

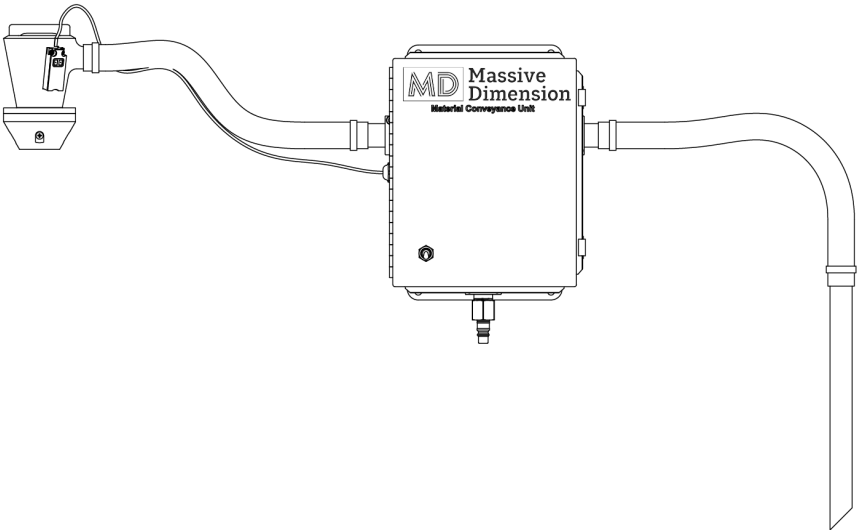
Triex LLC  
Vermont, USA, Earth  
1-802-505-6772



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# MDMCU - Massive Dimension Material Conveyance Unit User Manual

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# CAUTION! Read Carefully

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- **In Case of Emergency** pull the power cord out of the machine.
- Use of the MDMCU with powdered additives such as colorant can produce harmful airborne particles and is not recommended.
- The MDMCU is designed to convey plastic pellets from 0.5mm to 3.5mm in size. Pellets below this threshold will blow past the air vent screen and irregular sized feedstock outside of these dimensions can cause clogs or performance issues.
- Always STOP the MDMCU, unplug the power cord, and vent airlines before opening or removing any components from the MDMCU.
- It is highly recommended that your air supply is fitted with a condensate filter or other preventative means to keep moisture from entering the MDMCU and mixing with pellets.
- The MDMCU can shoot pellets at high velocity, always use caution with the system as to not harm yourself or other individuals.
- Always wear safety glasses during usage.
- The MDMCU is designed for indoor use only. Operate in a clean, dry area.
- Only use the specified input voltage to operate the MDMCU or damage to the components will occur.
- Do not use this device if any parts appear missing or damaged.
- Do not modify this device without authorization from Massive Dimension.

Contact Massive Dimension with any questions

1-802-505-6772  
contact@massivedimension.com

# General Specifications

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**Power Input:** 115VAC-1.4A or 230VAC-0.7A  
50/60Hz 1-phase  
160W NOMINAL

**Weight:** 6.6kg (14.5 lbs) Control box  
0.28kg (0.6 lbs) Material reservoir

## Parts Included

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1. Material reservoir
2. MDPH2 adaptor
3. MDPE10 adaptor
4. Connector flanges x2
5. 10-24 x 2.25in bolts x4
6. 10-24 locknuts x4
7. Control box
8. Hose - 25ft
9. Large hose clamps x10
10. Small hose clamps x2
11. Pellet vacuum straw
12. 24VDC Power Supply

