Gyrus ACMI otologic implants are MR conditional to 3 T (data on file).
**Applebaum Incudostapedial Joint Prostheses**

- Reestablishes the ossicular chain when the incudostapedial joint is missing.
- Eliminates the need for a bone chip interposition or removal of the incus.

Applebaum incudostapedial joint prosthesis, dense hydroxylapatite, 1 mm cannulated,
140956 small, 2 x 2 x 1.2 mm
140957 large, 2.5 x 2 x 1.2 mm

Dimensions: ① x ② x ③

Suggested by Edward L. Applebaum, M.D., Chicago, IL, USA

**Applebaum Incus Replacement System (I.R.S.)**

- Designed to closely resemble a carved homograft/autograft incus interposition implant.
- Made of dense hydroxylapatite.
- Offered in 5 sizes, eliminating any need to trim.
- Partially cannulated to fit on the stapes capitulum, and the carved “notch” engages the malleus handle.
- Size is easily determined using the Applebaum measuring rod (#130976, for details, see sheet OTO-460).

Applebaum incus replacement system, 1 mm
140970 2 x 2.5 mm
140971 2.25 x 2.5 mm
140972 2.5 x 2.5 mm
140973 3 x 2.5 mm
140974 3.5 x 2.5 mm

Dimensions: ① x ②

Developed by Edward L. Applebaum, M.D., Chicago, IL, USA

**Black Spanner Strut**

The spanner strut represents a modular approach to incus and incus-stapes replacement.
- The hydroxylapatite head is designed to cradle the malleus handle and is partially cannulated to fit the shaft.
- The trimmable fluoroplastic shaft is designed with a cupped end to be positioned over the stapes capitulum when an incus replacement is necessary.
- For incus-stapes replacement, the cupped end is trimmed off. The remaining shaft is positioned on the stapes footplate and engages the hydroxylapatite cap and malleus.
- The fluoroplastic shaft is trimmed to fit patient anatomy and can be angled with forceps.

Black spanner strut, hydroxylapatite/fluoroplastic, 1.15 mm cup inner diameter, 0.8 mm shaft diameter, 10.9 mm overall length

Developed by Bruce Black, M.D., Brisbane, Australia.

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Ossicular Reconstruction, OSS-105
Goldenberg Incus Prostheses

- Hydroxylapatite head designed with a “hook” to be rotated inferiorly or superiorly along the length of the malleus handle.
- Includes a centering hole to view the stapes capitulum.
- Plasti-Pore® shaft may be trimmed to exact length and notched for the stapedius tendon.

140912 Goldenberg incus prosthesis, hydroxylapatite/Plasti-Pore®, head dimensions: 4.25 x 2.3 mm, fully cannulated, 4.32 mm overall length

70145912 Goldenberg incus prosthesis, hydroxylapatite/HAPEx®, head dimensions: 4.25 x 2.3 mm, 1.12 mm fully cannulated, 5.9 mm functional length

Developed with Robert Goldenberg, M.D., Dayton, OH, USA

Grate Malleus-to-Stapes Strut

This prosthesis is designed to meet the needs of ossicular reconstruction.

- The radiused upper portion conforms to the shape of the malleus and the hollow post seats firmly on the stapes superstructure.
- The malleus-to-stapes strut is made of Plasti-Pore® material, a porous, high-density polyethylene that allows soft tissue ingrowth.

140842 Grate malleus-to-stapes strut, Plasti-Pore®, 1.15 mm inner diameter, 1.78 mm outer diameter, 4.7 mm overall length

Designed for M.R. Grate, M.D., Tallahassee, FL, USA

Grote Incus Prostheses

The design of this incus prosthesis implant allows stable placement between the malleus and the capitulum of the stapes.

- The opening in the wide end of the prosthesis easily fits over the capitulum to aid in stabilization.
- The unique “stair-step” design allows the prosthesis to bridge the gap between the malleus handle and the capitulum of the stapes.
- The large flat surface of the prosthesis may rest directly against the tympanic membrane.
- The prosthesis can easily be shaped with a diamond burr using irrigation.

Grote incus prosthesis, hydroxylapatite, 1.5 mm height, 1.5 mm width, 0.83 mm partially cannulated, 6 mm overall length

140865 70140990 7 mm overall length

Designed by Jan J. Grote, Leiden, The Netherlands.

Kartush Incus Strut Prostheses

- This dense hydroxylapatite strut was designed to bridge the gap between the malleus handle and capitulum of the stapes.
- Shaft is fully cannulated for improved visualization.

Kartush incus strut prosthesis, hydroxylapatite, 1.17 mm fully cannulated, short shaft, 2.75 mm overall length

140853 140854 140855 medium shaft, 3.9 mm overall length long shaft, 4.9 mm overall length

Designed by Jack M. Kartush, M.D., Michigan Ear Institute, Detroit, MI, USA
Wehrs Incus Prostheses, Double Notch

- The double notch incus prosthesis is designed for use when the anatomic position of the stapedial head in relation to the malleus handle is between 1.2 and 2 millimeters, or between 3 and 4 millimeters.
- For the smaller dimension, the second notch may be removed with a diamond burr using irrigation.

