TDP 1.5® Tablet Press User Manual

We don’t just sell machines—
we provide service.

Copyright Notice

Important Safety Information

READ THIS BEFORE OPERATING MACHINE

Intended Use

The intended use of this machine is to press dry raw materials into tablet form.
Potential misuse of this machine includes:

- Applying too much force to the powder.
- Trying to fill the Die with powder by hand.
- Inserting Tooling that is too big for the machine.
- Not properly mounting the machine.
- Using powders that could explode under pressure.
- Using wet or damp material.

Personal Protection

For personal protection while transporting the TDP 1.5®, abide by these actions:

- Wear steel toe boots to prevent foot injury.
- Wear heavy duty grip gloves to ensure firm grasp on machine.
- Wear back support belt to prevent injury if needed.

For personal protection while operating the TDP 1.5®, abide by these actions:

- Avoid wearing loose jewelry to prevent machine entanglement.
- Contain long hair to prevent machine entanglement.
- Wear safety goggles.
- Wear disposable latex/rubber gloves.
- Wear a hairnet (food grade products only).
- Wear a beard net if needed (food grade products only).

General Hazards

- Be aware of risk of entanglement and pinch point due to moving parts.
- Do not operate in a wet environment or with wet hands due to risk of electrical shock or burn.
- Do not operate if any wires are damaged, pinched, or frayed due to risk of electrical shock or burn.
- Keep out of reach of children.
- Keep fingers away from all moving parts.
- Ensure that it is secured to a workbench to prevent from falling.
- Inspect machine before use.
- Check that nuts and bolts are suitably tightened.
- Use this machine only for its intended use as described in this manual.
- Turn off and unplug the machine before conducting cleaning and maintenance.
- Do not modify the machine in any way.

Important Safety Information

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Symbols

WARNING

This signals potential risk for personal injury.

CAUTION

This signals potential risk for damage to the machine or other parts.

Modes for Stopping

In the case of an emergency during manual operation, immediately stop turning the Hand Wheel and remove yourself from the TDP 1.5®.

In the case of an emergency during motor operation, immediately press the red OFF button (see below) and unplug.

Prop. 65 Statement for CA Residents

Based on LFA's current level of knowledge of our machines, the TDP 1.5® does not require a Proposition 65 warning label.

Warning for Explosive Material

This machine is not explosion proof. LFA recommends that you test your materials' explosivity before running them through this machine. If your materials are indeed explosive, do not use them with this machine.

Important Safety Information

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Installation and Safety Assessment

Due to the nature and design of this machine and its intended use in an industrial environment, it is important that before use it is installed in a cage with a mode of stopping on the outside of the cage. LFA Machines has decided that we can not possibly foresee all of the environments or situations in which this machine could be used or installed and therefore have determined that the end user must install the machine in a way that is appropriate and safe for its use.

Once the machine has been installed, it is critical that you conduct a safety assessment to ensure that it complies with all local and industry accepted safety regulations.

If you require guidance on the installation of the machine or conducting a safety assessment, please contact LFA Machines.

This machine is sold as an Unfinished Machine under the Machinery Directive (2006/42/EC) Article 13.

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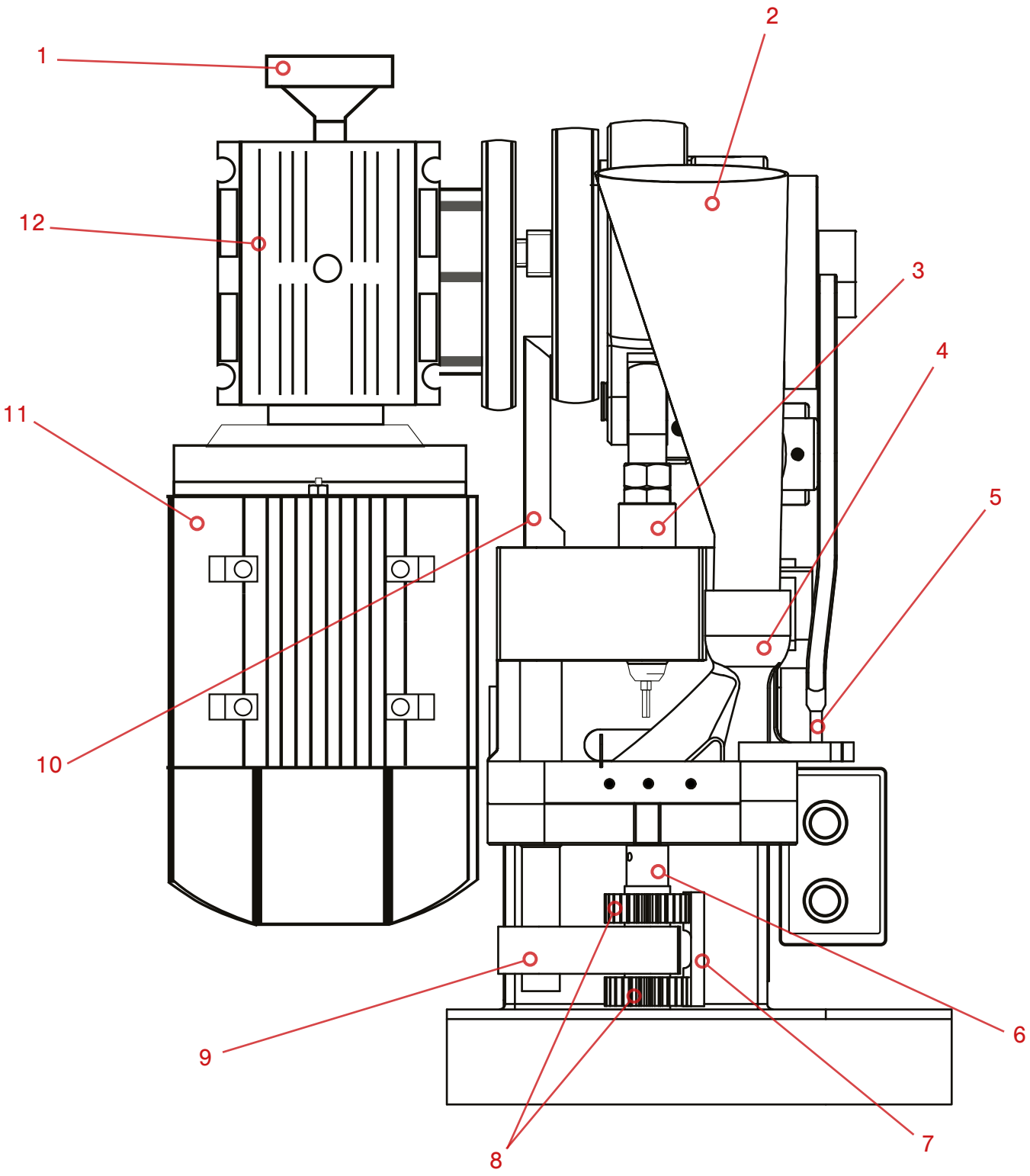
TDP 1.5® Parts List



1. Hand Wheel
2. Hopper
3. Upper Drift Pin Assembly
4. Boot
5. Boot Timing Bar
6. Lower Drift Pin Assembly
7. Lower Drift Pin Assembly Locking Bar
8. Lower Drift Pin Assembly Cogs
9. Lower Drift Pin Assembly Lifting Bar
10. Lower Drift Pin Assembly Timing Rod
11. Motor
12. Gearing

Preface

The TDP 1.5® is a flexible and easily managed desktop-format tablet press that provides remarkable levels of output, performance, and overall flexibility. Made to meet the demands of laboratory and developmental tasks rather than large-scale production, the TDP 1.5® is capable of producing from only a few tablets right up to small manufacturing runs of 5,400 per hour. With the ability to run on both electricity and manual power, this machine is the perfect choice for anyone who requires a high-quality press for small batch manufacturing and trial runs, making it suitable for research and development or similar applications.

The purpose of this document is to support your understanding of the TDP 1.5®'s components, features, functions, and design. With this manual, you will be able to successfully operate and maintain your TDP 1.5® machine.

The user manual's content includes:

- Important safety information
- TDP 1.5® installation instructions
- Description of the TDP 1.5®'s operation
- TDP 1.5® maintenance information
- Appendix with supplemental information

Training

TDP 1.5® training is essential for the machine's successful operation and your personal safety. There are several methods to prepare you for working with the TDP 1.5®.

On-Site/Off-Site Training

LFA technicians can travel and train you at your own facility with your own machines. LFA also offers free training at our UK, USA, and Taiwan facilities for all our customers and their teams. For more information, go to https://www.lfatabletpresses.com/services

Training via Video Chat/Phone

Using an online video chat system, an LFA technician can interact face-to-face with you and assist with your understanding of the machine. Or, if you prefer, LFA can provide training via phone for all customers who call the office. To set up a training, call or email your local LFA office:

UK
Phone
+44 01869 250234
Email
support.uk@lfamachines.com

USA
Phone
+1 (682) 312-0034
Email
support.usa@lfamachines.com

Taiwan
Phone
+886 422031790
Email
support.asia@lfamachines.com

LFA Articles

LFA writes informative articles about desktop tablet presses, which includes instructions, procedures, and guides. To access the articles, go to https://www.lfatabletpresses.com/articles

LFA Videos

LFA has created several videos involving the TDP 1.5® and other desktop tablet presses. To access the videos, go to https://www.lfatabletpresses.com/videos or https://www.youtube.com/user/TabletPilPress

Installation

Tools and Materials Needed

Before you install and operate the TDP 1.5®, it is best to have the following tools and materials on hand for general operation and maintenance:

- Engine hoist or lift and lifting strap
- Mounting materials such as:
  - Non-slip pad (such as a yoga mat cut to fit the machine's base) OR anti-vibration pads
  - Power drill
- Hammer
- Metric wrench set and/or adjustable wrench
- Pliers/grippers
- Flathead screwdriver
- Crosshead screwdriver
- Set of metric Allen keys with ball ends
- Long wire pipe cleaner
- Lubricant (NSF approved for food grade products)
- Grease gun
- Toothbrush
- Bagless vacuum
- Sanitizer (e.g. Member's Mark Commercial Sanitizer)
- Cleaning brush set
- Plastic sheet or something similar to cover machine
- Safety goggles
- Disposable latex/rubber gloves
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

The Appropriate Workstation for the Machine

Find a stable workspace surface that supports the TDP 1.5®'s 53.5 kg (about 118 lbs) weight, such as a wooden bench (use stainless steel if for food grade industry). Another important thing to consider is to find a bench that has a suitable working height for you. This machine also has a single phase 240 V or 110 V (± 10%) electrical requirement, so ensure that it is near an appropriate power plug.

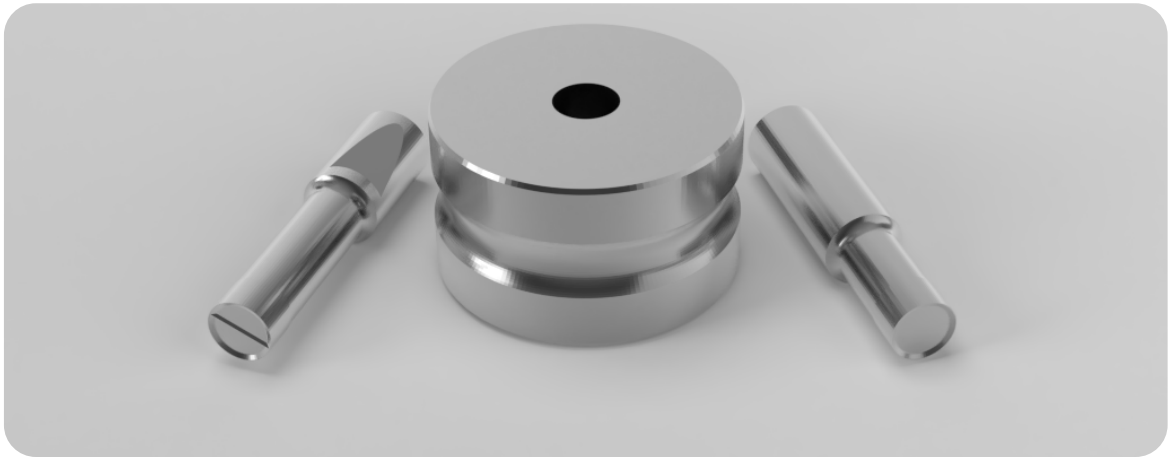
Environmental Conditions

It is important that the environment in which you operate and store the TDP 1.5® has the appropriate temperature and relative humidity levels. These two environmental factors can potentially cause the machine to rust and/or cause the tablets to have a lower quality. The table below shows the acceptable temperature and relative humidity levels:

Machine	Temperature		Humidity
TDP 1.5®	°C	°F	45-65% RH
	18-24	64-75	

The shipping crate will contain the following:
1. The assembled TDP 1.5®

2. The Tooling (already installed)



Unpacking the TDP 1.5®

Watch a video of a TDP 1.5® unboxing at https://www.lfatabletpresses.com/videos/tdp-1.5-unboxing-setup

Tools Needed

- Flathead screwdriver
- Hammer
- Adjustable wrench

Instructions

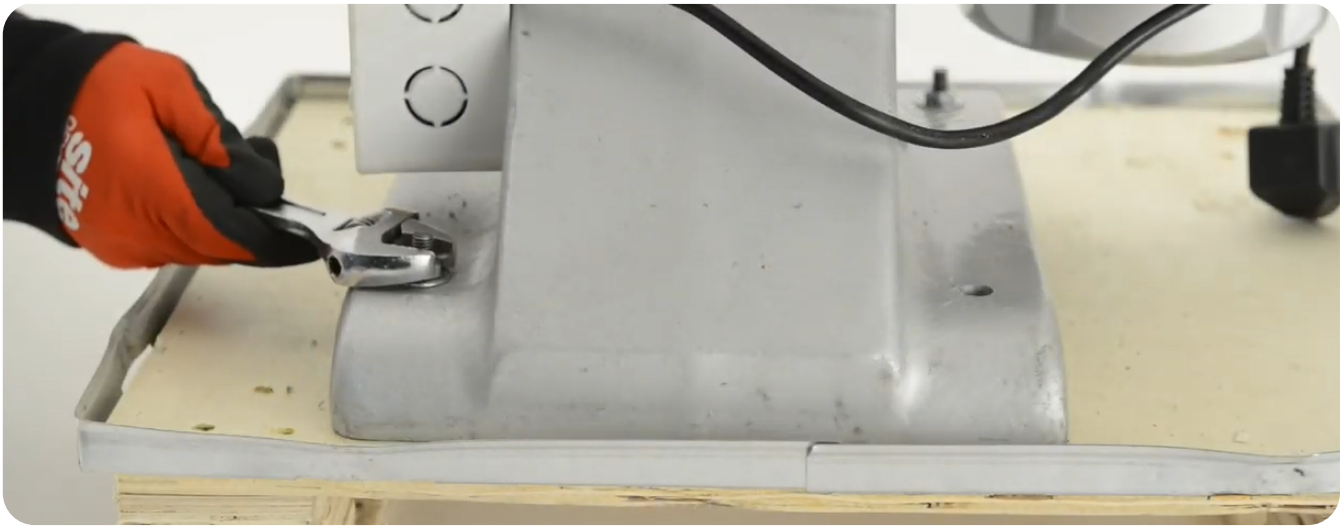
1. Pry open each of the clips on the shipping container with a flathead screwdriver.

