

Learning Resources

Metal Shop: Arc Welding: Safety And Operations

Defines arc welding and welder, names the 5 main types of electrodes, describes how to put the electrode into the holder, how to strike an arc, why angle is important, correct arc length, compares good and bad welds and more.

Ages 15 to 18, Adult
13 minutes, order 1-1421-IN

Center Guiding Of Drawers

This program shows purposes of center guide, how to measure and make guide for drawer. Step-by-step procedures for locating and mounting the guides and the guide strip. Explains necessary tolerances and show how to set up for proper alignment.

Ages 15 to 18, Adult
10 minutes, order 1-1441-IN

Design For Manufacture: The Case Of A Pump Body

This video shows how the most appropriate materials and methods of manufacture can be selected to produce a quality product at a minimum cost. The program examines four different methods of pump body production: hot chamber die casting, cold chamber die casting, sand casting, injection moulding of plastics.

Videos for Technical, Industrial and Vocational Skills

The program also highlights the various tools and ploys that can be used during the design stage. This program is particularly useful for courses in materials, manufacturing processes and design.

Professional, Ages 16 to Adult
23 minutes, order 8-2406-IN

An Encyclopedia Of Manufacturing Processes Series

Composite Materials: Part A

Examine the physical properties of composites based on E glass, Aramid and carbon fibre reinforcements. Covers three methods of fabrication – hand lay up of a simple shape, resin/glass depositor gun used in the production of truck hoods, and vacuum bagging of a competition catamaran hull and modern airline rudder.

Also shown is the use of resin impregnating machines in the making of the Huon class mine hunter.

28 minutes, order 8-2400

Composite Materials: Part B

The program examines eight methods of production—resin infusion, resin transfer moulding, compression moulding, pultrusion, filament winding, continuous profile, bulk casting and centrifugal casting. The advantages, limitations and areas of application for each process are examined, together with typical properties of the materials used in each process.

28 minutes, order 8-2401

Machining: Removing Material

Shows the how and why of the metal removal process. It covers a wide range of production machines from engine lathes to a 7 axis CNC machining centre, grinding operations, the importance of tooling and FMS systems. Tony Smith, Manager of advanced manufacturing engineering at PBR Automotive explains how the company selects the most appropriate machines to optimize productivity.

PBR allowed complete access to their production facilities for the making of this program.

31 minutes, order 8-2402

Machining: Cutting Material

This is a training video showing the how and why of cutting materials. It covers a wide range of cutting processes from power hacksaws and bandsaws through to oxyacetylene, plasma arc, water jet, E.D.M. wire cut, laser beam and ultrasonic machining. The processes are fully explained with the aid of computer graphics.

28 minutes, order 8-2403

Metal Casting: Sand Moulds

Explains the various processes used to produce metal castings. It outlines the advantages, limitations and areas of application of casting processes, using sand/investment moulds. The processes covered include jobbing moulding, rapid prototyping, pit moulding, hot and cold box moulding, lost wax, evaporative foam, shell mould, Hunter and Disamatic moulding machine processes.

28 minutes, order 8-2404



Learning Resources

Metal Casting: Die Casting

Explains six die casting processes. It outlines the advantages, limitations and areas of application of each process. Included are gravity casting, tilt casting, low pressure die casting, high pressure hot chamber die casting, high pressure cold chamber die casting and squeeze casting. The processes are fully explained with the aid of computer graphics.

Also covered: Alloys used and their properties: surface finishing and computer modelling programmes for optimising die design.

28 minutes, order 8-2405

Forming of Plastics Part A

This is part A of a two part video on the forming of plastics - their physical properties and testing procedures used.

This video examines compression and injection moulding of thermosetting materials, physical properties of polymers and how these vary with temperature changes, compounding, extrusion of sheet tube and tube, cross head and co extrusion, blow moulding, blown film and printing, production of fibres and printing on plastics. Computer graphics are used to help explain the various processes.

29 minutes, order 8-2407

Forming of Plastics Part B

This is part B of a two part video on the forming of plastics - their physical properties and testing procedures used.

