



Sizing Your Scales

How do I determine the right size scales for my machine?

There are a couple of ways to determine which size scales you need.

The best way is to physically measure the travel of your machine as shown in the photos below.

Again, while there are several alternative ways to measure travel, *the safest way to protect your equipment* is to physically measure the travel of your machine. If you are replacing an older DRO kit, you may have considered measuring the existing scale lengths and 'match' them to the scales we sell. Unfortunately, there are a couple of reasons this might not work. First off, when your old DRO kit was installed, the odds are scales were only available in 6" increments, possibly even longer (at DRO PROS we carry scales in 2" increments). Second, the difference between actual travel and physical length differs between manufacturers.

The other alternative is to rely on the "spec sheet" or owner's manual to obtain machine travels. Quite often a manufacturer will use the same spec sheet for different models. While most of the time this will work as second best to measuring, again, there are many instances where the owner's manual is not updated or does not correctly reflect the true travel of the machine.

Most likely, without actually measuring your machines travel, there's a pretty good chance you might not get the right scales. We recommend taking the time to measure *to protect your investment*.

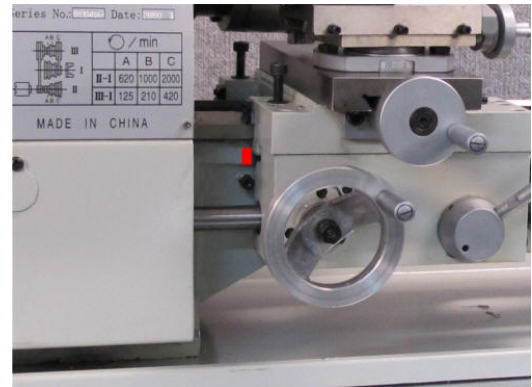
The last 'hurdle' to measuring a machines travel is whether or not it's equipped with a power feed. Most milling machines with a power feed will have the effective travel reduced by 5-6" with a power feed installed. DRO PROS recommends to outfit your machine with a scale that will cover the full travel *with the power feed removed*. That's because if for some reason in the future the power feed breaks, or is uninstalled, then full travel of the mill will not break the scale.

Measuring a Lathe

First, position your carriage towards the headstock until it 'bumps up' against the headstock:



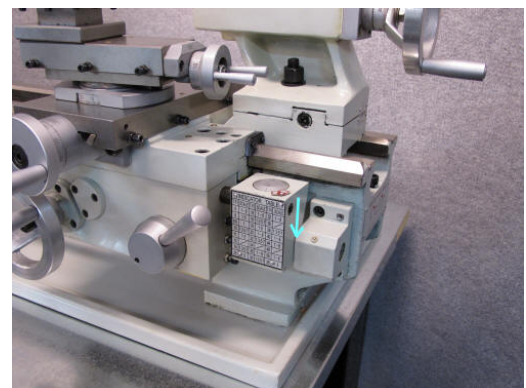
Next, make a mark (ours is in red) on the bed just to the left of the apron:



Reposition the carriage all the way to the tailstock end:



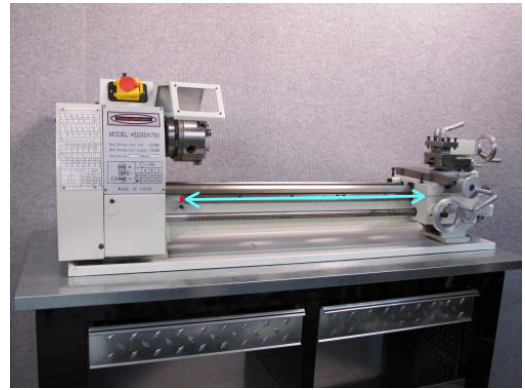
You can see below where the threading dial housing is now flush against the leadscrew hangar bearing:



And from the front, this is what it looks like:



Measure between the previously made red mark and the edge of the carriage apron:

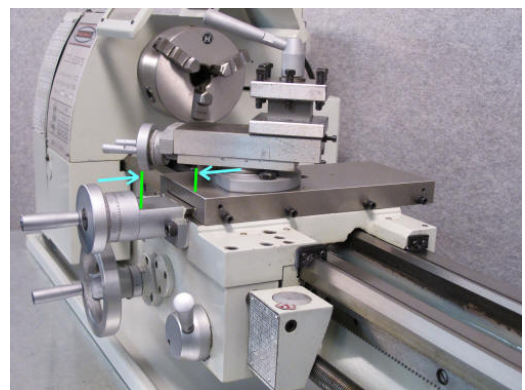


This distance represents your total carriage travel. As in the case with most scales, we recommend allowing ~ 1/2 inch clearance on either end of the scale to arrive at your total required scale travel.

