

Square Spray Nozzles



► Features

- Relatively small droplets size.
- Wide-area spraying.
- Because of its square spray pattern, no clearance produced in multiple-nozzle arrangement, being different from full-cone nozzles where the spray pattern is circular.
- Easy-to-maintain three-piece type.

► Applications

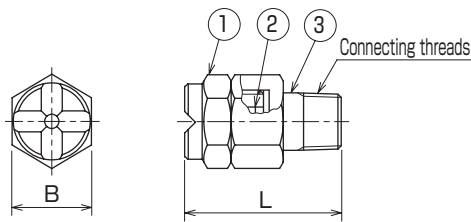
- Cooling of steel sheets.
- Secondary cooling in continuous casting process.
- Various washing purposes.

► Materials

- Stainless steel (standard material: SUS303)
- Brass
- Plastics (PTFE, PVC, or PP)

Shapes and dimensions

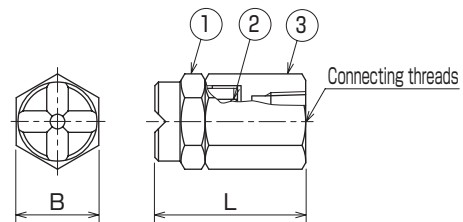
● KS····SQ type



Model	Dimension (mm)		Connecting threads	Weight (g)
	B	L		
¼ KS····SQ	19	35	R ¼	55
⅓ KS····SQ	23	42	R ⅓	86
½ KS····SQ	29	56	R ½	205
¾ KS····SQ	32	64	R ¾	265
1 KS····SQ	41	75	R 1	580

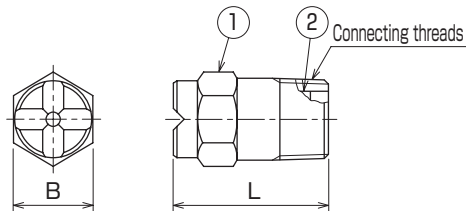
No.	Part name
①	Nozzle body
②	Core
③	Adapter

● KS····SQG type



Model	Dimension (mm)		Connecting threads	Weight (g)
	B	L		
¼ KS····SQG	19	35	Rc ¼	55
⅓ KS····SQG	23	42	Rc ⅓	86
½ KS····SQG	29	56	Rc ½	205
¾ KS····SQG	32	64	Rc ¾	265
1 KS····SQG	41	75	Rc 1	580

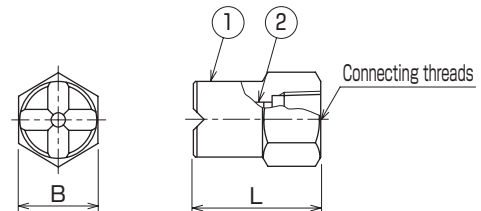
● KS····SQS type



Model	Dimension (mm)		Connecting threads	Weight (g)
	B	L		
¼ KS····SQS	14	25	R ¼	26
⅓ KS····SQS	17	32	R ⅓	58
½ KS····SQS	22	38	R ½	88
¾ KS····SQS	27	50	R ¾	175
1 KS····SQS	35	60	R 1	350
1¼ KS····SQS	42	70	R1¼	750
1½ KS····SQS	48	85	R1½	1000

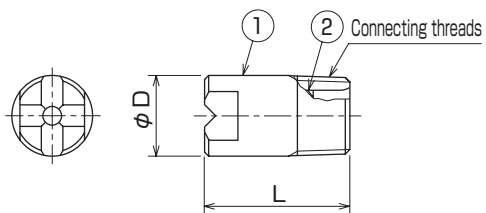
No.	Part name
①	Nozzle body
②	Core

● KS····SQH type



Model	Dimension (mm)		Connecting threads	Weight (g)
	B	L		
¼ KS····SQH	19	32	Rc ¼	26
⅓ KS····SQH	22	38	Rc ⅓	58
½ KS····SQH	27	50	Rc ½	88
¾ KS····SQH	32	64	Rc ¾	175
1 KS····SQH	41	80	Rc 1	350
1¼ KS····SQH	50	95	Rc1¼	750
1½ KS····SQH	56	110	Rc1½	1000
2 KS····SQH	70	130	Rc 2	2800

