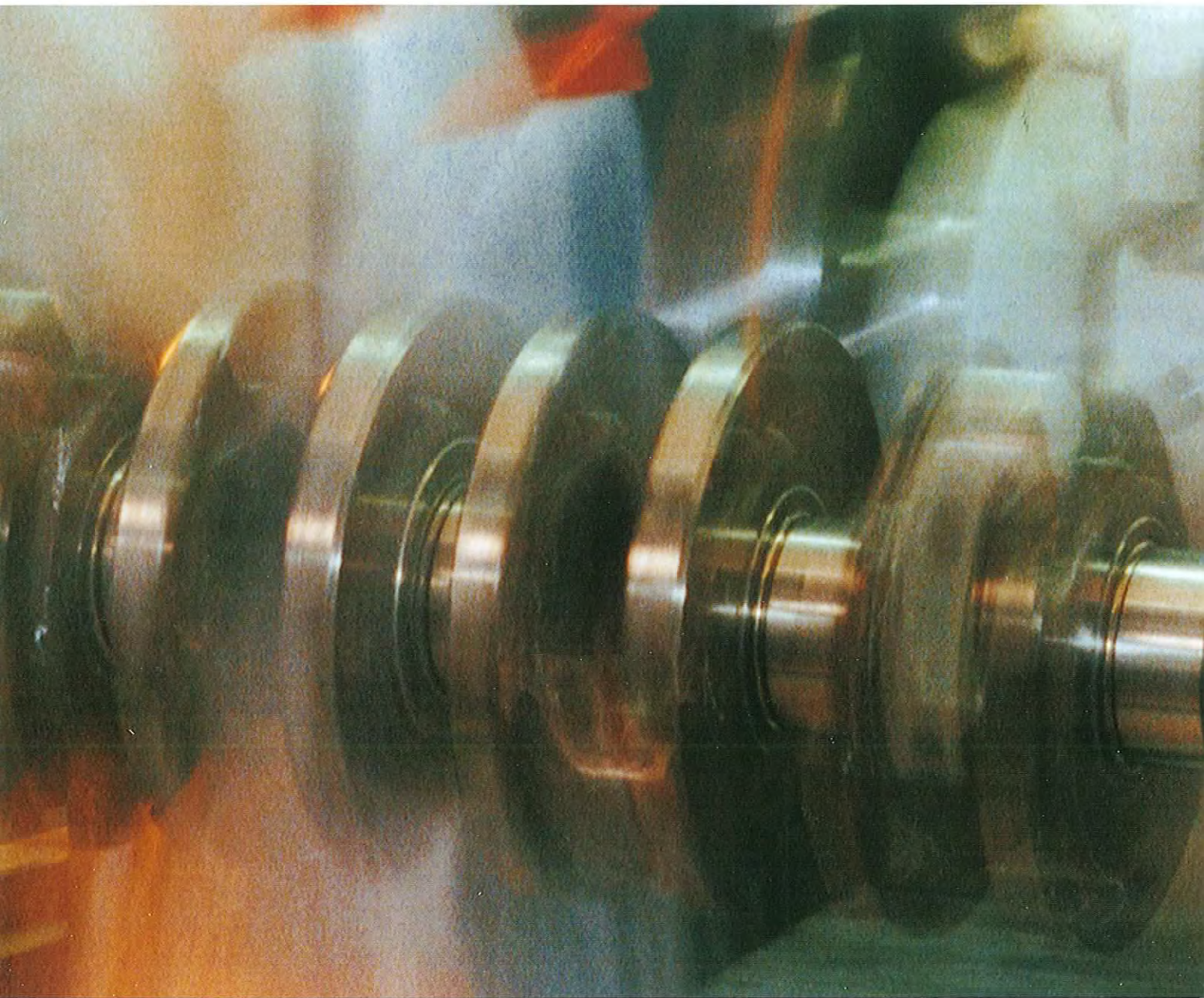


RTM 225 A



Crankshaft grinder

A Company
of ThyssenKrupp
Technologies

BERCO S.p.A.



The machine and its executions

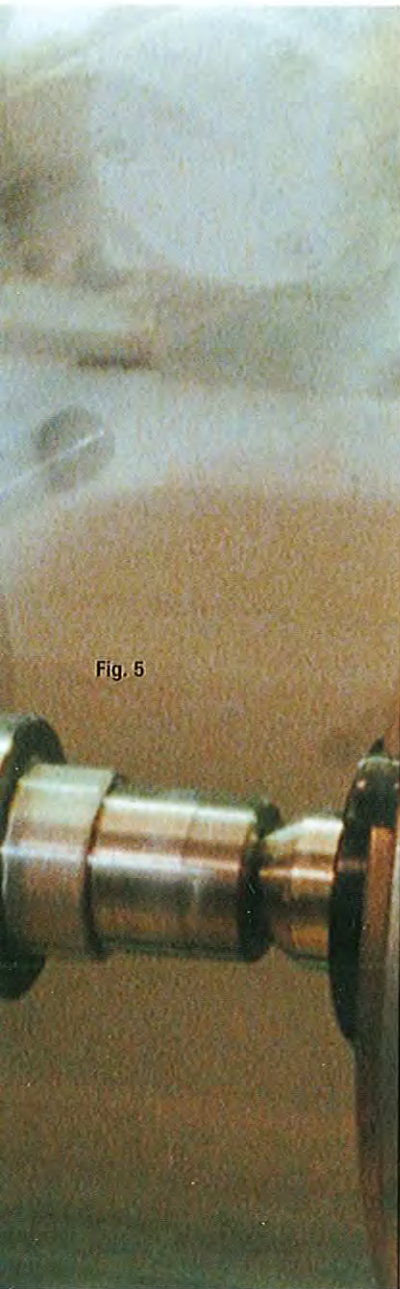


Fig. 5

This new Crankshaft Grinder has been designed to meet the manifold requirements of those people who must handle both unit and production regrinding of small and medium batches of crankshafts.

In fact, depending on volume of job, the operator often needs a high flexibility machine being capable to attain, in any workshop condition, the highest production levels, by the addition of special devices and automatics.

Berco, with above problems in mind, has manufactured the RTM 225A in five executions, all of them with the same basic dimensions, to allow regrinding of the most popular crankshafts, but featured by the different extent of automation of the work cycles. The customer will thus be able to choose, out of these executions, the one which better suits his specific requirements as well as a number of optionals which make the machine more complete and fit for the job.

"A" execution

The standard outfit of this basic machine includes:

- d.c. motor for headstock;
- fast hydraulic wheelhead traverse;
- 4-way cross slide swing heads;
- device to actuate fast table traverse.

There are no provisions for automatic cycle in the standard outfit, the machine being suitable only for regrinding of crankshafts with different specifications and dimensions.

"B" execution

Difference, in comparison with the "A" execution, is given by same electrohydraulic devices which allow time-saving regrinding of small and medium batches of crankshaft.

"C" execution

This execution is particularly suitable for production regrinding of crankpins. Its devices make operator's interventions to the work cycle negligible.

Its automatics allow, for example, selfalignment grinding wheel/crankshaft journal as well as a continuous control over the work cycle via the electronic sizing unit.

"D" execution

This execution is similar to the "A" execution but has, in addition, a unit for actuating table traverse and reverse, thus allowing cylindrical grinding.

"ES" execution

It is suitable for production regrinding of crankshafts.

Once its automatics are disengaged, the machine can profitably be used also for unit regrinding.

The machine includes the electronic and automatic measuring device for checking the stop of the wheelhead work feed when the measurement of the journals is reached, and the automatic wheelhead return during the period before a new work cycle.