1.1 Note: Hammer the clips even further down to aid in removing the shipping container from the base.

2. Lift the top of the shipping container from its base, which is bolted to the TDP 1.5®.
3. Remove the plastic wrapping.

3.1 Note: Save the wrapping for future transport and/or storage.

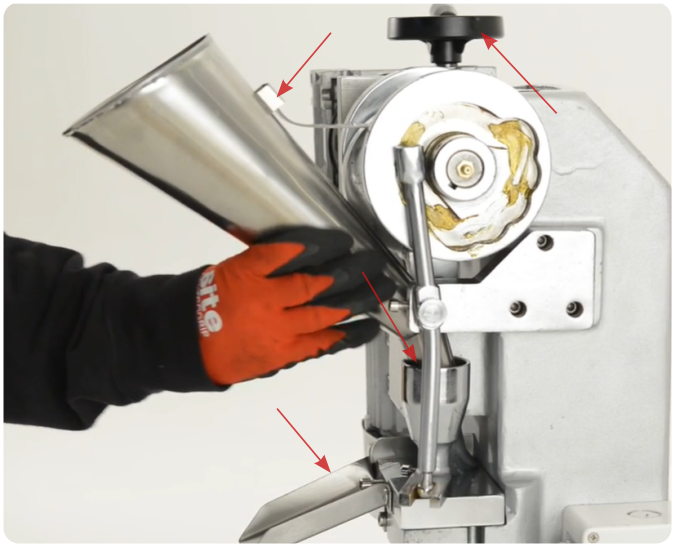
4. Remove the bolts from the shipping container's base with a wrench.



4.1 Note: Keep the bolts and the shipping container’s base in case you need to move or relocate the TDP 1.5®.

Assembly

The TDP 1.5® comes almost fully assembled. Secure the Ejection Tray and Hopper Holder onto the machine with a crosshead screwdriver and Allen key. Place the Hand Wheel into the keyed section on top of the Gearing and secure it with an Allen key and insert the Hopper into the Boot.



Mounting the TDP 1.5®

WARNING: To prevent personal injury, wear steel toe boots and heavy duty grip gloves while transporting the TDP 1.5®.

LFA does NOT recommend carrying the machine manually but rather with an engine hoist. At least two people should be involved (one operating the engine hoist and one stabilizing the machine) in removing the machine from the shipping container and placing it in the workspace.

Transporting the TDP 5®

Tools and Materials Needed

- Engine hoist and lifting strap

Instructions

1. Secure the lifting strap to the engine hoist.
2. Wrap the lifting strap to support both the bottom and top of the TDP 1.5®.
3. Carefully transport the machine to the desired workspace.

Bolting the TDP 1.5®

The TDP 1.5® Base comes with four bolts and four bolt holes. Because the machine's movement could cause it to fall off the workspace surface during operation, which creates potential for injury to self and to the machine, it is important to ensure that it will not move by bolting down the TDP 1.5®. There are other options as well that can prevent the TDP 1.5® from moving, which are described below:

Non-Slip Pad

Placing a pad or mat that grips the surface underneath the TDP 1.5® will stabilize any movement. What works well is anything similar to a yoga mat. Simply cut the pad to a size that is slightly bigger than the TDP 1.5®'s base, and then bolt the base through the mat and into the workspace surface.

Anti-Vibration Pads

Anti-vibration pads underneath the TDP 1.5®'s base not only absorb noises and vibrations, but also reduce the machine's movement. Similar to using a non-slip pad, the anti-vibration pads also need to be bolted through into the workplace surface.

WARNING: Anti-vibration pads with feet indentations, such as those used for washing machines, are not suitable for the TDP 1.5®. They may cause the machine to lose its balance and fall off the workspace surface, potentially resulting in personal injury.

Note: Before bolting the machine to the workspace surface, ensure that an appropriate electrical outlet (240 V or 110 V) is nearby.

Once you have determined where the bolts will be, drill four holes into the workspace surface. Then, insert the bolts through the TDP 1.5®'s base and the workspace surface and tighten them as necessary.

In accordance with Article 13 of the European Directive 2006/42/EC, LFA Machines sells the TDP 1.5® as a partly finished machine, and it is meant to be installed into and function as a part in a production line.

After the installation of this machine, the following measures need to be taken:

- **Shields must be installed in order to cover moving parts, those being in particular the Upper Punch, Upper Drift Pin Assembly, Lower Drift Pin Assembly, Boot, Top Cam Assembly, and Hand Wheel.**
- **An emergency stop/emergency lockout/isolator switch must be installed on the outside of the machine.**
- **A risk assessment must be conducted on the entire production line.**

If you require guidance on the installation of the machine or conducting a safety assessment, please contact LFA Machines.

Manual and Electrical Controls

Basic Components

A description of the principal components follows:

- The **Hand Wheel** can be turned to start the cam track's direction.
- The **Top Cam Drive Shaft** guides the punches' movement.
- The **Hopper** holds the dry materials that will be compressed.
- The **Boot** moves the materials from the Hopper to the Tooling and ejects the tablets.
- The **Die** defines or molds the size and shape of the powder.
- The **Upper Punch** and **Lower Punch** compress the materials within the Die.

TDP 1.5® Process

The basic mechanism of the TDP 1.5® involves filling the Tooling (Die, Upper Punch, and Lower Punch) with powder, compressing the powder, and ejecting the tablet.

Filling the Tooling with Powder

The dry materials are poured into the Hopper, which funnels the powder into the Boot. As the Hand Wheel is manually operated, the Top Cam Drive Shaft withdraws the Upper Punch from the Die.

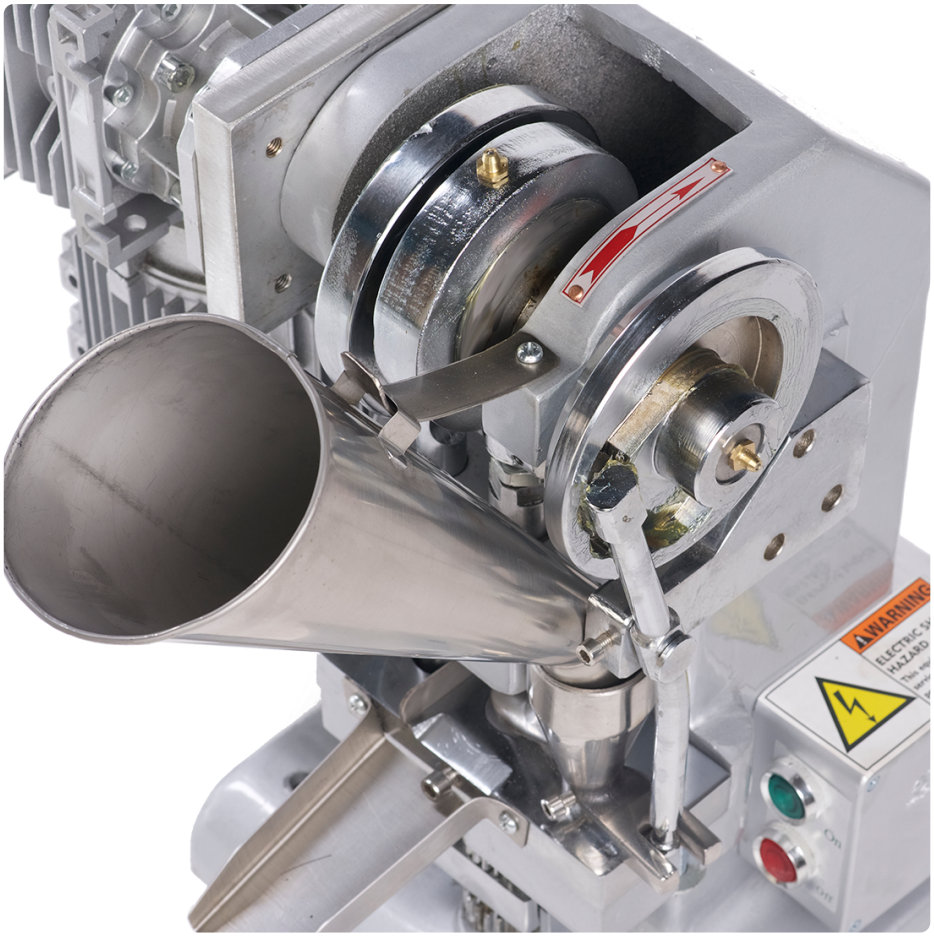
When the machine is operated by the motor, the Gearing initiates the movement of the Top Cam Drive Shaft, which withdraws the Upper Punch from the Die and sets the Lower Punch at the level at which the fill depth is adjusted.

Compressing the Powder

After the powder is filled in the Tooling, the Top Cam Drive Shaft drives the Upper Punch into the Die, which creates high pressure between both punches that allows the tablet to be compressed.

Ejecting the Tablet

After both punches compress the powder into a tablet, the Top Cam Drive Shaft withdraws the Upper Punch while the Lower Punch is pushed upward to expel the tablet. The tablet is then pushed out of the way by the Boot to prepare for the next tablet compression.



How to Create Tablets with the TDP 1.5®

Tools and Materials Needed

- Raw material formulation
- TDP 1.5®
- Safety goggles
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

WARNING: For personal protection while operating the TDP 1.5®, contain long hair and do not wear loose jewelry.

Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

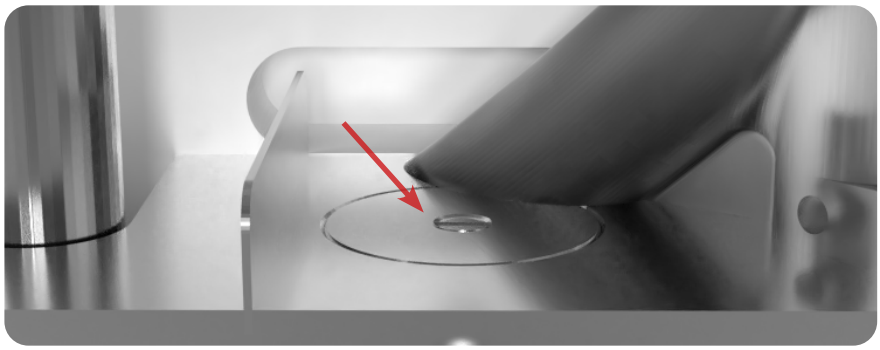
1. Adjust the fill depth and punch pressure to the lowest level.
2. Pour the dry materials into the Hopper.
    2.1 Note: Ensure that the TDP 1.5® is unplugged from the electrical outlet.
3. Raise the Hand Wheel's handle and rotate the Hand Wheel clockwise.
    3.1 Note: Always manually operate the TDP 1.5® for one rotation of the Top Cam Drive Shaft to ensure that it is operating correctly.
4. Adjust the fill depth and punch pressure until the tablet is at the desired weight and thickness.
5. Plug in the TDP 1.5® to an electrical outlet.
6. Press the green button (ON) to start to start the machine, and the red button (OFF) to turn off the machine.

Settings and Adjustment

The TDP 1.5®'s settings can be adjusted. Tuning the Tooling can help with changing the tablets' characteristics and how they are ejected from the machine. To watch a video of adjusting the fill depth, punch pressure, and ejection height on a similar machine, go to https://www.lfatabletpresses.com/videos/setup-the-fill-depth-punch-pressure-ejection-height-on-a-tdp-5-tablet-press

Ejection Height

When the Upper Punch is fully lifted, the Lower Punch in its highest position should be flush with the Die:



If the Lower Punch is above or below the Die's face, it will affect how smoothly the tablet is ejected. Adjusting the ejection height will help with this and can vary with different forms of Tooling.

Tools and Materials Needed

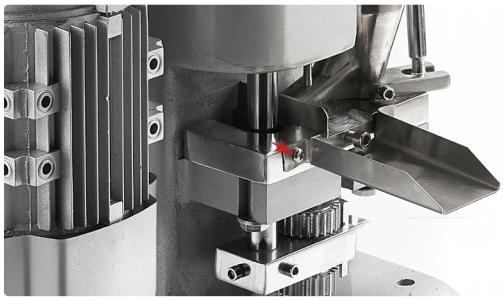
- Set of metric Allen keys with ball ends
- Crosshead screwdriver
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

WARNING: To prevent any potential personal injury, unplug the TDP 1.5® from the electrical outlet

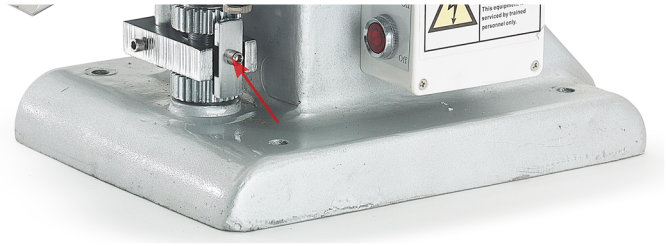
Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

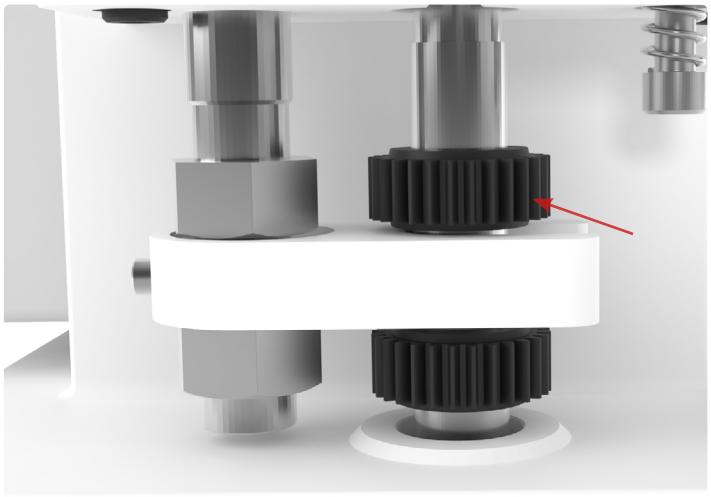
1. Produce a test tablet to determine how the Tooling should be adjusted.
2. Rotate the machine until the Lower Drift Pin Assembly is at its highest position and the Boot is at the position to eject the tablet.
3. Remove the Ejection Tray with a crosshead screwdriver.



4. Remove the Lower Drift Pin Assembly Locking Bar bolt with an Allen key.



5. Rotate the Upper Cog in the Lower Drift Pin Assembly by hand.
    5.1 Note: To raise ejection height, turn clockwise. To lower ejection height, turn counterclockwise.



6. Run an ungloved finger over the Base Plate to ensure the Die is flush.
7. Secure the bolt in the Lower Drift Pin Assembly Locking Bar with an Allen key.
    7.1 Note: Ensure that the Lower Drift Pin Assembly Locking Bar is situated vertically.
8. Reattach the Ejection Tray to the TDP 1.5® with a crosshead screwdriver.

