

AIR Tech Notes

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Subject: **Oil Draining**

There are several things you should consider when draining oil from an ammonia system. First is the oil draining procedure to be used. This procedure should follow your standard operating procedure (SOP). It should include safety equipment, emergency response, eye wash locations, valve isolation and lockout procedures, first aid and disposal requirements. If you do not have an oil draining procedure or would like to compare yours to another I would suggest the recommended oil draining guidelines by the International Institute of Ammonia Refrigeration (IIAR). It is a very good source for information for the ammonia industry. The website is, <http://www.iiar.org/>, or they can be reached by phone at (202) 857-1110. If you are not a member of IIAR, I would recommend you consider joining as it is a valuable resource for our industry.

I recommend using self closing valves on all oil drain connections, as this will ensure in the event of a problem the valve will close. If the style of valve is a spring loaded ball valve it should have a means of relieving the interior of the ball in the event that the ball has liquid in it after oil draining is completed. Another self closing valve is a Danfoss QDV-15. It also has a means of relief in the event liquid is left between the stop valve of the oil pot and the self closing valve for oil draining.

Care should be taken when draining oil to insure all low spots are drained as well as the oil pots. I always try to look at all the possible points in a piping system that can accumulate oil. Some of these are low points such as traps in the piping, columns, pump suctions when not in use, and thermosyphon oil coolers. With certain oils it is possible to have the oil separate in the high pressure receiver. With the addition of an oil pot the oil can be drained from the HPR.

With all the different designs of systems today it is difficult to have a one procedure fits all approach to oil draining. Some systems will have unique characteristics which require the oil draining procedure to be specific to them. The majority of systems will require more than one procedure for all the locations that would require draining.

Because of the hazards associated with ammonia systems; oil draining should only be performed by properly trained personnel and in accordance with appropriate SOP.