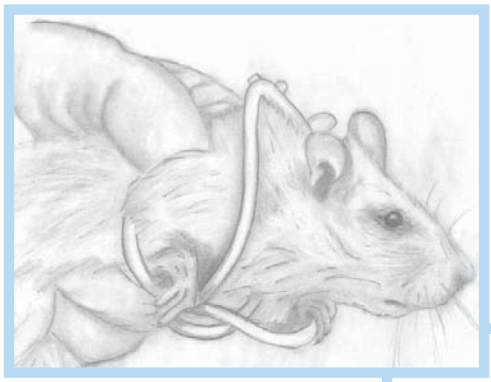
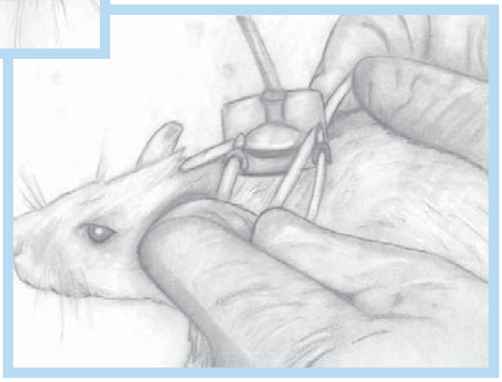
Originally developed in collaboration with Danny Jack of Covance Laboratories, Instech's infusion harnesses are made of a soft elastomer saddle with a vented dome that protects the catheter, adjustable belly bands to secure the saddle to the animal, and a stainless steel spring to protect the fluid line and transmit torque to a swivel.

HARNESS BENEFITS

- Simple to install – no surgery
- Long life – washable and reusable
- Easy to adjust as animal grows
- Access to jugular vein
- Vented to promote healing of surgical wound
- Covers less of the body than jackets – better temperature regulation



To install, orient as shown, slide on...



...then tighten bands for a proper fit .

Dan Nolan, Nolan's Illustrating

Covance Infusion Harnesses™

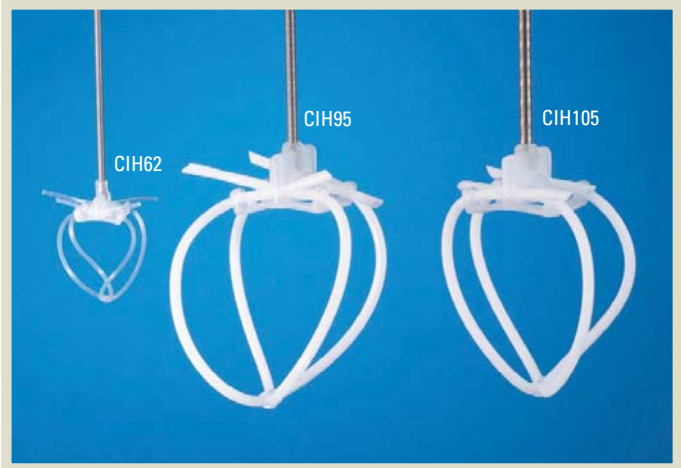
The original harness models feature a clear opening in the dome through which you feed catheter or infusion tubing into the spring tether and up to a swivel.

There are two models for rats (CIH95 for standard single channel infusion or CIH105 with a larger spring for two catheters) and a miniature version for mice.

They may be purchased indivudually, in bulk or as part of custom infusion kits. CIH harnesses are typically provided non-sterile. Custom spring lengths are available.

Part No.	Description	Unit
CIH95	Infusion harness for rats, .090in ID	ea
CIH105	Infusion harness for rats, .105in ID	ea
CIH62	Infusion harness for mice	ea

$ http://www.instechlabs.com/Infusion/tethers/cih.php



HARNESS TETHERS

Vascular Access Harnesses™

Patent pending

VAH™ ADVANTAGES

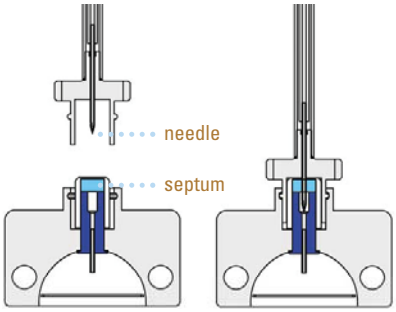
- Septum permits aseptic technique
- Quick connection
- Minimal backflow
- Low profile
- Animals can be ordered with VAH and catheter pre-installed (contact us for a list of experienced animal vendors)

The VAH™ is an advancement on the original Covance Infusion Harness which permits quick and aseptic connection and disconnection of a catheterized rat and an infusion tether.

The system consists of a small external port (or two ports, in the case of the two channel model) housed in a harness which is installed at the same time that the catheter is implanted. The catheter is attached to a connector built into the port under the harness dome and then the port and catheter are filled with lock solution to maintain patency during transport.

To begin an infusion study, simply remove the cap, wipe the septum with disinfectant and plug the mating VAH tether into the harness. A recessed septum-piercing needle built into the tether makes the fluid connection through the port. Like a subcutaneous access port, the VAH is a closed system: tether connection does not introduce contamination or air. Furthermore, retrograde flow, which can lead to occluded catheters, is virtually eliminated.

All VAH components are provided EtO sterilized.



Single Channel VAH™

Transport | Connect | Infuse

Install the VAH95AB harness at the time of catheterization. For best results, use a 3Fr polyurethane catheter as it makes the most reliable fit with the 22ga connector in the harness. A 20cm rounded-tip PU catheter, specially configured for the VAH, is now available bundled with the harness in part no VAH95AB-C.

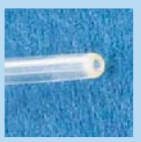
For intermittent access for bolus injection, blood sampling or flushing, pierce the septum manually using an SN22 needle or VAHLS22/30 connector with needlestick protection.

For continuous access, connect a VAH tether. The KVAH95T kit includes the tether, a swivel and tubing with a luer stub to connect to a syringe pump (see p 19 for a diagram).

