

#### Magna 400 Special Alloy for Crushing Equipment

Magna 400 is a high alloy designed specially for Crushers. Deposits have outstanding high impact and abrasion resistance.

#### Magna 401 Universal Hardfacing Electrode

Magna 401 does not crack even if applied in volume or welded rapidly without cushioning. Ideal for rebuilding on worn parts on Chains, Pins / Sprockets of Hydraulic Shovels and Excavators.

#### Magna 402 Impact-Resistant Alloy for Manganese Steel

Magna 402 is an electrode, which is austenitic in structure and non-cracking. It can withstand extreme shock, loading and impact. It is ideal for overlays and rebuilding of Crusher Roller Teeth, Feeder Breaker Chain Sprockets and Shovel Main Gear Teeth.

#### Magna 404 Hardfacing Electrode for Extreme Abrasion

Magna 404 contains hard tungsten cobalt carbides in a tough alloy steel matrix. This special formulation is designed to resist severe grinding abrasion and extreme wear. The electrode can be applied using either torch or arc welding equipment.

#### Magna 405 Superior Build-up Electrode

Magna 405 is recommended for use in building up of worn parts for machining later. It is excellent for flame hardening or pack hardening. It is also ideal for repairing and rebuilding of worn Chain Sprockets / Track Rollers of SDL, Dragline Break Drums, Caterpillar Transmission Housing etc.

#### Magna 505 "Super Ease" High-Strength Alloy for Aluminum

Magna 505 is an easy to use aluminum electrode. It is popularly used to salvage aluminum components of Earth Moving Equipments such as aluminum Transmission Housings, Differential Covers, etc.

#### Magna 770 High-Strength Non-Cracking Machineable Electrode for Cast Iron

Magna 770 is specially designed to weld all types of cast iron encountered in maintenance applications. It requires little or no preheating. It is ideal for repairing and rebuilding of Engine Housings, Water Pump Housings, Compressor Cylinder Block Housings, and Gear Box Housings.

#### Magna 8N12 Universal Electrode for Nickel Alloys

Magna 8N12 is a special electrode for welding wide variety of metals and alloys and their unusual combinations. It can join carbon steels, alloy steels, stainless steels, monel, inconels, stellites, hastelloys and their dissimilar combinations. The weld is highly crack resistant under heaviest loading condition which is often encountered in components used in mining and quarrying industry.

Magna 8N12 is also available for T.I.G. process.

#### Magna Welding Alloys Specialities

##### Magna 904 "Heat Ban" Insulating Compound

Magna 904 is a jelly-like compound that actually absorbs and dissipates heat. It is safe to use on all surfaces. It has no unpleasant odour nor does it give off irritating or obnoxious fumes.

##### Magna 940 Rapid Repair Compound

Magna 940 is an instant repair compound that is excellent for "cold" repairs on parts and surfaces made of steel, copper, aluminium, cast iron, stainless steel, brass and chrome.



#### About ITW

ITW (NYSE:ITW) is a Fortune 200 global multi-industrial manufacturing leader. The company's seven industry-leading segments leverage the unique ITW Business Model to drive solid growth with best-in-class margins and returns in markets where highly innovative, customer-focused solutions are required. ITW has nearly 50,000 dedicated colleagues in operations around the world who thrive in the company's unique decentralized and entrepreneurial culture. To learn more about the company and the ITW Business Model, visit [www.itw.com](http://www.itw.com).

To offer the best service to each market segment, ITW PP & F Korea Limited operates the following divisions that are branded uniquely for the most prominent recognition by users and customers:

 **OMEGA Ultimate Lubricants**  
Specializing in lubrication solutions - greases, oils and additives

 **MAGNA Welding Alloys**  
Specializing in gas and arc welding consumables for maintenance

 **CORIUM Industrial Chemicals**  
Specializing in industrial & commercial chemicals and adhesives

 **ZETALUBE Lubricants**  
A new lubricity dimension evolved from experience

#### WE SUPPLY SUPERIOR PRODUCTS THAT MAKE MAINTENANCE:

- FASTER
- SAFER
- MORE RELIABLE

#### Our products are engineered to:

- Lower costs
- Reduce downtime
- Cut wastage

At ITW PP & F Korea Limited we are fully committed to a proactive approach to safety, health, environment and product improvement. Our commitment is well reflected in:

- Our continuous Research and Developments
- Our on-going in-house Training and our in-house Training Facilities
- Our comprehensive range of Quality Products
- Our many long-term Repeat Customers.

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Distributor:

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The information contained in this publication supersedes all relevant information previously released and is to the best of our knowledge and accurate at the time of issue on April, 2017.



Magna  
Welding Alloys

# Welding & Brazing Products

# Designed for the

# Mining & Quarrying Industry



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There is growing concern in the mining and quarrying industry over the dramatic increase in the cost of maintenance. An inadequate maintenance program where cheap production welding products are often used for repairs invariably results in excessive downtime. During which production equipment is inoperative and making no contribution to profits.

