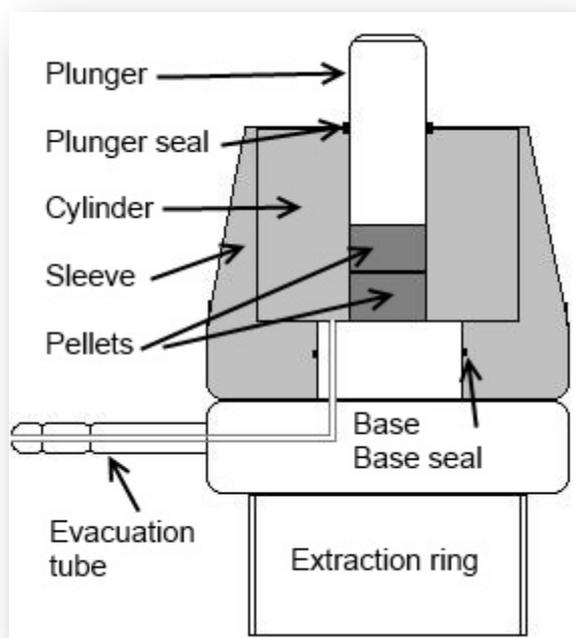


### 20 mm – 45 mm evacuable XRF dies

- Instructions for use
- Dies with water jacket
- Type of steel used for pellets

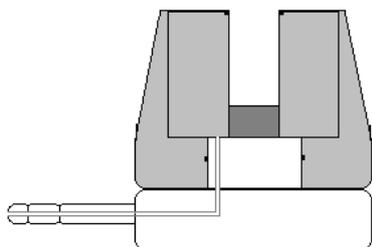
**Instructions for use:**



Overview of components

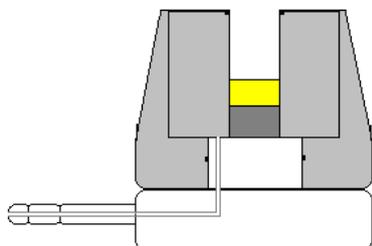
**Step 1**

Place one of the pellets in the cylinder with the optically polished surface facing up.



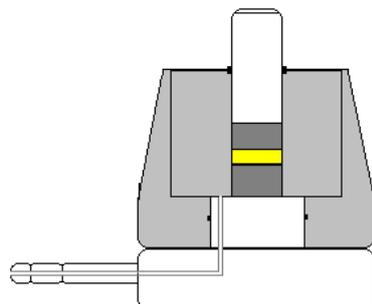
*Step 2*

Prepare and load sample into cylinder bore using a paper funnel or spatula. Use the plunger to spread and tamp the sample evenly over the pellet.



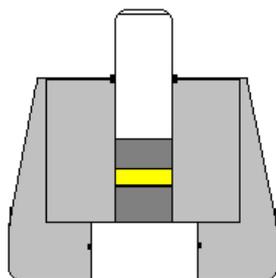
*Step 3*

Insert the second pellet with its optically polished surface facing down into the cylinder, followed by the plunger with O-ring. Place the die assembly onto the lower platen of your [laboratory press](#), connect a [vacuum pump](#) to the evacuation tube and evacuate the sample for two to three minutes. Apply load to the plunger (refer to the maximum load limit of the die) whilst continuing to evacuate the sample. Release the pressure when completed.



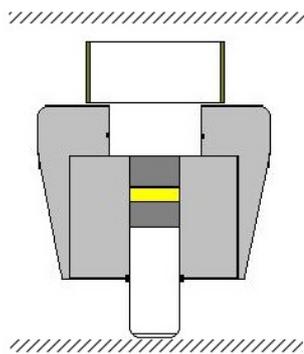
*Step 4*

Stop applying the vacuum and remove the evacuation tube with the die base.



*Step 5*

Turn the die upside-down and place it with the plunger resting on the lower platen of the laboratory press. Place the extraction ring between the upper platen of the press and the bottom of the die as shown in the illustration below. Apply a light load on the extraction ring until the pellets and sample disc are free of the cylinder.



*Step 6*

Carefully clean all the parts of the die.

***Dies with water jacket:***

The water jacket allows heating (or cooling) of solid samples while under pressure when circumstances don't permit the use of electrical appliances.

Using a circulating water bath or pump, boiling water is introduced via the inlet tube into the jacket where it circulates before exiting via the other tube. (The third tube, shown at the bottom of the photo, is the vacuum connector in the base of the die, used for evacuating the sample). When using boiling water, the die body reaches ~80 to 100 °C, so wear thermal protection gloves if necessary.



***Type of steel used for pellets:***

The dies offered in our lab-club webstore are equipped with pellets made of SS-440C steel with a chromium content of 18%. They are hardened to about 60 Rockwell.

We also offer dies with tungsten carbide pellets containing 5% cobalt, making them approximately ten times harder than the SS-440C type. Please [contact](#) us for prices and delivery times.

Bear in mind that the hardness of the sample medium is not the primary consideration when deciding on the type of pellet to be used, rather it's the abrasiveness. Multiple use of a highly abrasive material will eventually scuff and damage the pellets and the inside wall of the cylinder.