

Company: Bonneville Power Administration

Name:

Date: 2/8/2007

Selection: Missing Fairbanks Vertical Turbines



Pump:

Size: 36F.1 (1 stage)
 Type: VERT.TURBINE
 Synch speed: 900 rpm
 Curve: 09-096
 Specific Speeds:
 Dimensions:
 Vertical Turbine:
 Speed: 880 rpm
 Dia: 27.72 in
 Impeller:
 Ns: ---
 Nss: ---
 Suction: 40 in
 Discharge: 24 in
 Bowl size: 35.75 in
 Max lateral: 1.2 in
 Thrust K factor: 120 lb/ft

Search Criteria:

Flow: --- US gpm Head: --- ft

Fluid:

Water
 Density: 62.25 lb/ft³
 Viscosity: 1.105 cP
 NPSHa: --- ft
 Temperature: 60 °F
 Vapor pressure: 0.2563 psi a
 Atm pressure: 14.7 psi a

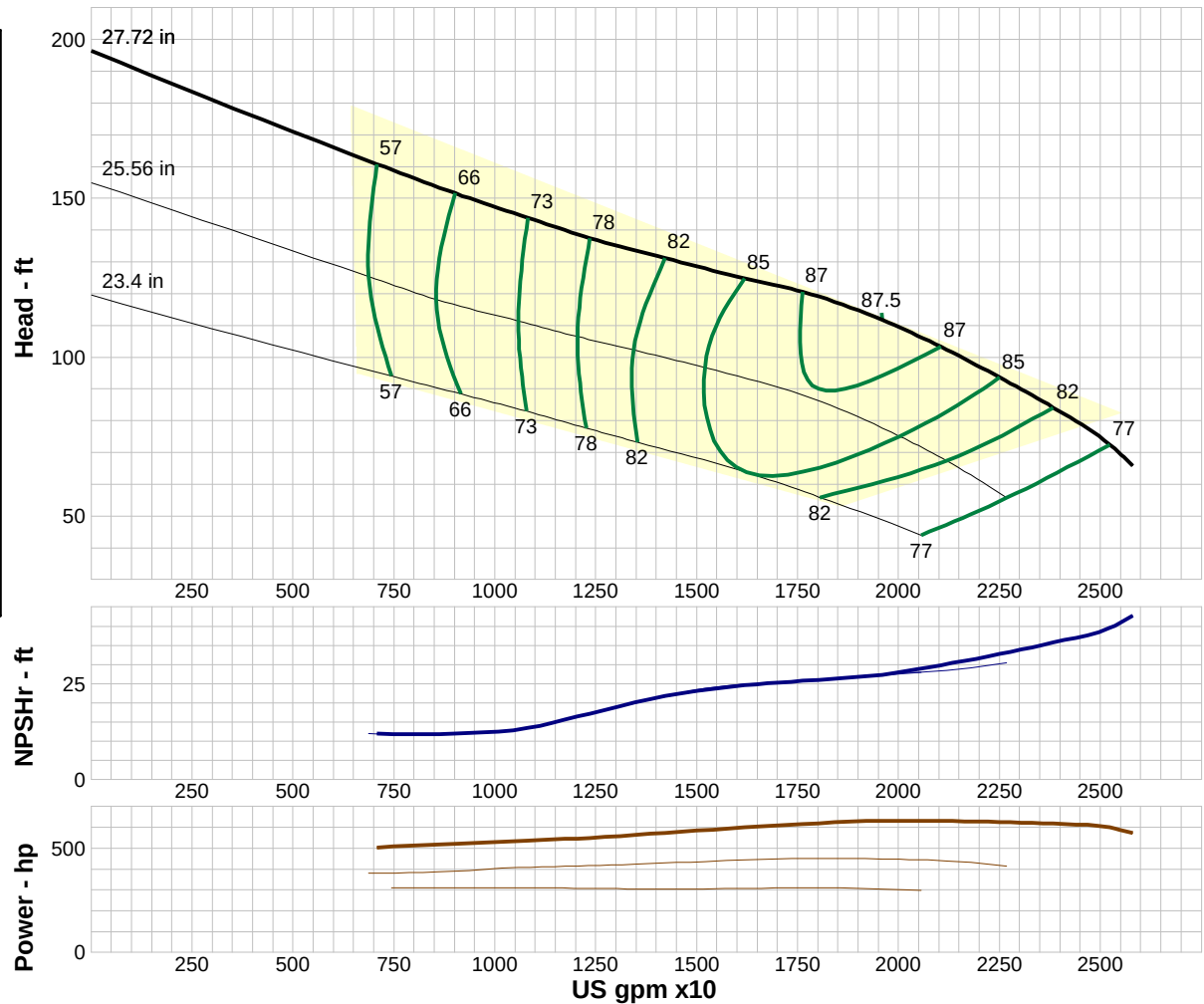
Motor:

Standard: NEMA --- hp
 Enclosure: TEFC Speed: ---
 Frame: ---
 Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 150 °F
 Pressure: 300 psi g
 Sphere size: 2.41 in
 Power: 1489 hp
 Eye area: --- in²

---- Data Point ----	
Flow:	19588 US gpm
Head:	112 ft
Eff:	87.5%
Power:	631 hp
NPSHr:	27.4 ft
---- Design Curve ----	
Shutoff head:	197 ft
Shutoff dP:	84.9 psi
Min flow:	--- US gpm
BEP:	87.5% @ 19588 US gpm
NOL power:	631 hp @ 19588 US gpm
-- Max Curve --	
Max power:	631 hp @ 19588 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
24757	880	76.3	78.7	605	38.3
20631	880	106	87.1	631	29.2
16505	880	124	85.5	603	24.8
12379	880	137	78.1	550	17.3
8252	880	155	62.5	515	12

