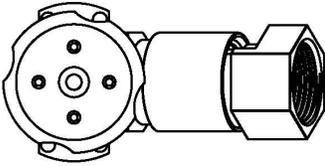
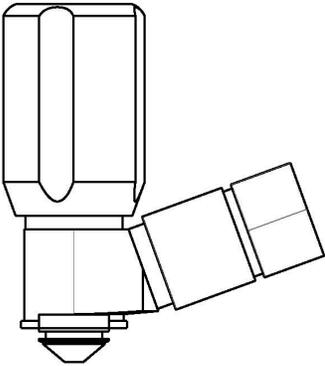
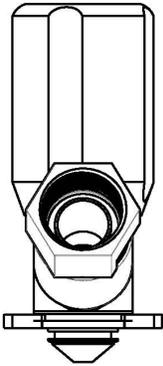
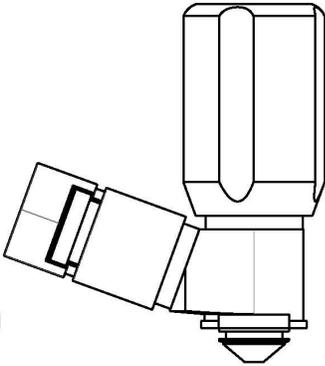
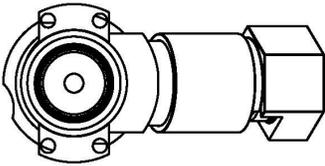


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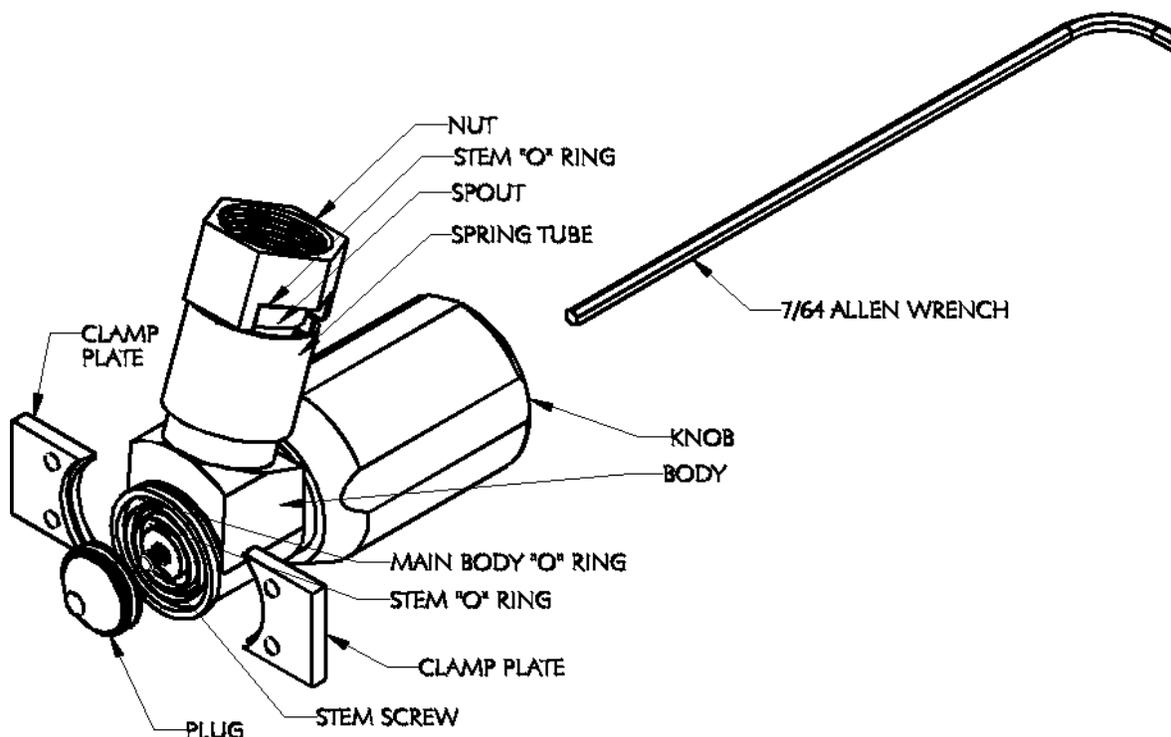
RV-500 VACUUM VALVE

LTR	DESCRIPTION	POSITION	DATE																									
																												
																												
																												
