



W SINCE 1970

# Wale Apparatus



**Premier Global Distributor Of**

**Scientific And Artistic Glass Working  
Equipment And Supplies For Over 44 Years**

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**Cat. WA814**

## CORNING PYREX® #7740 BOROSILICATE TUBING AND ROD - 33 COE

Corning Pyrex brand glass tubing and glass rod is a low expansion borosilicate glass composition with high chemical resistance, making it the most popular type of glass in the world for scientific laboratory use. Corning Pyrex glass tubing and rod, meets all U.S. pharmacopoeia specifications for Type 1A glass.

Corning Pyrex is used in multiple applications such as scientific research and development, within science labs, as well as within the glass artistic industry. OD, ID, and WALL sizes are measured in millimeters.



### PYREX STANDARD WALL TUBING

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BS-003C</b>	234030	3mm OD x	3.00		0.60	15	551
<b>BS-003H</b>	Half Case	0.6mm Wall x	+/- 0.20		+/- 0.10	8	275
<b>BS-003</b>	Handipak	1219mm L				2	25
<b>BS-004C</b>	244040	4mm OD x	4.00	2.40	0.80	24	400
<b>BS-004H</b>	Half Case	0.8mm Wall x	+/- 0.30		+/- 0.08	12	200
<b>BS-004</b>	Handipak	1500mm L				2	20
<b>BS-005C</b>	244050	5mm OD x	5.00	3.40	0.80	20	256
<b>BS-005H</b>	Half Case	0.8mm Wall x	+/- 0.30		+/- 0.10	10	128
<b>BS-005</b>	Handipak	1500mm L				2	16
<b>BS-006C</b>	244060	6mm OD x	6.00	4.00	1.00	20	170
<b>BS-006H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	10	85
<b>BS-006</b>	Handipak	1500mm L				2	12
<b>BS-007C</b>	244070	7mm OD x	7.00	5.00	1.00	17	122
<b>BS-007H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	8	61
<b>BS-007</b>	Handipak	1500mm L				2	10
<b>BS-008C</b>	244080	8mm OD x	8.00	6.00	1.00	16	194
<b>BS-008H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	8	97
<b>BS-008</b>	Handipak	1500mm L				2	10
<b>BS-009C</b>	244090	9mm OD x	9.00	7.00	1.00	15	82
<b>BS-009H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	7	41
<b>BS-009</b>	Handipak	1500mm L				2	10
<b>BS-010C</b>	244100	10mm OD x	10.00	8.00	1.00	30	145
<b>BS-010H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	15	72
<b>BS-010</b>	Handipak	1500mm L				2	9
<b>BS-011C</b>	244110	11mm OD x	11.00	9.00	1.00	28	121
<b>BS-011H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.08	14	60
<b>BS-011</b>	Handipak	1500mm L				2	10
<b>BS-012C</b>	244120	12mm OD x	12.00	10.00	1.00	26	100
<b>BS-012H</b>	Half Case	1.0mm Wall x	+/- 0.30		+/- 0.10	13	50
<b>BS-012</b>	Handipak	1500mm L				2	10
<b>BS-013C</b>	244130	13mm OD x	13.00	10.60	1.20	27	81
<b>BS-013H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.08	13	40
<b>BS-013</b>	Handipak	1500mm L				2	8
<b>BS-014C</b>	244140	14mm OD x	14.00	11.60	1.20	23	64
<b>BS-014H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	11	32
<b>BS-014</b>	Handipak	1500mm L				3	8
<b>BS-015C</b>	244150	15mm OD x	15.00	12.60	1.20	19	49
<b>BS-015H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	9	24
<b>BS-015</b>	Handipak	1500mm L				2	6
<b>BS-016C</b>	244160	16mm OD x	16.00	13.60	1.20	20	49
<b>BS-016H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	10	24
<b>BS-016</b>	Handipak	1500mm L				2	6

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BS-017C</b>	244170	17mm OD x	17.00	14.60	1.20	28	64
<b>BS-017H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	14	32
<b>BS-017</b>	Handipak	1500mm L				3	8
<b>BS-018C</b>	244180	18mm OD x	18.00	15.60	1.20	30	64
<b>BS-018H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	15	32
<b>BS-018</b>	Handipak	1500mm L				4	8
<b>BS-019C</b>	244190	19mm OD x	19.00	16.60	1.20	18	64
<b>BS-018H</b>	Half Case	1.2mm Wall x	+/- 0.30		+/- 0.10	9	32
<b>BS-019</b>	Handipak	1500mm L				2	8
<b>BS-020C</b>	244200	20mm OD x	20.00	17.60	1.20	26	49
<b>BS-020H</b>	Half Case	1.2mm Wall x	+/- 0.40		+/- 0.10	13	24
<b>BS-020</b>	Handipak	1500mm L				4	8
<b>BS-022C</b>	244220	22mm OD x	22.00	19.00	1.50	26	36
<b>BS-022H</b>	Half Case	1.5mm Wall x	+/- 0.40		+/- 0.15	13	18
<b>BS-022</b>	Handipak	1500mm L				4	6
<b>BS-025C</b>	244250	25mm OD x	25.00	22.00	1.50	29	36
<b>BS-025H</b>	Half Case	1.5mm Wall x	+/- 0.40		+/- 0.15	14	18
<b>BS-025</b>	Handipak	1500mm L				5	6
<b>BS-028C</b>	244280	28mm OD x	28.00	25.00	1.50	23	25
<b>BS-028H</b>	Half Case	1.5mm Wall x	+/- 0.40		+/- 0.15	11	12
<b>BS-028</b>	Handipak	1500mm L				3	4
<b>BS-030C</b>	244300	30mm OD x	30.00	26.40	1.80	29	25
<b>BS-030H</b>	Half Case	1.8mm Wall x	+/- 0.71		+/- 0.18	14	12
<b>BS-030</b>	Handipak	1500mm L				4	4
<b>BS-032C</b>	244320	32mm OD x	32.00	28.40	1.80	31	25
<b>BS-032H</b>	Half Case	1.8mm Wall x	+/- 0.71		+/- 0.18	15	12
<b>BS-032</b>	Handipak	1500mm L				5	4
<b>BS-035C</b>	244350	35mm OD x	35.00	31.00	2.00	24	16
<b>BS-035H</b>	Half Case	2.0mm Wall x	+/- 0.71		+/- 0.20	12	8
<b>BS-035</b>	Handipak	1500mm L				3	2
<b>BS-038C</b>	244380	38mm OD x	38.00	34.00	2.00	27	16
<b>BS-038H</b>	Half Case	2.0mm Wall x	+/- 0.70		+/- 0.20	13	8
<b>BS-038</b>	Handipak	1500mm L				3	2
<b>BS-041C</b>	244410	41mm OD x	41.00	37.00	2.00	29	16
<b>BS-041H</b>	Half Case	2.0mm Wall x	+/- 0.90		+/- 0.20	14	8
<b>BS-045C</b>	244450	45mm OD x	45.00	41.00	2.00	32	16
<b>BS-045H</b>	Half Case	2.0mm Wall x	+/- 1.00		+/- 0.20	16	8
<b>BS-048C</b>	244480	48mm OD x	48.00	44.00	2.00	19	9
<b>BS-048H</b>	Half Case	2.0mm Wall x	+/- 1.00		+/- 0.20	9	4
<b>BS-051C</b>	244510	51mm OD x	51.00	47.00	2.00	20	9
<b>BS-051H</b>	Half Case	2.0mm Wall x	+/- 1.00		+/- 0.20	10	4



## PYREX STANDARD WALL TUBING

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BS-054C</b>	244540	54mm OD x 2.4mm Wall x 1500mm L	54.00	49.20	2.40	26	9
<b>BS-054H</b>	Half Case		+/- 1.00		+/- 0.20	13	4
<b>BS-057C</b>	244570	57mm OD x 2.4mm Wall x 1500mm L	57.00	52.20	2.40	12	4
			+/- 1.00		+/- 0.20		
<b>BS-060C</b>	244600	60mm OD x 2.4mm Wall x 1500mm L	60.00	55.20	2.40	38	12
			+/- 1.10		+/- 0.23		
<b>BS-064C</b>	244640	64mm OD x 2.4mm Wall x 1500mm L	64.00	59.20	2.40	14	4
			+/- 1.20		+/- 0.23		
<b>BS-070C</b>	244700	70mm OD x 2.4mm Wall x 1500mm L	70.00	65.20	2.40	30	8
			+/- 1.20		+/- 0.23		
<b>BS-075C</b>	244750	75mm OD x 2.4mm Wall x 1500mm L	75.00	70.20	2.40	16	4
			+/- 1.30		+/- 0.23		
<b>BS-080C</b>	244800	80mm OD x 2.4mm Wall x 1500mm L	80.00	75.20	2.40	17	4
			+/- 1.30		+/- 0.23		
<b>BS-085C</b>	244850	85mm OD x 2.4mm Wall x 1500mm L	85.00	80.20	2.40	18	4
			+/- 1.30		+/- 0.23		
<b>BS-090C</b>	244900	90mm OD x 2.4mm Wall x 1500mm L	90.00	85.20	2.40	19	4
			+/- 1.30		+/- 0.23		
<b>BS-095C</b>	244950	95mm OD x 2.4mm Wall x 1500mm L	95.00	90.20	2.40	20	4
			+/- 1.40		+/- 0.23		
<b>BS-100C</b>	244000	100mm OD x 2.4mm Wall x 1500mm L	100.00	95.20	2.40	16	3
			+/- 1.40		+/- 0.23		
<b>BS-110C</b>	244310	110mm OD x 2.6mm Wall x 1500mm L	110.00	104.80	2.40	19	3
			+/- 1.80		+/- 0.25		
<b>BS-120C</b>	244330	120mm OD x 3.0mm Wall x 1500mm L	120.00	114.00	2.40	24	3
			+/- 1.80		+/- 0.30		
<b>BS-125C</b>	244340	125mm OD x 3.0mm Wall x 1500mm L	125.00	119.00	2.40	25	3
			+/- 1.80		+/- 0.30		
<b>BS-130C</b>	244360	130mm OD x 3.0mm Wall x 1500mm L	130.00	124.00	2.40	18	2
			+/- 1.80		+/- 0.30		
<b>BS-140C</b>	244370	140mm OD x 3.5mm Wall x 1500mm L	140.00	133.00	2.40	22	2
			+/- 2.00		+/- 0.40		
<b>BS-150C</b>	244390	150mm OD x 3.5mm Wall x 1500mm L	150.00	142.98	2.40	12	1
			+/- 2.01		+/- 0.36		
<b>BS-178C</b>	244230	178mm OD x 4.1mm Wall x 1500mm L	178.00	169.80	2.40	17	1
			+/- 2.20		+/- 0.40		

## PYREX MEDIUM WALL TUBING

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BM-014C</b>	247300	6.3mm OD x 1.2mm Wall x 1500mm L	6.30	4.02	1.20	21	145
<b>BM-014H</b>	Half Case		+/- 0.30		+/- 0.10	10	72
<b>BM-014</b>	Handipak					2	18
<b>BM-012C</b>	247310	12.7mm OD x 1.6mm Wall x 1500mm L	12.70	9.50	1.60	33	80
<b>BM-012H</b>	Half Case		+/- 0.30		+/- 0.16	16	40
<b>BM-012</b>	Handipak					4	10
<b>BM-058C</b>	247315	15.9mm OD x 1.6mm Wall x 1500mm L	15.90	12.70	1.60	33	80
<b>BM-058H</b>	Half Case		+/- 0.30		+/- 0.16	13	24
<b>BM-058</b>	Handipak					3	6
<b>BM-034C</b>	247320	19.0mm OD x 1.6mm Wall x 1500mm L	19.00	15.80	1.60	23	36
<b>BM-034H</b>	Half Case		+/- 0.30		+/- 0.16	11	18
<b>BM-034</b>	Handipak					4	6
<b>BM-100C</b>	247330	25.4mm OD x 2.4mm Wall x 1500mm L	25.40	20.62	2.40	32	25
<b>BM-100H</b>	Half Case		+/- 0.41		+/- 0.23	16	12
<b>BM-100</b>	Handipak					5	4
<b>BM-114C</b>	247340	31.8mm OD x 2.4mm Wall x 1500mm L	31.80	27.00	2.40	26	16
<b>BM-114H</b>	Half Case		+/- 0.70		+/- 0.23	13	8
<b>BM-114</b>	Handipak					3	2
<b>BM-112C</b>	247350	38.1mm OD x 2.4mm Wall x 1500mm L	38.10	33.30	2.40	32	16
<b>BM-112H</b>	Half Case		+/- 0.70		+/- 0.23	16	8
<b>BM-112</b>	Handipak					4	2
<b>BM-134C</b>	247370	44.4mm OD x 2.4mm Wall x 1500mm L	44.40	39.72	2.40	21	9
<b>BM-134H</b>	Half Case		+/- 1.00		+/- 0.23	10	4
<b>BM-200C</b>	247380	50.8mm OD x 3.2mm Wall x 1500mm L	50.80	44.40	3.20	32	9
			+/- 1.00		+/- 0.30		
<b>BM-214C</b>	247390	57.1mm OD x 3.2mm Wall x 1500mm L	57.10	50.80	3.20	16	4
			+/- 1.00		+/- 0.33		
<b>BM-212C</b>	247400	63.5mm OD x 3.2mm Wall x 1500mm L	63.50	57.10	3.20	18	4
			+/- 1.35		+/- 0.33		
<b>BM-300C</b>	247420	76.2mm OD x 3.2mm Wall x 1500mm L	76.20	69.80	3.20	22	4
			+/- 1.50		+/- 0.33		
<b>BM-400C</b>	247450	101.6mm OD x 4.8mm Wall x 1500mm L	101.60	92.04	4.80	32	3
			+/- 1.78		+/- 0.48		
<b>BM-412C</b>	247460	114.3mm OD x 4.8mm Wall x 1500mm L	114.30	104.70	4.80	37	3
			+/- 1.80		+/- 0.48		
<b>BSM-008C</b>	244081	8mm OD x 1.5mm Wall x 1500mm L	8.00	5.00	1.50	22	100
			+/- 0.30		+/- 0.15		
<b>BSM-009C</b>	244103	9mm OD x 1.5mm Wall x 1500mm L	9.00	6.00	1.50	21	81
			+/- 0.30		+/- 0.15		



## Did You Know?

Pyrex, borosilicate glass was introduced to the market by Corning, Inc. in 1915. This high quality tubing and rod is respected by glass artists for how excellent it blends with all colored borosilicate glass. Pyrex intensifies gold and silver fuming.

**PYREX MEDIUM WALL TUBING**

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BSM-010C</b>	244101	10mm OD x 1.5mm Wall x 1500mm L	10.00 +/- 0.30	7.00	1.50 +/- 0.15	19	64
<b>BSM-011C</b>	244105	11mm OD x 1.5mm Wall x 1500mm L	11.00 +/- 0.30	8.00	1.50 +/- 0.15	40	121
<b>BSM-014C</b>	244106	14mm OD x 1.6mm Wall x 1500mm L	14.00 +/- 0.30	10.80	1.60 +/- 0.15	29	64
<b>BSM-019C</b>	244107	19mm OD x 2.25mm Wall x 1500mm L	19.00 +/- 0.30	14.50	2.25 +/- 0.20	31	36

**PYREX HEAVY WALL TUBING**

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BH-038C</b>	247650	9.5mm OD x 2.0mm Wall x 1500mm L	9.50 +/- 0.30	5.50	2.00 +/- 0.20	24	68
<b>BH-038H</b>	Half Case					12	34
<b>BH-038</b>	Handipak					3	8
<b>BH-012C</b>	247500	12.7mm OD x 2.4mm Wall x 1500mm L	12.70 +/- 0.30	7.90	2.40 +/- 0.20	46	79
<b>BH-012H</b>	Half Case					23	39
<b>BH-012</b>	Handipak					4	6
<b>BH-058C</b>	247660	15.9mm OD x 2.4mm Wall x 1500mm L	15.90 +/- 0.30	11.10	2.40 +/- 0.20	37	49
<b>BH-058H</b>	Half Case					18	24
<b>BH-058</b>	Handipak					5	6
<b>BH-034C</b>	245510	19.1mm OD x 3.2mm Wall x 1500mm L	19.10 +/- 0.30	12.74	3.20 +/- 0.33	42	36
<b>BH-034H</b>	Half Case					21	18
<b>BH-034</b>	Handipak					4	3
<b>BH-078C</b>	247360	22.2mm OD x 3.2mm Wall x 1500mm L	22.20 +/- 0.41	15.84	3.20 +/- 0.36	51	37
<b>BH-078H</b>	Half Case					25	18
<b>BH-078</b>	Handipak					4	3
<b>BH-100C</b>	247520	25.4mm OD x 4.0mm Wall x 1500mm L	25.40 +/- 0.40	17.40	4.00 +/- 0.40	50	25
<b>BH-100H</b>	Half Case					25	12
<b>BH-100</b>	Handipak					6	3
<b>BH-114C</b>	247530	31.7mm OD x 4.0mm Wall x 1500mm L	31.70 +/- 0.70	23.70	4.00 +/- 0.40	41	16
<b>BH-114H</b>	Half Case					20	8
<b>BH-114</b>	Handipak					5	2
<b>BH-112C</b>	247540	38.1mm OD x 4.0mm Wall x 1500mm L	38.10 +/- 0.70	30.10	4.00 +/- 0.40	50	17
<b>BH-112H</b>	Half Case					25	8
<b>BH-112</b>	Handipak					6	2
<b>BH-134C</b>	247550	44.4mm OD x 4.0mm Wall x 1500mm L	44.40 +/- 1.00	36.40	4.00 +/- 0.40	34	9
<b>BH-134H</b>	Half Case					17	4
<b>BH-134</b>	Handipak					8	2
<b>BH-200C</b>	247560	50.8mm OD x 4.8mm Wall x 1500mm L	50.80 +/- 1.00	41.20	4.80 +/- 0.50	46	9
<b>BH-200H</b>	Half Case					23	4
<b>BH-200</b>	Handipak					11	2
<b>BH-214C</b>	247570	57.1mm OD x 4.8mm Wall x 1500mm L	57.10 +/- 1.00	47.50	4.80 +/- 0.50	23	4

**PYREX HEAVY WALL TUBING**

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BH-212C</b>	247580	63.5mm OD x 4.8mm Wall x 1500mm L	63.50 +/- 1.35	53.90	4.80 +/- 0.50	26	4
<b>BH-212H</b>	Half Case					13	2
<b>BH-234C</b>	247590	69.8mm OD x 4.8mm Wall x 1500mm L	69.90 +/- 1.42	60.30	4.80 +/- 0.50	58	8
<b>BH-300C</b>	247600	76.2mm OD x 4.8mm Wall x 1500mm L	76.20 +/- 1.50	66.60	4.80 +/- 0.50	32	4
<b>BH-314C</b>	247610	82.6mm OD x 4.8mm Wall x 1500mm L	82.60 +/- 1.57	73.00	4.80 +/- 0.50	35	4
<b>BH-312C</b>	247620	88.9mm OD x 4.8mm Wall x 1500mm L	88.90 +/- 1.65	79.30	4.80 +/- 0.50	37	4
<b>BH-400C</b>	247630	101.6mm OD x 6.4mm Wall x 1500mm L	101.60 +/- 1.65	88.80	6.40 +/- 0.64	42	3
<b>BH-412C</b>	247640	114.3mm OD x 6.4mm Wall x 1500mm L	114.30 +/- 1.65	101.50	6.40 +/- 0.64	48	3
<b>BH-500C</b>	247670	127.0mm OD x 6.4mm Wall x 1500mm L	127.00 +/- 1.65	114.20	6.40 +/- 0.64	53	3
<b>BH-600C</b>	247690	152.4mm OD x 7.9mm Wall x 1500mm L	152.40 +/- 2.00	136.60	7.90 +/- 0.90	26	1
<b>BH-612C</b>	247700	165.1mm OD x 7.9mm Wall x 1500mm L	165.10 +/- 2.00	149.30	7.90 +/- 0.90	29	1
<b>BSH-008C</b>	244082	8mm OD x 2.0mm Wall x 1500mm L	8.00 +/- 0.30	3.98	2.00 +/- 0.20	28	100
<b>BSH-010C</b>	244102	10mm OD x 2.0mm Wall x 1500mm L	10.00 +/- 0.30	6.00	2.00 +/- 0.20	24	64

**PYREX CAPILLARY TUBING**

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
<b>BC-055C</b>	246510	5.5mm OD 0.5 Bore x 1500mm L	5.50 +/- 0.40	0.50	2.50	37	210
<b>BC-065C</b>	246520	6.5mm OD 1.0 Bore x 1500mm L	6.50 +/- 0.40	1.00	2.76	35	145
<b>BC-066C</b>	246521	6.5mm OD 1.25 Bore x 1500mm L	6.50 +/- 0.40	1.25	2.63	34	145
<b>BC-076C</b>	246540	7.5mm OD 1.75 Bore x 1500mm L	7.50 +/- 0.40	1.75	2.88	34	110
<b>BC-080C</b>	246523	8.0mm OD 3.38 Bore x 1500mm L	8.00 +/- 0.40	3.38	2.31	30	100
<b>BC-090C</b>	246560	9.0mm OD 2.39 Bore x 1500mm L	9.00 +/- 0.40	2.39	3.31	35	81

# GLASS - CLEAR AND COLORED BOROSILICATE AND SOFT

## PYREX ROD

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
BR-003C	249430					37	700
BR-003H	Half Case	3.0mm OD x 1500mm L	3.00			18	350
BR-003	Handipak		+/- 0.40			2	25
BR-004C	249440					37	400
BR-004H	Half Case	4.0mm OD x 1500mm L	4.00			18	200
BR-004	Handipak		+/- 0.40			2	25
BR-005C	249450					37	256
BR-005H	Half Case	5.0mm OD x 1500mm L	5.00			18	128
BR-005	Handipak		+/- 0.40			2	16
BR-006C	249460					36	170
BR-006H	Half Case	6.0mm OD x 1500mm L	6.00			18	85
BR-006	Handipak		+/- 0.40			2	12
BR-007C	249470					34	119
BR-007H	Half Case	7.0mm OD x 1500mm L	7.00			17	59
BR-007	Handipak		+/- 0.40			2	8
BR-008C	249480					37	100
BR-008H	Half Case	8.0mm OD x 1500mm L	8.00			18	50
BR-008	Handipak		+/- 0.40			4	10
BR-009C	249490					38	81
BR-009H	Half Case	9.0mm OD x 1500mm L	9.00			19	40
BR-009	Handipak		+/- 0.40			4	8

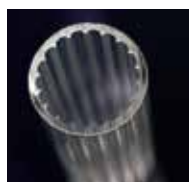
## PYREX ROD

Wale Part No.	Corning Item No.	Description	OD	ID	WALL	LBS	PCS
BR-010C	249400					37	64
BR-010H	Half Case	10.0mm OD x 1500mm L	10.00			18	32
BR-010	Handipak		+/- 0.40			2	4
BR-011C	249212					35	50
BR-011H	Half Case	11.0mm OD x 1500mm L	11.00			17	25
BR-011	Handipak		+/- 0.40			3	5
BR-012C	249250					34	36
BR-012H	Half Case	12.7mm OD x 1500mm L	12.70			17	18
BR-012	Handipak		+/- 0.50			3	3
BR-058C	249260					23	16
BR-058H	Half Case	15.9mm OD x 1500mm L	15.90			11	8
BR-058	Handipak		+/- 0.60			3	2
BR-034C	249270					33	16
BR-034H	Half Case	19.0mm OD x 1500mm L	19.00			16	8
BR-034	Handipak		+/- 0.80			4	2
BR-100C	249200					34	9
BR-100H	Half Case	25.4mm OD x 1500mm L	25.40			17	4
BR-100	Handipak		+/- 1.00			7	2
BR-114C	249210					23	4
BR-114H	Half Case	31.7mm OD x 1500mm L	31.70			11	2
BR-114	Handipak		+/- 1.30			11	2
BR-112C	249211					34	4
BR-112H	Half Case	38.1mm OD x 1500mm L	38.10			17	2
BR-112	Handipak		+/- 1.70			17	2

## PROFILE BOROSILICATE TUBING - 33 COE

### PROFILE TUBING, SCALLOPED INSIDE

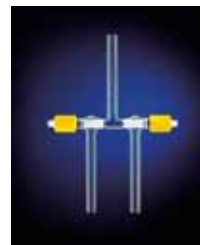
Inside Scalloped Profile Borosilicate Tubing by Simax available in 30mm and 34mm. 59" length. 33 COE



Item No.	Description
BP-SI030	30mm x 2mm x 59" Length - 6pcs / Handipak
BP-SI030C	30mm x 2mm x 59" Length - 36pcs / Case
BP-SI034	34mm x 2mm x 59" Length - 4pcs / Handipak
BP-SI034C	34mm x 2mm x 59" Length - 16pcs / case

## J YOUNG VALVES

Wale is now a USA distributor of J YOUNG VALVES. J YOUNG VALVES manufactured by GPE Scientific Limited is an established brand for over 60 years, with the highest reputation for quality! The proven reliability makes J YOUNG VALVES the leading market brand. It features a greaseless high vacuum system ensuring no seizure or contamination and a superior seal. Please contact Wale or visit our website for more information.



## BOROSILICATE GLASS - 33 COE

### GLASS GROUND JOINTS

AccuGrind™ are precise tolerance quality glass ground joints at a great price. AccuGrind™ is a quality brand that is a perfect fit for artists that want higher quality than Chinese but do not want to pay the higher price for Lenz (Schott) joints.

These joints have a straight edge on the end of the grind unlike Schott that is beveled on some joints. Also, the standard sizes have slightly thinner wall thickness than standard Schott. The AccuGrind™ bistabil joints are slightly thicker than Schott standard joints.

Understanding Glass Ground Joints: The Female ground joint has a grind on the inside of the glass and acts as the outside piece. The Male ground joint has a grind on the outside of the glass and acts as the inside piece. The first number is the width in millimeters, at the top of the ground joint. The second number is the length of the grind. Ex: 14/23 means that it has a width of 14mm at the top and will match with other 14/xx ground joints and that the entire grind on the ground joint is 23mm. This will not change compatibility as long as the first numbers match up.

### DROP STEM - ADAPTOR 14F TO 19M



Item No.	Description
J1419STEM-CL	Drop Stem - Adaptor 14F to a 19M

### STANDARD MEDIUM WALL GLASS GROUND JOINTS

#### FEMALE

Item No.	Description
J1019F-CL	10/19 Medium Wall Female - 125 mm length
J1423F-CL	14/23 Medium Wall Female - 125 mm length
J1926F-CL	19/26 Medium Wall Female - 125 mm length



#### MALE

Item No.	Description
J1019M-CL	10/19 Medium Wall Male - 125 mm length
J1423M-CL	14/23 Medium Wall Male - 125 mm length
J1926M-CL	19/26 Medium Wall Male - 125 mm length



### BISTABIL HEAVY WALL GLASS GROUND JOINTS

#### FEMALE

Item No.	Description
JH1423F-CL	14/23 Heavy Wall Female - 125 mm length
JH1926F-CL	19/26 Heavy Wall Female - 125 mm length



#### MALE

Item No.	Description
JH1423M-CL	14/23 Heavy Wall Male - 125 mm length
JH1926M-CL	19/26 Heavy Wall Male - 125 mm length



### ASIAN GLASS GROUND JOINTS

#### FEMALE

Item No.	Description
J1420F-AM	14/20 Female - Amber
J1420F-CB	14/20 Female - Cobalt Blue
J1420F-GN	14/20 Female - Green
J1420F-BL	14/20 Female - Black
J1922F-AM	19/22 Female - Amber
J1922F-CB	19/22 Female - Cobalt Blue
J1922F-GN	19/22 Female - Green



#### MALE

Item No.	Description
J1420M-AM	14/20 Male - Amber
J1420M-CB	14/20 Male - Cobalt Blue
J1420M-GN	14/20 Male - Green
J1420M-BL	14/20 Male - Black
J1922M-AM	19/22 Male - Amber
J1922M-CB	19/22 Male - Cobalt Blue
J1922M-GN	19/22 Male - Green



# QUARTZ & SPECIALTY GLASS

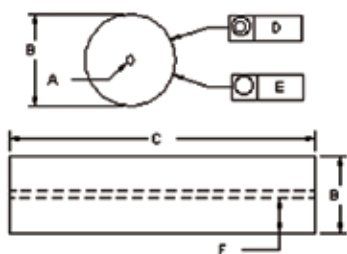
## BOROSILICATE GLASS - SPECIALTY SCIENTIFIC GLASS

### HEAVY WALL CAPILLARY TUBING

Heavy Wall Capillary Tubing in Borosilicate glass serves as a clear, precise instrumentation tubing and has application where protection from a rugged and/or hostile environment is required. This tubing is available in a variety of inner dimensions with outer diameters of 3.0, 4.0, 5.5 and 6.4mm. Custom Heavy Wall Capillary Tubing is also available in various combinations of inner and outer dimensions.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

*Some items are stocked, but others will have a lead time. Contact us for availability.*



A = Inner Diameter +/- Tolerance  
 B = Outer Diameter +/- Tolerance  
 C = Length +/- Tolerance  
 D = Concentricity  
 E = Roundness  
 F = Wall Thickness +/- Tolerance

Request price for special non-listed sizes and other glasses including clear fused quartz.

