Overview: Dominis Engineering designs and manufactures high performance propellers. The company has developed state-of-the-art technology for CNC milling of propellers and water jet impellers to "final form and finish". This technology eliminates robotic grinding and hand finishing of leading edges from the manufacturing process. Dominis has extensive experience in CNC machining of monoblock propellers, water jet impellers in duplex stainless steel and hydro turbine runners in stainless steel. Dominis Engineering also develops all the necessary tooling, fixtures and CAD/CAM programming for its production. The company was established in 1985.

Services:  
- propeller design
- machining of monoblock propellers
- machining of CP propeller blades
- machining of water jet impeller
- machining of shrouded impellers
- machining of turbine blades

Major naval projects:  
- spare CP propeller blades for Canadian Patrol Frigates (CPF)
- monoblock propellers for Egyptian Fast Missile Craft (EFMC)
- water jet impellers for Littoral Combat Ship (LCS)
- water jet impellers for Improved Navy Lighterage System (INLS)

Quality approvals:  
ISO 9001: 2008 (FM94074)

CAGE CODE:  
3AF71

Controlled goods no.:  
010930
Main customers:
- Canadian Coast Guard: Monoblock propellers
- Canadian Navy: CP propeller blades
- Flowserve, Phillipsburg, NJ: Pump blades
- Howden Buffalo, Canton, OH: High velocity fan rotors
- Michigan Wheel Marine, Grand Rapids, MI: Monoblock propellers
- Rolls-Royce Naval Marine, Walpole, MA: Water jet impellers
- US Coast Guard, Baltimore, MD: Ship propeller blades
- Velan Inc, Montreal, Quebec: Large valves
- Wartsila Defense, Chesapeake, VA: Monoblock propellers
- Wartsila Netherlands, Drunen, Netherlands: Water jet impellers

Equipment:

Dominis Engineering’s manufacturing capabilities are focused on three large, 5-axis simultaneous contouring milling machines, one vertical turning and boring mill with live tools, two medium capacity computerized balancers and high resolution laser scanner at its 835 sq. m. plant.

1. Toshiba BMC-80 horizontal machining centre with two pallets
   - Working volume & table capacity: 1.6 m x 1 m x 1.1 m, 1,500 kg
   - Spindle speed: 20 - 4,500 rpm 60 tool ATC

2. Toshiba BTD-110R.16(S) horizontal boring/milling machine
   - Working volume & table capacity: 2.5 m x 1.8 m x 1.4 m, 6,300 kg
   - Spindle speed: 40 - 8,000 rpm 60 tool ATC

3. Toshiba BTD-200QH horizontal boring and milling machine
   - Working volume & table capacity: 1.5 m x 1.1 m x 1.2 m, 4,000 kg
   - Spindle speed: 20 - 5,000 rpm 30 tool ATC

4. Toshiba TUE-150S, vertical turning and boring mill
   - Working volume & table capacity: 2 m dia x 1.6 m, 8,000 kg
   - Table speed: 10 - 350 rpm 18 tool ATC

5. Dynamics Research 602P computerized balancer
   - Working volume & capacity: 1.25 m dia. x 2 m, 900 kg

6. Dynamics Research 610 computerized balancer
   - Working volume & capacity: 2.50 m dia. x 2 m, 4,500 kg

7. Faro Scan Arm HD
   - Range: 2.8 m
   - Accuracy: ± 0.001”,
   - Minimum point spacing: 0.0015”
# Integrated Propeller Manufacturing System

## Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Client</th>
<th>Location</th>
<th>Description</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCS - Littoral Combat Ship LCS5 through LCS31 and spares</td>
<td>Rolls–Royce Naval Marine</td>
<td>Walpole, MA, USA</td>
<td>68 water jet impellers Diameter: 1.7 m</td>
<td>2012 - 2020</td>
</tr>
<tr>
<td>Coastal Patrol Boat</td>
<td>Michigan Wheel Marine</td>
<td>Grand Rapids MI, USA</td>
<td>20 monoblock propellers Diameter: 50”</td>
<td>2011 - 2012</td>
</tr>
<tr>
<td>EFMC Egyptian Fast Missile Craft</td>
<td>Wartsila Defence</td>
<td>Chesapeake VA, USA</td>
<td>20 monoblock propellers Diameter: 1.75 m</td>
<td>2010 - 2011</td>
</tr>
<tr>
<td>LCS - Littoral Combat Ship LCS 4</td>
<td>Wartsila Defence</td>
<td>Chesapeake VA, USA</td>
<td>3 water jet impellers Diameter: 1.7 m and 2 m</td>
<td>2010</td>
</tr>
<tr>
<td>INLS Improved Navy Lighterage System</td>
<td>Wartsila Defence</td>
<td>Chesapeake VA, USA</td>
<td>127 water jet impellers Diameter: 900 mm</td>
<td>2004 - 2014</td>
</tr>
<tr>
<td>E-Craft Expeditionary Craft</td>
<td>Wartsila Defence</td>
<td>Chesapeake VA, USA</td>
<td>4 water jet impellers Diameter: 810 mm</td>
<td>2007</td>
</tr>
<tr>
<td>DDX Destroyer</td>
<td>Howden Buffalo</td>
<td>New Philadelphia OH, USA</td>
<td>2 prototype fan rotors Diameter: 21”</td>
<td>2006</td>
</tr>
<tr>
<td>CPF Halifax Class Frigate</td>
<td>Canadian Navy</td>
<td>Halifax, NS , Canada</td>
<td>20 CP propeller blades Diameter: 4.34 m</td>
<td>2007</td>
</tr>
<tr>
<td>CCGS “Griffon” Icebreaker</td>
<td>Canadian Coast Guard</td>
<td>Sarnia, Ontario, Canada</td>
<td>2 monoblock propellers Diameter: 120”</td>
<td>2002</td>
</tr>
<tr>
<td>210’ Class B Cutter</td>
<td>US Coast Guard</td>
<td>Baltimore Maryland, USA</td>
<td>72 CP propeller blades Diameter: 90”</td>
<td>2000</td>
</tr>
<tr>
<td>210’ Class A Cutter</td>
<td>US Coast Guard</td>
<td>Baltimore Maryland, USA</td>
<td>12 CP propeller blades Diameter: 90”</td>
<td>2015</td>
</tr>
</tbody>
</table>