Part No.	Description	Unit
VAH95AB-C	VAH harness with catheter and SN22 needle	ea
VAH95AB	VAH harness with SN22 needle	ea
VAH95T	VAH tether assembly	ea
KVAH95T	VAH tether plus 22ga swivel, 24in CoEx, leur stub	ea
SN22	Extra VAH septum needles, 22ga x 0.5in	pkg of 12
VAHLS22/30	Male VAH connector, 3cm tubing, luer stub	pkg of 12

$ http://www.instechlabs.com/Infusion/tethers/vah.php

Catheter Included with VAH95AB-C NEW



Material	Polyurethane (uncoated)
Tip	Rounded
Size	3 French
Length	20 cm
Suture beads	1, moveable
Attachment sleeve	None
Packaging	3x7in pouch inside harness pouch

VAH95AB

Swivel on KVAH95T

SN22

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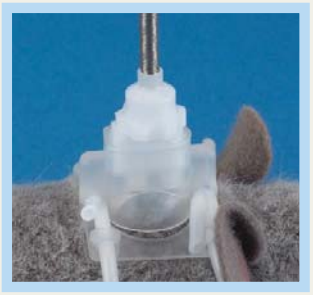
INSTECH SOLOMON

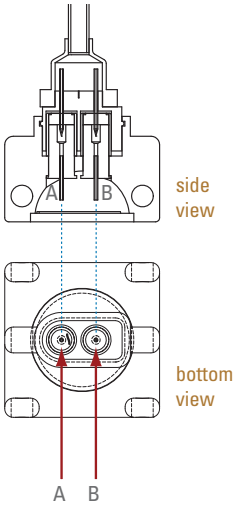
Dual Channel VAH™

Connect



Infuse

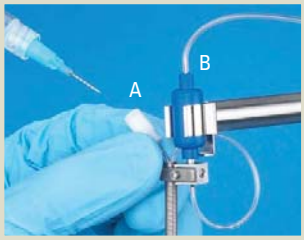
The dual channel VAH connects two independent channels as simply as the standard VAH connects one. Install the VAHD115AB harness when the catheters are implanted. For best results, use 3Fr polyurethane catheters (now available packaged with the harness; see p 28 for specifications). Channel A, on the rounded end of the harness, is distiguished with markings under the dome and on the tubing exiting the tether. Channel B, on the square end, is unmarked. Access the ports directly using an SN22 needle for manual flushing, injections or sampling.



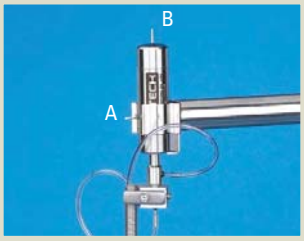
Connect the KAVHD115T tether kit for continuous access to channel B through a single channel plastic swivel and intermittent access to channel A through a minature injection port at the top of the tether. Alternaltively, connect the VAHD115T tether to a 375/D/22 swivel for continuous access to both channels. See p 30 for special configurations for bile sampling.

Part No.	Description	Unit
VAHD115AB-C	Dual channel VAH harness with 2 catheters, needle	ea
VAHD115AB	Dual channel VAH harness with SN22 needle	ea
VAHD115T	Dual channel VAH tether assembly	ea
KVAHD115T	Kit: VAHD115T, 375/22PS,SIP22/4, 24in CoEx, LS22	ea
SN22	Extra VAH septum needles, 22ga x 0.5in	pkg of 12

$ http://www.instechlabs.com/Infusion/tethers/dualvah.php



KVAHD115T: 1 channel swivel + injection port



VAHD115T + 2 channel swivel (order swivel separately)

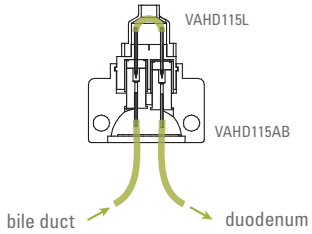
Specifications

	CIH95	CIH105	CIH62	VAH95AB/T	VAHD115AB/T NEW
Clear lumen / channels	.090in (2.3mm)	.105in (2.7mm)	.062in (1.6mm)	1 channel	2 channels
Port volume	-	-	-	8 µl	8 µl
Septum durability (with SN22)	-	-	-	~200 sticks	~200 sticks
Saddle size	1.13x1.13in (2.9cm)	1.13x1.13in (2.9cm)	0.56x0.56in (1.4cm)	1.13x1.13in (2.9cm)	1.13x1.13in (2.9cm)
Body surface contact area	.82in² (5.3cm²)	.82in² (5.3cm²)	.20in² (1.3cm²)	.82in² (5.3cm²)	.82in² (5.3cm²)
Spring type (12in / 30cm standard)	PS95	PS105	PS62	PS95	PS115
Standard belly band length	9in (23cm)	9in (23cm)	4.5in (11cm)	9in (23cm)	9in (23cm)
Compatible plastic swivels	375/22PS, 20PS	-	375/25PS	375/22PS	375/22PS
Compatible stainless swivels	any	any	375/25	375/22	375/D/22, 375/22
Tether tubing	-	-	-	VAHBPU-T22	VAHBPU-T22*
Compatible catheter	any	any	any	3Fr PU	3Fr PU
Harness and tether weight	12g	12g	3g	13g	17g

Applications

Mouse, infusion			●		
Rat infusion, 1 channel	●			●	
Rat infusion, 2 channel		●			●

BILE SAMPLING HARNESS FOR RATS NEW



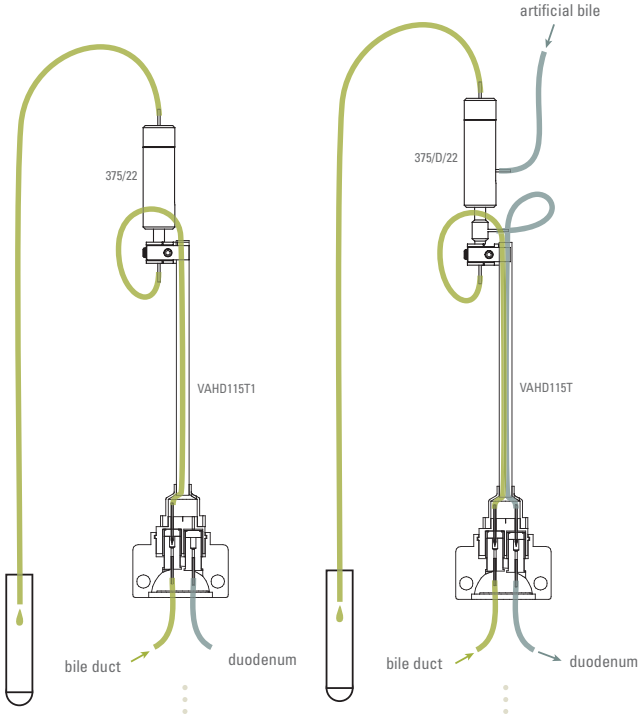
Instech's dual channel VAH™ is ideally suited for bile collection. Install the harness at the same time that 3Fr polyurethane catheters are placed in the bile duct and duodenum. Attach the VAHD115L loop connector so that bile flow, now diverted through the harness, can resume.

