

GripHeat 3D Print Specification Sheet

Power. Warmth. Grip. Reinvented.

1. Part Overview

- Part Name: GripHeat Sleeve Shell
- Components: 2 halves (front + back) + optional end cap
- Purpose: Functional prototype to test fit, ergonomics, and grip feel
- Design Intent: Rubberized flexible outer surface, smooth matte finish

2. Recommended Materials

Material: TPU (Thermoplastic Polyurethane)

Flexibility: Medium–High

Finish: Slightly textured

Notes: Durable, flexible, rubber-like filament suitable for handle grips. Ideal for functional prototypes with balanced flexibility and strength.

Material: TPE (Thermoplastic Elastomer)

Flexibility: High

Finish: Smooth

Notes: Softer and stretchier with a more rubber-like or silicone feel. Closest match to final production feel.

Material: NinjaFlex TPU (Premium)

Flexibility: High

Finish: Slightly matte

Notes: Premium-grade TPU with high elasticity and excellent layer adhesion. Produces a near-production tactile quality.

Color: Matte Black (Body) Lime Green (Button + Base Cap)

3. Print Settings (FDM Printer Recommended)

Layer Height: 0.2 mm — smooth yet efficient print resolution for accurate curvature and comfort grip.

Wall Thickness: 1.6 mm (4 perimeters) — provides structural strength while keeping flexibility.

Infill: 30–40% — balanced flexibility and durability.

Print Speed: 25–35 mm/s — reduces warping and maintains print precision for TPU/TPE.

Bed Temperature: 50–60°C — improves bed adhesion without warping.

Extruder Temperature: 220–240°C — ensures consistent flow with flexible materials.

Supports: Touching build plate only — supports button cavity and undercuts.

Cooling: Moderate — prevents stringing and improves overall finish quality.

4. Assembly Notes

- Print two mirrored halves; secure with 4 small M3 screws or heat-inserted brass inserts.
- Internal space should accommodate heating pad, wire channel, and button slot.
- Optional end cap can be printed separately in softer TPU for grip or branding.
- After printing, lightly sand and apply rubberized spray (Plasti Dip) for a matte finish.

5. Prototype Goals

- Test ergonomics and handle contour.
- Validate internal fit for electronics and wiring.
- Evaluate surface texture and flexibility.
- Confirm button alignment and assembly method.

6. Expected Cost

Option	Cost Range (CAD)	Turnaround Time
Local 3D Printing Shop	\$40–\$80	3–5 days
Online (Treatstock / JLC3DP)	\$25–\$50 + shipping	7–10 days