

WIRE DRAWING DIES

➤ *Basic principals*

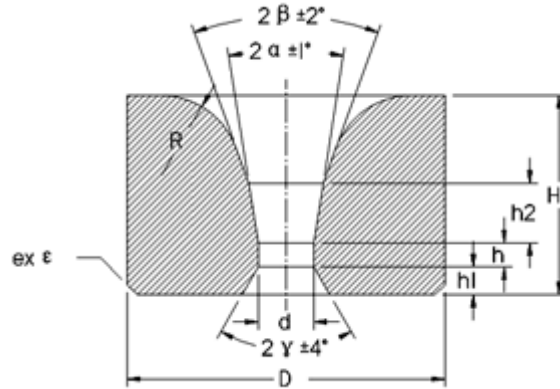
The art or process of wire drawing like the name implies is to draw a wire of a bigger diameter through a hole with smaller diameter hereby reducing the diameter through plastic deformation while the volume remains the same.

➤ *Grade, Properties and Application*

Grade	Density (g/cm ³)	Hardness (HRA)	TRS (MPa)	Applications recommended
YG6X	14.95	91.5	1800	For drawing steel and nonferrous wires or bars of less than ϕ 6.00mm under not so much stress.
YG6	14.95	90.5	1900	For drawing steel, nonferrous alloy bars of less than ϕ 20.00mm under more stress and also for drawing tubes of less than ϕ 10.00mm.
YG8	14.8	89.5	2200	For drawing steel and nonferrous bars and tubes, also for manufacturing mechanical parts, tools and wear parts.
YG10	14.5	88.5	2400	
YG15	14.0	87.0	2800	For drawing steel bars and tubes with a high reduction rate and for manufacturing anvils, drilling and punching and impacting.

➤ *Product Information*

A Carbide nibs for draw non-ferrous wires and rods



ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	ε
A-0100812-0.15	10	8	0.15	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.20	10	8	0.20	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.25	10	8	0.25	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.30	10	8	0.30	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.35	10	8	0.35	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.40	10	8	0.40	12°	90°	90°	≤0.1	1.6	3.7	5.0	1.0	45°
A-0100812-0.50	10	8	0.50	12°	90°	90°	≤0.2	1.6	3.6	—	1.0	45°
A-0100812-0.60	10	8	0.6	12°	90°	90°	0.5	1.6	3.5	—	0.5	45°
A-0100812-0.70	10	8	0.7	12°	90°	90°	0.6	1.6	3.5	—	0.5	45°
A-0100812-0.80	10	8	0.8	12°	90°	90°	0.6	1.6	3.5	—	0.5	45°
A-0100812-0.90	10	8	0.9	12°	90°	90°	0.6	1.6	3.5	—	0.5	45°
A-0100812-1.0	10	8	1.0	12°	90°	90°	0.6	1.6	3.5	—	0.5	45°
A-0121012-0.20	12	10	0.20	12°	90°	90°	≤0.1	1.2	2.9	6.5	1.2	15°
A-0121012-0.25	12	10	0.25	12°	90°	90°	≤0.1	1.2	2.9	6.5	1.2	15°
A-0121012-0.30	12	10	0.30	12°	90°	90°	≤0.1	1.2	2.9	6.5	1.2	15°
A-0121012-0.35	12	10	0.35	12°	90°	90°	≤0.1	1.2	2.9	6.5	1.2	15°
A-0121012-0.40	12	10	0.40	12°	90°	90°	0.4	2.0	5.0	—	1.0	45°
A-0121012-0.50	12	10	0.50	12°	90°	90°	0.4	2.0	5.0	—	1.0	45°
A-0121012-0.60	12	10	0.60	12°	90°	90°	0.5	2.0	5.0	—	1.0	45°
A-0121012-0.70	12	10	0.70	12°	90°	90°	0.5	2.0	5.0	—	1.0	45°
A-0121012-0.80	12	10	0.80	12°	90°	90°	0.6	2.0	5.0	—	1.0	45°
A-0121012-0.90	12	10	0.90	12°	90°	90°	0.6	1.8	4.8	—	1.0	45°
A-0121012-1.0	12	10	1.0	12°	90°	90°	0.7	1.8	4.8	—	1.0	45°
A-0121012-1.1	12	10	1.1	12°	90°	90°	0.7	1.8	4.8	—	1.0	45°
A-0121012-1.2	12	10	1.2	12°	90°	90°	0.8	1.8	4.8	—	1.0	45°
A-0121012-1.3	12	10	1.3	12°	90°	90°	0.9	1.8	4.8	—	1.0	45°

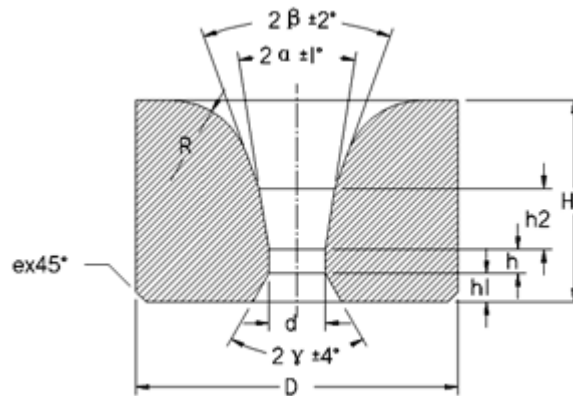
ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	ε
A-0121012-1.4	12	10	1.4	12°	90°	90°	1.0	1.8	4.8	—	1.0	45°
A-0121012-1.5	12	10	1.6	12°	90°	90°	1.0	1.8	4.8	—	1.0	45°
A-0121012-1.6	12	10	1.6	12°	90°	90°	1.1	1.8	4.8	—	1.0	45°
A-0121012-1.7	12	10	1.7	12°	90°	90°	1.1	1.8	4.8	—	1.0	45°
A-0121012-1.8	12	10	1.8	12°	90°	90°	1.2	1.8	4.8	—	1.0	45°
A-0141212-0.40	14	12	0.4	12°	60°	75°	0.4	2.0	5.0	—	1.0	45°
A-0141212-0.50	14	12	0.5	12°	60°	75°	0.4	2.0	5.0	—	1.0	45°
A-0141212-0.60	14	12	0.6	12°	60°	75°	0.5	2.0	5.0	—	1.0	45°
A-0141212-0.70	14	12	0.7	12°	60°	75°	0.5	2.0	5.0	—	1.0	45°
A-0141212-0.80	14	12	0.8	12°	60°	75°	0.6	2.0	5.0	—	1.0	45°
A-0141212-0.90	14	12	0.9	12°	60°	75°	0.6	2.0	5.0	—	1.0	45°
A-0141212-1.0	14	12	1.0	12°	60°	75°	0.7	2.0	5.0	—	1.0	45°
A-0141212-1.1	14	12	1.1	12°	60°	75°	0.7	2.0	5.0	—	1.0	45°
A-0141212-1.2	14	12	1.2	12°	60°	75°	0.8	2.0	5.0	—	1.0	45°
A-0141212-1.3	14	12	1.3	12°	60°	75°	1.0	2.0	5.0	—	1.0	45°
A-0141212-1.4	14	12	1.4	12°	60°	75°	1.0	2.0	5.0	—	1.0	45°
A-0141212-1.5	14	12	1.5	12°	60°	75°	1.0	2.0	5.0	—	1.0	45°
A-0141212-1.6	14	12	1.6	12°	60°	75°	1.1	2.0	5.0	—	1.0	45°
A-0141212-1.7	14	12	1.7	12°	60°	75°	1.1	2.0	5.0	—	1.0	45°
A-0141212-1.8	14	12	1.8	12°	60°	75°	1.2	2.0	5.0	—	1.0	45°
A-0141212-1.9	14	12	1.9	12°	60°	75°	1.2	2.0	5.0	—	1.0	45°
A-0141212-2.0	14	12	2.0	12°	60°	75°	1.2	2.0	5.0	—	1.0	45°
A-0141212-2.1	14	12	2.1	12°	60°	75°	1.2	2.0	5.0	—	1.0	45°
A-0141212-2.2	14	12	2.2	12°	60°	75°	1.2	2.0	5.0	—	1.0	45°
A-0141214-2.3	14	12	2.3	14°	60°	75°	1.3	2.0	5.0	—	1.0	45°
A-0161312-0.6	16	13	0.6	12°	60°	75°	0.5	2.5	4.5	—	1.0	45°
A-0161312-0.7	16	13	0.7	12°	60°	75°	0.5	2.5	4.5	—	1.0	45°
A-0161312-0.8	16	13	0.8	12°	60°	75°	0.6	2.5	4.5	—	1.0	45°
A-0161312-0.9	16	13	0.9	12°	60°	75°	0.5	2.5	4.5	—	1.0	45°
A-0161312-1.0	16	13	1.0	12°	60°	75°	0.7	2.5	4.5	—	1.0	45°
A-0161312-1.1	16	13	1.1	12°	60°	75°	0.7	2.5	4.5	—	1.0	45°
A-0161312-1.2	16	13	1.2	12°	60°	75°	0.8	2.5	4.5	—	1.0	45°
A-0161312-1.3	16	13	1.3	12°	60°	75°	0.8	2.5	4.5	—	1.0	45°
A-0161312-1.4	16	13	1.4	12°	60°	75°	1.0	2.5	4.5	—	1.0	45°
A-0161312-1.5	16	13	1.5	12°	60°	75°	1.0	2.5	4.3	—	1.0	45°
A-0161312-1.6	16	13	1.6	12°	60°	75°	1.1	2.5	4.3	—	1.0	45°
A-0161312-1.7	16	13	1.7	12°	60°	75°	1.1	2.5	4.3	—	1.0	45°
A-0161312-1.8	16	13	1.8	12°	60°	75°	1.2	2.5	4.0	—	1.0	45°
A-0161312-1.9	16	13	1.9	12°	60°	75°	1.2	2.5	4.0	—	1.0	45°
A-0161312-2.0	16	13	2.0	12°	60°	75°	1.2	2.5	4.0	—	1.0	45°
A-0161312-2.1	16	13	2.1	12°	60°	75°	1.2	2.5	4.0	—	1.0	45°

ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	ε
A-0161314-2.2	16	13	2.2	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.3	16	13	2.3	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.4	16	13	2.4	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.5	16	13	2.5	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.6	16	13	2.6	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.7	16	13	2.7	14°	60°	75°	1.3	2.5	4.0	—	1.0	45°
A-0161314-2.8	16	13	2.8	14°	60°	75°	1.4	2.5	4.0	—	1.0	45°
A-0161314-2.9	16	13	2.9	14°	60°	75°	1.4	2.5	4.0	—	1.0	45°
A-0161314-3.0	16	13	3.0	14°	60°	75°	1.4	2.5	4.0	—	1.0	45°
A-0201712-1.0	20	17	1.0	12°	60°	60°	0.7	3.0	8.0	—	1.2	45°
A-0201712-1.1	20	17	1.1	12°	60°	60°	0.7	3.0	8.0	—	1.2	45°
A-0201712-1.2	20	17	1.2	12°	60°	60°	0.7	3.0	8.0	—	1.2	45°
A-0201712-1.3	20	17	1.3	12°	60°	60°	1.0	3.0	8.0	—	1.2	45°
A-0201712-1.4	20	17	1.4	12°	60°	60°	1.0	3.0	7.5	—	1.2	45°
A-0201712-1.5	20	17	1.5	12°	60°	60°	1.0	3.0	7.5	—	1.2	45°
A-0201712-1.6	20	17	1.6	12°	60°	60°	1.1	3.0	7.5	—	1.2	45°
A-0201712-1.7	20	17	1.7	12°	60°	60°	1.1	3.0	7.5	—	1.2	45°
A-0201714-1.8	20	17	1.8	14°	60°	60°	1.2	3.0	7.0	—	1.2	45°
A-0201714-1.9	20	17	1.9	14°	60°	60°	1.2	3.0	7.0	—	1.2	45°
A-0201714-2.0	20	17	2.0	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.1	20	17	2.1	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.2	20	17	2.2	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.3	20	17	2.3	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.4	20	17	2.4	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.5	20	17	2.5	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.6	20	17	2.6	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.7	20	17	2.7	14°	60°	60°	1.3	3.0	7.0	—	1.2	45°
A-0201714-2.8	20	17	2.8	14°	60°	60°	1.4	3.0	7.0	—	1.2	45°
A-0201714-2.9	20	17	2.9	14°	60°	60°	1.4	3.0	7.0	—	1.2	45°
A-0201714-3.0	20	17	3.0	14°	60°	60°	1.5	3.0	7.0	—	1.2	45°
A-0201714-3.2	20	17	3.2	14°	60°	60°	1.5	3.0	7.0	—	1.2	45°
A-0201714-3.3	20	17	3.3	14°	60°	60°	1.6	3.0	7.0	—	1.2	45°
A-0201714-3.5	20	17	3.5	14°	60°	60°	1.7	3.0	7.0	—	1.2	45°
A-0201714-3.7	20	17	3.7	14°	60°	60°	1.8	3.0	7.0	—	1.2	45°
A-0201714-3.8	20	17	3.8	14°	60°	60°	1.9	3.0	7.0	—	1.2	45°
A-0201714-4.0	20	17	4.0	14°	60°	60°	1.9	3.0	7.0	—	1.2	45°
A-0201714-4.2	20	17	4.2	14°	60°	60°	1.9	3.0	7.0	—	1.2	45°
A-0201714-4.5	20	17	4.5	14°	60°	60°	1.9	3.0	7.0	—	1.2	45°
A-0201714-4.7	20	17	4.7	14°	60°	60°	1.9	3.0	7.0	—	1.2	45°
A-0201714-4.8	20	17	4.8	14°	60°	60°	2.0	3.0	7.0	—	1.2	45°
A-0252014-2.3	25	20	2.3	14°	60°	60°	1.3	4.0	8.5	—	1.2	45°

ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	ε
A-0252014-2.4	25	20	2.4	14°	60°	60°	1.3	4.0	8.5	—	1.2	45°
A-0252014-2.5	25	20	2.5	14°	60°	60°	1.3	4.0	8.5	—	1.2	45°
A-0252014-2.6	25	20	2.6	14°	60°	60°	1.3	4.0	8.5	—	1.2	45°
A-0252014-2.7	25	20	2.7	14°	60°	60°	1.3	4.0	8.5	—	1.2	45°
A-0252014-2.8	25	20	2.8	14°	60°	60°	1.4	4.0	8.5	—	1.2	45°
A-0252014-2.9	25	20	2.9	14°	60°	60°	1.4	4.0	8.5	—	1.2	45°
A-0252014-3.0	25	20	3.0	14°	60°	60°	1.5	4.0	8.5	—	1.2	45°
A-0252014-3.2	25	20	3.2	14°	60°	60°	1.5	4.0	8.5	—	1.2	45°
A-0252016-4.8	25	20	4.8	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252014-3.3	25	20	3.3	14°	60°	60°	1.6	4.0	8.5	—	1.2	45°
A-0252014-3.5	25	20	3.5	14°	60°	60°	1.7	4.0	8.3	—	1.2	45°
A-0252014-3.7	25	20	3.7	14°	60°	60°	1.8	4.0	8.3	—	1.2	45°
A-0252014-3.8	25	20	3.8	14°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252014-4.0	25	20	4.0	14°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252014-4.2	25	20	4.2	14°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-4.5	25	20	4.0	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-4.7	25	20	4.7	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-4.8	25	20	4.8	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-5.1	25	20	5.1	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-5.2	25	20	5.2	16°	60°	60°	1.9	4.0	8.0	—	1.2	45°
A-0252016-5.5	25	20	5.5	16°	60°	60°	2.2	4.0	7.5	—	1.2	45°
A-0252016-5.7	25	20	5.7	16°	60°	60°	2.4	4.0	7.5	—	1.2	45°
A-0252016-6.0	25	20	6.0	16°	60°	60°	2.5	4.0	7.5	—	1.2	45°
A-0252016-6.2	25	20	6.2	16°	60°	60°	2.6	4.0	7.5	—	1.2	45°
A-0252118-6.5	25	21	6.5	18°	60°	60°	2.1	3.0	9.6	—	1.2	45°
A-0252118-6.8	25	21	6.8	18°	60°	60°	2.3	3.0	9.6	—	1.2	45°
A-0252118-7.0	25	21	7.0	18°	60°	60°	2.5	3.0	9.6	—	1.2	45°
A-0252118-7.5	25	21	7.5	18°	60°	60°	2.5	3.0	9.6	—	1.2	45°
A-0252118-8.0	25	21	8.0	18°	60°	60°	2.5	3.0	9.6	—	1.2	45°
A-0252118-8.5	25	21	8.5	18°	60°	60°	2.5	3.0	9.6	—	1.2	45°
A-0292014-6.9	29	20	6.9	14°	60°	60°	2.5	4.0	8.0	—	1.2	45°
A-0302416-3.8	30	24	3.8	16°	60°	60°	2.5	5.0	8.0	—	1.2	45°
A-0302416-4.0	30	24	4.0	16°	60°	60°	2.5	5.0	8.0	—	1.2	45°
A-0302416-4.2	30	24	4.2	16°	60°	60°	2.5	5.0	8.0	—	1.2	45°
A-0302416-4.5	30	24	4.5	16°	60°	60°	2.5	4.0	8.0	—	1.2	45°
A-0302416-4.7	30	24	4.7	16°	60°	60°	2.5	4.0	8.0	—	1.2	45°
A-0302416-5.0	30	24	5.0	16°	60°	60°	2.5	4.0	8.0	—	1.2	45°
A-0302416-5.2	30	24	5.2	16°	60°	60°	2.5	4.0	8.0	—	1.2	45°
A-0302416-5.5	30	24	5.5	16°	60°	60°	2.5	3.0	8.0	5.0	1.2	45°
A-0302416-5.7	30	24	5.7	16°	60°	60°	2.6	5.0	8.0	—	1.2	45°
A-0302416-6.0	30	24	6.0	16°	60°	60°	2.6	5.0	8.0	—	1.2	45°

ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	ε
A-0302416-6.2	30	24	6.2	16°	60°	60°	2.6	5.0	8.0	5.0	1.2	45°
A-0302416-6.5	30	24	6.5	16°	60°	60°	2.5	5.0	8.0	—	1.2	45°
A-0302416-6.7	30	24	6.7	16°	60°	60°	2.6	5.0	8.5	—	1.2	45°
A-0302416-7.0	30	24	7.0	16°	60°	60°	2.8	5.0	8.5	—	1.2	45°
A-0302416-7.3	30	24	7.3	16°	60°	60°	2.8	5.0	8.5	—	1.2	45°
A-0302416-7.7	30	24	7.7	16°	60°	60°	3.0	5.0	8.5	—	1.2	45°
A-0302416-8.2	30	24	8.2	16°	60°	60°	3.1	5.0	8.5	—	1.2	45°
A-0302416-8.7	30	24	8.7	16°	60°	60°	3.3	5.0	8.5	—	1.2	45°
A-0302416-9.0	30	24	9.0	16°	60°	60°	3.5	3.0	8.5	5.0	1.2	45°
A-0302416-9.5	30	24	9.5	16°	60°	60°	3.5	3.0	8.5	5.0	1.2	45°
A-0302416-9.7	30	24	9.7	16°	60°	60°	3.5	3.0	8.0	—	1.2	45°

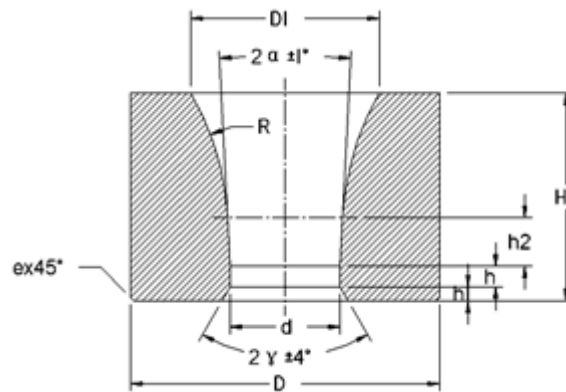
E Carbide nibs to draw metal wires and rods



ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h1	h2	R	e	
E-0151318-1.8	15	13	1.8	18°	30°	60°	1.2	2.0	5.0	4.0	1.0	
E-0151318-2.0	15	13	2.0	18°	30°	60°	1.2	2.0	5.0	4.0	1.0	
E-0151318-2.3	15	13	2.3	18°	30°	60°	1.2	2.0	5.0	4.0	1.0	
E-0151318-2.5	15	13	2.5	18°	30°	60°	1.2	2.0	5.0	4.0	1.0	
E-0151318-2.8	15	13	2.8	18°	30°	60°	1.2	2.0	5.0	4.0	1.0	
E-0191718-3.3	19	17	3.3	18°	40°	60°	1.8	2.5	7.0	3.0	1.0	
E-0191718-3.6	19	17	3.6	18°	40°	60°	1.8	2.5	7.0	3.0	1.0	
E-0201727-3.0	20	17	3.0	27°	40°	60°	1.8	2.0	6.0	5.0	1.5	
E-0201727-3.3	20	17	3.3	27°	40°	60°	1.8	2.5	6.0	5.0	1.5	
E-0201727-3.5	20	17	3.5	27°	40°	60°	1.8	2.5	6.0	5.0	1.5	
E-0201727-3.7	20	17	3.7	27°	40°	60°	1.8	2.5	6.0	5.0	1.5	
E-0201727-4.0	20	17	4.0	27°	40°	60°	1.8	2.5	6.0	5.0	1.5	
E-0201727-4.2	20	17	4.2	27°	40°	60°	1.8	2.5	6.0	5.0	1.5	

ITEM CODE	Dimension (mm)						Reference Dimension (mm)				
	D	H	d	2α	2β	2γ	h	h ₁	h ₂	R	e
E-0201727-4.6	20	17	4.6	27°	50°	60°	2.0	2.5	7.0	4.0	1.5
E-0201727-5.2	20	17	5.2	27°	50°	60°	2.0	3.0	7.0	5.0	1.5
E-0201727-5.5	20	17	5.5	27°	50°	60°	2.5	3.0	7.0	5.0	1.5
E-0201727-5.7	20	17.5	5.7	27°	50°	60°	2.5	3.0	7.0	5.0	1.5
E-0201727-5.9	20	17.5	5.9	27°	50°	60°	2.5	3.0	7.0	5.0	1.5
E-0201730-4.3	20	17	4.3	30°	50°	60°	1.8	2.5	7.0	5.0	1.5
E-0201730-4.6	20	17	4.6	30°	50°	60°	2.3	3.0	6.0	5.0	1.5
E-0201730-4.9	20	17.5	4.9	30°	50°	60°	2.3	3.0	7.0	5.0	1.5
E-0201730-5.2	20	17.5	5.2	30°	50°	60°	2.5	3.0	7.0	4.0	1.5
E-0201730-5.5	20	17.5	5.5	30°	50°	60°	2.5	3.0	7.0	4.0	1.5
E-0201730-5.7	20	17.5	5.7	30°	50°	60°	2.5	3.0	7.0	4.0	1.5
E-0211727-6.0	20	17.5	6.0	27°	50°	60°	2.8	3.0	7.0	5.0	1.5
E-0211727-6.3	20	17.5	6.3	27°	50°	60°	2.8	3.0	7.0	5.0	1.5

V Carbide nibs to draw non-ferrous wires and rods.



ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	h ₂	R	D ₁	e
V-0151312-0.60	15	13	0.60	12°	85°	0.5	2.0	3.0	—	12.0	1.2
V-0151316-0.60	15	13	0.60	16°	75°	0.4	2.0	3.2	1.2	12.0	1.0
V-0151312-0.70	15	13	0.70	12°	85°	0.5	2.0	3.0	—	12.0	1.2
V-0151316-0.70	15	13	0.70	16°	75°	0.4	2.0	3.2	1.2	12.0	1.0
V-0151312-0.80	15	13	0.80	12°	85°	0.6	2.0	3.0	—	12.0	1.2
V-0151316-0.80	15	13	0.80	16°	75°	0.6	2.0	3.2	1.2	12.0	1.0
V-0151312-0.90	15	13	0.90	12°	85°	0.6	2.0	3.2	—	12.0	1.2
V-0151316-0.90	15	13	0.90	16°	75°	0.6	2.0	3.3	1.2	12.0	1.0
V-0151312-1.0	15	13	1.0	12°	85°	0.7	2.0	3.5	—	12.0	1.2
V-0151316-1.0	15	13	1.0	16°	75°	0.7	2.0	3.5	1.2	12.0	1.0
V-0151312-1.1	15	13	1.1	12°	85°	0.7	2.0	3.6	—	12.0	1.2
V-0151316-1.1	15	13	1.1	16°	75°	0.7	2.0	3.6	1.2	12.0	1.0
V-0151312-1.2	15	13	1.2	12°	85°	0.8	2.0	3.8	—	12.0	1.2

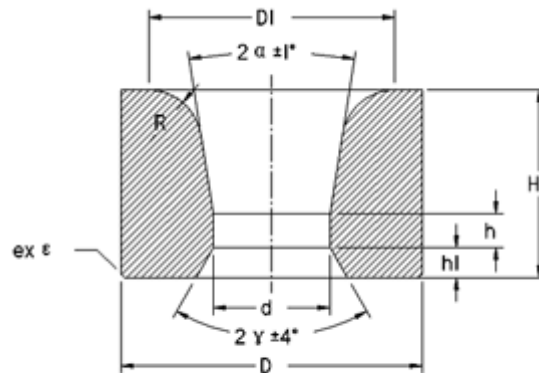
ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	h ₂	R	D ₁	e
V-0151316-1.2	15	13	1.2	16°	75°	0.8	2.0	3.8	1.2	12.0	1.0
V-0151312-1.3	15	13	1.3	12°	85°	1.0	2.0	4.0	—	12.0	1.2
V-0151316-1.3	15	13	1.3	16°	75°	1.0	2.0	4.0	1.2	12.0	1.0
V-0151312-1.4	15	13	1.4	12°	85°	1.0	2.0	4.0	—	12.0	1.2
V-0151316-1.4	15	13	1.4	16°	75°	1.0	2.0	4.0	1.2	12.0	1.0
V-0151312-1.5	15	13	1.5	12°	85°	1.0	2.0	4.0	—	12.0	1.2
V-0151316-1.5	15	13	1.5	16°	75°	1.1	2.0	4.0	1.2	12.0	1.0
V-0151312-1.6	15	13	1.6	12°	85°	1.2	2.0	4.0	—	12.0	1.2
V-0151316-1.6	15	13	1.6	16°	75°	1.2	2.0	4.0	1.2	12.0	1.0
V-0151312-1.7	15	13	1.7	12°	85°	1.2	2.0	4.2	—	12.0	1.2
V-0151316-1.7	15	13	1.7	16°	75°	1.2	2.0	4.2	1.2	12.0	1.0
V-0151312-1.8	15	13	1.8	12°	85°	1.2	2.0	4.5	—	12.0	1.2
V-0151316-1.8	15	13	1.8	16°	75°	1.2	2.0	4.5	1.2	12.0	1.0
V-0151312-1.9	15	13	1.9	12°	85°	1.2	2.0	4.5	—	12.0	1.2
V-0151316-1.9	15	13	1.9	16°	75°	1.2	2.0	4.5	1.2	12.0	1.0
V-0151312-2.0	15	13	2.0	12°	85°	1.3	2.0	4.5	—	12.0	1.2
V-0151316-2.0	15	13	2.0	16°	75°	1.3	2.0	4.5	1.2	12.0	1.0
V-0151312-2.1	15	13	2.1	12°	85°	1.3	2.0	4.6	—	12.0	1.2
V-0151316-2.1	15	13	2.1	16°	75°	1.3	2.0	4.8	1.2	12.0	1.0
V-0151312-2.2	15	13	2.2	12°	85°	1.3	2.0	4.8	—	12.0	1.2
V-0151316-2.2	15	13	2.2	16°	75°	1.3	2.0	4.8	1.2	12.0	1.0
V-0151312-2.3	15	13	2.3	12°	85°	1.3	2.0	5.0	—	12.0	1.2
V-0151316-2.3	15	13	2.3	16°	75°	1.3	2.0	5.0	1.2	12.0	1.0
V-0151312-2.4	15	13	2.4	12°	85°	1.3	2.0	5.0	—	12.0	1.2
V-0151316-2.4	15	13	2.4	16°	75°	1.3	2.0	5.0	1.2	12.0	1.0
V-0151312-2.5	15	13	2.5	12°	85°	1.3	2.0	5.0	—	12.0	1.2
V-0151316-2.5	15	13	2.5	16°	75°	1.3	2.0	5.0	1.2	12.0	1.0
V-0151312-2.6	15	13	2.6	12°	85°	1.3	2.0	5.0	—	12.0	1.2
V-0151316-2.6	15	13	2.6	16°	75°	1.3	2.0	5.0	1.2	12.0	1.0
V-0151312-2.7	15	13	2.7	12°	85°	1.3	2.0	5.0	—	12.0	1.2
V-0151316-2.7	15	13	2.7	16°	75°	1.3	2.0	5.0	1.2	12.0	1.0
V-0151312-2.8	15	13	2.8	12°	85°	1.4	2.0	5.0	—	12.0	1.2
V-0151316-2.8	15	13	2.8	16°	75°	1.4	2.0	5.0	1.2	12.0	1.0
V-0151312-2.9	15	13	2.9	12°	85°	1.4	2.0	5.0	—	12.0	1.2
V-0151316-2.9	15	13	2.9	16°	75°	1.4	2.0	5.0	1.2	12.0	1.0
V-0151312-3.0	15	13	3.0	12°	85°	1.5	2.0	5.0	—	12.0	1.2
V-0151316-3.0	15	13	3.0	16°	75°	1.5	2.0	5.0	1.2	12.0	1.0
V-0151312-3.2	15	13	3.2	12°	85°	1.5	2.0	5.0	—	12.0	1.2
V-0151316-3.2	15	13	3.2	16°	75°	1.5	2.0	5.3	1.2	12.0	1.0
V-0151312-3.3	15	13	3.3	12°	85°	1.5	2.0	5.0	—	12.0	1.2
V-0151316-3.3	15	13	3.3	16°	75°	1.5	2.0	5.0	1.2	12.0	1.0

ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	h ₂	R	D ₁	e
V-0151312-3.5	15	13	3.5	12°	85°	1.6	2.0	5.0	—	12.0	1.2
V-0151316-3.5	15	13	3.5	16°	75°	1.6	2.0	5.5	1.2	12.0	1.0
V-0151312-3.6	15	13	3.6	12°	85°	1.7	2.0	5.0	—	12.0	1.2
V-0151316-3.6	15	13	3.6	16°	75°	1.7	2.0	5.5	1.2	12.0	1.0
V-0151314-3.8	15	13	3.8	14°	70°	1.7	2.0	5.5	1.2	12.0	1.2
V-0151314-3.9	15	13	3.9	14°	70°	1.8	2.0	5.5	1.2	12.0	1.0
V-0191712-1.8	19	17	1.8	12°	85°	1.2	2.5	6.0	—	15.0	1.5
V-0191716-1.8	19	17	1.8	16°	75°	1.2	2.5	6.0	1.2	15.0	1.0
V-0191712-1.9	19	17	1.9	12°	85°	1.2	2.5	6.0	—	15.0	1.5
V-0191716-1.9	19	17	1.9	16°	75°	1.2	2.5	6.0	1.2	15.0	1.0
V-0191712-2.0	19	17	2.0	12°	85°	1.3	2.5	6.0	—	15.0	1.5
V-0191716-2.0	19	17	2.0	16°	75°	1.3	2.5	6.0	1.2	15.0	1.0
V-0191712-2.1	19	17	2.1	12°	85°	1.3	2.5	6.0	—	15.0	1.5
V-0191716-2.1	19	17	2.1	16°	75°	1.3	2.5	6.0	1.2	15.0	1.0
V-0191712-2.2	19	17	2.2	12°	85°	1.3	2.5	6.0	—	15.0	1.5
V-0191716-2.2	19	17	2.2	16°	75°	1.3	2.5	6.0	1.2	15.0	1.0
V-0191712-2.3	19	17	2.3	12°	85°	1.4	2.5	6.0	—	15.0	1.5
V-0191716-2.3	19	17	2.3	16°	75°	1.4	2.5	6.0	1.2	15.0	1.0
V-0191712-2.4	19	17	2.4	12°	85°	1.4	2.5	6.5	—	15.0	1.5
V-0191716-2.4	19	17	2.4	16°	75°	1.4	2.5	6.5	1.2	15.0	1.0
V-0191712-2.5	19	17	2.5	12°	85°	1.4	2.5	6.5	—	15.0	1.5
V-0191716-2.5	19	17	2.5	16°	75°	1.4	2.5	6.5	1.2	15.0	1.0
V-0191712-2.6	19	17	2.6	12°	85°	1.4	2.5	7.0	—	15.0	1.5
V-0191716-2.6	19	17	2.6	16°	75°	1.4	2.5	7.0	1.2	15.0	1.0
V-0191712-2.7	19	17	2.7	12°	85°	1.4	2.5	7.0	—	15.0	1.5
V-0191716-2.7	19	17	2.7	16°	75°	1.4	2.5	7.0	1.2	15.0	1.0
V-0191712-2.8	19	17	2.8	12°	85°	1.5	2.5	7.0	—	15.0	1.5
V-0191716-2.8	19	17	2.8	16°	75°	1.5	2.5	7.0	1.2	15.0	1.0
V-0191712-2.9	19	17	2.9	12°	85°	1.5	2.5	7.0	—	15.0	1.5
V-0191716-2.9	19	17	2.9	16°	75°	1.5	2.5	7.0	1.2	15.0	1.0
V-0191712-3.0	19	17	3.0	12°	85°	1.5	2.5	7.0	—	15.0	1.5
V-0191716-3.0	19	17	3.0	16°	75°	1.5	2.5	7.0	1.2	15.0	1.0
V-0191712-3.2	19	17	3.2	12°	85°	1.6	2.5	7.0	—	15.0	1.5
V-0191716-3.2	19	17	3.2	16°	75°	1.5	2.5	7.0	1.2	15.0	1.0
V-0191712-3.3	19	17	3.3	12°	85°	1.8	2.5	7.0	—	15.0	1.5
V-0191716-3.3	19	17	3.3	16°	75°	1.8	2.5	7.0	1.2	15.0	1.0
V-0191712-3.5	19	17	3.5	12°	85°	1.8	2.5	7.0	—	15.0	1.5
V-0191716-3.5	19	17	3.5	16°	75°	1.8	2.5	7.0	1.2	15.0	1.0
V-0191712-3.6	19	17	3.6	12°	85°	1.8	2.5	7.0	—	15.0	1.5
V-0191716-3.6	19	17	3.6	16°	75°	1.8	2.5	7.0	1.2	15.0	1.0
V-0191712-3.8	19	17	3.8	12°	85°	1.9	2.5	7.0	—	15.0	1.5

ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	h ₂	R	D ₁	e
V-0191716-3.8	19	17	3.8	16°	75°	1.9	2.5	7.0	1.2	15.0	1.0
V-0191712-3.9	19	17	3.9	12°	85°	2.0	2.5	7.0	—	15.0	1.5
V-0191716-3.9	19	17	3.9	16°	75°	2.0	2.5	7.0	1.2	15.0	1.0
V-0191712-4.1	19	17	4.1	12°	85°	2.1	2.5	7.0	—	15.0	1.5
V-0191716-4.1	19	17	4.1	16°	75°	2.1	2.5	7.0	1.2	15.0	1.0
V-0191712-4.2	19	17	4.2	12°	85°	2.2	2.5	7.0	—	15.0	1.5
V-0191716-4.2	19	17	4.2	16°	75°	2.2	2.5	7.0	1.2	15.0	1.0
V-0191712-4.5	19	17	4.5	12°	85°	2.3	2.5	7.0	—	15.0	1.5
V-0191716-4.5	19	17	4.5	16°	75°	2.3	2.5	7.0	1.2	15.0	1.0
V-0191712-4.6	19	17	4.6	12°	85°	2.4	2.5	7.0	—	15.0	1.5
V-0191716-4.6	19	17	4.6	16°	75°	2.4	2.5	7.0	1.2	15.0	1.0
V-0191712-4.9	19	17	4.9	12°	85°	2.5	2.5	7.0	—	15.0	1.5
V-0191716-4.9	19	17	4.9	16°	75°	2.5	2.5	7.0	1.2	15.0	1.0
V-0191712-5.1	19	17	5.1	12°	85°	2.5	2.5	7.0	—	15.0	1.5
V-0191712-5.2	19	17	5.2	12°	85°	2.6	2.5	7.0	—	15.0	1.5
V-0191716-5.2	19	17	5.2	16°	75°	2.6	2.5	7.0	1.2	15.0	1.0
V-0191712-5.5	19	17	5.5	12°	85°	2.7	2.5	7.0	—	15.0	1.5
V-0191716-5.5	19	17	5.5	16°	75°	2.7	2.5	7.0	1.2	16.0	1.0
V-0191714-5.6	19	17	5.6	14°	85°	2.8	2.5	7.0	—	16.0	1.5
V-0191716-5.6	19	17	5.6	16°	75°	2.8	2.5	7.0	1.2	16.0	1.0
V-0191714-5.9	19	17	5.9	14°	85°	3.0	2.5	7.0	—	16.0	1.5
V-0191716-5.9	19	17	5.9	16°	70°	3.0	2.5	7.0	1.2	16.0	1.0
V-0191714-6.2	19	17	6.2	14°	85°	3.0	2.5	7.0	—	16.0	1.5
V-0191716-6.2	19	17	6.2	16°	70°	3.0	2.5	7.0	1.2	16.0	1.0
V-0191714-6.5	19	17	6.5	14°	85°	3.0	2.5	7.0	—	16.0	1.5
V-0191716-6.5	19	17	6.5	16°	70°	3.0	2.5	7.0	1.2	16.0	1.0
V-0191716-6.8	19	17	6.8	16°	70°	3.0	2.5	7.0	1.2	16.0	1.0
V-0191714-6.9	19	17	6.9	14°	70°	3.0	2.5	7.0	1.2	16.0	1.0
V-0211710-4.2	21	17	4.2	10°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0211712-4.3	21	17	4.3	12°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0211710-4.5	21	17	4.5	10°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0211710-5.0	21	17	5.0	10°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0211713-5.1	21	17	5.1	13°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0211712-5.3	21	17	5.3	12°	56°	2.0	3.0	5.0	12.0	16.0	1.2
V-0212008-5.5	21	20	5.5	8°	55°	2.0	3.0	7.5	12.0	14.0	1.2
V-0252014-5.7	25	20	5.7	14°	75°	2.5	3.0	7.0	1.5	20.0	1.0
V-0252014-6.0	25	20	6.0	14°	75°	2.6	3.0	7.0	1.5	20.0	1.0
V-0252014-6.2	25	20	6.2	14°	75°	2.8	3.0	7.0	1.5	20.0	1.0
V-0252014-6.5	25	20	6.5	14°	75°	2.8	3.0	7.2	1.5	20.0	1.0
V-0252014-6.7	25	20	6.7	14°	75°	2.8	3.0	7.5	1.5	20.0	1.0
V-0252014-7.0	25	20	7.0	14°	75°	2.9	3.0	7.5	1.5	20.0	1.0

ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	h ₂	R	D ₁	e
V-0252014-7.2	25	20	7.2	14°	70°	3.0	3.0	7.5	1.5	21.0	1.0
V-0252014-7.7	25	20	7.7	14°	70°	3.0	3.0	8.0	1.5	21.0	1.0
V-0292012-7.4	29	20	7.4	12°	56°	3.0	3.0	7.0	14.0	22.0	2.0
V-0292014-7.8	29	20	7.8	14°	56°	2.8	3.0	6.5	14.0	22.0	2.0
V-0292014-8.2	29	20	8.2	14°	56°	3.5	3.0	7.0	14.0	22.0	2.0
V-0292114-8.8	29	21	8.8	14°	56°	3.5	3.0	6.5	14.0	22.0	2.0
V-0292116-9.1	29	21	9.1	16°	56°	4.0	3.0	7.0	14.0	22.0	2.0
V-0302114-8.2	30	21	8.2	14°	75°	3.3	3.0	8.0	1.5	25.0	1.0
V-0302114-8.6	30	21	8.6	14°	75°	3.3	3.0	8.5	1.5	25.0	1.0
V-0302114-9.0	30	21	9.0	14°	75°	3.4	3.0	9.0	1.5	25.0	1.0
V-0302114-9.3	30	21	9.3	14°	75°	3.4	3.0	9.0	1.5	25.0	1.0
V-0302114-9.6	30	21	9.6	14°	75°	3.5	3.0	10.0	1.5	25.0	1.0
V-0302114-10.0	30	21	10.0	14°	75°	3.6	3.0	10.0	1.5	25.0	1.0
V-0302114-10.5	30	21	10.5	14°	75°	3.6	3.0	10.0	1.5	25.0	1.0
V-0302114-11.0	30	21	11.0	14°	75°	3.7	3.0	10.5	1.5	25.0	1.0
V-0302114-11.5	30	21	11.5	14°	75°	3.7	3.0	10.5	1.5	25.0	1.0
V-0342316-10.0	34	23	10.0	16°	56°	3.2	3.0	8.0	14.0	26.0	2.0
V-0352414-10.0	35	24	10.0	14°	60°	4.0	3.5	10.0	7.0	27.0	1.0
V-0352416-10.1	35	24	10.1	16°	55°	3.0	4.0	9.0	14.0	24.0	2.0
V-0352414-11.0	35	24	11.0	14°	60°	4.0	3.5	11.0	7.0	27.0	1.0
V-0402516-11.4	40	25	11.4	16°	55°	3.5	4.0	10.0	14.0	26.5	2.0

W Carbide nibs to draw non-ferrous wires and rods



ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	R	D ₁	e	ε
W-0060412-0.20	6	4	0.20	12°	90°	≤0.1	0.8	2.8	4.2	0.8	45°
W-0060412-0.25	6	4	0.25	12°	90°	≤0.1	0.8	2.8	4.2	0.8	45°
W-0060412-0.30	6	4	0.30	12°	90°	≤0.1	0.8	2.8	4.2	0.8	45°

