PCI Plant Quality Talk
Quality Enhancement Committee

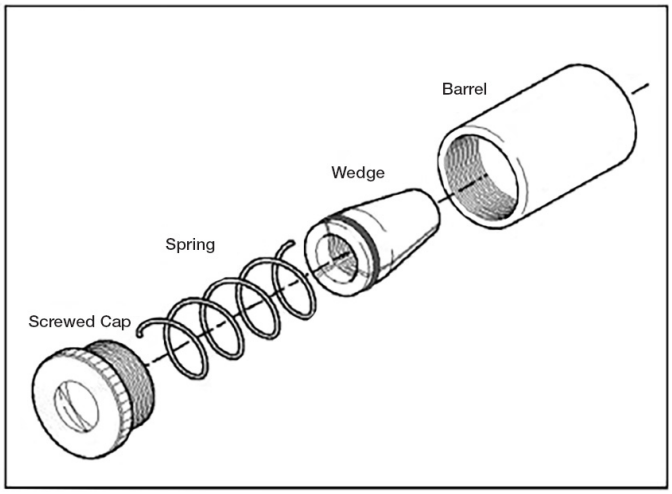
PCI Precast/Prestressed Concrete Institute

SERIES 1, ISSUE 11 – CHUCK MAINTENANCE

Chucks are placed over both ends of the strands once they have been passed through the locating holes in the stressing heads/abutments. Used in combination they lock to grip the strand, holding the force on the strand throughout the rest of the production process. A dirty, cracked, or worn chuck can fail by allowing the strand to slip out of the anchor under load, with potentially catastrophic consequences.

Best Practices

- Wedges should be marked with the manufacturer's name, size, and, where space allows, the batch traceability marking. Barrels should have the manufacturer's name, maximum load rating, and batch traceability markings. The manufacturer's certificate of conformity to their inspection plan and quality management procedures should be available upon request.
- Components for different strand sizes or from different manufacturers must not be mixed; control systems should be in place to ensure that this mixing does not take place.
- The barrels and wedges should be stored in a dry atmosphere, away from moisture. The wear rate on a set of wedges should be equal. Stock rotation should be used to ensure even wear on the wedges.
- Chucks should be cleaned and inspected after every use. A competent employee should ensure that the barrels and wedges are cleaned, inspected, and lubricated using the correct lubricant. When cleaning, care should be taken to remove any dirt from the teeth and on the segment joining faces, as this will affect the performance. Wedges are normally supplied with a rubber O ring to hold the segments together. It is important that these are fitted and in good condition to help align the wedges during use.
- Chuck maintenance should be carried out regularly and consistently in an area away from production to prevent mixing clean chucks with dirty ones. Inspection of the barrels and wedges must be carried out in good light with the aid of a magnifying glass. Rejected items must be removed from production immediately to prevent their reuse.



Enclosed Barrel Wedge

- The chucks should always have a cap and spring. The spring puts equal pressure on the wedge segments while the strand is pulled through. Without the spring, the wedge segments could seat unevenly, potentially resulting in strand slippage or failure. Stressing against a chuck without a cap could damage the chuck body and increase the chances of having misaligned jaws. Some chuck designs do not include a cap and spring. Typically, this type of chuck is only used at the dead end of the bed.
- Never strike a chuck with a hard object such as a steel hammer, reinforcing bar, or chunk of concrete. This will damage the chuck body or cap, making it even harder to get off the strand the next time. This cycle will continue until the chuck is unusable.

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- Tumblers can be used to clean chuck bodies and wedges. If they are used, be sure to never use hard media such as ceramic beads, glass beads, or sand. These will wear the components rapidly. Use natural media instead, such as walnut or pecan shell or ground corn husk. An inspection of the teeth on each jaw should be conducted if tumbled to ensure a good gripping surface.

A more detailed article on strand chuck use and maintenance is given in the appendices of PCI MNL 116 and 117.

Note: Please complete this form and return to the Quality Control Manager. All crew members should be observant and report to their foreman anything out of the ordinary on a project. *See something, say something.*

NOTES	ATTENDEE SIGNATURES
_____ DATE _____ PRESENTER	_____ _____ _____ _____ _____ _____

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