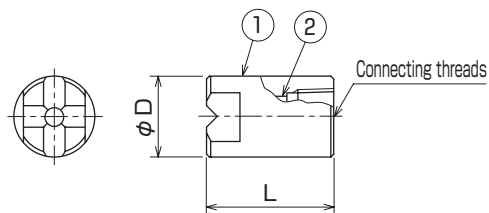
● KS····SQHH type



Model	Dimension (mm)		Connecting threads	Weight (g)
	φD	L		
1/4 KS····SQHH	14	25	R 1/4	26
3/8 KS····SQHH	17	32	R 3/8	58
1/2 KS····SQHH	22	38	R 1/2	88
3/4 KS····SQHH	27	50	R 3/4	175
1 KS····SQHH	35	60	R 1	350
1 1/4 KS····SQHH	42	70	R 1 1/4	750
1 1/2 KS····SQHH	48	85	R 1 1/2	1000

No.	Part name
①	Nozzle body
②	Core

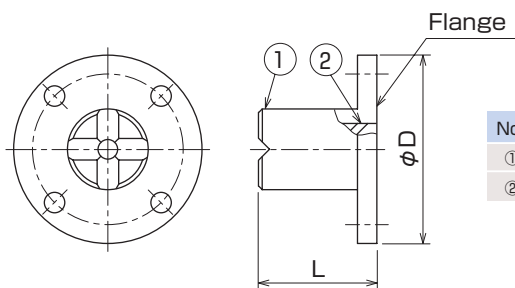
● KS····SQI type



Model	Dimension (mm)		Connecting threads	Weight (g)
	φD	L		
1/4 KS····SQI	19	35	Rc 1/4	56
3/8 KS····SQI	22	42	Rc 3/8	85
1/2 KS····SQI	27	56	Rc 1/2	168
3/4 KS····SQI	35	64	Rc 3/4	350
1 KS····SQI	42	80	Rc 1	500
1 1/4 KS····SQI	50	95	Rc 1 1/4	750
1 1/2 KS····SQI	58	110	Rc 1 1/2	1000

Model	Dimension (mm)		Connecting threads	Weight (kg)
	φD	L		
2 KS····SQI	75	130	Rc 2	2.5
2 1/2 KS····SQI	90	160	Rc 2 1/2	3.6
3 KS····SQI	105	190	Rc 3	7.0
4 KS····SQI	135	240	Rc 4	14
5 KS····SQI	160	300	Rc 5	24
6 KS····SQI	190	360	Rc 6	36
8 KS····SQI	240	480	Rc 8	76

● KS····SQF type



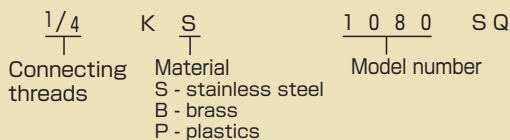
No.	Part name
①	Nozzle body
②	Core

Model	Dimension (mm)		Flange size	Weight (kg)
	φD	L		
3 KS····SQF	180	170	3B	7.0
4 KS····SQF	200	215	4B	13
5 KS····SQF	235	275	5B	21
6 KS····SQF	265	340	6B	30
8 KS····SQF	320	440	8B	66

NPT thread is also available.

*Flanges conform to JIS 5 k flanges as a standard specification.