**ORDERING INFORMATION:** Inside Diameter, Outside Diameter, Quantity, Length.

OUTSIDE DIAMETER (MM)	OD TOLERANCE (MM)
3	+/- .127
4	+/- .203
5.5	+/- .254
6.4	+/- .460

Each outside diameter size is available with any of the following inside diameters.

INSIDE DIAMETER		TOLERANCE +/-	
INCHES	MM	INCHES	MM
.001	0.025	.0002	.0051
.002	0.051	.0002	.0051
.003	0.076	.0003	.0076
.004	0.102	.0003	.0076
.005	0.127	.0005	.0127
.006	0.152	.0005	.0127
.007	0.178	.0005	.0127
.008	0.203	.0005	.0127
.009	0.229	.0005	.0127
.010	0.254	.0005	.0127
.011	0.279	.0007	.0178
.012	0.305	.0007	.0178
.013	0.330	.0008	.0203
.014	0.356	.0008	.0203
.015	0.381	.0008	.0203
.016	0.406	.001	.0254
.017	0.432	.001	.0254
.018	0.457	.001	.0254
.019	0.483	.001	.0254
.020	0.508	.001	.0254

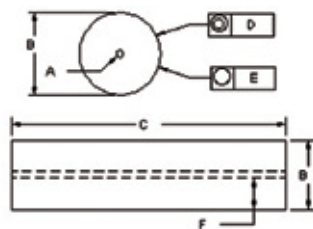
### ROUND CAPILLARY TUBING

Our Round Capillary product line is available in a broad combination of inner and outer diameters (ID and OD). Tolerances of +/-10% are standard, but this high quality, precision drawn tubing can be made to a customer's specification with tighter tolerances if required.

Stock tubing is available in 100.0mm lengths with both ends open, fire polished, and packed in convenient plastic vials for easy handling and storage. Custom lengths are available upon request

Sold in vials with several pcs per vial. Length of pcs is 100mm each.

*Some items are stocked, but others will have a lead time. Contact us for availability.*



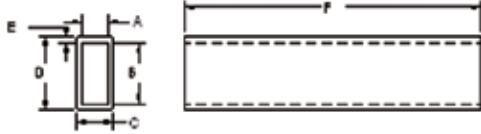
Item No.	Description
CV0508	.05 mm ID x .08 mm OD (100 pcs)
CV1017	.10 mm ID x .17 mm OD (100 pcs)
CV1525	.15 mm ID x .25 mm OD (100 pcs)
CV2033	.20 mm ID x .33 mm OD (100 pcs)
CV3040	.30 mm ID x .40 mm OD (75 pcs)
CV4055	.40 mm ID x .55 mm OD (75 pcs)
CV5070	.50 mm ID x .70 mm OD (75 pcs)
CV6084	.60 mm ID x .84 mm OD (75 pcs)
CV7087	.70 mm ID x .87 mm OD (50 pcs)
CV8010	.80 mm ID x 1 mm OD (50 pcs)
CV9011	.90 mm ID x 1.1 mm OD (50 pcs)
CV1012	1 mm ID x 1.2 mm OD (25 pcs)
CV1518	1.5 mm ID x 1.8 mm OD (25 pcs)
CV2024	2 mm ID x 2.4 mm OD (25 pcs)

## RECTANGULAR TUBING

Wale offers a complete line of high quality Rectangle Tubing in Borosilicate Glass that can be drawn into various shapes and sizes. Wall tolerances are typically +/-20% while inner dimension tolerances are held to much tighter specifications.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

Some items are stocked, but others will have a lead time. Contact us for availability.



A = Inner Dimension - Short Axis +/- Tolerance  
 B = Inner Dimension - Long Axis +/- Tolerance  
 C = Outer Dimension - Short Axis +/- Tolerance  
 D = Outer Dimension - Long Axis +/- Tolerance  
 E = Wall Thickness +/- Tolerance  
 F = Length +/- Tolerance

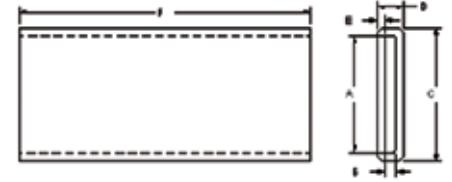
Item No.	Description
R-0204	2mm x 4mm ID x .70mm Wall
R-0206	2mm x 6mm ID x .80mm Wall
R-0307	3mm x 7mm ID x 1.00mm Wall
R-0309	3mm x 9mm ID x 1.00mm Wall
R-0406	4mm x 6mm ID x 1mm Wall
R-0410	4mm x 10mm ID x 1mm Wall
R-0412	4mm x 12mm ID x 1.2mm Wall
R-0610	6mm x 10mm ID x 1.2mm Wall
R-0615	6mm x 15mm ID x 1.2mm Wall
R-0714	7mm x 14mm ID x 1.2mm Wall
R-0721	7mm x 21mm ID x 1.3mm Wall
R-0816	8mm x 16mm ID x 1.3mm Wall
R-0824	8mm x 24mm ID x 1.5mm Wall
R-1015	10mm x 15mm ID x 1.3mm Wall
R-1022	10mm x 22mm ID x 1.5mm Wall
R-1030	10mm x 30mm ID x 1.5mm Wall
R-1035	10mm x 35mm ID x 1.8mm Wall
R-1040	10mm x 40mm ID x 1.8mm Wall
R-1224	12mm x 24mm ID x 1.5mm Wall
R-1326	13mm x 26mm ID x 1.5mm Wall
R-1525	15mm x 25mm ID x 1.5mm Wall
R-1535	15mm x 35mm ID x 1.8mm Wall
R-1545	15mm x 45mm ID x 2mm Wall
R-2030	20mm x 30mm ID x 1.8mm Wall
R-2040	20mm x 40mm ID x 2mm Wall
R-2050	20mm x 50mm ID x 2mm Wall
R-2652	26mm x 52mm ID x 2mm Wall
R-2675	26mm x 75mm ID x 2.2mm Wall
R-3050	30mm x 50mm ID x 2mm Wall
R-3575	35mm x 75mm ID x 2.5mm Wall
R-4080	40mm x 80mm ID x 2.5mm Wall
R-5075	50mm x 75mm ID x 2.5mm Wall

## LARGE RATIO RECTANGULAR TUBING

Wale offers a complete line of high quality Large Ratio Rectangle Tubing in Borosilicate Glass that can be drawn into various shapes and sizes. Wall tolerances are typically +/-20% while inner dimension tolerances are held to much tighter specifications.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

Some items are stocked, but others will have a lead time. Contact us for availability.



A = Inner Dimension - Long Axis +/- Tolerance  
 B = Inner Dimension - Short Axis +/- Tolerance  
 C = Outer Dimension - Long Axis +/- Tolerance  
 D = Outer Dimension - Short Axis +/- Tolerance  
 E = Wall Thickness

Item No.	Description
RT-5002	.02mm x .2mm ID x .02mm Wall
RT-5003	.03mm x .3mm ID x .03mm Wall
RT-5004	.04mm x .4mm ID x .04mm Wall
RT-5005	.05mm x .5mm ID x .05mm Wall
RT-5015	.05mm x 1mm ID x .05mm Wall
RT-5010	.1mm x 1mm ID x .1mm Wall
RT-5012	.1mm x 2mm ID x .1mm Wall
RT-3520	.2mm x 2mm ID x .2mm Wall
RT-3524	.2mm x 4mm ID x .2mm Wall
RT-3530	.3mm x 3mm ID x .3mm Wall
RT-3536	.3mm x 6mm ID x .3mm Wall
RT-2540	.4mm x 4mm ID x .4mm Wall
RT-2548	.4mm x 8mm ID x .4mm Wall
RT-4905	.5mm x 5mm ID x .3mm Wall
RT-4806	.5 x 6mm ID x .4mm Wall
RT-4707	.7 x 7mm ID x .46mm Wall
RT-4608	.8 x 8mm ID x .54mm Wall
RT-4509	.9 x 9mm ID x .6mm Wall
RT-4410	1mm x 10mm ID x .67mm Wall
RT-4410H	1mm x 10mm ID x 1mm Wall
RT-0115	1mm x 15mm ID x 1.1mm Wall
RT-0212	2mm x 12mm ID x 1.2mm Wall
RT-0220	2mm x 20mm ID x 1.3mm Wall
RT-0330	3mm x 30mm ID x 1.5mm Wall
RT-0350	3mm x 50mm ID x 2mm Wall
RT-0440	4mm x 40mm ID x 1.7mm Wall
RT-0550	5mm x 50mm ID x 2mm Wall
RT-0575	5mm x 75mm ID x 2.5mm Wall
RT-0640	6mm x 40mm ID x 2mm Wall
RT-0660	6mm x 60mm ID x 2.20mm Wall
RT-0770	7mm x 70mm ID x 2.5mm Wall
RT-0860	8mm x 60mm ID x 2.3mm Wall
RT-0880	8mm x 80mm ID x 2.5mm Wall
RT-1075	10mm x 75mm ID x 2.5mm Wall



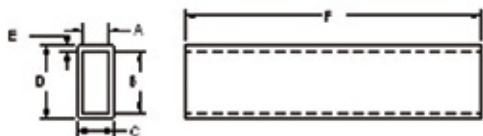
# QUARTZ & SPECIALTY GLASS

## HEAVY WALL RECTANGULAR TUBING

Wale offers a complete line of high quality Heavy Wall Rectangle Tubing in Borosilicate Glass that can be drawn into various shapes and sizes. Wall tolerances are typically +/-20% while inner dimension tolerances are held to much tighter specifications.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

*Some items are stocked, but others will have a lead time. Contact us for availability.*



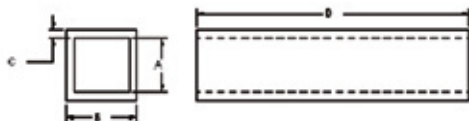
Item No.	Description
R-2675H	26mm x 75mm ID x 2.80mm Wall
R-3050H	30mm x 50mm ID x 2.50mm Wall
R-3575H	35mm x 75mm ID x 3.00mm Wall
R-4080H	40mm x 80mm ID x 3.00mm Wall
R-5075H	50mm x 75mm ID x 3.00mm Wall

## HEAVY WALL SQUARE TUBING

Wale offers a complete line of high quality Heavy Wall Square Tubing in Borosilicate Clear glass that can be drawn to various sizes. Wall tolerances are typically +/-20%, while inner dimension tolerances are held to much tighter specifications.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

*Some items are stocked, but others will have a lead time. Contact us for availability.*



Item No.	Description
S-108H	8mm ID x 10.4mm OD
S-110H	10mm ID x 13mm OD
S-112H	12mm ID x 15mm OD
S-113H	13mm ID x 16mm OD
S-114H	14mm ID x 17.2mm OD
S-116H	16mm ID x 19.2mm OD
S-151H	51mm ID x 56.6mm OD
S-160H	60mm ID x 66mm OD
S-170H	70mm ID x 76mm OD

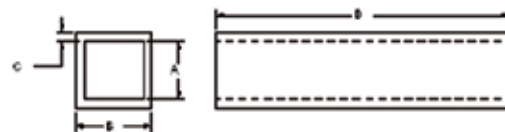
## SQUARE TUBING

Wale offers a complete line of high quality Square Tubing in Borosilicate Clear glass that can be drawn to various sizes. Wall tolerances are typically +/-20%, while inner dimension tolerances are held to much tighter specifications.

Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

*Some items are stocked, but others will have a lead time. Contact us for availability.*

ST-8505 THRU ST-8100 10 FT MINIMUM ORDER.  
S-102 THRU S-105 3FT MINIMUM ORDER.  
S-106 THRU S-130 2FT MINIMUM ORDER.  
S-130 AND UP 1 FT MINIMUM ORDER.



A = Inner Dimension +/- Tolerance  
B = Outer Dimension +/- Tolerance  
C = Wall Thickness +/- Tolerance  
D = Length +/- Tolerance

Item No.	Description
ST-8100	1mm ID x 1.40mm OD
S-102	2mm ID x 2.8mm OD
S-103	3mm ID x 4mm OD
S-105	5mm ID x 6.4mm OD
S-106	6mm ID x 7.6mm OD
S-108	8mm ID x 9.6mm OD
S-110	10mm ID x 11.8mm OD
S-112	12mm ID x 14mm OD
S-113	13mm ID x 15mm OD
S-114	14mm ID x 16mm OD
S-116	16mm ID x 18.20mm OD
S-118	18mm ID x 21mm OD
S-120	20mm ID x 23mm OD
S-122	22mm ID x 25.60mm OD
S-125	25mm ID x 28.6mm OD
S-128	28mm ID x 31.6mm OD
S-130	30mm ID x 33.6mm OD
S-135	35mm ID x 38.6mm OD
S-140	40mm ID x 44mm OD
S-145	45mm ID x 49mm OD
S-151	51mm ID x 55.4mm OD
S-160	60mm ID x 65mm OD
S-170	70mm ID x 75mm OD

## QUARTZ & SPECIALTY GLASS

### QUARTZ AND BOROSILICATE GLASS - SPECIALTY SCIENTIFIC GLASS

#### 2 AND 4 BORE TUBING

Our complete product line of precision drawn two and four bore tubings in Quartz and Borosilicate glass has excellent insulating qualities. They are utilized in thermocouple and electro-chemical probes, and other applications that require a great degree of insulating/isolating safety characteristics. Custom product to a customer's specification is also available.



Sold in 1' increments. Can be supplied in lengths up to 4' long if requested.

*Some items are stocked, but others will have a lead time. Contact us for availability.*

Item No.	Description
DB520	2 Bore .005" ID x .020" OD
DB531	2 Bore .005" ID x .031" OD
DB1062	2 Bore .010" ID x .062" OD
DB1562	2 Bore .015" ID x .062" OD
DB20125	2 Bore .020" ID x .125" OD
DB30125	2 Bore .030" ID x .125" OD
DB40250	2 Bore .040" ID x .250" OD
DB60250	2 Bore .060" ID x .250" OD
FB520	4 Bore .005" ID x .020" OD
FB531	4 Bore .005" ID x .031" OD
FB1062	4 Bore .010" ID x .062" OD
FB1562	4 Bore .015" ID x .062" OD
FB20125	4 Bore .020" ID x .125" OD
FB30125	4 Bore .030" ID x .125" OD
FB40250	4 Bore .040" ID x .250" OD
FB60250	4 Bore .060" ID x .250" OD

"As a teacher, I am totally confident suggesting Wale to my students as the place to get supplies. Whether they are complete novices or seasoned pros. I know that Wale carries quality products and the staff will always do everything they can do to make sure their need are met. Thanks you!"

- Terry from Alabama  
www.halefireglass.com

#### CLEAR FUSED QUARTZ TUBING

High quality clear fused quartz available in several diameters of tubing. Sold per 4' length.

*Some items are stocked, but others will have a lead time. Contact us for availability.*



Item No.	Description
CFQ2x3	2mm ID x 3mm OD
CFQ3x4	3mm ID x 4mm OD
CFQ3x5	3mm ID x 5mm OD
CFQ4x6	4mm I.D. x 6mm O.D. x 4' LONG
CFQ5x7	5mm I.D. x 7mm O.D. x 4' LONG
CFQ6x8	6mm I.D. x 8mm O.D. x 4' LONG
CFQ7x9	7mm I.D. x 9mm O.D. x 4' LONG
CFQ8x10	8mm I.D. x 10mm O.D. x 4' LONG
CFQ8x12	8mm I.D. x 12mm O.D. x 4' LONG
CFQ9x11	9mm I.D. x 11mm O.D. x 4' LONG
CFQ10x12	10mm I.D. x 12mm O.D. x 4' LONG
CFQ10x14	10mm I.D. x 14mm O.D. x 4' LONG
CFQ10.5x12.75	10.5mm I.D. x 12.75mm O.D. x 4' LONG
CFQ10.5x13	10.5mm I.D. x 13mm O.D. x 4' LONG
CFQ11x13	11mm I.D. x 13mm O.D. x 4' LONG
CFQ12x14	12mm I.D. x 14mm O.D. x 4' LONG
CFQ13x15	13mm I.D. x 15mm O.D. x 4' LONG
CFQ14x16	14mm I.D. x 16mm O.D. x 4' LONG
CFQ15x18	15mm I.D. x 18mm O.D. x 4' LONG
CFQ17x19	17mm I.D. x 19mm O.D. x 4' LONG
CFQ18x20.5	18mm I.D. x 20.5mm O.D. x 4' LONG
CFQ18x21.6	18mm I.D. x 21.6mm O.D. x 4' LONG
CFQ22x25	22mm I.D. x 25mm O.D. x 4' LONG
CFQ25x27.5	25mm I.D. x 27.5mm O.D. x 4' LONG
CFQ25x27	25mm I.D. x 27mm O.D. x 4' LONG
CFQ25x28	25mm I.D. x 28mm O.D. x 4' LONG
CFQ35x38	35mm I.D. x 38mm O.D. x 4' LONG
CFQ52x58	52mm I.D. x 58mm O.D. x 4' LONG
CFQ90x95	90mm I.D. x 95mm O.D. x 5' LONG

## WALEWEAR LAMPWORKING SAFETY GLASSES

WaleWear – An exclusive line of polycarbonate lenses designed for hot glassworking, featuring lightweight, scratch resistant lenses that filter sodium flare and UV emissions. The “SB” and “B3” series offers additional IR protection.

Available in standard economy, fitover, stylish plastic and metal safety frames which meet z87 standard.

WaleWear is available in the following lenses:

**S-Series:** This series would typically be used by the soft glass beadmaker & lampworker. Sodium Flare and UV protection.

**SB-Series:** This series is slightly darker than the standard series. The SB-series eyewear would typically be used by the soft glass or clear borosilicate glass lampworker. Also excellent for kiln work and glassblowing. Sodium Flare, UV and IR protection.

**B3-Series:** This series features the same benefits as the SB series with the addition of a welder’s shade #3 for additional brightness reduction. Sodium Flare, UV and IR protection.



S SERIES



SB SERIES



B3 SERIES

## WALEWEAR LAMPWORKING SAFETY GLASSES

### LAMPWORKERS COMBO FITOVER/FLIP

The Lampworkers Combo style is perfect for working with both soft and borosilicate colored glass!

It features a fit over plastic frame, which can be worn alone or over existing glasses, and offers Sodium Flare, UV, and IR protection. In addition, it has the flip up #3 welders shade for working with borosilicate color. Lightweight and very comfortable.



Item No.	Description
11-1032	Lampworkers Combo

### FIT OVER FRAME

The Fit Over style is a durable plastic frame with side shields and adjustable side arms. Great to either use as a standard frame or as a fit over for existing glasses. Lightweight and very comfortable. Perfect for kiln work!

Scratch resistant polycarbonate S Series lenses offer Sodium Flare and UV protection. SB and B3 lenses offer additional IR protection.

Item No.	Description
11-1031-S	S-Series
11-1031-SB	SB-Series
11-1031-B3	B3-Series
11-1031-6	Shade#6 Quartz Working



### CLIP ON / FLIP UP

The Clip-On eyewear featuring scratch resistant polycarbonate lenses is designed to clip onto existing glasses that can be easily flipped up or down when needed. This style is offered in both the lampworking lens or the readers magnification lens.

The lampworking series offers Sodium Flare and UV protection, with the SB and B3 lenses offering addition IR protection.

The readers lenses are designed to magnify only, great for the close up work. They offer no filtration protection and need to be worn over lampworking protective eyewear.

Item No.	Description
11-1020-S	S-Series
11-1020-SB	SB-Series
11-1020-B3	B3-Series
11-1000-1	1.00 Diopter - Readers Lens
11-1000-1.5	1.50 Diopter - Readers Lens
11-1000-2	2.00 Diopter - Readers Lens
11-1000-2.5	2.50 Diopter - Readers Lens
11-1000-3	3.00 Diopter - Readers Lens



SB SERIES



READERS LENS

### WALEWEAR SAFETY GLASSES

These exclusive stylish frames from Wale feature scratch resistant, polycarbonate S Series lenses which offers Sodium Flare and UV protection. SB and B3 lenses offer additional IR protection.

Item No.	Description
11-2100PE-S	S-Series - Purple
11-2100PE-SB	SB-Series - Purple
11-2100PE-B3	B3-Series - Purple
11-2100PK-S	S-Series - Pink
11-2100PK-SB	SB-Series - Pink
11-2100PK-B3	B3-Series - Pink



### RECSPEC BIKER FRAME

Molding today’s style with the safety that frameworkers need, these stylish plastic frame glasses are comfortable and lightweight.

Item No.	Description
11-1047-S	S-Series
11-1047-SB	SB-Series
11-1047-B3	B3-Series



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## WALEWEAR LAMPWORKING SAFETY GLASSES

### BELLA ITALIA DESIGNER BLACK/TAN PLASTIC FRAME

These stylish frames from Wale feature scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Item No.	Description
11-1024BT-S	S-Series
11-1024BT-SB	SB-Series
11-1024BT-B3	B3-Series



### LEO DESIGNER BLACK PLASTIC FRAME

These stylish frames from Wale feature scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Item No.	Description
11-1025B-S	S-Series
11-1025B-SB	SB-Series
11-1025B-B3	B3-Series



### "GEEK" DESIGNER FRAME

The "Geek" stylish frames from Wale feature scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Item No.	Description
11-1026A-S	S-Series - "GEEK" 201
11-1026A-SB	SB-Series - "GEEK" 201
11-1026A-B3	B3-Series - "GEEK" 201
11-1026B-S	S-Series - "GEEK" 106
11-1026B-SB	SB-Series - "GEEK" 106
11-1026B-B3	B3-Series - "GEEK" 106
11-1026C-S	S-Series - "GEEK" CAT 05
11-1026C-SB	SB-Series - "GEEK" CAT 05
11-1026C-B3	B3-Series - "GEEK" CAT 05
11-1026D-S	S-Series - "GEEK" 124U
11-1026D-SB	SB-Series - "GEEK" 124U
11-1026D-B3	B3-Series - "GEEK" 124U



### CADEN DESIGNER GREY PLASTIC FRAME

These sleek grey and black designer frames feature scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offer additional IR protection.

Item No.	Description
11-1027-S	S-Series
11-1027-SB	SB-Series
11-1027-B3	B3-Series



### DARK GREY METAL Z87 SAFETY FRAME

This metal frame style from Wale meets the Z87 standard features scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Item No.	Description
11-1021G-S	S-Series
11-1021G-SB	SB-Series
11-1021G-B3	B3-Series



### BLACK METAL FRAME WITH SPRING ARMS

This metal frame style from Wale features scratch resistant polycarbonate S Series lenses, which provide Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Item No.	Description
11-1023B-S	S-Series
11-1023B-SB	SB-Series
11-1023B-B3	B3-Series



### SLEEK FRAME PRESCRIPTION READY

These sleek frames feature the unique "Prescription Insert" which enables the wearer to customize, by having their personal prescription inserted.

Durable plastic frame with scratch resistant polycarbonate S Series lenses providing Sodium Flare and UV protection. The SB and B3 Series offers additional IR protection.

Optional readers lens and shade#3 inserts available.

Item No.	Description
11-2150BK-S	S-Series - Black
11-2150BK-SB	SB-Series - Black
11-2150BK-B3	B3-Series - Black
11-2150WH-S	S-Series - White
11-2150WH-SB	SB-Series - White
11-2150WH-B3	B3-Series - White
11-2150I-B3	Shade #3 Insert
11-2150-1	1.0 Diopter - Reader Lens Insert
11-2150-1.5	1.5 Diopter - Reader Lens Insert
11-2150-2	2 Diopter - Reader Lens Insert
11-2150-2.5	2.5 Diopter - Reader Lens Insert
11-2150-3	3 Diopter - Reader Lens Insert



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## BLACK AND WHITE PATTERN

These stylish, black and white frames feature scratch resistant, polycarbonate S Series lenses which offers Sodium Flare and UV protection. SB and B3 lenses offer additional IR protection. Lightweight for a comfortable fit.

Len Size: 45mm" wide x 25" high

Item No.	Description
11-2125-S	S-Series
11-2125-SB	SB-Series
11-2125-B3	B3-Series



## ACE AND GREEN ACE EYEWEAR

**ACE Glass** is similar to Didymium and is used to reduce sodium flare and enhance viewable colors while protecting from UV/IR emissions. Used commonly for Soft Glass frameworling. **Green ACE Glass 3.0** provides all the same protection as the ACE lens, but with the added brightness reduction of a shade 3 welder's tint and IR protection.. Used commonly for Borosilicate frameworling.

### 70F ECONOMY SAFETY FRAME

This frame has a comfortable fit and has been a safety glass industry standard for many years. Available with or without side shields.

Item No.	Description
11-2300	w/ ACE lens
11-2301	w/ ACE lens and side shields
11-2400	w/ Green ACE 3.0 lenses
11-2401	w/ Green ACE 3.0 lens and side shields



### ECONOMY METAL FRAME

Economy Metal Frame is standard with spring hinges and flexible nose pads for added comfort. Color of frame may vary.

Item No.	Description
11-2309	w/ ACE Lens
11-2409	w/ Green ACE 3.0 Lens



## SPORTS GOGGLES

The Sports Goggle is a great alternative for people who don't want to be bothered with adjusting and fixing glasses. Comes with adjustable headband and a soft silk pouch. Frame style only available in clear plastic.

Item No.	Description
11-2350	w/ ACE lens
11-2450	w/ Green ACE 3.0 Lens



## TITANIUM FRAME

Designer Titanium Frame is designed for those who like to forget that they're wearing glasses. Comfortable and durable style. Frames come with the essential spring hinges.

Item No.	Description
11-2315	w/ ACE lenses
11-2415	w/ Green ACE 3.0 lenses



## INDUSTRIAL SC-9000 (FIT OVER)

A large industrial frame with molded plastic side shields. Great for wearing over prescription glasses.

Item No.	Description
11-2305	w/ ACE Lens
11-2405	w/ Green ACE 3.0 Lens



## DOWNTOWN DESIGNER FRAME

This designer frame is lightweight and extremely comfortable. Built for those with smaller faces, perfect for the female frameworler!

Item No.	Description
11-2342	w/ ACE Lens
11-2442	w/ Green ACE 3.0 Lens



## 2010 PHILLIPS MAXX

Phillips Maxx is a stylish, lightweight, and comfortable wrap-around plastic sun glass style frame.

Item No.	Description
11-2302	w/ ACE Lens
11-2402	w/ Green ACE 3.0 Lens



## STOCK READERS GLASSES

Great for small detail work without buying prescription glasses. Also a substitute for a clip-on.

Item No.	Description
11-1011	w/ ACE lenses +1.00 diopter
11-1012	w/ ACE lenses +1.50 diopter
11-1013	w/ ACE lenses +2.00 diopter
11-1014	w/ ACE lenses +2.50 diopter
11-1015	w/ ACE lenses +3.00 diopter



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# EYEWEAR

## QUARTZ WORKING AND WELDERS SHADES

### QUARTZ WORKING SPLIT LENS - 1/3 TOP ACE

EXCELLENT FOR THE QUARTZ WORKER - Top 1/3 is ACE AND THE BOTTOM 2/3 is available in a welders shade #6 or a shade #8.

Item No.	Description
11-1126	Shade #6
11-1128	Shade #8
11-1112	Side Shields



### QUARTZ WORKING SPLIT LENS - 1/3 TOP CLEAR

EXCELLENT FOR THE QUARTZ WORKER - Top 1/3 is CLEAR AND THE BOTTOM 2/3 is available in a welders shade #6 or a shade #8.