Wehrs incus prosthesis, double notch, hydroxylapatite, 140877 short, 2.1 x 0.9 x 1.6 x 3.5 mm
140941 average, 2.7 x 1.5 x 1.6 x 3.5 mm
140878 medium, 3.3 x 2.1 x 1.6 x 3.5 mm
140879 long, 4.5 x 3.3 x 1.6 x 3.5 mm

Dimensions: ① x ④ x ② x ③

Wehrs Incus Prostheses, Single Notch

- The single notch prosthesis is applicable when the “offset” from the head of the stapes to the malleus handle is estimated to be from 2 to 3 mm.
- Lesser or greater distances require the use of a double notch prosthesis.

Wehrs incus prosthesis, single notch, hydroxylapatite, 140874 short, 2.1 x 0.9 x 2.5 mm
140940 average, 2.7 x 1.5 x 2.5 mm
140875 medium, 3.3 x 2.1 x 2.5 mm
140876 long, 4.5 x 3.3 x 2.5 mm

Dimensions: ① x ② x ③

70145894 Wehrs incus prosthesis, single notch, hydroxylapatite, HAPEX® shaft, 1 mm fully cannulated, 4.5 x 3.3 x 2.5 mm

Designed by Roger E. Wehrs, M.D., Tulsa, OK, USA
Goldenberg Incus-Stapes Prostheses

• Hydroxylapatite head designed with “hook” may be rotated inferiorly or superiorly along the length of the malleus handle.
• Wire reinforced Plasti-Pore® shaft is easily trimmed to length and provides stability and memory for bending to proper angulation.

140913 Goldenberg incus-stapes prosthesis, hydroxylapatite head, Plasti-Pore® shaft, 0.8 mm shaft diameter, 8.13 mm overall length

Developed with Robert Goldenberg, M.D., Dayton, OH, USA

70145913 Goldenberg incus-stapes prosthesis, hydroxylapatite head, HAPEX® shaft, head 4.2 x 2.3 mm, 8.2 mm overall length

Designed for Robert Goldenberg, M.D., Dayton, OH, USA

Grote Incus-Stapes Prosthesis

This prosthesis is designed for use in case of a missing incus and stapes superstructure but a mobile footplate.
• Each implant is formed of dense hydroxylapatite, a highly biocompatible material with a chemical composition nearly identical to bone.
• This material may rest directly against the tympanic membrane with minimal risk of extrusion.

140869 Grote incus-stapes prosthesis, hydroxylapatite, 0.76 mm shaft diameter, 6 mm handle length, 10 mm overall length

Designed by Jan J. Grote, Leiden, The Netherlands

Use
• Measure the distance from the footplate to the undersurface of the tympanic membrane.
• Measure the offset between the centerline of the footplate and the handle of the malleus.
• Use these measurements to trim the prosthesis to the proper dimensions using a diamond burr and irrigation.
• Form a pocket between the handle of the malleus and the tympanic membrane.
• Place the top of the prosthesis in this pocket, and align the shaft into the footplate.
Kartush Incus-Stapes Strut Prostheses
- The dense hydroxylapatite strut was designed to bridge the gap between the malleus handle and stapes footplate.
- Length may be trimmed using a diamond burr with irrigation.

Kartush incus-stapes strut prosthesis, hydroxylapatite, 0.76 mm shaft diameter,
140850 short, 5.3 mm overall length
140851 medium, 7.3 mm overall length
140852 long, 10.3 mm overall length

Designed by Jack M. Kartush, M.D., Michigan Ear Institute, Detroit, MI, USA

Wehrs Incus-Stapes Prosthesis, Double Notch
- The double notch prosthesis is applicable when the required offset from the stapes footplate to the malleus handle is estimated to be between 1.2 and 2 mm, or 3 and 4 mm.
- The second notch may be removed with a diamond burr and irrigation if not selected for use.

70145896 Wehrs incus-stapes prosthesis, double notch, hydroxylapatite, HAPEX® shaft, 0.8 mm diameter, 10.2 x 9 x 2.5 mm

Designed by Roger E. Wehrs, M.D., Tulsa, OK, USA

Wehrs II Incus-Stapes Prostheses, Double Notch
- The Wehrs II features a cut-out in the head of the prosthesis which adds increased strength and handling characteristics.

70140986 short, 5.3 x 4.1 x 1.6 x 3.5 mm
70140987 average, 6.3 x 5.2 x 1.6 x 3.5 mm
70140988 medium, 7.3 x 6.1 x 1.6 x 3.5 mm
70140989 long, 10.2 x 9 x 1.6 x 3.5 mm

Dimensions: ① x ② x ③ x ④
Wehrs II Incus-Stapes Prostheses, Single Notch

- The Wehrs II features a cut-out in the head of the prosthesis which adds increased strength and handling characteristics.

Wehrs II incus-stapes prosthesis,
single notch,
hydroxylapatite,
0.9 mm,
70140982 short, 5.3 x 4.1 x 2.5 mm
70140983 average, 6.3 x 5.2 x 2.5 mm
70140984 medium, 7.3 x 6.1 x 2.5 mm
70140985 long, 10.2 x 9 x 2.5 mm

Dimensions: ① x ② x ③

Black Oval-Top PORP® Prostheses

- Oval-top head is made of dense hydroxylapatite and designed to minimize extrusion by eliminating any sharp edges.
- Easily trimmable Plasti-Pore® or fluoroplastic shafts are cannulated to accommodate the stapes capitulum.

