

# ALTA ROBBINS

## *The Difference Is In The Seat!*

Robbins Aviation pioneered the concept of a large, durable, and fully contained soft seat. This rugged seat design enables our valves to be used in a wide range of applications for extended periods of time with zero leakage.

A brief examination of the design differences between Alta-Robbins valves and those of our typical competitors shows why we say *"The Difference Is In The Seat!"*

The Robbins difference begins with a large soft seat which is pressed into the cup of the bonnet assembly (See Figure 1). The bonnet assembly is then threaded into the valve body resulting in complete containment of the seat. Metering is produced as the stem tip moves up and down through the seat orifice. Bubble tight shut-off is achieved as the flat of the stem meets with the top of the seat. Very low torque is required to achieve bubble tight shut-off.



Figure 1  
Alta-Robbins Bonnet Assembly and Seat

Even though only low torque is needed for bubble tight shut-off, experience has shown that operators and technicians use great force when closing valves, often resorting to the use of wrenches or channel locks.

Robbins valves simply do not leak, even under severe abuse. Customers have reported that, even in the extreme instance of an operator "over-closing" a Robbins valve with a wrench to the point of actually twisting the stem off, the seat did not leak!

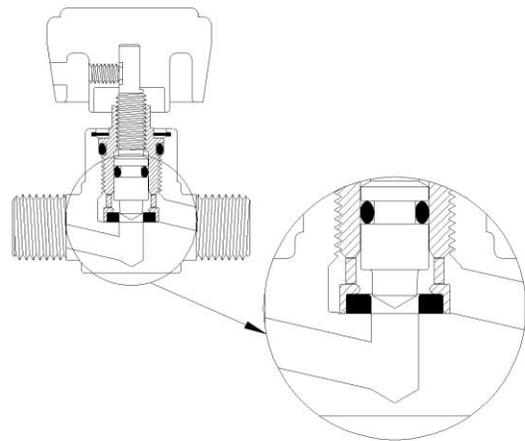
A brief look at our typical competitor's design makes it easy to understand why valve users have fallen into the habit of over-tightening valves.

Our typical competitor's seat is relatively small in size (See Figure 2) and is installed directly to the tip of the stem. It moves up and down with the stem and is completely un-contained. Metering is accomplished by moving the stem/seat closer or further away from the edges of the through hole in the body.



Figure 2  
- Relative Seat Size -  
Alta-Robbins seat & stem on right  
Typical competitors center & left

Bubble-tight shutoff is achieved in this design by driving the seat into the corners of the through hole. Each time that the un-contained soft seat is forced into the edges of the through hole, it loses its shape as it "squishes out". To ensure that it doesn't leak, the operator continues to tighten, and tighten, until it actually cuts all the way through the seat resulting in metal to metal shutoff.



Robbins seats are fully contained inside the cup of the bonnet and the body of the valve.