

Synopsis of Laboratory Handpieces (Project 07-022) (5/08)

Dental laboratory handpieces are used on a daily basis to adjust, finish, and polish all types of dental prostheses. Laboratory handpieces are commonly referred to as a low speed or “straight handpiece” because the shank and head are in a straight line. The term low speed is derived from the micromotor’s ability to generate speeds up to 40,000 rpm.

The two primary components of the handpiece are its control unit and the micromotor. Micromotors can be categorized into two groups: those with brushes and those without brushes. Micromotors with brushes contain carbon brushes that require periodic maintenance to assess them for wear and possible replacement. In addition, micromotors with brushes are vented and require routine cleaning of the motor and the chuck to prolong the motor’s operational life. Brushless motors are sealed and do not require vents for cooling; most manufacturers claim that they are virtually maintenance free. The only maintenance that is required is routine cleaning of the chuck.

An important aspect of micromotor performance is its torque rating. While all of the handpieces included in this synopsis have sufficient torque for routine laboratory work, micromotors with higher torque ratings enable the user to apply more pressure during use without affecting the motor’s speed. Higher torque ratings are particularly advantageous when the handpiece is used on acrylic prostheses or those made of base-metal alloys.

Most handpieces are equipped with a chuck release feature that enables the operator to attach and remove burs from the unit. This may be a twist or lever type apparatus. Units are equipped with standard bur and optional chuck sizes. In addition, a number of handpieces are designed with a reverse and forward control located on the control panel or in the rheostat.

Handpieces have traditionally been made of stainless steel; however, some manufacturers are now using titanium. Titanium is lighter and stronger than stainless steel, but more difficult and expensive to manufacture. The style or location of the control units are manufactured using three different styles: bench-top-, kneepad-, and foot-controlled. Bench-top control units offer the advantage of easy access to the controls with a forward display. Foot-controlled and kneepad types have the advantage of saving workspace on the bench-top because the control units are positioned below the bench-top. Manufacturers with more than one style of control unit will usually offer the same features on all types of their control units with variations. An additional safety feature included on most units is the overload protection feature that helps prevent the motors from over heating causing damage to the internal components.

The synopsis consists of tables providing useful information giving federal service customers a starting point for researching and purchasing a laboratory handpiece. The laboratory handpieces are listed alphabetically by manufacturer. The information in the [tables](#) has been provided by the manufacturer or obtained from the Internet. Some companies and/or handpieces may not appear in the table.

Synopsis of Laboratory Handpieces*

Product/Model	Pozzi Muscle U	AEU-16	TORQ-MASTER
			
Manufacturer	American Tooth Ind. 1200 Stellar Drive Oxnard, CA 93033-2404 (800) 235-4639 (805) 487-9868 (805) 483-8482 FAX www.americantooth.com	Aseptico International 8333 216th Street SE Woodinville, WA 98072 (800) 426-5913 (425) 487-3157 (360) 668-8722 FAX www.aseptico.com	Bell Dental Products 3003 Arapahoe St 101B Denver, CO 80205 (800) 920-4478 (303) 292-2137 (303) 292-4411 FAX
Govt Sales Rep	Lorena Davis		Dan Bell
Voltage (volts)	120	110/220	115/230
Torque (Newton-centimeter)	6.0 – 8.0	N/A	7.0 – 8.5
Speed range (rpm)	1,500 – 35,000	1,000 – 35,000	1,000 – 35,000
Forward/Reverse	Both	Both	Both
Chuck Release Type	Twist	Twist	Twist
Chuck Size(s) (mm)	2.35	2.35	2.35
Micromotor Type (Brush/Brushless)	Brushless	Brushless	Brushes
Type of Control Unit	Benchtop, Foot control	Benchtop, Foot control	Benchtop, Foot control
Type of Foot Control	On/off foot switch	On/off foot switch	On/off foot switch
Overload Protection	No	Yes	Yes
Handpiece Weight (ounces)	6.7	4.0	6.8
Control Unit Dimensions (L x W x H) in inches	7.0 x 6.5 x 3.0	6 x 5.5 x 3.0	6.3 x 6.1 x 4.0
Warranty	6 months for electrical 12 months for mechanical	12 months motor 90 days for handpiece	12 months
Price (Retail/Govt)	\$1018.06/\$814.45	\$785.00/\$785.00	\$795.00/\$795.00

*Manufacturers provided the data for these tables. The listing or omission of a product in this table does not imply endorsement, approval, or disapproval by DECS.

