

***One Direct Source for all your
Water Blasting Parts and Accessories!***

SURFACE NOZZLES	PAGE
Drilled Nozzles	1
Standard Button Tip Flex Lance Nozzles	1
TLX Nozzle	1
Drilled Nozzle Flow Charts	2-4
Sapphire Insert Nozzles / Sapphire Nozzle Flow Chart	5-6
Tube Cleaning Nozzles	7
Pineapple Nozzles	8
Radial Pancake Nozzles	8
FITTINGS	PAGE
40K Slimline Couplings	9
Gland Nuts & Collars	9
LANCES & RELATED	PAGE
Rigid Lances	10
Rigid Lance Holder	10
Stingers & Pipe Nipples	10
CONTROL GUNS	PAGE
Foot Operated Dump Style Control Gun	12
3/8" NPT Hand Held Dump Gun	13
Double-Dump Hand Gun	14
Air-operated Control Gun	15
Dual trigger air gun	16
Air-operated rotating barrel	19
ACCESSORIES	PAGE
Tri-mode valve	18
Pressure Regulator Valve	21
Lubricants, Sealants & Tapes	25
Tools	22
SAFETY ACCESSORIES	PAGE
Gun Whip Hoses with Safety Shrouds	20
Rupture Disc Holder w/Safety Shroud, Rupture Discs	20
TurtleSkin High Pressure WaterArmor for Safety	23-24
Whip Checks	23
Conditions of Sale & Warranty	20

40K NOZZLES

40K HP Standard Nozzles The economical **APS** stainless steel **HP Standard** style nozzles come in pressure ratings to match your flex or rigid lances. The **40K-HP Standard Nozzle** is designed to go with lances with either right or left hand Autoclave-type high pressure threads, a special seating design that eliminates the requirement for gland nuts and collars, wrench flats for easy installation, and offer a wide range of options for precision drilled orifices.

Please specify drilling pattern, pressure and flow when ordering.



LH Part #	RH Part #	40K-STD HP	Dimensions
16-011-001	16-011-101	1/4" HP	.375" OD x 1.225" L
16-012-001	16-012-101	3/8" HP	.468" OD x 1.375" L
16-013-001	16-013-101	9/16" HP	.687" OD x 1.625" L

40K Button Tip Flex Lance Nozzles The **APS Button-Tip** compact stainless steel nozzles come in pressure ratings to match your flex lances. They are ideal for cleaning small diameter tubes with small radius bends. The 40K-BT nozzles have Autoclave-type HP threads. All offer many options for precision drilled orifices.

Please specify drilling pattern, pressure, flow and whether right or left hand threaded when ordering.



LH Part #	RH Part #	40K-BT HP	Dimensions
16-014-001	16-014-101	1/4" HP	.375" OD x 1.016" L
16-015-001	16-015-101	3/8" HP	.468" OD x 1.375" L
16-016-001	16-016-101	9/16" HP	.687" OD x 1.562" L

Part ID	Description	Dimensions
16-020-007	10-32 RH MALE MP/HP	.250" OD x 1.125" L BLANK (40K)
16-020-008	NOZZLE, BALL TYPE, 9/16"-18 LHM	.680 X 1.00" OD



Part ID	Description
16-022-003	Blank, 5.16" 24UH RH (F) ADMAC 40K Nozzle (.375 O.D.) ADMAC STYLE



40K TLX Nozzles The **APS** stainless steel **TLX Nozzles** come in pressure ratings to match your flex or rigid lances. The 40K-TLX have Autoclave-type HP threads. All have wrench flats for easy installation on the lance. All offer many options for 3 or 4 rows of precision drilled orifices.



LH Part #	RH Part #	40K-TLX HP	Dimensions
16-017-001	16-017-101	1/4" HP	.375" OD x 1.337" L
16-018-001	16-018-101	3/8" HP	.468" OD x 1.650" L
16-019-001	16-019-101	9/16" HP	.687" OD x 2.000" L

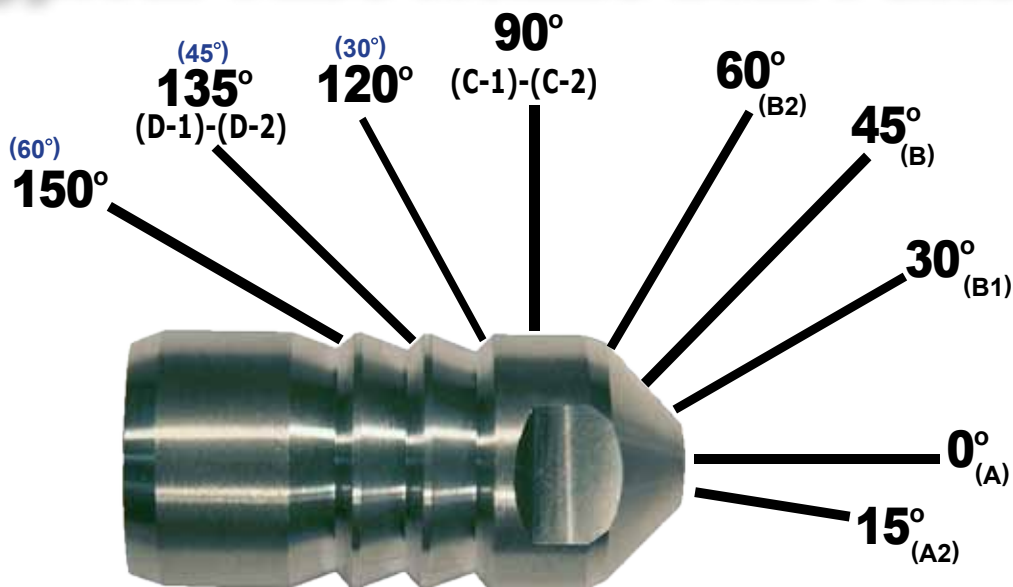
20K-40K Male Machine Thread Lance Nozzles The **APS Button-Tip** compact stainless steel nozzles come in pressure ratings to match your flex lances. They are ideal for cleaning small diameter tubes with small radius bends. The **40K-MMT** have Autoclave-type HP threads, and offer many options for precision drilled orifices.

Please specify drilling pattern, pressure and flow when ordering.

LH Part #	RH Part #	40K-MMT HP	Dimensions
16-020-004	16-020-001	1/4"-28 HP	.375" OD x 0.875" L
16-020-005	16-020-002	3/8"-24 HP	.468" OD x 1.000" L
16-020-006	16-020-003	9/16"-18 HP	.687" OD x 1.125" L
	16-020-007	10-32 HP	.687" OD x 1.125" L
16-020-010	BLANK, 1/4"-28 HP RHM 40K SHORT	BUTTON NOZZLE SS	



Typical Tube Nozzle Drill Patterns



Use this handy reference when designing your customized drilled orifice locations.
If you have any questions, call our highly experienced staff.

Nozzle Number	Orifice Diam./In.	2,000 PSI	4,000 PSI	5,000 PSI	6,000 PSI	7,000 PSI	8,000 PSI	9,000 PSI
0.12	0.012	0.154	0.218	0.244	0.267	0.288	0.308	0.327
0.13	0.013	0.181	0.256	0.286	0.313	0.338	0.362	0.384
0.14	0.014	0.210	0.297	0.332	0.363	0.392	0.419	0.445
0.15	0.015	0.241	0.340	0.381	0.417	0.450	0.481	0.511
0.16	0.016	0.274	0.387	0.433	0.474	0.512	0.548	0.581
0.18	0.018	0.347	0.490	0.548	0.600	0.649	0.693	0.735
0.2	0.020	0.428	0.605	0.677	0.741	0.801	0.856	0.908
0.21	0.021	0.472	0.667	0.746	0.817	0.883	0.944	1.001
0.22	0.022	0.518	0.732	0.819	0.897	0.969	1.036	1.099
0.24	0.024	0.616	0.872	0.974	1.067	1.153	1.233	1.307
0.25	0.025	0.669	0.946	1.057	1.158	1.251	1.337	1.419
0.26	0.026	0.723	1.023	1.144	1.253	1.353	1.447	1.534
0.28	0.028	0.839	1.186	1.326	1.453	1.569	1.678	1.780
0.31	0.031	1.028	1.454	1.626	1.781	1.924	2.057	2.181
0.32	0.032	1.096	1.550	1.732	1.898	2.050	2.191	2.324
2	0.036	1.387	1.961	2.193	2.402	2.594	2.773	2.942
3	0.043	1.978	2.798	3.128	3.427	3.701	3.957	4.197
4	0.047	2.364	3.343	3.737	4.094	4.422	4.727	5.014
4.5	0.050	2.675	3.783	4.229	4.633	5.004	5.350	5.674
5	0.052	2.893	4.092	4.575	5.011	5.413	5.786	6.137
5.5	0.055	3.237	4.577	5.118	5.606	6.055	6.473	6.866
6	0.059	3.725	5.267	5.889	6.451	6.968	7.449	7.901
6.5	0.060	3.852	5.447	6.090	6.672	7.206	7.704	8.171
7	0.062	4.113	5.817	6.503	7.124	7.695	8.226	8.725
7.5	0.065	4.521	6.393	7.148	7.830	8.457	9.041	9.590
8	0.067	4.803	6.793	7.594	8.319	8.986	9.606	10.189
8.5	0.069	5.094	7.204	8.055	8.823	9.530	10.188	10.806
9	0.071	5.394	7.628	8.528	9.342	10.091	10.788	11.442
9.5	0.073	5.702	8.064	9.016	9.876	10.667	11.404	12.096
10	0.075	6.019	8.512	9.516	10.425	11.260	12.037	12.768
10.5	0.077	6.344	8.972	10.031	10.988	11.868	12.688	13.458
11	0.078	6.510	9.206	10.293	11.275	12.179	13.020	13.809
11.5	0.080	6.848	9.684	10.828	11.861	12.811	13.696	14.527
12	0.082	7.195	10.175	11.376	12.461	13.460	14.389	15.262
12.5	0.084	7.550	10.677	11.937	13.077	14.124	15.100	16.016
13	0.085	7.731	10.933	12.223	13.390	14.463	15.461	16.399
14	0.089	8.475	11.986	13.401	14.680	15.856	16.951	17.979
15	0.093	9.254	13.088	14.632	16.029	17.313	18.509	19.631
16	0.095	9.657	13.657	15.268	16.726	18.066	19.313	20.485
18	0.100	10.700	15.132	16.918	18.533	20.018	21.400	22.698
20	0.106	12.022	17.002	19.009	20.823	22.492	24.045	25.503
21	0.109	12.713	17.978	20.100	22.019	23.783	25.425	26.967
25	0.118	14.898	21.070	23.557	25.805	27.873	29.797	31.604
27	0.125	16.719	23.644	26.434	28.957	31.278	33.437	35.465
30	0.130	18.083	25.573	28.591	31.320	33.830	36.166	38.359
35	0.140	20.972	29.659	33.159	36.324	39.235	41.943	44.488
40	0.156	26.039	36.825	41.172	45.101	48.715	52.078	55.237
50	0.167	29.841	42.201	47.183	51.686	55.827	59.682	63.302
60	0.187	37.416	52.915	59.160	64.807	70.000	74.833	79.372
70	0.203	44.093	62.357	69.717	76.371	82.491	88.186	93.536
80	0.210	47.186	66.732	74.608	81.729	88.278	94.373	100.098
90	0.219	51.318	72.574	81.140	88.885	96.007	102.635	108.861
100	0.250	66.874	94.574	105.737	115.829	125.110	133.748	141.862

Nozzle Number	Orifice Diam./In.	10,000 PSI	15,000 PSI	20,000 PSI	25,000 PSI	30,000 PSI	36,000 PSI	40,000 PSI
0.12	0.012	0.345	0.422	0.487	0.545	0.597	0.654	0.689
0.13	0.013	0.404	0.495	0.572	0.639	0.700	0.767	0.809
0.14	0.014	0.469	0.574	0.663	0.741	0.812	0.890	0.938
0.15	0.015	0.538	0.659	0.761	0.851	0.932	1.021	1.077
0.16	0.016	0.612	0.750	0.866	0.968	1.061	1.162	1.225
0.18	0.018	0.775	0.949	1.096	1.226	1.343	1.471	1.550
0.2	0.020	0.957	1.172	1.353	1.513	1.658	1.816	1.914
0.21	0.021	1.055	1.292	1.492	1.668	1.828	2.002	2.110
0.22	0.022	1.158	1.418	1.638	1.831	2.006	2.197	2.316
0.24	0.024	1.378	1.688	1.949	2.179	2.387	2.615	2.756
0.25	0.025	1.495	1.831	2.115	2.364	2.590	2.837	2.991
0.26	0.026	1.617	1.981	2.287	2.557	2.801	3.069	3.235
0.28	0.028	1.876	2.297	2.653	2.966	3.249	3.559	3.752
0.31	0.031	2.299	2.816	3.252	3.635	3.982	4.363	4.599
0.32	0.032	2.450	3.001	3.465	3.874	4.243	4.649	4.900
2	0.036	3.101	3.798	4.385	4.903	5.371	5.883	6.202
3	0.043	4.424	5.418	6.256	6.995	7.662	8.394	8.848
4	0.047	5.285	6.473	7.474	8.357	9.154	10.028	10.570
4.5	0.050	5.981	7.326	8.459	9.457	10.360	11.349	11.963
5	0.052	6.469	7.923	9.149	10.229	11.205	12.275	12.939
5.5	0.055	7.238	8.864	10.235	11.443	12.536	13.732	14.475
6	0.059	8.329	10.200	11.778	13.169	14.425	15.802	16.657
6.5	0.060	8.613	10.549	12.181	13.619	14.919	16.342	17.226
7	0.062	9.197	11.264	13.007	14.542	15.930	17.450	18.394
7.5	0.065	10.109	12.380	14.296	15.983	17.509	19.180	20.217
8	0.067	10.740	13.154	15.189	16.982	18.603	20.378	21.480
8.5	0.069	11.391	13.951	16.109	18.011	19.730	21.613	22.782
9	0.071	12.061	14.772	17.057	19.070	20.890	22.884	24.122
9.5	0.073	12.750	15.615	18.031	20.159	22.084	24.191	25.500
10	0.075	13.458	16.483	19.033	21.279	23.310	25.535	26.916
10.5	0.077	14.186	17.374	20.061	22.429	24.570	26.915	28.371
11	0.078	14.556	17.828	20.586	23.016	25.212	27.619	29.113
11.5	0.080	15.312	18.754	21.655	24.211	26.522	29.053	30.625
12	0.082	16.088	19.703	22.751	25.437	27.865	30.524	32.175
12.5	0.084	16.882	20.676	23.875	26.693	29.240	32.031	33.764
13	0.085	17.286	21.171	24.446	27.332	29.941	32.798	34.573
14	0.089	18.951	23.211	26.801	29.965	32.825	35.958	37.903
15	0.093	20.693	25.344	29.265	32.719	35.842	39.263	41.387
16	0.095	21.593	26.446	30.537	34.141	37.400	40.970	43.186
18	0.100	23.926	29.303	33.836	37.830	41.440	45.396	47.851
20	0.106	26.883	32.925	38.018	42.506	46.562	51.007	53.766
21	0.109	28.426	34.815	40.200	44.946	49.235	53.935	56.852
25	0.118	33.314	40.801	47.113	52.674	57.702	63.209	66.628
27	0.125	37.384	45.786	52.869	59.109	64.751	70.931	74.768
30	0.130	40.434	49.522	57.183	63.932	70.034	76.719	80.869
35	0.140	46.894	57.433	66.318	74.146	81.223	88.976	93.788
40	0.156	58.225	71.311	82.343	92.062	100.849	110.475	116.451
50	0.167	66.726	81.723	94.365	105.503	115.573	126.604	133.452
60	0.187	83.666	102.469	118.321	132.287	144.913	158.744	167.331
70	0.203	98.595	120.754	139.435	155.893	170.772	187.071	197.190
80	0.210	105.512	129.225	149.217	166.829	182.752	200.195	211.024
90	0.219	114.750	140.539	162.281	181.435	198.752	217.722	229.499
100	0.250	149.535	183.142	211.475	236.436	259.003	283.723	299.070

