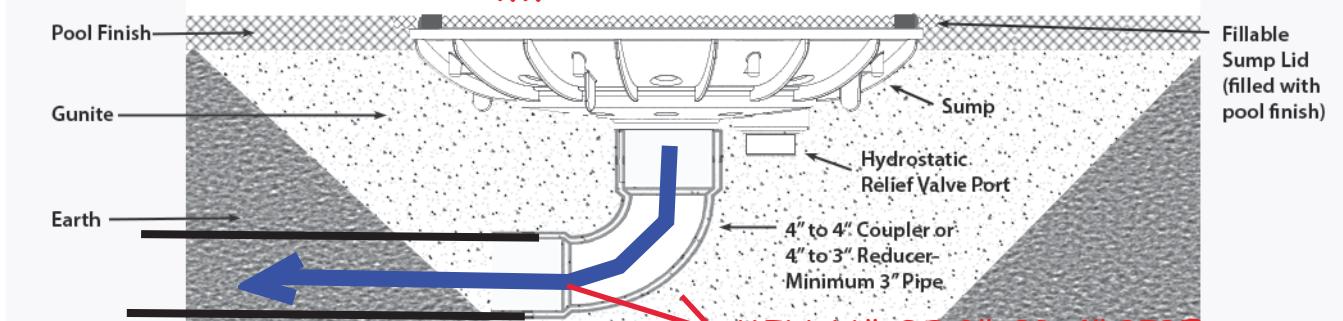
Lawrence Pernell
Examiner-License No.

PX2707 09/27/2024

INSTALLATION INSTRUCTIONS

**

SINGLE PUMP OPTION



**

ANNOTATIONS BY KIMES ENGINEERING