INFO - WELD NO. 3

WELDAMAX WELDING INFORMATION BULLETIN

ACCOUNTABILITY - COMMITMENT - CONTINUOUS IMPROVEMENT - TEAMWORK

GUIDE FOR WELDING CABLE USE (SECONDARY) (P.V.C. INSULATION)

The size of secondary (welding) cable i.e. from output of machine to electrode holder and earth clamp needs to be sufficiently rated in amperage carrying capacity to supply the MAXIMUM amperage output of the welding machine.

If this is adhered to, no overloading and over-heating of the cable, electrode holder or earth clamp will occur and the quality of the weld will be good.

LOOSE connections of the cable to the cable connectors, electrode holder and earth clamp will result in electrical resistance build up causing overheating of the components, may affect operator safety and discomfort and bad weld quality. A simple test can be made to establish whether the cable has sufficient carrying capacity or may have damaged copper strand inside the insulation. Run your hand over the length of cable while welding and if hot along the length, the cable size is insufficient. If a localized spot or area is detected, the cable strands are damaged.

COLOR I.D. OF P.V.C.	CONDUCTOR NOMINAL AREA mm2	+ - CURRENT IN AMPS FOR DUTY CYCLE OF: 100%	85%	60%	30%	20%	MAXIMUM OVERALL DIA. mm	APPROX. MASS KG/100m
GREEN	16	135	145	175	245	300	11.5	216
BLUE	25	180	195	230	300	400	13.0	350
GREY	35	225	245	290	410	500	14.5	470
RED	50	285	310	370	520	635	16.5	639
BROWN	70	355	385	460	650	795	19.0	814
YELLOW	95	430	470	560	700	900	21.5	1108
BLACK	120	500	540	650	910	1120	25.0	1420

NOTES:

OPERATING TEMPERATURE:

Tested at Ambient Air Temperature 25˚ C

Maximum Conductor Operating Temperature 85˚ C

DE-RATING FACTORS FOR OTHER AMBIENT AIR TEMPERATURES:

25˚ C	30˚ C	35˚ C	40˚ C	45˚ C
1	0.96	0.91	0.87	0.82

WHEN TOTAL CABLE LENGTH EXCEEDS 15m A LARGER CONDUCTOR MAY BE NEEDED TO AVOID EXCESSIVE VOLT DROP

SPECIAL NOTE: ELECTRIC AND MAGNETIC FIELDS

Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Welding current creates EMF fields around the welding cables and welding machines. Please take the following precautions for your own health and safety ! ! ! !

a. **EMF fields may interfere with some pacemakers and welders having a pacemaker should consult their physician before welding.**
b. **Welders should route the electrode and ground cables together.**
c. **Never coil the electrode cable around your body.**
d. **Do not place your body between the electrode and ground cables. If the electrode cable is on your right hand side, the ground cable should also be on your right hand side.**
e. **Connect the ground cable to the workpiece as close as possible to the area being welded.**
f. **Do not work next to or touch the welding power source if not properly grounded.**