

Codman[®]
SPECIALTY SURGICAL

A DIVISION OF INTEGRA LIFESCIENCES



Hydrocephalus

Product Catalog

Codman® brings you a complete range of shunt solutions

Our shunt offering provides Versatility, Precision, Flow Regulation, Infection Prevention and more.
An array of benefits for simplicity, safety, versatility and control



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If any covered defect occurs during the warranty period or term of such placement agreement, the purchaser or distributor should communicate directly with INTEGRA. If purchaser or distributor seeks to invoke the terms of this warranty, the product must be returned to INTEGRA. The defective product should be returned promptly, properly packaged and postage prepaid. Loss or damage in return shipment to INTEGRA shall be at sender's risk. INTEGRA's sole responsibility under this warranty shall be repair or replacement, at INTEGRA's sole discretion at INTEGRA's expense, subject to the terms of this warranty and applicable agreements.

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Programmable Valves

Codman[®] CERTAS[™] Plus

Codman[®] Hakim[®] Programmable Valve

Products Comparison



Codman® CERTAS™ Plus

**Codman® Hakim®
Programmable Valve**

Settings	8 (incl. Virtual Off)	18
Regular	●	●
Cylindrical	-	●
Small	●	●
Right Angle / Burr Hole	●	●
SiphonGuard® integrated Option	●	●
Bactiseal® unitized Option	●	-
MRI Resistance (up to 3 Tesla)	●	-
MRI compatibility (Up to 3 tesla)*	●	●

* Check Instructions For Use document for conditional MRI compatibility details.

Products References Summary

All programmable valves are packaged sterile in box of 1.

Codman® CERTAS™ Plus

	Regular		Small		Right Angle		
	Without SiphonGuard®	With SiphonGuard®	Without SiphonGuard®	With SiphonGuard®	Without SiphonGuard®	With SiphonGuard®	
Valve Only	828800	828804	828810	828814	828820	828824	
Valve System	828801	828805	828811	828815	828821	828825	
Valve System Unitized	828802	828806	828812	828816	828822	828826	
Valve System Unitized with Bactiseal®	828803	828807	828813	828817	828823	828827	
Codman CERTAS® Tool Kit						828851	
Codman® CERTAS™ Plus Electronic Tool Kit						828852	

Codman® Hakim® Programmable Valve

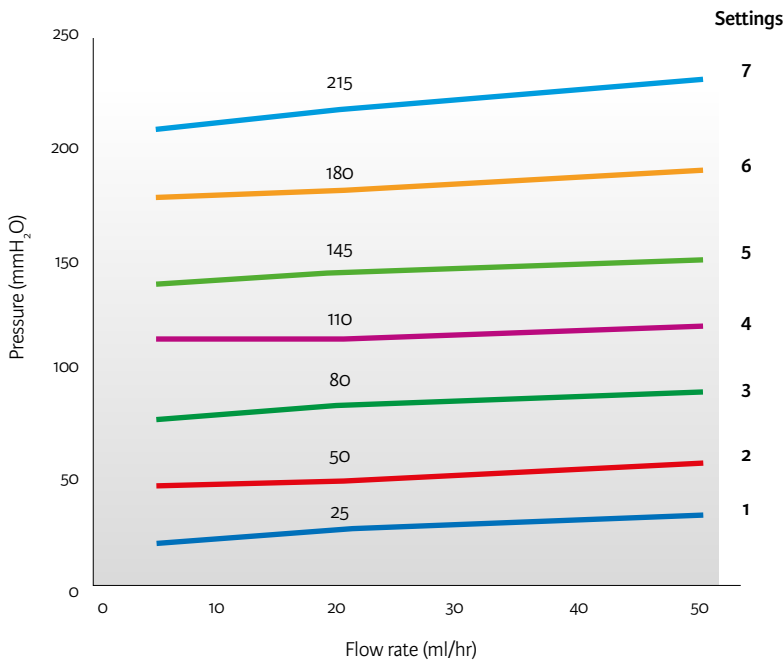
	Cylindrical		Micro		Regular		Burr Hole	
	Without Pre-Chamber	With Pre-Chamber	Without Rickham® Reservoir	With Rickham® Reservoir	Without SiphonGuard®	With SiphonGuard®	Without SiphonGuard®	With SiphonGuard®
Valve Only	823115	823110	823112	823116	823164	823162	823184	823182
Valve System	823101	823100	-	-	823834	823832	823838	823136
Valve System Unitized	-	823111	823114	823113	823844	823842	823148	823146
Valve Only Special	NS5034	-	-	-	-	-	-	-
VPV® System						823192R		
Codman® Hakim® Programmer						823190R		

Codman® CERTAS™ Plus

The Codman® CERTAS™ Plus programmable valve offers the ability to optimize the opening pressure of a shunt system before and after implantation. A shunted patient’s condition will often change over the course of their treatment making pressure changes necessary. The Codman® CERTAS™ Plus programmable valve allows a surgeon to non-invasively change the opening pressure (from 25 to 215 mm H₂O) to one of eight performance settings, which range from 1 (low pressure) to 7 (high pressure), plus performance setting 8, which is a “Virtual Off.” The setting of the Codman® CERTAS™ Plus programmable valve is changed through the use of an externally applied magnetic field. Applying a specific magnetic field to the adjustable valve mechanism will permit the cam to turn slightly, increasing or decreasing the tension on the spring, and changing the setting of the valve. To avoid unintended pressure setting changes, the valve is designed to withstand external magnetic influences, including MRI up to 3 Tesla. The Codman® CERTAS™ Plus programmable valve is available in 3 different designs (regular, small and right angle) and with integrated SiphonGuard® anti-siphon device and/or unitized Bactiseal® impregnated antimicrobial catheters.

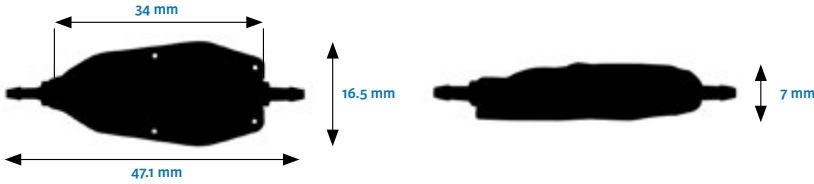


Valve Performance Chart



Settings 1, 2, 3	±20 mm H ₂ O
Setting 4	±25 mm H ₂ O
Settings 5, 6, 7	±35 mm H ₂ O
Setting 8	Intended to limit flow. Average pressure > 400 mm H ₂ O for flow rates 5 to 50 ml/hr

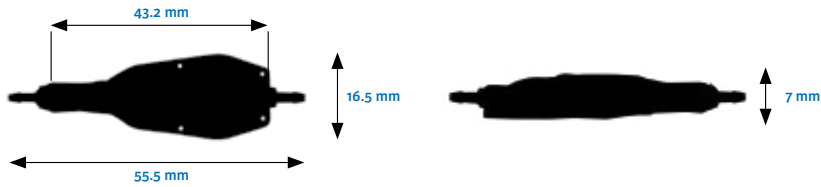
Codman® CERTAS™ Plus Regular



Reference	Package Content
828800	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
828801	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter (ref. 823041) • Stainless steel stylet • 120 cm distal catheter (ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828802	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter (ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828803	<p>Valve System Unitized Bactiseal®</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm Bactiseal® ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal® distal (Ref. 823074) catheter unitized • Priming adaptor plastic • Right angle adaptor plastic



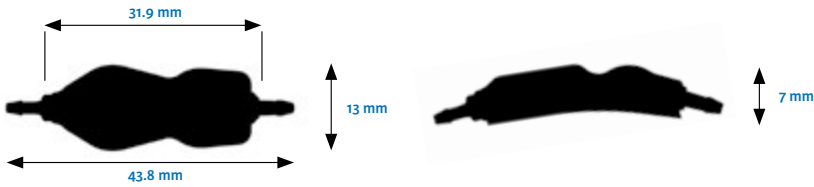
Codman[®] CERTAS[™] Plus Regular - with SiphonGuard[®]



Reference	Package Content
828804	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard[®] device • Priming adaptor plastic
828805	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard[®] device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828806	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard[®] device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828807	<p>Valve System Unitized Bactiseal[®]</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard[®] device • 14 cm Bactiseal[®] ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal[®] distal catheter unitized (Ref. 823074) • Priming adaptor plastic • Right angle adaptor plastic



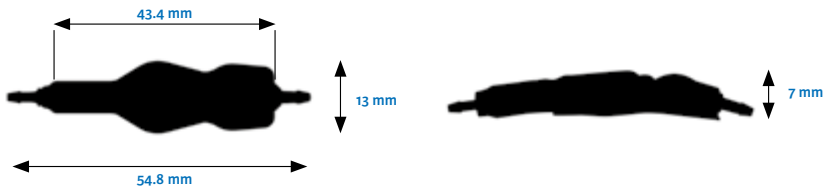
Codman® CERTAS™ Plus Small



Reference	Package Content
828810	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
828811	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828812	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828813	<p>Valve System Unitized Bactiseal®</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm Bactiseal® ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal® distal catheter unitized (Ref. 823074) • Priming adaptor plastic • Right angle adaptor plastic



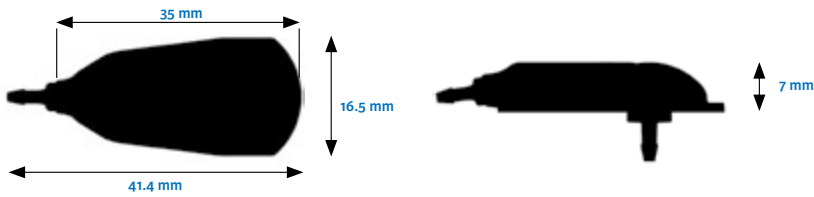
Codman® CERTAS™ Plus Small - with SiphonGuard®



Reference	Package Content
828814	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard® device • Priming adaptor plastic
828815	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard® device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828816	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard® device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828817	<p>Valve System Unitized Bactiseal®</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard® device • 14 cm Bactiseal® ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal® distal catheter unitized (Ref. 823074) • Priming adaptor plastic • Right angle adaptor plastic



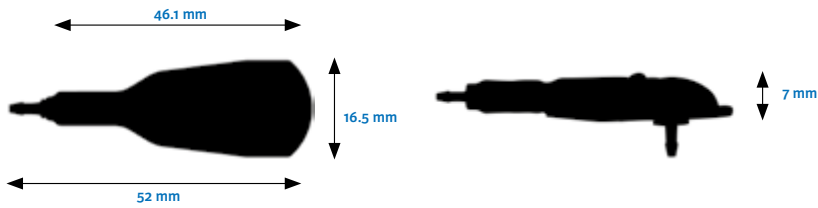
Codman® CERTAS™ Plus Right Angle



Reference	Package Content
828820	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
828821	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828822	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828823	<p>Valve System Unitized Bactiseal®</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm Bactiseal® ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal® distal catheter unitized (Ref. 823074) • Priming adaptor plastic • Right angle adaptor plastic



Codman[®] CERTAS[™] Plus Right Angle - with SiphonGuard[®]



Reference	Package Content
828824	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard[®] device • Priming adaptor plastic
828825	<p>Valve System</p> <ul style="list-style-type: none"> • Valve with integrated plastic connectors and SiphonGuard[®] device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828826	<p>Valve System Unitized</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard[®] device • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic • Right angle adaptor plastic
828827	<p>Valve System Unitized Bactiseal[®]</p> <ul style="list-style-type: none"> • Valve with integrated plastic connector and SiphonGuard[®] device • 14 cm Bactiseal[®] ventricular catheter (Ref. 823073) • Stainless steel stylet • 120 cm Bactiseal[®] distal catheter unitized (Ref. 823074) • Priming adaptor plastic • Right angle adaptor plastic



Programmers

Reference	Package Content
828852	<p>Codman® CERTAS™ Plus Electronic Tool Kit</p> <ul style="list-style-type: none"> • Locator tool • Adjustment tool • X-Ray overlay • Instructions for use • Spare batteries (one set of 2 batteries) • Screw driver
828851	<p>Codman CERTAS® Tool Kit</p> <ul style="list-style-type: none"> • Indicator tool • Adjustment tool • Locator tool, adjustable height • Locator tool, low profile • X-Ray overlay • Instructions for use
828859	<p>Codman CERTAS® X-Ray Overlay For Codman CERTAS® Tool Kit or Codman® CERTAS™ Plus Electronic Tool Kit</p>
828860	<p>Codman Certas® indicator tool</p>
828861	<p>Codman Certas adjustable height locator</p>



Codman® Hakim® Programmable Valve

The Codman® Hakim® Programmable Valve offers the ability to optimize the opening pressure of a shunt system before and after implantation. A shunted patient's condition will often change over the course of their treatment making pressure changes necessary. The programmable valve allows a surgeon to non-invasively change the opening pressure between 30 mm H₂O and 200 mm H₂O in 18 steps. The setting of the Codman® Hakim® Programmable Valve is changed through the use of an externally applied, codified magnetic field. The spring in the ball-spring mechanism of the valve sits atop a rotating spiral cam which contains a stepper motor. Applying a specific magnetic field to the stepper motor will cause the cam to turn slightly, increasing or decreasing the tension on the spring, and changing the opening pressure of the valve. The Codman® Hakim® Programmable Valve is available in multiple designs (Cylindrical, Regular, Micro, Burr Hole) and configurations.

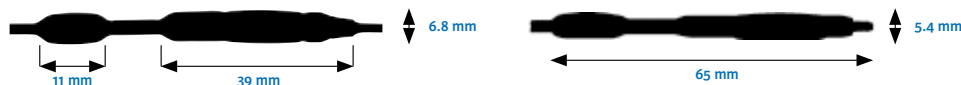


Programmer

Reference	Package Content
823192R	VPV® System <ul style="list-style-type: none"> • Programmer • Transmitter • Power cord • Carrying case • transmission gel
823190R	Codman® Hakim® Programmer <ul style="list-style-type: none"> • Programmer • Transmitter • Power cord • Carrying case



Codman® Hakim® Cylindrical - with Pre-Chamber



Reference	Package Content
823110	Valve Only <ul style="list-style-type: none"> • Valve with pre-chamber • Straight connector titanium • Valve introducer plastic
823100	Valve System <ul style="list-style-type: none"> • Valve with pre-chamber • 114 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium
823111	Valve System Unitized <ul style="list-style-type: none"> • Valve with pre-chamber • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium



14 cm open-ended proximal tube, 1.14 mm ID x 2.5 mm OD

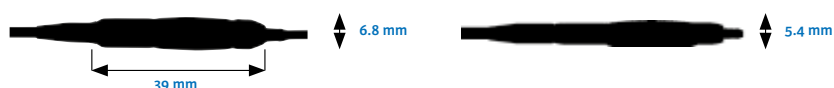


14 cm open-ended proximal tube, 1.14 mm ID x 2.5 mm OD



14 cm open-ended proximal tube, 1.14 mm ID x 2.5 mm OD

Codman® Hakim® Cylindrical - without Pre-Chamber



Reference	Package Content
823115	Valve Only <ul style="list-style-type: none"> • Valve • Straight connector titanium • Valve introducer plastic
823101	Valve System <ul style="list-style-type: none"> • Valve • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium
NS5034	Valve only - Special <ul style="list-style-type: none"> • Valve with integrated connectors • Valve introducer plastic

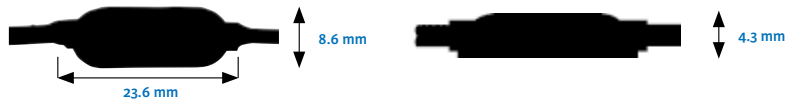


14 cm open-ended proximal tube, 1.14 mm ID x 2.5 mm OD



14 cm open-ended proximal tube, 1.14 mm ID x 2.5 mm OD

Codman® Hakim® Micro



Reference	Package Content
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- | | |
|---------------|--|
| 823112 | Valve Only <ul style="list-style-type: none"> • Valve • 2 straight connectors titanium • Priming adaptor plastic |
|---------------|--|



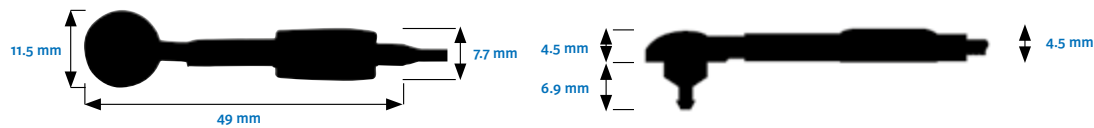
5 cm open-ended proximal tube, 1.4 mm ID x 2.7 mm OD
2.5 cm distal tube, 1 mm ID x 2.15 mm OD

- | | |
|---------------|---|
| 823114 | Valve System Unitized <ul style="list-style-type: none"> • Valve • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium • Priming adaptor plastic |
|---------------|---|



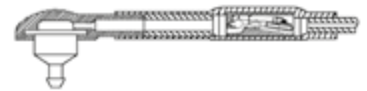
5 cm open-ended proximal tube, 1.4 mm ID x 2.7 mm OD

Codman® Hakim® Micro - with Rickham™ Reservoir



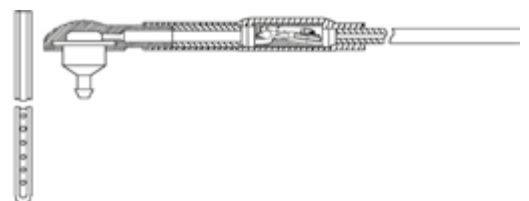
Reference	Package Content
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- | | |
|---------------|--|
| 823116 | Valve Only <ul style="list-style-type: none"> • Valve • Priming adaptor plastic |
|---------------|--|

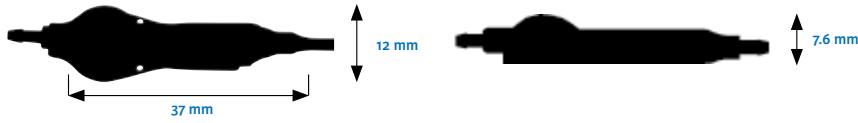


2.5 cm distal tube, 1 mm ID x 2.15 mm OD

- | | |
|---------------|--|
| 823113 | Valve System Unitized <ul style="list-style-type: none"> • Valve • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Priming adaptor plastic |
|---------------|--|



Codman® Hakim® Regular



Reference	Package Content
823164	Valve Only <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
823834	Valve System <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Right-angled adaptor plastic • Priming adaptor plastic
823844	Valve System Unitized <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Right-angled adaptor plastic • Priming adaptor plastic



Codman® Hakim® Regular - with SiphonGuard®



Reference	Package Content
823162	Valve Only <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
823832	Valve System <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter (Ref. 823045) • Right-angled adaptor plastic • Priming adaptor plastic
823842	Valve System Unitized <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter (Ref. 823041) • Stainless steel stylet • 120 cm distal catheter unitized (Ref. 823045) • Right-angled adaptor plastic • Priming adaptor plastic



Codman® Hakim® Burr Hole

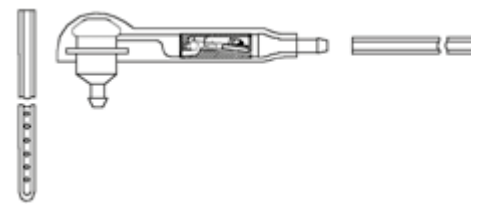


Reference Package Content

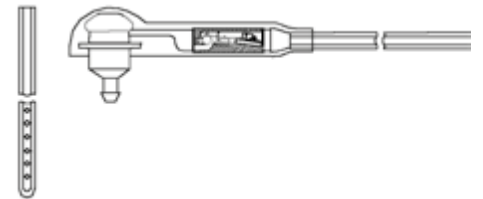
- 823184 Valve Only**
- Valve with integrated plastic connectors
 - Priming adaptor plastic



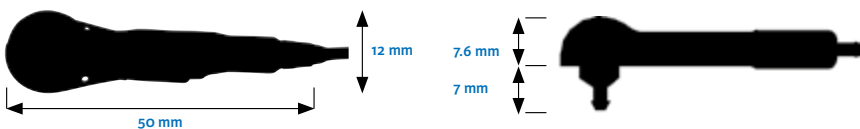
- 823838 Valve System**
- Valve with integrated plastic connectors
 - 14 cm ventricular catheter (Ref. 823041)
 - Stainless steel stylet
 - 120 cm distal catheter (Ref. 823045)
 - Priming adaptor plastic



- 823148 Valve System Unitized**
- Valve with integrated plastic connector
 - 14 cm ventricular catheter (Ref. 823041)
 - Stainless steel stylet
 - 120 cm distal catheter unitized (Ref. 823045)
 - Priming adaptor plastic



Codman® Hakim® Burr Hole - with SiphonGuard®

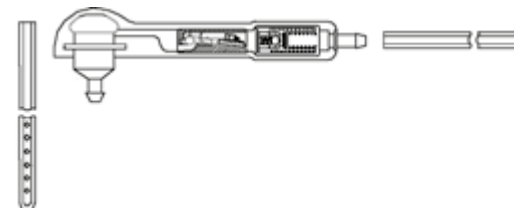


Reference Package Content

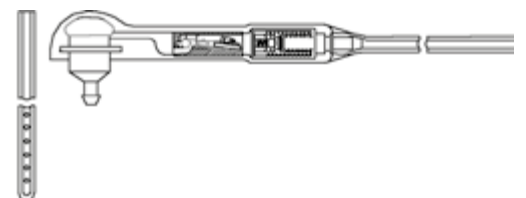
- 823182 Valve Only**
- Valve with integrated plastic connectors
 - Priming adaptor plastic



- 823136 Valve System**
- Valve with integrated plastic connectors
 - 14 cm ventricular catheter (Ref. 823041)
 - Stainless steel stylet
 - 120 cm distal catheter (Ref. 823045)
 - Priming adaptor plastic



- 823146 Valve System Unitized**
- Valve with integrated plastic connector
 - 14 cm ventricular catheter (Ref. 823041)
 - Stainless steel stylet
 - 120 cm distal catheter unitized (Ref. 823045)
 - Priming adaptor plastic



Flow Regulated Valves

OSV II[™]

Integra[®] Low Flow

Products Comparison



OSV II™

Integra® Low Flow

Regular	●	●
Small	●	●
Burr Hole	●	●
Lumbar	●	●
Flow Rate	20 ml/h	10 ml/h
MRI compatibility (up to 3Tesla)*	●	●

* Check Instructions For Use document for conditional MRI compatibility details.