Nozzle Number	Orifice Diam./In.	2,000 PSI	4,000 PSI	5,000 PSI	6,000 PSI	7,000 PSI	8,000 PSI	9,000 PSI	10,000 PSI	15,000 PSI	20,000 PSI	25,000 PSI	30,000 PSI
0.15	0.015	0.291	0.412	0.460	0.504	0.544	0.582	0.617	0.651	0.797	0.920	1.029	1.127
0.16	0.016	0.331	0.468	0.524	0.573	0.619	0.662	0.702	0.740	0.907	1.047	1.171	1.282
0.18	0.018	0.419	0.593	0.663	0.726	0.784	0.838	0.889	0.937	1.148	1.325	1.482	1.623
0.20	0.020	0.517	0.732	0.818	0.896	0.968	1.035	1.097	1.157	1.417	1.636	1.829	2.004
0.21	0.021	0.570	0.807	0.902	0.988	1.067	1.141	1.210	1.275	1.562	1.804	2.017	2.209
0.22	0.022	0.626	0.885	0.990	1.084	1.171	1.252	1.328	1.400	1.714	1.980	2.213	2.424
0.24	0.024	0.745	1.054	1.178	1.290	1.394	1.490	1.580	1.666	2.040	2.356	2.634	2.885
0.25	0.025	0.808	1.143	1.278	1.400	1.512	1.617	1.715	1.807	2.214	2.556	2.858	3.131
0.26	0.026	0.874	1.236	1.382	1.514	1.636	1.749	1.855	1.955	2.394	2.765	3.091	3.386
0.28	0.028	1.014	1.434	1.603	1.756	1.897	2.028	2.151	2.267	2.777	3.206	3.585	3.927
0.29	0.029	1.088	1.538	1.720	1.884	2.035	2.175	2.307	2.432	2.979	3.440	3.846	4.213
0.31	0.031	1.243	1.758	1.965	2.153	2.325	2.486	2.637	2.779	3.404	3.930	4.394	4.814
0.32	0.032	1.324	1.873	2.094	2.294	2.478	2.649	2.809	2.961	3.627	4.188	4.682	5.129
2.00	0.036	1.676	2.370	2.650	2.903	3.136	3.352	3.556	3.748	4.590	5.300	5.926	6.492
2.00	0.039	1.967	2.782	3.110	3.407	3.680	3.934	4.173	4.399	5.387	6.221	6.955	7.619
2.00	0.040	2.069	2.926	3.272	3.584	3.871	4.139	4.390	4.627	5.667	6.544	7.316	8.014
2.00	0.041	2.174	3.075	3.438	3.766	4.067	4.348	4.612	4.861	5.954	6.875	7.687	8.420
3.00	0.043	2.391	3.382	3.781	4.142	4.474	4.783	5.073	5.347	6.549	7.562	8.455	9.262
4.00	0.047	2.857	4.040	4.517	4.948	5.345	5.714	6.061	6.388	7.824	9.035	10.101	11.065
4.50	0.050	3.233	4.573	5.112	5.600	6.049	6.467	6.859	7.230	8.855	10.225	11.432	12.523
4.00	0.051	3.364	4.757	5.319	5.827	6.293	6.728	7.136	7.522	9.213	10.638	11.893	13.029
5.00	0.052	3.497	4.946	5.530	6.057	6.543	6.994	7.419	7.820	9.577	11.059	12.364	13.544
5.50	0.055	3.912	5.533	6.186	6.776	7.319	7.825	8.299	8.748	10.714	12.372	13.832	15.152
6.00	0.059	4.502	6.367	7.118	7.798	8.423	9.004	9.550	10.067	12.329	14.237	15.917	17.437
6.50	0.060	4.656	6.585	7.362	8.064	8.711	9.312	9.877	10.411	12.751	14.724	16.461	18.033
7.00	0.062	4.972	7.031	7.861	8.611	9.301	9.943	10.546	11.117	13.615	15.721	17.577	19.255
7.50	0.065	5.464	7.728	8.640	9.465	10.223	10.929	11.592	12.219	14.965	17.280	19.319	21.163
8.00	0.067	5.806	8.211	9.180	10.056	10.862	11.612	12.316	12.982	15.900	18.359	20.527	22.486
8.50	0.069	6.158	8.708	9.736	10.665	11.520	12.315	13.062	13.769	16.863	19.472	21.770	23.848
9.00	0.071	6.520	9.220	10.309	11.292	12.197	13.039	13.830	14.578	17.855	20.617	23.051	25.251
9.50	0.073	6.892	9.747	10.897	11.938	12.894	13.784	14.621	15.411	18.875	21.795	24.368	26.693
10.0	0.075	7.275	10.288	11.503	12.601	13.610	14.550	15.433	16.267	19.923	23.006	25.721	28.176
10.5	0.077	7.668	10.844	12.124	13.282	14.346	15.336	16.267	17.147	21.000	24.249	27.111	29.699
11.0	0.078	7.869	11.128	12.441	13.629	14.721	15.737	16.692	17.595	21.549	24.883	27.820	30.475
11.5	0.080	8.277	11.706	13.088	14.337	15.485	16.555	17.559	18.509	22.668	26.175	29.265	32.058
12.0	0.082	8.696	12.299	13.750	15.063	16.269	17.393	18.448	19.446	23.816	27.500	30.746	33.681
12.5	0.084	9.126	12.906	14.429	15.806	17.073	18.252	19.359	20.406	24.992	28.858	32.264	35.344
13.0	0.085	9.344	13.215	14.775	16.185	17.482	18.689	19.822	20.895	25.591	29.549	33.037	36.190
14.0	0.089	10.244	14.488	16.198	17.744	19.166	20.489	21.732	22.907	28.056	32.396	36.220	39.677
15.0	0.093	11.186	15.819	17.687	19.375	20.927	22.372	23.729	25.013	30.634	35.373	39.549	43.323
16.0	0.095	11.672	16.507	18.456	20.217	21.837	23.345	24.761	26.100	31.966	36.911	41.268	45.207
18.0	0.100	12.933	18.290	20.449	22.401	24.196	25.867	27.436	28.920	35.419	40.899	45.726	50.091
20.0	0.106	14.532	20.551	22.977	25.170	27.187	29.064	30.827	32.494	39.797	45.954	51.378	56.282
25.0	0.118	18.008	25.468	28.474	31.191	33.691	36.017	38.202	40.268	49.318	56.947	63.669	69.746
27.0	0.125	20.208	28.579	31.952	35.002	37.806	40.417	42.868	45.187	55.343	63.904	71.447	78.267
30.0	0.130	21.857	30.911	34.559	37.858	40.891	43.715	46.366	48.874	59.859	69.119	77.277	84.653
35.0	0.140	25.349	35.849	40.081	43.906	47.424	50.699	53.774	56.683	69.422	80.162	89.623	98.178
40.0	0.156	31.475	44.512	49.766	54.516	58.884	62.949	66.768	70.379	86.197	99.531	****	****
50.0	0.167	36.070	51.010	57.031	62.475	67.480	72.140	76.516	80.654	98.781	****	****	****
60.0	0.187	45.227	63.960	71.509	78.335	84.611	90.453	96.654	****	****	****	****	****
70.0	0.203	53.297	75.373	84.270	92.313	99.710	95.940	****	****	****	****	****	****
80.0	0.210	57.036	80.661	90.182	98.789	****	****	****	****	****	****	****	****
90.0	0.219	62.030	87.723	98.077	****	****	****	****	****	****	****	****	****
100	0.250	80.833	****	****	****	****	****	****	****	****	****	****	****

SAPPHIRE NOZZLE INSERTS

40K Patented High-Performance Sapphire Orifice Assemblies The **APS High-Performance Sapphire Nozzle Assemblies** are compact inserts made to screw into the most typical UHP rotary nozzle holder bodies common to UHP cleaning applications.

All are 3/8"-24 RH. The 17-002 part series is stat-tested.

Please specify orifice size, pressure and flow when ordering.

Part #	Jet Size
17-001-000	PLUG
17-001-007	0.007"
17-001-008	0.008"
17-001-009	0.009"
17-001-010	0.010"
17-001-011	0.011"
17-001-012	0.012"
17-001-013	0.013"
17-001-014	0.014"
17-001-015	0.015"
17-001-016	0.016"
17-001-017	0.017"
17-001-018	0.018"
17-001-019	0.019"
17-001-020	0.020"
17-001-021	0.021"
17-001-022	0.022"
17-001-023	0.023"
17-001-024	0.024"
17-001-025	0.025"
17-001-026	0.026"

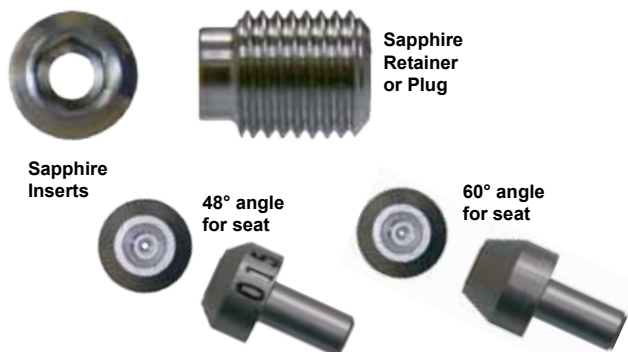
Part #	Jet Size
17-001-027	0.027"
17-001-028	0.028"
17-001-029	0.029"
17-001-031	0.031"
17-001-034	0.034"
17-001-035	0.035"
17-001-036	0.036"
17-001-037	0.037"
17-001-038	0.038"
17-001-039	0.039"
17-001-040	0.040"
17-001-043	0.043"
17-001-050	0.050"
17-001-051	0.051"
17-001-052	0.052"
17-001-056	0.056"
17-002-007	0.007"
17-002-008	0.008"
17-002-009	0.009"
17-002-010	0.010"
17-002-011	0.011"

Part #	Jet Size
17-002-012	0.012"
17-002-013	0.013"
17-002-014	0.014"
17-002-015	0.015"
17-002-016	0.016"
17-002-017	0.017"
17-002-018	0.018"
17-002-019	0.019"
17-002-020	0.020"
17-002-021	0.021"
17-002-022	0.022"
17-002-023	0.023"
17-002-025	0.025"
17-002-028	0.028"
17-002-029	0.029"
17-002-031	0.031"
17-002-033	0.033"
17-002-034	0.034"
17-002-035	0.035"
17-002-036	0.036"



40K High-Performance Sapphire Orifice Insert The **APS High-Performance Sapphire Orifice Nozzle Inserts** are compact inserts made to drop into the typical nozzle jewel screw common to UHP jetting applications.

Please specify orifice size, pressure and flow when ordering.



48° - Part #	60° - Part #	Jet Size
17-003-000	17-009-000	PLUG
17-003-001		RETAINER
17-003-007		0.007"
17-003-008	17-009-008	0.008"
17-003-009	17-009-009	0.009"
17-003-010	17-009-010	0.010"
17-003-011	17-009-011	0.011"
17-003-012	17-009-012	0.012"
17-003-013	17-009-013	0.013"
17-003-014	17-009-014	0.014"
17-003-015		0.015"
17-003-016	17-009-016	0.016"
17-003-018	17-009-018	0.018"
17-003-019	17-009-019	0.019"

48° - Part #	60° - Part #	Jet Size
17-003-020	17-009-020	0.020"
17-003-021		0.021"
17-003-022	17-009-022	0.022"
17-003-025	17-009-025	0.025"
17-003-026		0.026"
17-003-027		0.027"
17-003-028	17-009-028	0.028"
17-003-031		0.031"
17-003-032		0.032"
17-003-033		0.033"
17-003-034		0.034"
17-003-035		0.035"
17-003-036		0.036"
17-003-038		0.038"

Sapphire Nozzle Flow Chart (gpm)

NOZZLE NUMBER	Orifice Dia. ins.	35,000 psi.	40,000 psi.
0.005	0.005	(0.098)	(0.104)
0.006	0.006	(0.140)	(0.150)
0.007	0.007	(0.191)	(0.204)
0.008	0.008	(0.250)	(0.267)
0.009	0.009	(0.316)	(0.338)
0.010	0.010	(0.390)	(0.417)
0.011	0.011	(0.472)	(0.505)
0.012	0.012	(0.562)	(0.601)
0.013	0.013	(0.660)	(0.705)
0.014	0.014	(0.765)	(0.818)
0.015	0.015	(0.878)	(0.939)
0.016	0.016	(0.999)	(1.068)

NOZZLE NUMBER	Orifice Dia. ins.	35,000 psi.	40,000 psi.
0.017	0.017	(1.128)	(1.206)
0.018	0.018	(1.264)	(1.352)
0.019	0.019	(1.409)	(1.506)
0.020	0.020	(1.561)	(1.669)
0.021	0.021	(1.721)	(1.840)
0.022	0.022	(1.889)	(2.019)
0.023	0.023	(2.064)	(2.207)
0.024	0.024	(2.248)	(2.403)
0.025	0.025	(2.439)	(2.607)
1.0	0.026	(2.838)	(2.820)
0.027	0.027	(2.845)	(3.041)
0.028	0.028	(3.060)	(3.271)

NOZZLE NUMBER	Orifice Dia. ins.	35,000 psi.	40,000 psi.
0.029	0.029	(3.282)	(3.509)
0.030	0.030	(3.512)	(3.755)
1.5	0.031	(3.750)	(4.009)
0.32	0.032	(3.996)	(4.272)
0.33	0.033	(4.250)	(4.543)
0.34	0.034	(4.511)	(4.823)
0.35	0.035	(4.781)	(5.111)
2	0.036	(5.058)	(5.407)
2.1	0.037	(5.343)	(5.711)
2.2	0.038	(5.635)	(6.024)
2.3	0.039	(5.936)	(6.346)
2.4	0.040	(6.244)	(6.675)

40K High-Performance Sapphire Insert Assemblies The APS High-Performance Sapphire Nozzle Inserts are compact inserts made to drop into the typical nozzle jewel screw common to UHP jetting applications.

17-006 Series is screw-type and
17-010 Series is slotted-type.



17-010
Slotted-Type M4x.5



17-006
Hex-Type M4x.5

Please specify orifice size, pressure and flow when ordering.

Slotted Part #	Jet Size
17-010-100	SCREW, M4 X .5 SLOTTED SS TYPE D JEWEL
17-006-000	SLEEVE
17-010-101	PLUG M4 X .5 SLOTTED
17-010-000	PLUG ASSY, SAPPHIRE SLOTTED JEWEL NOZZLE
17-010-008	0.008"
17-010-009	0.009"
17-010-010	0.010"
17-010-011	0.011"
17-010-012	0.012"
17-010-013	0.013"
17-010-014	0.014"
17-010-015	0.015"
17-010-016	0.016"
17-010-017	0.017"
17-010-018	0.018"
17-010-019	0.019"
17-010-020	0.020"
17-010-021	0.021"
17-010-022	0.022"
17-010-023	0.023"
17-010-024	0.024"
17-010-025	0.025"
17-010-026	0.026"
17-010-027	0.027"
17-010-028	0.028"
17-010-029	0.029"
17-010-030	0.003"
17-010-031	0.031"
17-010-032	0.032"
17-010-033	0.033"
17-010-034	0.034"
17-010-035	0.035"
17-010-036	0.036"
17-010-037	0.037"
17-010-038	0.038"
17-010-039	0.039"
17-010-040	0.040"
17-010-041	0.041"
17-010-042	0.042"
17-010-043	0.043"
17-010-044	0.044"
17-010-045	0.045"
17-010-046	0.046"
17-010-047	0.047"
17-010-048	0.048"
17-010-049	0.049"
17-010-050	0.050"
17-010-051	0.051"
17-010-052	0.052"

Screw Part #	Jet Size
17-006-000	JEWEL SCREW HEX SS TYPE D JEWEL
17-006-001	SLEEVE
17-006-002	PLUG M4 X .5 HEX
17-006-112	PLUG ASSY, SAPPHIRE HEX JEWEL NOZZLE
17-006-008	0.008"
17-006-009	0.009"
17-006-010	0.010"
17-006-011	0.011"
17-006-012	0.012"
17-006-013	0.013"
17-006-014	0.014"
17-006-015	0.015"
17-006-016	0.016"
17-006-017	0.017"
17-006-018	0.018"
17-006-019	0.019"
17-006-020	0.020"
17-006-021	0.021"
17-006-022	0.022"
17-006-023	0.023"
17-006-024	0.024"
17-006-025	0.025"
17-006-026	0.026"
17-006-027	0.027"
17-006-028	0.028"
17-006-029	0.029"
17-006-030	0.003"
17-006-031	0.031"
17-006-032	0.032"
17-006-033	0.033"
17-006-034	0.034"
17-006-035	0.035"
17-006-036	0.036"
17-006-037	0.037"
17-006-038	0.038"
17-006-039	0.039"
17-006-040	0.040"
17-006-041	0.041"
17-006-042	0.042"
17-006-043	0.043"
17-006-044	0.044"
17-006-045	0.045"
17-006-046	0.046"
17-006-047	0.047"
17-006-048	0.048"
17-006-049	0.049"
17-006-050	0.050"
17-006-051	0.051"
17-006-052	0.052"

40K NOZZLES

40K Button-Tip Tube Cleaning Nozzles with Sapphire Inserts

The **APS Button-Tip Tube Cleaning Nozzles** use the sapphire inserts listed on the previous page. These compact nozzles are made of hardened stainless steel and are ideal for most ultra-high pressure rigid lance tube cleaning applications. Each requires the use of an "Admac style" brass button #17-000-000 to attach to the rigid lance.