Black oval-top PORP® prosthesis,
1.15 mm partially cannulated,
head 4 x 3 mm,
6.6 mm overall length,
140859 hydroxylapatite/Plasti-Pore®
140857 hydroxylapatite/fluoroplastic

Developed with Bruce Black, M.D., Brisbane, Australia.

Black Oval-Top Universal Prostheses

- This modular approach to prosthesis design minimizes O.R. inventory by including both a PORP® and TORP® shaft which can be assembled in the prosthesis head.
- Shafts may be trimmed to length as necessary.

Black oval-top universal prosthesis,
hydroxylapatite/fluoroplastic,
head 4 x 3 mm,
6 mm/9.5 mm total length (PORP®/TORP®),
1.15 mm PORP® shaft diameter,
140861 0.8 mm (wire) TORP® shaft diameter
140860 0.8 mm TORP® shaft diameter

Requires O.R. assembly, only one shaft is actually used.
U.S. Patent Nos. 4,597,764; D286,909; D286, 910
Developed with Bruce Black, M.D., Brisbane, Australia.

Developed with Bruce Black, M.D., Brisbane, Australia.
Dornhoffer Malleable PORP® Prosthesis

70145842  Dornhoffer malleable PORP® prosthesis, hydroxylapatite head/HAPEX® shaft, 1 mm partially cannulated, head 4 x 3.2 mm, 5 mm overall length

Designed for John Dornhoffer, M.D., Little Rock, AR, USA

Dornhoffer Interpositional PORP® Prosthesis

70141014  Dornhoffer interpositional PORP® prosthesis, hydroxylapatite head/titanium shaft, 2 mm functional length with cradle, 3 mm overall length, 3.2 mm head diameter

Designed for John Dornhoffer, M.D., Little Rock, AR, USA

Drum-to-Stapes Prosthesis PORP®

140059  Drum-to-stapes prosthesis PORP®, Plasti-Pore®, 1.17 mm partially cannulated, 4 mm flange diameter, 4.75 mm overall length

Designed for Ralph J. Caprosa, M.D., Pittsburgh, PA, USA

Goldenberg Cap Prosthesis

140963  Goldenberg cap prosthesis, hydroxylapatite, fully cannulated, 1.5 mm overall length head 4 x 3 mm

As developed in conjunction with Robert Goldenberg, M.D., Dayton, OH, USA

• Hollow post of prosthesis seats firmly on stapes.
• The thin, broad-faced flange seats against the tympanum with cartilage graft.
• Plasti-Pore® material construction invites tissue ingrowth to quickly stabilize the prosthesis.
• Can be trimmed to fit, as desired.

Ossicular Reconstruction, OSS-120
Goldenberg Malleable PORP® Prostheses

Wedge-shaped, hydroxylapatite head is versatile and may be used if malleus is present but rotated anteriorly. Malleable shaft allows proper angulation against the drum and can be easily trimmed to length.

140964  Goldenberg malleable PORP® prosthesis, hydroxylapatite head, Plasti-Pore® shaft, partially cannulated, 5.1 mm overall length, head 4 x 3 mm

70145964 Goldenberg malleable PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm fully cannulated, 5.6 mm overall length, head 4 x 3 mm

As developed in conjunction with Robert Goldenberg, M.D., Dayton, OH, USA

Goldenberg PORP® Prosthesis

- Wedge-shaped hydroxylapatite head conforms to tympanic membrane.
- Cannulated to visualize the stapes capitulum.
- Plasti-Pore® shaft is trimmable and can be notched for stapedius tendon.

140916  Goldenberg PORP® prosthesis, hydroxylapatite head, Plasti-Pore® shaft, 1.14 mm fully cannulated, head 4 x 3 mm, 5.5 mm overall length

As developed in conjunction with Robert Goldenberg, M.D., Dayton, OH, USA

Goldenberg PORP® Prosthesis (cont.)

70145916  Goldenberg PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm, fully cannulated, 4 x 3 mm head dimension, 6 mm overall length

As developed in conjunction with Robert Goldenberg, M.D., Dayton, OH.

Habermann PORP® Prosthesis

- Slim design enhances visualization.
- Notched shaft accommodates stapes crura.
- Head designed with groove to accommodate malleus.

70145871  Habermann PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, notched for stapes crura, 1 mm partially cannulated, 2.7 mm functional length

As developed in conjunction with Rex Habermann, M.D., St. Paul, MN, USA

Kartush PORP® Prosthesis

70145840  Kartush PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm partially cannulated, 3 mm head diameter, 4.5 mm overall length

Designed for Jack Kartush, M.D., Michigan Ear Institute, Detroit, MI, USA
Modified PORP® Prosthesis

- The modified partial ossicular replacement prosthesis (PORP®) features a cannulation of the prosthesis stem which offers the surgeon visibility of the superstructure of the stapes during the entire surgical procedure.
- Made of Plasti-Pore® material, a porous high-density polyethylene which is well-tolerated in the body as an implant, the post of the prosthesis seats firmly on the stapes and replaces the malleus and the incus.
- The implant may be trimmed as desired.