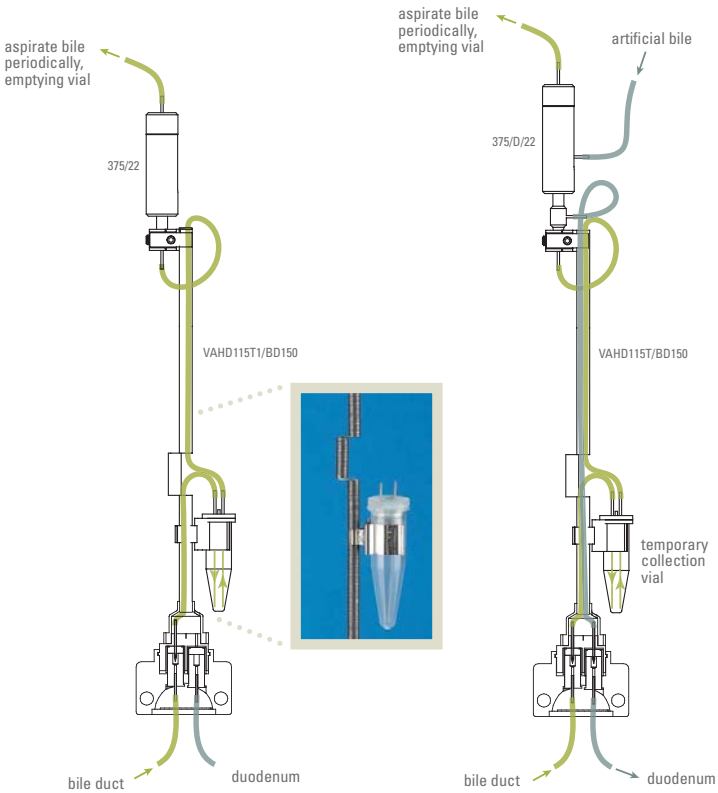
To collect bile, remove the loop connector and attach a tether in one of the four configurations shown below. Use a tether-mounted collection vial when good time resolution is needed. Bile will fill the tube at its natural rate with only two inches of head pressure to overcome. The short path length minimizes mixing. Collected bile can then be pulled out as rapidly as needed. Air pulled through behind the sample will clean the exit line for the next sample. The reservoir allows for automated bile sampling using Instech's Automated Blood Sampler.

Part No.	Description	Unit
VAHD115AB	Dual channel VAH harness	ea
VAHD115L	VAHD loop connector	ea
VAHD115T1	One channel VAHD tether	ea
VAHD115T	Two channel VAHD tether	ea
VAHD115T1/BD150	One channel VAHD tether with 1.5ml tether-mounted bile collection vial	ea
VAHD115T/BD150	Two channel VAHD tether with 1.5ml tether-mounted bile collection vial	ea

$ http://www.instechlabs.com/Infusion/tethers/bilesampling.php

For the original CIH-based bile harness, see www.instechlabs.com/Infusion/tethers/cih105bd.php





	Option 1	Option 2	Option 3	Option 4
Bile collection path	Direct	Direct	Via tether-mounted vial	Via tether-mounted vial
Volume replaced	No	Yes	No	Yes
Collection period	Short	Long	Short	Long
Time resolution	Poor	Poor	Good	Good

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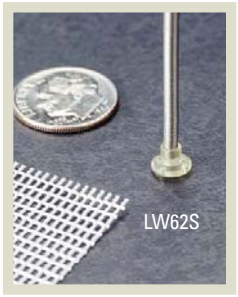
INSTECH SOLOMON

All of Instech's button tethers are based on the same design: a catheter passes through the stalk of a button which has been surgically implanted under the skin, into a stainless steel spring which protects the catheter and transmits torque to a swivel. Both standard button types have a low profile stalk that reduces stress on the sutures as the animal moves. Simply twist the spring into the button stalk to attach it; the expansion force of the spring will hold it in place. The rat tethers also include a coupler which sits about one inch above the animal, allowing the tether to be removed and reattached.

Plastic Button Tethers



These buttons are designed for short- to medium-term studies. The light-weight plastic will not cause adverse tissue reactions. They are available in a range of sizes for mice and rats. The miniature LW62 for mice includes Dacron® mesh which can be sutured onto the button to expand the attachment area and reduce strain on the incision site.

Part No.	Description	Unit
LW62S	Polysulfone button tether for mice, sterile (spring, button, Dacron® mesh)	ea
LW95S	Polysulfone button tether for rats, single catheter, sterile (spring, button, coupler)	ea
LW105S	Polysulfone button tether for rats, dual catheters, sterile (spring, button, coupler)	ea

$ http://www.instechlabs.com/Infusion/tethers/lw62.php

Dacron® Mesh Button Tethers

These disposable buttons are designed for longer-term implantation in rats. After seven to ten days the subcutaneous tissue will grow into the Dacron® mesh, making sutures redundant.

The buttons are available in two sizes: a standard lumen for one catheter and a larger lumen for two catheters. The single catheter buttons include a silicone seal for 3Fr catheters which helps reduce catheter movement and bacteria ingress. Replacement buttons are also available in bulk quantities.

Part No.	Description	Unit
DC95S	Dacron® button tether for rats, .090in lumen, sterile (spring, coupler, one button, catheter seal)	ea
DC95BS	Dacron® buttons (.090in lumen) and seals, sterile	pkg of 10
DC105S	Dacron® button tether for rats, .105in lumen, sterile (spring, coupler, one button)	ea
DC105BS	Dacron® buttons (.105in lumen), sterile	pkg of 10

$ http://www.instechlabs.com/Infusion/tethers/dc95.php

Specifications

	LW62S	LW95S	LW105S	DC95S	DC105S
Material	Polysulfone	Polysulfone	Polysulfone	Dacron® mesh Silicone	Dacron® mesh Silicone
Experiment duration (recommended)	1-30+ days	1-10 days	1-10 days	10-60+ days	10-60+ days
Clear lumen	.062in (1.6mm)	.090in (2.3mm)	.105in (2.7mm)	.090in (2.3mm)	.105in (2.7mm)
Button diameter	.250in (6.4mm)	.625in (15.9mm)	.625in (15.9mm)	1.0in (25.4mm)	1.0in (25.4mm)
Spring	12in (30cm) PS62	12in (30cm) PS95	12in (30cm) PS105	12in (30cm) PS95	12in (30cm) PS105
System weight	3.0g	7.5g	9.2g	7.2g	9.2g
Autoclavable	No	No	No	Yes	Yes

Applications

Mouse, infusion	●				
Rat infusion, 1 channel		●		●	
Rat infusion, 2 channel			●		●

HEAD BLOCK TETHERS

Instech's head block tether assemblies are designed for microdialysis on freely moving animals. They provide a solid attachment to the animal with little risk of infection. Always use a counter-balanced lever arm to remove slack and to give your animal the greatest freedom of movement.