RTM 225 A

RTM 225A - "C" execution

- 1 PSM 127 Continuous measurement attachment
- 2 Wheelhead
- 3 "DPA/L" Signal light fixture for journal lineup
- 4 Variable speed d.c. motor
- 5 Workhead
- 6 Main counterweight guard
- 7 Headstock
- 8 Hydraulic steady rest

- 9 Interchangeable panel with adjustable locators

- 10 Table traverse handwheel
- 11 Wheelhead feed control headwheel
- 12 Wheelhead work feed controls panel
- 13 Pedal control for workhead locking pins
- 14 Tailstock quill pedal control
- 15 Hydraulic wheel dresser

- 16 "ASRM" Electronic sizing and control unit

- 17 Tailstock
- 18 Table
- 19 Pushbutton panel - Electric controls box
- 20 Wheelhead fast approach lever
- 21 One-shot pump for feed gearing lubrication
- 22 Bed

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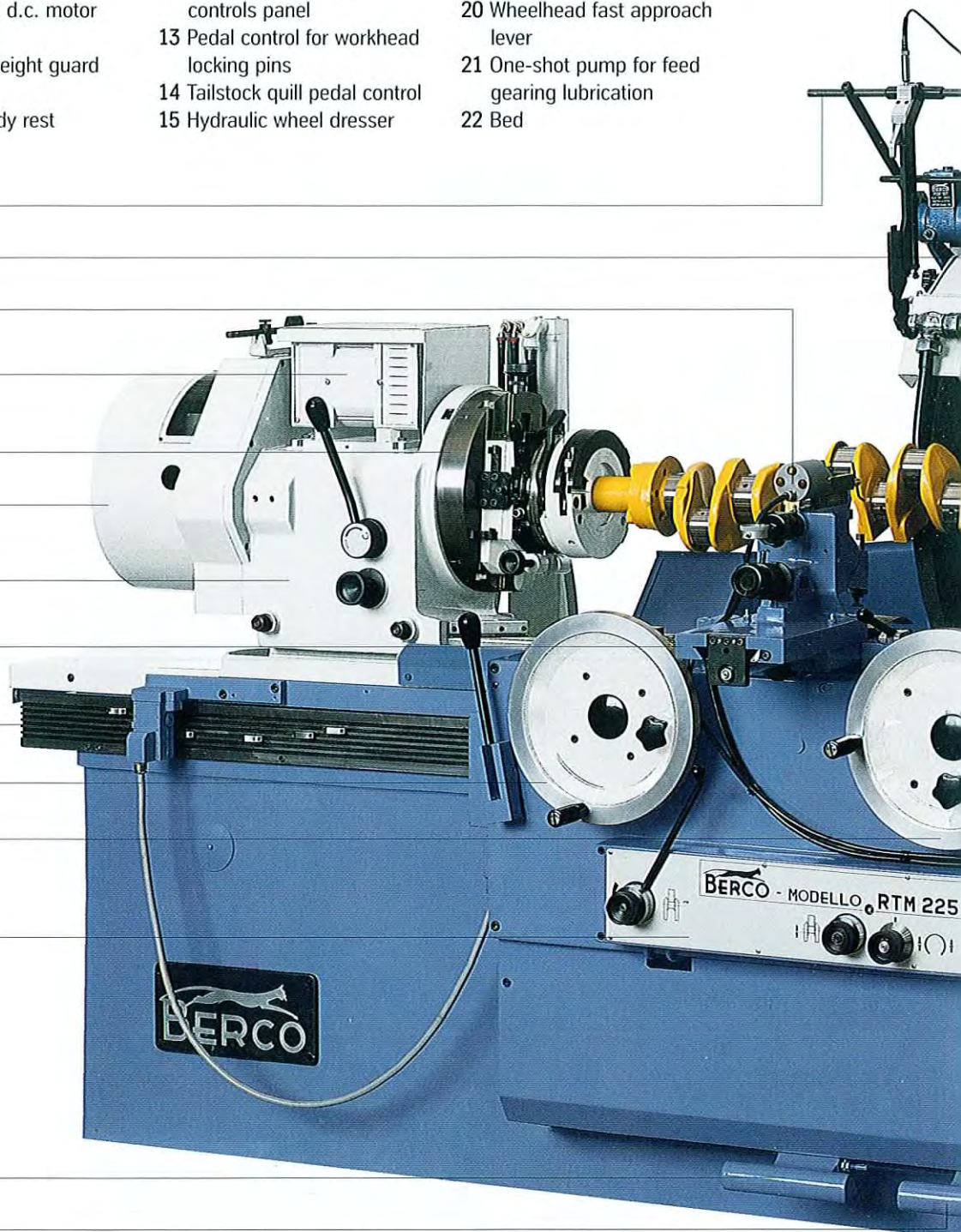
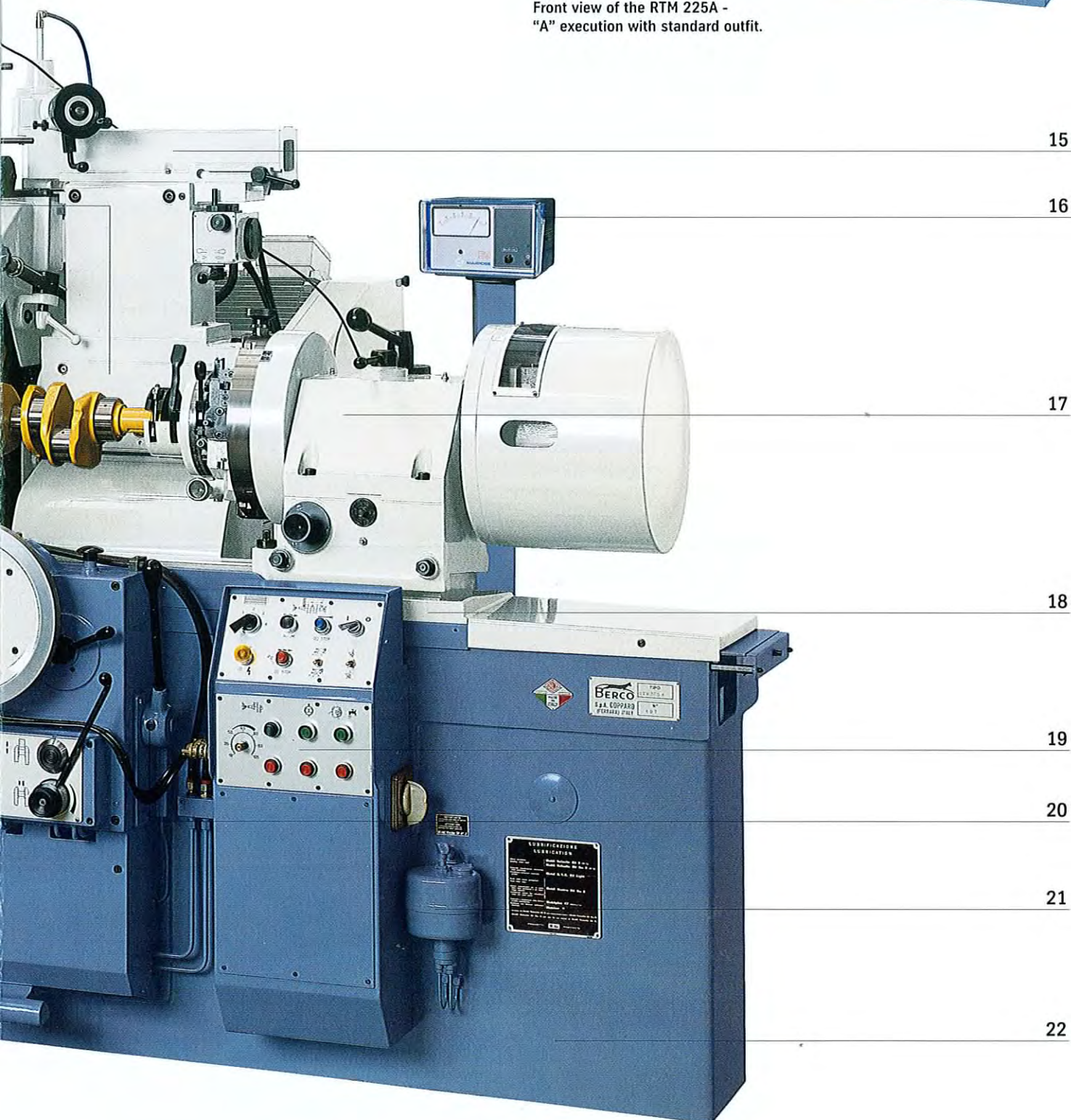


Fig. 1

General view of the machine in the "C" execution.