140084 Modified PORP® prosthesis, Plasti-Pore®,
1.17 mm fully cannulated, 4 mm flange diameter, 5 mm overall length

Designed for Leslie J. Block, M.D., Chicago, IL, USA

Micron® Adjustable Titanium PORP® Prostheses

- The Micron® adjustable titanium PORP® features a large open-head design for good visualization.
- Its adjustable nature allows for minimal stocking levels.

Micron® adjustable titanium PORP® prosthesis, titanium, 2–5 mm dimension,

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<td>70141046</td>
<td>centered</td>
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<tr>
<td>70141047</td>
<td>off-centered</td>
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May be used with above products:

<table>
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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>70135802</td>
<td>Micron titanium adjustable sizing block</td>
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<tr>
<td>212930</td>
<td>Shaft crimper</td>
</tr>
<tr>
<td>70132120</td>
<td>Complete PORP®/TORP® trial set including sterilization case</td>
</tr>
</tbody>
</table>

Micron® All Titanium Monolithic PORP®

- The Monolithic PORPs® come pre-sized so that the surgeon does not need to trim the prosthesis.
- Additionally, the open-head design allows for good visualization.

Micron® All Titanium Monolithic PORP®,
- titanium,
- tiltable head,
- 3 mm head diameter,
- 1 mm cradle functional diameter,
- 70142036 centered, 1.5 mm functional length
- 70142004 centered, 2 mm functional length
- 70142028 centered, 2.5 mm functional length
- 70142005 centered, 3 mm functional length
- 70142029 centered, 3.5 mm functional length
- 70142006 centered, 4 mm functional length
- 70142007 off-centered, 2 mm functional length
- 70142030 off-centered, 2.5 mm functional length
- 70142008 off-centered, 3 mm functional length
- 70142031 off-centered, 3.5 mm functional length
- 70142009 off-centered, 4 mm functional length

Micron® Titanium PORP® with Cradle

- Tiltable titanium head
- Cradle with trimmable HAPEX® shaft

Micron® titanium PORP® with cradle, titanium/HAPEX®,
- tiltable head,
- 4.5 mm functional length,
- 5.8 mm overall length,
- 3 mm head diameter,
- 70142002 centered
- 70142003 off-centered
**Off-Centered Cap Prosthesis**

An off-centered version of the Shea Cap Prosthesis, used when anatomy does not permit a direct reconstruction.

140896  Off-centered cap prosthesis, hydroxylapatite, 1 mm partially cannulated, 3 mm flange diameter, 1.5 mm overall length

As developed in conjunction with John J. Shea, M.D., Memphis, TN, USA

**Off-centered PORP® Prosthesis**

- The off-centered Plasti-Pore PORP® is completely cannulated, allowing the surgeon visibility of the superstructure of the stapes during surgery.
- The position of the shaft permits a direct, rather than angled, stapes to tympanum placement.
- Made of Plasti-Pore® material, a porous, high-density polyethylene which is well-tolerated in the body.
- May be trimmed as desired.

140051  Off-centered PORP® prosthesis, Plasti-Pore®, 1.17 mm fully cannulated, 4 mm flange diameter, 4.57 mm overall length

**Richards Centered PORP® Prostheses**

Fully cannulated hydroxylapatite partial ossicular replacement prosthesis.

140892  Richards centered PORP® prosthesis, hydroxylapatite, 1.17 mm fully cannulated, 4 mm flange diameter, 5.1 mm overall length

70145891 Richards centered PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm fully cannulated, 3.5 mm head diameter, 5.9 mm overall length

**Richards Centered Malleable PORP® Prosthesis**

Richards centered malleable PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm partially cannulated, 3.5 mm head diameter, 5.8 mm overall length

70145889 Richards centerd malleable PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm partially cannulated, 3.5 mm head diameter, 5.8 mm overall length

**Richards Off-Centered Malleable PORP® Prosthesis**

Richards off-centered malleable PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm partially cannulated, 3.5 mm head diameter, 5.8 mm overall length

70145892 Richards off-centered malleable PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm partially cannulated, 3.5 mm head diameter, 5.8 mm overall length

**Richards Off-Centered PORP® Prosthesis**

Richards off-centered PORP® prosthesis, hydroxylapatite, 1.17 mm fully cannulated, 4 mm flange diameter, 5.1 mm overall length

140893 Richards off-centered PORP® prosthesis, hydroxylapatite, 1.17 mm fully cannulated, 4 mm flange diameter, 5.1 mm overall length
Richards Off-Centered PORP® Prosthesis

70145893 Richards off-centered PORP® prosthesis,
hydroxylapatite head, HAPEX® shaft,
1.17 mm fully cannulated,
3.5 mm head diameter,
5.9 mm overall length

Shea Cap Prosthesis

• This versatile prosthesis functions as a short PORP®-type prosthesis.
• Can also be used in conjunction with other available implants or materials to bridge ossicular defects.

140895 Shea cap prosthesis,
hydroxylapatite,
1 mm partially cannulated,
1.75 mm base diameter,
3 mm flange diameter,
1.5 mm overall length

As developed in conjunction with John J. Shea, M.D., Memphis, TN, USA

Shea HA/FP Prosthesis

• Designed to minimize extrusion by rounding edges of hydroxylapatite head.
• Fluoroplastic cannulated shafts can be trimmed to size, reducing inventory needs.

