M1 Single Core
Cannagar Packing Machine

Operations Manual

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Introduction:

The M1 Single Core Cannagar Packing Machine is an invaluable tool for small-scale cannagar manufacturers seeking to transition from manual packing to a mechanical system. This entry-level machine offers a range of features to enhance efficiency and consistency in cannagar production.

Key Features:

1. **Pneumatic Operation:** The M1 is pneumatically operated, ensuring reliable and consistent pressure for packing cannagars. This pneumatic system simplifies the packing process and reduces manual effort.
2. **Pressure Regulator:** The machine is equipped with a pressure regulator, allowing operators to fine-tune and control the packing pressure. This feature is essential for achieving uniform and high-quality cannagars that meet specific client requirements.
3. **Dual Functionality - Packing and Extraction:** The M1 machine goes beyond just packing. It also serves as a pneumatic extractor, enabling the effortless removal of cannagar cores from the RXL MonoBlock molds. This dual functionality streamlines the entire cannagar production process, from molding to extraction.
4. **Compatibility with XL MonoBlock Molds:** The M1 machine seamlessly works with XL MonoBlock molds, available in a range of sizes from 22 to 48 gauge. This compatibility provides flexibility for different cannagar sizes and shapes, catering to a variety of customer preferences.

The M1 Cannagar Packing Machine is a versatile and user-friendly solution, allowing small-scale manufacturers not only to pack cannagars but also to efficiently extract cannagar cores. Whether you're starting in the industry or looking to streamline your production process, the M1 offers a practical and multifunctional tool for your needs.

Purpose of this Manual:

The purpose of this user manual is to provide comprehensive guidance and instructions for operating the M1 Single Core Cannagar Packing Machine. Designed for small-scale cannagar manufacturers, this manual aims to ensure safe and efficient machine operation, the consistent packing of cannagars, and the extraction of cannagar cores from XL MonoBlock molds. By following the guidelines outlined in this manual, users can enhance their production process, minimize errors, and achieve uniform and high-quality cannagars while maintaining safety standards. This manual serves as an essential reference tool for operators, offering step-by-step instructions, safety precautions, maintenance guidelines, and troubleshooting solutions

General Safety Precautions:

- **Read the User Manual:** Operators should thoroughly read and understand the user manual before operating the machine. It contains important information on safe operation and maintenance.
- **Wear Appropriate Attire:** Operators should wear suitable clothing and personal protective equipment (PPE), including safety glasses, gloves, and any other relevant gear to protect against potential hazards.
- **Maintain a Clean Workspace:** Keep the work area clean and free of obstructions. Cluttered or messy workspaces can lead to accidents.
- **Inspect the Machine:** Before each use, inspect the M1 machine for any damage, loose components, or signs of wear. Do not operate the machine if it appears to be in disrepair.
- **Pneumatic System:** If the machine uses pneumatic operation, be aware of air pressure levels and follow recommended pressure settings. Do not exceed the specified pressure limits.
- **Pressure Adjustment:** When adjusting the packing pressure, do so gradually and carefully. Sudden pressure changes can lead to accidents or damage to the machine.
- **Extractor Function:** When using the machine for core extraction, ensure that the extraction process is carried out safely to avoid any injuries or damage to the cores.
- **Training:** Ensure that operators receive proper training in the operation of the M1 machine. Only trained and authorized personnel should operate the equipment.
- **First Aid:** Have a first-aid kit readily available in case of minor injuries. Know the location of the nearest medical facilities for more severe incidents.
- **Reporting Issues:** Operators should report any malfunctions, damage, or safety concerns immediately to the appropriate personnel or supervisor.

Machine Specific Safety Precautions:

- **Beware of Pinch Points:** Operators must exercise caution and keep their hands clear of pinch points during machine operation. Failure to do so can result in damage to the machine or injury to the operator. Pinch points on the machine include:
    - **Tilt Hinges:** These hinges allow the machine to transition between packing and extraction modes. Avoid placing hands near these hinges during operation to prevent accidents.
    - **Tamping Die:** When the machine is packing material into the end of the mold, there is a risk of getting pinched between the tamping die and the mold. Keep hands away from this area during the packing and extraction operations.
    - **Mold Clamps:** Use caution when clamping the mold to the machine. The clamps can create pinch points if not handled carefully.
- **Secure the Machine:** It is essential to securely fasten the M1 machine to the table from which it will be operated. Utilize clamps or other appropriate methods to secure the machine. This not only prevents accidental tipping or displacement during operation but also provides stability during the extraction process.