Fig. 2
Front view of the RTM 225A -
"A" execution with standard outfit.



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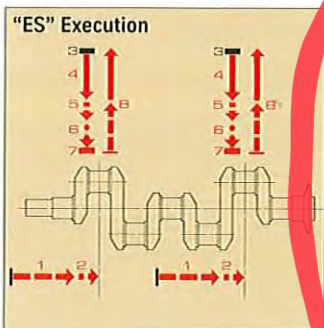
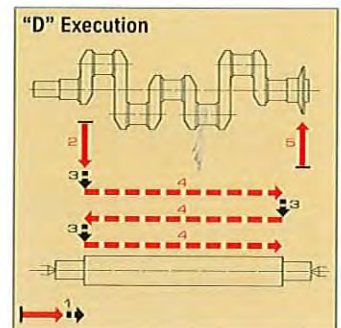
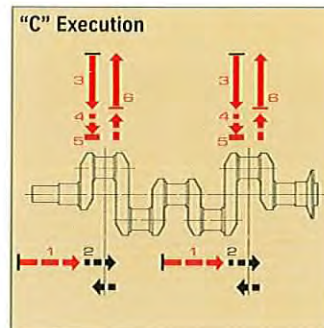
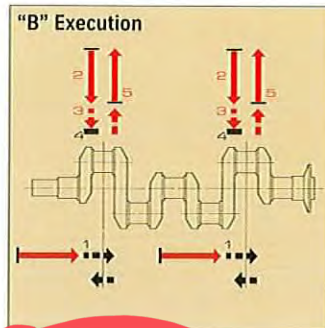
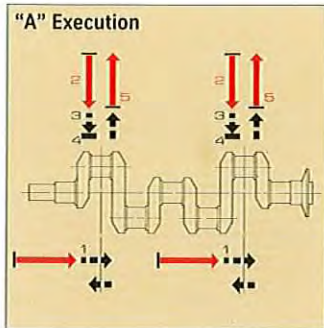
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Work cycles



In the pictures and in the description of the work cycles, the automatic stages are shown in red and the manual stages in black colour.

"A" EXECUTION

- 1) Rough positioning by fast traversing the table. Visual lineup wheel journal. Actuate the wheelhead control lever.
- 2) Hydraulic fast wheelhead approach.
- 3) Work travel with micrometer wheel-head feed.
- 4) Spark out. Actuate the wheelhead control lever.
- 5) Hydraulic fast return of wheelhead.

"B" EXECUTION

- 1) Rough positioning by fast traversing the table. Fine table positioning and final check of wheel/journal lineup by advancing the hydraulic steady rest equipped with the signal light fixture. Actuate the wheelhead control lever.
- 2) Hydraulic fast wheelhead approach.
- 3) Work travel with wheelhead plunge feed, for grinding crankshaft journal fillets and diameter.
- 4) Spark out. Actuate the wheelhead control lever.
- 5) Hydraulic fast return of wheelhead.

"C" EXECUTION

- 1) Rough table positioning (fast) through panel with locators.
- 2) Lever controlled hydraulic steady rest infeed. Precision table positioning (slow) and stop of table feed, once wheel/journal lineup is obtained, by the signal light fixture mounted on the top of the hydraulic steady rest.
- 3) Fit PSM 127 fork onto the journal and actuate the wheelhead control lever.
- 4) Hydraulic fast wheelhead approach.
- 5) Work travel with wheelhead plunge feed for the simultaneous grinding of the crankwebs.
- 6) Work travel with wheelhead plunge feed, for grinding crankshaft journal fillets and diameter.
- 7) Spark out.
- 8) Check of final size through the electronic gauge and automatic wheelhead retraction.

"D" EXECUTION

- For grinding crankshafts: refer to the "A".
- For cylindrical grinding:
- 1) Table positioning. Actuate the wheelhead control lever.
 - 2) Hydraulic fast wheelhead approach.
 - 3) Micrometer wheelhead feed.
 - 4) Table work feed and traverse reverse.
 - 5) Hydraulic fast return of wheelhead.

"ES" EXECUTION

- 1) Rough table positioning (fast) through panel with locators.
- 2) Lever controlled hydraulic steady rest infeed. Fine table positioning and final check of wheel/journal lineup via the signal light fixture. Fit PSM 127 fork out to the journal.
- 3) Lever controlled hydraulic wheelhead feed. Hydraulic fast wheelhead approach.
- 4) Work travel with wheelhead plunge feed, for grinding the crankshaft journal fillets and diameter.
- 5) Spark out.
- 6) Check of final size through the electronic gauge and automatic wheelhead retraction.

Main machine components

Fig. 3



Fig. 3

Rear view of the headstock.

Fig. 4

Workhead where the four movements stand out in full relief.

Fig. 5

Workhead equipped with 180 mm ($7\frac{1}{8}$ " dia. selfcentering chuck.

Fig. 6

Workhead equipped with driving collar and center with ring nut.

Fig. 7

Rear view of machine, "C" execution.

Bed and table

The bed structure has been carefully ribbed to give the machine the utmost stiffness and rigidity.

The table slides onto two ground ways: one flat and the other prismatic; which are lubricated through a system of spring-loaded rollers dipping into troughs. The table traverse, depending on execution of the machine, can be:

- manual micrometer, through handwheel
- fast, in either direction, driven by electric motor
- fast, with possibility of programmed stops at exact location of journals to be ground and subsequent automatic fine positioning, for correct lineup of crankshaft journals with the wheel.

Headstock and tailstock

The headstock spindle runs onto special, high-precision lifetime-lubricated bearings. Rotation is given by a d.c. motor, with speed adjustment via an electronic governor, through Poly-V type belts which assure an even and vibration-free running. A dry-disc clutch, with lever control, ensures a smooth and jerkless starting. The tailstock has the main spindle mounted on high-

precision bearings of the same type as the ones of the headstock. The top casting can be adjusted crosswise.

Lengthwise retraction of the tailstock quill ($50\text{ mm} - 1\frac{31}{32}$ " approx.) can be actuated either manually, by a lever, or by a hydraulic device with pedal control. Another lever on the top casting allows locking of the tailstock quill in position. Headstock and tailstock on air cushion.

The workheads, which allow crankshaft set up between either centers or selfcentering chucks, are mounted on headstock and tailstock spindles.

Balancing of the crankshaft being ground is through radially adjustable counterweights: one for headstock and one for tailstock.

The counterweights, located at the ends of headstock and tailstock and housed into cylindrical drums, can be reinforced, when grinding very heavy crankshafts, by the addition of auxiliary counterweights, fitted to workhead faceplates.

Wipers have been fitted to headstock and tailstock base, to prevent grinding dust from wearing the contact areas.

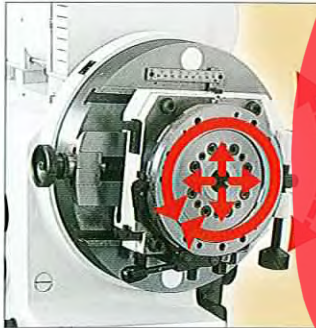


Fig. 4

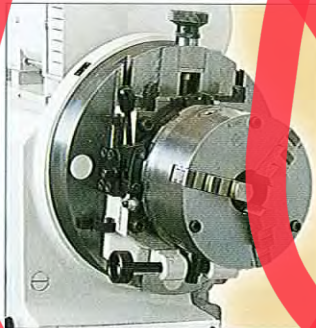


Fig. 5



Fig. 6

Wheelhead

The wheel spindle runs onto special bearings, with a babbitt metal lining, featured by hydrodynamic lubrication and sustentation. Dipping and spray system is through an impeller which assures a plentiful and continuous oil flow.

The wheelhead has the following movements:

- oleodynamically-operated fast approach and return
- manual micrometer work feed (by handwheel or by the jog button)
- oleodynamically-operated, micrometer automatic work feed, with adjustable speed, for simultaneous grinding of crankwebs
- oleodynamically-operated, micrometer automatic work feed, with adjustable speed, for grinding of fillets and diameter of crankshaft journals.

