



Health and Safety Training in Design and Technology
 Design and Technology Association
 Specialist Extension Level S8HS Planer/Thicknesser Machines

**Planer/
Thicknesser
Machines**

Forename: _____ Surname: _____

School / College/ Institution _____

Course date: / /

These Training and Accreditation Guidelines are based on the following essential publications:

- Health and Safety Training Standards in Design & Technology: D&T Association
- BS 4163:2014 BRITISH STANDARD Health and safety for design and technology in educational and similar establishments – Code of practice
- Model Risk Assessments for D&T in Secondary Schools and Colleges: CLEAPSS

Please tick against each of the standards below to confirm your knowledge, skills and understanding and that you have completed Assessment Tasks 1 and 2. The RDTHSC/Trainer will sign and date this form on completion

Colleagues must be aware that the planer/thicknesser should not be used by pupils in compulsory education. Colleagues must be able to demonstrate, through practical activities, their capability in using a planer/thicknesser and their knowledge and understanding of:

	Surface Planer	Thicknesser
1. The types of planer and thicknesser commonly used in school workshops with reference to start/stop controls, safety devices, guards and dust collection/extraction	<input type="checkbox"/>	<input type="checkbox"/>
2. The HSE L114 Safe Use of Woodworking Machinery, Approved Code of Practice and Guidance 1998 based on PUWER 1998 and its relevance to school workshops	<input type="checkbox"/>	<input type="checkbox"/>
3. The procedures for electrically isolating the machine in order to carry out such procedures as changing the blades and routine maintenance procedures when changing blades, ensuring they are fitted as a balanced set and that they are cutting at the same height	<input type="checkbox"/>	<input type="checkbox"/>
4. The correct repositioning of both the feed and the receiving tables	<input type="checkbox"/>	<input type="checkbox"/>
5. The correct adjustment of fences and guards	<input type="checkbox"/>	<input type="checkbox"/>
6. The setting of the correct feed speeds to maintain safe cutting operation	<input type="checkbox"/>	<input type="checkbox"/>
7. The correct procedures for feeding wood into the planer and the thicknesser including how to ascertain the minimum lengths of materials to be planed or thickened	<input type="checkbox"/>	<input type="checkbox"/>
8. Routine maintenance and safety checks	<input type="checkbox"/>	<input type="checkbox"/>
9. The importance of keeping the area around the planer and thicknesser free from clutter	<input type="checkbox"/>	<input type="checkbox"/>

RDTHSC/Trainer signature: _____

Date: _____

Colleagues must demonstrate their theoretical and practical knowledge, skills and understanding of the use of planer/thicknesser in school workshops by completing the following assessment tasks

Please tick in the appropriate column to confirm your knowledge and understanding and that you have completed the practical tasks set

Assessment Task 1

Knowledge and Understanding

Surface Planer

Thicknesser

1. The types of planer and thicknesser commonly used in school workshops with reference to start/stop controls, safety devices, guards and dust collection/extraction

Know that:

- Planing and thicknessing machines are classified as 'high risk woodworking machines'
- BS4163:2014 notes that learners in schools and sixth form colleges should not use planing and thicknessing machines
- Young persons, i.e. those under 18, should not use high-risk woodworking machinery unless they are involved in a specific training programme with proper supervision

Know the electrical installation requirements of planer/thicknesser machines in school workshops:

- Emergency switching systems must be provided in each separate student work area. However, preparation areas for staff use only need not have any emergency switching system and should not be affected by the emergency system of any other area
- The machine must be electrically isolated, using a fused switch-disconnector on or adjacent to the machine, controlled by a starter incorporating overload protection and no-volt release
- Isolation switches not incorporated in the equipment must be not more than 2m away from the equipment and positioned so that they can be operated safely while the equipment is in use. The switch should be clearly marked with the name of the machine
- The machine should be provided with a conveniently positioned and accessible, emergency stop switch (which could be the normal "off" switch) or other suitable control device that can quickly stop the machine in an emergency
- The machine must be able to be locked 'off', e.g. by use of a key-switch, when not in use and to prevent unauthorised use.

