



# **DM 400-AS**

## **Twin Wire Arc Spray System**



## WHAT IS ARC SPRAY COATING?

A high-performance thermal spraying process produced by the melting of two wires (coating material) in an arc. The molten or semi-molten wire particles are accelerated by means of an atomizing gas such as compressed air and then applied by impact at high velocities onto a grit blasted substrate – forming a wear or corrosion resistant coating. Applications include protective coating of cylinder rods, rollers, shafts, bearings, anti-skid, electric conductivity, etc.

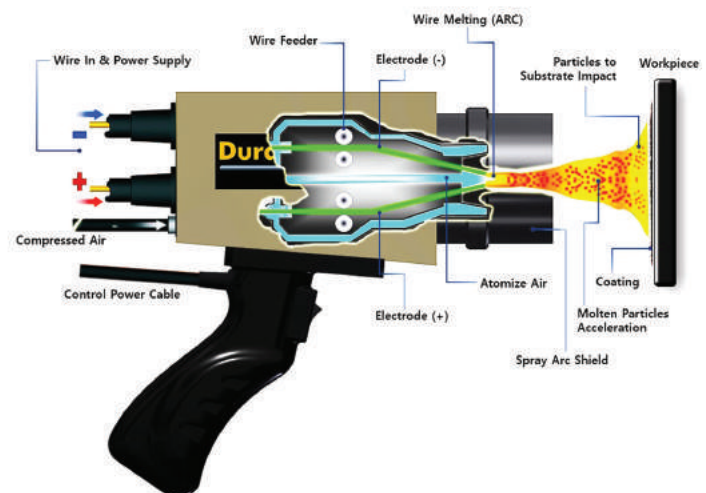
## DM 400-AS ARC SPRAY SYSTEM INTRODUCTION

Control operator fatigue with the DM 400-AS high-performance “push” arc spray system. Wire push method allows for a larger and more robust wire drive system, significantly reduced maintenance costs and gun weight. The DM 400-AS Arc Spray System unit weighs 250 kg (550 lbs) and is designed to fit any work space, stack the individual units on top of each other or separate up to 50 feet at 100% duty cycle.

Imagine having the power and flexibility of a 400-amp spray arc spray system with one-fifth the maintenance costs of conventional pull or push-pull systems. The DM 400-AS Arc Spray System from Dura-Metal Group offers unmatched performance and unbeatable power. This specially designed system lowers maintenance costs due to the lightweight torchhead 1.05 kg (2.3 lbs) that features no moving parts.

The DM 400-AS Arc Spray System has the capability of replacing the consumable wire guides in less than 30 seconds using no tools with the QuickChange Wire Guide System. The QuickChange four drive roll per wire system features either U-groove or VK-groove drive rolls for positive, slip-free wire feeding. No tools are needed for drive roll or wire diameter changes. Advanced closed-loop regenerative wire drive control system ensures consistent and repeatable coatings. Users can expect optimal airflow and atomization with a variety of air caps that are designed to produce the correct spray pattern for any job. From the High Velocity Air Cap featuring Converging/Diverging Air Chamber Geometry, which produces tight, dense spray patterns and smooth coatings, to the Fan Spray Air Cap, which provides the largest pattern.

TECHNICAL DATA	
Arc Spray System	400 Amp
Power Requirement	40 Amp
Input Supply	415 V / 3 Phase / 50 or 60 Hz 480 V / 3 Phase / 60 Hz
Air Requirement	80 PSI (50 scfh) / 1 inch hose supply
Wire Diameter	1.6 mm (1/16”), 2.0 mm (5/64”) or 2.4 mm (3/32”)
High Velocity	Yes
Wire Feeding	Electric Push Drive
Weight	250 Kg (550 lbs)



## KEY FEATURES

### DM 400-AS Wire Feeder/Control Console

Rugged QuickChange, four-drive roll per wire feed mechanism. Bypass air is metered and then directed to the drive housings and routed into the coaxial cables. This air is used to blow debris and dust off the consumable feedstock prior to it entering the coaxial cables. The closed-loop, servomotor features a regenerative motor drive. Faceplate controls consist of E-stop, Power Reset, Wire Jog, Maintain Air and Purge Air switches. Power supply controls include Voltage Control, Amperage Control and Digital LED Arc Voltage and Arc Amperage displays. Switches are environmentally sealed and rated for over one million operations. All electronics are housed in a NEMA 12 rated enclosure.

