

CUMMING

TECHNICAL NOTE 100-9

225 Bodwell Street Avon, MA 02322.1148
1.800.432.6464
Fax 508.580.0960 www.cummingcorp.com

HANDLING AND INSTALLATION OF C-FLOAT MODULES

GENERAL

These instructions are general in nature and may not apply in every case. Consult both the riser manufacturer and Cumming Corporation for specific installation procedures.

C-FLOAT MATERIALS

C-FLOAT syntactic foam buoyancy modules are a lightweight composite of plastic and glass. The outer fiberglass skin is resistant to impact. However, plastic is not as strong as steel and extra caution is required to avoid damage. See Figure 1 for typical module configurations.

HANDLING PRECAUTIONS

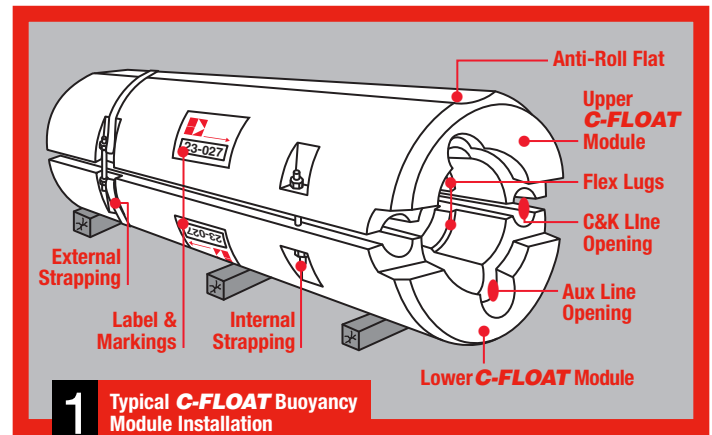
The main precaution is to avoid banging against sharp metal edges. Impact is the most common cause of damage to modules. Use soft straps to lift and move modules. Chains or wire rope will cut and scratch the module surface.

STACKING AND RACKING

The two most important rules to be followed in stacking modules are to: (1) Avoid bearing stress in excess of 1,000 psi on either the stacking flats or on the flexure lugs; and (2) Take care to prevent large bending loads by always locating supports directly under the flexure lugs, as shown in Figure 2. Stacking flats typically 12.00" wide are molded into the O.D. surfaces of **C-FLOAT** modules. These flats not only prevent rolling but also provide a large bearing area for stacking. In addition, the I.D. of each module is equipped with two flexure lugs designed to safely carry loads and isolate the buoyancy elements from any bending. Special attention to these features is essential to prevent damage or risk of injury when stacking modules or suited risers several layers high.

TOOLS REQUIRED

A mobile crane will be required with capacity to lift a completed riser joint with modules. A fork lift truck is a convenient way to move individual modules. The basic tools required are wrenches with deep sockets. Pneumatic tools will speed installation. All threaded connections should be lubricated (e.g., moly-based grease). Always use lock nuts. A torque wrench for checking nut torque (See "Torque on Nuts") is recommended.

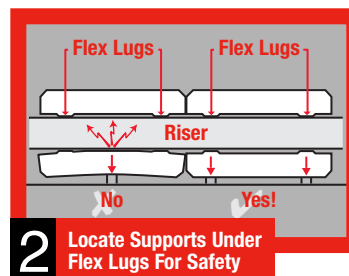


TORQUE ON NUTS

A common cause of damage is over-tightening of module nuts and locknuts. Excessive torque will break straps or crack fiberglass. Standard modules require only 20 ft-lbs for assembly. Stop collars and other steel parts normally take 50-80 ft-lbs. Make sure all threaded fasteners are lubricated. Some loosening of nuts may occur during the first 24 hours. Consult the specific installation instructions and re-check all nuts for proper torque and tension.

TYPICAL ASSEMBLY PROCEDURE

(1) Lay out bottom tier of modules; (2) Lower riser joint into place; (3) Mount upper tier of modules in line with lower tier; (4) Install stop collars at the ends of the joint, allowing approx. 1.5" of space at each end; (5) Install straps or studs on modules, apply lubricant, and torque nuts and locknuts per specific instructions; (6) Re-check after 24 hours for proper tension.



MAINTENANCE

Routine maintenance is not required other than occasional checking of fastener tension. Repair kits are available from Cumming Corporation to mend minor damage to module surfaces.

Sales Offices Worldwide

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www.cummingcorp.com
for the office nearest you.

