QUICK REFERENCE TO TECH BRIEFS BY TEMPERATURE

The following information can be used as a quick reference to specific tech briefs. It should be used in conjunction with the individual tech briefs and the technical selection guide. Design pressures up to 5000 psi and/or temperatures up to +1000°F are covered in the Selection Guide for Standard Applications in the Technical Section of catalog.

HOT TEMPERATURES

Zero to +400°F

Virtually all models of RESEARCH CONTROL® Valve (RCV) can be used in this temperature range provided:

1. The pressure vs. temperature limit for the body-bonnet material is not exceeded.
2. The proper design is chosen for the pressure boundary.
3. The proper innervalve design and/or material are chosen.

Type 807/752 is normally used here.

⚠CAUTION Carbon steel is not recommended below +32°F or for hydrogen service.

+400°F to +700°F

This temperature range can normally be served with RCV Type 859. A Type 808 valve can also be used in this range if a bellows seal is required.
NOTE: See Tech Brief 808 for pressure vs. temperature limits.
A type 807/752 can also be used provided that:

1. A packing other than TFE is used.
2. The pressure vs. temperature limit is not exceeded.

+700°F to +1000°F

This temperature range is normally served with a version of extended bonnet (Type 884), extended body (Type CBX), or extended cooling fin valve (Type 973). Although both the Type 807/752 and Type 859 can be used in this range with graphite packing, the factory should be consulted.

+1000°F to +1500°F

The factory should be consulted on all applications in this range.

COLD TEMPERATURES

Zero to -100°F

Most valves made of stainless steel can be used in this temperature range provided the pressure limit of the valve is not exceeded.
Two limiting factors are:

1. TFE packing will normally provide good sealing down to -100°F.
2. Ice build-up in the yoke area. When using a standard valve in an application where the process creates temperatures within the valve that are colder than the ambient atmosphere, ice can build up around the body, bonnet and into the yoke area. If the ice formation reaches the stem connector area, the valve can be prevented from stroking. If the ice does not reach the yoke area, the unit should function properly. If concerned about icing, RCV Type 884 or Type CBX should be used.

Zero to -450°F

RCV Type 884 or Type CBX is normally recommended in this temperature range to isolate the packing and stem area from the cold temperature.

Referenced Documents

Document Description	Document Number	Title
Tech Brief 807/752	941570	Standard 1/4", 1/2", 3/4" and 1" Valve
Tech Brief 808	940933	1/4", 1/2", 3/4" and 1" Bellows Sealed Assy
Tech Brief 859	940898	1/4" and 1/2" Cooling Fin Assy
Tech Brief 884	940928	1/4", 1/2", 3/4" and 1" Extension Bonnet Assy
Tech Brief 973	941242	1/4" and 1/2" Extended Cooling Fin Assy
Model CBX	941125	1/2" and 1" Extended Body Cold Box Assy

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