140962 Shea HA/FP prosthesis,
hydroxylapatite head,
fluoroplastic shaft,
1.14 mm partially cannulated,
3 mm head diameter,
5.4 mm overall length

As developed in conjunction with John J. Shea, M.D., Memphis, TN, USA

Shea PORP® Prosthesis

• The Shea PORP® prosthesis utilizes a hydroxylapatite head and an “easy-to-trim” Plasti-Pore® shaft.
• The small diameter head makes reduction in size unnecessary for most reconstructions.
• The Plasti-Pore® shaft provides a cannulated, trimmable length for placement over the capitulum of the stapes.

140898 Shea PORP® prosthesis,
hydroxylapatite head,
Plasti-Pore® shaft,
1.17 mm partially cannulated,
3 mm flange diameter,
5.6 mm overall length

As developed in conjunction with John J. Shea, M.D., Memphis, TN, USA
Sheehy Modified PORP® Prosthesis

- The Sheehy modified PORP® prosthesis features a smaller diameter flange than does the standard PORP® prosthesis, which allows ease of introduction and better visual contact with the stapes.
- The cannulated shaft of the prosthesis is designed to be firmly seated on the capitulum of the stapes, to aid in visualization of the stapes, and can be trimmed to the desired length.

140053 Sheehy modified PORP® prosthesis, Plasti-Pore®, 1.17 mm partially cannulated, 3 mm flange diameter, 4.75 mm overall length

Designed for James Sheehy, M.D., Los Angeles, CA, USA

Sheehy PORP® Prosthesis

70140934 Sheehy PORP® prosthesis, Plasti-Pore®, 1.12 mm fully cannulated, 2.8 mm head diameter, 4.7 mm overall length

Designed for James Sheehy, M.D., Los Angeles, CA, USA

Strasnick PORP® Prosthesis

70141576 Strasnick PORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 1.17 mm fully cannulated, 2.5 mm head diameter, 6 mm overall length, trimmable

Designed for Barry Strasnick, M.D., Norfolk, VA, USA

PORP® Trials

- The intraoperative measuring devices assist the surgeon in determining the appropriate implant.

PORP® trials, 3 mm head diameter, not for implantation,

70131321 2 mm functional length
70131322 3 mm functional length
70131323 4 mm functional length

Ossicular Replacement Prostheses Measuring TORP® Trials

Ossicular replacement prosthesis measuring TORP® trials, not for implantation,

70131350 4 mm overall length
70131352 5 mm overall length
70131354 6 mm overall length
70131356 7 mm overall length

May be used with above products:
70132120 Complete PORP®/TORP® trial set including sterilization case
70135060 Sterilization case

Austin Modified Off-Centered TORP® Prosthesis

- The Austin modification of the Plasti-Pore® material columella enables a direct, rather than angled, union between the footplate and the tympanic membrane. This modification aids the surgeon in better visualizing the footplate.
- The head should be covered with autogenous cartilage to inhibit extrusion.

140063 Austin modified off-centered TORP® prosthesis, Plasti-Pore®, 3 mm flange diameter, 1 mm shaft diameter, 7 mm overall length

Designed for David F. Austin, M.D., Iowa City, Iowa, USA
Black Oval-Top TORP® Prostheses

- Oval-top head is made of dense hydroxylapatite and is designed to minimize extrusion by eliminating any sharp edges.
- Easily trimmable Plasti-Pore® or fluoroplastic shafts reduce O.R. inventory needs.

Black oval-top TORP® prosthesis,
4 mm flange diameter,
0.8 mm shaft diameter,
10 mm overall length,
hydroxylapatite head,
140856 Plasti-Pore® shaft
140858 fluoroplastic shaft

As developed in conjunction with Bruce Black, M.D., Brisbane, Australia

Bojrab Universal Prosthesis

- Partially cannulated shaft allows usage as TORP® or PORP®.
- Notch in head accommodates malleus.

70145844 Bojrab universal prosthesis,
hydroxylapatite head, HAPEX® shaft,
combination interpositional TORP®, PORP®,
1 mm partially cannulated,
0.8 mm diameter of base of shaft,
3 mm head diameter,
6.9 mm TORP® functional length,
2.7 mm PORP® functional length
6.9 mm overall length

Designed for Dennis Bojrab, M.D., Michigan Ear Institute, Detroit, MI, USA

Brackman Modified TORP® Prosthesis

70140563 Brackman modified TORP® prosthesis,
Plasti-Pore®/wire,
0.8 mm shaft diameter,
3 mm head diameter,
8 mm overall length, trimmable

Designed for Daryl Brackman, M.D., Los Angeles, CA, USA

CAP TORP®

70145898 CAP TORP®,
hydroxylapatite head, HAPEX® shaft,
3.5 mm head diameter,
0.8 mm shaft diameter,
9 mm overall length

Designed in conjunction with David Kelsall, M.D., Denver, CO, USA
Causse Modified TORP® Prosthesis

- Same unique features as the standard Plasti-Pore® TORP® but with a smaller diameter (0.6 mm) shaft.
- The smaller shaft makes positioning of the implant easier when obstructions are present.

140057  Causse modified TORP® prosthesis, Plasti-Pore®,
4 mm flange diameter,
0.6 mm shaft diameter,
7 mm overall length

Designed for Jean-Bernard Causse, M.D., Béziers, France.

