# Tracheostomy Tube Reference Guide

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The information in this document is meant for educational purposes only. Insights from clinical experience are included. Always reference company specific instructions and information.
General Notes about Trachs:

1) There are two different methods for sizing trachs. Understand that sizes amongst brands are not equivalent…
   - Jackson sizing is for Shiley regular and Flex trachs only. The size of the trach does not refer to any actual measurement of the trach.
   - ISO (International Sizing Organization) is used by all other trach manufacturers, and for Shiley XLTs. The size of the trach refers to the inner diameter of the trach WITHOUT the inner cannula.

2) Know your cuffs
   - High Volume Low Pressure (HVLP)
   - Mid-Range cuffs
   - High Pressure Low Volume (HPLV)
   - Fome-cuf
   - Barrel or cylinder shape cuffs
   - Round cuffs
   - Tapered cuffs

3) Cuff leaks - Cuff size does not always change with or correspond to trach size. When addressing ventilator leaks check the cuff diameter when inflated (called the “resting diameter”).

4) Custom trachs can be made based on bedside measurements or imaging.
Shiley Flexible Adult Tracheostomy Tube

**Indications:** Regular/standard adult trach. Uses Jackson sizing.

**Product Information:** Flexible faceplate, 15mm adapter is part of trach, not inner cannula. Inner cannula can be removed to pass scope through smaller trachs and still connect to ventilator/ambu bag. Cap can be worn over inner cannula so inner cannula can be changed to keep trach patent. Increased patient comfort due to the more flexible material of the trach. Improved air flow around deflated cuff. Beveled tip for easier insertion and trach changes, percutaneous insertions. Sizes 4, 5, 6, 7, 8, 9, 10

**Additional Information:** Inner cannula has groove that prevents total finger occlusion. Some patients may not be able to finger occlude enough to produce speech. Also, some patients may not be able to wear a cap or speaking valve with inner cannula in place because the air leak will cause cap/speaking valve to blow off. If this is the case remove the inner cannula temporarily and take measures to prevent obstruction.

**Cuff:** Taperguard Low Volume Low Pressure

These numbers are the inner diameter (ID) of the trach tube without the inner cannula, and the outer diameter (OD) of the trach

This number is the size of the trach tube that is generally used for reference

Shiley Flex trachs have this color-coded square for sizing reference, as listed below:

<table>
<thead>
<tr>
<th>SKU</th>
<th>L.D.</th>
<th>O.D.</th>
<th>Inner Cannula L.D.</th>
<th>Length</th>
<th>Inner Cannula SKU</th>
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</thead>
<tbody>
<tr>
<td>S4</td>
<td>6.0mm</td>
<td>9.4mm</td>
<td>5.6mm</td>
<td>57mm</td>
<td>4574</td>
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<tr>
<td>S5</td>
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<td>5.6mm</td>
<td>57mm</td>
<td>4575</td>
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<tr>
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<td>9.4mm</td>
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<tr>
<td>S7</td>
<td>6.2mm</td>
<td>10.1mm</td>
<td>5.9mm</td>
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<td>7087</td>
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<tr>
<td>S8</td>
<td>6.9mm</td>
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<td>70mm</td>
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<td>6.9mm</td>
<td>10.6mm</td>
<td>5.9mm</td>
<td>70mm</td>
<td>7089</td>
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<td>S10</td>
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<tr>
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<td>12.2mm</td>
<td>7.1mm</td>
<td>73mm</td>
<td>7387</td>
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<tr>
<td>S14</td>
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<td>12.2mm</td>
<td>7.1mm</td>
<td>73mm</td>
<td>7388</td>
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<tr>
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<td>12.2mm</td>
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<td>73mm</td>
<td>7389</td>
</tr>
<tr>
<td>S18</td>
<td>7.5mm</td>
<td>12.2mm</td>
<td>7.1mm</td>
<td>73mm</td>
<td>7390</td>
</tr>
<tr>
<td>S20</td>
<td>8.5mm</td>
<td>15.3mm</td>
<td>8.0mm</td>
<td>79mm</td>
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</tr>
<tr>
<td>S23</td>
<td>8.5mm</td>
<td>15.3mm</td>
<td>8.0mm</td>
<td>79mm</td>
<td>7990</td>
</tr>
</tbody>
</table>

This complete number is the product reference number, also called the catalogue number, or SKU #

CN = Cuffed
UN = Uncuffed
75=The ISO (International Standard Organization) size, also the size of the inner diameter of the trach without the inner cannula in place. Will vary depending on trach size
H=Disposable inner cannula (R would indicate reusable)
**Shiley “Legacy” Adult Tracheostomy Tube**

**Indications**: Regular/standard adult trach. Uses Jackson sizing.

**Product Information**: Some patients who have used this trach for a long time or have trouble with speech with the Shiley Flex prefer to stay with the legacy version. See Shiley Flex advantages for comparison of features.

