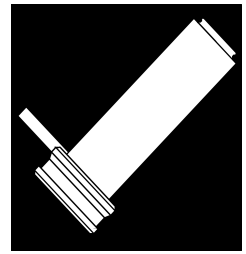


Precision LV Coil Heated Bushings



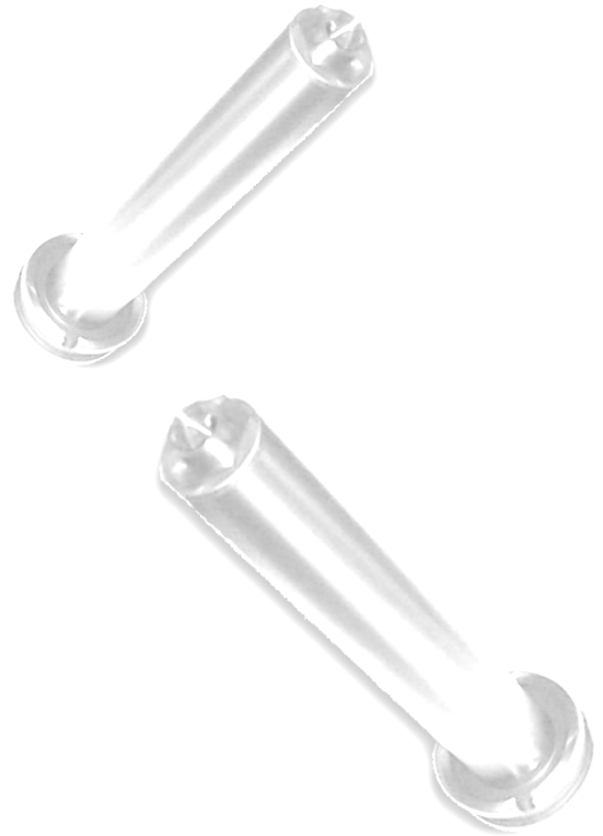
New Improved Design

Our new Precision LV Series of hot runner bushings follows on from the remarkable success of our Elite LV bushings.

The streamlined, self-purging flow channel design eliminates hang-ups and permits fast and easy colour changing. The moulding of temperature sensitive polymers is made simple by the distributed wattage heater element, which provides an even temperature profile along the bush length, with no additional heaters being required.

Features & Benefits

- Mould virtually all polymers.
- Shot capacity from 0.5 to 4,000 grams.
- Self-purging design.
- Excellent colour change.
- Replaceable heater and thermocouple.
- Fully field-serviceable.



■ Coil Heating

■ 4 Flow Diameters

■ 4 Tip Styles

■ 2 Head Styles

Hot Runner Systems By Fast Heat

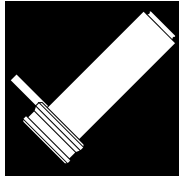
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fast  *heat*

Precision LV Series Technical Specifications

Introduction



Precision LV Series Hot Runner Bushings

The precision LV Series Hot Runner system is an exclusive small-to-large shot-size system with the ability to process engineering and glass-filled resins. Acceptable for crystalline and amorphous materials, this system utilises gate diameter, gate area cooling and temperature control at the tip to optimise the part quality.

The gate can be shrunk into a round depression (referred to as a 'recessed gate') so that the vestige does not protrude above the part surface. The Precision LV Series is available with four gating options to suit a broad range of applications.

LV187: Designed for close drop centres, yet with a shot capacity of up to 200 grams Ps, this bushing is ideal where space is restricted, and is available with a choice of 4 tip styles and 9 standard lengths.

LV250: With a shot capacity of up to 500 grams Ps, this bushing is available with a choice of 4 tip styles and 11 standard lengths, making it ideally suited for most small-to-medium applications.

LV375: Available with a choice of 16 lengths and 4 tip styles, the compact Precision LV375 has a large shot capacity of 2 Kg Ps, and is ideal for most medium-to-large moulding requirements.

LV625: Designed for moulding large shot volumes up to 4 Kg Ps, this bushing is available with a choice of 10 standard lengths and 4 tip styles, and is ideally suited to most large moulding applications.

Gating Options for the Precision LV Series



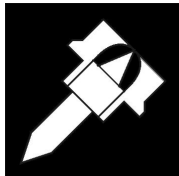
Sprue Tips -

These tips can process all types of resins, from commodity to engineering grades, while maintaining optimal performance with minimal vestige. Ideal for retrofitting into existing moulds that may have large sprues. Available in standard and wear resistant alloys, these tips are capable of processing up to 4000 grams of low viscosity resin (see enclosed engineering charts). The tips are also available in different diameters to suit application requirements.