Item No.	Description
11-1146	Shade #6
11-1148	Shade #8
11-1112	Side Shields



### QUARTZ WORKING SPLIT LENS - 1/3 TOP SHADE 4

EXCELLENT FOR THE QUARTZ WORKER - Top 1/3 is SHADE 4 AND THE BOTTOM 2/3 is available in a welders shade #6 or a shade #8.

Item No.	Description
11-1125	Shade #6
11-1127	Shade #8
11-1112	Side Shields



### FIT OVER POLYCARBONATE WELDERS SHADE #6 AND #8

Very comfortable for the quartz worker. Super light weight! Fits over most existing glasses.



Item No.	Description
11-1031-6	Fit Over Polycarbonate Welders shade #6
11-1031-8	Fit Over Polycarbonate Welders shade #8

### KLIP LIFTS - FULL LENSES

The Klip Lifts are worn on your existing plastic or metal safety glasses, converting them into furnace or laboratory viewing eyewear. With their integral spring clip, they hold securely in place. They fit glasses with 46, 48, or 50mm S7-shaped plastic frames.

These glasses offer no sodium flare removal, and should be worn over top of ACE, didymium or other sodium flare removing lenses.

Item No.	Description
11-3014	Shade #4
11-3015	Shade #5
11-3016	Shade #6
11-3018	Shade #8



### SHADE #6 LAMPWORKING SAFETY GLASSES FOR QUARTZ GLASS WORKING

Frame comes with easy insert, uses polycarbonate lenses which are lightweight, scratch resistant, and comfortable. Provides excellent UV/IR protection for the quartz worker.



Item No.	Description
11-2150BK-6	Shade #6 Lampworking Safety Glasses for Quartz Glass Working

### KLIP LIFTS - HALF LENSES

The Klip Lifts are worn on your existing plastic or metal safety glasses, converting them into furnace or laboratory viewing eyewear. With their integral spring clip, they hold securely in place. They fit glasses with 46, 48, or 50mm S7-shaped plastic frames.

These glasses offer no sodium flare removal, and should be worn over top of ACE, didymium or other sodium flare removing lenses.

Item No.	Description
11-3004	Shade #4
11-3005	Shade #5
11-3006	Shade #6
11-3008	Shade #8



### CLIP-ON FLIP-UP LENSES - 1/3 TOP ACE

Top 1/3 is ACE AND THE BOTTOM 2/3 is available in a welders shade #6 or a shade #8.

Item No.	Description
11-1136	Shade #6
11-1138	Shade #8



### CLIP-ON (WELDING SHADE ONLY)

Lightweight, plastic clip-on, flip-up spectacles are excellent for filtering UV and IR rays. They will fit most frame styles.

Item No.	Description
11-1183	with Welding Shade 3.0
11-1109	with Welding Shade 5.0
11-1106	with Welding Shade 6.0
11-1188	with Welding Shade 8.0



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# BURNERS, TORCHES, & ACCESSORIES

## NATIONAL HAND TORCH

The National Hand Torch is a quality built, versatile and economical pre-mix hand torch. The rotating leak proof union between the venturi mixer and neck, the high fuel flow range for such a small torch and the full line of tips and accessories allow this torch to be use for virtually all applications. The National Hand Torch is listed by Underwriters Laboratory.

NATIONAL HAND TORCHES ARE DESIGNED FOR USE WITH THE FOLLOWING FUELS AND PRESSURES: Natural Gas, Propane or Butane: .25 – 5 psi; Oxygen: 2 – 10 psi

The National Hand Torch accepts all 7/16"-24 thread tips.



Item No.	Description
1385	National Hand Torch Only barbed connections
1375	National hand Torch Only w/B style threaded connections
1379	National Hand Torch Kit - Barbed Connections. Includes OX-3 and OX-5 Tips
1379-N	National Hand Torch Kit - Barbed Connections. Includes NOX-1,3, and 5 Tips
1388	Torch Holder for National Hand Torch
1389	Wale Heavy Duty Torch Holder w/ Spring Steel clamp



## NATIONAL HAND TORCH FOR HYDROGEN USE

This model of the National Hand Torch is specially designed for use with Hydrogen and Oxygen.

This torch comes with a 7" stainless steel neck/ elbow and has "A" (3/8-24 thread) size welding hose connections.

The National Hand Torch accepts all 7/16"-24 thread tips.



Item No.	Description
1365	National Hand Torch for Hydrogen use
14	1/4" Barb to Female A-size - Fuel
14-0	1/4" Barb to Female A-size - Oxygen

## REPLACEMENT PARTS FOR NATIONAL HAND TORCH:



Item No.	Description
329	Elbow Nut
330-A	Elbow Assembly - 4 1/2" Long - Standard
331	Elbow Nut Retaining Ring
334-G	Valve Stem Assembly - Green
334-R	Valve Stem Assembly - Red
335-A	Aluminum Valve Wheel - Green
335-O	Valve Wheel - Green
336-A	Aluminum Valve Wheel - Red
336-O	Valve Wheel - Red

## ACCESSORIES:

Item No.	Description
457C	10" Nozzle for National Hand Torch
457D	18" Long Elbow with Nut and Retaining Ring
457E	24" Long Elbow with Nut and Retaining Ring
457F	36" Long Elbow with Nut and Retaining Ring
457G	12" SS Nozzle for National Hand Torch-Hydrogen
40-1385	Top Mount Graphite Plate

## GAS/AIR TORCH TIPS FOR NATIONAL HAND TORCH

Gas Air torch tips are constructed of brass and provide a soft flame that is perfect for slow even heating. Commonly used as warming flames, annealing flames, or soft glass working flames. These pre-mix tips feature a 7/16-24 thread, which is compatible with the National Hand Torch, Nortel pre-mix top mount, Carlisle High Capacity Hand Torch, and several other pre-mix torch models.

Item No.	Description
N-0	N-0 .065 inch orifice
N-1	N-1 .095 inch orifice
N-2	N-2 .156 inch orifice
N-3	N-3 .187 inch orifice
N-4	N-4 .265 inch orifice



# BURNERS, TORCHES, & ACCESSORIES

## TIPS FOR NATIONAL HAND TORCH

### SINGLE HOLE GAS/OXY TORCH TIPS FOR NATIONAL HAND TORCH

Single Hole pre-mix single fire tips for gas and oxygen that feature a 7/16-24 thread, which is compatible with the National Hand Torch, Nortel pre-mix top mount, Carlisle High Capacity Hand Torch, and several other pre-mix torch models. Unpiloted tips provide a very sharp fire that is great for detail work. Offered in brass for economy, and stainless which is ultra clean and durable.

Item No.	Description
SSOX-1	Stainless OX-1 .042" Orifice
SSOX-2	Stainless OX-2 .055" Orifice
SSOX-3	Stainless OX-3 .070" Orifice
SSOX-4	Stainless OX-4 .082" Orifice
SSOX-5	Stainless OX-5 .100" Orifice
OX-00	Brass OX-00 .020" Orifice
OX-0	Brass OX-0 .032" Orifice
OX-1	Brass OX-1 .042" Orifice
OX-2	Brass OX-2 .055" Orifice
OX-3	Brass OX-3 .070" Orifice
OX-4	Brass OX-4 .082" Orifice
OX-5	Brass OX-5 .100" Orifice



### PILOTED GAS/OXY TORCH TIPS FOR NATIONAL HAND TORCH

Piloted pre-mix single fire torch tips for gas and oxygen that feature a 7/16-24 thread, which is compatible with the National Hand Torch, Nortel pre-mix top mount, Carlisle High Capacity Hand Torch, and several other pre-mix torch models. Piloted tips can be pushed much harder than the unpiloted variety. Offered in brass for economy, and stainless which is ultra clean and durable.

Item No.	Description
SSNOX-1	Stainless OX-1 .042" Orifice
SSNOX-2	Stainless OX-2 .055" Orifice
SSNOX-3	Stainless OX-3 .070" Orifice
SSNOX-4	Stainless OX-4 .082" Orifice
SSNOX-5	Stainless OX-5 .100" Orifice
NOX-1	Brass OX-1 .042" Orifice
NOX-2	Brass OX-2 .055" Orifice
NOX-3	Brass OX-3 .070" Orifice
NOX-4	Brass OX-4 .082" Orifice
NOX-5	Brass OX-5 .100" Orifice



### MULTI-PORT HUSH TORCH TIPS FOR NATIONAL HAND TORCH

THE BEST TIPS ON THE MARKET - Pre-mix multiport tips for gas and oxygen that feature a 7/16-24 thread, which is compatible with the National Hand Torch, Nortel pre-mix top mount, Carlisle High Capacity Hand Torch, and several other pre-mix torch models. Each tip has permanently "locked-in" stainless steel inserts, while the brass body acts as a heat sink, dissipating the heat from the face. This combination does not damage the blowpipe neck as stainless steel sometimes does.



Item No.	Description
1380	7 Hole - 1/4" diameter
1381	19 Hole - 3/8" diameter
1382	31 Hole - 1/2" diameter

### EXTRA LARGE NATIONAL TORCH TIP

53 Hole x 1" Diameter tip for National Hand Torch - 7/16 - 24 thread



Item No.	Description
C536	Extra Large National Torch Tip

### FISHTAIL TORCH TIPS FOR NATIONAL HAND TORCH

Pre-mix fishtail torch tips for gas and oxygen that feature a 7/16-24 thread, which is compatible with the National Hand Torch, Nortel pre-mix top mount, Carlisle High Capacity Hand Torch, and several other pre-mix torch models.



Item No.	Description
FSH-1	4 ports
FSH-3	9 ports
FSH-5	15 ports

### RIBBON TIPS FOR NATIONAL HAND TORCH

Pre-mix ribbon fire tips for gas and oxygen that feature a 7/16-24 thread. This tip is only compatible with the National Hand Torch. Ribbon fire tips present their flame in a line configurations and are offered in various lengths and row configurations. Made from stainless steel to be ultra clean and durable.



Item No.	Description
1396	4" - 3 Rows
1392	4" - 2 Rows
1395	3" - 3 Rows
1384	2" - 2 Rows
1386	1 1/2" - 1 Row

# BURNERS, TORCHES, & ACCESSORIES

## NORTEL TWIN-FUEL HAND TORCH

This pre-mix hand torch has a special injector type mixer and one hand finger tip control. The "Twin Fuel" Hand Torch has a lightweight aluminum handle and accepts the National Hand Torch tips (7/16" -24 thread). The "Twin Fuel" option allows greater versatility in temperatures and usable fuels. It is ideal for quartz working, other high temperature applications, and lathe work. Used as a booster torch when combined with under side lathe fires. The overall length of the torch is 11" and also includes a 10" long neck.



RECOMMENDED OPERATING PRESSURES: .25 to 5 psi of Gas, 5 to 20 psi of Oxygen

Item No.	Description
938	Twin-Fuel Hand Torch

## CARLISLE UNIVERSAL HAND TORCH

The Universal Pre-Mix Hand Torch is a nickel-chrome plated brass torch for glassblowers, laboratory technicians, metal, plastic, and glass shops. A wide variety of tips enables the operator to utilize flames ranging from a pinpoint fire to a large bushy flame with both gas/air and gas/oxygen mixtures. Both piloted and unpiloted tips are available. The Universal Pre-Mix Hand Torch is equipped with a rotating nozzle and can be used as a hand or bench torch with equal ease. The valve knobs are color coded for easy identification. All accessories and tips for the Universal Pre-Mix Hand Torch are interchangeable with the Unecon Hand Torch.



The Universal is available with a 1/4" nozzle for single point gas oxygen tips, 3/8" nozzle for gas/air and multipoint tips, and 7/16" for a wide variety of gas/oxygen tips.

Item No.	Description
905	Universal with 1/4 inch nozzle
805	Universal with 3/8" nozzle

## PILOTED GAS/OXY TORCH TIPS FOR 1/4-27

Piloted pre-mix single fire tips for gas and oxygen that feature a 1/4-27 thread, which is compatible with the Universal Hand Torch. Offered in brass for economy, and stainless which is ultra clean and durable.

Item No.	Description
911SS	Stainless Ox-1 .028" Orifice
912SS	Stainless Ox-2 .035" Orifice
913SS	Stainless Ox-3 .046" Orifice
914SS	Stainless Ox-4 .059" Orifice
915SS	Stainless Ox-5 .070" Orifice
911	Brass Ox-1 .028" Orifice
912	Brass Ox-2 .035" Orifice
913	Brass Ox-3 .046" Orifice
914	Brass Ox-4 .060" Orifice
915	Brass Ox-5 .070" Orifice



## CARLISLE HI-CAPACITY UNIVERSAL HAND TORCH 7/16 -24 THREAD

The Universal Pre-Mix Hi-capacity Torch **FOR USE WITH NATIONAL TORCH TIPS** (7/16 - 24 thread) This torch is a staple of the Scientific Glassworking community. With a nickel-chrome plated brass construction, this torch features excellent chemical and corrosion resistance.



Item No.	Description
804	Hi-Capacity Universal Hand Torch 7/16 -24 thread - Fits National Torch Tips

## CARLISLE UNECON HAND TORCH

The Unecon Pre-Mix hand torch features all nickel-chrome plated brass construction. The lever incorporated in the handle turns the torch off automatically when released. To relight the torch, the operator simply grasps the handle, depresses the lever and reignites the torch.

Available with a 3/8" nozzle or 1/4" nozzle. These nozzles are interchangeable.



Item No.	Description
903	1/4" nozzle, accepts single hole Gas/Oxygen Tips
803	3/8" nozzle, accepts single hole Gas/Oxygen Tips

## UNPILOTED GAS/OXY TORCH TIPS FOR 1/4-27

Unpiloted pre-mix single fire tips for gas and oxygen that feature a 1/4-27 thread, which is compatible with the Universal Hand Torch. Unpiloted tips provide a very sharp fire that is great for detail work. Offered in brass for economy, and stainless which is ultra clean and durable.

Item No.	Description
906SS	Stainless Ox-1 .028" Orifice
907SS	Stainless Ox-2 .035" Orifice
908SS	Stainless Ox-3 .046" Orifice
909SS	Stainless Ox-4 .060" Orifice
910SS	Stainless Ox-5 .070" Orifice
906	Brass Ox-1 .028" Orifice
907	Brass Ox-2 .035" Orifice
908	Brass Ox-3 .046" Orifice
909	Brass Ox-4 .060" Orifice
910	Brass Ox-5 .070" Orifice





# BURNERS, TORCHES, & ACCESSORIES

## NORTEL UNITORCH HAND TORCH 6 NOZZLE

The Unitorch has a stainless steel manifold and nozzle tubes with (6) stainless steel tips and a lightweight aluminum handle. It is ideal for lathe work, dewars, windows, fritted discs, round bottoms, ring seals, graded seals, glass to metal seals and flame cutting. The Unitorch hand torch easily works 40mm quartz or 75mm borosilicate glass standard wall tubing. It weighs 1 ½ lbs. and is 17" overall in length.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas, 5 to 15 psi of Oxygen

Item No.	Description
950	Nortel Unitorch Hand Torch 6 Nozzle

## NORTEL UNITORCH HAND TORCH 9 AND 12 NOZZLE

Offers the same characteristics as the 6 nozzle torch but features additional nozzles.



Item No.	Description
950-12	12 Nozzle Unitorch Hand Torch
950-9	9 Nozzle Unitorch Hand Torch

## THE SMITH "LITTLE TORCH" HAND TORCH

GREAT FOR SMALL DETAIL WORK ON GLASS AND METALS - The Smith "Little Torch" is a quality pre-mix hand torch designed to meet the exacting industrial standards for a small multi-purpose torch. Just a fraction wider and longer than the average middle finger. The balanced, rugged aluminum alloy body weighs only 1.5 ounces.



Variety of tips available allowing an infinite variety of flame settings up to 6300° F. Because of the small orifice size of tips 1, 2 and 3, each is fitted with a synthetic sapphire to assure accurate gas flow and improved flame characteristics.

Item No.	Description
900	Little Torch with Hosing - Includes 5 free tips
900-7	6 foot Red Hosing for Little Torch
900-8	6 foot Green Hosing for Little Torch
898	Magnetic Bench Stand for Little Torch
900-11	3" Flexible Extension for Custom Angle



898

## SINGLE HOLE TIPS FOR LITTLE TORCH

Tips for the Little Torch that provide a single point flame. A precision tip that presents a narrow pre-mixed flame for detailed applications.



Item No.	Description
901	Set of 5 Tips - Size #3 through #7
901-3	#3 - .011" orifice
901-4	#4 - .020" orifice
901-5	#5 - .029" orifice
901-6	#6 - .037" orifice
901-7	#7 - .047" orifice

## TWIN FLAME TORCH TIPS FOR LITTLE TORCH

Tips for the Little Torch that provide two flames directed to a central point. The twin flame tip is commonly used for sealing operations.



Item No.	Description
902	Set of 3 Tips - Size #4 through #6
902-4	#4 - .020" orifice
902-5	#5 - .029" orifice
902-6	#6 - .037" orifice

# BURNERS, TORCHES, & ACCESSORIES

## NORTEL RANGER HAND TORCH

The Ranger Hand Torch is a stainless steel, surface-mix torch producing hotter, quieter, safe flames without flashback. This burner offers all of the features of the Minor Lampworking Torch on a hand torch. The Ranger Hand Torch features precision needle valves to regulate the fuel and oxygen flow. The valve bodies can be rotated to suit the operator. The narrow head allows easy manipulation of glass work.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
980	Nortel Ranger Hand Torch

## NORTEL MULTIMIX JR HAND TORCH

Featuring the same flame characteristics of the Mid-Range Lampworking Torch, this hand torch is constructed of stainless steel and features a surface mix flame which produces great control and a tight flame pattern. The hand torch features fine control valves, fuel and oxygen valve bodies which can be rotated to suit the operator, and a lightweight design.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
40-0021	Nortel Multimix JR hand torch

## NORTEL MULTI-MIX HAND TORCH

The "Multi-Mix" Hand Torch is a surface mix torch that features a stainless steel nozzle and welded construction. Fuel and oxygen valve bodies can be rotated to suit the specific operator. Supplied with hose barb adapters for connection to hosing. The large burner head easily dismantles for cleaning or replacement of parts. Lightweight, the 20" long 8x8 row model weighs only 13 ounces.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas, 5 psi to 15 psi of Oxygen

Item No.	Description
991	8x8 Row Head
999	11x11 Row Head

## NORTEL RED MAX HAND TORCH

The Red Max Hand Torch features a stainless steel head and produces the same flame patterns as the Red Max Bench Burner. The large concentrated flame is great for both borosilicate and soft glass.



- Overall length 18"
- Head diameter is 3/4" 19mm

RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
922	Red Max Hand Torch

## NORTEL MINOR LAMPWORKING TORCH

The Minor Bench Burner is the ultimate burner for working with Moretti – Effetre soft glass used in Beadmaking and Marblemaking. An all stainless steel burner that supplies surface mix flames up to 3/4" diameter. The Minor is the same as the small burner mounted on the #923 Red Max Bench Burner. Works with natural gas, propane, and hydrogen.

RECOMMENDED OPERATING PRESSURES: .25 to 5 psi of Gas and 5 psi to 15 psi of Oxygen



Minor Burner shown with Graphite Top Mount

Item No.	Description
930	Nortel Minor Lampworking Torch -Barbed Connections
40-0930	Graphite top mount 2" x 3"
20-1381	Hose 1/4" I.D. - 12 Ft. - B Fitting on one end
611-540	Regulator - Oxygen 0 - 60 psi
613-510	Regulator - Propane 0 - 30 psi

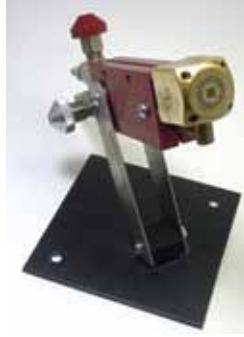
WE ACCEPT:



# BURNERS, TORCHES, & ACCESSORIES

## NORTEL MID-RANGE LAMPWORKING TORCH

The Mid-Range Bench Burner is a surface mix stainless steel burner which supplies flames up to 1" diameter. The Mid-Range burner features easy tilt positioning and precision needle valves to regulate the fuel and oxygen flow. The valve bodies can be rotated to suit the operator. This lampworking torch offers smooth tilt movement and a heavy base with mounting holes. Works with natural gas, propane, and hydrogen.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
40-0019	Nortel Mid-Range Lampworking Torch
40-0020	Graphite top mount 2" x 3"

## NORTEL MEGA MINOR LAMPWORKING TORCH

The Mega Minor is an upgraded version of the popular Minor Bench Burner that makes more efficient use of oxygen to produce a larger and hotter flame. For use with soft and hard glass beadmaking as well as small scale sculpture and marbles. Works with natural gas, propane, and hydrogen.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
931	Nortel Mega Minor Lampworking Torch
40-0930	Graphite top mount 2" x 3"

## NORTEL MID-RANGE PLUS LAMPWORKING TORCH

The Mid-Range Plus Bench Burner is a powerful stainless steel surface mix bench burner with your choice of the Minor bench burner surface mix head mounted on top or a Premix head on top, as shown in picture. The top mount head is individually controlled. The "Mid-Range Plus" Bench Burner supplies flames up to 1" diameter with the bottom burner and a small detailed flame with the Top Fire. Works with natural gas, propane, and hydrogen.



RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 12 psi of Oxygen

Item No.	Description
40-0023	Nortel Mid-Range Plus Torch w/ Pre-mix Topfire
40-0022	Nortel Mid-Range Plus Torch w/ Surface mix Topfire

## NORTEL MID-RANGE MEGA PLUS W/ MEGA MINOR TOPFIRE

The Nortel Mid-Range Mega Plus is a Mid-Range Torch, with a Mega Minor burner mounted on top.



The top mount head is separately controlled. The "Mid-Range Mega Plus" Bench Burner supplies flames up to 1" diameter with the bottom burner and a small detailed flame with the Top Fire. Works with natural gas, propane, and hydrogen.

RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
40-0024	Nortel Mid-Range Mega Plus w/ Mega Minor Topfire

## NORTEL MEGA MAX

ALL SURFACE MIX - The MEGA RED MAX Bench Burner is a powerful stainless steel surface mix bench burner with the Mega Minor bench burner surface mix head mounted on top. The top mount head is separately controlled. The "MEGA RED MAX" Bench Burner supplies flames up to 1 1/2" diameter with the large burner and a small detailed flame with the Top Fire.



With the new design of this bench burner you get a much more focused, uniform, cleaner, hotter flame than you can get with the original square headed Major bench burner. Works with natural gas, propane, and hydrogen.

RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen

Item No.	Description
927	Nortel Mega Max
40-0925	Graphite top mount 2" x 3"

## RED MAX CONVERSION KIT

This kit allows you to turn your Major Minor into a Red Max Torch. Includes new torch head, cooling fins and hardware



Item No.	Description
924C	Red Max Conversion Kit



# BURNERS, TORCHES, & ACCESSORIES

## NORTEL RED MAX LAMPWORKING TORCH

The RED MAX Bench Burner is a powerful stainless steel bench burner supplying flames up to 1 1/2" diameter and a small detailed flame with the top mounted burner. The top mounted burner is available in either a Surface mix or a Pre-mix burner.

With the new design of this burner, you get a much more focused, uniform, cleaner, and hotter flame than the original design of the Major bench burner.

Works with natural gas, propane, and hydrogen.

RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen



923



924

Item No.	Description
923	Red Max Burner w/ Minor Surface Mix Top Mounted Burner - Barbed Connections
923B	Red Max Burner w/ Minor Surface Mix Top Mounted Burner - "B" Connections
924	Red Max Burner w/ Pre-mix Top Mounted Burner - Barbed Connections
924B	Red Max Burner w/ Pre-mix Top Mounted Burner - B Connections
40-0925	Graphite top mount 2" x 3"

## NORTEL MINI MILON TORCH

This Pre-mix Burner which produces a pinpoint flame, is designed to use 7/16" threaded tips, National style.

Included are tips number 0, 1, 2, 3 and N11. Other tips, multiple orifice, and ribbon style are available.

The top ball-style mount enables easy tilt up and down and side to side. Swivel friction can be adjusted by the wing nuts.

Works with natural gas or propane and oxygen.

RECOMMENDED OPERATING PRESSURES: .25 psi to 5 psi of Gas and 5 psi to 15 psi of Oxygen



Item No.	Description
932	Nortel Mini Milon Torch

## ALPHA BETHLEHEM SURFACE MIX BENCH BURNER

The new low-pressure, stainless steel, Alpha Glass Bead Burner. The Alpha delivers more flow at a low gas pressure producing the ideal glass working flame. It's an excellent starter burner for the glass bead artist. Affordable and convenient, the Alpha is the only torch on the market today designed with your needs in mind.



Specifications:

- Burner configuration: Center fire - 6 jets Pentagon shape
- Face dia. - 5/8" (15.875 mm)
- Full flame consumption: Gas: 2 psi; 7 cu. ft./hr. (198 l/hr.) Oxygen: 8 psi; 27 cu. ft./hr. (765 l/hr.)
- Works: Rod - 5/8" (16 mm) Tube - 19 mm
- Dimensions: 5" long with a 6" base Net Weight: 2 1/2 lbs.
- Torch Cleaning Kit (Included with Burner) Kit includes a wooden dowel striker, two wires for gas ports cleaning, a wire brush and instructions)

RECOMMENDED OPERATING PRESSURES: 2 psi of Gas and 8 psi of Oxygen

Item No.	Description
25-0020	Alpha Bethlehem Bench Burner with B Valves and Base - Surface Mix

## CHAMPION BETHLEHEM SURFACE MIX BENCH BURNER

The newest low-pressure torch to hit the market, the Champion Glass Working Torch. The Champion is their most technologically advanced, versatile burner to date, and is a new, improved stainless steel alternative to our fan-favored PM2D. Newly engineered for a low-pressure, high heat performance, the Champion has the most efficient large flame on the market today.



Specifications:

- Burner configuration: Center fire - 6 jets Outer fire - 30 jets
- Face dia. - 1 1/8" (28.575 mm)
- Full flame consumption: Gas: 5 psi; 24.96 cu. ft./h (706.8 l/hr.)
- Oxygen: 20 psi; 88.13 cu. ft./hr. (2496 l/hr.)
- Works: Rod - 44 mm AND Tube - 80 mm +
- Dimensions: 6 7/8" long with a 8" base Net Weight: 8 3/4
- Torch Cleaning Kit (Included with Burner) Kit includes a wooden dowel striker, two wires for gas ports cleaning, a wire brush and instructions

RECOMMENDED OPERATING PRESSURES: 5 psi of Gas and 20 psi of Oxygen

Item No.	Description
25-0022	Champion Bethlehem Bench Burner with Valves and Base - Surface Mix



## BRAVO BETHLEHEM SURFACE MIX BENCH BURNER

The new low-pressure, stainless steel Bravo Bench Burner was designed specifically with the needs of the artistic flameworker in mind. A dual-purpose torch, it will work easily with both soft and borosilicate glass. Bethlehem's Bravo is one of the hottest new torches on the market today!

Made with the precision and quality of all Bethlehem burners, the Bravo's output is surface-mixed and whisper-soft. By varying the atmosphere of your flame, you can use your torch like a fiery paintbrush for shading and highlights. The razor-sharp center is excellent for creating small details. For marbles, sculpting, and vessels, this sleek new torch is both cost-effective and fuel-efficient.

The Bravo Bench Burner Features: An improved design replacing our popular Barracuda Burner.

All stainless steel construction that stays cool while the flame is super hot.

A unique design that allows for a higher volume of fuel at a lower inlet pressure- 15 cu. ft./hr. at only 2 psi. Can also operate on household gas (1/4 psi) and oxygen concentrators (7 psi)

Specifications:

- Burner Configuration Center fire – 6 jets; Outer fire – 12 gas jets
- Works Rod - 1" (26 mm); Tube - 38mm
- Full Flame Gas Consumption Gas: 2 psi; 15 cu. ft./hr. (425 l/hr.); Oxygen: 8 psi; 66 cu. ft./hr. (1867 l/hr.)
- Hose Connection Threaded "B" fittings
- Construction Stainless steel body with black enamel base
- Dimensions 6" Long with a 6" base Net Weight 3 1/2 lbs.
- Torch Cleaning Kit (Included with Burner) Kit includes a wooden dowel striker, two wires for gas ports cleaning, a wire brush and instructions

RECOMMENDED OPERATING PRESSURES: 2 psi of Gas and 8 psi of Oxygen

Item No.	Description
25-0021	Bravo Bethlehem Bench Burner with Valves and Base - Surface Mix



## BUNSEN BURNER - 4 BARREL

Four Barrel Bunsen Burner is great for heating glass while working on other sections.

