

#NUGSMASHER

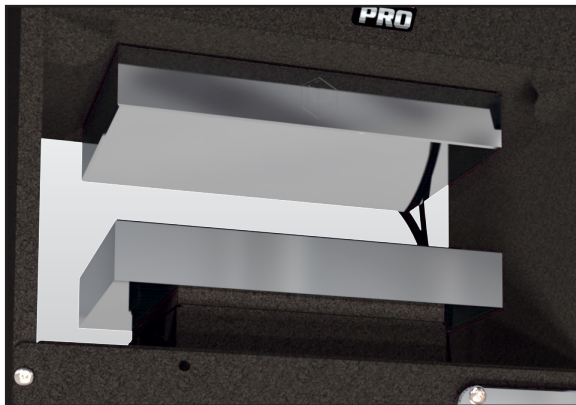


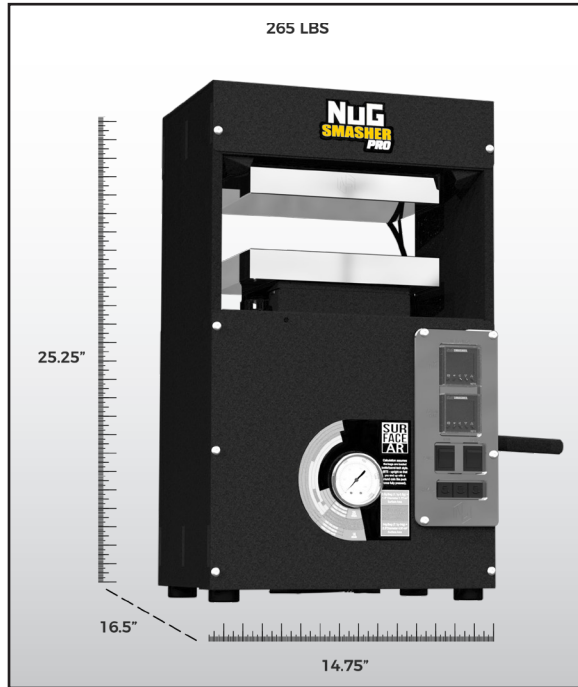
**NUG
SMASHER[®]
PRO**

**ROSIN
MADE
SIMPLE**

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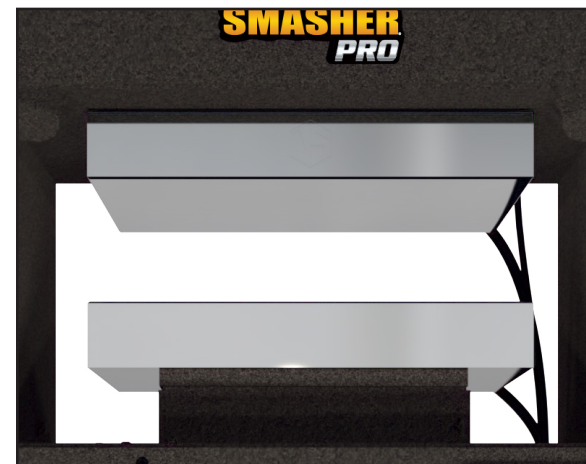
Thank you for the purchase of your NugSmasher® Pro. We have designed this unit for the purpose of effortless rosin extraction for up to 1/4 pound of flower. When setting up your unit, please ensure your stand is suitable for the weight of the machine. Also note, that the unit gets hot and the high temperature hydraulic heat plates are capable of bodily injury if not used in a safe manner. ***(Please do not attempt to open your unit casing as this will void your factory warranty.)***

While our products are sturdy and built to last, they are also heavy and shippers can be rough during handling. If there are any problems from shipping and your item does not deliver safely please contact us direct so we can resolve the matter immediately.

As always, please feel free to call us at any point with any questions or concerns at [\(951\) 272-9800](tel:9512729800) or [NugSmasher®.com/contact](https://NugSmasher.com/contact).

QUICK START GUIDE

- Your release knob is packaged in foam near the heat plates and will be installed on the right side of unit towards bottom of press.
- Notice the keyed end of the release valve as it slides through side of unit and can be installed easily by looking at rear of machine under manual handle sticker.
- Rotating release knob clockwise till it is tight will allow press plates to be raised via manual handle or pneumatically with 90-100 psi air compressor (3-5) gallon small compressor is ideal. Using a water separator is recommended to minimize any water from entering the unit.
- Rotating release knob counter clockwise will allow plates to separate and open – never open beyond one-half turn to release plates as damage and loss of fluid may occur.