Specifications

	M115S	MINF	MM95	MMW70
Clear lumen	.115in (2.9mm)	.070in (1.8mm)	.090in (2.3mm)	.070in (1.8mm)
Tether type	PS115 spring	looped wire	PS95 spring	looped wire
Tether length	12in (30cm)	12in (30cm)	12in (30cm)	12in (30cm)
Base width	0.2in	0.12in	0.25in	0.25in
Base height	0.8in (2cm)	0.46in (1.1cm)	0.5in (1.3cm)	0.5in (1.3cm)
System weight	10g	0.3g	7.5g	1.0g
Applications				
Rat	●		●	
Mouse		●		●

Head Block Tether for Rats

This large lumen tether can accommodate up to two standard microdialysis probes. A 3/4in (1.9cm) slotted screw is attached to the animal's skull with dental cement. A blade on the end of the spring tether slides into the screw and is secured with a knurled tubular nut.

Part No.	Description	Unit
M115S	Head block tether for rats, sterile (spring with blade, 5 slotted screws, miniature nut)	ea
M115BS	Replacement screws for M115 tether, sterile	pkg of 5
M115TS	Replacement M115 spring w/ blade, nut, no screws	pkg of 5

$ http://www.instechlabs.com/Infusion/tethers/M115.php

Head Block Tether for Mice

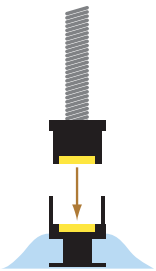
This tether uses a fine .010in diameter looped wire instead of a spring, making it lightweight and allowing it to transmit torque easily to the swivel as the mouse moves. Attach the small peg to the animal's skull with dental cement, then connect the wire by inserting it into a hole in the peg and sliding a sleeve over it. The tether includes a special slotted clamp to attach to any of Instech's 375-series swivels.

Part No.	Description	Unit
MINF	Head block tether for mice, nonsterile (looped wire, 5 pegs & sleeves, slotted swivel clamp)	ea
MPEG	Replacement pegs and sleeves for MINF tethers	pkg of 10
MCLAMP	Slotted swivel clamp for looped-wire tethers	pkg of 5

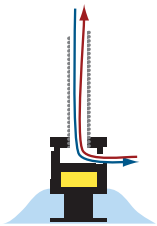
$ http://www.instechlabs.com/Infusion/tethers/MINF.php

Magnetic Head Block Tethers NEW

This new design uses magnets to connect the tether to a base that is cemented to the skull. Simply bring the two parts near each other and they will snap together. Designed for rats and mice, tethers are available with either a protective spring or a lightweight looped wire. Replacement bases are provided sterile; other components non-sterile.



Magnets couple tether to base



Tubing exits through a hole in the side of the connector

Part No.	Description	Unit
MM95	Magnetic head block with spring tether	ea
MMW70	Magnetic head block with looped wire tether, MCLAMP	ea
MMBS	Replacement magnetic head block bases, sterile	pkg of 10

$ http://www.instechlabs.com/Infusion/tethers/MM.php

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INSTECH SOLOMON

Glass Ionomer Cement for Permanent Head Attachment in Rats and Mice

This type of cement has significant advantages over the more commonly used methylmethacrylate cements. It bonds to bone, eliminating the need for bone screws in most cases. It has a much lower temperature increase during polymerization and it hardens more quickly with no noxious fumes.

The new automixing configuration includes a dispenser, two 13.3gm cartridges (80 times the volume of the single use capsules) and 44 disposable mixing tips. The cartridges have two chambers so that the components of the cement are only mixed in the tips; therefore, they do not need to be used all at once. An SOP for rodent head attachment is included.

Part No.	Description	Unit
MGIG/AKIT	Glass ionomer cement automix kit NEW (2 cartridges, 44 tips, dispenser)	ea
MGIG/ARFL	Glass ionomer cement automix refills (2 cartridges, 44 tips)	ea

$ http://www.instechlabs.com/Infusion/tethers/MGIG.php

Sold for laboratory research applications only.

Collection Tube Holders

Tether Mounted. The small end of these clips attaches to M115 head block tethers. The other end holds a standard 1/4- or 1/2-ml collection tube. This allows samples to be collected close to the animal and does not require an extra swivel channel for exiting fluid. Primarily used for multi-probe microdialysis.

Swivel Mounted. The MTUBE is most commonly used for mouse microdialysis with a one channel swivel. The bracket attaches to the rotating portion of a swivel using a set screw. A smaller set screw holds the mouse head block tether wire. Holds standard 1/4-ml collection tubes.

Part No.	Description	Unit
MCTHH	Tether-mounted holder for 1/2 ml collection tubes	pkg of 5
MCTHQ	Tether-mounted holder for 1/4 ml collection tubes	pkg of 5
MTUBE	Swivel-mounted holder for 1/4 ml collection tubes	ea

$ http://www.instechlabs.com/Infusion/tethers/tubeholders.php

SOLOCATH™ CATHETERS

Instech Solomon has over 20 years experience designing and manufacturing laboratory animal catheters. This expertise translates into dependable designs, high-quality manufacturing and strong technical support.

A vital feature of an Instech Solomon finished catheter is the rounded distal tip. Data suggest the rounded tip is less traumatic to the intimal lining of blood vessels. Square cut or bevel cut catheters have edges which irritate the blood vessel's intimal lining, hastening the host's thrombogenic response.

SoloCath catheters are available in silicone, polyurethane or heparin-coated polyurethane and in sizes for mice to large animals. Most catheter models include moveable suture bulbs as a standard feature, and many other options are available on a customized basis.

