**General Description**

The Bowen Full-Circle Casing Scraper is ideal for the removal of mud, cement, bullets, rust, scale, paraffin, perforation burrs and other obstructions from the inside walls of casing.

Maintaining a clean casing I.D. is important when operating drilling, fishing or wireline tools. Likewise, packers, patches, spears and similar tools require clean surfaces to grip. Obstructions on casing walls will frequently cause these tools to fail or become difficult to operate.

Utilizing a simple one-piece mandrel design, the Bowen Full-Circle Casing Scraper is constructed to be rugged, yet simple to operate and maintain.

The Scraper conditions 50% more surface area than any other tool on the market. The full circle blades are so spaced to contact 600° (almost two complete circles) of casing surface at once.

Short and compact, the Scraper also incorporates a long taper on blades for passing through joints without hanging. The Scraper works in vertical or rotary operations and may be run on drill pipe.

Bowen Full-Circle Casing Scrapers are available to condition pipe ranging from \(2\frac{3}{8}\)-inch tubing to 13\(\frac{3}{8}\)-inch casing.

**Use**

The Bowen Full-Circle Casing Scraper is used to remove any deposits, irregularities or burrs from oil well casing that might be the cause of trouble during later operation, such as running packers and other close tolerance equipment. Some of the main uses are:

1. Clean out cement, hardened mud, and paraffin.
2. Remove burrs from perforations.
3. Remove bullets that become imbedded in the casing.
4. Remove burrs and nicks that might have resulted from the running of bits, or fishing tools.
5. Remove tight spots that might have been caused by dents in casing as a result of mishandling.

Removing obstructions from the inside of casing offers many advantages to the operator. Packers can be run easily and without damage to the sealing element. Packer seating and sealing is positive in clean, burr-free casing. If a casing swab is run, damage to the expensive swab rubbers is held to a minimum and rubber life is greatly increased.

The Bowen Full-Circle Casing Scraper may be run either with the pin up or the pin down. It may be rotated or spudded. In all cases, interior casing scraping is assured due to the arrangement of the blades. Yet, this same arrangement and the contour of the blades permits passage through casing couplings and easy reentry at the bottom, in the event the scraper passes out through the bottom of the casing.
Construction
The Bowen Full-Circle Casing Scraper is composed of a rugged one-piece mandrel design with a two-piece split ring retained by four screws in the center. Blades are spring loaded and are designed to scrape a full range of common casing weights with only one size of blade for each different casing O.D.

The blades are precision cast from high-quality wear-resistant tool steel. They are very tough, but not brittle. They tend to work-harden slightly in service, which prevents wear very effectively. The blades are designed to fit closely over the spring housing welded to the mandrel, so that lateral movement is kept to an absolute minimum.

Springs are made of corrosion resistant 302 stainless and are totally enclosed between the blade and spring housing. Accidental loss down hole is virtually impossible.

The mandrel is made from heat treated alloy steel and has a pin by box connection. Both ends have a suitable fishing neck to allow fishing out of the well if required.

Operation
The Bowen Full-Circle Casing Scraper is usually run with the pin connection up. It can be run either way at the convenience of the operator. The scraping action of the blades is identical in either case.

The configuration of the blades is such that the area scraped by the top row is overlapped by the row on the bottom.

The tool is made up on the string, and usually a bit is installed on the bottom. The Scraper is run in and the scraping operation begun, rotating or spudding as desired.

When a blade encounters an abrupt obstruction, such as a perforation burr or a fragment of cement, it is held firmly in its close-fitting slot by the mandrel and two-piece retainer ring.

Very slight or very gradual changes in casing internal diameters are passed over without damage to the casing, since the blades move in or out adjusting itself to the irregularities. The blades are simply held in contact with the clean surface of the casing without cutting the metal.

Maintenance
Good maintenance will prolong the life of the tool and prevent misruns. After each use, the tool should be completely disassembled and thoroughly cleaned. Any worn or damaged parts should be replaced as this time. See Disassembly and Assembly below.