Products References Summary

All flow regulated valves are packaged sterile in box of 1.

OSV II™

	Regular		Burr Hole		Lumbar		Low Pro
	With Antechamber	Without Antechamber	With Antechamber	Without Antechamber	With Antechamber	Without Antechamber	With Antechamber
Valve Only	909700	909701	-	-	-	-	909700P
Valve System Unitized	909707S 909712 909707 909714	909708S 909713 909708 909715	909721	909720	-	-	909712P
Valve System One-Piece	909718 909706 909704	909719 909705	-	-	909711	909710	-

Integra® Low Flow

	Standard		Burr Hole		Lumbar	Mini
	With Antechamber	Without Antechamber	With Antechamber	Without Antechamber	Without Antechamber	With Antechamber
Valve Only	909500	909501	-	-	-	909500P
Valve System Unitized	909507S 909512 909514	909508S 909513	909521	909520	-	909512P 909512P
Valve System One-Piece	909506	-	-	-	909510	-

OSV II™

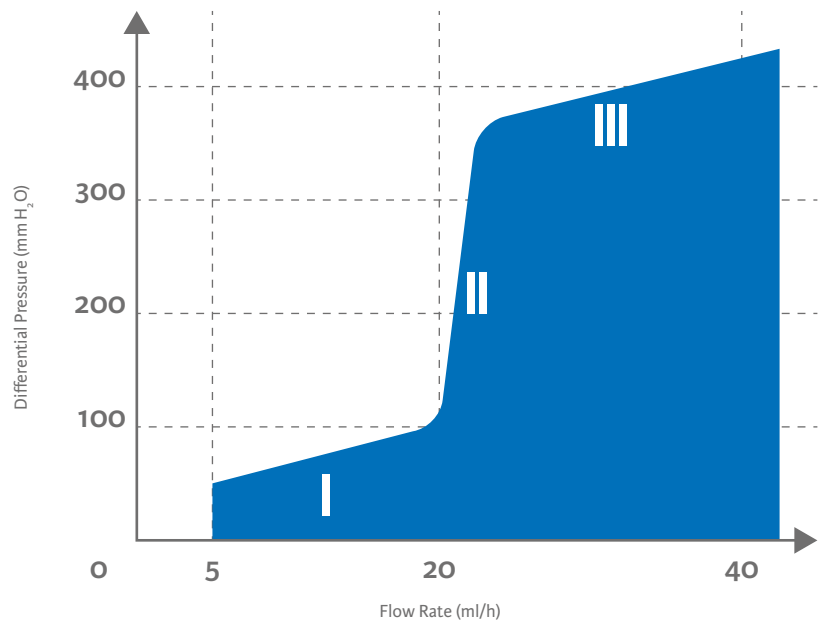
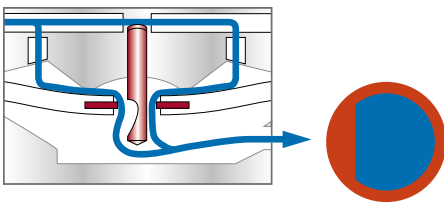
Introduced in 1987, the Orbis-Sigma Valve was the first valve to manage hydrocephalus through flow-regulation rather than conventional differential pressure regulation. The valve operates a 3-stage, variable resistance mechanism that regulates flow through the valve (Stage II) at a rate close to that of CSF secretion (around 20 ml/h).



Valve Performance Chart

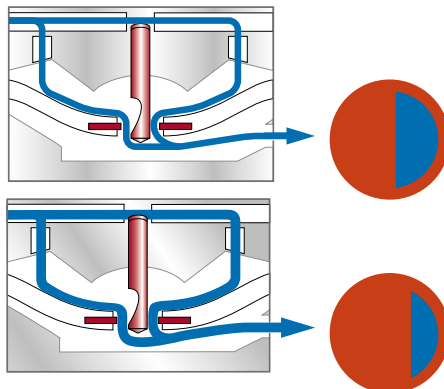
STAGE I: 30-120 mm H₂O Differential Pressure (DP) Stage

This stage begins when the flow rate reaches 5 ml/h.



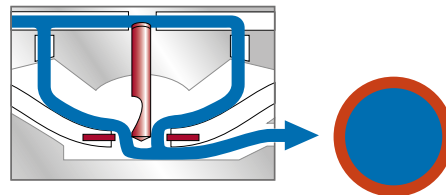
STAGE II: 120-300 mm H₂O Flow Regulating Stage

Maintains a close balance between CSF flow and production rate, restricting flow around 20 ml/h, whatever the differential pressure is.

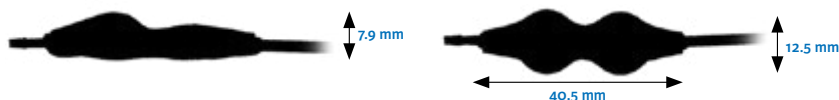


STAGE III: Above 300 mm H₂O Safety Stage

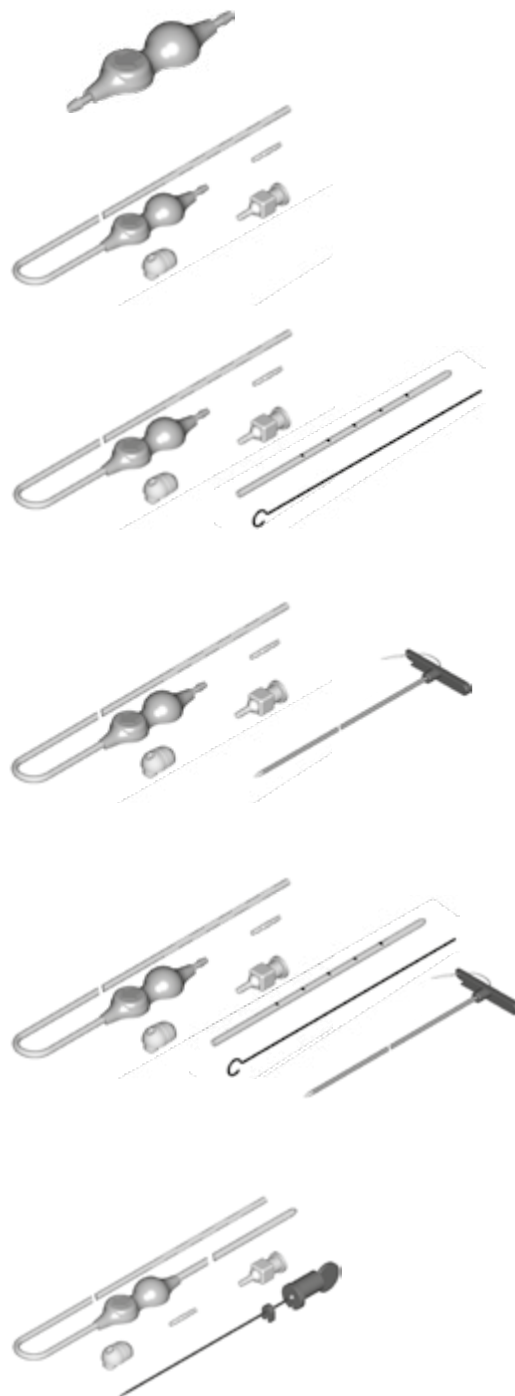
Immediately restores normal ICP during unexpected pressure elevation. Rarely needed.



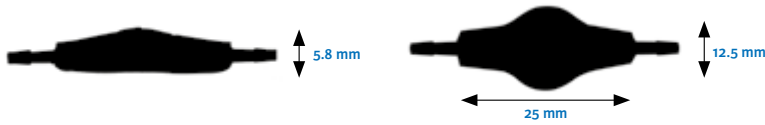
OSV II™ - with Antechamber



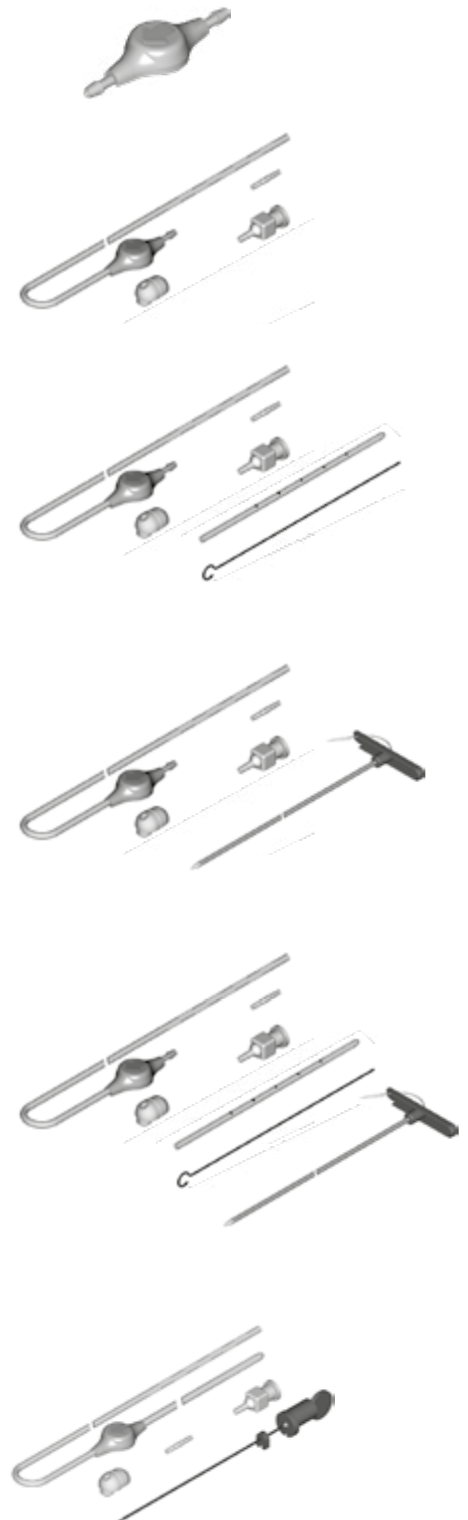
Reference	Package Content
909700	<p>Valve Only</p> <ul style="list-style-type: none"> Valve with antechamber and integrated connectors
909707S	<p>Valve System Unitized - without ventricular catheter</p> <ul style="list-style-type: none"> Valve with antechamber and integrated plastic connector 110 cm open-ended striped drainage distal catheter unitized (F7) Straight connector polypropylene Luer connector Right angle guide
909712	<p>Valve System Unitized - with ventricular catheter</p> <ul style="list-style-type: none"> Valve with antechamber and integrated plastic connector 110 cm open-ended striped drainage distal catheter unitized (F7) Straight connector polypropylene Luer connector Right angle guide 15 cm straight ventricular catheter (F8) Introducing rod
909707	<p>Valve System Unitized - with tunneler</p> <ul style="list-style-type: none"> Valve with antechamber and integrated plastic connector 110 cm open-ended striped drainage distal catheter unitized (F7) Straight connector polypropylene Luer connector Right angle guide 65 cm malleable tunneler
909714	<p>Valve System Unitized - with ventricular catheter and tunneler</p> <ul style="list-style-type: none"> Valve with antechamber and integrated plastic connector 110 cm open-ended striped drainage distal catheter unitized (F7) Straight connector polypropylene Luer connector Right angle guide 15 cm straight ventricular catheter (F8) Introducing rod 65 cm malleable tunneler <p>Valve System One-Piece</p> <ul style="list-style-type: none"> Valve with antechamber Straight ventricular catheter (F8) and 110 cm open-ended striped drainage distal catheter unitized (F7) Ventricular catheter introducer Right angle guide Straight polypropylene connector Luer connector
909718	7 cm ventricular catheter
909706	9 cm ventricular catheter
909704	13 cm ventricular catheter



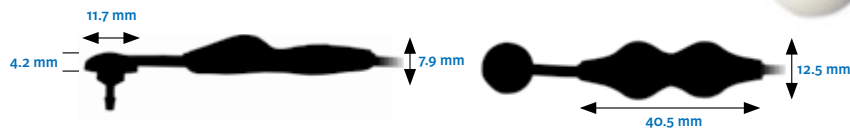
OSV II™ - without Antechamber



Reference	Package Content
909701	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve without antechamber and with integrated plastic connectors
909708S	<p>Valve System Unitized - without ventricular catheter</p> <ul style="list-style-type: none"> • Valve without antechamber and with integrated plastic connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide
909713	<p>Valve System Unitized - with ventricular catheter</p> <ul style="list-style-type: none"> • Valve without antechamber and with integrated plastic connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide • 15 cm straight ventricular catheter (F8) • Introducing rod
909708	<p>Valve System Unitized - with tunneler</p> <ul style="list-style-type: none"> • Valve without antechamber and with integrated plastic connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide • 65 cm malleable tunneler
909715	<p>Valve System Unitized - with ventricular catheter and tunneler</p> <ul style="list-style-type: none"> • Valve without antechamber and with integrated plastic connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide • 15 cm straight ventricular catheter (F8) • Introducing rod • 65 cm malleable tunneler <p>Valve System One-Piece</p> <ul style="list-style-type: none"> • Valve without antechamber • Straight ventricular catheter (F8) and 110 cm open-ended striped drainage distal catheter unitized (F7) • Ventricular catheter introducer • Right angle guide • Straight polypropylene connector • Luer connector
909719	7 cm ventricular catheter
909705	9 cm ventricular catheter



OSV II™ Burr Hole - with Antechamber



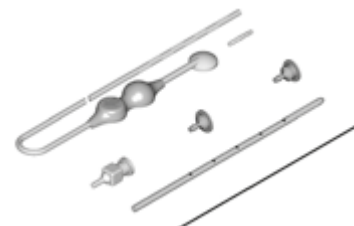
Reference

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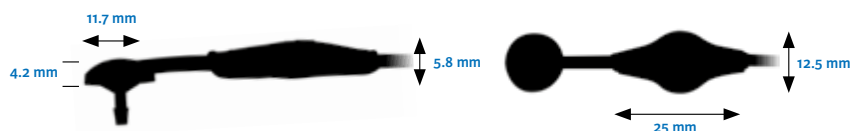
909721

Valve System Unitized

- Valve with antechamber and 6.4 mm burr hole cap
- 10 cm open ended striped drainage distal catheter unitized (F7)
- 15 cm straight ventricular catheter (F8) with radiopaque length dots
- Introducing rod
- Straight polypropylene connector
- Regular and shallow polypropylene burr hole reservoir
- Luer connector



OSV II™ Burr Hole - without Antechamber



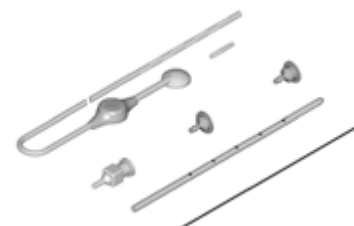
Reference

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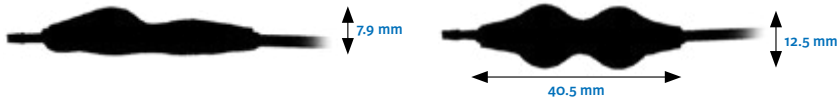
909720

Valve System Unitized

- Valve without antechamber and with 6.4 mm burr hole cap
- 110 cm open ended striped drainage distal catheter unitized (F7)
- 15 cm straight ventricular catheter (F8) with radiopaque length dots
- Introducing rod
- Straight polypropylene connector
- Regular and shallow polypropylene burr hole reservoirs
- Luer connector



OSV II™ Lumbar - with Antechamber



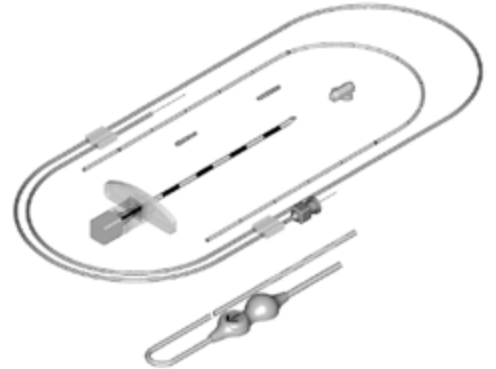
Reference

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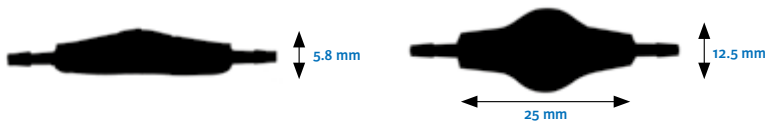
909711

Valve System One-Piece

- Valve with antechamber
- 5 cm proximal tubing (F8) and 110 cm open ended striped drainage distal catheter unitized (F7)
- 80 cm closed tip lumbar catheter (F5)
- Guidewire in dispenser
- 14G Tuohy needle
- Stepdown polypropylene connector (F8/F5)
- Luer connector
- Suture clamp (F5)
- Straight polypropylene connector



