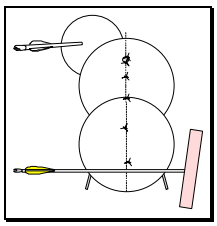


Bow Tuning

Tuning 3: Tuning for groups

Steve Ellison

AIM:

After the session you should:

- Be able to apply two 'micro' tuning tests and adjust tuning accordingly

OUTLINE:

Introduction	5 min
Practical 1: Short distance fine tuning	30 min
Practical 2: 'Paper plate' tuning	30 min

EQUIPMENT:

You will need:

- Pressure button adjustment tools (Allen keys)
- Nocking point adjustment equipment (e.g. pliers/nocking points for metal nocking points; sharp knife, twine/floss and glue for traditional twine nocking points
- A notebook, to record measurements and changes

Bow Tuning 3: Tuning for groups

Most tuning check are checks for alignment and clean arrow flight. The following exercises *demonstrate* some tests used in tuning directly for group size. They are sometimes called 'micro tuning' tests. Because each test is based on observation of group size changes, the tests cannot be used easily as quick checks on setup; use other tests (parts 1 and 2) for that. To tune for group size typically takes an hour or more in addition to setting up targets etc.

1 Short distance fine tuning

For the present exercise, carry out ONE of the following checks:

1.1 Vertical tuning (Example: Nocking point)

i) Measure your nocking point height. Shoot fletched shafts along the top of a target face or other straight line. Note the *height* of the resulting group. relative positions of bare and fletched shafts (use the 'targets' below). Repeat to confirm if necessary. Note 'flyers' separately; they may be influenced differently by micro tuning.

ii) Move the nocking point by not more than 3mm (1mm is the normal recommendation). Either direction will do; upwards is often considered 'safer'. Repeat the check, recording (on the target or using the sheet overleaf) the group height. Is there a visible change? If the group is worse, move the nocking point back the other way; if better, continue in the same direction.

iii) Continue adjusting in the 'favourable' direction until the group worsens.

iv) Set the nocking point height to the 'best' setting.

Note: Vertical tuning can also be used to tune tiller, arrow rest height or any other 'vertical' adjustment.

1.2 Horizontal tuning (Example: Button tension)

i) Write down the present button setting. Shoot groups along a *vertical* line (face edge or line). Note the group *width*. (the spaces below may help).

ii) Increase button tension 1/4 turn and repeat. If the group improves, continue increasing the tension; if it gets worse, move back the other way.

iii) Continue adjusting in the 'better' direction until the group worsens

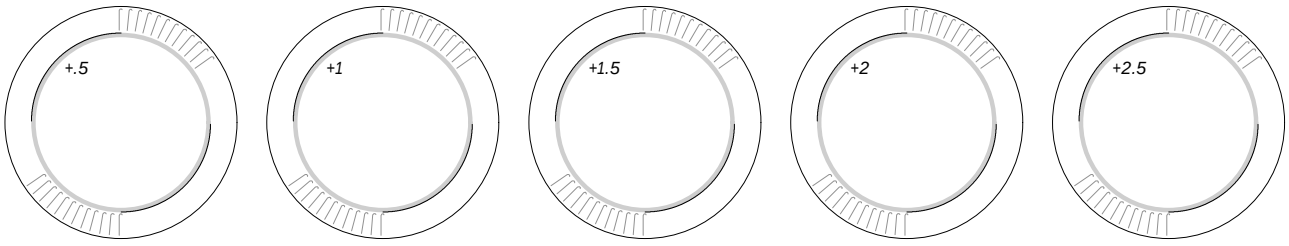
iv) set the tension to the 'best' group size.

Note: Horizontal tuning can also be used to tune pressure button position (in/out), bracing height, or any other 'horizontal' adjustment.

2 Paper plate tuning

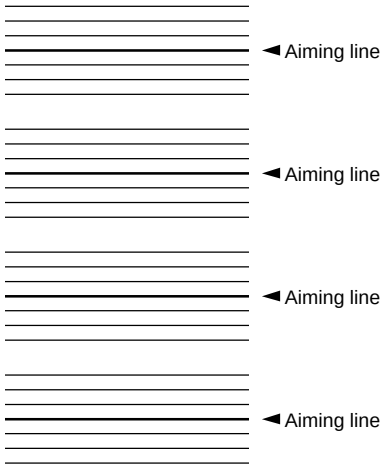
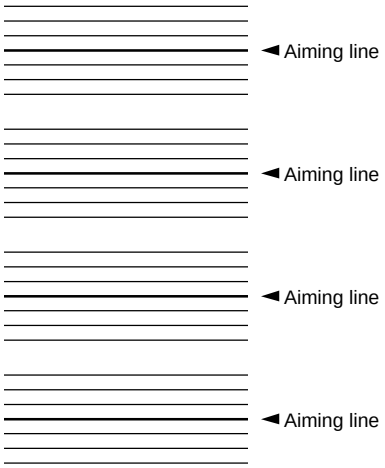
Choose an adjustment (e.g. nocking point height, tiller (in adjuster turns) etc. Mark up about five or six plates with adjustment values (see figure below). Simply set the adjustment to each value and shoot 20-30 arrows at each plate. After checking the plates, set the adjustment for the best group size.

Figure: Plates marked for nocking point tune

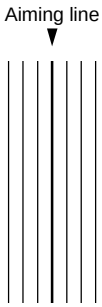
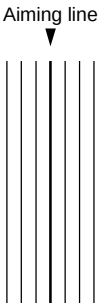
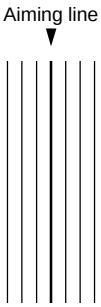
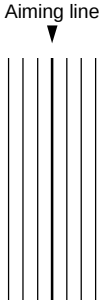
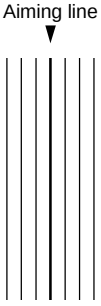


Micro tuning worksheet

Vertical tuning record

Setting	Group size	Setting	Group size
_____		_____	

Horizontal tuning record

Setting	Group Size	Setting	Group size	Setting	Group size
_____		_____		_____	
_____		_____		_____