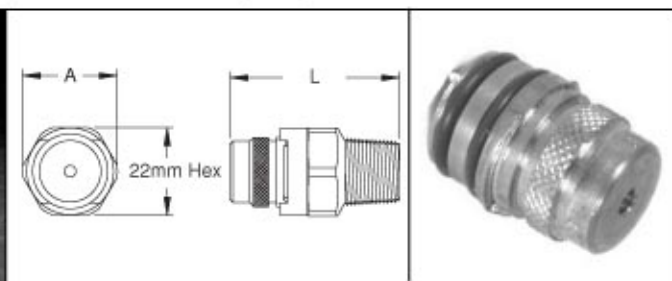
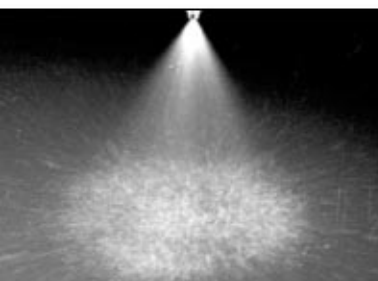


ZS SERIES

Full cone spray nozzles



TYPICAL APPLICATIONS:

- Chemical Processing
- Cooling Sprays
- Foam Breaking
- Continuous Casting

SPRAY CHARACTERISTICS:

Full cone spray pattern, with uniform distribution throughout the cone.

CONSTRUCTION:

The nozzle contains a patented insert with larger flow passages than older styles, and is less

susceptible to clogging. Standard materials are brass, 303 stainless steel and 316 stainless steel.

Please see page 40 for body styles and adapters.

U.S. Patent No. 4,142,682

Canadian Patent No. 1,050,589

ZS SERIES

One piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/4 ZS	41	25
1/2 ZS	43	25
3/4 ZS	44	25
1/2 ZS	46	25
3/4 ZLS	54	32
1/2 ZLS	56	32

ZGS SERIES

Two piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/4 ZGS	50	25
1/2 ZGS	54	25
3/4 ZGS	65	25
1/2 ZGS	67	28
3/4 ZLGS	71	32
1/2 ZLGS	73	32

ZHGS SERIES

Two piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/4 ZHGS	54	25
1/2 ZHGS	56	25
3/4 ZHGS	57	25
1/2 ZHGS	59	25
3/4 ZHGS	75	32
1/2 ZHGS	77	32

