

Crown 12-HW-10

Gas Tungsten Arc Welding
(GTAW) TIG Alloy

Tool Steel

DCEN
All Position



Premium Machinable Hot-Work Tool Steel TIG Alloy

Typical Applications

Crown 12-HW-10 is used where tough, wear resistant welds that have good thermal shock resistance are needed. Used to repair or reclaim damaged and worn dies where heat checking due to water cooling is a problem and where machining in the as-welded condition is necessary. **Crown 12-HW-10** will repair upsetter, press, hammer and insert forging dies as well as die casting dies and other hot and cold working units. Also good for welding broken teeth in transmission type gears. It is also used on all H-series tool steels when as-welded machinability is required.

Specifications

Identifying Color:
White End

- Hardness 38-42 (Rockwell C) as welded.
- Preheat 350°F to 450°F preheat depending on base metal chemistry, the type of weld and the amount of deposit.
- Machinability Good

Procedure

Prepare area to be welded by grinding out cracks and other defects. Remove all foreign material, fatigued metal and any sharp radii. Remove all oxides and other contaminants. Preheat according to chart above. Interpass temperature should at least match the preheat temperature. Deposit stringer beads.

Manual Welding – DC straight polarity (DCEN) – Use Argon Shielding Gas

Tungsten: Traditional choice is a 2% thoriated tungsten (Red Band), however, the more recent and safer introductions of 2% ceriated tungsten (Orange Band) or 1.5% lanthanated tungsten (Gold Band) have demonstrated superior performance in most applications.

Safety note: Thorium is radioactive & may present risks which are negligible under normal conditions of use.

| Material Thickness (inches) | Tungsten Diameter | Filler Rod Diameter | Arc Voltage (volts) | Welding Current (amperage) | Gas Flow (cfh) |
|-----------------------------|-------------------|---------------------|---------------------|----------------------------|----------------|
| .045 | .040 | .045 | 7 – 14 | 60 – 100 | 15 – 20 |
| 1/16 to 3/32 | 1/16 | 1/16 | 9 – 14 | 100 – 160 | 20 |
| 1/8 | 3/32 | 1/16 | 12 – 15 | 125 – 200 | 20 |
| 3/16 | 3/32 | 3/32 | 12 – 17 | 130 – 195 | 25 |
| 3/16 to 1/2 | 1/8 | 1/8 | 15 – 20 | 150 – 300 | 25 |

All suggested settings are approximate. Inverter-based welders generally require lower amps. Welds should be tested to comply to your specifications.

Sizes and Part Numbers

| TIG Diameter | Part Numbers | |
|--------------|--------------|------------|
| | 1# Package | 5# Package |
| .045 x 36" | TT12HW/TG-BP | TT12HW/TG |
| 1/16 x 36" | TT12HW/TL-BP | TT12HW/TL |
| 3/32 x 36" | TT12HW/TN-BP | TT12HW/TN |
| 1/8 x 36" | TT12HW/TO-BP | TT12HW/TO |



!!!! WARNING !!!!



WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.

BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).

THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.

DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.

BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.

SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.

