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# Lee Pro 6000: Precision & QC Safety Setup

Professional Die Configuration for Accurate and Safe 9mm Reloading

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# Revision History

| REV. | DATE | CHANGES |
|---|---|---|
| 1.0 | June 2026 | Initial release. |
| 1.1 | June 2026 | Added table of contents and section numbering; resolved cross-references; consistency and editorial fixes (crimp band labelling, terminology, references). |
| 1.2 | July 2026 | Technical corrections to the case-feed comparison (escapement scope, slider swap); hopper check rewritten as visual port verification; field notes added for Station 1 die choice and the primer station, including the 2025 case-sensor revision; recurring stray-primer jams root-caused to case retainer position and documented as a new setup gotcha (§9.5); powder-verification criterion aligned with measured data; load data disclaimer and contact address added; photo and table presentation improvements. |

# Executive Summary

This document is a precision and quality-control reference for the Lee Pro 6000 (Six Pack Pro) progressive press configured for 9mm Luger reloading with premium dies (Mighty Armory sizing, Lyman Pro micrometer seating and crimp). It documents the die configuration, critical setpoints, observed performance data, and operational nuances needed to produce safe, repeatable cartridges in volume.

Critical setpoints:

| PARAMETER | TARGET | TOLERANCE |
|---|---|---|
| Overall length (OAL) | 27.8 mm | ± **0.2 mm** |
| Case mouth diameter (crimp) | 9.585 mm | ± **0.035 mm** |
| Powder charge (N320) | 3.14 gr | $\sigma \approx$ **0.036 gr** |

Verification schedule:

| CHECK | FREQUENCY |
|---|---|
| OAL + case mouth measurement (calipers) | Every 50 rounds |
| Powder charge verification (scale) | Session start + 1-in-20 spot check |
| Primer magazine visual top-up | Every 80–90 rounds |
| Powder-check station (DAA Magnetic v2.0) | Every cycle (automatic) |

Critical failure modes monitored: squib charges, double charges, bullet setback, off-axis seating, crooked case indexing, primer feed faults, shellplate bolt drift.

**⚠ Setup-Critical: Case Retainer Position**

The most disruptive fault encountered during this build was primers regularly falling between the primer punch and the shellplate and jamming the press. It was initially misread as a design defect of the priming station; the actual root cause was a case retainer arm positioned too far from the shellplate, which let cases index slightly off-center at the priming station (see §9.5). With the retainer repositioned the fault has not recurred. The lesson is recorded here because the misdiagnosis was expensive: check the retainer position before blaming the priming mechanism.

Headline performance result: twenty consecutive Auto-Drum powder drops show an extreme spread of 0.12 gr and a sample standard deviation of approximately 0.036 gr (~1.1% of mean), within the consistency range typically advertised by dedicated stand-alone bench-mounted measures. Detailed data in §7 (Observed Performance).

# About this Document

This guide is a personal, hands-on reference written by an owner of the Lee Six Pack Pro 6000, not vendor documentation. It reflects the choices, measurements, and lessons learned while configuring and operating this specific press for 9mm reloading, with a focus on precision and quality control. Where it differs from the official Lee manual, the manual remains the authoritative source for assembly and basic operation; this document is intended to complement it by addressing the setup details and field nuances that most affect repeatability and safety.

Corrections, additions, and alternative approaches from other reloaders are welcome. If you spot an error, have a better procedure for one of the stations, or want to share data from your own setup, please get in touch at lj@bbmail.me so future readers benefit from the collective experience of the community.

**⚠ Load Data Disclaimer**

This document contains powder charge weights, cartridge dimensions, and setup values. They reflect one specific combination of press, dies, components, and firearm, and were verified as safe only in that combination. They are provided as a record of the author's setup, not as load data for anyone else's use. Always start from the published minimum in a current, pressure-tested load manual (such as the Vihtavuori Reloading Guide) and work up while checking for pressure signs in your own firearm. Reloading ammunition is inherently dangerous; the author accepts no responsibility or liability for any use of the information in this document. If any value here conflicts with published load data or the equipment manufacturer's instructions, the published data and the manufacturer's instructions prevail.

# 1 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 my earlier 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.

# 2 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.

# 3 Press Overview

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

## Station Layout at a Glance

The full station layout on this build, with each station's operation, is shown below. Station 2 carries three operations within a single handle cycle on the Pro 6000: the powder-through expander flares the case mouth and drops powder from above as the ram rises, and the primer is seated from below by the primer punch on the return. This is part of what allows six physical stations to deliver the functionality of a nine-station press.

| STATION | OPERATION |
|---|---|
| 1 | Sizing and decapping (Mighty Armory) |
| 2 | Primer seating, powder drop, and case flare (Lee Auto-Drum with powder-through expander) |
| 3 | Powder check (DAA Magnetic Powder Check v2.0) |
| 4 | Bullet drop (Lee Inline Bullet Feeder Kit) |
| 5 | Bullet seating (Lyman Pro Micrometer Seating) |
| 6 | Taper crimp (Lyman Pro Micrometer Taper Crimp) |

Stations 1, 2, 5, and 6 are documented in detail below as the precision-critical stations. Stations 3 and 4 are covered briefly in the Station Setup section and referenced from the Easy-to-Miss Setup Gotchas and Troubleshooting sections where their tuning matters.

# Workflow Diagram

The figure below shows the six-station progressive cycle. A fresh case is delivered from the case-feed magazine to Station 1, then indexes through Stations 2–6 on successive ram strokes. A finished cartridge ejects after Station 6. Operations performed at each station are labelled inside the box; arrows show the indexing direction.

