

SINE WAVE (HWALDUNG PAHDO)

Sine wave movement is unique to ITF Taekwon-Do. Its purpose is to maximise the power in each technique by maximising body mass and kinetic energy. Sine wave permits greater control over body movements enabling smoother changes in direction and transition from one movement to another.

There are 3 stages to the sine wave motion

Stage 1

The body drops slightly by bending the knees. At this stage the body is relaxed and moves into a balanced position while keeping the arms in a neutral position (the arms move slightly to a natural relaxed position but should not drop or make unnecessary movements)

Stage 2

The body raises up but the knees must not straighten completely. The arms extend to prepare for the technique, but must not extend fully (approximately 80% is sufficient). This stretches the muscles that will be used to execute the technique. The whole body should still be relaxed at this stage.

Stage 3

The body drops quickly to maximise the acceleration of the technique. This dropping motion helps the muscles in other parts of the body to remain relaxed (like in freefall), while the muscles used for accelerating the arms work more freely and effectively. At the end of the movement the muscles are tensed to stop the body's dropping motion, to stop the arms moving (usually ending with a twisting motion), and to end the breath control all at the same time.

The secret to a good sine wave motion is to perform the 3 stages in a continuous flowing motion without stopping.

Correct motion:



Sine wave

Incorrect motion:



Horizontal wave



Saw tooth wave

Although nearly all techniques are performed with sine wave, there are a few exceptions:

No sine wave – as in movement 21 in pattern Choong Moo.

$\frac{1}{3}$ sine wave – as in front snap kick. The body just drops as the kick is executed.

$\frac{2}{3}$ sine wave – the body just moves up then down as in stages 2 & 3. This is used in fast motion where the second movement is performed quickly so there is no time for stage 1.