Part #	Size	# Jets x Inc.	O.D. x L
17-014-001	9/16"-18 UHF	3 Jets @ 15° Inc. Forward	.875" x 1.000"
17-014-002	9/16"-18 UHF	2 Jets @ 20° Inc. Forward	.875" x 1.000"
17-014-003	9/16"-18 UHF	2 Jets @ 20° Inc. Forward	.875" x 1.000"
17-014-004	9/16"-18 UHF	4 Jets @ 20° Inc. Forward	.875" x 1.000"
17-014-005	9/16"-18 UHF	4 Jets @ 20° Inc. Forward	.875" x 1.000"
17-014-006	9/16"-18 UHF	4 Jets @ 30° Inc. Forward	.875" x 1.000"
17-014-007	9/16"-18 UHF	4 Jets @ 45° Inc. Forward	.875" x 1.000"
17-014-008	9/16"-18 UHF	2 Jets @ 60° Inc. Forward	.875" x 1.000"
17-014-009	9/16"-18 UHF	4 Jets @ 60° Inc. Forward	.875" x 1.000"
17-014-010	9/16"-18 UHF	4 Jets @ 45° Inc. Forward	.937"
17-014-011	9/16"-18 UHF	4 Jets, 2 @ 60° Inc. Fwd., 2 @ 10° Back	.875"
17-014-015	9/16"-18 UHF	4 Jets, 2 @ 60° Back, 2 @ 100° Back	.875"
17-014-016	9/16"-18 UHF	2 @ 90° Side Jets	1.000" x 1.500"
17-014-017	9/16"-18 UHF	4 @ 90° Side Jets	1.000" x 1.500"
17-014-018	9/16"-18 UHF	2 @ 80° Side Jets	1.000" x 1.500"
17-014-019	9/16"-18 UHF	4 @ 80° Side Jets	1.000" x 1.500"

Part #	Size	# Jets x Inc.	O.D. x L
17-014-020	9/16"-18 UHF	4 Jets, 2 @ 40° Inc. Fwd., 2 @ 60° Inc. Fwd.	1.000" x 2.000"
17-014-021	9/16"-18 UHF	4 Jets, 3 @ 30° Inc. Fwd., 1 @ 5° Inc. Fwd.	1.000" x 3.000"
17-014-022	9/16"-18 HP	2 Jets @ 160° Back	1.000" x 1.500"
17-014-023	9/16"-18 HP	4 Jets @ 160° Back	1.000" x 1.500"
17-014-024	9/16"-18 HP	2 Jets @ 180° Back	1.000" x 1.500"
17-014-025	9/16"-18 HP	4 Jets @ 180° Back	1.000" x 1.500"
17-014-026	9/16"-18 HP	2 Jets @ 200° Back	1.000" x 1.500"
17-014-027	9/16"-18 HP	4 Jets @ 200° Back	1.000" x 1.500"
17-014-028	9/16"-18 HP	6 Jets @ 60° Inc. Forward	1.500" x 2.500"
17-014-029	9/16"-18 HP	5 Jets, 1 @ 0°, 2 @ 90° Inc. Fwd., 2 @ 45° Back	.750" x 2.500"
17-014-030	9/16"-18 UHF	4 Jets, 2 @ 90° Inc. Fwd., 2 @ 90° Back	.937" x 2.000"
17-014-031	9/16"-18 UHF	2 Jets @ 60° Inc. Forward	1.000" x 3.000"
17-014-032	9/16"-18 UHF	2 Jets @ 20° Inc. Forward	1.125" x 3.000"
17-014-033	9/16"-18 UHF	2 Jets @ 20° Inc. Forward	.875" x 3.000"
17-014-034	9/16"-18 UHF	6 Jets, 2 @ 20° Inc. Fwd., 2 @ 40° Back, 2 @ 60° Back	.875" x 2.000"
17-014-035	9/16"-18 UHF	4 Jets, 2 @ 90° Inc. Fwd., 2 @ 45° Back	.995" x 2.00"

40K Button-Tip Tube Cleaning Nozzles with Sapphire Inserts

The **APS Button-Tip Tube Cleaning Nozzles** use the sapphire inserts listed on the previous page. These compact nozzles are made of hardened stainless steel and are ideal for most ultra-high pressure rigid lance tube cleaning applications. Each requires the use of an "Admac style" brass button #17-000-000 to attach to the rigid lance.

Please specify orifice size, pressure and flow when ordering.



Part #	Size	# Jets x Inc.	O.D.
17-011-001	3/8"-24	1 Jet @ 0° Forward	.490"
17-011-002	3/8"-24	1 Jet @ 15° Forward	.490"
17-011-003	3/8"-24	3 Jets @ 8° Forward	.490"
17-011-004	3/8"-24	2 Jets @ 10° Forward	.490"
17-011-005	3/8"-24	2 Jets @ 10° Forward	.490"
17-011-006	3/8"-24	3 Jets @ 10° Forward	.490"
17-011-007	3/8"-24	2 Jets @ 20° Forward	.490"
17-011-008	3/8"-24	3 Jets @ 20° Forward	.490"
17-011-009	3/8"-24	2 Jets @ 30° Forward	.490"
17-011-010	3/8"-24	3 Jets @ 30° Forward	.490"
17-011-011	3/8"-24	2 Jets @ 45° Forward	.490"
17-011-012	3/8"-24	3 Jets @ 45° Forward	.490"
17-011-013	3/8"-24	1 Jet @ 10° Forward 1 @ 90°	.490"
17-011-014	3/8"-24	4 Jets @ 30° Forward	.625"
17-011-015	3/8"-24	1 Jet @ 10° Forward 1 @ 90°	.560"
17-011-016	3/8"-24	2 Jets @ 20° Forward	.490"
17-011-017	3/8"-24	3 Jets @ 50° Forward	.590"

Part #	Size	# Jets x Inc.	O.D.
17-013-001	9/16"-18	2 Jets @ 30° Forward / 1 @ 5°	.490"
17-013-002	9/16"-18	2 Jets @ 10° Forward / 2 @ 90°	.490"
17-013-003	9/16"-18	2 Jets @ 10° Forward	.490"
17-013-004	9/16"-18	3 Jets @ 15° Forward	.490"
17-013-005	9/16"-18	4 Jets @ 10° Forward	.490"
17-013-006	9/16"-18	2 Jets @ 30° Forward	.490"
17-013-007	9/16"-18	2 Jets @ 30° Forward	.490"
17-013-008	9/16"-18	4 Jets @ 30° Forward	.490"
17-013-009	9/16"-18	4 Jets @ 30° Forward	.490"
17-013-010	9/16"-18	4 Jets @ 45° Forward	.490"
17-013-011	9/16"-18	2 Jets @ 20° Forward	.490"
17-013-012	9/16"-18	3 Jets @ 30° Forward	.490"
17-013-013	9/16"-18	3 Jets @ 30° Forward	.490"
17-013-014	9/16"-18	2 Jets @ 45° Forward	.625"
17-013-015	9/16"-18	3 Jets @ 45° Forward	.560"
17-013-016	9/16"-18	2 Jets @ 10° Forward	.490"
17-013-017	9/16"-18	4 Jets @ 10° Forward	.590"
17-013-018	9/16"-18	3 Jets @ 10° Forward	.560"
17-013-019	9/16"-18	3 Jets @ 10° Forward	.560"
17-013-020	9/16"-18	4 Jets @ 30° Forward / 2 @ 90°	.560"
17-013-021	9/16"-18	2 Jets @ 40° Forward / 2 @ 60°	.875"
17-013-022	9/16"-18	1 Jet @ 0° Forward / 4 @ 65°	.687"



40K Male Button-Tip Tube Cleaning Nozzles with Sapphire Inserts

The **APS Male Button-Tip Tube Cleaning Nozzles** use the sapphire inserts listed on the previous page. These rugged nozzles are made of hardened stainless steel and are ideal for most ultra-high pressure rigid lance tube cleaning applications. Each requires the use of an "Admac style" brass button #17-000-000 to attach to the rigid lance.

Please specify orifice size, pressure and flow when ordering.



Part #	Size	# Jets x Inc.	O.D.
17-012-001	7/16"-20	2 Jets @ 20° Forward / 1 @ 0°	.550"
17-012-002	7/16"-20	2 Jets @ 30° Forward	.550"
17-012-003	7/16"-20	2 Jets @ 20° Forward	.550"
17-012-004	7/16"-20	2 Jets @ 30° Forward / 1 @ 0°	.550"
17-012-005	7/16"-20	2 Jets @ 45° Forward	.550"
17-012-006	7/16"-20	2 Jets @ 45° Forward	.550"
17-012-007	7/16"-20	2 Jets @ 30° Forward / 1 @ 0°	.550"
17-012-008	7/16"-20	4 Jets @ 30° Forward	.650"
17-012-009	7/16"-20	2 Jets @ 30° Forward / 2 @ 150°	.650"
17-012-010	7/16"-20	2 Jets @ 30° Forward	.650"

40K APLM Pineapple Line Mole Nozzles The **APS APLM pineapple-type line mole nozzles** are made from stainless steel with a special copper coating to prevent galling during installation. APLM nozzles have 9/16 and 3/4" NPT inlets with 1/4" or 3/8" NPT (F) ports, and a choice of port locations. These are used with line mole inserts listed on the next page. Wrench flats allow for easy installation.



Part #	Description
16-025-008	NOZZLE, SP-9/16" HP RH 40K PINEAPPLE (3-3/8"-24 PORTS @ B @ 60°, 6-3/8"-24 PORTS @ C @ 90°, 6-3/8"-24 PORTS @ D (45°) (2" DIA.)
16-025-021	NOZZLE, SP-7/8"-14 TYPE M 40K BUTTON NOSE PINEAPPLE (2-1/4"-28 JEWEL PORT @ D @ 45° BACK W/90° SPACING, 1-1/4"-28 JEWEL PORT @ C @ 90°, 1-1/4"-28 JEWEL PORT AT A @ 75°) (1-3/8" DIA. X 2.125" LONG)
16-025-105	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (4-1/4"-28 PORTS @ B @ 60°, 4-1/4"-28 PORTS @ C @ 90°, 4-1/4"-28 PORTS @ D @ 45° (1-5/8" DIA.)
16-025-106	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (4-3/8"-24 PORTS @ C) (2-3/4" DIA.) MAN. 296.2000 550.0000 NOZZLES
16-025-108	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (4 MIS-ALIGNED 3/8"-24 PORTS @ C (90°) (2-3/4" DIA.) MAN. 0.0000 350.0000 NOZZLES
16-025-109	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (2-1/4"-28 PORTS @ B (60° INC.), 2-1/4"-28 PORTS @ C (90°) (1-5/8" DIA.)
16-025-110	NOZZLE, SP-9/16" HP RH 40K PINEAPPLE (4-1/4"-28 PORTS @ 2C1 @ 90°, 2 @ 2C2(90) (1-3/8" DIA.) MAN. 0.0000 500.0000 NOZZLES
16-025-111	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (2-3/8"-24 RH JETS @ A2 @ 75° FWD.), 4-3/8"-24 RH JETS @ B (45° FWD.) (2-3/4" DIA.)
16-025-113	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (2-1/4"-28 RH JETS @ A2 @ 75° FWD., 4-1/4"-28 RH JETS @ B @ 45° FWD.) (1-9/16" DIA.)
16-025-115	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (2-1/4"-28 RH JETS @ A2 @ 75° FWD.), 4-1/4"-28 RH JETS @ B (45° FWD.) (1-15/16" DIA.)
16-025-118	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (2-3/8"-24 RH JETS @ A2 @ (75° FWD.), 4-3/8"-24 RH JETS @ B (45° FWD.), 2-3/8"-24 RH JET (2-3/4" DIA.)
16-025-120	NOZZLE, SP-9/16" HP LH 40K PINEAPPLE (4-3/8"-24 RH JETS @ B (45° FWD.), 2-3/8"-24 RH JETS @ C1 (90°), 2-3/8"-24 RH JETS @ C2 (90°) MIS-ALIGNED (2-3/4" DIA.)

Various 40K Carrier Nozzles



Part #	Description
17-005-001	CARRIER, HIGH PRODUCTION 4-JET(OFFSET) X 1.990 O.D. SS NOZZLE (3126)
17-005-007	CARRIER, HIGH PRODUCTION 24° INC. 4-JET EQUALLY SPACED X 1.490 O.D. SS NOZZLE (3144-4)
17-005-008	CARRIER, HIGH PRODUCTION 24° INC. 5-JET EQUALLY SPACED X 1.490 O.D. SS NOZZLE (3144-5)
17-005-138	NOZZLE, 3-JETS @ 30° INC. ANGLE JEWEL EQUALLY SPACED STYLE (1.990 O.D. X 3-3/8" LONG X 9/16" UHF BUTTON) SS (J/S TYPE: 53970)
17-005-137	CARRIER, 9/16" UH RH (F) BUTTON X 2 - 3/8"-24 JETS @ B @ 30° INC. (5" PATTERN @ 6" AWAY)
17-005-136	CARRIER, 9/16" UH RH (F) BUTTON X 2 - 3/8"-24 JETS @ B @ 20° INC.

40K Radial Pancake Nozzle Assemblies APS offers a wide variety of sizes in "pancake style" nozzles for tube cleaning applications. Each is made of hardened stainless steel, features **4 jets @ 90°** that use high pressure sapphire inserts, and the cut-outs on the ones 3" and above save a great deal of added weight. **The largest is 6" wide.**

Please specify orifice size, pressure and flow when ordering.



Part #	Size	# Jets
17-010-001	2"	4
17-010-002	4"	4
17-010-003	5"	4
17-010-004	6"	4
17-010-005	3"	4
17-010-006	5.5"	4



Sapphire Insert Screwdriver APS offers this specialized quality screwdriver for use in installing the slotted sapphire nozzle inserts into the sleeves. It features a magnetic butt, pocket clip and 1/8" blade just perfect for the job.



Part #	Description
17-006-100	Screwdriver Assembly, Hex Jewel W/Magnet Assy
17-006-101	Screwdriver Assembly, Slotted Jewel W/Magnet

40K FITTINGS

40K Slimline Couplings APS makes a variety of slimline couplings especially for water jetting service. All are made from high durability stainless steel. A wide range of sizes are available. Please specify size when ordering.



Part #	Description	PSI / Bar
22-001-001	1/4" HP RHF x 1/4" HP RHF	40K / 2758
22-001-002	1/4" UH/HP RHF x 1/4" UH/HP LHF	40K / 2758
22-001-003	1/4" UH/HP LHF x 1/4" UH/HP LHF	40K / 2758
22-001-004	5/16" UH RHF x 5/16" UH RHF	40K / 2758
22-001-005	3/8" UH/HP RHF x 3/8" UH/HP RHF	40K / 2758
22-001-006	3/8" UH/HP RHF x 3/8" UH/HP LHF	40K / 2758
22-001-007	3/8" HP LHF x 3/8" HP LHF	40K / 2758
22-001-008	7/16" UH RHF BUTTON x 7/16" UH RHF Button	40K / 2758
22-001-009	9/16" UH RHF BUTTON x 1/4" UH RHF Button	40K / 2758
22-001-010	9/16" UH RHF BUTTON x 5/16" UH RHF Button	40K / 2758
22-001-011	9/16" UH RHF BUTTON x 5/16" UH RHF Button	40K / 2758
22-001-012	9/16" UH F BUTTON x 7/16" UH RHF Button	40K / 2758
22-001-013	9/16" UH RHF BUTTON x 9/16" UH RHF Button	40K / 2758
22-001-014	9/16" UH RHF BUTTON x 9/16" UH LHF Button	40K / 2758

Part #	Description	PSI / Bar
22-001-015	9/16" HP RHF x 9/16" HP RHF	40K / 2758
22-001-016	9/16" HP RHF x 9/16" HP LHF	40K / 2758
22-001-017	9/16" HP LHF x 9/16" HP LHF	40K / 2758
22-001-018	3/4" HP RHF x 3/4" HP RHF	40K / 2758
22-001-019	3/4" HP RHF x 3/4" HP LHF	40K / 2758
22-001-020	3/4" HP LHF x 3/4" HP LHF	40K / 2758
22-001-021	1" HP RHF x 1" HP RHF	40K / 2758
22-001-022	1" HP RHF x 1" HP RHF	40K / 2758
22-001-023	1" HP RHF x 1" HP LHF	40K / 2758
22-001-024	1" HP LHF x 1" HP LHF	40K / 2758
22-001-025	9/16" HP RHF x 1/4" HP RHF	40K / 2758
22-001-026	9/16" HP RHF x 3/8" HP RHF	40K / 2758
22-001-027	9/16" HP LHF x 1/4" HP LHF	40K / 2758
22-001-028	9/16" HP LHF x 3/8" HP LHF	40K / 2758

40K Gland Nuts & Collars Advanced Pressure Systems proudly offers a growing line of quality water jetting fittings for every pressure and application.



Part #	Description	PSI/Bar
22-002-001	Collar, 1/4" High Pressure 60K	40K / 2758
22-002-002	Collar, 3/8" High Pressure 60K	40K / 2758
22-002-003	Collar, 9/16" High Pressure 60K	40K / 2758

Part #	Description	PSI/Bar
22-003-001	Gland Nut, 1/4" High Pressure	40K / 2758
22-003-002	Gland Nut, 3/8" High Pressure	40K / 2758
22-003-003	Gland Nut, 9/16" High Pressure 60K	40K / 2758



40K Rigid Lances Advanced Pressure Systems proudly offers a growing line of quality rigid lances every pressure and application. When ordering, please specify left or right hand thread, length and thread size.



