

RESISTANCE SPOT WELDING GUIDELINES



Taken from British Standard BS 1140 : 1993 Resistance spot welding of uncoated & coated low carbon steel.
Important: These are recommendations only, settings must take into account actual conditions and should be verified using a destruct test

Single Sheet Thickness /mm Over Up to	Electrode Tip Dia /mm	ELECTRODE FORCE Kgf						WELD TIME 50 Hz Cycles						WELD CURRENT K.Amps						Single Sheet thickness /mm	Min Slug Dia /mm
		Uncoated Mild Steel			Coated Steel			Uncoated Mild Steel			Coated Steel			Uncoated Mild Steel			Coated Steel				
		MED. FORCE	HIGH FORCE	HOT E.Z. DIP	MED. FORCE	HIGH FORCE	HOT E.Z. DIP	MED. FORCE	HIGH FORCE	HOT E.Z. DIP	MED. FORCE	HIGH FORCE	HOT E.Z. DIP	MED. FORCE	HIGH FORCE	HOT E.Z. DIP	MED. FORCE	HIGH FORCE	HOT E.Z. DIP		
		SET-TING	SET-TING	ZINC	SET-TING	SET-TING	ZINC	SET-TING	SET-TING	ZINC	SET-TING	SET-TING	ZINC	SET-TING	SET-TING	ZINC	SET-TING	SET-TING	ZINC		
0.4 0.6	4 from:	90	133	150	150	140	5	4	6	6	4	4	5	7	6	6					
	to:	115	183	204	204	196	7	5	8	8	6	6	8	9	8	8.5					
0.6 0.8	4 from:	125	175	194	194	183	7	6	8	8	6	5	6	8	7	7	0.6	3.9			
	to:	133	204	224	224	224	10	8	10	10	8	7	9	10	9	9.5	0.7	4.2			
0.8 1.0	5 from:	140	194	224	224	214	9	7	9	9	7	6	7	9	8	8	0.8	4.5			
	to:	150	265	296	296	285	12	10	12	12	10	8	10	11	10	10.5	0.9	4.7			
1.0 1.2	5 from:	163	255	285	285	275	11	8	10	10	8	7	8	10	9	9	1.0	5.5			
	to:	183	326	367	367	347	15	12	13	13	12	9	12	13	13	12					
1.2 1.6	6 from:	194	306	347	347	326	14	9	11	11	9	8	10	14	12	11	1.2	5.5			
	to:	214	408	459	459	438	18	13	15	15	13	11	13	16	15	14	1.4	5.9			
1.6 2.0	7 from:	265	398	449	449	428	18	10	12	12	10	9	12	18	14	13	1.6	6.3			
	to:	296	527	561	561	540	22	14	16	16	14	13	15	21	17	16.5	1.8	6.7			
2.0 2.5	8 from:	347	510	550	550	530	22	12	14	14	12	10	14	22	17	16	2.0	7.1			
	to:	377	632	693	693	663	28	16	18	18	16	15	18	26	22	21	2.2	7.4			
2.5 3.0	9 from:	449	612	673	673	652	28	15	17	17	15	12	17	26	19	18	2.5	7.9			
	to:	479	765	815	815	795	35	20	21	21	20	17	20	30	24	23	3.0	8.6			

NOTES: A: When welding sheets of dissimilar thicknesses, welding conditions may be based on the thinner sheet or the second thinnest sheet when welding three thicknesses.



RESISTANCE 'PROJECTION' NUT GUIDELINES

Typical welding conditions are given in table B.1. for weld nuts, the form and dimensions of which are shown in BS7670 : Part 1 : 1993.

Thread size	Sheet thickness mm	Electrode force kN	Weld time Cycles	Current I) kA	Min Torsional Load Test Nm
M4	1.0 - 2.0.	2.9 - 3.1	5	7.5 - 8.0.	6.0.
M5	1.0 - 2.0.	3.6 - 3.8	5	9.0 - 9.5	12.0.
M6	1.0 - 2.0.	4.2 - 4.5	6	10.5 - 11.0.	20.0.
M8	1.0 - 2.0.	4.9 - 5.1	9 - 10	17.0 - 18.0.	50.0.
M10	2.0.	6.0.	10	21.0.	100.00.
M12	2.0.	7.1	12	24.0.	180.00.

1) Current is quoted for guidance only and should be adjusted to compensate for variations in components, equipment or power supply.



RESISTANCE 'PROJECTION' BOLT WELDING GUIDELINES

Typical welding conditions are given in table B.2 for the commonest sizes of weld bolts, the form and dimensions of which are given in BS 7670 : Part 1 : 1993.

Thread size	Sheet thickness mm	Electrode force kN	Weld time Cycles	Current I) kA	Min Torsional Load Test Nm
M5	1.0-2.0	2.7	12	8	6.0.
M6	1.5-2.5	3.5	15	8.5	10.0.
M8	1.5-2.5	3.5	15	9.5	23.0.

1) Current is quoted for guidance only and should be adjusted to compensate for variations in components, equipment or power supply.



MANUFACTURERS & SUPPLIERS OF RESISTANCE WELDING PRODUCTS