The conditions for production welding are entirely different from conditions for maintenance welding. In production welding the base metal is known, welding environments are ideal and applications are repetitive. In maintenance welding the base metals are unknown, welding conditions far from ideal and repair often are carried out on rusty and dirty parts.

With spiralling cost for labour and new parts experienced by industry today, scraping or replacing of parts is not the answer. The alternative is to salvage by repairing and rebuilding with proper maintenance products. This would minimise downtime cost for equipment, as well as save labour and replacement costs.

### How Magna Welding Alloys Benefits You

Magna Welding Alloys, a Division of ITW PP & F Korea Limited which is a part of renowned ITW Group has been pioneering since 1968, the concept of "total maintenance welding solution" for the Mining and Quarrying Industry in order to achieve the following objectives:

- Reduction in inventories
- Minimising labour cost
- Improved availability of equipment
- Shorter shutdowns and faster start-ups
- Extensions of overhaul intervals

### Research and Development

Magna's Technical Team based in Hong Kong is continuously inventing & upgrading products to meet the demands and changing trends of the Mining and Quarrying industry. Its team is dedicated to working in close partnership with its distributors and customers to provide a quality and comprehensive product range with complete technical back up service.

### Network of Distributors

The competitive advantage of Magna Welding Alloys is the ability to respond to customer's application needs and supply products quickly through its extensive network of Distributors and Marketing Consultants around the world.

### Environmental Policy

Magna Welding Alloys recognizes environmental protection as an integral part of its business activities. The company has an environmental policy that aims to minimize impact on its customers, its employees and the community. Objectives set within the policy are directed at conserving natural resources and reducing waste generated in areas of its activities.

### Internet and Intranet sites

Magna's Marketing Specialists located at various cities and its Distributors utilize an information system through the Internet Technology in order to response almost immediately to customer's queries.

### Personal Service from our Technical Specialist

Magna Welding Alloy's highly trained Marketing Consultants, Distribution Representatives and Welding Specialists are available to provide a complete package (ask for details from your local representative) to determine your individual welding needs, which may include the following:

#### Customer Support Service:

- Problems and complaints investigation
- Base metal applications recommendation
- Responding to Technical enquiries

#### In-house training program:

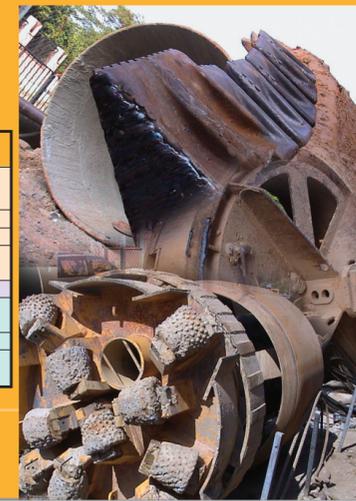
- Trained Representatives can conduct seminars and presentations on a continuous basis, covering subjects such as cost savings, product applications and health and safety requirements.
- In-house training programs are customised on request

#### On site visits:

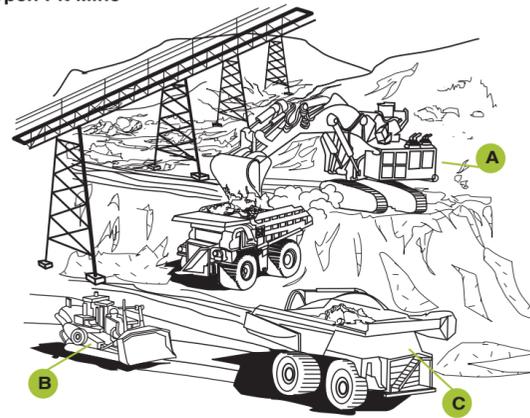
- Regular on sites visits conducted by Marketing Consultants and Distribution Representatives
- On-site visits can be conducted by Welding Specialists on request
- On-site demonstrations can be conducted by Distribution Representatives on request

### Typical Application - Underground Mine

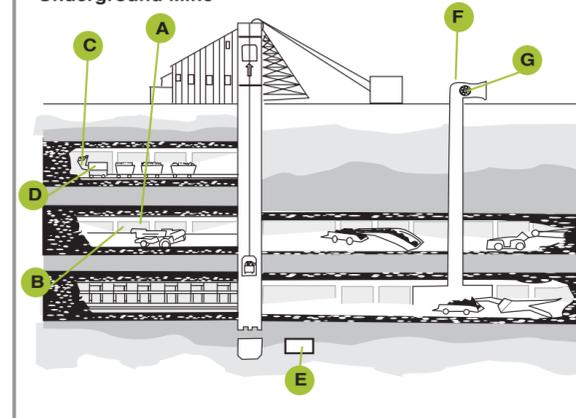
Item	Location	Equipment	Problem	Magna Product	Competitive Advantage
A	Shaft	Drill drive shaft	Undersize	M 303 Gold	A super strength alloy excellent for repairing unknown or dissimilar steels.
B	Stem flute	Drill stem	Wear	M 403	A welder-friendly hardfacing alloy with superior wear resistance.
C	Bucket	Mucker bucket	Crack	M 303 Gold	Provides good resistance to corrosion.
			Wear	M 401/402	An electrode you weld without removing the slag It is developed to withstand impact & abrasion
D	Shaft	Mucker drive shaft	Undersize	M 405	Easy to weld & provides a smooth arc with virtually no spatter.
E	Plate	Pump Impellor	Crack	M 77F	A brazing flux coated alloy that readily bonds the deposit to dirty & rusty metals.
F	Shaft	Exhaust Fan Rotor	Undersize	M 303 Gold	Weld deposits are machinable.
G	Body	Cylinder Head	Crack	M 770	Designed to weld all types of cast iron. Produces crack-free welds that are machinable.