**Cuff**: Barrell-shape High Volume Low Pressures

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**Shiley abbreviations**

- DCT = Disposable (inner cannula) Cuffed Tracheostomy
- DCFS = Disposable (inner cannula) Cuffless
- DCFN = Disposable (inner cannula) Cuffless Fenestrated
- DFEN = Disposable (inner cannula) Fenestrated – cuffed
- LPC = Low Pressure Cuff (softens with body temperature)
- LGT = Laryngectomy Tube – shorter than a trach tube
- PERC = Percutaneous tracheostomy

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**Size**

- Inner cannula inner diameter
- Outer diameter of outer cannula
Types of Shiley Legacy Adult Tracheostomy Tube Inner Cannulas

- Flex disposable inner cannula
- Legacy disposable inner cannula (DIC) – Clip lock
- Fenestrated inner cannula
- Spare Inner Cannula (SIC) use if to temporarily connect to ventilator while cleaning reusable inner cannula
- Reusable Inner Cannula (RIC) – Twist lock
- Reusable low profile inner cannula, does not connect to ventilator
Shiley Adult Tracheostomy Tube Inner Cannulas continued

Blue dot indicates inner cannula is reusable. Shiley inner cannulas that twist to lock in place are reusable.

Fenestrated Tracheostomy Tubes

**Indications:** Regular size adult trach placed for speaking. Needs a fenestrated inner cannula to function for speaking purposes.

**Product Information:** Some patients are unable to pass air around regular tracheostomy tubes, so fenestrations can assist with voicing. Not usually first choice for speaking because fenestrations can cause tissue to adhere and bleeding issues. Do not place unless special indication and advanced consultation obtained. Some fenestrated tracheostomy tubes do not come with fenestrated inner cannulas, so they can only be used for voicing without an inner cannula in place.
Shiley Single Cannula Tracheostomy Tube (always cuffed)

**Indications:** Not generally used anymore, but still stocked in hospital distribution and on emergency carts. Uses ISO sizing meaning the inner diameter of the trach is the same as the size of the trach. **Product Information:** No inner cannula provides a smaller inner diameter to outer diameter ratio. Can be useful in emergencies for recannulating and ventilation. The size 6 is actually smaller than a regular Shiley size 4, so we place the SCT 6 at bedside in the hospital as a size smaller for regular Shiley 4 trachs for use in emergencies. The larger sizes 8 and above are 89mm and longer, so considered extended length. No inner cannula, material trach is made from easily builds up secretions and can clog off easily. Patients who have this trach should change it and clean is once a week. **DO NOT PLACE FOR ANY PROLONGED TIME, NOT ADVISABLE FOR DISCHARGE.**
Shiley XLT Tracheostomy Tube

Indications: Proximal is used for large necks, Distal to bypass problematic areas in trachea. Uses ISO sizing meaning the inner diameter of the trach without the inner cannula is the same as the size of the trach.

Product Information: Longer lengths, different points of flexion. Generally, these are large trachs. Large outer diameters and small inner cannulas

Cuff: Round, High Volume Low Pressure

XLT Proximal or Distal, indicates part of tube with extended length

Inner Diameter is the same as trach tube size

Outer diameter

Length

Picture of cuff indicates tube is cuffed
Portex - Bivona Tracheostomy Tubes

**Indications:** If a longer trach is needed, or a different trach plate is needed due to skin breakdown. The Adjustable length is used temporarily until the appropriate length is determined. Uses ISO sizing meaning the inner diameter of the trach is the same as the size of the trach.

**Product Information:** Low profile flexible trach plate. Longer versions (fixed or adjustable) are available. All three types can come with TTS cuffs or “Aire” cuffs. Longer hyperflex trachs are MRI compatible with caution (need to be secured, see package insert). Can be reprocessed up to 10 times (either autoclave or boiling process to sterilize at home by patient). No inner cannulas.

**Cuff:** Aire- Cuf – round, mid-range. TTS – High Volume High Pressure, water filled

Three general types (TTS cuffs pictured – clear pilot balloon)

Extended lengths have clear faceplates, standard lengths have white faceplates

- **Bivona Standard:** Regular length (no hyperflex reinforcement)
- **Bivona Fixed:** TTS Extended Length Fixed Flange, hyperflex reinforced
- **Bivona Adjustable:** TTS Extended Adjustable Length Flange, hyperflex reinforced.

- Internal diameter is same as tube size (some half sizes available in regular length), special order
- Bivona Tight to Shaft
- Diameter of cuff when **deflated**
- Internal diameter is same as tube size
- Black insertion pin and arrows indicate tube is adjustable length (temporarily used to determine best fit for patient). If not present is fixed length.
Notes about Adjustable Length Portex-Bivonas

- Adjustable trachs are supposed to be used temporarily until the length can be determined. TTS low volume high pressure cuffs can be used because they are indicated for up to two weeks without regular prolonged cuff deflation. TTS can be advantageous for manipulating the length of this trach in the airway.
- Adjustable trachs can pose an airway safety issue. Patients dependent on the position of the trach should be monitored in the ICU in most cases. If patient transfers to the floor nursing and RT staff need education on monitoring and maintenance. Adjustable trachs are contraindicated for home or SNF discharge.
- The arrows on the trach indicate where the pilot balloon should be rotated. Otherwise the cinch used to keep the length of the trach in place can cause pressure on the balloon and cause cuff pressure issues.