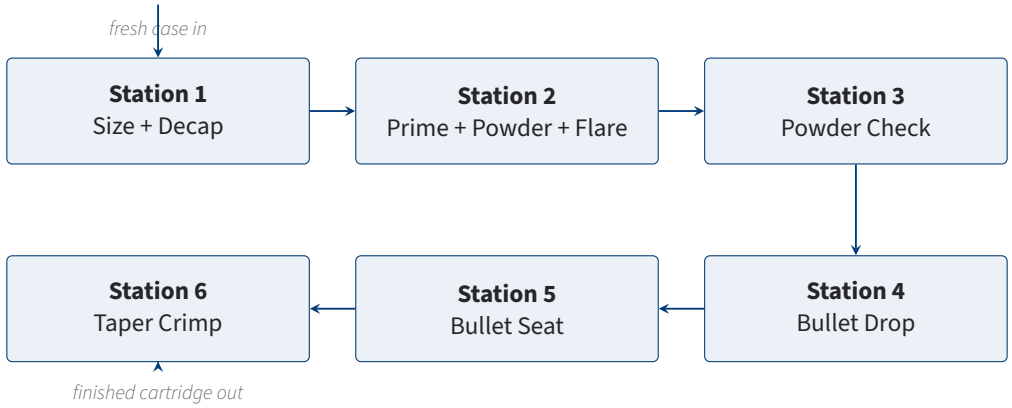


**Figure 1.** Six-station progressive workflow on the Lee Pro 6000.

# Key Innovations

- Smart Lock Quick-Change Bushings with internal O-ring retention (no lock rings required).
- Inline case feed system for smooth automation, explained in detail below.
- Deluxe Auto-Drum powder measure on the powder-through expander.

# The Case-Feed Mechanism: A Particularly Economical Design Choice

The inline case feed deserves more than a single bullet because of how compactly it solves what is typically a multi-part problem. Six physical stations would normally accommodate eight or nine distinct loading operations, but a typical progressive layout also needs a dedicated position for case feeding, where a fresh case is presented to the shellplate before Station 1's sizing die can act on it. The Pro 6000 dispenses with this position entirely by integrating case feeding into the indexing motion itself.

The mechanism is a five-tube Universal Case Feed Magazine that holds cases vertically over a small spring-loaded gate. The gate releases a single case at the exact moment the spring-activated case slider on the press is in position to receive it. The slider then transports that case to the shellplate at the Station 1 position as part of the index cycle. The whole sequence is timed mechanically, requires no operator intervention, and uses no toolhead position.

What makes this design notable is the combination of three benefits in one small mechanism. First, it gives the press the functional equivalent of a seventh station for free, which is why a six-station press can deliver nine-operation throughput. Second, the spring-loaded gate eliminates the case-tipping failure mode that plagues most other progressive case feeders, where cases drop sideways or escape the shuttle and stall the cycle. Third, the design requires no tuning across case lengths: changing cartridges is a deterministic parts swap (the matching feed tube, plus the corresponding case slider for larger cases) rather than an adjustment that must be dialed in. A single small spring performs the case-metering job that competing presses handle with more elaborate escapement hardware at the foot of their drop tubes: sliding cams, pivoting arms, and spring-loaded shuttles. Powered case feeders do additionally automate case orientation, which the tube magazine leaves to the operator at filling time, a fair trade against their cost, bulk, and caliber-specific collator plates. This is the design choice that most directly accounts for the press performing at a level often associated with higher-priced equipment.

**Figure 2.** Lee Pro 6000 with Deluxe Auto-Drum.

# 4 Build-Specific Choices

**Unique Features**

- Lyman Pro Micrometer Seating & Taper Crimp Dies (Stations 5 & 6) – precise, repeatable OAL and taper crimp control.
- Combined stability – Lee's Smart Lock Bushing retention paired with Lyman's micrometer adjustments yields fast die swaps, stable settings, and consistent output over long sessions.

# 5 Station Setup

## 5.1 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 toolhead until the die mouth contacts the shellplate (or shell holder).
3. Back the die out approximately ¼ 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 mouth 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.

**Field Note**

I initially chose the Mighty Armory sizing and decapping die for this press because on the Mark 7 it outperformed the Lyman Pro equivalent, consistently producing perfectly resized cases without a bulge at the base. Curiously, this advantage seems to have disappeared on the Lee Six Pack Pro 6000, even though the die's placement relative to the shellplate is the same. Why this is so is still under investigation.

**Figure 3.** Station 1 – Resizing & Decapping.

## 5.2 Station 2 – Expanding & Powder Drop

**Station 2**

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

*Before any powder goes in: look into the empty hopper and verify the port feeding the metering drum is completely open (see §9.2). Full installation and fine-tuning procedure: §11.1.*

**Rationale**

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

**Figure 4.** Station 2 – Powder drop and expansion.

## 5.3 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 5.** Station 3 – Magnetic powder check.

## 5.4 Station 4 – Bullet Feed

**Station 4**

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

*When changing bullet profile, verify the detent bearing position matches the new bullet shape (see §9.1).*

**Rationale**

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

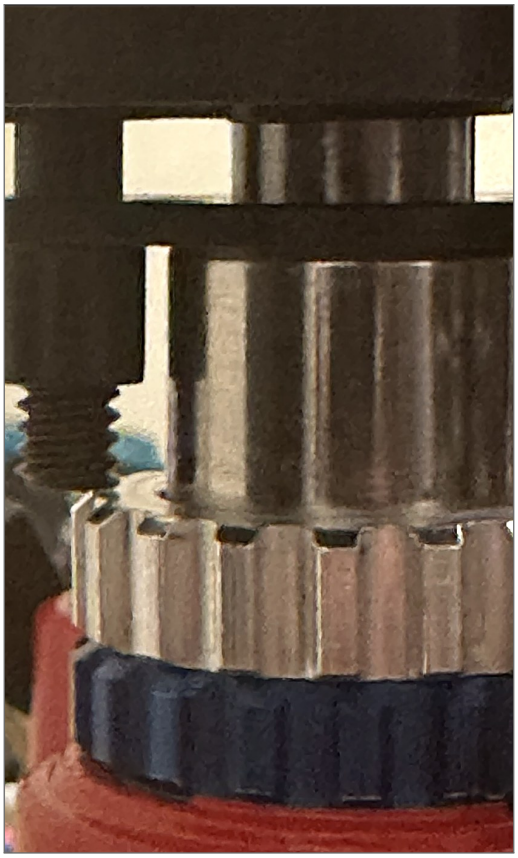

**Figure 6.** Station 4 – Inline bullet feed.

## 5.5 Station 5 – Bullet Seating

**Station 5**

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

*Full installation and fine-tuning procedure:* §11.2.

**Rationale**

Independent seating improves consistency and reduces bullet deformation.