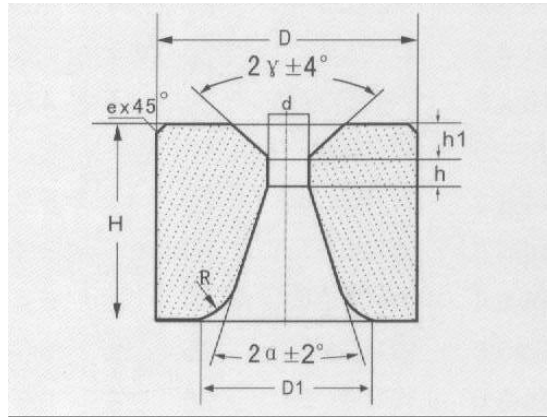
ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	R	D ₁	e	ε
W-0060412-0.35	6	4	0.35	12°	90°	≤0.1	0.8	2.8	4.2	0.8	45°
W-0060412-0.40	6	4	0.40	12°	90°	≤0.1	0.8	2.8	4.2	0.8	45°
W-0080612-0.15	8	6	0.15	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.20	8	6	0.20	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.25	8	6	0.25	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.30	8	6	0.30	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.35	8	6	0.35	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.40	8	6	0.40	12°	90°	≤0.1	1.0	4.5	5.7	1.0	45°
W-0080612-0.50	8	6	0.50	12°	90°	≤0.1	1.0	4.5	5.8	1.0	45°
W-0080612-0.60	8	6	0.60	12°	90°	≤0.1	1.0	4.3	5.8	1.0	45°
W-0080612-0.70	8	6	0.70	12°	90°	≤0.1	1.0	4.3	5.9	1.0	45°
W-0080612-0.80	8	6	0.80	12°	90°	≤0.1	1.0	4.2	5.9	1.0	45°
W-0080612-0.90	8	6	0.90	12°	90°	≤0.1	1.0	4.2	6.0	1.0	45°
W-0080612-1.0	8	6	1.0	12°	90°	≤0.1	1.0	4.0	6.0	1.0	45°
W-0090612-0.12	9	6	0.12	12°	90°	≤0.1	1.0	4.5	6.4	1.15	15°
W-0090612-0.15	9	6	0.15	12°	90°	≤0.1	1.0	4.5	6.4	1.15	15°
W-0090612-0.20	9	6	0.20	12°	90°	≤0.1	1.0	4.5	6.4	1.15	15°
W-0090612-0.25	9	6	0.25	12°	90°	≤0.1	1.0	4.5	6.4	1.15	15°
W-0090612-0.30	9	6	0.30	12°	90°	≤0.1	1.0	4.3	6.4	1.15	15°
W-0090612-0.35	9	6	0.35	12°	90°	≤0.1	1.0	4.3	6.4	1.15	15°
W-0090612-0.40	9	6	0.40	12°	90°	≤0.1	1.0	4.3	6.4	1.15	15°
W-0090612-0.50	9	6	0.30	12°	90°	≤0.1	1.0	4.3	6.6	1.15	15°
W-0090612-0.60	9	6	0.60	12°	90°	≤0.1	1.0	4.2	6.6	1.15	15°
W-0090612-0.70	9	6	0.70	12°	90°	≤0.1	1.0	4.2	6.8	1.15	15°
W-0090612-0.80	9	6	0.80	12°	90°	≤0.1	1.0	4.2	6.8	1.15	15°
W-0090612-0.90	9	6	0.90	12°	90°	≤0.1	1.0	4.2	6.8	1.15	15°
W-0090612-1.0	9	6	1.0	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0090612-1.1	9	6	1.1	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0090612-1.2	9	6	1.2	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0090612-1.3	9	6	1.3	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0090612-1.4	9	6	1.4	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0090612-1.5	9	6	1.5	12°	90°	≤0.1	1.0	4.0	7.0	1.15	15°
W-0120612-0.20	12	6	0.20	12°	60°	≤0.1	0.8	5.2	8.5	1.2	15°
W-0120812-0.25	12	8	0.25	12°	60°	≤0.1	0.8	5.2	8.5	1.2	15°
W-0120812-0.30	12	8	0.30	12°	60°	≤0.1	0.8	5.2	8.5	1.2	15°
W-0120812-0.40	12	8	0.40	12°	60°	≤0.1	0.8	5.2	8.5	1.2	15°
W-0120814-0.60	12	8	0.60	14°	60°	1.5	0.8	4.1	4.3	1.5	45°
W-0120814-0.70	12	8	0.70	14°	60°	1.5	0.8	4.1	4.3	1.5	45°
W-0120814-0.80	12	8	0.80	14°	60°	1.5	0.8	6.0	8.2	1.5	45°
W-0120814-0.90	12	8	0.90	14°	60°	1.5	0.8	6.0	8.2	1.5	45°
W-0120814-1.0	12	8	1.0	14°	60°	1.5	0.8	6.0	8.2	1.5	45°

ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	R	D ₁	e	ε
W-0120814-1.1	12	8	1.1	14°	60°	1.5	0.8	6.0	8.6	1.5	45°
W-0120814-1.2	12	8	1.2	14°	60°	1.5	0.8	6.0	8.6	1.5	45°
W-0120814-1.3	12	8	1.3	14°	60°	1.0	1.0	6.0	9.0	1.5	45°
W-0120814-1.4	12	8	1.4	14°	60°	1.0	1.0	6.0	9.0	1.5	45°
W-0120814-1.5	12	8	1.5	14°	60°	1.0	1.0	6.0	9.0	1.5	45°
W-0120814-1.6	12	8	1.6	14°	60°	1.2	1.0	5.4	9.0	1.5	45°
W-0151014-1.0	15	10	1.0	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-1.1	15	10	1.1	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-1.2	15	10	1.2	14°	60°	1.5	1.2	7.0	8.2	1.5	45°
W-0151014-1.3	15	10	1.3	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-1.4	15	10	1.4	14°	60°	1.5	1.2	7.0	8.2	1.5	45°
W-0151014-1.5	15	10	1.5	14°	60°	1.5	1.2	7.0	8.6	1.2	45°
W-0151014-1.6	15	10	1.6	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0151014-1.7	15	10	1.7	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0151014-1.8	15	10	1.8	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0151014-1.9	15	10	1.9	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0151014-2.0	15	10	2.0	14°	60°	1.5	1.2	7.0	9.0	1.5	45°
W-0151014-2.1	15	10	2.1	14°	60°	1.5	1.2	7.0	11.0	1.2	45°
W-0151014-2.2	15	10	2.2	14°	60°	1.5	1.2	7.0	11.0	1.2	45°
W-0151014-2.3	15	10	2.3	14°	60°	1.6	1.0	6.0	12.0	1.5	45°
W-0151014-2.4	15	10	2.4	14°	60°	1.5	1.2	6.0	12.0	1.5	45°
W-0151014-2.5	15	10	2.5	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-2.6	15	10	2.6	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-2.7	15	10	2.7	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-2.8	15	10	2.8	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-2.9	15	10	2.9	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-3.0	15	10	3.0	14°	60°	1.5	1.2	7.0	8.2	1.2	45°
W-0151014-3.2	15	10	3.2	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0151014-3.4	15	10	3.4	14°	60°	1.6	1.2	7.0	10.5	1.2	45°
W-0151014-3.5	15	10	3.5	14°	60°	1.8	1.0	7.0	12.0	1.2	45°
W-0151014-3.7	15	10	3.7	14°	60°	1.8	1.1	7.0	10.5	1.2	45°
W-0151014-3.8	15	10	3.8	14°	60°	1.5	1.2	7.0	9.0	1.2	45°
W-0201414-1.1	20	14	1.1	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.2	20	14	1.2	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.3	20	14	1.3	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.4	20	14	1.4	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.5	20	14	1.5	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.6	20	14	1.6	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.7	20	14	1.7	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.8	20	14	1.8	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-1.9	20	14	1.9	14°	60°	2.0	1.6	9.0	13.2	1.5	45°

ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	R	D ₁	e	ε
W-0201414-2.0	20	14	2.0	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.1	20	14	2.1	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.2	20	14	2.2	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.3	20	14	2.3	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.4	20	14	2.4	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.5	20	14	2.5	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.6	20	14	2.6	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.7	20	14	2.7	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.8	20	14	2.8	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-2.9	20	14	2.9	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-3.0	20	14	3.0	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-3.2	20	14	3.2	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-3.4	20	14	3.4	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-3.6	20	14	3.6	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-3.8	20	14	3.8	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-4.0	20	14	4.0	14°	60°	2.0	1.6	9.0	13.2	1.5	45°
W-0201414-4.2	20	14	4.2	14°	60°	2.1	1.0	6.0	17.0	1.5	45°
W-0201416-4.4	20	14	4.4	16°	60°	2.2	1.0	6.0	17.0	2.0	45°
W-0201416-4.7	20	14	4.7	16°	60°	2.3	1.0	6.0	17.0	2.0	45°
W-0201416-5.0	20	14	5.0	16°	60°	2.4	1.0	5.5	17.0	2.0	45°
W-0201416-5.3	20	14	5.3	16°	60°	2.4	1.0	5.6	17.0	2.0	45°
W-0201416-5.6	20	14	5.6	16°	60°	2.5	1.0	5.6	17.0	2.0	45°
W-0201416-5.7	20	14	5.7	16°	60°	2.6	1.0	5.6	17.0	2.0	45°
W-0251814-3.0	25	18	3.0	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-3.2	25	18	3.2	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-3.4	25	18	3.4	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-3.6	25	18	3.6	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-3.8	25	18	3.8	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-4.0	25	18	4.0	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-4.2	25	18	4.2	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-4.5	25	18	4.5	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-4.8	25	18	4.8	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-5.1	25	18	5.1	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-5.4	25	18	5.4	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-5.5	25	18	5.5	14°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251814-5.8	25	18	5.8	14°	60°	3.0	2.5	12.0	18.0	2.0	45°
W-0251814-6.0	25	18	6.0	14°	60°	2.8	2.9	14.0	18.0	2.0	45°
W-0251814-6.3	25	18	6.3	14°	60°	3.0	2.5	14.0	18.0	2.0	45°
W-0251816-6.5	25	18	6.5	16°	60°	3.2	2.0	12.0	18.0	2.0	45°
W-0251816-6.8	25	18	6.8	16°	60°	3.1	2.3	12.0	18.0	2.0	45°
W-0251814-7.0	25	18	7.0	14°	60°	3.1	2.6	14.0	18.0	2.0	45°

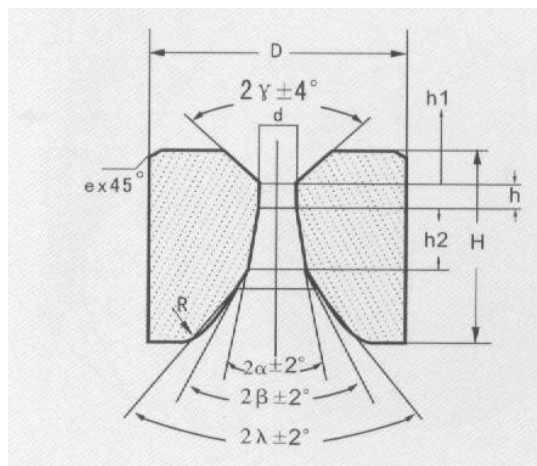
ITEM CODE	Dimension (mm)					Reference Dimension (mm)					
	D	H	d	2α	2γ	h	h ₁	R	D ₁	e	ε
W-0251816-7.3	25	18	7.3	16°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0251816-7.7	25	18	7.7	16°	60°	3.2	2.0	12.0	17.5	2.0	45°
W-0302216-7.7	30	22	7.7	16°	60°	4.5	2.0	14.5	20.5	2.0	45°
W-0302216-8.0	30	22	8.0	16°	60°	3.3	3.0	15.0	26.0	2.0	45°
W-0302216-8.4	30	22	8.4	16°	60°	3.3	3.0	14.8	26.0	2.0	45°
W-0302216-9.0	30	22	9.0	16°	60°	3.4	2.9	14.6	26.0	2.0	45°
W-0302216-9.4	30	22	9.4	16°	60°	3.5	2.8	14.5	26.0	2.0	45°
W-0302216-10.0	30	22	10.0	16°	60°	3.6	2.7	14.4	26.0	2.0	45°
W-0302216-10.5	30	22	10.5	16°	60°	3.6	2.7	14.4	26.0	2.0	45°
W-0302216-11.0	30	22	11.0	16°	60°	3.7	2.6	14.3	26.0	2.0	45°
W-0352516-6.7	35	25	6.7	16°	60°	4.5	2.0	14.5	23.5	2.0	45°
W-0352516-7.0	35	25	7.0	16°	60°	2.5	3.5	14.5	25.0	2.0	45°
W-0352516-7.5	35	25	7.5	16°	60°	2.5	3.5	14.5	25.0	2.0	45°
W-0352516-7.7	35	25	7.7	16°	60°	2.5	3.5	14.0	25.0	3.0	45°
W-0352516-8.2	35	25	8.2	16°	60°	2.5	3.5	14.0	25.0	3.0	45°
W-0352516-8.7	35	25	8.7	16°	60°	2.5	3.5	14.0	25.0	3.0	45°
W-0352516-9.3	35	25	9.3	16°	60°	2.8	3.5	14.0	25.0	3.0	45°
W-0352516-9.8	35	25	9.8	16°	60°	2.8	3.5	14.0	25.0	3.0	45°
W-0352516-10.0	35	25	10.0	16°	60°	3.0	3.5	14.0	25.0	3.0	45°
W-0352516-10.5	35	25	10.5	16°	60°	3.2	3.5	14.0	25.0	3.0	45°
W-0352516-11.0	35	25	11.0	16°	60°	3.6	3.5	14.0	25.0	3.0	45°
W-0352516-11.5	35	25	11.5	16°	60°	3.6	3.5	14.0	25.0	3.0	45°
W-0352516-12.0	35	25	12.0	16°	60°	3.6	3.5	14.0	25.0	3.0	45°
W-0352516-12.5	35	25	12.5	16°	60°	3.6	3.5	14.0	25.0	3.0	45°
W-0352516-13.0	35	25	13.0	16°	60°	3.6	3.5	14.0	25.0	3.0	45°

R4 Carbide nibs to draw metal wires and rods



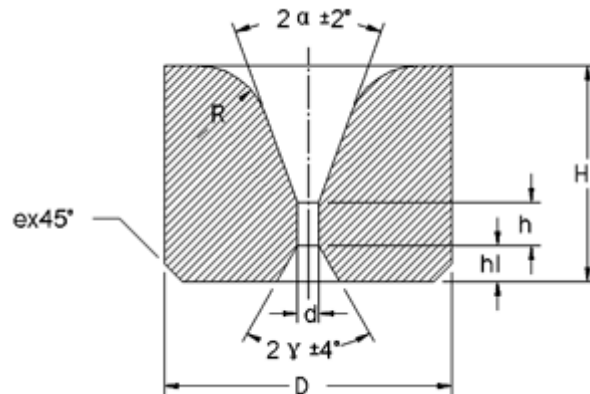
ITEM CODE	Dimension (mm)						Reference Dimension (mm)			
	D	H	d	D1	α	γ	h	h ₁	R	e
R4-2.2-12	12.7	11.4	2.2	10	12	90	1.2	2.0	5.0	1
R4-2.4-12	12.7	11.4	2.4	10	12	90	1.2	2.0	5.0	1
R4-2.6-12	12.7	11.4	2.6	10	12	90	1.2	2.0	5.0	1
R4-2.8-12	12.7	11.4	2.8	10	12	90	1.2	2.0	5.0	1
R4-3.0-12	12.7	11.4	3.0	10	12	90	1.4	2.0	5.5	1
R4-3.2-12	12.7	11.4	3.2	10	12	90	1.4	2.0	5.5	1
R4-3.4-12	12.7	11.4	3.4	10	12	90	1.4	2.0	5.5	1
R4-3.6-12	12.7	11.4	3.6	10	12	90	1.6	2.0	5.5	1
R4-3.8-12	12.7	11.4	3.8	10	12	90	1.6	2.0	5.5	1

R5 Carbide nibs to draw metal wires and rods



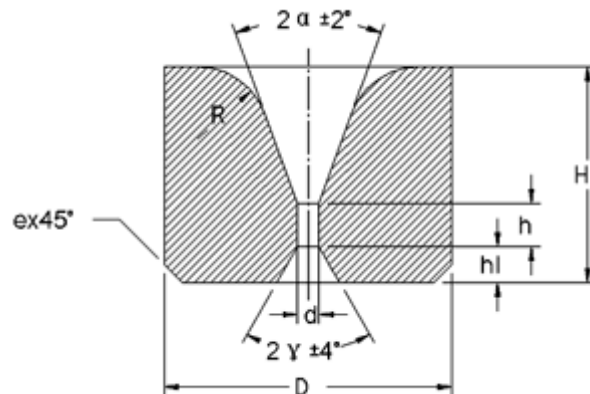
ITEM CODE	Dimension (mm)							Reference Dimension (mm)				
	D	H	d	2α	2β	2γ	2γ	h	h ₁	h ₂	R	e
R5-1.2	16.0	15.0	1.2	12	35	70	60	0.6	2.5	6.0	3.0	1
R5-2.4	16.0	15.0	2.4	12	35	70	60	1.2	2.5	5.6	3.0	1
R5-2.5	16.0	15.0	2.5	12	35	70	60	1.25	2.5	5.55	2.5	1
R5-3.1	16.0	15.0	3.1	12	35	70	60	1.5	2.5	5.3	2.5	1

S01 Carbide nibs to draw ferrous and nonferrous metal wires



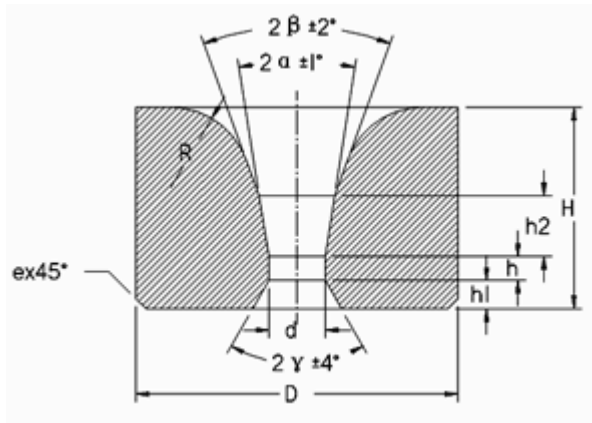
ITEM CODE	Dimension (mm)					Reference Dimension (mm)			
	D	H	d	2α	2γ	h	h ₁	h ₂	R
S01-0060440-0.8	6	4	0.2	40°	60°	0.8	0.6	0.8	1.5
S01-00806440-1.0	8	6	0.2	40°	60°	1.0	0.6	1.0	2.5

S10 Carbide nibs to draw ferrous and nonferrous metal wires.



ITEM CODE	Dimension (mm)					Reference Dimension (mm)			
	D	H	d	2α	2γ	h	h ₁	R	e
S10-0060440-0.4	6	4	0.4	40°	60°	0.6	0.8	1.5	0.5
S10-0060440-0.6	6	4	0.6	40°	60°	0.8	0.8	1.5	0.5
S10-0060440-0.8	6	4	0.8	40°	60°	1.0	0.8	1.5	0.5
S10-0080640-0.4	8	6	0.4	40°	60°	0.4	1.0	2.0	0.5
S10-0080640-0.6	8	6	0.6	40°	60°	0.6	1.0	2.0	0.5
S10-0080640-0.8	8	6	0.8	40°	60°	0.8	1.0	2.0	0.5

S11 Carbide nibs to draw ferrous and nonferrous metal wires.



