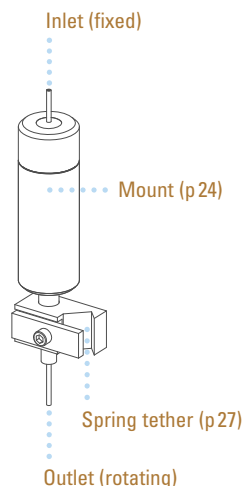


STAINLESS STEEL SWIVELS

A swivel is a device that is inserted into the fluid path so that the infusion line can rotate as the animal moves. It is a critical part of any tethered animal infusion system. Instech's fluid swivels have been in use for forty years and have earned a reputation as the finest in the industry.

Each swivel is precision machined to ensure ease of rotation, durability and reliability. Self-adjusting seals, at the heart of every Instech swivel, actually improve with use. All stainless steel models include a universal swivel-to-tether clamp which mates with any Instech spring tether.



Microdialysis Swivels



For years, Instech's 375/D/22QE swivel has been the industry standard for awake animal microdialysis. It features quartz lining on the center channel to minimize dead volumes and reactivity with neurotransmitters. Otherwise it is the same as our 375/D/22 model, with torques that are appropriate for rats but not mice. The newer 375/D/22QM is a completely different seal design with two significant improvements: quartz lining on both the center and side channels, and extremely low frictional torque, making it the first dual channel swivel that can be used with mice. However, the 'QM model is more fragile than the 'QE and often cannot be repaired if clogged or damaged.

Single Channel Swivels

Instech single channel stainless steel swivels are autoclavable and may be reused hundreds of times. The standard models are typically used with rats and mice, but work with rabbits, guinea pigs and, with the SR750 strain relief, large animals as well.



Part No.	Description	Unit
375/25	Single channel swivel, 25ga	ea
375/22	Single channel swivel, 22ga	ea
375/20	Single channel swivel, 20ga	ea
375/18TW	Single channel swivel, 18ga thin wall NEW	ea

<http://www.instechlabs.com/Infusion/swivels/375.php>

Part No.	Description	Unit
375/D/22QE	Microdialysis swivel, quartz-lined center channel	ea
375/D/22QM	Low-torque quartz-lined dual channel swivel	ea

<http://www.instechlabs.com/Infusion/swivels/375d22qm.php>

Dual Channel Swivels

A two channel swivel gives you the ability to infuse and withdraw simultaneously, to infuse on one channel while monitoring on the other, or to infuse on two lines independently.



Part No.	Description	Unit
375/D/22	Dual channel swivel, 22ga	ea
375/D/20	Dual channel swivel, 20ga	ea

<http://www.instechlabs.com/Infusion/swivels/375d.php>

Custom Swivels

In addition to the standard models above, Instech can manufacture swivels to user specifications within the limits allowed by the seal designs. From the outside, custom swivels look just like Instech's standard stainless steel models: they are precision machined, 3/8in in diameter (compatible with all Instech swivel mounts) and 2-1/4in (single channel) or 2-3/8in (dual channel) in length. What varies is the size of the center and side channels. The largest possible single channel swivel is 16ga; the largest dual channel model is thin-walled 19ga (19TW). See the tubing chart at the end of this catalog for dimensions and call for pricing and availability.

STAINLESS STEEL SWIVELS

Swivel Repair and Replacement Parts



CLAMP



375R/D/22

Part No.	Description	Unit
CLAMP	Universal swivel-to-tether clamp	pkg of 5
MCLAMP	Slotted swivel clamp for looped-wire tethers	pkg of 5
375R/D/xx	Tools and parts to repair 1 dual ch swivel (xx = gauge)	ea
375R/xx	Tools and parts to repair 5 single ch swivels (xx = gauge)	ea
375R/D/TK	Tools to repair dual channel swivels (no parts)	ea
375R/CSxx	Parts to repair 5 center channel seals (xx= gauge)	ea
375R/D/SSxx	Parts to repair 5 side seals (xx= gauge)	ea
375R/BR	Replacement bearings for 5 single or dual channel swivels	ea

See <http://www.instechlabs.com/Infusion/swivels/swivelrepair.php> for repair kit contents, pricing and information on returning swivels for factory service.