Fill Depth

At times, a tablet will be too light or too heavy, and its weight must change. Adjusting the fill depth determines the tablet's thickness and weight. This can be controlled by changing how high or low the Lower Punch sits.

Tools and Materials Needed

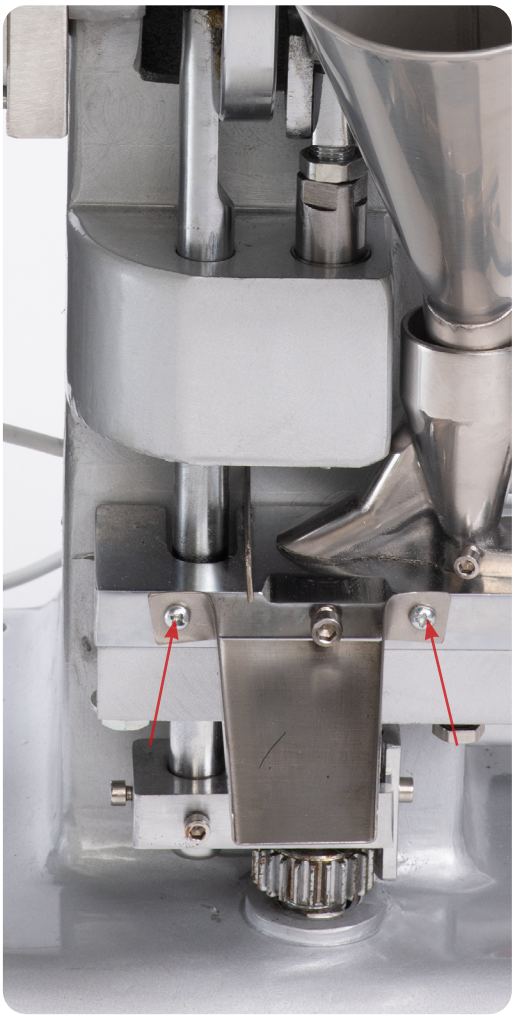
- Set of metric Allen keys with ball ends
- Crosshead screwdriver
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

WARNING: To prevent any potential personal injury, unplug the TDP 1.5® from the electrical outlet.

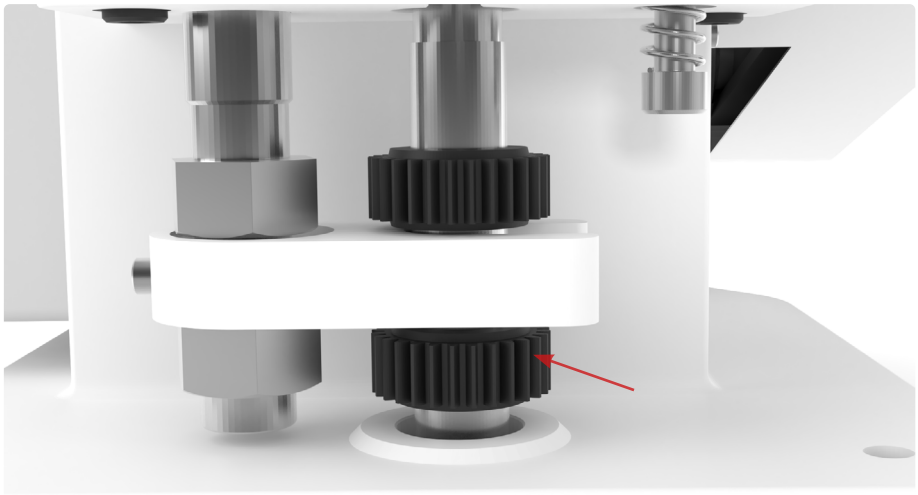
Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

1. Produce a test tablet to determine how the Tooling should be adjusted.
2. Remove the Ejection Tray with a crosshead screwdriver.



3. Remove the Lower Drift Pin Assembly Locking Bar with an Allen key.
4. Rotate the Lower Cog in the Lower Drift Pin Assembly by hand.
    4.1 Note: To increase the tablet weight, turn counterclockwise. To decrease the tablet weight, turn clockwise.



5. Replace the bar in the Lower Drift Pin Assembly Locking Bar with an Allen key.
    5.1 Note: Ensure that the Lower Drift Pin Assembly Locking Bar is situated vertically.

6. Produce a test tablet to make sure the weight is correct.
7. Reattach the Ejection Tray to the TDP 1.5®.

Punch Pressure

Sometimes tablets come out too soft and will crumble easily, which happens often after increasing the fill depth. Or, the machine can jam and will not be able to turn over. To correct this, the punch pressure needs to be adjusted in order to increase the tablet's firmness/de-jam the machine.

Tools and Materials Needed

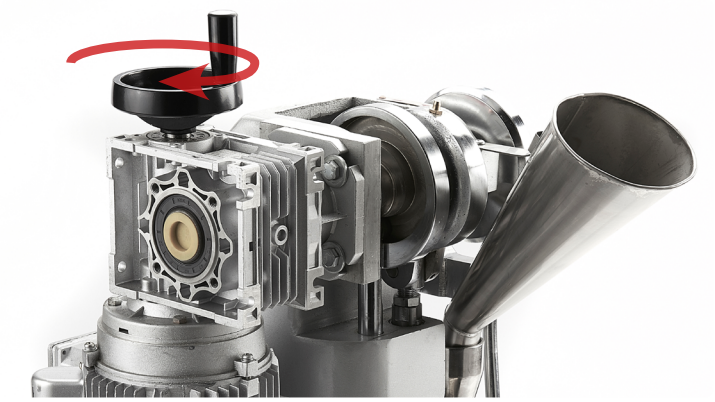
- Adjustable wrench
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

WARNING: To prevent any potential personal injury, unplug the TDP 1.5® from the electrical outlet.

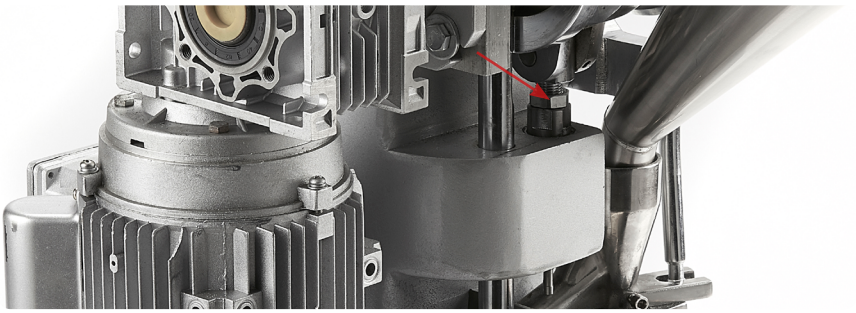
Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

1. Produce a test tablet to determine how the Tooling should be adjusted.
2. Remove any excess powder from the Base Plate.
3. Turn the Hand Wheel's handle until the Upper Punch is raised.



4. Loosen the Upper Drift Pin Assembly Locking Nut with an adjustable wrench.



5. Turn the Hand Wheel until the Upper Drift Pin Assembly is exposed.
6. Rotate the Upper Drift Pin Assembly with a wrench or by hand.
    6.1 Note: To increase the pressure and harden the tablet, turn clockwise. To decrease the pressure and soften the tablet, turn counterclockwise.
7. Tighten the Upper Drift Pin Assembly Locking Nut with an adjustable wrench.
8. Reattach the Ejection Tray with an Allen key.

Maintenance

To ensure that the TDP 1.5® will have a long operational life, maintenance is essential. This section includes methods for replacing parts, troubleshooting solutions, and how often to grease and clean your machines to keep its performance optimal.

General Maintenance Prescriptions

- Use the maintenance checklist (found in the Appendix) before, during, and after machine operation.
- Make sure all grease points are maintained and regularly lubricated.
- Use an appropriate amount of lubricant. Excess grease can drip into the tablets as they are formed.
- Before reassembling the machine after cleaning, make sure that the parts are dried and oiled.
- Constantly check for any loose nuts and/or screws before, during, and after machine operation.
- If the machine is not used for more than a week, place the Tooling in an airtight container and cover in lubricant.

Lubrication

Regularly greasing your machine is vital to prolonging its operational life. Parts that are not greased properly can make the machine seize up and cause major problems later. LFA recommends maintaining a lubrication schedule for your TDP 1.5®, which can be found in this section.

Tools and Materials Needed

- Grease gun
- Lubricant/grease (food grade if machine has contact with the food or drug product)
- Set of metric Allen keys with ball ends
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

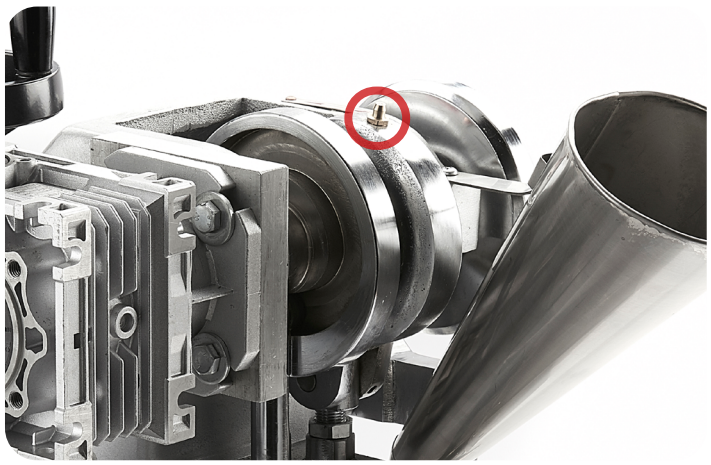
WARNING: To prevent any potential personal injury, unplug the TDP 1.5® from the electrical outlet.

Instructions (continued on next page)

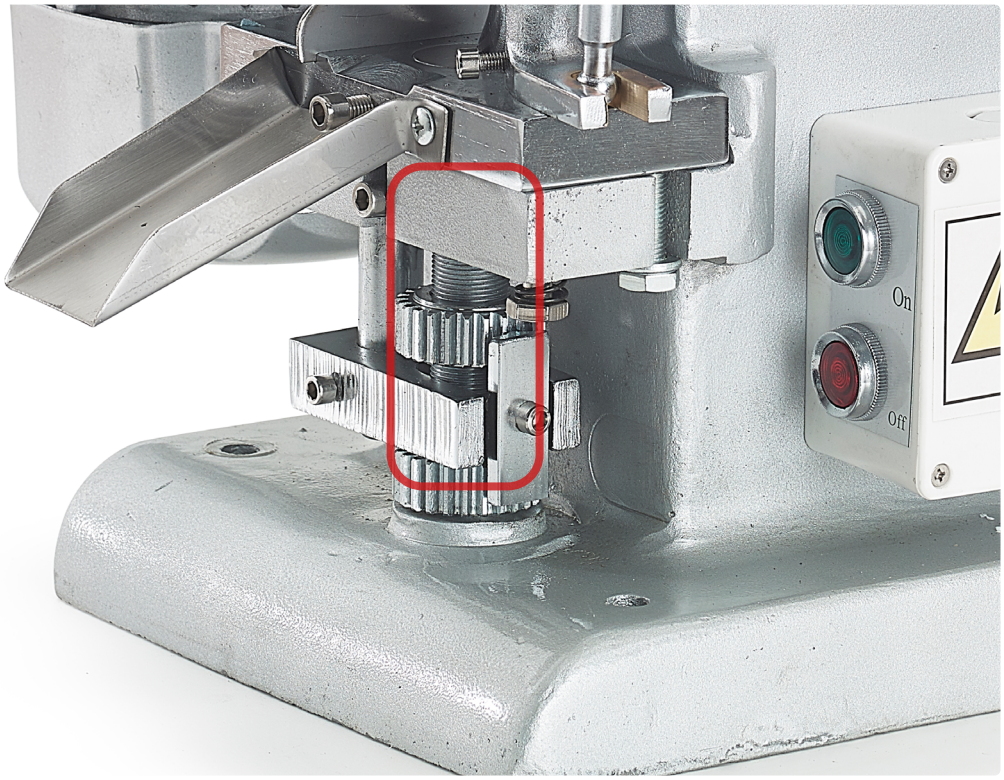
Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

1. Rub a finger’s worth of grease on the Boot Timing Cam’s side.
    1.1 Note: Be sure to lubricate the Boot Timing Cam Runner.

2. Lubricate the Eccentric Sheave Strap's Grease Nipple with the grease gun.
    2.1 Note: Rotate the Hand Wheel during this to ensure grease gets in.

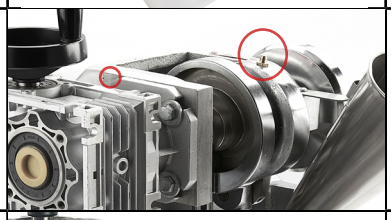
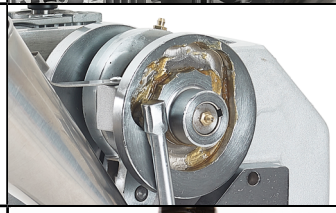
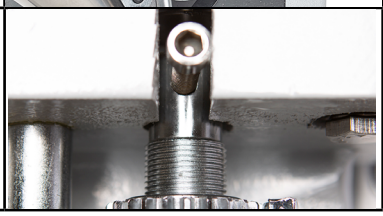


3. Lubricate the Lower Drift Pin Assembly.



Lubrication Schedule

LFA recommends the following TDP 1.5® parts to be lubricated according to the following frequency:

Part	Location	Image	Frequency	Type of Lubricant
Tooling heads	The heads of the Upper Punch and Lower Punch		Visually inspect and apply when dry	Assembly paste
Tooling (after cleaning)	Storage container		Apply after cleaning	Mineral oil
Eccentric Sheave Strap	The Grease Nipple on top of Eccentric Sheave Strap		Apply (a) after every 5000 tablets, (b) after a deep clean, or (c) when the press has not been used for an extended period of time	NLGI Grade 2
Boot Timing Cam	Cam track and top of Boot Timing Bar		Apply (a) after every 5000 tablets, (b) after a deep clean, or (c) when the press has not been used for an extended period of time	NLGI Grade 2
Lower Drift Pin Assembly	The points at which the Lower Drift Pin Assembly, and base meet		Apply a small amount whenever the press will be left unattended for an extended period of time	Mineral oil

Dismantling for Repair and Replacement

Eventually due to wear and tear, some parts of the TDP 1.5® will need to be removed for repair and replacement. To prevent any delays in your tablet production, it is best practice to keep extra parts just in case.

To buy a TDP 1.5® part replacement, simply go to
https://www.lfatabletpresses.com/products/pill-press-machine-spare-parts/tdp-1-5-parts

Warranty
To access LFA's warranty policy, go to https://www.lfatabletpresses.com/warranty
If your part is eligible for warranty, have your part's serial number on hand and please contact LFA:

UK
Phone
+44 01869 250234
Email
support.uk@lfamachines.com

USA
Phone
+1 (682) 312-0309
Email
support.usa@lfamachines.com

Taiwan
Phone
+886 422031790
Email
support.asia@lfamachines.com

WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® from the electrical outlet when replacing parts.