KEEP RELEASE VALVE IN CLOSED “CLOCKWISE POSITION” WHEN NOT IN USE

Please note that under any circumstances do not turn release valve more than $\frac{1}{2}$ a turn in the open (counter clockwise) direction as this will void your warranty and may result in hydraulic fluid loss. Also make sure when not in use or stored, the release valve must be in closed tight (clockwise) position.

WARNING!

Never turn your release knob more than $\frac{1}{2}$ full turn counter clock wise from tight.



PLEASE NOTE:

Your release knob is factory designed to be a slight upward.

QUICK START GUIDE

Before your unit is turned on, (If using as manual operated pump) insert handle into rear inset opening on left side of unit. Notice there is a round tube that your shaft handle will be inserted into for plate compression operation and a 1/4-20 set screw to hold in place.



Set power switch to the “on” position (red circle). You will notice on your control screen there are two rows of digits. The top is the current temperature of the heat plates. The bottom is the set temperature. The Pro comes preset at 200 degrees Fahrenheit and will take approximately 10-12 minutes to reach set temperature depending on your location. The NugSmasher® Pro has 3 heating elements in each plate and top and bottom plates are individually controlled by your PID controllers, it is recommended you keep top and bottom plates at same temperature for best results.

ADJUSTING TEMPERATURE

Press the up or down arrows (green circles) to select desired temperature setting.

Once you have changed to your desired temperature press the enter button (red circles) once to lock in temperature. It is not advised to go into any other programming modes as your unit has been factory preset for optimum settings. Note: US models are set for Fahrenheit and all international orders are set in Celsius unless specified otherwise.





LCD display economical intelligent temperature controller

1. Main features

- New generation of high-end controller, large window, high contrast LCD and easy to read white PV display, which improves the visibility of all angles and achieve long-distance visibility.
- Built-in waterproof sealing ring and externally mounted waterproof sealing ring make the front panel have good waterproof performance.
- Plastic handle waterproof button, the button operating surface strong, scratch-resistant and wear-resistant, operation feel clear and smooth.
- Economic type, simple operation, practical function, specially designed for temperature control.
- Common thermocouple and RTD input type can be selected through software parameter settings.
- The measurement accuracy reaches 0.25% level. The measurement error caused by temperature drift and time drift is eliminated by using digital correction and self-calibration technology.
- Advanced "FUZZY+PID" ai intelligent control mode, no overshoot and with the function of auto tuning (AT) and self-adaptation.
- Can provide most two way alarm output, and can implement a variety of alarm methods.
- The °C or °F temperature unit can be selected via software parameter settings.
- High-efficiency and high-reliability switching power supply, global universal voltage range AC100~240V or AC/DC12~24V.
- The anti-jamming performance meets the requirements of electromagnetic compatibility (EMC) under harsh industrial conditions.

