

Attack Tips

The Longest Lasting, Highest Quality Jets Made



AP4
1/4 npt

Shown larger than actual size.



APF4
1/4 npt flush mount



AP2
1/8 npt

Flow straighteners are installed in all **Attack Tips**.

Hardened and polished stainless steel tips

Thanks to our high efficiency nozzle design and our unique 7-step manufacturing process, **StoneAge® Attack Tips** are the best quality, longest lasting tip we have found. The flow straightener corrects power-robbing turbulence, ensuring excellent jetting results. **StoneAge®** tests show the **Attack Tips** can outlast tungsten carbide jets.

Attack Tip Orifice Flow Chart (in gpm)

ORIFICE ID		Pressure - kpsi & bar										Flow Rating
		2	4	6	8	10	12	14	16	18	20	
in.	mm	138	276	414	552	700	827	966	1103	1241	1400	
.018	0.46	0.39	0.55	0.68	0.78	0.87	0.96	1.0	1.1	1.2	1.2	0.6
.020	0.51	0.48	0.68	0.83	0.96	1.1	1.2	1.3	1.5	1.5	1.5	0.7
.022	0.56	0.58	0.82	1.0	1.2	1.3	1.4	1.5	1.6	1.7	1.8	0.8
.024	0.61	0.69	0.98	1.2	1.4	1.6	1.7	1.8	2.0	2.1	2.2	1.0
.026	0.66	0.81	1.2	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.6	1.1
.029	0.74	1.0	1.4	1.7	2.0	2.3	2.5	2.7	2.9	3.0	3.2	1.4
.032	0.81	1.2	1.7	2.1	2.5	2.8	3.0	3.3	3.5	3.7	3.9	1.7
.035	0.89	1.5	2.1	2.6	3.0	3.3	3.6	3.9	4.2	4.4	4.7	2.1
.038	0.97	1.7	2.5	3.0	3.5	3.9	4.3	4.6	4.9	5.2	5.5	2.5
.042	1.07	2.1	3.0	3.7	4.2	4.7	5.2	5.6	6.0	6.4	6.7	3.0
.047	1.19	2.7	3.8	4.6	5.3	5.9	6.5	7.0	7.5	8.0	8.4	3.8
.052	1.32	3.3	4.6	5.6	6.5	7.3	8.0	8.6	9.2	9.8	10	4.6
.057	1.45	3.9	5.5	6.8	7.8	8.7	9.6	10	11	12	12	5.5
.063	1.60	4.8	6.8	8.3	9.6	11	12	13	14	14	15	6.8
.069	1.78	5.7	8.1	9.9	12	13	14	15	16	17	18	8.1
.075	1.91	6.8	9.6	12	13	15	17	18	19	20	21	9.6
.082	2.08	8.1	12	14	16	18	20	21	23	24	26	12
.090	2.29	9.8	14	17	20	22	24	26	28	29	31	14
.098	2.49	12	16	20	23	26	28	31	33	35	37	16
.106	2.69	14	19	23	27	30	33	36	38	41	43	19
.115	2.92	16	23	28	32	36	39	42	45	48	50	23
.125	3.18	17	27	33	38	42	46	50	53	56	60	27
.135	3.43	22	31	38	44	49	54	58	62	66	69	31
.145	3.68	25	36	44	51	57	62	67	72	76	80	36
.155	3.94	29	41	50	58	65	71	77	82	87	92	41
.165	4.19	33	46	57	66	73	80	87	93	98	100	46

ATTACK TIPS

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High Flow Carbide Inserts

The Best Way to Handle Your High Flow Applications

We recommend using our **OC8 Holders** and **OC8 Carbide Inserts** where filtration is poor, abrasive solids are present, or for very high flow applications. These nozzle tips are offered for both 15K psi and 20K psi connections. The replaceable carbide inserts are available in large orifice diameters to handle high flows and offer a long taper to provide excellent jet quality and distance. Additional **OC8 Flow Conditioners** are available by request.



OC8-P8

The **OC8-P8 Holder** and **OC Carbide Inserts** for 15K psi, 1/2" npt, female connection.



OC8-P12

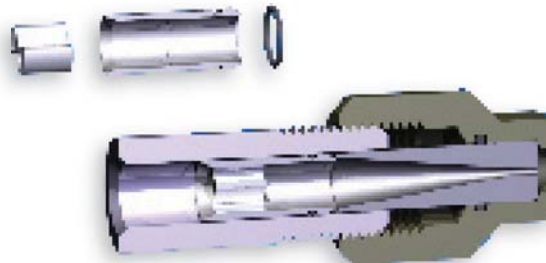
The **OC8-P12 Holder** and **OC Carbide Inserts** for 15K psi, 3/4" npt, female connection.