OSV II™ Lumbar - without Antechamber



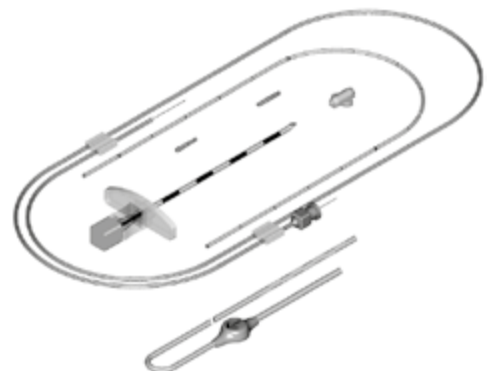
Reference

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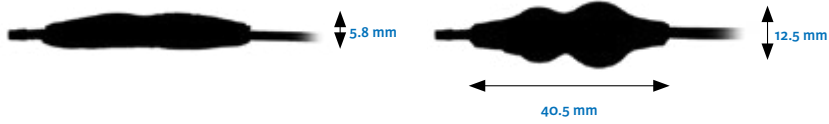
909710

Valve System One-Piece

- Valve without antechamber
- 5 cm proximal tubing (F8) and 110 cm open ended striped drainage distal catheter unitized (F7)
- 80 cm closed tip lumbar catheter (F5)
- Guidewire in dispenser
- 14G Tuohy needle
- Stepdown polypropylene connector (F8/F5)
- Luer connector
- Suture clamp (F5)
- Straight polypropylene connector



OSV II™ Low Pro - with Antechamber



Reference

Package Content

909700P

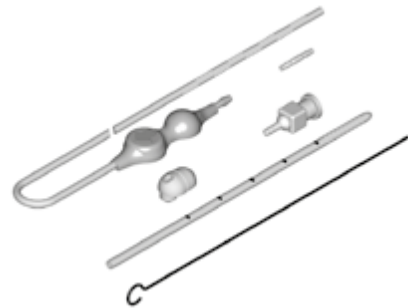
Valve Only

- Valve with antechamber and integrated connectors

909712P

Valve System Unitized

- Valve with antechamber and integrated connector
- 110 cm open-ended striped drainage distal catheter unitized (F7)
- 15 cm straight ventricular catheter (F8) with radiopaque dots every 2 cm
- Introducing rod
- Straight polypropylene connector
- Luer connector
- Right angle guide



Integra® Low Flow

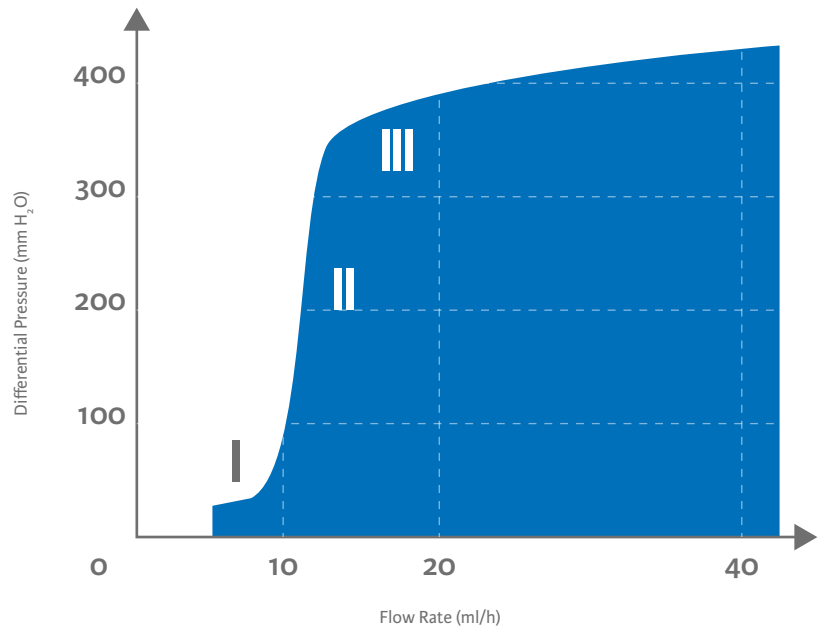
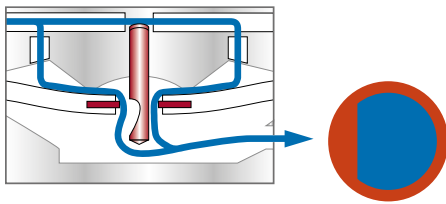
The Integra® Low Flow Standard and Mini are implantable hydrocephalus valve systems for controlled cerebrospinal fluid (CSF) drainage from the ventricles to the peritoneal cavity or other appropriate drainage site such as the heart's right atrium. Unlike conventional valves, the Integra® Low Flow is a variable resistance valve that maintains drainage at a constant rate, between 8 and 17 ml/h, within the physiological range of intracranial pressure (ICP). The mechanism incorporates a safety pressure relief mode to prevent accidental intracranial hypertension. The Integra® Low Flow delivers position independent performance, without programming or frequent adjustments.



Valve Performance Chart

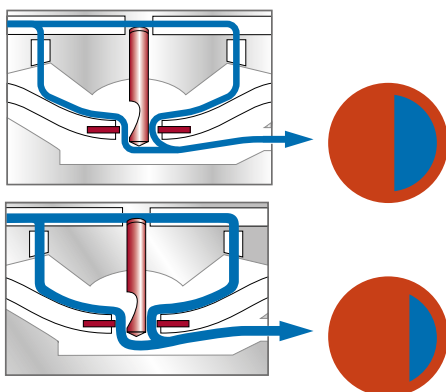
STAGE I: 30-120 mm H₂O Differential Pressure (DP) Stage

This stage begins when the flow rate reaches 5 ml/h.



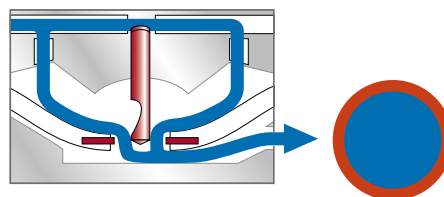
STAGE II: 120-300 mm H₂O Flow Regulating Stage

Maintains a close balance between CSF flow and production rate, restricting flow around 10 ml/h, whatever the differential pressure is.

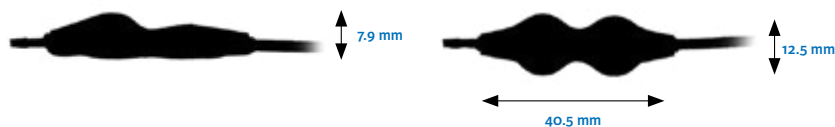


STAGE III: Above 300 mm H₂O Safety Stage

Immediately restores normal ICP during unexpected pressure elevation. Rarely needed.



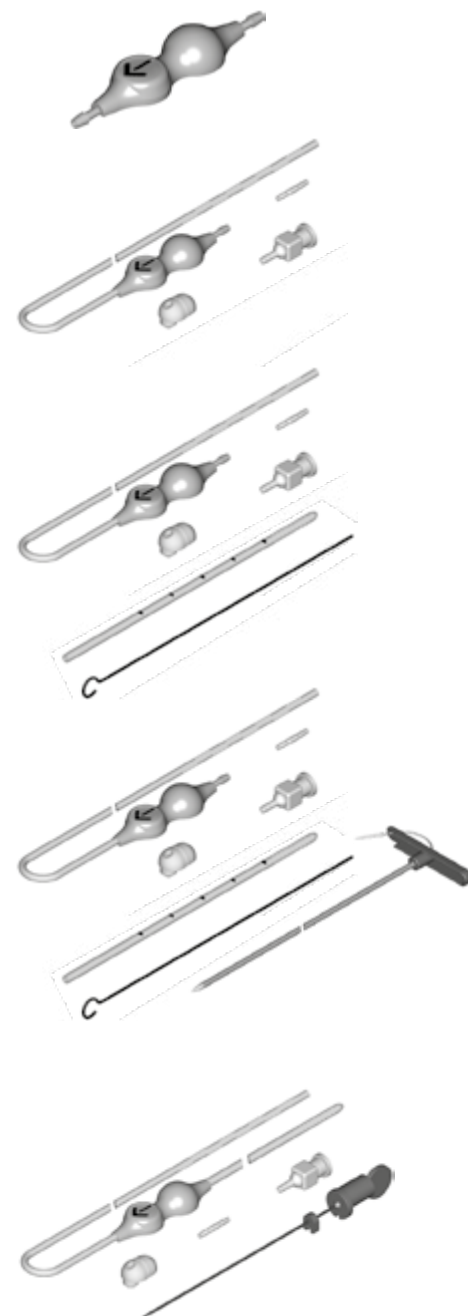
Integra® Low Flow Standard - with Antechamber



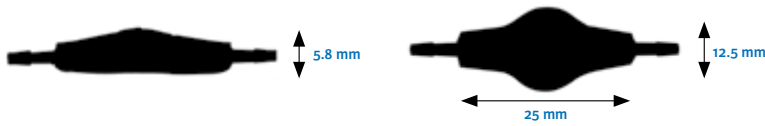
Reference

Package Content

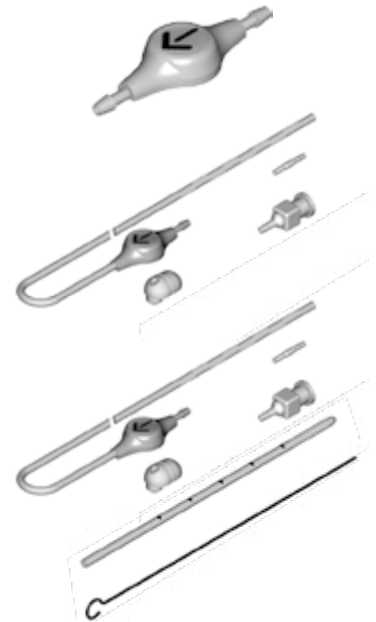
909500	<p>Valve Only</p> <ul style="list-style-type: none"> • Valve with antechamber and integrated connectors
909507S	<p>Valve System Unitized - without ventricular catheter</p> <ul style="list-style-type: none"> • Valve with antechamber and integrated connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide
909512	<p>Valve System Unitized - with ventricular catheter</p> <ul style="list-style-type: none"> • Valve with antechamber and integrated connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide • 15 cm straight ventricular catheter (F8) • Introducing rod
909514	<p>Valve System Unitized - with ventricular catheter and tunneler</p> <ul style="list-style-type: none"> • Valve with antechamber and integrated connector • 110 cm open-ended striped drainage distal catheter unitized (F7) • Straight polypropylene connector • Luer connector • Right angle guide • 15 cm straight ventricular catheter (F8) • Introducing rod • 65 cm malleable tunneler
909506	<p>Valve System One-Piece</p> <ul style="list-style-type: none"> • Valve with antechamber • 9 cm straight ventricular catheter (F8) and 110 cm open-ended striped drainage distal catheter (F7) unitized • Ventricular catheter introducer • Right angle guide • Straight polypropylene connector • Luer connector



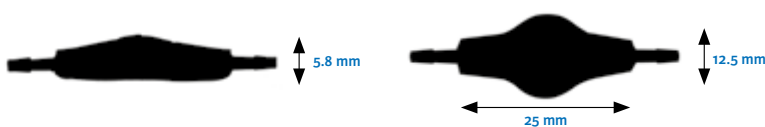
Integra® Low Flow Standard - without Antechamber



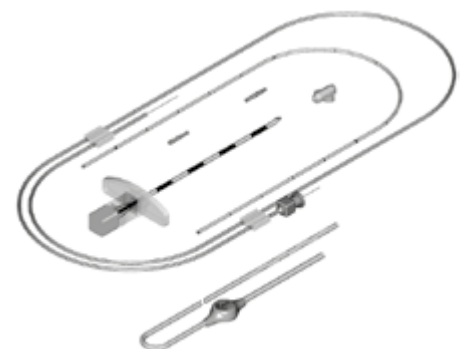
Reference	Package Content
909501	<p>Valve Only</p> <ul style="list-style-type: none"> Valve without antechamber and with integrated plastic connectors
909508S	<p>Valve System Unitized - without ventricular catheter</p> <ul style="list-style-type: none"> Valve without antechamber and integrated connector 110 cm open-ended striped drainage catheter (F7) unitized Straight polypropylene connector Luer connector Right angle guide
909513	<p>Valve System Unitized - with ventricular catheter</p> <ul style="list-style-type: none"> Valve without antechamber and integrated connector 110 cm open-ended striped drainage catheter (F7) unitized Straight polypropylene connector Luer connector Right angle guide 15 cm straight ventricular catheter (F8) Introducing rod



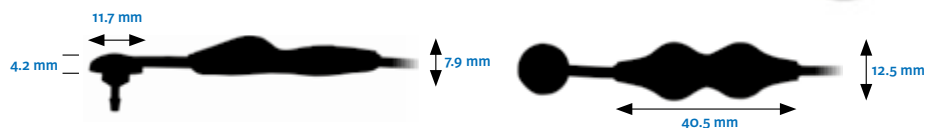
Integra® Low Flow Standard Lumbar - without Antechamber



Reference	Package Content
909510	<p>Valve System Unitized</p> <ul style="list-style-type: none"> Valve without antechamber 5 cm proximal tubing (F8) and 110 cm open-ended striped drainage distal catheter (F7) unitized 80 cm closed tip lumbar catheter (F5) Guidewire in dispenser 14 G Tuohy needle Stepdown polypropylene connector (F8/F5) Luer connector Suture clamp (F5) Straight polypropylene connector



Integra® Low Flow Standard Burr Hole - with Antechamber



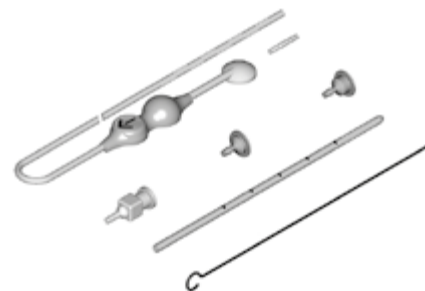
Reference

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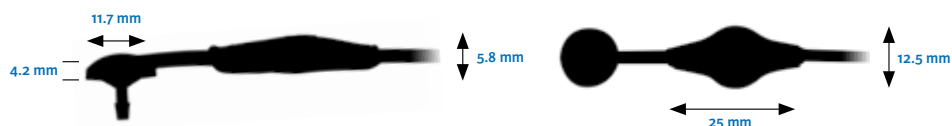
909521

Valve System Unitized

- Valve with antechamber
- 6.4 mm burr hole cap and 110 cm open-ended striped drainage distal catheter (F7) unitized
- Straight polypropylene connector
- 2 polypropylene burr hole reservoirs
- Luer connector
- 15 cm straight ventricular catheter (F8) with radiopaque length dots
- Introducing rod



Integra® Low Flow Standard Burr Hole - without Antechamber



Reference

Package Content

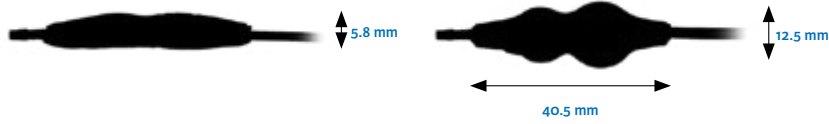
909520

Valve System Unitized

- Valve without antechamber
- 6.4 mm burr hole cap and 110 cm open-ended striped drainage distal catheter (F7) unitized
- Straight polypropylene connector
- 2 polypropylene burr hole reservoirs
- Luer connector
- 15 cm straight ventricular catheter (F8) with radiopaque length dots
- Introducing rod



Integra® Low Flow Mini - with Antechamber



Reference

Package Content

909500P

Valve Only

- Valve with low profile antechamber and integrated connectors

Valve System Unitized

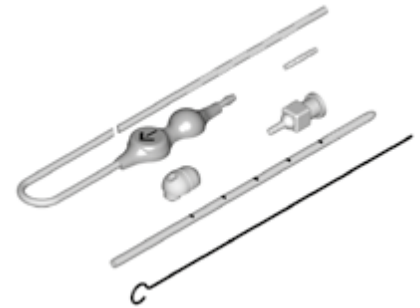
- Valve with small antechamber and integrated connector
- 110 cm striped peritoneal catheter (F7) unitized
- Right angle guide
- Straight connector
- Luer connector

909512P

- 15 cm straight ventricular catheter with radiopaque length dots every 2 cm and introducing rod

90S512P

- 15 cm straight ventricular catheter with printed length marks every 1 cm and introducing rod



Fixed Pressure Valves

Codman[®] Hakim[®] Precision

Essential

Products Comparison

	Codman [®] Hakim [®] Precision	Essential
Cylindrical	●	-
Regular - Bactiseal	●	●
Small	●	-
Burr Hole	●	●
Lumbar	-	-
Pressure range	5	3
MRI compatibility*	● (Up to 1.5 tesla)	● (Up to 3 tesla)
SiphonGuard [®] unitized Option	●	-

* Check Instructions For Use document for conditional MRI compatibility details.

Products References Summary

All fixed pressure valves are packaged sterile in box of 1.

Codman[®] Hakim[®] Precision

Radiopaque code	Cylindrical		Micro	
	Without Pre-Chamber	With Pre-Chamber	Without Rickham [®] Reservoir	With Rickham [®] Reservoir
Valve Only				
•	823082	823011	823026	823095
••	823083	823012	823027	823096
•••	823084	823013	823028	823097
••••	823085	823014	823029	823098
•••••	823086	823015	823030	823099
Valve System				
•	823016	823001	823035	823021
••	823017	823002	823036	823022
•••	823018	823003	823037	823023
••••	823019	823004	823038	823024
•••••	823020	823005	823039	823025
Valve System Unitized				
•	-	823006	-	-
••	-	823007	-	-
•••	-	823008	-	-
••••	-	823009	-	-
•••••	-	823010	-	-

Radiopaque code	Regular		Burr Hole	
	Without SiphonGuard [®]	With SiphonGuard [®]	Without SiphonGuard [®]	With SiphonGuard [®]
Valve Only				
•	825471	825461	825491	825481
••	825472	825462	825492	825482
•••	825473	825463	825493	825483
••••	825474	825464	825494	825484
•••••	825475	825465	825495	825485
Valve System				
•	823816	823811	-	823361
••	823817	823812	823802	823362
•••	823818	823813	823803	823363
••••	823819	823814	823804	823364
•••••	823820	823815	823805	823365
Valve System Unitized				
•	823806	823821	823281	823261
••	823807	823822	823282	823262
•••	823808	823823	823283	823263
••••	823809	823824	823284	823264
•••••	823810	823825	823285	823265

Products References Summary

Essential

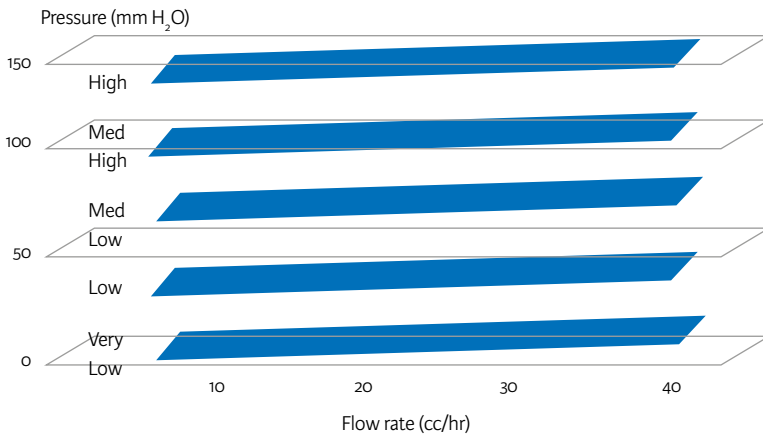
Radiopaque code	Flat Bottom	Burr Hole
Valve System Unitized		
•	NL8504120	NL8504110
••	NL8504121	NL8504111
•••	-	NL8504112

Codman® Hakim® Precision

The Codman® Hakim® Precision Fixed Pressure Valve features ball and spring mechanism with 5 distinct operating pressures to adapt patient's specific needs. The Codman® Hakim® Precision Valve is available in multiple designs (cylindrical, regular, micro, burr hole) and configurations including with SiphonGuard® Device integrated.






