

Lee Pro 6000 – Precision + QC Safety Setup

Professional Die Configuration for Accurate and Safe 9mm Reloading

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Introduction

This document provides a professional, field-ready reference for configuring the **Lee Pro 6000** for 9mm reloading with a focus on **consistency**, **safety**, and **repeatability**. The layout mirrors our Mark 7 guide: clear sections, numbered steps, tables, and photo captions.

Scope of this Document

This document is not a complete installation and configuration guide for the Lee Six Pack Pro 6000 progressive press. The official Lee documentation already provides clear instructions for press assembly, case feeding, and priming. To avoid duplication, these aspects are considered out of scope.

Instead, this guide focuses on the die stations that are most critical for **precision and quality control**:

- **Station 1** – Sizing & Decapping Die (Mighty Armory)
- **Station 2** – Powder Drop (Lee Auto-Drum with Powder-Through Expander)
- **Station 5** – Bullet Seating Die (Lyman Pro Micrometer Seating)
- **Station 6** – Taper Crimp Die (Lyman Pro Micrometer Taper Crimp)

These four stations directly determine whether cartridges are safe, consistent, and within SAAMI specification:

- Station 1 ensures proper resizing and primer removal.
- Station 2 regulates the **powder charge**, which must precisely match bullet weight and chosen OAL.
- Station 5 sets the **overall length (OAL)** for reliable feeding and chambering.
- Station 6 applies a consistent **taper crimp**, preventing bullet setback and ensuring safe cycling.

Each is presented with both a general overview and a detailed step-by-step setup section.

Selection Rationale

Rationale

The Lee Six Pack Pro 6000 was not chosen due to budget considerations. If budget were the primary factor, the use of premium dies such as the Mighty Armory and Lyman Pro series would not be logical. Instead, the press was selected for its high efficiency in workspace and process flow, combined with straightforward operation and minimal complexity.

Press Overview

Although the press has six stations, combined operations effectively provide the functionality of a 9-station press.

Key Innovations

- **Smart Lock Quick-Change Bushings** with internal O-ring retention (no lock rings required).
- **Inline case feed** system for smooth automation.
- **Deluxe Autodrum** powder measure on the powder-through expander.



Figure 1: Lee Pro 6000 with Deluxe Autodrum.

Unique Features

Unique Features

- **Smart Lock Bushings** – retain die settings via an internal O-ring; *no lock rings* needed.
- **Lyman Pro Micrometer Seating & Taper Crimp Dies** (Stations 5 & 6) – precise, repeatable **OAL** and **taper crimp** control.
- **Combined Stability** – bushing retention + micrometers = fast swaps, stable settings, consistent output over long sessions.

Station Setup

Station 1 – Resizing & Decapping

Station 1

Mighty Armory Full-Length Carbide Sizing and Decapping Die.

Setup Instructions:

1. Insert the die using a Smart Lock Bushing.
2. Thread the die into the press tool head until the die mouth contacts the shellplate (or shell holder).
3. Back the die out approximately $\frac{1}{4}$ turn to prevent excessive contact pressure.
4. Tighten the lock ring to secure the die in place.
5. Verify the decapping pin protrudes just enough to push out primers without striking the case web.

Function: Restores 9 mm brass to SAAMI spec by resizing the case body and neck in one stroke. Carbide insert eliminates lube for pistol brass; integrated decapping pin ensures reliable primer removal and avoids downstream jams.

Rationale

Rigid initial sizing prepares brass for precise downstream operations.



Figure 2: Station 1 – Resizing & Decapping.

Station 2 – Expanding & Powder Drop

Station 2

Lee Powder-Through Expander Die with Deluxe Autodrum. Expands case mouth and drops powder in a single step.

Rationale

Combining **case flare** and **powder drop** enables full automation and consistent metering.



Figure 3: Station 2 – Powder drop and expansion.

Station 3 – Powder Check

Station 3

DAA Magnetic Powder Check v2.0. Mechanical indicator flags missing or double charges on every cycle.

Rationale

Prevents squibs and overcharges without electronics.



Figure 4: Station 3 – Magnetic powder check.

Station 4 – Bullet Feed

Station 4

Lee Inline Bullet Drop Die with tube system. Positions bullets reliably for precision seating in the next station.

Rationale

Separating feed and seating helps avoid **OAL variation** and speeds bullet profile changes.



Figure 5: Station 4 – Inline bullet feed.

Station 5 – Bullet Seating

Special Station: 5

Lyman Pro Micrometer Bullet Seating Die. Seats bullets to precise **OAL** with micrometer repeatability.

Rationale

Independent **seating** improves consistency and reduces bullet deformation.



Figure 6: Station 5 – Bullet seating die.

Station 6 – Taper Crimp

Special Station: 6

Lyman Pro Micrometer Taper Crimp Die. Applies a controlled, repeatable **taper crimp** for reliable chambering.

Rationale

Prevents bullet setback, promotes smooth feeding, and keeps **OAL** stable.



Figure 7: Station 6 – Taper crimp die.