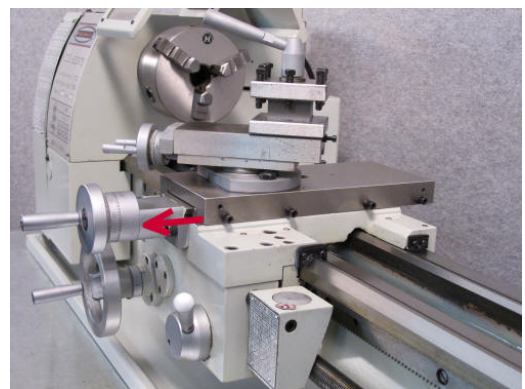
Next, let's take a look at the cross slide:



Notice the gap between the back of the cross slide handwheel dial housing and the cross slide. This indicates the cross slide is not in the full forward position:



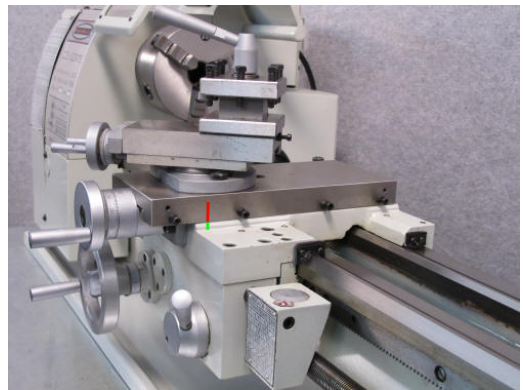
Move the cross slide to the fullmost forward position:



Note the cross slide handwheel dial housing is now flush against the cross slide:



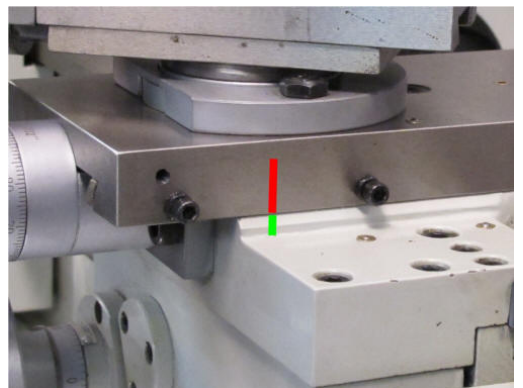
Make a mark on the cross slide (we used red). Specifically where is not important:



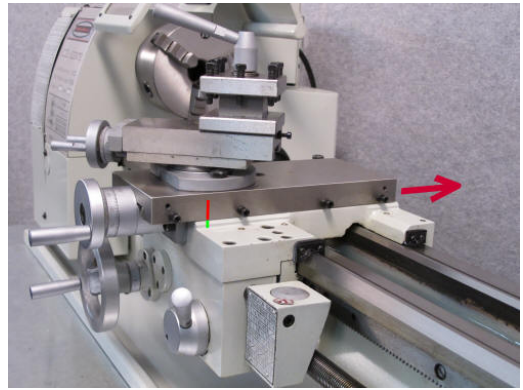
Next, make a corresponding mark on the saddle (we used green), opposite the mark on the cross slide:



Here is a close-up:



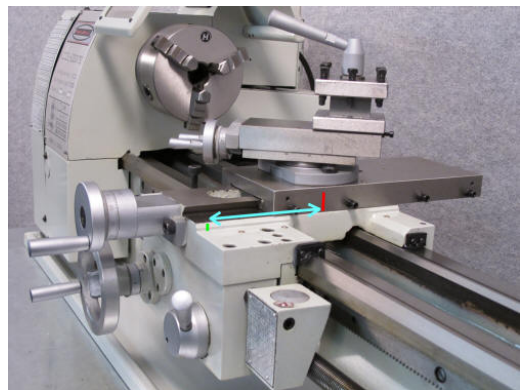
Reposition the cross slide to the rear-most position:



Notice how the marks 'split':



The distance between the marks represents the movement, or travel, of your cross slide:



Most of the time we recommend allowing ~ 1/2 inch clearance on either end of the scale to arrive at your total required scale travel. But the cross slide is unique in that there's typically not a lot of 'extra' room to keep the scale from 'hanging off' the end. So oftentimes when we talk to customers we'll recommend a scale with less than the typical 1/2" clearance. How much 'extra' scale do you need? Depends on your experience and what you feel comfortable with...

Of course you can always call our techs now at (877) 628-6028 - they're glad to help! We hope this information helps you when you must ask yourself - ***How do I determine the right size scales for my machine?***

Best of luck, but most of all, enjoy your new DRO kit!

DRO PROS