Valve Performance Chart



For Codman® Hakim® Precision Fixed Pressure Valves dimensions, please refer to Codman® Hakim® Programmable Valves section.



Codman® Hakim® Precision Cylindrical - with Pre-Chamber



Reference	Pressure		Radiopaque code	Package Content
823011	10 mm H ₂ O	Very Low	●	Valve Only  <ul style="list-style-type: none"> • Valve with pre-chamber and integrated plastic connector • Valve introducer plastic • Straight connector titanium
823012	40 mm H ₂ O	Low	●●	
823013	70 mm H ₂ O	Medium	●●●	
823014	100 mm H ₂ O	Medium High	●●●●	
823015	130 mm H ₂ O	High	●●●●●	
823001	10 mm H ₂ O	Very Low	●	Valve System  <ul style="list-style-type: none"> • Valve with pre-chamber and integrated plastic connector • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium
823002	40 mm H ₂ O	Low	●●	
823003	70 mm H ₂ O	Medium	●●●	
823004	100 mm H ₂ O	Medium High	●●●●	
823005	130 mm H ₂ O	High	●●●●●	
823006	10 mm H ₂ O	Very Low	●	Valve System Unitized  <ul style="list-style-type: none"> • Valve with pre-chamber • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone unitized • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium
823007	40 mm H ₂ O	Low	●●	
823008	70 mm H ₂ O	Medium	●●●	
823009	100 mm H ₂ O	Medium High	●●●●	
823010	130 mm H ₂ O	High	●●●●●	



Codman® Hakim® Precision Cylindrical - without Pre-Chamber



Reference	Pressure		Radiopaque code	Package Content
823082	10 mm H ₂ O	Very Low	●	Valve Only  <ul style="list-style-type: none"> • Valve with integrated plastic connector • Valve introducer plastic • Straight connector titanium
823083	40 mm H ₂ O	Low	●●	
823084	70 mm H ₂ O	Medium	●●●	
823085	100 mm H ₂ O	Medium High	●●●●	
823086	130 mm H ₂ O	High	●●●●●	
823016	10 mm H ₂ O	Very Low	●	Valve System  <ul style="list-style-type: none"> • Valve with integrated plastic connector • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Valve introducer plastic • Right-angled adaptor plastic • Straight connector titanium
823017	40 mm H ₂ O	Low	●●	
823018	70 mm H ₂ O	Medium	●●●	
823019	100 mm H ₂ O	Medium High	●●●●	
823020	130 mm H ₂ O	High	●●●●●	


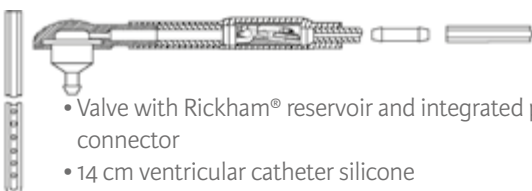
Codman® Hakim® Precision Micro



Reference	Pressure	Pressure	Radiopaque code	Package Content
823026	10 mm H ₂ O	Very Low	●	Valve Only  • Valve • 2 straight connectors titanium • Priming adaptor plastic
823027	40 mm H ₂ O	Low	●●	
823028	70 mm H ₂ O	Medium	●●●	
823029	100 mm H ₂ O	Medium High	●●●●	
823030	130 mm H ₂ O	High	●●●●●	
823035	10 mm H ₂ O	Very Low	●	Valve System  • Valve • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Right-angled adaptor plastic • Straight connector titanium • Priming adaptor plastic
823036	40 mm H ₂ O	Low	●●	
823037	70 mm H ₂ O	Medium	●●●	
823038	100 mm H ₂ O	Medium High	●●●●	
823039	130 mm H ₂ O	High	●●●●●	

Codman® Hakim® Precision Micro - with Rickham® Reservoir






Reference	Pressure	Pressure	Radiopaque code	Package Content
823095	10 mm H ₂ O	Very Low	●	Valve Only  • Valve with Rickham® reservoir and integrated plastic connector • Straight connector titanium • Priming adaptor plastic
823096	40 mm H ₂ O	Low	●●	
823097	70 mm H ₂ O	Medium	●●●	
823098	100 mm H ₂ O	Medium High	●●●●	
823099	130 mm H ₂ O	High	●●●●●	
823021	10 mm H ₂ O	Very Low	●	Valve System  • Valve with Rickham® reservoir and integrated plastic connector • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Priming adaptor plastic
823022	40 mm H ₂ O	Low	●●	
823023	70 mm H ₂ O	Medium	●●●	
823024	100 mm H ₂ O	Medium High	●●●●	
823025	130 mm H ₂ O	High	●●●●●	

Fixed Pressure Valves




Codman® Hakim® Precision Regular



Reference	Pressure		Radiopaque code	Package Content
825471	10 mm H ₂ O	Very Low	●	Valve Only  <ul style="list-style-type: none">• Valve with integrated plastic connectors• Priming adaptor plastic
825472	40 mm H ₂ O	Low	●●	Valve System  <ul style="list-style-type: none">• Valve with integrated plastic connectors• 14 cm ventricular catheter silicone• Stainless steel stylet• 120 cm distal catheter silicone• Priming adaptor plastic• Right angled adaptor plastic
825473	70 mm H ₂ O	Medium	●●●	
825474	100 mm H ₂ O	Medium High	●●●●	
825475	130 mm H ₂ O	High	●●●●●	
823816	10 mm H ₂ O	Very Low	●	
823817	40 mm H ₂ O	Low	●●	Valve System Unitized  <ul style="list-style-type: none">• Valve with integrated plastic connector• 14 cm ventricular catheter silicone• Stainless steel stylet• 120 cm distal catheter silicone unitized• Priming adaptor plastic• Right angled adaptor plastic
823818	70 mm H ₂ O	Medium	●●●	
823819	100 mm H ₂ O	Medium High	●●●●	
823820	130 mm H ₂ O	High	●●●●●	
823806	10 mm H ₂ O	Very Low	●	
823807	40 mm H ₂ O	Low	●●	
823808	70 mm H ₂ O	Medium	●●●	
823809	100 mm H ₂ O	Medium High	●●●●	
823810	130 mm H ₂ O	High	●●●●●	


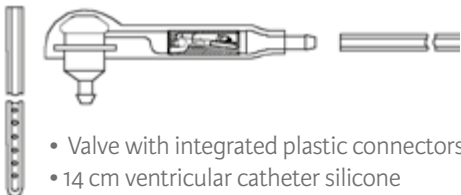
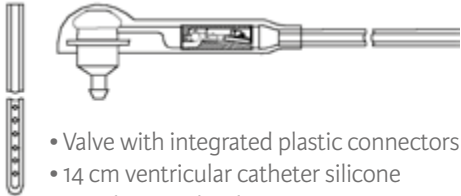
Codman® Hakim® Precision Regular - with SiphonGuard®



Reference	Pressure		Radiopaque code	Package Content
825461	10 mm H ₂ O	Very Low	●	Valve Only  <ul style="list-style-type: none">• Valve with integrated plastic connectors• Priming adaptor plastic
825462	40 mm H ₂ O	Low	●●	Valve System  <ul style="list-style-type: none">• Valve with integrated plastic connectors• 14 cm ventricular catheter silicone• Stainless steel stylet• 120 cm distal catheter silicone• Priming adaptor plastic• Right angled adaptor plastic
825463	70 mm H ₂ O	Medium	●●●	
825464	100 mm H ₂ O	Medium High	●●●●	
825465	130 mm H ₂ O	High	●●●●●	
823811	10 mm H ₂ O	Very Low	●	
823812	40 mm H ₂ O	Low	●●	Valve System Unitized  <ul style="list-style-type: none">• Valve with integrated plastic connectors• 14 cm ventricular catheter silicone• Stainless steel stylet• 120 cm distal catheter silicone unitized• Priming adaptor plastic• Right angled adaptor plastic
823813	70 mm H ₂ O	Medium	●●●	
823814	100 mm H ₂ O	Medium High	●●●●	
823815	130 mm H ₂ O	High	●●●●●	
823821	10 mm H ₂ O	Very Low	●	
823822	40 mm H ₂ O	Low	●●	
823823	70 mm H ₂ O	Medium	●●●	
823824	100 mm H ₂ O	Medium High	●●●●	
823825	130 mm H ₂ O	High	●●●●●	

Codman® Hakim® Precision Burr Hole


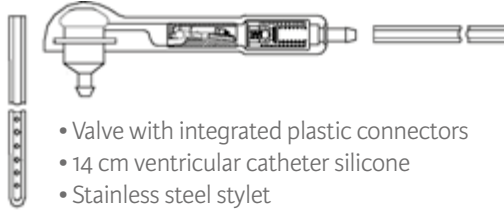
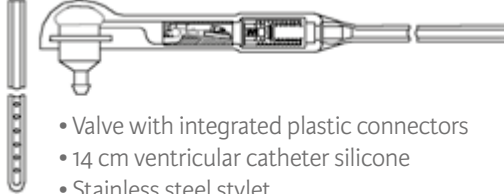


Reference	Pressure		Radiopaque code	Package Content
825491	10 mm H ₂ O	Very Low	●	Valve Only  <ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
825492	40 mm H ₂ O	Low	●●	
825493	70 mm H ₂ O	Medium	●●●	
825494	100 mm H ₂ O	Medium High	●●●●	
825495	130 mm H ₂ O	High	●●●●●	
823802	40 mm H ₂ O	Low	●●	Valve System  <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Priming adaptor plastic
823803	70 mm H ₂ O	Medium	●●●	
823804	100 mm H ₂ O	Medium High	●●●●	
823805	130 mm H ₂ O	High	●●●●●	
823281	10 mm H ₂ O	Very Low	●	Valve System Unitized  <ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone unitized • Priming adaptor plastic
823282	40 mm H ₂ O	Low	●●	
823283	70 mm H ₂ O	Medium	●●●	
823284	100 mm H ₂ O	Medium High	●●●●	
823285	130 mm H ₂ O	High	●●●●●	

Fixed Pressure Valves

Codman® Hakim® Precision Burr Hole - with SiphonGuard®



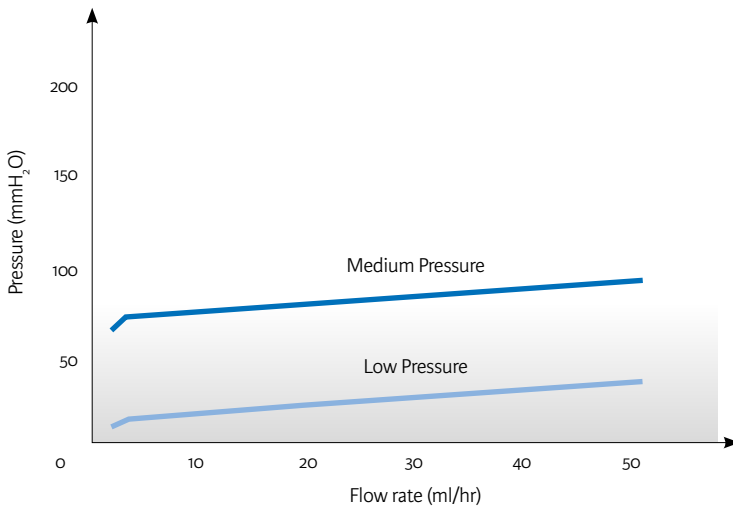
Reference	Pressure		Radiopaque code	Package Content
825481	10 mm H ₂ O	Very Low	●	Valve Only
825482	40 mm H ₂ O	Low	●●	
825483	70 mm H ₂ O	Medium	●●●	<ul style="list-style-type: none"> • Valve with integrated plastic connectors • Priming adaptor plastic
825484	100 mm H ₂ O	Medium High	●●●●	
825485	130 mm H ₂ O	High	●●●●●	
823361	10 mm H ₂ O	Very Low	●	Valve System
823362	40 mm H ₂ O	Low	●●	
823363	70 mm H ₂ O	Medium	●●●	<ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone • Priming adaptor plastic
823364	100 mm H ₂ O	Medium High	●●●●	
823365	130 mm H ₂ O	High	●●●●●	
823261	10 mm H ₂ O	Very Low	●	Valve System Unitized
823262	40 mm H ₂ O	Low	●●	
823263	70 mm H ₂ O	Medium	●●●	<ul style="list-style-type: none"> • Valve with integrated plastic connectors • 14 cm ventricular catheter silicone • Stainless steel stylet • 120 cm distal catheter silicone unitized • Priming adaptor plastic
823264	100 mm H ₂ O	Medium High	●●●●	
823265	130 mm H ₂ O	High	●●●●●	

Essential

The Essential Shunt Kit Flat Bottom Design, can be used in (but is not restricted to) situations where skin erosion may be a problem. The Essential Shunt Kit Burr Hole allows to accommodate surgical preferences. Valve and catheters contains barium sulfate. No metal part used in the system eliminating possibility of interference with imaging technology. The implantation is simplified by eliminating connections. The shunt is available in two configurations (flat bottom and burr hole) with varying pressure ranges.



Essential Flat Bottom



Closing Pressure	5 - 50 mm H ₂ O	51 - 110 mm H ₂ O
Pressure Range	Low	Medium
Radiopaque Code	●	●●

Note: The above curves describe typical in-vitro valve performance characteristics for each closing pressure range. Due to characteristics of silicone materials, some variation in pressure performance may occur which historically has no compromised effective control and treatment of hydrocephalus. Trimming the peritoneal catheter will result in an overall decrease in system pressure of approximately 1 mm H₂O at a flow rate of 23 ml/h for each 6 cm of catheter length removed.

Reference	Pressure	Radiopaque code	Package Content
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NL8504120
NL8504121

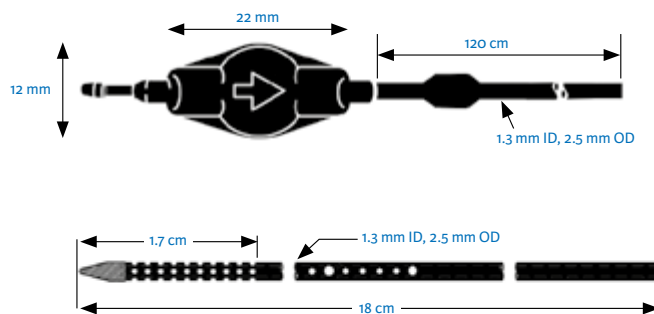
5-50 mm H₂O
51-110 mm H₂O

Low
Medium

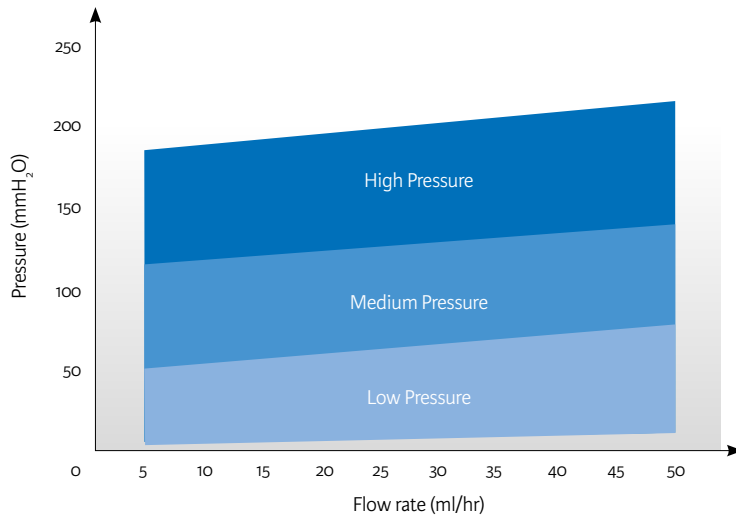
●
●●

Valve System Unitized

- Valve
- 120 cm kink resistant striped peritoneal catheter unitized
- 18 cm ventricular catheter with radiopaque markers
- Stylet
- Right angle guide



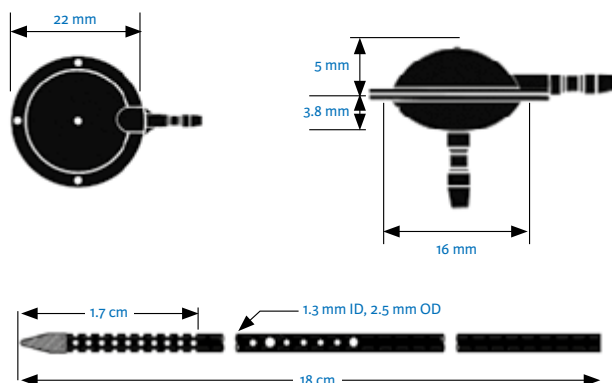
Essential Burr Hole



Closing Pressure Range	5 - 50 mm H ₂ O	51 - 110 mm H ₂ O	111 - 180 mm H ₂ O
Pressure at 5 ml/h Flow	5 mm H ₂ O	50 mm H ₂ O	110 mm H ₂ O
Pressure at 50 ml/h Flow	75 mm H ₂ O	140 mm H ₂ O	220 mm H ₂ O
Pressure Range	Low	Medium	High
Radiopaque Code	●	● ●	● ● ●

Note: Values shown in the flow/pressure-range chart are the low point of the established 5 ml/h range and the high point of the 50 ml/h range.

Reference	Pressure	Radiopaque code	Package Content
NL8504110	5-50 mm H ₂ O	Low ●	Valve System Unitized • Valve
NL8504111	51-110 mm H ₂ O	Medium ● ●	• 120 cm kink resistant striped peritoneal catheter unitized
NL8504112	111-180 mm H ₂ O	High ● ● ●	• 18 cm ventricular catheter with radiopaque markers • Stylet • Right angle guide





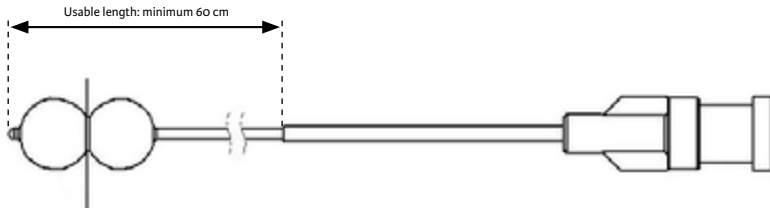
Neuro Endoscopy

NeuroBalloon™ Catheter

NeuroBalloon™

NeuroBalloon™

The NeuroBalloon™ Catheter is designed for dilatation of prepunctured cerebral membrane fenestrations such as for Endoscopic Third Ventriculostomies (ETVs). The unique double balloon design assures its positioning. The dilatation of the membrane can be observed through the transparent silicone material of the NeuroBalloon™ catheter. This positioning is especially important during ETVs.



The NeuroBalloon™ Catheter is compatible with a F4 working channel lumen diameter of 1.35 mm minimum. Diameter of the waist when inflated with 0.6 ml (cc) of air and after a pre-inflation with 1 ml (cc) is 3.5 mm minimum. Diameter of the waist when inflated with 1 ml (cc) of air and after a pre-inflation with 1 ml (cc) is 6.0 mm maximum.