Balanced construction provides good combustion qualities.

Burner has a heavy and stable base and a 1/4" barb connection for attaching the hose.



Item No.	Description
B122P	Bunsen Burner - 4 barrel for Propane
B122G	Bunsen Burner - 4 barrel for Natural Gas

## CARLISLE MINI CC LAMPWORKING BENCH BURNER

The Carlisle Mini CC is a surface mix burner that offers a high level of versatility in the flame. This wide range of flame capabilities makes the Mini CC the perfect bench burner for beginners and experts alike.

The body of the mini CC is constructed of brass and has cooling fins cut into its profile to help protect the burner from heat build-up. The tube matrix, which is constructed of seven tubes, is made of stainless steel. The connection of the body to the stand is made with a ball joint, allowing for an increased or decreased tilt of 15 degrees and articulation. This allows the burner to have excellent positioning capabilities.

Consumption based on standard usage is approximately 1.5 LPM (Liters Per Minute) of propane and 7 LPM of oxygen. This burner may be used with oxygen and either natural gas, propane, or even hydrogen. The recommended operating pressures are 2 psi (Pounds per Square Inch) for fuel gas and 5 psi for oxygen.

This unit features "B" size welding hose fittings for feed connections. Hose barbs can be adapted if requested.



Item No.	Description
100B	Carlisle Mini CC Lampworking Torch
40-0101	Graphite top mount 2" x 3"

## CARLISLE HELLCAT LAMPWORKING BENCH BURNER

The Carlisle HellCat Lampworking Torch extends your reach! Four valves separately control the inner and outer flames for unsurpassed control. Adjust to practically any flame combination and make bigger objects faster.

Burner is supplied with 4 separate "B" size welding hose inlets which allows use with optional foot pedal controller. Optional adapters available to support barbed connections or 2 inlet use.



Item No.	Description
117	Carlisle HellCat Lampworking Torch

## HOT HEAD LAMPWORKING TORCH

The Hot Head is an affordable burner head for working with soft glass and it's easy use makes it ideal for the beginner lampworker. Its fueled by MAPP gas either in the disposable bottles or larger bulk containers. It does not require hoses, regulators or oxygen as do other recommended burners and torches.



Item No.	Description
40-5613	Hot Head Lampworking Torch

## CARLISLE CC LAMPWORKING BENCH BURNER

The burner that started it all is still the standard of the industry. The Carlisle CC burner has two separate flames to allow for maximum control. The centerfire is a pre-mix tip that can either be a #3 (standard) or a #5 (special order). The outerfire is surface mixed and is excellent for boosting the heat when you need it.

These units are offered with either a ball and post mount, or the upgraded rack and pinion mount. The rack and pinion allows for ease of positioning, with a knob on either side of the unit to change the articulation of the head. The ball and post will also allow for some articulation, but should not be done while the unit is emitting a flame.

There are many other options and sizes that can be selected for a more custom torch, such as the CC Plus, CC ++, 2 or 4 inlets, hose barbs or welding hose connections, and also the air optimizer! The standard burners in stock have 2 inlets, hose barb adapters, and a #3 centerfire tip. Other units are available to order.

Also available for use with Hydrogen.



Item No.	Description
110	CC Bench Burner with Ball and Post Mount (2 inlets)
114	CC Bench Burner with Rack and Pinion Mount (2 inlets)
111	CC Bench Burner for use with Hydrogen
40-0110	Graphite top mount 2" x 3"

## CARLISLE CC PLUS LAMPWORKING BENCH BURNER

The CC Plus is a larger version featuring 3 rows of porting on the outside flame, rather than the standard 2 rows on a CC.

The pre-mix center fire and surface mix outer fire are similar to the standard CC design however capable of passing twice the amount of gas and oxygen. This high capacity design is ideal for working quartz and larger applications.

Standard features include a ball and post mount, #3 centerfire tip, and 2 inlets with hose barb adapters.

Also available for use with Hydrogen.



Item No.	Description
126	CC Plus with Rack and Pinion
120	With Ball & Post Mount (2 inlets)

## CARLISLE BLACK WIDOW BENCH BURNER

The Black Widow is a 4 inlet concept torch. The engineers behind the magic gathered advice from every artist that walked through Carlisle's doors. After various trials, the original Black Widow was born. It was an all surface mixed torch with the center fire built exactly like the ever popular High Oxy Mini CC centerfire. As the Black Widow gained popularity, artists began to make new requests. They wanted something that would be able to "punch" a hole right through medium wall tubing. Carlisle responded and the results were breathtaking. The Widow is now offered with four different variations of the centerfire. It is now possible to get the Widow with a pre-mixed #3, pre-mixed #5, surface mixed "Artistic", or surface mixed "Hi Oxy" center fire.

The Widow base is something entirely unique. It can be adjusted vertically to accommodate the standing artist or a larger piece of artwork. The head of the torch is also adjustable in a front-to-back motion (almost straight up or down) and turns 360°. The Widow is the perfect torch for any Borosilicate worker as well as the soft glass bead maker or master sculptor. Consumption based on standard usage is approximately 80 CFH (cubic foot per hour) of propane and 448 CFH of oxygen. This burner may be used with oxygen and either natural gas, propane, or even hydrogen.

RECOMMENDED OPERATING PRESSURES: 2 psi of Gas and 20 psi of Oxygen



Item No.	Description
119	Black Widow Carlisle Bench Burner

"My name is Monica Chapon and I use your products non-stop. The hand-held torch I purchased in 2006 is the most important piece in my studio...I also use glass rod bought from Wale."

- Monica Chapon





# BURNERS, TORCHES, & ACCESSORIES

## ACCESSORIES

### QUICK-CONNECTS

MADE IN THE USA - Quick-Connects provide for fast and reliable connections and disconnections for torches, hoses and regulators. All models are color-coded for added safety Oxygen (Green), Fuel Gas (Red). Oxy/Fuel Gas models included integral reverse flow Check Valve. Quick Connects fit all B-Size welding and cutting equipment.



Supplied in sets of 1 Fuel Gas and 1 Oxygen. Available in regulator mounted, torch mounted, and hose to hose models. Individual quick connects and half sides are available upon request.

Features:

- Brass construction provides long service life - cycle tested over 10,000 operations indicating a service life of 10 to 12 years
- Instant closure on reverse flow Check Valve with total shutoff at only 10 oz. of back pressure
- Spring loaded locking mechanism
- Exceed CGA flow specifications - 1100 SCFH flow at 125 psi inlet pressure
- UL Listed
- 200 psi maximum operating pressure

Item No.	Description
1811	Torch to Hose Mounted Set
1812	Regulator to Hose Mounted Set
1813	Hose to Hose Mounted Set
20-1400-F	Regulator to Hose Mounted - Male Plug Only -Gas
20-1400-O	Regulator to Hose Mounted - Male Plug Only -Oxy

### T GRADE TWIN WELDING HOSE

MADE IN THE USA - GOODYEAR - T Grade rubber welding red hose is compatible for use with natural gas, propane, and the T Grade welding green hose is compatible for use with oxygen.



The durable cross-section design is abrasion and cut resistant. Able to withstand working pressures up to 150 psi.

"A" fitting is for Hydrogen

Item No.	Description
20-1381	1/4" I.D. - 12 Foot - B Fitting on one end
20-1382	1/4" I.D. - 25 Foot - B Fitting on both ends
20-1382-50	1/4" I.D. - 50 Foot - B Fitting on both ends
34-10107-1	1/4" I.D. - 25 Ft B Fitting on end A on other end
20-1383	3/8" I.D. - 12 Foot - B Fitting on one end
20-1384	3/8" I.D. - 25 Foot - B Fitting on both ends

### Y CONNECTORS

Y connectors are designed to allow for two hoses to come from one regulator. Inlet is female B size and outlets are male B size. Also offered with valves to control the flow to each line.



Item No.	Description
20-1403	Fuel Gas - with valves
20-1404	Oxygen - with valves
20-1400	Oxygen
20-1401	Fuel Gas

### ADAPTERS AND FITTINGS

1/4 inch Barb to B-Size or A size adapters allow you to connect a 1/4" ID welding hose by pushing onto the 1/4" barb connector



B-size is 9/16 - 18 Thread

A-size is 3/8 - 24 Thread

Fuel adaptors have left handed threads and Oxygen adaptors have right handed threads

Item No.	Description
24-0	1/4 Barb to Female B-Size - Oxygen
24	1/4 Barb to Female B-Size - Fuel
40-B	1/4" Barb to male B-Size - Oxygen
41-B	1/4" Barb to male B-Size - Fuel
14	1/4" Barb to Female A-size - Fuel
14-0	1/4" Barb to Female A-size - Oxygen

### PVC TWIN TUBING

This PVC color coded tubing is lightweight, flexible, and kink resistant. It's available plain or with protective Norfab overbraid for added protection from heat and abrasion. Great for Hand Torches!

1/4 inch ID x 3/8 inch OD. Able to withstand working pressures up to 20 psi.

Item No.	Description
20-1350	10 Foot
20-1352	25 Foot
20-1354	50 Foot
20-1356	100 Foot
20-1370	10 Foot - with Norfab Overbraid
20-1372	25 Foot - with Norfab Overbraid
20-1374	50 Foot - with Norfab Overbraid
20-1376	100 Foot - with Norfab Overbraid



20-1350



20-1370

# BURNERS, TORCHES, & ACCESSORIES

## ACCESSORIES

### STANDARD DUTY REGULATORS

Standard Duty regulators from Wale are single stage regulators that are ideally suited for flameworking applications. A sensitive neoprene diaphragm maintains consistent delivery pressure. Features include dual inlet filtering, compact design, and it is made in the U.S.A.



Outlets are welding hose "B" size fittings.

Item No.	Description
611-540E	Oxygen Regulator - Standard Duty 0-150 psi
613-510E	Fuel Regulator - Standard Duty 0--30 psi

### HEAVY DUTY REGULATORS

HIGH QUALITY PREMIER REGULATORS - Premier tank regulators from Wale are heavy duty single stage regulators that are ideally suited for flameworking applications. A sensitive neoprene diaphragm maintains consistent delivery pressure. Features include dual inlet filtering, compact design, and it is made in the U.S.A.



Outlets are welding hose "B" size fittings.

Item No.	Description
611-540	Oxygen 0 - 60 psi
613-510	Propane 0 - 30 psi

### 7 WAY HEX MANIFOLDS

These popular and economical manifolds are made of brass and are tested up to 3,000 psi in pressure. Each manifold offers up to 6 outlets with 1 inlet. The inlet and outlets are 1/4 inch NPT thread.



Purchase the 1/4" NPT to B Size adapters to use with this manifold for easy connection of torches.

Purchase the 1/4 inch plug to plug up outlets that are not needed.

Item No.	Description
20-1405	7 Way Hex Manifold
20-1409	1/4" NPT to Male "B" size Oxygen adapter
20-1410	1/4" NPT to Male "B" size Fuel Gas adapter
20-1408	1/4 inch plug

### TWIN REGULATOR BONUS PACK

Bonus Pack Includes:

- Oxygen Regulator 0-150 psi
- Fuel Regulator 0-30 psi
- Set of Flashback Arrestors

Great Deal!



Item No.	Description
1800	Twin Regulator Bonus Pack

### FLASHBACK ARRESTORS

Flashback Arrestors help prevent serious incidents caused by reverse gas flows or flashbacks. They are designed to stop flashbacks by preventing ignition of mixed gases while protecting equipment such as hoses, regulators, and cylinders.

Flashback Arrestors are required for use with all pre-mix torches, and are strongly recommended for all surface mix torches as well.

Features:

- Color coding for gas service provides added safety - Oxygen (Green), Fuel Gas (Red)
- Internal check valve designed to prevent reverse flow of oxygen and fuel gases
- Maximum operating pressures of 22 psi for Propane and 125 psi for Oxygen
- Reusable and does not require manual resetting
- UL listed and 100% tested



Note that these cannot be used with gasses at or below 1 psi, including residential pressure natural gas (approximately .25 psi or 7" Water Column).

Item No.	Description
1810	Set of Flashback Arrestors (1 Fuel & 1 Oxygen)
1803	Oxygen Flashback Arrestor
1804	Fuel Gas Flashback Arrestor

WE ACCEPT:



# BURNERS, TORCHES, & ACCESSORIES

## ACCESSORIES

### WELDIT GASAVER TORCH HANGER

The Weldit Gasaver is a hand torch accessory designed for bench or lathe use. It is to be installed in the oxygen and fuel supply lines. When a torch is hung on the Gasaver lever, flow is automatically shut off. The pilot that is on the hanger can be used to easily relight the hand torch when it is picked up from the lever.



Item No.	Description
20-8245	Natural Gas
20-8244	Propane
20-8246	Hydrogen

### WALE HEAVY DUTY TORCH HOLDER W/ SPRING STEEL CLAMP HOLDER

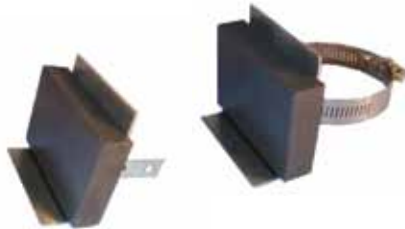
With a cast iron base and stainless steel arm assembly, the heavy duty Wale Torch Holder is designed to be a stable and durable holder for the National Hand Torch. Due to the innovative design, the torch can be easily and safely placed or removed with one hand. On the base, there are 4 threads that can store extra tips while not in use.



Item No.	Description
1389	Wale Heavy Duty Torch Holder w/ Spring Steel Clamp Holder

### TOP MOUNT GRAPHITE MARVER

Wale is proud to offer these economical graphite marver tops for a range of burners. Each has been designed to work with the burner listed, and features a size of 3 inch wide x 2 inch deep x 5/8 inch thick.



Item No.	Description
40-0930	Minor/Mega Minor Burners - Pt# 930, 931
40-0020	Mid-Range Burner - Part# 40-0019 - "L" bracket design
40-0925	Major/RedMax Burners - Part# 923, 924, & 927 "L" bracket design
40-0110	CC Burners - Part# 110 and 114
40-0101	Mini CC Burner - Part# 100B

### TORCH LIGHTING PRODUCTS

For safe and reliable ignition of your torches, nothing beats the tried and true striker from Shurlite. This flint striker also has affordable replacement flints.

For those that want an upgrade, the Torch-Mate provides hands-free automatic torch lighting. Simply depress the activator arm with your torch and it automatically triggers the battery operated igniter. This rugged all-metal lighter measures 2" wide x 3 1/2" long x 2 1/2" high and is ideal for bench or lathe mounting. Operates on (2) AA batteries (not included).



810



800

Item No.	Description
800	Torch Mate - Battery Operated
810	Shurlite Striker
815	Replacement Flint for Shurlite (box of 5)

### MINI CC "CROWLEY" MARVER

Developed with the help of glass artist and instructor Debbie Crowley of the Glass Hive, this torch mounted marver is the most innovative of its kind ever created. Using a threaded connection point, the marver is securely attached to the burner, alleviating any issues of movement of the work surface during use. The graphite pad itself is a full 4 inches wide by 2 1/2 inches deep by 1/2 inch thick. The pad is held in place on a stainless steel cradle with two spring clips. The spring clips have a strong grip to hold the graphite in place without movement during use, yet are flexible enough to allow for easy change out of the pad or even allowing the pad to be flipped over for dual service life. The best feature of all is the separate articulation ball joint. This allows the pad to be angled and moved to almost any position regardless of how the head is angled. With this revolutionary feature, you can have a level marver pad and an angled torch head or vice versa or anywhere in between.



This option is available only as a self installed option. The product comes with installation instructions and all parts necessary other than the Mini CC burner (burner sold separately).

Item No.	Description
40-0102	Mini CC "Crowley" Marver



# KILNS

**WE OFFER AN ENTIRE LINE OF KILNS FROM JEN-KEN, PARAGON, EVENHEAT AND MORE!**

## DELUXE 11" x 9" ANNEALING/FUSING JEN-KEN KILN WITH 4" BEAD DOOR

Annealing and fusing kiln.

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 11" DIA. x 9" D
- Electric Requirements: 120V – 13 AMP
- Max Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 70lbs
- Shipping Method: UPS



Additional Info:

- Includes: 9" Shelf, Posts, and Kiln Wash
- Side Firing
- Additional 4" x 9" Side Flip Up Door

Item No.	Description
40-1191	w/ Digital Controller
40-1190	w/ Analog Pyrometer

## AF3P CUBE 4" DOOR JEN-KEN KILN

Compact and portable, this kiln is great for lampworking and fusing along with many other applications.

- Controller: AF3P 3 Key Digital
- Inside Dimension: 9" L x 9" W x 9" D
- Electric Requirements: 120V 13AMP
- Max Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 70lbs
- Shipping Method: UPS



Additional Info:

- Large 4" x 9" door
- Side firing only
- Includes shelf, posts, kiln wash, peephole plug, base brick, and manual

Item No.	Description
40-1192-BD4	Cube 4" Door Jen-Ken Kiln

## 11" x 4.5" ANNEALING/FUSING JEN-KEN KILN WITH BEAD DOOR

Annealing and fusing kiln.

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 11" DIA. x 4 1/2" D
- Electric Requirements: 120V – 13 AMPS
- Max Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 50lbs
- Shipping Method: UPS



Additional Info:

- Includes: Shelf, Posts, and Kiln Wash
- Side Firing
- Additional 2" x 9" Side Flip Up Door

Item No.	Description
40-1142	w/ Digital Controller
40-1141	w/ Analog Pyrometer

## CHILIPEPPER TOOLBOX ANNEALING JEN-KEN KILN

Bead Annealer Series, lightweight and portable.

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 16" W x 5 1/2" H x 6 1/2" D
- Electric Requirements: 120V 15AMP
- Max Temp: 1100° F
- MFG. Warranty: 2 Years
- Shipping Weight: 25lbs
- Shipping Method: UPS



Additional Info:

- Door Opening: 16" W x 2 3/4" H
- Exterior metal bead mandrel rest at bottom of door opening
- Kiln insulation lining Two 1" layers of 8lb non-carcinogenic "Superwool-607"

Item No.	Description
40-0617	Chilipepper kiln w/ Digital Controller
40-0616	w/ Analog Pyrometer

## GS FUSE BOX JEN-KEN KILN

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 6" x 6" x 4 1/2" D
- Electric Requirements: 120V – 10 AMP
- Max. Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 35lbs
- Shipping Method: UPS



Additional Info:

- Includes: Shelf, Posts, Kiln Wash, and Base Brick
- Lift Off Brick Lid

Item No.	Description
GS	GS Fuse Box Jen-Ken Kiln

"I began lampworking about 13 years ago. I purchased all my equipment from Wale and still use most everything to this day. I did upgrade to a bigger torch and better glasses, but I also bought those at Wale...it's been a pleasure working with Wale all these years...keep up the good work."

- Annie D.

## 11" x 4.5" ANNEALING/FUSING JEN-KEN KILN

Compact and easy to move with large sturdy handles.

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 11" DIA x 4 1/2" D
- Electric Requirements: 120V – 10 AMP
- Max Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 50lbs
- Shipping Method: UPS



Additional Info:

- Side firing
- No bead door

Item No.	Description
40-1144	w/ Digital Controller
40-1145	w/ Analog Pyrometer

## AF3P BEAD CUBE JEN-KEN KILN

Compact and portable, great for lampworking.

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 9" L x 9" W x 4.5" D
- Electric Requirements: 120V – 13 AMP
- Max Temp: 1700° F
- MFG. Warranty: 2 Years
- Shipping Weight: 70lbs
- Shipping Method: UPS



Additional Info:

- Includes: Shelf, Posts, Kiln Wash, Peep Hole Plug, and Base Brick
- Side Firing
- Large 2" x 9" Door

Item No.	Description
AF3P	#AF3P Bead Cube Jen-Ken Kiln

## AFG OVAL 9 JEN-KEN KILN

Designed for the artist that has a passion for all the fired arts! Includes BOTH ceramic and glass firing modes.

- Controller: Digital
- Inside Dimension: Oval – 24"W x 39"L x 9"D
- Electric Requirements: 240V - 36AMP
- Max Temp: 1700°F
- MFG. Warranty: 2 Years
- Shipping Weight: 250 lbs
- Shipping Method: Freight Truck



Additional Info:

- Receptacle: 6-50R
- Includes: 2 "D" Half Shelves, Kiln Wash, Peep Hole Plug, and Stand
- Optional: Viewing Window
- Glass Mode: Gives the uniform top blast of heat to evenly heat the glass on the shelf with some of the side coils heating to assist in bringing the kiln to temperature.
- Ceramic Mode: All side firing, great for ceramics and glazes

Item No.	Description
OVAL9	AFG OVAL 9 Jen-Ken Kiln

## AF3P 15" x 6" JEN-KEN KILN

Smaller kiln with BIG kiln features!

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 15" DIA. x 6"D
- Electric Requirements: 120V - 15AMP
- MFG. Warranty: 2 Years
- Shipping Weight: 80lbs
- Shipping Method: UPS



Additional Info:

- Includes: Shelf, Posts, Kiln Wash, Peep Hole Plug, and Stand
- Optional: Viewing Window or Flip Door
- 2-Position Lid Prop for Venting
- High Temperature Lid Coating

Item No.	Description
AF3P156	15" x 6" Jen-Ken Kiln

## AFG 18" x 11" JEN-KEN KILN

- Controller: AF3P 3 KEY DIGITAL
- Inside Dimension: 18" DIA. x 11"D
- Electric Requirements: 240V – 20 AMP
- MFG. Warranty: 2 Years
- Shipping Weight: 150lbs
- Shipping Method: Freight Truck

Additional Info:

- Includes: Shelf, Posts, Kiln Wash, Peep Hole Plug, and Stand
- Optional: Viewing Window
- 2-Position Lid Prop For Venting
- High Temperature Lid Coating



Item No.	Description
AFG18E	18" x 11" Jen-Ken Kiln

## BLUEBIRD XL 20" x 4.5" x 9" PARAGON KILN

Dream kiln for the glass bead enthusiast!

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 20" L x 4 1/2" H x 9" D
- Electric Requirements: 120V -15 AMP
- Max Temp: 1500°F
- MFG. Warranty: 2 Years
- Shipping Weight: 80 lbs
- Shipping Method: UPS



Additional Info:

- (2) 10" Wide x 4 1/2" doors
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off switch
- 20 Slot Mandrel Holder
- Also available in custom black, pink, purple, and turquoise



Item No.	Description
40-1160	BluebirdXL 20" x 4.5" x 9" Paragon Kiln
40-1160B	BluebirdXL in Black 20" x 4.5" x 9" Paragon Kiln
40-1160P	BluebirdXL in Pink 20" x 4.5" x 9" Paragon Kiln
40-1160PU	BluebirdXL in Purple 20" x 4.5" x 9" Paragon Kiln
40-1160OT	BluebirdXL in Turquoise 20" x 4.5" x 9" Paragon Kiln

## F-200 LAMP WORKING PARAGON KILN

High performance, versatile kiln great for glass annealing and fusing. Ideal for seminar teachers, like two kilns in one!

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 25" W x 15" D x 8" H
- Electric Requirements: 240V – 20 AMP
- Max Temp: 1700°F
- MFG. Warranty: 2 Years
- Shipping Weight: 275 lbs
- Shipping Method: Freight Truck

Additional Info:

- Spring loaded vertical drop door with (2) 2" x 11" punty rod doors. Use to insert figurine with a punty rod which extends outside the firing chamber.
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off switch
- 19 Slot Mandrel Holder
- Dual Mechanical Relays. Optional Mercury Relay available
- Top Firing



Item No.	Description
F200	F-200 Lamp Working Paragon Kiln

## F-500 LAMP WORKING PARAGON KILN

Great work horse that will raise production and is designed for annealing large glass figurines, beads, and marbles.

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 24" W x 18" D x 22 1/4" H
- Electric Requirements: 120V - 15 AMP
- Max Temp: 1200°F
- MFG. Warranty: 2 Years
- Shipping Weight: 40lbs
- Shipping Method: Freight Truck

Additional Info:

- Precisely balanced counter-weight vertical drop door with (2) 4" x 10 1/2" punty rod doors. Use to insert figurine with a punty rod which extends outside the firing chamber.
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off switch
- Adjustable 19 Slot Mandrel Holder
- Industrial Grade Mercury Relay
- Side Firing



Item No.	Description
F500	F-500 Lamp Working Paragon Kiln



WE ACCEPT:





## F120 10.75" x 7" x 11" PARAGON KILN

Anneal glass figurines in this lampworking kiln.



- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 10 ¾" W x 7" H x 11" D
- Electric Requirements: 120V – 15 AMP OR 220V
- Max. Temp: 1700°F
- MFG. Warranty: 2 Years
- Shipping Weight: 125lbs
- Shipping Method: Freight Truck

Additional Info:

- Spring loaded vertical drop door with punty rod door. Use to insert figurine, up to 5" tall, with a punty rod which extends outside the firing chamber.
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off switch
- Safety pilot light
- 2 ½" Insulating Refractory Firebricks
- Top Firing

Item No.	Description
40-1165-220	10.75" x 7" x 11" Paragon Kiln 220 volt 50hz
40-1165	F120 10.75" x 7" x 11" Paragon Kiln 120 volt

## F130 11" x 13" x 11" PARAGON KILN

Anneal large glass figurines in this elite lampworking kiln.



You can make figurines up to 11" tall in the F-130 Elite Paragon kiln. Maintain the annealing temperature indefinitely with the Sentry xpress 3-key controller.

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 11" W x 13" H x 11" D
- Electric Requirements: 120V – 20 AMP
- Max. Temp: 1800°F
- MFG. Warranty: 2 Years
- Shipping Weight: 150lbs
- Shipping Method: Freight Truck

Additional Info:

- Spring Loaded Vertical Drop Door with Punty Rod Door. Use to insert figurine, up to 11" tall, with a punty rod which extends outside the firing chamber.
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off Switch
- Safety Pilot Light
- 2 ½" Insulating Refractory Firebricks
- Top Firing

Item No.	Description
40-1164	F130 11" x 13" x 11" Paragon Kiln

## F-240 LAMP WORKING PARAGON KILN WITH TOP ELEMENTS

Anneal large glass figurines in this kiln.

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 18" W x 18" D x 13" H
- Electric Requirements: 240V – 20 AMP
- Max Temp: 1700°F
- MFG. Warranty: 2 Years
- Shipping Weight: 290 lbs
- Shipping Method: Freight Truck



Additional Info:

- Spring loaded vertical drop door with (2) 4" x 15" punty rod doors. Use to insert figurine, up to 11" tall, with a punty rod which extends outside the firing chamber.
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off switch
- Top Firing

Item No.	Description
40-1166	F240 With Top Elements

## SC2 8" x 5.75" x 7.75" PARAGON KILN WITH BEAD DOOR

SC-2 digital kiln includes a bead door and window.

- Controller: Sentry Express 3 Key Digital
- Inside Dimension: 8" W x 5 ¾" H x 7 ¾" D
- Electric Requirements: 120V – 15 AMP
- Max. Temp: 2000°F
- MFG. Warranty: 2 Years
- Shipping Weight: 36lbs
- Shipping Method: UPS



Additional Info:

- 6 ½" Bead Door with Glass View Port and Mandrel Holder
- Sentry Express Digital Controller includes two modes: Single Speed and 8 Segment Ramp Hold
- On/Off Switch
- Side and Back Firing
- Includes a ¼" Thick Ceramic Fiber Shelf
- Top Vent complete with Tapered Plug for lost Wax Casting
- Built in Base

Item No.	Description
40-1163	SC2 8" x 5.75" x 7.75" Paragon Kiln with Bead Door

## EVENHEAT CRUCIBLE FURNACE

Hi-Temp Crucible Furnace.

- Controller: Rampmaster Digital
- Inside Dimension: 11" DIA. x 9" H
- Electric Requirements: 240V – 17 AMP
- Max Temp: 2300°F
- MFG. Warranty: 2 Years
- Shipping Weight: 135 lbs
- Shipping Method: Freight Truck



Additional Info:

- Side Firing
- Safety shut-off switch
- Includes: (3) 4 1/2lb crucibles, fiber blanket crucible shield, 9" kiln shelf with (3) posts, and a lewis wilson instructional video

## FISHBONE BEAD ANNEALER EVENHEAT

Perfect for annealing beads and sculpted glass.