Operators should be thoroughly informed about these specific safety measures and adhere to them diligently to minimize the risk of accidents, injuries, or machine damage during M1 Cannagar Packing Machine operation.

Emergency Shutdown Procedures:

In the rare event that an emergency shutdown is necessary, it is crucial to follow this procedure to ensure the safe and immediate cessation of machine operation.

- **Disconnect Pneumatic Line from the Pressure Regulator:**
    - Locate the pneumatic line connected to the machine's pressure regulator. This line is responsible for controlling the packing pressure.
    - Carefully disconnect this pneumatic line from the machine's pressure regulator. Ensure that you take this step cautiously to prevent any accidental damage.

- **Cycle the Pneumatic Lever Up and Down:**
    - Once the pneumatic line is disconnected, locate the pneumatic lever on the machine, typically used to control machine operation.
    - To release all pressure in the machine's cylinders, firmly cycle the pneumatic lever up and down several times. This action ensures that any residual pressure is safely vented from the system.

Machine Overview:

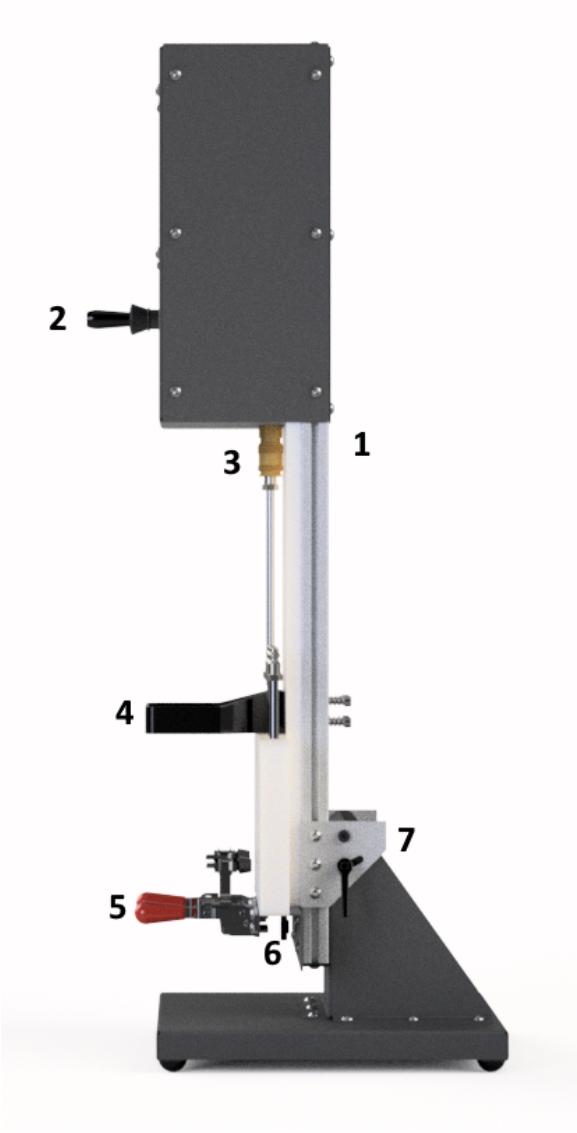
The M1 Cannagar Packing Machine is composed of several key components, each with a specific function to facilitate efficient and precise operation. Understanding these components is essential for safe and effective use of the machine. Here is a detailed overview of each component:

- **Pressure Regulator:**
    - **Function:** The pressure regulator is a critical device that enables the operator to adjust the packing pressure of the machine. It also serves as the point where the shop air supply is connected.
    - **Pressure Range:** The machine can operate with a wide pressure range, varying from 20 to 120 psi, allowing for flexibility in packing requirements.
- **Tamping/Extraction Lever:**
    - **Function:** The tamping/extraction lever is the primary control element of the machine. It empowers the operator to raise and lower the tamping die, crucial during the compaction process, and to extract cannagar cores upon completion.
    - **Location:** This lever is conveniently positioned on the front face of the machine.
    - **Operation:** Moving the lever upward raises the tamping die, while moving it downward lowers the tamping die.
- **Quick Connect Tamping Die:**
    - **Function:** The quick connect tamping die is an essential component for packing material into the MonoBlock mold. It ensures that material is evenly compacted for uniform cannagar cores.

