



P H Q  
 N D  
 :

$$\frac{Q_1}{Q_2} = \frac{N_1}{N_2} \times \frac{D_1}{D_2}$$

$$\frac{H_1}{H_2} = \left(\frac{N_1}{N_2}\right)^2 \times \left(\frac{D_1}{D_2}\right)^2$$

$$\frac{P_1}{P_2} = \left(\frac{N_1}{N_2}\right)^3 \times \left(\frac{D_1}{D_2}\right)^3$$

Q<sub>A</sub> B A  
 P<sub>B</sub> P<sub>A</sub> H<sub>B</sub> H<sub>A</sub> Q<sub>B</sub>  
 :

$$Q_{\text{series}} = Q_A = Q_B$$

$$H_{\text{series}} = H_A + H_B$$

$$P_{\text{series}} = P_A + P_B$$

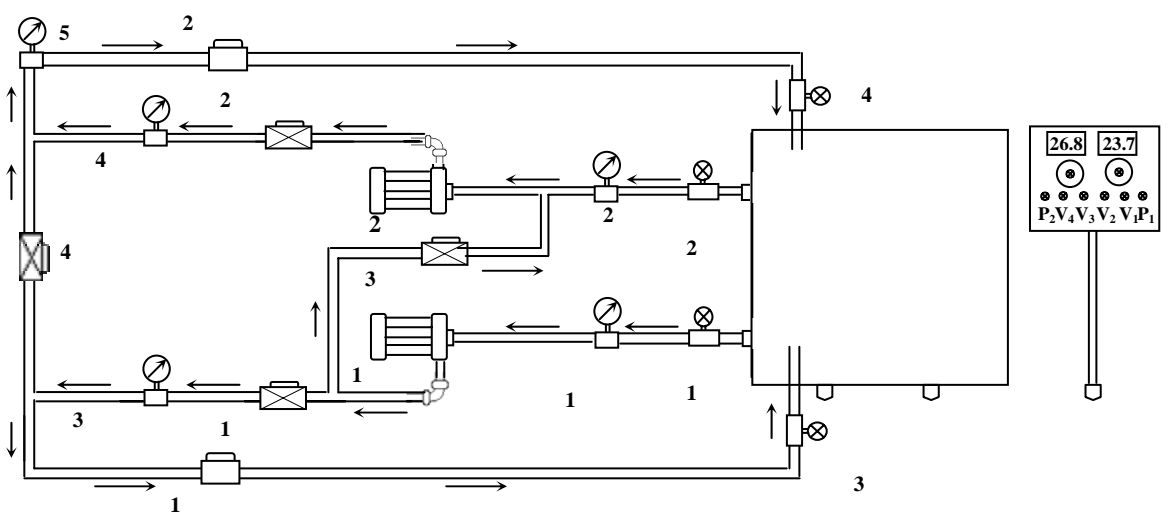
$$H_{\text{para}} = H_A = H_B$$

$$Q_{\text{para}} = Q_A + Q_B$$

$$P_{\text{para}} = P_A + P_B$$

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. 2 ( ) 1  
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2 . 1  
2 ) 2 2 2  
2 5 4 ( ) 2  
) 2 4  
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 .1 3 .  
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.3 1 .  
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 / ( , ) 1 .

/ ( , ) 1 .

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( )H3 ( )Q .  
 .2 ( / )

( )E ( )Q .( , )  
 .( / )

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( )	1 ( )	3 ( )	1 ( )	1 ( / )
				<b>N = 1000 RPM</b>
				<b>N = 1400 RPM</b>
				<b>N = 1800 RPM</b>

2

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. 4 1 .  
 . 2 2 .  
 . 3 .  
 .2 4 .  
 / ( , ) 2 .

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.4 2 .  
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 . 4 2 .  
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( )H4 ( )Q  
 .2 ( / )

( )E ( )Q .( , )  
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( )	2 ( )	4 ( )	2 ( )	2 ( / )
				<b>N = 1000 RPM</b>
				<b>N = 1400 RPM</b>
				<b>N = 1800 RPM</b>



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. 1 1 .

. 3 .

.2 4 .

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1,2 .

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( )H5 ( )Q .

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/ ( , ) 1,2 .

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( )H5 ( )Q .

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( )	<sup>2</sup> ( )	<sup>5</sup> ( )	<sup>2</sup> <sup>1</sup> ( / )
			<b>N = 1000 RPM</b>
			<b>N = 1400 RPM</b>
			<b>N = 1800 RPM</b>

:( )

( )	<sup>2</sup> ( )	<sup>5</sup> ( )	<sup>2</sup> <sup>1</sup> ( / )
			<b>N = 1000 RPM</b>
			<b>N = 1400 RPM</b>
			<b>N = 1800 RPM</b>