



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 2020 FBC 7th 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

PROJECT INFORMATION

PROJECT CLIENT: COAST TO COAST

PROJECT NAME: CHARLES & NANCY REYNOLDS

PROJECT ADDRESS: 620 EMERALD HARBOR DR

LOT: **62**

SUBDIVISION: EMERALD HARBOR

J. Kent Kimes, PE, #33678 Principal Engineer

QPW

RECEIVED

JUN n 6 2023

TOWN OF LONGBOAT KEY Planning, Zoning & Building



- For Client Use Only -

© 2023 Kimes Engineering and Management Services, Inc. 1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311 C.A. 27189





CLIENT: COAST TO COAST

NAME: CHARLES & NANCY REYNOLDS

ADDRESS: 620 EMERALD HARBOR DR

LOT: 62

SUBDIVISION: EMERALD HARBOR

SITE SPECIFIC INFORMA	TION FOR COMPLIANCE W	ITH ANSI/APSP-7	
METHOD OF DETERMINING ANSI 7 PUMP FLOW	Detailed	TTDH X	
	Curve 8	Calc ^	
SUCTION OUTLET FOR:	FILTRATION PUMP		
Manufacturer & Model:	JANDY VSPLUS HP	VSPHP270DV2A	
Pum	p Flow from Pump Curve w	vith method indicated	: 97 <i>GPM</i>
ANSI/APSP/ICC-7 2013 ADOPTED IN 2020 FBC 7TH ED			BASED ON ANSI 7 FLOW
DRAIN INFO: PARAMOUNT SDX2 DUAL DRAIN	OUTLET COVER/GRATE- PO		PODT ODJENITATION
APPROVED Maximum Outlet Flo			
		th DRAIN 2.5	
TRUNK SUCTION 6 FPS @ ANSI 15		- USE 2.	(in)
SUCTION OUTLET FOR:	NOT USED		
Manufacturer & Model			
Pum	p Flow from Pump Curve w	vith method indicated	: GPM
ANGLIAROR (100 T 0040 AR 007777 AV 0040 TRO TRU			
ANSI/APSP/ICC-7 2013 ADOPTED IN 2020 FBC 7TH ED	OND LONGER SIZES BRANCE OUTLET COVER/GRATE- SPA		BASED ON ANSI / FLOW
DRAIN INFO:	OUTLET COVERY GRATE- 3F7	A COTLETS	
APPROVED Maximum Outlet Fl	ow (GPM) Floor:	GPM Wal	I: GPM
AT FROVED IMAXIII dittee 11		CH DRAIN	01111
TRUNK SUCTION 6 FPS @ ANSI 15			(in)
	FLOW (in)	USE	(in)
ANSI 15 FLOW= 36 GPM	ES SIZED ON ANSI 15 FLOW	A/ DIDE CIZE CLINANA D	v
MINIMUM CIRCULATION LIN	UNK/SKIMMER SUCTION:	1.5 (in) ANSI 15	
	FILTRATION RETURNS:	1.5 (in) ANSI 15	Control of the Contro
SDA AUX FLOW O CDAA			
SPA AUX. FLOW O GPM	SPA AUXILIARY RETURN: 2 ND AUXILIARY RETURNS:		Flow @ 8 FPS
O' III	-		Flow @ 8 FPS
	VACUUM OR SWEEP LINE:	1.5 (in) ANSI 5 I	Flow @ 8 FPS
NOTES: SUCTION OULET COVER/GRATE AND			IN DOTTOM DODT
FOR POOL USE PARAMOUNT SDX2 DI ORIENTATION	DAL DRAINS WITH 2.5	BRAINCH SIZE AN	ID BUTTOM PORT
ONLENTATION		DEO	
		REC	EIVED
USE 2.5" FROM BRANCH TEE TO PUA	IP		
		TOWN	N 6 2023
		Planning 7	ONGBOAT KEY
NO CHANGE TO ENGINEERING WITH	HOUT APPROVAL OF TH		anno a Suilding



CLIENT: COAST TO COAST

NAME: CHARLES & NANCY REYNOLDS

ADDRESS: 620 EMERALD HARBOR DR

LOT: 62

SUBDIVISION: EMERALD HARBOR

[POOL ONLY					
	Suction	Pressure	Equipment			
Pipe Size (in.)	2.5"	2"	2"			
Pipe Length (100% flow)	36	30	15			
#EL fittings	5	5	5			
#T Run fittings	2	2	1			
#T Branch fittings	1	1	1			
Gate Valves	0	0	0			
#3 Way valves	1	1	1			

This calculation assumes worst case with 100% suction from drain and none from skimmer.