ITEM CODE	Dimension (mm)						Reference Dimension (mm)				
	D	H	d	2α	2β	2γ	h	h1	h2	R	e
S11-0080612-0.3	8	6	0.3	12°	40°	60°	0.3	1.0	1.2	2.0	0.5
S11-0080612-0.4	8	6	0.4	12°	40°	60°	0.3	1.0	1.2	2.0	0.5
S11-0080616-0.5	8	6	0.5	16°	40°	60°	0.3	1.0	1.5	2.0	0.5
S11-0080612-0.6	8	6	0.6	12°	40°	60°	0.4	1.0	1.4	2.0	0.5
S11-0080616-0.7	8	6	0.7	16°	40°	60°	0.5	1.0	1.7	2.0	0.5
S11-0080616-0.8	8	6	0.8	16°	40°	60°	0.6	1.0	1.8	2.0	0.5
S11-0080612-0.9	8	6	0.9	12°	40°	60°	0.6	1.0	1.8	2.0	0.5
S11-0080612-1.0	8	6	1.0	12°	40°	60°	0.6	1.0	1.8	2.0	0.5
S11-0080610-1.1	8	6	1.1	10°	40°	60°	0.5	1.0	2.0	2.0	0.5
S11-0080610-1.2	8	6	1.2	10°	40°	60°	0.6	1.0	2.0	2.0	0.5
S11-0131014-0.4	13	10	0.4	14°	40°	60°	0.3	1.2	2.0	3.0	1.0
S11-0131012-0.4	13	10	0.4	12°	40°	60°	0.3	1.2	2.0	3.0	1.0
S11-0131018-0.4	13	10	0.4	18°	40°	60°	0.3	1.2	2.0	3.0	1.0
S11-0121014-0.4	12	10	0.4	14°	40°	90°	0.4	1.2	2.0	6.8	1.0
S11-0121014-0.6	12	10	0.6	14°	40°	90°	0.6	1.2	2.0	6.5	1.0
S11-0121014-0.8	12	10	0.8	14°	40°	90°	0.8	1.2	2.0	6.3	1.0
S11-0121014-1.0	12	10	1.0	14°	40°	90°	0.8	1.2	3.0	4.0	1.0
S11-0121016-1.2	12	10	1.2	16°	40°	90°	1.0	1.2	3.0	4.0	1.0
S11-0121016-1.4	12	10	1.4	16°	40°	90°	1.0	1.2	3.0	4.0	1.0
S11-0121016-1.6	12	10	1.6	16°	40°	90°	1.2	1.2	3.0	4.0	1.0
S11-0121016-1.8	12	10	1.8	16°	40°	90°	1.2	1.2	3.0	3.5	1.0
S11-0121016-2.0	12	10	2.0	16°	40°	90°	1.2	1.2	3.0	3.5	1.0
S11-0121016-2.3	12	10	2.3	16°	40°	90°	1.2	1.2	3.0	4.0	1.0
S11-0151314-0.4	15	13	0.4	14°	40°	90°	0.4	1.5	2.0	9.1	1.2
S11-0151314-0.6	15	13	0.6	14°	40°	90°	0.6	1.5	2.0	9.0	1.2
S11-0151314-0.8	15	13	0.8	14°	40°	90°	0.6	1.5	2.0	8.8	1.2
S11-0151314-1.0	15	13	1.0	14°	40°	90°	0.8	1.5	2.0	8.6	1.2
S11-0151316-1.3	15	13	1.3	16°	40°	90°	1.0	1.5	2.0	8.2	1.2
S11-0151316-1.6	15	13	1.6	16°	40°	90°	1.3	1.5	2.0	8.0	1.2

S11-0151316-1.8	15	13	1.8	16 °	40°	90 °	1.3	1.5	2.0	7.8	1.2
S11-0151316-2.0	15	13	2.0	16 °	40°	90 °	1.3	1.5	2.0	7.6	1.2
S11-0151316-2.3	15	13	2.3	16 °	40°	90 °	1.3	1.5	2.0	7.4	1.2
S11-0151316-2.8	15	13	2.8	16 °	40°	90 °	1.5	1.5	2.0	7.0	1.2
S11-0131014-0.5	13	10	0.5	14 °	40°	60 °	0.4	1.2	2.0	4.0	1.0
S11-0131014-0.6	13	10	0.6	14 °	40°	60 °	0.4	1.2	2.2	3.0	1.0
S11-0131012-0.6	13	10	0.6	12 °	42°	60 °	0.4	1.2	2.2	3.0	1.0
S11-0131018-0.6	13	10	0.6	18 °	40°	60 °	0.4	1.2	2.2	3.0	1.0
S11-0131014-0.7	13	10	0.7	14 °	40°	60 °	0.6	1.2	2.5	3.0	1.0
S11-0131012-0.7	13	10	0.7	12 °	42°	60 °	0.6	1.2	2.2	3.0	1.0
S11-0131014-0.8	13	10	0.8	14 °	40°	60 °	0.6	1.2	2.5	3.0	1.0
S11-0131012-0.8	13	10	0.8	12 °	42°	60 °	0.6	1.2	2.5	3.0	1.0
S11-0131018-0.8	13	10	0.8	18 °	40°	60 °	0.6	1.2	2.5	3.0	1.0
S11-0131012-0.9	13	10	0.9	12 °	42°	60 °	0.7	1.2	2.5	3.0	1.0
S11-0131018-0.9	13	10	0.9	18 °	40°	60 °	0.7	1.2	2.5	3.0	1.0
S11-0131014-1.0	13	10	1.0	14 °	40°	60 °	0.7	1.2	3.0	3.0	1.0
S11-0131012-1.0	13	10	1.0	12 °	42°	60 °	0.7	1.2	3.0	3.0	1.0
S11-0131018-1.0	13	10	1.0	18 °	40°	60 °	0.7	1.2	3.0	3.0	1.0
S11-0131014-1.1	13	10	1.1	14 °	40°	60 °	1.0	1.2	3.0	3.0	1.0
S11-0131012-1.1	13	10	1.1	12 °	42°	60 °	1.0	1.2	3.0	3.0	1.0
S11-0131018-1.1	13	10	1.1	18 °	40°	60 °	1.0	1.2	3.0	3.0	1.0
S11-0131014-1.3	13	10	1.3	14 °	40°	60 °	1.3	1.2	3.0	3.0	1.0
S11-0131018-1.3	13	10	1.3	18 °	40°	60 °	1.0	1.2	3.0	3.0	1.0
S11-0131018-1.5	13	10	1.5	18 °	40°	60 °	1.1	1.2	3.0	3.0	1.0
S11-0131014-1.6	13	10	1.6	14 °	40°	60 °	1.1	1.2	3.0	3.0	1.0
S11-0131018-1.6	13	10	1.6	18 °	40°	60 °	1.1	1.2	3.0	3.0	1.0
S11-0131018-1.7	13	10	1.7	18 °	40°	60 °	1.2	1.2	4.0	4.0	1.0
S11-0131016-1.8	13	10	1.8	16 °	40°	60 °	1.2	1.2	3.5	4.0	1.0
S11-0131018-1.8	13	10	1.8	18 °	40°	60 °	1.2	1.2	4.0	4.0	1.0
S11-0131018-1.9	13	10	1.9	18 °	40°	60 °	1.2	1.2	4.0	4.0	1.0
S11-0131016-2.0	13	10	2.0	16 °	40°	60 °	1.2	1.2	4.0	4.0	1.0
S11-0131018-2.0	13	10	2.0	18 °	40°	60 °	1.2	1.2	4.0	4.0	1.0
S11-0131018-2.1	13	10	2.1	18 °	40°	60 °	1.4	1.2	4.0	4.0	1.0
S11-0131018-2.2	13	10	2.2	18 °	40°	60 °	1.4	1.2	4.0	4.0	1.0
S11-0131016-2.3	13	10	2.3	16 °	40°	60 °	1.4	1.2	4.0	4.0	1.0
S11-0131018-2.3	13	10	2.3	18 °	40°	60 °	1.4	1.2	4.0	4.0	1.0
S11-0131016-2.4	13	10	2.4	16 °	40°	60 °	1.2	1.2	3.5	4.0	1.0
S11-0131016-2.5	13	10	2.5	16 °	40°	60 °	1.2	1.2	3.5	4.0	1.0
S11-0131016-2.6	13	10	2.6	16 °	40°	60 °	1.2	2.0	3.5	3.0	1.0
S11-0161316-0.3	16	13	0.3	16 °	45°	60 °	0.2	1.5	4.0	5.0	1.0
S11-0161316-0.4	16	13	0.4	16 °	45°	60 °	0.2	1.5	4.0	5.0	1.0
S11-0161316-0.5	16	13	0.5	16 °	45°	60 °	0.3	1.5	4.0	5.0	1.0
S11-0161316-0.6	16	13	0.6	16 °	45°	60 °	0.3	1.5	4.0	5.0	1.0

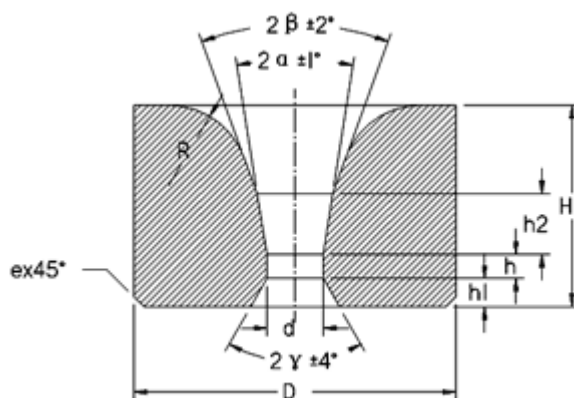
S11-0161316-0.7	16	13	0.7	16 °	45°	60 °	0.3	1.5	4.0	5.0	1.0
S11-0161316-0.8	16	13	0.8	16 °	45°	60 °	0.4	1.5	4.0	5.0	1.0
S11-0161316-0.9	16	13	0.9	16 °	45°	60 °	0.4	1.5	4.0	5.0	1.0
S11-0161316-1.0	16	13	1.0	16 °	45°	60 °	0.5	1.5	4.0	5.0	1.0
S11-0161316-1.1	16	13	1.1	16 °	45°	60 °	0.5	1.5	4.0	5.0	1.0
S11-0161316-1.2	16	13	1.2	16 °	45°	60 °	0.6	1.5	4.0	5.0	1.0
S11-0161316-1.3	16	13	1.3	16 °	45°	60 °	0.6	1.5	4.0	5.0	1.0
S11-0161316-1.4	16	13	1.4	16 °	45°	60 °	0.7	1.5	4.0	5.0	1.0
S11-0161316-1.5	16	13	1.5	16 °	45°	60 °	0.7	1.5	4.0	5.0	1.0
S11-0161316-1.6	16	13	1.6	16 °	45°	60 °	0.8	1.5	4.0	5.0	1.0
S11-0161316-1.7	16	13	1.7	16 °	45°	60 °	0.8	1.5	4.0	5.0	1.0
S11-0161316-1.8	16	13	1.8	16 °	45°	60 °	0.9	1.5	4.0	5.0	1.0
S11-0161316-1.9	16	13	1.9	16 °	45°	60 °	0.9	1.5	4.0	5.0	1.0
S11-0161316-2.0	16	13	2.0	16 °	45°	60 °	1.0	1.5	4.0	5.0	1.0
S11-0161316-2.1	16	13	2.1	16 °	45°	60 °	1.0	1.5	4.0	5.0	1.0
S11-0161316-2.2	16	13	2.2	16 °	45°	60 °	1.0	1.5	4.0	5.0	1.0
S11-0161316-2.3	16	13	2.3	16 °	45°	60 °	1.1	1.5	4.0	5.0	1.0
S11-0161316-2.4	16	13	2.4	16 °	45°	60 °	1.2	1.5	4.0	5.0	1.0
S11-0161316-2.5	16	13	2.5	16 °	45°	60 °	1.2	1.5	4.0	5.0	1.0
S11-0161316-2.6	16	13	2.6	16 °	45°	60 °	1.3	1.5	4.0	5.0	1.0
S11-0161316-2.7	16	13	2.7	16 °	45°	60 °	1.3	1.5	4.0	5.0	1.0
S11-0161316-2.8	16	13	2.8	16 °	45°	60 °	1.4	1.5	4.0	5.0	1.0
S11-0161316-3.0	16	13	3.0	16 °	45°	60 °	1.4	1.5	4.0	5.0	1.0
S11-0161318-3.2	16	13	3.2	18 °	45°	60 °	1.4	1.5	5.0	4.0	1.0
S11-0161418-0.4	16	14	0.4	18 °	40°	60 °	0.3	1.5	4.0	4.0	1.0
S11-0161418-0.6	16	14	0.6	18 °	40°	60 °	0.4	1.5	4.0	4.0	1.0
S11-0161418-0.8	16	14	0.8	18 °	40°	60 °	0.6	1.5	4.0	4.0	1.0
S11-0161418-0.9	16	14	0.9	18 °	40°	60 °	0.6	1.5	4.0	4.0	1.0
S11-0161418-1.0	16	14	1.0	18 °	40°	60 °	1.0	1.5	4.0	4.0	1.0
S11-0161418-1.3	16	14	1.3	18 °	40°	60 °	1.2	1.5	4.0	4.0	1.0
S11-0161418-1.6	16	14	1.6	18 °	40°	60 °	1.2	1.5	4.0	4.0	1.0
S11-0161418-1.8	16	14	1.8	18 °	40°	60 °	1.2	1.5	4.0	4.0	1.0
S11-0161418-2.0	16	14	2.0	18 °	40°	60 °	1.2	1.5	4.0	4.0	1.0
S11-0161418-2.3	16	14	2.3	18 °	40°	60 °	1.4	1.5	4.0	4.0	1.0
S11-0161418-2.5	16	14	2.5	18 °	40°	60 °	1.4	1.5	4.0	4.0	1.0
S11-0161418-2.6	16	14	2.6	18 °	40°	60 °	1.4	1.5	4.0	4.0	1.0
S11-0161418-2.8	16	14	2.8	18 °	40°	60 °	1.4	1.5	4.0	4.0	1.0
S11-0201716-1.4	20	17	1.4	16 °	40°	75 °	1.1	2.5	6.0	10.1	1.5
S11-0201716-1.6	20	17	1.6	16 °	40°	75 °	1.2	2.5	6.0	10.0	1.5
S11-0201716-1.8	20	17	1.8	16 °	40°	75 °	1.2	2.5	6.0	10.0	1.5
S11-0201718-1.8	20	17	1.8	16 °	40°	60 °	2.3	2.5	6.0	5.0	1.2
S11-0201718-1.9	20	17	1.9	16 °	40°	60 °	2.3	2.5	6.0	3.0	1.2
S11-0201716-2.0	20	17	2.0	16 °	40°	75 °	1.5	2.5	6.0	10.0	1.5

S11-0201718-2.0	20	17	2.0	16 °	40°	60 °	2.3	2.5	6.0	5.0	1.2
S11-0201718-2.1	20	17	2.1	16 °	40°	60 °	2.3	2.5	6.0	3.0	1.2
S11-0201718-2.2	20	17	2.2	16 °	40°	60 °	2.3	2.5	6.0	4.0	1.2
S11-0201710-2.3	20	17	2.3	16 °	40°	75 °	3.0	2.5	6.0	10.0	1.5
S11-0201716-2.3	20	17	2.3	16 °	40°	75 °	1.2	2.5	6.0	9.7	1.5
S11-0191618-2.3	19	16	2.3	18 °	40°	75 °	1.2	2.5	6.0	9.6	1.5
S11-0191618-2.5	19	16	2.5	18 °	40°	75 °	1.3	2.5	6.0	9.7	1.5
S11-0191616-2.8	19	16	2.8	16 °	40°	75 °	1.4	2.5	6.0	9.8	1.5
S11-0191618-3.0	19	16	3.0	18 °	40°	75 °	1.4	2.5	6.0	9.6	1.5
S11-0191616-3.8	19	16	3.8	16 °	40°	75 °	1.7	2.5	6.0	9.0	1.5
S11-0191616-5.2	19	16	5.2	16 °	40°	75 °	2.0	2.5	6.0	8.1	1.5
S11-0191616-5.6	19	16	5.6	16 °	40°	75 °	2.0	2.5	6.0	8.0	1.5
S11-0191616-5.9	19	16	5.9	16 °	40°	75 °	2.0	2.5	6.0	7.9	1.5
S11-0201718-2.3	20	17	2.3	18 °	40°	60 °	2.3	2.5	6.0	5.0	1.2
S11-0201718-2.4	20	17	2.4	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201710-2.5	20	17	2.5	10 °	40°	75 °	3.0	2.5	6.0	10.0	1.5
S11-0201716-2.5	20	17	2.5	16 °	40°	75 °	1.3	2.5	6.0	9.6	1.5
S11-0201718-2.5	20	17	2.5	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-2.6	20	17	2.6	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-2.7	20	17	2.7	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201716-2.8	20	17	2.8	16 °	40°	75 °	1.5	2.5	6.0	9.8	1.5
S11-0201718-2.8	20	17	2.8	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-3.0	20	17	3.0	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201716-3.3	20	17	3.3	16 °	40°	75 °	1.5	2.5	6.0	9.6	1.5
S11-0201718-3.3	20	17	3.3	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-3.5	20	17	3.5	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-3.8	20	17	3.8	18 °	40°	60 °	2.3	2.5	7.0	5.0	1.2
S11-0201718-4.0	20	17	4.0	18 °	40°	60 °	2.4	2.5	7.0	5.0	1.2
S11-0201718-4.2	20	17	4.2	18 °	40°	60 °	2.5	2.5	7.0	5.0	1.2
S11-0201718-4.5	20	17	4.5	18 °	40°	60 °	2.5	2.5	7.0	5.0	1.2
S11-0201718-4.7	20	17	4.7	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0201718-5.0	20	17	5.0	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0201718-5.2	20	17	5.2	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0201718-5.5	20	17	5.5	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0201716-5.7	20	17	5.7	16 °	40°	75 °	2.0	2.5	6.0	8.0	1.5
S11-0201718-5.7	20	17	5.7	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0201718-6.0	20	17	6.0	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0211718-1.6	21	17	1.6	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0211718-1.8	21	17	1.8	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0211718-2.0	21	17	2.0	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0211718-2.3	21	17	2.3	16 °	40°	60 °	1.4	2.5	6.0	5.0	1.2
S11-0211718-2.5	21	17	2.5	18 °	40°	60 °	1.4	2.5	6.0	5.0	1.2
S11-0211718-2.8	21	17	2.8	18 °	40°	60 °	1.4	2.5	6.0	5.0	1.2

S11-0211718-3.0	21	17	3.0	18 °	40°	60 °	1.4	2.5	6.0	5.0	1.2
S11-0211718-3.3	21	17	3.3	18 °	40°	60 °	1.5	2.5	7.0	5.0	1.2
S11-0211718-3.5	21	17	3.5	18 °	40°	60 °	1.5	2.5	7.0	5.0	1.2
S11-0211718-3.8	21	17	3.8	18 °	40°	60 °	1.6	2.5	7.0	5.0	1.2
S11-0211718-4.0	21	17	4.0	18 °	40°	60 °	1.7	2.5	7.0	5.0	1.2
S11-0211718-4.2	21	17	4.2	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0211718-4.5	21	17	4.5	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0211718-4.7	21	17	4.7	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0211718-4.9	21	17	4.9	16 °	40°	60 °	1.9	2.5	7.0	5.0	1.2
S11-0211718-5.2	21	17	5.2	18 °	40°	60 °	2.0	2.5	8.0	5.0	1.2
S11-0211718-5.5	21	17	5.5	18 °	40°	60 °	2.5	2.5	8.0	5.0	1.2
S11-0211718-5.7	21	17	5.7	18 °	40°	60 °	3.0	2.5	8.0	5.0	1.2
S11-0221818-1.5	22	18	1.5	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-1.6	22	18	1.6	18 °	40°	60 °	1.4	2.5	5.0	5.0	1.2
S11-0221818-1.7	22	18	1.7	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-1.7	22	18	1.7	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-1.8	22	18	1.8	18 °	40°	60 °	1.4	2.5	5.0	5.0	1.2
S11-0221818-1.8	22	18	1.8	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-1.9	22	18	1.9	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-2.0	22	18	2.0	18 °	40°	60 °	1.4	2.5	5.0	5.0	1.2
S11-0221818-2.1	22	18	2.1	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-2.2	22	18	2.2	18 °	40°	60 °	1.2	2.5	6.0	5.0	1.2
S11-0221818-2.3	22	18	2.3	18 °	40°	60 °	1.4	2.5	5.0	5.0	1.2
S11-0221818-2.4	22	18	2.4	18 °	40°	60 °	1.4	2.5	5.5	5.0	1.2
S11-0221818-2.5	22	18	2.5	18 °	40°	60 °	1.4	2.5	5.0	5.0	1.2
S11-0221818-2.6	22	18	2.6	16 °	40°	60 °	1.4	2.5	5.5	5.0	1.2
S11-0221818-2.7	22	18	2.7	18 °	40°	60 °	1.4	2.5	6.5	5.0	1.2
S11-0221818-2.8	22	18	2.8	18 °	40°	60 °	1.4	2.5	7.0	5.0	1.2
S11-0221818-2.9	22	18	2.9	18 °	40°	60 °	1.4	2.5	5.5	5.0	1.2
S11-0221818-3.0	22	18	3.0	18 °	40°	60 °	1.4	2.5	7.0	5.0	1.2
S11-0221818-3.1	22	18	3.1	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-3.3	22	18	3.3	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-3.5	22	18	3.5	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-3.7	22	18	3.7	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-3.8	22	18	3.8	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-4.0	22	18	4.0	18 °	40°	60 °	1.8	2.5	7.0	5.0	1.2
S11-0221818-4.2	22	18	4.2	18 °	40°	60 °	2.2	2.5	7.0	5.0	1.2
S11-0221818-4.5	22	18	4.5	18 °	40°	60 °	2.2	2.5	7.0	5.0	1.2
S11-0221818-4.7	22	18	4.7	18 °	40°	60 °	2.2	2.5	7.0	5.0	1.2
S11-0221818-5.0	22	18	5.0	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0221818-5.2	22	18	5.2	16 °	40°	60 °	2.0	2.5	6.0	5.0	1.2
S11-0221818-5.4	22	18	5.4	18 °	40°	60 °	2.0	2.5	7.0	5.0	1.2
S11-0221818-5.5	22	18	5.5	18 °	40°	60 °	2.7	2.5	7.5	5.0	1.2

S11-0221818-5.7	22	18	5.7	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0221818-6.0	22	18	6.0	18 °	40°	60 °	2.6	2.5	7.0	5.0	1.2
S11-0221820-6.3	22	18	6.3	20 °	40°	75 °	2.2	2.5	6.0	8.0	1.5

S12 Carbide nibs to draw nonferrous metal rods.

