



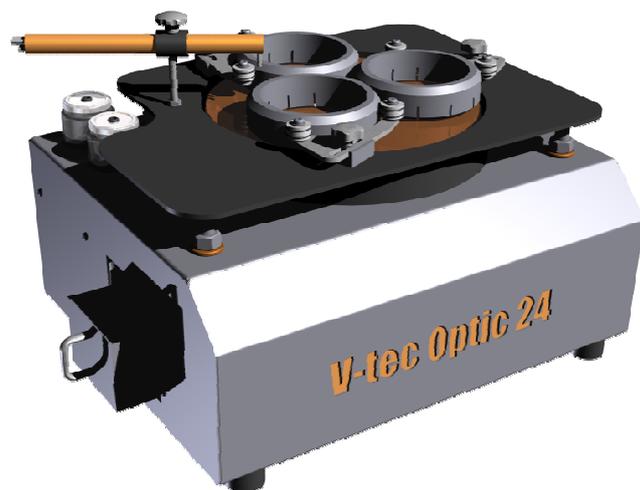
OPEN FACE – FLAT LAPPING MACHINE

The V-Tec OPTIC is a Flat lapping and Polishing machine for high precision and fine finishing of the sealing faces of (safety) valve and components up to a diameter of 200 mm. / 8". The frame mounted 'open face' OPTIC is build on rigid metal construction with a height adjustment and waste tank. The machine incorporates a fully automatic Liquid Diamond Dispensing System and process timer.

The OPTIC flat lapping machines are used in valve repair shops for fine finishing of all common Safety valve discs, seats or complete nozzles. Only optical flat lapping can be used for reaching the so important required seat tightness of metal seated Safety valves, used in the oil- & gas industry. The V-Tec OPTIC lapping plate and standard supplied consumables are specially selected for this purpose. The OPTIC can be used to reach a flatness accuracy within 3 light bands. The OPTIC is specially designed and equipped for the use in valve repair, but for a long and reliable working effect, it needs to be placed in a dedicated lapping room.

THE OPTIC IS EQUIPPED WITH:

- ✔ Motor with gearbox.
- ✔ Fully automatic liquid diamond and lubricating dispensing system.
- ✔ Motor timer 0 - 999 minutes.
- ✔ Adjustable table top.
- ✔ Anti vibration mountings.
- ✔ 3 conditioning rings, spray head, guide levers & hand weights.
- ✔ Standard lapping plate is Copper Composite Plate specially for valve seats and discs.



Ventil, Innovators in Valve Repair

AUTOMATIC DISPENSING UNIT

The accurately controlled automatic unit dispenses liquid diamond and lubrication on the lapping plate. It contains a stirring system to ensure a consistent mixture and distribution of the diamond abrasive liquid. The magnet drive of the stirrer makes it very easy to clean the jar and prevents contamination. The dual channel dispenser arm can be easily positioned to dispense both liquid diamond and lubrication.



CONSUMABLES (LAPPING MIXTURE)

The OPTIC machine is delivered ready for use, including all required materials and consumables. The Lapping mixture exists of an abrasive mixed with a lapping, lubricating liquid.

OPTIC SPECIFICATION	OPTIC 15	OPTIC 24
Lapping plate diameter	380 mm. / 15"	610 mm. / 24"
Lapping plate speed	55 RPM.	55 RPM.
Number of conditioning rings	3	
Conditioning rings inside dia.	140 mm. / 5.5"	240 mm. / 9.5"
Dispenser system	Standard, automatic	
Motor timer	0 – 999 sec.	
Machine dimensions	670 x 550 mm. / 26.3 x 21.5"	900 x 1100 mm. / 36 x 44"
Working height	275 mm. / 21.5"	940 mm. / 37"
Weight	68 kg.	572 kg.
Main drive motor	0.37 kW.	1.5 kW.
Standard electrical supply	Single phase 220-240 Volt 50-60 Hz or 3 Phase 380 – 400 Volt 50-60 Hz.	
Required air supply	5-6 bar / 70-90 PSI.	
Certification	CE marked.	
Standard consumables	Silicon Carbide, Grain 600 and lubrication liquid.	
Optional components	Monochromatic light and optical flat lenses (see page 3).	

Ventil, Innovators in Valve Repair



OPTIONAL FEATURES

OPTICAL FLATS & MONOCHROMATIC LIGHT

Optical flats are optical-grade, lapped and polished glass pieces which are extremely flat (about 25 nanometres). They are used in combination with a monochromatic light to determine the flatness of the lapped valve seat or disc.

When the valve seat or disc and optical flat are placed under the monochromatic light, the surface is illuminated and the light waves reflect off both the bottom surface of the flat and the surface of the seat. The reflected waves interfere, creating a pattern of interference fringes (Newton's rings), visible as light and dark bands.



The spacing between the fringes is smaller where the gap is changing more rapidly, indicating a departure from flatness in one of the two surfaces, in a similar way to the contour lines on a map.

A flat surface is indicated by a pattern of straight, parallel fringes with equal spacing, while other patterns indicate uneven surfaces. Two adjacent fringes indicate a difference in elevation of one-half wavelength of the light used, so by counting the fringes differences in elevation of the surface can be measured to millionths of an inch. The delivery includes a laminated poster with operating instructions and indicative guidelines of levels of flatness.



Ventil, Innovators in Valve Repair