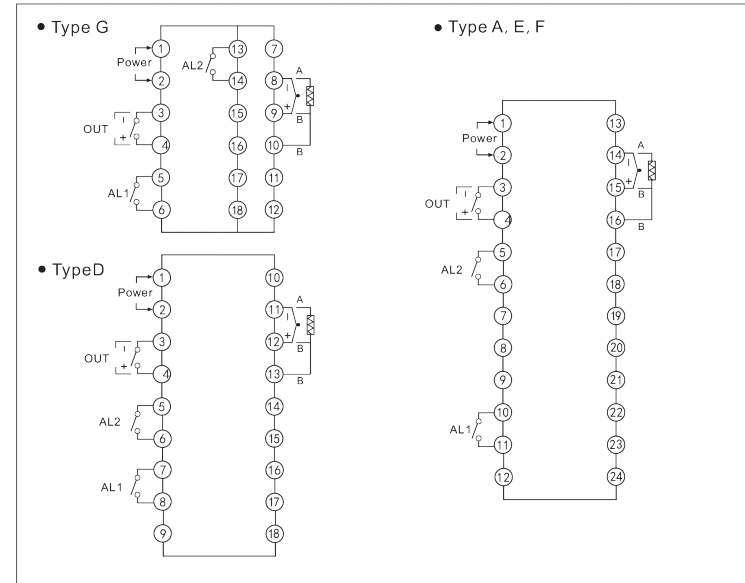
2. Technical Specification

Panel type	G	D	A	E	F
Panel size mm (width × height)	48×48	72×72	96×96	48×96	96×48
Hole size mm (width × height)	45 ^{+0.6} ×45 ^{+0.6}	68 ^{+0.6} ×68 ^{+0.6}	92 ^{+0.6} ×92 ^{+0.6}	45 ^{+0.6} ×92 ^{+0.6}	92 ^{+0.6} ×45 ^{+0.6}
Power supply voltage	AC100~240V 50/60Hz or AC/DC12~24V				
Range of allowable voltage variation	85% ~ 110% of rated supply voltage				
Power consumption	About 5VA at AC100 ~ 240V and 3.5 va at DC24V				
Display mode	7-segment negative LED liquid crystal display, PV White SV green light indicator orange light				
Input specifications and measuring range	Thermocouple: K (-50~ 1300°C), E (0~800°C), J (0~1000°C), N (0~1300°C) Thermal resistance: Pt100 (-200~ 600°C)				
The number of decimal places	0(None) , 0.0(1 decimal point)(set by DP parameter)				
Measurement accuracy	0.25 grade (when the thermal resistance and thermocouple are input and the cold end is compensated by copper resistance or freezing point) , 0.3% FS ± 2.0 °C (when the thermocouple is input and the cold end is compensated by the internal components of the instrument)				
Sampling period	80ms (when digital filter parameter INF = 0) , display response time ≤ 0.5 seconds				
Control mode	On/OFF bit adjustment, PID + FUZZY artificial intelligence adjustment algorithm				
Control output	Relay contact output	3A/250VAC Resistive Load, 5A/30VDC resistive load			
	SSR drive voltage output	12VDC/50mA (To Drive SSR relay)			
	SCR contactless output	1A/240V resistive load, only suitable for AC100 ~ 240V power supply			
Electromagnetic compatibility	IEC61000-4-4(electrical fast transient pulse group) , ± 4 kv/5 khz; iec61000-4-5(surge) , 4 kv				
Isolation withstand voltage	The power supply, relay contacts and signal terminals are ≥2300VDC each other, and the isolated weak current signal terminals are ≥600VDC each other				
Operating Ambient	Temperature: -10~+60°C, Humidity: 25~85%				
Storage temperature	Temperature: -25~+70°C, Humidity: 25~85%				

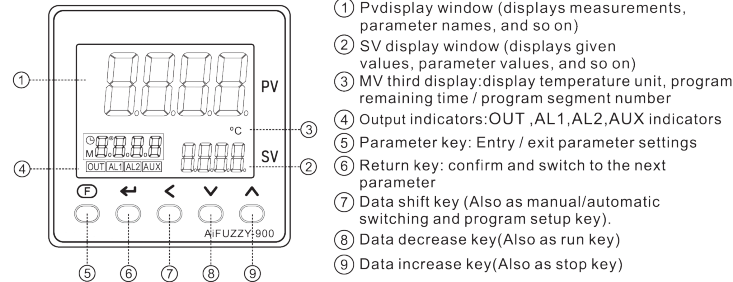
3. Ordering Code Definition

①	②	③	④
Code	Dimensions (width × height)	Code	OUT(Master output)
G	48×48mm	N	None
D	72×72mm	R	Relay output
A	96×96mm	Q	Relay (driving voltage DC12V)
E	48×96mm (vertical)	W1	Thyristor contactless normally open
F	96×48mm (horizontal)	W2	Thyristor contactless normally closed
		K1	One-way thyristor zero-crossing trigger
Code	Power supply		
Blank	AC100~240V		
D	AC/DC12~24V		