Workheads

These special workheads are the most advanced and rational solution of the problem concerning the correct crankshaft setup. They are featured by four movements:

- radial movement
- cross movement
- 360° rotary motion
- micrometer swing movement

The first two movements, regardless of accuracy of chucks and conditions of crankshaft centers, allow fast and safe centering of main journals or flywheel flange.

The 360° rotary motion and the micrometer swing movement allow fast indexing and truing of crankpins.

The 360° quick-change plate, entirely on needle bearings, can be regarded to as an index plate inasmuch as it has an indexed ring with location marks for 2, 3, 4, 5 and 6 cylinder engine crankshafts. Clamping and release of the plate are obtained through a special, eccentric drive system assuring fastness and safety of operation.

The workheads are equipped with centers, Y-drivers with driving collars and self-centering chucks. They can, on request, be fitted with special, quickaction "pot" chucks for holding the crankshaft (please refer to the extra outfit).

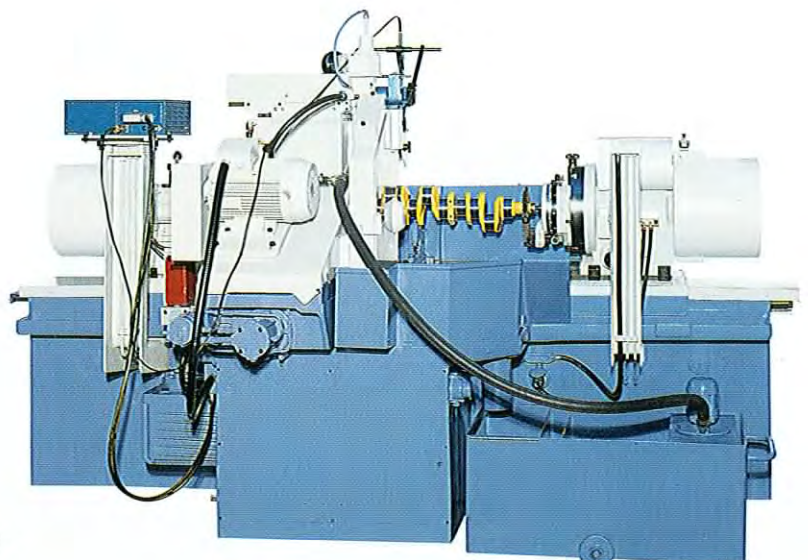


Fig. 7

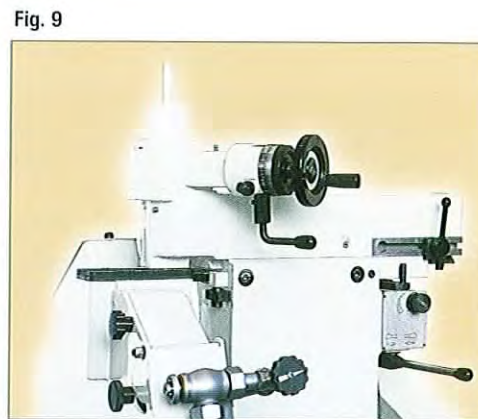
Special devices and automatics

The five executions of the RTM 225A are featured by different devices and automatics, schematically shown at right, which are:

Executions					devices and automatics
A	B	C	D	ES	
					Hydraulic wheel dresser, P/No. V10A15004 (V10A15005 Imperial)
					Hydraulic pedal control for actuating tailstock quill retraction, P/No. A00A15860A
					Hydraulic pedal control for actuating the workhead locking pins
					LUY hydraulic steady rest, P/No. A00A15650A
					DPA/L Signal light fixture for journal lineup, P/No. A00A15891
					Plunge feed device for grinding fillets and diameter of crankshaft journals, P/No. V09A15007 (V09A15008 Imperial)
					Plunge feed device for simultaneous grinding of crankwebs, P/No. A00A15905
					AAEM Electronic sizing and control unit
					AEM Electronic sizing unit
					Device for automatic (rough) table positioning, P/No. A00A15610
					Device for automatic (rough and fine) table positioning, P/No. A00A15955A
					Unit for actuating the automatic table traverse and reverse, P/No. A00A15750
					PSM 127 - Continuous measurement attachment

 Standard outfit
  Extra outfit
  Not provided for

Fig. 8
Rear view of tailstock showing the tailstock quill actuating cylinder and the actuator which controls the workhead faceplate locking pin.
Fig. 9
Hydraulic wheel dresser.



Hydraulic wheel dresser

A B C D ES

It is installed on the top of wheelhead and allows fast dressing of the grinding wheel face with uniform movement, even if the crankshaft is mounted in the machine. The diamond slide speed is adjustable at will and movement can be reversed automatically. A handwheel with indexed ring allows the adjustment of the diamond cutting depth as well as the compensation for reduction in grinding wheel diameter after each dressing. A ratchet lever allows obtaining the micrometer work jogging of the diamond holder, with constant increments. Unless clearly required when placing the order, no diamond will equip the wheel dresser.

Hydraulic pedal control for actuating tailstock quill retraction

A B C D ES

The device actuates, through the hydraulic cylinder in fig. 10 the tailstock quill retraction. The pedal control (14 fig. 1) leaves the operator free hands thus facilitating the crankshaft setup. A built-in contrivance prevents the tailstock quill from retraction when the grinding wheel is in working position.

Hydraulic pedal control for actuating the workhead locking pins

A B C D ES

This device allows, through the hydraulic swinging actuators shown in fig. 9, the locking pins to enter their seats in the workheads in the positions which were preset for centering crankshaft journals. It actuates the locking pins of both headstock and tailstock at the same time through the pedal (15 fig. 1) located in the lower part of machine bed, thus speeding up centering.

Specific devices and automatics

Fig. 10

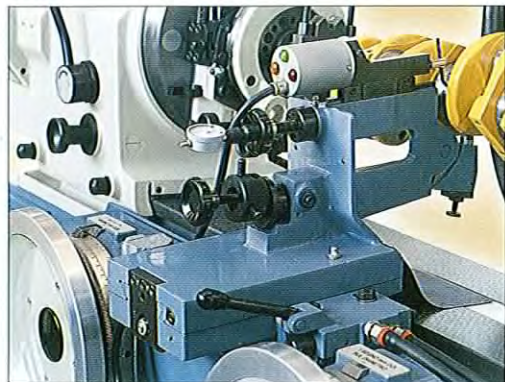


Fig. 11

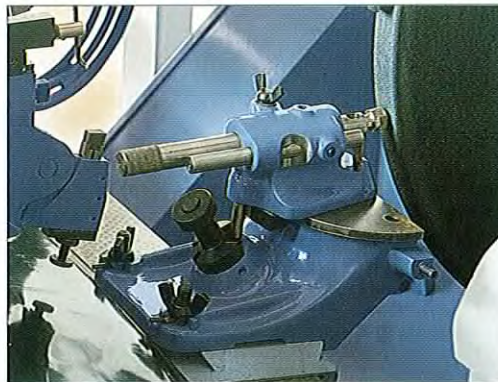


Fig. 12



Fig. 13



Fig. 10
Hydraulic steady rest and DPA/L
Signal light fixture mounted on its
top.

Fig. 11
Wheel dresser for hydraulic steady
rest.

Fig. 12
PSM 127 Continuous measurement
attachment.

Fig. 13
Wheelhead work feed device
control panel:
a) Feed speed adjustment knob (for
grinding fillets and diameter),
with fast approach lever;
b) Wheelhead travel adjustment
knob;
c) Knob for engaging and
disengaging the wheelhead feed;
d) Feed speed adjustment knob
(crankweb grinding), with fast
approach lever;
e) Indexed ring for checking
wheelhead position.

Hydraulic steady rest

A B C D ES

It is small-sized steady rest and can practically be used with all crankshaft types. It is fitted with a device, linked to the upper shoe, for checking centering of crankshaft journals. Approach to and return from the workpiece are hydraulic and controlled manually, by actuating a lever. Safety microswitches prevent fast automatic traverse of the table when the hydraulic steady rest is in working position.