Part #	Connection	I.D. & O.D.	PSI/Bar
52-005-XXX	3/8" HP	.370 OD x .156 ID	40K / 2758
52-003-XXX	9/16" HP	.557 OD x .250 ID	40K / 2758
52-000-XXX	1/4" HP	.247 OD x .089 ID	60K / 4137
52-001-XXX	3/8" HP	.370 OD x .125 ID	60K / 4137
52-002-XXX	9/16" HP	.557 OD x .187 ID	60K / 4137

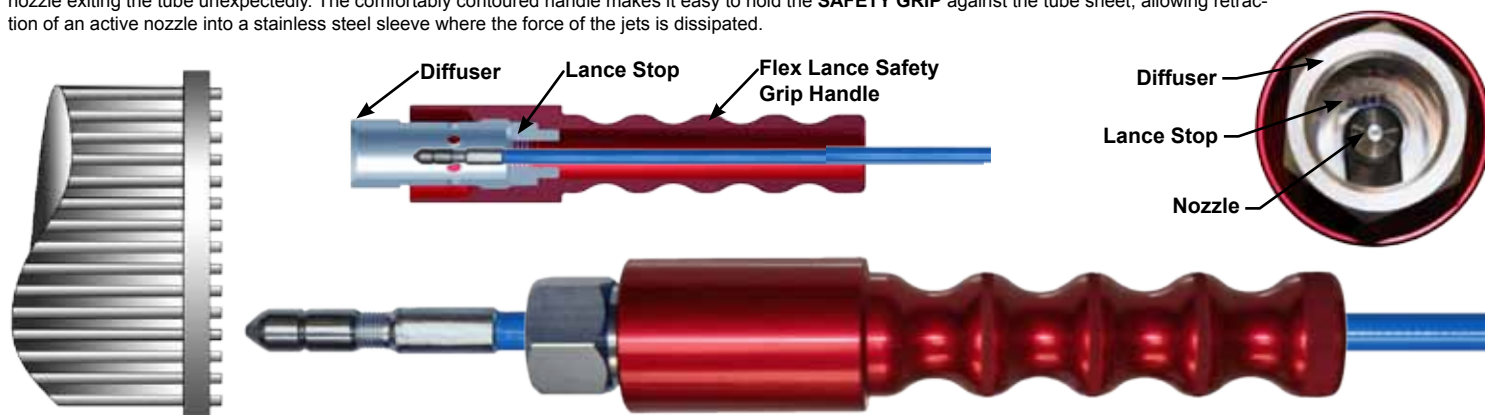
40K Flex Lance Stingers/Nipples Advanced Pressure Systems proudly offers a growing line of quality rigid lances every pressure and application. Left hand or right hand threaded, coned, button seal and UHM threads are available. When ordering, please specify length and thread size.

Part #	Thread	Length, In.
22-014-003	1/4" HP	3"
22-014-004	1/4" HP	4"
22-014-006	1/4" HP	6"
22-014-008	1/4" HP	8"
22-014-012	1/4" HP	12"
22-014-018	1/4" HP	18"
22-014-024	1/4" HP	24" (2 Ft.)
22-014-036	1/4" HP	36" (3 Ft.)
22-014-048	1/4" HP	48" (4 Ft.)
22-015-003	3/8" HP	3"
22-015-004	3/8" HP	4"
22-015-006	3/8" HP	6"
22-015-008	3/8" HP	8"

Part #	Thread	Length, In.	PSI/Bar
22-015-012	3/8" HP	12"	
22-015-018	3/8" HP	18"	
22-015-024	3/8" HP	24" (2 Ft.)	
22-015-036	3/8" HP	36" (3 Ft.)	
22-015-048	3/8" HP	48" (4 Ft.)	
22-616-003	9/16" HP	3"	40K / 2758
22-616-004	9/16" HP	4"	40K / 2758
22-616-006	9/16" HP	6"	40K / 2758
22-616-008	9/16" HP	8"	40K / 2758
22-616-012	9/16" HP	12"	40K / 2758
22-616-018	9/16" HP	18"	40K / 2758
22-616-024	9/16" HP	24" (2 Ft.)	40K / 2758
22-616-036	9/16" HP	36" (3 Ft.)	40K / 2758
22-616-048	9/16" HP	48" (4 Ft.)	40K / 2758

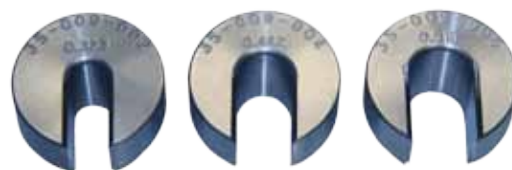
Part #	Thread	Length, In.	PSI/Bar
22-616-003	9/16" HP	3"	60K / 4137
22-616-004	9/16" HP	4"	60K / 4137
22-616-006	9/16" HP	6"	60K / 4137
22-616-008	9/16" HP	8"	60K / 4137
22-616-012	9/16" HP	12"	60K / 4137
22-616-018	9/16" HP	18"	60K / 4137
22-616-024	9/16" HP	24" (2 Ft.)	60K / 4137
22-616-036	9/16" HP	36" (3 Ft.)	60K / 4137
22-616-048	9/16" HP	48" (4 Ft.)	60K / 4137

Flex Lance Safety Grip The **FLEX LANCE SAFETY GRIP** is designed to minimize the risk of injury to flex lance operators caused by a live nozzle exiting the tube unexpectedly. The comfortably contoured handle makes it easy to hold the **SAFETY GRIP** against the tube sheet, allowing retraction of an active nozzle into a stainless steel sleeve where the force of the jets is dissipated.



The **FLEX LANCE SAFETY GRIP** is simple to install and is quickly adapted to handle various lance sizes by selecting the appropriately sized **LANCE STOP**.

Part #	Flex Lance Safety Grip
35-009-000	COMPLETE ASSEMBLY: Small Flex Lance Safety Grip*
35-009-001	HANDLE: Small Flex Lance Safety Grip
35-009-007	DIFFUSER: Small Flex Lance Safety Grip



Installation of LANCE STOPS: Simply unscrew the **DIFFUSER** from the **SAFETY GRIP HANDLE**, which will allow the **LANCE STOP** to be removed. Insert the new lance into the back of the **SAFETY GRIP HANDLE**. Select the correct size **LANCE STOP** for the lance to be used and place it onto the lance behind the nozzle end fitting. Insert the nozzle through the **DIFFUSER** and tighten the assembly into the **HANDLE**. (Note: the larger diameter end of the Lance Stop must be next to the end fitting.)

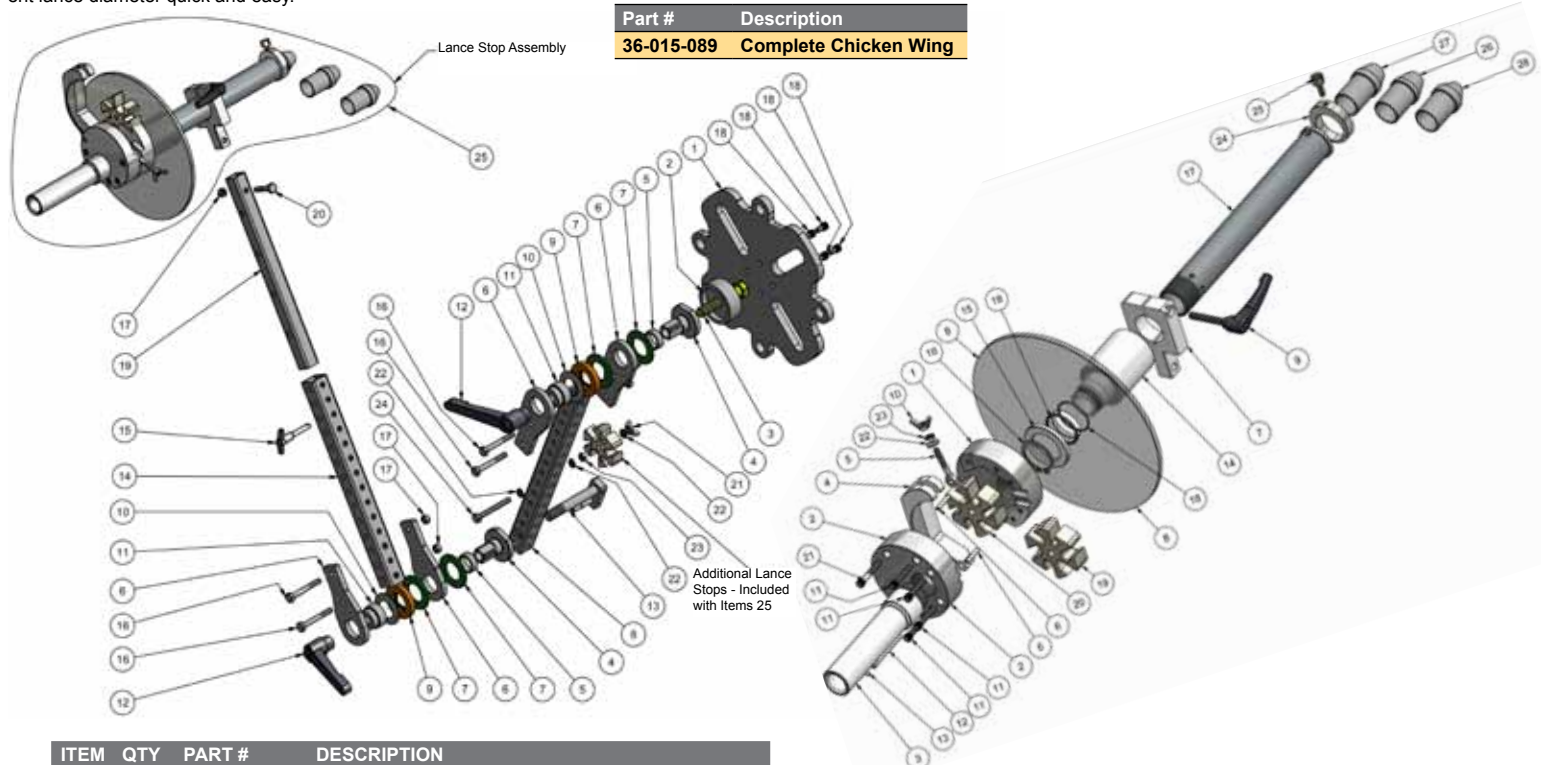
Part #	Lance Stop Description
35-009-002	Stop .323 Flex Lance Safety Guard Lance
35-009-003	Stop .390 Flex Lance Safety Guard Lance
35-009-004	Stop .442 Flex Lance Safety Guard Lance (2005 Lance)
35-009-005	Stop .510 Flex Lance Safety Guard Lance (2006 Lance)
35-009-006	Stop .725 Flex Lance Safety Guard Lance (2108 Lance)
35-009-010	Stop .290 Flex Lance Safety Guard Lance (3/2 & 3004 Lance)
35-009-011	Stop .530 Flex Lance Safety Guard Lance (6005 Lance)
35-009-012	Stop .570 Flex Lance Safety Guard Lance (1/4" NPT & 9/16" Rigid Lance Size)
35-009-013	Stop .470 Flex Lance Safety Guard Lance (4005 Lance)
35-009-014	Stop .870 Flex Lance Safety Guard Lance

LANCE SAFETY STOP

Articulated Flex Lance Safety Stop For Tube Sheet Mounting

This takes the Hand Held "Flex Lance Safety Grip" to the next level. This versatile lance stop/anti-withdrawal device attaches easily to the tube sheet for safer pipe cleaning operations. It features ready adaptability to vertical or horizontal applications and its wide range of expansion accommodates any size of tube sheet. Construction is galvanized steel with aluminum handles and includes a Lexan® splash guard.

The stops for six sizes of lances are provided by a quick-change insert, which is built into the design. This eliminates the problem of lost lance stops and makes changing to a different lance diameter quick and easy.



ITEM	QTY	PART #	DESCRIPTION
1	1	36-015-026	Chicken Wing Mounting Plate
2	1	36-015-025	Clutch Mounting Plate
3	1	10-121-325	Hex. Head Bolt 5/8"-11 x 3-1/4" long
4	2	36-015-046	Limiter - AWD Modified Torque
5	2	36-015-034	Bearing - Torque Limiter
6	4	36-015-016	Pivot Mounting Plate
7	4	36-015-033	Torque Limiter Fiber Washer
8	1	36-015-018.1	Telespar Arm
9	2	36-015-035	Torque Limiter Spacer (Orange)
10	2	36-015-032	Spring Washer
11	2	36-015-023	Spacer for Torque Limiter
12	2	36-015-028	Handle
13	1	36-015-068	Pivot Pin & Locking Plate Assembly
14	1	36-015-019	Telespar Arm
15	1	36-015-027	Extension Locking Pin
16	4	10-015-250	Hex. Head Bolt 5/16"-18 x 2-1/2" long
17	5	10-100-003	Nylon Lock Nut 5/16"-18 SS
18	4	10-002-050	SHCS 5/16"-18 x 1/2" long SS
19	1	36-015-088	Telespar Extension Arm
20	1	10-015-150	Hex. Head Bolt 5/16"-18 x 3" long
21	1	36-015-076	Wing Nut 5/16"-18 SS
22	3	10-020-002	Lock Washer 5/16" SS
23	1	10-100-006	Jam Hex. Nut 5/16"-18 SS
24	1	10-060-275	Hex. Head Bolt (full thread) 5/16"-18 x 2-3/4" long SS.
25	1	36-015-082-3	Multi Lance Stop Assembly

ITEM	QTY	PART #	DESCRIPTION
1	1	36-015-070	Lance Stop Body - Part 1
2	1	36-015-072	Lance Stop Body - Part 2
3	1	36-015-073	Lance Guide Tube
4	1	36-015-071	Latch - Lance Stop Holder
5	1	36-015-074	Latch Bolt
6	2	36-015-080	Dowel Pin
7	1	36-015-069	Clamp
8	1	36-015-044	Splash Shield (1.5" Size)
9	1	36-015-031	Handle
10	1	36-015-075	Wing Nut
11	4	10-001-125	SHCS 1-1/4" long
12	1	36-015-077	Latch Pivot Pin
13	1	10-022-031	Retaining Clip
14	1	36-015-081	Extension Tube Holder
15	1	36-015-084	Splash Shield Retaining Ring
16	1	10-024-150	Retaining Clip (5100-150) SS
17	1	36-015-087	Extension Tube
18	2	30-002-126	O-Ring Dur. 70
19	1	36-015-007.1	Lance Stop - Parker
20	1	36-015-007.2	Lance Stop - Spir Star
21	1	10-001-150	SHCS 1-1/2" long
22	1	10-010-003	Flat washer
23	1	10-020-001	Lock washer
24	1	36-015-159	Retaining Ring - Guide Bushing
25	1	36-015-160	Hex. Head Thumb Screw
26	1	36-015-161	Flex Lance - Guide Bushing 0.625 I.D.
27	1	36-015-162	Flex Lance - Guide Bushing 0.750 I.D.
28	1	36-015-163	Flex Lance - Guide Bushing 0.437 I.D.

Change of Lance Stop Size:

1. Unscrew Cover.
2. Open Lance Stop Retainer Latch.
3. Pull out Lance Stop Insert
4. Feed lance into Support Tube.
5. Select Stop size and install Insert.
6. Close Latch and replace Cover.

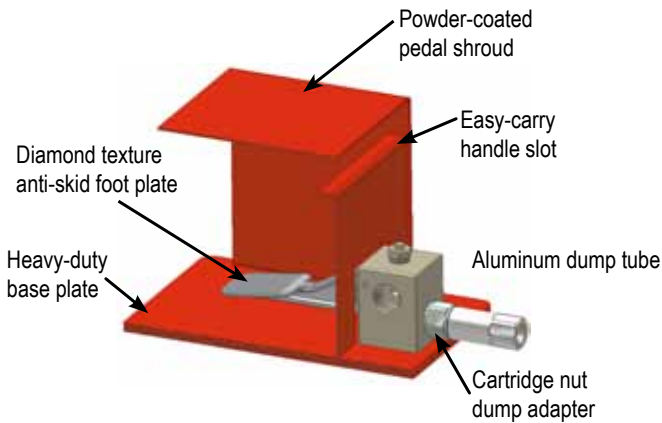
Spir-Star
Part # 36-015-007.2



Parker
Part # 36-015-007.1

40K Foot Operated Dump Style Control Guns

Typical Foot Gun Hookup These foot operated control valves (foot guns) are designed for smooth reliable operation. They are easily rebuilt in the field in 30 seconds by unscrewing the dump tube, which removes the used valve assembly. The operator then snaps a new cartridge style valve into the dump tube adapter and returns the whole assembly to the gun.