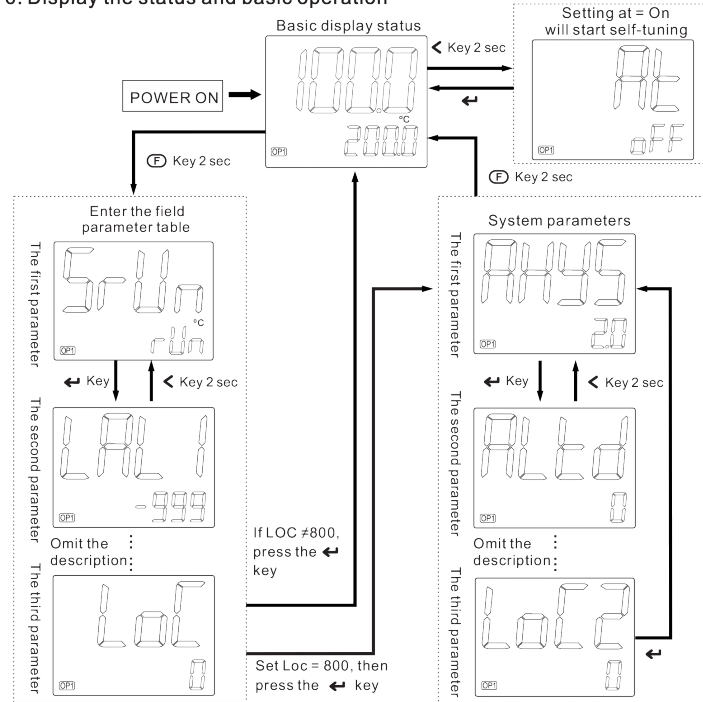
4. Wiring diagram.



5. Front Panel Description



6. Display the status and basic operation



•System parameter setting

In the basic display state, press and hold **Key 2 seconds**, Enter the field parameters, set the LOC = 800, Then press the **Key** to confirm and enter the system parameter setting state. **Key**, **Key**, **Key** can directly modify the parameter values. Press the **Key** to reducing the data, press the **Key** to increase the data, Waiting to modify the value of the decimal point will flash (like a cursor), press key and hold, you can quickly increase / decrease in value, And the speed will be automatically accelerated, also press the **Key** to move to modify the data location (cursor), the operation is more efficient. **Key** can be stored to modify parameter values and display the next parameter, press and hold **Key 2 seconds**, and can return to the previous parameter; press and hold **Key 2 seconds** can immediately exit the parameter setting state.

•Set Value Setting

In the basic display state, press **Key**, **Key**, **Key** key can directly modify the given value.

•“At”PID Parameter auto-tuning

The optimal PID control parameters can be determined by the auto-tuning controller, thereby obtaining precise control:

Press **Key** and hold for 2 seconds, the At parameter appears, "At" parameter "OFF" is set to "ON" and then press the **Key** to confirm instrument can start the implementation of the auto-tuning. Given function, the instrument in the basic display state display will flash the word "At", the instrument after 2 oscillation cycle ON-OFF control can automatically calculate the PID parameters. If you want to advance to give up auto-tuning, "At" parameter "ON" is set to "OFF" and then press **Key** to confirm.

*Given tuning parameter values obtained are not identical, to perform auto-tuning function, should be first given value set in The most commonly used value or middle value, if the system is good insulation properties of the furnace, the given value should be set in the system uses the maximum, and then Execute the start of the operation of auto-tuning function. Reasons to learn, auto-tuning after the initial use, the effect may not be the best, you need a period of time (usually the same time auto-tuning control) before they can get the best results.

*Do not operate the controller or interrupt the power supply during the auto-tuning process.

7. Parameter list and function

7.1 Field parameters

The SrUn parameter has only changed its position, originally after LAL2, but now ranks first.

Press **Key** to hold for 2 seconds and enter the field parameter settings

Code	Name	Description	Range
SrUn	Running state	run the control state. Stop: Stop State, SV window shows flashing display "StoP"	(Ex-factory value run)
HAL1	AL1 high limit alarm value	"HAL1" is the absolute value alarm or deviation value alarm, by "ALtd" parameter definition. When the value set to Max. will disable this function.(3200)	-999~3200
LAL1	AL1 low limit alarm value	"LAL1" is the absolute value alarm or deviation value alarm, by "ALtd" parameter definition. When the value set to Min. will disable this function.(-999)	(ex-factory value, upper limit: 3200 lower limit: -999)
HAL2	AL2 high limit alarm value	"HAL2" is the absolute value alarm or deviation value alarm, by "ALtd" parameter definition. When the value set to Max. will disable this function.(3200)	
LAL2	AL2 low limit alarm value	"LAL2" is the absolute value alarm or deviation value alarm, by "ALtd" parameter definition. When the value set to Min. will disable this function.(-999)	
Loc	Password lock	Set LOC = 800, then press Key to input system parameters.	

