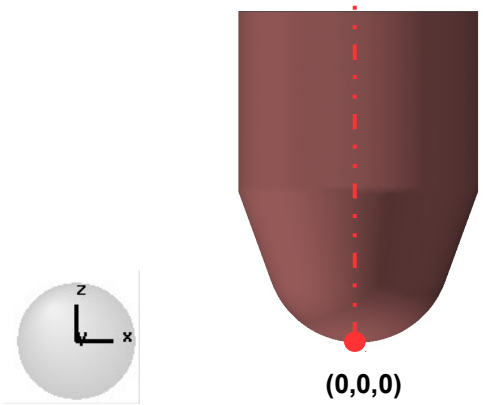
Infosheet Electrodes and Weld gun

Electrode library

For resistance spot welding processes, electrodes are used to conduct the electrical current through the workpieces. The electrode shape and type depends strongly on the process type, process properties and other boundary conditions.

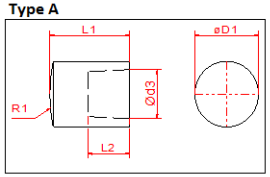
For resistance spot welding processes so called electrode caps made of copper material are used. The shape of the electrode caps is standardized in ISO 5821 (see right figure). Simufact Welding offers a large internal library of common electrode types and dimensions according to ISO 5821.

Electrode names like „F0-13-18-6.5“ are replaced by „F0-13-18-6c5“ due to the special characters. All library electrodes are created in the Z-X plane using the Z axis as rotation axis and the global origin as lowest point of the electrode. All electrodes created by the user have strictly to follow the above mentioned convention. The following figure shows an electrode cap according to ISO 5821 type E0 and the global origin.



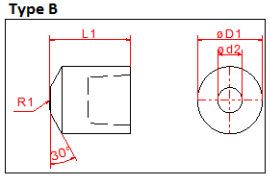
Simufact Welding offers also the possibility to use own electrode cap geometries. Electrode caps can be imported as volume or surface meshes like every other geometry. The imported electrode

Type A



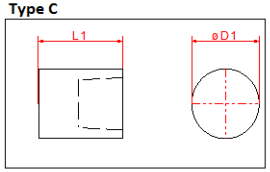
D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13		10	18	8		32	
16		12	20	9,5		40	
20		15	22	11,5		50	

Type B



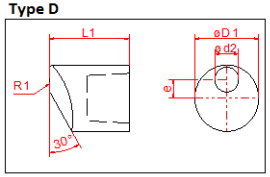
D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13	5	10	18	8		32	
16	6	12	20	9,5		40	
20	8	15	22	11,5		50	

Type C



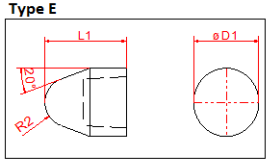
D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13		10	18	8			
16		12	20	9,5			
20		15	22	11,5			

Type D



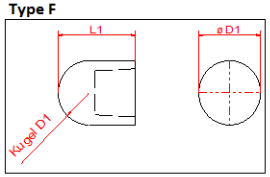
D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13	5	10	18	8	3	32	
16	6	12	20	9,5	4	40	
20	8	15	22	11,5	5	50	

Type E



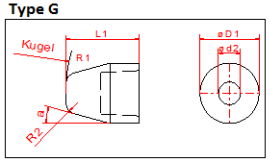
D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13		10	18	8			5
16		12	20	9,5			6
20		15	22	11,5			8

Type F



D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13		10	18	8			
16		12	20	9,5			
20		15	22	11,5			

Type G



D1h11	d2	d3	l1	l2+0.5/-0	e	R1	R2
13	5	10	18	8		32	5
16	6	12	20	9,5		40	6
20	8	15	22	11,5		50	8