



Company: Bonneville Power Administration

Name:

Date: 11/25/2006

#### Pump:

Size: 10CC (1 stage)  
 Type: Vertical  
 Synch speed: 3450 rpm  
 Curve: 10CC  
 Specific Speeds:  
 Dimensions:  
 Vertical Turbine:  
 Speed: 3450 rpm  
 Dia: 7.703 in  
 Impeller:  
 Ns: 3450  
 Nss: ---  
 Suction: 6 in  
 Discharge: 6 in  
 Bowl size: 9.5 in  
 Max lateral: 0.75 in  
 Thrust K factor: 4 lb/ft

#### Search Criteria:

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

#### Fluid:

Water  
 Density: 62.25 lb/ft<sup>3</sup>  
 Viscosity: 1.105 cP  
 NPSHa: --- ft  
 Temperature: 60 °F  
 Vapor pressure: 0.2563 psi a  
 Atm pressure: 14.7 psi a

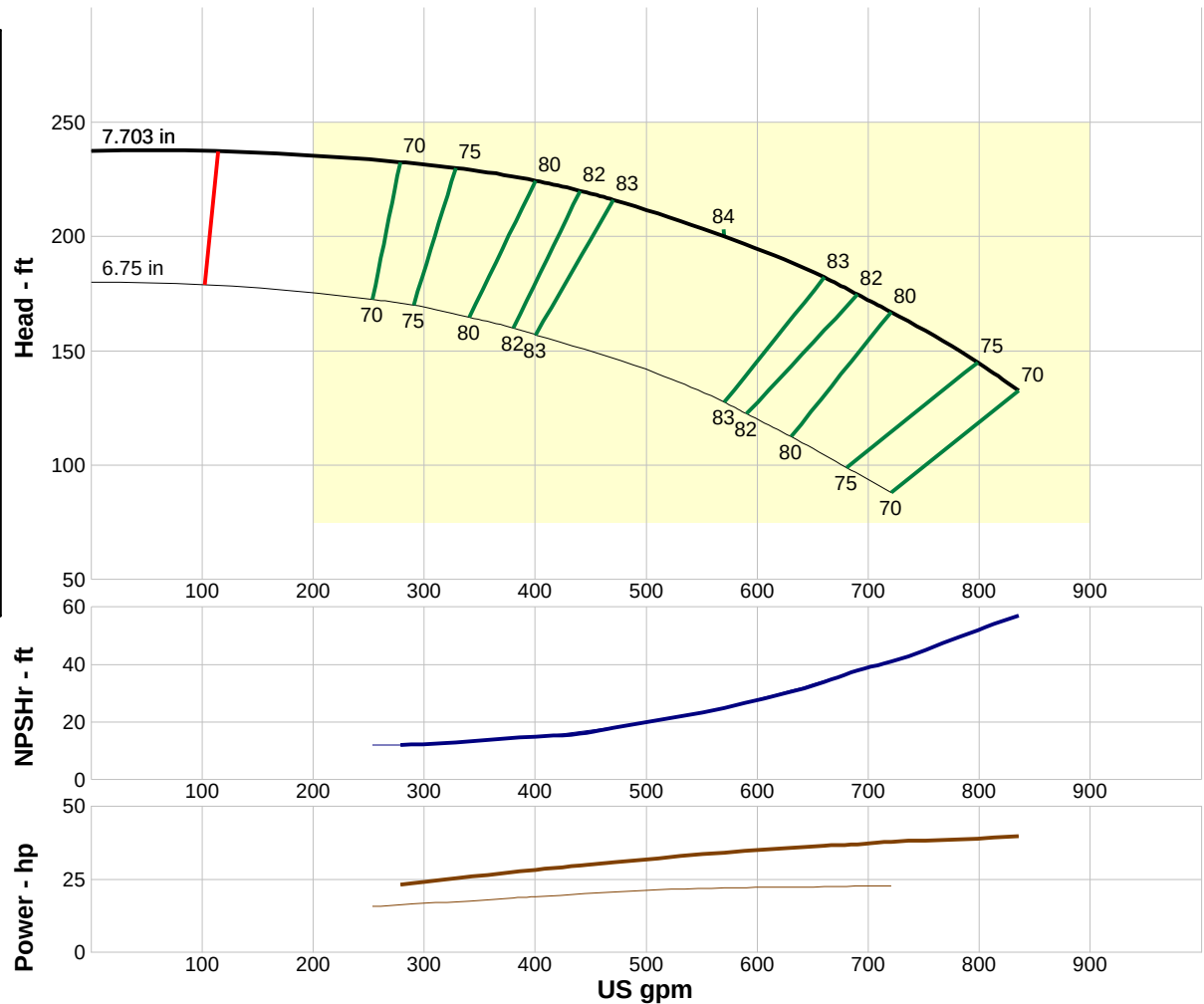
#### Motor:

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

#### Pump Limits:

Temperature: 140 °F  
 Pressure: 278 psi g  
 Sphere size: 0.531 in  
 Power: 150 hp  
 Eye area: --- in<sup>2</sup>

| ---- Data Point ----   |                      |
|------------------------|----------------------|
| Flow:                  | 570 US gpm           |
| Head:                  | 200 ft               |
| Eff:                   | 84%                  |
| Power:                 | 34.3 hp              |
| NPSHr:                 | 25 ft                |
| ---- Design Curve ---- |                      |
| Shutoff head:          | 238 ft               |
| Shutoff dP:            | 103 psi              |
| Min flow:              | 114 US gpm           |
| BEP:                   | 84% @ 570 US gpm     |
| NOL power:             | 39.9 hp @ 835 US gpm |
| -- Max Curve --        |                      |
| Max power:             | 39.9 hp @ 835 US gpm |



#### Performance Evaluation:

| Flow<br>US gpm | Speed<br>rpm | Head<br>ft | Efficiency<br>% | Power<br>hp | NPSHr<br>ft |
|----------------|--------------|------------|-----------------|-------------|-------------|
| 802            | 3450         | 144        | 74.5            | 39.1        | 52.5        |
| 668            | 3450         | 180        | 82.7            | 36.7        | 35.1        |
| 534            | 3450         | 206        | 83.6            | 33.1        | 22.5        |
| 401            | 3450         | 224        | 80              | 28.4        | 15          |
| 267            | 3450         | 233        | 68.9            | 22.9        | 11.8        |