

Pressure Valve

Understanding the total cost of ownership for a pressure relief valve

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In today's competitive economy, cost-savings and total cost of ownership play a more vital role than ever. Companies are looking for ways to save costs, without sacrificing quality, delivery and excellent customer service. This article is intended to provide an overview for determining the total cost of ownership for a pressure relief valve.

There are many variables which determine the life span of a pressure relief valve. Some of the key factors are: Service media; maintenance/repair cycle; how often the valve is required to operate; valve design; and metallurgy. Factoring the aforementioned, the average life span of a pressure relief valve is approximately 20 years across all industry segments and applications.

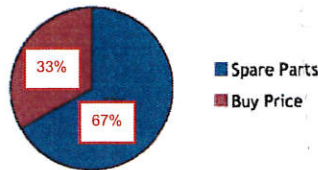
So, what is the Total Cost of Ownership (TCO) for a pressure relief valve? The TCO is the sum of the costs associated with the relief valve over its life span. These costs include:

- Initial cost of the valve (purchase price)
- Costs for valve maintenance and repair

Initial Cost of the Valve

Many customers are short-sighted and base a purchasing decision on the initial cost of the valve. However, over the life span of a pressure relief valve, the initial valve cost is a very small percentage of the TCO (less than 33 percent). Realizing this, many manufacturers will offer significant discounting-off of the purchase price to win the business.

TCO for a Pressure Relief Valve



Costs For Valve Maintenance and Repair

The costs for valve maintenance and repair include: labor costs, transportation charges and spare parts pricing. Ignoring the labor costs and transportation charges, which will not vary significantly from manufacturer to manufacturer, the key variable in the costs for valve maintenance and repair is the spare parts pricing. These costs account for 67 to 75 percent of the TCO for a pressure relief valve.

The significant discounting utilized in valve pricing is not used in spare parts pricing. Typically, no discount is offered on spare parts. The three main North American pressure relief valve manufacturers count on spare parts sales as approximately 35 to 50 percent of their annual sales.

The type and frequency of valve parts replacement is averaged in the table below (assuming an annual repair cycle). These are the typical "wearing" parts of a pressure relief valve:

Part Name	Replace Frequency
Disc	Every 3 years
Nozzle	Every 5 years
Spring	Every 7 years
Guide	Every 6 years
Disc holder/ Stem retainer	
Spindle for LESER	Every 3 years
Bellows	Every 4 years

Example

If a flanged 2H3 300# RF x 150# RF API valve has a purchase price of \$3,520, the spare parts costs associated with the life cycle of the valve will be approximately \$6,915 (in net present value dollars). The TCO for this valve is \$10,435.

Valve manufacturer XYZ would gladly discount the purchase price to \$1,760 (or lower) to win your business, knowing that they will get the business for the \$6,915 in spare parts sales. The TCO for the discounted valve is \$8,675.

Factors to Consider Before Purchasing

Initial Cost Of The Valve

First, dealing directly with manufacturers or manufacturer's representatives will ensure that you receive new valves with original manufacturer parts and the full manufacturer's warranty. Pressure relief valve manufacturers take customer service very seriously.

Before buying, ask about after-sales support, the claims process, payment terms and training. Beware of sellers who rely on heavy-discounting to win your business. Instead, seek sellers that give you a competitive price initially.

Costs For Valve Maintenance and Repair

Valve Design

Valve design has a major impact on the frequency required for part replacement and life span of the valve. Additionally, valve design can impact the ease or difficulty maintenance personnel have in repairing the valve. The following are valve design features which facilitate cost savings and a lower TCO for a pressure relief valve over its life span:

Widely Spaced Guiding – A one-piece spindle with reduced guiding surface area results in less friction, a major cause of galling, which will extend both the parts life and the life span of the valve.

Single Trim for Steam, Gas/Vapor and Liquids – One valve design which handles steam, gas/vapor and liquids reduces the amount of spare parts which need to be stocked and/or purchased over the life cycle of a valve.

Hardened or Stellite Metal Seats as Standard – Hardened or stellite metal seats, as standard, prolong the life and integrity of the valve seat (area of contact between the valve nozzle and disc), which will prolong the frequency of parts replacement and extend the life span of the valve.

A Self-Draining Body – A self-draining body prevents corrosion which results in easier disassembly and prolonged nozzle life.

Shielded Bellows – Shielded bellows protect the bellows from flow turbulence and solids in the flow stream. This shield extends the life of the bellows and results in fewer bellows replacements.

Spare Parts Costs

Before making a decision to buy based solely on a lower purchase price, find out what the spare parts costs are. Pay attention to these figures and compare them to other manufacturers. Remember, spare parts costs account for at least 67 percent of the TCO for the valve.

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