

## Disc brakes

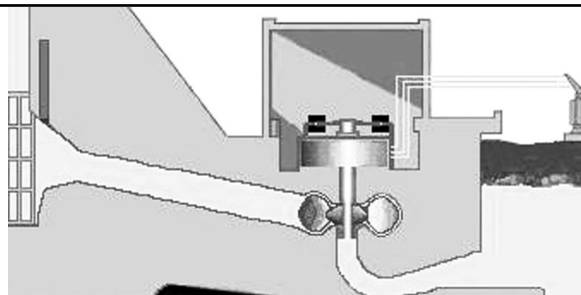
## Questionnaire

## Hydraulic turbine

Builder : \_\_\_\_\_

User : \_\_\_\_\_

Project : \_\_\_\_\_

**GENERAL CHARACTERISTICS****VALUES**

Diameter of the disc \_\_\_\_\_ m

Max. allowed thickness of the disc \_\_\_\_\_ mm

Axis of rotation \_\_\_\_\_

Nominal speed of rotation \_\_\_\_\_ rpm

Power \_\_\_\_\_ kw

Total Inertia \_\_\_\_\_ kg/m<sup>2</sup>

Ambient temperature \_\_\_\_\_ °C

**BRAKING WITH WATER GATE(S) CLOSED (without leakage)**

Normal torque of the turbine according to the speed

$$C = - "A" \omega^2 - "B" \omega - "C" \omega^{0,5}$$

<b>A =</b>	<b>B =</b>	<b>C =</b>
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If there is an electric braking based on the speed :

**Ce =** \_\_\_\_\_ (formula with  $\omega$  or in N.m)

and from which speed it is applied :

\_\_\_\_\_ rpm

Braking application at :

Requested braking time

1°)	% of the Nominal Speed	_____ s
2°)	% of the Nominal Speed	_____ s
3°)	% of the Nominal Speed	_____ s

Requested number of brake applications for \_\_\_\_\_ °)

**BRAKING WITH WATER GATE(S) OPEN (with leakage)**

Exceptional torque of the turbine according to the speed

$$C = - "A" \omega^2 - "B" \omega - "C" \omega^{0,5} + D$$

<b>A =</b>	<b>B =</b>	<b>C =</b>	<b>D =</b>
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If there is an electric braking based on the speed :

**Ce =** \_\_\_\_\_ (formula with  $\omega$  or in N.m)

and from which speed it is applied :

\_\_\_\_\_ rpm

Braking application at :

Requested braking time

1°)	% of the Nominal Speed	_____ s
2°)	% of the Nominal Speed	_____ s
3°)	% of the Nominal Speed	_____ s

Requested number of brake applications for \_\_\_\_\_ °)

Due to continuous development and improvement, all dimensions and characteristics are subject to change without notice.

## Disc brakes

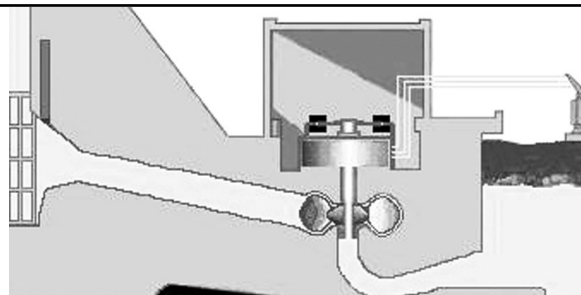
## Questionnaire

## Hydraulic turbine

Builder : \_\_\_\_\_

User : \_\_\_\_\_

Project : \_\_\_\_\_

**RESULTS OF CALCULATION****CALCULATION N°** \_\_\_\_\_

Type of brake \_\_\_\_\_

Response time of the brake \_\_\_\_\_ s

Number of brake(s) \_\_\_\_\_

Total braking torque \_\_\_\_\_ N.m

On disc Ø \_\_\_\_\_ m

Thickness of the disc \_\_\_\_\_ mm

Brake energy without leakage

1°) \_\_\_\_\_ J

2°) \_\_\_\_\_ J

3°) \_\_\_\_\_ J

Increase of  $\theta$ 

\_\_\_\_\_ °C

\_\_\_\_\_ °C

\_\_\_\_\_ °C

Time of braking

\_\_\_\_\_ s

\_\_\_\_\_ s

\_\_\_\_\_ s

Nber of possible brakings

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Brake energy with leakage

1°) \_\_\_\_\_ J

2°) \_\_\_\_\_ J

3°) \_\_\_\_\_ J

Increase of  $\theta$ 

\_\_\_\_\_ °C

\_\_\_\_\_ °C

\_\_\_\_\_ °C

Time of braking

\_\_\_\_\_ s

\_\_\_\_\_ s

\_\_\_\_\_ s

Nber of possible brakings

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_