Part #	Description
61-040-003	Complete foot Style control gun

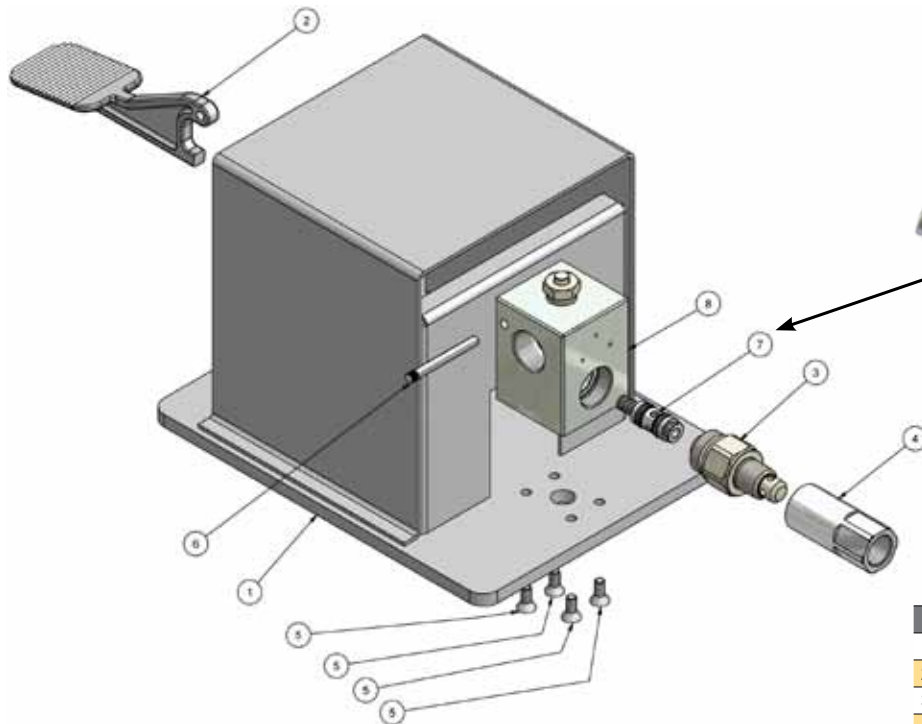
Features:

- Fully enclosed safety shrouds.
- Easy-carry handles.
- Quick-change cartridge overhaul.
- Non-slip diamond texture foot pedals.
- Powder-coated pedal shroud
- Cartridge nut / dump adapter
- 9/16" HP connection
- Aluminum dump tube
- Heavy-duty base plate

Easy-Change Cartridge

Assembly The cartridge assembly enables rebuilding of the gun in the field in 30 seconds or less with common tools.

#60-040-005



Item	Part #	Description
1	61-010-004	Foot Gun Base Complete Assembly
2	61-010-007	Foot Pedal
3	61-040-002	Dump Adapter 40K Foot Gun
4	61-010-002	Dump Tube
5	10-201-063	C'sink Screw 1/2"-20 x 5/8" long
6	61-020-005	Foot Pedal Pivot Pin
7	60-040-005	40K Gun Cartridge Assembly
8	61-040-001	Foot Gun Block 40K Assy.

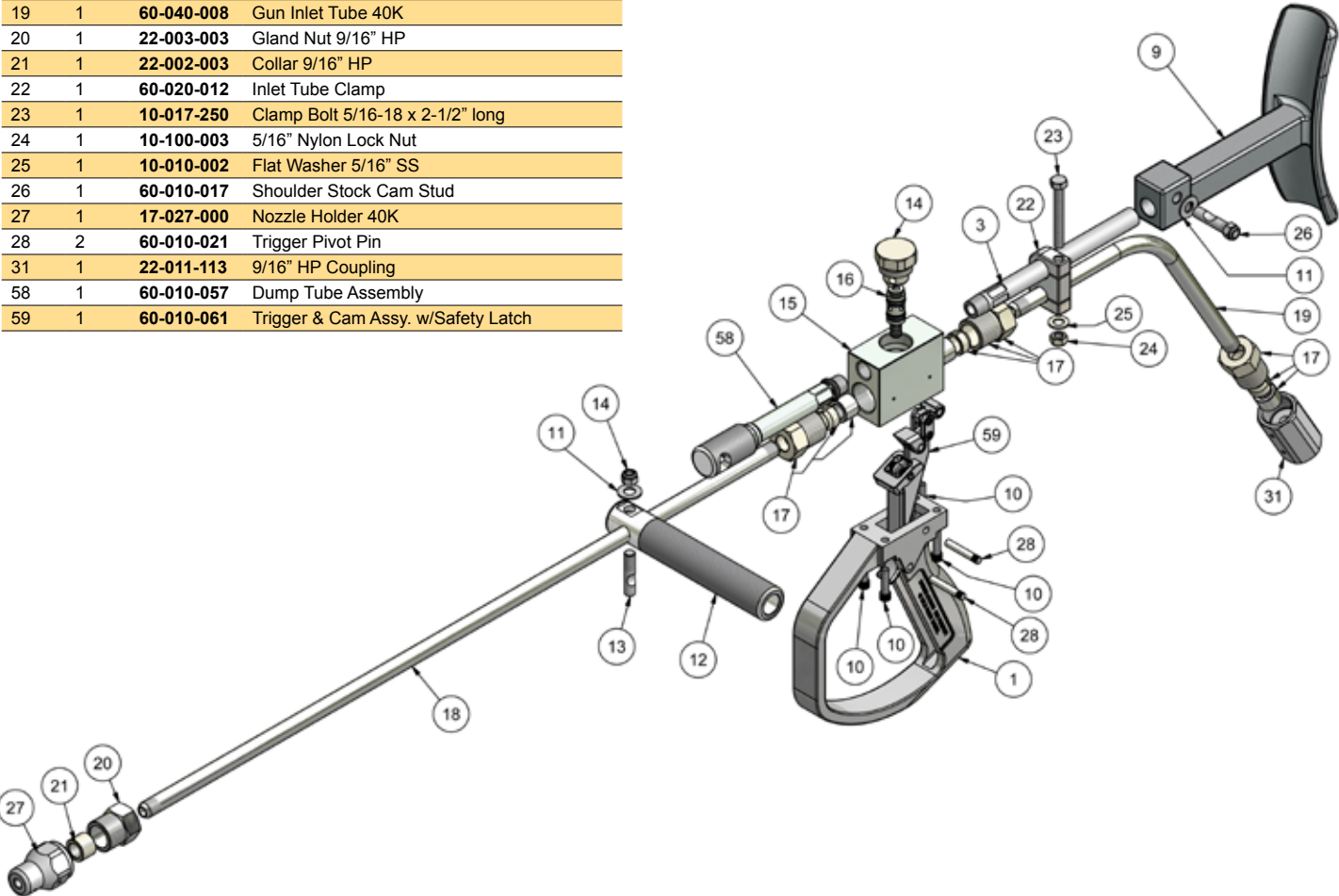
40K Hand-Held Dump Style Control Guns



Part #	Description	Barrel
60-040-007	Complete hand-held dump Style control gun	9/16"

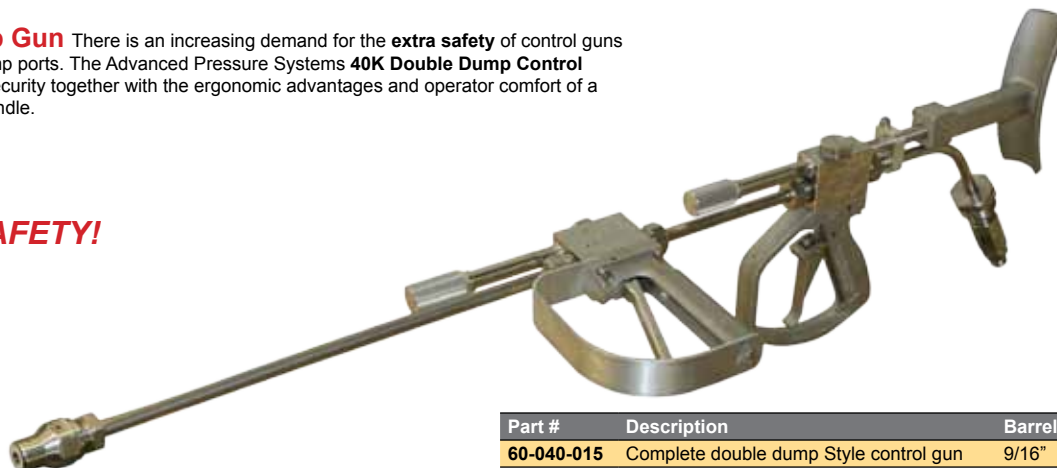
- These guns are the new standard and are built tough for the demands of today's contracting environment.
- These control guns incorporate many **superior features** that are in demand today.
- They are **light weight** and are easy to overhaul in the field using a cartridge which is interchangeable with Jetstream guns of the same pressure rating.
- The shoulder stock and handgrip are both adjustable and the trigger has a safety lock to prevent accidental discharge.
- Front barrels are 48" long with standard 9/16" MP size.

ITEM	QTY	PART #	DESCRIPTION
1	1	60-010-001	Gun Handle
3	1	60-010-009	Shoulder Stock Tube
9	1	60-010-003	Shoulder Stock
10	4	10-001-100	SHCS 1/4"-20 x 1" long SS
11	2	10-010-001	3/8" SS Plain Washer
12	1	60-020-008	Front Handle 9/16" HP Barrel
13	1	60-020-009	Cam Stud (incl. Nylon Lock Nut) - 9/16" Barrel
14	1	60-040-006	Cartridge Nut
15	1	60-040-001	Hand Gun Block 40K
16	1	60-040-005	Cartridge Assembly 40K
17	3	22-008-003	9/16" HP Anti-Vibe Collet Assembly
18	1	22-016-048	9/16" HP Nipple 48" long
19	1	60-040-008	Gun Inlet Tube 40K
20	1	22-003-003	Gland Nut 9/16" HP
21	1	22-002-003	Collar 9/16" HP
22	1	60-020-012	Inlet Tube Clamp
23	1	10-017-250	Clamp Bolt 5/16-18 x 2-1/2" long
24	1	10-100-003	5/16" Nylon Lock Nut
25	1	10-010-002	Flat Washer 5/16" SS
26	1	60-010-017	Shoulder Stock Cam Stud
27	1	17-027-000	Nozzle Holder 40K
28	2	60-010-021	Trigger Pivot Pin
31	1	22-011-113	9/16" HP Coupling
58	1	60-010-057	Dump Tube Assembly
59	1	60-010-061	Trigger & Cam Assy. w/Safety Latch



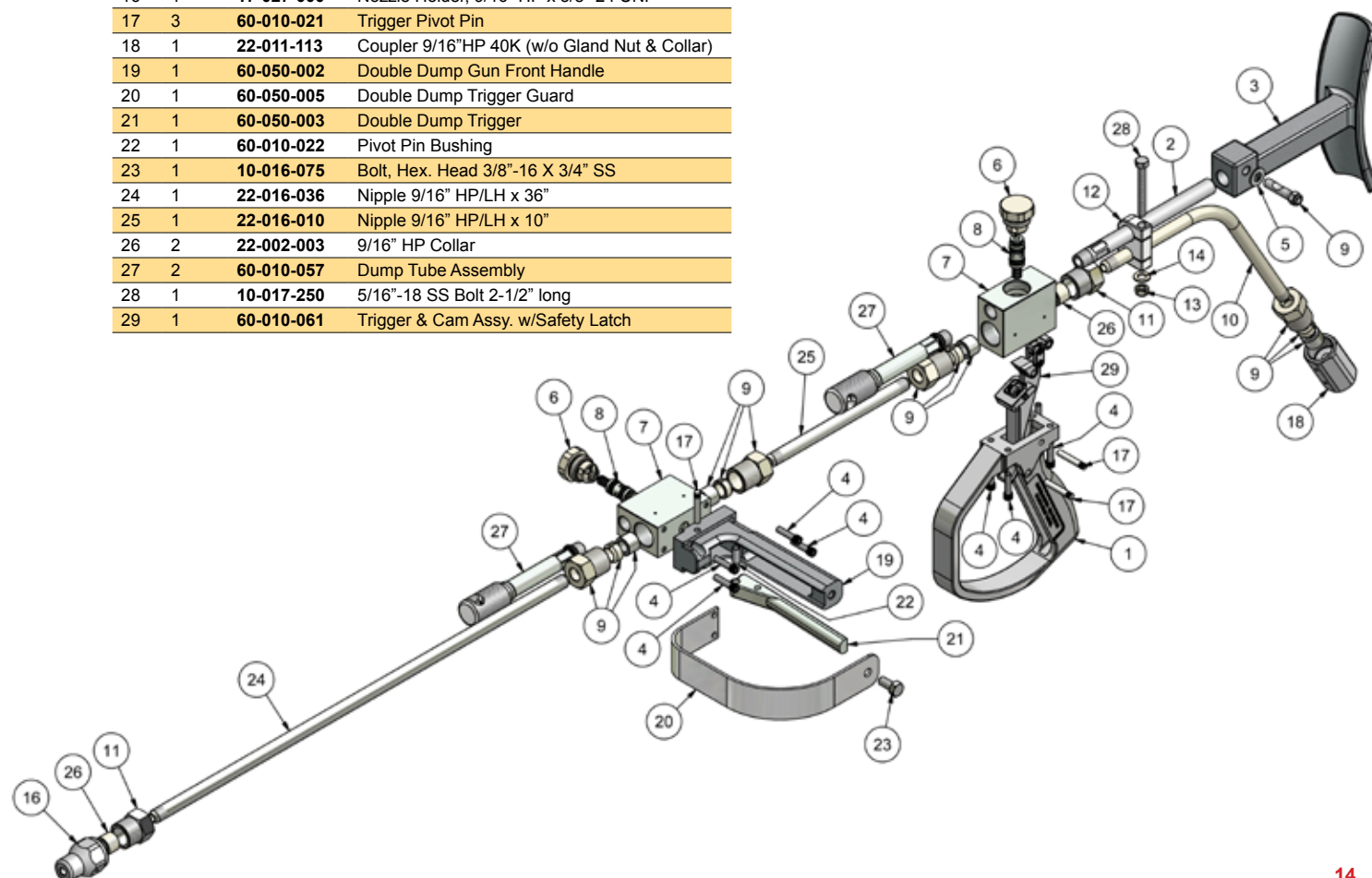
40K Double Dump Gun There is an increasing demand for the **extra safety** of control guns which incorporate dual dump ports. The Advanced Pressure Systems **40K Double Dump Control Guns** feature this added security together with the ergonomic advantages and operator comfort of a specially designed front handle.

EXTRA SAFETY!

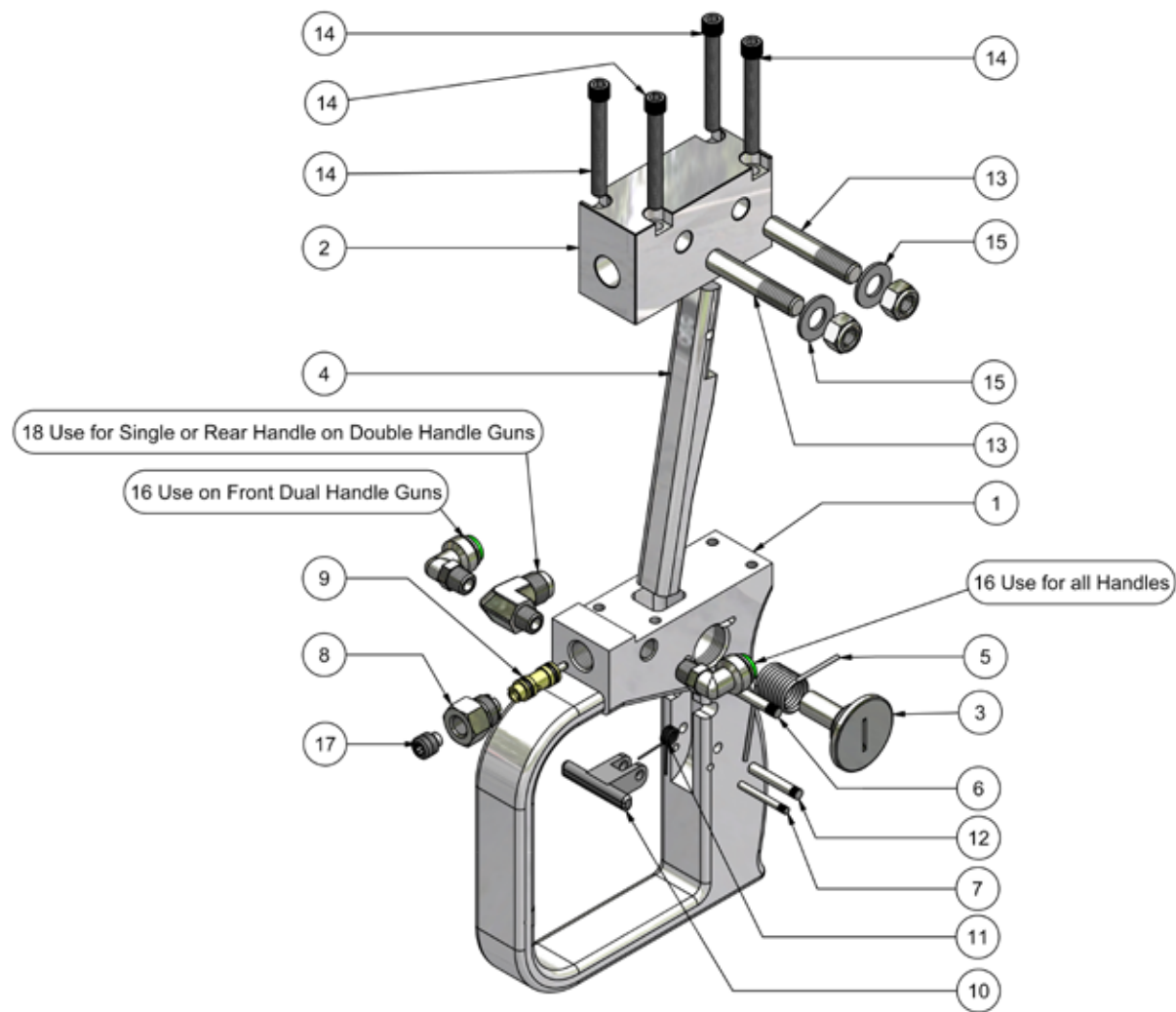


Part #	Description	Barrel
60-040-015	Complete double dump Style control gun	9/16"