**CNC machining to “final form and finish”**

*Propellers True to Design*
## COMPLETED NAVY AND COAST GUARD PROJECTS

### CP propeller blades delivered for Navy and Coast Guard programs

<table>
<thead>
<tr>
<th>Program name</th>
<th>Navy/Coast Guard</th>
<th>Prime</th>
<th>Diameter</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPF</td>
<td>Royal Canadian Navy</td>
<td>Dominis</td>
<td>4.3 m</td>
<td>20</td>
</tr>
<tr>
<td>210' Class B cutter</td>
<td>US Coast Guard</td>
<td>Dominis</td>
<td>90”</td>
<td>72</td>
</tr>
<tr>
<td>210' Class A cutter</td>
<td>US Coast Guard</td>
<td>Dominis</td>
<td>90”</td>
<td>12</td>
</tr>
</tbody>
</table>

Total no. of CP propeller blades: 104

### Propellers delivered for Navy and Coast Guard programs

<table>
<thead>
<tr>
<th>Program name</th>
<th>Navy/Coast Guard</th>
<th>Prime</th>
<th>Diameter</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ice breaker “Griffon”</td>
<td>Canadian Coast Guard</td>
<td>Dominis</td>
<td>3 m</td>
<td>2</td>
</tr>
<tr>
<td>CPB</td>
<td>US Navy</td>
<td>Michigan Wheel Marine</td>
<td>50”</td>
<td>20</td>
</tr>
<tr>
<td>EFMC</td>
<td>US Navy</td>
<td>Wartsil Defense</td>
<td>1.75 m</td>
<td>20</td>
</tr>
</tbody>
</table>

Total no. of propellers: 42

### Water jet impellers delivered for Navy and Coast Guard programs

<table>
<thead>
<tr>
<th>Program name</th>
<th>Navy/Coast Guard</th>
<th>Prime</th>
<th>Diameter</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>INLS</td>
<td>US Navy</td>
<td>Wartsil Defense</td>
<td>900 mm</td>
<td>127</td>
</tr>
<tr>
<td>E-craft</td>
<td>US Navy</td>
<td>Wartsil Defense</td>
<td>810 mm</td>
<td>4</td>
</tr>
<tr>
<td>LCS 4</td>
<td>US Navy</td>
<td>Wartsil Defense</td>
<td>1 @ 2 m</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 @ 1.7 m</td>
<td></td>
</tr>
<tr>
<td>LCS 5 through 31</td>
<td>US Navy</td>
<td>Rolls Royce Naval Marine</td>
<td>1.7 m</td>
<td>68</td>
</tr>
<tr>
<td>and spares</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total no. of water jet impellers: 202

Grand total no. of CP blades, propellers and water jet impellers delivered: 348

**Legend:**
- CPF: Canadian Patrol Frigate
- CPB: Coastal Patrol Boat
- EFMC: Egyptian Fast Missile Craft
- INLS: Improved Navy Lighterage System
- E-craft: Expeditionary Craft
- LCS: Littoral Combat Ship

Dominis Engineering Ltd.
5515 Canotek Road, Unit 15
Gloucester, Ontario, Canada K1J 9L1
Telephone: (613) 747-0193 Fax: (613) 746-3321
U.S. Navy program: LCS 5 Milwaukee – Littoral Combat Ship

Client: Rolls Royce Naval Marine
Shipyard: Marinette Marine, Marinette, WI
Quantity: 68 water jet impellers
Diameter: 1.7 m.
U.S. Navy program: LCS 4 Coronado – Littoral Combat Ship

Client: Wärtsilä Defense
Shipyard: Austal, Mobile, AL
Quantity: 3 water jet impellers
Diameter: 1.7 m. and 2 m.
U.S. Navy program: EFMC - Egyptian Fast Missile Craft

Client: Wärtsilä Defense
Shipyard: VT Halter Marine, Pascagoula, MS
Quantity: 20 monoblock propellers
Diameter: 1.75 m.
U.S. Navy Program: INLS - Improved Navy Lighterage System

**Client:** Wärtsilä Defense  
**Shipyard:** Marinette Marine, Marinette, WI  
**Quantity:** 127 water jet impellers  
**Diameter:** 900 mm
U.S. Navy program: E-CRAFT - Expeditionary Craft

Client: Wärtsilä Defense
Shipyard: Ketchikan Shipyard, Ketchikan, AK
Quantity: 4 water jet impellers
Diameter: 810 mm
Canadian Navy program: Canadian Patrol Frigate – Halifax Class

Client: Canadian Navy
Shipyard: St. John Shipbuilding, St. John, New Brunswick
Quantity: 20 CP propeller blades
Diameter: 4.34 m
Canadian Coast Guard program: Griffon Icebreaker

Client: Canadian Coast Guard
Shipyard: Davie Shipbuilding, Quebec, QC
Quantity: 2 monoblock propellers
Diameter: 120”
U.S. Coast Guard program: Medium Endurance Cutter

Client: U.S. Coast Guard
Shipyard: Todd Shipyard, Houston, TX
Quantity: 84 CP propeller blades
Diameter: 90”