

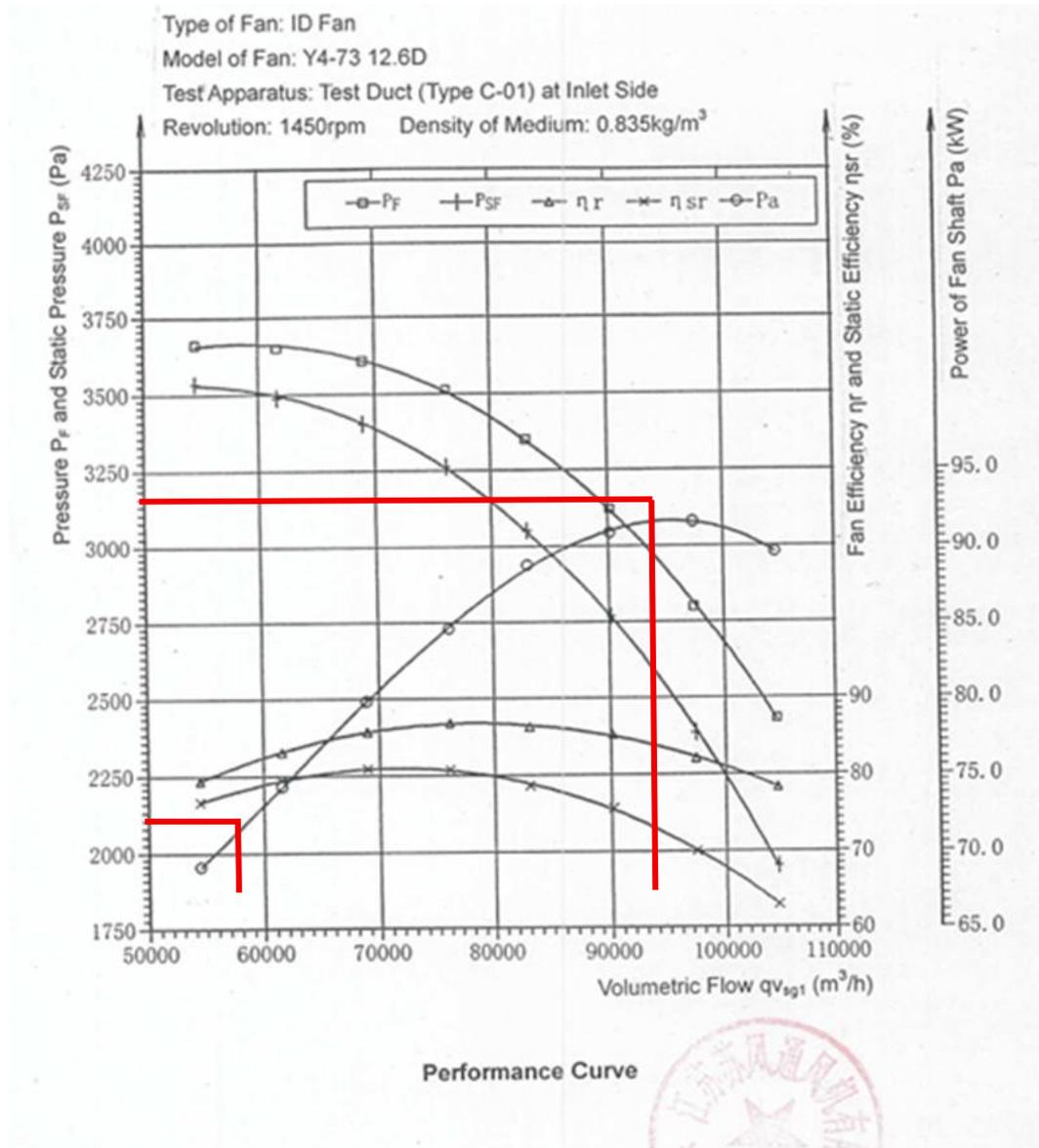
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LAMPIRAN