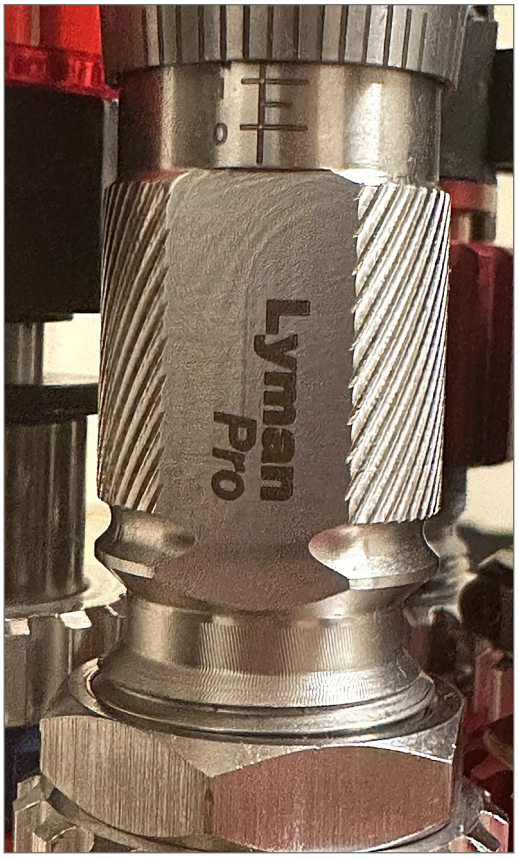


**Figure 7.** Station 5 – Bullet seating die.

## 5.6 Station 6 – Taper Crimp

**Station 6**

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

*Full installation and fine-tuning procedure:* §11.3.

**Rationale**

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

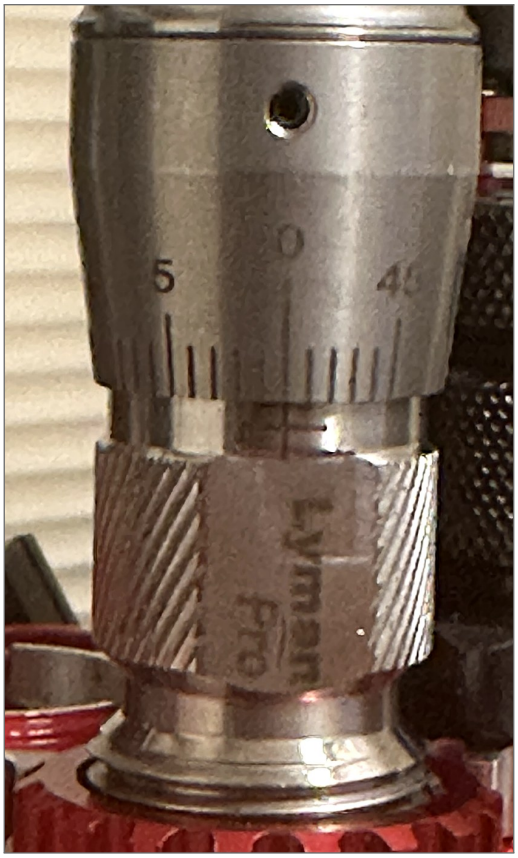


**Figure 8.** Station 6 – Taper crimp die.

# 6 Safety & Quality Control

The QC parameters below define the in-tolerance band for each measured characteristic and the verification cadence in normal production. Treat the table as the operator's reference card: any cartridge measured outside the tolerance column is a reject; any verification not performed at the stated frequency is a QC gap.

| PARAMETER | ACCEPTANCE CRITERION | METHOD | CADENCE |
|---|---|---|---|
| **OAL** | 27.8 mm ± 0.2 mm | Caliper | 50 rounds |
| Case mouth (after **taper crimp**) | 9.55–9.62 mm | Caliper | 50 rounds |
| Bulging / deformation | No visible bulges | Visual | 50 rounds |
| **Seating** depth | Even shoulder, no setback | Visual | 50 rounds |
| **Case flare** | Consistent slight bell, no over-flare | Visual | Continuous |

**Figure 9.** Caliper measurement for OAL verification.

**Figure 10.** Caliper measurement for case mouth diameter verification.

# 7 Observed Performance

After running this build through extended sessions, several field observations are worth recording because they directly affect everyday usability.

## No Powder Spillage

The Deluxe Auto-Drum on the powder-through expander, combined with the case retainers and stable indexing of the Six Pack Pro, produces no measurable powder spillage on the press body or bench during normal operation. Compared with previous experience on other progressive presses, this is a meaningful quality-of-life improvement: there is no powder cleanup at the end of a session beyond the routine compressed-air pass described in §12, and there is no powder migrating into mechanisms it should not reach.

## Powder Drop Consistency

Twenty consecutive powder drops from the Deluxe Auto-Drum were weighed on the same digital powder scale, zeroed before the session, with a display resolution of 0.01 gr; the statistics below are accordingly subject to that quantisation. All values in grains:

| # | GRAINS | # | GRAINS | # | GRAINS | # | GRAINS |
|---|---|---|---|---|---|---|---|
| 1 | 3.21 | 6 | 3.10 | 11 | 3.16 | 16 | 3.10 |
| 2 | 3.18 | 7 | 3.10 | 12 | 3.10 | 17 | 3.16 |
| 3 | 3.13 | 8 | 3.15 | 13 | 3.09 | 18 | 3.13 |
| 4 | 3.15 | 9 | 3.15 | 14 | 3.13 | 19 | 3.10 |
| 5 | 3.13 | 10 | 3.21 | 15 | 3.12 | 20 | 3.16 |

Summary statistics:

| | |
|---|---|
| Mean | 3.138 gr |
| Minimum | 3.09 gr |
| Maximum | 3.21 gr |
| Extreme spread | 0.12 gr |
| Sample standard deviation | approximately 0.036 gr |
| SD as percentage of mean | approximately 1.1% |

For a progressive press using a powder-through expander combined with a rotating-drum measure, this is excellent run-to-run consistency. The extreme spread of only 0.12 grain across twenty consecutive drops, with no outliers and a sample standard deviation of approximately 0.036 grain, places the Auto-Drum on the powder-through expander in the same consistency range as dedicated stand-alone bench measures, at least in this 20-drop single-session sample with N320. Once the Auto-Drum is set up correctly (and in particular with the hopper port verified fully open, see §9.2), it meters light 9mm charges with the kind of run-to-run consistency that historically required a bench-mounted measure. After many years of reloading on a range of progressive presses, this is the first time I have observed powder-drop consistency at this level outside of such a stand-alone measure.