Machine Overview:

- **Material Funnel:**
    - **Function:** The material funnel is designed to hold and guide materials into the MonoBlock cavity, simplifying the filling process.
    - **Adjustment:** The material funnel is adjustable, allowing for easy installation and positioning of the MonoBlock molds.
- **Mold Clamps:**
    - **Function:** Mold clamps, located at the bottom of the machine, securely hold the MonoBlock Mold in position during the tamping process.
    - **Operation:** Lowering the handles on the mold clamps releases the clamp, allowing the mold to be removed from the machine. Raising the levers secures the mold in place for operation.
- **Extraction Plate:**
    - **Function:** The extraction plate, situated near the bottom of the machine, supports the cannagar core plug during the filling process.
    - **Removal:** The extraction plate can be easily removed from the machine using the provided thumb screw, allowing for the extraction of the cannagar core from the mold.
- **Tilt Hinges/Locking Handles:**
    - **Function:** Tilt hinges and locking handles are located on the lower sides of the machine. These components are essential for tilting the machine backward during the cannagar extraction process.
    - **Operation:** Loosening the locking handles allows the machine to tilt backward, aiding in the extraction process. It is vital to support the machine to prevent tipping, and clamping the machine to its work surface is recommended to ensure stability during this process.

Machine Overview:



1. Pressure Regulator
2. Tamping Lever
3. Quick Connect Die
4. Material Funnel
5. Mold Clamps
6. Extraction Plate
7. Tilt Hinge

Machine Set Up:

Setting up the M1 Cannagar Packing Machine for operation is a crucial step to ensure safe and efficient use. Follow the detailed instructions in the exact sequence provided to set up the machine correctly:

- **Choose a Suitable Work Area:**
    - Place the machine on a stable work surface in a well-lit area. This provides a secure and well-illuminated environment for operating the machine.
- **Secure the Machine:**
    - It is recommended to use clamps to secure the front base of the machine to the work surface. This step prevents accidental movement and maintains stability during operation.
- **Familiarize Yourself with Machine Components:**
    - Before connecting the machine to the air supply, take the time to inspect and understand all the components on the machine, including their locations and functions. Familiarity with these components is essential for safe and effective operation.
- **Position the Tamping Lever:**
    - Place the tamping/extraction lever in the up position. This ensures that the tamping die is raised and ready for setup.
- **Connect to the Shop Air Supply:**
    - After positioning the tamping lever in the up position, it is now time to connect the machine to the shop air supply.
    - Connect the shop air supply to the quick connect fitting on the pressure regulator.
    - The pneumatic regulator typically comes with a factory setting of around 30 psi, which is a suitable starting point for initial operation and material testing.

Machine Set Up:

- **Assemble the MonoBlock Mold Components:**
    - Begin assembling the components of the MonoBlock Mold to prepare for cannagar production.
    - Insert the reversible core plugs into the bottom of the mold cavities, allowing for both rounded and flat-bottom cannagar cores. (Lubricating the plugs with water may be necessary to aid in installation)
    - Insert the skewers through the top of the mold, ensuring proper alignment with the core plug.
    - Insert the quick connect tamping die over the skewer, with the quick connect portion extending from the top of the mold.
- I**nstall the Mold into the Machine:**
    - Raise the material funnel to its highest position and lower both mold clamps.
    - Place the mold inside the machine and lower the material funnel over the first cavity, ensuring alignment.
    - Raise one or both of the mold clamp handles to secure the mold in position.
- **Secure the Quick Connect Tamping Die:**
    - Raise the knurled ring on the quick connect coupler, while inserting the tamping die into position.
    - Release the knurled ring to secure the tamping die firmly in place on the machine.

With these steps completed, the machine is now set up and ready to begin testing materials and producing cannagars. Proper setup ensures safe and efficient operation of the M1 Cannagar Packing Machine, helping to maintain consistent quality in production.

Machine Operation (Packing):

Before you begin, ensure that the machine is set up for operation following the steps listed in the machine setup section and the correct packing pressure has been determined. Now, let's proceed with the process of packing material into the Cannagar Molds:

- **Prepare the Material:**
    - Pre-weigh the desired amount of material that matches the specifications for your cannagar core.
- **Load the Material:**
    - Pour the pre-weighed material into the material funnel. Ensure that the funnel can accommodate the entire quantity. (For large gauge cannagars it may be necessary to fill the material funnel twice during the compaction process)
- **Material Placement:**
    - Use a silicone spatula to work a small amount of the material towards the opening of the mold.
- **Lower the Tamping Die Lever:**
    - Locate the lever that controls the tamping die on the front face of the machine.
    - Lower the tamping die lever to initiate the packing process. The tamping die will begin to compress the material inside the mold.
- **Compact the Material Thoughtfully:**
    - As you lower the tamping die, avoid fully packing the material tightly against the bottom of the cannagar mold. Overpacking in these initial stages may make it challenging to extract the cannagar core.
    - Instead, for each lift, allow the tamping die to lightly compact the material. The goal is not to overpack but to create an even and manageable core.