Specifications

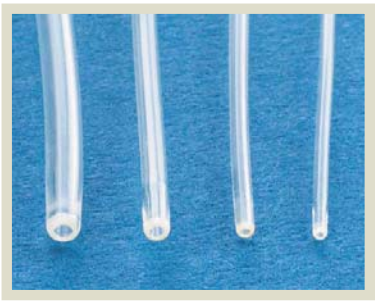
Silicone		2Fr	3Fr	3.5Fr	5Fr	7Fr
OD (inches)		.025	.037	.047	.065	.085
ID (inches)		.012	.020	.025	.030	.040
OD (mm)		0.64	0.94	1.19	1.65	2.16
ID (mm)		0.30	0.51	0.64	0.76	1.02
PU / CBAS	**1.2Fr[1]**	**2Fr**	**3Fr**	**3.5Fr**	**5Fr**	**7Fr**
OD (inches)	.016	.025	.036	.047	.065	.096
ID (inches)	.009	.013	.023	.027	.040	.052
OD (mm)	0.41	0.64	0.91	1.19	1.65	2.43
ID (mm)	0.23	0.33	0.58	0.69	1.02	1.32

Applications

Mouse	●	●				
Rat <100g	●	●				
Rat 100-200g		●				
Rat 200-300g		●	●			
Rat 300-350g			●	●		
Cat				●	●	
Rabbit				●	●	●
Dog >8kg					●	●
Mini-Pig, adult					●	●
Pig, adult						●
NHP <1kg			●			
NHP 1-2kg				●		
NHP >2kg				●	●	

Catheter application guide approximate for jugular v, carotid a, femoral a/v.
[1] 1.2Fr indicates dimensions of distal end of PU FunnelCath.

Polyurethane Catheters



Polyurethane has supplanted silicone as the catheter material of choice for chronic vascular access because of its ease of insertion, durability and biocompatibility. Unless otherwise indicated, PU catheters are clear with rounded tips, two moveable suture bulbs and attachment sleeve (no depth markings). Individually packaged and EtO sterilized. Minimum order quantity is 5 pieces.

Part No.	Description	Unit
PU-C20	2 French, 60 cm, no luer	ea
PU-C30	3 French, 60 cm, no luer	ea
PU-C35	3.5 French, 60 cm, no luer	ea
PU-C50	5 French, 60 cm, no luer	ea
PU-C70	7 French, 60 cm, no luer	ea

$ http://www.instechlabs.com/Infusion/catheters/PU.php

CBAS® Heparin-Coated Polyurethane Catheters

Consider using CBAS® heparin-coated catheters for improved patency in long-duration studies, blood sampling applications, and when working with high-value animals. CBAS (Carmeda BioActive Surface) is a patented process from Carmeda AB, a W.L. Gore company, for applying heparin to the surfaces of biomaterials. The active sequence of the heparin molecule serves to halt the clotting cascade.

CBAS has been used in a number of medical device applications including coronary stents (Cordis/J&J), vascular grafts (Gore), oxygenator circuits (Medtronic), artificial hearts, and others.

CBAS FEATURES

- Heparin bound to catheter – non-leaching
- Remains bioactive for months
- Provided EtO sterilized (do not resterilize)
- Available on polyurethane catheters only

CBAS is the most respected thromboresistant coating available in the human-use medical device industry. It is under license to Solomon Scientific for laboratory animal research applications.

Documented Performance. Foley et al describe longer patency and fewer positive blood cultures from CBAS-coated catheters in rats.[1] While heparin is not antimicrobial per se, it does reduce the aggregation of blood proteins on catheters, thereby minimizing the nutrients and binding sites for many microorganisms. Appelgren et al demonstrated a substantial reduction in infections from CBAS-coated catheters in humans.[2]

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Longevity. Functional CBAS was detected on the following devices after explantation:

Pig aorta catheter	112 days[3]
Human heart pump	855 days[4]
Dog vascular graft	84 days[5]

Non-Blood Applications. CBAS has also shown benefits in ophthalmic, urinary, lymphatic and intraperitoneal applications. For example, Zareie describes improved patency of intraperitoneal catheters coated with CBAS (80% catheter survival in rats at 5 weeks with CBAS coated catheters, versus 43% with uncoated silicone; $p<0.05$).[6]

CBAS catheters are clear with rounded tips, two moveable suture bulbs and attachment sleeve (no depth markings). The 2Fr size is not available with the CBAS coating. Individually packaged and EtO sterilized. Minimum order is 5 pieces.

Part No.	Description	Unit
CBAS-C30	3 French, 60 cm, no luer	ea
CBAS-C35	3.5 French, 60 cm, no luer	ea
CBAS-C50	5 French, 60 cm, no luer	ea
CBAS-C70	7 French, 60 cm, no luer	ea

$ http://www.instechlabs.com/Infusion/catheters/CBAS.php

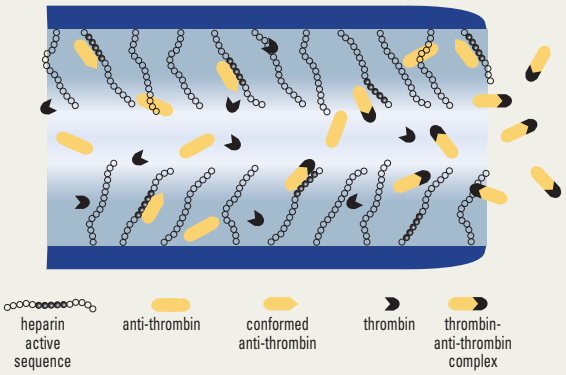
Silicone Catheters

Silicone is the old standard for long-term indwelling central venous catheters in laboratory animals and humans due to its softness and biocompatibility. Unless otherwise indicated, SIL catheters are clear with rounded tips, two moveable suture bulbs, and depth markings. Individually packaged and EtO sterilized. Minimum order quantity is 5 pieces.

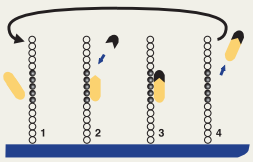
Part No.	Description	Unit
SIL-C20	2 French, 60 cm, no luer, no depth markings	ea
SIL-C30	3 French, 60 cm, no luer	ea
SIL-C35	3.5 French, 60 cm, female luer	ea
SIL-C50	5 French, 60 cm, female luer	ea
SIL-C70	7 French, 60 cm, female luer	ea

$ http://www.instechlabs.com/Infusion/catheters/silicone.php

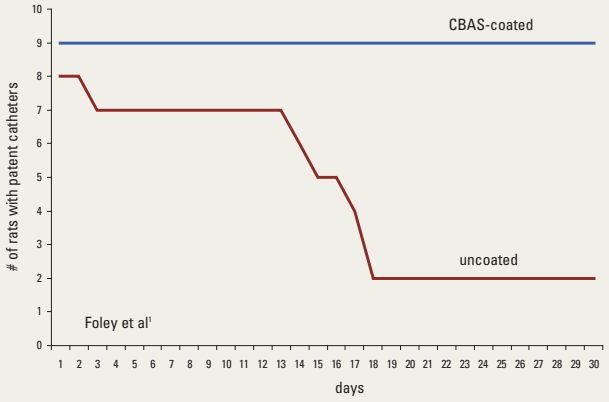
HOW CBAS WORKS



1. CBAS heparin active sequence is available to bind with antithrombin.
2. Antithrombin conforms to accelerate binding with thrombin and other coagulation factors.
3. Coagulation effect of thrombin is neutralized by formation of thrombin-antithrombin complex.
4. Thrombin-antithrombin complex washes away. CBAS heparin "active sequence" remains intact and is available repeatedly to bind with antithrombin.