Safety & Quality Control

Rationale

Every 50 rounds, verify:

- **OAL** target: 27.8 mm (± 0.2 mm).
- Case mouth diameter after **taper crimp**: 9.55–9.62 mm.
- Visual inspection: no bulges, proper **seating** depth, consistent **case flare**.



Figure 8: Caliper measurement for OAL verification.



Figure 9: Caliper measurement for case mouth diameter verification.

Warnings & Compatibility Notes

Warning

- The standard silver **Smart Lock Bushing** may not seat perfectly with certain non-Lee dies (e.g., Mighty Armory or Lyman Pro). Do **not force** dies into the bushings—this may damage threads or bushings.
- Better results were achieved with the **colored Smart Lock Bushings** compared to the standard aluminum-colored variant.
- The **Inline Bullet Drop Die** uses internal steel balls to adapt to bullet head size (small vs. large). Be aware of this mechanism when switching bullet profiles.
- Many parts are plastic—forcing components can break them. Always review the supplied documentation before making adjustments.
- YouTube tutorials vary widely in quality. Use them as supplemental reference only, and verify with official manuals where possible.

Tips & Best Practices

- Record micrometer values for **seating** and **taper crimp** once dialed in.
- Keep the Autodrum clean; verify drops with a scale, especially with fast powders.
- Inspect Smart Lock Bushings periodically to ensure dies return to exact height.

Detailed Instructions

This section provides step-by-step installation and fine-tuning procedures for stations 2, 5 and 6. Follow these instructions when first setting up the press or when changing dies/components.

Station 2 – Powder Drop

Special Station: Station 2

Lee Auto-Drum Powder Measure (with Expander)

Rationale

The powder charge is directly tied to the chosen **OAL**, bullet weight, and powder type. For this setup we use **Vihtavuori N320** with **145 gr bullets** at an OAL of **27.8 mm**. Correct and consistent powder drops are essential for both **safety** and **reliable cycling**.

Two concerns often mentioned with the Auto-Drum are **powder spillage** and **inconsistent drops**. These do not always occur, and the wise approach is to **first test the measure in its stock configuration**. Only if issues appear should you apply small refinements such as an O-ring on the micrometer insert, or a light polish of the plastic drum that experienced reloaders use to make the system even more stable. This way you avoid fixing what isn't broken while still knowing the remedies should they be needed.

Installation Steps

1. Mount the **Auto-Drum** on the powder-through expanding die at Station 2. A powder measure riser can be used if clearance is tight.
2. Use the **small drum** (handgun); the large drum is too coarse for 3 gr charges.
3. Fill the hopper with N320 and keep the level at least half full during use for steadier metering.

Adjustment Procedure

1. Rotate the 10-sided metering screw until the chamber is roughly flush with the drum.
2. Cycle the press 10–15 times with empty cases to settle the powder in the measure.
3. Throw 5 charges into a scale pan, weigh, and divide by 5 to find the average.
4. Adjust clockwise to reduce charge, counter-clockwise to increase.

Fine-Tuning with N320

1. Target charge range: **2.8–3.3 gr**.
2. Each flat on the adjustment screw \approx **0.1 gr** with N320.
3. Start at **2.8 gr** as a safe baseline, then increase gradually while verifying each change on the scale.

Verification and Consistency

- Throw and weigh at least 10 single charges; variation should be within ± 0.05 gr.
- Keep your press stroke steady and consistent, rhythm directly affects powder drops.
- If no problems appear, leave the measure as-is. If you do encounter issues, proven small fixes are:
 - **O-ring on the micrometer drum insert:** place a R12 O-ring on the threaded stem of the insert so it sits compressed between the flat face of the insert and the housing. This adds friction and prevents the adjustment from drifting under vibration.
 - **Light polish of the plastic drum:** smooths rotation and helps the drum return fully, reducing the chance of spillage.
 - **Wiper tension:** the side screw should be snug enough to seal but not so tight that it binds the drum.
 - **Anti-static wipe:** in very dry conditions, a quick pass with a dryer sheet over the hopper can help powder flow consistently.

Warning

Always begin at the lowest tested charge (**2.8 gr**) and work upward. Confirm Minor PF (≈ 125) with a chronograph for your barrel length. **Never exceed 3.3 gr without pressure-tested data.**

Station 5 – Bullet Seating

Special Station: Station 5

Lyman Pro Micrometer Bullet Seating Die

Rationale

The bullet seating die sets the **overall length (OAL)** of the cartridge. Using the Lyman Pro Micrometer design ensures precise, repeatable adjustments. Our target OAL is **27.8 mm** (± 0.2 mm), which balances reliable feeding with safe chambering.

Installation Steps

1. Install the die into a Smart Lock Bushing and insert it into Station 5.
2. Raise the press ram with a prepared case and bullet.
3. Screw the die body down until you feel contact with the case mouth.
4. Lock the die body using the bushing.

Fine-Tuning OAL

1. Back the micrometer adjustment screw out several turns.
2. Place a bullet on a case and run it fully into the die.
3. Gradually turn the micrometer inward until the measured OAL is close to **27.8 mm**.
4. Use a caliper to measure OAL. Adjust in increments of ≈ 0.01 mm using the micrometer scale.
5. Repeat until the average OAL stabilises at **27.8 mm**.

