**GMAW (Gas Metal Arc Spray Transfer)**

A baseline weld was made using automated welding equipment. Voltage, Wire Feed Speed, Travel Speed and Contact-Tip-to-Work Distance were then adjusted individually from baseline weld settings to illustrate how each parameter affects a fillet weld when raised and lowered. Icons in grey indicate the specific parameter adjusted; in the case of amperage, the icon represents the value measured.

### Baseline Weld Variables

- **Wire Type:** 0.045 ER70S-6 (Quantum Arc 6)
- **Shielding Gas:** 90% Argon / 10% Carbon Dioxide
- **Base Metal:** 1/4 in. Cold Rolled Carbon Steel
- **Transfer Mode:** Spray
- **Travel Direction:** Forehand (Push)
- **Nozzle Diameter:** 5/8 in.
- **Voltage:** 235 V
- **Wire Feed Speed:** 300 IPM
- **Travel Speed:** 16 IPM
- **Contact-Tip-to-Work Distance:** +10°
- **Wire Type:** 3/4” (Flush Tip)
- **Shielding Gas:** 90% Argon / 10% Carbon Dioxide
- **Travel Speed:** 45°
- **Contact-Tip-to-Work Distance:** 26.5 V

### Decreased

- **Voltage:** 22.5 V
- **Wire Feed Speed:** 250 IPM
- **Travel Speed:** 25 IPM
- **Contact-Tip-to-Work Distance:** 5/8” (Flush Tip Recess)

### Increased

- **Voltage:** 30.5 V
- **Wire Feed Speed:** 350 IPM
- **Travel Speed:** 20 IPM
- **Contact-Tip-to-Work Distance:** 1”