# Demanding Stations: Priming and Powder Drop

Across the progressive presses I have used over the years, the priming and powder-drop stations are consistently the two that demand the most precise engineering, and they are usually where most operators eventually encounter problems. Both involve repeated mechanical work against tight tolerances: seating a primer requires concentric force into a pocket that may be tight, fouled, or crimped, while the powder drop relies on a metering chamber that must fill and discharge exactly the same volume on every stroke.

On this press, both stations have ultimately proven reliable, but the priming station demanded far more diagnostic effort to get there. The powder side was excellent from the start: the Auto-Drum on the powder-through expander has produced consistent charges across long sessions with negligible spillage, as the figures above confirm. The priming side went through a long period of recurring stray-primer jams that resisted spring orientation fixes, cleaning, and shellplate bolt tuning (see §13), and was initially misread as a design defect. The root cause turned out to be a mis-positioned case retainer arm at the priming station, which let cases index slightly off-center (see §9.5); since repositioning it, the

jams have not recurred. The episode is documented in full because it is exactly the kind of fault this press produces: a component that looks correctly installed while quietly breaking the mechanism's alignment.

## On Price Class and Consistency

The standard intuition that more expensive equipment is more accurate equipment is, in most product categories, a reasonable shortcut: price and engineering effort do tend to correlate. In reloading the assumption usually holds as well, which is why the Pro 6000 is often described as "the best budget press," a label that implicitly accepts the underlying price-class hierarchy. The data presented earlier in this section is one piece of evidence that the hierarchy has an exception in this case. A drop-to-drop standard deviation of roughly 0.04 grain on a press at this price point is in the same range as the figures advertised by stand-alone bench-mounted measures costing several times more. The data indicates that the price-equals-precision heuristic does not consistently hold in this particular case.

A fellow shooter glanced at the title of an earlier draft of this document and remarked, "oh, that is curious, you left the Rolls Royce of reloading presses to go with a low-budget press; I wouldn't advise that." His reasoning was sound on the usual reading of the market. Most of the time, walking away from an established premium press for a budget alternative is exactly the move you would warn a friend against. The data and observations in this document indicate that the Pro 6000 is an exception to that reasoning.

> *The measured powder-drop consistency of the Pro 6000 does not align with what its price tier would conventionally predict.*

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# 8 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.

# 9 Easy-to-Miss Setup Gotchas

The Six Pack Pro is mechanically simple, but it is highly dependent on correct geometry, proper timing, and exact assembly orientation. A handful of small details can completely stop reliable operation while still appearing almost correct; the press continues to cycle mechanically, which makes diagnosis unintuitive. The five issues below account for the majority of avoidable, field-observed failures, and are worth checking first whenever the press starts misbehaving after maintenance, a component swap, or a bullet-profile change.

## 9.1 Inline Bullet Feeder – Detent Bearing Position

The inline bullet feeder uses two detent ball bearings that govern when the next bullet in the column is released. The feeder sleeve has three hole positions for the balls (upper, middle, and lower), and the bearings can be installed in any combination depending on the bullet being loaded. A common mistake is leaving them in the position used for a previous bullet.

Typical symptoms of an incorrect detent position include:

- bullets tipping sideways at the drop;
- double-feeds, or the entire bullet column dropping at once;
- bullets failing to enter the case mouth correctly;
- intermittent feed issues despite proper case indexing.

Lee's official method. The correct detent position is determined by bullet length, not by bullet shape. Lee instructs the user to measure the cylindrical portion of the bullet (the so-called "A section") and

look up the result in the *bullet length chart* included with the Inline Bullet Feed Kit instructions. Each caliber-specific kit has its own chart. Factory default is both balls in the upper holes.

Why bullet shape still matters in practice. Different bullet shapes interact differently with the release timing mechanism. Round-nose (RN) bullets self-center easily, transition smoothly through the die, and tolerate earlier release timing. Flat-nose (FN) bullets, with their blunt meplat, are far less self-centering and tend to tilt if released too abruptly or too early. For some FN profiles, a staggered configuration (one ball upper, one ball lower) works well: one side retains the bullet stack slightly longer, which stabilizes the dropped bullet and reduces tipping or double-release. The bullet transitions cleanly through three phases (being retained, dropping, then allowing the next bullet to advance), and the mechanism becomes much easier to understand once you cycle the feeder slowly by hand and watch it work.

Practical starting points. The table below summarizes arrangements that have worked well in practice. Always cross-check with Lee's bullet length chart for the specific kit, since the correct position depends primarily on the bullet's cylindrical length and only secondarily on its profile.

| BULLET PROFILE AND LENGTH | TYPICAL DETENT ARRANGEMENT |
|---|---|
| Long round nose (RN) | Both balls in the upper holes (factory default). |
| Mid-length round nose (RN) | Both balls in the middle holes. |
| Flat nose (FN) | One ball upper, one ball lower (staggered). |
| Short TC / coated bullets | Often staggered or middle; usually requires experimental tuning. |

*Empirical note for this build:* the mid-length RN load tested here was verified to feed best with both balls in the middle position. This is consistent with Lee's chart-based, length-driven approach: the bullet's cylindrical length placed it in the middle band of the chart, even though the profile (round nose) might have suggested the factory upper-upper default at first glance.

A correct setup produces a smooth single-bullet release, with no sideways tipping and consistent vertical bullet alignment.

## 9.2 Deluxe Auto-Drum – Hopper Shutoff Port Verification

The Deluxe Auto-Drum hopper doubles as a powder shutoff: rotating the hopper opens or closes the port at its base that feeds the metering drum. Depending on the hopper's rotational position, that port can be fully open, partially open, or fully closed. The drum continues to cycle mechanically in every one of these states, so the press can appear to be running normally while dispensing little or no powder.

The reliable check is visual, not positional. The hopper's rotation angle and the feel of its stops are poor proxies for the port state, and trusting them is exactly how a partially closed port slips through. Before any powder goes in, look down into the empty hopper: the port feeding the drum must be completely open, with no part of the shutoff occluding it. If it is not, rotate the hopper in small increments until

the opening is visibly full and unobstructed.