This video examines the injection moulding process for a range of products, injection blow moulding using preforms, production of flexible foams, rotational moulding, extrusion compression moulding, thermoforming and the computer modelling and production of a stadium seat.

Computer graphics are used to help explain the various processes.

29 minutes, order 8-2408

Ages 16 to Adult, Professional
120 minutes, order 8-24000-IN

Facing On The Lathe

Metal Shop Series

Explains use of facing procedure, setting up for facing, how to select, mount and position cutting tool. How to produce smooth work and preserve cutting tools, chamfering, facing a shoulder, etc.

Ages 15 to 18, Adult
11 minutes, order 1-1423-IN

Manual Load Handling In The Warehouse

The Safety On The Job Series

Do's and Don'ts, and how to handle products safely and efficiently. Promotes common-sense safety rules and the dangers of working while intoxicated.

Adult
12 minutes, order 1-8178-IN

Non-destructive Testing Of Machine Parts

This new program shows how 7 different non-destructive test procedures are carried out on machine parts (aircraft, automobile, etc), their advantages, limitations and typical areas of application.

The processes covered are: dye penetrants (colour contrast and fluorescent), magnetic particle (colour contrast and fluorescent), ultrasonic testing (pulse echo and through transmission), eddy current testing, alternating current field measurement (ACFM), radiography (x-ray and gamma ray, fluoroscopic radiography and computer aided radiography), and thermal imaging.

A very wide range of applications are shown from the multi-million dollar aircraft industry to simple crack testing of a car cylinder head.

Adult
29 minutes, order 8-2409-IN

Metal Shop: Oxyacetylene Welding: Safety And Operations

Defines gas welding, opening regulator valves, adjusting pressure, lighting torch, adjusting flame, uses of carburizing, neutral and oxidizing flames, puddling, fusion without filler rod and rod welding.

Ages 15 to 18, Adult
15 minutes, order 1-1425-IN

Powered Equipment In The Warehouse

The Safety On The Job Series

Safety procedures for the correct operation and maintenance of equipment. Covers proper techniques for handling equipment on loading docks, trailer wheels, dock boards, forklifts, hoists, and conveyers.

Includes rules for stacking and picking orders, personal protective equipment, and safety precautions around chemicals.

Adult
12 minutes, order 1-8177-IN

Pride And Workmanship

The pride, integrity and vision a woodcarver brings to the art of carving wooden animals for carousels gives students a glimpse of the satisfaction which comes when they complete their own work.

Ages 12-18
09 minutes, order 1-4397-IN



Learning Resources

Robotics - The Future Is Now

Hosted by William Shatner. This program teaches students about robots and the roles they play in industry. Through graphic illustrations we see how they are used now and their future possibilities.

It introduces the concepts, capabilities, and applications of industrial robots. A variety of demonstrations illustrate their range of motion, systems of "vision" and "touch", as well as problem-solving abilities developing parallels between human and robots.

Gold Circle Award,
American Society Of
Association Executives
Ages 12-18
20 minutes, order 1-9778-IN

Robots: The Computer At Work

In what ways are robots different from automated machines? Designed to answer such basic questions, this film takes its examples mainly from Japan where more robots are currently in use than in any other country.

Ages 12 to 14, Ages 15 to 18
22 minutes, order 1-8027-IN

Metal Shop: Safety & Basic Fundamentals On Engine Lathe, I

Shows function and operations of engine lathe and names its main parts. Outlines procedures for changing power and changing spindle speed, adjusting for desired feed and reversing feed. Stresses safety.

Ages 15 to 18, Adult
11 minutes, order 1-1426-IN

Metal Shop: Safety & Basic Fundamentals On Engine Lathe, II

Describes various chucks, locating and drilling center holes, and mounting stock. Characteristics of various tool bits, fixing a tool in holder, locking-adjusting the position, procedures for running lathe.

Ages 15 to 18, Adult
13 minutes, order 1-1427-IN

Safety And Operation Of Faceplate Turning, Part I

Defines faceplate turning and bowl or dish turning, backing block, mounting to the faceplate, locating centre of stock, fastening stock to block, marking circle on stock, cutting off excess with bandsaw.