### DM 400-AS Power Supply

Reliable, three phase, SCR rectified, constant potential DC power source, provides arc voltages between 18-40 volts, permits operation between 15-400 amps at 100% duty cycle. Arc gap and spray particle size increase with a rise in voltage. Voltage should be kept at the lowest level consistent with arc stability, to provide smooth and dense coatings. All functions are controlled from DM 400-AS Wire Feeder. Remote control capability, up to 50 feet from DM 400-AS Wire Feeder, when outfitted with standard power and control cables. Fan on demand feature operates cooling fan only when needed, minimizing dirt, dust and moisture build-up within the power supply thereby minimizing maintenance. DM 400-AS Power Supply shown with optional Running Gear.

### DM 400-AS Arc Spray Torchhead

Consumable wire electrodes are fed through the internal wire guides and into the QuickChange Wire Guides. Converging/Diverging Air Chamber and Air Cap direct high velocity, laminar flow air across the arc zone. Insulated power cables, charged positive and negative, connect the DM 400-AS Torchhead to the DM 400-AS Wirefeeder. These insulated coaxial cables also provide an internal pathway for the consumable wire to reach the wire guides of the DM 400-AS Torchhead. An On/Off trigger switch is supplied on the detachable torch handle to control the wire feed, compressed air and contactor of the DM 400-AS Power Supply. The DM 400-AS Torchhead is supplied with several hard points for mounting to robots, torch manipulators and fixtures.





## SIDE PANEL CONTROLS

### Wire counter

Re-settable LCD meter that displays wire fed in feet/ meters during spray operation.

### Time counter

Re-settable LCD meter displays elapsed spray times. Timer is activated automatically whenever spray unit is operating.

### Remote/ Local Voltage Control Switch

Allows for remote control of arc voltage when incorporating DM 400-AS to automation. Disables voltage panel control on faceplate.

### Remote/ Local Amperage Control Switch

Allows for remote control of arc amperage when incorporating DM 400-AS to automation. Disables amperage panel control on faceplate.



### Preflow adjust

Operator adjustment that lengthens or shortens time that air flow is started prior to arc start. Optimizes arc start for different wire feedstocks.

### Burnback adjust

Operator adjustment that lengthens or shortens time that arc power and atomizing air are left on after trigger is released. Optimizes arc shut off which increases wire tip life.

### Display/Hold adjust

Holds last voltage and amperage values display from 0-10 seconds after spray operation is complete.

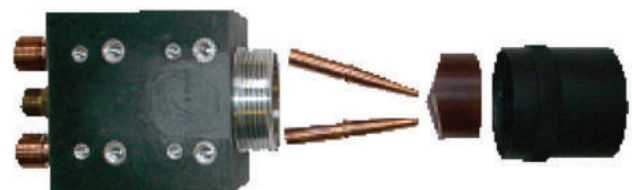
## QUICK CHANGE WIRE GUIDES

### Fan Spray Air Cap

Typically employed with zinc and aluminum feedstocks. This aircap produces a spray pattern with the largest possible spray area.

### High Velocity Air Cap

This aircap produces a small, concentrated spray pattern. Typical uses of this aircap are engineered coatings, which require low oxides and a tight collimated spray pattern.



*For application specific guidance on proper spraying procedures and parameters, please contact us at [tech.support@durametal-alloy.com](mailto:tech.support@durametal-alloy.com)*

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