PERFORMANCE OF CBAS VS. UNCOATED CATHETERS IN RATS



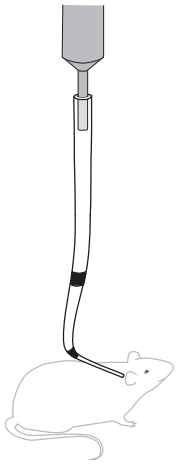
CBAS Bibliography

1. Foley P, et al. Effect of covalently bound heparin coating on patency and biocompatibility of long-term indwelling catheters in the rat jugular vein. Comparative Medicine. 52:243-8.
2. Appelgren P, et al. Surface heparinization of central venous catheters reduces microbial colonization in vitro and in vivo: results from a prospective, randomized trial. Crit Care Med. 24(9):1482-9. 1996.
3. Arnander C, et al. Long-term stability in vivo of a thromboresistant heparinized surface. Biomaterials. 8:496-9. 1987.
4. Riesenfeld R, et al. Analysis of the heparin coating of EXCOR® ventricular assist device after 855 days in a patient. Transactions of the 32nd Annual Meeting of the Society for Biomaterials. 2007.
5. Begovac P, et al. Improvements in GORE-TEX® [WL Gore & Associates] vascular graft performance by Carmeda BioActive Surface heparin immobilization. Eur J Vasc Endovasc Surg. 25:432-7. 2003.
6. Zareie M, et al. Improvement of a chronic rat model for peritoneal dialysis by using heparin-coated catheters. Advances in Peritoneal Dialysis. 20:150-4. 2004.

SOLOCATH™ CATHETERS

FunnelCath™ Mouse Catheter

The FunnelCath solves a common problem in mouse infusion: attaching a tiny intravascular catheter to conventional swivels or luer stubs.



Attach a 1.2Fr catheter directly to a 22 or 25ga swivel

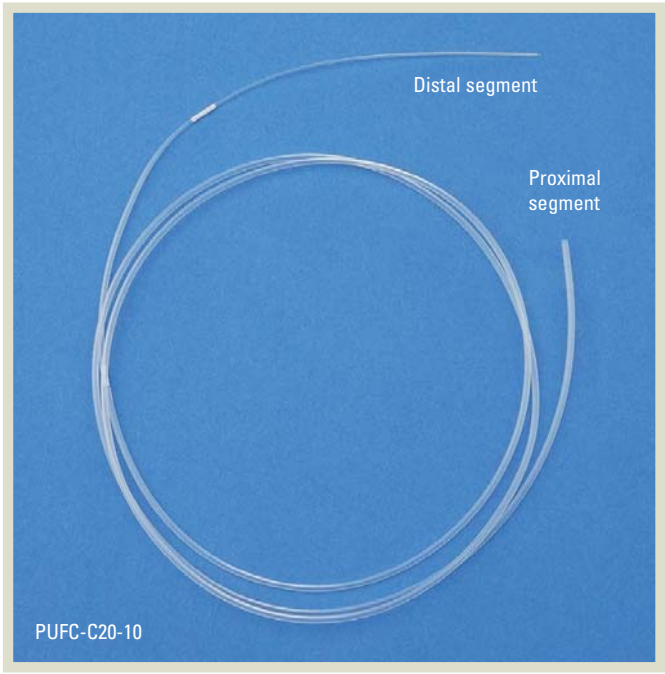
Previously there were two ways of tapering a larger catheter down to a smaller catheter. The first was to "pull down" (stretch) tubing using either an open flame or heated oil. This method was cumbersome and yielded inconsistent results. The second was to bond a smaller catheter to a larger catheter, but this was vulnerable to breakage and leakage. In contrast, FunnelCaths are tapered during the extrusion process, so it is seamless and consistent, catheter to catheter, batch to batch.

FunnelCaths are extruded from the same implant-grade polyurethane used in our SoloCaths, though a bit stiffer to facilitate placement in mice. Instech Solomon offers two sizes: the first has a proximal end that connects to a 25ga swivel and tapers down to a 1.2 French intravascular segment; the second connects to a 22ga swivel and also tapers down to 1.2 French.

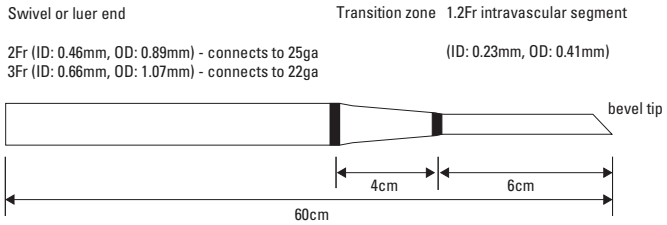
Provided EtO sterilized. Minimum order quantity is 5 pieces.

Part No.	Description	Unit
PUFC-C20-10	Polyurethane catheter, tapers from 2Fr to 1.2Fr	ea
PUFC-C30-10	Polyurethane catheter, tapers from 3Fr to 1.2Fr	ea

$ http://www.instechlabs.com/Infusion/catheters/funnel.php



Specifications



Silicone Gastro-Intestinal Catheter

This special 7Fr catheter includes a suture disk so that it can be anchored to the intestines. The internal lumen is sealed at the tip. A slit valve, which is normally closed to prevent occlusion from ingesta, opens during an infusion.

Part No.	Description	Unit
SIL-INT-C70	GI catheter, 7Fr, slit valve, suture disk @ 2.5cm	ea

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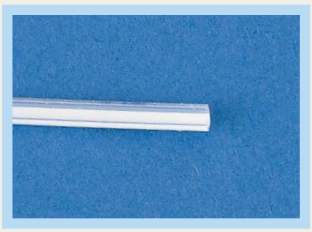
INSTECH SOLOMON

Catheter Customization

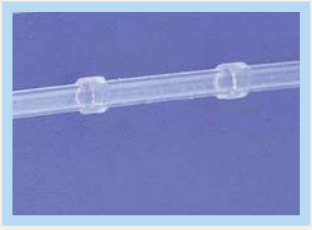
STANDARD*

Distal tip
Rounded (recommended)

Attachments
None



Modifications
Moveable suture bulbs

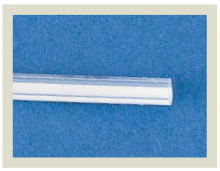


* Unless otherwise indicated in catheter description.

