

OPERATING INSTRUCTIONS

COMPETITION MODEL 3-BR POWDER MEASURE

Congratulations! You have just purchased and are about to operate one of the finest powder measures available. With proper care you should receive many years of service and satisfaction. To be sure that you get the most from your new Model #3BR Powder Measure, please take a few minutes to read the following instructions.

INTRODUCTION

The Redding MATCH GRADE Model #3BR Powder Measure is a broad range powder measure designed to handle all popular calibers of rifle and handgun cartridges. It has many unique features to enhance its accuracy and repeatability that you should become familiar with.

Interchangeable Micrometer Units
In order to achieve accurate, repeatable charges throughout a broad range from 1/2 to 100 grains, two interchangeable micrometer units are available.



Pistol Micrometer Unit

The Pistol Micrometer Unit (Item #03331) is designed to give its best accuracy with charges ranging from 1/2 to 10 grains. It is recommended for loading small pistol charges within this range.

The Universal Micrometer Unit (Item #03330) is designed for larger capacity cases and capable of throwing charges up to 100 grains. It will work equally well for medium charges and for moderately small pistol charges down to approximately 5 grains. As the name implies it is the most universal micrometer unit.

Adjustable Powder Baffle

An adjustable powder baffle is provided to assist with "charge to charge" uniformity by maintaining a consistent column of powder above the metering chamber. Various types of powder and different operating techniques may require adjusting the location of the baffle. It is designed to easily slide up or down.

A good starting position is approximately one-half to two-thirds the height of the reservoir.

Anti-Backlash Micrometer

The Model #3BR has been engineered to reduce the impact of backlash inside the micrometer. This feature reduces minute tolerances in the screw threads, minimizing thread backlash, assuring your settings will be very repeatable year after year.

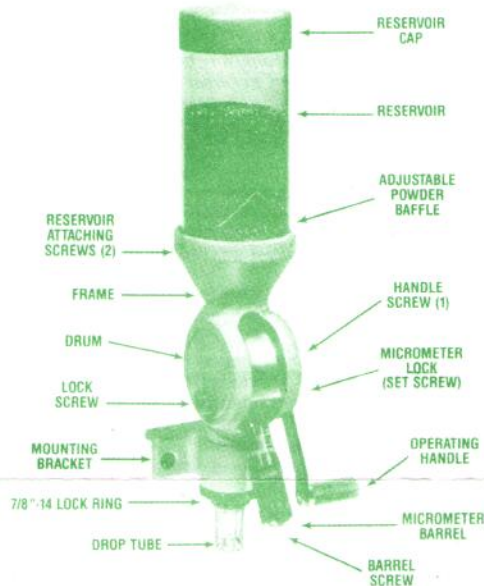
Micrometer Lock (Set Screw)

A set screw located under the operating handle on the right side of the powder measure securely attaches the micrometer in place. This prevents movement of the micrometer when the knurled lock screw (left side) is loosened to make setting adjustments. This set screw is often overlooked and must be removed for complete disassembly. (See Cleaning and Disassembly)

ASSEMBLY AND SET UP

The Model #3BR Powder Measure is shipped with the drum and metering chamber pre-assembled in the frame. As a result there is very little further assembly required.

1. The first step will be to attach the reservoir, but there are two things to check first.
Observe the metering chamber cavity and metering plunger. Be certain that this cavity is clean and dry before proceeding. Wipe out with a "Q-tip" if necessary*.
Observe the location of the powder baffle. If it is not already located approximately one-half to two-thirds the height of the reservoir, slide it to that point. Now attach the powder reservoir to the frame using the two dog point set screws provided in the frame.
2. Attach the operating handle according to the illustration with the single pan head screw provided.
3. Decide upon the most convenient location for your powder measure and attach the mounting bracket. Keep in mind it should be mounted very rigidly for best results. You should use a well braced shelf or the edge of a solid bench that is not subject to accidental jarring or vibration.
- 3a. An optional bench stand (Model #RS-6) is available for convenient bench top mounting of all Redding powder measures. It is also interesting to note that our tests have repeatedly demonstrated that powder measures show slightly improved accuracy, when mounted in the #RS-6 Bench Stand; rigidly mounted to a solid bench.



4. The frame of the powder measure can now be inserted into the mounting bracket (or optional bench stand) and secured with the 7/8" -14 lock ring. The mounting bracket and bench stand have no internal threads so you can conveniently align your powder measure at any desired angle. This feature also allows for the easy removal of the measure to change powders or to quickly dump unused powder back into the original container at the end of a reloading session.

MICROMETER SETTINGS

Before attempting to rotate the micrometer barrel, loosen the knurled lock screw on the *left* side of the powder measure. Rotate the barrel and observe the micrometer unit. It is graduated very similar to a conventional micrometer. The fixed sleeve is graduated from "0" to "100" with each line having a value of 5, equal to one revolution of the barrel.