Wear Parts and Causes of Damage

Wear Part	Cause of Damage
Tooling	The Tooling can become chipped or broken. Lead times for a new set of Tooling can take as long as 6-8 weeks, so LFA recommends having a spare set or two.
Boot	The TDP 1.5® Boot is formed from a toughened plastic. This part can become trapped between the Die Bore and the Upper Punch, which usually results from user error.
Boot Timing Bar	In the event that the Boot is trapped or damaged by the Upper Punch, the Boot Timing Bar can become bent.

Tooling

If you want to change the shape and diameter of the tablet, or if the Upper Punch, Lower Punch, and/or Die you currently have is damaged, it is necessary to change the Tooling.
To buy new Tooling from LFA, simply go to https://www.lfatabletpresses.com/products/tablet-press-tooling
To watch a video of a TDP® Tooling change, go to https://www.lfatabletpresses.com/videos/how-to-change-tdp-punch-die-tooling

Tools and Materials Needed

- Set of metric Allen keys with ball ends
- Set of metric wrenches/adjustable wrench
- Crosshead screwdriver
- Grippers or pliers
- Tooling/die set (Upper Punch, Die, and Lower Punch)
- Hammer (if Die is difficult to remove)
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

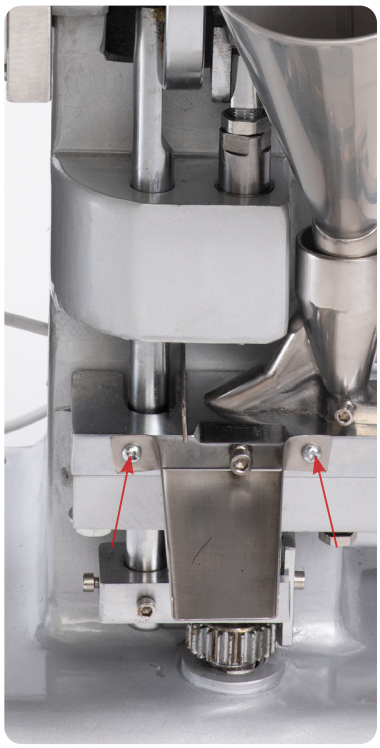
WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® from the electrical outlet when replacing parts.

Instructions

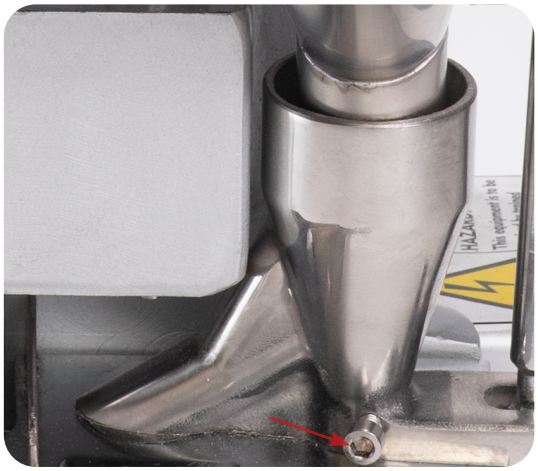
Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

Remove the Tooling

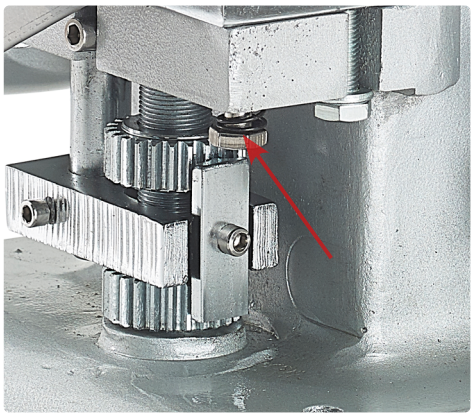
1. Remove the Hopper carefully and catch any powder still inside of it.
2. Remove the Ejection Tray with a crosshead screwdriver.



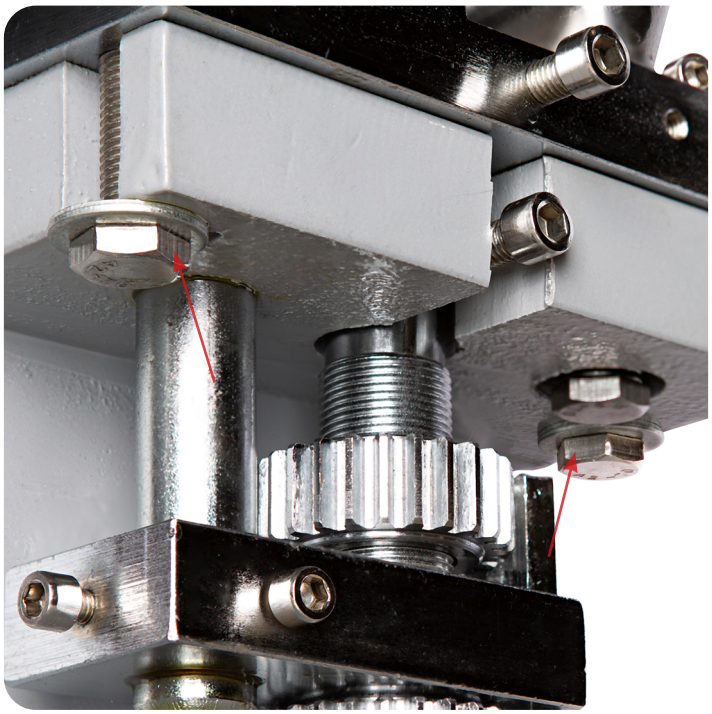
3. Loosen the Boot's set screw with an Allen key.



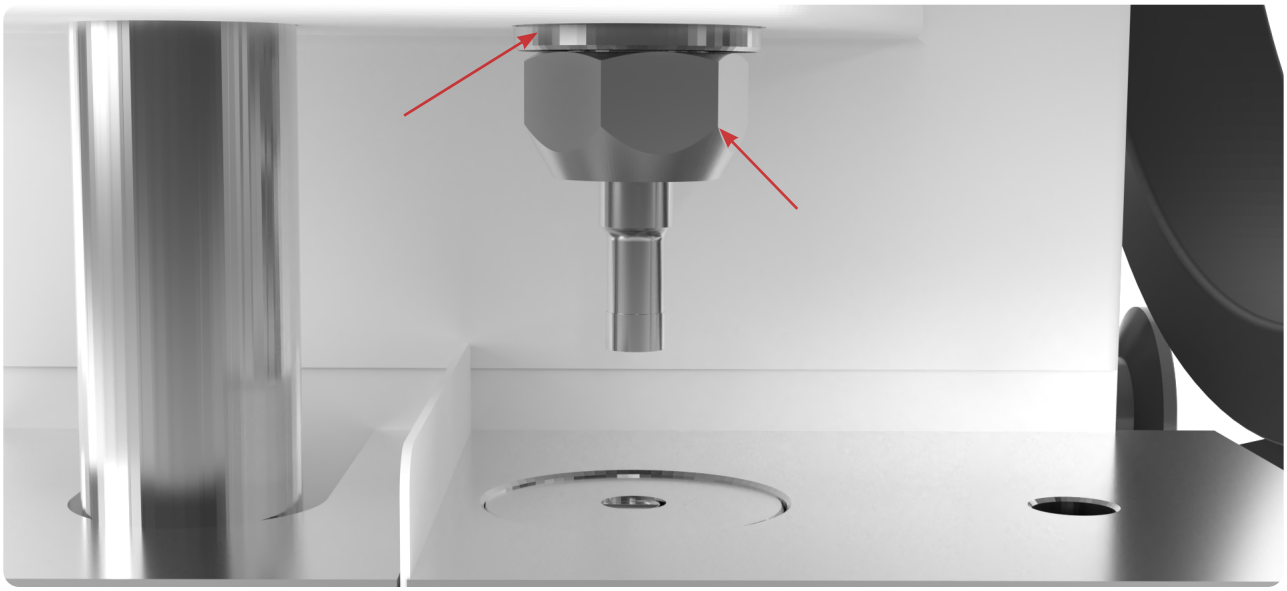
4. Remove the Boot Bolt and Spring underneath the Boot with a wrench.



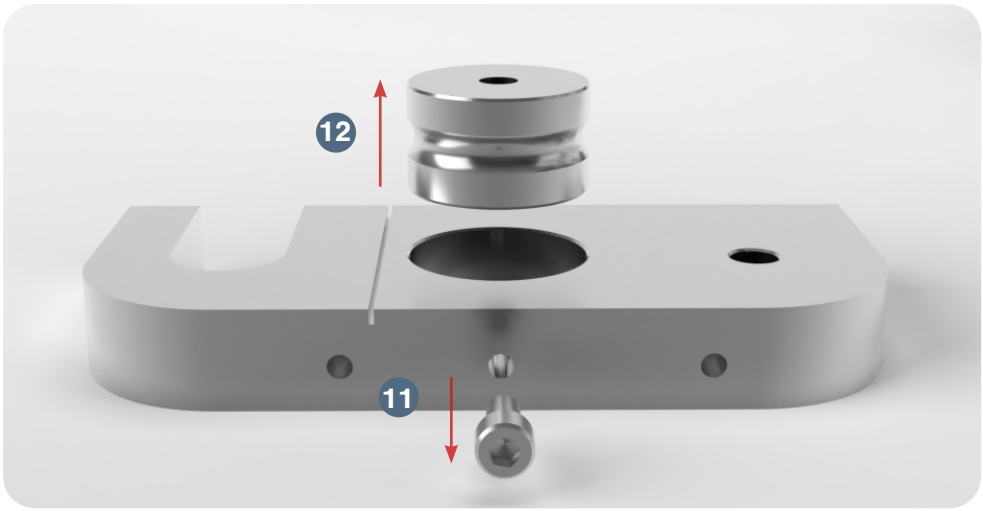
5. Take off the Boot carefully and remove any powder still inside it.
6. Loosen the two bolts underneath the Base Plate with a wrench.



7. Turn the Hand Wheel until the Upper Drift Pin Assembly is lowered.
8. Loosen the Upper Punch Die Locking Nut with a wrench while keeping the Upper Punch Drift Assembly in place with another wrench.



9. Remove the Upper Punch by hand.
    9.1 Note: If you cannot remove by hand, carefully use grippers or pliers.
10. Remove the Base Plate with the Die still inside it.
11. Remove the set screw that locks the Die with an Allen key.
12. Take out the Die from the middle of the Base Plate.
    12.1 Lightly tap the Die with a hammer if it is difficult to remove.

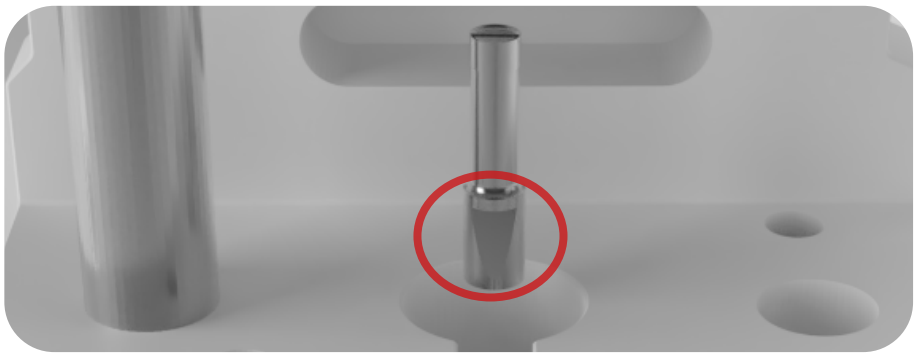


13. Remove the bolt that locks the Lower Punch with an Allen key.
14. Remove the Lower Punch by hand.
    14.1 Note: If you cannot remove by hand, carefully use grippers or pliers.

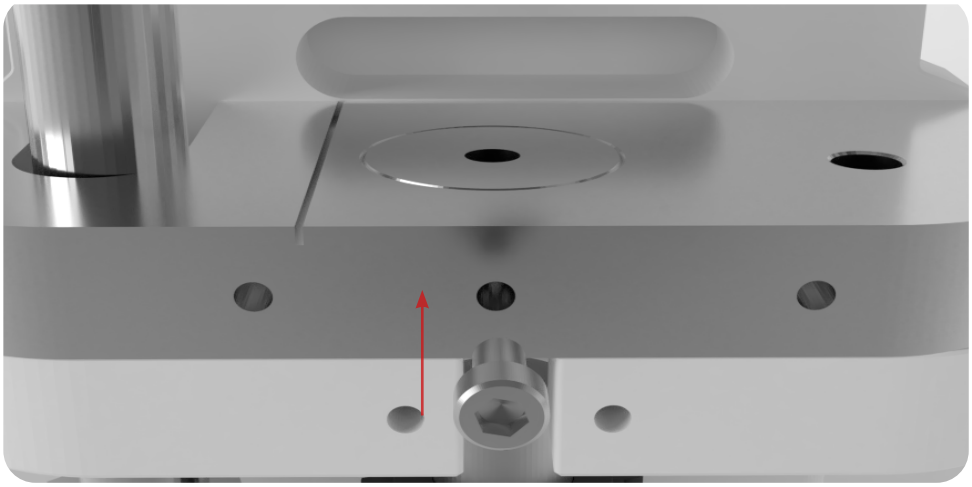
Note: To help ensure that the Die is inserted correctly, LFA recommends using an Insertion Ring. You can order the Die Seat Cleaner and Insertion Ring on our website at https://www.lfatabletpresses.com/die-seat-cleaner-insertion-ring

Replace the Tooling

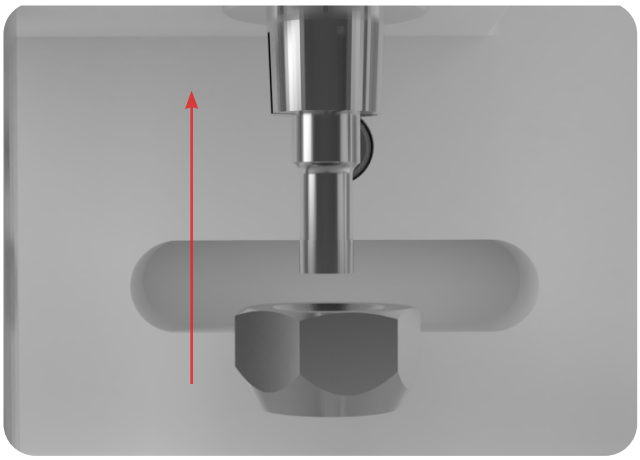
15. Insert the new Lower Punch into the Lower Drift Pin Assembly.
16. Reinsert the bolt that locks the Lower Punch with an Allen key.
    16.1 Note: Make sure that the Lower Punch's “keyed” section is facing forward.