- Controller: Set-Pro 3 Key Digital with Express Mode
- Inside Dimension: 14 1/4" W x 7 1/2" D x 3 1/2" H
- Electric Requirements: 120V – 15 AMP
- Max Temp: 1200°F
- MFG. Warranty: 2 Years
- Shipping Weight: 40 lbs
- Shipping Method: UPS



Additional Info:

- Set-Pro Digital Controller With Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- 25 Slot Mandrel Rest

Item No.	Description
40-1109	Crucible Furnace

Item No.	Description
40-0663	Fishbone Bead Annealer

## GT 14.5" x 6.5" EVENHEAT KILN

The GT 14-6 kiln offers a full range of firing operations, annealing, fusing, and more. Great for the beginner.

- Controller: Rampmaster Digital with Express Mode
- Inside Dimension: 14 1/2" DIA. x 6 1/2" H
- Electric Requirements: 120V – 20 AMP
- Max Temp: 1650°F
- MFG. Warranty: 2 Years
- Shipping Weight: 70 lbs
- Shipping Method: UPS



Additional Info:

- Rampmaster Digital Controller with Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- 2 Position Lid Vent
- Optional: Viewing Window and Stand

## GTS 18" x 9" EVENHEAT KILN

Larger diameter kiln great for annealing, fusing, and more!

- Controller: Rampmaster Digital with Express Mode
- Inside Dimension: 18" DIA. x 9" H
- Electric Requirements: 240V – 20 AMP
- Max Temp: 1,800°F
- MFG. Warranty: 2 Years
- Shipping Weight: 135 lbs
- Shipping Method: Freight Truck



Additional Info:

- Rampmaster Digital Controller With Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- Top and Side Firing
- 3 Position Lid Vent
- Optional: Viewing Window and Stand

Item No.	Description
40-1461	GT 14.5" x 6.5" Evenheat Kiln

Item No.	Description
40-1891	GTS 18" x 9" Evenheat Kiln

## GTS 23.5" x 9" OR 13" EVENHEAT KILN

The GTS 23 kiln has been on the glass firing line from the beginning. Excels at annealing, fusing, and other techniques. A favorite for personal and professional studios.

- Controller: Rampmaster Digital with Express Mode
- Inside Dimension: 23 ½" DIA. Available In 9"H or 13 ½" H
- Electric Requirements: 240V – 30 AMP
- Max Temp: 1,800°F
- MFG. Warranty: 2 Years
- Shipping Weight: 140lbs
- Shipping Method: Freight Truck

### Additional Info:

- Rampmaster Digital Controller with Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- Top and Side Firing
- Optional: Viewing Window and Stand



Item No.	Description
40-2391	Inside Dimensions 23.5" x 9"
40-2314	Inside Dimensions 23.5" x 13"

## STUDIO PRO 14 EVENHEAT KILN

Personal sized kiln featuring the unique Dual Access Design.

- Controller: Set-Pro Digital with Express Mode
- Inside Dimension: 14 ½" W x 14 ½" D x 6 ½" H
- Electric Requirements: 120V – 15 AMP
- Max Temp: 1650°F
- MFG. Warranty: 2 Years
- Shipping Weight: 120lbs
- Shipping Method: Freight Truck

### Additional Info:

- Set-Pro Digital Controller with Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- Top Firing
- Front and Top Access
- 2 Position Lid Vent
- Includes Floor Stand



Item No.	Description
40-0666	Studio Pro 14 Evenheat Kiln

## GTS 2541 25.5" x 9" OR 13" EVENHEAT KILN

The GTS 2541 is the original large, oval shaped kiln continuing to lead in performance and design. Still the #1 selling kiln for Evenheat, it offers superior performance and sizable space for volume firing.

- Controller: Rampmaster Digital with Express Mode
- Inside Dimension: 41" L x 25 ½" W - Available in 9" or 13 ½" H
- Electric Requirements: 240V – 40 AMP
- Max Temp: 1,800°F
- MFG. Warranty: 2 Years
- Shipping Weight: 280lbs
- Shipping Method: Freight Truck

### Additional Info:

- Rampmaster Digital Controller with Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- Top and Side Firing
- Optional: Dyna-Lift Lid Lift Assist, Viewing Window, and Stand



Item No.	Description
40-2545	Inside Dimensions 41" x 25.5" x 9"
40-2546	Inside Dimensions 41" x 25.5" x 13"

## TGK GT 4050 EVENHEAT KILN

Designed for glass firing projects, the GT 4050 will fire a variety of materials such a metal clays, low fire ceramics, etc., that do not exceed the maximum firing temp.

- Controller: Set-Pro Digital with Express Mode
- Inside Dimension: 19 ¾" L x 15 ¾" W x 6 ½" D
- Electric Requirements: 240V – 15 AMP
- Max Temp: 1650°F
- Shipping Weight: 135 lbs
- Shipping Method: Freight Truck

### Additional Info:

- Set-Pro Digital Controller with Express Mode was designed exclusively for glass work and offers an easy, 3 step programming process. Simply key in your glass coe, firing style, and firing speed to create the firing program.
- Top Firing
- Includes Floor Stand



Item No.	Description
4050	TGK GT 4050 Evenheat kiln



## KILN WASH

Kiln wash is basically a barrier between your work and the kiln shelf. It acts to prevent glazed objects or slightly over fired ware from "sticking" permanently to the surface. We supply a dry form of kiln wash that is mixed with water to a creamy consistency for use.

1 pound package.



Item No.	Description
40-1148	Kiln Wash

## KILN POSTS

Kiln Posts are used to support kiln shelves, which are used to separate the ware during a firing.

Item No.	Description
40-1147	1/2" High
40-1147-1	1" High
40-1147-2	2" High
40-1147-4	4" High



## AF3P CONTROLLER

This controller has 4 user defined programs. They function separately and are stored in memory. Each user defined program permits you to use up to 8 separate segments. Each segment consists of a ramp rate, soak temperature, and hold time which is entered by the user. You may elect to use one, two, three or four segments to meet your firing needs.



Item No.	Description
40-1197	120 Volt - 15 Amp

"I originally set up my new studio in 1998 with the help of equipment, tools, and supplies I purchases from Wale... Working with glass is what gets me up in the morning with a smile."

- Frances Taitt

## LARGE KILN SHELF - 20" x 20"

Kiln Shelves are used to support and separate the ware during a firing. This large shelf is a full 20" x 20"



Item No.	Description
40-1707	Large Kiln Shelf - 20" x 20"

## KILN SHELF - 9" CIRCLE

Kiln Shelves are used to support and separate the ware during a firing. This circular shelf is 9" in diameter



Item No.	Description
40-1146	Kiln Shelf - 9" Circle

## SMALL FACE PYROMETER WITH THERMOCOUPLE AND MOUNTING BRACKET

Many types of firing require the user to know the actual temperature of the firing chamber. In order to do so, a devise called a Pyrometer is used. A Pyrometer is simply a high temperature version of the thermometer.

Connected to the pyrometer is a thermocouple. This thermocouple is the temperature sensor. It's inserted into the firing chamber. The thermocouple produces a very low voltage which changes depending upon the temperature seen at the tip of the thermocouple. This voltage is applied to the pyrometer which reacts by moving or deflecting the needle a certain amount

The analog pyrometer is available in two sizes.

- Small: Features a 2" x 2" dial face and a temperature range up to 2000F.
- Large: Features a 4" x 4" dial face and a temperature range up to 2500F. It also includes an extra long thermocoupler/6ft thermo wire.

The Pyrometer does not shut the firing off at the end of the firing. The sole function of the Pyrometer is to indicate temperature.



40-1645



40-1070

Item No.	Description
40-1645	Small Pyrometer with Thermocoupler and Mounting Bracket. 2" x 2" Dial Face
40-1070	Large Pyrometer with Thermocoupler and Mounting Bracket. 4" x 4" Dial Face

# SCORING KNIVES AND COLD GLASS CUTTERS

## WALE HEAVY DUTY SCORING KNIFE

The Wale four-edge scoring knife is ideal for the cutting of glass and quartz, both tubing and rod. Unlike conventional designs, this scoring knife features four cutting surfaces. This allows greater ease of use and longer life.

The unique square collet allows the user to expose as much of the blade as desired, and at the same time allows the user to easily replace a worn blade. The four edged blade is crafted from high quality tungsten carbide, insuring long life and dependable service.

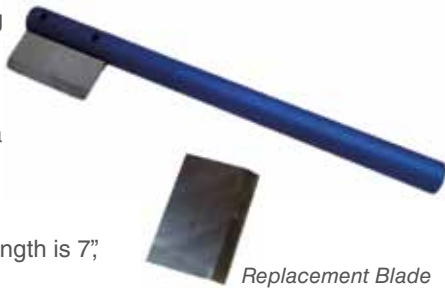


Replacement Blade

Item No.	Description
16-1050	Scoring Knife Complete
16-1051	Replacement Blade

## WALE THIN BLADE SCORING KNIFE

The Wale thin blade scoring knife is ideal for scoring large diameter tubing and rod, as well as plate glass. The scoring knife features a precision carbide blade for longer life and the handle is made of durable, light-weight aluminum. Overall length is 7", blade is 1 3/4" L x 1" W.



Replacement Blade

Item No.	Description
16-8250	Scoring Knife Complete
16-8251	Replacement Blade

## DIAMOND FLAT GLASS SCORING KNIFE

The diamond glass cutter is a staple of the industry. It allows you to cut flat glass with ease by scoring exactly where you want to via the precision head.



Item No.	Description
16-1655	Diamond Flat Glass Scoring Knife

## SPRING LOADED TUBING CUTTER

Easy to use, these spring loaded tubing cutters are designed to safely score and cut glass tubing up to 1.5 inch in outside diameter.



Item No.	Description
16-1060	Tubing Cutter Complete
16-1061	Replacement Carbide Wheels - 10 pcs

## ROD NIPPER

These nippers have tungsten carbide jaws to cut glass rods, millefiori cane, stringers & latticino. The head closes to a flatter paddle than other styles of nippers making the paddle head almost flush.



Item No.	Description
40-2055	Rod Nipper

## DISC NIPPERS

Disc nippers are our number one cutter for small and medium diameters of glass rod. It cuts very cleanly and quickly. You can also cut very small millefiori diameters as the blades close almost completely. The discs can be turned when they become dull, and there are replacement discs available.



Item No.	Description
40-2057	Disc Nippers
40-2059	Replacement Discs

## GRAPHITE PADDLES W/ WOOD HANDLE

MADE IN THE USA - 3/8" (9.5MM) THICK - High quality graphite paddles with a solid oak wooden handle. Features a strong and solid point of attachment and a high grade of graphite for extended life.

Offered in several sizes. Replacement graphite also available.



Item No.	Description
99-1250	2" x 3"
99-1251	3" x 4"
99-1252	4" x 6"
99-1260	Graphite Replacement Only 2" x 3"
99-1261	Graphite Replacement Only 3" x 4"
99-1262	Graphite Replacement Only 4" x 6"

## GRAPHITE PADDLES W/ LONG WOOD HANDLE

MADE IN THE USA - ALL GRAPHITE IS 3/8" (9.5MM) THICK - EXTRA LONG HANDLES - High quality graphite paddles with longer solid oak wooden handle, making it perfect for lathe use. Features a strong and solid point of attachment and a high grade of graphite for extended life.



Handles are 15 1/2" from where they connect to the graphite to the tip of the wood. The diameter of the wood is 7/8" (22mm)

Item No.	Description
99-1255	3" x 4" - 19" Overall Length with handle
99-1256	2" x 6" - 21" Overall Length with handle
99-1257	4" x 6" - 21" Overall Length with handle
99-1258	6" x 8" - 23" Overall Length with handle
99-1261	Graphite Replacement Only 3" x 4"
99-1266	Graphite Replacement Only 2" x 6"
99-1262	Graphite Replacement Only 4" x 6"
99-1267	Graphite Replacement Only 6" x 8"

## ECONOMY GRAPHITE PADDLES

MADE IN THE USA - 3/8" (9.5MM) THICK - A good grade of graphite combined with a heat resistant handle. These paddles are economical and lightweight.



Item No.	Description
40-7246	1 1/2" x 2 1/2"
40-7249	1 1/4" x 2"

## GRAPHITE OCTAGONAL REAMERS

MADE IN THE USA - Graphite Octagonal Reamers are made of high quality graphite machined to have a taper that is used to flare out tubing. Features a heat resistant handle.



Item No.	Description
99-1253	12mm tapering to 2mm
99-1254	25mm tapering to 10mm
99-1263	Replacement Graphite Only 12mm to 2mm
99-1264	Replacement Graphite Only 25mm to 10mm

## GRAPHITE OCTAGONAL REAMERS - LONG HANDLE

MADE IN THE USA - Graphite Octagonal Reamers are made of high quality graphite machined to have a taper that is used to flare out tubing.

Features a heat resistant handle that is 12" long, making it better for lathe work.



Item No.	Description
99-1246	12mm tapering to 2mm
99-1247	25mm tapering to 10mm
99-1263	Replacement Graphite Only 12mm to 2mm
99-1264	Replacement Graphite Only 25mm to 10mm

## GRAPHITE OCTAGONAL REAMER - LARGE W/ WOOD HANDLE

MADE IN THE USA - Graphite Octagonal Reamer made of high quality graphite machined to have a taper that is used to flare out tubing. This extra large model features a solid oak wooden handle.



Item No.	Description
99-1248	40mm tapering to 20mm
99-1268	Replacement Graphite Only 40mm to 20mm



## GRAPHITE REPLACEMENT BLANKS

MADE IN THE USA - High quality graphite blanks feature a strong and high grade of graphite for extended life. Offered in several sizes.



Item No.	Description
99-1260	Graphite Replacement Only - 2" x 3" x 3/8" thk
99-1261	Graphite Replacement Only - 3" x 4" x 3/8" thk
99-1262	Graphite Replacement Only - 4" x 6" x 3/8" thk
99-1266	Graphite Replacement Only - 2" x 6" x 3/8" thk
99-1267	Graphite Replacement Only - 6" x 8" x 3/8" thk
99-1269	Graphite Replacement Only - 1 1/4" x 2" x 3/8" thk
40-7246R	Graphite Replace. Only - 1 1/2" x 2 1/2" x 3/8" thk
99-1263	Graphite Reamer Replacement Only - 12mm to 2mm
99-1264	Graphite Reamer Replacement Only - 20mm to 12mm
99-1268	Graphite Reamer Replacement Only - 40mm to 20mm

## MARBLE MOLDS - SINGLE SIZE W/ HANDLE

Graphite paddle features a high temperature resistant handle and a marble cup machined into the graphite. These marble molds are made of high quality graphite for long lasting service.



Item No.	Description
40-5748	1 3/4" Cup w/ Handle
40-5746	1 1/4" Cup w/ Handle

## 4 IN 1 MARBLE MOLD - BENCH MOUNT

A graphite bench mount mold with marble cups machined into it. There are a total of 4 marble cups ranging in size from 1 1/4" to 2". This mold features a stainless mounting bracket.

Cups are 1 1/4", 1 1/2", 1 3/4", and 2"



Item No.	Description
40-5756	4 in 1 Marble Mold - Bench Mount

## STUMP SHAPER - GRAPHITE

MADE IN THE USA - High quality premium graphite that is machined to have tapered edges that makes it ideal for sculpting. Features a 6" heat resistant handle. The size of the graphite surface is 2" x 2 1/2". Great for shaping beads into Cylinder and Bi-cone shapes.



Item No.	Description
40-7245	Stump Shaper - Graphite

## 6 IN 1 MARBLE MOLD W/ HANDLE

A graphite paddle with a soft grip handle with marble cups machined into it. With 3 per side, there are a total of 6 marble cups ranging in size from 3/8" to 1". This mold is small, lightweight and easy to use.

Cups are 3/8", 1/2", 5/8", 3/4", 7/8", and 1"



Item No.	Description
40-5757	6 in 1 Marble Mold w/ Handle

## AQUADAG AQUEOUS BASED COLLOIDAL GRAPHITE DISPERSION

USED AS A MOLD RELEASE - Aquadag is an aqueous based colloidal graphite dispersion widely used as a mold release. The ultra fine particle size imparts superior surface finishing to the casting together with superb release properties. Aquadag is the ideal compound for use with forming tools. Use of the Aquadag promotes longer tool life and increased performance. For most favorable results, Aerodag should be applied by conventional spray techniques. For optimum film formulation, the spray should be applied to surfaces heated to at least 200° F. A satisfactory film can be obtained by brush application. Aquadag should be stored in a cool place but not allowed to freeze.



Item No.	Description
16-8233	Case of 4 Quarts
16-8234	1 Quart

# GRAPHITE HAND TOOLS, PLATES, RODS & AQUADAG

## 12" GRAPHITE RODS

RANGING FROM 1/8" up to 1" DIA. - MADE IN THE USA - HIGH QUALITY - Graphite rods are manufactured from fine grain, high density molded and extruded graphite. Graphite rods are often used to manipulate and shape molten glass without fear of sticking.



Item No.	Description
12-1201	1/8" x 12" Length
12-1202	5/32" x 12" Length
12-1203	3/16" x 12" Length
12-1204	1/4" x 12" Length
12-1205	5/16" x 12" Length
12-1206	3/8" x 12" Length
12-1207	1/2" x 12" Length
12-1208	5/8" x 12" Length
12-1209	3/4" x 12" Length
12-1211	1" x 12" Length

## 24" GRAPHITE RODS

RANGING FROM 1" up to 5" DIA. - MADE IN THE USA - HIGH QUALITY - These rods are manufactured from fine grain, high density molded and extruded graphite. Graphite rods are often used to manipulate and shape molten glass without fear of sticking.



Item No.	Description
12-1212	1" Dia. x 24" Length
12-1213	1 1/4" Dia. x 24" Length
12-1214	1 1/2" Dia. x 24" Length
12-1215	1 3/4" Dia. x 24" Length
12-1216	2" Dia. x 24" Length
12-1217	2 1/2" Dia. x 24" Length
12-1218	3" Dia. x 24" Length
12-1219	3 1/2" Dia. x 24" Length
12-1220	4" Dia. x 24" Length
12-1224	5" Dia. x 24" Length

## ASSORTED GRAPHITE RODS

Nice assortment of graphite rods sharpened at one end. Package contains 6 rods: 2 each 1/4", 2 each 5/16", and 2 each 3/8"



Item No.	Description
99-1612	Package of assorted graphite rods

## GRAPHITE PLATE - 6" SQUARE

MADE IN THE USA - These plates are manufactured from fine grain, high density molded and extruded graphite. Graphite plates are often used to marver molten glass.



Item No.	Description
40-1263	6" x 6" x 1/4" Thick - Graphite Plate

## GRAPHITE PLATE - 12" SQUARE

MADE IN THE USA - PREMIUM DENSE PLATES - These plates are manufactured from fine grain, high density molded and extruded graphite. Graphite plates are often used to marver molten glass.



Item No.	Description
12-1225	1/8" x 12" x 12" Thick - Graphite Plate
12-1227	1/4" x 12" x 12" Thick - Graphite Plate
12-1229	3/8" x 12" x 12" Thick - Graphite Plate
12-1230	1/2" x 12" x 12" Thick - Graphite Plate
12-1232	3/4" x 12" x 12" Thick - Graphite Plate
12-1234	1" x 12" x 12" Thick - Graphite Plate

## GRAPHITE CHUCK DONUTS

MADE IN THE USA - These high quality graphite chuck donuts work excellent with the Litton planetary chucks. Attaches to the chuck arms with a set screw. Available in round shape or with flats, as shown in the photo. Sold in a set of three. These are made to order.



Item No.	Description
20-4580	Round No Flat - 2.5" Dia x 1" Thk x 1" Hole
20-4581	Round No Flat - 2.5" Dia x 1 1/2" Thk x 1" Hole
20-4582	2.5" Di x 1.5" Thk x 1" Hole - W/Flat

# BLOWHOSE ASSEMBLIES, MULTI-STOPPERS, CORKS, SWIVELS, & MOUTHPIECES

## MULTI RUBBER STOPPERS

Wale multi rubber stoppers are manufactured of either green neoprene or silicone rubber, each offering specific advantages. The rings are cut from the same rubber stopper, each ring fitting perfectly inside the next. This allows for vacuum tight fit for all openings within rubber bottle stopper size range. Ideally suited for glassblowing operations and chemistry labs.

Multi rubber stoppers made of red silicone rubber are suitable for higher temperature applications with a serviceable temperature range from -100F to +450F. These rubber stoppers are resistant to hot oils, fuels, oxidizing chemicals, sodium hydroxide and ozone. Multi stoppers made of green neoprene are resistant to oils, solvents, ozones and many hydrocarbons. The serviceable temperature range is from -40°F to +212°F.



Item No.	Description
16-1173	Green Neoprene - 18mm to 70mm
16-1176	Green Neoprene - 1.5" to 4.5"
16-1174	Red Silicone - 22mm to 70mm
16-1177	Red Silicone - 1.5" to 4.5"
16-1180	Red Silicone - 2.5" to 8"
16-1183	Red Silicone - 2.5" to 11"
16-1185	Red Silicone - 2.5" to 14"

## GREEN NEOPRENE RUBBER STOPPERS - WITH HOLE

Neoprene rubber stoppers with 4mm hole to fit 1/4" swivel, 1" long.



Item No.	Description
G#10	#10 - 50mm tapering to 42mm
G#9	#9 - 45mm tapering to 37mm
G#8	#8 - 41mm tapering to 33mm
G#7	#7 - 37mm tapering to 30mm
G#6	#6 - 32mm tapering to 26mm
G#5	#5 - 27mm tapering to 23mm
G#4	#4 - 26mm tapering to 20mm
G#3	#3 - 24mm tapering to 18mm
G#2	#2 - 20mm tapering to 16mm
G#1	#1 - 19mm tapering to 14mm
G#0	#0 - 17mm tapering to 13mm
G#00	#00 - 15mm tapering to 10mm
G#000	#000 - 12.7mm tapering to 8.2mm

## GREEN NEOPRENE RUBBER STOPPERS - SOLID

Solid neoprene rubber stoppers with no holes, 1" long.



Item No.	Description
G#10	#10 - 50mm tapering to 42mm
G#9	#9 - 45mm tapering to 37mm
G#8	#8 - 41mm tapering to 33mm
G#7	#7 - 37mm tapering to 30mm
G#6	#6 - 32mm tapering to 26mm
G#5	#5 - 27mm tapering to 23mm
G#4	#4 - 26mm tapering to 20mm
G#3	#3 - 24mm tapering to 18mm
G#2	#2 - 20mm tapering to 16mm
G#1	#1 - 19mm tapering to 14mm
G#0	#0 - 17mm tapering to 13mm
G#00	#00 - 15mm tapering to 10mm
G#000	#000 - 12.7mm tapering to 8.2mm



# BLOWHOSE ASSEMBLIES, MULTI-STOPPERS, CORKS, SWIVELS, & MOUTHPIECES

## BRASS SWIVELS

Swivels are used to connect blowhose to stoppers to allow the hosing to be freely rotated without kinking.

Offered in straight and angle in multiple sizes.

Item No.	Description
16-1133	Straight - 3/16"
16-1135	Angle - 3/16"
16-1139	Straight - 1/4"
16-1136	Angle - 1/4"
16-1140	Straight - 5/16"
16-1141	Straight - 3/8"
16-1137	Angle - 3/8"



## CORK STOPPERS

Cork has been used since antiquity as a bottle stopper. The impermeability of cork to liquids and gases is derived from the fact that its closed cell walls are made up mainly of suberin (a type of fatty acid). Compressibility and flexibility make cork ideal for sealing bottles.

A cork bottle stopper of the proper size will act as an effective barrier to leakage or seepage of liquids. No other bottle stopper combines corks inert nature, impermeability, flexibility, sealing ability and resilience. Cork, being a natural product, is also environmentally friendly, renewable and recyclable.



Item No.	Description	Size	Top	Length	Bottom
16-1611	Assorted Corks 48 Pcs 0000-12	0000	3/16"	1/2"	3/32"
C#0000	Size 0000 - Corks - Pack Of 50	000	1/4"	1/2"	5/32"
C#000	Size 000 - Corks - Pack Of 50	00	5/16"	1/2"	7/32"
C#00	Size 00 - Corks - Pack Of 50	0	3/8"	1/2"	9/32"
C#0	Size 0 - Corks - Pack Of 50	1	7/16"	5/8"	21/64"
C#1	Size 1 - Corks - Pack Of 50	2	1/2"	11/16"	3/8"
C#2	Size 2 - Corks - Pack Of 50	3	9/16"	3/4"	27/64"
C#3	Size 3 - Corks - Pack Of 50	4	5/8"	13/16"	15/32"
C#4	Size 4 - Corks - Pack Of 50	5	11/16"	7/8"	17/32"
C#5	Size 5 - Corks - Pack Of 50	6	3/4"	15/16"	37/64"
C#6	Size 6 - Corks - Pack Of 50	7	13/16"	1"	5/8"
C#7	Size 7 - Corks - Pack Of 50	8	7/8"	1-1/16"	43/64"
C#8	Size 8 - Corks - Pack Of 50	9	15/16"	1-1/8"	47/64"
C#9	Size 9 - Corks - Pack Of 50	10	1"	1-1/4"	49/64"
C#10	Size 10 - Corks - Pack Of 50	11	1-1/16"	1-1/4"	53/64"
C#11	Size 11 - Corks - Pack Of 50	12	1-1/8"	1-1/4"	57/64"
C#12	Size 12 - Corks - Pack Of 50				

## BLOWHOSE ASSEMBLY

Assembly consists of a 1/4" diameter angle swivel, 6 feet of latex tubing and two amber lightweight mouthpieces.

Please note, this assembly comes with an adaptor to connect to a blowpipe or a glass blowtube.



Item No.	Description
16-1130	Blowhose Assembly

## LATEX TUBING

Latex is used for blowhose assemblies and can be purchased in several sizes and lengths.

Item No.	Description
16-1001	5/32" ID per Foot (recommended for 1/4" swivels)
16-1001B	5/32" ID - 100' Box
16-1002	1/4" ID per Foot (recommended for 3/8" swivels)
16-1002B	1/4" ID - 100' Box
16-1003	3/8" ID per Foot (recommended for 1/2" swivels)
16-1003B	3/8" ID - 100' Box



## MOUTHPIECES - AMBER LIGHTWEIGHT

Amber plastic mouthpieces used with blowhose assemblies. Lightweight and cost effective.

Item No.	Description
16-1127	144 Pieces
16-1126	50 Pieces
16-1125	25 Pieces
16-1124	1 Piece



## STEADY-REST SUPPORT ROLLERS

These adjustable rollers make the handling and rotation of large tubing and rod easy. Precision bearings mean smooth rolling without binding. The rollers can be adjusted to accommodate a wide variety of tubing sizes, from 1/4" up to 4 1/2". Height adjustable from 9" to 12".

The Wale steady rest rollers are 2" in diameter and made from brass and are also lined with a Hi-temperature Viton ring which will prevent your glass from scratching.

Item No.	Description
99-8215	Brass Rollers



# SILICON CARBIDE & DIAMOND ABRASIVE CUT-OFF WHEELS, DRESSING STICKS & COOLANT

## ABRASIVE CUT-OFF WHEELS

Wale high quality abrasive cut-off wheels are available in either silicon carbide or aluminum oxide compounds. Silicon carbide wheels are useful for cutting glass, quartz, ceramics, titanium, tungsten, zirconium, uranium, beryllium and germanium, fiber, plastics (such as phenolics) and fiber-reinforced plastics.

In general, hard substances (such as fused quartz, hard metals and alloys) are most economically cut with "hard" wheels, however, "soft" wheels will give the highest quality cut in the shortest time.

Wheel life is relatively longer in respect to wheel hardness i.e.; "hard" wheels equal longer life. In the case of very hard materials it may be that a "soft" wheel will be the only wheel of making the cut.

Cut-off machines with low horsepower (3/4 HP or 1 HP) tend to require softer wheels for a given job than the same machines with a 3 or 5 HP motor.