### Open Pit Mine



### Underground Mine



### Typical Application - Open Pit Mine

Item	Equipment	Location	Problem	Magna Product	Competitive Advantage
A	Hydraulic Excavator	Bucket Teeth	Severe Impact	M 400	An excellent impact & abrasion resistance electrode
		Bucket Chassis	Crack	M 303 Gold	Weld deposits are machineable
		Hydraulic Steel Tube	Puncture	M 100	Produces carbon free surface without further cleaning. An electrode that works equally well on AC or DC.
		Engine Housing	Crack	M 100 M 770	No special equipment is needed for this electrode Easy to weld through oil, grease and other contaminants
B	Bulldozer	Sprockets	Friction Impact	M 402 M 401	Withstands extreme shock, loading & impact Welded as final layer as it outperforms other similar electrodes.
		Tracks & Pins	Friction Impact	M 402 M 401	Excellent for equipment overlays & build-ups. It can be welded pass-over-pass without slag removal.
		Track Rollers	Friction	M 402	An electrode, which rapidly work hardens to great depth & resists shock & impact.
				M 401	A hard facing electrode that can be welded in all positions including vertical and overhead
		Front Blades	Abrasion	M 402	No preheating required except in extreme low temperatures.
		Lift Springs	Crack	M 303 Gold	Excellent for all position welding.
		Diesel Crankshaft	Wear	M 405	An electrode excellent as a tough overlay for building-up of worn parts
Fuel Tank	Crack	M 940	Repairs once cured can be machined, drilled, filed or tapped.		
C	Dumper	Radiators	Leak	M 55	An easy brazing alloy for all types of aluminum.
		Hydraulic/Real Diff. Cylinders Housing	Crack	M 303 Gold	An electrode that welds all steels thereby reducing inventory.
		Chassis	Crack	M 305	Welds all steels including high alloy steels.
		Radiator	Crack	M 55	Universal alloy for all types of aluminum
	Exhaust Manifold	Crack	M 777	Crack resistance & excellent machinability.	

Magna uses a high purity core wire generally having a much higher content of noble or semi-noble metals such as nickel, molybdenum, columbium, cobalt etc, than production electrodes manufacturer. Also our electrodes are coated with the state of the art - "Magna Flux Coating" technology formulated for maintenance welding. Check with your local Magna Welding Alloy Distributor for a comprehensive list of other products that are available.



### Gas Welding / Brazing Rods for the Mining and Quarrying Industry

#### Magna 55 Superior Alloy for Aluminium

Magna 55 is an aluminium alloy that welds all types of aluminium-both sheet and cast. Its unique two-stage melting range is excellent for both thin-flowing and rebuilding applications. Ideal for repairing and rebuilding aluminium Valve Cases, Intake Manifolds, Crank Case Covers, Blower Housings etc

#### Magna 77F Super Strength Universal Flux-Coated Brazing Alloy

Magna 77F has a tensile strength double that of most ordinary brazing rods. It can be used on nearly all metals including cast Iron, bronze, brass, monel, stainless steel, nickel and all steels. It is popularly used for brazing Monel Screens to Steel Rings, rebuilding of Brass Shower Heads and Spray Nozzles on Coal Washers and Excavator's Hydraulic Pump Shaft Splines.

### Arc Welding Electrodes for the Mining and Quarry Industry

#### Magna 100 Superior Chamfering Electrode

Magna 100 is an exothermic coated electrode ideal for chamfering, grooving and gouging metals within seconds. It can be used on all metals including cast iron, aluminium, bronze and stainless steel. Excellent results are obtained on any ordinary welding machine, either AC or DC. No special equipment or skill is needed.

#### Magna 303 Gold Ferrite Balanced Super-Strength Non-Cracking Alloy for All Steels

Magna 303 Gold is a maintenance electrode that welds all steels including high alloy steels. It provides excellent crack and corrosion resistance. Magna 303 Gold is excellent for welding and rebuilding of worn parts of Hydraulic Cylinders, Axles, Pressure Pipes, Roller Frames, Buckets, Pinions, Bull Gears and Swivel Rings.

#### Magna 305 Super Tough Alloy for High Strength Steels

Magna 305 is a high alloy electrode for welding T-1 and other heavy-duty steels. Magna 305 is used as an overlay on shafts and worn parts where good machinability is necessary.