- The hash marks on the tube do not indicate the internal length of the trach tube (which would be used for special ordering a fixed length). Subtract 2cm from the length observed externally to determine the internal length.
Notes about Tight to Shaft (TTS) versus “Aire” cuffs

- TTS “Tight to Shaft” means when deflated, the cuff lays flat against the shaft of the trach tube. This is a high pressure, low volume cuff and should only be used long term if it will regularly be deflated for speaking. Otherwise it is indicated for use less than two weeks. It is also beneficial because it makes trach changes easier, although this is not an indication for long term use in adults.

- Bivona TTS cuffs are filled with sterile water, not air. If it is filled with air it will diffuse out. Use minimal leak of minimal occlusive volume techniques for fill amount. If fill amount changes this is an indication that dilation of the traches may be occurring.

- “Aire” indicates cuff to be filled with air. Aire cuffs are “mid-range” high volume, low pressure cuffs. Standard cuff pressure is 25mmH20 measured with a manometer. If the silicone cuff is overinflated air will diffuse out.

Bivona “Aire-cuff” Tracheostomy Tubes – Blue pilot balloon)

Portex-Bivonas regular length, fixed, and adjustable trachs can all come with TTS or Aire-cuffs
Bivona Fome-Cuf Tracheostomy Tube

**Indications**: To address or prevent cuff leaks in long term trached/vent dependent patients. Uses ISO sizing meaning the inner diameter of the trach is the same as the size of the trach.

**Product Information**: Places the least pressure on the tracheal wall of any cuff available. Difficult to determine the status of the cuff once it is placed, passively inflates. Requires specialized education for a patient to manage at home and for staff inpatient. **DO NOT overinflate, if the cuff breaks in the patient there is no way to deflate the fome part of the cuff. See Trach Resource website for more information (type “Trach in UCD intranet bar).**
Portex BluSelect Tracheostomy Tube

**Indications:** Regular/standard adult trach

**Product Information:** Flexible faceplate, 15mm adapter is part of trach, not inner cannula. Inner cannula can be removed to pass scope through smaller trachs and still connect to ventilator/ambu bag. Cap can be worn over inner cannula so inner cannula can be changed to keep trach patent. Clear Faceplate labeling, checkered edging indicated fenestrated trach. Sizes 6, 7, 7.5, 8, 8.5, 9,10.

**New Portex product line, comes in with fenestrated and SuctionAid options**

**Cuff:** Barrell-shape, High Volume Low Pressure “SOFT-SEAL® tubes”

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Portex Blue Line Ultra Tracheostomy Tube

**Indications:** Regular/standard adult trach

**Product Information:** Will be discontinued soon, BluSelect is new product line

**Cuff:** Barrell-shape, High Volume Low Pressure
Portex Regular Tracheostomy Tube

**Indications:** Regular/standard adult trach

**Product Information:** Generally same as legacy Shiley. Uses ISO sizing for size of trach is the same size as the inner diameter of the trach without the inner cannula. Will be discontinued soon, BluSelect is new product line

**Cuff:** Barrell-shape, High Volume Low Pressure

Color coded tubes and inner cannulas

Orange = 6
Green = 7
White = 8
Blue = 9
Yellow = 10

Internal diameter is same as tube size
Trachs with Talk Attachments and Suction Aid

- Comes in Portex and Shiley brands. Ports can be used for subglottic suction or as talk attachments.
- Talk attachments are used for patients on ventilator (cuff inflated). The attachment opening is just above the cuff. Air can be infused when the cuff is inflated, and adjusted to achieve voicing. Occlude open port with finger for patient to speak.
- The suction port is for intermittent or continuous subglottic suction. Can attach to syringe and aspirate manually, or attach to wall suction at 100-120mmHg. Need to occlude open port with finger. For continuous subglottic suction detach open port and connect to wall suction.
Tracoe Tracheostomy Tube

**Indications:** Regular/standard adult trach.

**Product Information:** Good for speaking, low profile for long term trach patients.

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**Blom-Singer Tracheostomy Tube**

**Indications:** Regular/standard adult trach. Long term vent dependent patients, fenestration allows for speech regardless of cuff inflation. Equal size specifications as a Legacy Shiley.

**Product Information:** Speech cannula for ventilator patients with “Flap valve” and “bubble valve.” EVR (exhaled volume reservoir) attachment prevents false low expiratory minute volume alarms. LPV (low profile valve) for patients not on ventilator
Jackson Tracheostomy Tube

**Indications**: Long term trach patients

**Product Information**: Metal is inherently antimicrobial. Can be removed and cleaned easily and often. Patients report less problems with secretions and odor. Come with and without 15mm adapters on inner cannulas, with care used for speaking valves and caps.

Jackson Laryngectomy Tube