Counterboring Machine
for
Oversize Seat Ring Installation

For

COUNTERBORING TO IT6 TOLERANCE

this is simply your machine.

Tested and specified by the leading engine manufacturers.

VD4HD-ADM

Counterboring Seat Ring Pocket

Refacing Bottom of Seat Ring Pocket

HANDLING

Setup is fast and easy.

Place reference disk on boring tool setting stand to set micrometer screw to a reference value near desired diameter.

Place machine on boring tool setting stand and preset boring diameter.

Lock the pilot with mounted supporting spider in the valve guide.

Then, lower the machine over the pilot and position the cutting tool in front of the upper edge of the seat ring bore.

Refacing is automatic.

Pressing one button is enough to start the boring pass.

Two to three passes will be required to counterbore to the desired diameter.

WORKING PRINCIPLE

The seat ring pocket is counterbored to the preset depth by the simultaneous application of both a rotary and vertical feed motion to the indexable cutting insert.

While the cutting insert rotates in a circle around the seat ring pocket, a feed gear mechanism ensures a continuous vertical feed motion.

The lathe-type refacing action provides smooth and closely fitting contact surfaces for oversize valve seat rings.

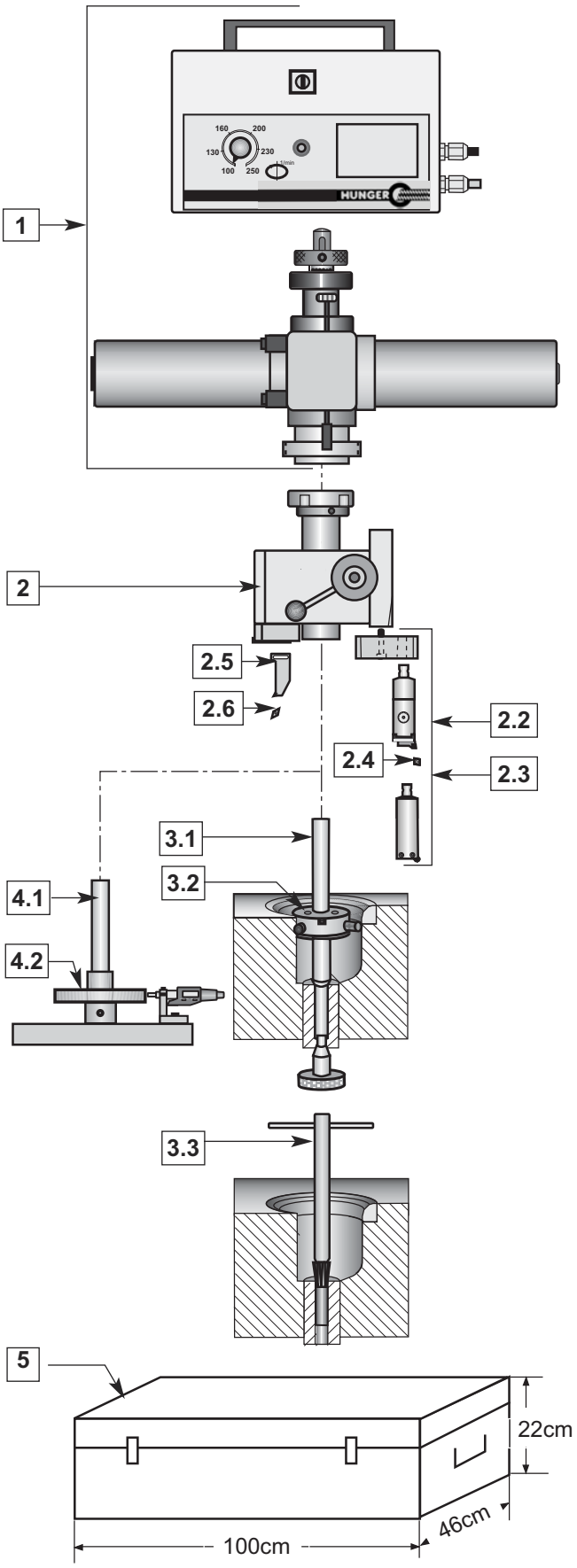
KEY FEATURES

- The motor drive unit is a part of the VD4HD valve seat refacing machine and, therefore, is only required, if no VD4HD is at hand.
- Powered by an universal SELV (Safety Extra Low Voltage) power supply to eliminate electric hazards.
- The speed of the motors is infinitely adjustable so that the cutting speed can be adapted to the diameter and material of bore.
- Two types of exchangeable boring heads are available.
  The standard AV boring head is provided with a vertical slide for counterboring.
  The optional AVH boring and facing head is provided with a vertical and a horizontal slide for counterboring and facing.
- The precision boring tools are equipped with a micrometer dial for adjusting the boring diameter in increments of 2µm to ensure high precision machining to IT6 tolerances.
- Form boring tools are available for machining shoulders within the counterbores under special angles to facilitate O-ring installation.
- The economical solution for both on site and workshop use.