● Model and Model Number representing



● Standard type model number list (connecting threads: 1/4 to 2)

● : Model availability

Connecting threads	Model						Model number	Minimum orifice diameter (mm)	Flow rate (L/min) at following pressure (MPa)							Spray angle at following pressure (MPa)	
	R threads			Rc threads					0.05	0.1	0.2	0.3	0.5	0.7	1.0		1.5
	KS...SQ	KS...SQS	KS...SQHH	KS...SQG	KS...SQH	KS...SQI											
1/4	●	●	●	●	●	●	0165	0.6		0.62	0.84	1.00	1.25	1.44	1.68	2.0	65°
	●	●	●	●	●	●	0190	0.6		0.62	0.84	1.00	1.25	1.44	1.68	2.0	90°
	●	●	●	●	●	●	0265	0.8		1.25	1.68	2.0	2.5	2.9	3.4	4.0	65°
	●	●	●	●	●	●	0290	0.8		1.25	1.68	2.0	2.5	2.9	3.4	4.0	90°
	●	●	●	●	●	●	0365	1.0		1.87	2.5	3.0	3.7	4.3	5.0	6.0	65°
	●	●	●	●	●	●	0390	1.0		1.87	2.5	3.0	3.7	4.3	5.0	6.0	90°
	●	●	●	●	●	●	0465	1.2	1.85	2.5	3.4	4.0	5.0	5.8	6.7	8.0	65°
	●	●	●	●	●	●	0490	1.2	1.85	2.5	3.4	4.0	5.0	5.8	6.7	8.0	90°
	●	●	●	●	●	●	0665	1.4	2.8	3.7	5.0	6.0	7.5	8.6	10.1	12.0	65°
	●	●	●	●	●	●	0690	1.4	2.8	3.7	5.0	6.0	7.5	8.6	10.1	12.0	90°
3/8	●	●	●	●	●	●	1065	1.9	4.6	6.2	8.4	10.0	12.5	14.4	16.8	20.0	65°
	●	●	●	●	●	●	1090	1.9	4.6	6.2	8.4	10.0	12.5	14.4	16.8	20.0	90°
	●	●	●	●	●	●	10110	1.9	4.6	6.2	8.4	10.0	12.5	14.4	16.8	20.0	110°
	●	●	●	●	●	●	1565	2.2	6.9	9.4	12.6	15.0	18.7	21.6	25.2	30.0	65°
	●	●	●	●	●	●	1590	2.2	6.9	9.4	12.6	15.0	18.7	21.6	25.2	30.0	90°
	●	●	●	●	●	●	15110	2.2	6.9	9.4	12.6	15.0	18.7	21.6	25.2	30.0	110°
1/2	●	●	●	●	●	●	2065	2.5	9.3	12.5	16.8	20.0	24.9	28.8	33.6	40.0	65°
	●	●	●	●	●	●	2090	2.5	9.3	12.5	16.8	20.0	24.9	28.8	33.6	40.0	90°
	●	●	●	●	●	●	20110	2.5	9.3	12.5	16.8	20.0	24.9	28.8	33.6	40.0	110°
	●	●	●	●	●	●	2565	2.8	11.6	15.6	21.0	25.0	31.2	36.0	42.0	50.0	65°
	●	●	●	●	●	●	2590	2.8	11.6	15.6	21.0	25.0	31.2	36.0	42.0	50.0	90°
	●	●	●	●	●	●	25110	2.8	11.6	15.6	21.0	25.0	31.2	36.0	42.0	50.0	110°
3/4	●	●	●	●	●	●	3065	3.1	13.9	18.7	25.2	30.0	37.4	43.2	50.4	60.0	65°
	●	●	●	●	●	●	3090	3.1	13.9	18.7	25.2	30.0	37.4	43.2	50.4	60.0	90°
	●	●	●	●	●	●	30110	3.1	13.9	18.7	25.2	30.0	37.4	43.2	50.4	60.0	110°
	●	●	●	●	●	●	4065	3.7	18.5	25.0	33.6	40.0	49.9	57.6	67.2	80.0	65°
	●	●	●	●	●	●	4090	3.7	18.5	25.0	33.6	40.0	49.9	57.6	67.2	80.0	90°
	●	●	●	●	●	●	40110	3.7	18.5	25.0	33.6	40.0	49.9	57.6	67.2	80.0	110°
	●	●	●	●	●	●	5065	4.3	23.2	31.2	42.0	50.0	62.3	72.0	84.0	100	65°
	●	●	●	●	●	●	5090	4.3	23.2	31.2	42.0	50.0	62.3	72.0	84.0	100	90°
	●	●	●	●	●	●	50110	4.3	23.2	31.2	42.0	50.0	62.3	72.0	84.0	100	110°
	1	●	●	●	●	●	●	6065	4.6	27.8	37.4	50.4	60.0	74.8	86.4	101	120
●		●	●	●	●	●	6090	4.6	27.8	37.4	50.4	60.0	74.8	86.4	101	120	90°
●		●	●	●	●	●	60110	4.6	27.8	37.4	50.4	60.0	74.8	86.4	101	120	110°
●		●	●	●	●	●	8065	5.2	37.1	49.9	67.3	80.0	99.7	115	134	160	65°
●		●	●	●	●	●	8090	5.2	37.1	49.9	67.3	80.0	99.7	115	134	160	90°
●		●	●	●	●	●	80110	5.2	37.1	49.9	67.3	80.0	99.7	115	134	160	110°

