

# ProWeld Micro-Welding System



RoHS/WEEE COMPLIANT MICRO-WELDING SYSTEM FOR PRECISION MOLD REPAIR

## ProWeld Micro-Welding System

As an essential resource to thousands of customers around the globe, DME is diligent in making certain its products are compatible in every region of the world. That's why every component within the Pro-Weld system satisfies all international compliances. This included RoHS (Restriction of Hazardous Substances) that prohibits or restricts the use of six potentially harmful materials in electronic equipment, and WEEE (Waste Electrical and Electronic Equipment) that requires equipment made after August 2005 to be returned to the manufacturer and recycled, rather than just "thrown away."



## Standard Equipment

Complete ProWeld system includes:

*(Dimensions in millimeters)*

SPECIFICATIONS	
Input Voltage	120 VAC
Consumable Power	600 VA
Output Power	700W
Output Voltage	0 – 9V
Output Current	0 – 1100 Amps
Control System	SCR Switching System
Auto Timer On	0.5 sec.
Dimensions (inches)	W6.5 x D17.75 x H16
Weight	62 lbs

ITEM NUMBER	DESCRIPTION
UMW0001	Power pack with welding cord, grounding cord and plate, power cord, foot switch and all accessories listed below
UMW0002	N51–Standard SKH-51 steel powder (40 grams) (63 Rc; for D-2/M-2/S-7 steels)
UMW0003	N80–Standard NAK80 steel powder (40 grams) (38-40 Rc; for P-20/P-21 steels)
UMW0004	NAK80–Standard steel sheet (10 sheets, 0.1T x 5W x 100L) (38-40 Rc; for P-20/P-21 steels)
UMW0005	NTA1–Ni Alloy sheet (10 sheets, 0.1T x 30W x 70L) (135HV; for all steels)
UMW0006	NTA2–Ni Alloy sheet (10 sheets, 0.2T x 30W x 70L) (135HV; for all steels)
UMW0009	Magnet electrode (2 dia. x 50L)
UMW0010	Magnet electrode (3 dia. x 50L)
UMW0011	Magnet electrode (4 dia. x 60L)
UMW0012	Magnet electrode (4 dia. x 50L)

ITEM NUMBER	DESCRIPTION
UMW0013	Standard electrode (2 dia. x 50L)
UMW0014	Standard electrode (3 dia. x 50L)
UMW0015	Standard electrode (4 dia. x 50L)
UMW0016	Standard electrode (1.2T x 5W x 35L)
UMW0017	Standard electrode holder (black) (used with UMW0015)
UMW0018	Magnet electrode holder (brown) (used with UMW0011 and UMW0012)
UMW0019	Standard electrode holder (black) (used with UMW0016)
UMW0020	Standard electrode holder (black) (used with UMW0013)
UMW0021	Standard electrode holder (black) (used with UMW0014)
UMW0022	Magnet electrode holder (brown) (used with UMW0009 and UMW0010)

**NOTE:** See next page for additional welding materials.

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Welding Material: Powder

ITEM NO.	WELDING MATERIALS	JAPANESE MOLD STEEL	QUANTITY	HARDNESS ROCKWELL C	U.S. MOLD STEEL EQUIVALENT
UMP0067	N-11	SKD-11	40 grams	Rc 50-60 Min.	A-2, D-2
UMP0072	N-38	HPM38	40 grams	Rc 30 Max.	All Die Steels 420SS (Prehardened)
UMP0073	N-39	PD555	40 grams	Rc 50-52	STAVAX
UMP0060	N-40	Ni-Cr Alloy	40 grams	Rc 36-42	All Mold Steels
UMP0062	N-50	Ni Alloy	40 grams	Rc 47-53	All Mold Steels
UMP0068	N-61	SKD61	40 grams	Rc 40-53 Max.	H-13, 420SS
UMP0063	N-13	Ni Alloy	40 grams	Rc 10-15	All Mold Steels
UMP0061	N-90	Ni Alloy	40 grams	Rc 16-20	All Mold Steels
UMP0071	N-55	NAK55	40 grams	Rc 38-41	P-21

Welding Material: Sheet (*dimensions in millimeters*)