17. Place the Base Plate onto the TDP 1.5® Base.
18. Insert the new Die into the middle of the Base Plate.
19. Reinsert the set screw that locks the Die with an Allen key.
    19.1 Note: Make sure the set screw is not fully tightened.

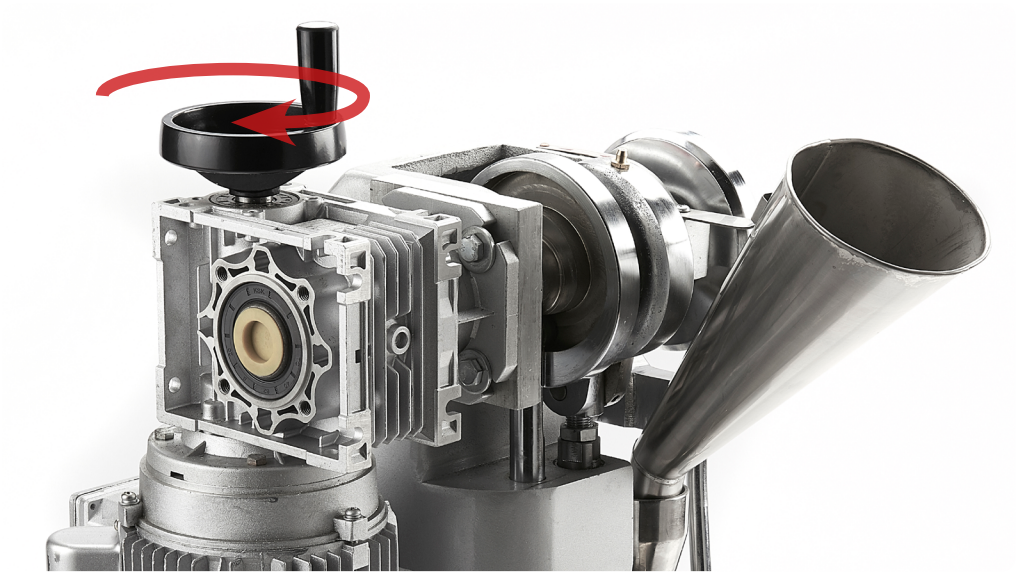


20. Insert the new Upper Punch into the Upper Drift Pin Assembly.
21. Tighten the Upper Punch Locking Nut onto the Upper Drift Pin Assembly with a wrench.



22. Rotate the Hand Wheel and carefully lower the Upper Punch into the Die.
    22.1 Note: To watch a video on proper Base Plate alignment, go to https://www.lfatabletpresses.com/videos/how-to-align-a-baseplate-on-a-tdp-5

23. Reinsert the Base Plate's bolts while the Upper Punch is still inside the Die.
    23.1 Note: The Die's set screw can be fully tightened now.
24. Position the Boot back on the Base Plate.
25. Insert the Boot Timing Bar's end in the Boot
26. Resecure the Boot Bolt and Spring underneath the Boot with a wrench.
27. Tighten the Boot’s set screw with an Allen key.
28. Reattach the Ejection Tray with an Allen key.
29. Reinsert the Hopper.
30. Turn the Hand Wheel for one rotation of the Top Cam Drive Shaft to ensure that the machine runs smoothly before plugging it in and turning it on.



Boot Timing Bar

This part can become warped from collision, and it is critical to the TDP 1.5®'s operation. If you need to replace your TDP 1.5®'s Boot Timing Bar, the process is quite simple.

Tools and Materials Needed

- Set of metric Allen keys with ball ends
- New Boot Timing Bar part
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

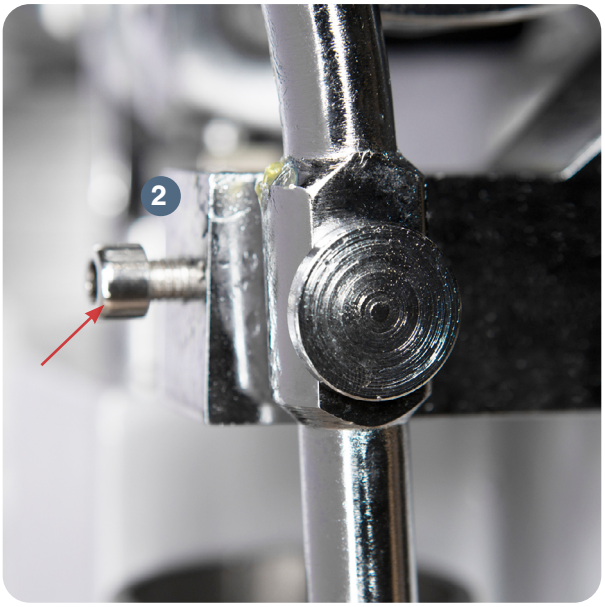
WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® from the electrical outlet when replacing parts.

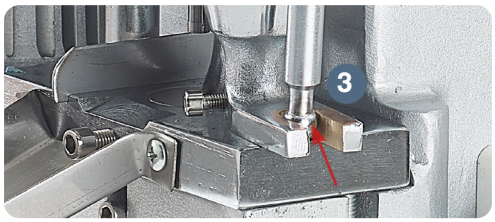
Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

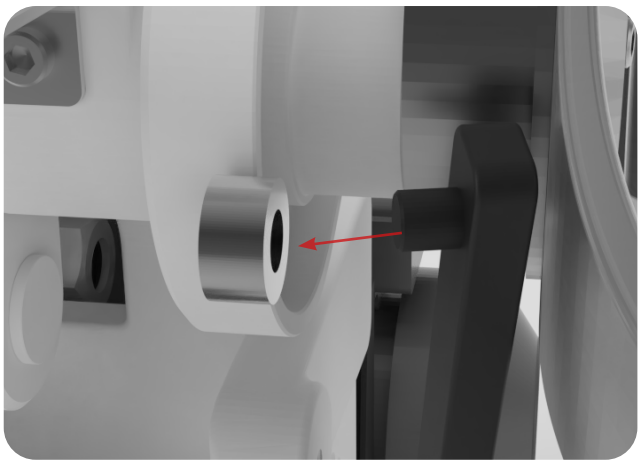
Remove the Boot Timing Bar

1. Remove the Hopper carefully and catch any powder still inside of it.
2. Loosen the Boot Timing Bar bolt with an Allen key.
3. Remove the Boot Timing Bar's end from the Boot.



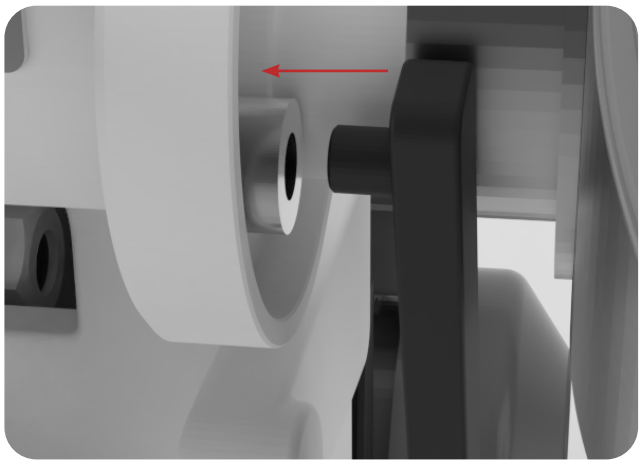


4. Remove the top part of Boot Timing Bar from the Boot Timing Cam.
    4.1 Note: To make removal easier, turn the Hand Wheel to rotate the Boot Timing Cam so you can easily access the Boot Timing Bar.
5. Remove the Boot Timing Cam Runner from the Boot Timing Bar by hand.
6. Remove the Boot Timing Bar from the Base Plate.

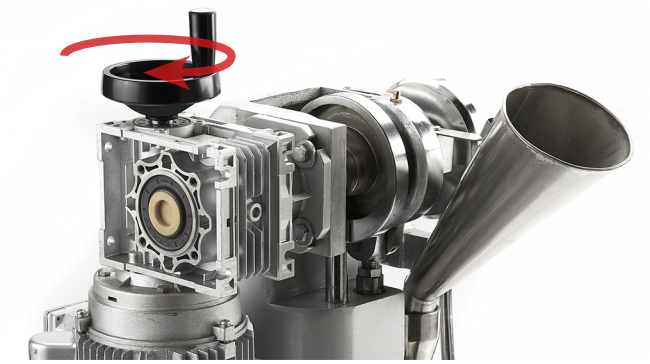


Replace the Boot Timing Bar

7. Place the Boot Timing Cam Runner on the new Boot Timing Bar.
8. Insert the new Boot Timing Bar with the runner into the side of the Boot Timing Cam.



9. Insert the new Boot Timing Bar's end in the Boot
10. Tighten the Boot Timing Bar bolt with an Allen key.
11. Reinsert the Hopper.
12. Turn the Hand Wheel for one rotation of the Top Cam Drive Shaft to ensure that the machine runs smoothly before plugging it in and turning it on.



Boot

Due to its constant movement, the Boot can wear down and prevent granular material from flowing smoothly. Replacing this part is a simple process. To watch a video of Boot removal on a similar machine, go to https://www.lfatabletpresses.com/videos/how-to-remove-the-boot-timing-bar-on-a-tdp-5

Tools and Materials Needed

- Set of metric Allen keys with ball ends
- Crosshead screwdriver
- Set of metric wrenches/adjustable wrench
- New Boot part
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

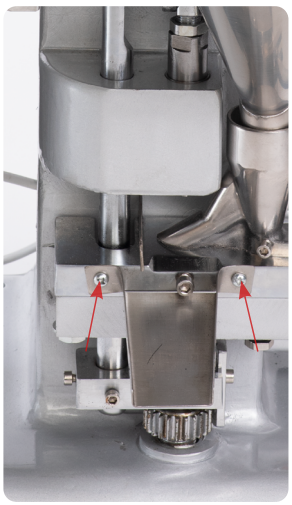
WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® from the electrical outlet when replacing parts.

Instructions

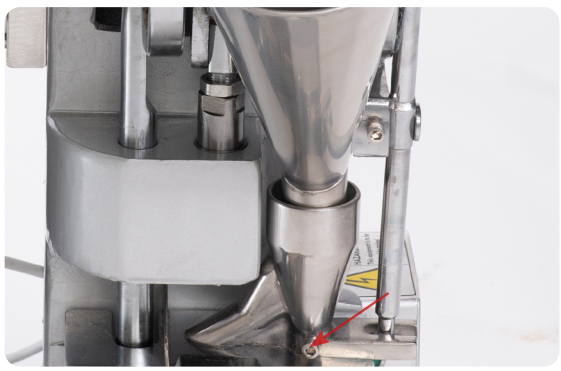
Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

Remove the Boot

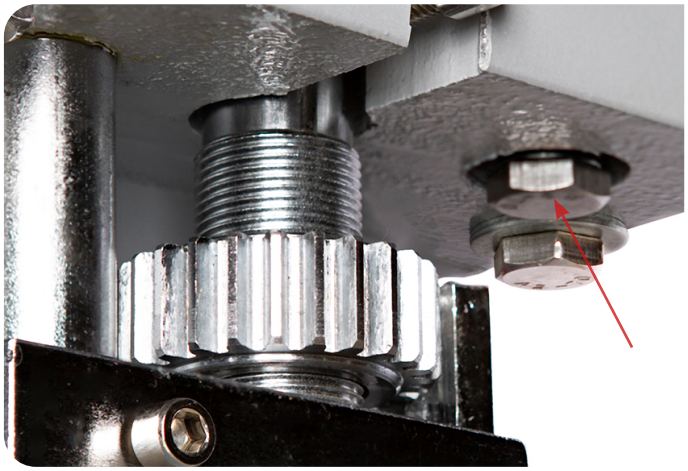
1. Remove the Hopper carefully and catch any powder still inside of it.
2. Remove the Ejection Tray with an crosshead screwdriver.



3. Loosen the Boot's set screw with an Allen key.



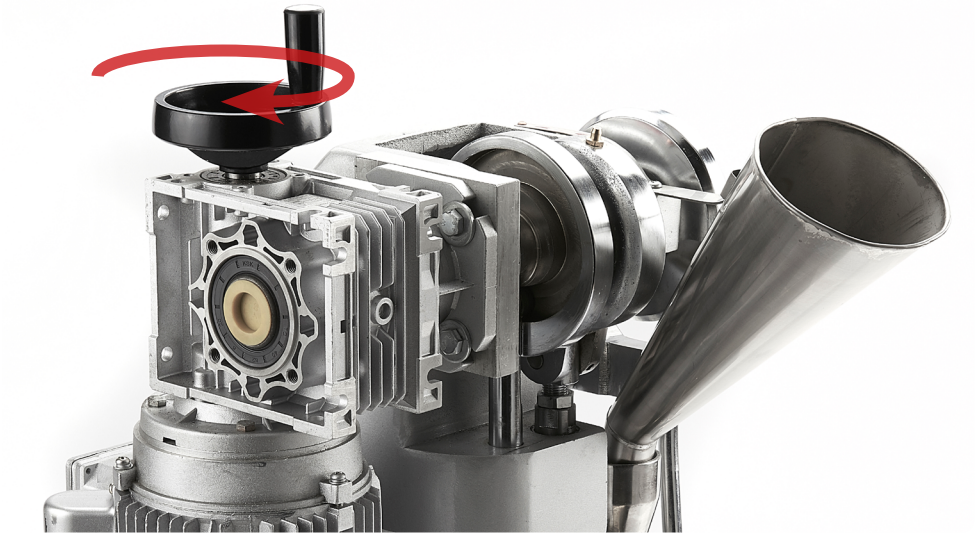
4. Remove the Boot Bolt and Spring underneath the Boot with a wrench.



5. Take off the Boot carefully and remove any powder still inside it.

Replace the Boot

6. Position the new Boot on the Base Plate.
7. Insert the Boot Timing Bar's end in the new Boot.
8. Resecure the Boot Bolt and Spring underneath the new Boot with a wrench.
9. Tighten the new Boot's set screw with an Allen key.
10. Reattach the Ejection Tray with an Allen key.
11. Reinsert the Hopper.
12. Turn the Hand Wheel for one rotation of the Top Cam Drive Shaft to ensure that the machine runs smoothly before plugging it in and turning it on.



Troubleshooting

Sometimes unavoidable issues will occur while operating the TDP 1.5®. Fortunately, there are several methods to remedy these issues.

Common Machine/Part Issues

Symptom	Possible Cause	Possible Solution
Machine freezes or locks up	Grease point areas are dry.	Regularly oil and grease all the Grease Nipple points.
	There is excess pressure on the Upper Drift Pin Assembly.	Rotate the Upper Drift Pin Assembly counterclockwise.
	The press is being started with the Upper Punch at a low point.	Adjust the starting position so that the Upper Punch is at the highest point.
Knocking sounds coming from machine	The Upper Punch and Lower Punch are colliding with the Die.	After loosening its bolts, readjust the Base Plate until it is correctly aligned. After that, tighten the bolts back.
	The Upper Drift Pin Assembly is slightly off.	Loosen the Base Plate bolts and rotate the machine until the Upper Punch is aligned with the Die's bore. After that, tighten the bolts back.
	The Upper Drift Pin Assembly is not dropping smoothly in the powder filling stage of the process.	Check that there is not a buildup of powder between the Lower Punch and the Die. Then check that the Lower Drift Pin Assembly has enough clearance to drop through the hole in the Base.
Heavy resistance during production	The high friction areas are either unclean, locked, worn out, or not greased properly.	Apply grease to the Grease Nipple points and all high friction areas on the machine.