DPA/L Signal light fixture for journal lineup

A B C D ES

It is mounted on the top of the hydraulic steady rest and is fitted with a stylus that, once correct journal/wheel lineup is obtained, switches on a signal light (for B and ES executions). If it is used with the device for automatic table positioning (please refer to next page) it begets self-alignment of the grinding wheel with the journal (only for C execution).

Plunge feed device for grinding fillets and diameter of the journals

A B C D ES

This hydraulically-operated device allows to obtain the wheelhead work feed, with preset speed and travel, for grinding the fillets and diameter of crankshaft journals (fig. 13).

Plunge feed device for simultaneous grinding of the crankwebs

A B C D ES

This hydraulically-operated device allows to obtain the wheelhead work feed, with preset speed and travel, for simultaneous grinding of the crankwebs (Fig. 11).

AAEM Electronic sizing and control unit

A B C D ES

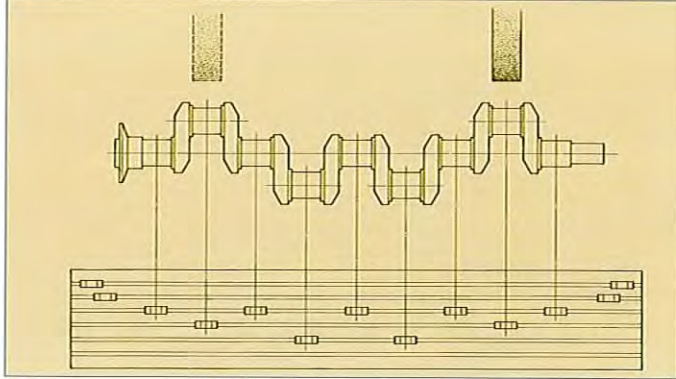
It consists essentially of a transducer, fitted to the BERCO PSM 127 measuring attachment, and a control unit with dials for reading the size. Besides allowing continuous reading of diameters during grinding, this unit controls, after zeroing on the sample journal, the automatic stop of the work cycle, on obtaining the present size, and the automatic return of wheelhead.

Standard outfit

Extra outfit

Not provided for

Fig. 14



AEM Electronic sizing unit

A B C D ES

This unit, in conjunction with the BERCO PSM 127 measuring attachment, allows continuous, precise and easy reading of diameters during grinding.

Wheel dresser for hydraulic steady rest

A B C D ES

Shape and dimensions of this grinding wheel face and radius dresser have specifically been designed for use on the "B", "C" and "ES" executions (where the hydraulic steady rest is standard).

It is mounted on the table, opposite the hydraulic steady rest, leaving the crankshaft in the machine. The dressing diamond is supplied only on request.

Device for automatic table positioning

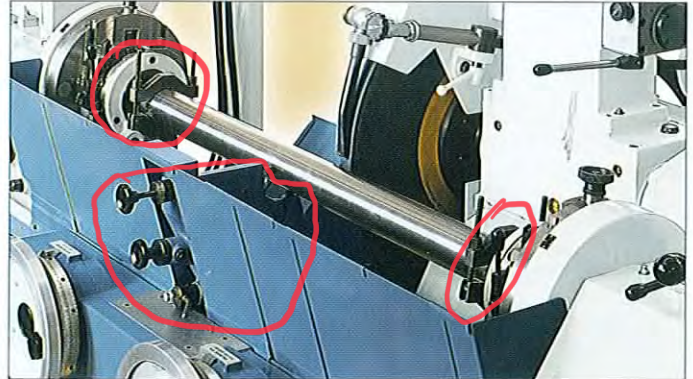
A B C D ES

This is an electromechanical device grouping a series of special devices which, after being present and with a simple operating sequence, allow precise alignment of all the crankshaft journals with the grinding wheel.

It consists essentially of:

- panel with adjustable locators (16 Fig. 1), for rough positioning of the table. Easily exchangeable, the preset panels can be kept in stock and reused for regrinding the type of crankshafts which they were present for (for C and E executions)
- an electric reducer, for micrometer fine positioning of the table. Table positioning is automatic, after the hydraulic steady rest has been approached to the journal and it is actuated by the DPA/L Signal light fixture (only for C execution).

Fig. 15



Oleomechanical table traverse and reverse unit

A B C D ES

This unit, which gives the machine the features of a cylindrical grinder, is most profitably used in engine rebuilding shops inasmuch as it is often necessary to grind parts other than crankshafts such as bars, rods etc.

It consists essentially of:

- a d.c. motor with electronic speed adjustment for the automatic work feed of the table (traverse speed is adjustable from 40 to 240 mm/min)
- an oleomechanical unit for reversing table traverse, either manual or automatic via limit stops sliding onto a scale secured to the table.

PSM 127 Continuous measurement attachment

A B C D ES

It is dial indicator attachment allowing continuous reading of diameter of crankshaft journals during grinding. It is complete with lifting unit and hydraulic shock absorber (please refer to the individual leaflet).



Fig. 16

Fig. 14
Schematic arrangement for rough positioning of crankshaft journals via the panel with adjustable locators.

Fig. 15
Cylindrical grinding on the RTM 225A equipped with the oleomechanical table work feed control unit.

Fig. 16
AEM electronic sizing and control unit. To be used in conjunction with Berco PSM 127.

Standard outfit

Fig. 17

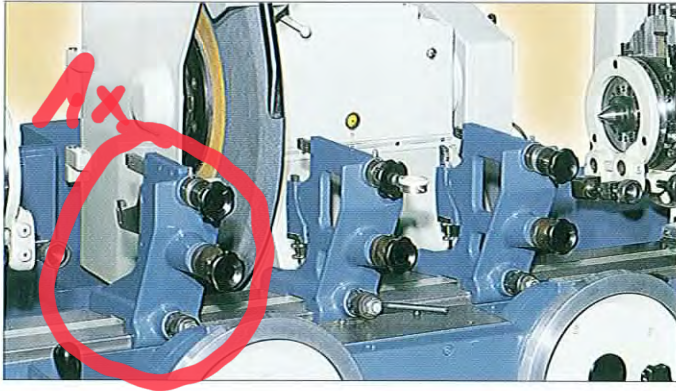


Fig. 18

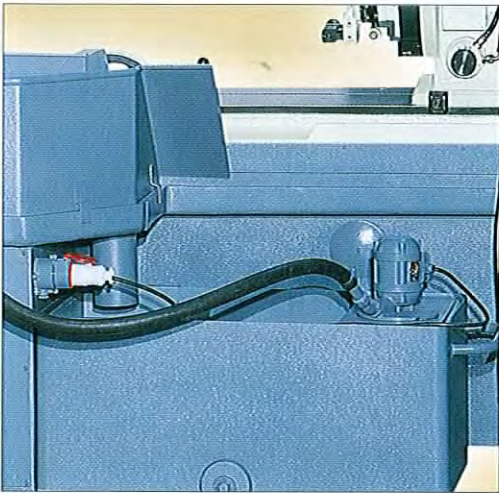
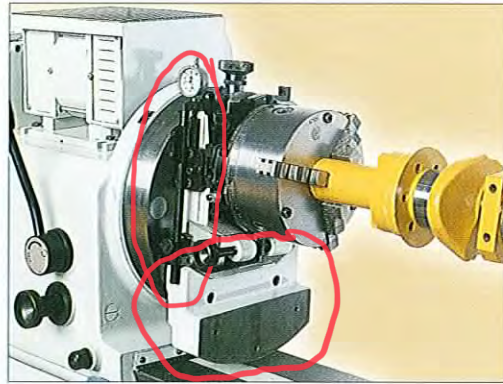


Fig. 19

Fig. 17
Steady rests. From right: normal steady rest; normal steady rest with builtin centering fixture (extra outfit) and narrow steady rest (extra outfit).

Fig. 18
Workhead position checking attachment. The crankshaft is held between chucks. Auxiliary counterweights fitted to workhead faceplate.