Clean and dry swivels after every use. Clogged channels are often not repairable. See the instruction manual for more information on maintenance.

Specifications

	375/25	375/22	375/20	375/18TW	375/D/22	375/D/20	375/D/22QE	375/D/22QM
Channels	1	1	1	1	2	2	2	2
Inlet and outlet tube gauge	25	22	20	18 thin wall	22	20	22	22
ID - center channel	.010" (0.25mm)	.016" (0.41mm)	.023" (0.58mm)	.039" (1.0mm)	.016" (0.41mm)	.023" (0.58mm)	.006" (0.15mm)	.006" (0.15mm)
Dead volume - center channel	3 µl	8 µl	16 µl	40 µl	8 µl	18 µl	1.4 µl	1.8 µl
ID - side channel	-	-	-	-	.016"	.023"	.016"	.006"
Dead volume - side channel	-	-	-	-	18 µl	18 µl	18 µl	2.8 µl
Typical frictional torque	.020 oz-in	.030 oz-in	.040 oz-in	.200 oz-in	.225 oz-in	.275 oz-in	.225 oz-in	.015 oz-in
Materials in fluid path, center ¹	SS, T	SS, T	SS, T	SS, T	SS, T	SS, T	Q, T	Q, T
Materials in fluid path, side ¹	-	-	-	-	SS, T	SS, T	SS, T	Q, T, P, PM
Compatible tubing	COEX-T25	COEX-T22	PE90	PE160	COEX-T22	PE90	COEX-T22 ²	COEX-T22 ²
Autoclavable	yes	yes	yes	yes	yes	yes	yes	no
Dimensions (dia. x len.)	.375"x2.25" (9.53x57mm)	.375"x2.25" (9.53x57mm)	.375"x2.25" (9.53x57mm)	.375"x2.25" (9.53x57mm)	.375"x2.38" (9.53x60mm)	.375"x2.38" (9.53x60mm)	.375"x2.38" (9.53x60mm)	.375"x2.38" (9.53x60mm)

Applications

Mouse, infusion								
Mouse, microdialysis								
Rat, infusion								
Rat, BP measurement								
Rat, viscous solutions								
Rat, microdialysis								
Larger animals, infusion								

¹ Material key: SS corrosion-resistant stainless steel (304 and 316); P polysulfone plastic; T Teflon®; Q fused silica quartz; PM polyimide. Teflon is a registered trademark of DuPont.

² Or microdialysis tubing with connectors. Note: traditional "blue widget" connectors may damage swivels. Use Instech silicone MC015/10 connectors instead.

³ Stainless steel swivels are not recommended for self-administration studies involving cocaine or other narcotics. Will void warranty. Use Instech plastic swivels instead.

SINGLE CHANNEL PLASTIC SWIVELS

Instech's plastic swivels are designed for researchers who prefer that the components touching the fluid path be replaced frequently to avoid cross-contamination and the cost of cleaning.

Compared to our stainless steel swivels, these models feature plastic bodies to reduce cost; however, the critical internal components are the same. As a result, these swivels feature Instech's unique self-adjusting seals, a superior design that has proven reliable through tens of thousands of infusion studies.

All models include a plastic swivel-to-tether clamp for attachment to standard Instech spring tethers at no additional cost. The swivel bodies are color-coded by gauge according to international standards.

Plastic swivels are available in three sizes, with or without luer inlets, individually packaged and sterilized, or as part of pre-assembled infusion kits.



