

Crown CM-86-10 & CM-86-20

Gas Tungsten Arc Welding
(GTAW) TIG Alloy

Shielded Metal Arc Welding
(SMAW) Stick Electrode

Tool Steel



"The Royal Line"

CROWN ALLOYS COMPANY

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Premium High Tensile Chrome-Nickel-Moly Steel (8620)

Typical Applications

Crown CM-86-10 (GTAW) and CM-86-20 (SMAW) are primarily designed for building-up and joining of wrought, cast and forged AISI 8620 steels. **Crown CM-86-10 & CM-86-20** can also be used on SAE 8600 series forgings, castings, plastic molds and dies. Some other applications include the welding and overlaying of medium and high carbon steels, chrome-moly steels and low-alloy steels that are often found in pipe and pressure vessels.

Crown CM-86-10 & CM-86-20 weld deposits can be surfaced with any other tool steel if a higher hardness is desired.

Specifications

AISI 8620

Identifying Color:
Pink End

- Hardness 25-30 (Rockwell C) as welded.
- Preheat 300°F to 400°F when welding on 8620. All other alloys, preheat according to base metal.
- Tensile Strength Up to 105,000 psi
- Machinability Excellent
- Heat Treatment Use 8620 procedure

Procedure

The following procedure must be followed whether using the **CM-86-10** or the **CM-86-20**:

Base metal must be clean. Remove all foreign material, fatigued metal & any sharp radii. Remove all cracks and heat checks when using for overlay purposes. Use **Crown Anti-Spatter** to prevent marking polished or clean surfaces. Preheat according to above chart. After welding, cool to room temperature. Temper when necessary to the base metal.

CM-86-10 Welding Parameters: TIG (GTAW)

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) |
|-----------------------------|-------------------|---------------------|---------------------|----------------------------|----------------|
| 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.

CM-86-20 Welding Parameters: Stick Electrode (SMAW)

Welding current can be DC reverse polarity (DCEP) or AC. However, DCEP ensures the best weldability & penetration.

| Electrode Diameter (inches) | Welding Current (amperage) |
|-----------------------------|----------------------------|
| 3/32 | 50 – 90 |
| 1/8 | 75 – 135 |
| 5/32 | 100 – 180 |

Sizes and Part Numbers

| TIG Diameter | Part Numbers | |
|--------------|--------------|------------|
| | 1# Package | 5# Package |
| 1/16 x 36" | TTCM86/TL-BP | TTCM86/TL |
| 3/32 x 36" | TTCM86/TN-BP | TTCM86/TN |
| 1/8 x 36" | TTCM86/TO-BP | TTCM86/TO |

| Electrode Diameter | Part Numbers | |
|--------------------|--------------|------------|
| | 1# Package | 5# Package |
| 3/32 | TECM86/EN-BP | TECM86/EN |
| 1/8 | TECM86/EO-BP | TECM86/EO |
| 5/32 | TECM86/EP-BP | TECM86/EP |



!!!! 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.