			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="font-size: small;">UNLESS SPECIFIED TOLERANCES ARE</td> <td rowspan="4" style="text-align: center; vertical-align: middle;">  Sci-in Tech Scientific Instrumentation Technology www.sciin.com </td> </tr> <tr> <td colspan="2" style="font-size: x-small;">DEG ±1/2°</td> </tr> <tr> <td colspan="2" style="font-size: x-small;">000±0.005"</td> </tr> <tr> <td colspan="2" style="font-size: x-small;">00±0.010"</td> </tr> <tr> <td style="font-size: small;">DRAWN BY</td> <td colspan="2" style="font-size: small;">PO BOX 1437 PRINCETON, NJ 08542</td> <td style="font-size: small;">REV.</td> </tr> <tr> <td style="font-size: small;"><i>M. CARR</i></td> <td style="font-size: small;">PART NO.</td> <td></td> <td></td> </tr> <tr> <td style="font-size: small;">MATL.</td> <td colspan="2" style="font-size: small;">PART NAME</td> <td></td> </tr> <tr> <td style="font-size: small;">DATE 3/8/03</td> <td colspan="2" style="font-size: small;">RV-500 ASSEMBLY</td> <td></td> </tr> </table>	UNLESS SPECIFIED TOLERANCES ARE		 Sci-in Tech Scientific Instrumentation Technology www.sciin.com	DEG ±1/2°		000±0.005"		00±0.010"		DRAWN BY	PO BOX 1437 PRINCETON, NJ 08542		REV.	<i>M. CARR</i>	PART NO.			MATL.	PART NAME			DATE 3/8/03	RV-500 ASSEMBLY		
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GENERAL DESCRIPTION

This valve is designed for small size with large throughput, quick efficient pump time, lightweight, tamper proof vacuum system, removes mass and a bulky appendage, simple to attach and use. What makes it unique is the detachable plug allowing the valve to be removed without voiding vacuum.

Construction materials are nickel-plated brass body, stainless steel vacuum components and durable plastic knob. The 316 S.S. bellows is welded to the stem and bonnet providing good vacuum integrity. Each valve is helium leak tested to 2×10^{-9} torr.



The Sci-in Tech connector can be adapted with other connector schemes ("VCR", VCO, ConFlat, Quick Connect, QF, ASA, ISO, etc.) if desired. Connecting to this valve is done with a $\frac{3}{4}$ -20 male thread with $\frac{1}{2}$ " hole and a smooth flat surface for the "O" ring to seal against. Any adapter (noted above) can be added to this tube. Sci-in Tech can provide an adapter or can be done in-house.



MOUNTING & UNMOUNTING VALVE

Review parts of valve in **Fig.1**. Valve can be installed with or without plug attached to valve stem on bottom.

Tools needed: Long 7/64" allen wrench, long 3/32" allen wrench with ball end, and wrench to fit the nut (if necessary).

Mounting valve to instrument.

Make sure all surfaces are clean and free of scratches where "O" rings seal.

Attach vacuum plug to valve stem if not already in valve port bore of instrument.

Turn knob counterclockwise to move valve stem approximately 1/16" from closed position to not interfere with mounting.

Loosely attach one (1 of 2) clamp plate (cleat) onto the valve port (on instrument) with two 4-40 screws.

Slip valve into position nesting valve flange into the radius cutout of the installed cleat.

Attach the other clamp plate loosely with two 4-40 screws.

Turn the screws until they just start to apply compression to the "O" ring. Check the valve to make sure it is oriented and seated properly, and then tighten the screws securely. Visually check valve alignment again.

Turn the knob lightly clockwise until it stops turning freely. to contact the plug.

DO NOT EVER FORCE TURNING THE KNOB IN EITHER DIRECTION.

(Forcing any movement could shorten life of valve.)

Insert the 7/64 long allen wrench into the center hole in the knob and tighten the screw just enough to compress the "O" ring. **DO NOT OVERTIGHTEN THIS SCREW!** Compressing "O" ring is all that is necessary.

Attach the vacuum pump source to valve and start pumping with the valve closed.

Check gauge to verify the seal of plug to valve stem is secure.

Open valve until the stop is felt and then close ¼ turn so the knob is loose. **DO NOT EXERT FORCE ON THIS STOP.**

After a satisfactory vacuum is achieved, the procedure to follow is:

Close valve.

Remove vacuum source.

Unscrew center screw in knob with 7/64 allen wrench.

Remove two clamp plates.

Remove valve.

Protect surface of valve port area from contamination and scratches

VACUUM CONNECTION SCHEME

This design is intended to provide easy connection, large diameter $\frac{1}{2}$ " throughput a way to remove or replace the threaded nut without harming the valve.

Slide on the spring.

Slide on the plastic spring retainer tube.

Compress the spring by pushing on the plastic retainer

Slip the nut on from the side and release retainer tube.

The nut is now captured and can be used for connecting to the vacuum source.