Symptoms of a closed or partially closed port include no powder drops at all, intermittent undercharges, empty cases passing through inspection, and inconsistent charges after assembly or cleaning. The shutoff feature is genuinely useful (for transport, powder changes, and spill prevention), but it is easy to leave partly engaged after maintenance.

After installing the hopper:

1. Fully seat the hopper into the measure.
2. While the hopper is still empty, look into it and verify the port feeding the metering drum is completely open; if not, rotate the hopper in small increments until it is.
3. Verify actual powder drops on a scale before loading live rounds.

**⚠ Warning**

A *partially* open port is more dangerous than a fully closed one: a hopper that is mostly closed will still meter inconsistent charges that pass casual visual inspection but can produce undercharges, squibs, or, over a string of rounds, variable pressure. Always confirm the port state by looking into the empty hopper, and rely on the powder check at Station 3 as a backstop.

## 9.3 Auto-Drum and PTX Die – Flare Depth Tuning

The Deluxe Auto-Drum is caliber-agnostic; the actual case-mouth flare is produced by the Lee Powder Through Expanding (PTX) die that the Auto-Drum mounts on top of (see vendor documentation AM3298). This means Station 2 has two components that must be tuned together as a matched set rather than independently: the PTX die controls the flare depth, and the Auto-Drum controls the powder charge. Both are adjusted against the shellplate at full ram extension, and getting them dialed in correctly is the single most time-consuming part of the initial setup.

The trap is the natural assumption that more flare makes bullet seating easier. Excessive flare adds noticeable resistance to both phases of the Station 2 cycle, but the resistance manifests differently in each direction. On the down-stroke (handle pulled down, ram rising, expanding plug being forced into the case mouth), the over-flaring requires extra force to deform the brass beyond what is necessary; this resistance is partly masked because the down-stroke is the high-load phase across all stations and operators are accustomed to feeling some force there. On the up-stroke (handle released back up, ram descending, case sliding off the expander), the over-expanded case grips the plug harder than necessary on retract, adding friction to what should be a release phase. The up-stroke friction is often the more telling indicator precisely because the up-stroke is normally a low-load phase at Station 2; any unexpected force at this point is immediately surprising. Visual inspection of the flared case does not reliably reveal the over-flare, because the case mouth springs back toward its original diameter after the plug clears; the visible flare understates the peak expansion the brass actually underwent, leaving an outwardly normal-looking flare while the mechanical work done was greater than necessary.

Worth noting that the over-flare's resistance is not isolated to Station 2 in the operator's hands. Because the shellplate moves all six stations together on every stroke, the extra force required by an over-flared

setup is added to the total stroke force across the whole cycle. In practice this means a hidden over-flare can make the entire progressive cycle feel slightly heavy and unnecessarily fatiguing across a long session, even though Station 2 is the actual source. A useful diagnostic is to isolate Station 2 by running cases through with no other stations loaded; its contribution to the total stroke force can then be felt directly.

The tuning approach that produced the cleanest cycle: increase the PTX depth gradually until the flare is just sufficient for a bullet to start straight into the case mouth without tipping, then back off by one notch. That single notch back is the difference between a stroke that feels smooth at the bottom and one that feels like the case is fighting the expander on the way down. The benefits of this approach compound: a more straightforward progressive cycle, reduced hand fatigue over a long session, noticeably less case debris (brass shavings and dust) generated at Station 2, and no compromise in bullet-seating reliability at Station 5.

Symptoms of an over-flared setup include:

- perceptible friction on the up-stroke (handle released up, ram descending, case sliding off the expander), often the most surprising symptom since the up-stroke is normally a low-load phase;
- extra force on the down-stroke (handle pulled down, ram rising, plug being forced into the case mouth), partly masked because the down-stroke is the high-load phase across all stations;
- a noticeably heavier overall progressive cycle than the press would otherwise produce, since the extra force adds to the total stroke load across all six stations;
- more case debris than expected accumulating on the shellplate and around Station 2;
- visible widening of the case mouth that is more than just a slight bell.

If the symptoms persist after backing the PTX die off, also clean and lightly polish the expanding plug (powder residue and fine brass dust accumulate over time and increase friction independent of flare depth), and verify the PTX die is square in the toolhead by floating it on a case and then tightening the lock ring.

## 9.4 Primer Feeder – Return Spring Orientation

Although priming is otherwise outside the scope of this guide, the primer shuttle return spring is worth surfacing because it can be physically installed in two orientations, but only one produces the correct tension and shuttle movement. The press will assemble and cycle with either, and run reliably only with one.

Symptoms of an incorrect spring installation include:

- the primer shuttle not fully returning;
- inconsistent primer pickup or feeding;
- shuttle hesitation, or rough and sticky operation;
- outright failure to pick up primers.

The large upper hook fits the frame in either direction, but the lower hook determines the spring's torsion direction. The lower hook must be positioned on the opposite side of the frame relative to the upper hook; installing both hooks on the same side reverses the geometry and prevents positive

shuttle movement.

When correctly installed, the shuttle snaps positively in both directions, returns fully under spring force alone, and aligns primers consistently. A useful check: with no primers loaded, manually cycle the primer shuttle slowly; it should move crisply and return fully on every stroke, with no hesitation.

Keep the primer track meticulously clean. Spent primer residue, stray powder granules, or excess oil will rapidly degrade what is otherwise a well-tuned mechanism.

# Field-Test Outcome

Correcting the spring orientation and following the cleaning routine above eliminated the original feed and return faults, and neither has recurred. Extended field use then exposed a second, more stubborn fault that spring orientation and cleanliness did not touch: primers regularly falling out of position between the primer punch and the shellplate, jamming the press. That fault was eventually root-caused not to the primer feeder at all, but to a case retainer arm positioned too far from the shellplate; the full diagnosis and fix are documented in §9.5. With the retainer repositioned, the primer system has been reliable. A minor workflow nuance remains: the press has no low-primer indicator, so the magazine must be topped up by visual inspection; with roughly 100 primers in the magazine, a glance every 80 to 90 rounds avoids running it dry mid-session.

