



# CADENCE SCIENCE®

ISO 13485 | ISO 9001

ANIMAL FEEDING NEEDLES | SYRINGES  
NEEDLES | STOPCOCKS | ADAPTERS  
RAPID TUBING & WIRE | CUSTOM SOLUTIONS



**CADENCE  
SCIENCE**

CADENCEINC.COM



PRECISION FLUID DELIVERY SOLUTIONS FOR:

ANALYTICAL  
CLINICAL/MEDICAL  
DIAGNOSTIC

VETERINARY  
GENOMICS  
PHARMACOLOGY

LABORATORY  
ENVIRONMENTAL  
INDUSTRIAL

WHEN FLUID PRECISION IS THE ONLY DECISION, CADENCE SCIENCE® DELIVERS!

# CADENCE SCIENCE®

## ANIMAL FEEDING NEEDLES | PG 4



Flexible Plastic (PTFE) - *New With Bite Protectors* | Flexible Plastic (PTFE)  
| Malleable Stainless Steel | Non-Flexible Reusable Stainless Steel

## SYRINGES | PG 12



Interchangeable | Match Numbered | Tuberculin (Mini) | Jumbo | Eccentric Tip  
| Pressure Control | Dissolved Gas Analysis (DGA) | Evacuating (Toomey)  
| Robb-Type Angiography | Irrigating (Plungerless Asepto) | Pipetting

## NEEDLES | PG 22



Hypodermic | Pipetting | Deflected Point | Veterinary | Matched Point  
| Specialty | Cannula | Configure-to-Order Needles

## STOPCOCKS & ADAPTERS | PG 36



1 & 3 Way Stopcocks | Spring Clip Stopcocks | Luers | Threaded (NPT & UTS)  
| Bulkhead | Tubing Connectors | Manifolds

## RAPID TUBING & WIRE | PG 50



Hypodermic Tubing | Capillary Tubing | Stainless Steel Wire

## CUSTOM SOLUTIONS | PG 56

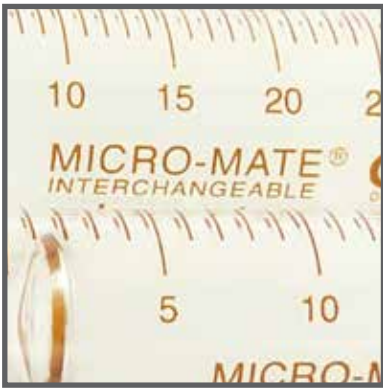


Customized Catalog Products | Surgical Devices  
| Specialty Blades & Needles



**Perfektum®**

Perfektum® glass syringes are matched numbered syringes. They feature frosted individually lapped barrels and plungers which can withstand higher temperatures. These syringes have matching serial numbers on mating barrels and plungers.



**Micro-Mate®**

Micro-Mate® interchangeable syringes represent the perfect mating of barrels and plungers.

Micro-Mate® also represents our custom type of hub that is designed and manufactured to reduce the stripping of threads which occurs when metal adapters are mated with plastic adapters.



**The Popper® Needle Brand**

Cadence, Inc. created the **Cadence Science®** brand following the acquisition of Popper and Sons in 2008. The Popper® brand name is no longer used, but the tradition of needle excellence that began in 1922 continues in every product that we make.






The **Cadence Science®** brand represents the finest products for the life science market. Cadence, Inc. created the **Cadence Science®** brand following the acquisition of Popper and Sons in 2008.

Cadence, Inc. is a manufacturer of custom and standard precision fluid handling components and fluid movement systems for lab testing and dispensing applications in multiple business segments including, genomics, life sciences, pharmacology, environmental science, and numerous industrial businesses.

Cadence has over 90 years of experience in making custom probes and needles with extensive and flexible manufacturing capabilities. This enables Cadence to provide consistent, high quality customized products under the **Cadence Science®** brand.

# ANIMAL FEEDING NEEDLES

ANIMAL  
FEEDING



**THE CADENCE SCIENCE®  
BRAND OF ANIMAL FEEDING  
NEEDLES REPRESENTS THE  
LARGEST SELECTION OF ANIMAL  
FEEDING NEEDLES IN THE INDUSTRY.**

**Our technical staff is available for consultation and recommendations  
for current products or custom requirements.**

**Cadence Science®** needles are designed to meet the special needs of pharmacologists, toxicologists, pathologists, and other biomedical researchers working with laboratory animals.

To prevent cross infection and for maximum convenience, laboratories using **Cadence Science®** Animal Feeding Needles, now have four options:

- **Flexible Plastic (PTFE) Needles - *New with Bite Protectors* (Disposable)**
- **Flexible Plastic (PTFE) Needles (Disposable)**
- **Malleable Stainless Steel Needles (Disposable)**
- **Non-Flexible Stainless Steel Needles (Reusable)**

# ANIMAL FEEDING NEEDLES

## Disposable and Sterile Animal Feeding Needles

**Cadence Science®** disposable animal feeding needles were developed for animal use only to satisfy the demands of those researchers who require a single use needle for critical applications. The **Cadence Science®** high standards of quality are combined with the convenience of a disposable sterile product to provide outstanding value.

### Disposable and Sterile Needle Styles:

Flexible Plastic (PTFE) Needles - *New with Bite Protectors* (Disposable), Flexible Plastic (PTFE) Needles (Disposable) and Malleable Stainless Steel Needles (Disposable).



# ANIMAL FEEDING NEEDLES

ANIMAL FEEDING

## Flexible Plastic (PTFE) Needles - *New with Bite Protectors (Disposable)*

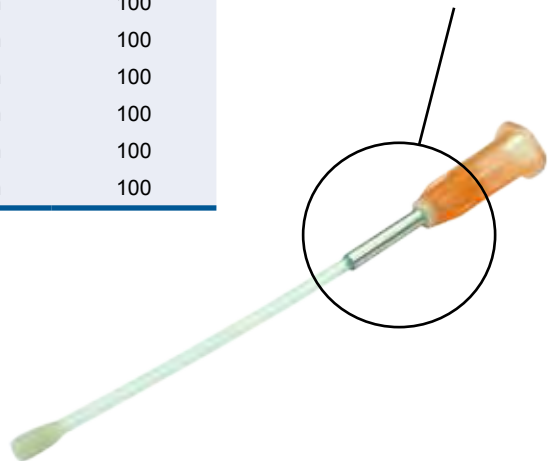
- Flexible Plastic (PTFE) tube is covered at the hub end with 304 stainless steel tubing – this protects tubing from damage due to biting during use
- Plastic (PTFE) tube is softer than other tubing types, very flexible, and translucent for easy confirmation of reagent delivery
- Plastic luer hubs and soft silicone tips
- Non-toxic and non-pyrogenic
- Packaged 5 needles per sterile peel pouch - 20 pouches per box



## Sterile Flexible Plastic (PTFE) Needles - *New With Bite Protectors (Disposable)*

Cat No.	Needle Style Material	Gauge X Length	Ball Diameter	Pack Size
9928B		18G X 1.5"	2.0mm	100
9923B		18G X 2"	2.0mm	100
9924B		18G X 3"	2.0mm	100
9922B	Flexible Plastic (PTFE)	17G X 2"	2.4mm	100
9926B	PTFE Plastic w/ SS Bite Protector	17G X 3.3"	2.4mm	100
9925B		15G X 3.1"	2.8mm	100
9927B		15G X 3.9"	2.8mm	100

**New With Bite Protector**





# ANIMAL FEEDING NEEDLES

## Flexible Plastic (PTFE) Needles (Disposable)

- Plastic (PTFE) tube is softer than other tubing types, very flexible, and translucent for easy confirmation of reagent delivery
- Plastic luer hubs and soft silicone tips
- Non-toxic and non-pyrogenic
- Packaged 5 needles per sterile peel pouch - 20 pouches per box



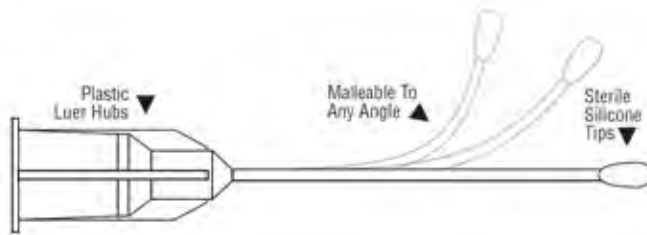
## Sterile Flexible Plastic (PTFE) Needles (Disposable)

Cat No.	Needle Style Material	Gauge X Length	Ball Diameter	Pack Size
9931	Flexible Plastic (PTFE) PTFE Plastic	20G X 1.2"	1.9mm	100
9920		20G X 1.5"	1.9mm	100
9932		18G X 1"	2.0mm	100
9933		18G X 1.2"	2.0mm	100
9928		18G X 1.5"	2.0mm	100
9923		18G X 2"	2.0mm	100
9924		18G X 3"	2.0mm	100
9922		17G X 2"	2.4mm	100
9926		17G X 3.3"	2.4mm	100
9925		15G X 3.1"	2.8mm	100
9927		15G X 3.9"	2.8mm	100
9929		14G X 4.3"	2.9mm	100
9930		14G X 4.7"	2.9mm	100

# ANIMAL FEEDING NEEDLES

## Malleable Stainless Steel Needles (Disposable)

- Designed to enable the researcher to shape the needles to his/her specific needs
- All needles come straight and are easily bent to any desired shape
- Featuring type 304 stainless steel tubing
- Plastic luer hubs
- Silicone tips for smoothest possible insertion
- Non-toxic and non-pyrogenic
- Packaged 5 needles per sterile peel pouch - 20 pouches per box



## Sterile Malleable Stainless Steel Needles (Disposable)

Cat No.	Needle Style Material	Gauge X Length	Ball Diameter	Pack Size
9921		20G X 1.5"	1.9mm	100
9916		20G X 2.8"	1.9mm	100
9918	Malleable	18G X 2"	2.3mm	100
9917	304 Stainless Steel	18G X 3.1"	2.3mm	100
9915		15G X 3"	2.9mm	100
9919		15G X 3.7"	2.9mm	100

# ANIMAL FEEDING NEEDLES

## Non-Flexible Stainless Steel Needles (Reusable)

We also offer a wide variety of straight and curved animal feeding needles from 12 gauge to 24 gauge stainless tubing and from 1" to 4" in length. The precision assembly of stainless steel balls and type 304 stainless steel tubing ensures a quality needle suited for feeding and dosing without injury to sensitive tissues.

Features:

- Fixed shape from stainless steel tubing
- Stainless steel balls
- Can be cleaned and re-used as needed
- Packaged and sold in dozen quantity non-sterile



## Non-Flexible Stainless Steel Needles (Reusable)

Cat No.	Needle Style Material	Gauge X Length	Ball Diameter	Pack Size
7900		24G X 1"	1.25mm	12
7901		22G X 1"	1.25mm	12
7920		22G X 1.5"	1.25mm	12
7921		20G X 1"	2.25mm	12
7902		20G X 1.5"	2.25mm	12
7903		20G X 3"	2.25mm	12
7922	Non-Flexible - Straight 304 Stainless Steel	18G X 1"	2.25mm	12
7904		18G X 1.5"	2.25mm	12
7905		18G X 2"	2.25mm	12
7906		18G X 3"	2.25mm	12
7923		16G X 2"	3mm	12
7908		16G X 3"	3mm	12
7909		14G X 3"	4mm	12
7924		13G X 3"	4mm	12
7910	Non-Flexible - Curved 304 Stainless Steel	20G X 1.5"	2.25mm	12
7911		20G X 3"	2.25mm	12
7912		18G X 1.5"	2.25mm	12
7913		18G X 2"	2.25mm	12
7914		18G X 3"	2.25mm	12
7915		16G X 2"	3mm	12
7916		16G X 3"	3mm	12
7946		16G X 4"	3mm	12
7917		14G X 3"	4mm	12
7919		12G X 3.5"	6.25mm	12