7.2 system parameter

Set Loc = 800, then press the **Ⓔ** key to enter the following system parameters

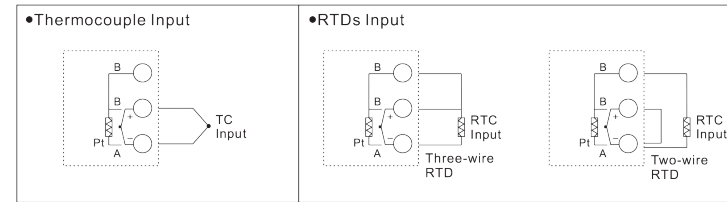
ALYS	Alarm hysteresis	Avoid frequent alarm on-off action because of the fluctuation of PV	0~2000 (Ex-factory value 2.0)
ALtd (ALtd)	Alarm mode	ALtd=0, AL1 is the deviation value alarm, AL2 is the absolute value alarm. ALtd=1, AL1 and AL2 is the absolute value alarm. ALtd=2, AL1 and AL2 is the deviation value alarm.	0~2 (Ex-factory value 1)
CntL (CntL)	Control mode	onoF: on-off control. For situation not requiring high precision. FPId: advanced artificial intelligence "FUZZY+PID" control.	(Ex-factory value FPId)
orEv (orEv)	Selection of heating refrigeration	onr: Reverse acting. Increase in measured variable causes a decrease in the output, such as heating control. ond: Direct acting. Increase in measured variable causes an increase in the output, such as refrigerating control.	(Ex-factory value onr)
P	Proportional band	Proportional band in FPId control. Instead of percentage of the measurement range, the unit is the same as PV. Generally, optimal P, I, D and CP can be obtained by auto tuning. They can also be manually inputted if you already know the correct values.*P initial value:20.	1~3200 (Ex-factory value 25.0)
I	Integration time	The integration time of the FPId adjustment, the unit is sec, and the integral action is canceled when I=0. *I initial value:200.	1~9999 (Ex-factory value 200)
d	Differential time	The differential time of the FPId adjustment, the unit is 0.1 sec, and the differential effect is canceled when d=0. *d initial value:50.0.	0~3200 (Ex-factory value 50.0)
CP	Control cycle	CP reflect the instrument operator to adjust the speed, the size of the SSR that affect the control accuracy. With SSR, SCR output control cycle preferable to shorter, usually 0.5~3.0 Sec. The relay switch output is generally in 15~40 sec. When the output relay switches, the CP will be limited to 3 sec, And self-tuning At will automatically set the CP as the appropriate value, taking into account the control accuracy And mechanical switch life. When the control mode CntL = onoF, the action of the CP as an output disconnect or power-on output ON Delay time.	0.2~300.0 (Ex-factory value relay output 15.0 SSR output 2.0)
HYS	Control hysteresis	HYS is used for ON-OFF control to avoid frequent on-off action of relay. For a reverse acting (heating) system, when PV > SV, output turns off; when PV<SV-HYS, output turns on. For a direct acting (cooling) system, when PV<SV, output turns off; when PV>SV+HYS, output turns on.	0~200.0 (Ex-factory value 2.0)
Int (Int)	Input Signal	Selection of input Types for thermocouples or RTD P, E, J, R, Pt100	(Ex-factory value K)
dP	Decimal point	0: no decimal. 0.0: one decimal place.	(Ex-factory value 0)
Sc	Input Shift Adjustment	SC is used to shift input to compensate the error caused by transducer, input signal, or auto cold junction compensation of thermocouple. PV after compensation=PV before compensation + Sc It is generally set to 0. The incorrect setting will cause measurement inaccurate.	-199.9~+400.0 (Ex-factory value 0)
InF	PV input filter	The value of InF will determine the ability of filtering noise. When a large value is set, the measurement input is stabilized but the response speed is slow. Generally, it can be set to 1 to 3. If great interference exists, then you can increase parameter "InF" gradually to make momentary fluctuation of measured value less than 2 to 5. When the instrument is being metrological verified, "InF" s can be set to 0 or 1 to shorten the response time.	0~40 (Ex-factory value 2)
dU	Temperature unit selection	°C: celsius equals °F: fahrenheit equals	(Ex-factory value °C)