Ages 15 to 18, Adult
08 minutes, order 1-1442-IN

Safety And Operation Of Faceplate Turning, Part II

How to mount faceplate to spindle, how to install and adjust tool rest, select proper spindle speed, adjust speed, how to hold the tools, how to work stock, how to sand and finish the bowl.

Ages 15 to 18, Adult
11 minutes, order 1-1443-IN

Safety Demonstration On The Band Saw

How to adjust table angle and height of upper guard and guide assembly, operation of brake, previsualization of cutting moves, need for a maximum of forward cuts and how to use relief cuts, how to feed stock.

Ages 16 to Adult
14 minutes, order 1-1444-IN

Safety Demonstration On Jointer

Explains uses of jointer and names its parts, how to find minimum length and thickness of stock, how to feed stock, how to joint an edge, a face and an end, how to make bevel cuts, pushstick / hand feeding.

Ages 15 to 18, Adult
12 minutes, order 1-1445-IN

Safety Demonstration On Radial Saw

Illustrates safe procedures for ripping, crosscutting and adjustment for the blade guard and anti-kickback bar. Explains use of friction brake, how to adjust motor yoke, change cutting angle, and more.

Adult, Ages 15 to 18
12 minutes, order 1-1446-IN

Safety Demonstration On Wood Shaper, I

Shows use of shaper and variety of spindle and cutter shapes and sizes, how to change spindles and cutters, to install and align fence. How to select cutter rotation and to reverse direction. How to test a set-up.

Ages 16 to Adult
11 minutes, order 1-1447-IN

Safety Demonstration On Wood Shaper, II

Explains steady feed, dangers of stopping and backing up, feed for straight facing, using rub collar, feeding with starting pin and rub collar. Use of spring ring guard, pressure bar, tall and bevel fences.

Ages 16 to Adult
10 minutes, order 1-1448-IN



Learning Resources

Safety Demonstration On Single-surface Planer

Shows uses of planer and details of operation, how to determine settings, selecting feedroll speed, maximum width and minimum length of stock, feeding stock with regard to grain, dealing with "stuck stock", and more.

Ages 15 to 18, Adult
16 minutes, order 1-1449-IN

Safety Demonstration On Table Saw, Part I

Describes functions of rip fence, blade guard and miter gauge, how to change blades, and adjustment for blade depth and angle of cut. Shows procedures for feeding wide stock and protecting against kickback.

Ages 15 to 18, Adult
11 minutes, order 1-1450-IN

Safety Demonstration On Table Saw, Part II

Elaborates on use of rip fence and miter gauge with emphasis on safety. Shows proper positioning of hands on stock, how to rip narrow or irregularly shaped stock and dangers of backing out of a cut.

Ages 15 to 18, Adult
09 minutes, order 1-1451-IN

Safety Demonstration On Wood Lathe

Shows lathe shaping, cutting to size, sanding and finishing. Shows main parts and functions. Shows gouges, skewers, parting tools and scrapers. How to mount stock, adjust tool rest, turning tools and spindle speed.

Ages 15 to 18, Adult
11 minutes, order 1-1452-IN

Safety Gear Series

WHMIS I (Workplace Hazardous Materials Information System) 1989, Volume 49, Number 21989, Volume 49, Number 2 is still having an effect on buying patterns in Canadian workplaces, according to the results of OH&S Canada's 1990 Annual Survey of Industry Trends. The results show that WHMIS is giving workers the knowledge they need to demand better protective equipment and controls.

OH&S Canada readers report that workers are asking for more or improved personal protective equipment since receiving WHMIS training. In particular, workers are asking for respiratory protection (in 61% of workplaces), protective clothing (51%), eye/face protection (49%), hand protection (40%), and foot protection (17%).