Best Practice

- Record the micrometer reference value for future setups.
- Re-check OAL every 10–20 rounds during production.
- Avoid excessive seating force to reduce bullet deformation.

Warning

Do not overtighten the die against the case mouth. Excess pressure can deform the bullet, collapse the case wall, or cause variations in OAL.

Station 6 – Taper Crimp

Special Station: Station 6

Lyman Pro Micrometer Taper Crimp Die

Rationale

The taper crimp die applies a controlled crimp at the case mouth. This prevents bullet set-back during feeding and keeps the **OAL** stable. A proper taper crimp improves chambering reliability without excessively stressing the brass.

Installation Steps

1. Install the die into a Smart Lock Bushing and insert it into Station 6.
2. Raise the press ram with a prepared, seated round.
3. Screw the die body down until it touches the case mouth.
4. Lock the die body using the bushing.

Fine-Tuning the Crimp

1. Back the micrometer adjustment screw out several turns.
2. Run a seated round into the die fully.
3. Gradually turn the micrometer inward until you feel light resistance.
4. Use a caliper to measure the case mouth diameter. Typical target: **9.55–9.60 mm** for 9mm Luger.
5. Repeat adjustments until the case mouth holds the bullet firmly without deforming the brass.

Best Practice

- Record the micrometer reference value for repeat setups.
- Inspect every 10–20 rounds to confirm consistent crimp depth.
- Avoid over-crimping, which can bulge the case or damage the bullet jacket.

Warning

A taper crimp should **secure the bullet**, not resize it. Excessive crimping may cause feeding issues, pressure spikes, or premature case wear.

Progressive Press Comparison

Overview

This comparison highlights key technical specifications and practical considerations for three popular progressive presses. The focus is on their use for high-volume reloading with separate stations for resizing, bullet feeding (drop), bullet seating, and taper crimping. Swaging is included where relevant but is not a practical advantage when using normal commercial brass.

Feature	Lee Pro 6000	Dillon RL1100
Stations	6	8
Case Feeding	Included (with Six Pack Pro Kit)	Variable-speed case feeder (included)
Bullet Feeding	Optional (Lee Inline Bullet Feeder)	Optional (Mr. Bulletfeeder or equivalent)
Priming System	Tray-based, ~100 primers	Tube-based, ~100 primers
Swaging	Not available	Built-in (uses one station)
Resizing / Drop / Seating / Crimp	All separate	All separate
Output (rds/hr)	~600–800 (with Lee bullet feeder)	~800–1,000 (with bullet feeder)

Table 1: Lee Pro 6000 vs Dillon RL1100

Lee Pro 6000 vs Dillon RL1100

Note on RL1100 extra stations

Although the RL1100 has two more stations than the Lee Pro 6000, one of those is dedicated to swaging. For normal commercial brass (where swaging is unnecessary), this leaves effectively **one** additional station. Since the Lee setup already accommodates a powder check, this single spare position does not provide a clear Quality Control advantage.

Lee Pro 6000 vs Mark 7 Apex 10

Feature	Lee Pro 6000	Mark 7 Apex 10
Stations	6	10
Case Feeding	Included (with Six Pack Pro Kit)	All-metal 11" high-speed case feeder (included)
Bullet Feeding	Optional (Lee Inline Bullet Feeder)	Optional (Mr. Bulletfeeder or equivalent)
Priming System	Tray-based, ~100 primers	Tube-based, ~100 primers
Swaging	Not available	Built-in
Resizing / Drop / Seating / Crimp	All separate	All separate
Output (rds/hr)	~600–800 (with Lee bullet feeder)	~1,000–1,200 (with bullet feeder)

Table 2: Lee Pro 6000 vs Mark 7 Apex 10

Note on Apex 10 extra stations

The Apex 10 provides four additional stations compared to the Lee. In practice, these are largely consumed by separating functions that are combined on the Lee (e.g. powder-through expanding plus inline primer feed vs. separate stations for priming, expander and powder drop). This design gives flexibility, however this flexibility has no benefits when loading for handguns. Thus, despite its 10-station design, the Apex 10 does not inherently offer extra QC positions beyond the Lee.

Note on Lee Pro 6000 construction

The Lee Pro 6000 makes use of several plastic components in its design, a likely choice to keep overall cost low. While in theory this may result in faster wear compared to all-metal presses, the availability and low price of replacement parts means that this is not a major practical concern for most reloaders.

Conclusion

Conclusion

Configured as outlined, the Lee Pro 6000 delivers a precise, repeatable, and safe workflow. Smart Lock bushings and micrometer dies ensure stable results without constant re-adjustment, while QC steps such as the powder check, OAL verification, and taper crimp maintain consistency.

The setup is reinforced by best practices and troubleshooting guidance, helping reloaders sustain accuracy and reliability over long sessions. In comparison with presses like the Dillon RL1100 and Mark 7 Apex 10, the Pro 6000 demonstrates that a six-station design can match their essential QC functions, making it a solid choice for professional-grade reloading.