QUICK DISCONNECT

'ZS' one piece tip	'ZGS' two piece tip		'ZHGS' Right Angle two piece tip		MAXIMUM FREE PASSAGE (mm)	CAPACITY (L/min) AT VARIOUS PRESSURES (bar)												Spray Angle @			
	ZGS	ZLGS	ZHGS	ZLHGS		0.2 bar	0.3 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	2 bar	3 bar	4 bar	5 bar	6 bar	8 bar	0.5 bar	1.5 bar	5 bar	
ZS1	ZGS1		ZHGS1		0.84	--	--	--	--	0.46	0.56	0.64	0.79	0.91	1.02	1.12	1.29	--	55°	52°	
ZS1.5	ZGS1.5		ZHGS1.5		1.17	--	--	--	0.57	0.68	0.84	0.97	1.18	1.37	1.53	1.67	1.93	--	65°	57°	
ZS2	ZGS2		ZHGS2		1.30	--	--	0.64	0.76	0.91	1.12	1.29	1.58	1.82	2.04	2.23	2.58	54°	59°	60°	
ZS3	ZGS3		ZHGS3		1.30	--	0.75	0.97	1.14	1.37	1.67	1.93	2.37	2.73	3.06	3.3	3.9	50°	53°	60°	
ZS3.5	ZGS3.5		ZHGS3.5		1.30	0.71	0.87	1.13	1.33	1.60	1.95	2.26	2.76	3.2	3.6	3.9	4.5	48°	58°	61°	
ZS5	ZGS5		ZHGS5		1.63	1.02	1.25	1.61	1.91	2.28	2.79	3.2	3.9	4.6	5.1	5.6	6.4	60°	75°	70°	
ZS6	ZGS6		ZHGS6		1.63	1.22	1.50	1.93	2.29	2.73	3.3	3.9	4.7	5.5	6.1	6.7	7.7	67°	72°	70°	
ZS6.5	ZGS6.5		ZHGS6.5		2.31	1.32	1.62	2.09	2.48	2.96	3.6	4.2	5.1	5.9	6.6	7.3	8.4	48°	56°	50°	
ZS7.5	ZGS7.5		ZHGS7.5		2.31	1.53	1.87	2.42	2.86	3.4	4.2	4.8	5.9	6.8	7.6	8.4	9.7	55°	65°	48°	
ZS8.5	ZGS8.5		ZHGS8.5		2.31	1.73	2.12	2.74	3.2	3.9	4.7	5.5	6.7	7.7	8.7	9.5	11.0	58°	65°	63°	
ZS10	ZGS10		ZHGS10		2.31	2.04	2.50	3.2	3.8	4.6	5.6	6.4	7.9	9.1	10.2	11.2	12.9	60°	65°	62°	
ZS14	ZGS14		ZHGS14		2.31	2.85	3.5	4.51	5.3	6.4	7.8	9.0	11.1	12.8	14.3	15.6	18.0	78°	85°	75°	
ZS15	ZGS15		ZHGS15		2.59	2.85	3.5	4.8	5.3	6.8	8.4	9.7	11.8	13.7	15.3	16.7	19.3	63°	65°	60°	
ZS18	ZGS18		ZHGS18		2.59	3.7	4.5	5.8	6.9	8.2	10.0	11.6	14.2	16.4	18.3	20.1	23.2	85°	88°	76°	
ZS20	ZGS20		ZHGS20		2.59	4.1	5.0	6.4	7.6	9.1	11.2	12.9	15.8	18.2	20.4	22.3	25.8	76°	82°	75°	
ZS22	ZGS22		ZHGS22		2.90	4.5	5.5	7.1	8.4	10.0	12.3	14.2	17.4	20.1	22.4	24.6	28.4	76°	78°	76°	
	ZLS16		ZLGS16		ZLHGS16	3.66	3.3	4.0	5.2	6.1	7.3	8.9	10.3	12.6	14.6	16.3	17.9	20.6	55°	60°	55°
	ZLS25		ZLGS25		ZLHGS25	3.66	5.1	6.2	8.1	9.5	11.4	14.0	16.1	19.7	22.8	25.5	27.9	32	68°	73°	65°
	ZLS32		ZLGS32		ZLHGS32	3.66	6.5	8.0	10.3	12.2	14.6	17.9	20.6	25.3	29.2	33	36	41	80°	90°	75°
	ZLS40		ZLGS40		ZLHGS40	4.11	8.2	10.0	12.9	15.3	18.2	22.3	25.8	32	36	41	45	52	86°	90°	81°

Wide angle full cone spray nozzles

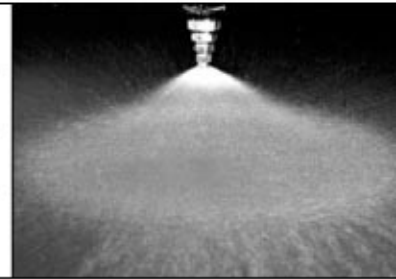
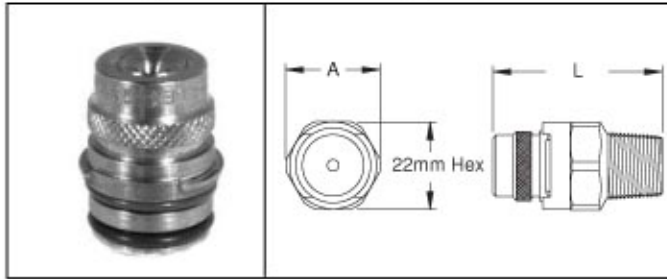
ZSW SERIES

TYPICAL APPLICATIONS:

Anywhere a wide angle full cone spray is required:

- Chemical Processing
- Cooling Sprays
- Continuous Casting

U.S. Patent No. 4,142,682
Canadian Patent No. 1,050,589



SPRAY CHARACTERISTICS:

A wide angle full cone spray pattern, with uniform distribution throughout the cone.

CONSTRUCTION:

This nozzle tip contains a patented insert with larger flow passages than older styles, and is

less susceptible to clogging. Standard materials are brass, 303 stainless steel and 316 stainless steel.

Please see page 40 for body styles and adapters.