Fig. 19
Coolant tank and power pump.

- Cooling system, complete with power pump and tank on the back of machine, with standard $\frac{1}{2}$ " gas thread nozzle (Fig. 19);
- Safety guard for headstock;
- Safety guard for tailstock;
- Set of splash guards;
- 1 Grinding wheel, 660 mm (26") dia. 25 mm (1") thick, mounted on wheelhub;
- 1 Dummy shaft for wheel balancing;
- 1 Wheelhub puller;
- 1 Motor pulley, for worn wheel;
- 1 Truncated center for workhead;
- 2 Centers with ring nuts for workheads;
- 1 Pair 180 mm ($7\frac{3}{32}$ " dia. self-centering chucks, with chuck spanner;
- 2 Driving dogs, 20-60 mm ($\frac{31}{64}$ "- $2\frac{3}{8}$ " capacity;
- 2 Driving dogs, 60-115 mm ($2\frac{3}{8}$ "- $4\frac{12}{32}$ " capacity;
- 1 Normal steady rest (Fig. 17);
- 2 Auxiliary counterweights (Fig. 18);
- DRM - Attachment for dressing grinding wheel face and corners (Fig. 20), less diamond (only for A and D executions);
- DRM/LUY - Attachment for dressing grinding wheel face and corners, for hydraulic steady rest (only for B, C and ES executions);
- Tool kit, complete with 1 center position checking attachment (Fig. 18), 1 centering rod and tow dial gauges for ditto;
- 1 Square for centering rod (Fig. 23);
- 1 Feeler gauge for centering rod (Fig. 21);
- DMI - Attachment for taking crank throw (Fig. 22);
- 7 Adjustable wedges for machine levelling;
- 1 Grease gun;
- 1 Set of service spanners;
- 2 kg oil for wheelhead lubrication.

Fig. 20

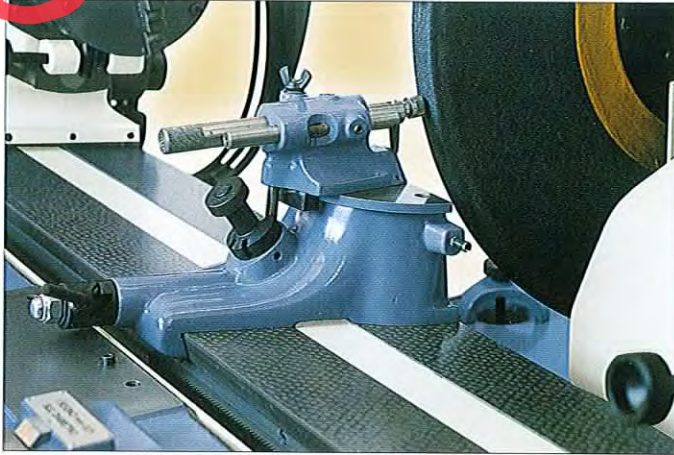


Fig. 22

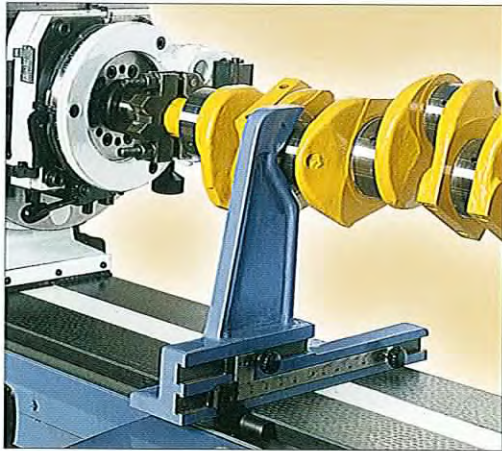


Fig. 23

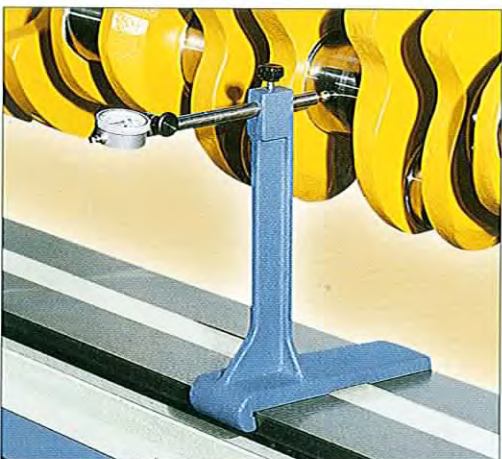


Fig. 21



Fig. 20
DRM Attachment for dressing grinding wheel face and corners (amount of radius is adjustable).

Fig. 21
Centering rod mounted via a surface gauge on the DMI Attachment, for truing the centers.

Fig. 22
DMI Attachment for taking crank throw.

Fig. 23
Centering rod mounted on square, for centering crankshaft journals. The crankshaft is held between centers.

All items in the standard outfit are common to the five machine executions, unless otherwise stated.

Extra outfit

Fig. 24

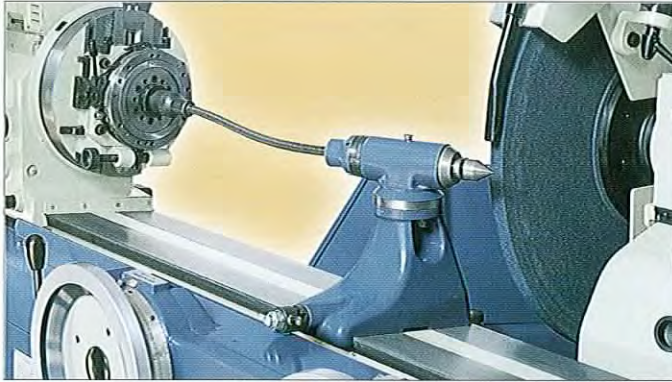


Fig. 25

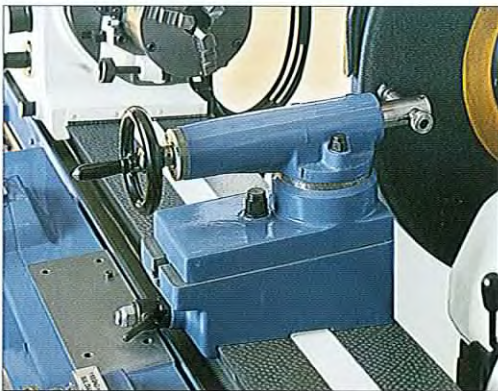
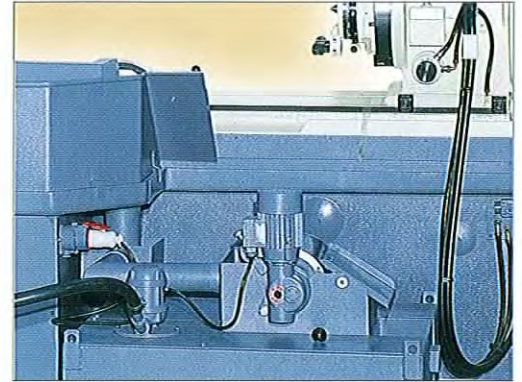


Fig. 26

Fig. 24
Grinding a center with the DRP Attachment.

Fig. 25
Cooling system with magnetic coolant clarifier and tank.

Fig. 26
DRFM Attachment for dressing and chamfering wheel face and for dressing and tapering wheel sides.

Fig. 27
Crankshaft held in the machine by the special quick-action "pot" chucks; loading and unloading of the crankshaft are thus extremely simplified.

Fig. 28
Example of a specific tooling for regrinding the four crankpins of a crankshaft.

