

ASSEMBLING OF THE HIGH-PRESSURE VESSEL

The following procedure is adopted in assembling the high-pressure vessel. Each side window, enclosed in its holder with plug J screwed in, is inserted into the horizontal well through the appropriate hole (F_2 or F_3). With the aid of a special key the windows are manually positioned so that the O-rings of plugs J enter the narrower part of the well. Thereafter, the holes F_2 and F_3 are plugged by fully turning in screws K.

The optical cell, after being filled with the solution and sealed by its plug, is inserted into its holder. The bottom window in its enclosure H, with the third plug J attached to it, is pressed against the cell holder thus pushing the cell into its proper position. The whole unit, mounted on a special cylindrical vice, is passed through hole F_1 into the narrow part of the axial well and by manual adjustment the correct position of the cell is ascertained. Finally, the hole F_1 is sealed by turning in screw L.

The vessel is now filled through its upper hole with *purum* grade glycerol and the level of the liquid adjusted by sucking out any excess (a specially mounted tube connected to a water aspirator proved convenient). The unit is placed in a vacuum jar which is closed by a lid with a moveable handle passing through its centre, plug E having been previously screwed on to the handle. The jar is evacuated in order to remove air which otherwise would be trapped between the glycerol and the tight-fitting piston thereby preventing its proper insertion. With the air removed, the plug E can easily be pressed in with the aid of the handle until its O-rings are squeezed into the narrow part of the axial hole. Thereafter, the air is allowed to enter, the vessel is removed from the jar and, after placing plunger D in the well, screw B is turned into the upper hole as far as possible. Piston C is now inserted into the bore of screw B, the unit is placed in a small hydraulic press (30 tons) and the content compressed until the desired pressure is attained.

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¹ S. Malmrud and S. Claesson, *Acta Imeko III*, 1964, 195.

² S. Malmrud and G. Andersson, *Rev. Sci. Instr.*, 1962, 33, 1277.

³ P. W. Bridgman, *Physics of High Pressure* (Bell and Sons, London, 1958), p. 72.

⁴ T. C. Poulter, *Phys. Rev.*, 1930, 35, 297.