OC8-G12

The **OC8-G12 Holder** and **OC Carbide Inserts** for 20Kpsi, 3/4" G12, female connection.

OC8 Flow Conditioners can be used with each of the holders above. These devices reduce turbulence in the water which helps provide better jet quality and increase production with harder hitting jet power. Recommended for extensions 6" and shorter.



OC8 Flow Conditioner Assembly

OC8 Carbide Insert Flow Chart (in gpm)

ORIFICE ID		Pressure - kpsi & bar										Flow Rating
		2	4	6	8	10	12	14	16	18	20	
in.	mm	138	276	414	552	700	827	966	1103	1241	1400	
.063	1.6	4.8	6.7	8.2	9.5	10.6	11.7	12.6	13.5	14.3	15.11	6
.075	1.9	6.8	9.6	11.7	13.5	15.1	16.6	17.9	19.1	20.3	21.4	9
.085	2.1	8.7	12.3	15	17.4	19.4	21.3	23	24.6	26	27.5	12
.095	2.4	10.8	15.3	18.8	21.7	24.3	26.6	28.7	30.7	32.6	34.3	15
.105	2.7	13.2	18.8	23	26.5	29.7	32.5	35.1	37.5	39.8	42	19
.125	3.2	18.8	26.6	32.5	37.6	42	46	49.7	53.2	56.4	59.4	26
.145	3.7	25.3	35.8	43.8	50.6	56.6	62	67	71.6	75.9	80	36
.165	4.2	32.7	46.3	56.7	65.5	73.2	80.2					46
.190	4.8	43.4	61.4	75.2	86.9	97.1	106					61
.215	5.5	55.6	78.7	96.3	111	124						78
.250	6.3	75.2	106	130	150	168						106



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OS Sapphire Tips

Replaceable Tips for High Pressure Applications

Jeweled Orifices for Small Diameter Jets

These tips are used for 40k psi jetting applications. Water filtration of 10 micron or better is required. Jeweled orifices make the best quality, longest lasting jets possible. They are available in three holder sizes, listed below.



Shown larger than actual size.

StoneAge® Tool & Tip Guide

- OS4 Tips** 1/4-28 NF Gopher GO-H9-C
OS6 Tips 3/8-24 NF DB-XX Deck Blasters
 BJV-H9 w/ BJ 444-S6
 or BJ 441-G9 Head and
 UH-40, & UH-50 Rotating Assemblies
OS7 Tips 7/16-20 NF BC-H9-C Barracuda Gun Nozzles

SAPPHIRE TIPS

Sapphire Tips - Orifice Flow Chart (in gpm)

ORIFICE ID in. mm	Pressure kpsi & bar											Availability		
	20 1379	22 1517	24 1655	26 1793	28 1931	30 2069	32 2207	34 2345	36 2483	38 2621	40 2759	OS4	OS6	OS7
.009 0.23	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29	0.30	0.31	0.32			•
.010 0.25	0.28	0.29	0.30	0.31	0.33	0.34	0.35	0.36	0.37	0.38	0.39	•	•	
.011 0.28	0.33	0.35	0.37	0.38	0.39	0.41	0.42	0.43	0.45	0.46	0.47		•	•
.012 0.30	0.40	0.42	0.43	0.45	0.47	0.49	0.50	0.52	0.53	0.55	0.56	•	•	•
.013 0.33	0.47	0.49	0.51	0.53	0.55	0.57	0.59	0.61	0.62	0.64	0.66	•	•	•
.014 0.36	0.54	0.57	0.59	0.62	0.64	0.66	0.68	0.70	0.72	0.74	0.76	•	•	•
.015 0.38	0.62	0.65	0.68	0.71	0.73	0.76	0.78	0.81	0.83	0.85	0.87	•	•	•
.016 0.41	0.70	0.73	0.77	0.80	0.83	0.86	0.89	0.92	0.95	0.97	1.00	•	•	•
.017 0.43	0.80	0.83	0.87	0.91	0.94	0.97	1.01	1.04	1.07	1.10	1.12	•	•	•
.018 0.46	0.89	0.94	0.98	1.02	1.05	1.09	1.13	1.16	1.20	1.23	1.26	•	•	•
.019 0.48	0.99	1.04	1.09	1.13	1.18	1.21	1.26	1.30	1.33	1.37	1.40	•	•	•
.020 0.51	1.10	1.15	1.21	1.25	1.30	1.35	1.39	1.43	1.48	1.52	1.56	•	•	•
.021 0.53	1.21	1.27	1.33	1.38	1.44	1.49	1.53	1.58	1.63	1.68	1.72	•	•	•
.022 0.56	1.33	1.40	1.46	1.52	1.58	1.63	1.68	1.74	1.79	1.84	1.88	•	•	•
.023 0.58	1.46	1.53	1.59	1.66	1.72	1.78	1.84	1.90	1.95	2.01	2.06	•	•	•
.024 0.61	1.58	1.66	1.74	1.81	1.87	1.94	2.00	2.07	2.13	2.18	2.24	•	•	•
.025 0.64	1.72	1.80	1.88	1.96	2.03	2.10	2.17	2.24	2.31	2.37	2.43	•	•	•
.026 0.66	1.86	1.95	2.04	2.12	2.20	2.28	2.35	2.42	2.49	2.56	2.63	•	•	
.027 0.69	2.01	2.10	2.20	2.29	2.37	2.46	2.54	2.61	2.69	2.76	2.84	•	•	
.028 0.71	2.16	2.26	2.36	2.46	2.55	2.64	2.73	2.81	2.89	2.97	3.05	•	•	•
.031 0.79	2.64	2.77	2.90	3.01	3.13	3.24	3.34	3.45	3.55	3.64	3.74	•	•	•
.033 0.84	3.00	3.14	3.28	3.42	3.54	3.67	3.79	3.91	4.02	4.13	4.24			•
.034 0.86	3.18	3.34	3.48	3.63	3.76	3.89	4.02	4.15	4.27	4.38	4.50	•	•	
.035 0.89	3.37	3.53	3.69	3.84	3.99	4.13	4.26	4.39	4.52	4.64	4.77	•		•