This calculation is conservative in that it omits the velocity head on the pressure side beyond the first split of return lines.

Pump Curve JANDY VSPLUS HP VSPHP270DV2A

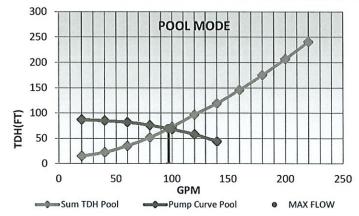
Filter: JANDY CS150, 150SF

Heater: JANDY JXI

Return Fittings 3

Head loss based on Hazen-Williams equation, where c=150Head Loss per 100 ft =0.2083 (100/c) $^{1.852}$ *q $^{1.852}$ /d $_h$

	DETAILED TDH POOL MODE										
Sum of Pipe Friction	2.1	7.6	16.0	27.3	41.3	57.8	76.9	98.5	122.5	148.9	177.7
Filter(s)	0.0	0.4	1.7	3.7	6.5	9.3	10.3	12.2	14.1	16.0	17.9
Return Fitting(s)	0.8	1.5	3.3	5.0	7.4	10.0	11.2	13.1	14.9	16.8	18.7
Salt System	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heater(s)	12.3	13.0	14.2	15.6	17.5	19.7	20.6	22.1	23.5	25.0	26.5
Sum TDH (FT H 2 O)	15.2	22.5	35.2	51.6	72.7	96.8	119.0	145.8	175.1	206.8	240.8
Flow (GPM)	20	40	60	80	100	120	140	160	180	200	220



RECEIVED

JUN n 6 2023

TOWN OF LONGBOAT KEY Planning, Zoning & Building

POOL MODE

MAXIMUM: 97 GPM @ 69' TDH

REQUIRED BRANCH SUCTION

2.5" (in) 2.5 (in)

RECOMMENDED MIN. TRUNK SUCTION TO EQUIP:

- For Client Use Only -

© 2023 Kimes Engineering and Management Services, Inc. 1925 Worth Ct | Bradenton, Florida 34211 | ph: (941)749-0311



Intelligent Pump Design.

· No Rewiring Necessary

Auto-sensing dual voltage motor automatically recognizes and adapts to 115- or 230-volt power supplies.

· Add iQPUMP01 for Instant Automation

Two auxiliary relays allow the pump to control other equipment such as a salt chlorinator and booster pump without a separate timeclock.

· Space Saving Design

Zero Clearance TEFC motor pulls in cooler air from the side of the motor instead of the back, allowing for compact installation against walls or other tight setups.



· Additional Features

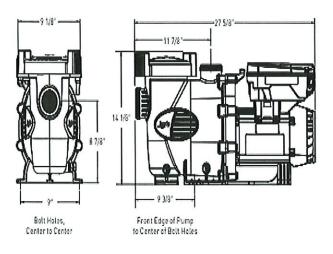
- 40% larger strainer basket than the leading competitor for greater pool owner convenience and improved efficiency when loaded with debris
- 2" x 2.5" unions included for easy installation and maintenance with no hidden costs
- Easy Controller Setup auto detects connection to an automation system or a traditional controller, eliminating the need to adjust settings manually
- R\$485 Quick Connect Port for faster installation and maintenance
- > Dry Contact Relay Control
- Ergonomic carry handle for easy installation
- Tool free lid allows for quick and easy cleaning of the pump basket

· Choose Your Own Controller

Designed to work with the following Jandy control systems for complete programmability and customization (controller sold separately):

- Jandy AquaLink® Automation Systems
- › iQPUMP01 with iAquaLink® App Control
- JEP-R Controller

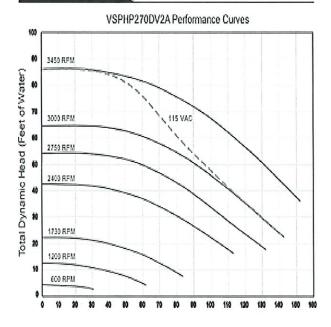
DIMENSIONS



SPECIFICATIONS

Model No.	THP	WEF	Yoltage	Max Watts		Union Size	Rec. Pipe Size ²		Overall Length
)/C DUD224DU2A	2.70	7 100	230 VAC	2,250W	10.5	21-2101	21. 41	64.0 lbs	22 6 /01
VSPHP270DV2A	2.70	7.107	115 VAC	1,8400	14.0	2 1 2 1/2	2 . 3	64.0 ILS	27 2/0