### Required:

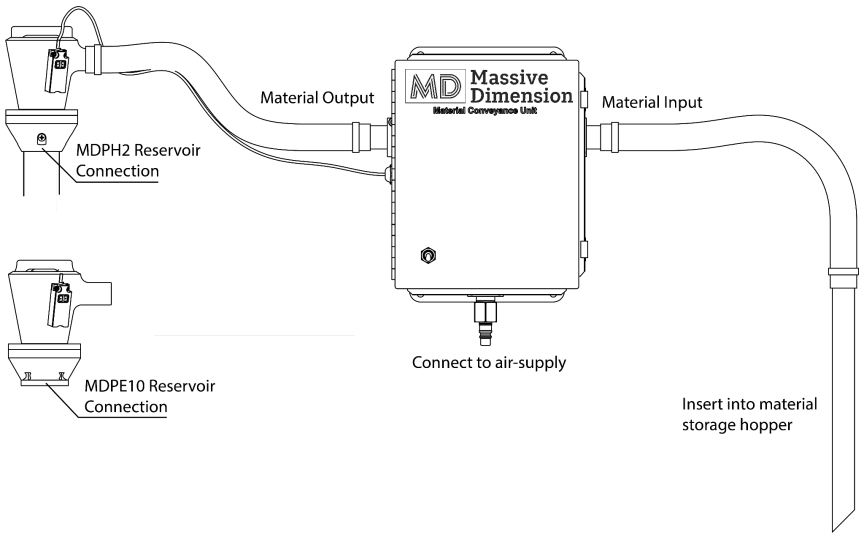
- Adjustable wrench
- Bulk storage hopper for pellet feed
- Shears to cut tubing to shorter length if desired.
- Air source / compressor rated for 100 PSI, Do not exceed 125 PSI. 50 SCFM is suggested per specs of the internal airflow components. However, testing has shown much lower SCFM compressors can be used. We suggest testing with your current air supply before considering whether an upgrade is necessary.

# Installation

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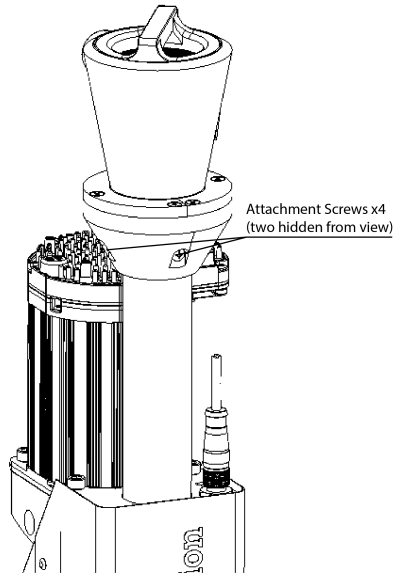
## Overview

The reservoir for the MDMCU has two different adaptors, one for the MDPH2 and one for the MDPE10. Both adaptors are included with the product. Before installing the reservoir make sure to have the corresponding adaptor installed on the reservoir.

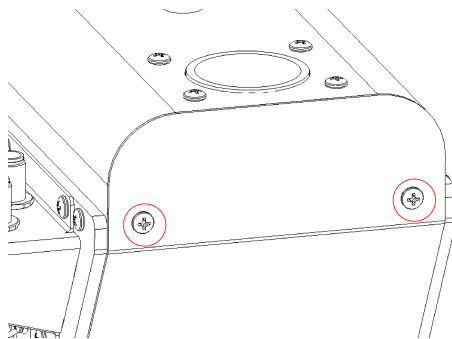


1. Mount the MDMCU control box using the mounting flanges on the top and bottom of the metal box. This should be installed on the printer frame or close to the location where the material is being stored.
2. The reservoir has two different adaptors, one for the MDPH2 and one for the MDPE10. Select the corresponding adaptor for your extruder. Attach the adaptor to the reservoir using the provided bolts and two printed flanges.

3. For installation on the MDPH2 - Slide the adaptor and reservoir onto the clear hopper and tighten the four phillips head screws. Make sure not to over tighten screws as it could crack the clear tube. Go to step 5 once attached.

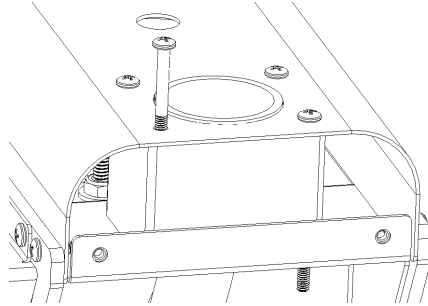


4. For installation on the MDPE10
  - a. Remove the two phillips head screws on the front of the MDPH10.

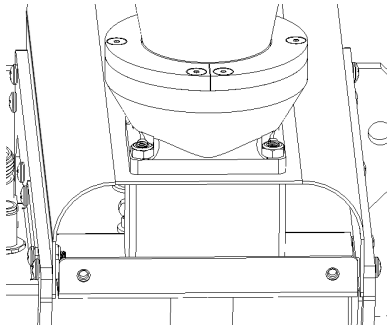


- b. Swing down the front cover to expose the internal components.