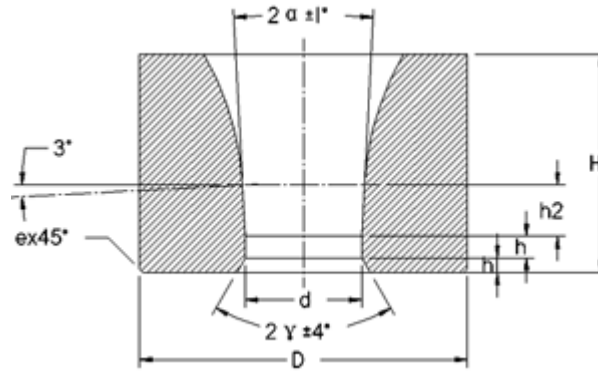


ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	d	2α	2β	2γ	h	h_1	h_2	R	e	
S12-0130816-0.40	13	8	0.40	16°	40°	60°	0.3	1.5	2.0	2.0	0.5	
S12-0130816-0.50	13	8	0.50	16°	40°	60°	0.3	1.5	2.0	2.0	0.5	
S12-0130816-0.60	13	8	0.60	16°	40°	60°	0.5	1.5	2.0	2.0	0.5	
S12-0130816-0.70	13	8	0.70	16°	40°	60°	0.5	1.5	2.0	2.0	0.5	
S12-0130816-0.80	13	8	0.80	16°	40°	60°	0.5	1.5	2.0	2.0	0.5	
S12-0130816-0.90	13	8	0.90	16°	40°	60°	0.5	1.5	2.3	2.0	0.5	
S12-0130816-1.1	13	8	1.1	16°	40°	60°	0.6	1.5	2.5	2.0	0.5	
S12-0130816-1.2	13	8	1.2	16°	40°	60°	0.6	1.5	2.5	2.0	0.5	
S12-0130816-1.3	13	8	1.3	16°	40°	60°	0.7	1.5	2.5	2.0	0.5	
S12-0130816-1.4	13	8	1.4	16°	40°	60°	0.7	1.5	2.6	2.0	0.5	
S12-0130816-1.5	13	8	1.5	16°	40°	60°	0.7	1.5	2.7	2.0	0.5	
S12-0130816-1.6	13	8	1.6	16°	40°	60°	0.8	1.5	2.8	2.0	0.5	
S12-0130816-1.7	13	8	1.7	16°	40°	60°	0.8	1.5	2.9	2.0	0.5	
S12-0130816-1.8	13	8	1.8	16°	40°	60°	0.8	1.5	3.0	2.0	0.5	
S12-0130816-1.9	13	8	1.9	16°	40°	60°	0.9	1.5	3.0	2.0	0.5	
S12-0130816-2.0	13	8	2.0	16°	40°	60°	1.0	1.5	3.0	2.0	0.5	
S12-0130816-2.1	13	8	2.1	16°	40°	60°	1.0	1.5	3.0	2.0	0.5	
S12-0130816-2.2	13	8	2.2	16°	40°	60°	1.0	1.5	3.0	2.0	0.5	
S12-0130816-2.3	13	8	2.3	16°	40°	60°	1.0	1.5	3.0	2.0	0.5	
S12-0161016-0.80	16	10	0.80	16°	40°	60°	0.5	2.0	2.5	3.0	1.0	
S12-0161016-0.90	16	10	0.90	16°	40°	60°	0.5	2.0	2.5	3.0	1.0	
S12-0161016-1.0	16	10	1.0	16°	40°	60°	0.6	2.0	2.5	3.0	1.0	
S12-0161016-1.1	16	10	1.1	16°	40°	60°	0.6	2.0	2.5	3.0	1.0	
S12-0161016-1.2	16	10	1.2	16°	40°	60°	0.6	2.0	2.5	3.0	1.0	
S12-0161016-1.3	16	10	1.3	16°	40°	60°	0.6	2.0	2.5	3.0	1.0	

S12-0161016-1.4	16	10	1.4	16°	40°	60°	0.7	2.0	2.6	3.0	1.0
S12-0161016-1.5	16	10	1.5	16°	40°	60°	0.7	2.0	2.7	3.0	1.0
S12-0161016-1.6	16	10	1.6	16°	40°	60°	0.8	2.0	2.8	3.0	1.0
S12-0161016-1.7	16	10	1.7	16°	40°	60°	0.8	2.0	2.9	3.0	1.0
S12-0161016-1.8	16	10	1.8	16°	40°	60°	1.0	2.0	3.0	3.0	1.0
S12-0161016-1.9	16	10	1.9	16°	40°	60°	1.0	2.0	3.1	3.0	1.0
S12-0161016-2.0	16	10	2.0	16°	40°	60°	1.0	2.0	3.2	3.0	1.0
S12-0161016-2.1	16	10	2.1	16°	40°	60°	1.0	2.0	3.3	3.0	1.0
S12-0161016-2.2	16	10	2.2	16°	40°	60°	1.0	2.0	3.4	3.0	1.0
S12-0161016-2.3	16	10	2.3	16°	40°	60°	1.0	2.0	3.5	3.0	1.0
S12-0161016-2.4	16	10	2.4	16°	40°	60°	1.0	2.0	3.5	3.0	1.0
S12-0161016-2.5	16	10	2.5	16°	40°	60°	1.0	2.0	3.5	3.0	1.0
S12-0161016-2.6	16	10	2.6	16°	40°	60°	1.0	2.0	3.5	3.0	1.0
S12-0161016-2.7	16	10	2.7	16°	40°	60°	1.1	2.0	3.5	3.0	1.0
S12-0201216-1.8	20	12	1.8	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-1.9	20	12	1.9	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.0	20	12	2.0	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.1	20	12	2.1	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.2	20	12	2.2	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.3	20	12	2.3	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.4	20	12	2.4	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.5	20	12	2.5	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.6	20	12	2.6	16°	40°	60°	1.0	2.5	4.5	3.0	1.0
S12-0201216-2.7	20	12	2.7	16°	40°	60°	1.1	2.5	4.5	3.0	1.0
S12-0201216-2.8	20	12	2.8	16°	40°	60°	1.2	2.5	4.5	3.0	1.0
S12-0201216-2.9	20	12	2.9	16°	40°	60°	1.3	2.5	4.8	3.0	1.0
S12-0201216-3.1	20	12	3.1	16°	40°	60°	1.3	2.5	5.0	3.0	1.0
S12-0201216-3.3	20	12	3.3	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-3.5	20	12	3.5	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-3.8	20	12	3.8	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-4.0	20	12	4.0	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-4.3	20	12	4.3	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-4.6	20	12	4.6	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0201216-5.0	20	12	5.0	16°	40°	60°	1.4	2.5	5.0	3.0	1.0
S12-0221416-4.2	22	14	4.2	16°	40°	60°	1.6	3.0	5.5	3.0	1.0
S12-0221416-4.5	22	14	4.5	16°	40°	60°	1.6	3.0	5.5	3.0	1.0
S12-0221416-4.7	22	14	4.7	16°	40°	60°	1.6	3.0	5.5	3.0	1.0
S12-0221416-5.0	22	14	5.0	16°	40°	60°	1.8	3.0	6.0	3.0	1.0
S12-0221416-5.2	22	14	5.2	16°	40°	60°	2.0	3.0	7.0	3.0	1.0
S12-0221416-5.5	22	14	5.5	16°	40°	60°	2.0	3.0	7.0	3.0	1.0
S12-0221416-5.7	22	14	5.7	16°	40°	60°	2.0	3.0	7.0	3.0	1.0
S12-0261616-6.4	26	16	6.4	16°	40°	60°	2.0	3.5	7.5	3.5	1.0
S12-0261616-6.7	26	16	6.7	16°	40°	60°	2.0	3.5	7.5	3.5	1.0

S12-0261616-7.0	26	16	7.0	16°	40°	60°	2.0	3.5	7.5	3.5	1.0
S12-0261616-7.2	26	16	7.2	16°	40°	60°	2.0	3.5	7.5	3.5	1.0
S12-0261616-7.5	26	16	7.5	16°	40°	60°	2.0	3.5	7.5	3.5	1.0
S12-0261616-7.7	26	16	7.7	16°	40°	60°	2.0	3.5	7.5	3.5	1.0
S12-0261616-8.0	26	16	8.0	16°	40°	60°	2.0	3.5	7.5	3.5	1.0

S13 Carbide nibs to draw ferrous and nonferrous metal rods.



ITEM CODE	Dimension (mm)					Reference Dimension (mm)				
	D	H	d	2α	2γ	h	h ₁	R	e	
S13-0201716-1.8	20	17	1.8	16°	75°	1.2	2.5	10.0	1.5	
S13-0201716-2.0	20	17	2.0	16°	75°	1.2	2.5	10.0	1.5	
S13-0201716-2.3	20	17	2.3	16°	75°	1.2	2.5	9.7	1.5	
S13-0201716-2.8	20	17	2.8	16°	75°	1.4	2.5	9.8	1.5	
S13-0201716-3.3	20	17	3.3	16°	75°	1.4	2.5	9.6	1.5	
S13-0201716-3.8	20	17	3.8	16°	75°	1.6	2.5	9.0	1.5	
S13-0201716-4.2	20	17	4.2	16°	75°	1.8	2.5	8.6	1.5	
S13-0201716-4.7	20	17	4.7	16°	75°	1.8	2.5	8.4	1.5	
S13-0201716-5.2	20	17	5.2	16°	75°	2.0	2.5	8.1	1.5	
S13-0201716-5.7	20	17	5.7	16°	75°	2.0	2.5	8.0	1.5	
S13-0281820-5.7	28	18	5.7	20°	60°	2.5	3.0	9.0	1.2	
S13-0281820-6.0	28	18	6.0	20°	60°	2.5	3.0	9.0	1.2	
S13-0281820-6.3	28	18	6.3	20°	60°	2.5	3.0	9.0	1.2	
S13-0281820-6.6	28	18	6.6	20°	60°	2.5	3.0	8.5	1.2	
S13-0281820-7.0	28	18	7.0	20°	60°	2.5	3.0	8.5	1.2	
S13-0281820-7.3	28	18	7.3	20°	60°	2.5	3.0	8.5	1.2	
S13-0282014-3.7	28	20	3.7	14°	60°	1.5	3.0	7.0	1.2	
S13-0282014-3.9	28	20	3.9	14°	60°	1.5	3.0	7.0	1.2	
S13-0282014-4.1	28	20	4.1	14°	60°	1.5	3.0	7.0	1.2	
S13-0282014-4.4	28	20	4.4	14°	60°	1.5	3.0	7.0	1.2	
S13-0282014-4.7	28	20	4.7	14°	60°	1.5	3.0	7.0	1.2	
S13-0282020-4.7	28	20	4.7	20°	60°	2.5	3.0	7.0	1.2	
S13-0282020-5.0	28	20	5.0	20°	60°	2.5	3.0	7.0	1.2	
S13-0282014-5.0	28	20	5.0	14°	60°	1.5	3.0	7.0	1.2	

S13-0282020-5.2	28	20	5.2	20°	60°	2.5	3.0	7.0	1.2
S13-0282014-5.3	28	20	5.3	14°	60°	1.5	3.0	7.0	1.2
S13-0282020-5.4	28	20	5.4	20°	60°	2.5	3.0	7.0	1.2
S13-0282014-5.5	28	20	5.5	14°	60°	1.5	3.0	7.0	1.2
S13-0282014-5.7	28	20	5.7	14°	60°	2.5	3.0	7.0	1.2
S13-0282020-5.7	28	20	5.7	20°	60°	2.5	3.0	7.0	1.2
S13-0282020-6.0	28	20	6.0	20°	60°	2.5	3.0	7.0	1.2
S13-0282014-6.0	28	20	6.0	14°	60°	2.1	3.0	7.0	1.2
S13-0282020-6.2	28	20	6.2	20°	60°	2.5	3.0	7.0	1.2
S13-0282014-6.3	28	20	6.3	14°	60°	2.2	3.0	7.0	1.2
S13-0282020-6.5	28	20	6.5	20°	60°	2.5	3.0	7.0	1.2
S13-0282014-6.6	28	20	6.6	14°	60°	2.3	3.0	7.0	1.2
S13-0282014-6.7	28	20	6.7	14°	60°	2.5	3.0	7.0	1.2
S13-0282020-6.7	28	20	6.7	20°	60°	3.0	3.0	7.0	1.2
S13-0282020-7.0	28	20	7.0	20°	60°	3.0	3.0	7.0	1.2
S13-0282014-7.0	28	20	7.0	14°	60°	2.4	3.0	7.0	1.2
S13-0282020-7.3	28	20	7.3	20°	60°	3.0	3.0	7.0	1.2
S13-0282014-7.5	28	20	7.5	14°	60°	2.7	3.0	7.0	1.2
S13-0282014-7.7	28	20	7.7	14°	60°	3.5	3.0	7.0	1.2
S13-0282020-7.7	28	20	7.7	20°	60°	3.0	3.0	7.0	1.2
S13-0282020-8.2	28	20	8.2	20°	60°	3.2	3.0	7.0	1.2
S13-0282020-8.6	28	20	8.6	20°	60°	3.5	3.0	7.0	1.2
S13-0282020-9.1	28	20	9.1	20°	60°	3.2	3.0	7.0	1.2
S13-0282020-9.6	28	20	9.6	20°	60°	3.0	3.0	7.0	1.2
S13-0292016-9.6	29	20	9.6	16°	60°	3.0	3.5	8.0	1.2
S13-0292016-10.0	29	20	10.0	16°	60°	3.0	3.5	8.0	1.2
S13-0292016-10.5	29	20	10.5	16°	60°	3.0	3.5	8.0	1.2
S13-0302011-4.8	30	20	4.8	11°	60°	1.2	3.0	7.0	1.5
S13-0302011-5.1	30	20	5.1	11°	60°	2.0	3.0	7.0	1.5
S13-0302011-5.2	30	20	5.2	11°	60°	2.5	3.0	7.0	1.5
S13-0302114-3.7	30	21	3.7	14°	60°	1.5	3.0	7.0	1.2
S13-0302119-3.7	30	21	3.7	19°	60°	2.0	3.0	7.0	1.2
S13-0302119-3.9	30	21	3.9	19°	60°	2.0	3.0	7.0	1.2
S13-0302114-3.9	30	21	3.9	14°	60°	1.5	3.0	7.0	1.2
S13-0302119-4.1	30	21	4.1	19°	60°	2.0	3.0	7.0	1.2
S13-0302114-4.1	30	21	4.1	14°	60°	1.5	3.0	7.0	1.2
S13-0302119-4.3	30	21	4.3	19°	60°	2.0	3.0	7.0	1.2
S13-0302114-4.3	30	21	4.3	14°	60°	1.5	3.0	7.0	1.2
S13-0302119-4.6	30	21	4.6	19°	60°	2.0	3.0	7.0	1.2
S13-0302114-4.6	30	21	4.6	14°	60°	1.5	3.0	7.0	1.2
S13-0302114-4.7	30	21	4.7	14°	60°	1.5	3.0	7.0	1.2
S13-0302119-4.7	30	21	4.7	19°	60°	2.0	3.0	7.0	1.2
S13-0302114-5.0	30	21	5.0	14°	60°	1.5	3.0	7.0	1.2

S13-0302119-5.0	30	21	5.0	19°	60°	2.2	3.0	7.0	1.2
S13-0302119-5.3	30	21	5.3	19°	60°	2.2	3.0	7.0	1.2
S13-0302114-5.3	30	21	5.3	14°	60°	1.8	3.0	7.0	1.2
S13-0302119-5.4	30	21	5.4	19°	60°	2.5	3.0	7.0	1.2
S13-0302114-5.6	30	21	5.6	14°	60°	2.0	3.0	7.0	1.2
S13-0302114-5.7	30	21	5.7	14°	60°	2.3	3.0	7.0	1.2
S13-0302119-5.7	30	21	5.7	19°	60°	2.5	3.0	7.0	1.2
S13-0302114-6.0	30	21	6.0	14°	60°	2.4	3.0	7.0	1.2
S13-0302119-6.0	30	21	6.0	19°	60°	2.5	3.0	7.0	1.2
S13-0302120-6.2	30	21	6.2	20°	60°	2.5	3.0	7.0	1.2
S13-0302112-6.2	30	21	6.2	12°	60°	2.5	3.0	7.0	1.2
S13-0302114-6.3	30	21	6.3	14°	60°	2.4	3.0	7.0	1.2
S13-0302119-6.5	30	21	6.5	19°	60°	2.5	3.0	7.0	1.2
S13-0302114-6.6	30	21	6.6	14°	60°	2.3	3.0	7.0	1.2
S13-0302114-6.7	30	21	6.7	14°	60°	2.3	3.0	7.0	1.2
S13-0302112-6.7	30	21	6.7	12°	60°	2.5	3.0	7.0	1.2
S13-0302119-6.7	30	21	6.7	19°	60°	2.5	3.0	7.0	1.2
S13-0302114-7.0	30	21	7.0	14°	60°	2.5	3.0	7.0	1.2
S13-0302119-7.0	30	21	7.0	19°	60°	2.5	3.0	7.0	1.2
S13-0302119-7.3	30	21	7.3	19°	60°	3.5	3.0	7.0	1.2
S13-0302114-7.3	30	21	7.3	14°	60°	2.5	3.0	7.0	1.2
S13-0302114-7.5	30	21	7.5	14°	60°	2.6	3.0	7.0	1.2
S13-0302114-7.7	30	21	7.7	14°	60°	2.7	3.0	7.0	1.2
S13-0302119-7.7	30	21	7.7	19°	60°	3.5	3.0	7.0	1.2
S13-0302114-8.0	30	21	8.0	14°	60°	2.8	3.0	7.0	1.2
S13-0302116-8.1	30	21	8.1	16°	60°	3.0	3.0	7.0	1.5
S13-0302119-8.1	30	21	8.1	19°	60°	3.5	3.0	7.0	1.2
S13-0302114-8.6	30	21	8.6	14°	60°	3.5	3.0	7.0	1.2
S13-0302119-8.6	30	21	8.6	19°	60°	3.5	3.0	7.0	1.2
S13-0302119-9.0	30	21	9.0	19°	60°	4.0	3.0	7.0	1.2
S13-0302116-9.1	30	21	9.1	16°	60°	3.0	3.0	7.0	1.5
S13-0302114-9.6	30	21	9.6	14°	60°	3.5	3.0	7.0	1.2
S13-0302119-9.6	30	21	9.6	19°	60°	4.0	3.0	7.0	1.2
S13-0302118-10.0	30	21	10.0	18°	60°	3.5	3.0	7.0	1.5
S13-0302116-10.1	30	21	10.1	16°	60°	3.5	3.0	7.0	1.5
S13-0332316-10.5	33	23	10.5	16°	60°	4.0	4.0	8.0	1.5
S13-0332316-11.5	33	23	11.5	16°	60°	4.0	4.0	8.0	1.5
S13-0332316-12.0	33	23	12.0	16°	60°	4.0	4.0	8.0	1.5
S13-0332316-12.5	33	23	12.5	16°	60°	4.0	4.0	8.0	1.5
S13-0352420-9.6	35	24	9.6	20°	60°	5.0	4.0	7.0	1.5
S13-0352420-10.1	35	24	10.1	20°	60°	5.0	4.0	7.0	1.5
S13-0352420-10.5	35	24	10.5	20°	60°	5.0	4.0	7.0	1.5
S13-0352420-11.5	35	24	11.5	20°	60°	5.0	4.0	7.0	1.5

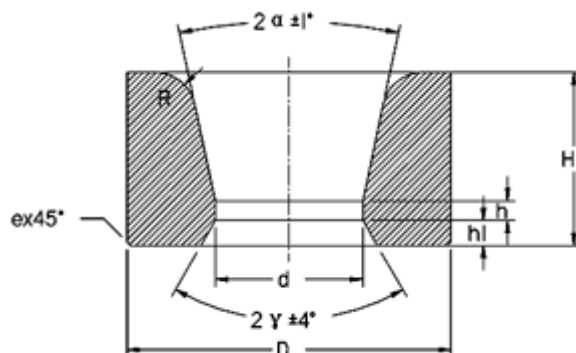
S13-0382420-10.5	38	24	10.5	20°	60°	5.0	4.0	7.0	1.5
S13-0382420-11.5	38	24	11.5	20°	60°	5.0	4.0	7.0	1.5
S13-0382420-12.5	38	24	12.5	20°	60°	5.0	4.0	7.0	1.5
S13-0382420-13.5	38	24	13.5	20°	60°	5.0	4.0	7.0	1.5
S13-0382420-14.5	38	24	14.5	20°	60°	5.0	4.0	7.0	1.5
S13-0402508-7.0	40	25	7.0	8°	60°	2.2	5.0	9.0	2.0
S13-0402516-10.5	40	25	10.5	16°	60°	3.5	4.0	7.0	1.5
S13-0402519-10.5	40	25	10.5	19°	60°	4.0	4.0	7.0	1.5
S13-0402516-11.5	40	25	11.5	16°	60°	3.5	4.0	7.0	1.5
S13-0402519-11.5	40	25	11.5	19°	60°	4.0	4.0	7.0	1.5
S13-0402520-12.0	40	25	12.0	20°	60°	5.0	4.0	7.0	1.5
S13-0402516-12.5	40	25	12.5	16°	60°	4.0	4.0	7.0	1.5
S13-0402519-12.5	40	25	12.5	19°	60°	4.0	4.0	7.0	1.5
S13-0402516-13.5	40	25	13.5	16°	60°	4.0	4.0	7.0	1.5
S13-0402519-13.5	40	25	13.5	19°	60°	4.5	4.0	7.0	1.5
S13-0402520-14.0	40	25	14.0	20°	60°	5.0	4.0	7.0	1.5
S13-0402516-14.5	40	25	14.5	16°	60°	4.0	4.0	7.0	1.5
S13-0402519-14.5	40	25	14.5	19°	60°	4.5	4.0	7.0	1.5
S13-0402516-15.5	40	25	15.5	16°	60°	4.0	4.0	7.0	1.5
S13-0402519-15.5	40	25	15.5	19°	60°	4.5	4.0	7.0	1.5
S13-0502816-16.5	50	28	16.5	16°	60°	4.0	4.5	7.0	1.5
S13-0502819-16.5	50	28	16.5	19°	60°	5.5	4.5	7.0	1.5
S13-0502816-17.5	50	28	17.5	16°	60°	4.0	4.5	7.0	1.5
S13-0502819-17.5	50	28	17.5	19°	60°	5.5	4.5	7.0	1.5
S13-0502816-18.5	50	28	18.5	16°	60°	4.0	4.5	7.0	1.5
S13-0502819-18.5	50	28	18.5	19°	60°	5.5	4.5	7.0	1.5
S13-0502816-19.5	50	28	19.5	16°	60°	4.0	4.5	7.0	1.5
S13-0502819-19.5	50	28	19.5	19°	60°	5.5	4.5	7.0	1.5
S13-0502816-20.5	50	28	20.5	16°	60°	5.0	4.5	7.0	1.5
S13-0502819-20.5	50	28	20.5	19°	60°	6.0	4.5	7.0	1.5
S13-0502816-21.5	50	28	21.5	16°	60°	5.0	4.5	7.0	1.5
S13-0502819-21.5	50	28	21.5	19°	60°	6.0	4.5	7.0	1.5
S13-0502816-22.5	50	28	22.5	16°	60°	5.0	4.5	7.0	1.5
S13-0502819-22.5	50	28	22.5	19°	60°	6.0	4.5	7.0	1.5
S13-0502816-23.5	50	28	23.5	16°	60°	5.0	4.5	7.0	1.5
S13-0502819-23.5	50	28	23.5	19°	60°	6.0	4.5	7.0	1.5
S13-0502816-24.5	50	28	24.5	16°	60°	5.0	4.5	7.0	1.5
S13-0502819-24.5	50	28	24.5	16°	60°	5.0	4.5	7.0	1.5
S13-0603519-25.5	60	35	25.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-26.5	60	35	26.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-27.5	60	35	27.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-28.5	60	35	28.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-29.5	60	35	29.5	19°	60°	6.0	5.5	8.0	1.5