PERFORMANCE





JUN 10 6 2023:
TOWN OBLINGS BERMIT PLANS
Planning Trings College Record

↑ WARNING

The maximum flow rate for each pair of SDX2 drains varies depending on size and orientation of pipe and location on wall or floor. See chart below for flow limits based on variables. Any modification that increases the flow rate of the

circulation system shall require reevaluation of the cover/grate and sump to ensure that the flow rating of the Suction Outlet Fitting Assembly (SOFA) is not exceeded. Compliance with this standard requires that these SOFA-configuration specific flow ratings NOT be exceeded at any time the pool is open to bathers.

Compliance with this standard requires selecting and installing a SOFA, or combination of SOFAs, such that the resulting individual suction system flow rating is greater than the pumping system's maximum system flow rate.

The velocity at the opening to the SDX2 drain at the system flow is equal to gpm/134.648=(X)FPS. For multiple drain systems where more than two drains are used, the maximum flow rate is calculated per ANSI/ APSP-7 Section 4.6 as shown in the following chart.

SOFA SDX2 FLOW RATINGS

VGB Compliant ANSI/APSP/ICC-16 2017 LISTED **

Flow Rating (GPM)	Pipe Size	Pipe Port Orientation	Drain Mounting Orientation	
180	3"	Side	Floor	
116	2.5"	Side	Floor	
100	2"	Side	Floor	
60	1.5"	Side	Floor	
178	3"	Bottom	Floor	
120	2.5"	Bottom	Floor	
100	2"	Bottom	Floor	
60	1.5"	Bottom	Floor	
140	3"	Side	Wall	
108	2.5"	Side	Wall .	
100	2"	Side	Wall	
60	1.5"	Side	Wall	
140	3"	Bottom	Wall	
108	2.5"	Bottom	Wall	
100	2"	Bottom	Wall	
60	1.5"	Bottom	Wall	

** ANNOTATION BY KIMES ENGINEERING





HIGH FLOW SAFETY DRAIN

SUBMERGED SUCTION OUTLET FOR SINGLE OR MULTIPLE DRAIN USE FOR USE ON WALL OR FLOOR





JXi™ Swimming Pool & Spa Gas Heater

Hot things come in small sizes

The JXi heater sets a new standard in pool and spa heating technology with its ultra-compact size, lightweight design, and installation flexibility, making it a top choice for pool professionals and pool owners everywhere. The high-efficiency, low-NOx JXi is available in four BTU sizes, 200K*, 260K, 399K, and offered in both natural and propane gas models.

Fastest Installation

Pro-driven features for the fastest, most customer-friendly installation include:

Ultra-Compact

2' x 2' footprint for small space requirements and maximum installation flexibility**

Lightweight Design

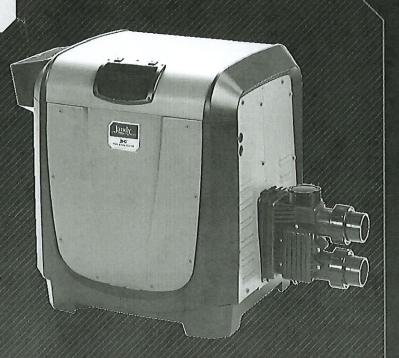
Weighs less than 126 pounds unpackaged for easy maneuverability and transport.

Best Retrofit Option

Plumbing flexibility for quick Mastertemp® and Max-É-Therm® replacement that requires no plumbing adjustments***

Easy to Control

RS485 digital interface is Aqualink®/ iAqualink-compatible for pool and spa automation



*Coming soon.

**Refer to JX manual for proper heater clearances that may apply.

***Rease see Easy Replacement section on next page.

Energy Efficient

83% thermal efficiency rating and low-NOx design surpasses strict DOE Energy Efficiency requirements.

Automation-Ready

AquaLink/iAquaLink-compatible with its RS485 interface.



AquaLink $/\hat{i}$ AquaLink COMPATIBLE

BLDG. PERMIT PLANS COPY OF RECORD

JUN n 6 2023

TOWN OF LONGBOAT KEY Planning, Zoning & Building