

7th. VALVE CHESTS.—These valve chests are 4 in number; they are to be made in cast iron. It is of particular importance that every part should be sound and cast to the thickness called for on the plans and specifications. The thickness of metal at the 4 flanges at each chest where they connect to other parts of the pumps, also the 2 flanges at each chest where the valve bonnets bolt on, finally, the 4 feet at each chest which bolt to the foundation-plates are all to be $2\frac{1}{2}$ inches when finished; all other parts of said chests are to be $1\frac{1}{2}$ inch metal, this also includes all the ribs on said chests. Total length of each chest 9 feet, inside breadth 2 feet 9 inches, inside height 20 inches; total outside breadth, over flanges 3 feet, over bonnet flanges 3 feet 8 inches. The flanges are to be secured to the other parts of pumps, such as inlet and outlet pipe, pump barrel, barrel-head and cover, also valve bonnets by means of $1\frac{1}{2}$ inch bolts or stud bolts put about $5\frac{1}{2}$ inches apart as it may come to divide the spaces equally at each flange; these bolts have all to be carefully fitted into the bolt holes. The bolts for the above named purpose are to be provided with substantial six-sided heads and nuts, made true, and wrought iron washers. The two chests are to be held at each pump by 8 bolts $1\frac{1}{2}$ inch in diameter and firmly secured to the foundation-plates.

Each valve chest is to have two recesses $7\frac{1}{2}$ inches wide, prepared to receive the valve seats, sockets, and keys; they are to be placed at the angle of 45° , and are formed by side pieces $1\frac{1}{2}$ inch thickness, 4 inches breadth being cast on said chest in addition to the regular thickness of metal; said side pieces are also placed at an angle of 45° .

The bottom is to form a recess 3 inches wide, to receive the valve seat. There is no fitting to be done on these seats, except the getting the surface tolerably true, the valve seats being set on an India-rubber joint.

8th. VALVE SEATS.—These valve seats are 8 in number, and are to be made of cast iron, presenting a sound surface to the valves. These seats are each divided by a longitudinal and transversal bar 4 inches wide, arched in the back as shewn on working drawing, the thickness on the outward bearing being 2 inches when finished, and in the centre 4 inches when finished. The seats are faced and fitted perfectly true to the valve.

9th. VALVE SOCKETS AND KEYS.—The valves are 16 in number, 8 being extra valves; they are made of a good quality of tough brass of the dimensions shewn on the working drawing, carefully fitted to the valve seats; they set in brass sockets and rods held to their places by means of wrought iron keys, sockets and keys fitting in the recesses formed at each valve chest.