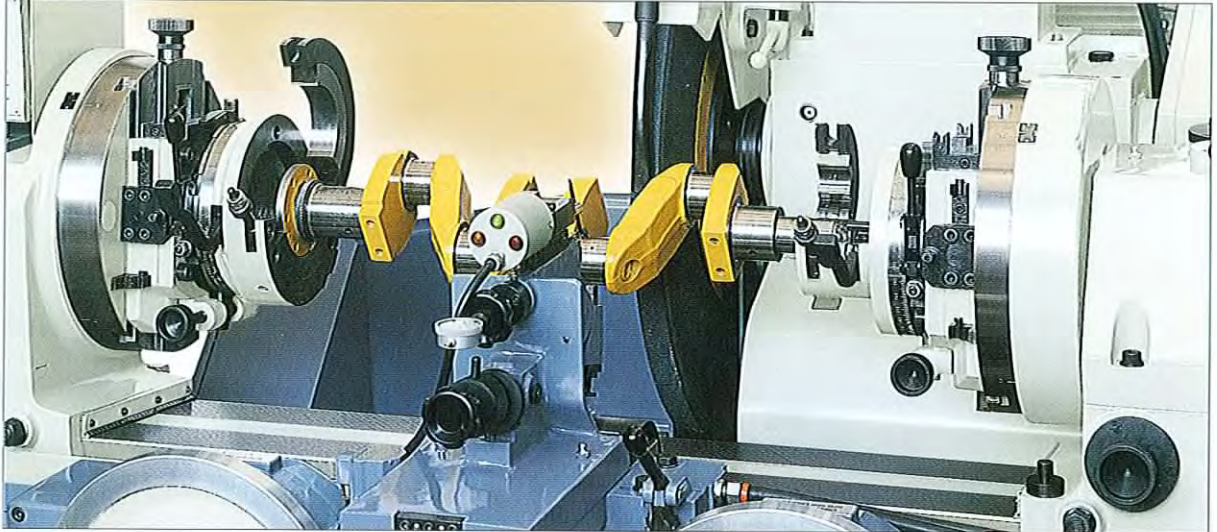
Fig. 29
SFN/2B - Portable belt superfinisher.

Besides the special devices for the different executions, which are either standard or extra outfit as shown at page 4, we have also available, as a further addition to each execution, the following optionals:

- Grinding wheels, 660 mm (26") dia. 203 mm (8") hole, 20, 32, 40 and 50 mm ($51/64$ ", $1 1/4$ ", $1 9/16$ " e 2") thick, P/Nos. U812140000, U806140020, respectively;
- $1/4$ " gas thread nozzle (for wheel thickness less than 20 mm - $51/64$ "), P/No. A01.26703;
- $1/4$ " gas thread nozzle (for wheel thickness more than 25 mm - 1"), P/No. A01.26704;
- DRFM Attachment for dressing and chamfering wheel face and for dressing and tapering wheel sides (Fig. 26), less diamond, P/No. A00A15850;
- DRP Center grinding attachment (Fig. 24), P/No. A00A15880;

- LU/DC, Normal steady rest with built-in centering fixture, (Fig. 18), less dial gauge, P/No. A00A15700;
 - LU/S, Narrow steady rest for narrow journals (Fig. 17), P/No. A00A15940A;
 - LU/S/DC, Narrow steady rest with built-in centering fixture, less dial gauge, P/No. A00A15625A;
 - Special quick-action "pot" chucks to be fitted to workheads of headstock and tailstock (Fig. 27), P/No. A04.26901 and A04.26928.
- N.B. To complete the devices, retaining half rings are needed; these items must be required separately according to the size of crankshaft ends, and supplied as extra.
- Collapsible way cover in replacement of the standard cover, P/No. V05A15004;

Fig. 27



- Magnetic coolant clarifier with tank in replacement of standard tank (Fig. 25), for cooling system, P/No. V08A17010.
Or gravity filtering clarifier assy, P/No. V08A14002;
- 1.5K Diamond for wheel dressing attachments, P/No. C465904010;
- SFN/2B Portable belt type superfinisher, (Fig. 29);
- AES 500 Static balancer (please refer to individual leaflet);
- Special driving plate pin, P/No. A01.26263;
- Unit consisting of knob and indexed bushing, for shifting the workheads, P/No. V04A15004;
- Tailstock cross traverse control unit, P/No. V11A17002;
- Driving dog assy for fast set up of crankshafts, P/No. A00A15590 and A00A15592;
N.B. To complete the devices, centers, half rings and dragging pins are needed; these items must be required separately according to the size of crankshaft ends, and supplied as extra;
- Self-centering chuck 180 mm ($7\frac{1}{32}$ ") dia. complete with one set of three jaws, max. external capacity 245 mm ($9\frac{11}{16}$ ") dia., P/No. A02.26304C.

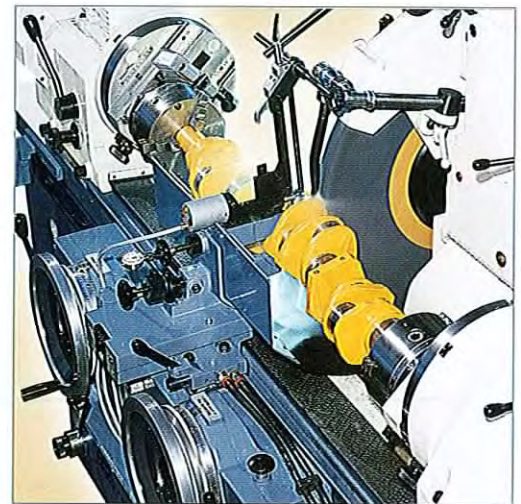


Fig. 28

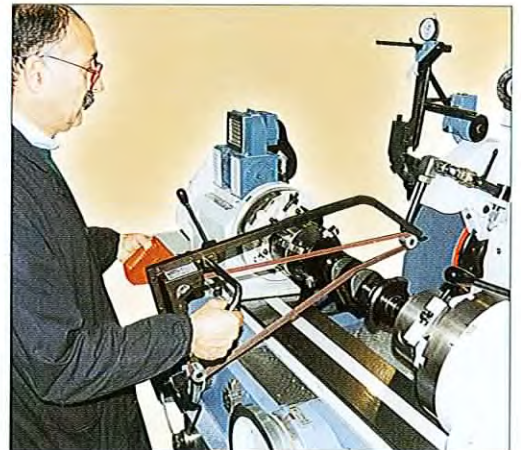


Fig. 29

Technical data

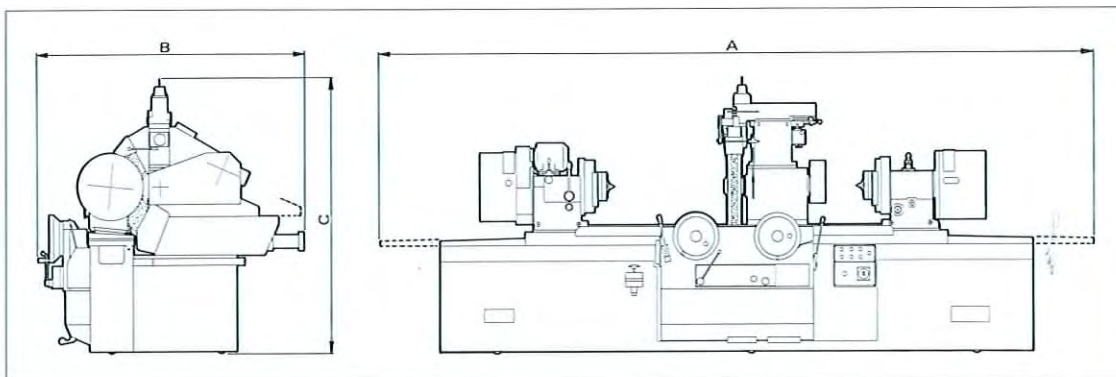


Fig. 30

Working capacity

Max. diameter ground with full-size wheel	mm	140	5 ³³ / ₆₄ "
Max. swing over table	mm	450	17 ²³ / ₃₂ "
Min. diameter admitted in steady tests	mm	20	2 ²⁵ / ₃₂ "
Max. diameter admitted in steady tests	mm	90	3 ³⁵ / ₆₄ "
Max. eccentricity of workheads (throw)	mm	80	3 ¹ / ₃₂ "
Max. mass admitted between center	kg	180	397 lb