# ANIMAL FEEDING NEEDLES

## Animal Feeding Guide

ANIMAL FEEDING

Species	Weight Range	Gauge	Length	Ball Diameter	Disposable	Reusable
Mice	Up to 14 g	24G	1"	1.25 mm		Straight: 7900
	15-20 g	22G	1" - 1.5"	1.25 mm		Straight: 7901, 7920
	20-25 g	20G	1" - 3"	1.9 - 2.25 mm	Malleable: 9921, 9916 Flexible Plastic (PTFE): 9931, 9920	Straight: 7921, 7902, 7903 Curved: 7910, 7911
	25-30 g	18G	1" - 2"	2.0 - 2.3 mm	Malleable: 9918 Flexible Plastic (PTFE): 9932, 9933, 9928, 9923 w/ SS Bite Protector: 9928B, 9923B	Straight: 7922, 7904, 7905 Curved: 7912, 7913
	30-35 g	18G	2" - 3.1"	2.0 - 2.3 mm	Malleable: 9917 Flexible Plastic (PTFE): 9923, 9924 w/ SS Bite Protector: 9923B, 9924B	Straight: 7905, 7906 Curved: 7913, 7914
Rats	50-75 g	20G	1" - 3"	1.9 - 2.25 mm	Malleable: 9921 Flexible Plastic (PTFE): 9931, 9920	Straight: 7921, 7902 Curved: 7910
	75-120 g	18G	1" - 1.5"	2.0 - 2.25 mm	Flexible Plastic (PTFE): 9932, 9933, 9928 w/ SS Bite Protector: 9928B	Straight: 7922, 7904 Curved: 7912
	100-200 g	18G	2" - 3.1"	2.0 - 2.3 mm	Malleable: 9918, 9917 Flexible Plastic (PTFE): 9923, 9924, 9928 w/ SS Bite Protector: 9923B, 9924B, 9928B	Straight: 7905, 7906 Curved: 7913, 7914,
		17G	1" - 3.3"	2.4 mm	Flexible Plastic (PTFE): 9922, 9926 w/ SS Bite Protector: 9922B, 9926B	
		16G	2" - 3"	3.0 mm		Straight: 7923, 7908 Curved: 7915, 7916
	150-300 g	16G - 15G	3" - 4"	2.8 - 3.0 mm	Malleable: 9915, 9919 Flexible Plastic (PTFE): 9925, 9927 w/ SS Bite Protector: 9925B, 9927B	Straight: 7908 Curved: 7916, 7946
	200-350 g	14G - 13G	3" - 5"	2.9 - 4.0 mm	Flexible Plastic (PTFE): 9929, 9930	Straight: 7909, 7924 Curved: 7917

Note: g=grams, kg=kilograms

# ANIMAL FEEDING NEEDLES

## Animal Feeding Guide (Continued)

Species	Weight Range	Gauge	Length	Ball Diameter	Disposable	Reusable
Hamsters	60-200 g	18G	1.5" - 2"	2.25 - 2.3 mm	Malleable: 9918 Flexible Plastic (PTFE): 9928 w/ SS Bite Protector: 9928B	Straight: 7905 Curved: 7913
	250-300 g	18G	1.5" - 2"	2.0 - 2.3 mm	Malleable: 9918 Flexible Plastic (PTFE): 9928, 9923 w/ SS Bite Protector: 9928B, 9923B	Straight: 7904, 7905 Curved: 7912, 7913
Guinea Pigs		350-450 g	17G	2" - 3.3"	2.4 mm	Flexible Plastic (PTFE): 9922, 9926 w/ SS Bite Protector: 9922B, 9926B
	16G - 15G		3" - 4"	2.8 - 3.0 mm	Malleable: 9915, 9919 Flexible Plastic (PTFE): 9925, 9927 w/ SS Bite Protector: 9925B, 9927B	
	400-600 g	14G - 13G	3" - 5"	2.9 - 4.0 mm	Flexible Plastic (PTFE): 9929, 9930	Straight: 7909, 7924 Curved: 7917
Rabbits	1-3 kg	16G - 15G	3" - 4"	2.8 - 3.0 mm	Malleable: 9915, 9919 Flexible Plastic (PTFE): 9925, 9927 w/ SS Bite Protector: 9925B, 9927B	Straight: 7908 Curved: 7916, 7946
Primates	Up to 4.5 kg	12G	3.5"	6.25 mm		Curved: 7919

Note: g=grams, kg=kilograms

### CUSTOM OPTIONS ALSO AVAILABLE...

In addition to our standard **Cadence Science®** product line, Cadence is also a leading provider of manufacturing and turn-key solutions for today's custom design challenges. By utilizing our extensive body of knowledge relating to specialty needles and tube fabrication, we are able to custom-fit our standard products to unique applications, as well as to undertake the custom manufacturing of complex OEM products.

For more information on how to best leverage our custom capabilities contact us today at 1-800-252-3371 or e-mail your requirements to [sales@cadenceinc.com](mailto:sales@cadenceinc.com).



**CADENCE SCIENCE® SYRINGES  
FOR FLUID SAMPLING, TESTING,  
DIAGNOSING, AND DISPENSING.**

**Cadence Science®** offers the most comprehensive line of reusable glass syringes and accessories for laboratory, life science and industrial applications. Syringes conform to ISO 594 specifications and are supplied in non-sterile condition, offering unbeatable quality and value. These syringes are made from superior borosilicate glass.

- The excellent physical-chemical properties of the glass provides extra protection against thermal shock and corrosion resistance.
- The pure properties of glass also ensure that testing and clinical procedures can be performed with confidence, without risk of allergic reactions or chemical interactions that can be associated with plastic syringes.

## Syringe Types:

- Interchangeable
- Matched Numbered
- Jumbo
- Tuberculin (Mini)
- Pressure Control
- Dissolved Gas Analysis (DGA)
- Evacuating (Toomey type)
- Robb-Type Angiography
- Plungerless Asepto Irrigating
- Pipetting Syringes & Manifolds

## Tip Styles

The three basic tip styles available all conform to the ISO 594 standard for luer taper fittings and allow the user to choose the best syringe type for their specific application.



### Metal Luer Lock Tips

Metal luer lock tips are made of chrome-plated brass. They are fitted to heavy glass bases to assure greater strength than glass luer tips. All luer needles lock into the lock tip with an easy twist.



### Metal Luer Slip Tips

Metal luer slip tips embody all the same features as metal luer lock tips, except for the unique special locking device. These metal tips are chrome-plated brass and fit all luer needles and other female luer fittings.



### Glass Luer Slip Tips

All glass luer slip tips have reinforced glass bases to assure strong tips and minimize breakage. They have beveled ends to reduce chipping.

# SYRINGES

SYRINGES

## Micro-Mate® Interchangeable Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5004	Lock Tip	12	<b>2mL</b> in 1/10mL
5005	Metal Tip	12	
5006	Glass Tip	12	
5007	Lock Tip	1	
5008	Metal Tip	1	
5009	Glass Tip	1	
5067	Lock Tip	1	<b>3mL</b> in 1/5mL
5014	Lock Tip	12	<b>5mL</b> in 1/5mL
5015	Metal Tip	12	
5016	Glass Tip	12	
5017	Lock Tip	1	
5018	Metal Tip	1	
5019	Glass Tip	1	
5024	Lock Tip	12	<b>10mL</b> in 1/5mL
5025	Metal Tip	12	
5026	Glass Tip	12	
5027	Lock Tip	1	
5028	Metal Tip	1	
5029	Glass Tip	1	
5034	Lock Tip	12	<b>20mL</b> in 1mL
5035	Metal Tip	12	
5036	Glass Tip	12	
5037	Lock Tip	1	
5038	Metal Tip	1	
5039	Glass Tip	1	
5047	Lock Tip	1	<b>30mL</b> in 1mL
5048	Metal Tip	1	
5049	Glass Tip	1	
5057	Lock Tip	1	<b>50mL</b> in 2mL
5058	Metal Tip	1	
5059	Glass Tip	1	



### Micro-Mate® Interchangeable Glass Syringes

Interchangeable syringes are manufactured to ensure the perfect mating of barrels and plungers. Any Micro-Mate® interchangeable syringe of a particular size will fit any Micro-Mate® interchangeable barrel of that same size.

#### Features:

- Precision shrinking ensures improved fit
- Colored plunger ends are fused around bottom beveled rim of plunger to facilitate dosage measurements
- Made from borosilicate glass providing protection against thermal shock
- Corrosion resistant
- Graduations permanently fused into glass barrel
- Reinforced flanges prevent syringe rolling

### Jumbo Syringes





## Perfektum® Matched Numbered Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5101	Lock Tip	1	<b>1mL</b> in 1/20mL
5107	Lock Tip	1	
5108	Metal Tip	1	<b>2mL</b> in 1/10mL
5109	Glass Tip	1	
5167	Lock Tip	1	<b>3mL</b> in 1/5mL
5169	Glass Tip	1	
5117	Lock Tip	1	
5118	Metal Tip	1	<b>5mL</b> in 1/5mL
5119	Glass Tip	1	
5127	Lock Tip	1	
5128	Metal Tip	1	<b>10mL</b> in 1/5mL
5129	Glass Tip	1	
5137	Lock Tip	1	
5138	Metal Tip	1	<b>20mL</b> in 1mL
5139	Glass Tip	1	
5147	Lock Tip	1	<b>30mL</b> in 1mL
5149*	Glass Tip	1	
5157	Lock Tip	1	<b>50mL</b> in 2mL
5159*	Glass Tip	1	
5177	Lock Tip	1	<b>100mL</b> in 4mL
5179*	Glass Tip	1	
5331	Lock Tip	1	<b>150mL</b> in 10mL
5333	Lock Tip	1	<b>250mL</b> in 10mL

Note:\* Includes tip adapter to convert large male glass luer to standard male metal luer.

## Perfektum® Matched Numbered Glass Syringes

Perfektum® matched numbered syringes feature frosted individually lapped barrels and plungers which can withstand higher temperatures. These syringes are individually boxed and have matching serial numbers on mating barrels and plungers.



## Jumbo Syringes

These precision made syringes are ideal for efficiently dispensing larger volumes of corrosive, toxic, and noxious liquids in aspirating, infusing, pipetting, sampling, and other critical procedures.

## Perfektum® Eccentric Tip Matched Numbered Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5126	Glass Tip	1	<b>10mL</b> in 1/5mL
5136	Glass Tip	1	<b>20mL</b> in 1mL
5154	Lock Tip	1	<b>50mL</b> in 2mL



## Eccentric Tip Syringes

Eccentric tip syringes feature an offset nozzle that is on the edge of the syringe barrel. This allows an attached needle to be closer in line with the syringe walls so that the needle is nearly parallel with the injection surface.

# SYRINGES

## Tuberculin Mini Glass Syringes

Tuberculin mini glass syringes are widely used in clinical and research procedures for the administration of precise low-volume doses ranging from 1/4mL to 2mL. Fabricated of chemically resistant borosilicate glass with easy-to-read accurate permanent calibration lines.



## Perfektum® Tuberculin Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5200	Glass Tip Matched Numbered	1	<b>1/4mL</b> in 1/100mL
5201	Glass Tip Matched Numbered	1	<b>1/2mL</b> in 1/100mL
5212*	Lock Tip	1	<b>1mL</b> in 1/100mL
5202	Glass Tip Matched Numbered	1	
5203**	Glass Tip Matched Numbered	1	
5205	Lock Tip Matched Numbered	1	

Note: \* Includes metal plunger.

\*\* Includes blue plunger.



**5203 - Includes Blue Plunger**

## Micro-Mate® Tuberculin Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5208	Glass Tip Interchangeable	1	<b>1mL</b> in 1/100mL
5209	Lock Tip Interchangeable	1	
5206	Glass Tip Interchangeable	1	<b>2mL</b> in 1/40mL
5207	Lock Tip Interchangeable	1	



**5212 - Includes Metal Plunger**

## Pressure Control Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5338*	Lock Tip	1	<b>1mL</b> in 1/100mL
5339	Lock Tip	1	<b>2mL</b> in 1/20mL
5340	Lock Tip	1	<b>3mL</b> in 1/5mL
5341	Lock Tip	1	<b>5mL</b> in 1/5mL
5342	Lock Tip	1	<b>10mL</b> in 1/5mL
5343	Lock Tip	1	<b>20mL</b> in 1mL

Note: \* Includes metal plunger.

### Pressure Control Glass Syringes

**Cadence Science®** pressure control syringes are designed with large, comfortable thumb and finger rings. These chrome-plated rings give the user a positive grip, permitting easy and accurate delivery. Pressure control syringes are particularly useful for injecting viscous fluids or in any application that requires one-hand filling.



# SYRINGES

## Dissolved Gas Analysis (DGA) Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
G5117	Lock Tip	1	<b>5mL</b> in 1/5mL
G5127	Lock Tip	1	<b>10mL</b> in 1/2mL
G5147	Lock Tip	1	<b>30mL</b> in 1mL
G5157	Lock Tip	1	<b>50mL</b> in 2mL
G5177	Lock Tip	1	<b>100mL</b> in 4mL
G5331	Lock Tip	1	<b>150mL</b> in 6mL
G5333	Lock Tip	1	<b>250mL</b> in 10mL



### Dissolved Gas Analysis (DGA) Syringes

**Cadence Science®** DGA glass syringes are used to take samples of mineral oil in a transformer. Transformer mineral oil cools the transformer and provides electrical insulation. When this mineral oil is subjected to high thermal and electrical stresses, it decomposes and gases are generated. Different gases are generated from different types of faults, and the chemical analysis of these gases (Dissolved Gas Analysis) provides diagnostic information about the condition of the transformer.