Synopsis of Laboratory Handpieces*

Product/Model	Z 500	V35 Electric	Rotex 780
			
Manufacturer	Brasseler USA One Brasseler Blvd Savannah, GA 14419 (800) 841-4522 (912) 927-8671 FAX www.brasselerusa.com	Buffalo Dental Mft. 129 Lafayette Dr Syosset, NY 11791-0678 (516) 496-7200 (800) 828-0203 (516) 496-7751 FAX www.buffalodental.com	Dentamerica 18688 E San Jose Ave, City of Industry, CA 91748 (626) 912-1388 (626) 913-0510 FAX www.dentamerica.com
Govt Sales Rep			Jerry Huang
Voltage (volts)	120	120 – 220	110 – 220
Torque (Newton-centimeter)	6.0	5.0 – 6.0	5.0 – 6.0
Speed range (rpm)	1,000 – 50,000	0 – 35,000	1,500 – 35,000
Forward/Reverse	Both	Both	Both
Chuck Release Type	Twist	Twist	Twist
Chuck Size(s)	2.35 mm Optional – 1.6, 3.0	2.35 mm	2.35 mm
Micromotor Type (Brush/Brushless)	Brushless	Brushless	Brushes
Type of Control Unit	Benchtop, Foot control, Optional knee pad	Benchtop, Optional Foot control	Benchtop, Foot switch
Type of Foot Control	Variable speed with auto cruise	Optional variable speed, foot control	Variable speed push activated
Overload Protection	Yes	Yes	Yes
Handpiece Weight (ounces)	8.1	14.0	8.0
Control Unit Dimensions (L x W x H) in inches	9.0 x 6.7x 3.7	7.2 x 6.3 x 3.5	7.4 x 4.7 x 3.14
Warranty	12 months	6 months	12 months electrical 6 months mechanical
Price (Retail/Govt)	\$1,285.00/\$925.00	\$425.00/\$425.00	\$525.00/\$525.00

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Product/Model	ICEBERG 35K	Combination Unit	500-III Syncro/Torque
			
Manufacturer	EuroWorldent 9600 W Sample Rd Suite 403 Coral Springs, FL 33065 (954) 340-4991 (954) 340-4992 FAX www.worldentgroup.com	Foredom 16 Stony Hill Rd. Bethel, CT 06801 (203) 792-8622 (203) 796-7861 FAX www.foredom.com	Handler Manufacturing 612 North Ave East Westfield, NJ 07090 (908) 233-7796 (800) 274-2635 (908) 233-7340 FAX www.handlermfg.com
Govt Sales Rep		Jean Harold	Bill Lehman
Voltage (volts)	115	115/230	115/230
Torque (Newton-centimeter)	5.5 – 6.5	4.5 – 5.0	N/A
Speed range (rpm)	0 – 35,000	1,000 – 38,000	1,000 – 35,000
Forward/Reverse	Both	Both	Both
Chuck Release Type	Twist	Twist	Twist
Chuck Size(s)	2.35 mm	2.35 mm	2.5 mm
Micromotor Type (Brush/Brushless)	Brushless	Brushes	Brushes
Type of Control Unit	Benchtop, Foot control	Benchtop, Foot control	Benchtop, Foot control
Type of Foot Control	Variable foot control	Variable foot control, optional on/off switch	Variable foot control, optional side mount
Overload Protection	Yes	Yes	Yes
Handpiece Weight (ounces)	7.0	7.3	6.0
Control Unit Dimensions (L x W x H) in inches	Inquire	7.7 x 2.3 x 1.5	7.1 x 6.7 x 2.6
Warranty	12 months	12 months	12 months
Price (Retail/Govt)	\$895.00/\$795.00	\$399.00/\$399.00	\$1,350.00/\$1,147.50

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Product/Model	Marathon N7	K5plus	M3 Complete
			