ZSW SERIES

One piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/8 ZSW	41	25
1/4 ZSW	43	25
3/8 ZSW	44	25
1/2 ZSW	46	25
3/4 ZLSW	54	32
1 ZLSW	56	32

ZGSW SERIES

Two piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/8 ZGSW	50	25
1/4 ZGSW	54	25
3/8 ZGSW	65	25
1/2 ZGSW	67	28
3/4 ZLGSW	71	32
1 ZLGSW	73	32

ZHGSW SERIES

Two piece body + removable insert



DIMENSIONS

NOZZLE BSPT PIPE SIZE	Length L (mm)	Dim. A (mm)
1/8 ZHGSW	54	25
1/4 ZHGSW	56	25
3/8 ZHGSW	57	25
1/2 ZHGSW	59	25
3/4 ZHGSW	75	32
1 ZHGSW	77	32

ZSW one piece tip	ZGSW two piece tip		ZHGSW Right Angle two piece tip		MAXIMUM FREE PASSAGE (mm)	CAPACITY (L/min) At VARIOUS PRESSURES (bar)											Spray Angle @		
	ZGSW	ZLGSW	ZHGSW	ZLHGSW		0.3 bar	0.5 bar	0.7 bar	1 bar	1.5 bar	2 bar	3 bar	4 bar	5 bar	6 bar	8 bar	0.5 bar	1.5 bar	5 bar
ZS2.8W	ZGS2.8W		ZHGS2.8W		1.30	--	0.90	1.07	1.28	1.56	1.80	2.21	2.55	2.85	3.13	3.6	110°	105°	96°
ZS4.3W	ZGS4.3W		ZHGS4.3W		1.30	--	1.39	1.64	1.96	2.40	2.77	3.4	3.9	4.4	4.8	5.5	117°	108°	100°
ZS5.6W	ZGS5.6W		ZHGS5.6W		1.63	--	1.80	2.14	2.55	3.13	3.6	4.4	5.1	5.7	6.3	7.2	117°	110°	100°
ZS8W	ZGS8W		ZHGS8W		2.06	2.00	2.58	3.05	3.6	4.5	5.2	6.3	7.3	8.2	8.9	10.3	118°	110°	103°
ZS10W	ZGS10W		ZHGS10W		2.31	2.50	3.2	3.8	4.6	5.6	6.4	7.9	9.1	10.2	11.2	12.9	118°	108°	102°
ZS12W	ZGS12W		ZHGS12W		2.31	3.00	3.9	4.6	5.5	6.7	7.7	9.5	10.9	12.2	13.4	15.5	120°	112°	102°
ZS14W	ZGS14W		ZHGS14W		2.31	3.5	4.5	5.3	6.4	7.8	9.0	11.1	12.8	14.3	15.6	18.0	118°	114°	104°
ZS17W	ZGS17W		ZHGS17W		2.59	4.2	5.5	6.5	7.7	9.5	11.0	13.4	15.5	17.3	19.0	21.9	118°	117°	102°
ZS20W	ZGS20W		ZHGS20W		2.59	5.0	6.4	7.6	9.1	11.2	12.9	15.8	18.2	20.4	22.3	25.8	120°	120°	106°
ZS24W	ZGS24W		ZHGS24W		2.59	6.0	7.7	9.2	10.9	13.4	15.5	18.9	21.9	24.5	26.8	30.9	122°	118°	106°
ZS27W	ZGS27W		ZHGS27W		2.59	6.7	8.7	10.3	12.3	15.1	17.4	21.3	24.6	27.5	30.1	35	122°	120°	107°
	ZLS30W	ZLGS30W		ZLHGS30W	3.66	7.5	9.7	11.4	13.7	16.7	19.3	23.7	27.3	30.6	33	39	120°	118°	110°
	ZLS35W	ZLGS35W		ZLHGS35W	3.66	8.7	11.3	13.3	16.0	19.5	22.6	27.6	32	36	39	45	122°	118°	108°
	ZLS40W	ZLGS40W		ZLHGS40W	4.11	10.0	12.9	15.3	18.2	22.3	25.8	32	36	41	45	52	122°	119°	104°
	ZLS45W	ZLGS45W		ZLHGS45W	4.11	11.2	14.5	17.2	20.5	25.1	29.0	36	41	46	50	58	141°	118°	108°