Nearly three-quarters of all survey respondents say they will have to take some action as a result of their review of general WHMIS training. More than half of the respondents are

going to have to do some retraining. A third say they will be changing the contents of their training program and a quarter say they will be changing the training tools used. All these point to a renewed demand for WHMIS training consultants and WHMIS-related training tools, such as audiovisuals and booklets.

"Narrated by television actor Martin Kove and produced in association with the National Safety Council, this video educates viewers about the importance of safety gear to specific on-the-job tasks.

"The narratives stress that most incidents occur while workers perform regular tasks, dispelling myths and countering common excuses for the neglecting of proper protective equipment. In addition to vital safety factors, the video points out the economic benefits to individuals and businesses that come through the observance of proper safety procedures." School Shop.

Foot Protection

Safety equipment is one of the best investments a company can make, but the equipment works only if people use it and use it correctly. *Foot Protection* program explains the use of toe shields, metatarsal guards, and puncture-resistant soles.

Code #1-8115, 11 minutes.

Hearing Protection

Martin Kove explains the physiology of the ear and describes how noise induced hearing loss occurs. A variety of ear plugs and earmuffs are described and the advantages of using hearing protection are discussed.

Code #1-8118, 13 minutes.

"Safety equipment is one of the best investments a company can make, but the equipment works only if people use it and use it correctly. Hearing Protection defines the causes of hearing loss and explains what different kinds of ear plugs and earmuffs are available." Training And Development Journal, July 1989

Eye and Face Protection

Different types of safety glasses, safety goggles, and face shields are described. Workers learn what to wear to protect their eyes from flying bits of wood or metal, chemicals, and dangerous light.

Code #1-8114, 11 minutes.



Learning Resources

Hand and Arm Protection

“Safety equipment is one of the best investments a company can make, but the equipment works only if people use it and use it correctly. **Hand And Arm Protection identifies techniques for protecting hands and arms from both traumatic and contact injuries.**” Training And Development Journal.

This program shows a variety of hand and arm safety gear ranging from light cotton to heavy metal mesh gloves. Techniques for protecting hands and arms around machinery are discussed. Closed caption version also available. Code #1-8116, 11 minutes.

Head Protection

“Safety equipment is one of the best investments a company can make, but the equipment works only if people use it and use it correctly. **Head Protection** describes the proper hats to wear and shows workers how to maintain them correctly.” Training And Development Journal. Code #1-8117, 10 minutes.

Respirators

This program explains what happens to the body when workers breathe in chemical contaminants or are deprived of oxygen. It introduces the different uses of air-purifying and air-supplying respirators, and discusses proper selection and maintenance of the equipment. Code #1-8119, 13 minutes.

Restraints

Coming in 1993.
Ages 15 to 18, Adult
11 minutes, order 1-81140-IN

Safety Housekeeping And Accident Prevention

The Basic Safety Series

A “Safety First” attitude recognizes hazardous conditions. Emphasizes correct operating procedures and safety rules in the handling of tools, chemicals, and personal protective equipment, and being prepared for emergencies.

Adult, Ages 15 to 18
15 minutes, order 1-8302-IN

Sheet Metal Machine

The Professional Beginners Series

Four programs: *Introducing The Box-and-Pan Brake, Making A Box, Combination Beading Machine, Forming Roll Operations.* Illustrates functions of different, commonly used sheet metal machines, basic procedures and techniques.

Ages 15 to 18, Adult
minutes, order 1-50930-IN

Metal Shop: Sheet Metal Working, Basic Equipment

Creating a 12" square dustpan is project used to show basic tools and techniques, purposes and operation of equipment. Provides useful tips for each stage plus efficient work practices, cleanup and safety.

Ages 15 to 18, Adult
8 minutes, order 1-9562-IN

Metal Shop: Sheet Metal Working, Advanced Equipment

A funnel from 16 gauge sheet metal is the vehicle for teaching the use of the floor shear, electric shear, Rotex turret punch and sheet metal stakes. Shows anvil horn, rotary machine, rollers, sliproll, etc.