ITE	QTY	PART #	DESCRIPTION
1	1	60-010-001	Gun Handle
2	1	60-010-009	Shoulder Stock Tube
3	1	60-010-003	Shoulder Stock
4	8	10-001-100	SHCS 1/4"-20 x 1" long
5	1	10-010-001	3/8" SS washer
6	2	60-040-006	Cartridge Nut 40K
7	2	60-040-001	40K Gun Block
8	2	60-040-005	40K Cartridge Assembly
9	4	22-008-003	9/16" Anti-Vibe Gland Nut and Collar Assy.
10	1	60-040-008	Inlet Tube 40K
11	2	22-003-003	Gland Nut
12	1	60-020-012	Inlet Tube Clamp
13	1	10-100-003	Nylon Locknut 5/16"-18 SS
14	1	10-010-002	Flat Washer 5/16" SS
15	1	60-010-017	Shoulder Stock Cam Stud
16	1	17-027-000	Nozzle Holder, 9/16" HP x 3/8"-24 UNF
17	3	60-010-021	Trigger Pivot Pin
18	1	22-011-113	Coupler 9/16"HP 40K (w/o Gland Nut & Collar)
19	1	60-050-002	Double Dump Gun Front Handle
20	1	60-050-005	Double Dump Trigger Guard
21	1	60-050-003	Double Dump Trigger
22	1	60-010-022	Pivot Pin Bushing
23	1	10-016-075	Bolt, Hex. Head 3/8"-16 X 3/4" SS
24	1	22-016-036	Nipple 9/16" HP/LH x 36"
25	1	22-016-010	Nipple 9/16" HP/LH x 10"
26	2	22-002-003	9/16" HP Collar
27	2	60-010-057	Dump Tube Assembly
28	1	10-017-250	5/16"-18 SS Bolt 2-1/2" long
29	1	60-010-061	Trigger & Cam Assy. w/Safety Latch



#60-073-010 and 60-073-015 Air Controlled 40K Control Gun Exploded View



#60-073-010 Air Controlled 40K
Control Gun Parts List

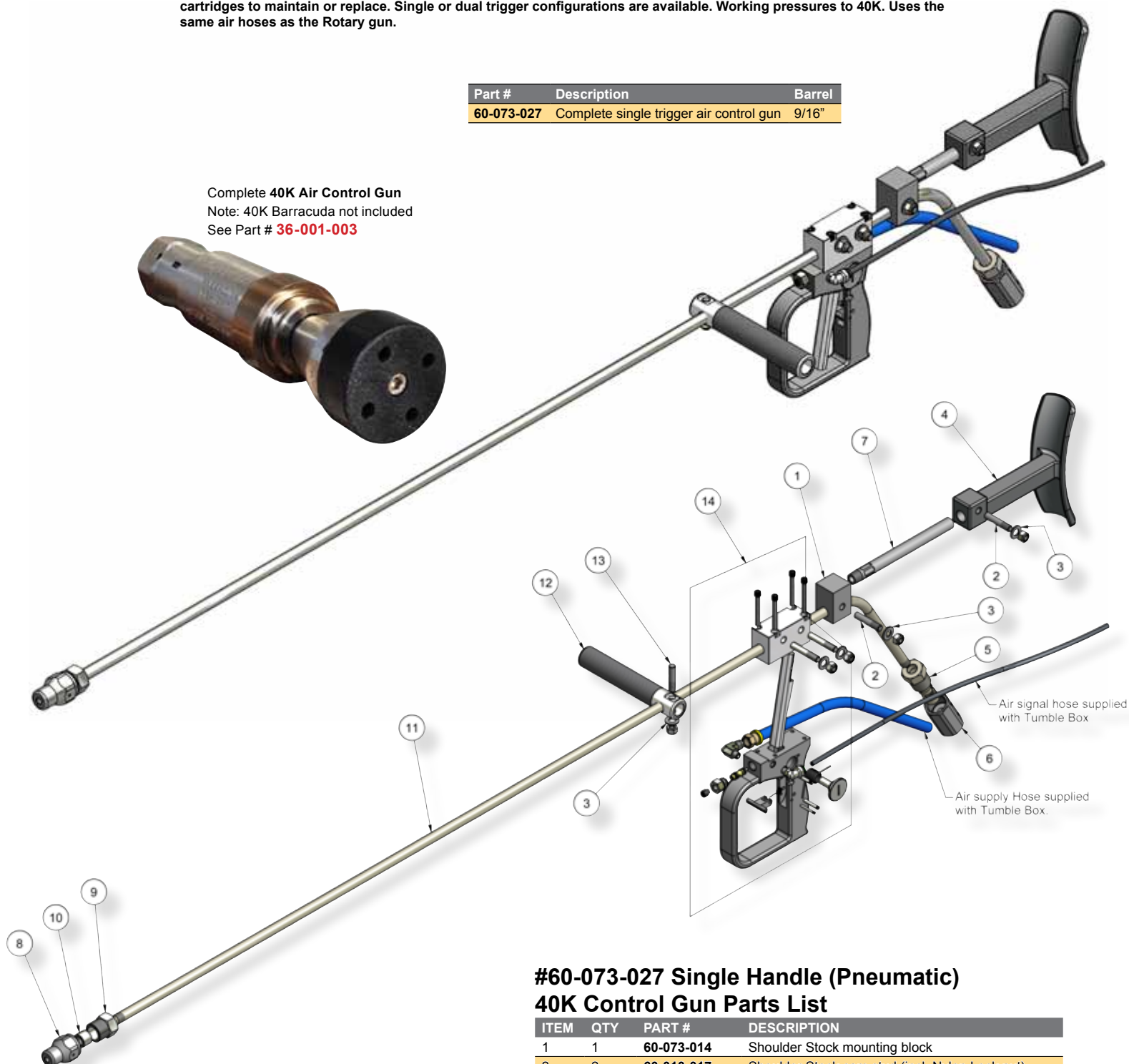
ITEM	QTY	PART #	DESCRIPTION
1	1	60-073-001	Air Control Gun Handle
2	1	60-073-002	Air Control Gun - Barrel block
3	1	60-073-003	Trigger Spring Mandrel
4	1	60-073-004	Trigger
5	1	60-073-005	Trigger Spring
6	1	60-073-006	Trigger Pivot Pin
7	1	60-073-007	Safety Latch Stop
8	1	60-073-008	Cartridge valve Retainer Nut
9	1	60-073-009	Poppet Cartridge Valve
10	1	60-030-003	Safety Latch
11	1	60-030-006	Safety Latch Spring
12	1	60-073-011	Safety Latch Pivot Pin
13	2	60-073-012	Cam Stud - 9/16" Barrel (incl. Nylon Lock Nut)
14	4	10-001-200	1/4"-20 SHCS x 2" long
15	2	10-010-001	3/8" Plain washer SS
16	2	60-073-013	Prestolok Compact Elbow
17	2	15-118-000	1/8"NPT x socket head plug.
18	1	60-073-018	1/8"NPT x 3/8" JIC Prestolok Compact Elbow

40K Pneumatic Dual & Single Handle Control Guns

These guns, combined with the StoneAge Barracuda rotating nozzle, can be used in place of the more costly Rotary Barrel guns (e.g. COBRA) for most applications including surface preparation. These guns are used to send the air signal to a Tumble Box, which controls the flow of high pressure water. The gun does not have any high pressure seals, valves or cartridges to maintain or replace. Single or dual trigger configurations are available. Working pressures to 40K. Uses the same air hoses as the Rotary gun.

Part #	Description	Barrel
60-073-027	Complete single trigger air control gun	9/16"

Complete **40K Air Control Gun**
Note: 40K Barracuda not included
See Part # **36-001-003**



#60-073-027 Single Handle (Pneumatic) 40K Control Gun Parts List

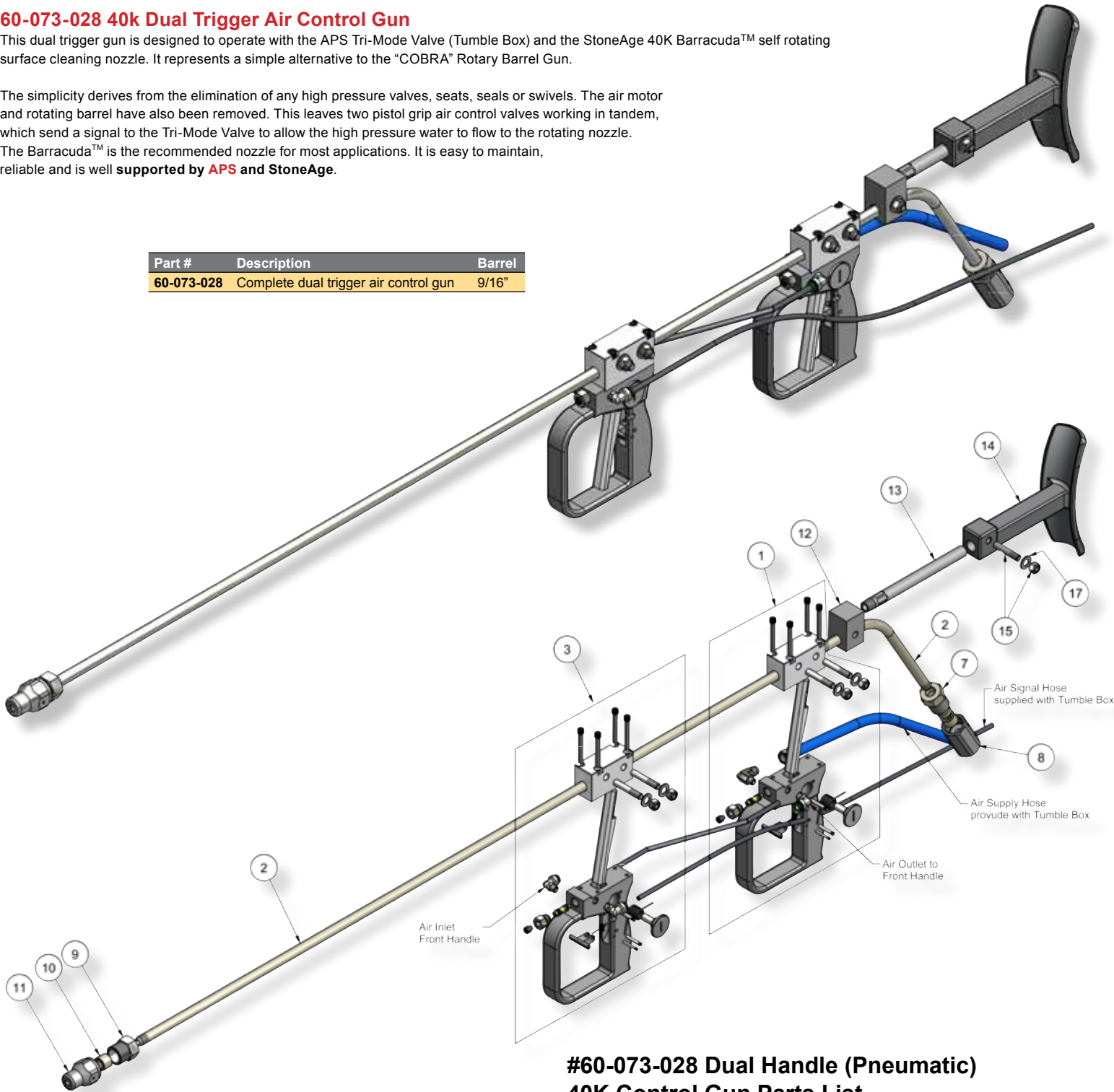
ITEM	QTY	PART #	DESCRIPTION
1	1	60-073-014	Shoulder Stock mounting block
2	2	60-010-017	Shoulder Stock cam stud (incl. Nylon Lock nut)
3	3	10-010-001	3/8" Plain washer SS.
4	1	60-010-003	Shoulder Stock
5	1	22-008-003	9/16" Anti Vibration Collet Assembly
6	1	22-011-113	9/16" HP 40K Coupler without Gland Nut & Collar
7	1	60-010-009	Shoulder Stock tube
8	1	17-027-000	Nozzle Holder 9/16"HP x 3/8"-24 UNF
9	1	22-003-003	9/16" HP Gland Nut
10	1	22-002-003	9/16" HP Collar
11	1	60-073-016	9/16" HP Air gun barrel 40K
12	1	60-020-008	Front Handle 9/16" Barrel
13	1	60-020-009	Cam Stud 9/16" barrel (incl. Nylon locknut)
14	1	60-073-015	Pneumatic Control Gun - Single/Rear Assembly

60-073-028 40k Dual Trigger Air Control Gun

This dual trigger gun is designed to operate with the APS Tri-Mode Valve (Tumble Box) and the StoneAge 40K Barracuda™ self rotating surface cleaning nozzle. It represents a simple alternative to the “COBRA” Rotary Barrel Gun.

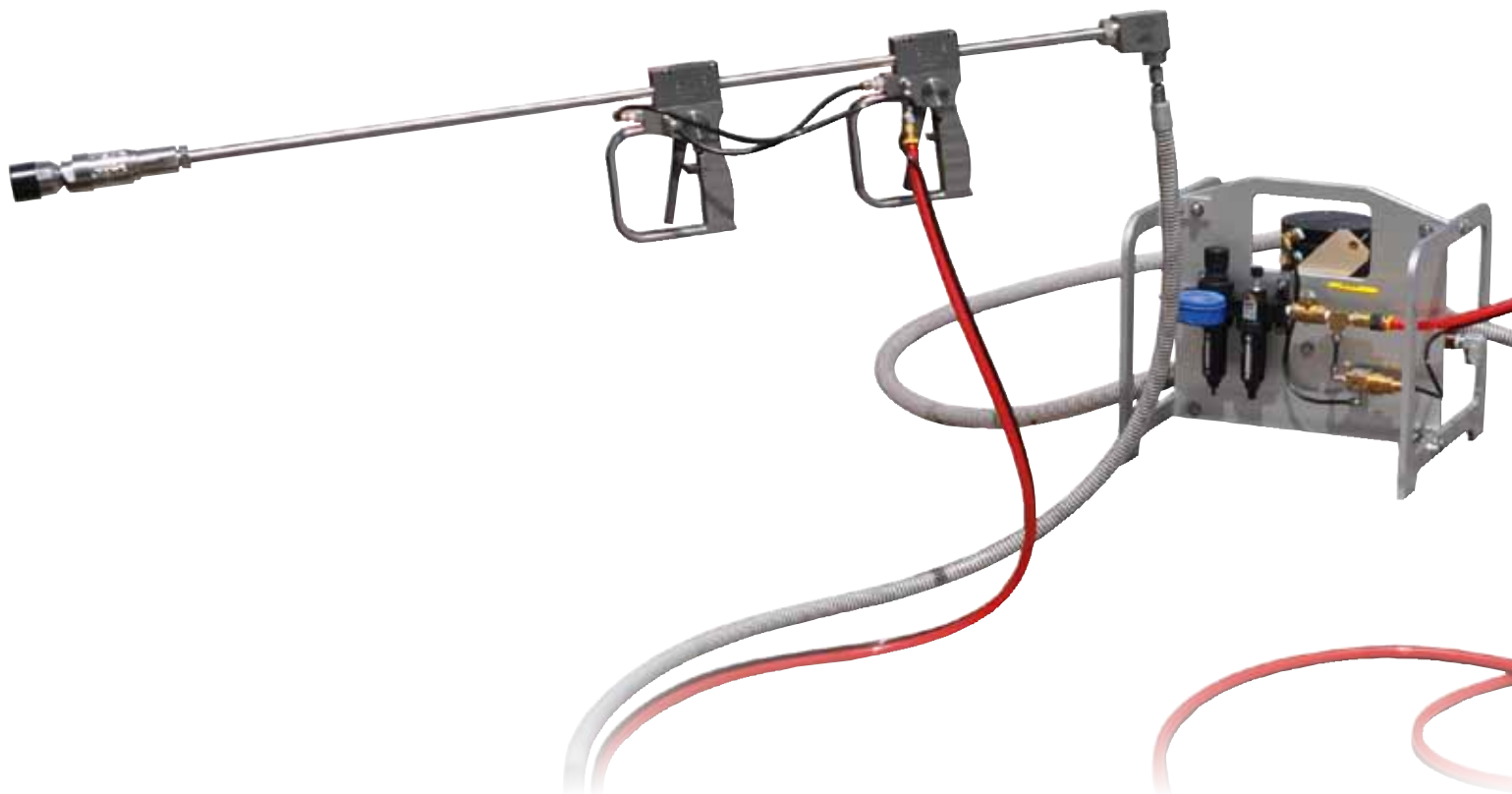
The simplicity derives from the elimination of any high pressure valves, seats, seals or swivels. The air motor and rotating barrel have also been removed. This leaves two pistol grip air control valves working in tandem, which send a signal to the Tri-Mode Valve to allow the high pressure water to flow to the rotating nozzle.

