IS 2029 : 1998 RING WRENCHES (SPANNERS) — SPECIFICATION

The **Indian Standard IS 2029: 1998 - Ring Wrenches (Spanners) — Specification** specifies the requirements for double-ended ring wrenches, essential hand tools used to apply torque to fasteners like bolts and nuts, particularly in mechanical, automotive, and maintenance applications. These wrenches have closed-loop (ring-shaped) ends designed for a secure grip, allowing effective force application without slipping. The ring ends often have a 6-point or 12-point configuration to match fastener heads, ensuring even force distribution and minimizing damage.

The standard includes specifications for various types of ring spanners, including straight, cranked, angled, and offset, to meet different application needs like secure grip and efficient turning of fasteners, even when nuts or bolts are recessed or located in tight spaces. Key quality aspects covered by the standard are:

- **Material Requirements**: Suitable alloy steels with appropriate heat treatment are specified to ensure durability, strength, and hardness.
- **Design and Dimensions**: Standardized dimensions support compatibility with bolt heads ranging from 6 mm to 60 mm in diameter.
- **Mechanical Properties**: The standard requires that wrenches have certain strength and hardness to withstand torque and avoid deformation or breakage. Wrenches shall meet specific hardness (typically 382 HV) and torque capacity (16 Nm to 4000 Nm for this size range), with detailed test methods provided in the standard.
- **Finish and Coating**: To resist rust and ensure longevity, wrenches should have a smooth finish, with recommended coatings such as 5-micron nickel-chromium plating or minimum 8-micron cadmium plating.
- **Marking**: Wrenches should be marked with size, manufacturer's identification, and the IS number for traceability.

Additionally, the standard mandates that wrenches be well-forged, smoothly finished, and free from sharp edges, burrs, cracks, and other manufacturing defects. They undergo case hardening to enhance wear resistance, meeting performance and durability requirements for demanding conditions. These quality controls ensure the wrenches' robust construction, toughness, and safety, providing longer service life even under high-impact or harsh usage.