Item No.	Description
10-1145	12" Diameter x 1/16" Thick x 3/4" Arbor - Grade 1527
10-1146	14" Diameter x 1/16" Thick x 3/4" Arbor - Grade 1527
10-1148	10" Diameter x 1/16" Thick x 5/8" Arbor - S-120-S-R
10-1150	12" Diameter x 1/16" Thick x 3/4" Arbor - S-120-M-R
10-1151	14" Diameter x 1/16" Thick x 3/4" Arbor - S-120-M-R
10-1152	12" Diameter x 1/16" Thick x 3/4" Arbor - S-120-S-R
10-1153	14" Diameter x 1/16" Thick x 3/4" Arbor - S-120-S-R
10-1154	12" Diameter x 1/16" Thick x 3/4" Arbor - S-90-H-R
10-1155	14" Diameter x 1/16" Thick x 3/4" Arbor - S-90-H-R

Note: Special sizes and thicknesses available from 6" to 34" diameter 1/16" to 1/8" thick. Minimum order 50pcs.

Grade	Type of Abrasive	Grain Size	Hardness	Type Bond	Description
S-120-M-R	Silicon Carbide	120	Medium	Rubber	A good general purpose wheel for most glass cutting. An excellent wheel for high quality cutting of thin wall stainless steel tubing.
S-120-S-R	Silicon Carbide	120	Soft	Rubber	A softer, faster cutting wheel to produce a very high quality cut on glass. It is considered the best cutting wheel available.
S-90-H-R	Silicon Carbide	90	Hard	Rubber	A harder wheel with a larger grit size designed for cutting solids and heavy wall glass tubing. Good for thin wall metal tubing, ceramics and other hard materials.

Volume discounts are available, please contact Wale for further information.

## WALE RUST INHIBITOR COOLANT FOR GLASS CUTTING

Wale Rust Inhibitor Coolant for Glass Cutting is a synthetic water soluble chemical coolant for glass cutting. The coolant is transparent and it contains no petroleum, mineral or vegetable oils and is completely soluble in hard or soft water. Wale Rust Inhibitor Coolant for Glass Cutting keeps tools and work cool, increasing tool life and assuring dimensional accuracy by providing excellent chemical lubricity for freer cutting action and finer finishes. Wale Rust Inhibitor Coolant for Glass Cutting requires no degreasing and washes off quickly with water. Tests show new and improved Wale Rust Inhibitor Coolant for Glass Cutting lasts three to four times longer than ordinary coolant.



Item No.	Description
10-1128C	Case of (4) - One Gallon Containers
10-1128	Rust Inhibitor Coolant - 1 Gallon

# SILICONE CARBIDE & DIAMOND ABRASIVE CUT-OFF WHEELS, DRESSING STICKS & COOLANT

## DIAMOND CUT-OFF WHEELS

Wale Apparatus offers the full line of NORTH JERSEY DIAMOND WHEELS. These wheels are MADE IN THE USA and have been perfected specifically for use in the glass industry. The North Jersey Diamond Wheels offer superior quality and are formulated in a wide range of diameters, thicknesses, diamond concentrations, and arbors to cut borosilicate and soft glass. They are available in either Resin Bond or Metal Bond. Please contact Wale Apparatus for specific diamond wheel recommendations.

## RESIN BOND DIAMOND WHEELS

Specifications: 50 Concentration - 5/16" Diamond Depth

Item No.	Description
10-1200	10" diameter x 5/8" arbor x .050" thick - 220 grit resin bond diamond wheel
10-1201	10" diameter x 5/8" arbor x .050" thick - 280 grit resin bond diamond wheel
10-1202	10" diameter x 5/8" arbor x .050" thick - 320 grit resin bond diamond wheel
10-1205	12" diameter x 3/4" arbor x .060" thick - 220 grit resin bond diamond wheel
10-1206	12" diameter x 3/4" arbor x .060" thick - 280 grit resin bond diamond wheel
10-1207	12" diameter x 3/4" arbor x .060" thick - 320 grit resin bond diamond wheel
10-1210	14" diameter x 3/4" arbor x .070" thick - 220 grit resin bond diamond wheel
10-1211	14" diameter x 3/4" arbor x .070" thick - 280 grit resin bond diamond wheel
10-1212	14" diameter x 3/4" arbor x .070" thick - 320 grit resin bond diamond wheel
10-1999	7" diameter x 5/8" arbor x .050" thick - 220 grit resin bond diamond wheel

Specifications: 100 Concentration - 5/16" Diamond Depth

Item No.	Description
10-1203	10" diameter x 5/8" arbor x .050" thick - 150 grit resin bond diamond wheel
10-1204	10" diameter x 5/8" arbor x .050" thick - 180 grit resin bond diamond wheel
10-1208	12" diameter x 3/4" arbor x .060" thick - 150 grit resin bond diamond wheel
10-1209	12" diameter x 3/4" arbor x .060" thick - 180 grit resin bond diamond wheel
10-1213	14" diameter x 3/4" arbor x .070" thick - 150 grit resin bond diamond wheel
10-1214	14" diameter x 3/4" arbor x .070" thick - 180 grit resin bond diamond wheel



## METAL BOND DIAMOND WHEELS

Specifications: 50 Concentration - 1/4" Diamond Depth

Item No.	Description
10-1220	10" diameter x 5/8" arbor x .050" thick - 220 grit metal bond diamond wheel
10-1222	12" diameter x 3/4" arbor x .060" thick - 220 grit metal bond diamond wheel
10-1224	14" diameter x 3/4" arbor x .070" thick - 220 grit metal bond diamond wheel

Specifications: 100 Concentration - 1/4" Diamond Depth

Item No.	Description
10-1221	10" diameter x 5/8" arbor x .050" thick - 150 grit metal bond diamond wheel
10-1223	12" diameter x 3/4" arbor x .060" thick - 150 grit metal bond diamond wheel
10-1225	14" diameter x 3/4" arbor x .070" thick - 150 grit metal bond diamond wheel



PLEASE NOTE: Diamond Wheels are available in other grits, thicknesses, sizes, diamond depths and concentrations. Please contact us for wheel recommendations.

## NORTON DRESSING STICK



The purpose of a Norton Dressing Stick is to remove some of the wheel bond and materials "clogging" the wheel so as to expose the cutting edge of the abrasive particles. Dressing often keeps cutting tools cool and sharp and does not noticeably shorten wheel life. Dressing is done by cutting into the stick. Grinding wheels, diamond core drills and other tools can be dressed in a similar manner. An abundant supply of coolant should be used when dressing tools.

Item No.	Description
10-1199	1" x 1" x 6" Dressing Stick Disc



# DIAMOND CORE DRILLS, MANDRELS, HAND PADS, FILES, SCRIBES & ENGRAVERS

## DIAMOND CORE DRILLS w/"MAGNICON" BONDING NO "METAL INTERFERENCE" ON CUTTING SURFACES

### Suggested Operating Speeds in R.P.M.

3/32" to 1/2".....	2,400-1,800 RPM
9/16" to 1 1/2".....	1,800-1,250 RPM
1 9/16" to 2 1/2".....	1,250-850 RPM
2 3/4" to 3".....	850-650 RPM
3 1/4" to 5".....	650-200 RPM



2" (50.8mm) O.A.L. Standard

Item No.	O.D.	I.D.	O.D. Metric	I.D. Metric
101005	3/32	.043	2.38	1.0
101010	7/64	.059	2.78	1.5
101015	1/8	.075	3.17	1.9
101020	9/64	.090	3.57	2.3
101025	5/32	.106	4.00	2.7
101030	11/64	.121	4.36	3.1
101035	3/16	.137	4.76	3.5
101040	13/64	.153	5.16	3.9
101045	7/32	.169	5.55	4.3
101050	15/64	.184	6.00	4.7
101055	1/4	.200	6.35	5.1
101060	17/64	.215	6.75	5.5
101065	9/32	.231	7.14	5.9
101070	19/64	.247	7.54	6.3
101075	5/16	.262	8.00	6.7
101080	21/64	.278	8.33	7.1
101085	11/32	.294	8.75	7.5
101090	23/64	.309	9.13	7.9
101095	3/8	.325	9.53	8.3
101100	25/64	.340	10.00	8.6
101105	13/32	.356	10.32	9.0
101110	27/64	.372	10.72	9.5
101115	7/16	.387	11.11	9.8
101120	29/64	.403	11.50	10.2
101125	15/32	.419	12.00	10.6
101130	31/64	.434	12.30	11.0
101135	1/2	.446	12.70	11.3
101140	33/64	.461	13.10	11.7
101145	17/32	.473	13.50	12.0
101150	35/64	.489	13.89	12.4
101155	9/16	.504	14.30	12.8
101160	37/64	.520	14.68	13.2
101165	19/32	.536	15.08	13.6
101170	39/64	.551	15.50	14.0
101175	5/8	.566	15.88	14.4
101180	41/64	.583	16.27	14.8
101185	21/32	.598	16.67	15.9
101190	43/64	.614	17.07	15.6
101195	11/16	.629	17.50	16.0

Item No.	O.D.	I.D.	O.D. Metric	I.D. Metric
101200	45/64	.645	17.86	16.4
101205	23/32	.650	18.00	16.5
101210	47/64	.676	18.65	17.2
101215	3/4	.692	19.00	17.6
101220	49/64	.708	19.45	18.0
101225	25/32	.723	19.84	18.4
101230	51/64	.739	20.24	18.8
101235	13/16	.754	20.64	19.2
101240	53/64	.770	21.00	19.6
101245	27/32	.786	21.43	20.0
101250	55/64	.801	21.83	20.4
101255	7/8	.817	22.25	20.8
101260	57/64	.833	22.63	21.2
101265	29/32	.848	23.00	21.5
101270	59/64	.864	23.42	22.0
101275	15/16	.879	23.81	22.3
101280	61/64	.895	24.21	22.7
101285	31/32	.911	24.61	23.1
101290	63/64	.926	25.00	23.5
101295	1	.940	25.40	23.9
101300	1-1/64	.956	25.80	24.3
101305	1-1/32	.971	26.20	24.7
101310	1-3/64	.987	26.60	25.1
101315	1-1/16	1.00	27.00	25.4
101320	1-5/64	1.018	27.40	25.9
101325	1-3/32	1.034	27.80	26.3
101330	1-7/64	1.049	28.20	26.7
101335	1-1/8	1.065	28.57	27.1
101340	1-9/64	1.081	29.00	27.5
101345	1-5/32	1.095	29.37	27.8
101350	1-11/64	1.112	29.76	28.2
101355	1-3/16	1.127	30.16	28.6
101360	1-13/64	1.143	30.56	29.0
101365	1-7/32	1.159	31.00	29.4
101370	1-15/64	1.174	31.35	29.8
101375	1-1/4	1.190	31.75	30.2
101380	1-17/64	1.205	32.15	30.6
101385	1-9/32	1.221	32.55	31.0
101390	1-19/64	1.237	32.95	31.4

Item No.	O.D.	I.D.	O.D. Metric	I.D. Metric
101395	1-5/16	1.252	33.35	31.8
101400	1-21/64	1.268	33.73	32.2
101405	1-11/32	1.284	34.13	32.6
101410	1-23/64	1.299	34.53	33.0
101415	1-3/8	1.315	34.95	33.4
101420	1-25/64	1.331	35.32	33.8
101425	1-13/32	1.346	35.72	34.2
101430	1-27/64	1.362	36.12	34.6
101435	1-7/16	1.377	36.50	35.0
101440	1-29/64	1.393	36.90	35.4
101445	1-15/32	1.405	37.30	35.7
101450	1-31/64	1.424	37.70	36.2
101460	1-1/2	1.431	38.10	36.4
101470	1-9/16	1.493	36.70	37.9
101480	1-5/8	1.556	41.30	39.5
101490	1-11/16	1.618	42.85	41.1
101500	1-3/4	1.681	44.45	42.7
101510	1-13/16	1.743	46.00	44.3
101520	1-7/8	1.806	47.63	45.9
101530	1-15/16	1.868	49.20	47.5
101540	2	1.931	50.80	49.1
101550	2-1/16	1.993	52.40	50.6
101560	2-1/8	2.056	54.00	52.2
101570	2-3/16	2.118	55.56	53.8
101580	2-1/4	2.181	57.15	55.4
101590	2-5/16	2.242	58.75	57.0
101600	2-3/8	2.306	60.33	58.6
101610	2-7/16	2.368	61.91	60.2
101620	2-1/2	2.431	63.50	61.8
101630	2-3/4	2.675	69.85	68.0
101640	3	2.925	76.20	74.3
101650	3-1/4	3.175	82.55	80.7
101660	3-1/2	3.425	88.90	87.0
101670	3-3/4	3.675	95.25	93.4
101680	4	3.925	101.60	99.7
101690	4-1/4	4.175	108.00	106.1
101700	4-1/2	4.425	114.30	112.40
101710	4-3/4	4.675	120.65	118.8
101720	5	4.925	127.00	125.1

Drills shown on this page are not mounted. Part numbers for mounted drills are prefixed with #102.

# DIAMOND CORE DRILLS, MANDRELS, HAND PADS, FILES, SCRIBES & ENGRAVERS

## DIAMOND CORE DRILL ACCESSORIES

### STARLITE DRESSING STONE

The Starlite Dressing Stone is an aluminum oxide abrasive held within a hard rubber bond. The stone is designed to dress core drills without shortening the drill life.

Item No.	Description
709100	3/16" x 2" x 4"
709200	3/4" x 1" x 3"



**TWO SIZES ARE AVAILABLE:**  
**Part Number**      **Size**  
 709100      3/16" X 2" X 4" (Extra-Thin)  
 709200      3/4" X 1" X 3" (Standard)

## CONVERSION ADAPTERS AND SPECIAL MOUNTING ADAPTERS

Performance-proven system of Starlite accessories operates Starlite diamond core drills with unmatched precision. Permanent mounted core drill assures true-running drill which significantly increases drill operating life.

Item No.	Description
702020	Converts Drill Press with 1/2" chuck to accept permanent nut mounted core drills.
702025	Same as 702020 except for Drill Press with 3/8" chuck.



### CONVERSION ADAPTERS

**702020** Converts Drill Press with 1/2" Chuck to accept permanent nut mounted core drills.  
**702025** Same as 702020 except for Drill Press with 3/8" Chuck.

Note: Conversion Adapter is for a Regular Nut Mount.

## STARPAD® DIAMOND HANDPADS AND FILES

Diamond Starpad® is a flexible diamond abrasive made as hand files, discs and handpads for use on most materials where conventional abrasives are normally used. Starpad® Handfiles are lightweight yet sturdy, long lasting, easy to use and inexpensive. They are color coded for quick identification and easy of use.

Handpad Item No.	Diamond Size	Color Code
350005	60	Green
350010	120	Black
350015	200	Red
350020	400	Yellow
350025	500	White
350030	1000	Blue
350035	1 of each of the above pads	



File	Size	Course 120 Grit (Black)	Medium 200 Grit (Red)	Fine 400 Grit (Yellow)
Rectangle	1-1/2" x 3/4"	350070	350090	350110
Rectangle	1-3/4" x 1/2"	350075	350095	350115
Rectangle	2-1/2" x 1/4"	350085	350105	350125
1/2 Round	1-3/4" x 3/8"	350080	350100	350120
Kit	1 of each of the above pads		350000	



# DIAMOND CORE DRILLS, MANDRELS, HAND PADS, FILES, SCRIBES & ENGRAVERS


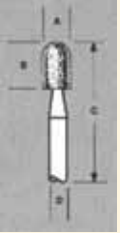
## MOUNTED DIAMOND POINTS AND WHEELS w/HARDENED STAINLESS STEEL SHANKS

These tools can be used on materials such as carbide, glass, ceramic and similar type materials.


**Speed:** Should be operated in a speed range above 5,000 R.P.M. for best results.

**Coolant:** Whenever possible these tools should be operated in conjunction with a coolant, either mist or flood.

The use of the coolant will prolong the tool life as well as improve the finish of the workpiece.

Type	Item No.		Sizes in Inches			Item No.		Sizes in MM		
	D-1/8" 120G	D-1/4" 120G	A	B	C	D-3mm 120G	D-6mm 120G	A	B	C
<b>Cylinders-Mounted</b> 	117005	*	.030	3/16	2	117205	*	0.76	4.6	51
	117010	*	.040	3/16	2	117210	*	1.00	4.6	51
	117020	117015	3/64	3/16	2	117220	117215	1.20	4.6	51
	117030	117025	1/16	1/4	2	117230	117225	1.60	6.4	51
	117040	117035	5/64	1/4	2	117240	117235	2.00	6.4	51
	117050	117045	3/32	1/4	2	117250	117245	2.40	6.4	51
	117060	117055	1/8	1/4	2	117260	117255	3.20	6.4	51
	117070	117065	5/32	5/16	2	117270	117265	4.00	7.9	51
	117080	117075	5/32	1/4	3	117280	117275	4.00	6.4	76
	117090	117085	3/16	5/16	2	117290	117285	4.80	7.9	51
	117100	117095	7/32	5/16	2	117300	117295	5.50	7.9	51
	117110	117105	1/4	5/16	2	117310	117305	6.40	7.9	51
	117120	117115	9/32	5/16	2	117320	117315	7.10	7.9	51
	117130	117125	5/16	5/16	2	117330	117325	7.90	7.9	51
	117140	117135	5/16	5/16	3	117340	117335	7.90	7.9	76
	*	117145	3/8	5/16	2	*	117345	9.50	7.9	51
	*	117155	1/2	5/16	2	*	117355	12.7	7.9	51
*	117165	1/2	5/16	3	*	117365	12.7	7.9	51	
<b>Cylinders-Rounded Mounted</b> 	119005	*	1/16	1/4	2	119205	*	1.60	6.4	51
	119010	*	5/64	1/4	2	119210	*	1.90	6.4	51
	119015	*	3/32	1/4	2	119215	*	2.40	6.4	51
	119020	*	1/8	1/4	2	119220	*	3.20	6.4	51
	119025	*	3/16	5/16	2	119225	*	4.80	7.9	51
	119030	*	1/4	5/16	2	119230	*	6.40	7.9	51
	119035	*	5/16	5/16	2	119235	*	7.90	7.9	51
	*	119040	3/8	5/16	2	*	119240	9.50	7.9	51
	*	119050	1/2	5/16	2	*	119250	12.7	7.9	51

\*Not available

Type	Item No.		Sizes in Inches					Item No.		Sizes in MM				
	120G	A	B	C	D	E	120G	A	B	C	D	E		
<b>Rounds-Mounted</b> 	121005	3/64		2	1/8		121205	1.2		51	3.0			
	121010	1/16		2	1/8		121210	1.6		51	3.0			
	121015	5/64		2	1/8		121215	2.0		51	3.0			
	121020	3/32		2	1/8		121220	2.4		51	3.0			
	121025	1/8		2	1/8		121225	3.2		51	3.0			
	121030	3/16		2	1/8		121230	4.8		51	3.0			
	121035	1/4		2	1/8		121235	6.4		51	3.0			
	121040	5/16		2	1/8		121240	8.0		51	3.0			
	121045	3/8		2	1/8		121245	9.5		51	3.0			
	121050	1/2		2	1/4		121250	12.0		51	6.0			
	121055	3/4		2	1/4		121255	19.0		51	6.0			



# DIAMOND CORE DRILLS, MANDRELS, HAND PADS, FILES, SCRIBES & ENGRAVERS

## MOUNTED DIAMOND POINTS AND WHEELS w/HARDENED STAINLESS STEEL SHANKS

Type	Item No.		Sizes in Inches					Item No.		Sizes in MM				
	120G	A	B	C	D	E	120G	A	B	C	D	E		
Wheels- Mounted	123005	1/4	1/32	1-7/8	1/8		123205	6.4	0.79	48	3.0			
	123010	1/4	3/64	1-7/8	1/8		123210	6.4	1.20	48	3.0			
	123015	1/4	1/16	1-7/8	1/8		123215	6.4	1.60	48	3.0			
	123020	1/4	3/32	1-7/8	1/8		123220	6.4	2.40	48	3.0			
	123025	1/4	1/8	1-7/8	1/8		123225	6.4	3.20	48	3.0			
	154005	1/2	1/16	2	1/4	40/50								
	154010	1/2	1/16	2	1/4	60/80								
	154020	1/2	1/16	2	1/4	100/100								
Cones- Mounted	125005	11/64	60°	2	1/8		125205	4.4	60°	51	3.0			
	125010	5/32	35°	2	1/8		125210	4.0	35°	51	3.0			
	125015	3/16	26°	2	1/8		125215	4.8	26°	51	3.0			
Tapers- Round End Mounted	129005	.044	.066	5/16	4°	1/8	129205	1.1	1.7	8	4°	3.0		
	129010	.060	.082	5/16	4°	1/8	129210	1.5	2.1	8	4°	3.0		
	129015	.078	.110	5/16	6°	1/8	129215	2.0	2.8	8	6°	3.0		
Tapers- Flat End Mounted	127005	.106	.138	5/16	2	1/8	127205	2.7	3.5	8	50.8	3.0		
	127010	.134	.166	5/16	2	1/8	127210	3.4	4.2	8	50.8	3.0		
Counter Sinks- Mounted	112005	3/16	5/16	1-7/8	1/4		112205	4.8	8.0	48	6.0			
	112010	1/4	5/16	1-7/8	1/4		112210	7.0	8.0	48	6.0			
	112015	1/2	1/4	1-7/8	1/4		112215	13.0	6.4	48	6.0			
	112020	3/4	1/4	1-7/8	1/2		112220	19.0	6.4	48	12.0			

### DIAMOND LANCER

OVERALL LENGTH IS 6 1/4" (162MM)

The Diamond Tip Scriber is carefully lapped to a fine finish at a 90 degree angle. The 90 is the most common, most useful all around point. The Scriber is highly recommended for marking and engraving glass, ceramics, and metals.



Item No.	Description
16-1651	Diamond Tip Scriber

### DIAMOND LANCER SCRIBE

Beautiful, high quality tool! Applications include engraving, scribing, impact marking, hardness testing, scientific testing, and profiling.



Item No.	Description
16-1652	Diamond Lancer Scribe
16-1657	Diamond Refill For Cat. #16-1652 Lancer

### TITANIUM PEN

Ti-Pen™ is the ideal glass signing tool for the lampworker, glass blower, scientific framemaker, or glass jewelry maker. The titanium pen writes by friction of the metal point leaving behind a metal deposition in a silver color on the surface of glass, quartz, ceramics, or vitreous enamels. Smooth flowing fine lines can be obtained by first moistening the surface. The titanium glass writing tool offers fine line permanent marking (.25mm, .010 in. wide) which withstand temperatures up to 1500° C. Use of this tool will not scratch, damage or weaken the glass. Lines made by this tool may be electroplated to make circuits, etc.



Item No.	Description
16-1660	TI-PEN

# DIAMOND CORE DRILLS, MANDRELS, HAND PADS, FILES, SCRIBES & ENGRAVERS

## STARBIDE SOLID TUNGSTEN CARBIDE PLATED MANDRELS w/DIAMOND or CBN ABRASIVES

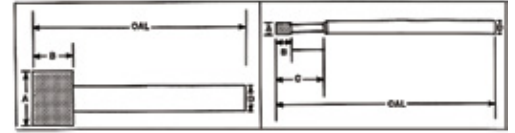
**Diamond:** For 64C Rockwell materials and higher, ceramics, glass, carbides, etc.

**CBN:** Normal material range 50C Rockwell, High Carbon, High Chrome, H.S.S. some grades Beryllium Copper, "D", "T" & "M" type steels.

A. These tools can be used on materials such as carbide, glass, ceramic and similar type materials.

B. Speed: Should be operated in a speed range about 5,000 R.P.M. for best results.

C. Coolant: Whenever possible these tools should be operated in conjunction with a coolant, either mist or flood. The use of the coolant will prolong the tool life as well as improve the finish of the workpiece.



FRACTIONAL SIZES: Diamond and CBN

FRACTIONAL								METRIC							
Diamond Item No.	CBN Item No.	Grit Size	A	B	C	D	OAL	Diamond Item No.	CBN Item No.	Grit Size	A	B	C	D	OAL
114030	214035	120	.079	.157	.500	1/8	2-1/4	114028	214028	120	2.0	4.0	12.7	3.0	57
114035	214030	120	.089	.157	.500	1/8	2-1/4	114033	214033	120	2.2	4.0	12.7	3.0	57
114040	214040	120	.099	.157	.500	1/8	2-1/4	114038	214038	120	2.5	4.0	12.7	3.0	57
114045	214045	120	.109	.157	.500	1/8	2-1/4	114043	214043	120	2.7	4.0	12.7	3.0	57
114050	214050	120	.118	.157	.500	1/8	2-1/4	114048	214048	120	3.0	4.0	12.7	3.0	57
114055	214055	120	.130	.197	.625	1/8	2-1/4	114053	214053	120	3.0	5.0	15.8	3.0	57
114060	214060	120	.140	.197	.625	1/8	2-1/4	114058	214058	120	3.5	5.0	15.8	3.0	57
114105	214105	120	.157	.197		1/8	2-1/4	114100	214100	120	4.0	5.0		3.0	57
114115	214115	120	.177	.236		1/8	2-1/4	114110	214110	120	4.5	6.0		3.0	57
114125	214125	120	.197	.236		1/8	2-1/4	114120	214120	120	5.0	6.0		3.0	57
114135	214135	120	.236	.275		1/4	2-1/4	114130	214130	120	6.0	7.0		6.0	57
114145	214145	120	.256	.275		1/4	2-1/4	114140	214140	120	6.5	7.0		6.0	57
114155	214155	120	.276	.315		1/4	2-1/4	114150	214150	120	7.0	8.0		6.0	57
114165	214165	120	.315	.315		1/4	2-1/4	114160	214160	120	8.0	8.0		6.0	57
114175	214175	120	.354	.394		1/4	2-1/4	114170	214170	120	9.0	10.0		6.0	57
114185	214185	120	.394	.394		1/4	2-1/4	114180	214180	120	10.0	10.0		6.0	57
114195	214195	120	.473	.394		1/4	2-1/4	114190	214190	120	12.0	10.0		6.0	57
114205	214205	120	.591	.394		1/4	2-1/4	114200	214200	120	15.0	10.0		6.0	57
114215	214215	120	.787	.394		5/16	2-1/4	114210	214210	120	20.0	10.0		8.0	57
114225	214225	120	.984	.394		5/16	2-1/4	114220	214220	120	30.0	10.0		8.0	57
114235	214235	120	1.181	.394		5/16	2-1/4	114230	214230	120	30.0	10.0		8.0	57



# LAPPING MACHINES, DIAMOND ABRASIVE DISCS, SILICONE CARBIDE BELTS, BELT SANDERS, DIAMOND & SILICON CARBIDE ABRASIVE BELTS

## COVINGTON 12" HORIZONTAL BEVELER/GRINDER

### Features:

- Aluminum water manifold controls fluid flow
- Heavy welded steel chassis with stainless steel catch pan
- Available in 110V or 220V, 50Hz or 60Hz
- Shaft will accept 5/8" - 11RH male accessories
- 1" stainless steel shaft with welded flange
- Heavy-duty ball bearing



The 12" Variable Speed Beveler/Grinder is a versatile unit designed to cold-work pieces of glass. With the appropriate accessories, this unit will grind, shape, and polish small work pieces. Flat diamond discs are the cleanest, fastest way to make glass bevels. There are several features built into this variable-speed lapping unit, including a water sleeve that allows water to come up through the shaft center and disperse from the middle of the plate, and an overhead loc-line® water supply. It also has a 5/8"-11RH female thread that accepts a variety of different diamond finishing tools. An optional male-to-male brass fitting for female threads is also available. The 1hp, 3phase, wash down motor and speed controller allow speed ranges from 200rpm to 1100rpm. The bearings have been set 11" apart on the shaft to give rigidity and stability to the balanced and precision ground 12" plate. A wash-down motor and controller are perfect for wet environments. This unit is made with 11-gauge box tubing and 16-gauge removable side panels topped with heavy-duty powder coatings. Comes with a full 1-year Mfg. warranty on parts.

\* This unit must ship common carrier. Call today for a freight quote.

### 12" Variable Speed Horizontal Beveler/Grinder

Item No.	Motor	Motor No.	Dimensions	Weight
40-1200BG	110V, 60Hz	MTRW01	25" x 25" x 27"	185 lbs
40-1200BG-220	220V, 50Hz			

### 12" Beveler/Grinder Stand

Item No.	Size	Dimensions	Weight
40-1200BG-S	24" x 24"	25" x 25" x 16"	30 lbs

Item No.	Description	Size	Dimensions	Weight
40-1200BG-LC	Large Cabinet Stand	24" x 36"	39" x 39" x 17"	70 lbs
40-1200BG-SC	Small Cabinet Stand	12" x 36"	37" x 26" x 6"	50 lbs

\* Please note that the optional Lam-I-Cushion top and door kit are sold separately

## COVINGTON 18" HORIZONTAL BEVELER/GRINDER

### Features:

- Water supply feeds through shaft center
- Aluminum water manifold controls fluid flow
- Heavy welded steel chassis with stainless steel catch pan
- Available in 110V or 220V, 50Hz or 60Hz
- Shaft will accept 5/8" - 11RH male accessories
- 1" stainless steel shaft with welded flange
- Heavy-duty ball bearing

\* This unit must ship common carrier. Call today for a freight quote.

