

Modine's Modu-Coil (modular coil) offers a replacement solution for cases where the coil is bigger than the available space to maneuver the coil into its operation location.

The Modu-Coil is a fluid coil built in two modules or sections allowing each module to fit in elevators and tight spaces making the transportation and installation of the coil easier. The greatest benefit from the modular coil is that it eliminates the need to demolish walls that otherwise will be needed, resulting in huge savings on expensive demolition/remodel and crane services while reducing down time.

Construction

Each of the two modular sections is constructed with one tube plate where each section's open tubes terminate. At the site, the two sections and one gasket are aligned together using as pilot pins the factory preinstalled bolts in the one section and then fastened together to complete the coil assembly.

The modular coil is selected with the same number of rows, fins per inch, tubes high and circuiting as a standard fluid coil. The difference will be on the finned length. Because of the split, the finned length will be effectively reduced by two times the tube plate thickness (minimum 0.75 inches), too small a length reduction to have any significant impact on the overall coil performance.

The original modular coil was available with 5/8 OD copper tubing and 0.035 minimum tube wall thickness. The offering is being revised as per this report by adding 1/2" tube OD option with 0.022" and 0.030" tube wall thickness. Headers and return bends are the same construction as a normal fluid coil. Tube plates are manufactured with carbon steel. The circuitry will be selected the same way as in a standard fluid coil with either same end or opposite end connections. Dimensions of the coil will follow standard Heatcraft coil design. However, the factory will need to be consulted for fin height and finned length limitations.

Operating Pressures

In general, the maximum operating pressure for a Modu-Coil is 250 psig with a maximum fluid temperature of 200°F. Consult factory outside this range.

Installation

A modular coil will require extra support at the partition location. Also torque check 24 hours after installation, before operation starts is recommended.

1. Carefully remove the coil from the shipping package to avoid damage to the finned surface area. Damaged fins can be straightened using an appropriate fin comb. If a mist eliminator was purchased, remove it before installation.
2. Modine recommends cleaning the coil with a commercially available coil cleaner prior to installation. Refer to Maintenance for cleaning recommendations.
3. Check the coil hand designation to insure that it matches the system. Water and glycol coils are generally plumbed with the supply connection located at the bottom of the leaving air-side of the coil and the return connection at the top of the entering air-side of the coil. This arrangement provides counter flow heat exchange and positive coil drainage. If a universal coil is supplied, cap off the two unused connections.
4. Modu-Coils are shipped from the factory in sections. One section is provided, assembled with ½" bolts torqued to the plate for connection of sections, gasket, and cover plate. Remove the cover plate and discard. The other section is provided with .562 diameter thru-holes.
5. During coil section assembly, care should be taken so that each individual section is supported so the sections will align evenly. Once the units are connected, refer to the Torque Pattern procedure below (Section 10).
6. Proper clearance should be maintained between the coil and other structures such as the fan, filter racks, transition areas, etc.
7. Once installed, the coil should be pressurized to 75 psig with dry nitrogen or other suitable gas. The coil should be left pressurized for a minimum of 10 minutes. If the coil holds the pressure, the hook-up can be considered leak free. (Additional recommendation in section 10) If the pressure drops by 5 psig or less re-pressurize the coil and wait another 10 minutes. If the pressure drops again, there are more than likely one or more small leaks which should be located and repaired. Pressure losses greater than 5 psig would indicate a larger leak that should be isolated and repaired. If the coil itself is found to be leaking, contact your local Modine coil representative.
8. All field brazing and welding should be performed using high quality materials and an inert gas purge (such as nitrogen) to reduce oxidation of the internal surface of the coil.
9. All field piping must be self-supporting. System piping should be flexible enough to allow for thermal expansion and contraction of the coil.
10. The recommended Torque pattern and pounds is as follows.
 - A. Nuts and weld studs should be coated with thread lubricant.
 - B. Tighten all nuts per Figure 1 - Torque Pattern, to 35 ft-lb torque. After the initial torque has been applied re-torque them to 50 ft-lb, again using the pattern shown in Figure 1.
The permissible range of final torque values are as follows:

Maximum torque:	53 ft-lb
Design torque:	50 ft-lb
Minimum torque:	47 ft-lb
 - C. Pressure-test the coils per the installation instructions.
 - D. It is recommended that after the coil has been leak tested and found to be free from leaks, let it sit for 24 hours.
Re-torque nuts to 50 ft-lb per Figure 1 - Torque Pattern.
 - E. Refill the coil per the operation instructions.

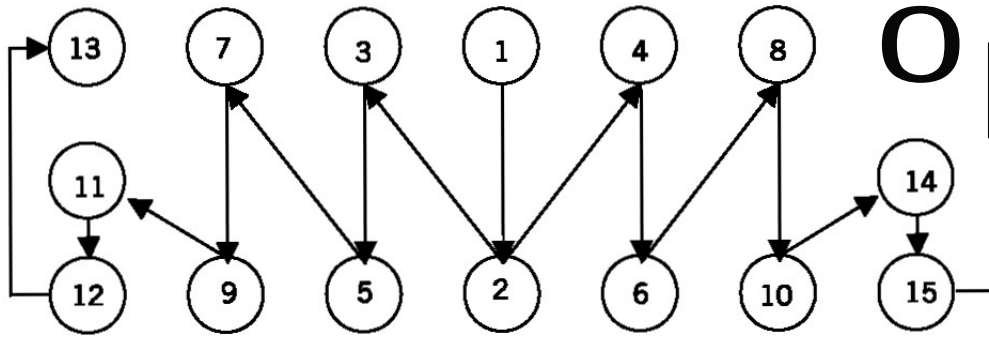


Figure 1-Torque Pattern