SPL	Low limit of SV	Minimum value that SV is allowed to be.	-999~3200 (Ex-factory value -99)
SPH	High limit of SV	Maximum value that SV is allowed to be.	-999~3200 (Ex-factory value 999)
Loc2	Password lock2	LOC2=0: Unlocking, no locking function. LOC2=1: At self-tuning parameter cannot be set. LOC2=2: Field parameters cannot be set. LOC2=3: SV setting value cannot be set LOC2=4: At self-tuning, current field parameters and SV set values cannot be set	0~4 (Ex-factory value 0)

LOC2 is a newly added parameter

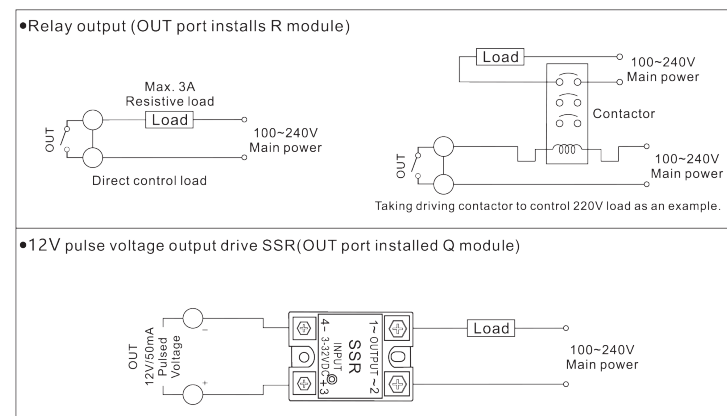
8. Partial application wiring method

8.1 The wiring method of the input signal



* If the input wiring error, sensor damage, over-range or Int settings and input sensor types are inconsistent, there will be "orAL" warning flicker, After these faults need to be eliminated, the PV can measure the display normally.

8.2 Main control output wiring method



The NugSmasher® Pro can be used with a manual pump handle or pneumatic operation with push button actuation of plates. The NugSmasher® Pro requires a compressor (not included) with a minimum psi of 100 psi and 3-5 gallon air capacity. Note the larger the supply tank the less you will have your compressor cycling on and off. Attach compressor and airline to input line which comes rolled up and recessed on rear inset panel on right side of machine.



IDEAL TEMPERATURE:

The ideal pressure and temperature will vary depending on strain and growing techniques so don't be discouraged on your results when you press new material. We recommend when pressing a new strain to start at approx. 220 degrees for flower and notate your yield results (weight of material in vs. rosin out). Perform additional test presses and drop 5-7 degrees per press until you notice your yield percentage starting to drop. Adjust back to the previous temp and that will be your ideal temp for that strain. It is advised to have a thermal temp gun to verify and check temperatures from time to time. Use our temperature test strips included with your unit (also available for purchase at NugSmasher®.com), unless in a pinch use a small piece of electrical tape as the high gloss on heat plates will affect accurate temp readings if using a thermal temp gun. (As shown in Illustration)

PRESSURE:

Once your unit reaches set temperature you're ready to start pressing. Once you have your material between **parchment paper -do not use wax paper!-**, slowly start raising plates. It is key to do this slowly to properly build heat into your material. The entire pressing process should be between 90-120 seconds depending on your strain. Your NugSmasher® Pro is most capable of over pressing your material as the mistake made most with new extractors. See, [NugSmasher®.com/tools/calculator](https://NugSmasher.com/tools/calculator) tool for pressure calculations for your NugSmasher® Pro. There are several videos available online on the NugSmasher® social Instagram account as well as the NugSmasher® YouTube channel that are very beneficial for techniques and tips of your rosin extraction. **Note:** Do not use other leverage device or foot to push manual handle down as you will cause damage not covered by warranty.