ITEM NO.	WELDING MATERIALS	JAPANESE MOLD STEEL	QUANTITY	HARDNESS ROCKWELL C	U.S. MOLD STEEL EQUIVALENT
UMA0001	NT-6		10 / 0.2T x 5w x 100L	Rc 30	All Mold Steels
UMA0054	NS-1	SS Alloy	10 / 0.1T x 30w x 70L	Rb 90	All Mold Steels
UMA0055	NS-2	SS Alloy	10 / 0.2T x 30w x 70L	Rb 90	All Mold Steels
UMD0102	HPM-50	HPM50	10 / 0.2T x 5w x 100L	Rc 38-40	P-21 Improved
UMD0107	HPM-38	HPM38	10 / 0.2T x 5w x 100L	Rc 30-33	420SS
UMD0104	STAVAX	STAVAX	10 / 0.2T x 5w x 100L	Rc 50-52	STAVAX, 420SS
UMD0101	HPM-2	SCM440, IMPAX, HPM-2	10 / 0.2T x 5w x 100L	Rc 30-50	P-20
UMD0103	MAS1		10 / 0.2T x 5w x 100L	Rc 50-53	P-20
UMD0106	NAK55	NAK55	10 / 0.2T x 5w x 100L	Rc 38-40	P-21

Welding Material: Wire

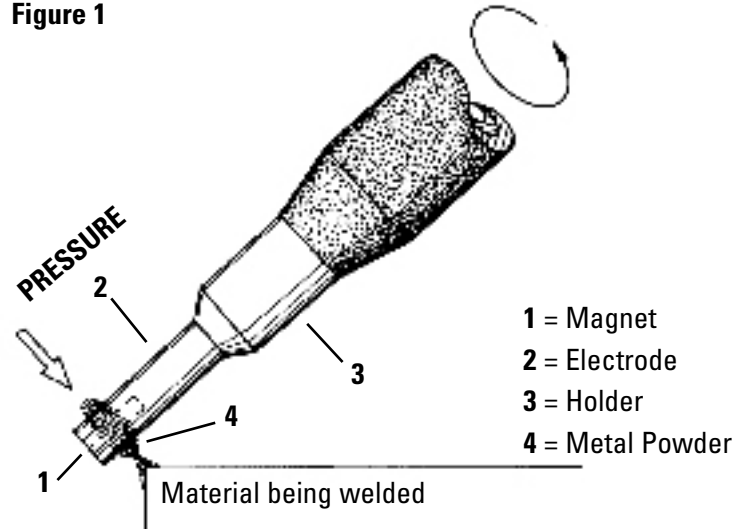
ITEM NO.	WELDING MATERIALS	JAPANESE MOLD STEEL	QUANTITY	HARDNESS ROCKWELL C	U.S. MOLD STEEL EQUIVALENT
UMA0056	S2	SS Alloy	1 / 0.2 dia. x 5m	Rb 90	All Mold Steels
UMA0057	S3	SS Alloy	1 / 0.3 dia. x 5m	Rb 90	All Mold Steels
UMA0058	S4	SS Alloy	1 / 0.4 dia. x 5m	Rb 90	All Mold Steels
UMA0059	S5	SS Alloy	1 / 0.5 dia. x 5m	Rb 90	All Mold Steels

# ProWeld Micro-Welding System



## Precision Mold Repairs and Alterations Made Easy with ProWeld

Figure 1



### The Micro-Welding Method

With only gentle pressure ProWeld uses electrical pulses to fuse metal powder, metal sheets, strips or wire etc., to the contour of the mold under repair (Fig. 1).

Figure 2



Figure 3



Using the appropriate electrode, powder (Fig. 2), metal or strips (Fig. 3), which contain alloying properties of the material being welded, are first fused then bonded to the base metal by a systematic and controlled supply of energy.

Figure 4



Figure 5



This produces a weld (Figs. 4 and 5) which also can be controlled by various adjustments of the power pack (frequency of the electrical pulses, output current). Special training is not needed to successfully perform this welding process.

- Perform high-quality repairs of very small mold areas
- Increase the life of a mold after repair
- Reduce repair costs up to 85% with special metal alloys developed for all conventional types of steel
- Modern control electronics ensure a homogenous welding pattern even under the most difficult working conditions
- Process emits almost no heat
- Weld material is not excessive – hand and machine finishing is easy
- Only gentle pressure is required on welding electrodes to prevent the formation of cavities or pin holes
- Magnetic electrodes pick up metal powder which can be easily placed on the workplate
- Suitable for all forms of mold damage; no need for other types of welding, e.g. argon, laser welding, TIG
- Safe and easy to operate, no special training needed
- Emits no harmful welding fumes or toxic gases
- No scaling or flaking. High-quality welding alloys are free of impurities. The resulting weld is strong, homogenous and reliable