Connecting threads	Model				Model number	Minimum orifice diameter (mm)	Flow rate (L/min) at following pressure (MPa)							Spray angle at following pressure (MPa)	
	R threads		Rc threads				0.05	0.07	0.1	0.2	0.3	0.5	0.7		1.0
	KS...SQS	KS...SQHH	KS...SQH	KS...SQI											
1 1/4	●	●	●	●	10065	5.9	46.3	53.5	62.4	84.1	100	125	144	168	65°
	●	●	●	●	10090	5.9	46.3	53.5	62.4	84.1	100	125	144	168	90°
	●	●	●	●	100110	5.9	46.3	53.5	62.4	84.1	100	125	144	168	110°
	●	●	●	●	12565	6.6	57.9	66.9	78.0	105	125	156	180	210	65°
	●	●	●	●	12590	6.6	57.9	66.9	78.0	105	125	156	180	210	90°
	●	●	●	●	125110	6.6	57.9	66.9	78.0	105	125	156	180	210	110°
1 1/2	●	●	●	●	15065	7.2	69.5	80.3	93.6	126	150	187	216	252	65°
	●	●	●	●	15090	7.2	69.5	80.3	93.6	126	150	187	216	252	90°
	●	●	●	●	150110	7.2	69.5	80.3	93.6	126	150	187	216	252	110°
	●	●	●	●	20065	8.4	92.6	107	125	168	200	249	288	336	65°
	●	●	●	●	20090	8.4	92.6	107	125	168	200	249	288	336	90°
	●	●	●	●	200110	8.4	92.6	107	125	168	200	249	288	336	110°
	●	●	●	●	25065	9.4	116	134	156	210	250	312	360	420	65°
	●	●	●	●	25090	9.4	116	134	156	210	250	312	360	420	90°
2	●	●	●	●	250110	9.4	116	134	156	210	250	312	360	420	110°
	●	●	●	●	30065	10.3	139	161	187	252	300	374	432	504	65°
	●	●	●	●	30090	10.3	139	161	187	252	300	374	432	504	90°
	●	●	●	●	300110	10.3	139	161	187	252	300	374	432	504	110°
	●	●	●	●	40065	11.9	185	214	250	336	400	499	576	672	65°
	●	●	●	●	40090	11.9	185	214	250	336	400	499	576	672	90°
	●	●	●	●	400110	11.9	185	214	250	336	400	499	576	672	110°
	●	●	●	●	45065	12.6	208	241	281	378	450	561	648	756	65°
●	●	●	●	45090	12.6	208	241	281	378	450	561	648	756	90°	
●	●	●	●	450110	12.6	208	241	281	378	450	561	648	756	110°	

● Standard type model number list (connecting threads: 3 to 8)

