

MAGNA 100 AC-DC

FEATURES:

Magna 100 is an exothermic coated electrode which has been designed for chamfering, grooving and gouging of all metals. It has the following properties:

- 1. Exothermic Reaction.** Magna 100 is composed of a core wire coated with a special heat producing coating. The coating has insulating materials so that it does not get over-heated even though the electrode is used at high amperages. The coating melts more slowly than the core wire and this forms a crucible at the tip of the electrode. The coating contains chemicals that create a gas of intense velocity when melted. The coating contains ceramic and heat resisting materials. When the electrode is used, an actual blowing action like a jet is created. The heat of the electrode melts the base metal and the high velocity gas over stream blows the molten metal away, leaving a clean kerf.
- 2. Special Core Wire.** Several companies have attempted to imitate Magna 100 using an ordinary cheap steel core wire. This wire contains amounts of carbon, sulphur and phosphorous which causes deep contamination of the base metal. On sensitive metals such as stainless steel this can be disastrous. The Magna 100 core wire is manufactured under strict control and hence all impurities are kept to an absolute minimum.
- 3. Use of Magna 100.** There are daily uses for this product in every maintenance department. It can be used for removing cracks and fractures in place of grinding before welding. It is excellent for removing unwanted welds, such as when removing lifting cleats and lugs, or for taking welded sections apart. It can be used for cutting grooves anywhere required.
- 4.** Magna 100 makes a U-shaped gouge which is ideal for welding. It does not seal a crack as oxyacetylene chamfering does.
- 5. Economy.** Magna 100 is much faster than oxyacetylene gouging and up to 10 times faster than a chipping gun for removing unwanted metal.

6. **Versatility.** Magna 100 can be used on nearly all metals including cast iron, aluminium, bronze and stainless steel.

7. **Universal.** Magna 100 can be used with excellent results on any ordinary welding machine - AC or DC.

APPLICATION

AC or DC straight polarity welding machines may be used for Magna 100. Either machine is suitable so long as it has a minimum output of 250 amps.

Insert the electrode firmly into the holder and set the machine to the highest setting available. Strike an arc on a piece of scrap metal then, proceed to chamfer away the unwanted metal. Hold the Magna 100 at a very close angle to the base metal and actually push the electrode into the work surface and in the direction of travel.

Recommended Amperage:

Electrode Diameter

| Metric | Gauge | Inch. | Setting |
|---------|-------|-------|-----------------|
| 2.4 mm. | 12 | 3/32" | 150 - 250 amps. |
| 3.2 mm. | 10 | 1/8" | 250 - 350 amps. |
| 4.0 mm. | 8 | 5/32" | 275 - 400 amps. |
| 4.8 mm | 6 | 3/16" | 300 - 500 amps. |

Lower amperages may be used successfully, however, a higher amperage reading will remove more metal at a greater rate.

Magna 100 may be used for cutting and piercing applications. However, Magna 150 performs more effectively as it is designed especially for work of this type.

See over for a table showing how the angle of electrode can effect the amount of metal removed, the time taken and the durability of the electrode.

Affect of Angle of Inclination on the Efficiency of Magna 100 on 25 mm (1") Plate of Mild Steel.

| Electrode Dia. | Angle of Inclination | Current | Time taken | Metal removed | Length of Groove per sec. | Electrode Consumption | Quantity of metal removed per kg electrode |
|----------------|----------------------|---------|------------|---------------|---------------------------|-----------------------|--|
| mm. inch. | Degs. | Amp. | Secs. | Grams (lb.) | mm. inch. | mm. inch. | kg (lb.) |
| 3.2 (1/8") | 6 | 170 | 12 | 20(0.70) | 572(22.5) | 114(4.50) | 0.58(1.27) |
| 3.2 (1/8") | 9 | 170 | 12 | 26(0.90) | 572(22.5) | 114(4.50) | 0.74(1.64) |
| 3.2 (1/8") | 12 | 170 | 13 | 26(0.90) | 617(24.3) | 127(5.00) | 0.74(1.64) |
| 3.2 (1/8") | 15 | 170 | 14 | 28(1.00) | 600(23.6) | 140(5.50) | 0.68(1.49) |
| 3.2 (1/8") | 18 | 170 | 15 | 20(0.70) | 584(23.0) | 146(5.75) | 0.45(1.00) |
| 3.2 (1/8") | 21 | 170 | 15 | 14(0.50) | 610(24.0) | 152(6.00) | 0.31(0.68) |
| 4.0 (5/32") | 6 | 220 | 14 | 42(1.50) | 381(15.0) | 89(3.50) | 1.10(2.43) |
| 4.0 (5/32") | 9 | 220 | 15 | 57(2.00) | 381(15.0) | 95(3.75) | 1.38(3.03) |
| 4.0 (5/32") | 12 | 220 | 18 | 50(1.75) | 381(15.0) | 114(4.50) | 1.00(2.20) |
| 4.0 (5/32") | 15 | 220 | 18 | 35(1.25) | 401(15.8) | 114(4.50) | 0.68(1.50) |
| 4.0 (5/32") | 18 | 220 | 18 | 28(1.00) | 424(16.7) | 127(5.00) | 0.52(1.14) |
| 4.0 (5/32") | 21 | 220 | 19 | 24(0.85) | 442(17.4) | 140(5.50) | 0.50(0.88) |
| 4.8 (3/16") | 6 | 320 | 21 | 64(2.25) | 363(14.3) | 114(4.50) | 0.96(2.11) |
| 4.8 (3/16") | 9 | 320 | 22 | 113(4.00) | 381(15.0) | 127(5.00) | 1.54(3.40) |
| 4.8 (3/16") | 12 | 320 | 26 | 106(3.75) | 410(16.1) | 178(7.00) | 1.03(2.27) |
| 4.8 (3/16") | 18 | 320 | 31 | 71(2.50) | 395(15.5) | 203(8.00) | 0.59(1.31) |
| 4.8 (3/16") | 21 | 320 | 32 | 57(2.00) | 381(15.0) | 203(8.00) | 0.48(1.06) |

MAGNA APPLICTION PROCEDURE - MAGNA 100

See how "jet blast" action of Magna 100 has efficiently gouged out the cracked and fatigued metal on this cast iron assembly, leaving a clean kerf ready for welding.

