

FITCHBURG GRINDING MACHINE CORPORATION

FALULAH ROAD · FITCHBURG · MASSACHUSETTS · U.S.A.

LIEBER'S CODE · CABLE ADDRESS: GRIMACO · GENERAL CODE

May 19, 1945

Betwinik Brothers of Mass., Inc.
2 Sherman Street
Worcester 1, Massachusetts

Attention: Nathan Bretholtz, Plant Manager

Gentlemen:

We have your letter of May 14th regarding your 10x25" Bath Universal Grinder, Serial #558, in compliance with which we are forwarding to you repair parts catalog and photostatic copies of machine specifications. We trust this literature will answer all your questions.

Very truly yours,
FITCHBURG Grinding Machine Corporation

J. Eushing
J. Eushing
Vice President

JC ap
Enc. 3

UNIVERSAL!

A Universal Grinding Machine
That Will Do Your

CYLINDRICAL, INTERNAL
SURFACE, DISC

CUTTER and REAMER

Grinding of all descriptions and do them with as much rapidity as a single purpose machine.

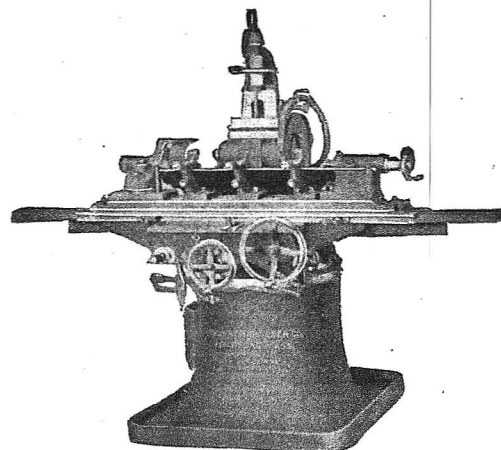
A universal machine that is so designed that it can be changed for any of the various operations in less than THREE MINUTES.

Three of the many points of superiority common to Bath Universal Grinding Machines:

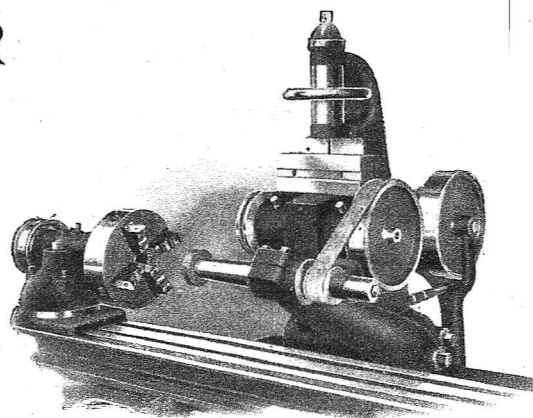
The Grinding Wheel Head does not swivel, and has only one movement which is vertical.

The lifting strain of the wheel driving belt comes on two idler pulleys which are carried by the base of the machine, eliminating any lifting of the Grinding Wheel Head.

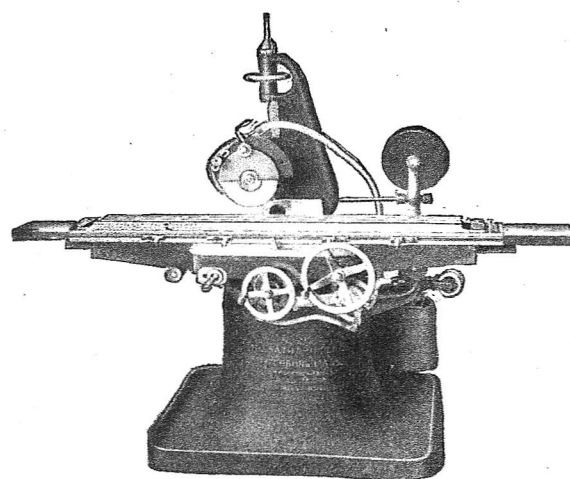
Stop and start traverse lever provides means of stopping table at the end of its stroke automatically by giving the lever a part of a turn at any time during the traverse of the table, allowing the operator to prepare for the next piece.