**Field Note: Most Setup-Sensitive Subsystem**

In candid terms, the primer station is the most setup-sensitive part of the press. The transport mechanism that moves primers along the track is solid, but the final delivery stage that presents each primer under the case has no tolerance for a case that sits even slightly off-center. On this unit, a case retainer arm positioned too far from the shellplate produced exactly that off-center condition, and the result was primers regularly falling between the punch and the shellplate and jamming the press. For a long stretch this looked like a design defect of the priming station; the honest record is that it was a setup fault, and §9.5 documents both the misdiagnosis and the fix. Lee has since made the priming station more forgiving of exactly this class of fault: a case sensor introduced for the 2025 model year presents a primer only when a case is actually at the station, and the same revision changed the carrier so the separate plastic case retainer no longer needs swapping between cartridges of different rim diameter. The unit described here was bought in late 2025 but shipped as older stock without these changes. Owners can tell the two apart by checking for the sensor blade at the priming station versus the older plastic retainer ring on the carrier. Lee offers a paid ship-to-factory retrofit for earlier presses, but at the time of writing that service is limited to customers in the United States and is not available in Europe. In the author's view, whether the retrofit is chargeable ought to depend on the purchase date rather than the manufacture date, since a press sold new after the revision arguably should carry the fix at no cost to the buyer.

## 9.5 Case Retainer Position at the Priming Station

The black plastic case retainer arms around the carrier hold each case in its shellplate detent as the plate indexes. Their position relative to the shellplate is adjustable, and the arm serving the priming station is the one adjustment on this press whose effect is out of all proportion to its appearance: a millimeter too far out and the press still cycles, cases still feed, and nothing looks wrong.

What actually happens with the arm too far from the shellplate is that the case is held loosely enough to sit slightly off-center in its detent when it arrives at the priming station. The primer punch then rises against an off-center primer pocket, and instead of seating, the primer can escape sideways into the gap between the punch and the shellplate, where it jams the plate on the next index. On this build the fault recurred regularly for an extended period and was misdiagnosed as an inherent weakness of the priming station; spring orientation, cleaning, and shellplate bolt tension were all corrected without effect, because none of them was the cause.

The fix is simple once the cause is known: position the retainer arm close to the shellplate so the case is held centered in its detent, then confirm by watching a case arrive at the priming station and checking that it sits visibly centered before the ram is raised. After this adjustment the stray-primer jams stopped entirely on this press.

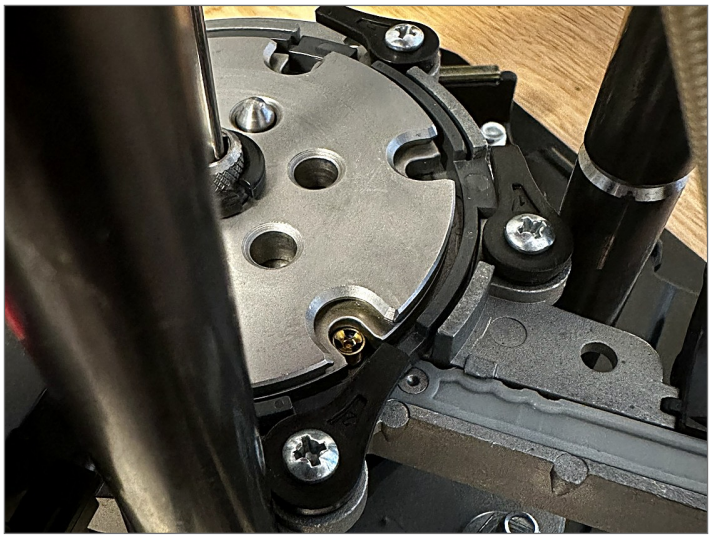

**Figure 11.** Case retainer arms around the shellplate. The arm position relative to the shellplate determines whether the case is held centered in its detent; the arm serving the priming station is the critical one.

Symptoms of a retainer arm positioned too far out:

- cases sitting visibly off-center in the shellplate detent at the priming station;
- primers falling between the primer punch and the shellplate, jamming the plate;
- recurring priming faults that survive spring, cleaning, and bolt-tension fixes;
- a fault pattern that suggests a design defect while every individual component checks out.

**Rationale**

Many Six Pack Pro failures are not caused by defective parts, but by components installed in a way that *looks* correct while subtly changing the mechanism's timing or alignment. Once the five details above (detent position, hopper port state, flare depth tuning, primer spring orientation, and case retainer position) are configured correctly, the press typically becomes dramatically smoother and more reliable. The case retainer episode documented above is the strongest evidence for this claim: a fault pattern severe enough to be mistaken for a design defect disappeared entirely with one small adjustment.

# 10 Tips & Best Practices

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

# 11 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.

## 11.1 Station 2 – Powder Drop

**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. This setup uses 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. Before filling, look into the empty hopper and verify the port feeding the metering drum is completely open; rotate the hopper in small increments if it is not.
4. 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, consistent with published Vihtavuori load data for 9mm Luger. Verify against the current edition of the *Vihtavuori Reloading Guide* for your specific bullet and OAL before loading.
2. Each flat on the adjustment screw ▫ 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; the extreme spread should stay within ≈ 0.15 gr, consistent with the measured drop-to-drop consistency of the Auto-Drum ($\sigma \approx 0.036$ gr, see the Observed Performance data).
- 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.

## 11.2 Station 5 – Bullet Seating

**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. The 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.

## 11.3 Station 6 – Taper Crimp

**Station 6**

Lyman Pro Micrometer Taper Crimp Die

**Rationale**

The taper crimp die applies a controlled crimp at the case mouth. This prevents bullet setback 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. Tuning target: 9.55–9.60 mm for 9mm Luger, deliberately inside the production acceptance band of 9.55–9.62 mm used for QC checks; dialing in toward the tighter range leaves margin for normal drift.
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.

# 12 Maintenance

Unlike the rest of this document, this section is deliberately written in plain, non-specialist language: cleaning is the one routine that may be delegated to someone who has never operated the press, and it should be safe to hand over as-is.

A quick orientation before the steps. The Lee Pro 6000 takes empty brass cartridge casings, presses a tiny ignition cap (called a *primer*) into the base of each one, adds a precise amount of gunpowder, sits a bullet on top, and squeezes it all together into a finished round of ammunition. It does six different operations in parallel on a round metal plate that rotates one position with every pull of the handle.

