

WT OF UNIT - W/H 1500

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|----------|---|-------------|--------------|
| SCREW WT | = | 3180 | 12/8/2008 |
| MOTOR - | | -23 | TROY @ |
| FUEL - | | -17 | CK P7. |
| | | <u>3140</u> | |
| | | | NET w/BRICK. |

NET TANK VOLUME -

MEASURED w/FLOW METER TO BE 1430 GALLONS

CALC TO VERIFY: ON 3/25 THE TEST UNIT ACTUALLY MEASURED INSIDE

$$L = 98''$$

$$D = 70''$$

$$\text{GROSS VOL} = \frac{\pi 35^2 \times 98}{231} = 1633 \text{ GALLONS}$$

DEDUCTS -

COMPRESS CHAMBER

$$\frac{631.17 \times 42}{231} = 114.76 \text{ GALLONS}$$

BLOWER HOUSING

$$\frac{271.21 \times 5.25}{231} = 6.16 \text{ GALLONS}$$

Vertical Flow Nozzle

$$\frac{97.96 \times 18.68}{231} = 7.92 \text{ Gallons}$$

1x PIPING - 4" SCH 40 OD = 4.50"

$$\frac{(129.75' + 204.75' + 16') \times \left(\frac{4.5}{2}\right)^2 \times \pi}{231}$$

$$\frac{350 \times 15.96}{231} = 24.10 \text{ Gallons}$$

1x - 5" SCH 40 - OD = 5.563"

$$\frac{102.75' \times \left(\frac{5.563}{2}\right)^2 \times \pi}{231} = 10.81 \text{ Gallons}$$

Air Inlet Tube - 6" SCH 10 Pipe, OD = 6.25"

$$\frac{98' \times \left(\frac{6.25}{2}\right)^2 \times \pi}{231} = 13.02 \text{ Gallons}$$

Reaction Chamber

$$\frac{25' \times \left(\frac{10.5}{2}\right)^2 \times \pi}{231} = 9.37 \text{ Gallons}$$

3/3

VOLUME SUMMARY:

$$\text{Net} = 1633 - (114.76 + 6.16 + 7.92 + 24.10 + 10.81 + 13.02 + 19.37)$$

$$= 1633 - 186.14 = \boxed{1446.86} \text{ VS } 1430 \text{ GAL}$$

COMBUSTION CHAMBER VOL:

$$\frac{557.93 \times 42}{1728} + \frac{9^2 \times \pi \times 4}{1728} = 14.15$$

$$\text{Min Load} = \frac{10 \text{ LBS}}{\text{ft}^3} \times 14.15 = \underline{141.50 \text{ LBS}}$$