Disassembly
1. Clamp the mandrel in a suitable vise, near one end.
2. Remove four (4) socket head screws from split ring.
3. Remove all blades and springs from tool.
4. Thoroughly clean all the parts, and examine each for wear or damage. Replace any badly worn or damaged parts.

Assembly
1. Clamp the mandrel in a vise near one end.
2. Insert springs into slots provided on mandrel and hold in place with thick grease.
3. Place one row of blades in position and using banding tool, compress blades against the mandrel.
4. Secure Band and remove banding tool.
5. Place second row of blades in position and using banding tool compress blades against the mandrel.
6. Install split ring between the blades and secure ring with four (4) socket head screws. Coat threads with LOC-TITE #242 (blue).
7. Remove banding tool and steel band from first row of blades. The Bowen Full-Circle Casing Scraper is now ready for use.
## Bowen Full-Circle Casing Scrapers

**Designed to Scrape - inches**

<table>
<thead>
<tr>
<th>OD of Fishing Neck - inches</th>
<th>3-1/8</th>
<th>3-3/4</th>
<th>4-1/4</th>
<th>5-1/2</th>
<th>7-3/4</th>
<th>8-1/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool OD - inches</td>
<td>13/16</td>
<td>1-1/4</td>
<td>1-1/2</td>
<td>2-1/4</td>
<td>3-1/2</td>
<td>3-1/2</td>
</tr>
<tr>
<td>Tool ID - inches</td>
<td>13/16</td>
<td>1-1/4</td>
<td>1-1/2</td>
<td>2-1/4</td>
<td>3-1/2</td>
<td>3-1/2</td>
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<tr>
<td>Complete Assembly</td>
<td>150032</td>
<td>149088</td>
<td>149335</td>
<td>150025</td>
<td>150418</td>
<td>150034</td>
</tr>
</tbody>
</table>

* See table below for recommended minimum and maximum casing ID ranges

## Replacement Parts

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Assembly</th>
<th>Mandrel</th>
<th>150041</th>
<th>149089</th>
<th>149336</th>
<th>150026</th>
<th>152004</th>
<th>150035</th>
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</thead>
<tbody>
<tr>
<td>Blade</td>
<td>150041 (6)</td>
<td>149090 (6)</td>
<td>149338 (6)</td>
<td>150028 (8)</td>
<td>152007 (8)</td>
<td>150037 (8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional Blade</td>
<td>—</td>
<td>150064</td>
<td>150017</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td>—</td>
<td>150046 (24)</td>
<td>149888 (24)</td>
<td>149340 (18)</td>
<td>150030 (24)</td>
<td>152016 (24)</td>
<td>150039 (24)</td>
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<tr>
<td>Blade Retainer (2 Pieces)</td>
<td>150042</td>
<td>149091</td>
<td>149337</td>
<td>150027</td>
<td>152005</td>
<td>150036</td>
<td></td>
<td></td>
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<tr>
<td>Screw</td>
<td>4</td>
<td>150003</td>
<td>150904</td>
<td>150904</td>
<td>23230</td>
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## Required Accessory

- Blade Installation Tool: 149267

## Recommended Minimum and Maximum Casing ID Ranges for Full-Circle Casing Scrapers

### Assembly

<table>
<thead>
<tr>
<th>ID</th>
<th>150032</th>
<th>149088</th>
<th>149335</th>
<th>150025</th>
<th>150418</th>
<th>150034</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blade</td>
<td>150361</td>
<td>149090</td>
<td>150564</td>
<td>149338</td>
<td>150017</td>
<td>150028</td>
</tr>
<tr>
<td>Maximum Casing</td>
<td>4.622</td>
<td>5.250</td>
<td>6.188</td>
<td>6.688</td>
<td>7.188</td>
<td>9.188</td>
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<tr>
<td>Minimum Casing</td>
<td>3.886</td>
<td>4.662</td>
<td>5.600</td>
<td>5.850</td>
<td>6.308</td>
<td>8.224</td>
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</table>

