

MAGNA 305

FEATURES

Magna 305 is an electrode formulated to provide non-cracking high physical properties for welding dirty steels, low alloy steels, T1 and other of the newer construction steels. It has the following superior properties:

- 1. Non-cracking Properties.** Magna 305 has alloying elements including chromium, molybdenum, nickel and manganese which are added so that there is virtually no loss in ductility while the strength is increased substantially. The elements have a fine dispersion throughout the weld as particles which tend to break up notches and crack propagations so that cracks cannot occur.
- 2. Super High Qualities.** Features high (81 kg/mm²) tensile strength, up to 24% elongation (in 50 mm) and good (73 kg/mm²) yield strength. Fully machinable (actually machines like free machining steel). Superior toughness and resistance to fracturing.
- 3. Pass-Over-Pass without intermediate Slag Chipping.** With Magna 305 it is possible to weld pass-over-pass with no slag chipping and yet there will be no porosity in the finished weld. Thus, if a hole is filled where slag-chipping is difficult, it can be filled with non-stop welding and the final weld will be completely solid. The fact that slag need not be chipped is a great time saving feature.
- 4. Welds Difficult to Weld Steels.** Magna 305 is superior when welding the new low alloy high tensile construction steels. It also imparts superior welding properties when welding steels, such as:

| | | | |
|----------------|---------------|--------------|------------------|
| T-1 Steel | USS Con-Pac M | VAN-80 | N-A-XTRA 100 |
| T-1 Type A | Jalloy S-90 | HY-80 | N-A-XTRA 110 |
| Armco SSS-100 | Jalloy S-100 | Jalloy S-110 | Jalloy AR-360 |
| Armco SSS-100A | HY-90 | SKF327 | Carbon Manganese |

It also provides perfect welds in many problem steels, such as:

Painted Steel

Rusty Steel

Oily Steel

Sulphur Bearing Steel

'Tramp' Steel

Free Machining Steel

Cold Rolled Steel

5. **Great Economy.** Because Magna 305 is approximately 2 times as strong as most ordinary electrodes, it is possible to substantially reduce the size of fillets. Many maintenance men find they can use one weld bead instead of three and still have greater strength with Magna 305.
6. **Exclusive Non-Hygroscopic Coating.** Many workshops use 'low-hydrogen' electrodes since these produce welds superior to mild steel electrodes. The problem with this is that once the low-hydrogen electrode package is opened, the electrodes start absorbing moisture rapidly. Within as little as 20 minutes their hygroscopic qualities are such that they have absorbed so much hydrogen from the atmosphere that they are no longer different from a standard mild steel electrode.

The Magna 305 coating however, has much better resistance to moisture absorption so that it produces superior welds even when exposed to the air. This feature makes it ideal for usage in outdoor workshops or in other maintenance areas where the electrodes cannot be kept in dry conditions or where electrode ovens are not available.

7. **Low temperature strength.** Magna 305 is highly suitable where high-strength welds with excellent low-temperature impact properties are required.

APPLICATION

Can be applied using either AC or DC welding machines. DC machines should be set on reverse polarity (electrode positive). Use amperage normally selected for ordinary steel electrodes of same diameter; the protective coating prevents damage to Magna 305 caused by excess amperage. Preheating is not generally required, however, heavy sections (over 100 mm. (4")thick) will give better results by preheating.

Magna 305 can be used in all positions following standard procedure. When welding vertical up - keep electrode in deposit and working in a narrow semi-

circular motion and weave steadily up the metal. Magna 305 will restrike immediately with perfect deposits free from porosity.

Recommended Amperage:

| | AC or DC Reverse | | | |
|---------------|-------------------------|--------------|----------------|--|
| Metric | Inches | Gauge | Setting | |
| 4.8 mm. | 3/16 | 6 | 230 - 290 amps | |
| 4.0 mm. | 5/32 | 8 | 140 - 220 amps | |
| 3.2 mm. | 1/8 | 10 | 120 - 150 amps | |