Cadence DGA syringes are custom fit (matched numbered) to create a tight fit between the barrel and plunger. The barrels are frosted in order to improve the fluency of the barrel while pulling an oil sample out of the transformer.

## Toomey Evacuating Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5350*	Catheter Tip	1	<b>50mL</b> in 1mL

*Note: \* Includes metal catheter tip adapter #6218.*



### Toomey Evacuating Glass Syringes

The Toomey evacuating syringe is fitted with a nickel plated catheter tip and is useful in irrigating applications.

## Robb-Type Angiography Glass Syringes

Cat No.	Description	Pack Size	Size and Graduation
5192	Lock Tip	1	<b>50mL</b> in 1mL

### Robb-Type Angiography Syringes

This specially designed syringe has ground glass barrels featuring a reduced barrel I.D. This reduction produces higher pressures during injection procedures which require the use of contrast media or saline flushes. Additionally, the syringe features an 0.088" effluent luer lock tip which ensures that a greater fluid rate can be achieved during the injection procedure.



## Plungerless Asepto Irrigating Glass Syringes

Cat No.	Pack Size	Size and Graduation
5301	1	<b>1/2oz</b> in
5302	1	<b>1oz</b> in
5304	1	<b>2oz</b> in
5305	1	<b>3oz</b> in



### Irrigating Syringes

Plungerless irrigating syringes are made of heat resistant annealed glass. These syringes are fitted with age-resistant rubber bulbs which assure excellent service and repeated sterilizations for extended periods.

# SYRINGES

## Pipetting Assemblies (Comparable to BD Cornwall\*)

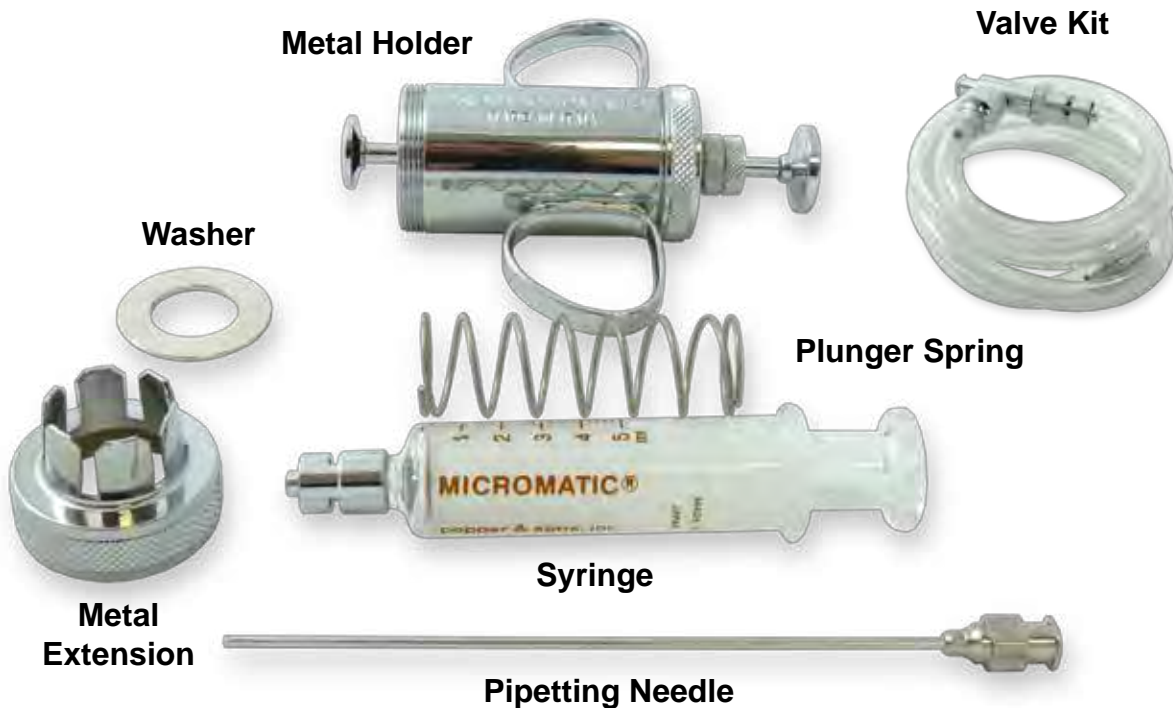
Cat No.	Size and Graduation	Fill Range	Pack Size	Replacement Parts				
				Syringe	Metal Holder	Valve Kit	Valve Only	Pipetting Needle
5700	1mL in 1/50mL	0.1ml to 1.0ml	1	5701	5703	6080	6082	7932 (20G x 1 1/2")
5710	2mL in 1/10mL	0.2ml to 2.0ml	1	5711	5713	6080	6082	7932 (20G x 1 1/2")
5720	5mL in 1/5mL	0.5ml to 5.0ml	1	5721	5723	6080	6082	7939 (16G x 4")
5730	10mL in 1/2mL	1.0ml to 10ml	1	5731	5733	6081	6083	7941 (14G x 4")

### Cadence Science® Pipetting Assemblies



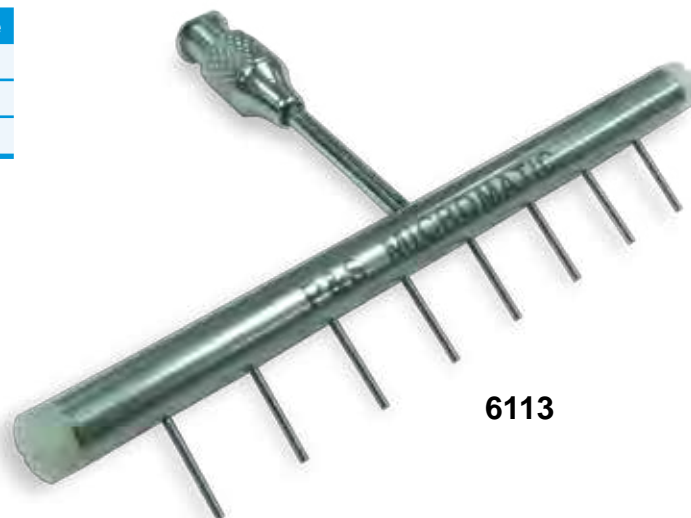
Cadence Science® pipettor units feature durable spring loaded syringe assemblies, automatic 2-way valves, and are autoclavable. Cadence Science® replacement syringes fit interchangeably into both Cadence Science® pipetting assemblies as well as BD Cornwall Pipetting Outfits.

\* BD Cornwall is a registered trademark of Becton Dickinson and Company.



## Pipetting Manifolds

Cat No.	Description	Pack Size
6113	8-Tip Center Feed Manifold	1
6114	8-Tip Side Feed Manifold	1
6156	Aspiration Adapter	1



6113

### Cadence Science® Pipetting Manifolds

**Cadence Science®** 8 tip center and side feed manifolds can be used with **Cadence Science®** pipetting assemblies or with any other luer taper or luer lock pipetting system. Together, **Cadence Science®** manifolds and pipettors allow for quick repetitive, quantitative volumetric distribution of reagents in volumes as low as 50 µl per well. The all stainless steel construction, including female luer fittings, provides for leakproof assembly to pipetting units.

#### CUSTOM OPTIONS ALSO AVAILABLE...

In addition to our standard **Cadence Science®** product line, Cadence is also a leading provider of manufacturing and turn-key solutions for today's custom design challenges. By utilizing our extensive body of knowledge relating to specialty needles and tube fabrication, we are able to custom-fit our standard products to unique applications, as well as to undertake the custom manufacturing of complex OEM products.

For more information on how to best leverage our custom capabilities contact us today at 1-800-252-3371 or e-mail your requirements to [sales@cadenceinc.com](mailto:sales@cadenceinc.com).

# NEEDLES

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NEEDLES

CADENCE SCIENCE® STANDARD  
AND CUSTOM NEEDLES FOR FLUID  
SAMPLING, TESTING, DIAGNOSING,  
AND DISPENSING.



DON'T SEE WHAT YOU'RE LOOKING FOR?  
SEE OUR CONFIGURE-TO-ORDER SECTION ON PAGE 30.

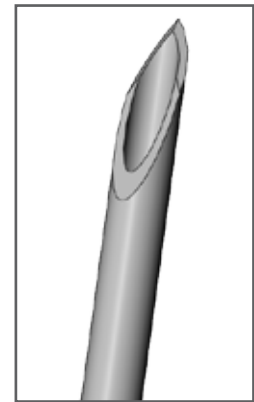






## Hypodermic Needles

Cat No.	Gauge	Length	Pack Size	Cat No.	Gauge	Length	Pack Size
<b>Regular Gauge</b>				4056	20G	1"	
4000	27G	1/4"		4058	20G	1 1/2"	12
4001	27G	3/8"		4059	20G	2"	
4002	27G	1/2"	12	4060	20G	2 1/2"	
4004	27G	3/4"		4065	19G	1 1/2"	
4005	27G	1"		4066	19G	2"	12
4009	26G	3/8"		4067	19G	3"	
4010	26G	1/2"	12	4070	18G	1"	
4013	26G	1"		4071	18G	1 1/2"	12
4014	26G	1 1/2"		4072	18G	2"	
4017	25G	3/8"		4075	17G	2"	12
4019	25G	5/8"		4076	17G	3 1/2"	
4021	25G	1"	12	4090	15G	3 1/2"	12
4022	25G	1 1/2"		4093	13G	3 1/2"	12
4023	25G	2"		<b>Ultra Fine Gauge for Laboratory Applications</b>			
4027	24G	5/8"		4111	33G	1/4"	
4028	24G	3/4"	12	4112	33G	3/8"	12
4031	24G	1 1/2"		4113	33G	1/2"	
4034	23G	1/2"		4108	32G	1/4"	
4035	23G	5/8"		4109	32G	3/8"	12
4036	23G	3/4"		4110	32G	1/2"	
4037	23G	1"	12				
4039	23G	1 1/2"					
4040	23G	2"					
4043	22G	1"					
4045	22G	1 1/2"	12				
4046	22G	2"					
4047	22G	3"					
4050	21G	1"					
4051	21G	1 1/4"	12				
4052	21G	1 1/2"					

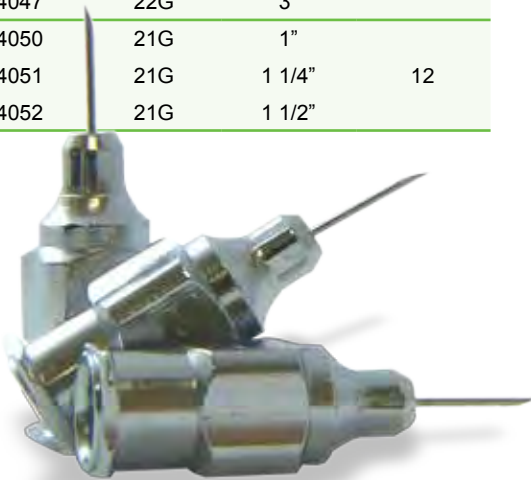


15° Bevel

### Hypodermic Needles

**Cadence Science®** hypodermic needles are precision made and designed to ensure strict adherence with U.S. Government specification GG-N-196. Points are machine ground to achieve uniform sharpness. Precision grinding, micro-bead jet blasting, and ultrasonic cleaning assure freedom from burrs and debris. All needle cannula are fabricated of type 304 stainless steel tubing which must pass our rigorous in-plant quality control prior to acceptance and use.

Standard luer hubs comply with luer taper specifications ISO 594. This assures an interchangeable fit mating with luer slips and luer locks. Contoured hub cavity facilitates cleaning.



# NEEDLES

NEEDLES

## Deflected Point Septum Penetration Needles

Cat No.	Gauge	Length	Pack Size
<b>Micro-Mate® Hub with 316 Stainless steel Tubing</b>			
9866	22G	6"	12
9862	20G	1"	
9863	20G	6"	12
9864	20G	8"	
9865	20G	12"	
9860	18G	6"	12
9861	18G	12"	
<b>Standard Hub with 304 Stainless Steel Tubing</b>			
4165	26G	1/2"	12
4170	25G	1"	12
4172	22G	1"	
4173	22G	1 1/2"	
4174	22G	2"	12
4175	22G	4"	
4176	22G	6"	
4180	21G	4"	12
4181	21G	6"	
4182	20G	1"	
4184	20G	2"	
4185	20G	4"	
4186	20G	6"	12
4187	20G	8"	
4855	20G	10"	
4188	20G	12"	
4189	19G	2"	
4190	19G	4"	12
4191	19G	6"	
4192	18G	1 1/2"	
4193	18G	2"	
4194	18G	4"	12
4195	18G	6"	
4854	18G	10"	
4196	18G	12"	
4850	16G	4"	
4851	16G	6"	12
4853	16G	12"	



### Deflected Point Septum Penetration Needles

*Equivalent to BD Huber\**

The deflected needle style features point positioning on the axis of the needle lumen. This improved point geometry provides easier penetration and minimizes coring and tracking (particularly with finer gauge needles).