The rotating micrometer barrel is graduated from "0" thru "4" and back to "0". Each numbered line has a value of 1 and the shorter lines in between have a value of 1/10. Thus any setting from "0" to "100" is possible by tenths. Once a setting has been made the lock screw should be re-tightened to retain that setting.

NOTE: These graduations are provided for the convenience of setting the powder measure and are for reference only. The graduations DO NOT indicate grains of powder.

Remember: All powder measures are volume metering devices. Always verify the actual weight of your settings with an accurate powder scale.

OPERATING THE MEASURE

Select the desired powder type you wish to use and fill the reservoir. Be certain to fill it well above the baffle.

Make an arbitrary micrometer setting. Once you have used the measure for a while, you will make settings from your reloading notes or powder graph. (See Preparing a Powder Graph)

Several charges should now be thrown and discarded to settle and stabilize the powder measure. Use this time to develop a smooth uniform operating rhythm. The important thing to learn at this point is: UNIFORM OPERATION IS THE KEY TO UNIFORM CHARGES. Operate the measure at the same speed with each stroke of the handle.

The discarded charges should be returned to the original container and not the measure reservoir. Check the actual weight of several sample charges using an accurate powder scale and make any necessary adjustments to the micrometer setting until the desired charge weight is established. Record the micrometer setting, powder type and actual charge weight in your reloading notes for future reference.

REDDING RELOADING
EQUIPMENT

REDDING-HUNTER INC. • 1089 STARR ROAD • CORTLAND, NY 13045

* Saturated with household rubbing alcohol (Do not use petroleum products)

The measure is now set up and ready to charge cartridge cases with powder. A case is held under and against the drop tube while the handle is operated with the same uniform stroke that you used when setting the micrometer. Repeat this procedure for each case. The translucent drop tube will allow you to visually watch the powder flow into each case. It is a good common sense safety practice to visually check each case for the same level of powder and to spot check the measure settings after every ten to fifteen charges.

At the end of a reloading session, always return any unused powder to the original container. Never leave powder in the measure when it is unattended. It may be spilled, mixed or become misidentified. Sunlight, humidity and other elements may also have a detrimental effect.

MASTERING DIFFICULTIES

Coarse granular extruded powders such as IMR-4350 are always difficult to meter through any powder measure. However, all Redding powder measures will handle them successfully if the proper operating technique is mastered.

The rotating drum is designed with a very sharp edge for cutting such powders. You will feel the resistance in the operating handle at a certain point in the stroke where the shearing action takes place. This shearing is inevitable and is usually only one or two pieces of powder. The trick is to learn how to accomplish the powder cutting with the least amount of disturbance and still maintain a smooth uniform rhythm. One of the best methods is to put your thumb on the frame of the measure while operating the handle with the first two fingers.

With a little practice using this method a good operator can achieve charges within one-half of one per cent of the desired charge with even the coarsest powders and much better with the easy ones.

We previously discussed rigid mounting of the powder measure. It is an absolute must with coarse grained powders.

Another difficulty that is characteristic of coarse grained powders is "bridging" or "jamming" that may occur in the drop tube.

The translucent drop tube allows you to visually detect this problem immediately. If "bridging" occurs it may be an indication that your operating stroke is too fast and abrupt. Relax, slow down, and develop a steady uniform rhythm. You may prefer to change your routine slightly. The handle may be bumped lightly against the limit of its travel to dislodge powder. This routine of lightly bumping the handle is preferred by some and settles the powder in the reservoir. If you use this method of bumping, it should be done LIGHTLY AND UNIFORMLY. Heavy handed banging of the handle will only cause erratic charges and damage the measure.

If you change your operating routine, re-evaluate and re-check your micrometer settings. They may change by a tenth or two.

MICROMETER ZERO

If you have reason to believe that the micrometer has become misaligned you can easily check it as follows: Loosen the knurled lock screw on the left side of the powder measure. Turn the micrometer barrel in towards zero as far as it will go using only finger pressure. The zero on the rotating micrometer barrel should align with the zero index line on the fixed sleeve. If it does not, you should tighten the lock screw, release the barrel screw on the end of the micrometer, rotate the barrel until the zero lines match and re-tighten the barrel screw.

CLEANING AND DISASSEMBLY

Cleaning of the powder measure is rarely necessary, but may sometimes be required after extended use with certain fine grain powders. An accumulation of dust or powder residue between the close fitting drum and frame may cause a slight drag which hinders smooth operation. If you suspect this condition, check the "feel" of the measure with all powder removed.

If the unit requires cleaning, disassemble according to the instructions below and simply wipe the drum and inside of the frame with a clean piece of cheese cloth. If you wish to dampen the cloth slightly*, ordinary household alcohol will work fine.

Petroleum products and solvents should not be used and will cause damage to the reservoir and drop tube.

Never use anything abrasive and do not disturb the sharp cutting edges of the drum, they must remain sharp.