S13-0603519-30.5	60	35	30.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-31.5	60	35	31.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-32.5	60	35	32.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-33.5	60	35	33.5	19°	60°	6.0	5.5	8.0	1.5
S13-0603519-34.5	60	35	34.5	19°	60°	6.0	5.5	8.0	1.5
S13-0653519-29.5	65	35	29.5	19°	60°	6.0	5.5	8.0	1.5
S13-0653519-30.5	65	35	30.5	19°	60°	6.0	5.5	8.0	1.5
S13-0653519-31.5	65	35	31.5	19°	60°	6.0	5.5	8.0	1.5
S13-0653519-32.5	65	35	32.5	19°	60°	6.0	5.5	8.0	1.5
S13-0653519-33.5	65	35	33.5	19°	60°	6.0	5.5	8.0	1.5
S13-0753520-34.5	75	35	34.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-35.5	75	35	35.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-36.5	75	35	36.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-37.5	75	35	37.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-38.5	75	35	38.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-39.5	75	35	39.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753520-40.5	75	35	40.5	20°	60°	7.0	5.5	8.0	1.5
S13-0753518-41.5	75	35	41.5	18°	60°	7.0	6.0	8.0	2.0
S13-0753518-42.5	75	35	42.5	18°	60°	7.0	6.0	8.0	2.0
S13-0753518-43.5	75	35	43.5	18°	60°	7.0	6.0	8.0	2.0
S13-0803520-41.5	80	35	41.5	20°	60°	7.0	5.5	8.0	1.5
S13-0803520-42.5	80	35	42.5	20°	60°	7.0	5.5	8.0	1.5
S13-0803520-43.5	80	35	43.5	20°	60°	7.0	5.5	8.0	1.5
S13-0803520-44.5	80	35	44.5	20°	60°	8.0	6.0	8.0	1.5
S13-0803520-45.0	80	35	45.0	20°	60°	8.0	6.0	8.0	1.5
S13-0853520-41.5	85	35	41.5	20°	60°	8.0	6.0	8.0	1.5
S13-0853520-42.5	85	35	42.5	20°	60°	8.0	6.0	8.0	1.5
S13-0853520-43.5	85	35	43.5	20°	60°	8.0	6.0	8.0	1.5
S13-0853520-44.5	85	35	44.5	20°	60°	8.0	6.0	8.0	1.5
S13-0853520-45.0	85	35	45.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-45.0	90	35	45.0	20°	60°	9.0	6.0	8.0	2.0
S13-0903520-46.0	90	35	46.0	20°	60°	9.0	6.0	8.0	2.0
S13-0903520-47.0	90	35	47.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-48.0	90	35	48.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-49.0	90	35	49.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-50.0	90	35	50.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-51.0	90	35	51.0	20°	60°	8.0	6.0	8.0	1.5
S13-0903520-52.0	90	35	52.0	20°	60°	9.0	6.0	8.0	2.0
S13-0903520-53.0	90	35	53.0	20°	60°	9.0	6.0	8.0	2.0
S13-0903520-54.0	90	35	54.0	20°	60°	9.0	6.0	8.0	2.0
S13-0903520-55.0	90	35	55.0	20°	60°	10.0	6.0	8.0	2.0
S13-0903520-56.0	90	35	56.0	20°	60°	10.0	6.0	8.0	2.0
S13-0903520-57.0	90	35	57.0	20°	60°	10.0	6.0	8.0	2.0

S13-0903520-58.0	90	35	58.0	20°	60°	10.0	6.0	8.0	2.0
S13-0953520-53.0	95	35	53.0	20°	60°	8.5	6.0	8.0	1.5
S13-0953520-54.0	95	35	54.0	20°	60°	8.5	6.0	8.0	1.5
S13-0953520-55.0	95	35	55.0	20°	60°	8.5	6.0	8.0	1.5
S13-0953520-56.0	95	35	56.0	20°	60°	8.5	6.0	8.0	1.5
S13-0953520-57.0	95	35	57.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-47.0	100	35	47.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-48.0	100	35	48.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-49.0	100	35	49.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-50.0	100	35	50.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-51.0	100	35	51.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-52.0	100	35	52.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-53.0	100	35	53.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-54.0	100	35	54.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-55.0	100	35	55.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-56.0	100	35	56.0	20°	60°	8.5	6.0	8.0	1.5
S13-1003520-57.0	100	35	57.0	20°	60°	8.5	6.0	8.0	1.5
S13-1104020-59.0	110	40	59.0	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-60.0	110	40	60.0	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-61.0	110	40	61.0	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-61.5	110	40	61.5	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-62.5	110	40	62.5	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-63.5	110	40	63.5	20°	60°	10.0	6.0	8.0	2.0
S13-1104020-64.0	110	40	64.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-65.0	110	40	65.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-66.0	110	40	66.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-67.0	110	40	67.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-68.0	110	40	68.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-69.0	110	40	69.0	20°	60°	11.0	6.0	8.0	2.0
S13-1104020-70.0	110	40	70.0	20°	60°	11.0	6.0	8.0	2.0
S13-1405020-71.0	140	50	71.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-72.0	140	50	72.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-73.0	140	50	73.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-74.0	140	50	74.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-75.0	140	50	75.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-76.0	140	50	76.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-77.0	140	50	77.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-78.0	140	50	78.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-79.0	140	50	79.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-80.0	140	50	80.0	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-81.5	140	50	81.5	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-82.5	140	50	82.5	20°	60°	12.0	6.0	8.0	2.0
S13-1405020-83.5	140	50	83.5	20°	60°	12.0	6.0	8.0	2.0

S13-1405020-84.0	140	50	84.0	20°	60°	12.0	6.0	8.0	2.0
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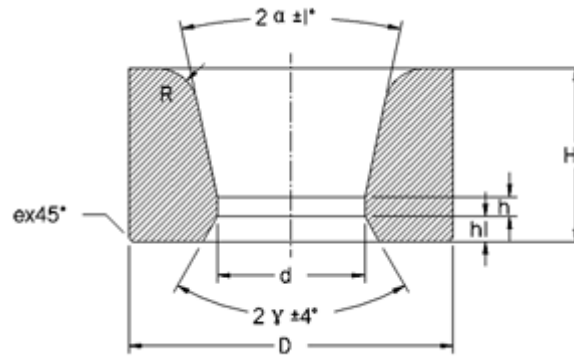
S20 Carbide nibs to draw metal tubes



ITEM CODE	Dimension (mm)					Reference Dimension (mm)			
	D	H	d	2α	2γ	h	h ₁	h ₂	e
20-0161410-2.0	16	14	2.0	10°	60°	1.0	1.0	2.5	1.0
20-0161410-3.0	16	14	3.0	10°	60°	1.5	1.0	3.5	1.0
20-0221810-4.0	22	18	4.0	10°	60°	2.0	1.0	4.5	1.0
20-0302210-5.0	30	22	5.0	10°	60°	3.0	2.0	7.0	1.2
20-0302210-6.0	30	22	6.0	10°	60°	3.0	2.0	7.0	1.2
20-0302210-7.0	30	22	7.0	10°	60°	3.0	2.0	7.0	1.2
20-0302210-8.0	30	22	8.0	10°	60°	3.0	2.0	7.0	1.2
20-0352510-9.0	35	25	9.0	10°	60°	3.0	2.0	7.0	1.2
20-0352510-10.0	35	25	10.0	10°	60°	3.0	2.0	7.0	1.2
20-0352510-11.0	35	25	11.0	10°	60°	3.0	2.0	7.0	1.2
20-0402810-12.0	40	28	12.0	10°	60°	3.0	2.0	7.0	1.5
20-0402810-13.0	40	28	13.0	10°	60°	3.0	2.0	7.0	1.5
20-0402810-14.0	40	28	14.0	10°	60°	3.0	2.0	7.0	1.5
20-0453010-15.0	45	30	15.0	10°	60°	3.0	2.0	7.0	1.5
20-0453010-16.0	45	30	16.0	10°	60°	3.0	2.0	7.0	1.5
20-0453010-17.0	45	30	17.0	10°	60°	3.0	2.0	7.0	1.5
20-0503210-18.0	50	32	18.0	10°	60°	3.0	2.0	7.0	1.5
20-0503210-19.0	50	32	19.0	10°	60°	3.0	2.0	7.0	1.5
20-0503210-20.0	50	32	20.0	10°	60°	3.0	2.0	8.0	1.5
20-0503210-21.0	50	32	21.0	10°	60°	3.0	2.0	8.0	1.5
20-0553210-22.0	55	32	22.0	10°	60°	3.0	2.0	8.0	1.5
20-0553210-23.0	55	32	23.0	10°	60°	3.0	2.0	8.0	1.5
20-0553210-24.0	55	32	24.0	10°	60°	3.0	2.0	8.0	1.5
20-0553210-25.0	55	32	25.0	10°	60°	3.0	2.0	8.0	1.5
20-0603410-26.0	60	34	26.0	10°	60°	3.0	2.0	8.0	1.5
20-0603410-27.0	60	34	27.0	10°	60°	3.0	2.0	8.0	1.5
20-0603410-28.0	60	34	28.0	10°	60°	3.0	2.0	8.0	1.5

20-0653610-29.0	65	36	29.0	10°	60°	3.0	2.0	8.0	1.5
20-0653610-30.0	65	36	30.0	10°	60°	3.0	2.0	8.0	1.5
20-0653610-31.0	65	36	31.0	10°	60°	3.0	2.0	8.0	1.5
20-0754210-33.0	75	42	33.0	10°	60°	5.0	3.0	10.0	1.5
20-0754210-35.0	75	42	35.0	10°	60°	5.0	3.0	10.0	1.5
20-0854510-37.0	85	45	37.0	10°	60°	5.0	3.0	10.0	1.5
20-0854510-39.0	85	45	39.0	10°	60°	5.0	3.0	10.0	1.5
20-0954810-41.0	95	48	41.0	10°	60°	5.0	3.0	10.0	1.5
20-0954810-43.0	95	48	43.0	10°	60°	5.0	3.0	10.0	1.5
20-0954810-45.0	95	48	45.0	10°	60°	5.0	3.0	10.0	1.5

S22 Carbide nibs to draw nonferrous metal tubes



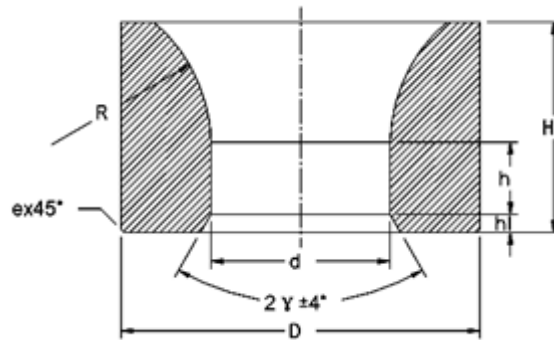
ITEM CODE	Dimension (mm)					Reference Dimension (mm)			
	D	H	d	2α	2γ	h	h_1	h_2	e
S22-0201324-2.8	20	13	2.8	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-2.9	20	13	2.9	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-3.0	20	13	3.0	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-3.2	20	13	3.2	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-3.4	20	13	3.4	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-3.6	20	13	3.6	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-3.8	20	13	3.8	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-4.0	20	13	4.0	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-4.3	20	13	4.3	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-4.6	20	13	4.6	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-4.7	20	13	4.7	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-5.0	20	13	5.0	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-5.3	20	13	5.3	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-5.6	20	13	5.6	24°	60°	1.5	3.0	3.0	1.0
S22-0201324-5.7	20	13	5.7	24°	60°	1.5	3.0	3.0	1.0
S22-0201428-7.0	20	14	7.0	28°	90°	3.0	1.0	3.0	1.0
S22-0231824-6.7	23	18	6.7	24°	60°	2.0	3.0	4.0	1.2
S22-0231824-7.6	23	18	7.6	24°	60°	2.0	3.0	4.0	1.2

S22-0231824-8.6	23	18	8.6	24°	60°	2.0	3.0	4.0	1.2
S22-0242225-9.0	24	22	9.0	25°	60°	2.5	3.0	4.0	1.2
S22-0251528-8.0	25	15	8.0	28°	90°	3.5	1.0	3.5	1.0
S22-0251528-8.5	25	15	8.5	28°	90°	3.5	1.0	3.5	1.0
S22-0251528-9.0	25	15	9.0	28°	90°	3.5	1.0	3.5	1.0
S22-0251528-10.5	25	15	10.5	28°	90°	3.5	1.0	3.0	1.0
S22-0301628-12.0	30	16	12.0	28°	90°	4.0	1.0	4.0	1.0
S22-0301628-12.5	30	16	12.5	28°	90°	4.0	1.0	4.0	1.0
S22-0301628-13.5	30	16	13.5	28°	90°	4.0	1.0	3.5	1.0
S22-0301824-6.7	30	18	6.7	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-7.0	30	18	7.0	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-7.3	30	18	7.3	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-7.6	30	18	7.6	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-8.1	30	18	8.1	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-8.6	30	18	8.6	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-9.1	30	18	9.1	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-9.6	30	18	9.6	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-10.1	30	18	10.1	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-10.5	30	18	10.5	24°	60°	2.0	3.0	4.0	1.2
S22-0301824-11.5	30	18	11.5	24°	60°	2.0	3.0	4.0	1.2
S22-0302026-9.2	30	20	9.2	26°	60°	3.5	3.0	6.0	1.2
S22-0302026-9.6	30	20	9.6	26°	60°	3.5	3.0	6.0	1.2
S22-0303024-12.0	30	30	12.0	24°	60°	4.0	4.5	5.0	1.2
S22-0351828-14.5	35	18	14.5	28°	90°	4.5	1.0	4.0	1.5
S22-0351828-15.0	35	18	15.0	28°	90°	4.5	1.0	4.0	1.5
S22-0351828-15.5	35	18	15.5	28°	90°	4.5	1.0	4.0	1.5
S22-0351828-16.5	35	18	16.5	28°	90°	4.5	1.0	4.0	1.5
S22-0402028-18.0	40	20	18.0	28°	90°	5.0	1.0	5.0	1.5
S22-0402028-18.5	40	20	18.5	28°	90°	5.0	1.0	5.0	1.5
S22-0402028-19.0	40	20	19.0	28°	90°	5.0	1.0	5.0	1.5
S22-0452328-22.0	45	23	22.0	28°	90°	6.0	1.0	5.0	1.5
S22-0452328-22.5	45	23	22.5	28°	90°	6.0	1.0	5.0	1.5
S22-0452328-23.0	45	23	23.0	28°	90°	6.0	1.0	4.5	1.5
S22-0452424-12.5	45	24	12.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-13.5	45	24	13.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-14.5	45	24	14.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-15.5	45	24	15.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-16.5	45	24	16.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-17.5	45	24	17.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-18.5	45	24	18.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-19.5	45	24	19.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-20.5	45	24	20.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-21.5	45	24	21.5	24°	60°	3.0	4.5	5.0	1.2

S22-0452424-22.5	45	24	22.5	24°	60°	3.0	4.5	5.0	1.2
S22-0452424-23.5	45	24	23.5	24°	60°	3.0	4.5	5.0	1.2
S22-0502528-27.0	50	25	27.0	28°	90°	7.0	1.0	6.0	1.5
S22-0552824-27.0	55	28	27.0	24°	60°	3.5	5.0	3.0	1.5
S22-0603024-24.5	60	30	24.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-25.5	60	30	25.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-26.5	60	30	26.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-27.5	60	30	27.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-28.5	60	30	28.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-29.5	60	30	29.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-30.5	60	30	30.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-31.5	60	30	31.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-32.5	60	30	32.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603024-33.5	60	30	33.5	24°	60°	3.5	5.0	6.0	1.5
S22-0603524-29.0	60	35	29.0	24°	60°	5.0	5.0	6.0	1.5
S22-0803524-34.5	80	35	34.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-35.5	80	35	35.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-36.5	80	35	36.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-37.5	80	35	37.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-38.5	80	35	38.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-39.5	80	35	39.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-40.0	80	35	40.0	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-41.5	80	35	41.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-42.0	80	35	42.0	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-43.5	80	35	43.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-44.5	80	35	44.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-45.5	80	35	45.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-46.5	80	35	46.5	24°	60°	6.5	5.0	10.0	1.5
S22-0803524-47.0	80	35	47.0	24°	60°	6.5	5.0	10.0	1.5
S22-0804028-36.0	80	40	36.0	28°	60°	5.0	5.0	7.0	1.5
S22-0804224-37.0	80	42	37.0	24°	60°	6.0	5.0	10.0	1.5
S22-0904024-49.0	90	40	49.0	24°	60°	6.5	5.0	10.0	2.0
S22-0904024-50.0	90	40	50.0	24°	60°	6.5	5.0	10.0	2.0
S22-0904024-52.0	90	40	52.0	24°	60°	6.5	5.0	10.0	2.0
S22-0904024-53.0	90	40	53.0	24°	60°	6.5	5.0	10.0	2.0
S22-0904024-54.0	90	40	54.0	24°	60°	6.5	5.0	10.0	2.0
S22-1004024-55.0	100	40	55.0	24°	60°	6.5	5.0	10.0	2.0
S22-1004024-56.0	100	40	56.0	24°	60°	6.5	5.0	10.0	2.0
S22-1004024-57.0	100	40	57.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-59.0	120	45	59.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-60.0	120	45	60.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-61.0	120	45	61.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-62.0	120	45	62.0	24°	60°	6.5	5.0	10.0	2.0

S22-1204524-63.0	120	45	63.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-64.0	120	45	64.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-65.0	120	45	65.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-66.0	120	45	66.0	24°	60°	6.5	5.0	10.0	2.0
S22-1204524-67.0	120	45	67.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-69.0	130	50	69.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-70.0	130	50	70.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-71.0	130	50	71.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-72.0	130	50	72.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-73.0	130	50	73.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-74.0	130	50	74.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-75.0	130	50	75.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-76.0	130	50	76.0	24°	60°	6.5	5.0	10.0	2.0
S22-1305024-77.0	130	50	77.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-79.0	140	50	79.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-80.0	140	50	80.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-81.0	140	50	81.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-82.0	140	50	82.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-83.0	140	50	83.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-84.0	140	50	84.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-85.0	140	50	85.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-86.0	140	50	86.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-87.0	140	50	87.0	24°	60°	6.5	5.0	10.0	2.0
S22-1405024-88.0	140	50	88.0	24°	60°	6.5	5.0	10.0	2.0

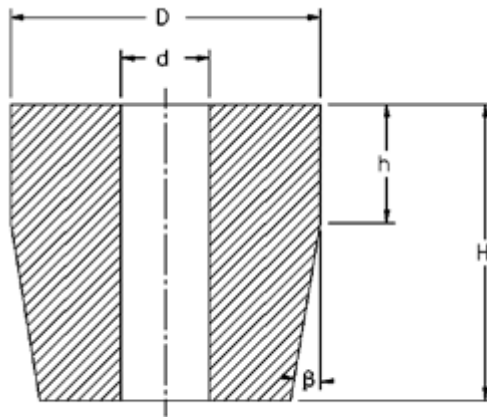
S23 Carbide nibs to draw metal tubes.