*\* BD Huber is a registered trademark of Becton Dickinson and Company.*

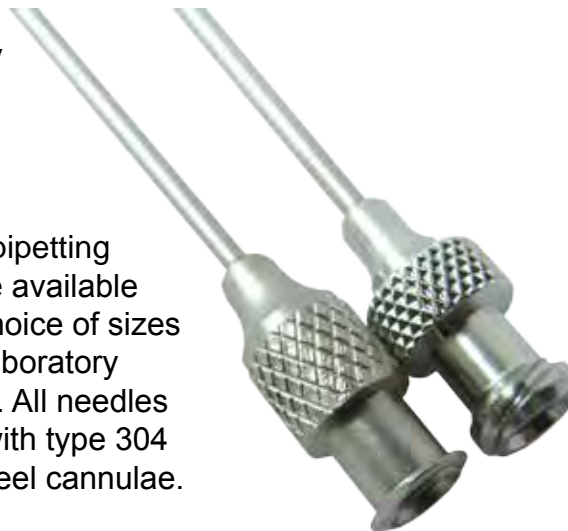


## Laboratory Pipetting Needles with 90° Blunt Ends

Cat No.	Gauge	Length	Pack Size
<b>Micro-Mate® Hub with 316 Stainless steel Tubing</b>			
9876	20G	4"	12
9874	18G	2"	12
9875	18G	6"	12
9872	16G	4"	12
9873	16G	6"	12
9870	14G	4"	12
9871	14G	6"	12
<b>Stainless Steel Hub with 304 Stainless Steel Tubing</b>			
7950	20G	4"	12
7951	19G	4"	12
7952	18G	4"	12
7953	17G	4"	12
7954	16G	4"	12
7955	15G	4"	12
7956	14G	4"	12
7957	13G	4"	12
<b>Standard Hub with 304 Stainless Steel Tubing</b>			
7930	24G	1"	12
7931	22G	1 1/2"	12
7932	20G	1 1/2"	12
7933	20G	4"	12
7934	20G	6"	12
7935	18G	2"	12
7936	18G	4"	12
7937	18G	6"	12
7938	16G	2"	12
7939	16G	4"	12
7940	15G	4"	12
7941	14G	4"	12
7942	14G	6"	12

### Laboratory Pipetting Needles

**Cadence Science®** pipetting needles are available in a wide choice of sizes for use in laboratory procedures. All needles are made with type 304 stainless steel cannulae.



Catalog numbers 7950 to 7957 needles are fitted with stainless steel hubs for special applications with corrosive materials or critical procedures. Catalog numbers 7930 to 7942 needles are fitted with standard nickel plated luer hubs. These needles are used in conjunction with both manual and automatic volumetric dispensers, dilutors, and pipettors.

For those applications requiring the use of plastic syringes with pipetting needles, **Cadence Science®** has developed the Micro-Mate® pipetting needle. These 90° blunt end needles are made with a 316 stainless steel cannula and a special 316 stainless Micro-Mate® female luer hub. These hubs provide a secure, leakproof mating of plastic luer tip syringes with metal luer pipetting needles.



# NEEDLES

NEEDLES

## Cancer Implant Needles

Cat No.	Gauge	Length	Pack Size
7926	16G	3 1/4"	12
7927	13G	3 1/4"	12
7928	11G	3 1/4"	12

## Cancer Implant Needles

Two piece needle set consists of a sharp pointed stainless steel outer cannula and a stainless steel blunt obturator which protrudes 3.2mm (1/8") beyond

the needle point. The needle provides a simple procedure to obtain and implant tumorous tissue cells beneath the skin of lab animals for observation while maintaining a sterile field.

## Micro-Emulsifying Needles

Cat No.	Gauge	Length	Pack Size
<b>With Reinforcing Bar</b>			
7974	25G	2 7/8"	4
7975	22G	2 7/8"	4
7976	20G	2 7/8"	4
7977	18G	2 7/8"	4
7969	16G	2 7/8"	4
<b>Without Reinforcing Bar</b>			
7971	22G	2 7/8"	4
7978	20G	1 7/8"	4
7972	20G	2 7/8"	4
7979	18G	1 7/8"	4
7973	18G	2 7/8"	4

## Micro-Emulsifying Needles

Widely used for allergens and the mixing of adjuvants and antigens, oil based liquids or any two liquid media differing in viscosity. By locking two syringes on to the double hub needle or double hub adapter, two liquids such as a mineral oil and an emulsifying agent may be readily pumped between the two syringes to produce a uniform mixture.

Indicated lengths are the overall length. Researchers and technicians utilize **Cadence Science®** Micro-Mate® 5mL and 10mL luer lock tip glass syringes for micro-emulsifying procedures. The outstanding quality

of the glass and the special secure luer locking tip provide quality and reliability.



**With Reinforcing Bar**



**Without Reinforcing Bar**



## Dissolution Cannulae

Cat No.	Gauge	Length	Pack Size
9880	14G	4 3/8"	1
9881	14G	7 1/2"	1



### Dissolution Cannulae

Ideal for drug dissolution testing. Drug dissolution testing is routinely used in the pharmaceutical industry to provide critical release information for quality control purposes, in new drug development, and to predict in vivo drug release profiles. These cannulae feature 316 stainless steel hub and tubing for maximum resistance to chemical reaction.

## Veterinary Luer Needles

Cat No.	Gauge	Length	Pack Size
7200	22G	1/2"	12
7201	22G	3/4"	
7203	20G	1/2"	12
7263	19G	3"	12
7212	18G	1"	12
7215	18G	2"	
7238	18G	2 1/2"	
7239	18G	3"	
7220	16G	1 1/2"	
7221	16G	2"	12
7222	16G	3"	12
7268	15G	1 1/2"	
7271	15G	3"	
7227	14G	1 1/2"	12
7228	14G	2"	
7229	14G	3"	
7230	12G	1"	
7231	12G	1 1/2"	12
7232	12G	2"	
7233	12G	3"	



### Veterinary Needles

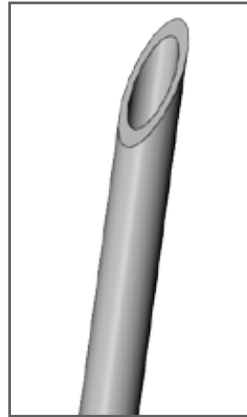
These hypodermic needles are all fitted with a large knurled chrome plated hub which allows for secure gripping even under the most difficult circumstances.

# NEEDLES

NEEDLES

## 22° Bevel Matched Point Needle Sets

Cat No.	Gauge	Length	Pack Size
4300	26G	3 1/2"	1
4352	25G	3"	1
4301	25G	3 1/2"	1
4302	24G	3 1/2"	1
4303	22G	1 1/2"	1
4304	22G	2"	1
4305	22G	2 1/2"	1
4306	22G	3"	1
4307	22G	3 1/2"	1
4308	22G	4"	1
4354	22G	5"	1
4372	22G	6"	12
4373	22G	8"	12
4376	22G	9"	12
4374	22G	10"	12
4310	20G	2"	1
4311	20G	2 1/2"	1
4312	20G	3"	1
4313	20G	3 1/2"	1
4314	20G	4"	1
4315	20G	5"	1
4316	20G	6"	1
4319	19G	3"	1
4320	19G	3 1/2"	1
4321	19G	4"	1
4322	18G	3"	1
4323	18G	3 1/2"	1
4324	18G	4"	1
4325	18G	6"	1
4375	18G	7"	12
4371	18G	8"	12
4326	17G	3"	1
4327	17G	3 1/2"	1
4328	17G	4"	1
4329	17G	6"	1



22°



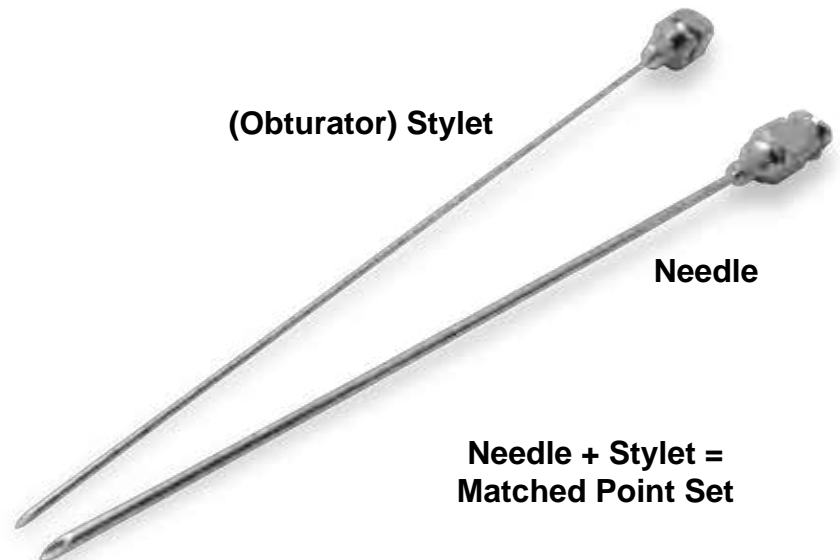
### 22° Bevel Matched Point Needles

These needle sets are manufactured to strict standards providing assurance of perfectly “matched bevels”. They incorporate type 304 stainless steel needles and stylets (obturators) to assure needle point strength, sharpness, and integrity of point geometry. The nickel plated brass hubs and stylet caps have matching serial numbers to facilitate matching after cleaning or sterilization. The point of the needle is aligned with the flat of the hub. The hub slot and cap guide are aligned with the point of the needle for easier orientation.

(Obturator) Stylet

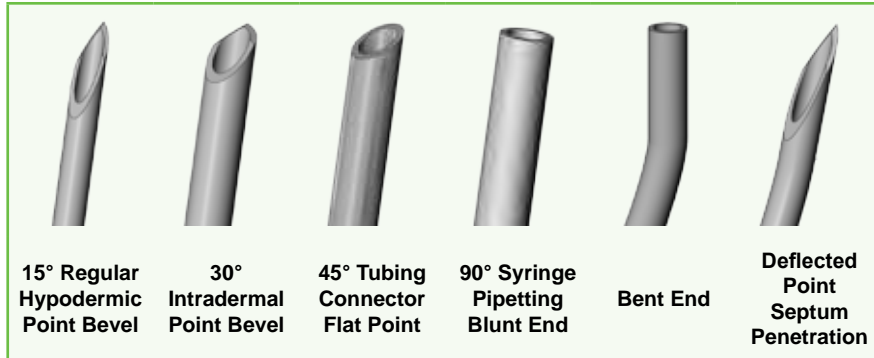
Needle

Needle + Stylet = Matched Point Set

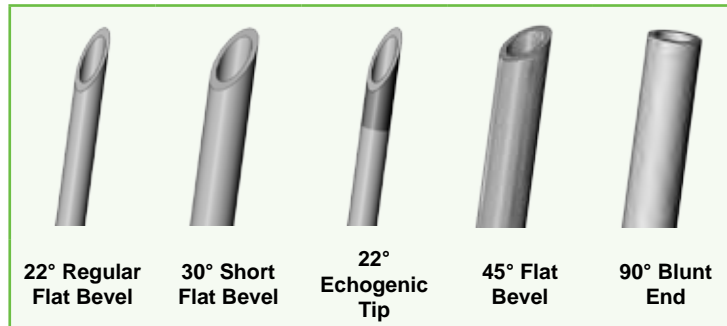


## POINT STYLES

### Standard Needle Tip Styles



### Matched Point Tip Styles



## HUB STYLES

	Standard Female 5/16" Luer Hub		Female Luer 304 Stainless Steel Hub
	Veterinary Female Luer Hub		Female Luer Kel-F Hub
	Webster Hose Hub for 3/16" to 1/4" I.D. Rubber or Plastic Tubing		Micro-Mate® Nickel Plated Brass Female Luer Hub (For mating plastic to metal luers w/o stripping)
	Female Luer to Male Luer Hub Fits Coaxially into a Female Luer Hub		Micro-Mate® 316 Stainless Steel Female Luer Hub (For mating plastic to metal luers w/o stripping)