The Barracuda™ is the recommended nozzle for most applications. It is easy to maintain, reliable and is well supported by **APS** and **StoneAge**.



#60-073-028 Dual Handle (Pneumatic)
40K Control Gun Parts List

ITEM	QTY	PART #	DESCRIPTION
1	1	60-073-010	Air Gun Rear Handle Assembly
2	1	60-073-010	Air Gun Front Handle Assembly
3	1	60-073-016	9/16" Barrel for 40K Dual Handle Air Gun
4	1	60-073-014	Shoulder Stock Mounting Block
5	2	60-010-017	Cam Stud (includes Nylon Locknut)
7	2	10-010-001	3/8" Plain Washer SS.
8	1	60-010-003	Shoulder Stock
9	1	22-008-003	9/16" Anti Vibration Collet Assembly
10	1	22-011-113	1/16" HP 40K Coupler without Gland Nut & Collar.
11	1	60-010-009	Shoulder Stock Tube
14	1	17-027-000	Nozzle Holder 9/16" HP x 3/8"-24UNF (40K Dump Gun)
15	1	22-003-003	9/16" HP Gland Nut
16	1	22-002-003	9/16" HP Collar



The 40K “TRI-MODE VALVE” (commonly called a Tumble Box) has been developed after extensive research aimed at identifying the features that contractors and end users needed most. The air side incorporates a robust easy to operate shut off valve, a large easy to read horizontally mounted gauge, which is protected by a heavy rubber buffer. The shuttle valve is a **simple cartridge type design**, which is easy to service and replace.

Air Side



Part #	Description
60-070-076	Complete Tumble Box

Cartridge Overhaul In less than a minute!



#60-070-111



Water Side

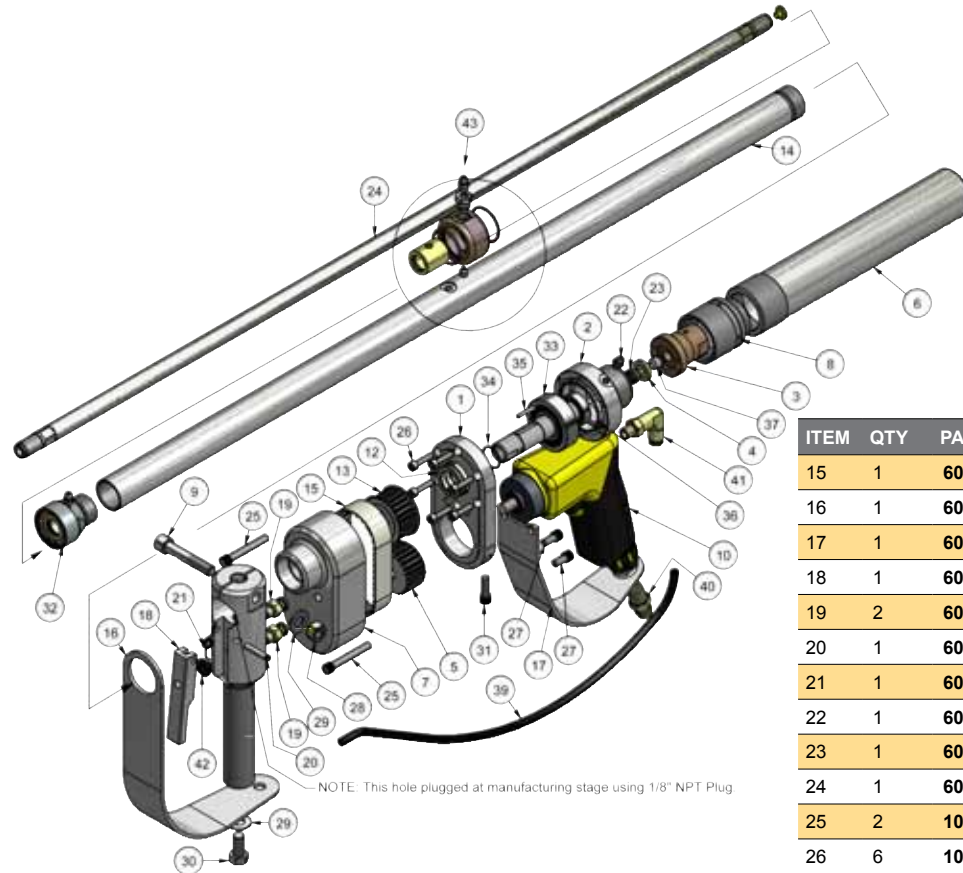
ROTATING BARREL CONTROL GUNS

The **APS COBRA** is an **air-operated control gun** with a rotating barrel. The simple **robust design**, combined with the high quality of manufacture, makes this the perfect tool for **Ultra High Pressure Jetting** applications. When used together with our **Tri-Mode Control Valve**, the combination is the most cost effective and easy to use and maintain system on the market. It is ideal for the removal of paint and corrosion leaving a white metal finish, which is ready for coating.

Nozzle Sold Separately



Part #	Barrel* Length	Overall Length	Rotation Speed	Weight	Air Demand		Operating Pressure	Max. Flow	Required Inlet Connection	Nozzle Connection
	In.	In.	RPM	Lbs.	Pressure PSI	Volume CFM	PSI	GPM		
60-072-001	36"	46"	1700-3000	10.75	90	22	40,000	7	3/8" HP Female	9/16" HP Button
60-072-062	48"	58"	1700-3000	12.3	90	22	40,000	7	3/8" HP Female	9/16" HP Button



NOTE: This hole plugged at manufacturing stage using 1/8" NPT Plug



ITEM	QTY	PART #	DESCRIPTION
1	1	60-072-002	40 K COBRA - Back plate
2	1	60-072-004	40K COBRA - Swivel bearing housing
3	1	60-072-005	40K COBRA - Swivel inlet adapter
4	1	60-072-006	40K COBRA - Swivel seal back up ring
5	1	60-072-007	40K COBRA - Pulley, drill motor. Alum. 26 pitch drive
6	1	60-072-008	40K COBRA - Hose protector
7	1	60-072-009	40K COBRA - Belt drive cover
8	1	60-072-010	40K COBRA - Bearing retaining cap
9	1	60-072-012	40K COBRA - Cam Stud/Barrel shroud
10	1	60-072-013	40K COBRA - Barrel shroud
11	1	60-072-015	40K COBRA - Front handle
12	1	60-072-016	Grease seal
13	1	60-072-020	40K COBRA - Timing/Drive sprocket
14	1	60-072-019	40K COBRA - Barrel shroud

ITEM	QTY	PART #	DESCRIPTION
15	1	60-072-022	Timing/Drive Belt
16	1	60-072-027	40K COBRA - Air Motor trigger guard
17	1	60-072-028	40K COBRA - Front handle trigger guard
18	1	60-072-025	40K COBRA - Trigger, Front handle
19	2	60-072-031	Connector - 1/8" NPT Prestolok
20	1	60-072-032	40K COBRA - Front handle trigger pin
21	1	60-072-033	40K COBRA - Front handle trigger pin
22	1	60-072-023	Grease zerk
23	1	60-072-026	Oil/Grease seal
24	1	60-072-035	40K COBRA - Barrel 9/16"-18 UHM B/E x 34-3/16" long
25	2	10-001-175	SHCS 1/4"-20 x 1-3/4" long
26	6	10-008-075	SHCS 10-32 x 3/4" long.
27	2	10-001-050	SHCS 1/4"-20 x 1/2" long
28	1	10-100-002	3/8"-16 Nylon Lock Nut
29	2	10-010-001	Flat washer 3/8" SS
30	1	10-016-075	Hex. bolt, 3/8"-16 x 3/4" long SS.
31	1	10-003-075	SHCS 1/4"-28 x 3/4" long
32	1	60-072-070	Front bearing assembly
33	1	60-072-141	40K COBRA - Shaft/Bearing assembly
34	1	60-072-037	Spiral retaining clip
35	1	60-072-038	Keyway pin
36	1	30-002-031	O-Ring, 2-013 Buna 70 Dur.
37	1	60-072-049	40K COBRA - Swivel shaft seal
38	1	60-072-041	40K Brass button seal J/S
39	1	60-072-040	1/4" air tubing
40	1	60-072-042	Fitting 3/8" JIC x 1/4" NPT
41	1	60-072-039	Swivel elbow - 1/4" x 1/8" NPT Prestolok
42	1	60-072-034	Ribber insert for front trigger
43	1	60-072-024	Center Barrel Bearing Assembly

Whip Hose With Safety Shrouds Safe operation of hand held control guns requires the use of a Safety Shroud to guard the operator from failure of the hose fitting at the point where it is connected to the gun. Both of these shrouds have a nitrile outer cover, which resists oil, water and many solvents, and an inner layer of braided stainless steel. Safety Shrouds are essential equipment, and should be used in conjunction with a whip hose, which allows for connection to different high pressure sources, without the need to make frequent connections to the gun.

NEVER USE A CONTROL GUN WITHOUT A SAFETY SHROUD.



The European Type Shroud, which will fit virtually any gun, and is held in place by an adjustable strap. It is light in weight, and with universal application it is a popular alternative to the Standard Screw Type Shroud.

The Screw Type Shroud is held in place by a Shroud Adapter. This style is customized to fit specific guns and is very reliable and durable.

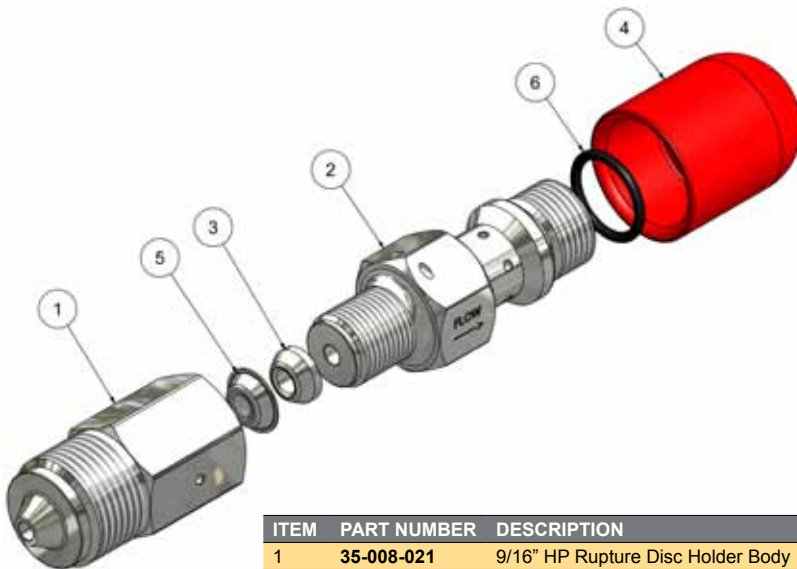
Part #	Whip Hose Shroud Assemblies
44-021-050	15-40K European Style Safety Shroud Assy. 3 Ft. Whip Hose
44-021-055	15-40K European Style Safety Shroud Assy. 6 Ft. Whip Hose
44-021-054	15-40K European Style Safety Shroud Assy. 10 Ft. Whip Hose
44-021-031	15-40K Screw Type Safety Shroud with 6 Ft. Whip Hose (6105ST x 5mm SS Type M x 9/16" MP LH SS Tube Nipple)

40K Rupture Disc Holder with Safety Shroud A Rupture Disc is an essential component in any system which contains a positive displacement pump. It provides protection against excessive pressure building up in the water blasting equipment connected to a pump. Advanced Pressure Systems has designed a rugged, compact Rupture Disc Holder, which offers safety features to prevent the use of coins or other disc substitutes, which may prove dangerous to operators or cause damage to the blasting equipment. The domed deflector minimizes spray in the event of a disc rupturing and the disc holder body is simple to remove for replacing a disc.



Part #	Description	PSI
35-008-020	9/16" HP RH Rupture Disc Assy.	20K-40K Range

40K Rupture Discs Advanced Pressure Systems offers a complete range of Rupture Discs for use in the Rupture Disc Holder. These discs will protect your personnel, pumps and associated equipment from over-pressuring. The standard range of disc bursting pressures are carefully selected to provide the ideal safety relief for all of your equipment. Special ratings can be provided upon request. Rupture discs for NLB & Jetstream equipment are also available to order.



ITEM	PART NUMBER	DESCRIPTION
1	35-008-021	9/16" HP Rupture Disc Holder Body
2	35-008-013	20/40K Rupture Disc Hold Down Nut
3	35-008-011	20/40K Rupture Disc Hold Down Ring
4	35-008-027	Rupture Disc Holder Shroud
5		Select Rupture Disc to suit Application
6	30-001-910	O-Ring 90 Dur.

Part #	Description	
35-006-300	30K Burst	Rupture Disc
35-006-320	32K Burst 1/4 A/S	Rupture Disc
35-006-350	35K Burst	Rupture Disc
35-006-385	38.5K Burst 1/4 A/S	Rupture Disc
35-006-400	40K Burst 1/4 A/S (GDWJ TYPR: 3133023400)	Rupture Disc
35-006-435	43.5K Burst 1/4 A/S (GDWJ TYPR: 3133023435)	Rupture Disc
35-006-450	45K Burst	Rupture Disc
35-006-470	47K Burst 1/4 A/S	Rupture Disc
35-006-500	50K Burst 1/4 A/S W/TAG	Rupture Disc
35-006-509	50.9K Burst 1/4 A/S	Rupture Disc

PRESSURE REGULATING VALVE

40K Pressure Regulating Valve (By-Pass Valve) A Pressure Regulating Valve (PRV) is used on both diesel and electric pumping units to divert a portion of the flow to a low pressure outlet. It is really a hand adjusted needle valve, and it can be used to control pressure when the application requires a flow at the low end of the pumping unit's operating range. For electric units a PRV is required equipment, because the speed of the drive is not adjustable.

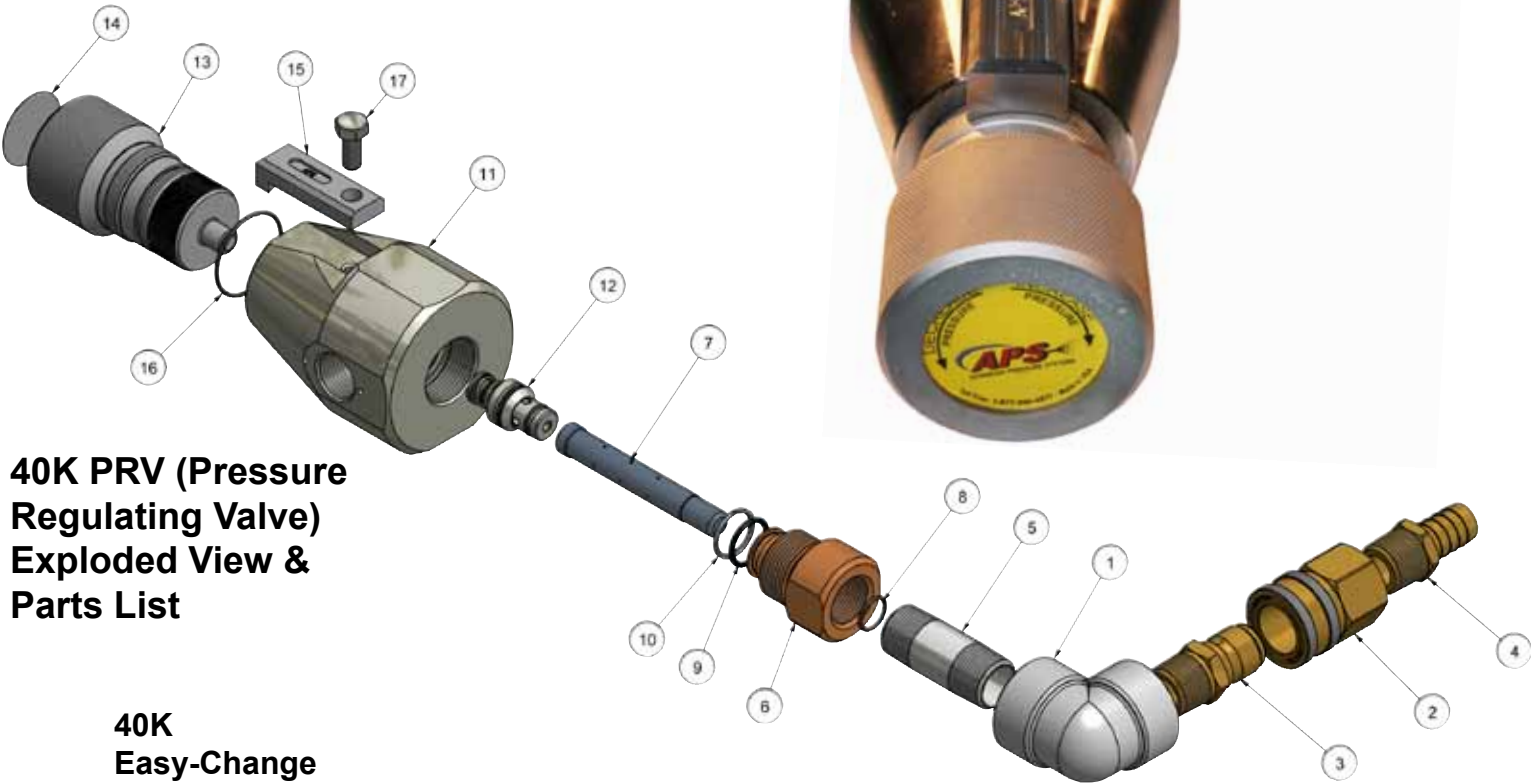
The design provides:

- Simple field rebuild using a cartridge unit. Down time is two minutes or less.
- Easy hand adjustment without the need for wrenches.
- This includes the locking of the adjuster handle, after the pressure is set.
- All components machined from stainless steel.
- Direct mounting to fluid end discharge manifold.