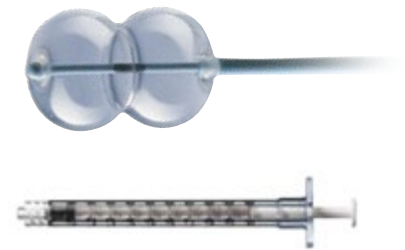
Reference

7CBD10

Package Content

NeuroBalloon™ Catheter

- 60 cm minimum usable length catheter with female luer lock connector and silicone balloon
- 1 ml syringe supplied sterile



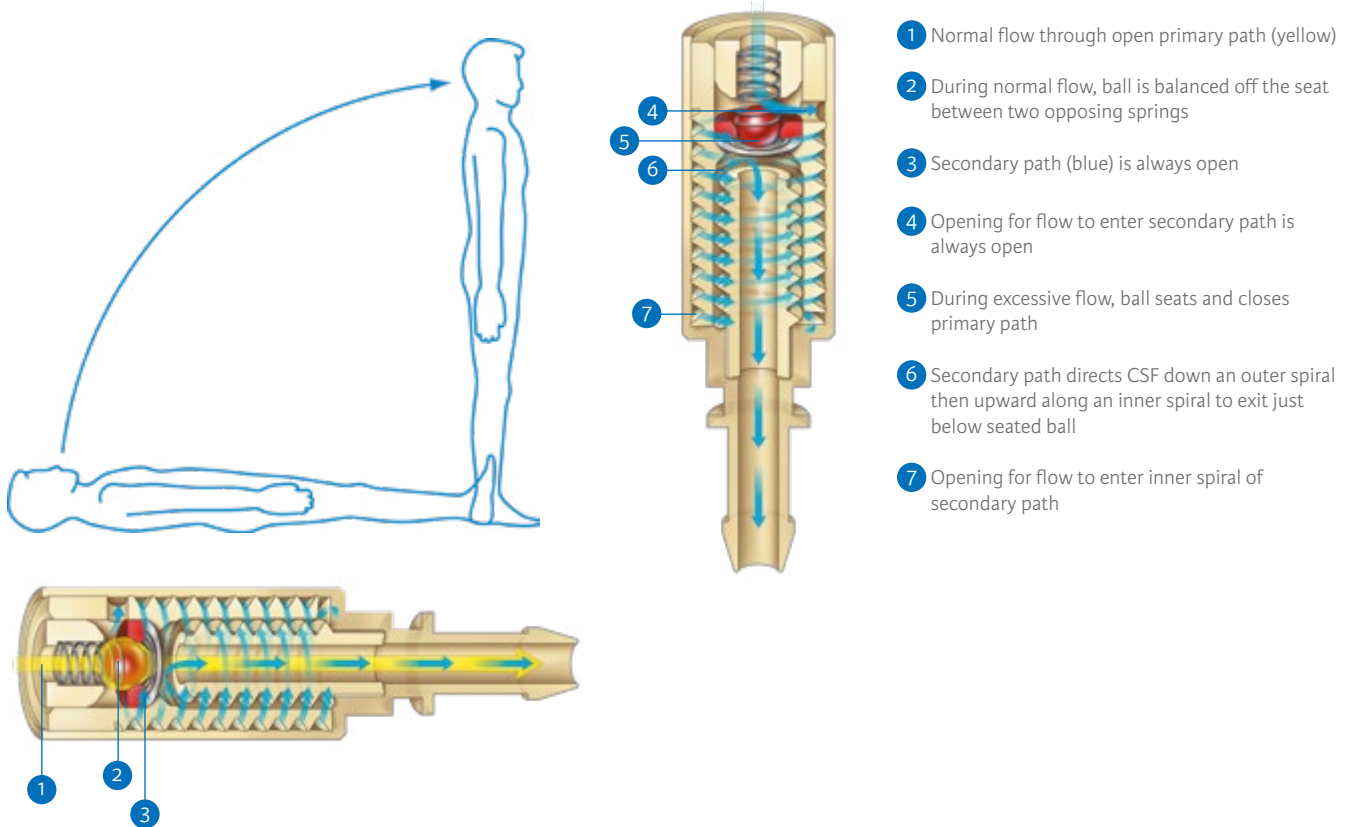
Specialty Drainage Products

SiphonGuard[®]

Anti-Siphon Device

SiphonGuard®

The SiphonGuard® anti-siphon device is available as an integral component of the Codman® CERTAS™ Plus programmable valve and the Codman® Hakim® programmable and precision valves, or as a stand-alone upgrade to current shunt implants. The stand-alone device is placed anywhere distal to any valve and includes all the mechanical and durability design features that make SiphonGuard® device so robust. The inlet tubing of the SiphonGuard® device can be cut to the desired length and connected to the shunt valve outlet, after the valve has been implanted.



Reference

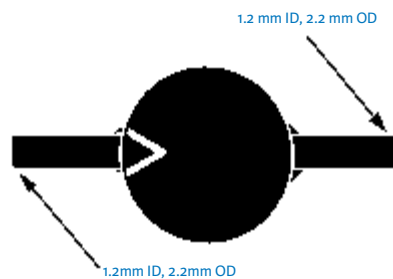
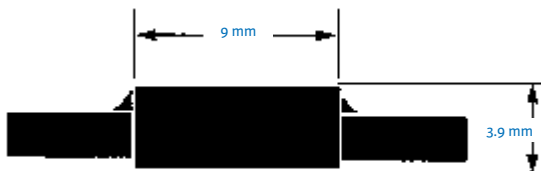
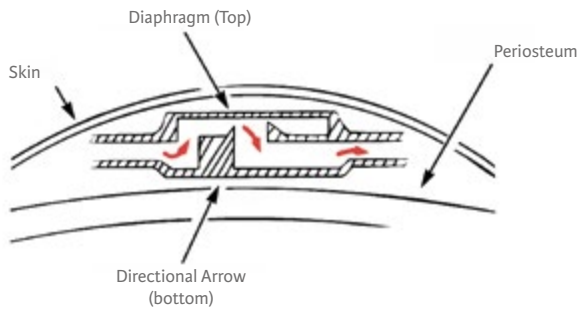
823090

Package Content

SiphonGuard® CSF Flow Control Device

Anti-Siphon Device

The Anti-Siphon Device minimizes siphon effect by closing as the hydrostatic pressure changes relative to patient position (standing, sitting or supine).



Reference

NL8500200

Package Content

Anti-Siphon Device Kit

- Anti-Siphon device
- 2 Pudenz straight connectors



Reservoirs

Integral Ventricular Reservoirs

Holter[®] Ventricular Catheter Integra CSF Reservoirs

Accu-Flo[®] CSF Reservoirs

Accu-Flo[®] Reservoirs

Standard Integra[®] CSF Reservoirs

Side Inlet Integra[®] CSF Reservoirs

Convertible Integra[®] CSF Reservoirs

Holter[®] Selker Ventriculostomy Reservoirs

Holter[®] Rickham[™] Ventriculostomy Reservoirs

Holter[®] Salmon-Rickham[™] Ventriculostomy Reservoirs

Rickham[™]-Style Reservoirs

All reservoirs are packaged sterile in box of 1.

Integral Ventricular Reservoirs

The Integral Ventricular Reservoir is a CSF reservoir allowing CSF transmission into a shunt system and access to the CSF compartments for sampling or injection. The Antechamber should be punctured with a 25G needle. The Integral Ventricular Reservoir may be used as a ventricular access port, and later, if needed, connected to a valve for hydrocephalus patients. It consists of a ventricular antechamber with an integrated right angle ventricular catheter. It is supplied with a closed distal tubing that may be introduced with a Ventricular Catheter Introducer or with a Standard Wire Introducer. A tubing plug is provided for surgeons who prefer to use the wire introducer for introduction of the ventricular catheter.

Reference	Package Content
	Integral Ventricular Reservoir Width 16 mm, Depth 28 mm, Height 7 mm Volume 0.3 ml, Sterile
	<ul style="list-style-type: none"> • Reservoir with integrated right angle catheter • Ventricular catheter introducer and introducing rod • Radiopaque polypropylene straight connector and plug
999015	3 cm length (x)
999016	4 cm length (x)



Holter® Ventricular Catheter Reservoirs

Also referred to as Cerebral Catheter Reservoirs, the Holter® Ventricular Catheter-Reservoir is an all silicone rubber reservoir and right-angle catheter molded together as one unit, X-ray detectable. The dome-shaped reservoir has a base made of reinforced sheeting, coated with silicone rubber. The reservoir base, which extends beyond the diameter of the reservoir to accommodate sutures, has a diameter of 15.7 mm. The distal end of the Catheter Reservoir is designed to accommodate the inlet adapter of a Holter® Valve when the reservoir is used in a shunt system. The plug inserted in the distal end of the reservoir should be removed when the Holter® Ventricular Catheter-Reservoir is being used in a shunt system.

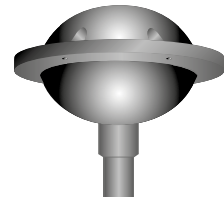
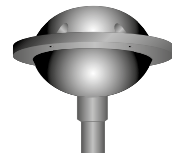
Reference	Package Content
	Holter® Ventricular Catheter Reservoir Height 6.0 mm, Diameter 15.7 mm, ID 1.5 mm, OD 3.1 mm, Sterile
	<ul style="list-style-type: none"> • Ventricular right angle barium catheter reservoir with stainless steel plug inserted in the distal end • Stainless steel stylet
821630	3 cm length (x)
821632	4 cm length (x)
821634	5 cm length (x)
821636	6 cm length (x)
821638	7 cm length (x)
821640	8 cm length (x)
821642	9 cm length (x)



Accu-Flo® CSF Reservoirs

The Accu-Flo® CSF Reservoirs are single flushing silicone reservoirs designed to provide access to cerebrospinal fluid and/or the brain by penetration of the reservoir dome with a 25G or smaller Huber type needle. CSF may be withdrawn from or other fluid may be injected into the reservoir. The Accu-Flo® CSF Reservoirs have embedded plastic bases to help prevent accidental needle passage through the base during medication or aspiration. The flange at the base of the dome has 4 suture holes for attachment to the periosteum. Each Accu-Flo® CSF Reservoir is pretested for pressure leaks.

Reference	Package Content
826100	Accu-Flo® CSF Reservoir 14 mm Sterile <ul style="list-style-type: none"> • Reservoir for 14 mm burr hole • Barium ventricular catheter • Stainless steel straight connector
826101	Accu-Flo® CSF Reservoir 24 mm Sterile <ul style="list-style-type: none"> • Reservoir for 24 mm burr hole • Barium ventricular catheter • Stainless steel straight connector



Standard Integra® CSF Reservoirs

The Standard Integra® CSF Reservoirs consist of a single flushing reservoir, supplied with a separate ventricular catheter. The reservoir is designed for subcutaneous placement and attaches to the ventricular catheter at the straight connector. The reservoir is made with a suture flange at its base for attachment to the periosteum. The 1.5 cm size is a formal burr hole, bottom inlet design. The larger 2.5 cm reservoir is a flat bottom device requiring only a small (3 mm) burr hole opening to accommodate the inlet tubing on the base of the reservoir. The reservoir is fitted with a polypropylene needle-puncture shield. A 25G or smaller needle should be used to puncture the reservoir.



Reference

Package Content

NL8501210

Burr Hole Reservoir

Size 1.5 cm, Flushing volume 0.68 ml, Sterile

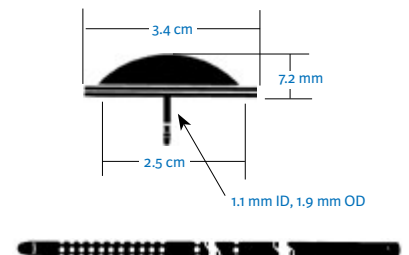
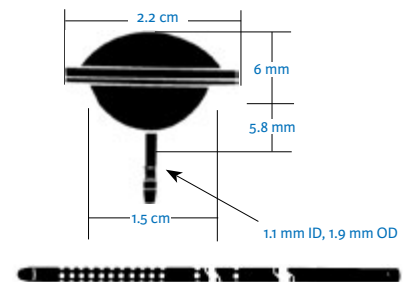
- Reservoir with integrated connector
- Small Pudenz ventricular catheter
- Stylet

NL8501211

Flat-Bottom Reservoir

Size 2.5 cm, Flushing volume 1.26 ml, Sterile

- Reservoir with integrated connector
- Small Pudenz ventricular catheter
- Stylet

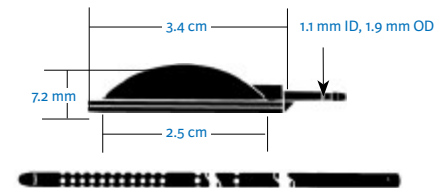
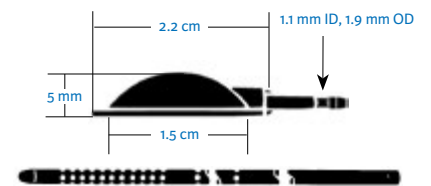


Side Inlet Integra® CSF Reservoirs

The Side Inlet Integra® CSF Reservoirs vary from the Standard Model in that the inlet tubing enters from the side of the reservoir rather than from the base. This flat bottom side inlet design eliminates the need for a formal burr hole, provides greater latitude in positioning and allows the ventricular catheter to be revised without disturbing the reservoir. The reservoir is fitted with a polypropylene needle-puncture shield. A 25G or smaller needle should be used to puncture the reservoir.



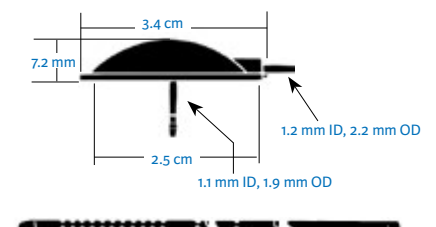
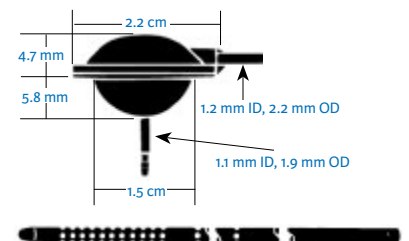
Reference	Package Content
NL8501214	Small Flat-Bottom Reservoir Size 1.5 cm, Flushing volume 0.31 ml, Sterile <ul style="list-style-type: none"> • Reservoir with integrated connector • Small Pudenz ventricular catheter • Right-angle guide • Stylet
NL8501212	Large Flat-Bottom Reservoir Size 2.5 cm, Flushing volume 1.14 ml, Sterile <ul style="list-style-type: none"> • Reservoir with integrated connector • Small Pudenz ventricular catheter • Right-angle guide • Stylet



Convertible Integra® CSF Reservoirs

The Convertible Integra® CSF Reservoirs vary from the Standard Model in incorporating an outlet tube in addition to an inlet tube. The outlet tube may be connected to a distal catheter, allowing the reservoir to be used in a shunting system, if later indicated. Since the distal tip of the outlet tube is plugged, conversion to a shunting system requires cutting off the outlet tube proximal to the plugged end for connection to a distal shunt catheter. The reservoir is fitted with a polypropylene needle-puncture shield. A 25G or smaller needle should be used to puncture the reservoir.

Reference	Package Content
NL8501215	Burr Hole Convertible Reservoir Size 1.5 cm, Flushing volume 0.68 ml, Sterile <ul style="list-style-type: none"> • Reservoir with integrated connectors • Small Pudenz ventricular catheter • Right-angle guide • Stylet
NL8501213	Flat-Bottom Convertible Reservoir Size 2.5 cm, Flushing volume 1.31 ml, Sterile <ul style="list-style-type: none"> • Reservoir with integrated connectors • Small Pudenz ventricular catheter • Right-angle guide • Stylet

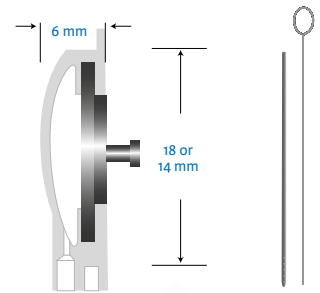


Holter® Selker Ventriculostomy Reservoirs

The Holter® Selker Ventriculostomy Reservoirs are flat base nylon reservoirs. Attached to the reservoir is a radiopaque silicone rubber cap with a nylon plug inserted in the lumen of the side arm. The plug is left in place for simple ventriculostomy and is removed when the reservoir is connected to the Holter(r) Valve System. The cap is equipped with four tabs to aid suturing. The Holter® Selker Ventriculostomy Reservoirs require only a 4 mm drilled hole to accommodate the ventricular catheter. This style reservoir provides a larger target area for puncturing and a low profile recommended for pediatric use. A 25G Huber type needle or smaller should be used to puncture the reservoir.



Reference	Package Content
	Holter® Selker Ventriculostomy Reservoir Sterile <ul style="list-style-type: none"> • Reservoir with preassembled cap and plug • 15 cm straight ventricular catheter radiopaque, ID 1.5 mm, OD 3.1 mm • Stylet
821618	Small (Size 14 mm)
821619	Large (Size 18 mm)

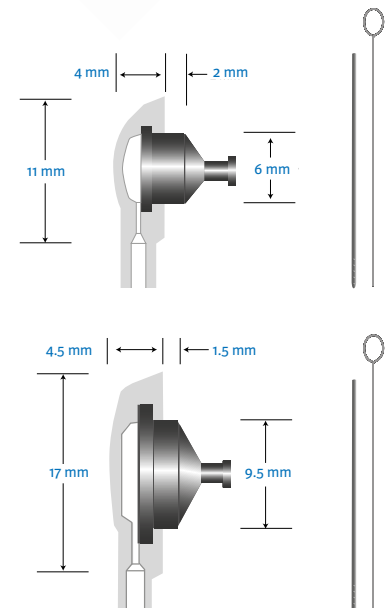


Holter® Rickham™ Ventriculostomy Reservoirs

Holter® Rickham™ Ventriculostomy Reservoirs are available in 316 stainless steel or nylon. Attached to the reservoir is a radiopaque silicone rubber cap with a stainless steel or nylon plug inserted in the lumen of the side arm. The plug is left in place for simple ventriculostomy and is removed when the reservoir is connected to the Holter® Valve System. The Holter® Rickham™ Ventriculostomy Reservoirs require a 6 mm burr hole or skull recess. A 25G Huber type needle or smaller should be used to puncture the reservoir.



Reference	Package Content
	Holter® Rickham™ Ventriculostomy Reservoir Standard Size 6 mm, Sterile <ul style="list-style-type: none"> • Reservoir with preassembled cap and plug • 15 cm straight ventricular catheter radiopaque, ID 1.5 mm, OD 3.1 mm • Stylet
821615	Plastic base
821621	Stainless steel base
	Holter® Rickham™ Ventriculostomy Reservoir Large Size 9.5 mm, Sterile <ul style="list-style-type: none"> • Reservoir with preassembled cap and plug • 15 cm straight ventricular catheter radiopaque, ID 1.5 mm, OD 3.1 mm • Stylet
821616	Plastic base
821623	Stainless steel base



Holter® Salmon-Rickham™ Ventriculostomy Reservoirs

The Holter® Salmon-Rickham™ Ventriculostomy Reservoirs are available in 316 stainless steel or nylon. Attached to the reservoir is a radiopaque silicone rubber cap with a stainless steel or nylon plug inserted in the lumen of the side arm. The plug is left in place for simple ventriculostomy and is removed when the reservoir is connected to the Holter® Valve System. The Holter® Salmon-Rickham™ Ventriculostomy Reservoirs are designed for pediatric use. They are ideal for seating in very thin to medium thickness cranium and require a 6 mm burr hole or drilled-skull recess. A 25G Huber type needle or smaller should be used to puncture the reservoir.