ITEM CODE	Dimension (mm)				Reference Dimension (mm)			
	D	H	d	2γ	h	h ₁	h ₂	E
S23-0301800-11.7	30	18	11.7	60°	5.0	1.0	30.0	1.5
S23-0503200-20.0	50	32	20.0	60°	12.0	2.0	30.0	1.5
S23-0503200-22.0	50	32	22.0	60°	12.0	2.0	30.0	1.5
S23-0503200-24.0	50	32	24.0	60°	12.0	2.0	30.0	1.5
S23-0603500-26.0	60	35	26.0	60°	12.0	2.0	35.0	1.5

S23-0603500-28.0	60	35	28.0	60°	12.0	2.0	35.0	1.5
S23-0603500-30.0	60	35	30.0	60°	12.0	2.0	35.0	1.5
S23-0704200-32.0	70	42	32.0	60°	15.0	2.5	35.0	1.5
S23-0704200-34.0	70	42	34.0	60°	15.0	2.5	35.0	1.5
S23-0704200-36.0	70	42	36.0	60°	15.0	2.5	35.0	1.5
S23-0754200-38.0	75	42	38.0	60°	15.0	2.5	35.0	1.5
S23-0754200-40.0	75	42	40.0	60°	15.0	2.5	35.0	1.5
S23-0854500-42.0	85	45	42.0	60°	15.0	3.0	40.0	1.5
S23-0854500-44.0	85	45	44.0	60°	15.0	3.0	40.0	1.5
S23-0854500-46.0	85	45	46.0	60°	15.0	3.0	40.0	1.5
S23-1005000-48.0	100	50	48.0	60°	18.0	3.0	40.0	2.0
S23-1005000-50.0	100	50	50.0	60°	18.0	3.0	40.0	2.0
S23-1005000-52.0	100	50	52.0	60°	18.0	3.0	40.0	2.0
S23-1005000-54.0	100	50	54.0	60°	18.0	3.0	40.0	2.0
S23-1105000-56.0	110	50	56.0	60°	18.0	3.0	40.0	2.0
S23-1105000-58.0	110	50	58.0	60°	18.0	3.0	40.0	2.0
S23-1105000-60.0	110	50	60.0	60°	18.0	3.0	40.0	2.0
S23-1105000-62.0	110	50	62.0	60°	18.0	3.0	40.0	2.0
S23-1255500-64.0	125	55	64.0	60°	20.0	3.0	40.0	2.0
S23-1255500-66.0	125	55	66.0	60°	20.0	3.0	40.0	2.0
S23-1255500-68.0	125	55	68.0	60°	20.0	3.0	40.0	2.0
S23-1255500-70.0	125	55	70.0	60°	20.0	3.0	40.0	2.0

S30 Carbide floating plugs to draw metal tubes

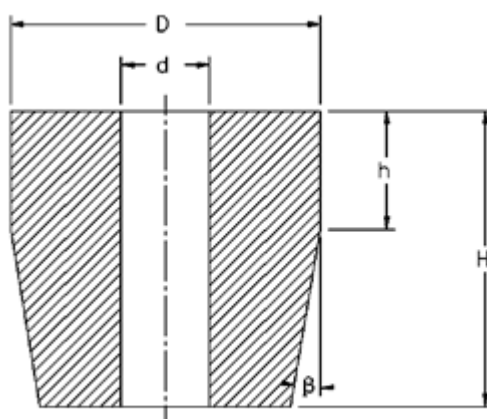


New Type	Dimension (mm)				Reference Dimension (mm)		
	D	H	d	β	e	e ₁	e ₂
S30-101308-22.0	22	13	10	8°	1.5	1.0	1.0
S30-121608-23.5	23.5	16	12	8.5°	1.0	1.0	1.0
S30-141608-24.5	24.5	16	14	8.5°	1.0	1.0	1.0

S30-141608-25.5	25.5	16	14	8.5°	1.0	1.0	1.0
S30-141708-27.0	27	17	14	8.5°	1.5	1.0	1.0
S30-141608-27.5	27.5	16	14	8.5°	2.0	1.0	1.0
S30-172708-28.0	28.0	27	17	8.5°	2.0	1.0	1.0
S30-172708-29.2	29.2	27	17	8.5°	2.0	1.0	1.0
S30-172708-30.4	30.4	27	17	8.5°	2.0	1.0	1.0
S30-172708-31.6	31.6	27	17	8.5°	25.0	1.0	1.0
S30-172708-32.2	32.2	27	17	8.5°	2.0	1.0	1.0
S30-172710-32.8	32.8	32	12	10°	2.0	2.0	1.5
S30-172708-33.4	33.4	27	17	8.5°	2.0	1.0	1.0
S30-172708-34.0	34.0	27	17	8.5°	2.0	1.0	1.0
S30-133810-34.0	34.0	38.8	13	10.5°	5.0	2.0	2.0
S30-172708-35.2	35.2	27	17	8.5°	2.0	1.0	1.0
S30-172708-36.4	36.4	27	17	8.5°	2.0	1.0	1.0
S30-192708-37.0	37.0	27	19	8.5°	2.0	1.0	1.0
S30-192708-38.2	38.2	27	19	8.5°	2.0	1.0	1.0
S30-192708-39.4	39.4	27	19	8.5°	2.0	1.0	1.0
S30-212708-40.0	40.0	27	21	8.5°	3.0	1.0	1.0
S30-212708-41.0	41.0	27	21	8.5°	3.0	1.0	1.0
S30-212708-42.0	42.0	27	21	8.5°	3.0	1.0	1.0
S30-212708-43.0	43.0	27	21	8.5°	3.0	1.0	1.0
S30-233208-44.0	44.0	32	23	8.5°	3.0	1.0	1.0
S30-233208-45.0	45.0	32	23	8.5°	3.0	1.0	1.0
S30-233208-46.0	46.0	32	23	8.5°	3.0	1.0	1.0
S30-253208-47.0	47.0	32	23	8.5°	4.0	1.0	1.0
S30-253208-48.0	48.0	32	25	8.5°	4.0	1.0	1.0
S30-253208-49.0	49.0	32	25	8.5°	4.0	1.0	1.0
S30-253208-50.0	50.0	32	25	8.5°	4.0	1.0	1.0
S30-253208-51.0	51.0	32	25	8.5°	4.0	1.0	1.0
S30-253208-52.0	52.0	32	25	8.5°	4.0	1.0	1.0
S30-253208-53.0	53.0	32	25	8.5°	4.0	1.0	1.0
S30-283208-54.0	54.0	32	25	8.5°	4.0	1.0	1.0
S30-283208-55.0	55.0	32	28	8.5°	4.0	1.0	1.0
S30-283208-56.0	56.0	32	28	8.5°	4.0	1.0	1.0
S30-283508-57.0	57.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-58.0	58.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-59.0	59.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-60.0	60.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-61.0	61.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-62.0	62.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-63.0	63.0	35	28	8.5°	4.0	1.0	1.0
S30-283508-64.0	64.0	35	28	8.5°	4.0	1.0	1.0
S30-343509-68.0	68.0	35	34	9°	5.0	3.0	2.0

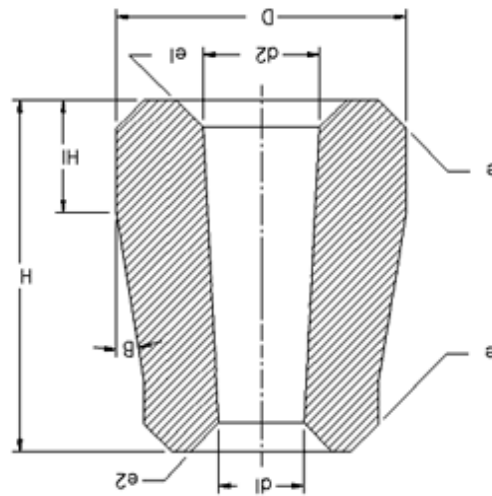
S30-343509-71.0	71.0	35	34	9°	5.0	3.0	2.0
S30-383509-75.0	75.0	35	38	9°	5.0	3.0	2.0
S30-383509-77.0	77.0	35	38	9°	5.0	3.0	2.0
S30-423509-80.0	80.0	35	42	9°	5.0	3.0	2.0
S30-423509-82.0	82.0	35	42	9°	5.0	3.0	2.0
S30-473509-86.0	83.0	35	47.8	9°	5.0	3.0	2.0
S30-473509-88.0	88.0	35	47.8	9°	6.0	3.0	2.0
S30-483509-91.0	91.0	35	48	9°	6.0	3.0	2.0
S30-483509-94.0	94.0	35	48	9°	6.0	3.0	2.0
S30-583509-99.0	99.0	35	58	9°	6.0	3.0	2.0
S30-583509-102.0	102.0	35	58	9°	6.0	3.0	2.0
S30-583509-105.0	105.0	35	58	9°	6.0	3.0	2.0

S30-A Carbide floating plugs to draw metal tubes



ITEM CODE	Dimension (mm)			Reference Dimension (mm)
	D	H	d	β
S30-0352100-12.0-A	35	21	12	8°
S30-0402300-16.0-A	40	23	16	8°
S30-0452500-16.0-A	45	25	16	8°
S30-0502800-18.0-A	50	28	18	8°
S30-0553000-18.0-A	55	30	18	8°
S30-0603200-22.0-A	60	32	22	8°
S30-0653400-22.0-A	65	34	22	8°

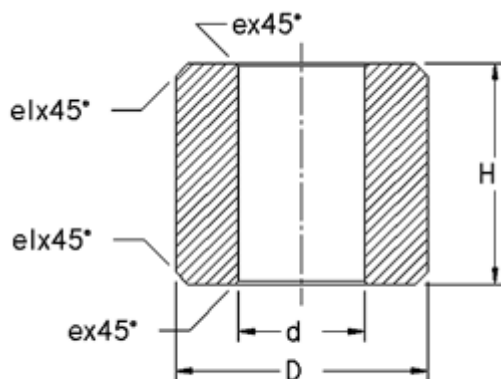
LS30-AB Carbide floating plugs to draw metal tubes



ITEM CODE	Dimension (mm)					Reference Dimension (mm)				
	D	H	H ₁	d	d ₁	e	a	E ₁	e ₂	β
LS30-21AB	21	25	8	18	6	2	2	2.0		9.5°
LS30-20.6AB	20.6	25	8	18.4	6	2	2	2.0		9.5°
LS30-25.2AB	25.2	30	8	21.5	8	2	2	2.0		9.5°
LS30-27AB	27	30	8	24.2	8	2	2	2.0		9.5°
LS30-22.6AB	22.6	32	10.5	20.1	8	2	2	2.0		10.5°
LS30-10AB	10	25	6	8	4	1	1	1.0		9.5°
LS30-11AB	11	25	6	9	4	1	1	1.0		9.5°
LS30-12AB	12	25	6	10	4	1	1	1.0	0.6	9.5°
LS30-13AB	13	25	6	10	4	1	1	1.0	0.6	9.5°
LS30-14AB	14	25	6	12	4	1	1	1.0	0.6	9.5°
LS30-14ABC	14	25	8	11	4	1	1	1.0	0.6	9.5°
LS30-15AB	15	25	8	13	6	1	1	1.0	0.6	9.5°
LS30-15ABC	15	25	8	12	6	1	1	1.0	0.6	9.5°
LS30-16AB	16	25	8	14	6	1.5	1.1	1.5	1.1	9.5°
LS30-17AB	17	25	8	14	6	1.5	1.1	1.5	1.1	9.5°
LS30-18AB	18	25	8	15	6	1.5	1.1	1.5	1.1	9.5°
LS30-18ABC	18	25	8	16	6	1.5	1.1	1.5	1.1	9.5°
LS30-19AB	19	25	8	16	8	1.5	1.1	1.5	1.1	9.5°
LS30-20AB	20	25	8	18	8	1.5	1.1	1.5	1.1	9.5°
LS30-20ABC	20	25	8	17	8	1.5	1.1	1.5	1.1	9.5°
LS30-21AB	21	25	8	18	8	1.5	1.1	1.5	1.1	9.5°
LS30-22AB	22	25	8	19	8	1.5	1.1	1.5	1.1	9.5°
LS30-23AB	23	30	9	20	10	1.5	1.1	1.5	1.1	9.5°
LS30-24AB	24	30	9	21	10	1.5	1.1	1.5	1.1	9.5°
LS30-25AB	25	30	9	22	10	1.5	1.1	1.5	1.1	9.5°
LS30-26AB	26	31	11	22.9	10	1.5	1.1	1.5	1.1	9.5°
LS30-26ABC	26	30	9	23	10	1.5	1.1	1.5	1.1	9.5°
LS30-27AB	27	30	9	24	10	1.5	1.1	1.5	1.1	9.5°
LS30-28AB	28	35	10	25	12	1.5	1.1	1.5	1.1	9.5°

LS30-29AB	29	35	10	26	12	1.5	1.1	1.5	1.1	9.5°
LS30-30AB	30	35	10	27	12	1.5	1.1	1.5	1.1	9.5°
LS30-31AB	31	35	10	28	12	1.5	1.1	1.5	1.1	9.5°

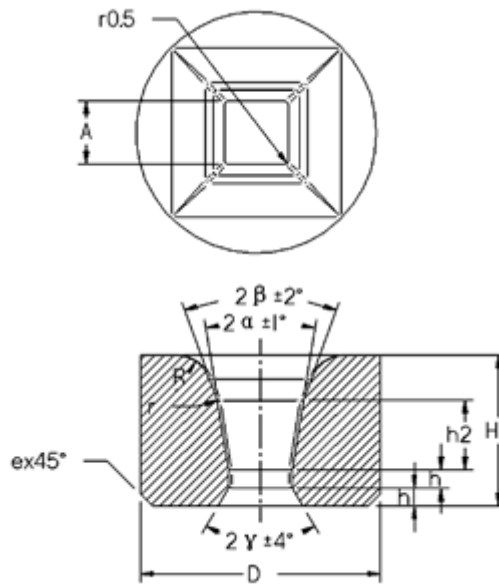
S31 Carbide floating plugs to draw metal tubes



ITEM CODE	Dimension (mm)			Reference Dimension(mm)	
	D	H	d	e ₁	e
S31-0142500-7.0	14	25	7.0	1.0	0.5
S31-0152500-7.0	15	25	7.0	1.0	0.5
S31-0162500-7.0	16	25	7.0	1.0	0.5
S31-0172500-8.0	17	25	8.0	1.0	0.5
S31-0182500-8.0	18	25	8.0	1.0	0.5
S31-0193000-10.0	19	30	10.0	1.0	0.5
S31-0203000-10.0	20	30	10.0	1.0	0.5
S31-0213000-10.0	21	30	10.0	1.0	0.5
S31-0223000-10.0	22	30	10.0	1.0	0.5
S31-0233000-12.0	23	30	12.0	1.0	0.5
S31-0243000-12.0	24	30	12.0	1.0	0.5
S31-0253000-12.0	25	30	12.0	1.0	0.5
S31-0263000-12.0	26	30	12.0	1.0	0.5
S31-0273000-12.0	27	30	12.0	1.0	0.5
S31-0283500-16.0	28	35	16.0	1.0	0.5
S31-0293500-16.0	29	35	16.0	1.0	0.5
S31-0303500-16.0	30	35	16.0	1.0	0.5
S31-0313500-16.0	31	35	16.0	2.0	0.5
S31-0323500-16.0	32	35	16.0	2.0	0.5
S31-0333500-20.0	33	35	20.0	2.0	0.5
S31-0343500-20.0	34	35	20.0	2.0	0.5
S31-0353500-20.0	35	35	20.0	2.0	0.5
S31-0363500-20.0	36	35	20.0	2.0	0.5
S31-0373500-20.0	37	35	20.0	2.0	0.5

S31-0383500-20.0	38	35	20.0	2.0	0.5
S31-0393500-20.0	39	35	20.0	2.0	0.5
S31-0403500-20.0	40	35	20.0	2.0	0.5
S31-0413500-20.0	41	35	20.0	2.0	0.5
S31-0423500-20.0	42	35	20.0	2.0	0.5
S31-0434000-22.0	43	40	22.0	2.0	0.5
S31-0444000-22.0	44	40	22.0	2.0	0.5
S31-0454500-26.4	45	45	26.4	2.0	0.5
S31-0464500-26.4	46	45	26.4	2.0	0.5
S31-0474500-26.4	47	45	26.4	2.0	0.5
S31-0484500-26.4	48	45	26.4	2.0	0.5
S31-0504500-26.4	50	45	26.4	2.0	0.5

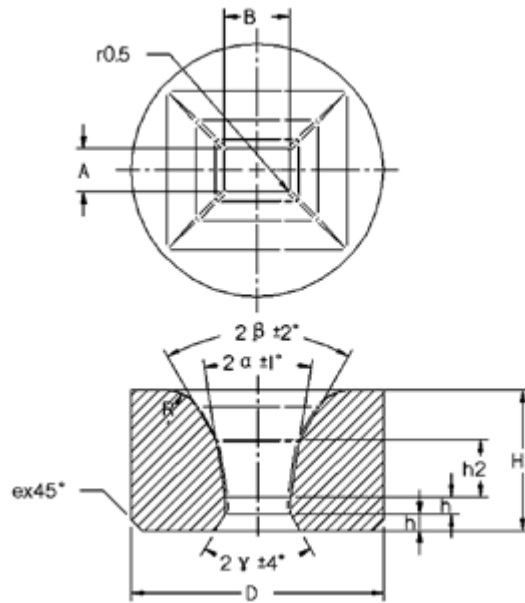
S40 Carbide nibs to draw square metal bars



ITEM CODE	Dimension (mm)						Reference Dimension (mm)					
	D	H	a	2α	2β	2γ	h	h ₁	h ₂	R	e	
S40-0161214-1.8	16	12	1.8	14°	40°	60°	1.0	1.5	5.0	1.5	1.0	
S40-0161214-2.4	16	12	2.4	14°	40°	60°	1.0	1.5	5.0	1.5	1.0	
S40-0221814-2.8	22	18	2.8	14°	40°	60°	1.5	2.0	7.0	2.0	1.2	
S40-0221814-3.2	22	18	3.2	14°	40°	60°	1.5	2.0	7.0	2.0	1.2	
S40-0221814-3.6	22	18	3.6	14°	40°	60°	1.5	2.0	7.0	2.0	1.2	
S40-0221814-4.0	22	18	4.0	14°	40°	60°	1.5	2.0	7.0	2.0	1.2	
S40-0302114-4.6	30	21	4.6	14°	40°	60°	2.0	2.0	11.0	3.0	1.5	
S40-0302114-5.0	30	21	5.0	14°	40°	60°	2.0	2.0	11.0	3.0	1.5	
S40-0302114-5.7	30	21	5.7	14°	40°	60°	2.0	2.0	11.0	3.0	1.5	
S40-0302114-6.7	30	21	6.7	14°	40°	60°	2.0	2.0	11.0	3.0	1.5	
S40-0352514-7.7	35	25	7.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5	

S40-0352514-8.7	35	25	8.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S40-0352514-9.7	35	25	9.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S40-0452514-10.7	45	25	10.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S40-0452514-11.7	45	25	11.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S40-0452514-12.7	45	25	12.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S40-0452514-13.7	45	25	13.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S40-0452514-14.7	45	25	14.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S40-0502814-15.7	50	28	15.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S40-0502814-16.7	50	28	16.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S40-0502814-17.7	50	28	17.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S40-0502814-18.7	50	28	18.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S40-0603016-19.7	60	30	19.7	16°	40°	60°	5.0	4.0	14.0	4.0	1.5
S40-0603016-20.7	60	30	20.7	16°	40°	60°	5.0	4.0	14.0	4.0	1.5
S40-0603016-21.7	60	30	21.7	16°	40°	60°	5.0	4.0	14.0	4.0	1.5
S40-0603016-22.7	60	30	22.7	16°	40°	60°	5.0	4.0	14.0	4.0	1.5
S40-0603016-23.7	60	30	23.7	16°	40°	60°	5.0	4.0	14.0	4.0	1.5
S40-0653216-24.7	65	32	24.7	16°	40°	60°	6.0	5.0	14.0	5.0	1.5
S40-0653216-25.5	65	32	25.5	16°	40°	60°	6.0	5.0	14.0	5.0	1.5
S40-0653216-26.5	65	32	26.5	16°	40°	60°	6.0	5.0	14.0	5.0	1.5
S40-0653216-27.5	65	32	27.5	16°	40°	60°	6.0	5.0	14.0	5.0	1.5
S40-0703516-28.5	70	35	28.5	16°	40°	60°	8.0	6.0	16.0	5.0	1.5
S40-0703516-29.5	70	35	29.5	16°	40°	60°	8.0	6.0	16.0	5.0	1.5
S40-0703516-30.5	70	35	30.5	16°	40°	60°	8.0	6.0	16.0	5.0	1.5
S40-0703516-31.5	70	35	31.5	16°	40°	60°	8.0	6.0	16.0	5.0	1.5
S40-0803516-32.5	80	35	32.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0803516-33.5	80	35	33.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0803516-34.5	80	35	34.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0803516-35.5	80	35	35.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0803516-36.5	80	35	36.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0803516-37.5	80	35	37.5	16°	40°	60°	8.0	6.0	16.0	5.0	2.0
S40-0904020-38.5	90	40	38.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-0904020-39.5	90	40	39.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-0904020-40.5	90	40	40.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-0904020-41.5	90	40	41.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1004020-42.5	100	40	42.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1004020-44.5	100	40	44.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1004020-47.5	100	40	47.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1204520-49.5	120	45	49.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1204520-51.5	120	45	51.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0
S40-1204520-53.5	120	45	53.5	20°	40°	60°	8.0	6.0	16.0	6.0	2.0

