

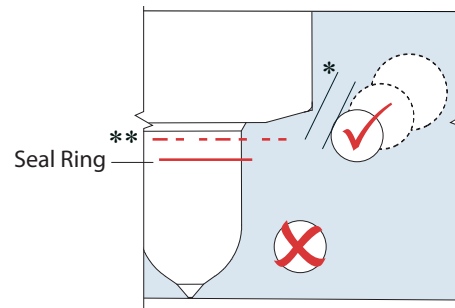
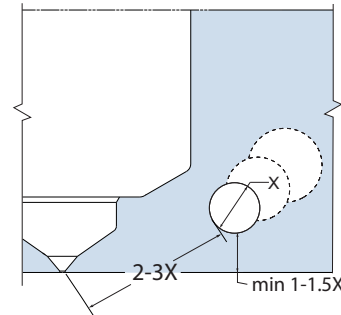
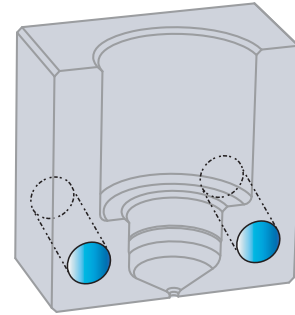
# Gate Cooling

## Benefits

- Consistent gate quality and vestige
- Improved control of material stringing, resin drool and gate blushing
- Faster cycle time

## Optimized Cooling

- Standard tips
  - Maximum distance between channel and gate detail = 2-3x channel dia.
  - Minimum distance between channel and critical surfaces = 1-1.5x channel dia.
  - Cooling should surround insert and be uniform across the tool
  - Flow rate = 1.8-2.2 gpm [6.8l/m-8.3l/m] to achieve turbulent flow ( $Re > 4000$ )
  - Cooling position based on heat sink location not proximity to gate detail
  - Insert material determined by projected cycles/cycle time goals
- Extended tips (HT-X, VG-X, VG-XX)
  - Should not have cooling in front of seal ring
- SideGate
  - Contact Husky



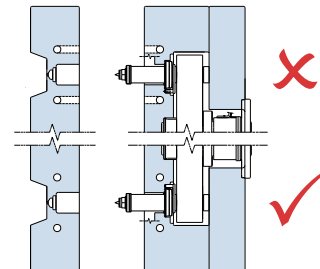
Extended Tip- Gate Detail

\* Minimum of 1-1.5X cooling diameter clearance to nozzle bore

\*\* Position the cooling centerline at the mid-point of the seal-ring locating diameter

## Independent Cooling Circuits

- Cavity / manifold plate cooling circuits should not be shared between plates
- Independent circuits prevent coolant leakage when plates are separated



## Gate Inserts

- Cools entire gate area circumference
- Insert cooling circuit provides improved gate temperature control
- Replaceable wear item