The parts you need to recognize for cleaning are:

- The handle at the side. This is what you pull to drive the whole machine.
- The big round plate at chest height, which rotates. Six brass casings sit on it, each at a different stage of being loaded. It is called the *shellplate*.
- The vertical shaft underneath the shellplate. It moves up and down when you pull the handle and lifts the casings into each station. It is called the *ram*.
- The primer feed, a small mechanism that picks up fresh primers (small ignition caps, about the size of a watch battery) and slides them under each casing one at a time. This is the most delicate and most dirt-sensitive part of the whole machine.
- The powder measure, a small container with a rotating internal drum that drops a measured amount of gunpowder into each casing. Lee's version is called the *Auto-Drum*.

## The Single Most Important Rule

Almost everything that goes wrong with this press is caused by tiny bits of debris, not by parts wearing out. Three kinds of debris matter most:

- Loose grains of gunpowder (small dark specks).
- Powdery black residue left behind by used primers.
- Tiny shavings of brass that flake off the casings during processing.

These bits collect in the moving parts, especially around the primer mechanism and around the parts that rotate the shellplate. Once enough has collected, the press starts to misbehave. So the rule is: cleaning matters more than oiling.

## End of Every Reloading Session

Take a can of compressed air and blow over the whole press (takes about 30 seconds). Spend a few extra seconds pointing the nozzle at four specific spots:

1. The shellplate (the round rotating plate where casings sit).
2. The narrow channel that primers travel through to reach the casings.

3. The small slide that pushes empty casings onto the shellplate.
4. The area around the vertical ram (the big up-and-down shaft).

Also check the small clear tube underneath the press that collects used primers as they are punched out. If it is nearly full, empty it. An overflowing tube is one of the most common causes of the primer mechanism jamming.

# Every Thousand Rounds or So (A More Thorough Clean)

1. Blow the press out properly with compressed air, more carefully than your end-of-session pass.
2. Lift off the top plate. The upper plate that holds the six tools (called *dies*, one per operation) is the *toolhead*. Lift it off so you can reach underneath. Blow out the area under the shellplate and around the small ratchet that turns the plate one position per handle pull.
3. Apply a little gun oil. Dab a small amount of gun oil onto the cotton end of a cotton swab and apply a thin film to two places. Wipe off any excess afterward:
   - The vertical ram (the big up-and-down shaft).
   - The pivot points of the handle linkage underneath the press, where the moving joints connect. One or two drops on each joint is plenty.
4. Apply a little white lithium grease. White lithium grease is a thick white lubricant sold in small tubes at any hardware store. With a fresh cotton swab, apply a thin film to three places. Again, wipe off any excess:
   - The small slide that pushes empty casings onto the shellplate.
   - The parts that rotate the shellplate, especially the small ratchet and the surface it pushes against.
   - The sliding surface of the small slide that delivers each new primer, but *be careful not to get any grease inside the tiny cup that actually holds the primer*. That cup must stay completely dry.

**⚠ Warning**

The one area that must stay completely dry.
Anywhere primers travel must be clean and free of any oil or grease. This includes:

- The narrow channel primers slide through to reach the casing.
- The small cup that holds a primer just before it gets pressed into place.
- The small punch that pushes the primer into the casing.

If oil or grease reaches any of these spots, the primers can be contaminated and fail to ignite when the trigger is pulled (the gun goes “click” instead of “bang”). This is both unsafe and the most common cause of trouble with reloaded ammunition. In the primer area, use only a brush and compressed air. Nothing wet.

## What Not to Do

- Do not blow compressed air directly into the powder measure (the *Auto-Drum*) while it is still assembled on the press. The strong burst can dislodge the seal inside. First remove the hopper (the small container that holds the powder) and the rotating metering drum, then clean the inside.
- Do not use solvents like brake cleaner or strong degreasers near the plastic parts of the press. These chemicals make plastic brittle, so it cracks weeks or months later.
- Do not be overly generous with oil or grease anywhere. A thin film is enough. Any excess will eventually creep into places where it does not belong, especially the primer area, and cause the problems described above. After applying lubricant, always wipe off what you do not need.

# 13 Troubleshooting Progressive Cycles

A common pattern when learning this press is that producing single rounds works reliably, but the moment you try to run an uninterrupted progressive cycle (cases being processed at all six stations simultaneously), small problems surface that were hidden during slower one-at-a-time use. Under full progressive load there is more mechanical stress, more debris in motion, and any squeak, hesitation, or misalignment that was tolerable on its own now compounds across stations and can stop the cycle.

## Squeaks and Friction

An audible squeak during a stroke is almost always metal-on-metal contact that needs lubrication. To find the source, cycle the press slowly with the handle, completely empty (no cases, no primers, no powder), and listen. A long screwdriver held to one ear with the tip resting on different parts of the press works as a simple stethoscope and helps pinpoint the exact location.

The most likely sources, in rough order of probability:

- The vertical ram and the sleeve it slides through. By far the most common source. Gun oil in a thin film; wipe off any excess.
- The pivot points of the handle linkage underneath the press. One or two drops of gun oil per pivot.
- The underside of the shellplate, where it rotates against the press body. A thin film of white lithium grease.
- The small ratchet that advances the shellplate, and the surface it pushes against. A thin film of white lithium grease.
- The slide mechanisms that deliver primers and cases. White lithium grease on the sliding surfaces only; keep grease out of the small cup that holds the primer (see the warning in §12).

If the squeak only appears under load (rounds being processed) and not when the press is empty, the friction is likely at a sliding surface that engages only when there is mechanical resistance from a case or bullet being worked on. Apply lubrication broadly across all the locations above rather than trying

to isolate a single point.