# NEEDLES

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## CONFIGURE-TO-ORDER NEEDLES

Catalog products that can be configured to your specifications include:









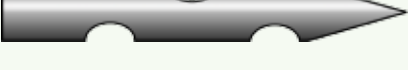
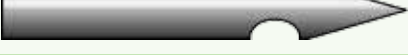
- Hypodermic Needles
- Perforated Needle Sets
- Matched Point Needle Sets
- Cannulae
  - 90° Blunt End Cannulae
  - Pointed Cannulae - Regular Wall
  - Pointed Cannulae - Thin Wall

### Design Your Own Needle

- **Catalog Number**
- **Gauge** - Regular or Thin Wall Tubing
- **Length** - Specify Exact Length
- **Point Style**
- **Minimum Order** - 12 of the same configuration



## Custom Fabricated Perforated Needle Sets

Cat No.	Description	
4430	Single Hole Closed Pencil Point	
4431	Single Hole Closed 45° Bevel Point	
4432	Single Hole Closed Round End	
4433	Single Hole Closed Trocar Point	
4434	Single Hole Closed 22° Bevel Point	
4435	Single Hole Open 30° Bevel Point	
4436	3 Single Holes Closed Trocar Point	
4437	Thru Hole Open 22° Bevel Point	
4438	3 Single Holes Closed Pencil Point	
4439	Side Hole Dead Volume Pencil Point	

### Configure-to-Order as Easy as...

1. Select Catalog Number (Point Style)
2. Select Gauge - Regular or Thin Wall Tubing
3. Specify Needle Length
4. Specify Quantity

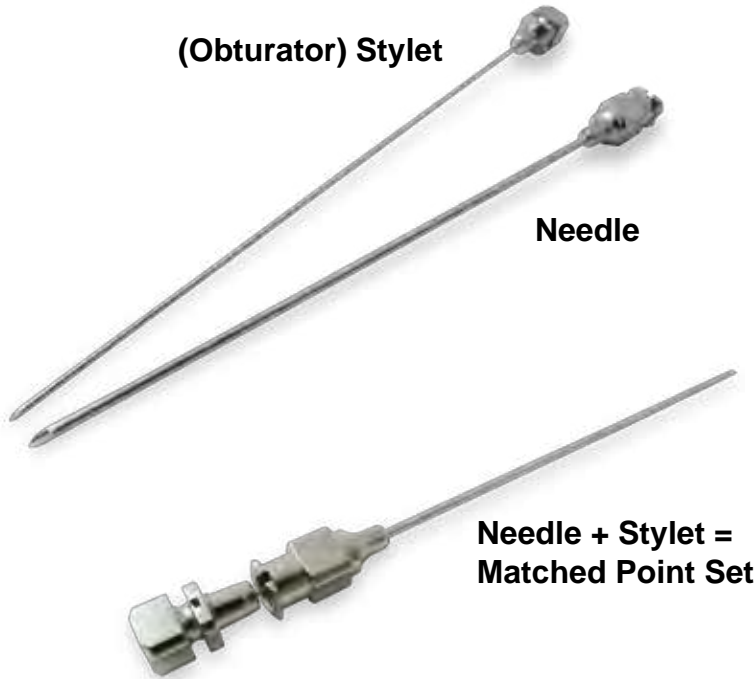
Example = 4435 - 20G X 7" Qty. 35

- All hubs are nickel plated and comply with ISO 594 specifications
- Minimum order is 12 of the same configuration.

# NEEDLES

NEEDLES

## Custom Made Matched Point Sets



### Configure-to-Order as Easy as...

1. Select Catalog Number
2. Select Gauge - Regular or Thin Wall Tubing (26G to 10G)
3. Specify Needle Length (1/2" to 9")
4. Specify Quantity

Example = 4420 - 22G X 5"  
Qty. 12

- Minimum order is 12 sets of the same configuration










	22° Regular Flat Bevel	30° Short Flat Bevel	45° Flat Bevel	90° Blunt End	22° Echogenic Tip
Regular Wall 10G - 26G	4420	4421	4422	4426	4428
Thin Wall 12G - 25G	4423	4424	4425	4427	4429

- Type 304 stainless steel needles with stainless fitted stylets (obturators) with matched bevels
- Nickel plated needle lock hubs and obturator (stylet) caps with matching serial numbers
- All hubs are nickel plated and comply with ISO 594 specifications
- Point of needles aligned with flat of hub; hub slot and cap guide aligned with point of needle

## Custom Fabricated Hypodermic Needles



	Cat. No Hub Style	15° Regular Hypodermic Point Bevel	30° Intradermal Point Bevel	45° Tubing Connector Flat Point	90° Syringe Pipetting Blunt End	Bent End*	Deflected Septum Point*
	<b>4400</b> Standard Female 5/16" Luer Hub	32G to 6G	30G to 6G	32G to 6G	32G to 6G	27G to 10G	27G to 11G
	<b>4401</b> Veterinary Female Luer Hub	24G to 10G	24G to 10G	24G to 10G	24G to 10G	24G to 10G	24G to 15G
	<b>4402</b> Webster Hose Hub for 3/16" to 1/4" I.D. Rubber or Plastic Tubing	19G to 12G	19G to 12G	19G to 12G	19G to 12G	19G to 12G	19G to 12G
	<b>4403</b> Female Luer to Male Luer Hub Fits Coaxially into #4400 Needles	25G to 15G	25G to 15G	25G to 15G	25G to 15G	25G to 15G	25G to 15G
	<b>4404</b> Female Luer 304 Stainless Steel Hub	23G to 11G	23G to 11G	23G to 11G	23G to 11G	23G to 11G	23G to 11G
	<b>4405</b> Female Luer Kel-F Hub	25G to 10G	25G to 10G	25G to 10G	25G to 10G	25G to 10G	25G to 15G
	<b>4470</b> Micro-Mate® Nickel Plated Brass Female Luer Hub (For mating plastic to metal luers w/o stripping)	32G to 6G	30G to 6G	32G to 6G	32G to 6G	27G to 10G	27G to 11G
	<b>4471</b> Micro-Mate® 316 Stainless Steel Female Luer Hub (For mating plastic to metal luers w/o stripping)	23G to 11G	23G to 11G	23G to 11G	23G to 11G	23G to 11G	23G to 11G

Note: \* Deflected and Bent Needles - minimum length is 3/4"

### Configure-to-Order as Easy as...

1. Select Hub Style
2. Select Gauge (Regular Wall is Standard)
3. Specify Needle Length (3/8" to 24" typical)
4. Select Point Style (Regular Hypodermic is Standard)
5. Specify Quantity

Example = 4403 - 18G X 4" with 30° point Qty. 24

- Hubs comply with ISO 594 specifications (excl. 4402)
- Minimum order is 12 of the same configuration.

# NEEDLES

NEEDLES

## Custom Cannulae - 90° Blunt End

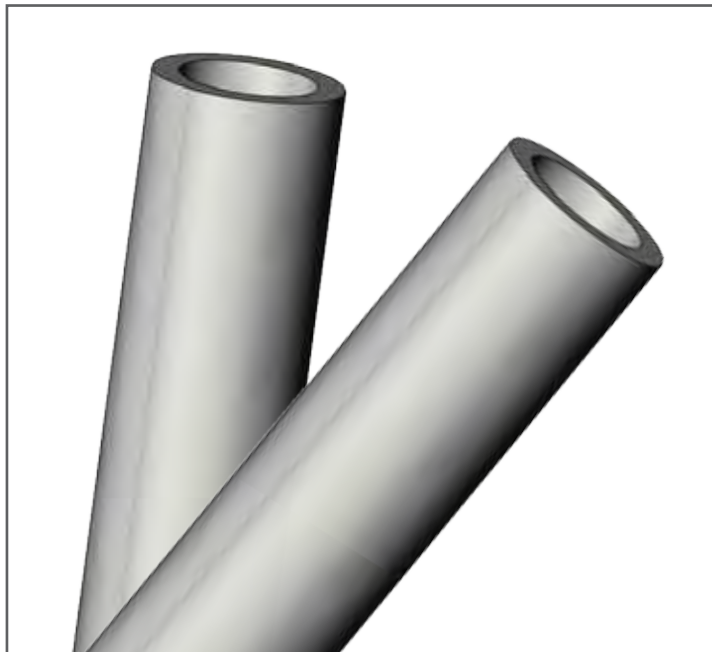
Gauge Product No.	Length	Standard Tolerance
30G - 24G 4450 RW 4451 TW	3/8" - 1"	±.010"
	1 1/8" - 3"	±.015"
	3 1/8" - 6"	±.015"
23G - 16G 4450 RW 4451 TW	3/8" - 1"	±.010"
	1 1/8" - 3"	±.015"
	3 1/8" - 6"	±.015"
	6 1/8" - 9"	±.031"
	9 1/8" - 11 15/16"	±.031"
15G - 10G 4450 RW 4451 TW	3/8" - 1"	±.010"
	1 1/8" - 3"	±.015"
	3 1/8" - 6"	±.015"
	6 1/8" - 9"	±.031"
	9 1/8" - 11 15/16"	±.031"
9G to 6G 4450 RW 4451 TW	3/8" - 1"	±.010"
	1 1/8" - 3"	±.015"
	3 1/8" - 6"	±.015"
	6 1/8" - 9"	±.031"
	9 1/8" - 11 15/16"	±.031"

### Configure-to-Order as Easy as...

1. Select Catalog Number  
RW=Regular Wall  
TW=Thin Wall
2. Select Gauge (30G to 6G)
3. Specify Needle Length
4. Specify Quantity

Example = 4450 - 15G X 3"  
Qty. 12

- Minimum order is 12 of the same configuration.



**90° Blunt Tubes  
Finished Ends**

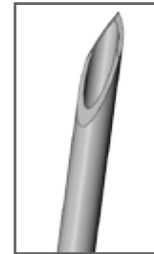
## Custom Pointed Cannulae - Thin Wall

Gauge Product No.	Length	Standard Tolerance
25G - 16G 4461 TW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
	10 1/8" - 12"	±.062"
15G - 10G 4461 TW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
	10 1/8" - 12"	±.062"

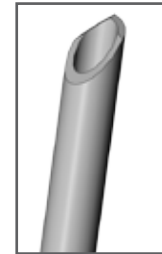
## Custom Pointed Cannulae - Regular Wall

Gauge Product No.	Length	Standard Tolerance
27G - 24G 4460 RW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
23G - 16G 4460 RW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
15G - 10G 4460 RW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
9G - 6G 4460 RW	3/8" - 2 1/2"	±.015"
	2 5/8" - 5"	±.015"
	5 1/8" - 10"	±.031"
	10 1/8" - 12"	±.062"

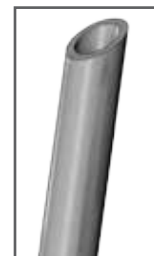
- For additional point configurations and other special fabrication services, consult our technical staff.
- Minimum order is 12 of the same configuration.



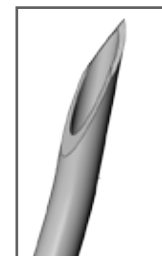
15°



30°



45°



**Deflected Point  
Septum  
Penetration**

*Other Tip Styles Available*

### Configure-to-Order as Easy as...

1. Select Catalog Number
2. Select Gauge (30G to 6G)
3. Specify Needle Length
4. Select Point Style
5. Specify Quantity

Example = 4460 RW - 18G X 8" with 30° Point Qty. 20

# STOPCOCKS

STOPCOCKS

## Stopcocks

**Cadence Science®** stopcocks are precision-machined, individually lapped, and carefully mated to maintain pressure characteristics. These stopcocks are easily integrated with other stopcocks, manifolds, adapters, tubing, needles, and glass syringes.

