



# DM350·500

CO<sub>2</sub>/MAG Automatic Welding Machine



**D** Digital Inverter  
Welding Machine  
**SERIES**

## CO<sub>2</sub>/MAG Welding Machine, pursuing Higher Quality and Efficiency

- High Quality Welding in low current range
- Spatter Free with Digital Electronic Reactor
- Stable Welding Quality by Penetration Adjustment Function
- Perfect Arc Starts for reliable welding operations
- Standard 4 Roll Feeder type with Encoder



DM350

CE-Marking  
Specification



DM350



# Digital Control creates new CO<sub>2</sub>/MAG Welding World!!!

The Newest Advanced Welding Machine with new user-friendly functions, changing conventional welding machines.

TRUE DIGITAL

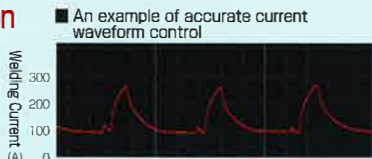


INVERTER  
**DM350-500**

## New Functions with High Quality and High Efficiency Welding

### ● Less Spatter Generation

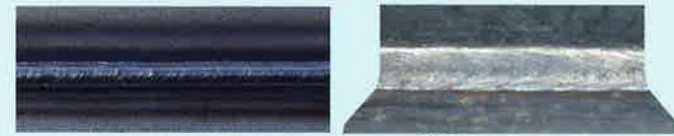
High accurate control of current waveform in the short circuit period granulates and generates fewer spatters.



### ● Stable arc control within full range of current

Stable Welding Control from 30A to 350A. Excellent for complicated joint welding and out of position welding.

#### ■ Bead Appearance

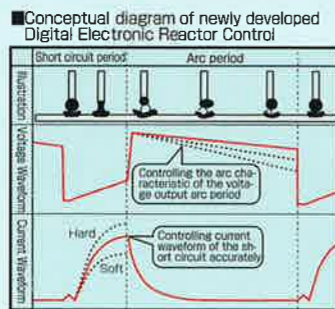


●40A, 16V, 50cm/min

●180A, 21V, 65cm/min

### ● Digital Electronic Reactor Control which supports high quality welding

OTC's original Digital Electronic Reactor controls output voltage accurately not only in the short circuit period, but also in the arc period.



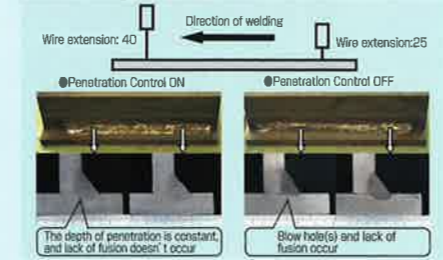
### ● Substantially improved the instantaneous arc starts by digital turbo start function and digital antistick

By standardizing the diameter of the wire point, stable arc starts are achieved for Spatter Free Welding. With automatic welding the number of start errors and down time are drastically reduced.



### ● Standard Feature: Penetration Adjustment Function, contributes to the stabilization of the welding quality

Even when the wire extension is changed while welding, penetration is maintained and welding defects are prevented.



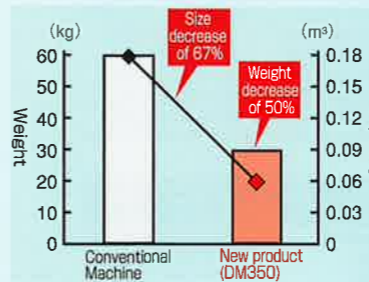
### ● Adjustment of arc characteristic provides various selection of arc control

#### ■ Arc characteristic adjustment

HARD	SOFT
<ul style="list-style-type: none"> <li>Improvement of stability for high speed welding</li> <li>Improvement of efficiency of out of position welding</li> <li>Arc stability control when the extension cable is lengthened</li> <li>Hard arc feeling is required</li> </ul>	<ul style="list-style-type: none"> <li>Reduce spatter generation</li> <li>Secure the flat bead</li> <li>Improvement of high current weldability</li> <li>Soft arc feeling is required</li> </ul>

### ● Substantially small size and light weight

A combination of 80kHz (Output Frequency) high speed inverter circuit by OTC's original Soft Switching Control and digital control provides substantially small size and light weight.



### ● Touch panel control type for user friendly operation and layout

New touch panel control based with One Key One Operations and LED indications

#### Digital Meter easily read in dark places

Digital Display of current and voltage while welding, along with the average current or voltage when welding is complete. Digital Diagnostic Display of error codes for troubleshooting

#### Welding condition memory function

Welding memory play back function of welding conditions by one touch control. Repeatability of welding conditions and for welding efficiency.



#### Easy to set the conditions by Dial

Setting of the Amps and Volts conditions accurately such as 1A and 0.1V.

