

Reactor Coolant Pump – RCP

Guarantying coolant water circulation and sealing for the primary loop

Framatome designs, customizes & qualifies RCP models

Available to SMR/PWR designers & operators

Challenge

- Guarantee integrity, pressure control and ensure nuclear safety through circulating coolant for PWR reactors
- Ensure both cooling of nuclear reactivity while securing long lasting reliability
- Design and manufacture according to the applicable construction codes (ASME & RCC-M)

Solution

Framatome manufactures Reactor Coolant Pumps with the highest level of safety and quality standards.

- Final acceptance tested (FAT) through a **Full Flow Test** on our own test loop facility located **on-site** (CEH-Maubeuge)
- Design on a cartridge structure for **enhanced inspection of hydraulic parts**,
- Delivery with our 3 stage **Hydrodynamic Shaft Seal**: longer lifetime (almost twice versus existing technologies), easier to install, safer
- Custom design adaptation can be proposed according to reactor operating conditions
- Service and maintenance ensured for decades
- Robust and reliable supply chain of manufacturing capacities
- Expertise available for operating environments such as: BWR & PWR including SMR & VVER, CANDU
- ISO certified , Framatome supports international regulations: ISO 17025, ISO 19443, ASME III d1



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Technical information

RCP	FJ1 series	FJ2
Rating	300°C / 155 bars / 1 500 rpm	
Flowrate	14 000 m³/hr - 26 000 m³/hr	28 000 m³/hr -30 000 m³/hr
Pump Efficiency	Up to 84%	Up to 80%
Head	70-100 m	102 m
Bearings	3	4
Power	4-8 MW	8-11 MW
Casing	•Molded → FJ1-24 •Forged → FJ1-28	Molded
Weight	< 120tons	122 tons
Height	< 9,2m	9,3m

Key figures

> **330** Reactor Coolant Pumps manufactured and delivered since the 1970's

85 nuclear power plants equipped worldwide

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Customer benefits

- **Proven 60 years lifetime**
- Spare parts available on demand : seals, impeller, diffuser, shaft & motor available
- RCPs tested on Framatome's **dedicated on-site test loop**
- Numerical models to **manage RCP performance**

**Your performance
is our everyday commitment**