

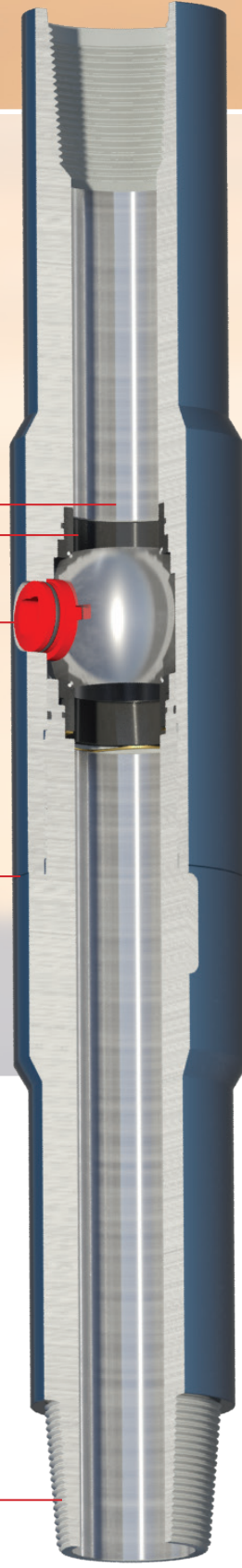
# TIW<sup>®</sup> Safety Valves and Kelly Valves

## Genuine TIW<sup>®</sup> Class II Valve

- Designed to API Spec 7-1, First Edition, Section 5
- TIW Valve Design and Quality System certified by API
- Available in 5,000, 10,000 or 15,000 working-pressure designs
- Design-tested to 2,500 psi external pressure

## Our Complete Line of Products Includes:

- TIW<sup>®</sup> Stab-In Safety Valves
- TIW<sup>®</sup> Class I Kelly Valves
- TIW<sup>®</sup> Class II Kelly Valves

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- Tested to full pressure from above and below the ball
  - Full open bore to match field end connection in most sizes
  - Bottom-located operating stem
  - High torque middle connection
  - Can be ordered with field connections to match drillpipe or tubing

## TIW® is the Original Designer of Ball-Type Safety and Kelly Valves

The TIW® Ball-Type Safety Valve provides a quick, sure shutoff in the drillstring that can repay the cost of the valve quickly as kick protection. The TIW Kelly Valve is designed to hold pressure in either direction and can be used as a Drill Stem Safety Valve or as either an Upper or Lower Kelly Cock. The Kelly Valve has an exclusive corrugated spring to ensure a positive seal. Standard pressure rating is 10,000 psi test, but higher ratings are available. The ball is stainless steel and closes easily. The full-bore Kelly valve will not interfere with running tools like core barrels or survey instruments.

Kelly Valves are available as API Type I and Type II and our strict adherence to API specifications, NACE standards and our own quality requirements ensures that TIW valves are the highest quality valves on the market. TIW also offers the Ball-Type Kelly Valve for standard, H<sub>2</sub>S and H<sub>2</sub>S trim services.

### Upper Kelly Cock

The Upper Kelly Cock is intended for use between the lower end of the Swivel Sub and the upper end of the Kelly. It is manufactured with left-hand threaded connections compatible with the Swivel Sub and Upper Kelly connection. This valve is used to close the bore if the Kelly Valve positioned at the bottom of the Kelly is below the rotary table when a kick occurs. The Valve is opened and closed manually using a valve wrench.

### Lower Kelly Valve

The Lower Kelly Valve is intended for use between the lower end of the Kelly or top drive and the upper end of the drillpipe. The standard configuration features right-hand threaded connections compatible with the lower connection on the Kelly and the drillpipe tool joints. This valve is positioned at the bottom of the Kelly/top drive and allows the drillstring bore to be closed off to contain a kick while weighting up and preparing to circulate out the kick. When running liners, the Kelly Valve is positioned below the cement manifold for well control. The valve is opened and closed manually with a valve wrench.

The Lower Kelly Valve is often referred to as a “Mud Saver Valve”. By closing the valve prior to breaking out the Kelly when making a connection, it keeps the drilling fluid in the Kelly and prevents the standpipe from running out on the rig floor and rig personnel. This saves mud and improves safety by reducing slippery rig floor conditions.

### Stab-In Safety Valve

The TIW® Safety Valve is a standby valve kept on the rig floor and is intended for use as an emergency stab-in valve when the Kelly or top drive is not connected to the work string such as during tripping pipe. The valve is kept in the open position and can be quickly stabbed in to the work string connection, made up and then closed to seal the running string bore. The valve is opened and closed manually with a valve wrench.

## Valve Matrix

| TYPE                                 | SAFETY VALVES | CLASS I KELLY VALVES | CLASS II KELLY VALVES |
|--------------------------------------|---------------|----------------------|-----------------------|
| 5,000 WP/10,000 Test                 | X             | X                    | X                     |
| 10,000 WP/15,000 Test                | X             | X                    | X                     |
| 15,000 WP/22,000 Test                | X             | X                    | X                     |
| Available in H <sub>2</sub> S Design | X             | X                    | X                     |