## Which Station Is Causing the Trouble?

When the progressive cycle stalls, the next step is identifying which station is the actual point of failure. The table below covers the most common symptoms:

| SYMPTOM | LIKELY CAUSE AND WHERE TO LOOK |
|---|---|
| Primer does not seat, or seats inconsistently. | The primer feed mechanism is dirty, or lubricant has migrated into the primer area. Clean the primer track completely dry (see §12). |
| Cases arrive crooked on the shellplate. | The case slider or the indexing mechanism is hesitating. Clean and lightly grease the slider and indexing parts (see §12). |
| No powder drops, or charges are inconsistent. | The Auto-Drum hopper is partly closed, or the measure is fouled. See §9.2. |
| Bullets tip sideways at the bullet-feed station (Station 4). | The detent ball positions do not match the current bullet profile. See the table in §9.1. |
| Bullets are crooked after seating (Station 5). | The bullet most likely arrived crooked from Station 4, or the seating die is not square in the toolhead. Fix Station 4 first; then check that the seating die sits square. |
| Primer fails to seat, the case shifts outward, and the plastic case retainer pops free. | The shellplate center bolt is under-torqued and the case is lifting under priming load. See §13. |
| Primers fall between the primer punch and the shellplate and jam the plate; the fault survives spring, cleaning, and bolt-tension fixes. | The case retainer arm at the priming station is positioned too far from the shellplate, letting the case sit slightly off-center in its detent. Reposition the arm closer to the shellplate. See §9.5. |
| Perceptible friction on the up-stroke at Station 2 (case sliding off the expander as the ram descends), often combined with extra case debris on the shellplate and a generally heavier-feeling progressive cycle. | The PTX die is over-flaring the case mouth: the case grips the over-expanded plug harder than necessary on retract, and the extra force adds to the total stroke load across all stations. Back the PTX depth off by one notch from minimum-sufficient flare. See §9.3. |

**Table 1.** Progressive-cycle symptoms and likely causes.

A useful diagnostic habit: when the cycle starts to fail, do not immediately disassemble the suspected station. Cycle the press slowly once more and observe each station in sequence. Often what looks like a Station 5 failure is actually a Station 4 problem that only becomes visible at Station 5. The *first* station that shows any irregularity is the one to investigate, not the one where the visible damage appears.

## Case Shifts Off-Center at the Priming Station

A specific failure mode worth flagging: the case at the priming station drifts outward radially, the plastic case retainer that holds it down on the shellplate pops free, and the primer punch coming up from below ends up trying to seat into a case that is no longer concentric with it. The result is a misaligned or crushed primer, or simply no seating at all.

The most common cause is that the center bolt holding the shellplate is slightly under-torqued. This bolt has a narrow sweet spot: tight enough that the case rim is held firmly in the shellplate detent and cannot lift, but loose enough that the shellplate still indexes smoothly when the ram is operated. If it is even slightly too loose, the upward force of the primer punch can lift the case off the shellplate face just enough for it to escape the detent and rotate outward. Once that happens, the plastic retainer takes the full upward load rather than only keeping the case seated, and it pops.

The fix is to tighten the shellplate center bolt by a small increment, then test with a few rounds. Lee's recommended procedure is to back the bolt off completely, then tighten while rotating the shellplate by hand until the rotation just starts to drag, then back off approximately one-sixth of a turn. Snugging it from your current setting in small steps and re-testing is usually enough.

**⚠ Warning**

The shellplate center bolt on the Lee Pro 6000 is reverse-threaded: counterclockwise tightens, clockwise loosens. This is opposite to the standard right-hand thread most fasteners use, and it is deliberate. The shellplate rotates during every index stroke, and a standard thread would gradually be worked loose by that repeated motion. A left-hand thread arranges things so the indexing motion reinforces the bolt rather than backing it out, which means the shellplate cannot self-loosen during normal operation. Counterintuitive at the wrench, intuitive once the rationale is understood. Verify the direction by hand pressure before applying real torque, and remember it: trying to "tighten" clockwise will actually loosen the bolt further and make the symptom worse.

If tightening the bolt does not resolve the symptom, two secondary causes are worth checking. First, inspect the plastic case retainer itself for deformation, whitening, or stress cracks around the pin slots; a retainer that has popped off many times can take a permanent set and lose its grip. A replacement retainer is inexpensive and is the cheapest test. Second, if the symptom is intermittent and only affects certain cases, suspect tight or crimped primer pockets in the brass (common in once-fired military 9mm). High priming resistance translates directly into upward force on the case, and that force is what defeats marginal retention. Sort suspect headstamps and either ream or swage their primer pockets before reloading them.

## Recommended Approach for New Progressive Users

1. Run the *every thousand rounds* maintenance routine from §12 first. Many beginning progressive problems disappear simply with a clean, properly lubricated press.
2. Test by producing 5 to 10 rounds slowly in progressive mode, watching every station as the handle moves.
3. If a station fails, note exactly what failed and at which point in the stroke. Then apply the matching fix from the table above.
4. Once 10 clean rounds in a row are possible, increase tempo gradually.

# 14 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. Output figures are typical cycle rates; reaching them in practice depends on the setup details covered in the Easy-to-Miss Setup Gotchas section, of which the case retainer position at the priming station proved the most consequential on this build.

## Lee Pro 6000 vs Dillon RL1100

| 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 2.** 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 3.** 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.

# 15 Conclusion

**Conclusion**

Configured as outlined, the Lee Pro 6000 delivers precise and repeatable cartridges: Smart Lock bushings and micrometer dies hold stable settings without constant re-adjustment, the powder system meters at bench-measure consistency, and QC steps such as the powder check, OAL verification, and taper crimp maintain that quality round after round. In comparison with presses like the Dillon RL1100 and Mark 7 Apex 10, the six-station design matches their essential QC functions.

The honest caveat is not a defect but a temperament: this press depends heavily on a handful of setup details that look correct while being wrong, and it will run poorly without complaint until they are found. On this build, a mis-positioned case retainer arm produced months of stray-primer jams that were mistaken for a design flaw before the real cause surfaced. With the five gotchas in this document configured correctly, the press has been reliable and its output worthy of its specifications; the purpose of this guide is to let the next owner reach that state without the detour.

# References


- Lee Precision, *Six Pack Pro Press Instructions*. The authoritative source for press assembly and basic operation.
- Lee Precision, *Auto-Drum Powder Measure Instructions* (vendor document AM3298). Powder measure and PTX die setup.
- Lee Precision, *Inline Bullet Feed Kit Instructions*. Includes the caliber-specific bullet length chart used for detent bearing placement (§9.1).
- SAAMI, *ANSI/SAAMI Z299.3: Voluntary Industry Performance Standards for Pressure and Velocity of Centerfire Pistol and Revolver Ammunition*. Cartridge and chamber dimensional standards for 9mm Luger.
- Vihtavuori, *Reloading Guide* (current edition). Published, pressure-tested load data for N320 in 9mm Luger. All charge weights used in this document must be verified against the current edition before loading.