Symptom	Possible Cause	Possible Solution
Inability to compact materials to tablet form	Boot is blocked and not enough materials are flowing out.	Check the Boot for a potential clog.
	The Boot Timing Bar is not secured.	Tighten the Boot Timing Bar's bolts.
	There is not enough pressure.	Rotate the Upper Drift Pin Assembly clockwise.
	The Lower Punch is broken.	Remove the Lower Drift Pin Assembly to access the broken Lower Punch. After removing it, replace the Tooling.
	The Lower Drift Pin Assembly is not dropping properly during filling.	Check that there is not a buildup of powder between the Lower Punch and the Die. Then check that the Lower Drift Pin Assembly has enough clearance to drop through the hole in the base.
	There are flowing issues with the mix.	If the machine is able to make tablets with LFA's Firmapress®, then the problem is your mix. Adjust your formulation. If still an issue, contact LFA for support.
Powder sticks to the Upper Punch	There is damage to the Tooling or the Tooling's design is causing sticking.	Remove and replace the Tooling (Upper Punch, Lower Punch, and Die).
	There are issues with the mix.	Adjust your formulation. If still an issue, contact LFA for support.
Powder sticks to the Lower Punch	There are issues with the mix.	Adjust your formulation. If still an issue, contact LFA for support.

Common Tablet Issues

Symptom	Possible Cause	Possible Solution
Double tablets	Previous tablet did not eject correctly.	Remove the double tablet manually from the Die bore.
	Excess granular materials were placed in the Die, which prevented the ejection of the existing tablet.	Clean the Tooling to remove any excess granular materials and make sure that it is clean and completely dry.
Cracked or broken tablets	There are problems with the formulation of the granules and ingredients.	If the machine is able to make tablets with LFA's Firmapress®, then the problem is your mix. Adjust your formulation. If still an issue, contact LFA for support.
	The Boot is not feeding enough material to be pressed in tablet form.	
	There is excess pressure.	Please read our article on Capping at https://www.lfatabletpresses.com/articles/tablet-capping
Shattered tablets	The Boot Timing Bar and the Boot are not adjusted properly.	Adjust the Boot Timing Bar by loosening/tightening its bolt and moving it.
	Air is becoming trapped in the tablet during compression.	Please read our article on Capping at https://www.lfatabletpresses.com/articles/tablet-capping
	The ejection height is incorrect.	Rotate the Upper Cog in the Lower Drift Pin Assembly by hand until the ejection height is at the correct level.
Inconsistent tablet weight	The Lower Drift Pin Assembly Locking Bar is loose.	Check that the Lower Drift Pin Assembly Locking Bar is secured to the Lower Drift Pin Assembly and the Lower Drift Pin Assembly Cogs.
	Not enough pressure is being exerted.	Rotate the Upper Drift Pin Assembly clockwise.
	There are flowing issues with the mix.	If the machine is able to make tablets with LFA's Firmapress®, then the problem is your mix. Adjust your formulation. If still an issue, contact LFA for support.
Soft tablets	There is too little punch pressure.	Rotate the Upper Drift Pin Assembly clockwise.
	There are flowing issues with the mix.	If the machine is able to make tablets with LFA's Firmapress®, then the problem is your mix. Adjust your formulation. If still an issue, contact LFA for support.
Uneven tablets	The Tooling is worn out.	Check the ingredients of your formula before you replace the Die, Upper Punch, and Lower Punch.

De-Jamming the TDP 1.5®

There are several reasons why a TDP 1.5® might jam such as:

- The fill depth is set too low and the pressure is set too high.
- There is a build up of powder sticking to the Tooling.
- Any powder buildup on the machine can cause tablets to eject backwards and not forwards, creating potential for a double tablet becoming stuck in the Die's bore.

Tools and Materials Needed

- Set of metric Allen keys with ball ends
- Set of metric wrenches/adjustable wrench
- Disposable latex/rubber gloves (for food grade products and to protect hands from grease)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® before de-jamming it.

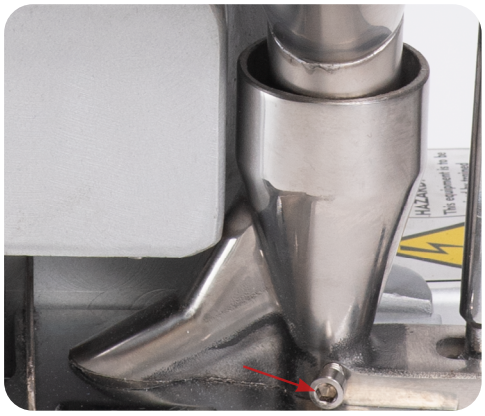
Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

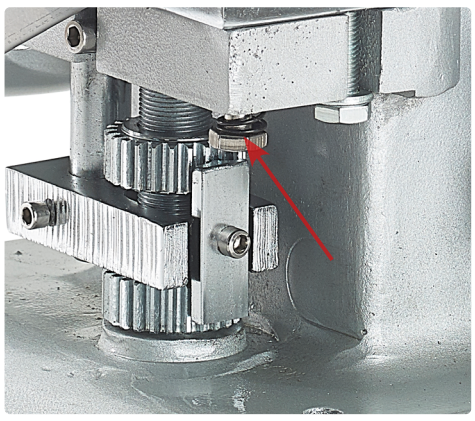
Run a Reverse Rotation

Note: Please refer to the Dismantling for Repair and Replacement section for additional assistance.

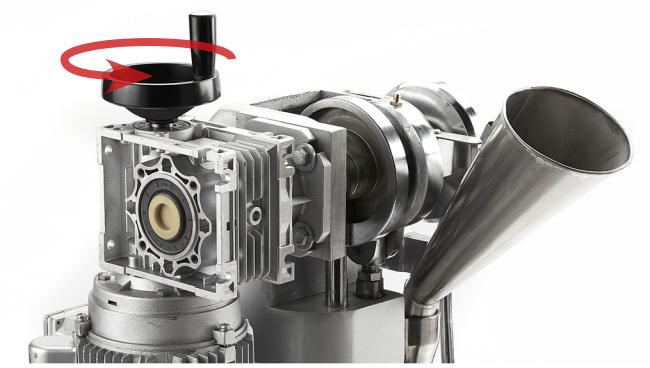
1. Remove the Hopper carefully and catch any powder that is inside of it.
2. Loosen the Boot's set screw with an Allen key.



3. Remove the Boot Bolt and Spring underneath the Boot with a wrench.



4. Take off the Boot carefully and remove any powder that is inside of it.
5. Turn the Hand Wheel in the reverse direction for a few rotations.



6. Position the Boot on the Base Plate.
7. Insert the Boot Timing Bar's end in the Boot.
8. Resecure the Boot Bolt and Spring underneath the Boot with a wrench.
9. Tighten the Boot’s set screw with an Allen key.
10. Reattach the Ejection Tray with a crosshead screwdriver.
11. Reinsert the Hopper.
12. Turn the Hand Wheel for one rotation to ensure that the machine runs smoothly before plugging it in and turning it on.

Cleaning

During the TDP 1.5®'s operation, excess powder will find its way into parts of the machine, particularly in the Base, Hopper, Boot, Base Plate, and Tooling. It is important to clean the TDP 1.5® thoroughly to prevent rusting and cross contamination. To watch a video on how to clean a similar machine, go to https://www.lfatabletpresses.com/videos/cleaning-your-tdp-5-tablet-press

LFA recommends that the machine be cleaned after each operation.

Tools and Materials Needed

- Cleaning brush
- Long wire pipe cleaner
- Toothbrush
- Cleaner (such as heavy duty foam cleaner; NSF approved if food grade product)
- Set of metric Allen keys with ball ends
- Set of metric wrenches/adjustable wrench
- Crosshead screwdriver
- Grippers or pliers (if parts are difficult to remove)
- Hammer (if Die is difficult to remove)
- Disposable latex/rubber gloves
- Bagless vacuum
- 3 clean cloths
- Potable water
- Bowl of warm soapy water (nothing abrasive)
- Sanitizer (e.g. Member's Mark Commercial Sanitizer)
- Hairnet and/or beard net (food grade products only)
- Safety goggles
- Sterile shoe covers (food grade products only)

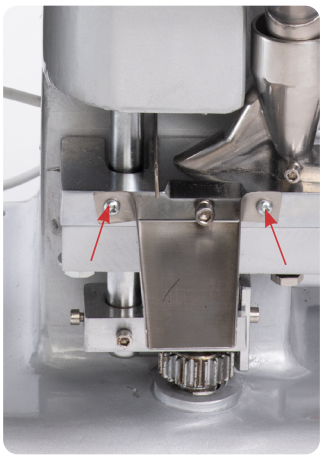
WARNING: To prevent any potential personal injury, ALWAYS unplug the TDP 1.5® from the electrical outlet when replacing parts.

Instructions

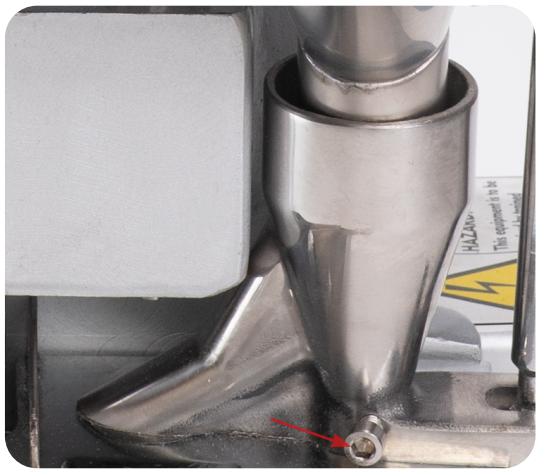
Note: Wear safety goggles and latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

Remove Parts

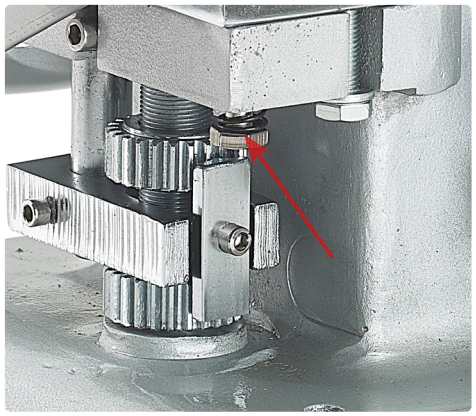
1. Remove the Hopper carefully and catch any powder still inside it.
2. Remove excess powder and any tablets from the Ejection Tray with a cleaning brush.
3. Remove the Ejection Tray with an crosshead screwdriver.



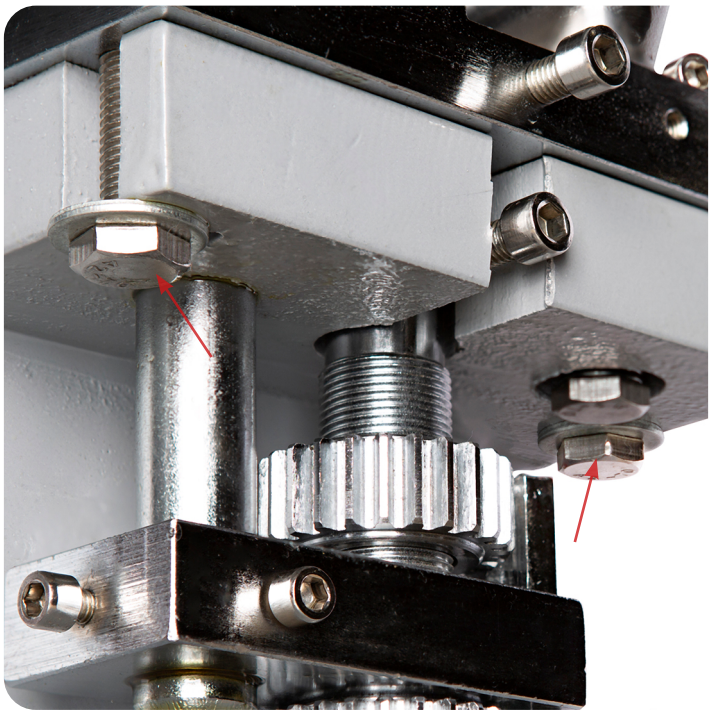
4. Loosen the Boot's set screw with an Allen key.



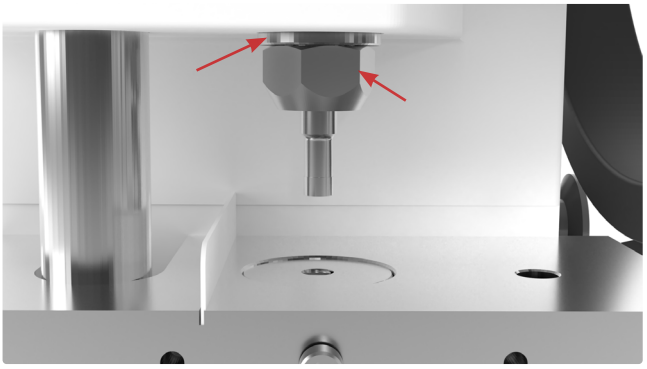
5. Remove the Boot Bolt and Spring underneath the Boot with a wrench.



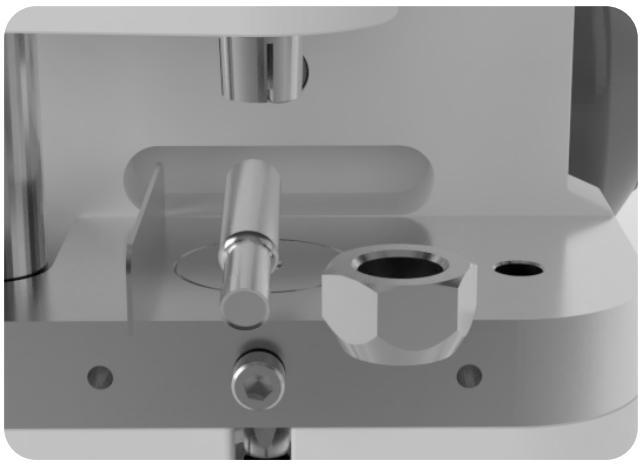
6. Take off the Boot carefully and remove any powder still inside it.
7. Loosen the bolts underneath the Base Plate with a wrench.