Fisch-Type TORP® Prosthesis

- L-shaped modification of the TORP® implant offering a smaller head size and shaft to permit better visibility while the surgeon is positioning the implant.
- Made of Plasti-Pore® material, the Fisch TORP® prosthesis can be trimmed to desired length.

140087  Fisch-type TORP® prosthesis, Plasti-Pore®,
4 mm flange diameter,
0.8 mm shaft diameter,
8 mm overall length

Designed for Ugo Fisch, M.D., Zurich, Switzerland.

Dornhoffer Malleable TORP® Prosthesis

70145843  Dornhoffer malleable TORP® prosthesis, hydroxylapatite head, HAPEX® shaft,
head 4 x 3.2 mm,
0.8 shaft diameter,
8.25 mm overall length, trimmable

Designed for John Dornhoffer, M.D., Little Rock, AR, USA

Goldenberg Malleable TORP® Prosthesis

70145917  Goldenberg malleable TORP® prosthesis, hydroxylapatite head, HAPEX® shaft,
head 3 x 4 mm,
0.8 mm shaft diameter,
7.9 mm overall length

As developed in conjunction with Robert Goldenberg, M.D., Dayton, OH, USA

Goldenberg TORP® Prosthesis

- Wedge-shaped head may be used when the malleus is not present or is extremely anteriorly rotated.
- Plasti-Pore® shaft is easily trimmed and is wire-reinforced for increased stability.
- A tissue graft over the oval window may be used when the stapes footplate is not present.

140917  Goldenberg TORP® prosthesis, hydroxylapatite/Plasti-Pore®,
0.8 mm shaft diameter,
8 mm overall length

Designed for Robert Goldenberg, M.D., Dayton, OH, USA
Grote TORP® Prosthesis

- 70140992  Grote TORP® prosthesis, hydroxylapatite, 5 mm handle length, 0.6 mm shaft diameter, 10 mm overall length

Designed for Jan J. Grote, M.D., Leiden, The Netherlands

Haberman TORP® Prosthesis

- Slim, wire portion of the shaft enhances visualization.
- HAPEX® portion can be trimmed to the desired length.

- 70145870  Haberman TORP® prosthesis, hydroxyapatite head, HAPEX® shaft, 3.5 mm head diameter, 0.9 mm shaft diameter, 7.4 mm overall length

Designed for Rex Habermann, M.D., St. Paul, MN, USA

Kartush TORP® Prosthesis

- 70145841  Hydroxyapatite head/HAPEX® shaft, 3 mm head diameter, 0.8 mm shaft diameter, 8 mm overall length, trimmable

Designed for Jack Kartush, M.D., Michigan Ear Institute, Detroit, MI, USA

McGee Malleable TORP® Prosthesis

- This updated off-centered variety of TORP® prosthesis utilizes a hydroxyapatite head and a Plasti-Pore® wire-reinforced shaft.
- This combination of materials provides an implant “head” produced from a highly biocompatible material and a malleable, easy-to-trim shaft.

- 140897  McGee malleable TORP® prosthesis, hydroxyapatite head, Plasti-Pore® shaft, 3 mm flange diameter, 0.8 mm shaft diameter, 2 mm trimmable length, 7 mm overall length

Developed in conjunction with T. Manford McGee, M.D., Michigan Ear Institute, Detroit, MI, USA
**Micron® Adjustable Titanium TORP® Prostheses**

- The Micron® adjustable titanium TORP® features an open-head design for optimal visualization.
- Its adjustable nature allows for minimal stocking levels.

Micron® adjustable titanium TORP® prosthesis, titanium, 2–10 mm, 70141044 centered 70141045 off-centered

May be used with above products: 70135802 Sizing block 212930 Shaft crimper 70132120 Complete PORP®/TORP® trial set including sterilization case

**Micron® All Titanium Monolithic TORP®**

- The monolithic TORPs® come pre-sized so that the surgeon does not need to trim the prosthesis.
- Additionally, the open-head design allows optimal visualization.

Micron® All Titanium Monolithic TORP®, titanium, 0.9 mm round footplate (shoe diameter), 3 mm head diameter, centered, tiltable head, 70142032 2 mm overall length 70142033 2.5 mm overall length 70142034 3 mm overall length 70142035 3.5 mm overall length 70142010 4 mm overall length 70142011 4.5 mm overall length 70142012 5 mm overall length 70142013 5.5 mm overall length 70142014 6 mm overall length 70142015 6.5 mm overall length 70142016 7 mm overall length 70142017 7.5 mm overall length 70142018 8 mm overall length

Micron® All Titanium Monolithic TORP®, titanium, 0.9 mm round footplate (shoe diameter), 3 mm head diameter, off-centered, tiltable head, 70142019 4 mm overall length 70142020 4.5 mm overall length 70142021 5 mm overall length 70142022 5.5 mm overall length 70142023 6 mm overall length 70142024 6.5 mm overall length 70142025 7 mm overall length 70142026 7.5 mm overall length 70142027 8 mm overall length

**Micron® Titanium TORP® with Shoe**

- Tiltable titanium head and shoe
- Trimmable HAPEX® shaft.