Machine Operation (Packing):

- **Raise the Tamping Die Lever:**
    - After each light compaction, raise the tamping die lever.
- **Repeat the Process:**
    - Using the silicone spatula, add another small amount of material into the funnel opening.
    - Lower the tamping die lever again to perform a gentle compaction, allowing the tamping die to lightly press the new material into the mold.
- **Final Compact for 1-2 Seconds:**
    - When you reach the final amount of material and it fills the mold, this is the time to allow the tamping die to press for a period of 1 to 2 seconds, compacting the material firmly for a secure and even core.

By following these step-by-step instructions, you can efficiently and precisely pack the Cannagar Molds using the M1 Cannagar Packing Machine. This process allows you to create consistent and high-quality cannagar cores, avoiding overpacking and simplifying the extraction process.

Machine Operation (Extraction):

Extracting cannagar cores is the next crucial step in the cannagar production process. Follow these step-by-step instructions to efficiently extract the cores using the M1 Cannagar Packing Machine:

- **Prepare for Extraction:**

  Note: *It is recommended to clamp the machine to the work surface for stability during extraction.*

  - Begin by loosening the locking handles located on the lower sides of the machine. This will allow you to tilt the top of the machine backward to aid in the extraction process.
- **Remove the Extraction Plate:**
  - After tilting the machine, remove the extraction plate from the bottom of the machine by loosening the thumb screw.
- **Prepare the Tamping Die:**
  - The quick connect tamping die will be used for the extraction process. Place the tamping die over the compacted Cannagar core. Ensure it is securely in place.
- **Load the Mold and Tamping Die:**
  - Position the mold and tamping die into the machine for extraction.
    - Raise the material funnel to its top position.
    - Insert the tamping die through the bottom of the funnel.
    - Allow the mold to sit securely in the machine.
    - Slide the material funnel down on top of the MonoBlock Mold, aligning the opening in the funnel with the opening in the mold.
- **Clamp the Mold:**
  - Secure the mold into position by clamping it. Ensure it is firmly held in place for a stable extraction process.

Machine Operation (Extraction)

- **Adjust the Pressure Regulator:**
    - In this extraction process, it's essential to increase the pressure on the regulator. A starting recommendation is 100 psi, but some cores may require up to 120 psi for effective extraction.
- **Lower the Tamping Lever:**
    - Pull the tamping lever downward to initiate the extraction process. As you do this, the tamping die will press down on the Cannagar core to force it through the MonoBlock Mold.
- **Repeat for Additional Cores:**
    - This extraction process is to be repeated for each additional core in the MonoBlock Mold.

By following these step-by-step instructions, you can successfully extract cannagar cores using the M1 Cannagar Packing Machine. Properly aligning the mold, utilizing the tamping die, adjusting the pressure regulator, and ensuring machine stability will lead to consistent and high-quality core extraction for your cannagars.

Material Preparation:

Proper material preparation is a fundamental step in achieving consistent and high-quality cannagar cores using the M1 Cannagar Packing Machine. This process ensures that the material is well-suited for packing into the mold openings, allowing for smooth operation. It's essential to consider the moisture content of the material as it can significantly impact the packing process.

- **Grinding the Material:**
    - To facilitate the packing process, the material should be ground to a size that easily fits into the mold openings. The grind type may vary based on the gauge size of the mold you are using.
    - For smaller gauge molds, a fine grind is recommended to ensure the material fits comfortably into the smaller openings.
    - For larger gauge molds, a coarser grind can be used as the openings can accommodate larger material particles.
- **Consider Moisture Content:**
    - Material with high moisture content can impact the packing process. If your material has high moisture content, it is beneficial to allow it to dry for a period before using it to pack cannagar cores. High moisture content can lead to over-packing, making it difficult to extract cores and affecting the core's burnability.
    - For high-moisture material, grind it and let it lay out on a tray for approximately one hour (plus or minus). This process significantly improves handling and packing with this type of material.
    - When working with dry material, the operator may benefit from increasing the moisture content slightly. This can be done by placing the ground material into a humidity chamber for 10 to 15 minutes before packing. The added moisture helps bind the material in the cannagar core and reduces crumbling during extraction.