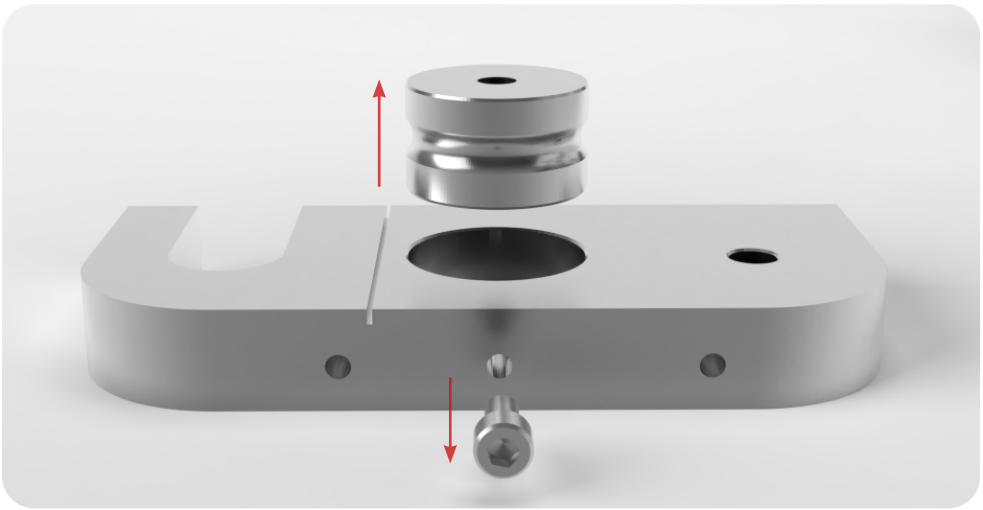
8. Turn the Hand Wheel until the Upper Drift Pin Assembly is lowered.
9. Loosen the Upper Punch Die Locking Nut with a wrench while keeping the Upper Punch Drift Assembly in place with another wrench.



10. Remove the Upper Punch by hand.
    10.1 Note: If you cannot remove by hand, carefully use grippers or pliers.



11. Remove the Base Plate with the Die still inside it.
12. Remove the bolt that locks the Die with an Allen key.
13. Take out the Die from the middle of the Base Plate.
    13.1 Note: Lightly tap the Die with a hammer if it is difficult to remove.



14. Remove the bolt that locks the Lower Punch with an Allen key.
15. Remove the Lower Punch by hand.
    15.1 Note: If you cannot remove by hand, carefully use grippers or pliers.

Clean the Base

16. Vacuum any powder/debris from the machine.
17. Spray the TDP 1.5® Base with the cleaner, particularly in the Tooling's location.
18. Rinse the cleaner off with potable water.
19. Sanitize the TDP 1.5® Base with a clean cloth.

Clean the Parts

20. Take one of the parts removed from the machine and submerge it in the bowl of warm soapy water.
    20.1 Note: To ensure that all dirt and debris are removed, wash one part at a time.
21. Take a clean cloth and carefully wash the part thoroughly.
    21.1 Note: Use the toothbrush for difficult-to-remove debris. When cleaning tooling, use non-abrasive cleaning equipment such as a soft pipe cleaner and soft cloth.
22. Dry part immediately after it is cleaned and rinsed.
23. Sanitize part with a clean cloth.
24. Repeat steps 20-23 for each remaining part until they are all clean.

Cleaning Schedule Matrix

Part	Frequency							
	After installing machine	After every use	Before every use	In between products that present a cross contamination risk	Weekly	Monthly	Before placing In storage	After removing from storage
Ejection Tray	Remove from machine	Remove from machine	Install on machine	Remove from machine	N/A	N/A	Remove from machine	Install on machine
Tooling	Remove from machine	Remove from machine	Install into machine	Remove from machine	N/A	N/A	Remove from machine	Install on machine
Boot	Remove from machine	Remove from machine	Install into machine	Remove from machine	N/A	N/A	Remove from machine	Install on machine
Base Plate	Remove from machine	Remove from machine	Install on machine	Remove from machine	N/A	N/A	Remove from machine	Install on machine
Hopper	Remove from machine	Remove from machine	Install on machine	Remove from machine	N/A	N/A	Remove from machine	Install on machine
Top Cam area	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine
Upper Drift Pin Assembly	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine
Motor and Gearing	Clean on machine	Clean in machine	Clean in machine	N/A	Clean on machine	Clean in machine	Clean on machine	Clean on machine
Upper Drift Pin Assembly Threaded Cam	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine	Clean in machine
Lower Drift Pin Assembly	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine	Remove from machine
Base/Frame	Clean on machine	Clean in machine	Remove from machine	Remove from machine	N/A	N/A	Clean in machine	Clean on machine

Cleaning Level Key
Level 1 - Remove powder
Level 2 - Dry clean with cloth
Level 3 - Dry clean and re-lubricate if specified in lubrication schedule
Level 4 - Wet clean and re-lubricate if specified in lubrication schedule
Remove from machine - Take part out of machine and clean if required. Store it correctly or install back into machine.
Install into machine - Install part into the machine and make sure that it has been cleaned. If needed, lubricate to the level required.
Clean on/in machine - Clean the part while in the machine and do not remove it. Make sure that all contact surfaces are clean to the level required.

This cleaning matrix is intended as a guide only and is not an exhaustive list. All cleaning schedules will need to be adapted to the industry and product, following industry regulations and the material safety data sheets that come with specific products. Please check with your Food Safety Manager/Department, Quality Control Manager/Department, or other relevant internal departments at your company before using.

Storing the TDP 1.5®

After its thorough cleaning, the TDP 1.5® needs to be stored in the proper conditions. It is important to store it in an environment in which the machine is safe from rusting. The TDP 1.5®'s high traction areas and the Tooling need to be lubricated separately before you store them.

Tools and Materials Needed

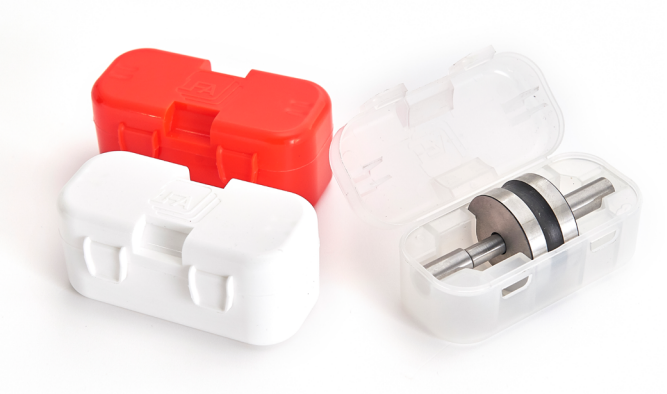
- Plastic wrapping to cover machine
- Airtight container for Tooling (if in storage for more than a week)
- Grease gun
- Lubricant/grease (food grade lubricant if machine has a high chance of contact with the food or drug product)
- Disposable latex/rubber gloves (for food grade products and to protect hands from lubricant)
- Hairnet and/or beard net (food grade products only)
- Sterile shoe covers (food grade products only)

Instructions

Note: Wear latex/rubber gloves (and appropriate food grade attire if applicable) during this process.

Lubricating the Tooling

If you are not using the machine for more than a week, store the Tooling in an airtight container and cover it with lubricant to prevent rust formation. If not, simply lubricate each part of the Tooling and reinsert it back into the machine.

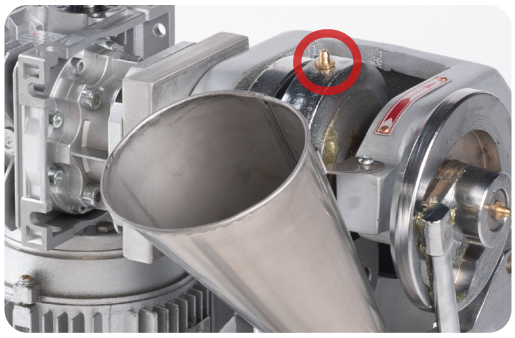


LFA's TDP® Tooling Case provides airtight storage and is perfect for transport and protection. Order at https://www.lfatabletpresses.com/tooling-case-tdp

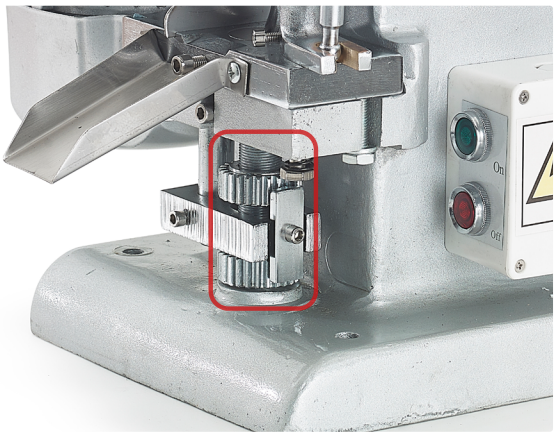
1. Rub a finger's worth of grease on the Boot Timing Cam's side.
    1.1 Note: Be sure to lubricate the Boot Timing Cam Runner.

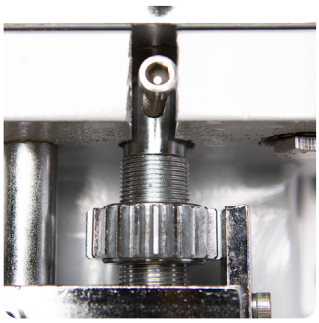
2. Lubricate the Grease Nipple on the Eccentric Sheave Strap with the grease gun.

2.1 Note: Rotate the Hand Wheel during this to ensure grease gets in.



3. Lubricate the Lower Drift Pin Assembly.





You can also lubricate any point of traction on the TDP 1.5® at your own discretion; just be sure not to over-lubricate.

Cover the TDP 1.5®

4. Carefully cover the TDP 1.5® with the plastic wrapping.

4.1 Note: You can use the plastic wrapping that came with the machine in the shipping container.

Environmental Conditions

It is important that the environment in which you store the TDP 1.5® has the appropriate temperature and relative humidity levels. These two environmental factors can potentially cause the machine to rust and/or cause the tablets to have a lower quality. The table below shows the acceptable temperature and relative humidity levels:

Machine	Temperature		Humidity
TDP 1.5®	°C	°F	45-65% RH
	18-24	64-75	

Appendix

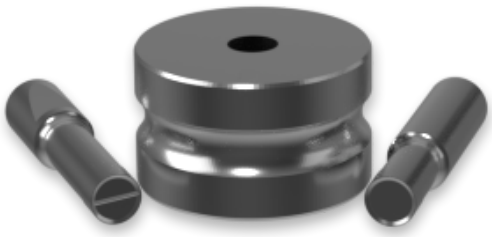
Glossary

Term	Definition
API/Active Pharmaceutical Ingredient	Any substance or mixture of substances used that is an active ingredient in the drug product.
Binding agent	See excipient.
Die	The part of the Tooling that makes up the hole in which the powder is compressed and shaped into a tablet.
Die bore	The cavity inside the middle of the Die.
Die face	The very top flat surface of the Die.
Ejection height	The height at which the Lower Punch is lifted to for a tablet's ejection from the machine.
Excipient	An inactive substance that serves as the vehicle or medium for a drug or other API.
Fill depth	The amount of space that the powder can flow into in the Die.
Formulation	Powder mix of the excipient and the API that is compressed to make tablets.
Granular material	See Formulation.
Kilonewton (kN)	The force to accelerate a mass of 1 kg at a constant 1 m per second. The TDP® range's pressure is measured in this unit.
Punches	The Upper Punch and Lower Punch have concave endings in the shape of the desired tablet. When the punches meet, they compress the powder between.
Punch pressure	The adjustable amount of force that is used to press tablets.
TDP®	LFA trademarked term for desktop tablet press.
Tooling	Enables a tablet press to form tablets. It consists of a Die, Upper Punch, and Lower Punch.

Description of TDP 1.5® Parts

Tooling

The Tooling consists of the Die, the Upper Punch, and the Lower Punch. This die set compresses the powder into the tablet. Order at https://www.lfatabletpresses.com/tdp-tooling



Lower Drift Pin Assembly Cogs

The Lower Drift Pin Assembly Cogs are used to adjust the tablet's fill depth and ejection height. They are located in the Lower Drift Pin Assembly. The Upper Cog adjusts the ejection height of the tablet. Turning it counterclockwise raises the ejection height, and turning it clockwise lowers it. The Lower Cog increases the tablet's fill depth (weight). Turning it clockwise increases the weight of the tablet, and turning it counterclockwise decreases the weight. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-pin-drift-assembly-cogs

Lower Drift Pin Assembly Locking Bar

The Lower Drift Pin Assembly Locking Bar holds the Lower Drift Pin Assembly Cogs in place. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-drift-pin-assembly-locking-bar

Hopper

The Hopper is the funnel that holds the granular materials before it moves into the Boot to be pressed. Order at https://www.lfatabletpresses.com/tdp-1-5-hopper

Boot

The Boot is where the dry granular materials are held for pressing. It fills the Die bore with the dry granular material and moves the finished tablet out of the Die before refilling it with the next batch of materials. Order at https://www.lfatabletpresses.com/tdp-1-5-boot

Boot Bolt and Spring

The Boot Bolt and Spring holds the Boot in place while the press is running and allows it to move back and forth. It is kept secure with the set screw on the side of the Boot. Order at https://www.lfatabletpresses.com/tdp-1-5-boot-bolt-spring

Upper Drift Pin Assembly

The Upper Drift Pin Assembly holds the Upper Punch in place. It is attached to the Eccentric Sheave. Order at https://www.lfatabletpresses.com/tdp-1-5-upper-drift-pin

Eccentric Sheave Strap

The Eccentric Sheave Strap attaches the Upper Drift Pin Assembly to the Top Cam Drive Shaft. Order at https://www.lfatabletpresses.com/tdp-1-5-eccentric-sheave-strap

Lower Drift Pin Assembly Timing Cam

The Lower Drift Pin Assembly Timing Cam moves the Lower Drift Pin Assembly Timing Rod. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-assembly-timing-cam

Top Cam Drive Shaft

All other TDP 1.5® parts are connected to the Top Cam Drive Shaft. As it is turned, all the parts of TDP 1.5® move. Order at https://www.lfatabletpresses.com/tdp-1-5-top-cam

Boot Timing Cam

The Boot Timing Cam is responsible for the movement of the Boot Timing Bar, which allows the Boot to fill the Die bore with the dry granular materials needed to form the tablet. Order at https://www.lfatabletpresses.com/tdp-1-5-boot-timing-cam

Grease Nipples

Grease Nipples are grease cap points that grease the TDP 1.5®'s gaps with high pressure. Order at https://www.lfatabletpresses.com/tdp-1-5-grease-nipples

Lower Drift Pin Assembly Timing Rod

The Lower Assembly Timing Rod raises the finished tablet out of the Die. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-assembly-timing-rod

Lower Drift Pin Assembly

The Lower Drift Pin Assembly is located below the base of the tablet. It holds the Lower Punch in place in the Die while the Upper Punch pushes down to form the tablet in the middle. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-drift-pin

Electric Motor

The Electric Motor is mounted at the back of the TDP 1.5® Base and can be either 110 v or 220 v. Order at https://www.lfatabletpresses.com/tdp-1-5-electric-motor