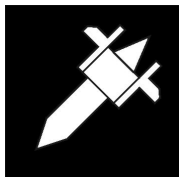
Extra Stock Sprue Tips -

Identical to the Sprue tip, except with extra stock steel at the tip, which can be machined to meet customer specific requirements. Ideal for difficult access areas in the part, or for secondary runner applications. Available in standard and wear resistant alloys, these tips are capable of processing up to 4000 grams of low viscosity resin (see enclosed engineering charts). The Extra Stock tips are also available in different diameters to suit specific application requirements.



Ring Gate Tips -

The Ring Gate tips can process all types of commodity and engineering grade resins, while maintaining optimal performance with a ring shaped minimal vestige on the part. Ideal for retrofitting into existing moulds that may have larger gates, the tips are available in standard and wear resistant alloys. These tips are capable of processing up to 4000 grams of low viscosity resin (see enclosed engineering charts). The tips are also available in three different tip flats to suit specific application requirements, and they are recommended for gating directly on to the parts.



Collar Gate Tips -

The Collar Gate tips replace the standard Ring Gate style in applications where no witness ring on the part is acceptable. These tips are capable of processing up to 4000 grams of low viscosity resin (see enclosed engineering charts). The Collar Gate tips are available in standard and wear resistant alloys, as well as three different tip flats to suit specific application requirements. They are recommended for gating directly on to the parts.

Head Options for the Precision LV Series

These bushes can be supplied with any radius to mate with your machine nozzle. Please specify the radius required when ordering. The bush head will be supplied flat if no radius is specified.

Please note that in order to maintain design compatibility with US equivalent bushings, imperial measurements have been used for the Precision LV250, LV375 & LV625. Metric units have been used on the Precision LV187.

Precision LV Series Technical Specifications

By Polymer

| Gate Styles SS = Short Sprue XS = Extra Stock RG = Ring Gate CG = Collar Gate | | Precision LV | | | |
|---|---|--------------|----|----|----|
| | | SS | XS | RG | CG |
| ABS | a | 3 | 3 | 3 | 3 |
| ABS - FR | a | 3 | 3 | 1 | 1 |
| ABS / Pa 6 | c | 3 | 3 | 2 | 2 |
| Acetal - C | c | 3 | 3 | 2 | 2 |
| Acetal - H | c | 3 | 3 | 2 | 1 |
| Acrylic | a | 3 | 3 | 3 | 3 |
| CAB | a | 3 | 3 | 2 | 2 |
| CAP | a | 3 | 3 | 3 | 2 |
| EVA | a | 3 | 3 | 3 | 3 |
| LCP | c | 3 | 3 | 2 | 1 |
| Pa 6 | c | 3 | 3 | 3 | 2 |
| Pa 66 | c | 2 | 2 | 2 | 1 |
| Pa 11 & 12 | c | 2 | 2 | 2 | 1 |
| PBA | c | 3 | 3 | 3 | 3 |
| PBT | c | 3 | 3 | 3 | 2 |
| Pc | a | 3 | 3 | 2 | 2 |
| Pc / ABS | a | 3 | 3 | 2 | 2 |
| Pc / PBT | c | 2 | 3 | 2 | 1 |
| PEEK | c | 1 | 2 | 1 | 0 |
| PEI | a | 2 | 3 | 1 | 0 |
| PES | a | 2 | 3 | 2 | 1 |
| PET | c | 3 | 3 | 3 | 2 |
| Pe - LD | s | 3 | 3 | 3 | 3 |
| Pe - HD | s | 3 | 3 | 3 | 3 |
| Pp | s | 3 | 3 | 3 | 3 |
| Ps | a | 3 | 3 | 3 | 3 |
| PPE | a | 3 | 3 | 3 | 3 |
| PPE / Nylon | c | 2 | 3 | 0 | 0 |
| PPS | c | 2 | 3 | 1 | 0 |
| PSU | a | 3 | 3 | 2 | 1 |
| PVC-p | a | 3 | 3 | 3 | 3 |
| PVC-u | a | 2 | 3 | 1 | 1 |
| SAN | a | 3 | 3 | 3 | 3 |
| SB | a | 3 | 3 | 3 | 3 |
| TPE Elastomer | c | 3 | 3 | 2 | 2 |
| TPR Rubber | a | 3 | 3 | 3 | 3 |
| TPU Urethane | a | 3 | 3 | 3 | 3 |

Key

3 = Excellent 2 = Good 1 = Application Dependant 0 = Not Recommended * = Add Reduction Ring
a = Amorphous c = Crystalline s = Semi Crystalline

Gate Temperature Control

Run gate HOT for CRYSTALLINE polymers (c), Run gate COOL for AMORPHOUS (a) & SEMI-CRYSTALLINE (s) polymers.