Lubrication is not necessary because the frame is a natural bearing surface of cast iron, although powdered graphite is acceptable if desired. *Never use oil of any kind on any powder measure.*

Disassembly may be accomplished in the following manner. Remove the operating handle to gain access to the micrometer locking set screw under the handle. This set screw need not be completely removed, but must be loosened a minimum of three full turns. Completely remove the knurled lock screw from the left side of the drum.

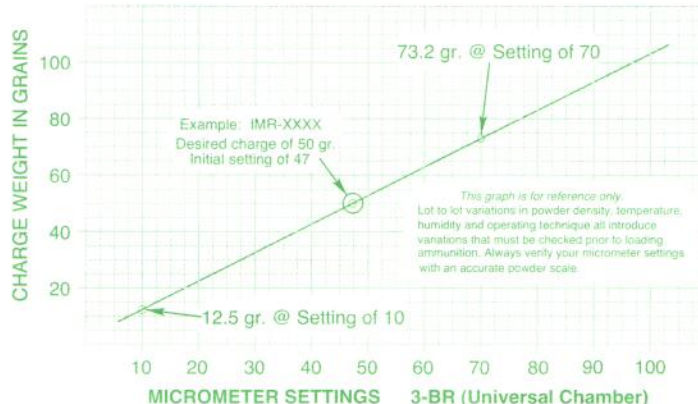
The entire micrometer assembly will now slide freely out of the drum and frame. Once the micrometer assembly is removed the drum will freely slide right or left out of the frame.

To re-assemble, carefully reverse the procedure.

* Saturated with household rubbing alcohol (Do not use petroleum products)

PREPARING A POWDER GRAPH

The micrometer metering chamber of the Model #3BR Powder Measure makes returning to a known setting from your reloading notes a snap. You can go a step further and prepare your own easy to use reference graph for any powder in just a few minutes. Here is how to do it: for materials all you need is a straight edge and some 10/10 graph paper. Ordinary 8 1/2" x 11" size format is just fine.



Somewhere near the bottom of the graph paper, create a horizontal line and title it "MICROMETER SETTINGS FOR THE MODEL #3BR." Then graduate this line from 0 thru 100.

Along the left side of the graph create a vertical line that intersects the horizontal line at zero. Title this vertical line "WEIGHT OF CHARGE IN GRAINS" and graduate this line from 0 to 100 grains.

Now somewhere in the lower right hand side of the graph you should add the following "This graph is for reference only. Lot to lot variations in powder density, temperature, humidity and operating technique all introduce variations that must be checked prior to loading ammunition. Always verify your micrometer settings with an accurate scale".

At this point you may want to photocopy your blank graph so that you will have plenty on hand for all the powder types that you expect to use.

Now you're ready to start the fun part. Zero your trusty powder scale and fill the reservoir with the desired powder. Label your graph with the powder type. Set the micrometer at 10. Draw off a few charges and establish your rhythm as usual. Now throw 10 charges in the scale pan and weigh it. As an example let's say you used IMR-XXXX and the 10 charges weighed 125 grains. Put that back in the original container and do it again. Still 125 grains?

Ok, divide by 10. Each charge is 12.5 grains. Put a mark on your graph that corresponds with the micrometer setting of 10 and a charge weight of 12.5. Make a new micrometer setting at 70. Draw off a few charges to establish your rhythm again. Throw 5 charges in the scale pan again and weigh it. This time it's 366 grains. Do it again. It never hurts to double check. It again weighs 366 grains. Now divide by 5 and you have 73.2 grains. Put a mark on your graph that corresponds with the micrometer setting of 70 and charge weight of 73.2 grains. Connect the two points and extend both ends with your straight edge and you're all done. Now try it. Let's say you want 50 grains of IMR-XXXX. Read across the graph from 50 grains and you intersect your line at a micrometer setting of 47. Have fun and don't forget the following safety rules.

SAFETY RULES

DO NOT SMOKE WHILE USING A POWDER MEASURE OR HANDLING POWDER.

ALWAYS VERIFY POWDER MEASURE SETTINGS WITH AN ACCURATE SCALE. LOT TO LOT VARIATIONS IN POWDER DENSITY, TEMPERATURE, HUMIDITY, AND OPERATING TECHNIQUES, ALL INTRODUCE VARIATIONS THAT MUST BE CHECKED PRIOR TO LOADING AMMUNITION.

PERIODICALLY SPOT CHECK THE ACTUAL WEIGHT OF MEASURED CHARGES DURING THE RELOADING SESSION.

VISUALLY CHECK ALL CASES FOR THE SAME LEVEL OF POWDER. ALWAYS RETURN ANY UNUSED POWDER TO THE ORIGINAL CONTAINER AT THE END OF A RELOADING SESSION.

NEVER LEAVE POWDER IN A POWDER MEASURE WHEN IT IS UNATTENDED.

DO NOT USE THIS MEASURE WITH BLACK POWDER.

REDDING RELOADING EQUIPMENT