Reference

Package Content

Holter® Salmon-Rickham™ Ventriculostomy Reservoir

Low Profile, Size 6 mm, Sterile

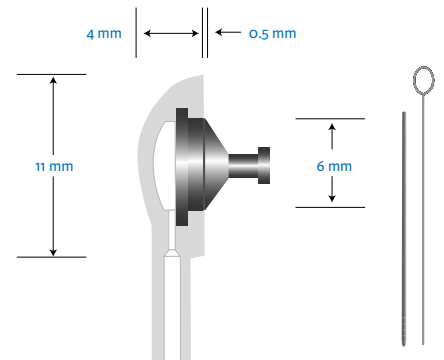
- Reservoir with preassembled cap and plug
- 15 cm straight ventricular catheter radiopaque, ID 1.5 mm, OD 3.1 mm
- Stylet

821617

Plastic base

821625

Stainless steel base



Rickham™-Style Reservoirs

The Rickham™-Style Reservoirs consist of a dome, manufactured from barium-sulfate-impregnated silicone elastomer, and a nylon base which acts as a needle-puncture shield. The reservoir dome may be injected with a 25G or smaller needle.

Reference

Package Content

NL850132

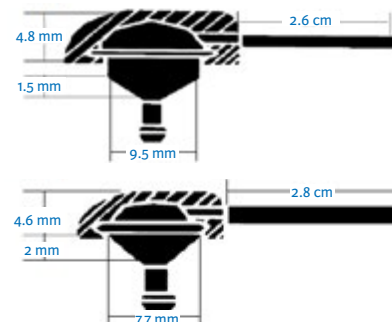
Large Rickham™-Style Reservoir

Size 9.5 mm, Sterile

NL850121

Small Rickham™-Style Reservoir

Size 7.7 mm, Sterile



Catheters

Bactiseal[®]

Ventricular Catheters

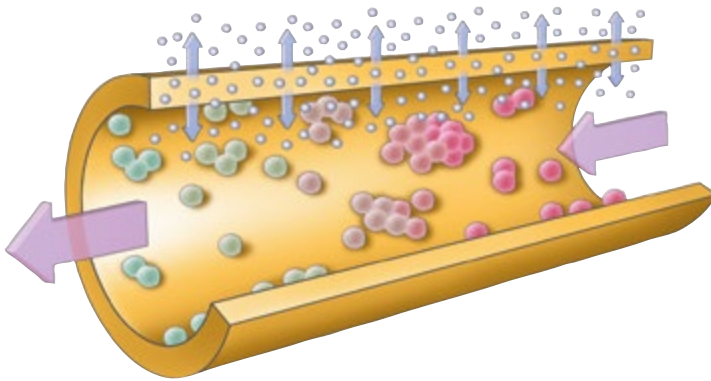
Peritoneal Catheters

Lumbar-Peritoneal Catheters

Atrial Catheters

Bactiseal® Catheters

Bactiseal® antimicrobial silicone impregnated catheter with 0.15% of Clindamycin and 0.054% of Rifampicin targets infection. Its properties protect patients from Gram Positive infection. The highest at risk groups are the PAEDIATRIC group, especially neonates. Bactiseal® offers proven dual-drug action against Gram Positive bacteria, kills 100% of target organisms within 52 h and 50 days of constant protection on all catheter surfaces.



Reference

Package Content

823072

Bactiseal® Catheters Kit

- Ventricular catheter
- Peritoneal catheter



823073

Bactiseal® Ventricular Catheter

- Length 14 cm, ID 1.4 mm, OD 2.7 mm
- Ventricular catheter



823074

Bactiseal® Peritoneal Catheter

- Length 120 cm, ID 1.0 mm, OD 2.2 mm
- Peritoneal catheter



All catheters are packaged sterile in box of 1.

Ventricular Catheters

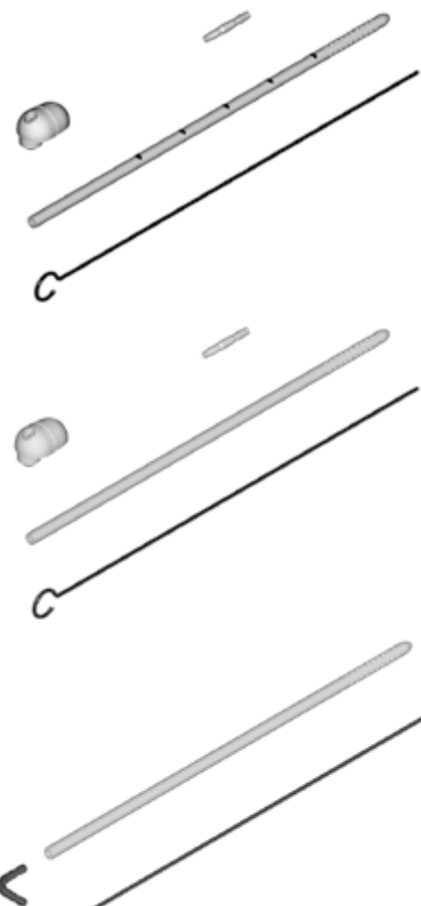
Codman® Hakim® Ventricular Catheter

Reference	Package Content
823041	Codman® Hakim® Ventricular Catheter Silicone impregnated with barium sulphate, Sterile Length 14 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel stylet • Right-angled adaptor plastic



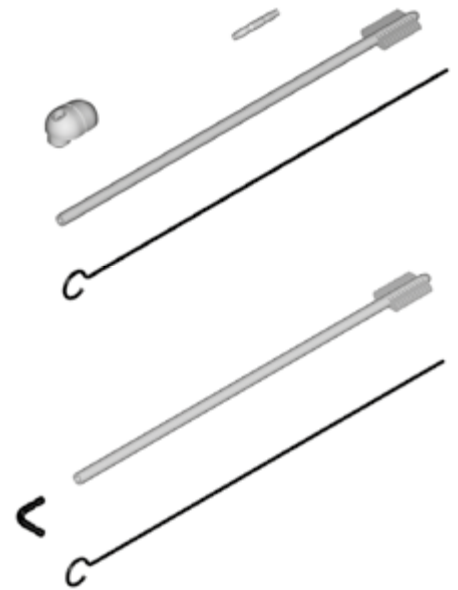
Integra® Standard Ventricular Catheters

Reference	Package Content
9MD102A	Standard Ventricular Catheter with radiopaque length dots Full barium, Sterile Length 15 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Ventricular catheter with radiopaque length dots every 2 cm up to 10 cm from tip (F8) • Straight polypropylene connector • Right angle guide • Introducing rod
951102A	Standard Ventricular Catheter with right angle guide Full barium, Sterile Length 15 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Ventricular catheter • Straight polypropylene connector • Right angle guide • Introducing rod
951102	Standard Ventricular Catheter with stainless steel right angle connector Full barium, Sterile Length 15 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel right angle connector • Introducing rod



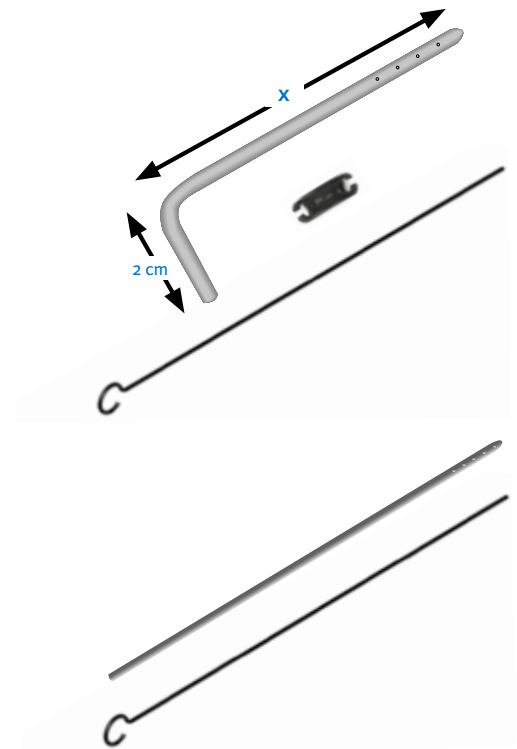
Integra® Finned Ventricular Catheters

Reference	Package Content
951101A	Finned Ventricular Catheter with right angle guide Full barium, Sterile Length 15 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Finned ventricular catheter • Straight polypropylene connector • Right angle guide • Introducing rod
951101	Finned Ventricular Catheter with stainless steel right angle connector Full barium, Sterile Length 15 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Finned ventricular catheter • Stainless steel right angle connector • Introducing rod



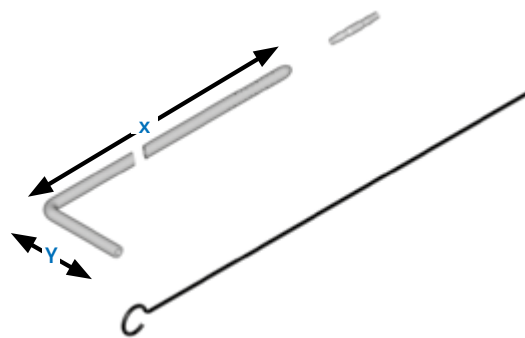
Holter® Ventricular Catheters

Reference	Package Content
	Holter® Right Angle Ventricular Catheter Silicone impregnated with barium, radiopaque, multiple perforations, Sterile ID 1.5 mm, OD 3.1 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel stylet • Right-angled adaptor plastic
821652	3 cm length (x)
821654	4 cm length (x)
821656	5 cm length (x)
821658	6 cm length (x)
821660	7 cm length (x)
821662	8 cm length (x)
821664	9 cm length (x)
821666	10 cm length (x)
821650	Holter® Straight Ventricular Catheter Silicone impregnated with barium, radiopaque, multiple perforations, Sterile Length 15 cm, ID 1.5 mm, OD 3.1 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel stylet



Right Angle Ventricular Catheters

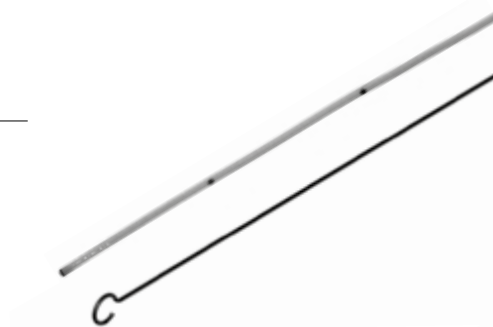
Reference	Package Content
	Right Angle Ventricular Catheter Silicone, Sterile Length (y) 2.2 cm, ID 1.4 mm, OD 2.7 mm <ul style="list-style-type: none"> • Ventricular barium stripe catheter (F8) • Straight polypropylene connector • Introducing rod
9MZ203	3 cm length (x)
9MZ204	4 cm length (x)
9MZ205	5 cm length (x)
9MZ206	6 cm length (x)
9MZ207	7 cm length (x)
9MZ208	8 cm length (x)
9MZ209	9 cm length (x)
9MZ210	10 cm length (x)
9MZ211	11 cm length (x)
9MZ213	Right Angle Ventricular Catheter Length (y) 5 cm, Length (x) 7 cm, ID 1.4 mm, OD 2.7 mm, Sterile <ul style="list-style-type: none"> • Ventricular barium stripe catheter (F8) • Straight polypropylene connector • Introducing rod



Accu-Flo® Barium Ventricular Catheter

X-ray detectable throughout. Rounded X-ray detectable tantalum tip. X-ray detectable tantalum markings, 5 cm and 10 cm. With 40 inlet holes, 4 rows of 10 holes, 90° apart.

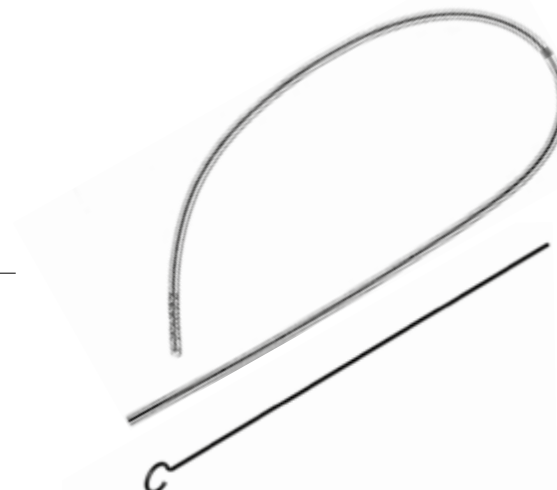
Reference	Package Content
821201	Accu-Flo® Barium Ventricular Catheter Silicone, Sterile Length 15 cm, ID 1.3 mm, OD 2.5 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel stylet



Accu-Flo® Clear Ventricular Catheter (Extended length)

Rounded X-ray detectable tantalum tip. X-ray detectable tantalum mark at 15 cm. With 40 inlet holes, 4 rows of 10 holes, 90° apart.

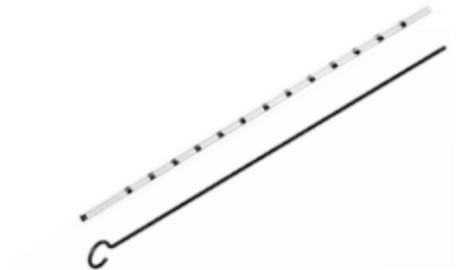
Reference	Package Content
821203	Accu-Flo® Clear Ventricular Catheter Silicone, Sterile Length 30 cm, ID 1.3 mm, OD 2.5 mm <ul style="list-style-type: none"> • Ventricular catheter



Accu-Flo® Dotted Ventricular Catheter

Rounded X-ray detectable tantalum tip. Clear silicone tubing with X-ray detectable tantalum markings every 1 cm. With 40 inlet holes, 4 rows of 10 holes, 90° apart.

Reference	Package Content
821221	Accu-Flo® Dotted Ventricular Catheter Clear silicone, Sterile Length 15 cm, ID 1.3 mm, OD 2.5 mm <ul style="list-style-type: none"> • Ventricular catheter • Stainless steel stylet



Portnoy Ventricular Catheter

7 elastomer flanges spaced approximately 2.5 mm apart along 15 mm of the proximal end to help reduce the possibility of obstruction of the drainage holes during insertion and resultant occlusion of the catheter.

Reference	Package Content
NL8501229	Portnoy Ventricular Catheter Barium impregnated, Sterile Length 18 cm, ID 1.3 mm, OD 2.2 mm <ul style="list-style-type: none"> • Ventricular catheter • Introducing rod



Peritoneal Catheters

Codman[®] Peritoneal Catheter

Reference	Package Content
823045	Codman[®] Peritoneal Catheter Silicone, Sterile Length 120 cm, ID 1 mm, OD 2.2 mm • Peritoneal catheter



Holter[®] Distal Peritoneal Catheters

Reference	Package Content
821682	Holter[®] Distal Peritoneal Catheter Barium impregnated, open end, Sterile Length 90 cm, ID 1.2 mm, OD 2.5 mm • Peritoneal catheter • 2 stainless steel Holter [®] type A connectors
821684	Holter[®] Distal Peritoneal Catheter Salmon Style Barium impregnated, closed distal tip with 4 side slits 90° apart, tip in solid silicone to be more heavily opacified for positive X-ray identification, Sterile Length 90 cm, ID 1.2 mm, OD 2.5 mm • Peritoneal catheter • 2 stainless steel Holter [®] type A connectors



Accu-Flo[®] Barium Distal Catheter

X-ray detectable. Each catheter has 24 drainage holes, 4 rows of 6 holes, 90° apart. X-ray detectable tantalum markings are at the distal 10 cm, 20 cm and 30 cm.

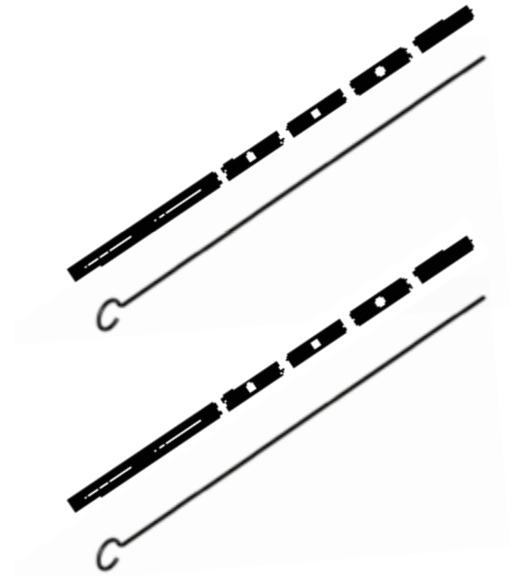
Reference	Package Content
821380	Accu-Flo[®] Barium Distal Catheter Barium impregnated, Open end, Sterile Length 91 cm, ID 1.3 mm, OD 2.5 mm • Peritoneal catheter



Peritoneal Catheters Open-Ended with Slits

Distal end of the catheter with 4 staggered rows of 6 mm slits. If distal outlet hole of the catheter becomes obstructed, slits open for drainage.

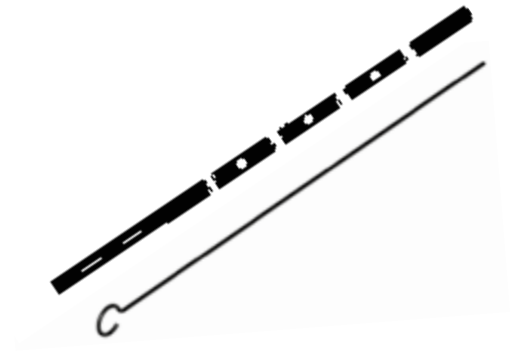
Reference	Package Content
	Peritoneal Catheters Open-Ended with Slits, Barium stripe Barium stripe, Sterile <ul style="list-style-type: none"> • Peritoneal catheter • Introducing rod
NL8501376	Length 120 cm, ID 1.3 mm, OD 2.5 mm
953101	Length 91 cm, ID 1.1 mm, OD 2.3 mm
	Peritoneal Catheters Open-Ended with Slits, full Barium Full barium, Sterile <ul style="list-style-type: none"> • Peritoneal catheter • Introducing rod
9MZ101	Length 91 cm, ID 1.1 mm, OD 2.1 mm
9MZ1011	Length 110 cm, ID 1.1 mm, OD 2.1 mm



Reflux Control Peritoneal Catheter

Minimum flow resistance through a series of slits along the catheter's distal section. One set of 4 slits at the catheter's distal end and two sets of 4 slits spaced at 2.5 cm intervals along the catheter help resist retrograde flow of CSF while minimizing occlusion at the distal catheter tip. Catheter made of high durometer silicone elastomer. Stripe, made of barium sulfate-impregnated silicone elastomer imbedded in the wall of the catheter, make the catheter radiopaque throughout its entire length .

Reference	Package Content
NL8501375	Reflux Control Peritoneal Catheter Barium sulfate impregnated, Sterile Length 120 cm, ID 1.3 mm, OD 2.5 mm <ul style="list-style-type: none"> • Peritoneal catheter • Introducing rod



Lumbar-Peritoneal Catheters

Holter® Lumbar-Peritoneal Catheters

Holter® Lumbar-Peritoneal Catheters are manufactured as a one-piece silicone rubber. The 3 cm T-portion has 4 sets of 3 proximal holes, and has 1.0 mm ID and 1.8 mm OD. The peritoneal catheter end has three longitudinal slits (120° apart) to regulate flow and prevent reflux.

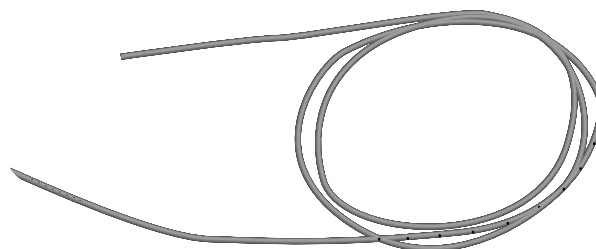
Reference	Package Content
821698	Holter® Lumbar-Peritoneal Catheters Silicone, T-shaped, Sterile Length 65 cm, ID 1.2 mm, OD 2.5 mm 3.5 mm slit valves • Lumbar-peritoneal catheter



James Design Lumbar-Peritoneal Catheters

Pressure is controlled through distal slit valves (5–9 cm H₂O medium pressure), 4 slits 90° apart. The proximal tip is perforated, open ended and angled cut for easy insertion.