Know the hazard of inhaling wood dust, i.e.:

- The COSHH Regulations 2002 (as amended) require employers to prevent, or to adequately control, exposure by inhalation to wood dust. Dust from all types of wood, hardwood, softwood and composite materials such as medium density fibreboard (MDF) has been assigned a workplace exposure limit (WEL) of 5 mg m³. This is a time weighted average over an eight hour period. For both hardwood and softwood dusts the COSHH Regulations require employers to ensure that exposure by inhalation is reduced as far as reasonably practicable and in any case to below the WEL
- A risk assessment should be carried out on woodworking machinery to evaluate risks to health and any action required to prevent or control risks. This should involve consideration of the dust concentrations inhaled and the length of time exposed
- This is particularly important where machining operations produce fine dust that remains airborne and is easily inhaled
- Higher dust concentrations are produced from MDF than from hardwoods or softwoods
- Wood dust should be controlled by an effective local exhaust ventilation (LEV) system that captures and removes the dust at source before it can spread. The LEV should be properly designed, maintained and used correctly. LEV systems should be thoroughly examined at least every 14 months by a competent person and the results recorded and kept for a minimum of 5 years
- In addition to thorough examinations, a weekly check should be done to verify that the basic operational features are functioning correctly
- The presence of dust or chips on or around a machine is an indication that the LEV system might not be functioning correctly
- Where an effective LEV system is not in place, a dust mask conforming to BS EN 149:2001+A1:2009 class FFP3 should be used. Class FFP3 should be used when emptying or cleaning LEV systems and maintaining machines
- Training should be provided on correct use of respirators. Disposable filtering respirators should be replaced as appropriate in accordance with the manufacturer's instructions

<p>Know the capacity of the machine, i.e.</p> <ul style="list-style-type: none"> The maximum width for surface planing and the maximum width/depth for thicknessing 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know the method of powering and the general mechanical operation of the machine, i.e.</p> <ul style="list-style-type: none"> The function of the infeed and outfeed tables The types and characteristics of cutter blocks in normal use. Only cylindrical cutter blocks should be used on hand – fed planing machines How to set up the adjustable fence, i.e. using an engineer’s square to set up accurately for edging and how to adjust the tilt facility for bevel planing How to adjust the table control mechanism for thicknessing The function of the feed and pressure rollers, anti-friction rollers and pressure bars The function of the type of anti-kick back device fitted to the machine The speed of feed required, i.e. for surface planing by hand and the choice of speed when using the power feed with the thicknesser The gauges/scales used on the machine and their accuracy How the cutter block must be guarded, i.e. by use of an adjustable bridge guard on the working side of the fence and a guard attached to the fence covering the full width and length of the cutter block behind the fence 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know the main causes of accidents on planing and thicknessing machines, i.e.</p> <ul style="list-style-type: none"> That 20% of accidents occurred on hand-fed planing machines and of these, 80% occurred during edging and flatting, that although a bridge guard was fitted in most cases, accidents were mainly caused by failure to adjust the guard properly 	<input type="checkbox"/>	<input type="checkbox"/>
<p>2. The HSE L114 Safe Use of Woodworking Machinery, Approved Code of Practice and Guidance 1998 based on PUWER 1998 and its relevance to school workshops</p>		
<p>Know the key documents which cover the safe use of planer/thicknesser machines in school workshops, i.e.</p> <ul style="list-style-type: none"> HSE L114 Safe Use of Woodworking Machinery, Approved Code of Practice and Guidance 1998 BS 4163:2014 BRITISH STANDARD Health and safety for design and technology in educational and similar establishments – Code of practice CLEAPSS Model Risk Assessments for D&T 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know any recent changes in legislation and implications for practice in school workshops, e.g.</p> <ul style="list-style-type: none"> Planing and thicknessing machines should be fitted with a braking device providing a run down time of less than 10 seconds 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know that:</p> <ul style="list-style-type: none"> Appropriate eye protection must be worn when operating planer/thicknessers High levels of noise can cause permanent hearing loss Planing and thicknessing machines together with their LEV system can produce noise levels of about 100 db(A) so a competent person should carry out an assessment of the daily personal exposures. Ear protectors should be used if the machines are used for more than a few minutes. Any person exposed to this level of noise for more than a few minutes each day needs to be protected by actions at the first or the second action value specified in the Control of Noise at Work Regulations 2005 Appropriate signs should be provided in each area to advise staff and students on the use of personal protective equipment (PPE) There are general safety measures which must be applied when using woodworking machinery, i.e. long hair should be protected from entanglement, loose clothing should not be worn, jewellery should be removed 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know the type of working environment required, i.e.</p> <ul style="list-style-type: none"> Lighting - at least 500 lx should be provided for normal bench and machine work (taking into consideration the stroboscopic effect of fluorescent lighting units) Heating and ventilation - work areas should be maintained at a temperature comfortable to work in when appropriate protective clothing is worn. Fan assisted heating should be avoided Flooring - floors should be provided with a non-slip surface which should be maintained in good condition. Accumulations of waste materials should be removed from floors each day. Floors should be kept free of obstacles and tripping hazards 	<input type="checkbox"/>	<input type="checkbox"/>