PRV-40K
#65-040-010



40K PRV (Pressure
Regulating Valve)
Exploded View &
Parts List



40K
Easy-Change
Cartridge
Assembly
#65-040-001



ITEM	QTY	PART #	DESCRIPTION
1	1	65-040-006	3/4"NPT x 3/4"NPT Cast SS Elbow
2	1	65-040-007	3/4"NPTF Parker Quick Disconnect
3	1	65-040-008	3/4"NPTM Quick Disconnect Male Half
4	1	65-040-005	3/4"NPTM x 3/4" Barb
5	1	65-040-004	3/4"Sch 40 SS Nipple
6	1	65-040-003	Discharge Adapter - 40K Pressure Regulating Valve
7	1	65-040-002	Diffuser - 40K Pressure Regulating Valve
8	1	30-001-015	O-Ring 2-015 Dur.90
9	1	30-001-117	O-Ring, 2-120 Dur.90
10	1	30-017-117	Delrin (White) Backup Ring
11	1	65-040-009	Body - 40K J/S Style Pressure Regulating Valve
12	1	65-040-001	40K Cartridge Assembly - Pressure Regulating Valve
13	1	65-110-003	Adjuster Handle, 15K/20K/40K J/S Style Pressure Regulating Valve
14	1	70-010-019	Decal, FDV/PRV Adjuster Handle
15	1	70-110-008	Clamp, J/S Type FDV/ PRV Adjuster Handle
16	1	30-001-029	O-Ring 2-029 Dur.90
17	1	10-016-075	Bolt, Hex. Head - 3/8"-16 X 3/4" SS

APS offers a complete line of coning and threading tool kits for manually coning and threading 1/4" O.D. to 9/16" O.D. tubing.

There are three different tool kit versions, "High" pressure, and the "Complete Kit" that contains both the Medium and the High Pressure tools. All items are conveniently packaged in a sturdy hand carry tool case with removable top tray. The unique coning and threading tool designs allows for interchange ability between components, eliminating multiple tool inventories.



Coning and Threading Tool Kit



ESSENTIAL SAFETY ACCESSORIES

Hose Whip Checks APS strongly recommends the use of "whip check" hose restrainers in any water jetting operation. These are perhaps the simplest and least expensive safety measure to implement. A "whip check" can be attached at any point where two hoses are joined, or to a pump's fluid end at the discharge side, or where a hose attaches to any piece of water blasting equipment such as a water blast lancing or cutting system.

When a high pressure hose is joined to a piece of equipment, the whip check should be used to restrain the movement of the pressurized hose should it become uncoupled, thereby allowing operators to get away and perform a safe, orderly system shut-down.



Part #	Description
43-010-001	21" GALVANIZED WIRE (1/8") & SS SPRINGS (1/2" - 1 1/4" HOSE)
43-010-002	NYLON W/RUBBER GROMMET STOPS (APP. 31-1/2" LONG)
43-010-003	STAINLESS, 38" CS PLATED WIRE (1/4") & SPRINGS (1-1/2" - 3" HOSE)
43-010-004	NYLON 2-PLY W/RUBBER GROMMET STOPS (APP. 64" LONG)
43-010-005	NYLON 2-PLY W/RUBBER GROMMET STOPS (APP. 44" LONG)

Pictured here are two typical whip check types, one is the stainless steel tension model, and the other is high-strength brightly-colored nylon with rubber cinch bands.

40K Waterblast Pressure Gauges APS offers a complete range of Pressure Gauges designed specifically for water blasting applications. Features include stainless steel construction, glycerine filled, clear laminated safety glass, precision movement, easy-to-read color-coded gauge faces.

- Easy set-up.
- Easy operation
- Easy to set and lock pressure.
- Easy-carry handle.
- Maintains pressure and flow to two guns at once during all phases of operation.
- Rugged construction.
- Quick-change cartridge overhaul.
- Optional pressure gauge.
- Hose adapters for different connections available

Part #	Description	PSI
35-001-007	6" 0-60K RANGE, 40K MAWP SS GF 1/4" HPF (9/16"-18 RHF) BOTTOM MOUNT	40K
35-001-008	6" 0-60K RANGE, 40K MAWP SS GF 9/16" HPM TUBE NIPPLE BOTTOM MOUNT	40K
35-001-027	4" 0-60K RANGE, 0-60K MAWP SS GF 9/16" HP TUBE NIPPLE BOTTOM MOUNT	40K

#35-001-007



WaterArmor Suits for Safety

At **APS** we understand the need for safety in any environment. The water blasting equipment produced at **APS** is designed with safety features. To protect the safety of the water blast technician during operation, we advise that extra safety precautions should be taken.

This is why we offer TurtleSkin WaterArmor.



Full Body Waterjet Suits

Part # 55-001-003 (Chaps & Torso Only)

Rugged and Lightweight Full Body Protection

Water jet operators appreciate the comfortable and easy-to-replace, hinged-panel design of lightweight TurtleSkin WaterArmor. The modular design allows any of the 19 individual components to be easily removed and replaced using common tools. The replacement of one or two individual parts is far less costly than the expense of purchasing a whole new suit.

TurtleSkin WaterArmor Torso

Part # 55-001-004

Upper Body Protection for Water Blasting Operators

Flexible, lightweight upper body protection that keeps the water jet operator's torso safe from potentially fatal water jet swipes.

TurtleSkin WaterArmor Chaps

Part # 55-001-005

Upper Leg Protection for Water Blasting Operators

Protective chaps for the upper legs that feature adjustable straps and thigh panels that can be lengthened or shortened to fit any size operator.

Water Blast Protective Gaiters

Part # 55-001-002

Flexible, Lightweight Water Blasting Foot Protection

Designed to protect the feet, shins, toes, and insteps, TurtleSkin WaterArmor Gaiters are constructed of hinged protective panels that flex with every step. These gaiters give water blasting operators the mobility to do their work and keep lower extremities safe from dangerous blasts.

Arm Protection Gauntlets

Part # 55-001-001 (Gloves Not Included)

Arm and Wrist Protection for Water Blasting Operators

TurtleSkin WaterArmor water jet protective gear is known for its flexibility, comfort, and toughness. The gauntlet covers the wrist, forearm, and back of the hand. Patented TurtleSkin features flexible layers constructed with the tightest weave of high-strength aramid.



ITEM	Description	
1	Vest Panel	Torso
2	Right Waist Panel	Torso
3	Belt	Chaps
4	Right Hip Panel	Chaps
5	Right Thigh Panel	Chaps
6	Right Knee	Chaps
7	Right Shin	Chaps
8	Left Waist Panel	Torso
9	Groin Guard	Torso
10	Left Hip Panel	Chaps

ITEM	Description	
11	Left Thigh Panel	Chaps
12	Left Knee	Chaps
13	Left Shin	Chaps
14	Right Gaiter Shin	Gaiters
15	Right Metatarsal	Gaiters
16	Toe	Gaiters
17	Left Gaiter Shin	Gaiters
18	Left Metatarsal	Gaiters
19	Ankle	Gaiters
20	Right Arm Gauntlets	Gauntlet
21	Left Arm Gauntlets	Gauntlet

High-Pressure Water Jet Testing Results:

The following conditions did not elicit penetration of the protective system with high-pressure water traveling at 8 feet/second (2.4 meters/second) at no closer than 3 inches (7.62 cm):

Pressure PSI (bar)	Flow Rate GPM (lpm)	Orifice ID Inches (mm)	0° Nozzle, Single Orifice: Material	Efficiency Factor *
40,000 (2,800)	5.5 (21)	0.035 (0.889)	Sapphire	22.4
36,000 (2,500)	5 (19)	0.035 (0.889)	Sapphire	21.5
20,000 (1,400)	11 (42)	0.051 (1.295)	Tungsten Carbide	29.9
10,000 (700)	16 (61)	0.073 (1.854)	Tungsten Carbide	30

* Efficiency Factor is equal to

Ultra High-Pressure Water Jet Safety and Performance

TurtleSkin WaterArmor uses an innovative, patented fabric to provide protection from high-pressure water jet injuries. Created by Warwick Mills, TurtleSkin is made from the tightest weave ever achieved in aramid, a fiber two times stronger and five times lighter than steel. TurtleSkin WaterArmor can protect ultra high-pressure water jet operators from pressures as high as 2800 bar (40,000 psi).

Protection up to 2800 bar or 40,000 psi

TurtleSkin WaterArmor personal protective waterjet equipment offers increased protection to ultra-high pressure water jet operators at all pressures at specified flow rates.

One Size Fits All Protection

TurtleSkin WaterArmor hydrodemolition protective suits are specifically designed for ultra-high pressure water jet safety. Every patented garment features adjustable straps, and the thigh panels on the chaps can be lengthened or shortened to fit any size operator.



LUBRICANTS, SEALANTS AND TAPE

Lubricants, Sealants and Tapes It is essential to keep the correct lubricants, sealants and Teflon® tapes on hand to guard against leaks and pressure loss, and to protect the threads on all water jetting components. **APS** keeps these things in stock as an added convenience for our customers. Our goal is to always be the first source you call.

Part #	Description	Size
24-001-001	Blue Goop® Thread Lubricant	2 Fl. Oz. Tube
24-001-002	Loctite® Nickel-Based Anti-Seize	1 Lb. Jar
24-001-003	Loctite® 567™ Thread Sealant	1.69 Fl. Oz.
24-001-004	1/2" White Teflon® Tape	520 Ft. Roll
24-001-005	3/4" White Teflon® Tape	520 Ft. Roll
24-001-006	1/2" Blue Monster® Premium Teflon®	1,429 Ft. Roll
24-001-007	3/4" Blue Monster® Premium Teflon® Tape	1,429 Ft. Roll
24-001-009	Jet-Lube 550	1/2 Lb. Jar
24-001-010	Jet-Lube 550	1 Lb. Jar
24-001-011	Yellow Lube®	6-6 Oz. sq tube
24-001-013	Loctite® Clover Compound, Grease Mix	16 Oz. Net WT
24-001-014	Loctite® Clover Compound, Water Mix	6-6 oz sq tube
24-001-020	Lubritech® Air Lube Airline Lubricants	16 Fl. Oz. Bottel
24-001-015	Lubemaster® Permalube 4099	14.8 Oz. Tube
24-001-020	LubriMatic® White Lithium Grease	16 Oz. Can

Blue Goop® Thread Lubricant (Excellent anti-seize lubricant, especially for 40K applications.) **Part# 24-001-001** Oil-based thread lubricant for use on stainless steel, steel, titanium, aluminum, and nickel-based alloys.



Loctite® Nickel-Based Anti-Seize Part# 24-001-002 A heavy duty, high temperature lubricant; it resists galling and corrosion, reduces wear in heavy pressure applications, contains oils and graphite which cannot be burned away or be removed by slow moving parts.



Loctite® Clover Compound, Grease Mix Part# 24-001-013 Silicon carbide particles in a grease mix. Perfect for smoothing and finishing of metal surfaces. Retains its texture and lubrication properties during extended use. Uses include cleaning corroded threads, valve rebuilding, smoothing gears, removing tool marks, lapping for flatness.



1/2" Blue Monster® Premium Teflon® Part# 24-001-006 Blue Monster is rugged, not flimsy like most thread seal tapes on the market. Blue Monster has not been stretched during the manufacturing process, so it is thicker and creates a more effective seal with less tape. Blue Monster could be used in conjunction with # 24-001-003 Loctite® Thread Sealant for all NPT Threads.



Jet-Lube 550 1 LB. Net WT. Part# 24-001-010 1/2 LB. Net WT. Part# 24-001-009 550 contains carefully balanced proportions of molybdenum disulphide (MoS2), graphite, and low friction fillers in an aluminum complex base grease that is fortified with effective rust and corrosion inhibitors. 550 assures protection against rust, oxidation and corrosion. It will not harden, evaporate, or settle out; and it requires no thinning. 550 is the ideal product for petrochemical plants' maintenance needs.

Applications: Threads, Flange Faces, Keyways, Gaskets. Slides, Guides and Fittings



LubriMatic® White Lithium Grease

Part# 24-001-016 Includes zinc additive for a clean, white color. Ideal for general home, shop, automotive, agricultural and industrial applications. NLGI #2, drop point 393 Deg. F.



Loctite® 567™ Thread Sealant (Designed for the locking and sealing of tapered metal threads & fittings NPT.) **Part# 24-001-003** Designed for the locking and sealing of metal tapered threads and fittings. The product cures when confined in the absence of air between close fitting metal surfaces and prevents loosening and leakage from shock and vibration. The high lubricating properties of this compound prevent galling on stainless steel, aluminum and all other metal pipe threads and fittings.



Yellow Lube

6 oz. tube/cs Part# 24-001-011

3 oz. tube/cs Part# 24-001-023 (Very good general purpose anti-seize lubricant which also helps to seal tapered threads.) Yellow Lube is a thread compound employing a heavy duty sulfur/phosphorus extreme pressure additive package for a variety of types and combinations of metals. Galling of threads is virtually impossible.



Loctite® Clover Compound, Water Mix Part# 24-001-014 Paste formulation for fast metal removal. Biodegradable, recommended for applications where cleanup with water is required.



White 1/2 Teflon® Tape 520 Ft. Roll Part# 24-001-004

White 3/4 Teflon® Tape 520 Ft. Roll Part# 24-001-005

The use of Teflon Tape on MPT fittings will help to prevent leaks.



Lubritech® Air Lube Airline Lubricants Part# 24-001-020 Air Lube Airline Lubricants are formulated specifically to absorb the moisture present in compressed air used in pneumatic tools, air motors and cylinders. They contain a unique emulsifier system designed to encapsulate up to 10% of its weight in water, while corrosion inhibitors form a protective film on metal surfaces, preventing oxidation and rust formation. Made from highly thermally stable base stocks, these hard-working lubricants help eliminate varnish formation and associated valve sticking. Air Lube Airline Lubricants will not leave hard carbon deposits or effect rubber or plastic valves and seals.



Lubemaster® Permalube 4099 (Tube)

Part# 24-001-015 This grease is for the Cobra Gun.



Yellow Lube

WATERJET THREAD PROTECTION

Benefits

Yellow Lube Water Blasting Thread Protection eliminates wear and galling. Yellow Lube adheres to heavily loaded rotating, reciprocating or sliding parts. It may be used on any heavily loaded equipment that would normally be lubricated with an extreme pressure grease. Yellow Lube is a film forming lubricant having a strong polar attraction to metal. During use, a chemical reaction occurs on areas subjected to heavy loading and frictional heat. This reaction creates a resilient, self-lubricating layer in the metal surface that helps prevent further abrasive contact.

Applications

Yellow Lube Water Blasting Thread Protection is a thread lubricant designed to protect and seal stainless NPT fittings. In high pressure applications such as water blasting, steps to creating a seal are as follows:

1. Be sure the fitting is clean and dry.
2. Apply Yellow Lube to all mating surfaces.
3. Make fitting up hand tight.
4. Using a wrench or other device, tighten the connection one to one and a quarter full turns.
5. Solid metal to metal seal will have been established: the crest of the threads will be buried in the root, but without galling.

3 oz. Tube - Part # 24-001-023

6 oz. Tube - Part # 24-001-011



Specifications

NLGI Grade	2 1/2
Appearance.....	Yellow, smooth
Solids Content.....	45%
Temperature Range.....	0°F. to 300°F.
Oil description	Synthetic
Viscosity, SUS @ 1 00°F.	730
Water spray off (with 5% salt spray)ASTM D-4049	0%
Evaporation Rate	Nil
Thickener	Inorganic (non-melt)
U.S. Environmental Protection Agency static sheen test	Pass
Active Toxicity*	None
K-Factor	(316 Stainless Steel Bolts) 0.174