

USER MANUAL

I .GENERAL DESCRIPTION

BCM VP020 pumps feature a high speed hand-operating vacuum and pressure unit, the output of which is in a range of $-880\text{mbar} \sim 20\text{bar}$. Those pumps are specially designed and manufactured to calibrate the vacuum and pressure instruments working in these ranges.



There is a vacuum/pressure switch on the pump, which is the key for switch between the vacuum and pressure output. With this switch the pump can be used as a negative pressure source or positive pressure source for calibration. With a so called volume-controlled vernier-adjuster one can adjust the output for a precise/desired value of the vacuum or pressure.

Thanks to its small size and light weight, the pumps is portable, handy and easy for operation in the field. When accompanied with a precision vacuum/pressure indicator the pump can be integrated into a complete vacuum or pressure set.

II .WORKING PRINCIPLE AND BASIC CONSTRUCTION

BCM VP020 pumps consist of a vacuum/pressure switch, a vent-valve, a volume-controlled vernier-adjuster, a cylinder and a piston, two pressure ports, and a pair of hand-grips. When the vacuum/pressure switch is put on the "vacuum" side the pump generates vacuum; while the pump generates the pressure when the switch is put on the "pressure" side.

Through two female threads of the two pressure ports(one on the top of the pump and the other on the flexible hose), the pump can be connected to a master pressure gage and the pressure instrument to be calibrated.

The hand-grips of the pump can be pressed and released repeatedly to develop vacuum or pressure. During this operation, the piston moves up and down in the cylinder. When the vacuum or pressure is developed, a more precision vacuum or pressure value can be reached by adjusting the vernier-adjuster.

To release the vacuum/pressure, twist off gradually the vent-valve. After the calibration, dismount the instrument.