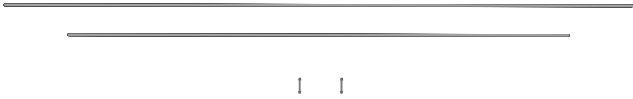
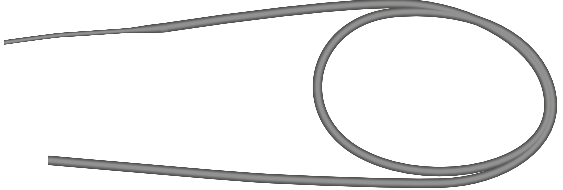

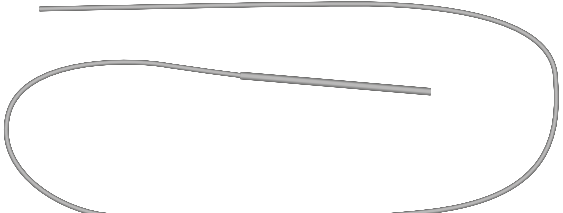
Reference	Package Content
	James Design Lumbar-Peritoneal Catheters Silicone, Sterile ID 0.76 mm, OD 1.65 mm • Lumbar-peritoneal catheter
826200	25 cm length
826201	50 cm length
826202	80 cm length



Atrial Catheters

Holter® Distal Atrial Catheters

Barium impregnated with 2 lumen configurations to meet various shunting needs.

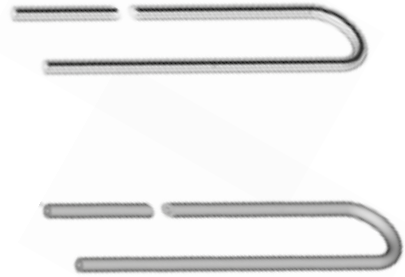
Reference	Package Content	
821670	Holter® Distal Atrial Catheter Type A Barium impregnated, Large lumen, Sterile Length 45 cm, ID 1.2 mm, OD 2.5 mm • Atrial catheter • 2 stainless steel Holter® type A connectors	
821672	Holter® Distal Atrial Catheter Type B Barium impregnated, Large lumen, Sterile Length 38 cm, ID 1.2 mm, OD 2.5 mm • Atrial catheter • 2 Holter® type B connectors	
821674	Holter® Distal Atrial Catheter Type C Barium impregnated, Large lumen, Sterile Length 42 cm, ID 1.2 mm, OD 2.5 mm • Atrial catheter	
821676	Holter® Distal Atrial Catheter Type E Barium impregnated, Sterile Small Catheter - Length 24 cm, ID 0.8 mm, OD 1.3 mm Large Catheter - Length 24 cm, ID 1.2 mm, OD 2.5 mm Total length 48 cm • Atrial catheter • 1 stainless steel Holter® type A connector	
821678	Holter® Distal Atrial Catheter Type H Barium impregnated, Large lumen, Sterile Length 42 cm, ID 1.2 mm, OD 2.5 mm • Atrial catheter	

Codman® Atrial Catheter

Reference	Package Content	
823044	Codman® Atrial Catheter Silicone, Sterile Length 46 cm, ID 1 mm, OD 2.2 mm • Atrial catheter	

Integra[®] Atrial Catheters

Reference	Package Content
953100	Atrial Catheter F7 Barium stripe, Sterile Length 46 cm, ID 1.1 mm, OD 2.3 mm • Atrial catheter
9MZ100	Atrial Catheter F6 Full barium, Sterile Length 46 cm, ID 1.1 mm, OD 2.1 mm • Atrial catheter



Connectors

Metal Connectors








Plastic Connectors

Catheter Accessories

The connectors are X-ray detectable, except for radiolucent ones. They have beveled ends and are grooved to hold sutures for preventing catheter disconnection.

Metal Connectors

Straight Connectors

Reference	Package Content	
823048	Straight Connector Stainless steel, Sterile Length 10.4 mm, ID 1.10 mm, OD 1.95 mm Box of 1	
823053	Straight Connector Titanium, Sterile Length 14 mm, ID 1.0 mm, OD 2.2 mm Box of 1	
821694	Holter® Type A Connectors Stainless steel, Non-sterile Length 10.4 mm, ID 1.4 mm, OD 2.0 mm Box of 5	
821501	Accu-Flo® Straight Connectors Stainless steel, Sterile Length 11 mm, ID 1.0 mm, OD 1.9 mm Box of 1	
901410	Straight Connectors Stainless steel, Sterile ID 1.2 mm, OD 1.8 mm Box of 5	
821504	Accu-Flo® Straight Connector Plastic, Sterile Length 17.8 mm, ID 1.0 mm, OD 1.9 mm Box of 1	
999410	Straight Connectors Radiopaque polypropylene, Sterile ID 1.0 mm, OD 2.0 mm Box of 5	

Right Angle Connectors

Reference	Package Content
823049	Right Angle Connector Stainless steel, Sterile ID 1.1 mm, OD 1.9 mm Box of 1
821511	Accu-Flo® Right Angle Connector Stainless steel, Sterile Length 11 mm, ID 1.0 mm, OD 1.9 mm Box of 1
901411	Right Angle Connectors Stainless steel, Sterile ID 1.2 mm, OD 1.8 mm Box of 5
821507	Accu-Flo® Right Angle Connector Plastic, Sterile Length 11.0 mm, ID 1.0 mm, OD 1.9 mm Box of 1
999411	Right Angle Connectors Radiopaque polypropylene, Sterile ID 1.0 mm, OD 2.0 mm Box of 5



Three Way Connectors

Reference	Package Content
821521	Accu-Flo® Three Way Y Connector Stainless steel and silicone, Sterile Length 28.7 mm, Width 17.8 mm, ID 1.0 mm, OD 1.9 mm Box of 1
901412	Three Way Y Connectors Stainless steel, Sterile ID 1.2 mm, OD 1.8 mm Box of 5
901414	Three Way T Connectors Stainless steel, Sterile ID 1.2 mm, OD 1.8 mm Box of 5



Three Way Connectors

Reference	Package Content
821520	Accu-Flo® Three Way Y Connector Plastic and silicone, Sterile Length 34.3 mm, Width 20.8 mm, ID 1.0 mm, OD 1.9 mm Box of 1
999412	Three Way Y Connectors Radiopaque polypropylene, Sterile ID 1.0 mm, OD 2.0 mm Box of 5
999414	Three Way T Connectors Radiopaque polypropylene, Sterile ID 1.0 mm, OD 2.0 mm Box of 5



Stepdown Stepup Connectors

Reference	Package Content
901415	Stepdown Connectors (F8 to F5) Stainless steel, Sterile ID 0.8 mm, OD 1.8-1.5 mm Box of 5
821695	Holter® Type B Connectors (Stepdown/Stepup) Stainless steel, Non-sterile Length 7.9 mm, ID 1.0-1.2 mm, OD 1.3-1.9 mm Box of 5
999415	Stepdown Connectors (F8 to F5) Radiopaque polypropylene, Sterile ID 0.8 mm, OD 1.8-1.5 mm Box of 5



Threaded Connectors

Reference	Package Content
NL8501911	Threaded Straight Connector Nylon, Sterile Length 16.0 mm, ID 1.1 mm, OD 1.9 mm Box of 1
NL8501919	Double-Threaded Straight Connector Nylon, Sterile Length 17.0 mm, ID 1.1 mm, OD 1.9 mm Box of 1



Catheter Accessories

Reference	Package Content
	CODMAN[®]-MEDOS[®] Right Angle Adaptor Plastic, Sterile
828591	Box of 2
823052	Box of 1
991002	Right Angle Guides For F8 catheters, Silicone, Sterile Box of 5





Tunnelers and Introducers

Valve Introducer

Single Use Distal Catheter Introducers

Valve Introducer

The Codman® Medos Valve Introducer is intended for use with Codman® Hakim® Programmable Valve and Codman® Hakim® Precision Valve cylindrical design only.

Reference	Package Content
823055	Codman® Medos Valve Introducer Plastic, Length 21.8 cm Sterile, Box of 1 Single use



Single Use Distal Catheter Introducers

Reference	Package Content
	Codman® Malleable Catheter Passers Sterile, Box of 6
821515	Short - Length 36 cm
821516	Long - Length 55 cm
821517	XLong - Length 65 cm
	Integra® Malleable Shunt Tunnelers ID 3.5 mm Sterile, Box of 5
990001	Length 45 cm
990010	Length 65 cm



Ventricular Catheter Introducers

The Split Trocar is intended for the placement of the Uni-Shunt[®] Catheter in both the ventricle and peritoneum. The open/close obturator prevents excessive loss of CSF in the ventricle.

Reference	Package Content
824095	Split Trocar Length 10 cm Sterile, Box of 1



Used as a guide for catheter insertion. Introducer can be peeled apart permitting optimal positioning of a ventricular catheter.

Reference	Package Content
	Peel-Away Catheter Introducers Overall length 18 cm, Peel away sheath length 14.7 cm Sterile, Box of 10
831323	F9
831325	F12.5
831326	F14





Indications and Contraindications

Programmable Valves

Codman® CERTAS™ Plus

Indications

The Codman® CERTAS™ Plus Programmable Valve is an implantable device that provides constant intraventricular pressure and drainage of CSF for the management of hydrocephalus.

Contraindications

These devices are contraindicated in patients receiving anticoagulants or known to have bleeding diathesis. Avoid shunt implantation if infection is present within the body. Delay the shunt procedure when infections such as meningitis, ventriculitis, peritonitis, bacteremia, and septicemia are present. The BACTISEAL Catheters are contraindicated in patients with known hypersensitivity to rifampin or clindamycin hydrochloride.

Codman CERTAS® Tool Kit

(ref 828851)

Indications

The Codman CERTAS® Tool Kit allows the noninvasive reading or adjustment of the valve setting.

Contraindications

These devices are contraindicated in patients receiving anticoagulants or known to have a bleeding diathesis. Avoid shunt implantation if infection is present within the body. Delay the shunt procedure when infections such as meningitis, ventriculitis, peritonitis, bacteremia, and septicemia are present. The BACTISEAL Catheters are contraindicated in patients with known hypersensitivity to rifampin or clindamycin hydrochloride.

Codman® CERTAS™ Plus Electronic Tool Kit

(ref 828852)

Indications

The CERTAS Plus Electronic Tool Kit allows the non-invasive reading or adjustment of the valve setting for the CERTAS and CERTAS Plus Programmable Valves.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Codman® Hakim® Programmable Valve

Indications

The Codman® Hakim® Programmable Valves are implantable devices that provide constant intraventricular pressure and drainage of CSF for the management of hydrocephalus.

Contraindications

The Codman® Hakim® Programmable Unitized Valve Systems are not recommended for atrial placement. Use the non-unitized versions for this procedure. These devices are contraindicated in patients receiving anticoagulants or known to have a bleeding diathesis. Avoid shunt implantation if infection is present within the body. Delay the shunt procedure when infections such as meningitis, ventriculitis, peritonitis, bacteremia, and septicemia are present.

Codman® Hakim® Programmer

(ref 823190R)

Indications

The Codman® Hakim® Programmer and Transmitter are designed for use only with Codman® Hakim® Programmable Valves in the treatment of hydrocephalus when shunting cerebrospinal fluid (CSF) from the ventricles of the brain.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

VPV® System

(ref 823192R)

Indications

The Codman® VPV® System is indicated for use only with Codman® Hakim® Programmable Valves in the treatment of hydrocephalus when shunting cerebrospinal fluid from the ventricles of the brain. It is used to adjust the Codman® Hakim® Programmable Valve to the selected pressure and provides valve adjustment confirmation without the need for radiographic imaging.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Flow Regulated Valves

OSV II™

Indications

The OSV II™ Valve System is an implantable system used in the treatment of patients with hydrocephalus, to shunt CSF from the ventricles to the peritoneal cavity or other appropriate drainage site such as the heart's right atrium.

Contraindications

This OSV II™ Valve System should not be implanted when an infection along the shunt pathway (e.g. meningitis, ventriculitis, peritonitis) is suspected. It is advisable to postpone valve implantation if an infection is present anywhere in the body (septicemia, bacteremia). Atrial shunting is not advised for patients with congenital heart disease or other serious cardiopulmonary abnormalities. The OSV II™ Valve System should not be implanted in patients with untreated choroid plexus tumors. Such tumors produce CSF at rates in excess of the specification of the flow regulation Stage II, and the OSV II™ Valve System would underdrain under these conditions. The OSV II™ Valve System should not be used for drainage of extraventricular fluid collections such as hygromas or cysts; such conditions are typically treated with very low differential pressure valves.

OSV II™ Lumbar

Indications

The OSV II Lumbar Valve System is an implantable system used in the treatment of patients with communicating hydrocephalus to shunt CSF from the lumbar subarachnoid region to the peritoneal cavity.

Contraindications

The OSV II Lumbar Valve System should not be used in patients with non-communicating hydrocephalus. This valve system should not be implanted when an infection along the shunt pathway (e.g. meningitis, ventriculitis, peritonitis) is suspected. It is advisable to postpone valve implantation if an infection is present anywhere in the body (septicemia, bacteremia). The OSV II Lumbar Valve System should not be implanted in patients with untreated choroid plexus tumors. Such tumors produce CSF at rates in excess of the specification of the flow regulation Stage II, and the OSV II Lumbar Valve System would underdrain under these conditions.

Integra® Low Flow

Indications

The Integra® Flow Regulating Valve Low Flow is an implantable system used in the treatment of patients with hydrocephalus, to shunt CSF from the ventricles to the peritoneal cavity or other appropriate drainage site such as the heart's right atrium.

Contraindications

This valve system should not be implanted when an infection along the shunt pathway (e.g. meningitis, ventriculitis, peritonitis) is suspected. It is advisable to postpone valve implantation if an infection is present anywhere in the body (septicemia, bacteremia). Atrial shunting is not advised for patients with congenital heart disease or other serious cardiopulmonary abnormalities. The Integra® Flow Regulating Valve Low Flow should not be implanted in patients with untreated choroid plexus tumors. Such tumors produce CSF at rates in excess of the specification of the flow regulation Stage II, and the Valve would underdrain under these conditions. Integra Flow Regulating Valve Low Flow should not be used for drainage of extraventricular fluid collections such as hygromas or cysts; such

conditions are typically treated with very low differential pressure valves.

Fixed Pressure Valves

Codman[®] Hakim[®] Precision

Indications

The Codman[®] Hakim[®] Precision Fixed Pressure Valve Systems are implantable devices that provide constant intraventricular pressure and drainage of CSF for the management of hydrocephalus.

Contraindications

The Codman[®] Hakim[®] Unitized Valve Systems are not recommended for atrial placement. Use the nonunitized versions for this procedure. These devices are contraindicated in patients receiving anticoagulants or known to have a bleeding diathesis. Avoid shunt implantation if infection is present within the body. Delay the shunt procedure when infections such as meningitis, ventriculitis, peritonitis, bacteremia, and septicemia are present.

Essential

Indications

The Essential Shunt Kit-Flat bottom design, utilized in the treatment of hydrocephalic patients, is designed to shunt cerebrospinal fluid from the lateral ventricles of the brain into the peritoneum. The Essential Shunt Kit-Flat bottom design, can be used in (but is not restricted to) situations where skin erosion may be a problem, as with older patients. The CSF Flow control valve, utilized in the treatment of hydrocephalic patients, is a component in systems designed to shunt cerebrospinal fluid from the lateral ventricles of the brain into either the right atrium of the heart or the peritoneum. Note: this kit provides a peritoneal catheter. For cardiac shunting, a cardiac catheter must be purchased separately.

Contraindications

Ventriculoatrial or Ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia, or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body. The ventriculoatrial method of shunting is contraindicated for hydrocephalic patients with congenital heart disease or other anomalies of the cardiopulmonary system.

Neuro Endoscopy Catheter

NeuroBalloon[™]

Indications

The NeuroBalloon[™] Catheter is intended for dilatation of cerebral membrane fenestrations under direct or endoscopic visualization during intracranial procedures.

Contraindications

Not for intravascular use. Do not use in rigid neuro-tissues, such as dilatation of aqueducts stenosis or thick membranes of arachnoid cysts, since the balloon is not designed to withstand high pressure. If the dilatation of the target site is not successful with 1 ml of air, the tissue may be too rigid for this instrument. Over-inflation should not be attempted as it may damage the balloon; another technique should be used.

Speciality Drainage Products

SiphonGuard[®]

(ref 823090)

Indications

The SiphonGuard[®] device can be used as a component of hydrocephalus shunt systems designed to shunt CSF from the lateral ventricles of the brain into the peritoneal cavity or right atrium of the heart. The SiphonGuard[®] device is designed to reduce the potential hazards of excessive lowering of intraventricular pressure (with respect to atmospheric pressure) when a patient is in an erect position.

Contraindications

The SiphonGuard[®] device must not be used in the presence of known or suspected infections along the course of the shunt system (meningitis, ventriculitis, skin infections, bacteremia, septicemia, or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body.

Anti-Siphon Device

(ref NL8500200)

Indications

The Anti-Siphon Device, utilized in the treatment of hydrocephalic patients, is a component in systems designed to shunt cerebrospinal fluid from the lateral ventricles of the brain into either the right atrium of the heart or the peritoneum. The device is designed to reduce the potential hazards of excessive lowering of intraventricular pressure (with respect to atmospheric pressure) when the patient is in a sitting, standing or erect position.

Contraindications

Ventriculoatrial or ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body.

Reservoirs

Integra[®] CSF Reservoirs

(ref NL8501210, NL8501211, NL8501214, NL8501212, NL8501215, NL8501213)

Indications

The Integra CSF Reservoir provides access to the lateral cerebral ventricles via hypodermic puncture. It is useful in obtaining CSF samples for cytological and chemical studies, for monitoring ventricular fluid pressure and for ventricular drainage. The reservoir provides easy access to the lateral ventricles and to cystic tumors for the injection of chemotherapeutic agents and/or radio-isotopes. The Convertible Integra CSF Reservoir may be utilized in hydrocephalic patients as a component in systems designed to shunt CSF from the lateral ventricles into either the right atrium of the heart or the peritoneum.

Contraindications

If the Convertible Integra CSF Reservoir is used as part of a shunting system, the following contraindications should be noted: Ventriculoatrial or ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body.

Integral Ventricular Reservoirs

(ref 999015, 999016)

Indications

The Ventricular Antechamber is a CSF reservoir allowing CSF transmission into a shunt system and access to the CSF compartments for sampling or injection. The Integral Ventricular Reservoir may be used as a ventricular access port, and later, if needed, connected to a valve for hydrocephalus patients. The Antechamber should be punctured with a 25 G needle.

Contraindications

Implantation should be postponed when an infection exists anywhere in the body. For further information, refer to the Instructions for Use of the Integra NeuroSciences Valve Systems.

Rickham[™]-Style Reservoirs

(ref NL8501132, NL8501121)

Indications

The UltraVS In-Line Valves, utilized in the treatment of hydrocephalic patients, are components in systems designed to shunt cerebrospinal fluid (CSF) from the lateral ventricles into either the peritoneal cavity or the right atrium of the heart. The in-line and burr-hole systems are designed to shunt cerebrospinal fluid from the lateral ventricles into the peritoneal cavity. A ventriculoperitoneal shunting system may be indicated to avoid the cardiovascular complications of an atrial shunt or for a hydrocephalic patient in whom an atrial shunt is contraindicated.