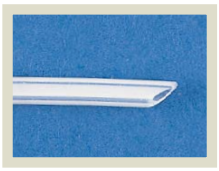
To define a custom catheter, see:
www.instechlabs.com/Infusion/catheters/customcatheter.php

ALTERNATIVES

Squared tip



Beveled tip



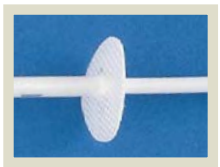
Luer – pre-attached or attachable

Port – pre-attached or attachable

Fixed suture bulbs

Suture flange to anchor in tissue

Suture disk to anchor in intestines, bladder, etc.



Dacron® felt for tissue ingrowth

Perfusion holes for catheters in organs

Sleeve for securement and strain relief

Port boot for securement and strain relief

SOLOPORT™ SUBCUTANEOUS ACCESS PORTS

The SoloPort represents over twenty years of experience in port design, service, innovation, and hands-on use in research. The port has evolved from an intravascular access port into a multi-purpose access port for intestinal, biliary, spinal, cranial, ventricular, and other applications.

SoloPorts come in a variety of configurations for most species and catheter sizes, including the MICRO, the smallest top-access mouse port available. The ports are made from the highest quality biomaterials. The MICRO is made of stainless steel; the MIN and MID sizes are available in either titanium or plastic; the MAX is made of titanium.

Each port includes a catheter which can be pre-attached by Instech Solomon or, for 3Fr and larger, attached intraoperatively by the surgeon. SoloPort catheters are also available with CBAS® heparin coating for optimal hemocompatibility.

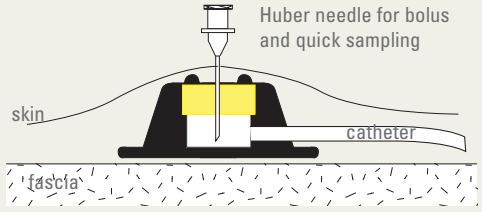
WHY USE A PORT?

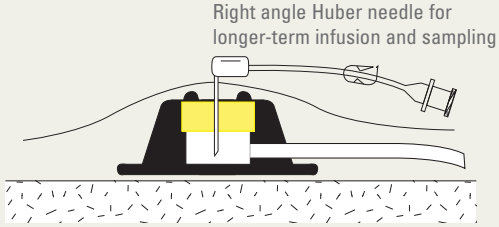
Ports are totally implanted catheter devices which do not exit through the animal's skin. There is little concern about the animal disturbing the port, thereby obviating the need for a jacket or other protective apparatus. Because there is no chronic exit site wound, infection risks associated with ports are considerably lower than with external catheters. The use of ports has provided many new research opportunities, and it represents a refined technique which has reduced animal use and minimized stress.

PORT ADVANTAGES

- Decreased infections
- No externalized components
- Jacket/harness not required
- Permits common housing

The port was originally intended for intermittent bolus infusions and periodic sampling and access, but it is now widely used in protracted and continuous infusions.

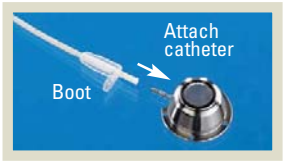


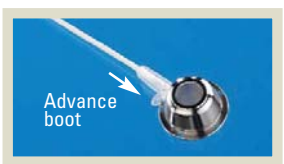


SOLOPORT™ FEATURES

Attachable Catheter Option. Generally preferred because the catheter can be tunneled from the vessel to the port pocket during surgery and the proximal end can be trimmed to size, preserving the rounded distal tip.

Pre-attached Catheter Option. Requires one less step during surgery, eliminating some risk of user error, but the catheter can be trimmed from the distal end only. The 1Fr and 2Fr catheters must be pre-attached.





Securement Boot. Titanium SoloPorts and PMIDs with attachable catheters include a molded silicone rubber securement boot for strain relief, a feature common in human-use ports. Boots are supplied to match the catheter size. The boot offers an improvement over the old attachment sleeve as it is easier to grip and move, and it provides greater compression.

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INSTECH SOLOMON

Specifications

	MICRO	PMIN	MIN	PMID	MID	MAX
Body material	stainless steel	polysulfone	titanium	polysulfone	titanium	titanium
Height	.175in (4.4mm)	.275in (7.0mm)	.275in (7.0mm)	.395in (10.0mm)	.395in (10.0mm)	.460in (11.7mm)
Weight	1.4g	2.6g	2.9g	3.1g	6.7g	10.4g
Dead volume	.03ml	.13ml	.13ml	.38ml	.38ml	.65ml
Catheter sizes	1.2Fr	2-7Fr	3-7Fr	3-7Fr	3-7Fr	3-7Fr
Sterilization	EtO	EtO, steam[1]	EtO, steam[1]	EtO, steam[1]	EtO, steam[1]	EtO, steam[1]

Applications

Mouse	●					
Rat		●				
Ferret		●	●			
Rabbit				●	●	
NHP (<4kg)			●			
NHP (>4kg)				●	●	
Dog (<14kg)				●	●	
Dog (>14kg)				●	●	●
Pig						●