#### Arc characteristics

Arc type choices selectable via front touch panel control for a variety of applications

#### A variety of functions

Touch Panel control for user friendly operation for various functions to achieve high quality welding

#### A choice of the welding modes

Easy set up of the welding wire and wire diameter by touch panel with LED indications of present setting at a glance.

## High Performance NEW Wire Feeder best matched for D Series

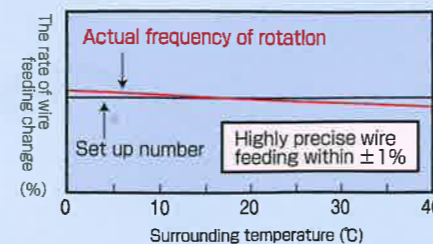
### ● 4 Roll Feeder Standard

Wire feeding power of this type is 1.5 times greater than that of a 2 roll feeding type! The powerful 4-roll wire feeding allows for greater welding torch flexibility.



### ● Encoder Feedback Type with newly developed adjustable Inertia Control

Highly precise wire feeding, not influenced by surrounding temperature or extension cable, contributes to the stabilization of the welding quality.



### ● CE-Marking Wire Feeder

CE-Marking specification wire feeder is available.

#### CE-Marking Type

- Full Covered Wire Case
- Euro torch connection



## User Friendly Design and Operation

### ● 5 welding types can correspond with 16 type's wire diameter. With option soft, also Aluminum can be weld.

● Double Operation Type for the first time in the CO<sub>2</sub>/MAG Welding world. Two types of Optional Remote Controllers are available for setting welding conditions. Analog Remote Pendant or a Digital Remote Pendant for a more accurate control of welding conditions.

### ● Easy to control the welding condition of the welding power source intensively or connect with Automatic Machine and Robots.

Possible to equip communications board (CAN) of high expandability as an option. Easy to join with personal computers, automatic machines and robots.

### ● Soft Arc Mode Standard

For soft arc, select Soft Arc Mode by Function Key. (Soft arc applicable mode: CO<sub>2</sub> mild steel solid 0.9, 1.0, 1.2)

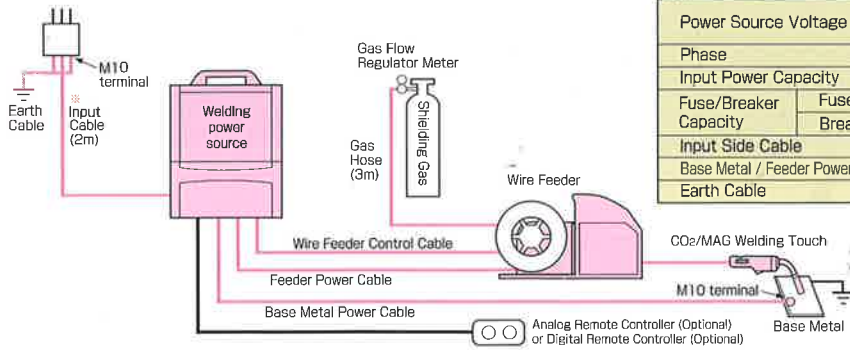
#### ■ DM350-500 Welding Modes

Wire type	Gas	Wire diameter (mm)	Wire type	Gas	Wire diameter (mm)	
Mild Steel Solid	CO <sub>2</sub>	0.8	Mild Steel Cored	CO <sub>2</sub>	1.2	
		0.9			1.4	
		1.0			1.6	
		1.2			0.8	
		1.4			0.9	
		1.6			1.0	
	MAG [80%Ar/20%CO <sub>2</sub> ]	MAG [80%Ar/20%CO <sub>2</sub> ]	0.8	Stainless Steel Solid	MIG [80%Ar/20%CO <sub>2</sub> ]	1.2
			0.9			1.0
			1.0			0.9
			1.2			1.2
			1.4			0.9
			1.6			1.2



### ● Connection Diagram

Colors indicate standard composition



\*2m Input Cable is attached to Welding Power Source.

### ■ Input Power Capacity and Cable Specifications

Item	Model Name	DM-350	DM-500
Power Source Voltage	V	400±15% (Inform input voltage when ordering)	
Phase	—	3 phase	
Input Power Capacity	kVA	more than 20	more than 29
Fuse/Breaker Capacity	Fuse	50	70
	Breaker	50	70
Input Side Cable	mm <sup>2</sup>	more than 4	more than 10
Base Metal / Feeder Power Cable	mm <sup>2</sup>	38	60
Earth Cable	mm <sup>2</sup>	more than 4	more than 10

## Standard Composition and Specifications

### ■ Welding Power Source

Welding Power Source	type	DM-350 (Standard)	DM-350 (CE-Marking)	* DM-500 (Standard)
Rated Input Voltage	V	400±15% (Inform input voltage when ordering)		
Phase		3 phase		
Rated Input	kVA	18 (15kW)		29 (25kW)
Rated Output Current	A	350		500
Rated Load Voltage	V	31.5		39
Range of Output Current	A	30~350		30~500
Range of Output Voltage	V	12~36		12~45
Max. no-load Voltage	V	58		80
Rated Duty Cycle	%	60		100
Dimensions (W×D×H)	mm	250×640×370 (except handle)		300×655×595 (except handle, eyebolt)
Weight	kg	30		51

\*Available on request.