- c. Remove the four phillips head screws that secure the hopper connector.

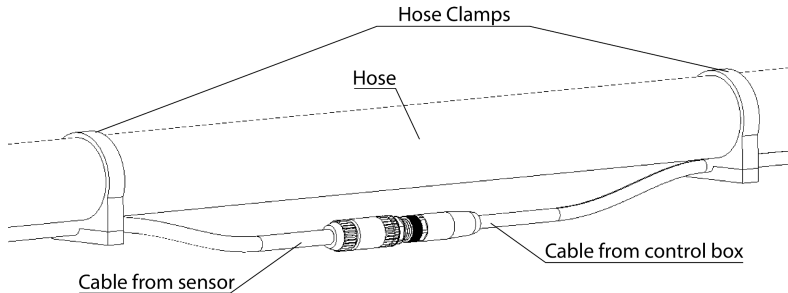


- d. With the bolts removed, insert the supplied (4) cap head screws in from the bottom and thread them into the nylon lock nuts as shown in the picture below.



- e. Close the front of the MDPE10 faceplate and screw in the two phillips head screws.
5. Attach the hose from the reservoir to the control box and the hose from the control box to the material vacuum wand. Note the arrow on the vacuum line indicated airflow direction. Cut hoses to length as needed. Use the hose clamps to secure the hoses on the shafts. Make sure to route the hoses in locations where the printer will not crush or pinch them.

- Next, use the remaining hose clamps to route the control sensor cable along the hose, as shown in the following drawing. When the cable from the sensor is at its end, route the cable from the control box up to the connection. Make sure the extra slack of the cable is coiled up near the control box.



- Insert the pellet vacuum straw into the material storage bin.
- Attach the air supply to the control box. Use the smaller hose clamp to secure this connection.
- Plug in the power supply to the control box and turn the power on using the toggle switch on the front of the control box. The MDMCU will automatically open the valve to fill the reservoir, then once it is filled it will turn off. Typically this only takes a few seconds.
- The installation is now complete and your extruder is ready to print with automated feed conveyance!



## Cleaning / Material Change

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When switching from one polymer type to another it is important to disconnect the pellet conveying hose from the extruder mounted reservoir and turn the machine back on allowing for at least 30 sec of air flow to clean the system out of any stray pellets so as not to contaminate the next print.

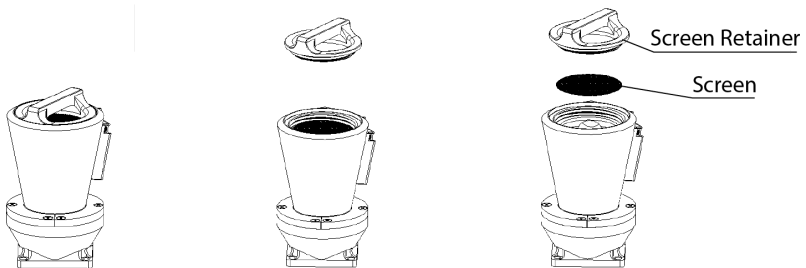
It can be beneficial to use the MDMCU to vacuum pellets back out of the feed throat of the MDPH2 / MDPE10 in preparation of screw/barrel cleaning or a polymer change. In order to accomplish this, one must simply loosen the clamps that secure the hoses on the control box, and then switch their positions so that the flow of air instead goes from the material reservoir hose towards the pellet straw hose. Remove the twist cap on the top of the material reservoir. Loosen the hose clamp on the material reservoir mounted on the extruder and push the hose into the material reservoir and down the feed throat to vacuum pellets out and back into your bulk material storage. Remember to return the hoses on the control box to their original positions before resuming regular use. Always turn off the control box before removing hoses.

## Cleaning Screen

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**Disconnect the power cord from the MDMCU before continuing.**

Unscrew the black handled screen retainer. Once removed you can pry out the screen to access the inside of the extruder mounted reservoir.



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