LOADING MICRON BAGS:

NugSmasher® extraction bags, are recommended for optimal yield and clean quality rosin. Our bags are hand-made and packaged in the USA! NugSmasher® extraction bags are specifically designed to work with the weight of fresh cured flower and are labeled accordingly at: 3.5 g (1.1g-3.5g), 7 g (3.6g-7g) and 14 g (7.1g-14g). This assumes the bags are loaded (BTS) or bottle/barrel-tech style (upright so that you end up with the round coin like puck once fully pressed). This perfected method allows you the ability to put the proper weight of flower into the bag and get a consistent extraction every time. This method also applies the proper pounds per square inch of pressure (PSI) on your product and eliminates the guess work.



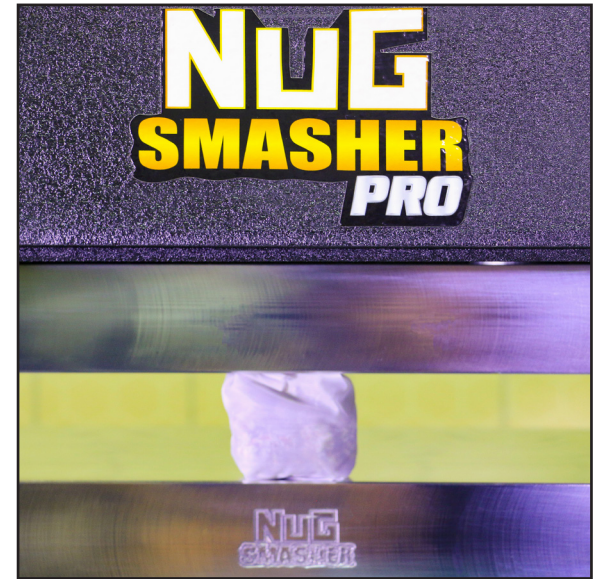
3.5g bag (1.1g-3.5g) = 1.5"-1.6"Diameter

7g bag (3.6g-7g) = 2"-2.2"Diameter

14g bag (7.1g-14g) = 2.4"-2.7"Diameter

REMEMBER

"FIRE IN FIRE OUT!"



As the micron gets smaller the diameter gets larger, this is the reason for the variance in the diameter numbers above. We prefer to use 160 micron for fresh flower, as flower dries we go down in micron screen size (for dry flower use 90 micron). Micron size determines the diameter (surface area) of the smashed bag. For nugs 1g and smaller no bag is necessary. For more details about loading Bottle-Tech and/or Barrel-Tech style (BTS) please visit NugSmasher® on YouTube: <https://www.youtube.com/watch?v=0osvcD7CLK0>

Plate Pressure: -VS- Gauge Pressure:

Plate Pressure:

The applied plate pressure is determined by the extracted material's surface area (bag, size and quantity) and the applied pressure to the extraction (Gauge PSI Reading)

Gauge Pressure:

Gauge pressure (psi) is measured from the hydraulic rams fluid pressure. This is the applied pressure and should be adjusted to the surface area to achieve optimum results.

NugSmasher® Pro Consistency Chart PSI to Surface Area Bag Selection

PSI ON Material	500	750	1000	1250	1500	One 3.5G Bag (BTS)
Gauge Reading	258	387	516	645	774	
PSI ON Material	500	750	1000	1250	1500	Two 3.5G Bags (BTS)
Gauge Reading	515	774	1031	1289	1547	
PSI ON Material	500	750	1000	1250	1500	Three 3.5G Bags (BTS)
Gauge Reading	773	1160	1547	1934	2321	
PSI ON Material	500	750	1000	1250	1500	One 7G Bag (BTS)
Gauge Reading	459	687	917	1146	1375	
PSI ON Material	500	750	1000	1250	1500	Two 7G Bags (BTS)
Gauge Reading	917	1375	1834	2292	2751	
PSI ON Material	500	750	1000	1250	1500	Three 7G Bags (BTS)
Gauge Reading	2751	4126	5502	6877	8253	
PSI ON Material	500	750	1000	1250	1500	One 14G Bag (BTS)
Gauge Reading	716	1075	1432	1791	2149	
PSI ON Material	500	750	1000	1250	1500	Two 14G Bags (BTS)
Gauge Reading	1433	2149	2865	3582	4298	
PSI ON Material	500	750	1000	1250	1500	Four 14G Bags (BTS)
Gauge Reading	2865	4298.65	5731.54	7164	8598	

Surface Area Key

NugSmasher® extraction bags, our bags are recommended or optimal yield and clean quality rosin. NugSmasher® extraction bags are specifically designed to work with the weight of fresh cured flower together with our extraction machines and are labeled accordingly at: 3.5g, 7g and 14g this assumes the bags are loaded (BTS) or bottle/barrel-tech style (upright so that you end up with the round coin like puck once fully pressed).

