

NORTH FLORIDA POOLS

6/2/2020

McCLEAN POOL

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MINIMUM FLOW REQ'D = 36 GPM

POOL VOLUME : SURFACE AREA X AVG DEPTH X 7.48 GAL / CF

VOL = **544** SF X **4** FT DEEP **16276.48** Gallons

TURNOVER TIME: No. Hours X 60 min / hour =

6 hours x 60 = **360** minutes

MAX POOL FLOW RATE: GALLONS / TURNOVER = FLOW RATE

16276.48 GAL / **360** minutes = **45.2124444** GPM

POOL FEATURES

JETS, SHEER DE **1** WATER FEATURE GPM EA = **36** GPMTOTAL SUGGESTED POOL FLOW RATE: **81.21** GPMV = 1.318 C R^{0.63} S^{0.54}**SUPPLY (RETURN) PIPING****3** in = NOMINAL DIAMETER**3.04** in = D ACTUAL diam**0.2535** ft = D diam**140** = C, coefficient of roughness**7.2679** in² = A pipe**0.0505** ft² = A pipe**144.00** gpm / line **0.3208556** cfs**144.00** gpm = TOTAL FLOW IN 1 LINES**0.3209** cfs = Q flow rate**6.3572** f/sec = V = Velocity**0.0634** ft = R = Hydraulic Radius = A / P**0.0489** ft/ft = S hydraulic gradient**18** ft = pipe length average**0.88** ft = hf = head loss due to friction**0.38** psi **0.0038069****SUCTION PIPING****2.5** in = NOMINAL DIAMETER**2.45** in = D ACTUAL diam**0.2038** ft = D diam**140** = C, coefficient of roughness**4.6951** in² = A pipe**0.0326** ft² = A pipe**72.00** gpm = **0.1604278** cfs**2** No. of Suction Pipes**0.1604** cfs = Q flow rate**4.9203** f/sec = V = Velocity**0.0509** ft = R = Hydraulic Radius = A / P**0.0392** ft/ft = S hydraulic gradient**33** ft = pipe length average**1.29** ft = hf = head loss due to friction**0.56** psi **0.0056034****PUMP CURVE CALCULATIONSS**

FLOW TOT HEAD LOSS FT PSI

GPM FT PSI

80.00 **12.7** **5.50****100.00** **18.7** **8.10****120.00** **28.0** **12.12****140.00** **36.1** **15.63****160.00** **48.5** **21.00****BRANCH PIPING FLOW RATES****2** in @ 6 fps max BRANCH = **61.54** GPM**2** in @ 8 fps max TRUNK = **82.06** GPM**2** in @ 10 fps max RETURN = **102.57** GPM**3** in @ 3 fps max RETURN = **67.95** GPM MAIN

DRAIN

OTHER PRESSURE LOSSES

per mnfg

28.00 FT = FILTER TDH LOSS**0.00** FT = HEATER TDH LOSS**28.00** FT = TOTAL TDH LOSS**MINOR LOSSES (SUPPLY & SUCTION COMBINED)**h (lost) = KL * V² / (2*g)

K h (lost) ft

2 ea = # tees thru side outlet **1.75** **2.20****2** ea = # gate valves **1** **1.26****1** ea = # check valves **0.2** **0.13****0** THERAPY JET **21.73** **0.00****0** ea = # 45 deg ELL **0.4** **0.00****6** ea = # 90 deg ELL **0.75** **2.82****0** ea = Reducer D2= **0.5** **0.0871791****TOTAL =****6.40** ft

D1/D2= 6.084

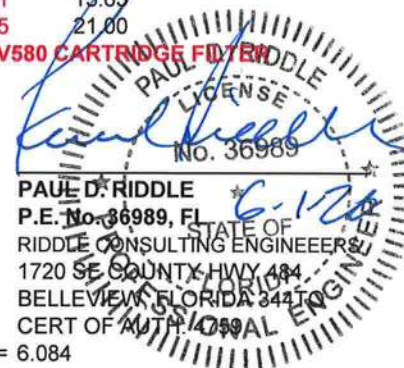
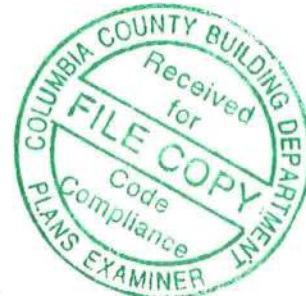
ELEVATION DIFFERENCE**0.00** ft = delta Z**0.00** FT = TOTAL FRICTION HEAD LOSS AFTER SPLIT @ LOOP**36.57** FT = TOTAL HEAD LOSS IN SYSTEM @ **144.00** GPM**15.83** PSIPUMP SELECTION : **JANDY VSPHP270DV2A**model: **VARIABLE SPEED**SUCTION OUTLET COVER: **MUST EXCEED** **144.00** GPM FLOW RATEmodel **32" CHANNEL DRAIN OR 2 OUTLET COVERS**

SYSTEM FLOW RATE MUST NOT EXCEED APPROVED COVER FLOW RATE

O.K.

