



# KEPNER PRODUCTS COMPANY

ESTABLISHED IN 1948

TIPS#18

## Valve Material Selection

### SAFETY WARNING

Kepner standard valves are offered in aluminum, brass, carbon steel, and types 303 and 316 stainless steels. These materials have their inherent strengths and weaknesses. As such, no one material is ideal for all applications and is why we offer a choice of materials. However, making the right choice is an important matter since misuse of valve materials could cause system failure or personal injury. The customer is solely responsible for ordering suitable valve material for their application.

Some factors to consider in selecting suitable material include: its mechanical properties, corrosion resistance, the combinations of temperature and pressure that might be encountered during operation, foreseeable degradation mechanisms (such as corrosion, creep, fatigue), and the material's impact strength to handle possible surge and water hammer effects. One should also be aware of limitations on using free machining steels, such as carbon steel (12L14) and 303 stainless steel, for fatigue critical applications (cyclic loadings). Steel additives such as sulfur, lead and selenium for purpose of improving machinability are typically present as inclusions that can lower fatigue life.

Kepner technical service experts are available to help customers with their material selection. Please contact us for assistance.

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Valve performance is dependent on proper selection, application, installation and maintenance. Consult Factory.

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