Manufacturer	Hayes Handpiece Inc 5375 Avenida Encinas Suites C & D Carlsbad, CA 92008 (800) 228-0521 (760) 602-0505 FAX www.hayeshandpiece.com	KaVo America Co 340 E Main St Lake Zurich, IL 60047 (800) 323-8029 (847) 550-6800 (847) 550-6825 FAX www.kavo.com	Meta Dental Corp 82-06 Grand Ave Elmhurst, NY 11373 (800) 730-6382 (718) 639-7460 (718) 639-7408 FAX www.metadentalco.com
Govt Sales Rep	Bill Bimmerle	Jay Saludo	
Voltage (volts)	110/220	120	120
Torque (Newton-centimeter)	4.0	4.5	4.0
RPMs	0 – 35,000	1,000 – 35,000	0 – 35,000
Forward/Reverse	Both	Both	Both
Chuck Release Type	Twist	Twist	Twist
Chuck Size(s)	2.35 mm	2.35 mm, 3.0 mm, 3.175 mm	2.35 mm
Micromotor Type (Brush/Brushless)	Brushes	Brushless	Brushes
Type of Control Unit	Benchtop, Foot control	Benchtop, Foot control, Knee pad	Benchtop, Foot control
Type of Foot Control	Variable speed foot control	Variable speed foot control	Switch foot pedal
Overload Protection	Yes	Yes	Yes
Handpiece Weight (ounces)	5.6	7.0	6.0
Control Unit Dimensions (L x W x H) in inches	5.7 x 4.5 x 3.7	7.0 x 1.2	5.5 x 3.8 x 2.5
Warranty	12 months	12 months parts & labor	12 months
Price (Retail/Govt)	\$379.00/\$350.00	\$1,300.00/\$780.00	\$195.00/\$195.00

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Product/Model	NM 3000	XL- 230	RAM Power 35
			
Manufacturer	Nouvag 18058 Albyn Court Lake Hughes, CA 93532 (800) 673-7427 (661) 724-0217 (661) 724-1590 FAX www.nouvagusa.com	Osada Inc 8436 West Third St, 695 Los Angeles, CA 90048 (800) 426-7232 (323) 651-0711 (310) 841-2221 FAX www.osadausa.com	Ram Products Inc 5 Elkins Rd East Brunswick, NJ 08816 (732) 651-5500 (732) 651-6688 FAX www.ramprodinc.com
Govt Sales Rep			Aaron Kudrowitz
Voltage (volts)	115/230	120/220 – 230	110/230
Torque (Newton-centimeter)	5.5	4.4	4.5 – 5.5
RPMs	1,000 – 35,000	900 – 30,000	0 – 35,000
Forward/Reverse	Both	Both	Both
Chuck Release Type	Twist	Lever	Twist
Chuck Size(s)	2.35 mm	2.35 mm, opt. 1.6 mm and 3.175 mm	2.35 mm, 3.1 mm, opt 2.54 mm
Micromotor Type (Brush/Brushless)	Brushes	Brushless	Brushes
Type of Control Unit	Benchtop, Foot pedal	Benchtop, Foot pedal	Benchtop, Foot pedal
Type of Foot Control	On/off, Variable speed	On/off, Variable speed	On/off, Variable speed
Overload Protection	Yes	Yes	Yes
Handpiece Weight (ounces)	4.2	6.0	9.76
Control Unit Dimensions (L x W x H) in inches	9.8 x 7.5 x 5.1	7.0 x 4.0 x 4.0	6.2 x 4.7 x 3.2
Warranty	12 months	12 months power console 6 months handpiece	12 months
Price (Retail/Govt)	\$1,045.00/Call for govt price	\$946.00/\$946.00	\$349.00/\$349.00

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Product/Model	UP210	#5402
		
Manufacturer	Urawa Corp. 6980 Aragib Cir, #6 Buena Park, CA 90620 (714) 739-2081 (714) 739-2084 FAX www.urawa.com	Wehmer Corp. 1151 North St. Lombard, IL 60148 800-323-0229 630-424-1898 FAX www.wehmer.com
Govt Sales Rep		
Voltage (volts)	120	110/220
Torque (Newton-centimeter)	3.5	3.5
RPMs	1,000 – 35,000	1,000 – 35,000
Forward/Reverse	Both	Both
Chuck Release Type	Twist	Twist
Chuck Size(s)	2.35 mm, 3.0 mm, 3.175 mm	2.35 mm
Micromotor Type (Brush/Brushless)	Brushes	Brushes
Type of Control Unit	Benchtop	Benchtop
Type of Foot Control	On/Off or Variable speed	On/Off or Variable speed
Overload Protection	Yes	Yes
Handpiece Weight (ounces)	6.7	6.5
Control Unit Dimensions (L x W x H) in inches	9.8 x 7.5 x 5.1	6.2 x 4.7 x 3.2
Warranty	Control Unit – 12 months Handpiece – 6 months	12 months
Price (Retail/Govt)	\$895.00/\$895.00	\$995.00/\$995.00

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