



Butterfly Valves

Butterfly valves are used throughout the pump stations wherever it may be necessary to isolate all or a portion of the equipment. Typical locations for butterfly valves are; at the inlet of each pump suction line (unless wet well vertical turbine or submersible turbine pumps are used); at each pump discharge into the pressure vessel; at the discharge of each pressure reducing valve; at the discharge of each flowmeter assembly.

A butterfly valve is a wafer style valve sandwiched between two mating flanges. One quarter turn of the disc of the valve is adequate to open or close the valve, and the valve may be throttled anywhere between fully open and fully closed. Valve sizes of eight inches and smaller usually have a hand lever, and valve sizes over eight inches have a gear reducer and hand wheel or crank. In some instances hand levers may be required on larger valves and gear reducers on smaller valves.

Bodies of butterfly valves are either ductile or cast iron, discs are brass or bronze, and seats are Buna-N or EPDM elastomer which also form the gasket surface. Valve stems are normally 416 stainless steel. Discs of ductile iron or plated ductile iron are not used since the sealing edges deteriorate rapidly, causing the valve to leak through when closed. Valve bodies may be either wafer pattern or tapped lug pattern.

Tapped lug pattern valves are rated at dead end service, and are normally used for this reason. If a pump or valve must be removed for service or replacement, the valve will hold pressure in the pressure vessel, allowing removal of the piece without requiring a shutdown of the entire pump station. Thus repairs on a component may be made while the system is still "live".