Injection Mold Design Checklist

Tick off the following information

1. Part Information

- Customer ___________________________________________________________
- Date ___________________________________________________________________
- Part Name __________________________________________________________
- Drawing no. __________________________________________________________
- Part weight __________________________________________________________
- Part size ___________________________________________________________
- Wall thickness ______________________________________________________
- Fillets and radii _____________________________________________________
- Plastic material ______________________________________________________
- Shrinkage ____________________________________________________________
- Core surface finish requirement: polishing grade/texture___________________
- Cavity surface finish polishing grade/ texture _____________________________
- In mold labelling or decorating requirement ______________________________
- Engraving detail ______________________________________________________

To get help with your current Mold Design & to see a video example go to:

https://www.improve-your-injection-molding.com/mold-design-services.html
2. Basic Mold Design

- Gate location
- Gate size and type
- Runner type (hot/cold)
- Ejection method
- Ejector return method eg. springs
- Minimum mould opening requirement
- Parting line locations (also called split lines)
- Venting positions (primary & secondary to atmosphere)
- Basic cooling design concept
- Interlocking method between fixed and moving sides of mould
- Heat treating requirements such as nitriding on moving mould components
3. Annual Production Quantity

☐ Annual production quantity
☐ Estimated cycle time
☐ Number of mould cavities
☐ Mould material for core and cavity inserts
☐ Hardness for core and cavity inserts
☐ Mould material for mould bolster
☐ Hardness and coatings for mould bolster

4. Molding Machine Specifications

☐ Machine tonnage capacity
☐ Machine Brand
☐ Location ring diameter
☐ Nozzle spherical radius
☐ Orifice diameter
☐ Space between tie bars (both horizontally and vertically)
☐ Maximum opening stroke
☐ Minimum opening stroke
☐ Minimum die height
☐ Maximum die height
☐ Clamp hole size and position
☐ Maximum KO bar ejector stroke
☐ KO bar positions and diameter
☐ Core puller option
☐ Platen length and width
☐ Number of available cooling circuits on machine
☐ Number of available air lines on machine
☐ Robot take out or free fall requirement
☐ Mould clamping technique - direct bolting or clamps
5. Additional items to include in mold design:

- Electrical connector brand (DME, Husky..)
- Number of hot runner electrical zones
- Cavity layout (ie 2x2, 3x4)
- Pitching distance between cavities
- Pre-alignment - guide pin and bush diameter
- Plate thicknesses – especially back plates for mould rigidity
- Sufficient support pillars for mould rigidity
- Mould design for easy mould assembly
- Mould design for easy cleaning of vents in the moulding machine:
- Mould design for easy access to block gates
- Mould design for easy machine installation and removal
- Corrosion protection coatings such as electroless nickel plating on P20 bolster plates
- Limit sensors
- Grease nipples
- Lifting bar (used to lift mould into moulding machine)
- Retainers for gate inserts
- Correct fitting clearances specified on drawings of inserts

Additional Notes:
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