The Small and Neonate Models can be used in (but are not restricted to) situations where skin erosion may be a problem, as with premature infants, pediatric patients and older patients.

Contraindications

Ventriculoatrial or ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body. The ventriculoatrial method of shunting is contraindicated for hydrocephalic patients with congenital heart disease or other anomalies of the cardiopulmonary system.

Accu-Flo® CSF Reservoirs

(ref 826100, 826101)

Indications

The Accu-Flo® CSF Reservoir, when attached to a ventricular catheter, is designed to provide direct access to the lateral cerebral ventricles for aspiration and the injection of medication, and to cystic tumors for chronic drainage or the injection of chemotherapeutic agents and/or radioisotopes via a syringe fitted with a 25-gauge, or smaller, Huber point needle through the reservoir dome.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if scalp or systemic infection is present. It is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Holter® Ventricular Catheter Reservoirs

(ref 821630, 821632, 821634, 821636, 821638, 821640, 821642)

Indications

The Cerebral Catheter Reservoir is indicated for use as a component of a shunting system to gain access to the cerebral ventricles or other intracranial cavities for the purpose of diagnostic studies, therapeutic drug administration, or the diversion of fluid.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Accu-Flo® Reservoirs

(ref 821401, 821411)

Indications

The Accu-Flo® Reservoir is indicated for use in the treatment of hydrocephalus as a component of the Accu-Flo® Shunting System for aspiration of cerebrospinal fluid (CSF) and injection of medication via hypodermic puncture with a 25-gauge or smaller Huber point needle through the reservoir dome only.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if scalp or systemic infection is present. It is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Holter® Selker Ventriculostomy Reservoirs

(ref 821618, 821619)

Indications

The Ventriculostomy Reservoir Set is indicated for use to gain access to the cerebral ventricles or other intracranial cavities for the purpose of diagnostic studies or therapeutic drug administration with or without a shunting device. When used with a shunting device, the Ventriculostomy Reservoir is also indicated for use as the proximal fluid pathway.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Holter® Rickham™ Ventriculostomy Reservoirs

(ref 821615, 821621, 821616, 821623)

Indications

The Ventriculostomy Reservoir Set is indicated for use to gain access to the cerebral ventricles or other intracranial cavities for the purpose of diagnostic studies or therapeutic drug administration with or without a shunting device.1-4 When used with the shunting device, the ventriculostomy reservoir is also indicated for use as the proximal fluid pathway.1-4

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Holter® Salmon-Rickham™ Ventriculostomy Reservoirs

(ref 821625, 821617)

Indications

The Cerebral Catheter-Reservoir is indicated for use as a component of a shunting system to gain access to the cerebral ventricles or other intracranial cavities for the purpose of diagnostic studies, therapeutic drug administration, or the diversion of fluid.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Catheters

Bactiseal®

(ref 823072, 823073, 823074)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Do not implant this device in patients with known hypersensitivity to rifampin or clindamycin hydrochloride. Do not implant this device in patients with active infections, such as ventriculitis, peritonitis, meningitis, or skin infections at or near the implantation site. Treat the infection before implanting this device. Use of this device is contraindicated in patients receiving anticoagulants or known to have a bleeding diathesis.

Integra® CSF Ventricular Catheters

(ref 951101, 951101A, 951102, 951102A, 9MD102A, 9MZ203, 9MZ204, 9MZ205, 9MZ206, 9MZ207, 9MZ208, 9MZ209, 9MZ210, 9MZ211, 9MZ213)

Indications

The ventricular catheters are intended for ventricular shunting of cerebrospinal fluid (CSF). Catheters featuring radiopaque dots allow the surgeon to determine the location and depth of the catheter during implantation and on X-Ray.

Contraindications

Ventricular catheters should not be used when an infection exists along the shunt pathway (meningitis, ventriculitis, peritonitis, septicemia, bacteremia). Postponement of shunt or component implantation is advisable if infection is present anywhere in the body. The use of the ventriculo-atrial approach is contraindicated in patients with serious heart or cardiopulmonary disease.

Integra® Peritoneal Catheters

(ref 9MZ101, 9MZ1011, 953101)

Indications

The peritoneal catheter is used to drain CSF from the outlet of the valve unit into the peritoneum. The distal end of the catheter has four staggered rows of 6-mm slits, which are not readily visible. If the distal outlet hole of the catheter becomes obstructed, the slits open for drainage. The slits perform optimally in a saline environment after soaking for 24 hours at 37°C.

Contraindications

Hydrocephalus shunt systems should not be implanted when the patient has known or suspected infections in the vicinity of any of the implanted components (meningitis, ventriculitis, skin infections, bacteremia, septicemia, peritonitis, etc.). Avoid implanting hydrocephalus shunt systems if infection is present anywhere in the body. Shunting into the atrium of patients with congenital heart disease or other cardiopulmonary anomalies is contraindicated.

Integra® Atrial Catheters

(ref 9MZ100, 953100)

Indications

The atrial catheter is used to drain CSF from the outlet of the valve unit into the right atrium of the heart. The distal end of the catheter does not have any slits.

Contraindications

Hydrocephalus shunt systems should not be implanted when the patient has known or suspected infections in the vicinity of any of the implanted components (meningitis, ventriculitis, skin infections, bacteremia, septicemia, peritonitis, etc.). Avoid implanting hydrocephalus shunt systems if infection is present anywhere in the body. Shunting into the atrium of patients with congenital heart disease or other cardiopulmonary anomalies is contraindicated.

Portnoy Ventricular Catheter

(ref NL8501229)

Indications

The Portnoy Ventricular Catheter, utilized in the treatment of hydrocephalic patients, is a component in systems designed to shunt cerebrospinal fluid from the lateral ventricles into either the right atrium of the heart or the peritoneum.

Contraindications

Ventriculoatrial or ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia, or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body. The ventriculoatrial method of shunting is contraindicated for hydrocephalic patients with congenital heart disease or other anomalies of the cardiopulmonary system.

Reflux Control Peritoneal Catheter & Peritoneal Open-Ended Catheter with Slits

(ref NL8501375, NL8501376)

Indications

The Peritoneal Reflux Control Catheter and Peritoneal Open-Ended Catheter With Slits, utilized in the treatment of hydrocephalic patients, are components for systems designed to shunt cerebrospinal fluid from the lateral ventricles into the peritoneum. A ventriculoperitoneal shunting system may be indicated to avoid the cardiovascular complications of an atrial shunt or for a hydrocephalic patient in whom an atrial shunt is contraindicated.

Contraindications

Ventriculoperitoneal shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin infections, bacteremia, septicemia or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body.

Codman® Peritoneal Catheter

(ref 823045)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if systemic infection is present. Use of this device for ventriculoperitoneal shunting is contraindicated in patients who have peritonitis or a history of peritonitis. Use of this device is contraindicated in patients receiving

anticoagulants or who are known to have a bleeding diathesis.

Holter® Distal Peritoneal Catheter

(ref 821682, 821684)

Indications

The Distal Peritoneal Catheter, Open End, is indicated for use with a proximal valve in the treatment of hydrocephalus where ventriculoperitoneal shunting is the procedure of choice.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of the Distal Peritoneal Catheter for ventriculoperitoneal shunting is contraindicated in patients who have peritonitis or a history of peritonitis.

Holter Lumbar-Peritoneal Catheter

(ref 821698)

Indications

The Lumbo-Peritoneal Shunt is indicated for shunting cerebrospinal fluid when the lumboperitoneal route is the procedure of choice in the treatment of communicating hydrocephalus. Hoffman has tended to use the more resistant shunt (3.6 mm slit length) in the treatment of infants with communicating hydrocephalus, whereas the less resistant shunt (4.1 mm slit length) has been used in the treatment of CSF leakage or a bulging wound site.

Contraindications

This device is not designed, sold, or intended for use except as indicated. The Lumbo-Peritoneal Shunt is contraindicated in patients with arachnoiditis, any spinal or neural tube abnormality (i.e., scoliosis, spina bifida, myelodysplasia, meningocele, myelomeningocele, etc.), or the sequelae (e.g., motor signs, sensory signs, bladder and bowel disruption) of a spinal cord disease. In addition, this shunt is contraindicated in patients with peritonitis or a recent history of peritonitis.

Lumbar-Peritoneal Catheter James Design

(ref 826200, 826201, 826202)

Indications

The James Lumbar Peritoneal Shunt is recommended for treatment of the following conditions: communicating hydrocephalus, CSF intracranial fistula, subcutaneous and cutaneous CSF spinal fistula, pseudotumor cerebri, subarachnoid and subdural CSF intracranial extradural collections following surgery.

Contraindications

The placement of this shunt is not indicated in patients with cerebrospinal fluid infections, peritoneal infections that are of active or recent onset, disorders of the midline of the lumbosacral spinal region (i.e., spinal dysraphism, myelomeningoceles, or meningoceles). The percutaneous lumboperitoneal shunt placement should not be performed in the presence of CSF with debris and hemorrhage in the same, for the narrow lumen of the shunt catheter may be obstructed. Repeated lumbar punctures may be performed to clear the CSF of such debris and blood particles. The shunt can be subsequently inserted.

Codman® Hakim® Ventricular Catheter

(ref 823041)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if scalp or systemic infection is present. It is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Holter® Ventricular Catheter

(ref 821652, 821654, 821656, 821658, 821660, 821662, 821664, 821666, 821650)

Indications

The Holter® Ventricular Catheter is indicated for use to gain access to the ventricles for diagnostic purposes and in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Holter® Type A Distal Atrial Catheter

(ref 821670)

Indications

The Type "A" Atrial Catheter is indicated for use to shunt cerebrospinal fluid, when shunting of cerebrospinal fluid to the atrium is the procedure of choice in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infection (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or a high right atrial pressure associated with congenital heart disease.

Holter® Type B Distal Atrial Catheter

(ref 821672)

Indications

The Type "B" Atrial Catheter is indicated for use to shunt cerebrospinal fluid, when shunting of cerebrospinal fluid to the atrium is the procedure of choice in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infection (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or a high right atrial pressure associated with congenital heart disease.

Holter® Type C Distal Atrial Catheter

(ref 821674)

Indications

The Type "C" Atrial Catheter is indicated for use to shunt cerebrospinal fluid, when shunting of cerebrospinal fluid to the atrium is the procedure of choice in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infection (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or a high right atrial pressure associated with congenital heart disease.

Holter® Type E Distal Atrial Catheter

(ref 821676)

Indications

The Type "E" Atrial Catheter is indicated for use to shunt cerebrospinal fluid, when shunting of cerebrospinal fluid to the atrium is the procedure of choice in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infection (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or a high right atrial pressure associated with congenital heart disease.

Holter® Type H Distal Atrial Catheter

(ref 821678)

Indications

The Type "H" Atrial Catheter is indicated for use to shunt cerebrospinal fluid, when shunting of cerebrospinal fluid to the atrium is the procedure of choice in the treatment of hydrocephalus.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infection (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or a high right atrial pressure associated with congenital heart disease.

Codman® Distal Atrial Catheter

(ref 823044)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if systemic infection is present. Use of this device is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Accu-Flow® Barium Distal Open End Catheter

(ref 821380)

Indications

The Accu-Flow® Distal Open End Catheter is indicated for use in the treatment of hydrocephalus as a component of a shunt system when pressure control of cerebrospinal fluid (CSF) by means of a proximal valve is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if scalp or systemic infection is present. It is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Accu-Flo® Barium, Dotted and Clear Ventricular Catheter

(ref 821201, 821203, 821221)

Indications

All models of the Accu-Flo® Ventricular Catheter are intended for use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated. Use of this device is contraindicated if scalp or systemic infection is present. It is contraindicated in patients receiving anticoagulants or who are known to have a bleeding diathesis.

Connectors

Connectors

(ref NL8501911, NL8501919)

Indications

Integra connectors are utilized principally in the treatment of hydrocephalic patients, as components in systems designed to shunt cerebrospinal fluid from the lateral cerebral ventricles of the brain into either the right atrium of the heart or the peritoneum.

Contraindications

Integra connectors are designed for use as components in systems which provide access to the ventricles of the brain, particularly hydrocephalic shunt systems. Hydrocephalic shunting systems should not be used in the presence of known or suspected infections along the course of the shunt (meningitis, ventriculitis, skin

infections, bacteremia, septicemia or peritonitis). It is advisable to avoid shunting procedures if infection is present anywhere in the body.

Integra® Right Angle Guide

(ref 991002)

Indications

The Right Angle Guide is a component of Integra NeuroSciences Hydrocephalus Valve Systems. It is used to form a right angle bend in a F7, F8 ventricular catheter at the burr hole (diameter 5 mm). Implanted materials are silicone elastomer impregnated with barium sulfate.

Contraindications

Integra NeuroSciences hydrocephalus valve components should not be implanted when an infection exists along the shunt pathway (meningitis, ventriculitis, septicemia and/or bacteremia). Postponement of shunt or component implantation is advisable if infection is present anywhere in the body.

Integra® Radiopaque Polypropylene and Stainless Steel Connectors

(ref 999410, 999411, 999412, 999414, 999415, 901410, 901411, 901412, 901414, 901415)

Indications

Refer to the Instructions for Use accompanying the Integra NeuroSciences device used with the accessory. Implantable accessories intended to be used with Integra hydrocephalus Valve Systems for connection between an implanted ventricular catheter or drainage catheter and a CSF Shunt System. Different shapes are available: Straight connector; Right-angle connector for right angle connection at the burr hole on the bone between the ventricular catheter and the Valve tubing; "Y" or "T" connectors for connection between three components of CSF Shunt System e.g. 2 implanted ventricular catheters connected to a CSF Shunt System; Stepdown Connector for connection between F5 lumbar catheter and F8 inlet tubing of the valve's antechamber of the Integra lumboperitoneal shunt systems.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Anchoring Clips

Indications

These anchoring clips are designed for use with the Uni-Shunt® with Reservoir Catheter. They are used to secure the ventricular and distal ends of the Catheter. Use of the anchoring clips on the cranium and on the peritoneum is strongly recommended to maintain the position of the catheter.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

CODMAN®-MEDOS®Right Angle Adapter

(ref 823052)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated to secure the ventricular catheter.

Contraindications

This device is not designed, sold, or intended for use except as indicated

Codman® Stainless Steel Connectors

(ref 823049, 823048, 821521)

Indications

For use in the treatment of hydrocephalus as a component of a shunt system when draining or shunting of cerebrospinal fluid (CSF) is indicated.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Codman® Type A Stainless Steel Connectors

(ref 821694)

Indications

The Type A Fixation and Joining Connector is indicated for use in the joining and fixation of 1.2 mm nominal I.D. silicone rubber tubing with nonabsorbable sutures in a surgical application.

Contraindications

This device is not designed, sold or intended for use except as indicated. Ventriculoperitoneal shunting is contraindicated in patients with infection (e.g., peritonitis, meningitis, septicemia), or risk of infection.

Codman® Type B Stainless Steel Connectors

(ref 821695)

Indications

The Type B Fixation and Joining Connector is indicated for use in the joining and fixation of 0.8 mm nominal I.D. silicone rubber tubing to 1.2 mm nominal I.D. silicone rubber tubing, and specifically, with nonabsorbable sutures in a surgical application.

Contraindications

This device is not designed, sold or intended for use except as indicated. Ventriculoperitoneal shunting is contraindicated in patients with infection (e.g., peritonitis, meningitis, septicemia), or risk of infection.

Accu-Flo® Connectors

(ref 821501, 821504, 821511)

Indications

The Accu-Flo® Connectors can be utilized as a component in systems designed to shunt cerebro spinal fluid from the lateral ventricles into the right atrium of the heart or the peritoneal cavity, providing they are used in the joining and fixation of approximately 1.3 mm nominal I.D. silicone rubber tubing with nonabsorbable sutures in a surgical application.

Contraindications

This device is not designed, sold or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infections (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or high right atrial pressure associated with congenital heart disease. Ventriculoperitoneal shunting is contraindicated in patients with infection (e.g., peritonitis, meningitis, septicemia), or risk of infection.

Codman® Plastic Connectors

(ref 821520, 821507)

Indications

The ACCU-FLO Connectors can be utilized as a component systems designed to shunt cerebro spinal fluid from the lateral ventricles into the right atrium of the heart or the peritoneal cavity, providing they are used in the joining and fixation of approximately 1.3 mm nominal I.D. silicone rubber tubing with nonabsorbable sutures in a surgical application.

Contraindications

This device is not designed, sold or intended for use except as indicated. Ventriculoatrial shunting is contraindicated in patients with infections (e.g., meningitis, septicemia), risk of infection, pulmonary emboli, or high right atrial pressure associated with congenital heart disease. Ventriculoperitoneal shunting is contraindicated in patients with infection (e.g., peritonitis, meningitis, septicemia), or risk of infection.

Codman[®] Titanium Connector

(ref 823053)

Indications

The Titanium Shunt Connector (Sterile) is indicated for use in the joining and fixation of silicone catheters, valves, and other components of a system for ventriculoatrial or ventriculoperitoneal shunting of cerebrospinal fluid (CSF). The use of nonabsorbable sutures is required.

Contraindications

Ventriculoatrial shunting is contraindicated in patients with pulmonary emboli or high right atrial pressure associated with congenital heart disease.

Tunnelers and Introducers

Codman[®] Medos Valve Introducer

(ref 823055)

Indications

The Codman[®] Medos Valve Introducer, is a disposable instrument, specifically designed as an aid when passing the Codman[®] Hakim[®] Valve from the burr hole site to the mastoidal incision through the proper line of cleavage (between the galea and periosteum). Due to the malleability of this introducer, it can be performed to a desired curvature prior to valve placement. The introducer protects the valve unit tip connector, facilitates passage of the valve unit, and helps minimize tissue trauma.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Codman[®] Malleable Catheter Passer

(ref 821515, 821516, 821517)

Indications

The Disposable Catheter Passer is indicated for use as a subcutaneous guide in the placement of a hydrocephalic catheter for ventriculo-peritoneal shunting of CSF.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Integra[®] Malleable Shunt Tunneler

(ref 990001, 990010)

Indications

The Tunneler is a single-use instrument consisting of a stainless steel cannula with removable handle, plastic line with bullet-shaped end and barbed end, and sheath. The tunneler is used to make a subcutaneous tunnel between two incisions for procedures such as the subcutaneous insertion of the peritoneal drainage catheter of a hydrocephalus shunt. The barbed end is intended to be connected to a 0.8 to 1.4 mm internal diameter catheters. The tunneler is available in 45 and 65 cm lengths.

Contraindications

This device is not designed, sold or intended for use except as indicated.

Split Trocar

(ref 824095)

Indications

The Disposable Split Trocar, is comprised of a plastic inner obturator and a stainless steel exterior introducer. The Disposable Split Trocar is designed to be used for placement of a hydrocephalic catheter with an outer diameter of up to approximately 3.0 mm in both the ventricular and peritoneal cavities when hydrocephalic shunting is indicated. After the surgeon has penetrated the ventricle and before placement of the catheter, the Disposable Split Trocar can be used to obtain cerebrospinal fluid (CSF) for analysis. Available separately are a cranial anchoring clip and a right angle anchoring clip for securing the distal and proximal ends of the catheter after placement.

Contraindications

This device is not designed, sold, or intended for use except as indicated.

Peel-Away Catheter Introducers

(ref 831323, 831325, 831326)

Indications

The Peel-Away Catheter Introducer assists in placing a catheter in the ventricle when hydrocephalus shunting is indicated and when using an endoscope.

Contraindications

This device is not designed, sold, or intended for use except as indicated.



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