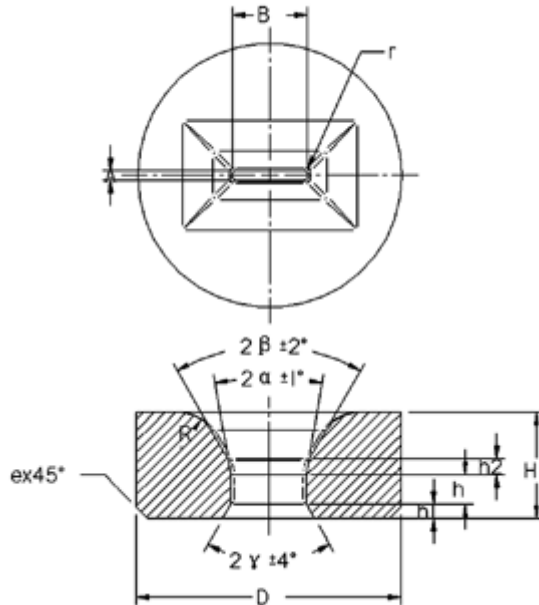
S41 Carbide nibs to draw rectangular nonferrous metal bars



ITEM CODE	Dimension (mm)							Reference Dimension(mm)				
	D	H	a	B	2α	2β	2γ	h	h_1	h_2	R	e
S41-0302114-6.7×4.7	30	21	6.7	4.7	14°	40°	60°	2.0	2.0	11.0	3.0	1.2
S41-0352514-7.7×5.7	35	25	7.7	5.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-7.7×6.7	35	25	7.7	6.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-8.7×2.7	35	25	8.7	2.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-9.7×3.7	35	25	9.7	3.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-9.7×5.7	35	25	9.7	5.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-9.7×6.7	35	25	9.7	6.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0352514-9.7×7.7	35	25	9.7	7.7	14°	40°	60°	3.0	3.0	13.0	3.0	1.5
S41-0452514-11.7×5.7	45	25	11.7	7.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S41-0452514-11.7×9.7	45	25	11.7	9.7	14°	40°	60°	3.5	3.0	13.0	4.0	1.5
S41-0502814-13.7×6.7	50	28	13.7	6.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-13.7×8.7	50	28	13.7	8.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-15.6×7.7	50	28	15.6	7.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-15.6×9.7	50	28	15.6	9.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-15.6×11.7	50	28	15.6	11.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-15.6×12.7	50	28	15.6	12.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-17.6×10.7	50	28	17.6	10.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0502814-17.6×15.7	50	28	17.6	15.7	14°	40°	60°	4.0	3.0	14.0	4.0	1.5
S41-0603014-19.6×7.7	60	30	19.6	7.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-19.6×9.7	60	30	19.6	9.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-19.6×11.7	60	30	19.6	11.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-19.6×14.7	60	30	19.6	14.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-21.6×9.2	60	30	21.6	9.2	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-21.6×11.7	60	30	21.6	11.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5

S41-0603014-21.6×14.2	60	30	21.6	14.2	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-23.6×11.7	60	30	23.6	11.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5
S41-0603014-23.6×14.7	60	30	23.6	14.7	14°	40°	60°	5.0	4.0	14.0	4.0	1.5

S42 Carbide nibs to draw nonferrous metal strips



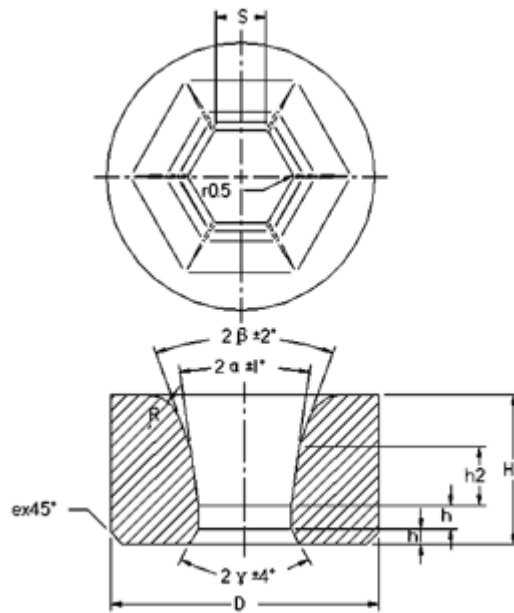
ITEM CODE	Dimension (mm)							Reference Dimension(mm)					
	D	H	a	b	2α	2β	2γ	h	h_1	h_2	R	r	e
S42-0201218-1.9×1.0	20	12	1.9	1.0	18°	60°	60°	2.0	2.0	4.0	3.0	0.5	1.0
S42-0201218-1.9×1.4	20	12	1.9	1.4	18°	60°	60°	2.0	2.0	4.0	3.0	0.6	1.0
S42-0201218-2.4×1.0	20	12	2.4	1.0	18°	60°	60°	2.0	2.0	4.0	3.0	0.5	1.0
S42-0201218-2.4×1.4	20	12	2.4	1.4	18°	60°	60°	2.0	2.0	4.0	3.0	0.6	1.0
S42-0201218-3.1×1.0	20	12	3.1	1.0	18°	60°	60°	2.0	2.0	4.0	3.0	0.5	1.0
S42-0201218-3.1×1.4	20	12	3.1	1.4	18°	60°	60°	2.0	2.0	4.0	3.0	0.6	1.0
S42-0201218-3.1×1.9	20	12	3.1	1.9	18°	60°	60°	2.0	2.0	4.0	3.0	0.6	1.0
S42-0221218-3.0×0.60	22	12	3.0	0.6	18°	60°	60°	2.0	2.0	4.0	3.0	0.5	1.0
S42-0221218-4.0×0.60	22	12	4.0	0.6	18°	60°	60°	2.0	2.0	4.0	3.0	0.5	1.0
S42-0221218-5.0×1.1	22	12	5.0	1.1	18°	60°	60°	2.0	1.5	4.0	3.0	0.5	1.2
S42-0251518-3.9×1.0	25	15	3.9	1.0	18°	60°	60°	2.5	2.5	5.0	3.0	0.5	1.2
S42-0251518-3.9×1.5	25	15	3.9	1.5	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-3.9×1.9	25	15	3.9	1.9	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-3.9×2.4	25	15	3.9	2.4	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-4.5×1.1	25	15	4.5	1.1	18°	60°	60°	2.5	2.5	5.0	3.0	0.5	1.2
S42-0251518-4.5×1.5	25	15	4.5	1.5	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-4.5×1.9	25	15	4.5	1.9	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-4.5×2.4	25	15	4.5	2.4	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2

S42-0251518-4.5×2.8	25	15	4.5	2.8	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-5.3×1.1	25	15	5.3	1.1	18°	60°	60°	2.5	2.5	5.0	3.0	0.5	1.2
S42-0251518-5.3×1.5	25	15	5.3	1.5	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-5.3×1.9	25	15	5.3	1.9	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-5.3×2.3	25	15	5.3	2.3	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-5.3×3.1	25	15	5.3	3.1	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-5.3×3.9	25	15	5.3	3.9	18°	60°	60°	2.5	2.5	5.0	3.0	1.0	1.2
S42-0251518-6.0×0.60	25	15	6.0	0.6	18°	60°	60°	2.5	2.5	5.0	3.0	0.5	1.0
S42-0251518-6.2×1.1	25	15	6.2	1.1	18°	60°	60°	2.5	2.5	5.0	3.0	0.5	1.2
S42-0251518-6.2×1.5	25	15	6.2	1.5	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-6.2×1.9	25	15	6.2	1.9	18°	60°	60°	2.5	2.5	5.0	3.0	0.6	1.2
S42-0251518-6.2×2.4	25	15	6.2	2.4	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-6.2×3.1	25	15	6.2	3.1	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-6.2×3.9	25	15	6.2	3.9	18°	60°	60°	2.5	2.5	5.0	3.0	0.8	1.2
S42-0251518-7.0×0.60	25	15	7.0	0.6	18°	60°	60°	2.5	2.5	5.0	4.0	0.5	1.2
S42-0321618-8.0×0.60	32	16	8.0	0.6	18°	60°	60°	2.5	2.5	5.0	4.0	0.5	1.2
S42-0351818-7.2×1.1	35	18	7.2	1.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-7.2×1.5	35	18	7.2	1.5	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-7.2×1.9	35	18	7.2	1.9	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-7.2×2.4	35	18	7.2	2.4	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-7.2×3.1	35	18	7.2	3.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-7.2×3.9	35	18	7.2	3.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-7.2×4.9	35	18	7.2	4.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-8.4×1.2	35	18	8.4	1.2	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-8.4×1.5	35	18	8.4	1.5	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-8.4×1.9	35	18	8.4	1.9	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-8.4×2.4	35	18	8.4	2.4	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-8.4×3.1	35	18	8.4	3.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-8.4×3.9	35	18	8.4	3.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-8.4×4.9	35	18	8.4	4.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-9.1×1.0	35	18	9.1	1.0	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-9.1×1.7	35	18	9.1	1.7	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-9.1×2.0	35	18	9.1	2.0	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-9.1×2.4	35	18	9.1	2.4	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-9.1×3.0	35	18	9.1	3.0	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-9.1×3.8	35	18	9.1	3.8	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-9.1×4.9	35	18	9.1	4.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-9.8×1.2	35	18	9.8	1.2	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-9.8×1.8	35	18	9.8	1.8	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-9.8×2.3	35	18	9.8	2.3	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-9.8×3.1	35	18	9.8	3.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-9.8×4.9	35	18	9.8	4.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-9.8×6.3	35	18	9.8	6.3	18°	60°	60°	2.5	2.5	6.0	4.0	1.2	1.2

S42-0351818-10.8×1.0	35	18	10.8	1.0	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-10.8×1.5	35	18	10.8	1.5	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-10.8×1.9	35	18	10.8	1.9	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-10.8×2.4	35	18	10.8	2.4	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-10.8×2.9	35	18	10.8	2.9	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-10.8×3.8	35	18	10.8	3.8	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-11.4×1.1	35	18	11.4	1.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.5	1.2
S42-0351818-11.4×1.5	35	18	11.4	1.5	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-11.4×1.9	35	18	11.4	1.9	18°	60°	60°	2.5	2.5	6.0	4.0	0.6	1.2
S42-0351818-11.4×2.4	35	18	11.4	2.4	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-11.4×3.1	35	18	11.4	3.1	18°	60°	60°	2.5	2.5	6.0	4.0	0.8	1.2
S42-0351818-11.4×3.9	35	18	11.4	3.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-11.4×4.9	35	18	11.4	4.9	18°	60°	60°	2.5	2.5	6.0	4.0	1.0	1.2
S42-0351818-11.4×6.3	35	18	11.4	6.3	18°	60°	60°	2.5	2.5	6.0	4.0	1.2	1.2
S42-0452018-12.8×1.4	45	20	12.8	1.4	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0452018-12.8×1.9	45	20	12.8	1.9	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0452018-12.8×2.6	45	20	12.8	2.6	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0452018-12.8×3.4	45	20	12.8	3.4	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0452018-12.8×4.1	45	20	12.8	4.1	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0452018-12.8×4.9	45	20	12.8	4.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0452018-12.8×5.9	45	20	12.8	5.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0452018-14.6×1.6	45	20	14.6	1.6	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0452018-14.6×2.1	45	20	14.6	2.1	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0452018-14.6×2.8	45	20	14.6	2.8	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0452018-14.6×3.4	45	20	14.6	3.4	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0452018-14.6×4.1	45	20	14.6	4.1	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0452018-14.6×4.9	45	20	14.6	4.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0452018-14.6×5.9	45	20	14.6	5.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-16.5×1.9	50	20	16.5	1.9	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-16.5×2.4	50	20	16.5	2.4	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0502018-16.5×3.1	50	20	16.5	3.1	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0502018-16.5×3.9	50	20	16.5	3.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-16.5×4.9	50	20	16.5	4.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-16.5×6.3	50	20	16.5	6.3	18°	60°	60°	3.0	3.0	6.0	4.0	1.2	1.5
S42-0502018-17.6×1.0	50	20	17.6	1.0	18°	60°	60°	3.0	3.0	6.0	4.0	0.5	1.5
S42-0502018-17.6×1.5	50	20	17.6	1.5	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-17.6×2.1	50	20	17.6	2.1	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-17.6×2.8	50	20	17.6	2.8	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0502018-17.6×3.4	50	20	17.6	3.4	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0502018-17.6×4.1	50	20	17.6	4.1	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-17.6×4.9	50	20	17.6	4.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-17.6×5.9	50	20	17.6	5.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-19.2×1.0	50	20	19.2	1.0	18°	60°	60°	3.0	3.0	6.0	4.0	0.5	1.5

S42-0502018-19.2×1.5	50	20	19.2	1.5	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-19.2×2.0	50	20	19.2	2.0	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-19.2×2.8	50	20	19.2	2.8	18°	60°	60°	3.0	3.0	6.0	4.0	0.8	1.5
S42-0502018-19.2×3.9	50	20	19.2	3.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-19.2×4.9	50	20	19.2	4.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-19.2×5.9	50	20	19.2	5.9	18°	60°	60°	3.0	3.0	6.0	4.0	1.0	1.5
S42-0502018-20.8×2.1	50	20	20.8	2.1	18°	60°	60°	3.0	3.0	6.0	4.0	0.6	1.5
S42-0502018-20.8×2.8	50	20	20.8	2.8	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0502018-20.8×3.4	50	20	20.8	3.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0502018-20.8×4.1	50	20	20.8	4.1	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0502018-20.8×4.9	50	20	20.8	4.9	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0502018-20.8×5.9	50	20	20.8	5.9	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0502018-23.2×1.0	50	20	23.2	1.0	18°	60°	60°	3.0	3.0	6.0	5.0	0.5	1.5
S42-0502018-23.2×1.4	50	20	23.2	1.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.6	1.5
S42-0502018-23.2×1.9	50	20	23.2	1.9	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0502018-23.2×2.4	50	20	23.2	2.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0502018-23.2×3.0	50	20	23.2	3.0	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0502018-23.2×3.8	50	20	23.2	3.8	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0502018-23.2×4.9	50	20	23.2	4.9	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0502018-23.2×5.9	50	20	23.2	5.9	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0602018-24.5×1.0	60	20	24.5	1.0	18°	60°	60°	3.0	3.0	6.0	5.0	0.5	1.5
S42-0602018-24.5×1.4	60	20	24.5	1.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.6	1.5
S42-0602018-24.5×2.6	60	20	24.5	2.6	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0602018-24.5×3.3	60	20	24.5	3.3	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0602018-24.5×3.8	60	20	24.5	3.8	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5
S42-0602018-27.0×1.4	60	20	27.0	1.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.6	1.5
S42-0602018-27.0×1.9	60	20	27.0	1.9	18°	60°	60°	3.0	3.0	6.0	5.0	0.6	1.5
S42-0602018-27.0×2.4	60	20	27.0	2.4	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0602018-27.0×3.0	60	20	27.0	3.0	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0602018-27.7×0.80	60	20	27.7	0.8	18°	60°	60°	3.0	2.0	6.0	4.0	0.25	1.5
S42-0602018-31.0×1.5	60	20	31.0	1.5	18°	60°	60°	3.0	3.0	6.0	5.0	0.6	1.5
S42-0602018-31.0×3.0	60	20	31.0	3.0	18°	60°	60°	3.0	3.0	6.0	5.0	0.8	1.5
S42-0602018-31.0×3.8	60	20	31.0	3.8	18°	60°	60°	3.0	3.0	6.0	5.0	1.0	1.5

S60 Carbide nibs to draw hexagonal ferrous metal bars.



ITEM CODE	Dimension (mm)						Reference Dimension (mm)				
	D	H	s	2α	2β	2γ	h	h ₁	h ₂	R	e
S60-0302114-2.5	30	21	2.5	14°	40°	60°	1.5	2.0	10.0	3.0	1.2
S60-0302114-3.0	30	21	3.0	14°	40°	60°	1.5	2.0	10.0	3.0	1.2
S60-0302114-4.0	30	21	4.0	14°	40°	60°	1.5	2.0	10.0	3.0	1.2
S60-0302114-4.7	30	21	4.7	14°	40°	60°	2.0	2.0	10.5	3.0	1.2
S60-0302114-5.7	30	21	5.7	14°	40°	60°	2.0	2.0	10.5	3.0	1.2
S60-0302114-6.7	30	21	6.7	14°	40°	60°	2.0	2.0	10.5	3.0	1.2
S60-0302114-7.7	30	21	7.7	14°	40°	60°	2.0	2.0	10.5	3.0	1.2
S60-0352114-8.6	35	21	8.6	14°	40°	60°	3.0	3.0	11.0	3.0	1.2
S60-0352114-9.6	35	21	9.6	14°	40°	60°	3.0	3.0	11.0	3.0	1.2
S60-0352122-9.6	35	21	9.6	22°	40°	60°	1.8	3.0	12.0	3.0	1.2
S60-0352114-10.6	35	21	10.6	14°	40°	60°	3.0	3.0	11.0	3.0	1.2
S60-0352122-10.6	35	21	10.6	22°	40°	60°	1.8	3.0	12.0	3.0	1.2
S60-0402514-11.5	40	25	11.5	14°	40°	60°	3.5	3.0	12.5	4.0	1.5
S60-0402522-11.5	40	25	11.5	22°	40°	60°	2.0	3.0	14.0	4.0	1.2
S60-0402514-12.5	40	25	12.5	14°	40°	60°	3.5	3.0	12.5	4.0	1.5
S60-0432423-13.7	43	24	13.7	23°	—	60°	3.0	3.5	14.0	4.0	1.5
S60-0432422-14.5	43	24	14.5	22°	40°	60°	3.0	3.0	13.0	4.0	1.5
S60-0442422-15.5	43	24	15.5	22°	40°	60°	3.0	3.0	13.0	5.0	1.5
S60-0452423-16.7	45	24	16.7	23°	—	60°	3.0	3.5	14.0	4.0	1.5
S60-0452514-13.5	45	25	13.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5
S60-0452514-14.5	45	25	14.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5
S60-0452514-15.5	45	25	15.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5
S60-0452514-16.5	45	25	16.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5

S60-0452514-17.5	45	25	17.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5
S60-0452523-17.7	45	25	17.7	23°	40°	60°	2.5	4.0	14.0	5.0	1.5
S60-0452514-18.5	45	25	18.5	14°	40°	60°	4.0	3.0	13.0	4.0	1.5
S60-0452523-18.7	45	25	18.7	23°	40°	60°	2.5	4.0	14.0	5.0	1.5
S60-0552814-19.5	55	28	19.5	14°	40°	60°	5.0	4.0	14.0	5.0	1.5
S60-0552823-19.7	55	28	19.7	23°	40°	60°	2.5	4.0	16.0	5.0	1.5
S60-0552814-20.5	55	28	20.5	14°	40°	60°	5.0	4.0	14.0	5.0	1.5
S60-0552823-20.7	55	28	20.7	23°	40°	60°	2.5	4.0	16.0	5.0	1.5
S60-0552814-21.5	55	28	21.5	14°	40°	60°	5.0	4.0	14.0	5.0	1.5
S60-0552823-21.7	55	28	21.7	23°	40°	60°	2.5	4.0	16.0	5.0	1.5
S60-0552814-22.5	55	28	22.5	14°	40°	60°	5.0	4.0	14.0	5.0	1.5
S60-0552823-22.7	55	28	22.7	23°	40°	60°	2.5	4.0	16.0	5.0	1.5
S60-0552814-23.5	55	28	23.5	14°	40°	60°	5.0	4.0	14.0	5.0	1.5
S60-0552823-23.7	55	28	23.7	23°	40°	60°	2.5	4.0	16.0	5.0	1.5
S60-0653016-24.5	65	30	24.5	16°	40°	60°	6.0	4.5	14.0	5.0	1.5
S60-0653023-24.7	65	30	24.7	23°	40°	60°	3.0	4.5	18.0	5.0	1.5
S60-0653016-25.5	65	30	25.5	16°	40°	60°	6.0	4.5	14.0	5.0	1.5
S60-0653023-25.7	65	30	25.7	23°	40°	60°	3.0	4.5	18.0	5.0	1.5
S60-0653016-26.5	65	30	26.5	16°	40°	60°	6.0	4.5	14.0	5.0	1.5
S60-0653023-26.7	65	30	26.7	23°	40°	60°	3.0	4.5	18.0	5.0	1.5
S60-0653016-27.5	65	30	27.5	16°	40°	60°	6.0	4.5	14.0	5.0	1.5
S60-0653023-27.7	65	30	27.7	23°	40°	60°	3.0	4.5	18.0	5.0	1.5
S60-0653016-28.5	65	30	28.5	16°	40°	60°	6.0	4.5	14.0	5.0	1.5
S60-0653023-28.7	65	30	28.7	23°	40°	60°	3.0	4.5	18.0	5.0	1.5
S60-0753516-29.5	75	35	29.5	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-30.5	75	35	30.5	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-31.3	75	35	31.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-32.3	75	35	32.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-33.3	75	35	33.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-34.3	75	35	34.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-35.3	75	35	35.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-36.3	75	35	36.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0753516-37.3	75	35	37.3	16°	40°	60°	7.0	5.0	15.0	6.0	1.5
S60-0903516-38.3	90	35	38.3	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-39.3	90	35	39.3	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-41.0	90	35	41.0	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-42.0	90	35	42.0	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-44.0	90	35	44.0	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-47.0	90	35	47.0	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-0903516-49.0	90	35	49.0	16°	40°	60°	7.0	5.0	15.0	6.0	2.0
S60-1004016-52.0	100	40	52.0	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1004016-54.0	100	40	54.0	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1004016-57.0	100	40	57.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0

S60-1204216-59.5	120	42	59.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1204216-61.5	120	42	61.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1204216-64.5	120	42	64.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1204216-67.5	120	42	67.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1204216-70.5	120	42	70.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0
S60-1204216-74.5	120	42	74.5	16°	40°	60°	8.0	6.0	15.0	6.0	2.0