Arranged for CYLINDRICAL GRINDING



Arranged for INTERNAL GRINDING



Arranged for SURFACE GRINDING

BATH GRINDER CO.,

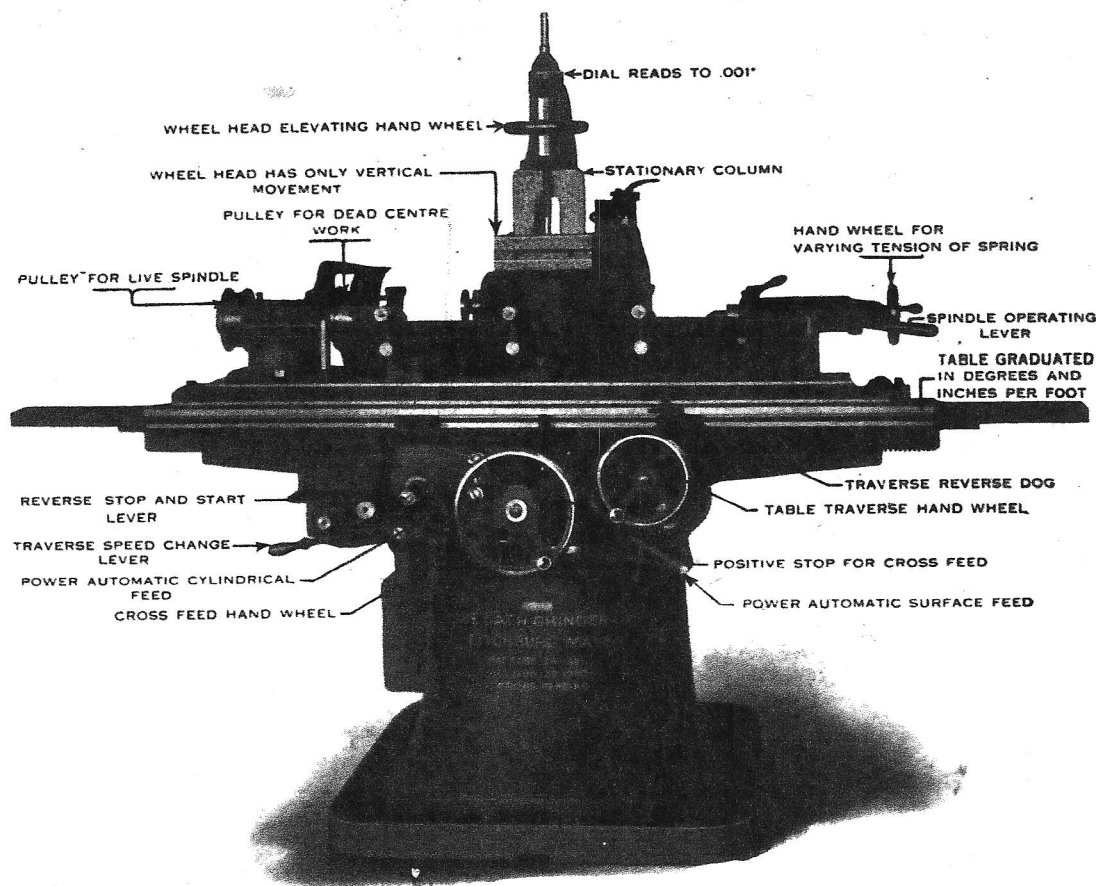
FITCHBURG, MASS.,
U. S. A.

DOMESTIC REPRESENTATIVES—Hallidie Mch. Co., Seattle, Spokane, Tacoma, Wash. Rumely-Wachs Mch. Co., Chicago, Ill. Chas. A. Strelinger Co., Detroit, Mich. National Supply Co., Toledo, Ohio. Fawcett-Barnes Mch. Co. Pittsburgh, Pa. Manning, Maxwell &

FOREIGN REPRESENTATIVES—Schuchardt & Schutte, Stockholm, Berlin, Vienna, St. Petersburg, Copenhagen, Budapest. Alfred H. Schutte, Cologne, Brussels, Liege, Paris, Milan, Bilbao, Barcelona. Alfred Harkett Ltd. Yokohama. Chas. Churchill & Co. Ltd. London.