Geometric features

Height of centers over table	mm	225	8 ⁵⁹ / ₆₄ "
Max. distance between center	mm	• 1000 - •• 1275	• 40" - •• 50"
Max. distance between self-centering chucks	mm	• 970 - •• 1245	• 38 ³ / ₁₆ " - •• 49"
Self-centering chuck diameter	mm	180	7 ¹ / ₃₂ "
Max. grinding wheel diameter	mm	660	26"
Min. grinding wheel thickness	mm	20	2 ²⁵ / ₃₂ "
Standard grinding wheel thickness	mm	25	1"
Max. grinding wheel thickness	mm	50	2"

Wheelhead

Fast travel	mm	125	4 ⁵⁹ / ₆₄ "
Fine travel	mm	120	4 ⁴¹ / ₆₄ "
Max. travel for plunge grinding crankwebs (only C execution)	mm	14	9/ ₁₆ "
Max. travel for plunge grinding fillets and diameter	mm	0.75	.030"
Feed per turn of the handwheel	mm	1	.040"

Headstock

Workpiece rotation speeds (steplessly adjustable)	r.p.m.	18-110
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Table

Micrometer feed per turn of the handwheel	mm	5.84	.23"
Fast traverse speed	m/min	3.6	in/min 142
Slow traverse speed, (only for C execution)	m/min	0.12	in/min 4 ³ / ₄
Work feed speed, steplessly adjustable (only for D execution)	m/min	0.04-0.24	in/min 1 ³ / ₁₆ - 9 ²³ / ₆₄

Motor rating

Wheelhead	kW	4 (5.50 HP)
Headstock	kW	0.62 (0.85 HP)
Fast table traverse	kW	0.25 (0.34 HP)
Slow table traverse (only C execution)	kW	0.09 (0.12 HP)
Table work feed (only D execution)	kW	0.6 (0.85 HP)
Hydraulic system	kW	0.55 (0.75 HP)
Cooling system	kW	0.15 (0.20 HP)

Dimensions and masses (Fig. 30)

Length A	mm	3900	153 ³³ / ₆₄ "
Width B	mm	1757	69 ¹³ / ₆₄ "
Height C	mm	1792	70 ⁷ / ₁₆ "
Approx. mass, unpacked	kg	3030	6680 lb
Approx. mass, ocean packed	kg	3600	7936 lb

Motor power is referred to 50 Hz frequency. Measurements, masses and executions are subject without previous notice.

• C, ES executions •• A, B, D executions

Others crankshaft grinders of the RTM series

Besides the RTM 225 A Berco is manufacturing other crankshaft grinder models; their main specifications are set forth hereunder:

RTM 270

Center height over table
270 mm ($10\frac{5}{8}$ "")
Max. swing over table 540 mm
($21\frac{1}{4}$ "")
Max. distance between centers
1600 and 1950 mm
(63 " and $76\frac{25}{32}$ "")
Max. mass admitted between
centers 300 kg (661 lb).

RTM 351

Center height over table
350 mm ($13\frac{3}{4}$ "").
Max. swing over table 700 mm
($27\frac{9}{16}$ "").
Max. distance between centers
2400-3000 mm
($94\frac{31}{64}$ " - $118\frac{7}{64}$ "").
Max. mass admitted between
centers 800 kg (1760 lb).

RTM 425A

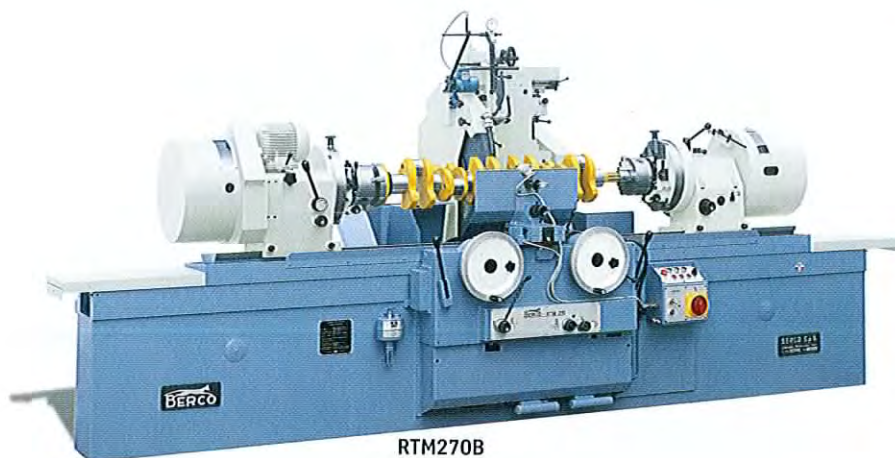
Center height over table
425 mm ($16\frac{3}{4}$ "").
Max. swing over table 850 mm
($33\frac{1}{2}$ "").
Max. distance between centers
4020 mm ($158\frac{1}{64}$ "").
Max. mass admitted between
centers 1200 kg (2645 lb).

RTM 575

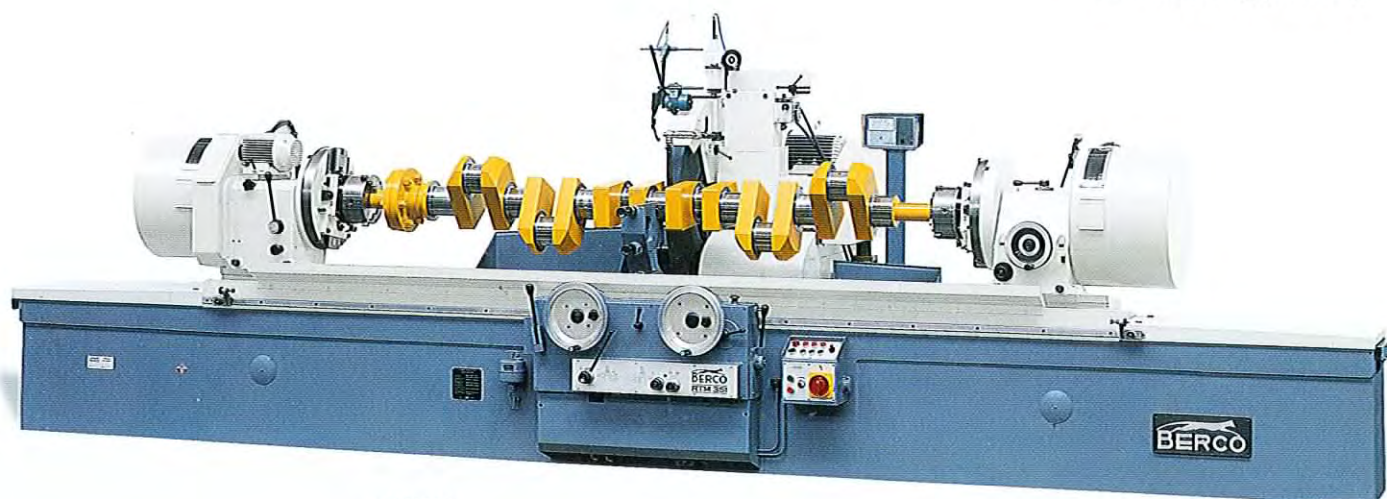
Center height over table
575 mm ($22\frac{5}{8}$ "").
Max. swing over table
1150 mm ($45\frac{3}{32}$ "").
Max. distance between centers
4020 mm ($158\frac{1}{64}$ "").
Max. mass admitted between
centers 1200 kg (2645 lb).

RTM 700

Center height over table
700 mm ($27\frac{9}{16}$ "").
Max. swing over table
1400 mm ($55\frac{1}{8}$ "").
Max. distance between centers
5700-6900 and 8000 mm
($224\frac{13}{32}$ " - $271\frac{21}{32}$ " e 315 "").
Max. mass admitted between
centers 6000 kg (13200 lb).



RTM270B



RTM351



00109.M94.1.GB.C10

Published by Berco Communication Dept.



ISO 9001 Cert. n. 0029/2



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BERCO S.p.A.

Via 1° Maggio, 237

44034 Copparo (FE) Italy

Tel. (+39) 0532 864111

Fax (+39) 0532 864259

www.berco.com

machinetools@berco.com