This perfected method allows you the ability to put the proper eight of flower into the bag and get a consistent extraction very time. The reason for this is that it allows for the proper pounds per square inch, pressure (PSI) on your product and eliminates the guess work.

3.5g = 1.5" Diameter = 1.77" in surface area
7g = 2"-2.2" Diameter = 3.14" in surface area
14g = 2.4"-2.7" Diameter = 4.91" in surface area.

We prefer to use 160 micron for fresh flower, as flower dries we go down in micron screen size (for dry flower use 90 micron).

*NOTE: As the micron gets smaller the diameter get slightly larger.
 Example: 90 micron is about 5% larger at the end of your extraction.*

For the Pro Calculator tool, please visit, NugSmasher.com/tools

EXTRACTION EXAMPLE:



One 14g Bag

Plate Pressure
750 PSI

There is only one 3.5g bag that has the total surface area of around 1.77in².

Gauge Pressure
1074 PSI

To extract your material at 750 PSI with a surface area of 1.77in (one 14g bag) it would equal 1074 PSI on your gauge.

Four 14g Bags

Plate Pressure
750 PSI

There are two 3.5g bags that has a total combined surface area of around 3.54in².

Gauge Pressure
4298 PSI

To extract your material at 750 PSI with a surface area of 3.54in² (1.77in² for each 14g bag) you would need 4298 PSI on your gauge.

TOP PLATE VIEW:



Use calculator tool for all configurations.

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- The contents of this document may be subject to change without notice.
- Due to improvement or change of this device, the description of this document could be partially different in specification, for which your understanding is requested.
- With the exception of what is provided for in the warranty provisions of NugSmasher®, we do not assume any liability against the damages (including but not limited to the loss of profit, indirect damage, special damage or other monetary damages) arisen out of the use or failure to use this product properly. The same shall also apply to the case even if NugSmasher® had been notified of the possibility of arising damages in advance. As an example, we shall not be liable for any loss of material made using this product or indirect damages caused by the product.
- Use of your NugSmasher® press should be done in accordance with all local, state and federal regulations. It is owner/users responsibility to know and understand laws and regulations regarding concentrates. NugSmasher® has no responsibility of how product is used and products produced with it.

- Keep away from children, pets and clothing.
- Never leave the extractor on when you go to sleep or leave the area.
- Never use or store flammable liquids (such as gasoline) around the extractor. The flammable vapors can flow from one part of the room to another and be ignited by an electrical spark.
- Place at least three feet away from objects such as bedding, furniture and drapes. Do not place where towels or other objects could fall on the extractor and start a fire.
- Use extractor on the floor or bench top. Never place on furniture, since unit may fall , which could result in a fire or shock hazard. Do not use in wet or moist places, such as bathrooms; corrosion or other damage to parts in the unit may lead to a fire or shock hazard.
- Do not hide cords under rugs or carpets. Placing anything on top of the cord or unit as it could cause the cord or machine to overheat, and can cause a fire.
- Do not use an extension cord unless absolutely necessary. Using a light-duty, household extension cord with high-wattage appliances can start a fire. If you must use an extension cord, it must be marked #14 or #12 AWG; this tells the thickness or gauge of the wire in the cord. Do not use a cord marked #16 or #18 AWG. Only use extension cords bearing the label of an independent testing laboratory such a U.L. or E.T.L.
- Be sure the plug fits snugly in the outlet. Since a loose plug can overheat, have a qualified repairman replace the worn-out plug or outlet. Since extractor draw lots of power, the cord and plug may feel warm. If the plug feels hot, unplug the heater and have a qualified repairman check for problems. Using an extractor with a hot cord or plug could start a fire.
- If a extractor is used on an outlet protected by a ground fault circuit interrupter (GFCI) and the GFCI trips, do not assume the GFCI is broken. Because GFCIs protect the location where leakage currents can cause a severe shock, stop using the extractor and have it checked, even it if seems to be working properly.
- Broken extractor should be checked and repaired by a qualified service center. Do not attempt to repair, adjust or replace parts yourself as this will void warranty.



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