Ordering Information

CBAS Heparin-Coated PU (attachable)		PMINA-CBAS-C30 PMINA-CBAS-C35 PMINA-CBAS-C50 PMINA-CBAS-C70	MINA-CBAS-C30 MINA-CBAS-C35 MINA-CBAS-C50 MINA-CBAS-C70	PMIDA-CBAS-C30 PMIDA-CBAS-C35 PMIDA-CBAS-C50 PMIDA-CBAS-C70	MIDA-CBAS-C30 MIDA-CBAS-C35 MIDA-CBAS-C50 MIDA-CBAS-C70	MAXA-CBAS-C30 MAXA-CBAS-C35 MAXA-CBAS-C50 MAXA-CBAS-C70
Polyurethane (attachable)		PMINA-PU-C30 PMINA-PU-C35 PMINA-PU-C50 PMINA-PU-C70	MINA-PU-C30 MINA-PU-C35 MINA-PU-C50 MINA-PU-C70	PMIDA-PU-C30 PMIDA-PU-C35 PMIDA-PU-C50 PMIDA-PU-C70	MIDA-PU-C30 MIDA-PU-C35 MIDA-PU-C50 MIDA-PU-C70	MAXA-PU-C30 MAXA-PU-C35 MAXA-PU-C50 MAXA-PU-C70
Silicone (attachable)		PMINA-SIL-C30 PMINA-SIL-C35 PMINA-SIL-C50 PMINA-SIL-C70	MINA-SIL-C30 MINA-SIL-C35 MINA-SIL-C50 MINA-SIL-C70	PMIDA-SIL-C30 PMIDA-SIL-C35 PMIDA-SIL-C50 PMIDA-SIL-C70	MIDA-SIL-C30 MIDA-SIL-C35 MIDA-SIL-C50 MIDA-SIL-C70	MAXA-SIL-C30 MAXA-SIL-C35 MAXA-SIL-C50 MAXA-SIL-C70
Silicone Intestinal (attachable)					MIDA-SIL-C70-INT	MAXA-SIL-C70-INT
CBAS Heparin-Coated PU (pre-attached)		PMINP-CBAS-C30 PMINP-CBAS-C35 PMINP-CBAS-C50 PMINP-CBAS-C70	MINP-CBAS-C30 MINP-CBAS-C35 MINP-CBAS-C50 MINP-CBAS-C70	PMIDP-CBAS-C30 PMIDP-CBAS-C35 PMIDP-CBAS-C50 PMIDP-CBAS-C70	MIDP-CBAS-C30 MIDP-CBAS-C35 MIDP-CBAS-C50 MIDP-CBAS-C70	MAXP-CBAS-C30 MAXP-CBAS-C35 MAXP-CBAS-C50 MAXP-CBAS-C70
Polyurethane (pre-attached)	MICP-PU-C10[2]	PMINP-PU-C30 PMINP-PU-C35 PMINP-PU-C50 PMINP-PU-C70	MINP-PU-C30 MINP-PU-C35 MINP-PU-C50 MINP-PU-C70	PMIDP-PU-C30 PMIDP-PU-C35 PMIDP-PU-C50 PMIDP-PU-C70	MIDP-PU-C30 MIDP-PU-C35 MIDP-PU-C50 MIDP-PU-C70	MAXP-PU-C35 MAXP-PU-C50 MAXP-PU-C70
Silicone (pre-attached)		PMINP-SIL-C20[2] PMINP-SIL-C30 PMINP-SIL-C35 PMINP-SIL-C50	MINP-SIL-C30 MINP-SIL-C35 MINP-SIL-C50 MINP-SIL-C70	PMIDP-SIL-C30 PMIDP-SIL-C35 PMIDP-SIL-C50 PMIDP-SIL-C70	MIDP-SIL-C30 MIDP-SIL-C35 MIDP-SIL-C50 MIDP-SIL-C70	MAXP-SIL-C30 MAXP-SIL-C35 MAXP-SIL-C50 MAXP-SIL-C70

Catheters feature rounded distal tip unless otherwise noted. C10=1Fr, C20=2Fr, C30=3Fr, C35=3.5Fr, C50=5Fr, C70=7Fr.
[1]CBAS® and PU catheters can be sterilized only by EtO at Instech Solomon. [2]Catheter has a bevel tip. SoloPort is a trademark of Solomon Scientific.

$ http://www.instechlabs.com/Infusion/ports/

PORTHOLD™ SUBCUTANEOUS ACCESS PORTS NEW

PORTHOLD™ The problem of needle dislodgement from ports is as old as ports themselves. In studying the problem, we discovered that it is the lateral forces, such as the jacket rubbing over the needle, or the animal rubbing against cage bars, that cause most needle dislodgements.

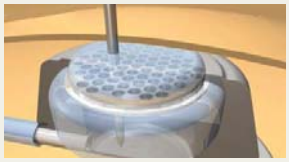
Our solution is the PortHold™. The patent-pending technology involves a titanium plate with an array of precision holes, which is molded into the septum. Access the port with a non-coring needle in a manner similar to that used with standard ports. The needle slides easily through the holes. However, when lateral forces tug on the needle, the plate holds it in place.

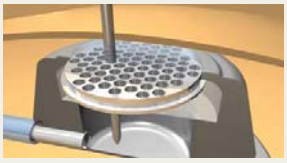
The ports have performed well in dogs and nonhuman primates during long-term ambulatory infusions.

Part No. 3.5Fr cath	5Fr catheter	7Fr catheter	Description
HMIDA-PU-C35	HMIDA-PU-C50	HMIDA-PU-C70	MID PortHold™ with attachable PU catheter x 60cm
HMIDA-CBAS-C35	HMIDA-CBAS-C50	HMIDA-CBAS-C70	MID PortHold™ with attachable CBAS® catheter x 60cm
HMIDA-SIL-C35	HMIDA-SIL-C50	HMIDA-SIL-C70	MID PortHold™ with attachable SIL catheter x 60cm

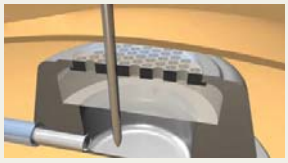
$ http://www.instechlabs.com/Infusion/ports/porthold.php

THE HOLES HOLD TO PREVENT NEEDLE DISLODGMENT





The PortHold design is identical to a conventional port with the exception of a 1mm thick titanium plate molded into the silicone septum.



Each septum hole is just slightly larger than the 22ga pencil point needle used to access it. When the needle is tugged to the side, the plate edges grab it, as shown in this exaggerated view.

Specifications

Body and plate material	Titanium
Height	0.395in (10.0mm)
Weight	6.9g
Dead volume	0.38ml
Catheter sizes	3.5-7 Fr
Sterilization	EtO, steam[1]

[1] CBAS and PU cathers can be sterilized by EtO only.

PortHold™ Non-Coring Needle Sets

The tips of these needles sets are specially designed to access Instech Solomon's PortHold™ ports. The sets include PVC tubing, a female luer and a mini-clamp. The SOFTEE™ hub is designed to increase animal comfort and improve grip. Use the SN22 needle (opposite page) for direct flushing with a syringe.

Part No.	Needle Size	Needle Length	Tubing Length
HSRA22563-6	22ga	9/16" (1.4cm)	6" (15cm)
HSRA22563-12	22ga	9/16" (1.4cm)	12" (30cm)
HSRA22625-6	22ga	5/8" (1.6cm)	6" (15cm)
HSRA22625-12	22ga	5/8" (1.6cm)	12" (30cm)

Provided sterile in packages of 12. Sets include female luer and mini-clamp.

$ http://www.instechlabs.com/Infusion/ports/pencil.php

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INSTECH SOLOMON