<p>3. The procedures for electrically isolating the machine in order to carry out such procedures as changing the blades and routine maintenance procedures when changing blades, ensuring they are fitted as a balanced set and that they are cutting at the same height</p>		
<p>Know that:</p> <ul style="list-style-type: none"> Power operated equipment must be isolated from the power source and locked in the 'off' position when left unattended, when the qualified staff are not in the work area, before clearing out any blockage, before cleaning is undertaken or before blades are changed Power operated equipment should be switched off before guards are adjusted and before waste material is removed 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know:</p> <ul style="list-style-type: none"> Suitable grinding angles for planer/thicknesser blades, i.e. between 30 and 35 degrees That there is a safe, minimum width of blade for each planer/thicknesser machine That it is important to keep blades as a balanced set, to avoid imbalance in the cutter block and bearing wear 	<input type="checkbox"/>	<input type="checkbox"/>
<p>Know the procedure for changing blades i.e.</p> <ul style="list-style-type: none"> Identify when blades are blunt and require sharpening How to remove blades on the machine by using the correct tools How to fit sharp blades using a setting/clamping device to ensure that all blades cut at the same height The correct procedure for tightening blades firmly in place The radial cutting edge of the blades should not project from the cutter block by more than 1.1mm 	<input type="checkbox"/>	<input type="checkbox"/>
<p>4. The correct repositioning of both the feed and the receiving tables</p>		
<p>Know:</p> <ul style="list-style-type: none"> How to correctly position the outfeed table after changing the blades and how to position the infeed table for the chosen depth of cut 	<input type="checkbox"/>	<input type="checkbox"/>
<p>5. The correct adjustment of fences and guards</p>		
<p>Know:</p> <ul style="list-style-type: none"> How to correctly set the adjustable bridge guard for flattening and edging and recognise the danger from the exposed cutter block when the fence is moved, i.e. When flattening, the bottom edge of the bridge guard should be set as close as possible from the upper surface of the work piece on the infeed table side, and no more than 3 mm away on the outfeed side When edging, the end of the bridge guard should be set as close as possible to the workpiece and the table How to position the bridge guard for flattening followed by edging Adjustment to the bridge guard should not be carried out while the cutters are in motion How to use the bridge guard and chip deflector to prevent access to the cutter block when thicknessing To ensure that the bridge guard is adjusted to its lowest position and fully covers the cutter block before leaving the machine, to leave the machine safe and fully guarded 	<input type="checkbox"/>	<input type="checkbox"/>
<p>6. The setting of the correct feed speeds to maintain safe cutting operation</p>		
<p>Understand:</p> <ul style="list-style-type: none"> The relationship between the number of blades, the cutter block speed, feed speed and surface finish How to choose a suitable feed speed, in relation to the material being cut and surface finish required The importance of a smooth, even feed speed on the overhand planer 	<input type="checkbox"/>	<input type="checkbox"/>
<p>7. The correct procedures for feeding wood into the planer and the thicknesser (See Assessment Task 2)</p>		