Micron® titanium TORP® with shoe, titanium head, HAPEX® shaft, 10 mm overall length (when shoe is attached), 3 mm head diameter, 0.9 mm shaft diameter, 0.9 x 1.16 mm shoe diameter, 70142000 centered, tiltable head 70142001 off-centered, tiltable head

Micron® All Titanium Monolithic TORP®, titanium, 0.9 mm round footplate (shoe diameter), 3 mm head diameter, off-centered, tiltable head, 70142019 4 mm overall length 70142020 4.5 mm overall length 70142021 5 mm overall length 70142022 5.5 mm overall length 70142023 6 mm overall length 70142024 6.5 mm overall length 70142025 7 mm overall length 70142026 7.5 mm overall length 70142027 8 mm overall length
Richards Centered TORP® Prostheses

Richards centered TORP® prosthesis, hydroxylapatite, 4 mm flange diameter, 0.84 mm shaft diameter, 4 mm head width,
140886  $1 = 1.65$ mm,  $2 = 4$ mm
140887  $1 = 3.67$ mm,  $2 = 6$ mm
140888  $1 = 5.7$ mm,  $2 = 8$ mm

Richards off-centered TORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 3.5 mm head diameter, 0.8 mm shaft diameter, 8.1 mm overall length, trimmable
70145888

Richards Off-Centered TORP® Prostheses

Richards off-centered TORP® prosthesis, hydroxylapatite, 4 mm flange diameter, 0.84 mm shaft diameter, 4 mm head width,
140889  $1 = 1.65$ mm,  $2 = 4$ mm
140890  $1 = 3.67$ mm,  $2 = 6$ mm
140891  $1 = 5.7$ mm,  $2 = 8$ mm

Richards off-centered TORP® prosthesis, hydroxylapatite head, HAPEX® shaft, 3.5 mm head diameter, notched, 0.8 mm shaft diameter, 8.1 mm overall length, trimmable
70145890
**Shea HA/FP TORP® Prosthesis**

- Designed to minimize extrusion by rounding edges of hydroxylapatite head.
- Easily trimmable fluoroplastic shaft reduces O.R. inventory needs.

140961  Shea HA/FP TORP® prosthesis, hydroxylapatite head, fluoroplastic shaft, 3 mm head diameter, 10 mm overall length, trimmable

Developed in conjunction with John J. Shea, M.D., Memphis, TN, USA

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**Shea Malleable TORP® Prosthesis**

- This Shea TORP® prosthesis utilizes a hydroxylapatite head and a Plasti-Pore® wire-reinforced shaft.
- This combination of materials provides an implant “head” produced from a highly biocompatible material and a malleable, easy-to-trim shaft.

140894  Shea malleable TORP® prosthesis, hydroxylapatite head, Plasti-Pore® shaft, 3 mm flange diameter, 0.8 mm shaft diameter, 7 mm overall length, 2 mm trimmable length

As developed in conjunction with John J. Shea, M.D., Memphis, TN, USA

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**Shea TORP® Prosthesis**

- A solid fluoroplastic shaft may be desired in those ears with only a small piece of living membrane vestibule exposed, or in those ears with obliterative otosclerosis in which the prosthesis is placed into the small oval window opening created without an interposed tissue graft.
- Flange is made of Plasti-Pore® material, which invites tissue ingrowth.

140003  Shea TORP® prosthesis, Plasti-Pore® head, fluoroplastic shaft, 4 mm flange diameter, 1 mm shaft diameter, 7 mm overall length

Designed for John J. Shea, M.D., Memphis, TN, USA
Shea TORP® Prostheses

- The Shea TORP® prosthesis is a white porous plastic columella made of Plasti-Pore® material, a high-density polyethylene which is well tolerated in the body as an implant.
- Designed to replace the entire ossicular chain, the prosthesis is placed from the oval window to the drum.
- The shaft of the prosthesis can be angulated and can be cut off to the proper length by the surgeon.
- Broad-faced thinned surface resists tilting, and distributes pressure over a large drum area.
- Tissue grows into the end of the shaft to secure it to the footplate or other oval window seal. The shaft end may be cut by the surgeon to the desired length.

Shea TORP® prosthesis,
Plasti-Pore®,
4 mm flange diameter,
0.25 mm flange thickness,
0.85 mm shaft diameter,
140901 4 mm overall length
140902 5 mm overall length
140903 6 mm overall length
140904 7 mm overall length
140905 8 mm overall length

Sheehy Modified TORP® Prosthesis

- Designed to replace the entire ossicular chain, the Sheehy modified TORP® prosthesis features a smaller diameter flange than does the standard TORP® prosthesis.
- Some practitioners find that the use of tragal cartilage between the flange of the prosthesis and tympanic membrane has diminished the necessity for the larger diameter flange.
- The entire TORP® prosthesis is made of Plasti-Pore® material.
- The prosthesis shaft can be angulated and trimmed to the desired length.