- Made from nickel plated brass or stainless steel
- Tested to 45 PSI water pressure

## 1-Way Stopcocks

Cat No.	Side 1	Side 2	Part Image	Cat No.	Side 1	Side 2	Part Image
6019	Female Luer Lock	Male Luer		6023	Male Luer Lock	Male Luer Lock	
6020	Female Luer Lock	Female Luer Lock		6029	Male Luer Lock	6mm Hose End	
6067 Spring Clip	Female Luer Lock	Male Luer Lock		6030	Male Luer Lock	8mm Hose End	
6021	Female Luer Lock	Male Luer Lock		6026	6mm Hose End	6mm Hose End	
6021SS Stainless Steel	Female Luer Lock	Male Luer Lock		6027	8mm Hose End	8mm Hose End	
6021HP High Pressure*	Threaded Female Luer Lock	Male Luer Lock					

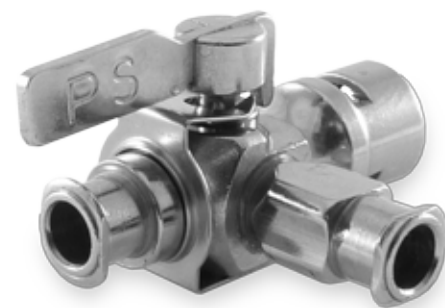
Note:\* Pressure resistant up to 20 bars (290 psi)

## 3-Way Stopcocks

Cat No.	Side 1	Side 2	Side Arm	Part Image	Cat No.	Side 1	Side 2	Side Arm	Part Image
6061 Spring Clip	Female Luer Lock	Male Luer	Right Side, Female Luer Lock		6011SS Stainless Steel	Female Luer Lock	Male Luer Lock	Right Side, Female Luer Lock	
6001	Female Luer Lock	Male Luer	Right Side, Female Luer Lock		6011HP High Pressure*	Threaded Female Luer Lock	Male Luer Lock	Right Side, Threaded Female Luer Lock	
6002	Female Luer Lock	Female Luer Lock	Right Side, Female Luer Lock		6014	Male Luer Lock	Male Luer Lock	Right Side, Female Luer Lock	
6010	Female Luer Lock	Male Luer Lock	Right Side, 3.5mm Hose End		6017	Female Luer Lock	Male Luer Lock	Left Side, Female Luer Lock	
6064 Spring Clip	Female Luer Lock	Male Luer Lock	Right Side, Female Luer Lock		6017SS Stainless Steel	Female Luer Lock	Male Luer Lock	Left Side, Female Luer Lock	
6011	Female Luer Lock	Male Luer Lock	Right Side, Female Luer Lock		6056 "Y" Type	Female Luer Lock	Female Luer Lock	Male Luer Lock	

Note: \* Pressure resistant up to 20 bars (290 psi)

The **Cadence Science®** spring clip design holds the key in position under proper sealing pressure for optimum performance. There is no need for a screwdriver in cleaning operations.



**6064**

# ADAPTERS

## Adapters

Adapters and tubing connectors are used in hospitals, laboratories, and biomedical instruments. Our broad range of fittings give the user a wide choice for secure connections and also for easy disconnect applications.

### Standard Products:

- 1-Way & 3-Way Adapters
  - Luer-to-Luer Adapters
  - Bulkhead Panel Mounted Fittings
  - Threaded (NPT & UTS) Adapters
  - PEEK Adapters
  - Micro-Mate® Luer Adapters
- Flushing Manifolds
- Pressure Monitoring Manifolds
- Male Luer Lock Blanks

### Technical Highlights

- Plated brass or 316 stainless steel
- Meets ISO 594 specifications
- Final assembly water tested at 45 PSI

**Female Luer Lock (FLL)** – contains a tabbed hub for secure fitting to a threaded male luer lock.



FLL

**Micro-Mate® Female Luer Lock (MMFLL)** – designed and manufactured to reduce the stripping of threads which occurs when metal adapters are mated with plastic male luer lock adapters. Uniquely designed to facilitate easy cleaning and maintenance.



MMFLL

**Male Luer Lock (MLL)** – male luer slip with a threaded sheath for a secure fitting to a female luer lock.



MLL

**Male Luer (ML)** – male luer slip that fits with a female luer.














ML



## Luer-to-Luer Adapters

ADAPTERS

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
FLL		6182 	6521 						
MLL		6176 	6519 			6177 	6520 		
ML		6170 		6414 	6454 			6183 	
	Elongated	6171 							



**6176**  
FLL to MLL



**6521**  
FLL to FLL



**6170**  
FLL to ML

# ADAPTERS

## Luer-to-Record Adapters

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
Female Record								6173	
Male Record		6172							

## Threaded End (NPT) Adapters

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
1/8-27 (NPT) Thread		6332	6531	6415	6455	6330	6526		
1/4-18 (NPT) Thread		6333	6532			6331	6527		



## Luer-to-Closed End Adapters

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
Closed End		6179	6200	6410	6450	6178	6517	6180	6522



6200

## Bulkhead Panel Mounted Fittings

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
Hose End for 1/16" to 3/32" I.D. Tubing		6142	6537	6421	6461	6140	6535	6141	
Hose End for 1/8" to 3/16" I.D. Tubing		6145	6538	6420	6460	6143	6536	6144	

## Bulkhead Panel Mounted Fittings

These are ideal fittings for critical instrumentation where there can be no movement of the adapter. Each bulkhead fitting includes a 1/4"-28 hex panel nut as well as a lockwasher for secure fit.



6142

# ADAPTERS

ADAPTERS

## Threaded End (UTS) Adapters

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
		6317	6529	6418	6458	6319	6524		
1/4-28 Standard Thread									
	With Wrench Flats					6320			
1/4-32 Standard Thread		6316	6530	6419	6459	6318	6525		
5/16-28 Standard Thread						6188		6189	



6530



6458



6524

## Threaded End (UTS) Adapters (Continued)

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
		6212	6528	6417	6457	6310	6523	6321	6534
10-32 Standard Thread	Hex Body	6314							
	With Wrench Flats					6211			
10-32 Internal Standard Thread		6312		6416	6456	6311	6533		
1/4-32 Internal Standard Thread		6315				6322			



6457



6523






















6456

# ADAPTERS



ADAPTERS

## Tubing Connectors

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel
Tuohy Borst (1-5 French)		6184 				6219 			
Hose End for 1/16" to 3/32" I.D. Tubing		6159 	6513 	6411 	6451 	6157 	6510 	6155 	
	Concentric Ringed Hose End	6220 	6217 						
Hose End for 3/16" to 1/4" I.D. Tubing		6168 	6515 						
Hose End for 1/4" to 5/16" I.D. Tubing				6413 	6453 	6169 	6512 	6152 	
	Single Barb							6151 	



## Tubing Connectors (Continued)

Side 2	Feature	FLL Plated Brass	FLL 316 Stainless Steel	MM FLL Plated Brass	MM FLL 316 Stainless Steel	MLL Plated Brass	MLL 316 Stainless Steel	ML Plated Brass	ML 316 Stainless Steel	
		6158	6514	6412	6452	6156	6511	6153	6516	
Hose End for 1/8" to 3/16" I.D. Tubing										
	Large Bore							6154		

## Flare Type Tubing Adapters

FLL	MLL	Cap Hole I.D.	Body Lumen I.D.	Fits Regular Wall Tubing with I.D. Range	French Size Equivalent	Fits PE Tubing Number
6190	6195	0.045"	0.020"	0.010" - 0.025"	2, 3	10, 20, 50
6191	6196	0.058"	0.032"	0.025" - 0.037"	4	60, 90
6192	6197	0.074"	0.050"	0.039" - 0.050"	5	60, 90, 100
6193	6198	0.105"	0.071"	0.062" - 0.071"	6, 7, 8	200, 205, 240
6194	6199	0.147"	0.093"	0.079" - 0.105"	9, 10, 11	260, 280, 320, 330

### Flare Type Tubing Adapters

These have a screw cap for secure fastening of either polyethylene, polypropylene, or Plastic (PTFE) tubing.



# ADAPTERS

ADAPTERS

## 1-Way PEEK Luer Adapters

Side 2	FLL PEEK	MLL PEEK
1/4-28 Standard Thread	6603 	6602 
1/4-28 Internal Standard Thread	6601 	6600 
10-32 Standard Thread	6607 	6606 
10-32 Internal Standard Thread	6605 	6604 
M6 Metric Thread	6611 	6610 
M6 Internal Metric Thread	6609 	6608 



6610



6603



6608

## PEEK Luer Adapters

Made of inert PEEK and designed for quick, leak-proof connections. These adapters are economical and provide for flexibility of a variety of threaded connections.



## 3-Way Adapters

Product No.	Side 1	Side 2	Side Arm	Part Image
6160	FLL	ML	Hose End for 1/16" I.D. Tubing	
6161	FLL	ML	FLL	
6162	FLL	MLL	Hose End	
6163	FLL	MLL	FLL	
6130	MLL	FLL	FLL	
6131	FLL	MLL	MLL	
6132	Hose End for 1/8" to 3/16" I.D. Tubing	Hose End for 1/8" to 3/16" I.D. Tubing	Hose End for 1/8" to 3/16" I.D. Tubing	



**6163**





**6162**



**6130**

# ADAPTERS




## Male Luer Lock Blanks

Cat No.	Side 1	Side 2	Overall Length	Part Image
6290	Slotted MLL	Blank	0.640"	
6291	Slotted MLL	Blank	0.875"	
6292	Slotted MLL	Blank	1.250"	
6293	Unslotted MLL	Blank	0.875"	

## Male Luer Lock Blanks

**Cadence Science®** male luer lock blanks can be used in a variety of designs where male luer fittings are essential. The blank male luer lock allows the user the option of modifying these components to their own requirements. Manufactured from brass to ensure durability, they can be plated to your specifications. These male luer lock blanks can be mated with any standard female luer to create a secure connection. All luer lock blanks are unplated type 360 brass.

## Other Adapters

Side 2	FLL Plated Brass
Catheter or Small Tubing	6174 
Fistula Tip	6185 
Pomeroy Ear Tip	6186 



6174

## Flushing Manifolds

Cat No.	Feature
6270	6 x MLL with 0.750" Spacing Between Locks
6272	10 x MLL with 0.450" Spacing Between Locks

### Flushing Manifolds

The unique design of **Cadence Science®** flushing manifolds allow liquids to be flushed through needles, catheters, and other components. The male luer locks can be mated to any standard female luer to provide a secure leakproof connection. All flushing manifolds are nickel plated brass.

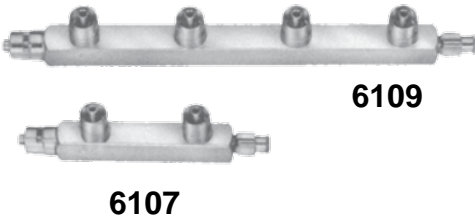


## Pressure Monitoring Manifolds

Cat No.	Feature
6107	3 x MLL with 1 FLL Hub
6108	4 x MLL with 1 FLL Hub
6109	5 x MLL with 1 FLL Hub
6112	5 x FLL with 1 MLL Hub

### Pressure Monitoring Manifolds

Our selection of **Cadence Science®** pressure monitoring manifolds allow the user to create their own miniature piping systems utilizing various luer connections. The sturdy metal base with metal luer fittings can be sterilized for repeated, reliable, and economical service. All pressure manifolds are nickel plated brass.



### CUSTOM OPTIONS ALSO AVAILABLE...

In addition to our standard **Cadence Science®** product line, Cadence is also a leading provider of manufacturing and turn-key solutions for today's custom design challenges. By utilizing our extensive body of knowledge relating to specialty needles and tube fabrication, we are able to custom-fit our standard products to unique applications, as well as to undertake the custom manufacturing of complex OEM products.

For more information on how to best leverage our custom capabilities contact us today at 1-800-252-3371 or e-mail your requirements to [sales@cadenceinc.com](mailto:sales@cadenceinc.com).