●: Model availability

Connecting threads	Model		Model number	Minimum orifice diameter (mm)	Flow rate (L/min) at following pressure (MPa)							Spray angle at following pressure (MPa)
	Rc threads	Flange			0.03	0.05	0.07	0.1	0.15	0.2	0.3	0.07
	KS...SQI	KS...SQF										
3	●	●	90065	17	335	417	482	562	669	757	900	65°
	●	●	90090	17	335	417	482	562	669	757	900	90°
	●	●	100065	18	372	463	535	624	743	841	1000	65°
	●	●	100090	18	372	463	535	624	743	841	1000	90°
4	●	●	125065	20	465	579	669	780	929	1051	1250	65°
	●	●	125090	20	465	579	669	780	929	1051	1250	90°
	●	●	150065	22	558	695	803	936	1114	1261	1500	65°
	●	●	150090	22	558	695	803	936	1114	1261	1500	90°
5	●	●	175065	24	651	811	937	1092	1300	1471	1750	65°
	●	●	175090	24	651	811	937	1092	1300	1471	1750	90°
	●	●	200065	26	744	926	1071	1248	1486	1681	2000	65°
	●	●	200090	26	744	926	1071	1248	1486	1681	2000	90°
	●	●	250065	29	930	1158	1338	1560	1857	2102	2500	65°
	●	●	250090	29	930	1158	1338	1560	1857	2102	2500	90°
6	●	●	300065	32	1115	1390	1606	1872	2229	2522	3000	65°
	●	●	300090	32	1115	1390	1606	1872	2229	2522	3000	90°
	●	●	350065	34	1301	1621	1873	2184	2600	2942	3500	65°
	●	●	350090	34	1301	1621	1873	2184	2600	2942	3500	90°
	●	●	400065	37	1487	1853	2141	2496	2971	3363	4000	65°
	●	●	400090	37	1487	1853	2141	2496	2971	3363	4000	90°
8	●	●	450065	39	1673	2084	2409	2808	3343	3783	4500	65°
	●	●	450090	39	1673	2084	2409	2808	3343	3783	4500	90°
	●	●	500065	41	1859	2316	2676	3120	3714	4203	5000	65°
	●	●	500090	41	1859	2316	2676	3120	3714	4203	5000	90°
	●	●	600065	45	2231	2779	3212	3744	4457	5044	6000	65°
	●	●	600090	45	2231	2779	3212	3744	4457	5044	6000	90°

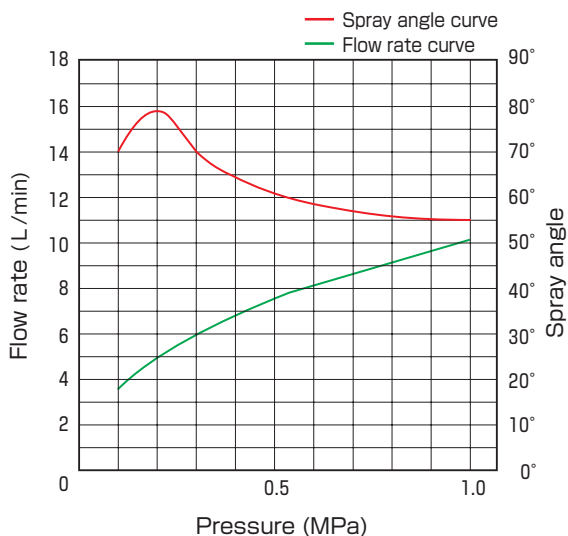
Note: Method to calculate spray angles

- The spray angle for nozzle model numbers 80110 or less is calculated from the spray opposite side distance at a distance of 300mm when spraying downward.
- The spray angle for nozzle model numbers 9065 or more and 80090 or less is calculated from the spray opposite side distance at a distance of 500mm when spraying downward.
- The spray angle for nozzle model numbers 90065 or more is calculated from the spray opposite side distance at a distance of 1000mm when spraying downward.

● Performance data

Characteristic curves

Nozzle model number 1/4 KB0670SQ



Flow distribution

Nozzle model number 1/4 KB0670SQ

Spray distance 300mm

Measurement Horizontal distance end to end

