Expansion Joint Systems

Modular Joint Adjustment Device

Product Introduction

- The modular joint adjustment device is a tool designed to aid in opening and closing modular joints during the joint installation process.
- User-friendly and built to withstand repeated usage of the adjustment tool.
- Configured for easy adjustment with a minimum number of tools.
- The modular joint adjustment device was designed to allow easy access for the hydraulic cylinder that helps aid with the movement of the modular joints into the open or closed position.

Required Tools

- Two 10" Crescent Wrenches or two 13/16" combination wrenches
- One Enerpac RC-106 Hydraulic Cylinder Jack or similar unit as recommended (9-3/4" collapsed height with approximate 6-1/8" stroke)

Wrenches and hydraulic equipment are supplied by the contractor on site or by others.

Adjustment Device Usage

- Determine the temperature gap opening for the modular joint by using the supplied chart on the contract drawings and the engineer's determination of that temperature setting. A field engineer shall determine the joint opening on the day of installation. It is important that the engineer takes into consideration the creep and shrink of the concrete deck / bridge. Failure to do so may allow the modular joint system to be installed at an improper dimension and this could result in damage to the joint system over time.
- Decide if the modular joint needs to be opened or closed. (Modular joints are always pre-set to a mid-range temperature opening before shipment.)
- Determine the starting point for the installation on the modular joint. The curb line area near the first set of support boxes is generally a preferred location.
- Determine if the hydraulic cylinder block needs to be placed in between the edge beam blocks to open or on the outside of the edge beam blocks to close the modular expansion joint. This configuration is typical assuming the use of the recommended hydraulic cylinder jack noted in the required tools section. If necessary, the contractor may use additional fill plates with the adjustment device or omit the hydraulic cylinder block depending on the jack selected. The edge beam block adjacent to the hydraulic cylinder jack is a free-floating block that slides on the adjustment base. This free-floating block is the adjustment block for bracing the hydraulic cylinder in place to open or close the modular joint.
- Take the adjustment device and set the edge beam blocks on top of the joint. Adjust the location of the edge beam blocks by sliding them along the length of the adjustment base (interior tube). The edge beam blocks will have a notched area in the block that will
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allow these blocks to sit on top of the edge beam rails. After adjusting the edge beam blocks, the hydraulic cylinder block will be pinned into place by using the hardware supplied. Make any adjustments to the position of this block as needed to insert the hydraulic cylinder.

- With the adjustment device in place and all hardware tightened, install the Enerpac RC-106 or similar hydraulic unit between the edge beam block and hydraulic cylinder block.
- Operate the hydraulic unit to open or close the modular expansion joint at a slow rate. This will prevent damage to the modular joint or adjustment device.
- Monitor the joint opening dimension by measuring from the outside of the edge beam to the outside of the opposite edge beam. Continue moving the hydraulic unit until you achieve the proper opening.

** Note: If it is necessary to open or close the modular joint more than 2 to 3 inches, work your way down the entire length of the modular joint only opening or closing it half the amount needed. Then, come back and repeat the process. DO NOT overstress the modular joint by opening or closing it too much at any one location as this could damage internal parts.

- After the full length of joint is set to the proper opening, double check those settings before securing the modular joint in the block-out.
- Prior to placing concrete, be sure to remove the Modular Adjustment Device and any other devices that would prevent free movement of the expansion joint.