Lampiran 1. Performance Curve IDFAN



Lampiran 2. Perhitungan Pressure Loss

Pressure Loss saat menggunakan bag filter redundant saat digunakan oleh unit 1 yaitu dengan menjumlahkan total Pressure Loss pada area inlet duct, bag filter dan outlet duct :

$$\begin{aligned}\text{TOTAL PRESSURE LOSS} &= \text{Pressure Loss inlet duct} + \text{Pressure Loss bag filter} \\ &\quad + \text{Pressure Loss outlet duct} \\ &= 26,78 \text{ Pa} + (-21 \text{ in WG}) + 36,70 \text{ Pa} \\ &= 63,48 \text{ Pa} + (-21 \text{ in WG})\end{aligned}$$

Pressure Loss saat menggunakan bag filter redundant saat digunakan oleh unit 1 yaitu dengan menjumlahkan total *Pressure Loss* pada area inlet duct, bag filter dan outlet duct :

$$\begin{aligned}\text{TOTAL PRESSURE LOSS} &= \text{Pressure Loss inlet duct} + \text{Pressure Loss bag filter} + \\ &\quad \text{Pressure Loss outlet duct} \\ &= 31,91 \text{ Pa} + (-21 \text{ in WG}) + 57,61 \text{ Pa} \\ &= 89,52 \text{ Pa} + (-21 \text{ in WG})\end{aligned}$$

Dari nilai total *Pressure Loss* yang telah didapatkan dari perhitungan di atas, maka kenaikan *Pressure Loss* saat unit 1 menggunakan bag filter redundant jika dibandingkan dengan saat menggunakan bag filter eksisting :

$$\begin{aligned}\text{Kenaikkan PRESSURE LOSS} &= \text{TOTAL PRESSURE LOSS (saat unit 1} \\ &\quad \text{menggunakan bag filter redundant)} - \text{TOTAL} \\ &\quad \text{PRESSURE LOSS (saat unit 1 menggunakan} \\ &\quad \text{bag filter eksisting)}.\end{aligned}$$

Maka,

$$\begin{aligned}\text{kenaikkan PRESSURE LOSS} &= \{ 89,52 \text{ Pa} + (-21 \text{ in WG}) \} - \{ 63,48 \text{ Pa} + (-21 \text{ in} \\ &\quad \text{WG}) \} \\ &= 89,52 \text{ Pa} - 63,48 \text{ Pa} \\ &= \mathbf{26,04 \text{ Pa}}\end{aligned}$$

Pressure Loss saat menggunakan bag filter unit 2 eksisting yaitu dengan menjumlahkan total *Pressure Loss* pada area inlet duct, bag filter dan outlet duct :

$$\begin{aligned}
 \text{TOTAL PRESSURE LOSS} &= \text{Pressure Loss inlet duct} + \text{Pressure Loss bag} \\
 &\quad \text{filter} + \text{Pressure Loss outlet duct} \\
 &= 26,78 \text{ Pa} + (-21 \text{ in WG}) + 36,70 \text{ Pa} \\
 &= 63,48 \text{ Pa} + (-21 \text{ in WG})
 \end{aligned}$$

Pressure Loss saat menggunakan bag filter redundant saat digunakan oleh unit 2 yaitu dengan menjumlahkan total pressure loss pada area inlet duct, bag filter dan outlet duct :

$$\begin{aligned}
 \text{TOTAL PRESSURE LOSS} &= \text{Pressure loss inlet duct} + \text{pressure} \\
 &\quad \text{loss bag filter} + \text{pressure loss outlet duct} \\
 &= 28,93 \text{ Pa} + (-21 \text{ in WG}) + 63,07 \text{ Pa} \\
 &= 92 \text{ Pa} + (-21 \text{ in WG})
 \end{aligned}$$

Dari nilai total *Pressure Loss* yang telah didapatkan dari perhitungan di atas, maka kenaikan *Pressure Loss* saat unit 2 menggunakan bag filter redundant jika dibandingkan dengan saat menggunakan bag filter eksisting: Kenaikkan PRESSURE LOSS = TOTAL PRESSURE LOSS (saat unit 2 menggunakan bag filter redundant) - TOTAL PRESSURE LOSS (saat unit 2 menggunakan bag filter eksisting).

$$\begin{aligned}
 \text{Maka, kenaikan PRESSURE LOSS} &= \{ 92 \text{ Pa} + (-21 \text{ in WG}) \} - \{ 63,48 \text{ Pa} \\
 &\quad + (-21 \text{ in WG}) \} \\
 &= 92 \text{ Pa} - 63,48 \text{ Pa} \\
 &= \mathbf{28,52 \text{ Pa}}
 \end{aligned}$$