Item No.	Motor	Motor No.	Dimensions	Weight
40-1800BG	110V, 60Hz	MTRW01	32" x 34" x 48"	355 lbs
40-1800BG-220	220V, 50Hz			

## COVINGTON 24" HORIZONTAL BEVELER/GRINDER

### Features:

- Water supply feeds through shaft center
- Aluminum water manifold controls fluid flow
- Heavy welded steel chassis with stainless steel catch pan
- Available in 110V or 220V, 50Hz or 60Hz
- Shaft will accept 5/8" - 11RH male accessories
- 1" stainless steel shaft with welded flange
- Heavy-duty ball bearing

\* This unit must ship common carrier. Call today for a freight quote.

Item No.	Motor	Motor No.	Dimensions	Weight
40-2400BG	110V, 60Hz	MTRW15	35" x 35" x 45"	425 lbs
40-2400BG-220	220V, 50Hz			

"I have been a customer of Wale since I started taking bead classes at The Banana Factory in late 2007 (I buy my glass and equipment exclusively from you)."

- Sandy Crisafulli

### WE ACCEPT:





# LAPPING MACHINES, DIAMOND ABRASIVE DISCS, SILICONE CARBIDE BELTS, BELT SANDERS, DIAMOND & SILICON CARBIDE ABRASIVE BELTS

## 8" AND 12" TABLETOP LAPPING MACHINES

MADE IN THE USA

### FEATURES

- Available in 12" Steel Plate
- No Center Post
- Water Through Center Spindle
- Heavy Welded Steel Chassis
- Green Powder Baked Paint Finish
- Heavy Duty Bearings Relube
- 115 Volt
- Variable Speed
- Brush Guard (Option)
- Removable Steel Guard
- One Year Warranty on Motor & Bearings



40-0800 8" Package deal includes:

- 1 - 40-0800 8" tabletop variable
- 1 - NT12-100 Grit Diamond Disc
- 1 - NT12-260 Grit Diamond Disc
- 1 - Pre-Polish 180 Blue Disc
- 1 - Pre-Polish 360 Brown Disc
- 1 - Synthetic Felt Polishing Pad

40-1200 Model 12" Package deal includes:

- 1 - 40-1200 12" tabletop variable speed Lapping machine
- 1 - NT12-100 Grit Diamond Disc
- 1 - NT12-260 Grit Diamond Disc
- 1 - Pre-Polish 180 Blue Disc
- 1 - Pre-Polish 360 Brown Disc
- 1 - Synthetic Felt Polishing Pad

All discs are magnetic backed for easy removal and replacing.

Item No.	Description
40-0800	8" Lapping Machine - Package deal
40-1200	12" Lapping Machine - Package deal

## 18" AND 24" FLOOR MODEL LAPPING MACHINES

MADE IN THE USA

These Diamond Lapping Machines are the most heavy duty, highest quality grinding instruments available on the market today.

### FEATURES

- Forward and reverse switch, greatly increasing disc life . No Center Post . Water Through Center Spindle . Forward and Reverse Switch . Heavy Welded Steel Chassis . Blue Hammer tone Powder Baked Paint Finish . Heavy Duty Bearings Relube
- 115 Volt standard - 220 Volt optional
- One Year Warranty on Motor and Bearings . Precision Ground Steel Plate for Magnetic Disc . Heavy Duty Steel Shaft with Welded Flange . Brush Guard . Removable Steel Guard
- 12" machine - 1/2 HP Dayton Motor
- 18" Machine - 3/4 HP Dayton Motor
- 24" Machine - 1 1/2 HP Dayton Motor



Shipping via freight. Contact us for a freight quote.

40-1800 18" Package deal includes:

- 1 - 40-1800 18" tabletop variable
- 1 - NT18-60 Grit Diamond Disc
- 1 - NT18-260 Grit Diamond Disc
- 1 - Pre-Polish 180 Blue Disc
- 1 - Pre-Polish 360 Brown Disc
- 1 - Synthetic Felt Polishing Pad

40-2400 Model 24" Package deal includes:

- 1 - 40-2400 24" tabletop variable speed Lapping machine
- 1 - NT18-60 Grit Diamond Disc
- 1 - NT18-260 Grit Diamond Disc
- 1 - Pre-Polish 180 Blue Disc
- 1 - Pre-Polish 360 Brown Disc
- 1 - Synthetic Felt Polishing Pad

Item No.	Description
40-1800	18" Floor Model Lapping Machine Package Deal
40-2400	24" Floor Model Lapping Machine Package Deal

## SILICON CARBIDE ABRASIVE GRAIN

Wale Apparatus Co. offers Norton Silicon Carbide Abrasive Grain for use with lapping machines in a variety of Grit Sizes: 60, 100, 220, 280, 320 and 600.

Item No.	Description
SCG60	60 Grit Silicon Carbide Grain
SCG100	100 Grit Silicon Carbide Grain
SCG150	150 Grit Silicon Carbide Grain
SCG220	220 Grit Silicon Carbide Grain
SCG280	280 Grit Silicon Carbide Grain
SCG320	320 Grit Silicon Carbide Grain
SCG600	600 Grit Silicon Carbide Grain



# LAPPING MACHINES, DIAMOND ABRASIVE DISCS, SILICONE CARBIDE BELTS, BELT SANDERS, DIAMOND & SILICON CARBIDE ABRASIVE BELTS

## DIAMOND LAPPING DISCS - NICKEL PLATED - MADE IN THE USA

- High Quality Diamonds
- Magnetic Backing
- Needs Only Water for Coolant
- Grinding Heavy Stock Removal
- Long Lasting



### 8" DIAMOND LAPPING DISCS - NICKEL PLATED

Item No.	Description
40-08NP-60	60 GRIT Nickel Plated Diamond Disc
40-08NP-80	80 GRIT Nickel Plated Diamond Disc
40-08NP-100	100 GRIT Nickel Plated Diamond Disc
40-08NP-180	180 GRIT Nickel Plated Diamond Disc
40-08NP-260	260 GRIT Nickel Plated Diamond Disc
40-08NP-360	360 GRIT Nickel Plated Diamond Disc
40-08NP-600	600 GRIT Nickel Plated Diamond Disc

### 12" DIAMOND LAPPING DISCS - NICKEL PLATED

Item No.	Description
40-12NP-40	40 GRIT Nickel Plated Diamond Disc
40-12NP-60	60 GRIT Nickel Plated Diamond Disc
40-12NP-80	80 GRIT Nickel Plated Diamond Disc
40-12NP-100	100 GRIT Nickel Plated Diamond Disc
40-12NP-180	180 GRIT Nickel Plated Diamond Disc
40-12NP-260	260 GRIT Nickel Plated Diamond Disc
40-12NP-360	360 GRIT Nickel Plated Diamond Disc
40-12NP-600	600 GRIT Nickel Plated Diamond Disc

### 18" DIAMOND LAPPING DISCS - NICKEL PLATED

Item No.	Description
40-18NP-40	40 GRIT Nickel Plated Diamond Disc
40-18NP-60	60 GRIT Nickel Plated Diamond Disc
40-18NP-80	80 GRIT Nickel Plated Diamond Disc
40-18NP-100	100 GRIT Nickel Plated Diamond Disc
40-18NP-180	180 GRIT Nickel Plated Diamond Disc
40-18NP-260	260 GRIT Nickel Plated Diamond Disc
40-18NP-360	360 GRIT Nickel Plated Diamond Disc
40-18NP-600	600 GRIT Nickel Plated Diamond Disc

### 24" DIAMOND LAPPING DISCS - NICKEL PLATED

Item No.	Description
40-24NP-40	40 GRIT Nickel Plated Diamond Disc
40-24NP-60	60 GRIT Nickel Plated Diamond Disc
40-24NP-80	80 GRIT Nickel Plated Diamond Disc
40-24NP-100	100 GRIT Nickel Plated Diamond Disc
40-24NP-180	180 GRIT Nickel Plated Diamond Disc
40-24NP-260	260 GRIT Nickel Plated Diamond Disc
40-24NP-360	360 GRIT Nickel Plated Diamond Disc
40-24NP-600	600 GRIT Nickel Plated Diamond Disc

## PRE-POLISHING DISCS - MADE IN THE USA

- Flexible Resin Bonded Disc
- High Concentration of Diamond Mixed in Resin
- Magnetic Backing
- Fast Grinding
- Replaces Cork/Pumice
- Needs Only Water for Coolant
- Center hole or No hole
- Long Lasting



### 8" PRE-POLISHING DISCS

Item No.	Description
40-08PP-BL	180 Grit 400/600 Mesh Pre-Polishing Disc-Blue
40-08PP-BR	360 Grit 1200/1900 Mesh Pre-Polishing Disc-Brown
40-08PP-RD	600 Grit 2200/2600 Mesh Pre-Polishing Disc-Red
40-08FP	Felt Polishing Pad

### 12" PRE-POLISHING DISCS

Item No.	Description
40-12PP-BL	180 Grit 400/600 Mesh Pre-Polishing Disc-Blue
40-12PP-BR	360 Grit 1200/1900 Mesh Pre-Polishing Disc-Brown
40-12PP-RD	600 Grit 2200/2600 Mesh Pre-Polishing Disc-Red
40-12FP	Felt Polishing Pad

### 18" PRE-POLISHING DISCS

Item No.	Description
40-18PP-BL	180 Grit 400/600 Mesh Pre-Polishing Disc-Blue
40-18PP-BR	360 Grit 1200/1900 Mesh Pre-Polishing Disc-Brown
40-18PP-RD	600 Grit 2200/2600 Mesh Pre-Polishing Disc-Red
40-18FP	Felt Polishing Pad

### 24" PRE-POLISHING DISCS

Item No.	Description
40-24PP-BL	180 Grit 400/600 Mesh Pre-Polishing Disc-Blue
40-24PP-BR	360 Grit 1200/1900 Mesh Pre-Polishing Disc-Brown
40-24PP-RD	600 Grit 2200/2600 Mesh Pre-Polishing Disc-Red
40-24FP	Felt Polishing Pad

# LAPPING MACHINES, DIAMOND ABRASIVE DISCS, SILICONE CARBIDE BELTS, BELT SANDERS, DIAMOND & SILICON CARBIDE ABRASIVE BELTS

## WET BELT SANDERS

The #761 Deluxe Commercial Wet Belt Sander is designed for high production work. This machine sands, grinds, and polishes large or heavy pieces. The deluxe sander is equipped with a 1/2hp motor, a 13" high back plate, a 4" high back plate, belt guard, instructions, and product guarantee. A water valve and spray nozzle are built in for easy hookup. The water valve takes 1/4" OD plastic tubing for gravity water flow or 1/4" copper tubing for pressure systems. The 13" high back plate makes it possible to wet sand flat surfaces vertically. This unit ships with the motor attached, ready to plug in and operate.



Item No.	Motor	Motor No.	Dimensions	Weight
1150-110	110V, 60Hz	MTR199	27" x 27" x 14"	67 lbs
1150-220	220V, 50Hz			

## DIAMOND ABRASIVE HANDPADS & FILES

Diamond Starpad® is a flexible diamond abrasive made as hand files, discs and handpads for use on most materials where conventional abrasives are normally used. Starpad® Handfiles are lightweight yet sturdy, long lasting, easy to use and inexpensive. They are color coded for quick identification and ease of use.

### Handpads

Item No.	Diamond Size	Color Code
350005	60	Green
350010	120	Black
350015	200	Red
350020	400	Yellow
350025	500	White
350030	1000	Blue
350035	1 of each of the above pads	

### Files

Item No.	Grit Type	File	Size
350070	Course (120 Grit) Black	Rectangle	1 1/2" x 3/4"
350075	Course (120 Grit) Black	Rectangle	1 3/4" x 1/2"
350085	Course (120 Grit) Black	Rectangle	2 1/2" x 1/4"
350080	Course (120 Grit) Black	1/2 Round	1 3/4" x 3/8"
350090	Medium (200 Grit) Red	Rectangle	1 1/2" x 3/4"
350095	Medium (200 Grit) Red	Rectangle	1 3/4" x 1/2"
350105	Medium (200 Grit) Red	Rectangle	2 1/2" x 1/4"
350100	Medium (200 Grit) Red	1/2 Round	1 3/4" x 3/8"
350110	Fine (400 Grit) Yellow	Rectangle	1 1/2" x 3/4"
350115	Fine (400 Grit) Yellow	Rectangle	1 3/4" x 1/2"
350125	Fine (400 Grit) Yellow	Rectangle	2 1/2" x 1/4"
350120	Fine (400 Grit) Yellow	1/2 Round	1 3/4" x 3/8"
350000	1 of each of the above files		Kit

## DIAMOND ABRASIVE BELTS

These high quality diamond abrasive belts feature a flexible, tear resistant Kevlar backing enabling wet sanding of glass and quartz of various shapes as well as square edges. Diamond abrasive belts are available in a wide range of sizes and grits, please contact Wale for additional information.



Item No.	Description
10-1400	3" x 41 1/2" - 70 Grit Diamond
10-1401	3" x 41 1/2" - 120 Grit Diamond
10-1402	3" x 41 1/2" - 220 Grit Diamond
10-1403	3" x 41 1/2" - 400 Grit Diamond
10-1404	3" x 41 1/2" - 600 Grit Diamond
10-1410	4" x 48" - 70 Grit Diamond
10-1411	4" x 48" - 120 Grit Diamond
10-1412	4" x 48" - 220 Grit Diamond
10-1413	4" x 48" - 400 Grit Diamond
10-1414	4" x 48" - 600 Grit Diamond
10-1440	4" x 106" - 70 Grit Diamond
10-1441	4" x 106" - 120 Grit Diamond
10-1142	4" x 106" - 220 Grit Diamond
10-1443	4" x 106" - 400 Grit Diamond
10-1444	4" x 106" - 600 Grit Diamond

## SILICON CARBIDE ABRASIVE BELTS



Item No.	Description
SB341.5-A	3" x 41 1/2" - 60 Grit - Silicone
SB341.5-B	3" x 41 1/2" - 80 Grit - Silicone
SB341.5-C	3" x 41 1/2" - 100 Grit - Silicone
SB341.5-D	3" x 41 1/2" - 220 Grit - Silicone
SB341.5-E	3" x 41 1/2" - 320 Grit - Silicone
SB341.5-F	3" x 41 1/2" - 400 Grit - Silicone
SB341.5-G	3" x 41 1/2" - 600 Grit - Silicone
SB4106-A	4" x 106" - 60 Grit - Silicone
SB4106-B	4" x 106" - 80 Grit - Silicone
SB4106-C	4" x 106" - 100 Grit - Silicone
SB4106-D	4" x 106" - 220 Grit - Silicone
SB4106-E	4" x 106" - 320 Grit - Silicone
SB4106-F	4" x 106" - 400 Grit - Silicone
SB4106-G	4" x 106" - 600 Grit - Silicone



# GLOVES AND SLEEVES, TAPES & ADHESIVES

Tapes are used primarily as an indicator and spacer between glass tapered joints. They endure high temperatures and will not adhere to the glass. Available with or without adhesive.

## GRAPHITE PAPER TAPES



### (Smooth) Standard Graphite Paper Tape

Item No.	Description
12-1410	1/2" x .005" x 50' Graphite Tape
12-1411	1" x .005" x 50' Graphite Tape
12-1412	2" x .005" x 50' Graphite Tape
12-1413	1/2" x .010" x 50' Graphite Tape
12-1414	1" x .010" x 50' Graphite Tape
12-1415	2" x .010" x 50' Graphite Tape
12-1416	1/2" x .015" x 50' Graphite Tape
12-1417	1" x .015" x 50' Graphite Tape
12-1418	2" x .015" x 50' Graphite Tape

### Standard Paper Tape with Adhesive Backing

Item No.	Description
12-1430	1/2" x .005" x 25' Graphite Tape w/Adhesive Back
12-1431	1" x .005" x 25' Graphite Tape w/Adhesive Back
12-1432	2" x .005" x 25' Graphite Tape w/Adhesive Back
12-1433	1/2" x .010" x 25' Graphite Tape w/Adhesive Back
12-1434	1" x .010" x 25' Graphite Tape w/Adhesive Back
12-1435	2" x .010" x 25' Graphite Tape w/Adhesive Back
12-1436	1/2" x .015" x 25' Graphite Tape w/Adhesive Back
12-1437	1" x .015" x 25' Graphite Tape w/Adhesive Back
12-1438	2" x .015" x 25' Graphite Tape w/Adhesive Back

## NOBEST PAPER TAPE

Nobest Paper Tapes are composed of a unique unfired ceramic-like material with selected synthetic fibers and high temperature binders. Nobest Paper Tapes provide excellent physical characteristics for applications such as gaskets, spacers, cushioning, supports, insulation, wrappings, etc., and Nobest Paper Tapes won't mar glass surface.



Item No.	Description
15-1553	.010" x 1" x 300' Paper Tape

## CRINKLED GRAPHITE PAPER TAPES



*Ribbed for Added Flexibility*

Item No.	Description
12-1423	1/2" x .010" x 50' Crinkled Graphite Paper Tape
12-1424	1" x .010" x 50' Crinkled Graphite Paper Tape
12-1425	2" x .010" x 50' Crinkled Graphite Paper Tape
12-1426	1/2" x .015" x 50' Crinkled Graphite Paper Tape
12-1427	1" x .015" x 50' Crinkled Graphite Paper Tape
12-1428	2" x .015" x 50' Crinkled Graphite Paper Tape

## CERAMIC TAPES

Wale® asbestos-free ceramic glassworking tapes are made from high purity refractory fibers with a melting point of 3200°F. It can be cut with ordinary scissors and formed into complex shapes. It can be folded, wrapped, rolled and goes around sharp corners. Strong, free standing shapes can be produced.

Applications are based on the outstanding temperature stability and uniformity, low specific heat, low thermal conductivity, resistance to thermal shock, good dielectric strength and excellent corrosion resistance. Applications including cushioning holders, insulation, supports - will not mar glass. Wale ceramic paper tapes also find applications in the laboratory as high temperature filters (passing gases or liquids for mixing), construction and repair of high temperature equipment, etc.

Wale asbestos-free ceramic glassworking tapes are available in a variety of widths and thicknesses.

Melting Point: 3200°F  
 Continuous Service Temperature: 2300°F  
 Density: 12 lbs./ft.<sup>3</sup>



Item No.	Description
15-1501	1/32" thick x 1" wide x 80' Ceramic Tape
15-1503	1/32" thick x 2" wide x 80' Ceramic Tape
15-1506	1/16" thick x 1" wide x 100' Ceramic Tape
15-1508	1/16" thick x 2" wide x 100' Ceramic Tape
15-1510	1/16" thick x 3" wide x 100' Ceramic Tape
15-1512	1/8" thick x 1" wide x 50' Ceramic Tape
15-1513	1/8" thick x 2" wide x 50' Ceramic Tape
15-1515	1/8" thick x 3" wide x 50' Ceramic Tape

### 24" Wide Ceramic Sheet

Item No.	Description
15-1517	1/32" thick x 24" wide x 10' Ceramic Sheet
15-1519	1/16" thick x 24" wide x 10' Ceramic Sheet
15-1520	1/16" thick x 24" wide x 25' Ceramic Sheet

## WALETEX HI TEMP TAPE

### WALETEX (BLUE COLOR) HIGH TEMP GLASS TAPES

Waletex coated glass tapes feature a Silicate mineral composition coating which helps increase the temperature resistance by 10 times or more over that of uncoated glass tapes. Waletex coated glass tapes are asbestos-free.



These tapes offer flame resistance up to 2000°F with continuous use temperatures from 1500°F to 1800°F. Most conventional glass tapes can only be used at temperatures up to 1000°F. In addition, Walex tapes are strong. In a torch test a .066" thick sample withstood a direct flame (approx. 2000°F) for 30 minutes before beginning to burn through (torch nozzle - 2" from sample). The combination of increased temperature resistance and strength means a longer working life. Also, it means that Walex tapes can be used for a wide range of applications.

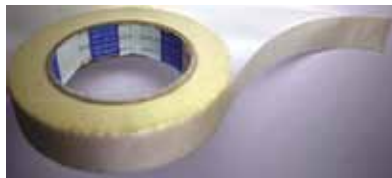


Item No.	Description
17-1730	1/32" x 1" x 100' Walex Tape
17-1731	1/32" x 2" x 100' Walex Tape
17-1732	1/32" x 3" x 100' Walex Tape
17-1733	1/16" x 1" x 100' Walex Tape
17-1733A	1/16" x 1" x 100' Walex Tape w/Adhesive Backing
17-1734	1/16" x 2" x 100' Walex Tape
17-1735	1/16" x 3" x 100' Walex Tape
17-1729	1/16" x 4" x 100' Walex Tape
17-1736	1/8" x 1" x 100' Walex Tape
17-1737	1/8" x 2" x 100' Walex Tape
17-1738	1/8" x 3" x 100' Walex Tape
17-1739	1/8" x 4" x 100' Walex Tape
17-1748	1/8" x 5" x 100' Walex Tape

\*Other widths of tapes and cloths are available on special order.

## PRESSURE SENSITIVE GLASS TAPES

Walex® Pressure Sensitive Glass Tapes feature the same properties as the other woven glass products. In addition to these properties, this tape has a pressure sensitive backing allowing it to be easily affixed to chuck jaws, hand tools, work pieces, etc.



Item No.	Description
17-1776	.010" Thick x 1" Wide x 108' Long
17-1777	.010" Thick x 2" Wide x 108' Long
17-1778	.010" Thick x 3" Wide x 108' Long

## WOVEN GLASS

Walex® asbestos-free woven glass products offer many unique characteristics and advantages for a broad variety of applications. These products are non-flammable and may be used at surface temperatures ranging from 120°F to 1000°F. In addition to its excellent heat resistance, Walex woven glass products feature high tensile strength and exceptional chemical resistance. They are highly resistant to most chemicals except hydrofluoric, hot phosphoric acid and wet hydrogen chloride. Walex asbestos-free woven glass products are suitable for most glassworking applications without the health hazards of asbestos.

## WOVEN GLASS TAPES



Item No.	Description
17-1706	1/32" Thick x 1/2" Wide x 100' Glass Tape
17-1707	1/32" Thick x 1" Wide x 100' Glass Tape
17-1708	1/32" Thick x 1 1/2" Wide x 100' Glass Tape
17-1709	1/32" Thick x 2" Wide x 100' Glass Tape
17-1711	1/16" Thick x 1" Wide x 100' Glass Tape
17-1712	1/16" Thick x 2" Wide x 100' Glass Tape
17-1713	1/16" Thick x 3" Wide x 100' Glass Tape
17-1714	1/8" Thick x 1" Wide x 50' Glass Tape
17-1715	1/8" Thick x 2" Wide x 50' Glass Tape
17-1716	1/8" Thick x 3" Wide x 50' Glass Tape

Glass tapes are available in other widths and thicknesses on special order.

## WOVEN GLASS CLOTH

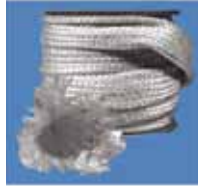
Item No.	Description
17-1718	1/32" Thick x 40" Wide x 3' Woven Glass Cloth



# GLOVES AND SLEEVES, TAPES & ADHESIVES

## BRAIDED GLASS SLEEVING

Item No.	Description
17-1721	1/4" ID x 1/16" Wall x 25'
17-1723	1/2" ID x 1/16" Wall x 25'
17-1724	3/4" ID x 1/16" Wall x 25'
17-1725	1" ID x 1/16" Wall x 25'
17-1726	1-1/4" ID x 1/16". Sold Per Foot



## FUSED QUARTZ WOOL

Wale Fused Quartz Wool is manufactured from 99.9% pure SiO<sub>2</sub> and possesses the same properties as other fused quartz products. It resembles glass wool and is made up of exceptionally fine quartz fibers of about 6 microns in diameter. Fused quartz wool finds applications as electronic insulation, thermal insulation, and high temperature & purity filters.

Item No.	Description
17-1780	Quartz Wool - 1 oz.
17-1780B	Quartz Wool Bulk - 17 oz.



## NOR-FAB (YELLOW COLOR) NON-ASBESTOS TAPES

Made from fiberglass combined with other synthetic fibers, NOR-FAB Series 400 offers excellent protection up to 650°F and intermittent protection at considerably higher temperatures. NOR-FAB 400 cloth is lightweight, has excellent strength and abrasion resistance, good flexibility and non-stretch characteristics. It possesses good chemical and mildew resistance and is unaffected or slightly weakened by most acid and alkali solutions.

Wale Apparatus offers a complete line of NOR-FAB cloth tapes, twisted rope, wicking and braided sleeving.

*\*Other sizes and lengths from .012" to .25" thick and 1/2" to 6" wide available on special order.*



Item No.	Description
15-1581	1/32" x 1/2" x 100'
15-1582	1/32" x 1" x 100'
15-1583	1/32" x 1-1/2" x 100'
15-1584	1/32" x 2" x 100'
15-1586	1/16" x 1" x 100'
15-1587	1/16" x 2" x 100'
15-1588	1/16" x 3" x 100'
15-1590	1/8" x 1" x 50'
15-1591	1/8" x 2" x 50'
15-1592	1/8" x 3" x 50'

## WALEBOND MOLDABLE HIGH TEMPERATURE ADHESIVE - 1 LB CAN

Walebond coats glass to withstand higher temperatures. It bonds glass to metal, glass to ceramic, metal to metal, etc. It is impervious to oil, gasoline, acids and alkalis.

- Withstands 2200°F
- Moldable



Item No.	Description
15-1483	16oz Jar - Thick Brush On

## WALECRETE SELF CURING, HIGH STRENGTH, HIGH TEMPERATURE ADHESIVE

Walecrete mixes with water to provide outstanding characteristics. It may be poured, dipped or brushed. It is ideal for molding. Maximum service temperature - 3000°F.

- Extreme high temperature resist
- Self curing
- High strength



Item No.	Description
15-1480	16oz Jar

## WALESET HIGH TEMPERATURE ADHESIVE

Waleset is an all purpose engineering adhesive ceramic cement. Locks, seals and bonds glass, ceramic, metals, etc. It withstands temperatures up to 2000°F.

- High temperature resistance, up to 2000°F
- No mixing
- Dropper bottle for easy application



Item No.	Description
15-1484	2 oz. bottle
15-1485	4 oz. bottle

## LOCTITE 349 UV ADHESIVE

Loctite UV adhesives are versatile materials used in bonding, encapsulating, coating, tacking and sealing applications. These adhesives are single component, solvent free products which cure in seconds when exposed to industrial UV/visible light sources. 349 Impruv is an optically clear UV adhesive. It forms a tough, clear bond even in large gaps. It is ideal for glass bonding with UV lamps.



Item No.	Description
40-9905	50ml bottle



## 6" TERRYCLOTH KEVLAR GLOVES

These Kevlar work gloves are made from Kevlar 29 aramid fiber and contain no asbestos and provide maximum cut and heat resistance without sacrificing comfort or flexibility. Provide limited protection up to 400° F and are functional for intermittent use at higher temperatures.



For superior heat protection, the terrycloth gloves provide a cushioning layer of air.

These gloves can be repeatedly washed or dry cleaned with negligible shrinkage and virtually no loss of quality.

Sold by the pair.

Item No.	Description
15-1572	6" Terrycloth Kevlar Gloves

## 14" TERRYCLOTH KEVLAR GLOVES

These Kevlar work gloves are made from Kevlar 29 aramid fiber and contain no asbestos and provide maximum cut and heat resistance without sacrificing comfort or flexibility. Provide limited protection up to 400° F and are functional for intermittent use at higher temperatures.



Offered with a 14" long safety cuff design and either a comfortable cool cotton liner or fully insulated wool liner.

These gloves can be repeatedly washed or dry cleaned with negligible shrinkage and virtually no loss of quality.

Sold by the pair.