SPECIFICATIONS:

Capacity: external, cylindrical, swing 10", take 25" length. Internal, swing 10", take 8" length. Surface, 20" length, 9" width, within .00025 $7\frac{1}{2}$ " height under 8" diam. wheel. Disc 16" diam., $3\frac{1}{2}$ " thick. Four speeds, 1750, 2100, 2600, and 3200 R.P.M. Vertical movement $7\frac{1}{2}$ ". Spindle driven by 2" belt. Takes wheels 12" diameter $1\frac{1}{2}$ " wide. Elevating screw provided with micrometer reading handwheel graduated to .001". Automatic Feeds: traverse for cylindrical and internal grinding has five speeds, 2, 3.9, 5.4, 7.6, and 10.8 feet per min. For surface grinding, 1.3, 2.5, 3.5, 4.9 and 7 Ft. per min. Cylindrical cross feed range, .00025" to .0025" to .025" at either of both reversals of table. Swivel table for grinding tapers. Speeds and Feeds: Speeds of wheel and work and feed of table are independent of each other. Five changes of work speed, 62, 114, 160, 224 and 320 RPM. Internal spindle has four speeds, 7000, 8400, 10400 and 12800 RPM. A lever starts and stops feed of table. Headstock: swivel base graduated to 90 degrees. Spindle 2" diameter. Spindle revolves for chuck and face plate work and can be locked for grinding on dead centers. Complete with universal workhead, tailstock, centers, three jaw universal chuck, back rest, diamond holder, splash guards, wheel flange, wheel guard, coolant tank, pump and piping. Condition excellent. Now belt driven. Motorization can be furnished.



SPECIFICATIONS of The Bath Nos. 2 and 2½ Universal Grinding Machines

Normal range of **EXTERNAL CYLINDRICAL** grinding, No. 2, swing 10" diam., 25" between centers, No. 2½, 10" diam., 36" between centers.

Normal range of **INTERNAL** grinding, No. 2, swing 10" diam., 8" long; No. 2½ 10" diam., 10" long.

Normal range of **SURFACE** grinding, No. 2, 9" wide, 7½" high, 20" long; No. 2½, 9" wide, 7½" high, 25" long.

Normal range of **DISC** grinding 16" diam., 3½" thick.

Vertical movement of grinding wheel head 7½".

Cross slide movement 9".

Swivel table graduated to grind up to 2" taper per foot, can be moved beyond for grinding greater tapers.

Headstock swivel graduated to 90°.

Cross slide knee graduated to 90°.

Grinding wheel elevating screw graduated to 1/16", also provided with micrometer reading to one-thousandth of an inch.

Headstock and footstock spindle 2" diam.

Headstock and footstock center No. 3 Morse taper.

Grinding wheel spindle 1½" diam., bearings 4½" and 4" long.

Grinding wheel spindle has four speeds: 1750, 2100, 2600, 3200 R. P. M.

Grinding wheel 1½" face, 12" diam.

Work has five speeds: 62, 115, 162, 226, 324 R. P. M.

Traverse movement of work for cylindrical grinding has five speeds: 3, 3¾, 5½, 7½, 11 feet per minute.

Traverse movement of work for surface grinding has five speeds: 1¼, 2½, 3½, 4¾, 7 feet per minute.

Internal spindle has four speeds: 7,000, 8,400, 10,400, 12,800 R. P. M.

Least amount of reduction by automatic feed at each reversal of work .00025".

Automatic surface feed 1/64" to 3/64".

Countershaft main drive tight and loose pulleys 10" diam., 3½ face, 800 R. P. M.

Three horse-power required.

Net weight of machine, No. 2, 3980; No. 2½, 4140.