Bush & Gate Style Selection Guide

By Shot Weight

| Bush Type | LV187 | LV250 | LV375 | LV625 |
|-----------|-------|-------|-------|-------|
|-----------|-------|-------|-------|-------|

| Sprue Gate | Gating on runners | | | |
|--------------------|-------------------|-----|------|------|
| Pp, Ps | 200 | 500 | 2000 | 4000 |
| LDPe, PVC-p, SAN | 150 | 400 | 1500 | 3000 |
| ABS, HDPe, Pa | 100 | 300 | 1000 | 2000 |
| PET, POM | 50 | 150 | 750 | 1500 |
| PBT, Pc, PMMA, PPO | 30 | 100 | 500 | 1000 |

| Ring Gate | Gating on parts with Witness Ring | | | |
|--------------------|-----------------------------------|-----|------|------|
| Pp, Ps | 150 | 500 | 2000 | 4000 |
| LDPe, PVC-p, SAN | 100 | 400 | 1500 | 3000 |
| ABS, HDPe, Pa | 50 | 300 | 1000 | 2000 |
| PET, POM | 25 | 150 | 750 | 1500 |
| PBT, Pc, PMMA, PPO | 15 | 100 | 500 | 1000 |

| Collar Gate | Gating on parts without Witness Ring | | | |
|--------------------|--------------------------------------|-----|------|------|
| Pp, Ps | 150 | 500 | 2000 | 4000 |
| LDPe, PVC-p, SAN | 100 | 400 | 1500 | 3000 |
| ABS, HDPe, Pa | 50 | 300 | 1000 | 2000 |
| PET, POM | 25 | 150 | 750 | 1500 |
| PBT, Pc, PMMA, PPO | 15 | 100 | 500 | 1000 |

Note: Maximum shot weights may be reduced, depending on polymer grade & component dimensions.

Precision LV Series Technical Specifications

Operating & Assembly Instructions

Operating & Servicing Instructions

The Precision LV body designs are identical, but vary in diameter and length.

They feature a replaceable coil heater with integral type 'J' thermocouple.



Startup / Operating Instructions

Whenever possible, use a temperature controller that automatically senses and safely bakes out wet heaters .e.g. Fast Heat Conductor series.

If your temperature controller does not utilise 'wet start' technology, set the controller to 90°C in automatic or 10% in manual.

Bring the machine nozzle into contact with the bush and allow the bush to 'soak' for at least 20 minutes before increasing to the processing temperature, in order to bake out any residual moisture and prolong heater life.

Tip Removal / Installation

Removal

Fit the bush firmly in a vice, using the head flats provided.

Use a suitable socket on the tip and turn anti-clockwise to loosen.

It may be necessary to soften the resin first by heating the bush.

Installation

1. Clamp the bush firmly in a vice, using the head flats provided.

2. Apply anti-seize sparingly on to male threads of tip.

3. Note—excess anti-seize may contaminate the resin being processed.

4. Use a suitable socket on the tip and torque to the settings specified below.

LV187 = 34Nm, LV250 = 41Nm, LV375 = 48Nm. LV625 = 54Nm

Component Disassembly / Assembly

Disassembly

1. Remove heater retaining circlip (not on LV187)

2. Slide heater clamps off bush—if necessary, 'spring' open with circlip pliers or similar.

3. Remove heater by placing hand around coil and carefully turning anti-clockwise, while applying pressure where the leads meet the bush.

Assembly

1. Slide heater on to bush by placing hand around coil and carefully turning anti-clockwise, while applying pressure where the leads meet the bush.

2. Once correctly positioned, tighten the heater to the bush by turning it clockwise.

3. Slide heater clamps into place—if necessary, 'spring' open with circlip pliers or similar.

4. Refit heater retaining clip (not on LV187).

Power Requirements

- 240 Volts AC—15 Amp fuse.
- Grounding—Fast Heat bushes utilise the direct contact of the bush, mould plates and machine platens to establish a path for grounding.

Warning

There must be a ground present between the mould 'Hot Half' and the temperature control system or damage may occur to the heater, thermocouple and / or temperature control system.

1.4