Item No.	Description
15-1578	Cotton Liner
15-1580	Wool Liner

## KEVLAR KNIT WORK GLOVES - 6" LONG

These Kevlar work gloves are made from Kevlar 29 aramid fiber and contain no asbestos and provide maximum cut and heat resistance without sacrificing comfort or flexibility. Provide limited protection up to 400° F and are functional for intermittent use at higher temperatures.



15-1571

Available in both knit and jersey, the knit gloves are the most breathable and economical while the jersey gloves are the most comfortable with an all day wear feel.

These gloves can be repeatedly washed or dry cleaned with negligible shrinkage and virtually no loss of quality.

Sold by the pair.



15-1579

Item No.	Description
15-1571	Knit Gloves
15-1579	Jersey Gloves

## KEVLAR MITTENS - 14" LONG

These Kevlar mittens are made from Kevlar 29 aramid fiber and contain no asbestos and provide maximum cut and heat resistance without sacrificing comfort or flexibility. Provide limited protection up to 400° F and are functional for intermittent use at higher temperatures.



These multiple ply mittens offer superior heat resistance with a fully insulated wool liner.

These mittens can be repeatedly washed or dry cleaned with negligible shrinkage and virtually no loss of quality.

Sold by the pair.

Item No.	Description
15-1570	Kevlar Mittens - 14" Long

## KEVLAR SLEEVES

These Kevlar sleeves are made from Kevlar 29 aramid fiber and contain no asbestos and provide maximum cut and heat resistance without sacrificing comfort or flexibility. Breathable and lightweight for all day comfort.

Offered in several lengths and styles. These sleeves can be repeatedly washed or dry cleaned with negligible shrinkage and virtually no loss of quality.



15-1577

15-1471

15-1473

Sold per sleeve.

Item No.	Description
15-1577	10" Long
15-1576	18" Long
15-1472	10" with Thumb Hole and Hand
15-1473	18" with Thumb Hole and Hand
15-1471	18" with Thumb and 1/4 Finger with Velcro Top

# GLOVES AND SLEEVES, TAPES & ADHESIVES

## HIGH TEMP PBI KEVLAR BLEND GLOVES AND MITTENS - KB SERIES 1700°

Kevlar PBI (Polybenzimidazole) is a high performance organic fiber which does not burn in air, retains its strength and suppleness even when charred, will not melt or emit toxic fumes or vapors, and has excellent flexibility.

KB Series PBI are 22 oz., and have been tested up to 1700° F. There are several styles available, each with a fully insulated wool lining featuring Aramid (a microbial blocker to keep liners fresh).

Covermitts are worn over gloves to provide additional protection, and should not be worn alone.

Sold by the pair.



15-1679



15-1681



15-1691



15-1682

## HIGH TEMP PBI KEVLAR BLEND GLOVES AND MITTENS - HB SERIES 2600°

Kevlar PBI (Polybenzimidazole) is a high performance organic fiber which does not burn in air, retains its strength and suppleness even when charred, will not melt or emit toxic fumes or vapors, and has excellent flexibility.

HB Series PBI are 45 oz., and have been tested up to 2600° F. There are several styles available, each with a fully insulated wool lining featuring Aramid (a microbial blocker to keep liners fresh).

Covermitts are worn over gloves to provide additional protection, and should not be worn alone.

Sold by the pair.



15-1683



15-1684



15-1692

Item No.	Description
15-1679	Gloves 14" Long with Aluminized Back
15-1681	Gloves 14" Long
15-1682	Gloves 23" Long
15-1685	Mittens 14" Long
15-1691	Covermitts 8" Long

Item No.	Description
15-1683	Gloves 14" Long
15-1684	Gloves 23" Long
15-1686	Mittens 14" Long
15-1692	Covermitts 8" Long

## ALUMINIZED SLEEVES

Aluminized Rayon sleeves are 18" in length and feature safety cuffs. Sold by the pair



Item No.	Description
15-1575	Aluminized Sleeves 18" Long

## ALUMINIZED APRON

This apron is a 19 oz. Aluminized Thermonol with adjustable web neck and waist straps that attach with slide snap. All edges are serged to prevent raveling. Apron is 24" wide x 39" long.



Item No.	Description
15-1680	Aluminized Apron

## ALUMINIZED THERMONOL JACKET

- 19 oz. Aluminized Thermonol
- 35" length
- Lay down collar FR cotton lined
- Semi-raglan sleeve for room and comfort
- Covered snap closure
- Snap adjustment at wrists
- Seams are sew-serged and safety stitched for added wear
- Additional sizes available up to 2X



Item No.	Description
15-1677L	Large - Aluminized Thermonol Jacket - 34" Sleeve
15-1677XL	X-Large - Aluminized Thermonol Jacket - 35" Sleeve

"You're awesome! Thank you for your patience and help. Best customer service I've experienced in a long time!"

- Becky from Texas

**3 INCH PORTABLE FLASHLIGHT POLARISCOPE**

The 3 inch portable polariscope is the smallest polariscope offered by Wale Apparatus. It is ideal for detecting strains in existing installations or where portability is a must. Great for small diameter glass objects or when portability is a necessity.

- 3" Viewport
- Flashlight Model
- Portable
- Electrical: Standard 6 Volt Battery



Item No.	Description
24-3550	3" Portable Flashlight Polariscope
24-3550V	Replacement Upper Hand Viewer

**10 x 19 INCH POLARISCOPE WITH HANDVIEWER**

Bench Model 10" x 19" Polariscope. Provides a large unobstructed area for full color viewing of strain patterns in glass material.

- Full Color Blue Dot Scientific Model
- Polarized Cabinet: 4"D with 10" x 19" Illumination Area
- 12" x 22" Swivel Base with Locking Handwheel
- Electrical: 115V, 60W
- 3 Prong Cord



Item No.	Description
24-3520	10 x 19" Polariscope with Handviewer 115 Volt
24-3520 (220V)	10 x 19" Polariscope with Handviewer 220 Volt
24-3520V	Replacement Viewer 5 x 5" Blue Dot Full Color

**6 INCH SQUARE POLARISCOPE WITH HANDVIEWER**

Bench Model 6" x 6" Polariscope. Offers full color viewing of strain patterns in glass material.

- 5" Viewport
- Full Color Blue Dot
- Blue Hammertone Finish
- 14" Maximum Height Adjustment
- Electrical: 115V, 60W
- 3 Prong Cord



Item No.	Description
24-3560	6" Square Polariscope with Handviewer 115 Volt
24-3561	6" Square Polariscope with Handviewer 220 Volt
24-3560V	Replacement Upper Hand Viewer
24-3560A	Conversion Adapter for converting to 220V

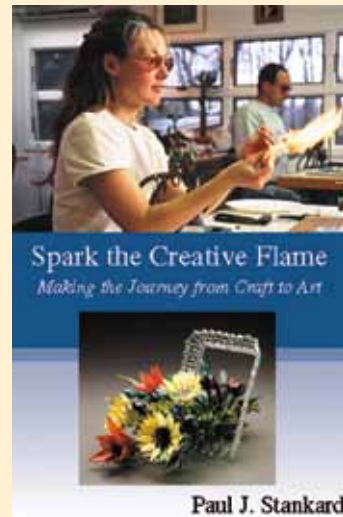
**SPARK THE CREATIVE FLAME**

*Spark the Creative Flame* is a resource that strives to inform, inspire, and motivate all who work in craft and wish to improve the creative expression of their work. While the book features frameworked glass and a selection of the leading artisans who do this work, the insights and recommendations presented transcend material and speak to broader issues relevant to all creative craftspeople.

*Spark the Creative Flame* is made up of three parts, presented in engaging and accessible language. The first section consists of three essays by scholar-artists that provide essential context for the book by considering the recent history of craft; the relationships among craft, design, and art; and the many facets of beauty. Section two presents a personal retrospective on the 50-year career of internationally acclaimed artist Paul J. Stankard. A pioneer in the Studio Glass Movement, Stankard is considered a living master in the art of floral paperweight making. The third section provides overviews of the careers of twelve highly regarded contemporary glass artists. Collectively, the reader is presented with insightful perspectives on the aspirations, strategies, challenges, and accomplishments of a representative sample of internationally respected frameworking artists.

Featured artists include: Lucio Bubacco, Vittorio Costantini, Amber Cowan, Matt Eskuche, Shane Fero, Carmen Lozar, Iwao Matsushima, Jay Musler, Ginny Ruffner, Kari Russell-Pool, Césaire Toffolo, and Anna Skibska.

*Spark the Creative Flame* is a unique contribution to dialogues on art, craft, and design because it combines craft history, personal philosophy from a respected maker, and in-depth appreciations of twelve significant makers. This book celebrates work and artists that pursue and have maintained integrity, originality, and mastery of process. The fusion of in-depth well-researched artist biographies, with color images of their signature work, accessibility, and explanations of complex issues in an approachable, meaningful way, makes this book a "must read" for artist/craftspeople as well as anyone with an interest in glass art or the creative process.



Item No.	Description
40-1480	<i>Spark the Creative Flame: Making the Journey from Craft to Art</i> By: Paul J. Stankard



# TP MASHER, CUTTING TOOLS, HOLDING TOOLS, HEMOSTATS, PLIERS, PRESSES & TWEEZERS

## LARGE INSIDE OUT CLAW W/ PLATE LOCKING SET SCREW

MADE IN THE USA - Excellent for inside and outside holding of Goblets, Glasses, Marbles, Pipes, etc. The handle is 7" long w/ locking screw and features 6 claws which can hold from 1" diameter up to approximately a 4" diameter. The overall length closed is approximately 18" long.



Item No.	Description
40-5651	American Large Inside Out Claw w/ Plate and Locking Set Screw

## MINI MEISTER HOLDING FINGERS

MADE IN THE USA - Great for holding Bottles, Bowls, Marbles, and Beads. This Mini Finger is only 9" long, and weighs less than an ounce! Superior quality and strength. Holds up to a 2" diameter and has a locking hand screw to hold your glass tightly in place.



Item No.	Description
40-5653	Mini Meister Holding Fingers

## MEDIUM HOLDING FINGERS

GREAT TOOL! MADE IN THE USA! - The Medium Holding Fingers feature a sliding collar with a locking hand screw for secure holding. The spring steel "fingers" hold pipes, marbles, goblets or irregular shaped objects for ease of working in the flame.



The medium size easily holds objects up to 3" in diameter. The overall length is 11.25"

Item No.	Description
40-5652	Medium Holding Fingers

## FLAMEWORKERS PREMIUM TOOL KIT

EACH TOOL IS HANDMADE IN THE USA

Flameworkers Tool Kit includes:

- #40-8100-5/8" Brass Push
- #40-5652 Holding Fingers with Locking Screw
- #99-1253 Octagonal Graphite Reamer 2mm to 12mm
- #40-1263 Graphite Plate 6" x 6" x 1/4" thick



Item No.	Description
40-1009	Flameworkers Premium Tool Kit

## PIN IMPLOSION TOOL

Pin Implosion Tool for making marbles, implosions, pendants, air trap sculptures, etc.

The 4"x4" Bench Top Pin Implosion inserts on Hexagon Machined Optical Illusion Swirl base with the option to secure to your work bench. The graphite plates pinholes/hexagon shape is 2.5" x 2.5" from side to side with pins being only 1/8" apart which allows for greater amount of pins for more detail in your work!! ~393 Pin Positions!!~



The Graphite Plate fits nicely and securely down into the fixture base and has machined holes to secure/screw down to any workbench.

Item No.	Description
40-8005	Pin Implosion Tool

## GONG - GLASS ON GLASS GROUND JOINT TOOLS

GREAT TOOLS FOR WORKING WITH GROUND GLASS JOINTS - The Blast Shield ground joint holding tool offers extreme precision with tools that are assembled on a lathe and guaranteed to run true.



The stainless steel handles are designed to have 1/4 inch hose slide over the end. The total length of the tool is just over 12 inches.

Item No.	Description
40-5670F	14mm Joint Holding Tool - To Hold Female Joints
40-5670M	14mm Joint Holding Tool - To Hold Male Joints
40-5671F	19mm Joint Holding Tool - To Hold Female Joints
40-5671M	19mm Joint Holding Tool - To Hold Male Joints

## BRASS GONG JOINT HOLDERS

Machined to precisely fit 1:10 taper glass joints. Hollow so you can blow air through the tool with a connection of blow hose or by just blowing air through the tool. These are true and balanced and are able to run on a lathe with no wobble. Features a high temperature handle grip that is easily able to be placed on or off as well as an Ultra-High Temperature Ceramic Sleeving that will resist heat up to 1100° Fahrenheit. The ceramic sleeving allows for you to garage your pieces in the kiln without the handle getting too hot to hold.



Very precise in holding both American and Chinese glass on glass ground joints. Tool measures about 16" with a longer handle for balance and heat dissipation..

Item No.	Description
40-5670B-F	Holds 14mm female Joints - Brass Holder
40-5670B-M	Holds 14mm male Joints - Brass Holder
40-5671B-F	Holds 19mm female Joints - Brass Holder
40-5671B-M	Holds 19mm male Joints - Brass Holder

# TP MASHER, CUTTING TOOLS, HOLDING TOOLS, HEMOSTATS, PLIERS, PRESSES & TWEEZERS

## HOT GLASS SHEARS

8" Diamond Shears for glassworking - This age old design is now available in a size geared to flame working. The blades of these shears are each shaped with a large V cutting area which can cut up to 1" in diameter. Upon closing the shears on the hot glass, they form a square or diamond shape around the glass. These shears can be used to either form or cut through the hot, pliable glass.



Item No.	Description
40-8003	Diamond Shears

## BRASS PUSH AND BLOW TUBE

This tool is made so the artist is able to have an easy flow of air going through the entire tool.

Brass 3/4" Push with a 3mm nipple for a perfect size hole and precision push guide. The brass bowl is conical/bullet shaped for a perfect bowl shape. Allows for the artist to blow air while pushing down into the glass to even out all of the glass wall thickness for solid precise shaping.



Sophieta Blow Tubes are for puffing holes with no blow tubes already connected to the glass piece that you are working with. This tool will fit holes ranging from 3mm to 3/4". The handle is 5/16" Stainless Steel handle/blow tube.

High Temperature heat resistant handle covering included. Vertical slit allows for easy application over the stainless steel handle.

This tool is very well balanced and designed by a glass blower. The tool measures about 7" on total length.

NOTE: Blowhose, swivel & mouthpiece sold separately.

Item No.	Description
40-8100-12	1/2" Brass Push and Blow Tube
40-8100-58	5/8" Brass Push and Blow Tube
40-8100-34	3/4" Brass Push and Blow Tube
40-8100-38	3/8" Brass Push and Blow Tube
40-8100-KIT	Kit - 3 TOOLS -1/2", 5/8" and 3/4"

## GLASS CUTTING SHEARS

Glass cutting shears are used to cut and sculpt hot glass. The lightweight, steel construction makes these shears durable.



Item No.	Description
40-8002	4" Shears
40-8000	6" Shears
40-8001	7 3/4" Shears

## TP 2 PARALLEL MASHER

The "TP 2" Parallel Masher, which is Truly Parallel, is the improved, next generation of the TP Masher. Now featuring the ability to adjust the grip to the individual's hand size, making for a perfect fit.



Features:

- Interchangeable graphite heads
- Lightweight ergonomic adjustable handle
- Adjustable stop for exact pressing thickness
- Custom spring action, allows for mashing with ease

Available graphite heads include a round head, lentil presses, small and large radials, and larger 2" square flat heads. Heads below are sold individually rather than as a set, so that replacement of chipped or broken sides is easy and affordable.

Item No.	Description
40-1135-2	TP-2 Masher - includes set of round flat heads
40-1136	Round Flat Head
40-1137	Lentil Head
40-1138	Small Radial Head
40-1139	Large Radial Head
40-1140	2" Square Flat Head

## PARALLEL MASHERS - 1 1/4" x 1 1/2"

These Parallel Mashers are used to flatten or mash molten glass to a flat or squatted shape. The heads are 1 1/4" x 1 1/2" and there is an adjustable set screw to set thickness.



Item No.	Description
40-1150	Parallel Mashers - 1 1/4" x 1 1/2"

## PARALLEL MASHERS - 2 1/4" SQUARE

These Parallel Mashers are used to flatten or mash molten glass to a flat or squatted shape. The heads are 2 1/4" square and there is an adjustable set screw to set thickness.



Item No.	Description
40-1151	Parallel Mashers - 2 1/4" square

## STAINLESS STEEL MASHING TWEEZERS

Mashing tweezers offer a smaller mashing surface and are made of stainless steel.



Item No.	Description
40-1171	8" Stainless Steel Mashing Tweezers 3/4" square
40-1171L	10" Stainless Steel Mashing Tweezers 1" square

# TP MASHER, CUTTING TOOLS, HOLDING TOOLS, HEMOSTATS, PLIERS, PRESSES & TWEEZERS

## STAINLESS STEEL TWEEZERS

High quality all stainless steel tweezers in varying lengths.



Item No.	Description
16-1164	4 1/2" Long
16-1165	6" Long
16-1166	8" Long
16-1167	10" Long
16-1168	12" Long

## STAINLESS STEEL TWEEZERS ECONOMY SET

Set of three standard tweezers in varied lengths. Made of stainless steel.



Item No.	Description
40-1169	Set of 3 - 6", 8" & 12" Long

## ASSORTED TWEEZER ECONOMY SET

Great for holding small objects! Set of five tweezers - 5" to 7" with different style ends. Includes: 2 cross locking tweezers, 1 lock tweezer, and 2 standard 6" tweezers. Made of stainless steel.



Item No.	Description
40-1168	Assorted Tweezer Economy Set

## PEARL TWEEZERS

These 6" long tweezers have cup shaped ends that are perfect for sorting out pearls, thus the name. In glass flameworking, these tweezers are often used for grabbing small marbles or other rounded items.



Item No.	Description
40-5738	Pearl Tweezers

## STAMP FORCEPS

Stamp Forceps w/ Rounded Spade Points- 4 1/2" Long



Item No.	Description
40-1170	Stamp Forceps

## LONG NEEDLE NOSE PLIERS

These pliers are often used to mash the molten glass or to stretch and pull canework.



Item No.	Description
40-1174	Long Needle Nose Pliers

## NEEDLE NOSE JEWELRY PLIERS

Use this tool to assemble your finished beads into jewelry. They also work great while making beads to manipulate the hot glass. The round nose is excellent for decorations, such as ruffles.



Item No.	Description
40-2204	Needle Nose Jewelry Pliers

## STAINLESS STEEL FORCEPS

4 1/2" long Stainless Steel Forceps with very fine point edges for picking up tiny items.



Item No.	Description
16-1169	Stainless Steel Forceps

## HEMOSTATS

Surgical Hemostats that feature locking clips to hold firm. Great for holding small pieces of glass.



Item No.	Description
40-1177	6" Long STRAIGHT
40-1178	8" Long CURVED as shown in above picture
40-1179	10" Long STRAIGHT



# TP MASHER, CUTTING TOOLS, HOLDING TOOLS, HEMOSTATS, PLIERS, PRESSES & TWEEZERS

## LOOP HEMOSTATS

Looped Hemostats are used to hold objects such as pendants and marbles. These are 9 1/2" long.



Item No.	Description
40-1182	Loop Hemostats

## LEAF PLIERS

Leaf Pliers use formed metal to mash out perfect leaves in glass.



Item No.	Description
40-1155	Realistic Leaves, thin metal rich with detail

## LEONARDO FEATHERBONE TOOL

Makes a featherbone design impression on your bead. Simply heat the area where you want the design, and press!



Item No.	Description
40-1121F	Fine
40-1121M	Medium
40-1121L	Large

## LEONARDO PETAL PULLERS & PRESSES

The Leonardo petal pullers make all types of petals or leaves. Pansies, daisies, roses and more, or add the petal onto a small bead and shape into a leaf.



Small petal puller - pull petals approximately 4mm by 12mm by 19mm.

Large petal puller - pull petals approximately 4mm by 16mm by 26mm.

Petal Presser - press glass already attached to work into a petal shape. Also available in small and large sizes.

Item No.	Description
40-1152	Small Size Petal Puller
40-1153	Large Size Petal Puller
40-1154	Small Size Petal Presser
40-1154L	Large Size Petal Presser

## LEONARDO BRASS IMPRINTERS

Makes a design impression on your bead. Simply heat the area where you want the design, and press!

The imprinters are delicate in size and versatile in adding an impression to any type or size bead.

Approximate size 5" long, pattern head is 13mm.

Item No.	Description
#SPIRAL	Spiral Pattern
#FLOWER	Flower Pattern
#CROSS	Cross Pattern
#PINWHEEL	Pinwheel Pattern
#HEART	Heart Pattern
#DAISY	Daisy Pattern
#GRID	Grid Pattern
#SMILEY	Smiley Pattern
#STAR	Star Pattern
#PAWPRIN	Pawprint Pattern
#SKULL	Skull Pattern



## LEONARDO FISHBONE TOOL

Makes a fishbone design impression on your bead. Simply heat the area where you want the design, and press!



Item No.	Description
40-1120F	Fine
40-1120M	Medium
40-1120L	Large

## PUFFY MANDRELS

A "Puffy Mandrel" is a modified mandrel, adapted from the glass blowing world for use by lampwork beadmakers to produce hollow beads.

The "Puffy Mandrel" allows beadmakers with a basic understanding of making hollow beads the ability to make light, consistently thin walled, even hollows! Because they are made of high quality surgical steel, these mandrels will hold up to hundreds of usages without bending or burning through.

Some beadmakers even use them with boro glass, and the high heat it requires.



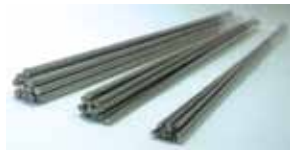
Item No.	Description
40-3805	1/8" Dia.
40-3807	3/32" Dia.

## STAINLESS STEEL MANDRELS

MADE IN THE USA. GREAT QUALITY STAINLESS STEEL!

These mandrels are used for wrapping glass around to form beads and other glass art. You must first apply Fusion flame-dry bead release so the glass does not adhere to the mandrel.

Sold in packs of 12.



Item No.	Description
40-3802	1/16" Diameter x 11" Long
40-3803	3/32" Diameter x 11" Long
40-3801	1/8" Diameter x 11" Long
40-3897	Assorted Pack of 1/8", 3/32" & 1/16" x 11" Long

## STAINLESS STEEL HOLLOW MANDRELS

Hollow Mandrels are used to blow out glass vessels, as well as present a larger size mandrel that is also lightweight. Remember to use Fusion flame-dry bead release with these mandrels to ensure that your glass art will come off the mandrel with ease!



Item No.	Description
40-3610	3/16" Thick x 12" Long

## SMALL PIN VISE W/ 4 COLLETS

This tool is used to hold your stainless steel mandrels, tungsten picks or small diameter graphite rods. It has four interchangeable collets which will hold up to 1/8" diameter.



Item No.	Description
40-3599	Small Pin Vise w/ 4 collets

## GLASS ROD AND TOOL REST

7 1/2" LONG - 10 SLOTS - MADE IN THE USA - STAINLESS STEEL!

The rod and tool rest keeps glass off your work surface eliminating contamination.

They also allow for easy pickup of glass and organization of tools..Rests can be placed directly outside your kiln opening to preheat glass rods.



Item No.	Description
40-0005	Glass Rod and Tool Rest

## FUSION FLAME DRY BEAD RELEASE

Our customers preferred bead release for over 12 years!

Fusion bead separator can be flame dried for instant use. It is very durable with terrific holding power and readily cleans out of your base bead hole. If it becomes too dry just add water and shake it up. It should be the consistency of a milk shake for best results.



Item No.	Description
40-1640	4 fluid ounces
40-1642	8 fluid ounces
40-1643	16 fluid ounces
40-1641	32 fluid ounces

## CERAMIC FIBER BLANKET

Place your hot work between the two ceramic blankets after flame annealing to bring your work down slowly in temperature. This will reduce the opportunity for thermal shock and breakage, but is not true annealing. Kiln annealing is the only way to ensure proper annealing of your work.



Item No.	Description
40-1624	12" wide x 8" long x 1/2" (2 pcs)
40-1623	24" wide x 1" thick (25 foot roll)
40-1622	24" wide x 1" thick (sold by the foot)
40-1623.5	1/2" x 2' x 25 FT. ROLL (2) ROLLS

WE ACCEPT:



# GLASSBLOWING & GLASS BEADMAKING KITS

## MASTER FLAMERWORKER'S / LAMPWORKING KIT

- #110 CC Bench Burner with Valves, Base & Aluminum Heat Exchanger
- #810 Flint Lighter
- #40-1625 16" x 24" x 1/4" Workboard
- #11-1032 Lampworkers Combo Eyewear
- #15-1571 Kevlar Lightweight Gloves
- #16-1130 Blowhose Assembly
- #16-1050 Four Edge Glass Scoring Knife
- #16-1167 10" Stainless Steel Tweezers
- #16-1611 Assorted Package of Corks
- #16-1616 Tungsten Pick
- #20-1381 12' H.D. 1/4" Twin Line Grade T Hose with B Fittings on one end
- #40-0005 Stainless Steel Rod & Tool Rest
- #40-0110 3" x 2" x 3/8" Graphite Top Mount Plate
- #40-1174 Long Needle Nose Mashing Pliers
- #40-1263 Graphite Plate - 6" x 6" x 1/4"
- #40-3909 Bent Tungsten Rake with Wood Handle
- #611-540 Oxygen Regulator
- #613-510 Propane Regulator
- #99-1250 Graphite Paddle with Wood Handle - 2" x 3" x 3/8"
- #99-1253 Graphite Octagonal Reamer with Handle - 2mm to 12mm taper
- #99-1612 Package of Assorted Graphite Rods



Item No.	Description
40-1020	Lampworking Kit

## SCIENTIFIC GLASS WORKING KIT

The Scientific Glass Working Kit includes:

- #1379 National Hand Torch with OX-3, & OX-5 Tips
- #NOX-3 Piloted Brass #3 Tip
- #1389 Wale Heavy Duty Torch Holder
- #11-1032 Poly Sodium Flare Plastic Frame Fit Over with Welders Shade #3 Clip-On Flip Up Eyewear
- #611-540 Oxygen Regulator
- #613-510 Fuel Regulator
- #20-1381 12' H.D. 1/4" Twin Line Grade T Hose with B Fittings on one end
- #1810 Set of Flashback Arrestors - "B" style
- #17-1730 Waletex Tape - 1" x 1/32" x 100ft roll
- #15-1553 Nobest, Non Asbestos Tape - .010" x 1" x 300ft
- #99-1250 Premium Graphite Paddle - 3/8" x 2" x 3" with Wood Handle
- #99-1253 Premium Graphite Octagonal Reamer - 2mm - 12mm
- #99-1612 Premium Graphite Rods - Package of 6, 2 ea of: 1/4", 5/16", and 3/8" diameter
- #16-1050 Glass Scoring Knife with 4 Edge Tungsten Blade
- #810 Shurlite Flint Lighter, Hand Held
- #16-1616 Tungsten Tool
- #16-1130 Blowhose Assembly
- #16-1167 Tweezers, 10" - Stainless Steel
- #16-1611 Package of Assorted Size Corks



Item No.	Description
40-1007	Scientific Glass Working Kit

## FLAMERWORKERS PREMIUM TOOL KIT

EACH TOOL IS HANDMADE IN THE USA

Flameworkers Tool Kit includes:

- #40-8100-5/8" Brass Push
- #40-5652 Holding Fingers 6 Prongs with Locking Screw
- #99-1253 Octagonal Graphite Reamers 2mm to 12mm
- #40-1263 Graphite Plate 6" x 6" x 1/4" thick



Item No.	Description
40-1009	Flameworkers Premium Tool Kit

## GLASSBLOWERS COMPANION KIT

GREAT FOR THE FURNACE WORKER!

Includes:

- #980 Ranger Surface Mix Torch
- #20-8244 Gas/Oxygen Saver for Propane
- #20-1382 25ft of Twin Hose that can be cut to length with all fittings (#14 and 14-0) included



Item No.	Description
40-1000-GC-KIT	Glassblowers Companion kit

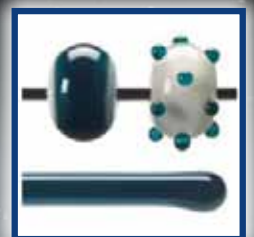
Want to build your own bead making kit? Contact us and find out how you can receive bead making kit pricing on the items of your choosing.



**YOU PROVIDE THE IMAGINATION,**



**WALE PROVIDES THE GLASS AND TOOLS!**



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**Wale Apparatus**  
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