Gross weight of machine, crated, No. 2, 4480; No. 2½, 4640.

Gross weight of machine, boxed for export, No. 2, 4880; No. 2½, 5040.

Dimensions boxed, cu. ft.: No. 2 machine 108.8, No. 2½ machine 127, countershaft 19.5, attachments 19.5.

Floor space required, No. 2, 104"x104"; No. 2½, 128"x128".

COMPLETE EQUIPMENT "C"

Surface grinding attachment.

Spring back rests.

8" Chuck attachment.

Cutter bar attachment.

Horizontal vise.

1 Center rest.

Low tooth rest stand.

No. 0 Diamond.

1 Diamond Stand for Cylindrical Grinding.

1 Diamond Stand for Surface Grinding.

1 Diamond Stand for Internal Grinding.

No. 2 Internal grinding attachment, with No. 2 Internal spindle.

Universal work holder and flange plate.

1-13/8" wheel collet, 5" long, for special grinding.

1-13/8" wheel collet, 1½" long for surface grinding.

1-13/8" wheel collet, for cutter grinding.

1-½" wheel collet, 4" long, for cutter grinding with 4" cup wheel.

1-5" wheel flange, for 12" wheel x 1½" face, for cylindrical grinding.

Code word. No. 2—Toose. No. 2½—Halfse.

Water attachment.

Complete set of wrenches.

High tooth rest stand.

6 Assorted grinding wheels.

2 Balanced grinder dogs.

Swivel plate clamps.

Face Plate.

FITCHBURG GRINDING MACHINE CORP.

67 WALNUT STREET

FITCHBURG, MASS., U. S. A.

Prices Include Machine Crated

F. O. B. Fitchburg, Mass.

PRICE LIST

3

UNIVERSAL
BATH TYPE

Oct. 1, 1939

FITCHBURG

BATH UNIVERSAL GRINDERS

	CODE	PRICE
10" x 25" O. H. Belt Drive #2	Toose	3440.00
12" x 36" " " " #2½	Halfse	3610.00
10" x 25" Motor Drive #2	Twomd	4575.00
12" x 36" " " " #2½	Halfmd	4880.00
Extra Length Table 42" Between Centers	Extra	160.00

MOTORS

Wheel Drive: 3 H. P. 1800 R. P. M. totally enclosed, dynamically balanced, constant speed motor.

Work Drive: ¼ H. P. 1800 R. P. M. totally enclosed, dynamically balanced, constant speed motor.

Table Drive: ¾ H. P. 1800 R. P. M. totally enclosed, dynamically balanced, constant speed motor.

These prices do not include motors or electrical equipment.

We will gladly quote on them if advised of current available.

Wired complete, ready for connection to line.

65.00

STANDARD EQUIPMENT FOR CYLINDRICAL AND INTERNAL GRINDING.	OVER HEAD BELT DRIVE		MOTOR DRIVE	
	10 x 25	12 x 36	10 x 25	12 x 36
Headstock	190.00	250.00	660.00	660.00
Footstock	110.00	110.00	110.00	110.00
Internal Attachment	155.00	155.00	155.00	155.00
Chuck "	(8") 110.00	(8") 110.00	(8") 130.00	(8") 130.00
Spring Back Rest 2—#2 3—#2½	(2) 64.00	(3) 124.00	(2) 64.00	(3) 124.00
Center Rests	52.00	52.00	52.00	52.00
Face Plate	(8) 19.00	(10") 19.00	(10") 40.00	(10") 40.00
Automatic Cross Feed	98.00	98.00	98.00	98.00
Pump and Water Attachment	75.00	75.00	125.00	125.00
Main Countershaft	150.00	150.00		
Traverse Drum Countershaft	52.00	52.00		
Five Speed Work Drive Countershaft	320.00	320.00		
Set of Grinding Wheels	15.00	15.00	15.00	15.00
Set of Wrenches	8.00	8.00	8.00	8.00
Diamond and Holder	30.00	30.00	30.00	30.00
2 Adj. Dogs, ⅜" to 1⅜" & ½" to 2½"	6.00	6.00	6.00	6.00

Prices represent amount which will be credited if these parts are omitted, or selling price if purchased separately.