Optional luer inlet on 22ga and 20ga models

Part No.	Description	Unit
375/25PS	Single channel plastic swivel, 25ga, sterile	ea
375/22PS	Single channel plastic swivel, 22ga, sterile	ea
375/20PS	Single channel plastic swivel, 20ga, sterile	ea
375/22PLS	Single channel plastic swivel, luer inlet, 22ga, sterile	ea
375/20PLS	Single channel plastic swivel, luer inlet, 20ga, sterile	ea

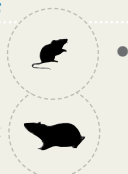
<http://www.instechlabs.com/Infusion/swivels/37520p.php>

Specifications

	375/25PS	375/22PS	375/20PS
Channel gauge	25ga	22ga	20ga
ID	.010in (.25mm)	.016in (.41mm)	.023in (.58mm)
Dead volume	2.5 µl	6 µl	12 µl
Typical frictional torque	.020 oz-in	.035 oz-in	.045 oz-in
Materials in fluid path ¹	SS, T	SS, T	SS, T
Compatible tubing	COEX-T25, FunnelCath	COEX-T22, 3Fr catheter	PE-60, PE90
Compatible tethers ²	CIH62, LW62	VAH95T, CIH95, LW95, DC95	VAH95T, CIH95, LW95, DC95
Autoclavable	No	No	No
Dimensions (dia. x len.)	.375x1.83in (9.5x46mm)	.375x1.83in (9.5x46mm)	.375x1.83in (9.5x46mm)
Weight	2.2g	2.2g	2.3g
Body color	Purple	Blue	Pink

Applications

Mouse, infusion



Rat, infusion

Rat, BP measurement

Rat, viscous solutions

Larger animals, infusion

•

•³

•

•

•

¹ Material key: SS corrosion-resistant stainless steel (304 and 316); T Teflon®. In luer models, ABS plastic body is also in fluid path.

² Plastic clamps included with swivels use press fit to spring tethers. Order metal adjustable CLAMP separately to use other tethers.

FIVE CHANNEL SWIVELS

These remarkable swivels feature five low dead volume channels and rotational torque as low as that of our one-channel models.

The practical limit on the number of lines in a traditional fluid swivel has been two; swivels with three or more channels are typically impossible for a rodent to turn and can have large dead volumes or problems with cross-channel leakage.

To solve these problems Instech kept the seals tight but added a motor to assist the rotation. A controller senses the animal's movement and drives the swivel core to follow the animal. Unlike switch-based systems, this swivel features a proportional control, allowing fine continuous movement to minimize stress on the animal. The torque felt by the animal is similar to that of an Instech single channel swivel. This power-assisted proportional control technology was first introduced in 2000 in Instech's patented Swivelless Swivel™, but is applied here to a swivel that hangs above caging of the researcher's choice.



Channels are color coded to match inlets and outlets

The control unit mounts to the vertical portion of the counter-balanced arm and is powered by a 12VDC adapter. The analog motor drive signal is available as an output for rotational activity monitoring.

The swivel is counterbalanced to minimize forces on the animal. While the power assist circuitry is responsive enough that a mouse can turn the swivel, use with mice is not recommended due to the negligible weight of the animal relative to the swivel.

There are three standard configurations with a variety of combinations of microdialysis channels, which have low dead volume and are lined to protect neurotransmitters, and standard 22ga infusion channels. Other configurations are possible; contact Instech for more information.



Specifications

Number of channels	5
Dead volume - μ D channels	6-7 μ l
Dead volume - 22ga channels	15-20 μ l
ID - μ D channels	0.009in (0.2mm)
ID - 22ga channels	0.015in (0.4mm)
OD - all channels	0.028in (0.7mm) - 22ga
Materials in fluid path	Titanium, polyimide, Teflon®
Rotational activity output	Analog signal, \pm 2V maximum
Lever arm length	5.75in (14.6cm)
Swivel dimensions (L x Dia)	7in x 0.6in (18x1.5cm)
Swivel weight	95 gms (counterbalanced)

Part No.	Channel				
	1 ●	2 ●	3 ●	4 ●	5 ●
MCS/5A	μ D	μ D	μ D	μ D	22ga
MCS/5B	22ga	22ga	22ga	22ga	22ga
MCS/5C NEW	μ D	μ D	22ga	22ga	22ga

<http://www.instechlabs.com/Infusion/swivels/mcs.php>