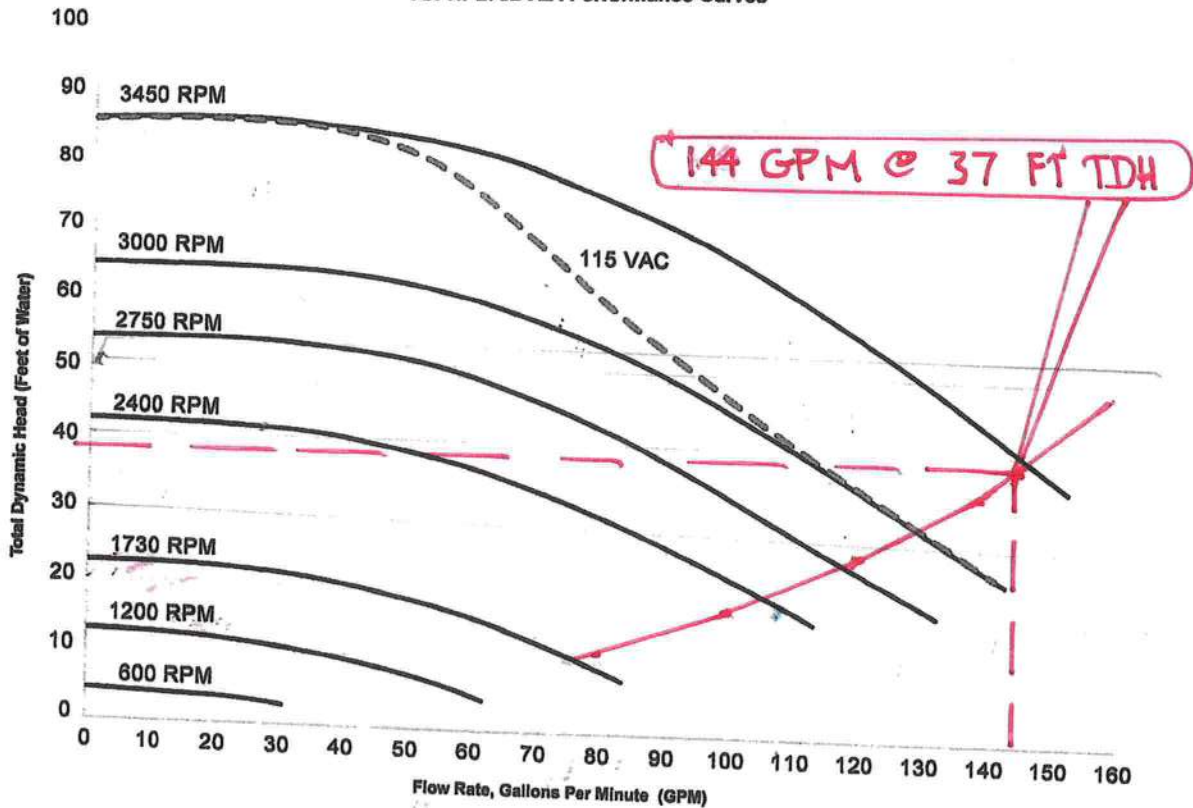
PER FBC 2017 6TH EDITION ANSI / APSP 10

MOTOR TO BE GFCI PROTECTED PER NEC 680.21©

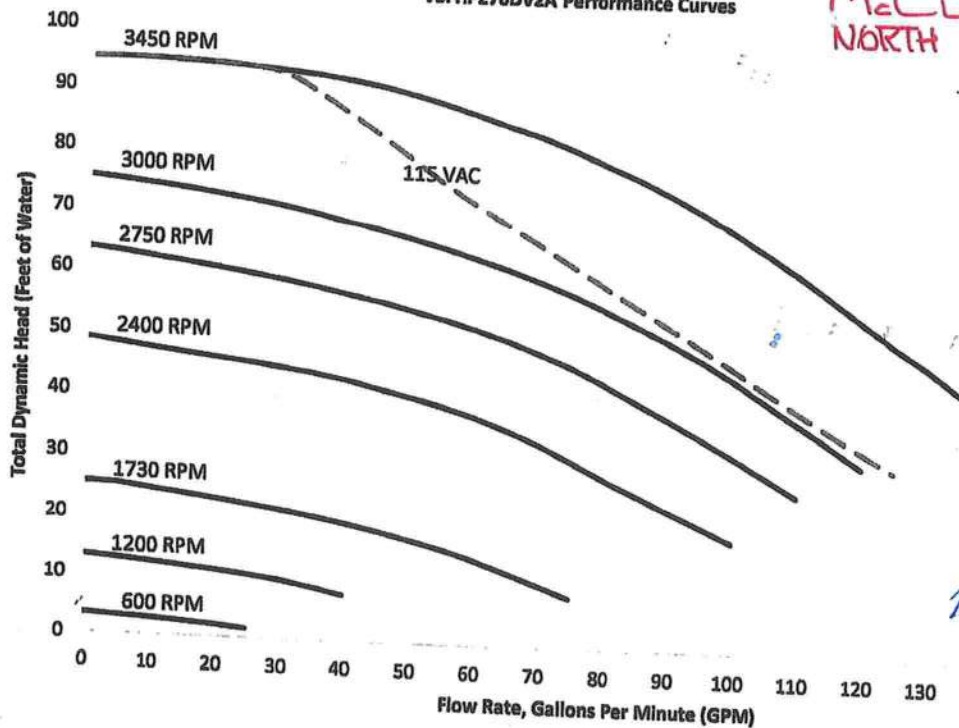


7.2 Performance Curves

VSPHP270DV2A Performance Curves



VSPHP270DV2A Performance Curves



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NORTH FLORIDA POOLS



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