Company: Bonneville Power Administration

Name:

Date: 2/8/2007

Selection: Missing Fairbanks Vertical Turbines



Pump:

Size: 36F.2+ (2 stage)

Type: VERT.TURBINE

Synch speed: 900 rpm

Curve: 09-096

Specific Speeds:

Dimensions:

Vertical Turbine:

Speed: 880 rpm

Dia: 27.72 in

Impeller:

Ns: ---

Nss: ---

Suction: 40 in
Discharge: 24 in

Bowl size: 35.75 in
Max lateral: 1.2 in
Thrust K factor: 120 lb/ft

Search Criteria:

Flow: --- US gpm

Head: --- ft

Fluid:

Water

Density: 62.25 lb/ft³

Viscosity: 1.105 cP

NPSHa: --- ft

Temperature: 60 °F

Vapor pressure: 0.2563 psi a

Atm pressure: 14.7 psi a

Motor:

Standard: NEMA

Enclosure: TEFC

--- hp

Speed: ---

Frame: ---

Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 150 °F

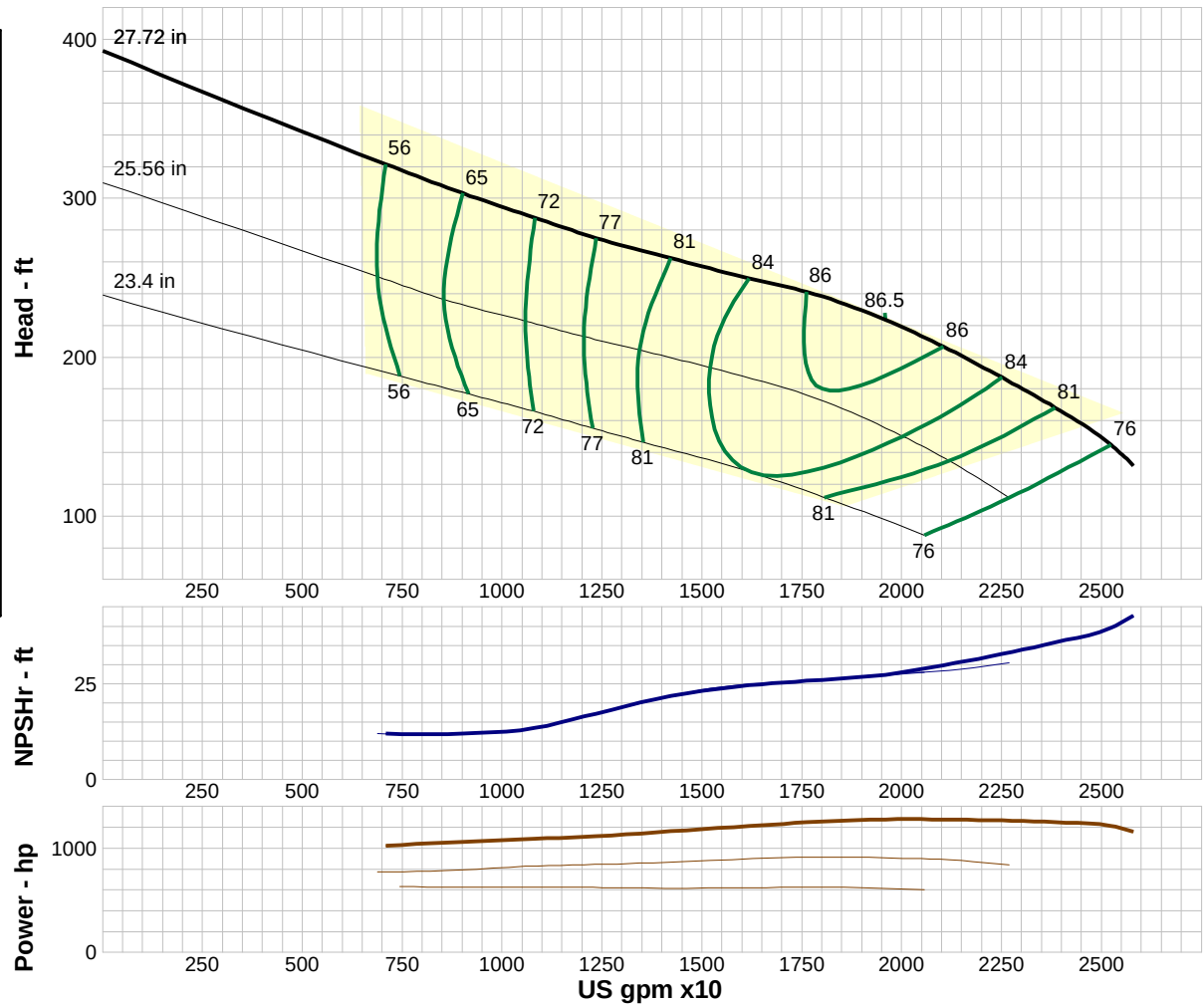
Pressure: 300 psi g

Sphere size: 2.41 in

Power: 1489 hp

Eye area: --- in²

---- Data Point ----	
Flow:	19588 US gpm
Head:	223 ft
Eff:	86.5%
Power:	1278 hp
NPSHr:	27.4 ft
---- Design Curve ----	
Shutoff head:	393 ft
Shutoff dP:	170 psi
Min flow:	--- US gpm
BEP:	86.5% @ 19588 US gpm
NOL power:	1278 hp @ 19588 US gpm
-- Max Curve --	
Max power:	1278 hp @ 19588 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
24757	880	153	77.7	1226	38.3
20631	880	211	86.1	1277	29.2
16505	880	248	84.5	1221	24.8
12379	880	275	77.1	1114	17.3
8252	880	310	61.5	1047	12