Boot Timing Drive Bar Runner

The Boot Timing Cam Runner is a round section that connects the Boot Timing Cam to the Boot Timing Bar, which keeps the timing. Order at https://www.lfatabletpresses.com/tdp-1-5-boot-drive-bar-runner

Boot Timing Bar

The Boot Timing Bar moves the Boot and is timed by the Boot Timing Cam track. The rocking motion that the arm provides helps the Boot to fill the Die bore with the dry granular material for the next tablet. Order at https://www.lfatabletpresses.com/tdp-1-5-boot-timing-bar

Lower Drift Pin Assembly Lifting Bar
The Lower Drift Pin Assembly Lifting Bar lifts the Lower Drift Pin Assembly that holds the Lower Punch and helps push the tablets out of the Die. Order at https://www.lfatabletpresses.com/tdp-1-5-lower-drift-pin-assembly-lifting-bar

Ejection Tray
The Ejection Tray aids with the ejection of finished tablets. Order at https://www.lfatabletpresses.com/tdp-1-5-ejection-tray

Base Plate
The Base Plate is not only the mount for the Boot, but also holds the Die in place. Order at https://www.lfatabletpresses.com/tdp-1-5-base-plate

Electrical Box and Connecting Cables
The Electrical Box has the On/Off buttons, which are connected to the motor and an electrical plug via cables. Order at https://www.lfatabletpresses.com/tdp-1-5-electrical-box-wiring

Hand Wheel

The Hand Wheel can be used to turn over the TDP 1.5® manually. Order at https://www.lfatabletpresses.com/tdp-1-5-hand-wheel

Hopper Holder

The Hopper Holder is a small bar that secures the Hopper in place. Order at https://www.lfatabletpresses.com/tdp-1-5-hopper-holder

Ejection Guard

The Ejection Guard is placed on the Base Plate and helps guide the tablets to the Ejection Tray. Order at https://www.lfatabletpresses.com/tdp-1-5-ejection-guard

Boot Timing Bar Mounting Plate

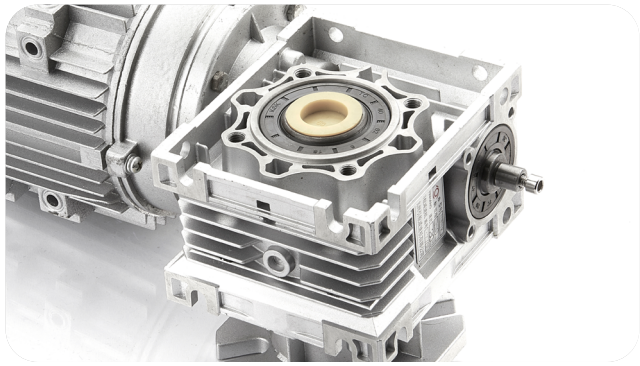
The Boot Timing Bar Mounting Plate attaches to the TDP 1.5® Base and holds the Boot Timing Bar. Order at https://www.lfatabletpresses.com/tdp-1-5-boot-timing-bar-mounting-plate

Upper Drift Pin Assembly Rod Eye and Clevis

The Upper Drift Pin Assembly Rod Eye and Clevis is the part that connects the Eccentric Sheave to the Upper Drift Pin Assembly, which holds the Upper Punch. Order at https://www.lfatabletpresses.com/tdp-1-5-upper-drift-pin-rod-eye-clevis-pin-assembly

Gearing

The Gearing is a mechanical unit consisting of integrated gears within a housing, which alters torque and speed of the motor. Order at https://www.lfatabletpresses.com/tdp-1-5-gearing



Upper Drift Pin Assembly Locking Nut

The Upper Drift Pin Assembly Locking Nut is a large nut used to secure the Upper Drift Pin Assembly in place. Order at https://www.lfatabletpresses.com/tdp-1-5-upper-drift-pin-assembly-locking-nut

Eccentric Sheave

The Eccentric Sheave controls the timing of the Upper Drift Pin Assembly. Order at https://www.lfatabletpresses.com/tdp-1-5-ecccentric-sheave

Gearing Mounting Plate

The Gearing Mounting Plate connects the Gearing to the TDP 1.5®. Order at https://www.lfatabletpresses.com/tdp-1-5-gearing-mounting-plate

Material of Contact Parts

Contact Part	Material
Boot	Copper coat CR
Base Plate	A3 steel coat CR
Tooling (Upper Punch, Lower Punch, and Die)	User specified
Ejection Tray	SUS304 stainless steel
Hopper	SUS304 stainless steel

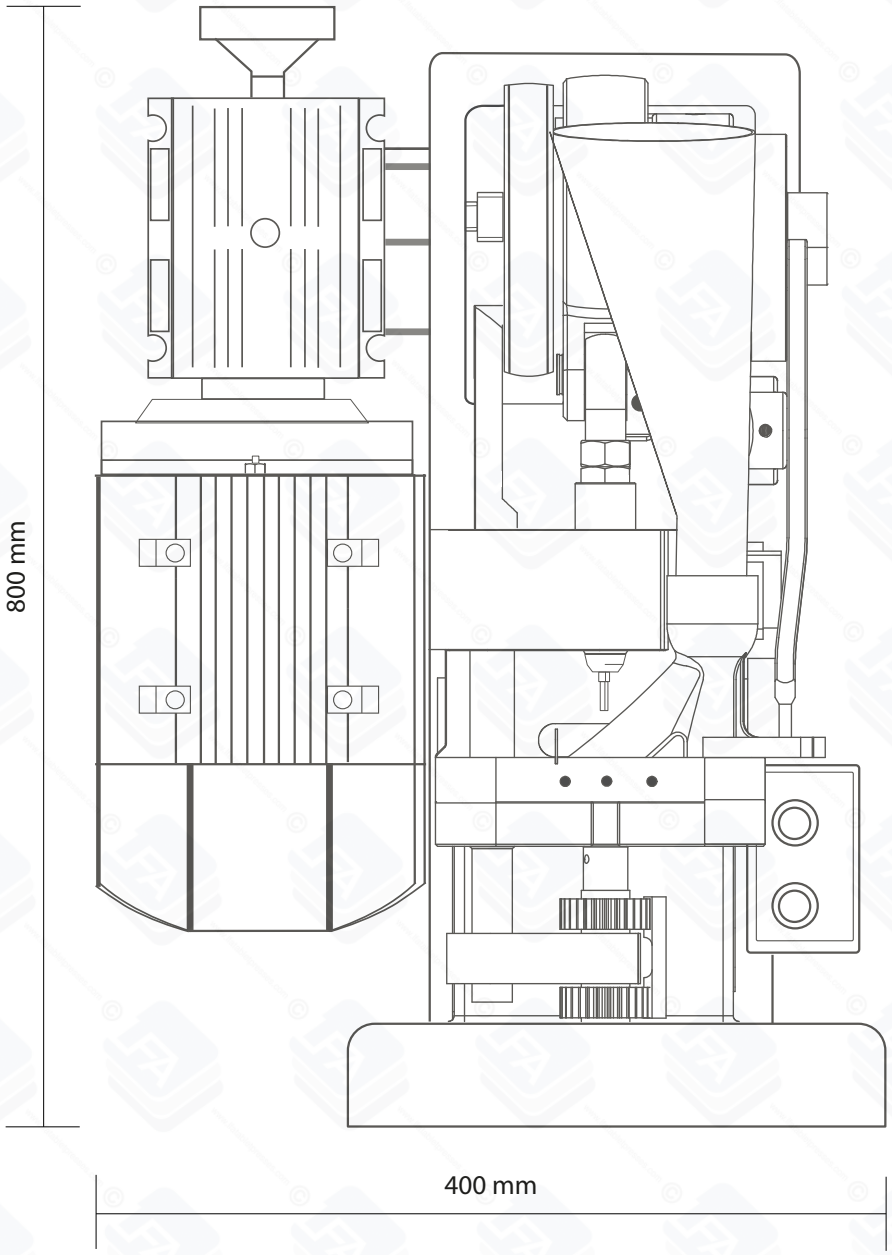
Technical Specifications

Number of dies	1
Max production capacity	5400/hour
Max diameter of tablet	8 mm (0.315 in)
Max thickness of tablet	6 mm (0.236 in)
Max fill depth	12 mm (0.472 in)
Max pressure	15 kN
Number of filling stations	1
Double layered tablet	No
Motor power	0.55 kW
Number of phase	1
Hertz	50 (UK) or 60 (USA)
Volts	240 (UK) or 110 (USA)
Overall size	460 mm x 480 mm x 600 mm
Dimensions with suggested working clearance	1360 mm x 1380 mm x 1500
Weight	53.5 kg (118 lbs)

Maintenance Checklist

Before Operation	
☐	Visually inspect the tablet press and the parts.
☐	Ensure all locking nuts are tight.
☐	Visually inspect grease nipples and regrease where necessary.
☐	Tune the tablet press by hand to get the tablet size and weight correct.
☐	Manually operate the machine for at least two full rotations to ensure it is not jammed.
During Operation	
☐	Listen for irregular knocking or clicking sounds. If heard, stop operation and lubricate the desktop press.
☐	Watch for buildup of powder in front of the Boot. If occurring, either (a) make mix more granular, (b) check the Boot's base for damage, or (c) clear the buildup with a paintbrush.
☐	Occasionally check the Motor's temperature. If it starts to overheat, turn off the machine, let it cool down, and grease it to ensure smooth operation.
☐	Ensure that the Hopper does not run out of powder.
☐	Weigh a sample tablet and test for its hardness.
After Operation	
☐	Unplug machine and remove all excess powder with a bagless vacuum.
☐	Remove the Boot and the Tooling and clean the inside of the tablet press.
☐	Wipe down the other surfaces with a damp cloth.
☐	Apply a layer of food grade grease to the entire desktop tablet press.
☐	Lubricate all grease nipples.
☐	Store Tooling in an airtight box with a small amount of grease.

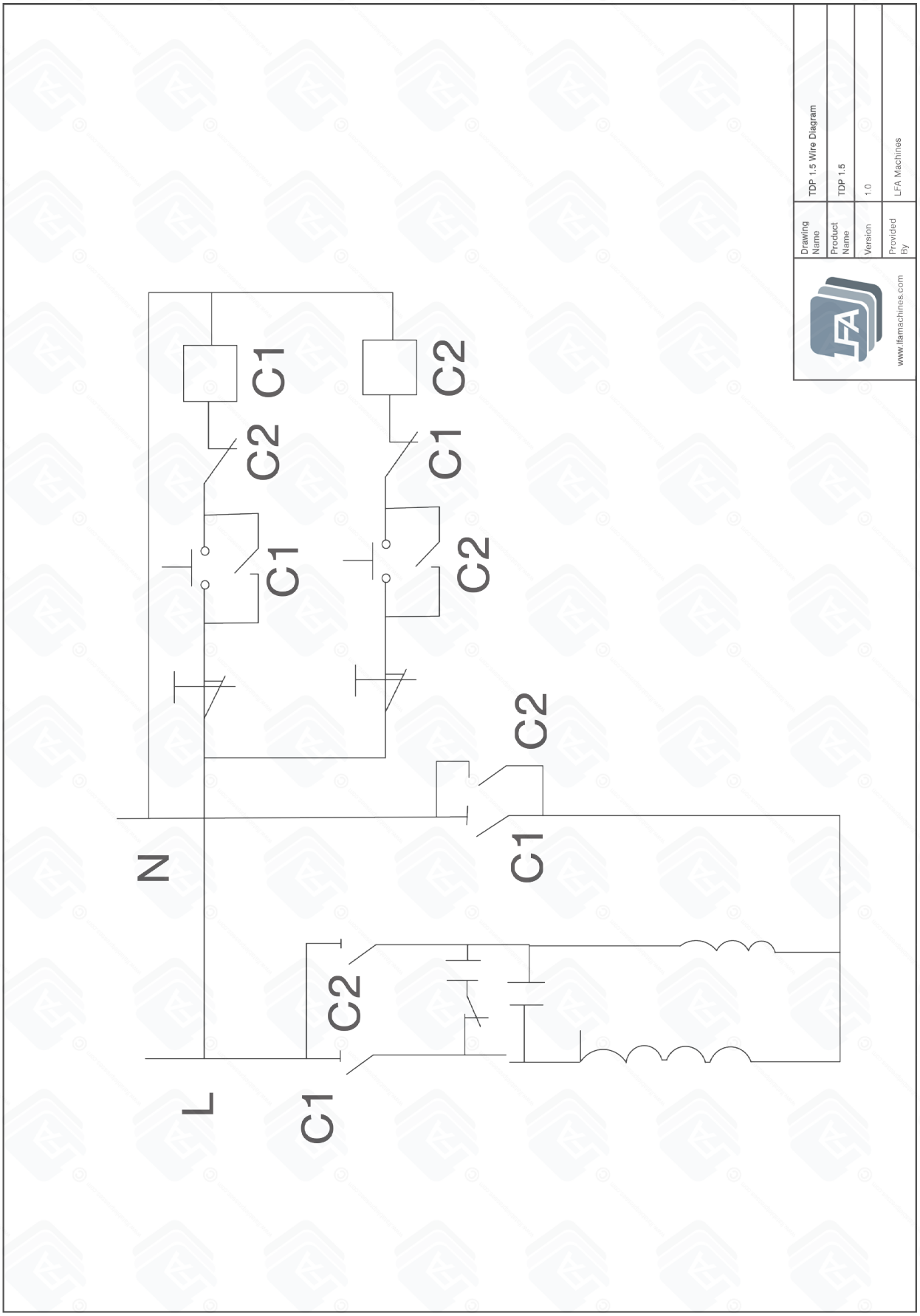
TDP 1.5® Dimensions



Drawing Name	TDP 1.5 Dimensions
Product Name	TDP 1.5
Version	1.0
Provided By	LFA Machines

www.lfamachines.com

TDP 1.5® Wiring Diagram



Resources

Helpful Links

Warranty
For information regarding the warranty policy of the TDP 1.5® and other LFA products, please visit https://www.lfatabletpresses.com/warranty

LFA Website
In order to aid you in your tablet production, LFA Machines maintains a website that offers a breadth of useful information about the TDP 1.5® and other tablet presses. Use our online tools such as the Tablet Mix Calculator to help you in your formulation production or read our regularly published articles that cover a whole range of topics about tablet presses and tablet production.

Visit the LFA homepage at https://www.lfatabletpresses.com

LFA Machines YouTube Channel
Our YouTube videos provide you an opportunity to see how to use our tablet presses, common troubleshooting tips, and other LFA products such as capsule fillers and mixers. We regularly upload videos to give you a visual aid that will hopefully support you in your tablet production efforts. To watch our videos, visit https://www.youtube.com/channel/UCwtbcwja77ai7vX2o34FUkQ

LFA Machines Social Media
Social media is a great way to keep yourself updated on new developments and exciting things happening at LFA Machines. The list below contains our current social media pages:

Twitter: @lfatabletpress
Instagram: @lfatabletpresses
Facebook: https://www.facebook.com/lfatabletpresses
LinkedIn: https://www.linkedin.com/company/lfa-machines-oxford-ltd/

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