

APPROVED FOR LAYOUT ONLY



CATALYTIC CONSTRUCTION CO.

Date: APR 14 1970

ORIGINAL SIGNED BY

Signed: S. C. [unclear] Department

NUTTER ENGINEERING COMPANY

Division of Heat Fluid Engineering Corporation
of the obligation to meet specifications and all other terms and conditions of the subcontract or purchase order.

AREA CODE 918 446-6672
TELETYPE 910-845-2112
P. O. BOX 7008
TULSA, OKLAHOMA 74105

TRAY INSTALLATION COMMENTS

1. Tray parts should be protected by covered storage to prevent damage and loss of small parts such as hardware. Do not expose bolts and nuts to dust or water.
2. Accompanying the shipment is one complete set of Shop Detail Drawings, which set contains Bill of Material showing the parts required and spares. Shipping Lists also accompany the trays, showing number of parts shipped and location by box, bundle or crate number. The drawings should be studied by the supervising personnel and, if possible, a trial fit-up made outside the vessel to familiarize the workmen with the proper assembly.
3. A drawing (Section Sheet) showing the various types of connections is included with the assembly drawings. This should be studied carefully. Particular care should be taken to install two-way fasteners or clamping devices only where necessary, as called for on the drawings. If this is not done, there will be a shortage of two-way devices.
4. Hardware boxes should be stored under cover to eliminate contamination by dust or water. Light oil, or other lubricant, applied to bolting immediately before use will help minimize assembly time. All fastener assemblies such as clamps and truss hardware, should be assembled on the panels outside the tower. Any possible preassembling of parts will minimize installation time.
5. To expedite hardware assembly, Ratchet, Speed, Box End, Open End, and T-Wrenches should be available to installation crew. A range of from 3 to 12 ft. lbs. of torque is recommended for 3/8" bolting. The function of the bolted joint is to be considered in order to determine the proper torque to be applied. The proper torque setting for each bolted joint should be established when assembling the first parts utilizing the maximum torque up to 12 ft. lbs. without creating a permanent distortion in the tray deck panels or hardware parts. By tightening bolting to this level, a lock-washer effect will be created with light gauge parts. Enough torque should be applied to assure maximum tightness without creating a permanent distortion in the tray deck. Thread galling may be experienced on some metals if excessive torque is used. This results in freezing nut and bolt, forcing the bolt to be twisted off to remove the tray.
6. All final tolerances should be established in accordance with the ultimate users' job specifications prior to tray installation.
7. Major support beams, which are usually used on large diameter columns, should be installed first. These parts are bolted to beam seats welded to the column wall and in many instances, especially larger field-erected columns, are not designed to pass the vessel manways. The top of the beam should be flush with the top of the tray support ring. As the beam seats are installed to a minimum dimension below the top of the support ring, it may be necessary to add shim plates under the beam to make it flush with the ring.
8. If recessed pans are used, the panels comprising the pan should be installed and tightened before beginning installation of the adjacent panels. Segmental downcomer and adjoining deck panels should be installed next. The remaining deck panels should be set in place and adjusted to provide for tower out-of-roundness or variation in diameter. The manway should be temporarily set in place to assure proper adjustment of all sections and then removed. A wood stick cut to proper length makes a useful gauge to fix position of sections adjacent to the manway throughout the rest of the trays. It is usually desirable to tighten the friction washers holding the tray floor to truss before final tightening of support ring clamps. This will allow panel to be installed flat, particularly if light gauge, whereas variations or waves in support ring might be transferred to section if support ring clamps are tightened first.
9. All clamp and bolting holes under the downcomer area must be closed by proper washer or other sealing device.
10. Gasketing should be installed according to the drawing. Particularly on vertical seams, it may be desirable to utilize small amounts of Permatex No. 1 or 2 to temporarily hold the gasket in place until the parts are permanently clamped.
11. The completed trays should be checked for level and dimensional tolerances in accordance with the ultimate users' job specifications. Workmen closing the manways should carefully check for tools, flashlights, etc., which may have been left in the trays or downcomers during installation.

220098 - TRAY INSTALLATION COMMENTS

V.P. 33020-0501-108-10R1