Barrett’s versatile BH8-Series robotic hands give you the flexibility you need to reduce costs and increase production.

**Big Functionality, Compact Form**

The BH8-series BarrettHand™ is a multi-fingered programmable grasper with the dexterity to secure target objects of different sizes, shapes, and orientations. Even with its low weight and super-compact base, it is totally self-contained.

Communicating by industry-standard serial communications or high-speed CANbus (USB adapters included), integration with any arm is fast and simple. The BarrettHand immediately multiplies the value of any arm requiring flexible automation.

The BarrettHand neatly houses its own communications electronics, servo-controllers, and all four brushless motors. Of its three multi-jointed fingers, two have an extra degree of freedom with 180 degrees of lateral mobility supporting a large variety of grasp types. All joints have high-precision position encoders.

Combined with its versatile software routines, a single BarrettHand matches the functionality of an endless set of custom grippers – yet switches part/tool shapes electronically within half a second.

The BarrettHand integrates with your application by consolidating many custom gripper tools into a single smart grasper.

**Intelligent Underactuation**

- Light: 980 grams
- High Payload: 6 kg

**Simple Control**

Barrett Technology’s full-source code and examples are included with every purchase and provide comprehensive ways of controlling the BarrettHand.

The BHControl application works under both Linux and Windows and presents an easy-to-use graphical user interface (GUI) for control of the BarrettHand. It exposes all of the functionality provided by the BarrettHand C/C++ library and the powerful yet easy-to-learn Grasper Control Language (GCL) in a graphical environment, without writing any code.

**Additional Applications**

- Component assembly
- Food handling
- Assembly-line part orientation
- Quality-control measurements for continuous process control
- Realtime environment interaction
- Handling castings, glass, and ceramics
- Remote manipulation
- Biohazard material handling
- Nuclear-waste management
- Search and Rescue
- Bomb disposal

**BH8-282**

**Materials Handling**

- Component assembly
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**Hand Tool Automation**

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**Material Handling**

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**Packaging/Palletizing**

- Component assembly
- Food handling
- Assembly-line part orientation
- Quality-control measurements for continuous process control
- Realtime environment interaction
- Handling castings, glass, and ceramics
- Remote manipulation
- Biohazard material handling
- Nuclear-waste management
- Search and Rescue
- Bomb disposal
### Fingertip Torque Sensors  
**P/N: B0106**
- **Function**: Senses torques about last joint in each finger
- **Quantity**: 3 (1 per finger)
- **Element Type**: Metal foil strain gage
- **Range**: ±1 N-m
- **Resolution**: 0.04 N-m

### BarrettHand with Tactile Sensors  
**P/N: B4335**
- **Function**: Localizes pressure across palm and fingers
- **Quantity**: 96 active cells
- **Element Type**: 24 capacitive cells per sensor pad
- **Range**: 10 N/cm²
- **Resolution**:
  - Palm: 0.02 N/cell; cell area 1.0 cm²
  - Finger: 0.01 N/cell; cell area 0.3 cm²
  - Fingertip: 0.01 N/cell; cell area 0.15 cm²

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**FEATURES & BENEFITS**

- **Lightweight**: Maximizes host arm’s payload capacity
  - Reduces accelerated inertia
  - Enhances safety

- **Compact fit**: Reaches tight spots

- **Self-contained**: Minimizes space, wires, and signal noise
  - No pumps, no hoses, no seals, no filters, no leaks

- **All electric**: Clean and quiet, no pneumatics or hydraulics

- **Human-scale**: Immediately adaptable to hand-held tools
  - Intuitive application development

- **Fault-tolerant, non-backdrivable fingers**: Object remains secure without power
  - Payload capacity not limited by active force
  - Rare-earth magnets for high torque, low mass
  - Explosion proof (no brushes, no sparks)
  - No brush replacements or brush debris

- **Brushless rare-earth motors**: Vacuum compatibility

- **Proprietary clutch mechanism and spreading fingers**: Grasps a wide variety of objects
  - Eliminates tool changer’s cost and wait time

- **Supervisory control mode**: Easily issue high-level commands

- **RealTime control mode**: Enables user to close control loops externally
  - Controllable from any host PC
  - Easy integration with PLCs

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**BH8-282 SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Payload</strong></td>
<td>0.0 kg</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>860 grams</td>
</tr>
<tr>
<td><strong>Motor Encoder Resolution</strong></td>
<td>4096 counts</td>
</tr>
<tr>
<td><strong>Motor Type</strong></td>
<td>Brushless Electric</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>CAN, RS-232 (USB adapters provided)</td>
</tr>
<tr>
<td><strong>Finger Speed</strong></td>
<td>Full 180 degree spread</td>
</tr>
<tr>
<td></td>
<td>0.5 sec</td>
</tr>
<tr>
<td><strong>DC Operation</strong></td>
<td>Voltage</td>
</tr>
<tr>
<td></td>
<td>20-80 VDC</td>
</tr>
<tr>
<td></td>
<td>Idle/typ/peak</td>
</tr>
<tr>
<td></td>
<td>7/15/250 W</td>
</tr>
<tr>
<td><strong>AC Operation</strong></td>
<td>Single phase</td>
</tr>
<tr>
<td></td>
<td>85-200 VAC, 50/60 Hz</td>
</tr>
<tr>
<td></td>
<td>Idle/typ/peak</td>
</tr>
<tr>
<td></td>
<td>10/20/200 W</td>
</tr>
<tr>
<td><strong>AC Dimensions, L x W x H</strong></td>
<td>304 x 80 x 54 mm</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Weight</td>
</tr>
<tr>
<td></td>
<td>0.7 kg</td>
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<tr>
<td><strong>Kinematics</strong></td>
<td>Total fingers</td>
</tr>
<tr>
<td></td>
<td>3 (1 fixed, 2 rotatable)</td>
</tr>
<tr>
<td></td>
<td>Total hand axes</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Total hand motors</td>
</tr>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td><strong>Range of motion</strong></td>
<td>Finger base joint</td>
</tr>
<tr>
<td></td>
<td>140°</td>
</tr>
<tr>
<td></td>
<td>Fingertip joint</td>
</tr>
<tr>
<td></td>
<td>45°</td>
</tr>
<tr>
<td></td>
<td>Finger Spread</td>
</tr>
<tr>
<td></td>
<td>180°</td>
</tr>
</tbody>
</table>

All dimensions are in millimeters and for reference only.