### ■ Wire Feeder

Wire Feeder	type	CM-7401 (Standard)	CM-7401 (CE-Marking)
Applicable Wire Size	mm	(0.8), (0.9), (1.0), (1.2), (1.4), (1.6)	
Wire type		Solid Wire, Flux-cored Wire	
Wire Feeding Speed	m/min	Max 22	
Weight	kg	13	16
Dimensions (W×D×H)	mm	215×543×350	243×732×402

### ■ CO<sub>2</sub>/MAG Welding Torch

CO <sub>2</sub> /MAG Welding Torch	type	WT3500-SD	WT3510-SD	WT5000-SD
Rated Current	A	350		500
Applicable Wire Size	mm	(0.9), (1.0), (1.2)	(0.9), (1.0), (1.2), (1.4), (1.6)	(1.2), (1.4), (1.6)
Duty Cycle	%	30	60	
Cooling Method		Air-Cooled		
Cable Length	m	3, (4.5), (6)		

### ■ Wire Feeder Control Cable (10 pins)

Wire Feeder Control Cable	DM350-500 Standard Spec.	DM350 CE-Marking Spec.
Standard Cable	1.5m Cable is attached to Wire Feeder.	Choose cable from the following. BKCPP-1002 (2m) BKCPP-1007 (5m) BKCPP-1012 (10m)
Extension Cable	BKCPJ-1005 (5m), BKCPJ-1010 (10m) BKCPJ-1015 (15m), BKCPJ-1020 (20m)	

### ■ Gas Hose

Gas Hose	DM350-500 Standard Spec.	DM350 CE-Marking Spec.
Standard	3m Gas Hose is attached to Wire Feeder.	
Extension	BKGG-0605 (5m), BKGG-0610 (10m) BKGG-0615 (15m), BKGG-0620 (20m)	

### ■ Wire Feeder Power Cable

Wire Feeder Power Cable	DM350 Standard Spec.	DM350 CE-Marking Spec.	DM500 Standard Spec.
Standard Cable	Choose cable from the following. BKPDT-3802 (2m) BKPDT-3807 (5m) BKPDT-3812 (10m) BKPDT-3817 (15m) BKPDT-3822 (20m)	Choose cable from the following. BKPDJ-3802 (2m) BKPDJ-3807 (5m) BKPDJ-3812 (10m) BKPDJ-3817 (15m) BKPDJ-3822 (20m)	Choose cable from the following. BKPT-6002 (2m) BKPT-6007 (5m) BKPT-6012 (10m) BKPT-6017 (15m) BKPT-6022 (20m)

### ■ Base Metal Power Cable

Base Metal Power Cable	DM350 Standard Spec.	DM350 CE-Marking Spec.	DM500 Standard Spec.
Standard Cable	Choose cable from the following. BKPDT-3802 (2m) BKPDT-3807 (5m) BKPDT-3812 (10m) BKPDT-3817 (15m) BKPDT-3822 (20m)		Choose cable from the following. BKPT-6002 (2m) BKPT-6007 (5m) BKPT-6012 (10m) BKPT-6017 (15m) BKPT-6022 (20m)

## Optional

### ■ Remote Control Box



Analog Remote Controller

### ● Analog Remote Controller

Name	Part numbers
Analog Remote Controller (3m Cable is attached)	K5416H00
Extension Cable	BKCPJ-0605 (5m)
	BKCPJ-0610 (10m)
	BKCPJ-0615 (15m)
	BKCPJ-0620 (20m)



Digital Remote Controller

### ● Digital Remote Controller

Name	Part numbers
Digital Remote Controller	E-2454
Control Cable	BKCAN-0410 (10m) BKCAN-0420 (20m)
CAN Communication Board	K5422B00

### ■ Wheel Kit (DM-350)

Part numbers : K5416B

This is convenient for the works, in which the power source is moved frequently. The rubber feet are attached originally.

In accordance with DAIHEN's policy to make continuing improvements, design and/or specifications are subject to change without notice and without any obligation on the part of manufacturer.

## DAIHEN Corporation

4-1, Koyochonishi, Higashinada-ku, Kobe, Hyogo 658-0033, Japan  
Phone: (Country Code 81) 78-275-2006  
Fax: (Country Code 81) 78-845-8159

Distributed by :



1.2014.28D  
PRINTED IN JAPAN