



## INFORMATION

### APPLICATION GUIDANCE

The following data covers general recommendations for the use of Tucson Hydrocontrols' fluid power products. For extreme operating conditions, or where there is doubt about this, contact Tucson Hydrocontrols for advice. Final approval in application is the responsibility of the user having duly considered the full operating conditions for the application.

### HYDRAULIC FLUID

Use good quality mineral oil recommended for use in fluid power systems. Such fluid should contain antioxidants, anti-foaming agents, anti-wear additives and corrosion inhibitors.

### PRESSURE

Valves for regular use up to 350 bar should have Cast Iron bodies. Aluminium bodies should not be used in continuous applications above 250 bar.

### VISCOSITY

Catalogue data is from tests conducted on mineral oil at a viscosity of 40 cSt. Product should ideally be used at viscosities in the range of 5-500 cSt. Product will perform with reduced efficiency in the ranges 5 - 15 cSt and 50 - 500 cSt. These extreme conditions must be evaluated by the user to establish suitability of the product's performance.

### TEMPERATURE

Product operating limits are broadly in the range -20°C — 200°C (depending on the seals and oil used) but satisfactory operation throughout the range may not be seen. Leakage and response will be affected when used at temperature extremes and it is the user's responsibility to determine acceptability at these levels. Seals used in these products have the following temperature limitations:

Nitrile	-20°C to 120°C
Viton	-20°C to 200°C

### THERMAL SHOCK

It is unreasonable to expect product to withstand rapid temperature changes - this could affect both performance and life and care should be taken to protect the product from such situations.

### FILTRATION

Hydraulic fluid should be filtered to BS5540/4 Class 18/13 or better. This represents a maximum contamination level of less than 2,500 particles per millilitre above size 5 micron, and less than 40 particles per millilitre above size 15 micron. As a guide this level of cleanliness should be achievable using filters that have a rating of 25 microns (nom.) or better.

It should be noted that one of the most critical periods

for excess contamination in a hydraulic system is in the initial start up and run in phases. Built-in manufacturing debris will exist downstream of filters and should be removed by high flow flushing under no-load conditions.

For heavily contaminated systems containing stray particles above 250 micron in size, it is necessary to protect valves further by specifying strainers fitted upstream of the valve inlet port. This is particularly important for valves that utilise fine control orifices and small clearances between components. In such instances consult Tucson Hydrocontrols for advice and specifications of strainers.

### APPLICATION OF PRODUCT

It is important to note that Tucson Hydrocontrols makes a variety of valves many of which fit into the same cavity. However, their functionality may differ considerably from one valve type to another. Accordingly fit interchangeability does not necessarily mean form or function interchangeability. Users should ensure that the appropriate valve is installed in the cavity by cross checking the part number stamped on the valve with that published in approved service literature or in the installation drawing.