EXCELLO BALL BEARING INTERNAL SPINDLES CAN BE FURNISHED AT THE
FOLLOWING PRICES:

ALLOW \$40.00 FOR OUR STANDARD SPINDLE.

SPINDLE		QUILL		To Grind Diameters	To Grind Length	Hole in Wheel	Wheel Diam- eter	Wheel Face	Complete Unit Price
Ex-Cell-O	Price	Ex-Cell-O	Price						
No. 318	\$153.00	1103	\$12.00	516 to ½	1½	⅞	¼	½	\$165.00
		1106	12.00	516 to ¾	1½	⅞	¾	½	165.00
		1109	12.00	¾ to 1-⅞	2	3/16	⅝	½	165.00
No. 314	178.00	1139	12.00	⅞ to 1-½	2½	7/32	¾	⅝	190.00
		1144	12.00	1-¾ to 2	3	9/32	1	¾	190.00
No. 317	203.00	1268	12.00	1-⅞ to 3	5½	17/32	1½	1½	215.00
		1278	12.00	2-⅞ to 4	6½	17/32	1½	1½	215.00

PRICES FOR SPECIAL LENGTH INTERNAL FIXTURES ON REQUEST.

BATH UNIVERSAL GRINDERS (Continued)

Additional Equipment
for
Surface Grinding

		CODE	PRICE
Surface Grinding Attachment.....	185.00		
Automatic Surface Feed.....	97.00		
Surface Grinding Collet.....	8.00		
Surface Grinding Diamond Stand.....	5.00	SURF	295.00

Additional Equipment
for
Tool and Cutter Grinding

Cutter Bar Attachment.....	160.00		
Universal Work Holder and Flange Plate.....	250.00		
Vise.....	50.00		
High Tooth Rest.....	36.00		
Low Tooth Rest.....	32.00		
No. 1 Collet for Special Grinding.....	12.00		
No. 2 " " Cup Wheel ".....	10.00		
No. 3 " " Cutter " ".....	10.00	TANC	560.00

Special Attachments

Spur Gear Cutter Attachment (Used with Universal Work Holder).....	70.00
48" Knife Grinding Attachment on 10 or 12x42" Machine.....	335.00
36" " " " " 10 or 12x36" ".....	305.00
Radial Attachment for Concave and Convex Cutters.....	325.00
Heavy Duty Headstock Less Motor 30" Swing.....	775.00
Spring Collet Chuck with One Collet 1" Capacity.....	205.00
Extra Collets.....	7.00
Inserted Tooth Cutter Grinding Attachment for Cutters to 24" inclusive.....	305.00
Angle Grinding Attachment for Grinding Flutes of Taper Reamers, etc.....	365.00
Attachment for Grinding Cutters with Round Corners, 12" Dia. Maximum.....	231.00
Internal Water Guard.....	60.00

Repairs Parts

Diamond Stand for External and Internal Grinding.....	23.00
Wheel Centers for 10" or 12" Wheels.....	23.00
Wheel Hoods " " " " ".....	44.25
Grinding Dogs $\frac{1}{8}$ " to $1\frac{3}{8}$ " and $\frac{1}{2}$ " to $2\frac{1}{2}$ ".....	7.00pr.
Diamonds.....	17.50
Water Shields and Rod.....	7.50
Swivel Table Clamps.....	2.30ea.
Table Reverse Dogs.....	9.75ea.
Table End Clamps.....	2.50ea.
Table End Covers.....	7.50ea.
Pump Connections.....	31.50
Surface Grinding Wheel Hood.....	19.00
No. 1 and 2 Internal Spindle Ends.....	46.00
No. 3 " " " ".....	70.00
Wheel Spindle.....	30.25
Wheel Spindle Boxes.....	55.00pr.
No. 5 Left Hand Wheel Collet.....	9.00
Centers.....	6.50ea.
Traverse Gear Box.....	310.00