Material Preparation:

- **Perform Material Testing:**
    - Testing is essential for any new material to determine its ideal preparation.

Proper material preparation is vital to the success of the cannagar production process. Understanding how moisture content can affect the packing and adjusting accordingly is essential for consistent and high-quality cannagar core production with the M1 Cannagar Packing Machine.

Pressure Determination:

The packing pressure is a critical factor when using the M1 Cannagar Packing Machine, as it directly influences the tightness of the core, which in turn affects its extractability from the MonoBlock molds and its stability during the wrapping process or when being inserted into pre-roll drop-ins. The moisture content of the material, as discussed in the material preparation section, plays a vital role in determining the appropriate packing pressure. Material with varying moisture content may require different packing pressures.

Material Pressure Testing Procedure:

- **Weigh the Material:**
    - Begin by weighing approximately half the amount of material typically designated for the specific cannagar core size you are producing.
- **Starting Pressure:**
    - Set the machine's pressure regulator at a starting point of 30 psi.
- **Packing and Extracting the Core:**
    - Pack the material into the MonoBlock Mold using the specified pressure, and then extract the core.
    - Observe the characteristics of the core. It should be solid and not break apart when extracted, but it also needs to easily release from the MonoBlock molds.

Pressure Determination:

- **Increasing the Pressure:**
    - After the initial observation, increase the packing pressure to 35 psi.
    - Inspecting the core again to determine if it meets the required specifications.
- **Determining Ideal Packing Pressure:**
    - Repeat this procedure in five psi increments until you find the ideal packing pressure that results in the desired core characteristics and optimal extraction from the MonoBlock molds.

Proper pressure determination is essential to ensure that the cannagar cores are packed to the right density, allowing for smooth extraction and high-quality final products. This testing procedure allows you to tailor the packing pressure according to the material's moisture content and specific requirements for your cannagar cores.

Maintenance and Cleaning:

- **Before Operation:**
    - Prioritize Safety: Ensure that all safety procedures are thoroughly reviewed and followed before operating the M1 Cannagar Packing Machine to confirm the proper functioning of all components.
    - Check Tightness: Regularly inspect and tighten all screws and bolts to prevent any potential issues during operation.
    - Tamping Cylinders: Verify that the tamping cylinders actuate smoothly without any binding, ensuring optimal performance.
- **During Normal Use:**
    - Ongoing Tightening: As components may naturally loosen over time, regularly check and tighten any loose parts during routine cleaning.
    - Compressed Air: Use compressed air to effectively blow off any accumulated material or debris, ensuring a clean working environment.
    - Surface Wiping: Wipe down the machine surfaces with isopropyl alcohol on a rag to maintain cleanliness.
- **Tamping Process:**
    - Excessive Buildup: In the event of excessive buildup during the tamping process, take the following steps:
    - Swappable Tamping Dies: Have extra tamping dies available to facilitate a quick swap during operation, ensuring continuous functionality.
    - Wiping with Isopropyl Alcohol: Regularly wipe down the tamping dies with a rag and isopropyl alcohol to prevent any buildup-related issues.

By adhering to these maintenance and cleaning guidelines, operators can ensure the optimal functionality and longevity of the M1 Cannagar Packing Machine.

Troubleshooting:

- **Problem:** Unable to Increase Machine Air Pressure
    - **Solution:** If the operator is unable to increase the air pressure despite adjusting the regulator, check the main regulator on the air compressor supplying air to the machine. Ensure that it is not set at a lower pressure than the desired pressure on the machine's regulator. Increase the main regulator pressure to achieve the desired setting on the machine.
- **Problem:** Material Thrown from Material Funnel During Tamping
    - **Solution:** If material is being thrown from the funnel during the tamping process, it's likely due to excessive material being fed into the final opening. To resolve this issue, reduce the material flow into the funnel during the tamping process. Adjust the material flow to prevent material from being thrown during compaction.
- **Problem:** Difficulty Extracting Cannagar Cores from MonoBlock Molds
    - **Solution:** If the completed Cannagar cores are hard to extract from the MonoBlock molds, the issue may be attributed to excessive packing pressure and prolonged compaction during the tamping process. Refer back to the pressure determination section of the user manual to adjust compacting pressure. Additionally, review the material preparation guidelines to ensure the material is in the proper condition for compaction.

By following these troubleshooting steps, operators can address common issues encountered during the operation of the M1 Cannagar Packing Machine, ensuring efficient and trouble-free performance.