A major supplier of castings & forgings for the nuclear market
Secondary system

Many parts for the secondary systems produced at our foundries and forging units.

1. Pump casing 7 tons - Grade 316L
2. Cast body valve
   Z3 CN 20-09 M - 575 kg
3. Valve body 120 kg
4. Pump casting 2365 kg
   Z3CND19-10M
5. Pump to 500 kg
   Grade 316L
6. Flanges - Grade 316L
7. Closing system 120 kg
   Grade A48AP
8. Closing system 120 kg
   Grade A48AP
Manoir Industries and the Nuclear Market

For over 40 years, Manoir Industries has offered high quality solutions using the widest range of technical expertise housed under one roof and with a consistent QA/QC standard.

In the nuclear sector, where safety, reliability and long operating life are absolutely essential, our foundries and forgings have been key partners to all the contractors involved both in the primary and secondary systems.

Manoir Industries is one of the leader suppliers of the primary system

More specifically we have delivered over 500 elbows and 300 tubes constituting the primary loop, around 3500 t. This corresponds to 60 nuclear reactors abroad: in Korea, South Africa, Belgium, UK and with partners as Framatome / Areva, Westinghouse, Babcock....

Primary system

A large range of products cast out of our plant in Pitres and forged products from Custines.

1. Elbow 6 t
   Grade Z3 CN 20-09 M

2. Pump casing 750 kg
   Grade Z3 CN 20-09 M

3. Pipe & elbow assembled
   Primary circuit 5 t
   Grade Z3 CN 20-09 M

4. Tube with 0-let 12 t
   Grade Z3 CN 20-09 M

5. Reactor coolant pump impeller 750 kg
   Grade Z3 CN 20-09 M

6. Steam generator manway 1,8 t
   Grade 18MND5

7. Steam generator feed water nozzle 2,2 t
   Grade 18MND5

8. MSIV Valve bodies 32”/24”/32”
   Grade 20MNSM, St
### Facilities

#### Nuclear power plant Third generation

<table>
<thead>
<tr>
<th>Facilities</th>
<th>FRANCE</th>
<th>CUSTINES</th>
<th>YANTAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam generator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reactor coolant pump</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary cooling loop</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary cooling loop Valve and pump components</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th></th>
<th>PITRES</th>
<th>CUSTINES</th>
<th>YANTAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundry</td>
<td></td>
<td>Forging</td>
<td>Foundry / Forging</td>
</tr>
<tr>
<td>1 Induction furnace</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Electric arc furnaces: up to 15 t</td>
<td>N/A</td>
<td></td>
<td>15 furnaces up to 200 tons</td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N/A</td>
<td></td>
<td>7 up to 8 tons max rough machined</td>
<td>Ingots of 150t max</td>
</tr>
<tr>
<td>carbon steel, stainless steel, Martensite steel, High alloys, Duplex, superduplex, inconels, …/…</td>
<td>All grades (except brass)</td>
<td>carbon steel, stainless steel, Martensite steel, High alloys, Duplex, superduplex, inconels, …/…</td>
<td></td>
</tr>
<tr>
<td>1 AOD Converter: up to 27 t</td>
<td>N/A</td>
<td></td>
<td>FOD, VOD, VC, VD, LF, EAF</td>
</tr>
<tr>
<td>Radiography (Xrays, gamma rays, 9 MeV linear accelerator)</td>
<td>Ultrasonic, dye penetrant, magnetic particle and dimensional testing</td>
<td>Radiography (Xrays, gamma rays), 9 MeV linear accelerator) Ultrasonic, die penetrant, magnetic particle and dimensional testing</td>
<td></td>
</tr>
<tr>
<td>Centrifugal Tubes, Elbows, Body Valves, Pump Casings …/…</td>
<td>(manway pad, feed inlet nozzle, tap, steam safe end), etc</td>
<td>Centrifugal Tubes, Body Valves, Pump Casing, Forged tubes …/…</td>
<td></td>
</tr>
<tr>
<td>Primary cooling loop</td>
<td></td>
<td>Components for steam generator</td>
<td>Primary cooling loop</td>
</tr>
<tr>
<td>Secondary cooling loop Valve and pump components</td>
<td>FValve and pump bodies, tap, tube connectors, etc</td>
<td>Secondary cooling loop Valve and pump components</td>
<td></td>
</tr>
</tbody>
</table>
Services

Castings and forgings can be delivered either machined or not.

To meet these needs, Manoir Industries has, in its plants, integrated machine shops (numerically controlled lathes, milling machines, machining centers) and non destructive controls (linear accelerator, gamma sources, dye penetrant tests, hydro test)...

When customer requirements exceed the in-house capacity, Manoir Industries subcontracts the work and supervise its accomplishment as part of the Quality Assurance System.

Fabrication codes and qualifications:
RCC-M, ASME and HAF604
THM
Yantai Taihai Manoir Nuclear Equipment Co., Ltd.
Add. No.6, Hengyuan Road, Laishan Economic Development Zone, Yantai, China, 264003

A network all over the world

Manoir Pitres
12 Rue des Ardennes – BP 8401 – Pitres
F - 27108 VAL DE REUIL CEDEX
Tel.+33 2 32 48 72 00
Fax +33 2 32 49 57 26

Manoir Custines
F - 54670 CUSTINES
Tel.+33 3 83 49 49 49
Fax +33 3 83 49 49 80

THM
Yantai Taihai Manoir Nuclear Equipment Co., Ltd.
Add. No.6, Hengyuan Road, Laishan Economic Development Zone, Yantai, China, 264003

www.manoir.eu.com
salesnuclear@manoir.eu.com