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Lampiran 1

1. Sebelum diperbaiki :

Diketahui :

$$p_i = 5,4 \text{ Kg/cm}^2$$

$$D = 49 \text{ mm} = 4,9 \text{ cm}$$

$$S = 54 \text{ mm} = 0,054 \text{ m}$$

$$n = 1500 \text{ rpm}$$

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} \times 3,14 \times 4,9^2 \times 0,054 \times 1500}{2 \times 60 \times 75} = 0,916006TK$$

Jika nilai n = 2000 rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} \times 3,14 \times 4,9^2 \times 0,054 \times 2000}{2 \times 60 \times 75} = 1,221341TK$$

Jika nilai n = 3000 rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} \times 3,14 \times 4,9^2 \times 0,054 \times 3000}{2 \times 60 \times 75} = 1,832011TK$$

Jika nilai n = 4000 rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} \times 3,14 \times 4,9^2 \times 0,054 \times 4000}{2 \times 60 \times 75} = 2,442681TK$$

Jika nilai n = 6000 rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} \times 3,14 \times 4,9^2 \times 0,054 \times 6000}{2 \times 60 \times 75} = 3,664022TK$$

Jika nilai $n = 8000$ rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{5,4 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 8000}{2 \times 60 \times 75} = 4,885363TK$$

2. Sesudah diperbaiki :

Diketahui :

$$p_i = 8,2 \text{ Kg/cm}^2$$

$$D = 49 \text{ mm} = 4,9 \text{ cm}$$

$$S = 54 \text{ mm} = 0,054 \text{ m}$$

$$n = 1500 \text{ rpm}$$

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{8,2 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 1500}{2 \times 60 \times 75} = 1,390971TK$$

Jika nilai $n = 2000$ rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{8,2 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 2000}{2 \times 60 \times 75} = 1,854628TK$$

Jika nilai $n = 3000$ rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{8,2 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 3000}{2 \times 60 \times 75} = 2,781943TK$$

Jika nilai $n = 4000$ rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{8,2 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 4000}{2 \times 60 \times 75} = 3,709257TK$$

Jika nilai $n = 6000$ rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

$$Ni = \frac{8,2 \times \frac{1}{4} 3,14 \times 4,9^2 \times 0,054 \times 6000}{2 \times 60 \times 75} = 5,563885TK$$

Jika nilai $n = 8000$ rpm

Penyelesaian :

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Lampiran 1

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Diketahui :

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Jika nilai n = 4000 rpm

Penyelesaian :

$$Ni = \frac{p_i \times \frac{1}{4} \pi \times D^2 \times S \times n}{2 \times 60 \times 75}$$

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Jika nilai n = 6000 rpm

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