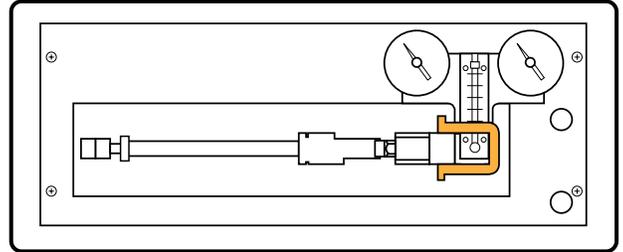


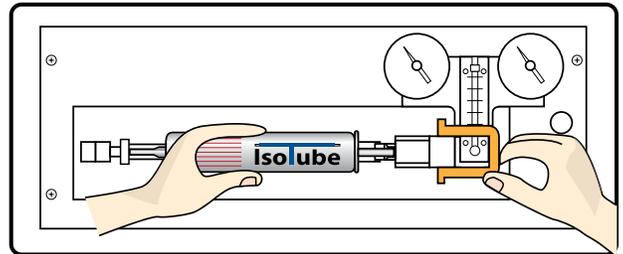
Collection of Mudgas Samples with Single-use IsoTubes®

NOTE: IsoTubes® are NOT suitable for gases containing hydrogen sulfide (H₂S, sour gas)

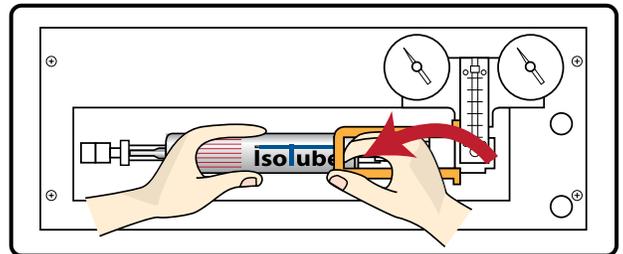
1. Remove an unused IsoTube® from its plastic bag and discard the bag.



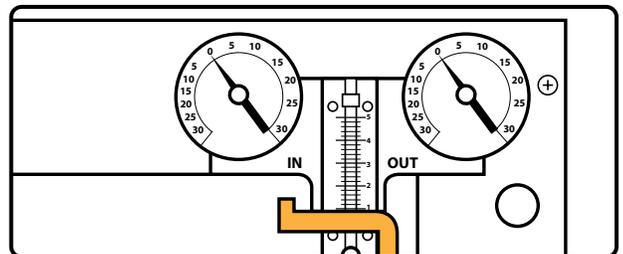
2. Insert the IsoTube® into the Manifold as shown. Some downward pressure must be applied to the “saddle” that locks the moveable chuck open when it is not in use



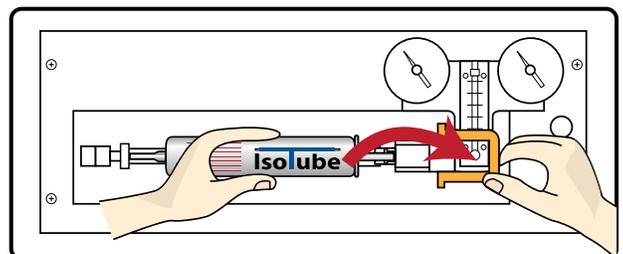
3. Move the control handle as shown in Picture 3 until it comes down over the top of the IsoTube®. **Caution: leaving the control handle in an intermediate position can stop the gas flow entirely.** If you are having difficulty closing the valve, try opening the control handle completely to release the pressure it is exerting on the saddle. Also, be sure that the IsoTube® is securely centered and seated into both chucks. Failure to do so will result in a missed sample, and will also block flow downstream to other monitoring equipment.



4. **NOTE: Monitoring flow rates and pressures will aid in identifying any malfunctions.** Both gauges should read approximately the same when there is flow through either the IsoTube® or the bypass. A problem is indicated if there is no flow on the flow meter and/or if either gauge reads significantly different from the other.



5. When a sample is ready to be collected, open the control handle until it “locks” into place. This closes off the flow to the IsoTube® into which your sample is collected, and switches flow through the BYPASS.



6. Remove the IsoTube® with the sample and place the provided caps on the stem valves on both ends of the IsoTube®.
7. Insert another tube as in Step 1 to allow for sufficient flushing of the new tube, and to prepare for collection of the next sample. Collecting a sample should be timed to occur just **after** any automatic monitoring equipment has sampled, so that the results are not affected by the purging of the next IsoTube®.
8. There are adhesive backed tags included with each carton of IsoTubes®. The first tag on each sheet (below left) provides space for identification of the company, rig and well as shown below. This tag should be placed on the **inside** flap of the box. Fill in the tags using a ballpoint pen...**PRESS HARD** as two duplicate copies are being made.

PRODUCT IDENTIFICATION ISO-TUBE # 1 of 25	Ajax Oil Co./BigRig <small>COMPANY or RIG</small>
	OCS-G-12345 ST #2 <small>WELL #</small>

Well Information

10,000 ft <small>Depth or Sample ID</small>	Atm. <small>Pressure</small>
130 G.U. <small>Gas Units</small>	DDC <small>Flammable Air Indicator</small>
01-01-04 14:30 <small>Date & Time</small>	

Sample Information (1 per tube)

9. Complete one of the adhesive-backed sample information tags (above right) for the sample just collected.
10. Remove the completed tag from the backing sheet and attach it to the IsoTube®.
11. Return the IsoTube® to the shipping carton.
12. When a carton of 25 IsoTubes® is filled, check to see that all caps have been replaced.
13. Remove the yellow copy of the sample identification tags and keep it for your records. The white copy should be put back in the carton with the IsoTube® samples.
14. If none of the IsoTubes® in a carton are pressurized, and if none of the IsoTubes have methane concentrations that exceed 5% by volume (the lower limit of flammability), the carton can be sealed up and shipped without hazardous materials labels.
15. If any of the IsoTubes® in a carton are known to be under pressure, or if any of the Iso Tubes are suspected of containing greater than 5% methane, the carton must be shipped as hazardous material. The necessary warning labels and shipping instructions are included in each carton.

Please help us to improve these instructions by giving us your comments and suggestions.

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