# RAPID TUBING & WIRE

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In an effort to enable the fastest possible delivery of new parts, Cadence now has in stock virtually all sizes of hypodermic tubing and stainless steel wiring needed for new product development, including:

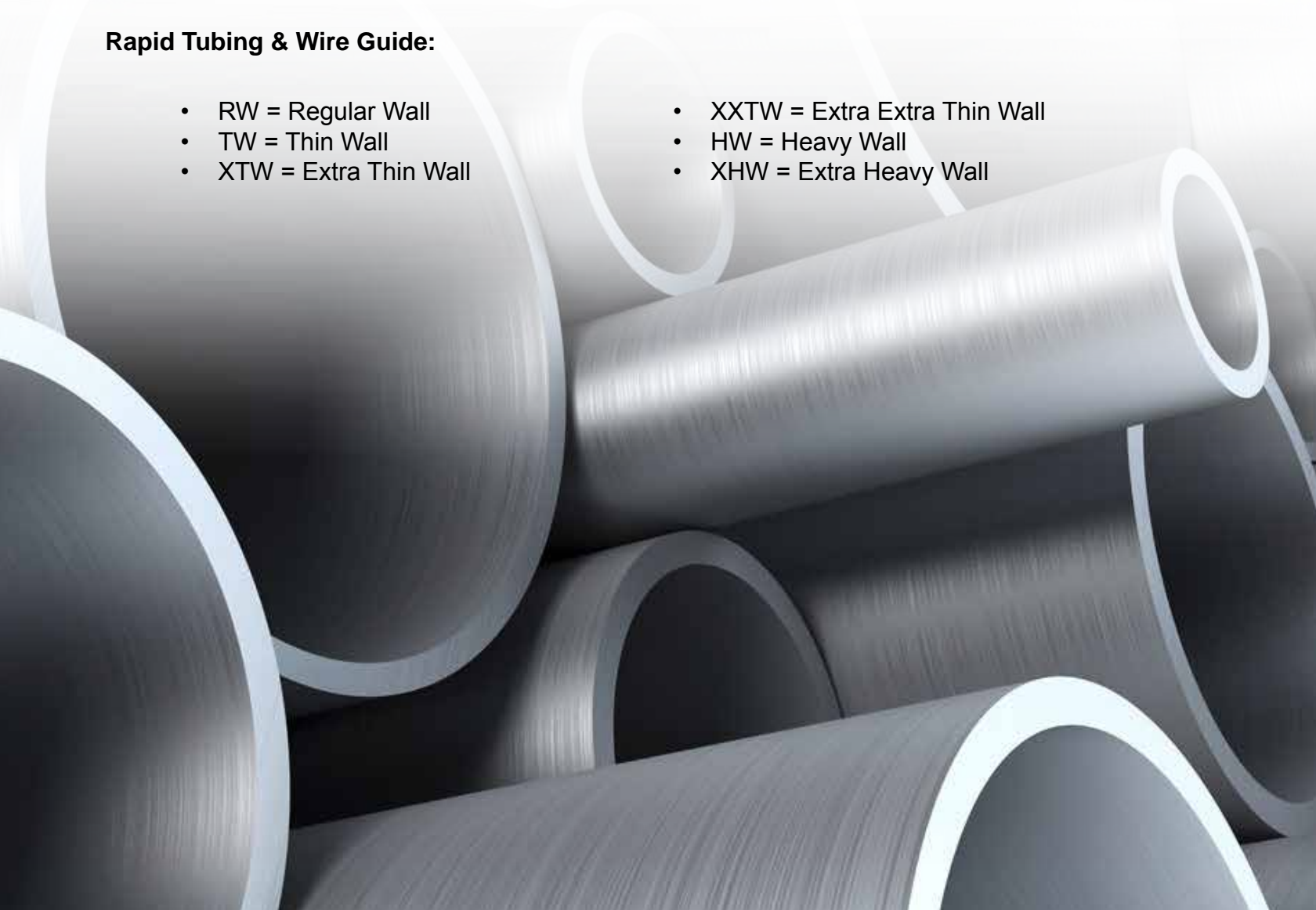
- 304 Stainless Steel Hypodermic Tubing
- 316 Stainless Steel Hypodermic Tubing
- 316 Stainless Steel Capillary Tubing
- 316 Stainless Steel Capillary Tubing - Burr-Free, Precision Cut Ends
- 304 Stainless Steel Wire

## Special Tubing Available:

- Fully Annealed
- Seamless
- Passivated
- Electropolished
- Drawn to Specifications
- OEM Tubular Components
- Smooth Bore
- O.D./I.D. Plastic (PTFE) & Ceramic Coating

## Rapid Tubing & Wire Guide:

- RW = Regular Wall
- TW = Thin Wall
- XTW = Extra Thin Wall
- XXTW = Extra Extra Thin Wall
- HW = Heavy Wall
- XHW = Extra Heavy Wall



## 304 Stainless Steel Wire

Cat No.	Nominal O.D.		To Fit Hypotubing Gauge
	Inches	MM	
W-.006	0.006	0.152	27RW
W-.008	0.008	0.203	25RW, 26RW
W-.010	0.01	0.254	24RW, 24TW, 25TW, 26TW
W-.014	0.014	0.356	22RW, 23TW
W-.018	0.018	0.457	21RW, 22TW
W-.019	0.019	0.483	20RW, 21TW, 21RW
W-.020	0.02	0.508	20RW, 21TW, 21RW
W-.021	0.021	0.533	20RW, 21TW
W-.023	0.023	0.584	20TW
W-.025	0.025	0.635	18RW, 19TW
W-.026	0.026	0.66	18RW, 19TW
W-.030	0.03	0.762	18RW, 19TW
W-.033	0.033	0.838	18TW
W-.035	0.035	0.889	18TW
W-.038	0.038	0.965	17RW, 18XTW
W-.040	0.04	1.016	17RW, 18XTW
W-.042	0.042	1.067	16RW
W-.0435	0.0435	1.105	16RW
W-.045	0.045	1.143	17TW
W-.0475	0.0475	1.207	15RW, 16TW
W-.050	0.05	1.27	15RW, 16TW
W-.052	0.052	1.321	15TW
W-.0583	0.0583	1.481	15TW
W-.061	0.061	1.549	14RW
W-.065	0.065	1.651	14TW
W-.068	0.068	1.727	13RW
W-.071	0.071	1.803	13TW
W-.081	0.081	2.057	13TW
W-.083	0.083	2.108	12RW
W-.085	0.085	2.159	12TW
W-.090	0.09	2.286	11RW
W-.095	0.095	2.413	11TW
W-.103	0.103	2.616	10RW
W-.114	0.114	2.896	9RW, 10TW

Quick turnaround for new product development is enabled by Cadence's large stock of tubing and wire.

**304 Stainless Steel Wire**  
**Full Hard, Spring Temper**  
*(Supplied in 4' Lengths)*

### Solid Stylet Wire

This solid stylet wire features type 304 stainless steel, bare bright finish, hand drawn passivated and straightened. Some of the sizes fit our hypodermic tubing as indicated on the solid stylet wire table. Stylet wire is stocked in 4 foot lengths.



# RAPID TUBING & WIRE

## 304 Stainless Steel

#3 Temper - Full Hard (Supplied in 5' Lengths)

Conforms to ISO 9626 Specifications

## 304 Stainless Steel Hypodermic Tubing

RAPID TUBING & WIRE

Cat No.	Gauge	Nominal O.D.		O.D. Range Inches	Nom. Wall Inches	Nominal I.D.		I.D. Range Inches
		Inches	MM			Inches	MM	
T-06RW	6RW	0.203	5.16	0.2020 - 0.2040	0.015	0.173	4.39	0.1700 - 0.1760
T-06.5RW	6.5RW	0.188	4.78	0.1870 - 0.1890	0.01	0.168	4.27	0.1650 - 0.1710
T-07RW	7RW	0.18	4.57	0.1790 - 0.1810	0.015	0.15	3.81	0.1470 - 0.1530
T-07.5RW	7.5RW	0.172	4.37	0.1710 - 0.1730	0.011	0.15	3.81	0.1470 - 0.1530
T-08RW	8RW	0.165	4.19	0.1640 - 0.1660	0.015	0.135	3.43	0.1320 - 0.1380
T-08.5RW	8.5RW	0.156	3.96	0.1550 - 0.1570	0.01	0.136	3.45	0.1330 - 0.1390
T-09RW	9RW	0.148	3.76	0.1470 - 0.1490	0.015	0.118	3	0.1150 - 0.1210
T-09.5RW	9.5RW	0.141	3.58	0.1400 - 0.1420	0.011	0.119	3.02	0.1170 - 0.1210
T-10RW	10RW	0.134	3.4	0.1330 - 0.1350	0.014	0.106	2.69	0.1040 - 0.1080
T-10TW	10TW	0.134	3.4	0.1330 - 0.1350	0.01	0.114	2.9	0.1120 - 0.1160
T-10XTW	10XTW	0.134	3.4	0.1330 - 0.1350	0.008	0.118	3	0.1160 - 0.1200
T-10.5RW	10.5RW	0.126	3.2	0.1250 - 0.1270	0.01	0.106	2.69	0.1040 - 0.1080
T-11RW	11RW	0.12	3.05	0.1190 - 0.1210	0.013	0.094	2.39	0.0920 - 0.0960
T-11TW	11TW	0.12	3.05	0.1190 - 0.1210	0.01	0.1	2.54	0.0980 - 0.1020
T-11.5RW	11.5RW	0.115	2.92	0.1140 - 0.1160	0.01	0.0945	2.4	0.0930 - 0.0960
T-12RW	12RW	0.109	2.77	0.1080 - 0.1100	0.012	0.085	2.16	0.0830 - 0.0870
T-12TW	12TW	0.109	2.77	0.1080 - 0.1100	0.009	0.091	2.31	0.0890 - 0.0930
T-12.5RW	12.5RW	0.1	2.54	0.0990 - 0.1010	0.009	0.082	2.08	0.0800 - 0.0840
T-13RW	13RW	0.095	2.41	0.0940 - 0.0960	0.012	0.071	1.8	0.0690 - 0.0730
T-13TW	13TW	0.095	2.41	0.0940 - 0.0960	0.009	0.077	1.96	0.0750 - 0.0790
T-13HW	13HW	0.095	2.41	0.0940 - 0.0960	0.015	0.065	1.65	0.0640 - 0.0660
T-13.5RW	13.5RW	0.089	2.26	0.0880 - 0.0900	0.009	0.071	1.8	0.0690 - 0.0730
T-14RW	14RW	0.083	2.11	0.0820 - 0.0840	0.01	0.063	1.6	0.0610 - 0.0650
T-14TW	14TW	0.083	2.11	0.0820 - 0.0840	0.008	0.067	1.71	0.0660 - 0.0685
T-14XTW	14XTW	0.083	2.11	0.0820 - 0.0840	0.0055	0.072	1.83	0.0710 - 0.0730
T-14.5RW	14.5RW	0.078	1.98	0.0770 - 0.0790	0.007	0.063	1.6	0.0620 - 0.0640
T-15RW	15RW	0.072	1.83	0.0715 - 0.0725	0.009	0.054	1.37	0.0525 - 0.0555
T-15TW	15TW	0.072	1.83	0.0715 - 0.0725	0.006	0.061	1.54	0.0595 - 0.0615
T-15XTW	15XTW	0.072	1.83	0.0715 - 0.0725	0.005	0.063	1.6	0.0615 - 0.0635
T-15HW	15HW	0.072	1.83	0.0715 - 0.0725	0.011	0.05	1.27	0.0480 - 0.0520
T-15.5RW	15.5RW	0.068	1.73	0.0675 - 0.0685	0.007	0.054	1.37	0.0525 - 0.0555
T-16RW	16RW	0.065	1.65	0.0645 - 0.0655	0.009	0.047	1.19	0.0455 - 0.0485
T-16TW	16TW	0.065	1.65	0.0645 - 0.0655	0.006	0.054	1.36	0.0525 - 0.0545
T-16XTW	16XTW	0.065	1.65	0.0645 - 0.0655	0.005	0.056	1.42	0.0545 - 0.0565
T-16HW	16HW	0.065	1.65	0.0645 - 0.0655	0.016	0.033	0.84	0.0310 - 0.0350
T-16.5RW	16.5RW	0.062	1.57	0.0615 - 0.0625	0.005	0.052	1.32	0.0505 - 0.0535
T-17RW	17RW	0.058	1.47	0.0575 - 0.0585	0.008	0.042	1.07	0.0405 - 0.0435
T-17TW	17TW	0.058	1.47	0.0575 - 0.0585	0.005	0.048	1.21	0.0465 - 0.0485
T-17XTW	17XTW	0.058	1.47	0.0575 - 0.0585	0.004	0.05	1.27	0.0490 - 0.0510