Ages 15 to 18, Adult
09 minutes, order 1-9563-IN

Metal Shop: Straight Turning Between Centers On The Lathe

METAL SHOP Age 14 to Adult - Shows steps of cutting stock to working length, centre drilling, mounting workpiece, tool selection, proper clamping, spindle speed, proper feed, making a trial cut, etc.

Ages 12 to 14, Ages 15 to 18
18 minutes, order 1-1428-IN

Using The Shaper To Make Drawers

How to make a drawer with a lip front, how to measure, how to use scrap sample for testing set-ups, shaping ends and edges of front, depth of cut for joints, cutting the joint and use of tenoning jig.

Ages 15 to 18, Adult
14 minutes, order 1-1453-IN

Using The Shaper To Make Panel Doors

Step-by-step procedures for shaping and jointing stiles and rails, how to measure and cut to test set-ups, use a pattern and a holding jig to shape the stock. How to reverse cutter, cutter rotation, etc.

Ages 15 to 18, Adult
16 minutes, order 1-1454-IN

Using The Shaper To Make Raised Panels For Doors

Step-by-step instruction for making raised panels using rails and stiles. Explains use of tall fence, how to make a trial run on practice piece, how to solve major problems in making raised panels.

Ages 15 to 18, Adult
09 minutes, order 1-1455-IN

Wood Shop - Safety And Operations (Series Of 15 Programs)

Skillful use of woodworking machines is an art. These fifteen programs help teach the art of woodworking, and how to practice it safely.

Using the Shaper to Make Panel Doors

The step by step procedures for shaping and jointing stiles and rails. Shows how to reverse the cutter and cutter rotation for grain change, and how to use a variety of cutters for the desired effect. Code 1-1454



Learning Resources

Using the Shaper to Make Raised Panels for Doors

How to solve the various challenges this project presents.
code 1-1455

Using the Shaper to Make Drawers

Making drawers with a flip front, testing set ups with scrap. Shaping ends and edges, joints, and the tenoning jig are all shown.
code 1-1453

Centre Guiding of Drawers

Using drawers made with the previous program, continues with step by step process for guides and guide strip, including necessary tolerances and alignment.
code 1-1441

Safety Demonstration on the Wood Shaper, Part I

Shows a variety of spindles and cuts, including changing cutters and spindles, reversing direction, installation and alignment.
code 1-1447

Safety Demonstration on the Wood Shaper, Part II

How to feed stock using starting pin and rub collar for both straight and irregular shaping.
code 1-1448

Safety Demonstration on the Single Surface Planer

Covers uses and operation of the planer. Depth of cut, speed, length, feeding and more are all here.
code 1-1449

Safety Demonstration on the Band Saw

One of the most useful tools in the wood shop. This program teaches correct use and explains visualizing cuts for maximum efficiency and safety.
code 1-1444

Safety Demonstration on the Jointer

A full description of the parts and uses of this machine. Jointing edges, faces and ends.
code 1-1445

Safety Demonstration on the Radial Saw

A full range of instructions to help make the most out of this common tool.
code 1-1446

Safety Demonstration on the Table Saw, Part I

Functions of the rip fence, blade guard and mitre gauge are illustrated, as well as all the common procedures for table saws.
code 1-1450

Safety Demonstration on the Table Saw, Part II

Extends the lessons in Part I and elaborates on them.
code 1-1451

Safety Demonstration on the Wood Lathe

Identifies parts and function, showing how to use a lathe to shape, cut and finish a project safely.
code 1-1452

Safety and Operation of Faceplate Turning, Part I

Getting ready to turn a project on the faceplate: fastening to block, centring, trimming excess.
code 1-1442

Safety and Operation of Faceplate Turning, Part II

Continuing and finishing work of Part I: installation of tool rest, selecting and adjusting speed, tools, finishing project.
code 1-1443
Ages 12 to 14, Ages 15 to 18 minutes, order 1-1440-IN

This listing is correct as of Friday January 5, 2001 but is subject to change without notice. If this listing appears to be out of date, please contact us for up-to-date pricing and availability. This is Subject Nbr 52. For a brief master list of all available subjects, request document number 800. For an ORDER FORM, request document number 801

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