Sheehy modified TORP® prosthesis,
Plasti-Pore®,
3 mm flange diameter,
1 mm shaft diameter,
7 mm overall length
140089

Sheehy TORP® (Improved) Prosthesis

- Designed for John J. Shea, M.D., Memphis, TN, USA

Sheehy TORP® (improved) prosthesis,
Plasti-Pore®,
3 mm head diameter,
0.8 mm shaft diameter,
7 mm overall length
70140933

Designed for James Sheehy, M.D., Los Angeles, CA, USA
Strasnick TORP® Prosthesis

70141577  Strasnick TORP® prosthesis,  
hydroxylapatite/HAPEX®,  
malleable head,  
2.5 mm head diameter,  
8 mm overall length, trimmable

Tilt-Top TORP® Prosthesis

- The unique ball-and-socket of the tilt-top TORP® prosthesis allows the surgeon to precisely fit the flange to the underside of the tympanic membrane (using a cover of cartilage if desired) while maintaining a more correct anatomical relationship between the shaft of the prosthesis and the stapes footplate or the oval window.
- The positional variances in eardrum-oval window relationships that can occur from case to case are easily accommodated. The surgeon merely determines the best flange-to-shaft angle and rotates the flange into place.
- The prosthesis is inserted in the manner used with a regular TORP® prosthesis.

140915  Tilt-Top TORP® prosthesis,  
Plasti-Pore®,  
4 mm flange diameter,  
0.8 mm shaft diameter,  
9 mm overall length
Attic Defect Plates

- Designed to be used in reconstructing attic defects in cases of intact canal wall mastoidectomy.
- The semicircular implants are intended for use in sealing attic defects, and promoting complete obliteration of the site.
- Offered in 3 sizes, to accommodate individual patient needs.

Attic defect plate, porous hydroxyapatite, 1 mm thick,
140862 small, 7 mm diameter
140863 medium, 10 mm diameter
140864 large, 14 mm diameter

As developed in conjunction with Bruce Black, M.D., Brisbane, Australia.

Grote Canal Wall Prostheses

- The Grote canal wall prosthesis is designed for the reconstruction of the posterior bony ear canal wall.
- Available in three sizes to better fit individual patient needs.
- Can be shaped using an appropriate diamond burr and irrigation.

Grote canal wall prosthesis, porous hydroxyapatite, 1 mm thick,
140866 small, 13 x 12 x 16 mm
140867 medium, 14 x 13 x 18 mm
140868 large, 16 x 15 x 20 mm

Dimensions: ① x ② x ③

Designed by Jan J. Grote, M.D., Leiden, The Netherlands.

Porous Hydroxyapatite Reconstruction Blocks

- Porous hydroxyapatite implants for reconstruction of bony defects or augmentation of bony deficiencies.
- Made of highly bio compatible hydroxyapatite material, these blocks are useful in plastic surgery, and in oral and maxillofacial procedures where homograft and autograft bone is normally used.

140871 Porous hydroxyapatite reconstruction block, small, 5 x 10 x 30 mm

Properties
- Pore size range: 150–350 μm
- Porosity range: 15–30%

Hydroxyapatite Granules

- Porous hydroxyapatite granules are small particle implants.
- Indicated for reconstruction of natural or surgically created defects of the mastoid. Rinsing with a sterile solution prior to insertion is recommended.
- The size of the prosthesis should be carefully assessed to ensure a proper fit. Once in position, the implant should be adequately covered with fascia or other material.

911101 Hydroxyapatite granules (not shown), porous hydroxyapatite, 0.5–1 mm size of granules, 3 pcs., sterile, single use
## Measuring Trials

- Stainless steel
- Not for implantation
- Used for customized sizing

Ossicular replacement prosthesis measuring PORP® trials,
- 70131321 2 mm functional length
- 70131322 3 mm functional length
- 70131323 4 mm functional length

Ossicular replacement prosthesis measuring TORP® trials,
- 70131350 4 mm functional length
- 70131352 5 mm functional length
- 70131354 6 mm functional length
- 70131356 7 mm functional length

Ossicular replacement prosthesis measuring trials accessories (not shown):
- 70132120 Complete PORP®/TORP® trial set including sterilization case
- 70135060 Sterilization case
- 70135801 Universal cutting block designed for use with HAPEx® shaft
- 70135802 Micron titanium adjustable sizing block
- 212930 Shaft crimper

## Williams Microclips

The Williams microclip offers another method for holding the tympanic graft securely in position.
- Reduces the possibility of dislodging the positioned anterior graft segment.
- Allows the surgeon to fasten down the graft in stages, one area at a time.
- Assures the surgeon that the graft remains securely in position even when visibility is obscured during placement of packing material.

### 145285 Microclip
- Stainless steel
- 1.27 mm inner diameter
- 0.13 mm wire diameter
- Sterile, single use
- 3 pcs.

### 130830 Microclip inserter
- Stainless steel
- 1.27 mm serrated jaws

Designed for J. David Williams, M.D., Anchorage, Alaska, USA
OtoMimix®

- First hydroxylapatite bone cement indicated for middle ear use.
- OtoMimix® bridges the gap for incudostapedial joint discontinuity as well as offering stability with preformed prostheses.
- Designed specifically for Otolaryngologists, OtoMimix® is comprised of both a powder and liquid component that form a working paste when mixed together.
- The powder component is a hydroxylapatite (HA) based mixture of tetracalcium phosphate and the liquid component is a dilute citric acid.

7014-3266 OtoMimix®, 2 g

Indications for Use
- Augmentation or coupling of the middle ear ossicles
- Attachment of the middle ear ossicles to middle ear implants
- Mechanical stabilization of middle ear prostheses
- Reconstruction of the posterior canal wall

130725 Rosen needles, sharp, 6 pcs.

130726 Rosen needles, dull, 6 pcs.

Bowis

Glass medicine cups, coloured,
813510 1 pc.
813505 5 pcs.