### Recommended casing sizes (inches) and weights (lbs)

<table>
<thead>
<tr>
<th>ID</th>
<th>4-1/2 OD</th>
<th>5-1/2 OD</th>
<th>6-5/8 OD</th>
<th>7 OD</th>
<th>8 OD</th>
<th>9-5/8 OD</th>
<th>10-3/4 OD</th>
<th>13-3/8 OD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 OD</td>
<td>9.5 – 13.5</td>
<td>14.0 – 23.0</td>
<td>20.0 – 33.0</td>
<td>20.0 – 24.0</td>
<td>17.0 – 22.0</td>
<td>32.3 – 64.9</td>
<td>32.75 – 79.2</td>
<td>48.0 – 98.0</td>
</tr>
<tr>
<td>6 OD</td>
<td>11.5 – 24.2</td>
<td>23.0 – 36.0</td>
<td>31.2 – 48.4</td>
<td>24.0 – 47.1</td>
<td>17.0 – 38.0</td>
<td>33.0 – 68.6</td>
<td>34.75 – 77.1</td>
<td>50.5 – 98.0</td>
</tr>
<tr>
<td>7 OD</td>
<td>15.0 – 36.0</td>
<td>39.3 – 68.6</td>
<td>47.0 – 77.1</td>
<td>39.0 – 70.7</td>
<td>29.0 – 38.0</td>
<td>42.0 – 82.1</td>
<td>46.1 – 93.1</td>
<td>64.6 – 119.38</td>
</tr>
</tbody>
</table>

### How to Order

1. Name and number of assembly or part
2. Size and weight of casing
3. Tool joint connection

**RECOMMENDED SPARE PARTS:**

1. 1 Set of Blades
2. 1 Set of Springs

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*Based on nominal casing IDs and recommended ID ranges*
Alaska
4111 Ingra
Anchorage, Alaska 99503
United States
Phone: 907 563 5253
Fax: 907 561 0671

California
4117 Atlas Court
Bakersfield, California 93308
United States
Phone: 661 395 0165
Fax: 661 328 1827

Louisiana
108 Nova Drive
Broussard, Louisiana 70518
United States
Phone: 337 839 2400
Fax: 337 839 2211

Mississippi
2930 Industrial Blvd.
Laurel, Mississippi 39440
United States
Phone: 601 649 8671
Fax: 601 649 8673

New Mexico
#414 R.R. 360
Farmington, New Mexico 87401
United States
Phone: 505 326 4303
Fax: 505 326 4304

North Dakota
3202 1st Avenue West
Williston, North Dakota 58801
United States
Phone: 701 774 0091
Fax: 701 774 0092

Oklahoma
3800 Thomas Road
Oklahoma City, Oklahoma 73179
United States
Phone: 405 677 2484
Fax: 405 677 2457

Texas
1249 Commerce Road
Alice, Texas 78332
United States
Phone: 361 664 8013
Fax: 361 664 0482

Utah
1553 East Highway 40
Vernal, Utah 84078
United States
Phone: 435 789 0670
Fax: 435 789 6668

West Virginia
Route 2, Murphy Run Road
Clarksburg, West Virginia 26301
United States
Phone: 304 623 4303
Fax: 304 623 2174

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1283 N. Derrick Drive
Unit 1, Box 2
Casper, Wyoming 8204
United States
Phone: 307 237 3100
Fax: 307 237 2546

Canada
9129 – 34A Avenue
Edmonton, Alberta T6E 5P4
Canada
Phone: 780 702 5209
Fax: 780 463 2348

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Winfchcombe
Gloucestershire, GL54 5NS
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Fax: 44(0) 1242 602614

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Fax: 971 4 8838795

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Germany
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Fax: 49 5176 9767 22

* Denotes Manufacturing and Engineering facilities