# RAPID TUBING & WIRE

## 304 Stainless Steel Hypodermic Tubing (Continued)

Cat No.	Gauge	Nominal O.D.		O.D. Range Inches	Nom. Wall Inches	Nominal I.D.		I.D. Range Inches
		Inches	MM			Inches	MM	
T-17.5RW	17.5RW	0.056	1.42	0.0555 - 0.0565	0.004	0.046	1.17	0.0450 - 0.0470
T-18RW	18RW	0.05	1.27	0.0495 - 0.0505	0.0085	0.033	0.84	0.0315 - 0.0345
T-18TW	18TW	0.05	1.27	0.0495 - 0.0505	0.006	0.039	0.98	0.0375 - 0.0395
T-18XTW	18XTW	0.05	1.27	0.0495 - 0.0505	0.004	0.042	1.07	0.0410 - 0.0430
T-18HW	18HW	0.05	1.27	0.0495 - 0.0505	0.01	0.03	0.76	0.0280 - 0.0320
T-18.5RW	18.5RW	0.046	1.17	0.0455 - 0.0465	0.006	0.034	0.86	0.0325 - 0.0355
T-19RW	19RW	0.042	1.07	0.0415 - 0.0425	0.0075	0.027	0.69	0.0255 - 0.0285
T-19TW	19TW	0.042	1.07	0.0415 - 0.0425	0.005	0.033	0.83	0.0315 - 0.0335
T-19XTW	19XTW	0.042	1.07	0.0415 - 0.0425	0.0035	0.035	0.89	0.0340 - 0.0360
T-19XXTW	19XXTW	0.042	1.07	0.0415 - 0.0425	0.0025	0.037	0.94	0.0360 - 0.0380
T-19HW	19HW	0.042	1.07	0.0415 - 0.0425	0.01	0.022	0.56	0.0200 - 0.0240
T-19.5RW	19.5RW	0.039	0.99	0.0385 - 0.0395	0.006	0.027	0.69	0.0255 - 0.0285
T-20RW	20RW	0.036	0.91	0.0355 - 0.0360	0.006	0.024	0.6	0.0230 - 0.0245
T-20TW	20TW	0.036	0.91	0.0355 - 0.0360	0.005	0.026	0.67	0.0255 - 0.0270
T-20XTW	20XTW	0.036	0.91	0.0355 - 0.0360	0.004	0.028	0.7	0.0270 - 0.0285
T-20XXTW	20XXTW	0.036	0.91	0.0355 - 0.0360	0.003	0.024	0.6	0.0290 - 0.0305
T-20.5RW	20.5RW	0.0343	0.87	0.0340 - 0.0345	0.004	0.0265	0.67	0.0255 - 0.0275
T-21RW	21RW	0.032	0.82	0.0320 - 0.0325	0.006	0.02	0.51	0.0195 - 0.0210
T-21TW	21TW	0.032	0.82	0.0320 - 0.0325	0.0045	0.023	0.59	0.0225 - 0.0240
T-21XTW	21XTW	0.032	0.82	0.0320 - 0.0325	0.0035	0.025	0.64	0.0245 - 0.0260
T-21XXTW	21XXTW	0.032	0.82	0.0320 - 0.0325	0.0025	0.027	0.69	0.0265 - 0.0280
T-21HW	21HW	0.032	0.82	0.0320 - 0.0325	0.008	0.017	0.43	0.0150 - 0.0180
T-21.5RW	21.5RW	0.0303	0.77	0.0300 - 0.0305	0.0035	0.0238	0.6	0.0230 - 0.0245
T-22RW	22RW	0.028	0.72	0.0280 - 0.0285	0.006	0.016	0.41	0.0155 - 0.0170
T-22TW	22TW	0.028	0.72	0.0280 - 0.0285	0.004	0.02	0.5	0.0190 - 0.0205
T-22XTW	22XTW	0.028	0.72	0.0280 - 0.0285	0.003	0.022	0.57	0.0215 - 0.0230
T-22XXTW	22XXTW	0.028	0.72	0.0280 - 0.0285	0.002	0.024	0.6	0.0235 - 0.0250
T-22XHW	22XHW	0.028	0.72	0.0280 - 0.0285	0.014	0.0048	0.12	0.0005 - 0.0090
T-22.5RW	22.5RW	0.0263	0.67	0.0260 - 0.0265	0.003	0.0203	0.52	0.0195 - 0.0210
T-23RW	23RW	0.025	0.64	0.0250 - 0.0255	0.006	0.013	0.34	0.0125 - 0.0140
T-23TW	23TW	0.025	0.64	0.0250 - 0.0255	0.004	0.017	0.44	0.0165 - 0.0180
T-23XTW	23XTW	0.025	0.64	0.0250 - 0.0255	0.003	0.021	0.54	0.0179 - 0.0200
T-23XXTW	23XXTW	0.025	0.64	0.0250 - 0.0255	0.002	0.019	0.48	0.0205 - 0.0220
T-23.5RW	23.5RW	0.0233	0.59	0.0230 - 0.0235	0.003	0.0173	0.44	0.0165 - 0.0180
T-24RW	24RW	0.022	0.57	0.0220 - 0.0225	0.005	0.012	0.31	0.0115 - 0.0130
T-24TW	24TW	0.022	0.57	0.0220 - 0.0225	0.004	0.015	0.37	0.0135 - 0.0155
T-24XTW	24XTW	0.022	0.57	0.0220 - 0.0225	0.003	0.016	0.41	0.0155 - 0.0170

RAPID TUBING & WIRE

# RAPID TUBING & WIRE

## 304 Stainless Steel Hypodermic Tubing (Continued)

Cat No.	Gauge	Nominal O.D.		O.D. Range Inches	Nom. Wall Inches	Nominal I.D.		I.D. Range Inches
		Inches	MM			Inches	MM	
T-24XXTW	24XXTW	0.022	0.57	0.0220 - 0.0225	0.002	0.018	0.46	0.0175 - 0.0190
T-24.5RW	24.5RW	0.0213	0.54	0.0210 - 0.0215	0.002	0.0163	0.41	0.0155 - 0.0170
T-25RW	25RW	0.02	0.51	0.0200 - 0.0205	0.005	0.01	0.26	0.0095 - 0.0110
T-25TW	25TW	0.02	0.51	0.0200 - 0.0205	0.004	0.012	0.31	0.0115 - 0.0130
T-25XTW	25XTW	0.02	0.51	0.0200 - 0.0205	0.003	0.014	0.36	0.0135 - 0.0150
T-25XXTW	25XXTW	0.02	0.51	0.0200 - 0.0205	0.002	0.016	0.41	0.0155 - 0.0170
T-25.5RW	25.5RW	0.0193	0.49	0.0190 - 0.0195	0.002	0.0143	0.36	0.0135 - 0.0150
T-26RW	26RW	0.018	0.46	0.0180 - 0.0185	0.004	0.01	0.26	0.0095 - 0.0110
T-26TW	26TW	0.018	0.46	0.0180 - 0.0185	0.003	0.0123	0.31	0.0115 - 0.0130
T-27RW	27RW	0.016	0.41	0.0160 - 0.0165	0.004	0.008	0.21	0.0075 - 0.0090
T-28RW	28RW	0.014	0.36	0.0140 - 0.0145	0.0035	0.007	0.18	0.0065 - 0.0080
T-29RW	29RW	0.013	0.34	0.0130 - 0.0135	0.003	0.007	0.18	0.0065 - 0.0080
T-30RW	30RW	0.012	0.31	0.0120 - 0.0125	0.003	0.006	0.16	0.0055 - 0.0070
T-31RW	31RW	0.01	0.26	0.0100 - 0.0105	0.0025	0.005	0.12	0.0040 - 0.0055
T-32RW	32RW	0.009	0.23	0.0090 - 0.0095	0.0025	0.004	0.11	0.0035 - 0.0050
T-33RW	33RW	0.0083	0.21	0.0080 - 0.0085	0.002	0.0043	0.11	0.0035 - 0.0050
T-34RW	34RW	0.0073	0.19	0.0070 - 0.0075	0.002	0.0033	0.08	0.0025 - 0.0040

## 316 Stainless Steel Hypodermic Tubing

## 316 Stainless Steel Hypodermic Tubing #3 Temper - Full Hard (Supplied in 5' Lengths)

Cat No.	Gauge	Nominal O.D.		O.D. Range Inches	Nom. Wall Inches	Nominal I.D.		I.D. Range Inches
		Inches	MM			Inches	MM	
T-12-316	12RW	0.109	2.77	0.1080 - 0.1100	0.012	0.085	2.16	0.0830 - 0.0870
T-13-316	13RW	0.095	2.41	0.0940 - 0.0960	0.012	0.071	1.8	0.0690 - 0.0730
T-14-316	14RW	0.083	2.11	0.0820 - 0.0840	0.01	0.063	1.6	0.0610 - 0.0650
T-15-316	15RW	0.072	1.83	0.0715 - 0.0725	0.009	0.054	1.37	0.0525 - 0.0555
T-16-316	16RW	0.065	1.65	0.0645 - 0.0655	0.009	0.047	1.19	0.0455 - 0.0485
T-17-316	17RW	0.058	1.47	0.0575 - 0.0585	0.008	0.042	1.07	0.0405 - 0.0435
T-18-316	18RW	0.05	1.27	0.0495 - 0.0505	0.0085	0.033	0.84	0.0315 - 0.0345
T-19-316	19RW	0.042	1.07	0.0415 - 0.0425	0.0075	0.027	0.69	0.0255 - 0.0285
T-20-316	20RW	0.036	0.91	0.0355 - 0.0360	0.006	0.024	0.6	0.0230 - 0.0245
T-21-316	21RW	0.032	0.82	0.0320 - 0.0325	0.006	0.02	0.51	0.0195 - 0.0210
T-22-316	22RW	0.028	0.72	0.0280 - 0.0285	0.006	0.016	0.41	0.0155 - 0.0170
T-23-316	23RW	0.025	0.64	0.0250 - 0.0255	0.006	0.013	0.34	0.0125 - 0.0140
T-24-316	24RW	0.022	0.57	0.0220 - 0.0225	0.005	0.012	0.31	0.0115 - 0.0130
T-25-316	25RW	0.02	0.51	0.0200 - 0.0205	0.005	0.01	0.26	0.0095 - 0.0110



## 316 Stainless Steel Capillary Tubing - Burr-Free, Precision Cut Ends

Cat No.	Cap Color	Description
9530	Red	0.005" I.D. X 0.062" O.D. X 5cm
9531	Red	0.005" I.D. X 0.062" O.D. X 10cm
9532	Red	0.005" I.D. X 0.062" O.D. X 20cm
9533	Red	0.005" I.D. X 0.062" O.D. X 30cm
9536	Black	0.007" I.D. X 0.062" O.D. X 5cm
9537	Black	0.007" I.D. X 0.062" O.D. X 10cm
9538	Black	0.007" I.D. X 0.062" O.D. X 20cm
9539	Black	0.007" I.D. X 0.062" O.D. X 30cm
9542	Blue	0.01" I.D. X 0.062" O.D. X 5cm
9543	Blue	0.01" I.D. X 0.062" O.D. X 10cm
9544	Blue	0.01" I.D. X 0.062" O.D. X 20cm
9545	Blue	0.01" I.D. X 0.062" O.D. X 30cm
9548	Yellow	0.02" I.D. X 0.062" O.D. X 5cm
9549	Yellow	0.02" I.D. X 0.062" O.D. X 10cm
9550	Yellow	0.02" I.D. X 0.062" O.D. X 20cm
9551	Yellow	0.02" I.D. X 0.062" O.D. X 30cm
9554	White	0.03" I.D. X 0.062" O.D. X 5cm
9555	White	0.03" I.D. X 0.062" O.D. X 10cm
9556	White	0.03" I.D. X 0.062" O.D. X 20cm
9557	White	0.03" I.D. X 0.062" O.D. X 30cm
9560	Green	0.04" I.D. X 0.062" O.D. X 5cm
9561	Green	0.04" I.D. X 0.062" O.D. X 10cm
9562	Green	0.04" I.D. X 0.062" O.D. X 20cm
9563	Green	0.04" I.D. X 0.062" O.D. X 30cm

## 316 Stainless Steel Capillary Tubing - Burr-Free, Precision Cut Ends 1/16" O.D. Capillary Tubing

### Fully Annealed Seamless Tubing

- Precision, square and burr-free cut
- Ultrasonically cleaned and passivated with final flow-through-I.D.-flush
- Color-coded caps for I.D. size identification
- Packaged one to a bag



## 316 Stainless Steel Capillary Tubing

Cat No.	Nominal O.D.		Nominal I.D.	
	Inches	MM	Inches	MM
T-.005-316	0.062	1.57	0.005	0.127
T-.007-316	0.062	1.57	0.007	0.178
T-.010-316	0.062	1.57	0.01	0.254
T-.020-316	0.062	1.57	0.02	0.508
T-.030-316	0.062	1.57	0.03	0.762
T-.040-316	0.062	1.57	0.04	1.016

## 316 Stainless Steel Capillary Tubing .062" (1/16") O.D. - Fully Annealed, Seamless Tubing (Supplied in 5' Lengths)

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### Performance Leader

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- Our custom design and manufacturing capabilities
- Excellent per unit pricing
- We guarantee our work 100%



# CUSTOM SOLUTIONS

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- Custom Packaging
- Cutting
- Design Assistance for New Products
- EDM
- Electrochemical Deburring
- Electrochemical Edge Enhancement
- Electrochemical Pointing
- Electro-Plating
- Electro-Polishing
- Finishing
- Flaring & Flanging
- Grinding
- Heat-Treating
- Insert Molding
- Inventory Management
- Joining
- Laser Cutting
- Laser Marking
- Laser Welding
- Machining
- Micro-Drilling
- Notching
- Overmolding
- Packaging
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