Throttle Valve

The valve shown in the accompanying illustration is of the manually operated type with a spring actuated quick closing device. The single seated valve "16" is guided in and closes against the seat "18" A head on the end of the stem "10" engages a "U" slot in the valve, and contacts the valve in the opening direction. In the closing direction the head contacts a hardened disc "17" inserted in the valve. The spring "14" prevents chattering of the valve in the open position. The valve is surroundedby the steam strainer "15". The strainer may be removed after closing the steam header stop valve and removing the throttle valve yoke.

The valve stem packing consists of closely fitting bushings "11" and "13" with a leak-off space between them. The leak-off should be connected to a point at atmospheric pressure. No other form of stem packing is used and excessive leakage should be corrected by installing new bushings. The surface of the stem must be kept smooth and free of galled spots, paint, rust or dirt.

The Valve stem "10" screws through a cylindrical bronze nut "6" which has a flat on one side and is prevented from rotating by the pin "5". When the hand wheel "1" is turned in the closing direction, the nut "6" screws up on the stem until the trip latch "8" can be latched under the hardened latch plate "7" on the nut. If now the handwheel is turned in the opening direction, the nut cannot move downward, being restrained by the trip latch "8" and consequently the stem rises, opening the valve. If the valve is open and the hand wheel is turned in the closing direction, the valve will close.

If for any reason the turbine speed increases to the over-speed trip limit, this mechanism functions to disengage the trip latch "8" from the latch plate "7". This allows the compression spring "3" to force the nut "6" downward carrying the stem and valve with it and thus closing the valve. The valve may be re-set by turning the hand wheel in the closing direction until the trip latch again engages the latch plate.

The following list has been compiled to facilitate ordering spare and renewal parts by item number and name, together with the serial number of the turbine.

Item No.	Name	Item No.	Name
1	Throttle valve Handwheel	10	Throttle Valve Stem
2	Throttle Valve Spring Retainer	11	Throttle Valve Gland Bushing (Upper)
3	Throttle Valve Spring (Upper)	12	Throttle Valve Gland
4	Throttle Valve Yoke	13	Throttle Valve Gland Bushing (Lower)
5	Throttle Valve Nut Guide Pin	14	Throttle Valve Spring (Lower)
6	Throttle Valve Nut	15	Steam Strainer
7	Throttle Valve Nut Latch Plate	16	Throttle Valve
8	Throttle Valve Trip Latch	17	Throttle Valve Disc
9	Throttle Valve Trip Latch Shaft	18	Throttle Valve Seat
		19	Throttle Valve Body