

# MAGNA 505

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Electrode for welding all types of aluminium using electric arc, with no special equipment and without argon. Has the following special qualities:

**1. Extraordinary Ease of Application.** Magna 505 is an aluminium electrode that has an ultra high pressure extruded coating rather than the conventional dipped or low pressure extruded coating. The coating has intense activity and actually enables the electrode to be applied with an exceedingly short arc. The electrode coating makes possible a spray transfer as distinct from the usual globular transfer. The short arc and spray transfer make possible unprecedented ease of welding. With this electrode, it is as easy to weld aluminium as it is to weld mild steel with a mild steel electrode. Magna 505 can readily be applied in overhead or vertical position. It welds all but the thickest sections, without preheat. The electrode does not have the wild erratic arc characteristics of ordinary aluminium electrodes, but instead provides a smooth, quiet, stable arc characteristic. Even thin gauges can be welded.

**2. High Physical Properties.**

- Up to 15 Kg/mm<sup>2</sup> (21,500 p.s.i.)
- Porosity-Free
- No Spatter
- Perfect Colour Match to Aluminium

**3. Easy Slag Removal.** Slag is of a light viscosity and floats out of the weld and will not become entrapped.

**4. Easily Adaptable.** To the following applications of the following types:

Structural members	Aluminium Pumps
Caravan & Truck Bodies	Foundry Patterns, Metal Plates & Core Boxes
Aluminium Housings	Casting Repairs
Aluminium Frames	Irrigation Piping

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## APPLICATION:

### When Applied using Electric Arc

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Heavy sections will yield a better result if bevelled to form a larger more efficient contact area. Sections up to 12 mm (1/2") thick do not require bevelling if electrode can be applied on both sides of the metal.

Preheating is generally not necessary except on particularly large and heavy members.

Apply using DC machine on reverse polarity and set to recommended current and strike an arc in the regular way. On flat work, keep electrode at a 90° angle to base metal maintaining a close arc not exceeding 3 mm (1/8") and proceed slowly and steadily.

#### **Recommended Amperages:**

<b>Metric</b>	<b>Inches</b>	<b>Gauge</b>	<b>Setting</b>
2.4 mm.	3/32	12	50-100 amps
3.2 mm.	1/8	10	65-120 amps
4.0 mm.	5/32	8	95-150 amps

When welding heavier sections, use a lower current than recommended and with a short arc, holding electrode perpendicular. Work quickly to deposit stringer beads using a weaving technique.

If Magna 505 balls and does not flow out over weld surface, slightly increase current.

If this does not solve the problem, preheat to 150°C (300°F).

#### **When Applied Using Oxyacetylene Torch**

Adjust torch to a slightly excessive acetylene flame and lightly warm base metal. Melt a small portion of flux off electrode where weld is to begin. Play heat over flux until it wets the surface, then melt one drop of alloy and apply heat until it distributes over and bonds to the surface. Continue applying Magna 505 in this way. To assist flow of alloy, Magna 55 flux is recommended.

On completion flux can be wire brushed from weld. For more thorough removal, use a brush and warm water or a solution of equal parts water and technical nitric acid followed by a fresh water rinse.

## Special Notes:

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1. When welding thin or small sections, ensure heat is not allowed to build up which will result in sagging or warping of the aluminium. On long seams weld a small portion, lift electrode from work and allow heat to dissipate before resuming.
2. Fluctuation of the arc is most likely caused by your machine being set on the wrong polarity. In this instance turn machine off and adjust to opposite polarity then resume welding.
3. When welding with Magna 505 be sure to hold electrode at a 90° angle to the base metal and travel rapidly as aluminium tends to "burn up" quickly.
4. For filling holes in heavy sections it is recommended to bore the hole and grind away irregularities to allow easy access to the hole.