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Extension Nipples

Put Your Nozzle Tips Close to the Work



Precision-machined Stainless Steel Nipples

Maximize jet power and removal rates by getting your jets close to the target surface. Extension nipples also improve jet quality for longer throw and harder hitting.

- Durable stainless steel construction
- Sizes in stock for all StoneAge® tools
- Makes smaller pumps capable of bigger jobs



SA 567-P4P2

Fits 1/4 npt ports
AP2 Attack Tips
15k psi

SA 356-P8P4

Fits 1/2 npt ports
AP4 Attack Tips
15k psi

SA 577-G12P4

Fits G12 ports
AP4 Attack Tips
20k psi

SA 569-G9S6

Fits G9 ports
OS6 Sapphire Tips
40k psi

Nipple Extension Specifications

DESCRIPTION	PART #	MAWP	THREADS	OD	ID
9/16 MPTubing	SA 567-P4P2*	15k psi 1000 bar	1/2 npt, 1/8 nptf	.563 in. 14.3 mm	.312 in. 7.9 mm
9/16 MPTubing	SA 567-M9P2	20k psi 1400 bar	9/16 MP, 1/8 npt	.563 in. 14.3 mm	.312 in. 7.9 mm
9/16 MPTubing	SA 567-M9M9	20k psi 1400 bar	9/16 MP, 9/16 MP	.563 in. 14.3 mm	.312 in. 7.9 mm
1/2 Sched.160 Pipe	SA 356-P8P4**	15k psi 1000 bar	1/2 npt, 1/4 nptf	.840 in. 21.3 mm	.470 in. 11.9 mm
1/2 Sched.160 Pipe	SA 356-P8P8	15k psi 1000 bar	1/2 npt, 1/2 npt	.840 in. 21.3 mm	.470 in. 11.9 mm
3/4 Sched.160 Pipe	SA 366-P12P12	15k psi 1000 bar	3/4 npt, 3/4 npt	1.05 in. 26.7 mm	.610 in. 15.5 mm
3/4 MPTubing	SA 577-M12M12	20k psi 1400 bar	3/4 MP, 3/4 MP	.750 in. 19.1 mm	.438 in. 11.1 mm
3/4 MPTubing	SA 577-M12P4	20k psi 1400 bar	3/4 MP, 1/4 npt	.750 in. 19.1 mm	.438 in. 11.1 mm
3/4 MPTubing	SA 577-G12P4**	20k psi 1400 bar	3/4 G12, 1/4 npt	.750 in. 19.1 mm	.438 in. 11.1 mm
9/16 HPTubing	SA 569-G9S6*	40k psi 2800 bar	9/16 G9, 3/8-24	.563 in. 14.3 mm	.188 in. 4.8 mm

Notes: npt = National Pipe Thread MP = Cone & Thread Connection G12 tip for BJV 20k psi

* Standard Lengths - 2, 3, 4, 8 in. (51, 76, 101, 203 mm) ** Standard Lengths - 3, 4, 6, 8, 10, 12 in. (76, 101, 152, 203, 254, 305 mm)

EXTENSION NIPPLES



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