SPECIFICATIONS

Capacities	
Max. boring diameter	225 mm
Min. boring diameter	66 mm
Feed motions	
Speed Range	100 - 250 rpm
Vertical/horizontal feed rate	0,05 mm/rev.
Electrics	
Operating voltage	max. 50 VDC
Rated current	10 A
Supply voltage (1ph.50/60Hz)	100 - 300 VAC
Dimensions	
Length	410 mm
Width	145 mm
Height	400 mm
Weight	
Net weight	approx. 17 kg

VD4HD-ADM



MODULAR COMPONENTS

Item	Description	Code
1.	**VD4E Motor Drive Unit** including Power Supply Unit wired for input voltage 230 V ±10% 1ph 50/60 Hz	249 05 310
2.	Bohring Heads	
2.1	**AV Boring Head** including vertical tool slide for counterboring	259 10 500
2.2	**AVH Boring Head** including vertical tool slide for counterboring and horizontal tool slide for facing bottom	259 10 570
2.3	Tooling for Counterboring ID 90-225 mm	
2.3.1	**Boring Tool Base Type B1**	259 12 060
2.3.2	**Precision Boring Tool Type B1** fitted with micrometer dial for setting boring diam.	259 20 150
2.3.3	**Form Boring Tool Type B1** for machining inclined shoulder for ease of O-ring installation	259 20 150
2.4	Tooling for Counterboring ID 66-100 mm	
2.4.1	**Boring Tool Base Type D1.1**	259 14 062
2.4.2	**Precision Boring Tool Type D1** fitted with micrometer dial for setting boring diam.	259 14 110
2.4.3	**Form Boring Tool Type D1** for machining inclined shoulder for ease of O-ring installation	259 20 821
2.5	Insert for Precision Boring Tools B1 an D1	
2.5.1	**Insert Type C0604HC**	862 20 030
2.6	Tooling for Facing Bottom of Counterbore	
2.6.1	**H01 Insert holder** for diam. 60-160 mm	259 65 110
2.6.2	**H02 Insert holder** for diam. 100-220 mm	259 65 120
2.7	Insert for Facing Bottom of Counterbore	
2.7.1	**Insert Type W1104CU** for H01/02 Holder	862 20 050
3.	Accessories for Centering and Guiding	
3.1	**Pilots** tailored to the respective engine model	on request
3.2	**Supporting Spiders** for supporting pilot shaft just below the valve seat	on request
3.3	**Chamfering Tools** for cleaning the valve guide	on request
4.	Accessories for Presetting Boring Diameter	
4.1	**Boring Tool Setting Stand** including micrometer screw for precsion setting of boring diameter of precision boring tool	259 50 100
4.2	**Reference Disk** for settign micrometer screw to a reference value near to the desired boring diameter	on reqest
5.	**Storage Case** for machine and accessories	259 90 000