8. Routine maintenance and safety checks		
Know: <ul style="list-style-type: none"> Equipment should be maintained in line the requirements of the 'Provision and Use of Work Equipment Regulations 1998', (i.e. by a person competent to repair and maintain machinery) The need to keep maintenance logs The need for electrical inspection and testing of equipment in line with 'The Electricity at Work Regulations 1989' The requirements of routine maintenance as recommended by the manufacturer, e.g. the need to inspect drive belts, regular cleaning of table surfaces, anti-friction rollers, serrated infeed and smooth outfeed rollers, lubrication of fence slides, regular inspection of blades The types of common faults that can occur when using planer/thicknessers, e.g. incorrect height of outfeed table when surface planing, reasons why the wood fails to easily pass through a thicknesser How to correct these faults 	<input type="checkbox"/>	<input type="checkbox"/>
9. The importance of keeping the area around the planer and thicknesser free from clutter		
Recognise: <ul style="list-style-type: none"> The need for good housekeeping around the machine, e.g. floors should be kept clear of obstacles and tripping hazards and there should be sufficient space around the machine so that timber can be handled safely 	<input type="checkbox"/>	<input type="checkbox"/>

Assessment Task 2	Surface Planer	Thicknesser
Practical Skills		
7. Colleagues should demonstrate through practical activities how to safely undertake a variety of operations to prepare timber accurately to size		
Machine operation:		
Know how to remove blades and replace with sharpened blades: <ul style="list-style-type: none"> Use of the correct tools Use of a blade setting/clamping device The correct procedure for tightening the blades firmly in place How to check that the cutters are set level with the surface of the outfeed table 	<input type="checkbox"/>	<input type="checkbox"/>
Flattening – use the hand-fed surface planer to prepare a face side, to demonstrate: <ul style="list-style-type: none"> Correct positioning of the bridge guard Appropriate lengths of material for surface planing Correct cutting sequence for removing wind or bow Correct positioning of the hands when flattening, i.e. ensuring that operators do not exert feeding pressure directly over the cutter block 	<input type="checkbox"/>	
Edging – use the hand-fed surface planer to prepare a face edge, to demonstrate: <ul style="list-style-type: none"> Correct positioning of the bridge guard Correct positioning of the hands when edging, i.e. ensuring that operators hands do not pass over the cutter block while they are in contact with the timber and that their main function is to exert horizontal pressure on the workpiece to maintain it square to the fence 	<input type="checkbox"/>	

<p>Planing to width – use the thicknesser to plane to width, to demonstrate:</p> <ul style="list-style-type: none"> • Correct sequence for preparing wood to size , i.e. planing to width before planing to thickness • Correct positioning of the rise and fall table • Correct use of the anti-friction rollers (if fitted) • Correct positioning of the hands, i.e. ensuring that wood is held by its' side faces to avoid fingers being trapped by the table rollers • Correct actions to take if wood does not pass easily through the thicknesser and identification of causes 		<input type="checkbox"/>
<p>Planing to thickness – use the thicknesser to plane to thickness, to demonstrate:</p> <ul style="list-style-type: none"> • Correct positioning of the rise and fall table • Correct positioning of the hands, i.e. ensuring that wood is held by its' side faces to avoid fingers being trapped by the table rollers 		<input type="checkbox"/>
<p>Flattening stock of minimum length – use the hand-fed surface planer to prepare a face side, to demonstrate:</p> <ul style="list-style-type: none"> • Correct positioning of the bridge guard • Minimum safe length of material for surface planing • Correct positioning of the hands when flattening 	<input type="checkbox"/>	
<p>Edging stock of minimum length – use the hand-fed surface planer to prepare a face edge, to demonstrate:</p> <ul style="list-style-type: none"> • Correct positioning of the bridge guard • Minimum safe length of material for surface planing • Correct positioning of the hands when edging 	<input type="checkbox"/>	
<p>Planing to width – use the thicknesser to plane narrow pieces to width by stacking, to demonstrate:</p> <ul style="list-style-type: none"> • Stacking narrow pieces together for support • Facility provided by the anti-kick back device fitted • Correct positioning of the hands 	<input type="checkbox"/>	
<p>Planing to thickness – use the thicknesser to plane narrow pieces to thickness, to demonstrate:</p> <ul style="list-style-type: none"> • Use of a suitable baseboard to plane narrow, thin strips • Correct positioning of the rise and fall table 		<input type="checkbox"/>
<p>Safety checks, to demonstrate:</p> <ul style="list-style-type: none"> • Correct positioning of infeed table and guards and electrical isolation when planing is complete, i.e. adjusting the infeed table to a minimum cut, lowering the bridge guard to its lowest position fully covering the cutter block, locking the machine to off, leaving the machine safe for the next operator 	<input type="checkbox"/>	<input type="checkbox"/>

